Phillip L. Kiddoo
Air Pollution Control District

Great Basin Unified Air Pollution Control District

157 Short Street, Bishop, California 93514-3537
760-872-8211 Fax: 760-872-6109

NOTICE OF PUBLIC INSPECTION PERIOD
GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT
AIR QUALITY MONITORING NETWORK PLAN 2019

The Great Basin Unified Air Pollution Control District has made available for inspection and public comment its *Draft Air Quality Monitoring Network Plan for 2019* (Draft AMNP 2019) in accordance with Title 40 of the Code of Federal Regulations Part 58.10. Copies of the Draft AMNP 2019 and supporting documents may be obtained from the District at 157 Short Street, Bishop, California, and at the District's website, www.gbuapcd.org, under "What's New." Written comments received by 5:00 pm on Monday, April 15, 2019, will be included in the staff report sent to the Governing Board members. Comments on the plan should be sent to Mr. Phill Kiddoo, Air Pollution Control Officer, GBUAPCD, 157 Short Street, Bishop, CA 93514. Comments may also be submitted by e-mail to pkiddoo@gbuapcd.org. Written or verbal comments will also be taken at the regular meeting of the District Governing Board to be held at May 2, 2019, at 10:00 a.m. in the Mono County Board of Supervisors Chamber (2nd Floor) Mono County Courthouse, Main Street (U.S. Highway 395), Bridgeport, California. For further information, contact Mr. Chris Lanane, Air Monitoring Specialist, at (760) 872-8211.

2019-03-22

Publication Dates	
Inyo Register	March 30, 2019
The Sheet	March 30, 2019
Tahoe Daily Tribune	March 30, 2019

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Agenda Item No. 8 - Attachment 1

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Great Basin Unified
Air Pollution Control District

2019
Annual Air Quality Monitoring Network Plan

Draft

May 2019

Prepared by
Christopher Lanane
Air Monitoring Specialist

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, California 93514
(760) 872-8211
(760) 872-6109 Fax
www.gbuapcd.org

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Tables and Figures

1.0 Introduction

An annual review of all national air quality monitoring networks is required by Federal regulations as a means to identify needs for addition, relocation, or termination of monitoring stations or instrumentation. The Annual Air Quality Monitoring Network Plan (AMNP) prepared by the California Air Resources Board (ARB), the primary quality assurance organization (PQAO) of which the Great Basin Unified Air Pollution Control District (District) is a part, includes the area encompassed by the District. As part of the ARB PQAO, the District operates under the ARB's EPA-approved Quality Assurance Project Plans (QAPP) and under ARB's annual monitoring network plan. With this document, the District has sought to develop a more comprehensive and District-specific plan for submittal to the U.S. Environmental Protection Agency (EPA). This plan describes the network of ambient air quality monitors to be operated by the District during the 2019 calendar year. It includes a review of actions taken in the monitoring network during the 2018-2019 fiscal year and plans for actions in the years ahead. This draft plan addresses the requirements for an annual network plan as listed in the Code of Federal Regulations, Title 40, Part 58, Section 10 (40 CFR 58.10). These regulations require that the AMNP be submitted to the EPA by July 1 of each year after a 30-day public inspection period. The inspection period for this plan began on March 30, 2019, and closed on May 2, 2019, after which the plan, along with the comments received during the public inspection period, will be submitted to EPA for approval. Please note that all highlighted text indicates additions and/or revisions of the information contained in the 2018 AMNP.

The District staff, along with the ARB and EPA Region IX conducted a comprehensive review of the air monitoring stations throughout the District in 2007 and ARB and the District conducted a comprehensive network assessment in 2015. The ARB conducted a comprehensive technical systems audit of the District's entire operation in 2018. State and Local Air Monitoring Station (SLAMS) designations, monitoring objectives, and spatial scales of representativeness were assigned to the criteria pollutants monitored by site. Each year, District staff conducts an annual review of the air monitoring network to evaluate whether the current monitoring strategies are meeting the needs of the District, to determine compliance with all current Federal and State regulations, and to aid in the development of future monitoring strategies. When monitoring station additions or relocations are warranted, site reports are written and/or updated locally and in the EPA's Air Quality System (AQS) database to document compliance with established monitoring criteria.

2.0 Public Comments

Pursuant to Federal regulations, this draft plan was made available for public inspection and comment for at least 30 days prior to submission to the EPA. Notice of availability of the document was published in local newspapers and the document was posted to the District's website (www.gbuapcd.org) on March 28, 2019, under the link, "What's New." The public inspection period provides an opportunity for the public, the EPA, and any other interested parties to provide comments on the plan. Comments received during the inspection period will be included with the plan in the submission. Following the review period ending May 2, 2019, the plan will be submitted to EPA for approval of any SLAMS network changes.

3.0 Network Design

The District operates fourteen (14) active PM10 monitoring stations, that include meteorological monitoring, and six (6) additional meteorology only monitoring stations in four planning areas and in the general environs of the District's three counties: Alpine, Inyo, and Mono. The planning areas in the District are: Coso Junction (formerly Searles Valley), Owens Valley, Mono Basin, and Mammoth Lakes. Figures 1 - 3 present maps of the entire District indicating the planning areas, the monitoring stations currently in operation, and those stations planned for installation this year. Note that three monitoring stations, North Beach, Mill Site, and Dirty Socks, were shut down due to the cancelation of leases from November 2012 through November 2014, by the Los Angeles Department of Water & Power, the land owner. In 2014, a permit was granted by the California State Lands Commission for the new North Beach monitoring location. That station was relocated and has been fully operational since August 2014. The Dirty Socks and Mill Site stations were restarted in December 2014.

Table 1 provides a list of the monitoring stations, the pollutants measured at each station, the EPA Air Quality System (AQS, the EPA's national air quality data base) site codes, and the start date for each station. Table 2 presents the monitoring objective and spatial scale for each monitor at each site. A list of the monitoring objectives and a description of them is provided in this document. Portions of these monitoring objectives and their descriptions are adapted from the CARB annual network plan for 2018. Please note that all stations and all monitors operated by the District comply with regulations described in Code of Federal Regulations Title 40, Part 58, Appendices A, C, D, and E.

After consultation with the District Board and District monitoring specialists, the APCO determines monitoring locations in the District, as delegated by the ARB. Monitoring locations are then added to or removed from the network monitoring plan that is assembled and presented annually to the public for inspection. This plan is then submitted to EPA for review and consideration for approval. The EPA Region IX administrator has the final authority on the configuration of the monitoring network.

Multiple purposes for monitoring a pollutant at a particular site are possible. There is some overlap between monitoring objectives as defined by EPA, presented in Table 2, and the monitoring purposes presented in Table 3. A brief description of the network for each criteria pollutant monitored is provided here. Further site-specific information is presented in the site reports presented in Appendix A.

The primary and basic objective of all of the District's ambient air quality monitors, including all SLAMS and special purpose monitors (SPMs), is to determine compliance with the national ambient air quality standards (NAAQS) for each pollutant and to aid the District in the development of emissions control strategies that protect the public health. Data from these monitors has and will continue to be used in the development of attainment plans for the two remaining nonattainment areas in the District, the Owens Valley Planning Area and the Mono Basin Planning Area, and in verifying compliance with the PM10 standard in the attainment areas, the Coso Junction Maintenance Area and the Mammoth Lakes Planning Area, within the District.

A secondary objective of the monitoring program is to provide air pollution data to the public in near-real-time through presentation of the data on the District's website. Additionally, these data are used to notify the public of unhealthy levels of particulate matter (PM) through the District's Dust Alert system. These notifications are received by any interested parties through e-mail or text message.

Figure 1. Great Basin Unified Air Pollution Control District Map

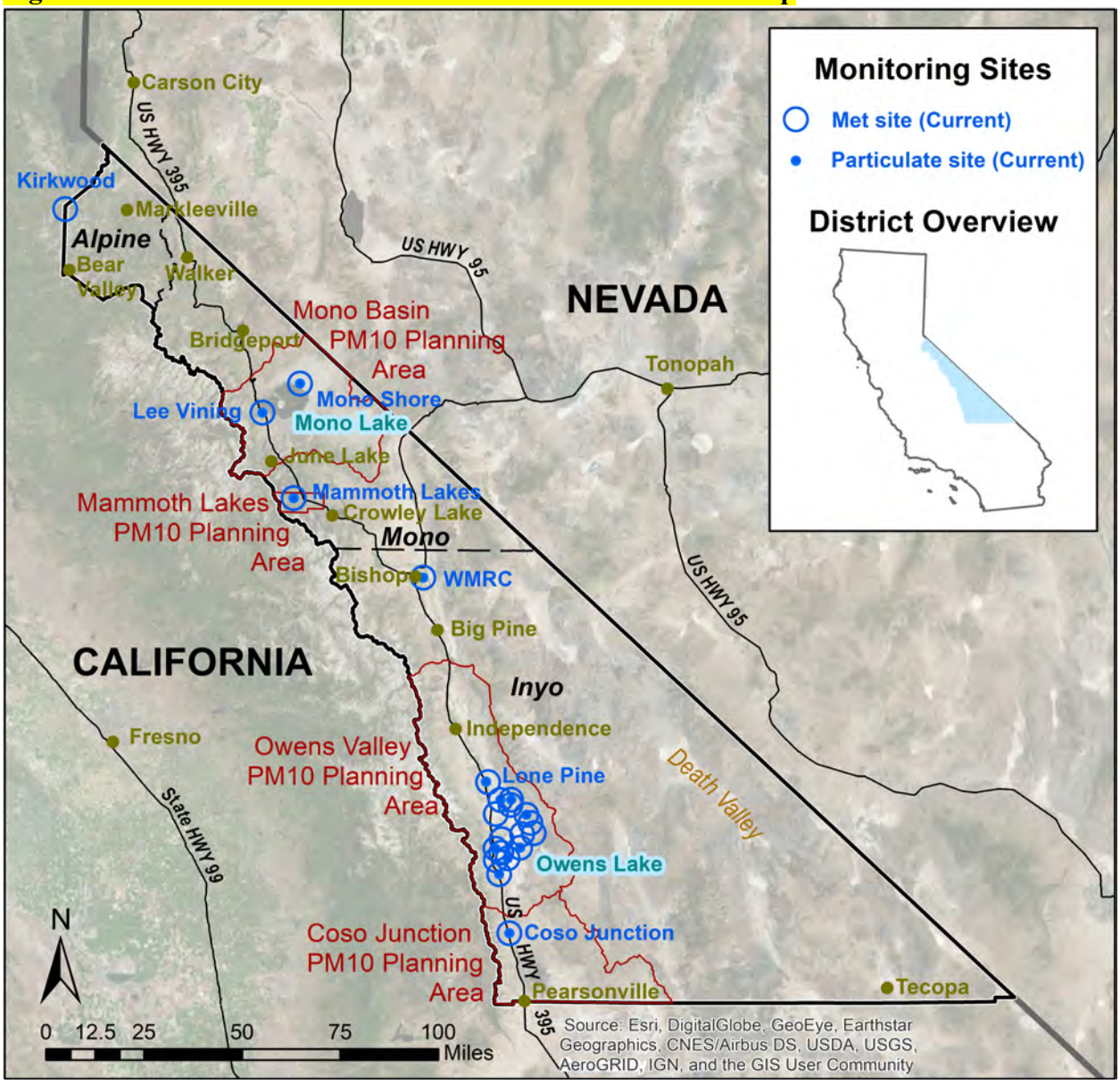


Figure 2. Great Basin Unified Air Pollution Control District Map, Owens Lake detail

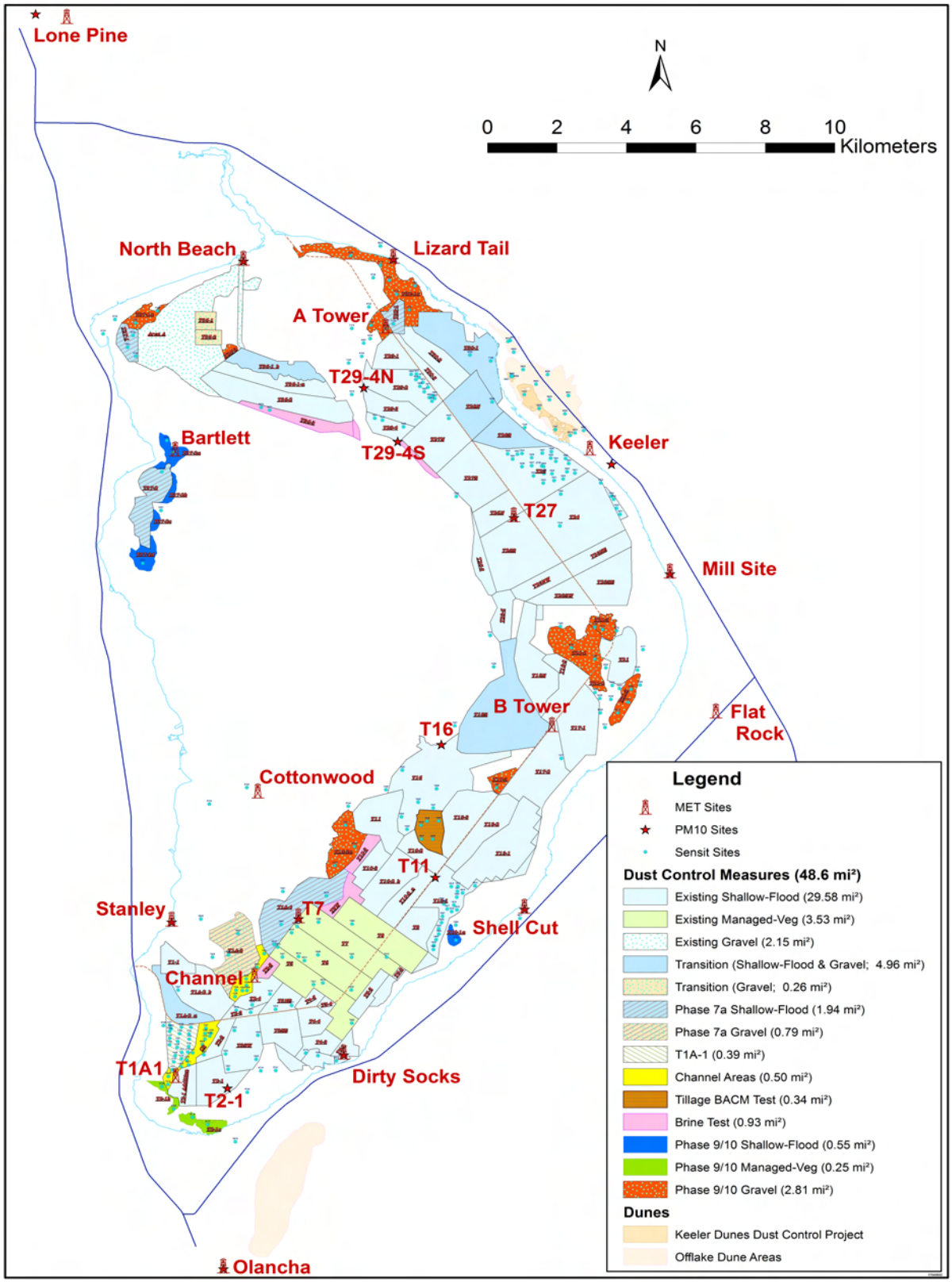


Figure 3. Great Basin Unified Air Pollution Control District Map, Mono Lake detail

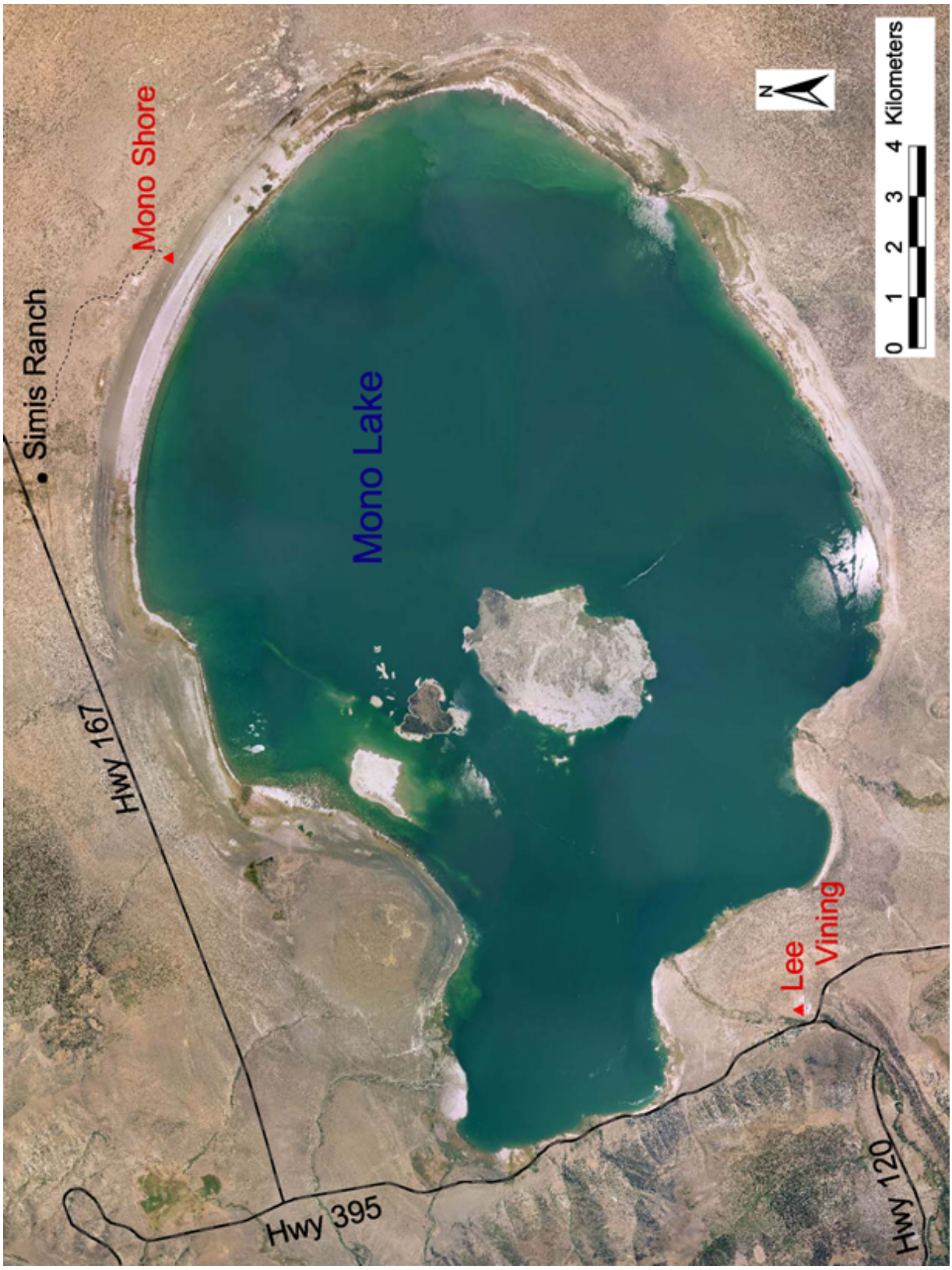


Table 1. List of Monitoring Sites and Variables Monitored

Site Name	Network	AQS Number	Pollutants Monitored	Monitoring Frequency	Start Date
Dirty Socks *	Owens Lake	06-027-0022	PM10	Hourly	Jun-99
Shell Cut	Owens Lake	06-027-0025	PM10	Hourly	Jan-01
Flat Rock **	Owens Lake	06-027-0024	PM10	Hourly	Jan-01
Bill Stanley	Owens Lake	06-027-0026	PM10	Hourly	Mar-02
Olancha	Owens Lake	06-027-0021	PM10	Hourly	Aug-95
Lone Pine	Owens Lake	06-027-0004	PM10	Hourly	Jan-80
North Beach *	Owens Lake	06-027-0029	PM10	Hourly	Nov-08
Lizard Tail	Owens Lake	06-027-0028	PM10	Hourly	Feb-08
Keeler	Owens Lake	06-027-1003	PM10, PM2.5	Hourly	Jul-94
Mill Site *	Owens Lake	06-027-0030	PM10	Hourly	May-11
T-7†	Owens Lake	SPM	PM10	Hourly	Jul-12
T-27†	Owens Lake	SPM	PM10	Hourly	Aug-12
Coso Junction	Owens Lake	06-027-1001	PM10	Hourly	Mar-79
Mammoth Lakes	Mammoth Lakes	06-051-0001	PM10	Hourly	Apr-84
Lee Vining	Mono Basin	06-051-0005	PM10	1-in-3-day	Jan-81
Simis Residence ††	Mono Basin	06-051-0007	PM10	1-in-3-day	May-82
Mono Shore	Mono Basin	06-051-0011	PM10	Hourly	Jan-00
White Mountain	District	06-027-0002	PM10	Hourly	Apr-06
NCORE	District	06-027-0002	CO, SO2, O3, NOy, PM10, PM2.5, PM10-2.5	Hourly	Jan-15

* Monitoring suspended December 2012 - 2014 due to lease cancellation by property owner. Monitoring restarted December 2014.

** PM10 monitoring suspended at Flat Rock May 2011 when monitor was moved to Mill Site. Flat Rock now used for meteorological monitoring and video capture and PM monitor testing.

† T7 transferred to LADWP operation 8/1/2018. T27 shut down 7/2/2018.

†† PM10 monitoring suspended August 2008; meteorological monitoring suspended June 2011.

Table 2. Criteria Pollutant Monitoring Objectives and Spatial Scales

MONITORING OBJECTIVE/ SITE TYPE

HC - Highest Concentration
PO - Population Exposure
SO – Source Oriented
BK – General/Background
RT - Regional Transport
WI – Welfare Related Impacts
SPM - Special Purpose Monitor
XD – Extreme Downwind
UB – Upwind Background
QA – Quality Assurance
OT – Other

SPATIAL SCALE

MI - Microscale
MS - Middle Scale
NS - Neighborhood Scale
US - Urban Scale
RS – Regional Scale
NaS – National Scale
GS – Global Scale

Site Name	Network	PM10	PM2.5
Dirty Socks *	Owens Lake	HC-SO/NS	
Shell Cut	Owens Lake	SO/NS	
Flat Rock **	Owens Lake	SO/NS	
Bill Stanley	Owens Lake	SO/NS	
Olancha	Owens Lake	SO-PO/NS	
Lone Pine	Owens Lake	PO/NS	
North Beach *	Owens Lake	HC-SO/NS	
Lizard Tail	Owens Lake	HC-SO/NS	
Keeler	Owens Lake	PO/NS	PO/NS
Mill Site *	Owens Lake	PO/NS	
T-7 †	Owens Lake	HC-SO/NS	
T-27 †	Owens Lake	HC-SO/NS	
Coso Junction	Owens Lake	PO-RT/NS	
Mammoth Lakes	Mammoth Lakes	PO/NS	
Lee Vining	Mono Basin	PO/NS	
Simis Residence ††	Mono Basin	SO/NS	
Mono Shore	Mono Basin	HC-SO/NS	
White Mountain	District	BK/RS	BK/RS
NCORE	District	BK/RS	

* Monitoring suspended December 2012 - 2014.
** PM10 monitoring ended at Flat Rock May 2011. Station now used for meteorological monitoring, video capture and PM monitor testing.
† T-7, T27 are SPMs, began operation July, August 2012, respectively. T7 transferred to LADWP operation 8/1/2018. T27 shut down 7/2/2018.
†† PM10 monitoring suspended August 2008; meteorological monitoring June 2011.

Table 3. Criteria Pollutant Monitoring Purposes

MONITORING PURPOSE

BK - Background Level
HC - High Concentration
TP - Pollutant Transport
EX - Population Exposure
SPM - Special Purpose Monitor
RC - Representative Concentration
SO - Source Impact
TR - Trend Analysis
CP - Site Comparison

Site Name	Network	PM10	PM2.5
Dirty Socks *	Owens Lake	RC/SO	
Shell Cut	Owens Lake	RC/SO	
Flat Rock **	Owens Lake	RC/SO	
Bill Stanley	Owens Lake	RC/SO	
Olancha	Owens Lake	RC/EX	
Lone Pine	Owens Lake	RC/EX	
North Beach	Owens Lake	RC/SO	
Lizard Tail	Owens Lake	RC/SO	
Keeler	Owens Lake	RC/EX	RC/EX
Mill Site *	Owens Lake	RC/SO	
T-7 †	Owens Lake	HC/SPM	
T-27 †	Owens Lake	HC/SPM	
Coso Junction	Owens Lake	RC/TP	
Mammoth Lakes	Mammoth Lakes	RC/EX	RC/EX
Lee Vining	Mono Basin	RC/EX	
Simis Residence ††	Mono Basin	RC/SO	
Mono Shore	Mono Basin	HC/SO	
White Mountain	District	RC/BK	
NCORE	District	RC/BK	

* Monitoring suspended December 2012 - 2014 due to lease cancellation by property owner. Monitoring restarted December 2014.

** PM10 monitoring ended at Flat Rock May 2011. Station now used for meteorological monitoring, video capture and PM monitor testing.

† T-7, T27 are special purpose monitors, began operation July, August 2012, respectively. T7 transferred to LADWP operation 8/1/2018. T27 shut down 7/2/2018.

†† PM10 monitoring suspended August 2008; meteorological monitoring June 2011.

Definitions

Air Pollution Control Officer (APCO) – the chief executive official for the District.

Background Level monitoring is used to determine general background levels of air pollutants.

Best Available Control Measures (BACM) – is defined as the maximum degree of emission reduction considering technical and economic feasibility and environmental impacts of the control.

Core-based Statistical Area (CBSA) is defined by the U.S. Office of Management and Budget as a statistical geographic entity consisting of the county or counties associated with at least one urbanized area/urban cluster of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration. The two categories of CBSAs are metropolitan statistical areas and micropolitan statistical areas.

Design Concentration is defined as the fourth highest concentration monitored during a specified period, e.g., one year.

Design Values are calculations based on the previous three years of monitoring data that provide estimates of the number of exceedances expected each year at a given site or in a given air basin. Design values greater than 1 per year for PM10 indicate that an area is not in attainment, as the standard allows only one exceedance per year for an area to remain in attainment.

High Concentration monitoring is conducted at sites to find the highest concentration of an air pollutant in an area within a given monitoring network. A monitoring network may have multiple high concentration sites as a result of varying meteorology, source area variability, etc.

Metropolitan Statistical Area (MSA) is defined by the EPA and by the U.S. Office of Management and Budget as areas having at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

Micropolitan Statistical Area (MiSA) is defined by the U.S. Census Bureau and the U. S. Office of Management and Budget as an area heaving one urbanized area or urban cluster of between 10,000 and 50,000 population.

Monitoring Objectives are the measures for determining the level of pollutant impacts from particular sources at particular sites, i.e., to determine the highest concentrations (HC) affecting specific places from sources; the impact from a particular source or set of sources (SI) in a given area; the impact caused by concentrations affecting specific populations (PO), communities, etc.; background level (BK) concentrations measured upwind of sources or not impacted by sources; areas impacted by transport of pollution (PT) generated from distant sources; measuring impacts to visibility, plants, or other welfare affects (VI).

Monitoring Planning Area (MPA) is defined by the EPA as a contiguous geographic area with established, well-defined boundaries, such as a metropolitan statistical area, county, or State, having a common area that is used for planning monitoring locations for PM2.5. MPAs may

cross political boundaries, e.g., State, County, etc. MPAs are generally oriented toward areas with populations greater than 200,000.

Nonattainment Area is any area that does not attain the standard for at least one of the pollutants for which there are National Ambient Air Quality Standards (NAAQS).

Pollutant Transport is the movement of pollutant(s) between air basins or areas within an air basin. Pollutant transport monitoring is used to assess and address sources from upwind areas when those transported pollutant(s) affect neighboring downwind areas. Transport monitoring can also be used to determine the extent of regional pollutant transport.

Population Exposure monitoring is conducted to represent the air pollutant concentrations to which a populated area is exposed.

Primary Quality Assurance Organization (PQAO), the organizational umbrella that ensures that those monitoring organizations under its purview ensure compliance with State and Federal air monitoring requirements. A PQAO is defined by five factors common to all monitoring organizations under its purview: common quality assurance organization; common team of field operators with similar training and procedures; common calibration facilities and standards; common field management, laboratory, or headquarter; common QAPP and/or SOPs.

Representative Concentration monitoring is conducted to determine pollutant concentrations over a homogeneous geographical area. These sites do not necessarily indicate the highest concentrations in an area for a particular pollutant.

Site Comparison monitoring is used to assess the effect of moving a monitoring location a short distance (approximately 2 miles or less) on measured pollutant levels. Some monitoring stations become unusable due to development, change of lease terms, eviction, etc. In these cases, attempts are made to conduct concurrent monitoring at both the old and new monitoring locations for a period of time in order to compare pollutant concentrations at both.

Source Impact monitoring is used to determine the impact of particular and significant sources of pollutant emissions on the air quality. Air pollutant sources may be stationary or mobile.

Spatial Scales define the concentrations within a given area that has relatively uniform land use and reasonably homogeneous geography. These scales are defined as follows:

Microscale - defines an area with dimensions ranging from several meters up to about 100 meters (several yards up to 100 yards).
Middle Scale - defines an area of up to several city blocks in size, with dimensions ranging from about 100 meters to 0.5 kilometers (100 yards to 1/3 mile)
Neighborhood Scale - defines an area with dimensions in the 0.5 to 4.0 kilometer range (1/3 mile to 2.5 miles). Most of the District's sites have been determined to be neighborhood scale sites.
Urban Scale - defines an area with dimensions on the order of 4 to 50 kilometers (2.5 miles to 30 miles).
Regional Scale - usually defines rural areas and extends from tens to hundreds of kilometers (or miles).

National and Global Scale - these measurement scales represent pollutant concentrations characterizing the nation and the globe as a whole.

Special Purpose Monitors (SPM) are used for surveys to determine whether a permanent monitor need be installed. They are also used to determine whether an existing monitoring network provides sufficient coverage to an area for determining pollutant impacts to that area.

Tapered Element Oscillating Microbalance (TEOM) – a monitor that measures particulate mass by drawing air through a filter positioned atop a sintered glass tube vibrating at a measured frequency. The frequency of the oscillation of the tube is attenuated as the filter loads with particulate. This attenuation in frequency is inversely proportional to the mass of the particulate collected.

Trend Analysis monitoring is useful for comparing and analyzing air pollution concentrations over time. Trend analysis can show the progress or lack thereof in improving the air quality for a given area over a period of many years.

Monitored Pollutants and Meteorological Variables

PM_{10}

Medium-volume size-selective inlet filter-based PM_{10} monitors (Rupprecht & Patashnick Partisol Plus 2025 or Thermo Partisol Plus 2025i) are operated at four (4) sites. Monitoring at the sites is conducted on either the Federal one-in-three-day schedule or on a daily schedule for the primary monitors. At the Keeler station, a collocated Partisol is operated on the Federal 1-in-12 sampling schedule. Filter-based monitors typically measure integrated 24-hour-average PM concentrations.

Continuous PM_{10} and $PM_{2.5}$ monitors (Rupprecht & Patashnick TEOM 1400a(AB), Thermo TEOM 1405, or Teledyne-API T640X monitors) are operated in conjunction with filter-based monitors at the four filter-based monitor sites. Continuous PM_{10} monitors alone are operated at an additional 10 fixed sites with two additional continuous PM_{10} monitors in portable stations. The advantage of continuous PM_{10} monitors is that they are capable of measuring hourly pollutant concentrations. These continuous PM_{10} monitors are concentrated in areas of high PM_{10} impact: e.g. around the shoreline of Owens Lake, in the Town of Mammoth Lakes, at the site of maximum impact on the north shore of Mono Lake. Hourly resolution of PM_{10} concentrations enables the District to more accurately determine the source of the emissions, especially in short-term wind-event driven emissive areas like Owens and Mono Lakes. The operation of all District PM10 monitors, including SLAMS and SPMs, are conducted in accordance with the provisions of 40 CFR 58 Appendices A, C, D, and E.

Since the District's monitoring program relies so heavily on continuous PM10 monitors, the Keeler monitoring station hosts the collocated continuous PM10 monitors as well as collocated filter-based PM10 monitors. Collocation of continuous monitors serves to ensure that the hourly-resolved PM10 data collected by the monitors is scientifically defensible, although such collocation is not required by the US EPA. Typical hourly average PM10 concentration comparisons at the Keeler station range between 92 and 95% between the collocated continuous PM10 monitors, calculated on an annual basis.

$PM_{2.5}$

The District operates three collocated $PM_{2.5}$ monitoring stations: one at the Keeler monitoring station, one at the WMRC/NCORE station, and another recently added at the Mammoth Lakes monitoring station. The collocated monitor at all three sites is a medium-volume filter-based Federal Equivalent Method (FEM) sampler (Rupprecht & Patashnick Partisol Plus 2025 or Thermo Scientific Partisol Plus 2025i with a very sharp-cut cyclone (VSCC) for $PM_{2.5}$, EQPM-0202-145). On July 1, 2013, the primary monitor changed from an R&P 2025 to a Rupprecht & Patashnick 1400a (AB) TEOM with an 8500C Filter Dynamics Measurement System (FDMS) unit configured for collection of PM2.5 particulate matter (EQPM-0609-181), at the Keeler monitoring station, at the request of the District's PQAO, the ARB. This TEOM/FDMS operates continuously, collecting hourly PM2.5 concentrations and the collocated monitor operates on the Federal 1-in-3-day schedule.

At the WMRC/NCORE station, the primary PM2.5 monitor is a Teledyne-API T640X continuous PM10/PM2.5/PM10-2.5 monitor (EQPM-0516-239/EQPM-0516-238/EQPM-0516-240). The T640X began collecting data-of-record at the WMRC /NCORE station October 1, 2017. T640X monitors are also installed at the Keeler, Lee Vining, and Mammoth Lakes monitoring stations.

It should be noted that, as the entire District's population is less than the minimum requirements (50,000) for a metropolitan statistical area under 40 CFR 58 Appendix D, Section 4.7, no additional $PM_{2.5}$ monitoring locations are required. The Keeler site monitors the highest concentrations of PM_{10} for a populated community in the District and state and local staff determined that the District's $PM_{2.5}$ station should be located this site, which provides data for population-oriented representative $PM_{2.5}$ particulate concentrations.

During 2013, the District's Mammoth Lakes monitoring station was severely impacted by smoke from forest fires to the north of the community. It was determined that, due to these impacts from wildfires and the desire to distinguish between road cinder impacts (PM_{10}), and domestic wood smoke impacts ($PM_{2.5}$) that the District should consider installing a continuous monitor capable of monitoring both PM_{10} and $PM_{2.5}$. Staff had planned to install a Thermo 1405DF TEOM, certified as an EPA Equivalent method monitor for PM_{10}, $PM_{2.5}$, and PM_{10}-$PM_{2.5}$ after comparison testing with other District PM monitors was completed in June 2015.

The results of the comparison were not definitive, so District staff elected to continue the comparison study through 2016-2017, in two locations: the WMRC/NCORE station, and the Keeler monitoring station. That comparison study was completed and the Mammoth Lakes TEOM/FDMS monitor was replaced with a Teledyne-API T640X PM10/PM2.5/PM10-2.5 (PM10: EQPM-0516-239; PM2.5: EQPM-0516-238; PM10-2.5: EQPM-0516-240) monitor in September 2018. A collocated Partisol Plus 2025 monitor was installed March 14, 2018, at the Mammoth Lakes station.

At this point, the District's method for review of its $PM_{2.5}$ monitoring network, currently consisting of three monitoring stations (two are collocated stations), one at Keeler, one at WMRC/NCORE, and one at Mammoth Lakes, and for obtaining public comment on the network, is to be conducted along with the public inspection period for the annual air quality monitoring network plan.

Meteorology
The District operates meteorological sensors at nearly all permanent fixed monitoring stations. Meteorological variables measured include wind speed and wind direction. In addition, at some locations ambient temperature, relative humidity, barometric pressure, precipitation, and solar radiation are also monitored.

Network Description

Owens Lake
The Owens Lake monitoring network consists of a combination of twelve (10) ambient air monitoring stations: seven (7) stations ring the lake along the historic shoreline, one of which is a population-based station, located at Keeler; two other population-oriented sites are located in the communities of Lone Pine north of the lake and Olancha, south of the lake. An additional monitor is located 20 miles south of the lake at Coso Junction. This station is used for modeling of Owens Lake plume trajectories and is used to monitor local source impacts in the Coso Junction Maintenance Area. Each station utilizes an R&P or Thermo TEOM continuous monitor for PM_{10} measurements. All ten (10) of the ambient air monitoring stations in the Owens Lake network are designated as SLAMS sites.

The purpose of the monitoring stations that ring the lake (North Beach, Lizard Tail, Keeler, Mill Site, Shell Cut, Dirty Socks, Stanley), all of which are designated as SLAMS sites, is to measure the shoreline impacts of PM emissions from the Owens Lake bed. Additionally, the Keeler and Mill Site stations serve as population-oriented monitors, with the Keeler station being located in the community of Keeler, and the Mill Site station being located near the LADWP Keeler Facility, which is the reporting station for the LADWP employees that work on the Owens Lake project. The Lone Pine and Olancha stations to the north and south of the lake, respectively, serve to monitor the impacts of PM emissions on the populations in the communities of Lone Pine and Olancha. The Coso Junction station, located 20 miles south of Owens Lake serves two purposes: monitoring the transport of both local and wind-driven PM emissions from Owens Lake, and monitoring the impacts of those same emissions on the visitors, employees, and residents in the Coso Junction area.

Dust Identification Program
In addition to the ten SLAMS stations around the Owens Lake, until third quarter 2018, the District operated two air quality stations on the lakebed: one at the location designated T7 on the south end of the lake, and another, designated T27 toward the east central area of the lake; and four on-lake meteorological stations. T7 and T27 were special purpose monitors (SPMs) for PM10 used to refine the model to aid in determining specific dust source areas requiring mitigation and are part of the District's Dust Identification Program. In addition, the program consists of a series of approximately 150 sand motion sensors (Sensits) and accompanying sand collection devices (Cox Sand Catchers (CSCs)) operated by the District as well as 140 Sensit/CSC sites operated by the City of Los Angeles. The network also utilizes source area determinations made by geo-referencing images collected during wind events at fourteen (14) camera stations with a total of 22 cameras. These cameras collect images of the lakebed every thirty seconds during daylight hours. This system coupled with the model and the SLAMS stations described above enables the District to pinpoint emissive areas of the lakebed that may cause or contribute to exceedances of the Federal PM_{10} standard at the Owens Lake shoreline. A map detailing the locations of the monitoring sites used for the Dust ID program is presented in Figure 4. Note that District staff determined that the District no longer needed to operate the T27

station, so it was shut down July 2, 2018. The T7 station operation was transferred to LADWP staff, who were already operating three similar stations as required for the operation and compliance monitoring of specific Best Available Control Measures (BACM) dust controls.

Mammoth Lakes

The Mammoth Lakes monitoring network consists of one monitoring station located in the Town of Mammoth Lakes. This station utilizes an R&P TEOM 1400a(AB)/8500C FDMS for hourly-resolved PM_{10} concentrations and an R&P 2025 Partisol Plus Sequential Sampler (RFPS-1298-127) operating on the one-in-three-day schedule for the collection of 24-hour integrated PM_{10} concentration data. The FDMS TEOM is not an EPA equivalent method PM10 monitor, but is necessary for the town to accurately measure and forecast wood smoke-driven PM10 events using hourly-resolved data. The District upgraded the continuous monitor in September 2018 to a newer generation EPA equivalent method continuous monitor, a Teledyne-API T640X, that measures hourly-resolved PM_{10}, $PM_{2.5}$ and $PM_{10-2.5}$ concentrations. In March 2019, an R&P 2025 Partisol Plus Sequential Sampler was added to collect 24-hour integrated PM2.5 concentration data. This station is used by the District to determine compliance with the Federal PM_{10} standard for this previously nonattainment community. The hourly resolved data allows Town personnel to forecast and determine "no-burn" days for wood-burning heater operators in order to maintain compliance with the Federal PM_{10} standard. The purpose of the station is to monitor PM impacts on the resident and visitor populations of the Town. The US EPA re-designated the Mammoth Lakes Planning Area as attainment in October 2015 (82 FR 29762).

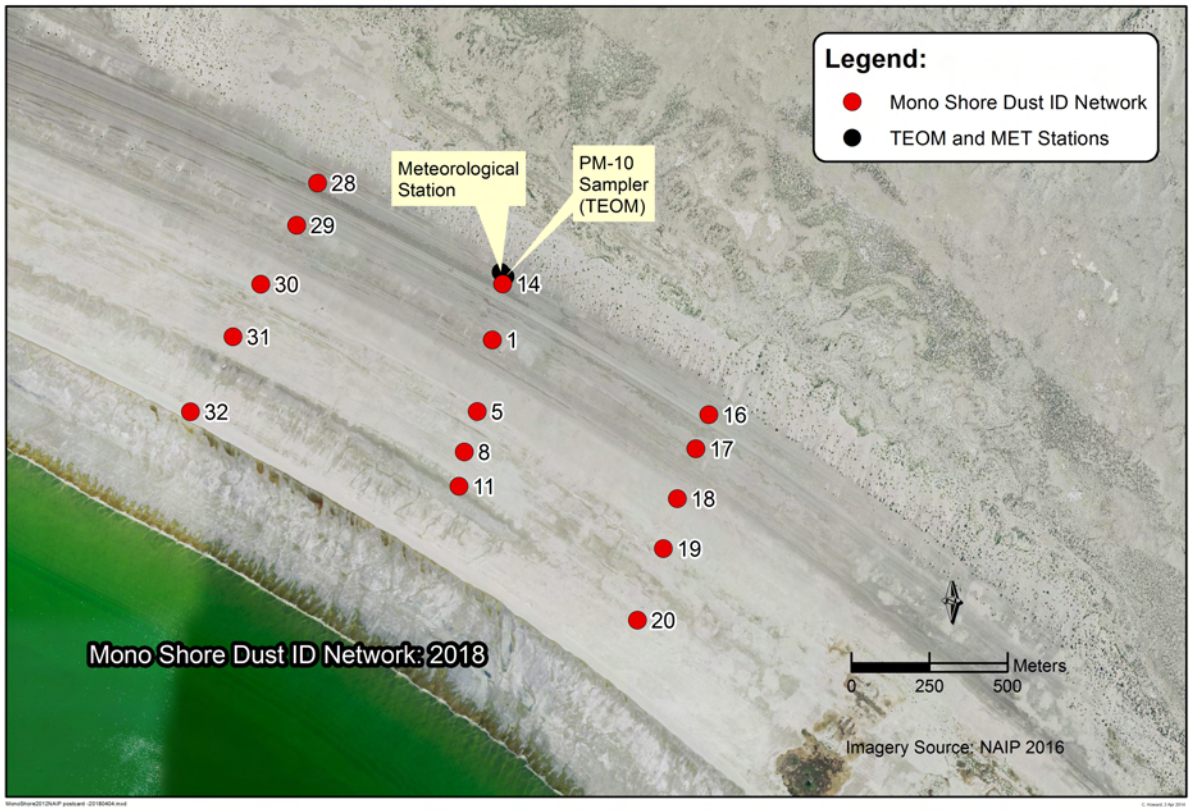
NCORE

The District also operates a rural NCORE station. The purpose of the station is to monitor background concentrations of pollutants in an area that is not impacted directly by emissions generated in and around metropolitan areas. This station has been installed at the District's White Mountain Research Center monitoring site. The station was nominally operational January 1, 2013, and submission of valid data to AQS began January 1, 2015. Further details on the station are contained in Appendix B, which contains a standalone monitoring plan for the District's NCORE station.

Mono Lake

The Mono Lake monitoring network currently consists of two monitoring stations: Lee Vining and Mono Shore. The purpose of the Lee Vining station is to monitor the impacts of PM concentrations on the population in the community of Lee Vining. The purpose of the Mono Lake station is to monitor the PM impacts on or near the shoreline of Mono Lake. PM_{10} concentrations at Lee Vining are collected using an R&P 2025 Partisol Sequential Sampler. In April 2018 a Teledyne-API T640X, that measures hourly-resolved PM_{10}, $PM_{2.5}$ and $PM_{10-2.5}$ concentrations was added at a location approximately 275 meters north of the existing Lee Vining station. The Mono Shore station consists of an off-the-grid solar-powered R&P TEOM PM_{10} continuous monitor housed in a passively temperature-controlled shelter. The TEOM provides hourly-resolved PM_{10} concentrations and has provided the District with the opportunity to develop a Dust Identification (Dust ID) program at Mono Lake. This Dust ID network consists of fifteen (15) sites with Cox Sand Catchers (CSCs) and Sensits associated with them. This network is used to measure the mass of saltating particles to estimate sand flux rates across a $2km^2$ area. The Mono Lake Dust ID network is presented in Figure 5.

Figure 4. Mono Lake Map: Dust Identification Program Detail



4.0 Special Programs

The District periodically conducts special monitoring programs for rule compliance and pollutant level assessment. The data gathered are for informational purposes initially and may lead to designation of special purpose monitors, as defined under Title 40 CFR 58.20, or to permanent monitoring locations in the District's network, or to nothing beyond the initial purpose of information gathering. During the 2019 monitoring year, the District will continue conducting the special programs listed below.

Portable PM_{10} Monitoring

Staff determined there was a need for small portable TEOM monitors that could be transported to monitoring locations and set up for short-term episode PM_{10} monitoring. Staff has constructed two portable TEOM stations each of which utilizes a propane-fired generator for power. The stations can operate unattended for more than five days on two small tanks of propane. Portable 3 has been operating at the northernmost residence in the community of Keeler in order to monitor impacts from the Keeler Dunes as the emissive areas of the Dunes are mitigated. Portable Station 2 has been in operation at a transitional site located in the community of Olancha. The District's previous site in Olancha is no longer available and the Portable 2 station has been in operation while the new permanent location has been prepared. The portable station was installed at the Olancha RV Resort October 24, 2018. It is anticipated the new permanent location in Olancha will be up and operational by April 2019.

BACM Compliance Monitoring – Owens Lake
A special purpose monitoring network of five (5) TEOM stations was installed by the LADWP's consultant for the purpose of measuring any potential emissions from the T12-1 Area during a test of a proposed Best Available Control Measure (BACM). The test was conducted from 2012 through mid-2015. The monitors were subsequently removed from the T12-1 area and distributed up and down wind of Tillage with BACM Backup (TWB2) areas to fulfill the required compliance monitoring. As part of this requirement, LADWP has taken over operation of the T7 station from the District as of August 2018.

Wildfire Monitoring
Staff, prompted by the District Governing Board, procured two Met One eBAM continuous PM2.5 monitors configured as stand-alone portable off-grid monitors for measuring PM impacts from wildfires. The monitors were procured in August 2015 and have been deployed to wildfire incidents in 2015, 2016, 2017, and 2018 to monitor PM2.5 impacts. An older eBAM monitor owned by the District was updated and retrofitted with an AIRSIS satellite communications system due to the heavy use of the eBAMs during the summer of 2018. Data from all three monitors can now be collected via the AIRSIS satellite connection and posted to the web. It is anticipated these monitors will continue to aid the District by providing up-to-date local information on wildfire impacts to the residents and visitors in the District, particularly in those areas that have no permanent monitoring station installed.

5.0 Recent or Proposed Modifications to Network

Owens Lake
The two on-lake PM_{10} monitoring stations, designated T7 and T27, that were installed in the Owens Lake Network in July and August 2012, respectively are no longer operated by the District. The T27 station has been shut down as of July 2, 2018, and the T7 station has transitioned to being operated by LADWP. These monitors were operated in compliance with all Title 40 CFR Part 58, Appendices A, C, D, and E requirements. Data from these special purpose monitors (SPMs) were used to refine the modeling of PM_{10} emissions from the remaining source areas on the lakebed and further refine the District's Dust Identification Program.

During May 2011, the PM_{10} monitoring was suspended at the Flat Rock station and the monitor moved to the Mill Site. The Flat Rock station was being impacted by dust emitting areas between the station and the 3,600-foot regulatory shoreline. An analysis was conducted and District staff determined that source areas from the lakebed impacted Flat Rock infrequently and that the Shell Cut station would also typically monitor those lakebed source areas. The District had a critical need to fill a gap in the network on the east shore of the lake south of Keeler in order to measure lakebed emission impacts caused by winds from the west, thus the PM_{10} monitor at Flat Rock was moved to the Mill Site location. (A formal site closure report/request was submitted to EPA May 2015). Within the week after the commencement of PM_{10} monitoring at the Mill Site location, the monitor measured an exceedance of the Federal PM_{10} standard from lakebed sources driven by winds from the west.

In November 2012, the leases for the Dirty Socks, Mill, and North Beach monitoring stations were canceled by the owner, the Los Angeles Department of Water & Power. In the first quarter of 2014, a permit was granted by the CSLC for the new North Beach monitoring location. The

station has been fully operational since August 2014. In November 2014 the lease dispute with the LADWP was resolved and the Dirty Socks and Mill Site monitoring stations were re-installed in their former locations. PM10 monitoring at these locations re-commenced in December 2014.

The Keeler monitoring station is used by the District as a test bed for new PM monitoring equipment. Although the station monitor compliment includes four (4) Rupprecht & Patashnick Model 2025 Partisol Plus filter based monitors, two (2) Rupprecht & Patashnick Model 1400A(ab) TEOM continuous PM monitors and one (1) Thermo model 1405 TEOM continuous PM monitor, not all of those monitors will be operational during the same period. For the 2019 monitoring year, as noted on Table A.2, the District will be operating the following monitors in the following configurations: one (1) R & P 1400A(ab) TEOM continuous primary PM10 monitor; one (1) Thermo 1405 TEOM continuous PM10 monitor as a collocated continuous monitor; one (1) R & P 1400A(ab)/8500FDMS TEOM continuous PM2.5 monitor (primary); one (1) R&P 2025 Partisol Plus PM10 primary filter based monitor; one (1) R&P 2025 Partisol Plus PM10 filter based collocated monitor; and one (1) R&P 2025 Partisol Plus PM2.5 filter based collocated monitor.

The Lone Pine continuous PM10 monitor, an R & P 1400a(AB)/8500 FDMS TEOM was converted to an EPA-certified equivalent method PM10 monitor, a 1400a(AB) TEOM, as of December 1, 2017, and has been operated in that manner since that date. The Lone Pine PM10 TEOM monitor is scheduled to be replaced in 2019 with a Teledyne-API T640X, which is an EPA-certified equivalent method for monitoring PM10, PM2.5, and PM10-2.5 (coarse).

Coso Junction

The Coso Junction monitoring station measures PM_{10} from local sources impacting the Coso Junction Management Area, and serves as a transport monitoring site for windblown PM_{10} emissions from Owens Lake to the north. When the Area was designated, " in attainment," in 2010, it was noted that the station could be affected by local sources around the monitoring station. In order to address this concern, monthly reports were produced for the first year of operation after the designation took place. During that period, the local sources were covered with gravel and/or cinders and the areas where vegetation had died off were watered and replanted with native plant species. Additionally, a camera was installed at the site to help with monitoring emissions from local sources. Collection of valid data resumed August 1, 2010, at the Coso Junction PM_{10} monitoring station.

In July 2013 severe flash flooding occurred in the vicinity of the Coso Junction, which is near the center of the Rose Valley. West winds coming down the leeward side of the Sierra Nevada caused windblown dust emissions from the silt and soil deposits resulting in four (4) violations of the federal PM_{10} standard at the monitoring station in 2013 and 2014. Requests for consideration of these violations as exceptional events were submitted to EPA IX for consideration in April 2015. EPA determined, in June 2016, that the events were of no regulatory significance at this time and deferred review of the exceptional events request. In 2018 an exceptional event mitigation plan was required and was developed by District and ARB staff for submittal to EPA. That plan was submitted to ARB September 25, 2018.

Mammoth Lakes

The venerable Rupprecht & Patashnick 1400a (AB) TEOM with the 8500c FDMS unit was replaced in September 2018 with a Teledyne-API T640X certified as an EPA-equivalent method

continuous monitor for PM_{10}, $PM_{2.5}$, and $PM_{10-2.5}$. The District also continues to operate the R&P 2025 Partisol Plus PM_{10} monitor in conjunction with the TAPI T640X on the 1-in-3-day schedule. The District installed a 2025 Partisol Plus PM2.5 monitor at the Mammoth site March 14, 2019. These two FRM monitors will provide filter-based comparison data to be used in conjunction with the T640X data for monitoring the Mammoth Lakes Attainment Area. All data collected from the three monitors will be submitted to the EPA AQS database.

Mono Lake

The District has operated monitoring stations in the Mono Basin area for approximately 18 years. District staff assessed the Mono Lake monitoring network and determined that some changes needed to be made. First, staff determined it was necessary to collect hourly-resolved PM_{10} data at the Mono Lake North Shore site, especially during the episodic dust storms at the Lake. Second, it was determined that staff needed to operate the network and utilize resources more efficiently.

In order to address the first determination, a continuous TEOM PM_{10} monitor was installed in May 2008 at the Mono Lake North Shore site to facilitate the collection of hourly-resolved PM_{10} data. An additional goal was set for the Mono Shore site to operate the continuous PM_{10} monitor through the entire year, rather than seasonally as had been done with the filter-based monitors.

In addressing the second determination, staff noted that no PM_{10} violations of the Federal standard had been measured at the Simis Ranch site since August 31, 1996. The District had collected 12 years of data subsequent to that measured violation. As a result, the decision was made to suspend the collection of PM_{10} data at the Simis Ranch site as of August 2008. Meteorological monitoring at the Simis Ranch site was suspended in July 2011.

The Mono Lake North Shore site is an off-the-grid station consisting of a large solar power array and battery system generating 5.28 kilowatts of power. The system has sufficient storage capacity to continue operating for five days without sunlight. In order to minimize power consumption at the site, the R&P TEOM PM_{10} monitor is housed in a custom-designed Zomeworks Cool Cell. The Cool Cell regulates the temperature of the Cell housing the TEOM passively using a water radiator and reservoir system to regulate the Cell temperature.

A Teledyne-API T640X continuous PM10, PM2.5, and PM10-2.5, monitor was installed in the community of Lee Vining in April 2018, at a location 265 meters north of the existing site where the District has operated an R&P Partisol Plus 2025 filter-based PM_{10} FRM monitor for over 15 years. Plans are to move the filter-based monitor from its current location to the new station for collocation with the T640X PM monitor during the third quarter of 2019.

National Core Multipollutant Monitoring Station (NCORE)

The District was chosen by EPA Region IX staff to install and operate one of the EPA NCORE monitoring stations. The NCORE network consists of 80-plus monitoring stations around the nation that are used by EPA for determining national monitoring and regulatory strategies. Seven monitoring stations are placed in California and the District was chosen to operate one of them: a rural NCORE site. These sites are funded by EPA for capital equipment and operation and maintenance.

The first phase of funding began with the 2008 calendar year. Funds were received for the procurement of the prescribed monitoring equipment which includes: a trace-level carbon

monoxide monitor (CO), a trace-level sulfur dioxide monitor (SO2), a trace-level reactive nitrogen compounds monitor (NOy), a low-level ozone monitor (O3), and a calibration system for the monitors. The EPA also provided the District with funds for the procurement of a monitoring station enclosure in which to house the NCORE monitoring equipment. The District's NCORE site is located at the White Mountain Research Center, 4 kilometers east of Bishop, California, near the current berth of the District's Portable Monitoring Station. Final approval of the site by EPA headquarters was given in mid-2009. Installation of the station and procurement and installation of the remaining equipment took place throughout 2012. Data of record have been collected since January 1, 2015.

The District has also used the NCORE station as a test bed for a variety of PM monitors and PM monitor comparison studies. PM monitors tested include: a Teledyne-API 602 Beta Plus monitor, a Thermo 1405DF TEOM, and a Teledyne-API T640X. All three monitors are EPA-certified equivalent method monitors for PM10, PM2.5, and PM10-2.5. These monitors were compared to the following District monitors: a 1400a(AB)/8500C FDMS/TEOM monitoring PM2.5, an R&P 1400a(AB) TEOM monitoring PM10, and, intermittently, an R&P 2025 Partisol Plus PM10 sequential filter monitor. Comparison studies were conducted from 2014 through 2017 to determine which monitor(s) would be used at the NCORE station and at other stations throughout the District. The comparison study was completed in 2017. It was determined that the Teledyne-API T640X was the best replacement continuous PM monitor for community monitoring in the District.

6.0 Minimum Monitoring Requirements, PM Design Concentrations

The District's jurisdictional boundaries encompass no Metropolitan Statistical Areas (MSA) as defined by the U.S. Office of Management and Budget and the U. S. Census Bureau (population greater than 50,000). The District does, however, contain Monitoring Planning Areas defined as "areas determined to be (potentially) in violation of the PM2.5 NAAQS." The District is also required to operate at least one monitor in each of the two (2) remaining PM_{10} nonattainment areas and in the two (2) attainment areas. The Coso Junction Area was designated attainment in October 2010, the Mammoth Lakes Planning Area in October 2015. The District's network meets or exceeds the minimum monitoring requirements for criteria pollutants as detailed below in Table 4. Please note that the Coso Junction Management Area (formerly the Searles Valley Nonattainment Area) encompasses the northern portion of the Searles Valley, immediately north of Pioneer Point, as well as the Rose Valley in the southwestern portion of Inyo County. In all cases where the District has installed one filter-based monitor and one continuous monitor at a station, the continuous monitor has been designated as the primary monitor and the filter-based monitor as collocated. Table 5 contains the 24-hour PM10 design concentration for each of the District's monitoring stations for the 2018 calendar year.

7.0 Data Certification and Reporting

The ARB, as the District's PQAO, has delegated the responsibilities for data collection, validation and reporting to the District, as the monitoring organization. District staff ensures that all data and statistical reports are submitted to the Air Quality System, the EPA's national air monitoring database, and that the data are certified annually, as required by regulation. Precision and accuracy reports are generated quarterly by the District and are also submitted to AQS. The 2018 dataset will be certified by May 1, 2019.

Table 4. Planning Area Minimum Monitoring Requirements			
PM_{10}			
Planning Area Monitors	Minimum Number of Monitors Required	Number of Active Monitors	PM10 Design Concentration ($\mu g/m^3$)
Coso Junction	1	1	70
Owens Lake	1	10	175
Mammoth Lakes	1	2	151
Mono Basin	1	2	292
PM2.5			
Metropolitan Planning Area (MPA)	Minimum Number of Monitors Required	Number of Active Monitors	PM2.5 Design Concentration ($\mu g/m^3$)
Keeler	1	2+1 collo.	28
WMRC/NCORE	1	2	44

Table 5. PM10 Design Concentrations based on 2016-2018 Monitoring Data

Monitor Site	POC No.	PM10 Design Concentration	PM10 Design Values, 2016-2018
Mammoth Continuous*	6	151	1.8
Mammoth FRM	5	86	1.1
Mono Shore	3	292	21.3
Lee Vining FRM*	3	84	0
Lee Vining Continuous*	4	178	1.7
Coso Junction	4	70	1.4
Dirty Socks	2	141	4
Keeler Primary FRM	6	80	5.1
Keeler Collocated FRM	7	20	4.4
Keeler Continuous	4	79	4.7
Lizard Tail	1	141	5
Lone Pine*	4	102	1
Mill Site	1	120	1
North Beach	1	146	3.7
Olancha	2	103	3.5
Portable 2	N/A	#N/A	N/A - SPM
Portable 3	N/A	#N/A	N/A - SPM
Shell Cut	2	175	7.4
Stanley	1	62	0.7
T-27	N/A	#N/A	N/A - SPM
T-7	N/A	#N/A	N/A - SPM
WMRC/NCORE Continuous	1	210	2
WMRC/NCORE Collocated FRM*	4	71	3.2

* Values based on data that did not meet EPA completeness criteria for the three-year period.

APPENDIX A

NCORE Station Monitoring Plan

Great Basin Unified
Air Pollution Control District

2018 Air Quality Monitoring
Network Plan
For
National Core (NCORE) Monitoring Station

located at
White Mountain Research Center
Bishop, California

May 2019

Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, California 93514

National Core (NCore) Multi-pollutant Monitoring Stations:

In October 2006 the United States Environmental Protection Agency (EPA) issued final amendments to the ambient air monitoring regulations for criteria pollutants. These amendments are codified in 40 CFR parts 53 and 58. The purpose of the amendments was to enhance ambient air quality monitoring to better serve current and future air quality needs. One of the most significant changes in the regulations was the requirement to establish National Core (NCore) multi-pollutant monitoring stations. These stations will provide data on several pollutants at lower detection limits and replace the National Air Monitoring Station (NAMS) networks that have existed for several years. The final network plan was to be submitted to EPA by July 1, 2010 and the stations were to be operational by January 1, 2011. Delays in funding and procurement of equipment resulted in delays of the start of monitor testing at the District's NCore station until January 1, 2013, and the beginning of the upload of valid data to AQS January 1, 2015.

The NCore Network addresses the following monitoring objectives:

- timely reporting of data to the public through AIRNow, air quality forecasting, and other public reporting mechanisms
- support development of emission strategies through air quality model evaluation and other observational methods
- accountability of emission strategy progress through tracking long-term trends of criteria and non-criteria pollutants and their precursors
- support long-term health assessments that contribute to ongoing reviews of the National Ambient Air Quality Standards (NAAQS)
- compliance through establishing nonattainment/attainment areas by comparison with the NAAQS
- support multiple disciplines of scientific research, including; public health, atmospheric and ecological

In 2007, 2010, and 2011, EPA provided funding to the Great Basin Unified Air Pollution Control District (the District) to establish an NCore station in the Eastern Sierra region of California. After evaluating the existing network, historical data, meteorology, and topography the District recommends the following changes to its air monitoring network to become effective July 1, 2009, and implemented by January 1, 2010:

1) Establish an NCore multi-pollutant monitoring station in the Eastern Sierra region at the White Mountain Research Center (formerly Station) (WMRC), 3000 East Line Street, Bishop, California. The location meets the objective for a rural NCore site and meets regional scale criteria for $PM_{2.5}$, PM_{10}, ozone (O_3), sulfur dioxide (SO_2), total reactive nitrogen compounds (NO_y), and carbon monoxide (CO).

2) For the near-term, collocate the NCore station with the District's existing Portable monitoring station, which collects data for PM10 (continuous), wind speed, wind direction, ambient temperature, and relative humidity.

Monitoring Objective
Determine compliance with NAAQS; observe pollution trends for national data analysis, provide pollution levels for daily index reporting; and provide data for scientific studies.

Table 1 Monitors

Monitor Type	Designation	Analysis Method	Frequency of Sampling
Carbon Monoxide (CO)	NCore	Automated Reference Method utilizing trace level non-dispersive infrared analysis.	Continuously
Sulfur Dioxide (SO_2)	NCore	Automated Equivalent Method utilizing trace level UV fluorescence analysis	Continuously
PM_{10} TEOM	SLAMS	Automated Equivalent Method utilizing Tapered Element Oscillating Microbalance/gravimetric analysis	Continuously
Total Reactive Nitrogen (NO_y)	NCore	Automated trace level chemiluminescence analysis.	Continuously
Meteorological	SLAMS	Air quality measurements approved instrumentation for wind speed, wind direction, humidity, temperature	Continuously
Ozone (O_3)	NCore	Automated trace level Equivalent Method utilizing an Ultraviolet Photometer	Continuously

Quality Assurance Status
All Quality Assurance procedures shall be implemented in accordance with 40 CFR 58, Appendix A. Quality Assurance Project Plans from the CARB and the District cover PM_{10}, $PM_{2.5}$, and meteorological measurements. For the trace level instruments, the quality assurance project plan and standard operating procedures (SOPs) utilized currently by the CARB will be used for each new instrument in the project. The most recent annual performance evaluations of the District's NCORE station took place October 17, 2018, and, January 29, 2019, and were conducted by CARB QA staff and included audits of the meteorological sensors and the following trace-level pollutant gas analyzers: ozone (O3), carbon monoxide (CO), and sulfur dioxide (SO2). The January 2019 audit covered only the CO and SO2 analyzers.

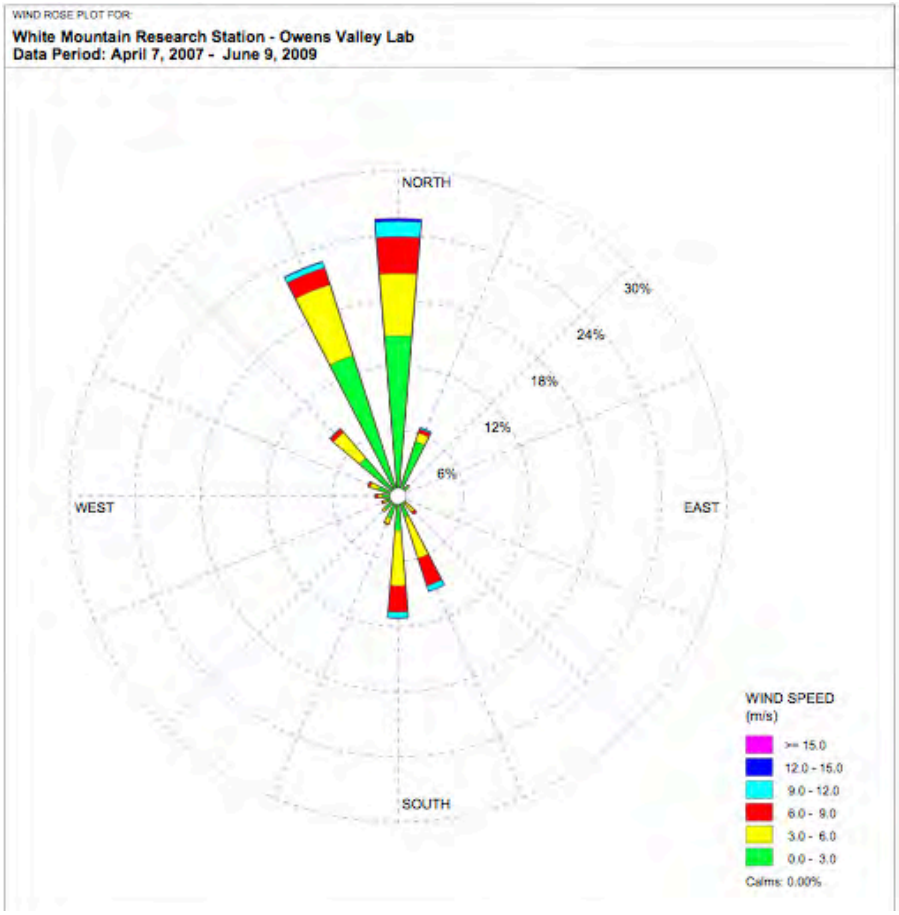
Area of Representativeness
40 CFR Part 58 Appendix D provides design criteria for ambient air monitoring. The monitoring objective for the NCore site is to produce data that represents a large area and therefore the spatial scale of the site is important. The spatial scale defines the physical dimensions of the air parcel nearest to a monitoring site throughout which actual pollutant concentrations are reasonably similar. It is determined by the characteristics of the area surrounding the air monitoring site and the site's distance from nearby air pollution sources such as roadways, factories, etc. In the case of rural NCore stations, which are to be located to determine general background concentrations levels, the spatial scales to be used are regional or larger. Table 2 shows the area of representativeness for each pollutant for the WMRC site.

Table 2: Spatial Scales for Each Pollutant

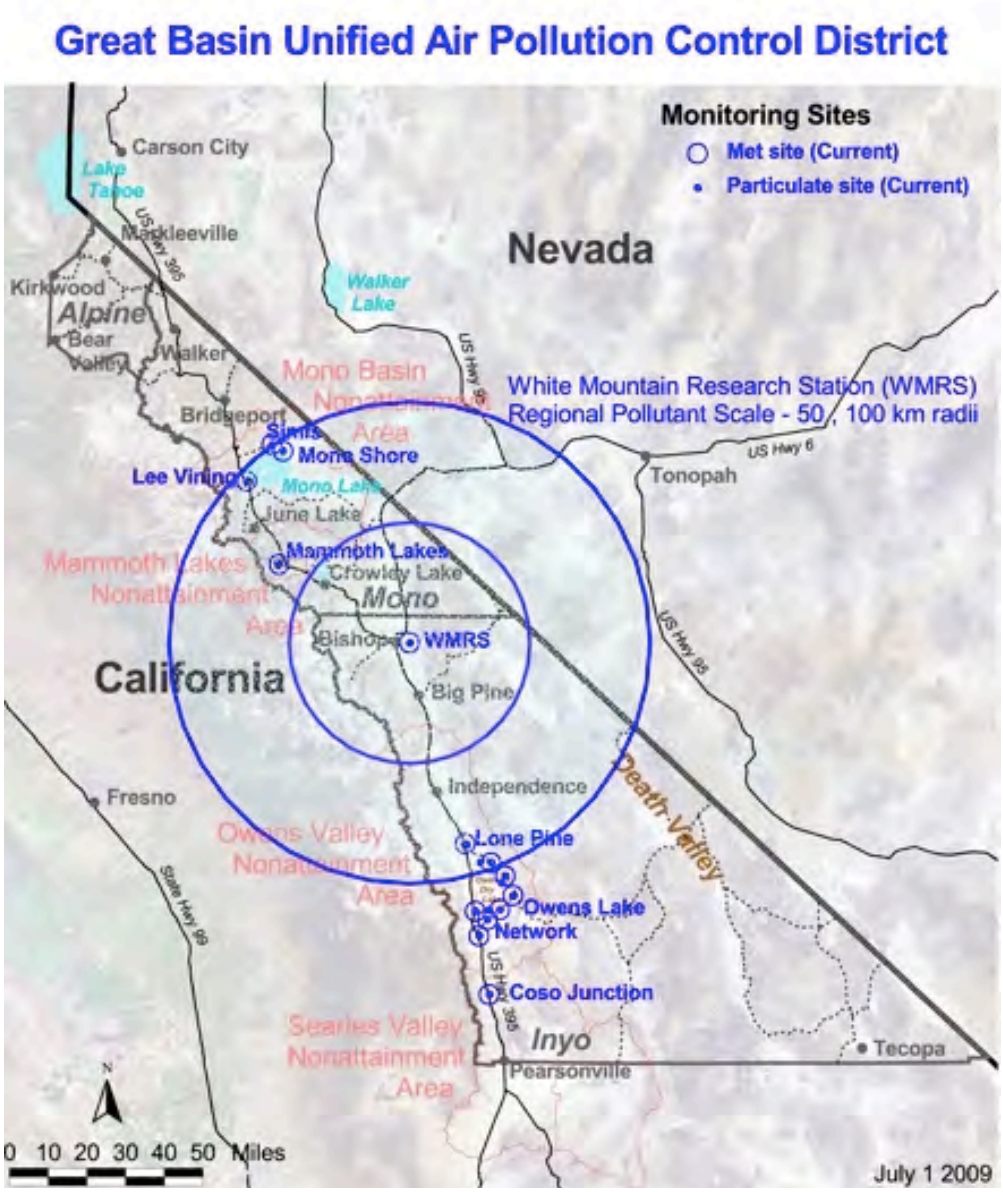
Pollutant	Spatial Scale	Comments
NO_y	>Urban Scale	No Regional scale for NO_y
CO	> Neighborhood Scale	No Regional scale for CO
SO_2	> Urban Scale	No Regional scale for SO_2
PM_{10}	> Neighborhood Scale	No Regional scale for PM_{10}
O_3	Regional Scale	
PM2.5	Regional Scale	

For regional scale the area covered is tens of kilometers to hundreds of kilometers.

There are no MSAs within the District's current monitoring network due to the sparse population in this high desert setting, approximately 2 people per square mile. On a 10 km scale the land use varies from riparian areas along the Owens River 0.6 kilometers west of the site to light industry, small commercial, and residential in the City of Bishop (population 4,000) 5 kilometers west of the site. The topography of the area varies from high desert to mountain peaks.

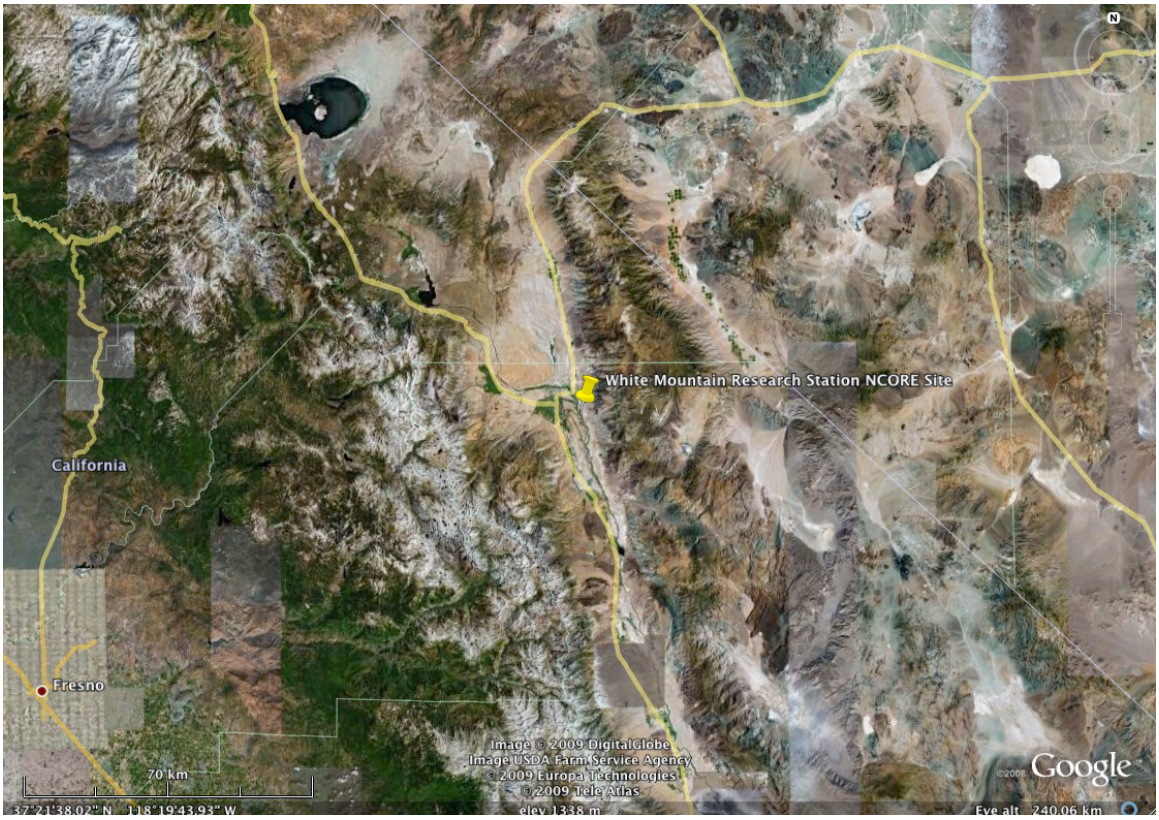


The White Mountain Research Center's Owens Valley Laboratory, where the NCore monitoring station is located, is in the Owens Valley, a high-desert valley, the floor of which is at an average elevation of 4,000 feet above mean sea level. The valley is open north to south and is bordered on the east by the White Mountains that rise from the valley floor to an elevation of 10,000 feet, with peaks up to 14,000 feet. The valley is bordered on the west by the Sierra Nevada range, which rises in elevation up to 14,000 feet. As can be seen from the District map and the area-wide view below, the NCore site is located East of the City of Bishop and east of the developed area around the City. The wind rose above indicates the prevailing wind directions of north and south, up and down the Owens Valley. The placement of the NCore site east of Bishop provides an excellent location for measuring background pollutant concentrations, as there are no major pollution sources, other than particulate matter, for 100km.



White Mountain Research Center (formerly Station)
Regional Pollutant Scale 50 and 100 km radii

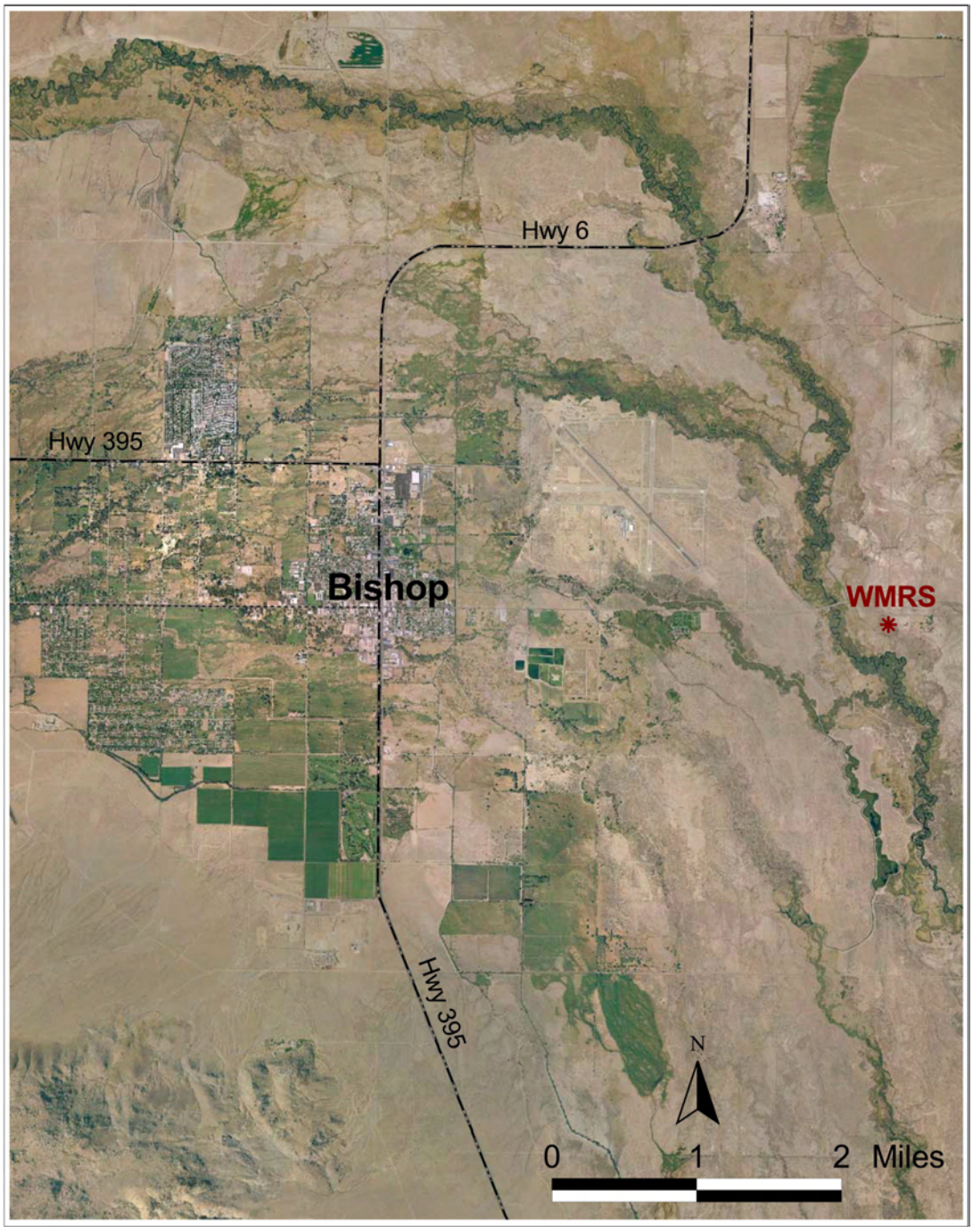
The Owens Valley, Mono Basin, and Mammoth Lakes Nonattainment areas have been designated as such due to PM_{10} concentrations that exceed the Federal standard of 150µg/m3. The sources of these concentrations are wind-blown dust from the exposed lakebeds of the Owens and Mono lakes and wintertime wood smoke and road cinders, in the case of Mammoth Lakes. The PM_{10} influence around Mono Lake is largely restricted to the immediate basin by the topography. The influence around Owens Lake is mostly caused by north winds driving the dust south. Occasional south wind storms will drive the dust northward, but the impacts generally reach only to the community of Independence, 20 miles north of Owens Lake and 40 miles south of the station at the White Mountain Research Center. During north wind events, occasional dust may impact the station from the Chalfant and Hammil Valleys from agricultural fields not properly mitigated.



White Mountain Research Station
Topographic Regional Map (90 km radius shown)

Site Description and Spacing:

Site Name: White Mountain Research Center
AQS ID: 06-027-0002
Location: (WMRC **-** 3000 East Line Street) NCore Station – 200 Poleta Road
County: Inyo
GPS Coordinates: 37°21'38" North Latitude, 118°19'50" West Longitude
Date Established: April 7, 2006
Inspection Date: August 20, 2009
Inspection By: Catherine Brown, EPA IX
Site Approval Status: Approved



The station is located on the grounds of the University of California White Mountain Research Center. The location is in the northeast portion of Inyo County and is approximately 0.6 km east of the Owens River and 5 km east of Bishop, California.

NCore and $PM_{2.5}$ SLAMS Siting Criteria

Appendix E to 40 CFR Part 58-*Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring* contains specific location criteria applicable to NCore and SLAMS siting. The following measurements and data were obtained for evaluation of compliance with the criteria.

1. **Horizontal Placement of Sampling Probes:**
The gaseous instruments are located in an 8'w x 8' h x 20'l air monitoring shelter located in an open area. The nearest building is the WMRC maintenance building approximately 150 meters east of the station. The sample probe inlets are installed approximately 4 meters above the ground. The Districts Portable monitoring station is placed next to the NCore air monitoring shelter and includes a 10-meter telescoping meteorological tower. The NCore station also has its own meteorological tower which supports sensors monitoring: wind speed, wind direction, ambient temperature, ambient pressure, relative humidity, precipitation, and solar radiation.

   Manual filter-based particulate samplers to be used for the NCore program include Thermo 2025i Partisol Plus sequential filter samplers for PM10 and for PM2.5. These samplers are installed on the metal monitoring platform adjacent to the NCore shelter. The height of the inlets of the filter-based particulate samplers above ground is 4.6 meters. The inlet for the continuous $PM_{10}/PM_{2.5}$ monitor in the Portable station is approximately 1.1 meters above the roof and approximately 4.3 meters above the ground. Inlets for the continuous particulate monitor in the NCore station were placed on the roof of the air monitoring shelter with the sample inlets 1 meter above the roof (4 meters above ground) with at least 1 meter of separation from any and all structures on the roof.

2. **Spacing from Obstructions:**
There are no obstructions to air flow around the site. The WMRC maintenance building is located 150 meters east of the proposed NCore station location and is 4 meters in height. This potential obstruction is 37 times the height of the obstruction away from the station and is not in a quadrant where it would affect the prevailing wind direction.

3. **Spacing from Roadways:**
Tables E-1, E-2, and Figure E-1 of 40 CFR Part 58 Appendix E list the minimum distances from roadways a monitoring probe needs to be based on the annual average daily traffic (AADT) counts. Table 3 summarizes the findings and includes the minimum separation distance from roadways for each pollutant. AADT counts were obtained from traffic count data from the California Department of Transportation's (CalTrans) website, at:
http://www.dot.ca.gov/trafficops/census/volumes2016.

Table 3
Spacing from Roadways Analysis

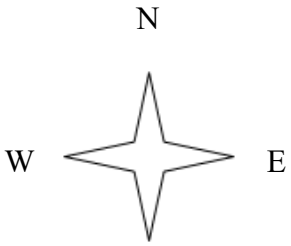
Roadway	ADT	Distance from site (meters)	Minimum Distance Required (meters)			
			Ozone Table E-1	NO/NO_y Table E-1	CO Table E-2	PM Figure E-1
US Highway 395	15,200 (2011)	5,700	40	30	45	80
East Line Street, Poleta Road	<1000 (estimated)	85	40	30	45	80

4. Spacing from Minor Sources:
The closest source to the site is the community of Bishop, California, 5 kilometers east of the site. The greater Bishop area has a population of approximately 12,600 (2010 US Census Bureau). Pollutant sources are limited to small businesses, residential home heating, vehicular traffic (17,000 AADT at Jctn Route 6 North, based on 2017 data) along US Highway 395. There are two permitted sources near the site: 7/11 Materials 4.5 km to the west and Standard Industrial Minerals 5 km to the north. These sources are listed below (Table 4) along with their emission rates. The first source is a concrete batch plant and the second is a non-metallic minerals (primarily kaolin clay) processing plant. These plants' operating schedules are limited to 3 to 5 days per week and to a certain number of weeks per year, usually in the summer months.

Table 4
Minor Source Emissions

Source	Emissions Type	Hours of Operation Per day	Emissions Rates	
			Pounds Per Hr. For Op	Pounds per hour 24hrs/day, 365 days/yr.
7/11 Materials	particulate	14	5.7	0.26
Standard Industrial Minerals	particulate	8	4.22	0.19






Direction	Description	Distance from Site
North	Power line along Line Street/Laws-Poleta Road	124 meters
North East	White Mountains	14 kilometers
East	WMRC Maintenance Building (maintenance and repair shop)	150 meters
South East	Owens Valley, open land	
South	Owens Valley, open land	
South west	Owens Valley, open land	
West	Bench above Owens River	600 meters
North West	Owens Valley, open land	

Site Details:

The Google Earth^{tm} image on page B7 indicates where the air monitoring shelter is located on the White Mountain Research Station compound. The shelter is 8' w x 8'h x 20' l. The roof of the shelter is flat to support the sample inlets for the continuous particulate samplers and has additional room for other samplers if the need arises. Immediately adjacent to the shelter is the sampling platform that provides a 10' x 20' area elevated to the level of the shelter roof where future monitors can be installed. The 10-meter meteorological tower and the District's Portable monitoring station are placed north of the NCore shelter and sampling platform (See photos in the NCore Site Report). The meteorological tower on the NCore station is a tilt-down type with a gin pole and winch system that allows the tower to tilt down and provides for easy servicing and calibration of the meteorological instruments. The shelter is wired for 200-amp service and has internet and cellular telephone connections. The shelter has a heating and air conditioning system that maintains indoor temperatures between 20-30 º C, as required for the operation of the pollutant gas analyzers.

APPENDIX B

Site Information Summaries
Site Reports

Table B.1

Great Basin Unified Air Pollution Control District
Site Specifie Information

Site Name	Network	AQS Number	Pollutants Monitored	Start Date
Dirty Socks *	Owens Lake	06-027-0022	PM10, Met.	Jun-99
Shell Cut	Owens Lake	06-027-0025	PM10, Met.	Jan-01
Flat Rock **	Owens Lake	06-027-0024	PM10, Met.	Jan-01
Bill Stanley	Owens Lake	06-027-0026	PM10, Met.	Mar-02
Olancha	Owens Lake	06-027-0021	PM10, Met.	Aug-95
Lone Pine	Owens Lake	06-027-0004	PM10, Met.	Jan-80
North Beach	Owens Lake	06-027-0029	PM10, Met.	Nov-08
Lizard Tail	Owens Lake	06-027-0028	PM10, Met.	Feb-08
Keeler	Owens Lake	06-027-1003	PM10, PM2.5, Met.	Jul-94
Mill Site *	Owens Lake	06-027-0030	PM10, Met.	May-11
T-7 †	Owens Lake	SPM	PM10	Jul-12
T-27 †	Owens Lake	SPM	PM10	Aug-12
Coso Junction	Owens Lake	06-027-1001	PM10, Met.	Mar-79
Mammoth Lakes	Mammoth Lakes	06-051-0001	PM10, Met.	Apr-84
Lee Vining	Mono Basin	06-051-0005	PM10, Met.	Jan-81
Simis Residence ††	Mono Basin	06-027-0007	Met.	Nov-81
Mono Shore	Mono Basin	06-027-0011	PM10, Met.	Jan-00
White Mountain	District	06-027-0002	PM10, Met.	Apr-06
NCORE	District	06-027-0002	O3, CO, SO2, Noy, PM10, PM2.5, Met.	Apr-12

* Monitor restarted December 2014 after two-year hiatus due to lease cancellation by property owner.
** PM10 monitoring suspended at Flat Rock May 2011. Flat Rock now used for meteorological monitoring and video capture only.
† T-7 and T27 are special purpose monitors that began operation in July and August 2012, respectively.
†† PM10 monitoring suspended August 2008; meteorological monitoring suspended June 2011.

Table B.2

Great Basin Unified Air Pollution Control District
Site Specifie Information
Pollutant Monitors

Site Name	Monitoring Frequency	Pollutants Monitored											
		R&P Partisol 2025 or Thermo 2025i Sequential PM10		R&P 1400a(AB) or Thermo 1405 TEOM Continuous PM10		R&P 1400a(AB)/FDMS 8500c TEOM Continuous PM10		R&P Partisol 2025 or Thermo 2025i Sequential PM2.5		R&P 1400a(AB)/FDMS 8500c TEOM Continuous PM2.5		Teledyne-API T640 PM10, PM2.5, PM10-PM2.5	
		P code	81102	P code	81102	P code	81102	P Code	88101	P Code	88101	P Code	81102
		M code	127	M code	079	M Code		M Code	145	M Code	181	M Code	239
		POC	Serial No.	POC	Serial No.	POC	Serial No.	POC	Serial No.	POC	Serial No.	P Code	88101
												M Code	238
												P Code	86101
												M Code	240
												POC	Serial No.
Dirty Socks	Daily			2	24918/22871								
Shell Cut	Daily			2	2224220								
Flat Rock *	Daily			2	*								
Bill Stanley	Daily			1	21317								
Olancha	Daily			2	22870/24925								
Lone Pine	Daily			4	24981/24928								
North Beach	Daily			1	24982/24982								
Lizard Tail	Daily			1	25241/17724								
Keeler	Daily	6	21969	4	22869/22508			1	22805	1	24922/24922		
Keeler Collo. Mon.**	Daily	7	21127	UA	21058			2	#N/A				
Mill Site	Daily			1	24313/29609								
T-7 †	Daily			SPM	24981/24981								
T-27 †	Daily			SPM	23888/22871								
Coso Junction	Daily			4	22508/22618								
Mammoth Lakes	Daily	5	21584			1	24980/23551					1	257
Lee Vining	1-in-3	3	21029										
Lee Vining - New	Daily											1	255
Simis Residence ††	1-in-3												
Mono Shore	Daily			1	23888/24920								
White Mountain	Daily												
NCORE	1-in-3	1	21326					1	21325			1	144

Site Name	Monitoring Frequency	Pollutants Monitored									
		Thermo 43i-TLE SO2 Analyzer		Thermo 49i Ozone Analyzer		Thermo 48i-TLE CO Analyzer		Thermo 42y NOy Analyzer		R&P Partisol 2025 PM10-PM2.5	
		P code	42401	P code	44201	P code	42101	P Code	42602	P Code	86101
		M code	560	M code	047	M Code	554	M Code	674	M Code	176
		POC	Serial No.	POC	Serial No.	POC	Serial No.	POC	Serial No.	POC	Serial No.
NCORE Additional Pollutants	Hourly 1-in-3	1	917736524	1	1120848986	1	917736525	1	917736523	1	See Above

* PM10 monitoring suspended at Flat Rock May 2011. Flat Rock now used for meteorological monitoring and video capture only.
** PM10 collocated continuous monitor, POC = UA, or unassigned.
† T-7 and T27 are special purpose monitors that were in operation from 2012-2018.
†† PM10 monitoring suspended August 2008; meteorological monitoring suspended June 2011.

Table B.3

GBUAPCD QUALITY ASSURANCE AUDITS
2018

GBUAPCD Continous Monitor Audits 2018				
Site	**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**
Mono Shore	01/23/18	06/27/18	09/25/18	12/19/18
Lone Pine TEOM	01/26/18	06/20/18	09/06/18	10/11/18
Olancha	01/26/18	06/20/18	09/06/18	12/04/18
North Beach	01/26/18	06/20/18	09/06/18	10/11/18
Lizard Tail	01/26/18	06/20/18	09/06/18	10/11/18
Portable-3 TEOM	01/26/18	06/20/18	08/29/18	12/03/18
Stanley	02/07/18	05/10/18	08/29/18	12/03/18
Keeler#1 PM2.5 FDMS	02/07/18	05/10/18	09/06/18	10/11/18
Keeler#2 PM10 TEOM	02/07/18	05/10/18	09/06/18	10/11/18
Keeler#3 PM10 TEOM	02/07/18	05/10/18	09/06/18	10/11/18
Shell Cut	02/07/18	05/24/18	08/29/18	12/03/18
Dirty Socks	02/07/18	05/10/18	08/29/18	12/03/18
T-7	02/21/18	05/30/18		
Coso Junction	02/21/18	05/30/18	09/06/18	10/11/18
T-27	02/21/18	06/06/18		
Mill	02/21/18	05/24/18	08/29/18	12/03/18
Mammoth FDMS	03/20/18	06/07/18		
Mammoth T640x			09/25/18	12/13/18
Lee Vining T640x		06/07/18	09/25/18	12/19/18
NCORE T640x	03/27/18	06/19/18	09/26/18	10/29/18

GBUAPCD Partisol Audits 2018				
Site	**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**
Keeler PM 10 Co	02/07/18	05/10/18	09/06/18	10/11/18
Keeler PM 2.5	02/07/18	05/10/18	09/06/18	10/11/18
Keeler PM 10 Pri	02/07/18	06/20/18	09/06/18	10/11/18
NCore PM 2.5	03/07/18	06/19/18	09/04/18	10/29/18
NCore PM 10	03/07/18	06/19/18	09/04/18	10/29/18
Lee Vining	03/20/18	06/19/18	09/04/18	10/29/18
Mammoth	03/20/18	06/07/18	09/25/18	12/19/18

GBUAPCD Meteorlogical Audits 2018			ARB Audits of GBUAPCD Sites 2018	
Site	**First Semi-Annual**	**Second Semi-Annual**	**Site**	**Annual**
Bill Stanley	05/10/18	12/03/18	Coso Junction	10/23/18
Dirty Socks	05/10/18	12/03/18	Dirty Socks	10/30/18
Mill	05/24/18	10/10/18	Flat Rock	10/31/18
Flat Rock	05/24/18	12/03/18	Keeler 1 PM2.5 FDMS	10/30/18
Shell Cut	05/24/18	12/03/18	Keeler 2 PM10 TEOM	10/30/18
T-7	05/30/18	11/20/18	Keeler 3 PM10 TEOM	10/30/18
Coso Junction	05/30/18	12/04/18	Keeler Met	10/30/18
B-Tower	06/06/18	10/10/18	Lizard Tail	10/31/18
A-Tower	06/06/18	10/10/18	Lone Pine TEOM	10/31/18
T-27	06/06/18		Lone Pine Met	11/01/18
Lee Vining	06/07/18	12/13/18	Mill	10/30/18
Mammoth	06/07/18	12/13/18	Mono Shore	10/16/18
NCore	06/19/18	10/29/18	North Beach	10/31/18
North Beach	06/20/18	12/04/18	Olancha	10/31/18
Lone Pine	06/20/18	12/04/18	Shell Cut	10/30/18
Olancha	06/20/18	12/04/18	Stanley	10/30/18
Mono Shore	06/27/18	12/19/18	WMRC	10/17/18
Dirty Socks	07/31/18	12/03/18	Keeler PM2.5 Partisol	10/30/18
Bartlett Point	07/27/18	12/18/18	Keeler PM10 Pri Partisol	10/30/18
Portable-3	07/31/18	10/10/18	Keeler PM10 Co Partisol	10/30/18
Keeler	07/31/18	12/03/18	Lee Vining Partisol	10/16/18
T-25	07/31/18	10/10/18	Mammoth Partisol	10/18/18

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***A-Tower***
AQS Number	
UTM X, Y (Zone 11)	*415480, 4042496*
Location	*North-central Owens Lake*
Address	*Owens Lake, CA*
County	*Inyo*
Distance to Road	*2.2 km north to Hwy 136.*
Traffic Count	*430*
Groundcover	*Course sands*
Representative Area	*North-central Owens Lake*

Met Installed?	*Yes*	☑ Variable: Wind Speed	☑ Variable: Relative Humidity	☐ Variable: Barometric Pressure
PM Installed?	*No*	☑ Variable: Wind Direction	☑ Variable: Temperature	☑ Variable: Precipitation

Anemometer Height (m): *9.3 meters* Temp Probe Height (m): *9.0 meters (and RH, temp)*

Pollutant / POC	*N/A*
Priamary/Collocated/Other	*N/A*
Paramter Code	
Monitor Objective	*Research*
Site Type	*Local meteorology*
Monitor Type	*Special Purpose Monitor*
Network Affiliation	
Instrument Make and Model	
Method Code	
FRM/FEM	
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*N/A*
Analysis Method	*N/A*
Start Date	*8/8/1990*
Operation Schedule	*5 minute*
Sampling Season	*Year-round*
Probe Height	*Precip gage @ 1.5m AGL*
Distance to Supporting Structure	*N/A*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*N/A*
Distance From Trees	*No trees within seven kilometers.*
Distance to Furnace or Incinerator	*No furnace or incinerator within 7km.*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*N/A*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***B-Tower***
AQS Number	
UTM X, Y (Zone 11)	*420264.5, 4030446*
Location	*Southeast Owens Lake*
Address	*Owens Lake, CA*
County	*Inyo*
Distance to Road	*3 km SE to Hwy 190*
Traffic Count	*520*
Groundcover	*Course sands*
Representative Area	*South-eastern Owens Lake*

Met Installed? *Yes* — ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* — ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *9.0 meters (and RH, temp)*

Pollutant / POC	*N/A*
Priamary/Collocated/Other	*N/A*
Paramter Code	
Monitor Objective	*Research*
Site Type	*Local Meteorology*
Monitor Type	*Special Purpose Monitor*
Network Affiliation	
Instrument Make and Model	
Method Code	
FRM/FEM	
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neigborhood Scale*
Sampling Method	*N/A*
Analysis Method	*N/A*
Start Date	*1/5/1995*
Operation Schedule	*5 minute*
Sampling Season	*Year-round*
Probe Height	*Rain Gage @ 1.4m AGL*
Distance to Supporting Structure	*N/A*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*N/A*
Distance From Trees	*8km NE of site.*
Distance to Furnace or Incinerator	*8km NE of site.*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*N/A*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Coso Junction***
AQS Number	*06-027-1001*
UTM X, Y (Zone 11)	*414978.3, 3989840*
Location	*Hwy 395 at Gill Station - Coso Road*
Address	*3 Gill Station Rd, Olancha, CA 93549*
County	*Inyo*
Distance to Road	*0.2km to Gill Station Road SE of stn.; 400m to Hwy. 395 west of site*
Traffic Count	*300 est. on GSR; 5400 on 395*
Groundcover	*Dirt, gravel, brush*
Representative Area	*Regional*

Met Installed? *Yes* — ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* — ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *9.15 meters*

Pollutant / POC	*PM-10 / 4*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented, Pollutant Transport*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*5/10/2006*
Operation Schedule	*1:1*
Sampling Season	*Year-round*
Probe Height	*4.40 meters*
Distance to Supporting Structure	*1.3m below inlet*
Distance from Obstructions on Roof	*No obstructions.*
Distance from Obstructions Not on Roof	*MET tower 10m in height.*
Distance From Trees	*0.5 km*
Distance to Furnace or Incinerator	*None in the vicinity for several kilometers.*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annual (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Coso Junction***
AQS Number	*06-027-1001*
UTM X, Y (Zone 11)	*414978.3, 3989840*
Location	*Hwy 395 at Gill Station - Coso Road*
Address	*3 Gill Station Rd, Olancha, CA 93549*
County	*Inyo*
Distance to Road	*0.2km to Gill Station Road SE of stn.; 400m to Hwy. 395 west of site*
Traffic Count	*300 est. on GSR; 5400 on 395*
Groundcover	*Dirt, gravel, brush*
Representative Area	*Regional*

Met Installed? *Yes* — ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* — ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *9.15 meters*

Pollutant / POC	*H2S / 1*
Priamary/Collocated/Other	*N/A*
Paramter Code	*42402*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented, Pollutant Transport*
Monitor Type	
Network Affiliation	
Instrument Make and Model	*Thermo 43i-TLE w/340 H2S converter*
Method Code	*020*
FRM/FEM	
Collecting Agency	*Coso Operating Co.*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*N/A*
Analysis Method	*Pulsed Fluorescence*
Start Date	*5/10/2006*
Operation Schedule	*1:1*
Sampling Season	*Year-round*
Probe Height	*4.5 meters*
Distance to Supporting Structure	*N/A*
Distance from Obstructions on Roof	*No obstructions*
Distance from Obstructions Not on Roof	*10m MET tower 30m west of H2S station*
Distance From Trees	*0.5 km*
Distance to Furnace or Incinerator	*None in the vicinity for several kilometers.*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*N/A*
Frequency of External Audits	*Quarterly*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Cottonwood***
AQS Number	
UTM X, Y (Zone 11)	*411798.9, 4028440*
Location	*South-central Owens Lake*
Address	*Owens Lake, CA*
County	*Inyo*
Distance to Road	*3 km to Hwy 395 (west)*
Traffic Count	*6600*
Groundcover	*Course sand*
Representative Area	*Central Owens Lake*

Met Installed? *Yes* — ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* — ☑ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *N/A*

Pollutant / POC	*N/A*
Priamary/Collocated/Other	*N/A*
Paramter Code	
Monitor Objective	*Research*
Site Type	*Local Meteorology*
Monitor Type	*Special Purpose Monitor*
Network Affiliation	
Instrument Make and Model	
Method Code	
FRM/FEM	
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*N/A*
Analysis Method	*N/A*
Start Date	*5/17/2001*
Operation Schedule	*5 minute*
Sampling Season	*Year-round*
Probe Height	*N/A*
Distance to Supporting Structure	*N/A*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*N/A*
Distance From Trees	*None*
Distance to Furnace or Incinerator	*None*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*N/A*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Dirty Socks***
AQS Number	*06-027-0022*
UTM X, Y (Zone 11)	*414272.2, 4020550*
Location	*South shore, Owens Lake*
Address	*DIRTY SOX HOT SPRING - HWY 190, Owens Lake, CA*
County	*Inyo*
Distance to Road	*402 meters to Hwy 190*
Traffic Count	*230*
Groundcover	*Gravel, sand, water, small shrubs*
Representative Area	*South shore, Owens Lake*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *10* Temp Probe Height (m) *9.5 meters*

Pollutant / POC	*PM-10 / 2*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Source Impact*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*6/23/1999*
Operation Schedule	*hourly; offline 12/19/12-12/18/14*
Sampling Season	*Year-round*
Probe Height	*4.2 meters*
Distance to Supporting Structure	*1.8m below inlet*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*10.0 (Met) - 14.6 meters (powerline); met tower to west*
Distance From Trees	*5km to the southwest*
Distance to Furnace or Incinerator	*6km to the west*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annual (CARB)*

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

GBUAPCD Site Report

Site Name	***Flat Rock***
AQS Number	*06-027-0024*
UTM X, Y (Zone 11)	*424988.9, 4030860*
Location	*Eastern shore, Owens Lake*
Address	*FLAT ROCK - HIGHWAY 190 - 1 MILE W OF HWY 136 JUNCTION, Owens Lake, CA*
County	*Inyo*
Distance to Road	*54.8 meters to Hwy 190; 1.6km NE to CA136/CA190 Junction*
Traffic Count	*520 on CA 190 and at junction*
Groundcover	*Sand, rocks, shrubs*
Representative Area	*East shore, Owens Lake*

Met Installed?	*Yes*	☑ Variable: Wind Speed	☐ Variable: Relative Humidity	☐ Variable: Barometric Pressure
PM Installed?	*No*	☑ Variable: Wind Direction	☑ Variable: Temperature	☐ Variable: Precipitation

Anemometer Height (m) *10.15 meters* Temp Probe Height (m) *9.45 meters*

Pollutant / POC	*PM-10*
Priamary/Collocated/Other	*Other*
Paramter Code	
Monitor Objective	*NAAQS*
Site Type	*Source Impact*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*None (TEOM removed 5/3/11 to Mill Site)*
Method Code	
FRM/FEM	
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*N/A*
Analysis Method	*Gravimetry*
Start Date	*12/14/2000*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	
Distance to Supporting Structure	*0*
Distance from Obstructions on Roof	*0*
Distance from Obstructions Not on Roof	*2.4 m (MET); 3.8 meters (powerline)*
Distance From Trees	*No trees*
Distance to Furnace or Incinerator	*0*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annual (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
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Site Name	***Keeler***
AQS Number	*06-027-1003*
UTM X, Y (Zone 11)	*421981.9, 4038410*
Location	*Located on top of metal storage unit and monitoring shelter.*
Address	*190 CERRO GORDO ROAD, KEELER, CA*
County	*Inyo*
Distance to Road	*20 meters to Cerro Gordo Rd., 117 m NE to CA Hwy. 136*
Traffic Count	*Cerro Gordo - 100/dy est.; Hwy. 136 - 430*
Groundcover	*Pavement*
Representative Area	*Community of Keeler*

Met Installed? *No* ☐ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☐ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-2.5 / 1*
Priamary/Collocated/Other	*Collocated (formerly primary)*
Paramter Code	*88101*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*Partisol 2025 PM2.5 VSCC*
Method Code	*145*
FRM/FEM	*FRM (RFPS-1006-145)*
Collecting Agency	*GBUAPCD*
Analytical Lab	*GBUAPCD*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*PM-10 Impactor and VSCC*
Analysis Method	*Gravimetry*
Start Date	*9/10/2009*
Operation Schedule	*1-in-12 day Partisol*
Sampling Season	*Year-round;Partisol began 9/1/98*
Probe Height	*4.6 meters*
Distance to Supporting Structure	*2.1m below inlet*
Distance from Obstructions on Roof	*See attached roof diagram*
Distance from Obstructions Not on Roof	*10 meters to antennae*
Distance From Trees	*Trees 50m east, 4m height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*1.1m to PM2.5 TEOM*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*Partisol: Monthly by Station Operator*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Keeler***
AQS Number	*06-027-1003*
UTM X, Y (Zone 11)	*421981.9, 4038410*
Location	*Located on top of metal storage unit and monitoring shelter.*
Address	*190 CERRO GORDO ROAD, KEELER, CA*
County	*Inyo*
Distance to Road	*20 meters to Cerro Gordo Rd., 117 m NE to CA Hwy. 136*
Traffic Count	*Cerro Gordo - 100/dy est.; Hwy. 136 - 430*
Groundcover	*Pavement*
Representative Area	*Community of Keeler*

Met Installed? *No* ☐ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☐ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-2.5 / 3*
Priamary/Collocated/Other	*Primary*
Paramter Code	*88101*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400 ab/8500c FDMS, PM2.5 continuous*
Method Code	*181*
FRM/FEM	*FEM (EQPM-0609-181)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*PM-10 Impactor, PM2.5 VSCC*
Analysis Method	*Gravimetry*
Start Date	*3/11/1993*
Operation Schedule	*hourly (TEOM); Daily (1° Partisol.)*
Sampling Season	*Year-round;Partisol began 9/1/98*
Probe Height	*4.45 meters*
Distance to Supporting Structure	*2.0m below inlet*
Distance from Obstructions on Roof	*See roof diagram*
Distance from Obstructions Not on Roof	*9 meters to antennae*
Distance From Trees	*Trees 50m east, 4m height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*1.10m to colocated PM2.5 TEOM; 1.10m to PM2.5 colo Partisol*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annual (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
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Site Name	***Keeler***
AQS Number	*06-027-1003*
UTM X, Y (Zone 11)	*421981.9, 4038410*
Location	*Located on top of metal storage unit and monitoring shelter.*
Address	*190 CERRO GORDO ROAD, KEELER, CA*
County	*Inyo*
Distance to Road	*20 meters to Cerro Gordo Rd., 117 m NE to CA Hwy. 136*
Traffic Count	*Cerro Gordo - 100/dy est.; Hwy. 136 - 430*
Groundcover	*Pavement*
Representative Area	*Community of Keeler*

Met Installed? *No* ☐ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☐ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-10 / 7*
Priamary/Collocated/Other	*Collocated*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*Partisol 2025 PM10*
Method Code	*127*
FRM/FEM	*FRM (RFPS-1298-127)*
Collecting Agency	*GBUAPCD*
Analytical Lab	*GBUAPCD*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*PM-10 Impactor, Collocated PM10 Monitor*
Analysis Method	*Gravimetry*
Start Date	*6/15/2009*
Operation Schedule	*1-in-12 day Partisol*
Sampling Season	*Year-round;Partisol began 9/1/98*
Probe Height	*4.45 meters*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*See roof diagram*
Distance from Obstructions Not on Roof	*10 meters to antennae*
Distance From Trees	*Trees 50m east, 4m height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*1.48m to PM10 primary Partisol*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*yes*
Frequency of flow verification, manual PM sampler	*Partisol: Monthly by Station Operator*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
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Site Name	***Keeler***
AQS Number	*06-027-1003*
UTM X, Y (Zone 11)	*421981.9, 4038410*
Location	*Located on top of metal storage unit and monitoring shelter.*
Address	*190 CERRO GORDO ROAD, KEELER, CA*
County	*Inyo*
Distance to Road	*20 meters to Cerro Gordo Rd., 117 m NE to CA Hwy. 136*
Traffic Count	*Cerro Gordo - 100/dy est.; Hwy. 136 - 430*
Groundcover	*Pavement*
Representative Area	*Community of Keeler*

Met Installed? *No* ☐ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☐ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*PM-10 / 6*
Priamary/Collocated/Other	*Primary*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*Partisol 2025 PM10*
Method Code	*127*
FRM/FEM	*FRM (RFPS-1298-127)*
Collecting Agency	*GBUAPCD*
Analytical Lab	*GBUAPCD*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*PM-10 Impactor, Collocated PM10 Monitor*
Analysis Method	*Gravimetry*
Start Date	*6/15/2009*
Operation Schedule	*1:1*
Sampling Season	*Year-round;Partisol began 9/1/98*
Probe Height	*4.45 meters*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*See roof diagram*
Distance from Obstructions Not on Roof	*10 meters to antennae*
Distance From Trees	*Trees 50m east, 4m height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*2.48m to primary PM2.5 Partisol; 1.48m to colo PM10 Partisol*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*yes*
Frequency of flow verification, manual PM sampler	*Partisol: Monthly by Station Operator*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
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Site Name	***Keeler***
AQS Number	*06-027-1003*
UTM X, Y (Zone 11)	*421981.9, 4038410*
Location	*Located on top of metal storage unit and monitoring shelter.*
Address	*190 CERRO GORDO ROAD, KEELER, CA*
County	*Inyo*
Distance to Road	*20 meters to Cerro Gordo Rd., 117 m NE to CA Hwy. 136*
Traffic Count	*Cerro Gordo - 100/dy est.; Hwy. 136 - 430*
Groundcover	*Pavement*
Representative Area	*Community of Keeler*

Met Installed? *No* ☐ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☐ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-10 / 4*
Priamary/Collocated/Other	
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*PM-10 Impactor, Collocated PM10 Monitor*
Analysis Method	*Gravimetry*
Start Date	*6/15/2009*
Operation Schedule	*hourly (TEOM); 1/12 day 2° Partisol*
Sampling Season	*Year-round;Partisol began 9/1/98*
Probe Height	*4.45 meters*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*See roof diagram*
Distance from Obstructions Not on Roof	*10 meters to antennae*
Distance From Trees	*Trees 50m east, 4m height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*1.10m to primary TEOM (#2); 1.05m to 10pri Partisol*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Keeler MET***
AQS Number	*06-027-1003*
UTM X, Y (Zone 11)	*421356, 4038807*
Location	*Northeast of Keeler, CA*
Address	*Keeler, CA*
County	*Inyo*
Distance to Road	*75 meters*
Traffic Count	*3/day*
Groundcover	*sand/brush*
Representative Area	*Community of Keeler*

Met Installed?	*Yes*	☑ Variable: Wind Speed	☐ Variable: Relative Humidity	☐ Variable: Barometric Pressure
PM Installed?	*No*	☑ Variable: Wind Direction	☑ Variable: Temperature	☑ Variable: Precipitation

Anemometer Height (m): *10 meters* Temp Probe Height (m): *9.15 meters*

Pollutant / POC	*N/A*
Priamary/Collocated/Other	*N/A*
Paramter Code	
Monitor Objective	
Site Type	*Local Meteorology*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	
Method Code	
FRM/FEM	
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*N/A*
Analysis Method	*N/A*
Start Date	*3/14/1985*
Operation Schedule	*5 minute*
Sampling Season	*Year-round*
Probe Height	
Distance to Supporting Structure	*N/A*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*20 meters to trees*
Distance From Trees	*Trees to the east, 15m in height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*N/A*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
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Site Name	***Kirkwood***
AQS Number	*06-005-1033*
UTM X, Y (Zone 11)	*754606, 4286527*
Location	*Coordinates Are UTM Zone 10*
Address	*Loop Road, Kirkwood, CA*
County	*Amador*
Distance to Road	*32 meters north to Loop Rd; 1.2 km north to CA Hwy 88*
Traffic Count	*AADT CA Hwy 88 and Kirkwood Meadows Drive 1550 for 2015 per CalTrans website. 2500 AADT for Amador/Alpine County line on Hwy 88.*
Groundcover	*Decomposed granite*
Representative Area	*4+ km*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *9 meters*

Pollutant / POC	*N/A*
Priamary/Collocated/Other	*N/A*
Paramter Code	
Monitor Objective	*Local Meteorology - backup power station (diesel)*
Site Type	*Local Meteorology*
Monitor Type	*SLAMS*
Network Affiliation	*Great Basin*
Instrument Make and Model	*N/A*
Method Code	*N/A*
FRM/FEM	*N/A*
Collecting Agency	*GBUAPCD*
Analytical Lab	*N/A*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*N/A*
Analysis Method	*N/A*
Start Date	*1/1/2017*
Operation Schedule	*Hourly (continuous)*
Sampling Season	*Year-round*
Probe Height	*N/A*
Distance to Supporting Structure	*The sensors sit atop a 10-meter tower*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*N/A*
Distance From Trees	*60m to trees north ; 40m east; 75 west; 80m south*
Distance to Furnace or Incinerator	*Backup power station 60m east.*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*N/A*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Lee Vining - continuous***
AQS Number	*06-051-0005*
UTM X, Y (Zone 11)	*313746, 4203737*
Location	*Community of Lee Vining, CA*
Address	*330 Mattly Avenue*
County	*Mono*
Distance to Road	*84 m to Hwy 395; 179 m to Matty Ave.*
Traffic Count	*395 - 4500; Matty Ave. - 100 est.*
Groundcover	*Sage, desert scrub, decomposed granite*
Representative Area	*Community of Lee Vining, CA*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *10 meters*

Pollutant / POC	*PM-10 / 4*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*Population Exposure*
Site Type	*Neighborhood Scale*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*Teledyne API T640x PM10*
Method Code	*239*
FRM/FEM	*FEM (EQPM-0516-239)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Polychromatic LED 90° white light scattering*
Start Date	*10/1/2018*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*4.1 meters*
Distance to Supporting Structure	*1.5 meters above roof*
Distance from Obstructions on Roof	*No obstructions on roof*
Distance from Obstructions Not on Roof	*MET tower 1 meter west of inlet*
Distance From Trees	*33 meters WSW, 5 meters in height*
Distance to Furnace or Incinerator	*330 meters south*
Distance Between Collocated Monitors	*275 meters south to LV Partisol Site, CalTrans yard*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*Monthly by station operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Lee Vining - continuous***
AQS Number	*06-051-0005*
UTM X, Y (Zone 11)	*313746, 4203737*
Location	*Community of Lee Vining, CA*
Address	*330 Mattly Avenue*
County	*Mono*
Distance to Road	*84 m to Hwy 395; 179 m to Matty Ave.*
Traffic Count	*395 - 4500; Matty Ave. - 100 est.*
Groundcover	*Sage, desert scrub, decomposed granite*
Representative Area	*Community of Lee Vining, CA*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *10 meters*

Pollutant / POC	*PM-2.5 / 4*
Priamary/Collocated/Other	*Other*
Paramter Code	*88101*
Monitor Objective	*Population Exposure*
Site Type	*Neighborhood Scale*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*Teledyne API T640x PM2.5*
Method Code	*238*
FRM/FEM	*FEM (EQPM-0516-238)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Polychromatic LED 90° white light scattering*
Start Date	*10/1/2018*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*4.1 meters*
Distance to Supporting Structure	*1.5 meters above roof*
Distance from Obstructions on Roof	*No obstructions on roof*
Distance from Obstructions Not on Roof	*MET tower 1 meter west of inlet*
Distance From Trees	*33 meters WSW, 5 meters in height*
Distance to Furnace or Incinerator	*330 meters south*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*Monthly by station operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Lee Vining - partisol***
AQS Number	*06-051-0005*
UTM X, Y (Zone 11)	*313749, 4203464*
Location	*Community of Lee Vining, CA*
Address	*Hwy 395, Lee Vining*
County	*Mono*
Distance to Road	*84 m to Hwy 395; 179 m to Matty Ave.*
Traffic Count	*395 - 4500; Matty Ave. - 100 est.*
Groundcover	*Lawn (north); Gravel (south)*
Representative Area	*Community of Lee Vining, CA*

Met Installed? *No* ☐ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* ☐ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-10 / 3*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*Population Exposure*
Site Type	*Neighborhood Scale*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*Partisol 2025 PM10*
Method Code	*127*
FRM/FEM	*FRM (RFPS-1298-127)*
Collecting Agency	*GBUAPCD*
Analytical Lab	*GBUAPCD*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*1/1/1981*
Operation Schedule	*1-in-3 day Partisol (started 7/1/2001)*
Sampling Season	*Year-round*
Probe Height	*3 meters AGL*
Distance to Supporting Structure	*2.0m below inlet*
Distance from Obstructions on Roof	*No obstructions - unit mounted on stand*
Distance from Obstructions Not on Roof	*N/A*
Distance From Trees	*20m east, 5m in height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*New station 330 Mattly Ave w/T640x PM10/PM2.5*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*Partisol: Monthly by Station Operator*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Lizard Tail***
AQS Number	*06-027-0028*
UTM X, Y (Zone 11)	*415700.8, 4044610*
Location	*Owens Lake NE Shoreline*
Address	*Lizard Tail - NE Shoreline Owens Lake, CA*
County	*Inyo*
Distance to Road	*275 meters to powerline road; 800m to Hwy 395*
Traffic Count	*Powerline:20; Hwy 395: 540*
Groundcover	*Sand and shrubs*
Representative Area	*4 km area*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *10.1 meters* Temp Probe Height (m) *9.0 meters*

Pollutant / POC	*PM-10 / 1*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Source Impact*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*1/16/2008*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*2 meters above roof; 4.6 meters AGL.*
Distance to Supporting Structure	*1.7m below inlet*
Distance from Obstructions on Roof	*None*
Distance from Obstructions Not on Roof	*Met tower: 4.6 meters; power pole 9.1 meters*
Distance From Trees	*Trees 4km southeast*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Lone Pine MET***
AQS Number	*06-027-0019*
UTM X, Y (Zone 11)	*406299.9, 4051850*
Location	*Lone Pine Wastewater Treatment Plant*
Address	*OUT AT THE SEWER PONDS ONE MILE E OF LOCUST ST*
County	*Inyo*
Distance to Road	*30 meters to access road; 1370 west to Hwy 395*
Traffic Count	*1 per week; 6000*
Groundcover	*dirt and grass*
Representative Area	*rural area east of Lone Pine*

Met Installed? *Yes* — ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* — ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *9.54 meters* Temp Probe Height (m) *9.03 meters*

Pollutant / POC	*N/A*
Priamary/Collocated/Other	*N/A*
Paramter Code	
Monitor Objective	
Site Type	*Local Meteorology*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	
Method Code	
FRM/FEM	
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*N/A*
Analysis Method	*N/A*
Start Date	*5/14/1986*
Operation Schedule	*5 minutes*
Sampling Season	*Year-round*
Probe Height	*Precip gage @ 1.5 m AGL*
Distance to Supporting Structure	*N/A*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*40 meters to phone pole*
Distance From Trees	*100m west, 10m height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Lone Pine TEOM***
AQS Number	*06-027-0004*
UTM X, Y (Zone 11)	*405399.8, 4052020*
Location	*Southern Inyo Hospital*
Address	*501 East Locust Rd, Lone Pine, CA*
County	*Inyo*
Distance to Road	*85m so. To east Locust; 610m west to 395*
Traffic Count	*200 on East Locust; 6000 on Hwy 395*
Groundcover	*rooftop, asphalt roofing*
Representative Area	*Community of Lone Pine*

Met Installed? *No* ☐ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☐ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-10 / 4*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab (converted from FDMS to FEM TEOM 12/1/2017)*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*4/17/2008*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*2.82 meters above roof; 6.5 m AGL*
Distance to Supporting Structure	*2.0m below inlet*
Distance from Obstructions on Roof	*30 meters*
Distance from Obstructions Not on Roof	*29 meters*
Distance From Trees	*East of site, 3m above inlet*
Distance to Furnace or Incinerator	*65 meters*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*Yes. TEOM replaced with TAPI T640X, 3rd qtr. 2018*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Mammoth***
AQS Number	*06-051-0001*
UTM X, Y (Zone 11)	*326513.8, 4168312*
Location	*Town of Mammoth Lakes, CA*
Address	*Gateway Home Center, Mammoth Lakes, CA*
County	*Mono*
Distance to Road	*30.5 meters east to Old Mammoth Rd.; 124m NNE to Hwy 203*
Traffic Count	*OMR:6600; Hwy 203 13,200*
Groundcover	*Urban; asphalt composite roof and pavement*
Representative Area	*Town of Mammoth Lakes*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-10 / 6*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab/8500c FDMS, PM10 continuous (started 1/1/2006)*
Method Code	*None*
FRM/FEM	*N/A*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*1/1/2006*
Operation Schedule	*hourly (TEOM); 1/3 day Partisol*
Sampling Season	*Year-round;Part. Started 2/1/03*
Probe Height	*FDMS: 4 meters above roof; Partisol: 3 meters above roof; (roof at ~10m)*
Distance to Supporting Structure	*2.0m below inlet*
Distance from Obstructions on Roof	*N/A; Distance to Supporting Struct. Cont: TEOM and Partisol 0.7m above enclosure*
Distance from Obstructions Not on Roof	*30.5 meters (at 55 degrees and 180 degrees)*
Distance From Trees	*40 meters from site, 2-5m above inlet*
Distance to Furnace or Incinerator	*130m south*
Distance Between Collocated Monitors	*3 m from TEOM inlet to Partisol inlet*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*Change to EPA-Equiv. continuous PM monitor planned Q3 2018*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Mammoth***
AQS Number	*06-051-0001*
UTM X, Y (Zone 11)	*326513.8, 4168312*
Location	*Town of Mammoth Lakes, CA*
Address	*Gateway Home Center, Mammoth Lakes, CA*
County	*Mono*
Distance to Road	*30.5 meters east to Old Mammoth Rd.; 124m NNE to Hwy 203*
Traffic Count	*OMR:6600; Hwy 203 13,200*
Groundcover	*Urban; asphalt composite roof and pavement*
Representative Area	*Town of Mammoth Lakes*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*PM-10 / 5*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Population Oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*Partisol 2025 PM10 (started 2/1/2003)*
Method Code	*127*
FRM/FEM	*FRM (RFPS-1298-127)*
Collecting Agency	*GBUAPCD*
Analytical Lab	*GBUAPCD*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*10/21/2000 8:00:00 PM*
Operation Schedule	*1-in-1 day Partisol*
Sampling Season	*Year-round*
Probe Height	*3m above roof*
Distance to Supporting Structure	*2m above platform*
Distance from Obstructions on Roof	*None*
Distance from Obstructions Not on Roof	*30.5 meters*
Distance From Trees	*40 meters to east, w, w, n; 2-5m above inlet*
Distance to Furnace or Incinerator	*130m south*
Distance Between Collocated Monitors	*3m to TEOM/FDMS inlet*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*Partisol: Monthly by Station Operator*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Mill***
AQS Number	*06-027-0030*
UTM X, Y (Zone 11)	*423662.9, 4035093*
Location	*2 miles south of Keeler*
Address	*East shore Owens Lake, CA*
County	*Inyo*
Distance to Road	*0.4 km to Hwy 190. 590m east to Hwy 136; 15m east to access rd.*
Traffic Count	*430 on Hwy 395; 5 on access rd.*
Groundcover	*Gravel*
Representative Area	*Regional*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m)

Pollutant / POC	*PM-10 / 1*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Source Impact*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*N/A*
Analysis Method	*Gravimetry*
Start Date	*11/14/2001*
Operation Schedule	*hourly; offline 12/26/12-12/18/14*
Sampling Season	*Year-round*
Probe Height	*4.2 meters*
Distance to Supporting Structure	*1.8m below inlet*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*None*
Distance From Trees	*3.7km NNW, 10m height.*
Distance to Furnace or Incinerator	*3.7 km NNW*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Mono Shore***
AQS Number	*06-051-0011*
UTM X, Y (Zone 11)	*329152.6, 4215350*
Location	*Northeast shore of Mono Lake*
Address	*Mono Lake, CA*
County	*Mono*
Distance to Road	*4.4 km north to CA Hwy 167*
Traffic Count	*200*
Groundcover	*Course sand*
Representative Area	*Beach area, Mono Lake, CA*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *7m* Temp Probe Height (m) *6 meters*

Pollutant / POC	*PM-10 / 3*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Highest Concentration*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*6/2/2008*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*2.5 meters TEOM*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*No obstructions on roof*
Distance from Obstructions Not on Roof	*No obstructions to air flow*
Distance From Trees	*50 meters to dune shrubs which are below inlet height*
Distance to Furnace or Incinerator	*5 km NW*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*Ozone / 1*
Priamary/Collocated/Other	*N/A*
Paramter Code	*44201*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Thermo 49i*
Method Code	*047*
FRM/FEM	*FEM (EQOA-0880-047)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Regional*
Sampling Method	*See attached list*
Analysis Method	*UV Photometer*
Start Date	*1/1/2013*
Operation Schedule	*Minutely*
Sampling Season	*Year-round*
Probe Height	*4.9 meters (PM inlets); 3.8m gaseous*
Distance to Supporting Structure	*1.1m below inlet*
Distance from Obstructions on Roof	*1m from railing and IMPROVE inlets to north / 1.2m above roof (IMPROVE)*
Distance from Obstructions Not on Roof	*265 meters east side of sparse trees*
Distance From Trees	*265 meters east of station*
Distance to Furnace or Incinerator	*No furnaces or incinearators within 4 miles*
Distance Between Collocated Monitors	*1 meter, 20m in height*
Unrestricted Airflow	*360*
Probe Material	*Borosilicate glass and FEP Teflon*
Residence Time	*11.11 seconds (system revised 3/2017)*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*Bi-weekly by Station Operator*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*SO2 / 1*
Priamary/Collocated/Other	*N/A*
Paramter Code	*42401*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Thermo 43i-TLE*
Method Code	*560*
FRM/FEM	*FEM (EQSA-0486-060)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Regional*
Sampling Method	*See attached list*
Analysis Method	*Pulsed fluorescence*
Start Date	*1/1/2013*
Operation Schedule	*Minutely*
Sampling Season	*Year-round*
Probe Height	*4.9 meters (PM inlets); 3.8m gaseous*
Distance to Supporting Structure	*1.1m below inlet*
Distance from Obstructions on Roof	*1m from railing and IMPROVE inlets to north / 1.2m above roof (IMPROVE)*
Distance from Obstructions Not on Roof	*265 meters east side of sparse trees*
Distance From Trees	*265 meters east of station*
Distance to Furnace or Incinerator	*No furnaces or incinearators within 4 miles*
Distance Between Collocated Monitors	*1 meter, 20m in height*
Unrestricted Airflow	*360*
Probe Material	*Borosilicate glass and FEP Teflon*
Residence Time	*17.0 seconds (system revised 3/2017)*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*Bi-weekly by Station Operator*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*CO / 1*
Priamary/Collocated/Other	*N/A*
Paramter Code	*42101*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Thermo 48i-TLE*
Method Code	*554*
FRM/FEM	*FRM (RFCA-0981-054)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Regional*
Sampling Method	*See attached list*
Analysis Method	*Gas Filter Correlation*
Start Date	*1/1/2013*
Operation Schedule	*Minutely*
Sampling Season	*Year-round*
Probe Height	*4.9 meters (PM inlets); 3.8m gaseous*
Distance to Supporting Structure	*1.1m below inlet*
Distance from Obstructions on Roof	*1m from railing and IMPROVE inlets to north / 1.2m above roof (IMPROVE)*
Distance from Obstructions Not on Roof	*265 meters east side of sparse trees*
Distance From Trees	*265 meters east of station*
Distance to Furnace or Incinerator	*No furnaces or incinearators within 4 miles*
Distance Between Collocated Monitors	*1 meter, 20m in height*
Unrestricted Airflow	*360*
Probe Material	*Borosilicate glass and FEP Teflon*
Residence Time	*17.84 seconds (system revised 3/2017)*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*Bi-weekly by Station Operator*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-10 / 1*
Priamary/Collocated/Other	*Primary (partisol POC 4 is collocated)*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Teledyne API T640x PM10*
Method Code	*239*
FRM/FEM	*FEM (EQPM-0516-239)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Regional*
Sampling Method	*See attached list*
Analysis Method	*Polychromatic LED 90° white light scattering*
Start Date	*10/1/2017*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*4.9 meters (PM inlets); 3.8m gaseous*
Distance to Supporting Structure	*1.1m below inlet*
Distance from Obstructions on Roof	*1m from railing and IMPROVE inlets to north / 1.2m above roof (IMPROVE)*
Distance from Obstructions Not on Roof	*265 meters east side of sparse trees*
Distance From Trees	*265 meters east of station*
Distance to Furnace or Incinerator	*No furnaces or incinearators within 4 miles*
Distance Between Collocated Monitors	*1 meter, 20m in height*
Unrestricted Airflow	*360*
Probe Material	
Residence Time	
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*T640x Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*PM-2.5 / 1*
Priamary/Collocated/Other	*Primary (partisol POC 2 is collocated)*
Paramter Code	*88101*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Teledyne API T640x PM2.5*
Method Code	*238*
FRM/FEM	*FEM (EQPM-0516-238)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Regional*
Sampling Method	*See attached list*
Analysis Method	*Polychromatic LED 90° white light scattering*
Start Date	*10/1/2017*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*4.9 meters (PM inlets); 3.8m gaseous*
Distance to Supporting Structure	*1.1m below inlet*
Distance from Obstructions on Roof	*1m from railing and IMPROVE inlets to north / 1.2m above roof (IMPROVE)*
Distance from Obstructions Not on Roof	*265 meters east side of sparse trees*
Distance From Trees	*265 meters east of station*
Distance to Furnace or Incinerator	*No furnaces or incinearators within 4 miles*
Distance Between Collocated Monitors	*1 meter, 20m in height*
Unrestricted Airflow	*360*
Probe Material	
Residence Time	
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*T640x Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*NOy / 1*
Priamary/Collocated/Other	*N/A*
Paramter Code	*42600*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Thermo 42y*
Method Code	*674*
FRM/FEM	*N/A*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Regional*
Sampling Method	*See attached list*
Analysis Method	*CHEMILUMINESCENCE*
Start Date	*1/1/2013*
Operation Schedule	*Minutely*
Sampling Season	*Year-round*
Probe Height	*4.9 meters (PM inlets); 3.8m gaseous*
Distance to Supporting Structure	*1.1m below inlet*
Distance from Obstructions on Roof	*1m from railing and IMPROVE inlets to north / 1.2m above roof (IMPROVE)*
Distance from Obstructions Not on Roof	*265 meters east side of sparse trees*
Distance From Trees	*265 meters east of station*
Distance to Furnace or Incinerator	*No furnaces or incinearators within 4 miles*
Distance Between Collocated Monitors	*1 meter, 20m in height*
Unrestricted Airflow	*360*
Probe Material	*Borosilicate glass and FEP Teflon*
Residence Time	*17.84 seconds (system revised 3/2017)*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*Bi-weekly by Station Operator*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) _____ Temp Probe Height (m) _____

Pollutant / POC	*PM-2.5 / 2*
Priamary/Collocated/Other	*Collocated*
Paramter Code	*88101*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Partisol 2025 PM2.5 VSCC*
Method Code	*145*
FRM/FEM	*FRM (RFPS-1006-145)*
Collecting Agency	*GBUAPCD*
Analytical Lab	*GBUAPCD*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Regional*
Sampling Method	*PM-10 Impactor and VSCC*
Analysis Method	*Gravimetry*
Start Date	*9/10/2009*
Operation Schedule	*1-in-3 day Partisol*
Sampling Season	*Year-round; Partisol began 9/1/98*
Probe Height	*4.6 meters*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*See attached roof diagram*
Distance from Obstructions Not on Roof	*10 meters to antennae*
Distance From Trees	*Trees are below the inlet height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*1.1m to PM2.5 TEOM*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*Yes*
Frequency of flow verification, manual PM sampler	*Partisol: Monthly by Station Operator*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*
UTM X, Y (Zone 11)	*382151.5, 4135722*
Location	*Bishop, CA - White Mountain Research Center, Owens Valley Lab*
Address	*200 Poleta Road, BISHOP, CA. 93514*
County	*Inyo*
Distance to Road	*80 m north of site*
Traffic Count	*200/day (estimate)*
Groundcover	*Decomposed granite*
Representative Area	*50-100 km radius*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*PM-10 / 4*
Priamary/Collocated/Other	*Collocated*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Background Level*
Monitor Type	*SLAMS*
Network Affiliation	*NCORE*
Instrument Make and Model	*Partisol 2025 PM10*
Method Code	*127*
FRM/FEM	*FRM (RFPS-1298-127)*
Collecting Agency	*GBUAPCD*
Analytical Lab	*GBUAPCD*
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*PM-10 Impactor, Collocated PM10 Monitor*
Analysis Method	*Gravimetry*
Start Date	*4/20/2017*
Operation Schedule	*1-in-12 day Partisol*
Sampling Season	*Year-round; Partisol began 9/1/98*
Probe Height	*4.45 meters*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*See roof diagram*
Distance from Obstructions Not on Roof	*10 meters to antennae*
Distance From Trees	*Trees are below the inlet height*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*1.48m to PM10 primary Partisol*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*yes*
Frequency of flow verification, manual PM sampler	*Partisol: Monthly by Station Operator*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***North Beach***
AQS Number	*06-027-0029*
UTM X, Y (Zone 11)	*411379, 4044551*
Location	*North shore, Owens Lake*
Address	*Owens Lake, CA*
County	*Inyo*
Distance to Road	*30 meters north to Main Line Road*
Traffic Count	*10*
Groundcover	*gravel*
Representative Area	*North shore, Owens Lake*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☐ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *5.3* Temp Probe Height (m) *N/A*

Pollutant / POC	*PM-10 / 1*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Source Impact*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*8/4/2014*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*2 meters above roof; 4.4 meters AGL*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*No obstructions on roof; 1.1m from sample cone to IMPROVE inlet, 1.2 m to TAPI602 inlet*
Distance from Obstructions Not on Roof	*4meters to power pole*
Distance From Trees	*No trees*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Olancha***
AQS Number	*06-027-0021*
UTM X, Y (Zone 11)	*410805.6, 4014080*
Location	*Community of Olancha, CA*
Address	*131 WALKER CREEK RD., Olancha, CA 93549*
County	*Inyo*
Distance to Road	*0.5 KM to Hwy 395*
Traffic Count	*5600*
Groundcover	*Sand, gravel, brush*
Representative Area	*Community of Olancha*

Met Installed? *Yes* ☑ Variable: Wind Speed ☑ Variable: Relative Humidity ☑ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) *10 meters* Temp Probe Height (m) *9.15 meters*

Pollutant / POC	*PM-10 / 2*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Source Impact, Population-oriented*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*Gravimetry*
Analysis Method	*PM10 Impactor*
Start Date	*8/17/1995*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*4.45 meters*
Distance to Supporting Structure	*1.5m below inlet*
Distance from Obstructions on Roof	*3m to PM10 Partisol inlet(temporarily down)*
Distance from Obstructions Not on Roof	*10 meters to tower*
Distance From Trees	*0.5 km*
Distance to Furnace or Incinerator	*None*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Shell Cut***
AQS Number	*06-027-0025*
UTM X, Y (Zone 11)	*419477.7, 4024950*
Location	*South-east shore, Owens Lake*
Address	*SHELL CUT - HIGHWAY 190 - MIDWAY BETWEEN DIRTY SOX AND FLAT ROCK, Owens Lake, CA*
County	*Inyo*
Distance to Road	*164.5 meters to Hwy 190; 250m SE to CA Hwy 190*
Traffic Count	*230*
Groundcover	*Dirt, sand, gravel, shrubs*
Representative Area	*South-east shore Owens Lake*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) *10.03 meters* Temp Probe Height (m) *9.03 meters*

Pollutant / POC	*PM-10 / 2*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Source Impact*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*1/8/2001*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*4.47 meters; rain guage at 3.96 meters*
Distance to Supporting Structure	*1.7m below inlet*
Distance from Obstructions on Roof	*No obstructions on roof*
Distance from Obstructions Not on Roof	*2.6 meters (Met); 4.2 (powerline)*
Distance From Trees	*No trees*
Distance to Furnace or Incinerator	*12 km southeast*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Simis***
AQS Number	*06-051-0007*
UTM X, Y (Zone 11)	*324798.3, 4217850*
Location	*1.8 km north of Mono Lake*
Address	*SIMIS RES-HIWY 167, MONO LAKE, CA*
County	*Mono*
Distance to Road	*475 meters to CA 167; NW of site*
Traffic Count	*120*
Groundcover	*Sagebrush/Rabbitbrush Scrub*
Representative Area	*High Desert*

Met Installed? *Yes* — ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *No* — ☑ Variable: Wind Direction ☑ Variable: Temperature ☐ Variable: Precipitation

Anemometer Height (m) Temp Probe Height (m)

Pollutant / POC	*N/A*
Priamary/Collocated/Other	*N/A*
Paramter Code	
Monitor Objective	
Site Type	*MET data collection suspended July 2011*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	
Method Code	
FRM/FEM	
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood*
Sampling Method	*N/A*
Analysis Method	*N/A*
Start Date	*5/21/1982*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*10 meters AGL*
Distance to Supporting Structure	*N/A*
Distance from Obstructions on Roof	*N/A*
Distance from Obstructions Not on Roof	*N/A*
Distance From Trees	*38 meters*
Distance to Furnace or Incinerator	*N/A*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*N/A*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*N/A*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*N/A*
Frequency of External Audits	*N/A*

GBUAPCD Site Report

Great Basin Unified Air Pollution Control District
157 Short Street, Bishop, CA 93514
760.872.8211, http://www.gbuapcd.org

Site Name	***Stanley***
AQS Number	*06-027-0026*
UTM X, Y (Zone 11)	*409315.3, 4024570*
Location	*Ash Point; West side Owens Lake, CA*
Address	*BILL STANLEY SITE - OWENS LAKE, CA*
County	*Inyo*
Distance to Road	*85 meters to Lake Minerals Rd.; 1.15km west to US 395*
Traffic Count	*1-LMR; 6600-395*
Groundcover	*sand and shrubs*
Representative Area	*Southwestern shoreline of Owens Lake*

Met Installed? *Yes* ☑ Variable: Wind Speed ☐ Variable: Relative Humidity ☐ Variable: Barometric Pressure

PM Installed? *Yes* ☑ Variable: Wind Direction ☑ Variable: Temperature ☑ Variable: Precipitation

Anemometer Height (m) *10.06 meters* Temp Probe Height (m) *9.27 meters*

Pollutant / POC	*PM-10 / 1*
Priamary/Collocated/Other	*Other*
Paramter Code	*81102*
Monitor Objective	*NAAQS*
Site Type	*Source Impact*
Monitor Type	*SLAMS*
Network Affiliation	
Instrument Make and Model	*TEOM 1400ab, PM10 continuous*
Method Code	*079*
FRM/FEM	*FEM (EQPM-1090-079)*
Collecting Agency	*GBUAPCD*
Analytical Lab	
Reporting Agency	*GBUAPCD*
Spatial Scale	*Neighborhood Scale*
Sampling Method	*PM-10 Impactor*
Analysis Method	*Gravimetry*
Start Date	*3/4/2002*
Operation Schedule	*hourly*
Sampling Season	*Year-round*
Probe Height	*4.61 meters; rain guage at 1.58 meters*
Distance to Supporting Structure	*1.9m below inlet*
Distance from Obstructions on Roof	*2.1 m to tower (attached to shelter)*
Distance from Obstructions Not on Roof	*7.6 meters to power pole*
Distance From Trees	*4.5 km south*
Distance to Furnace or Incinerator	*4.5 km south*
Distance Between Collocated Monitors	*N/A*
Unrestricted Airflow	*360*
Probe Material	*N/A*
Residence Time	*N/A*
Will there be a change in 18 months?	*No*
Suitable comparison against annual PM2.5?	*No*
Frequency of flow verification, manual PM sampler	*N/A*
Frequency of flow verification, automated PM analyzers	*TEOM: Bi-weekly by Station Operator*
Frequency of one-point QC check (gaseous)	*N/A*
Frequency of District Audits	*Quarterly TEOM (GBUAPCD); Semi-annual MET (GBUAPCD)*
Frequency of External Audits	*Annually (CARB)*

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Site Name	***A-Tower***
AQS Number	

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***B-Tower***
AQS Number	

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Coso Junction***
AQS Number	*06-027-1001*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

Great Basin Unified Air Pollution Control District
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Site Name	***Dirty Socks***
AQS Number	*06-027-0022*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Flat Rock***
AQS Number	*06-027-0024*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

Great Basin Unified Air Pollution Control District
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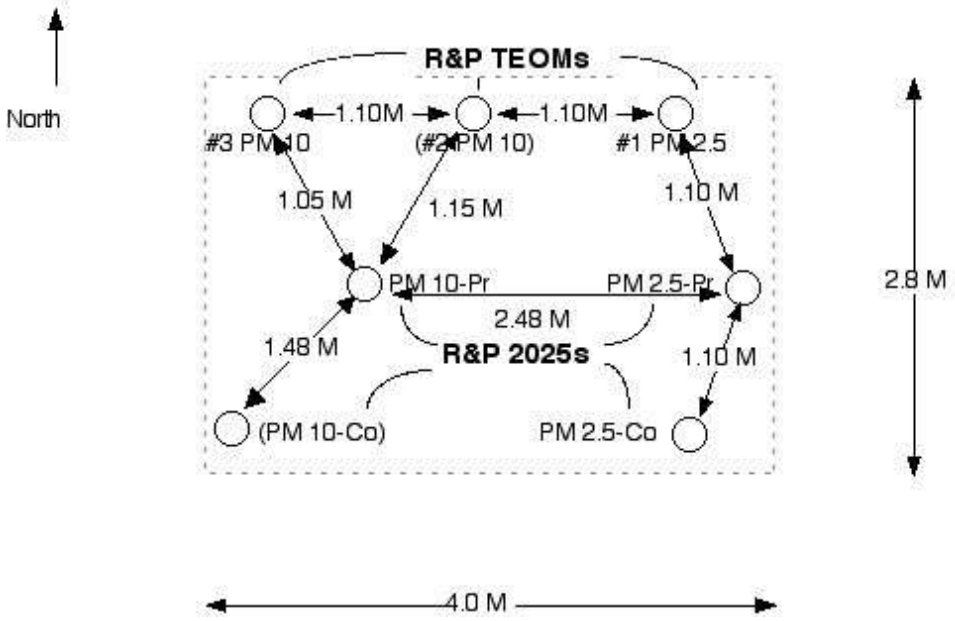
Site Name	***Keeler***
AQS Number	*06-027-1003*

Site Photo:

Great Basin Unified APCD
Keeler Air Monitoring Site
#06-027-1003
Particulate sampler diagram - April 2017



North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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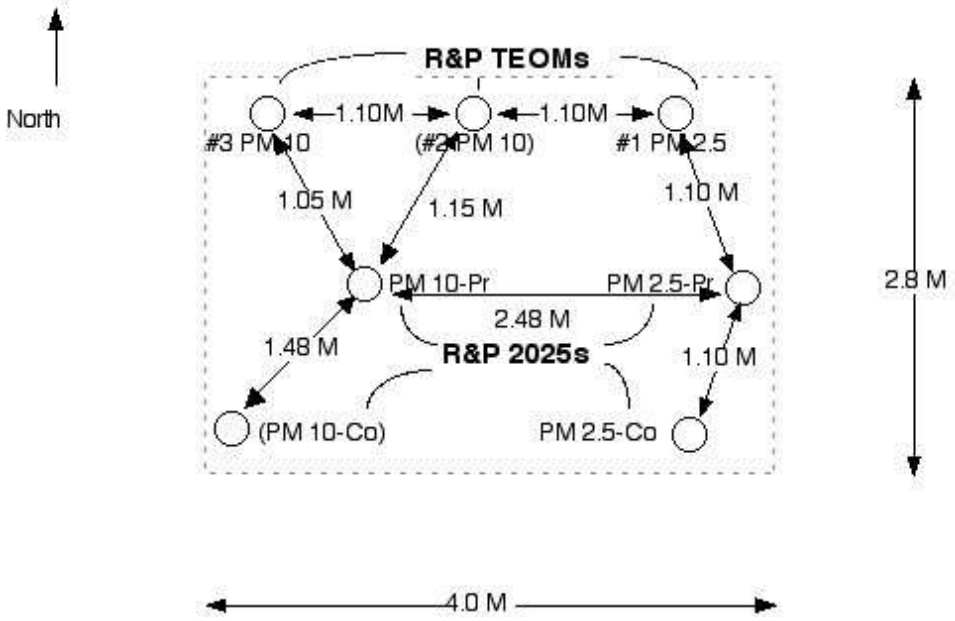
760.872.8211, http://www.gbuapcd.org

Site Name	***Keeler MET***
AQS Number	*06-027-1003*

Site Photo:

Great Basin Unified APCD
Keeler Air Monitoring Site
#06-027-1003
Particulate sampler diagram - April 2017



North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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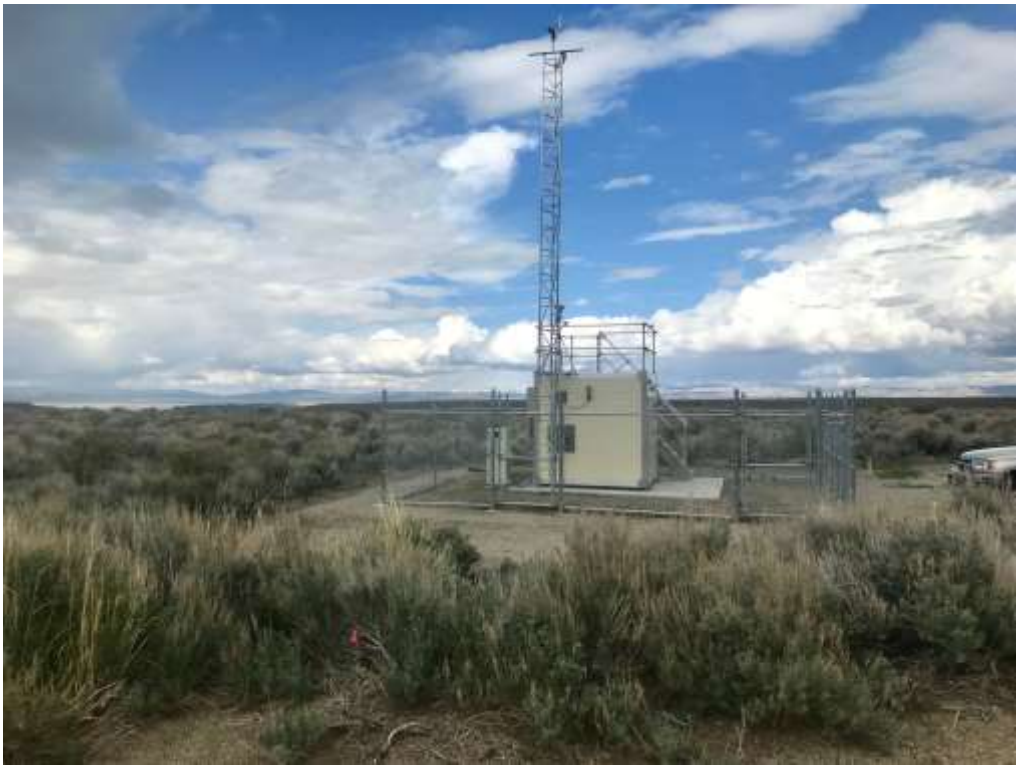
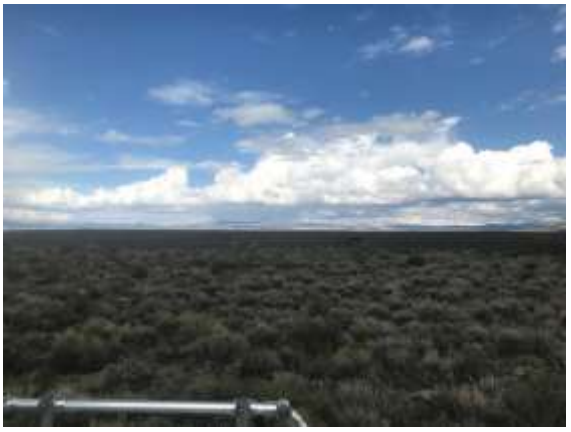
Site Name	***Lee Vining - continuous***
AQS Number	*06-051-0005*

Site Photo:



North-facing photo:

East-facing photo:



West-facing photo:

South-facing photo:

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Site Name	***Lee Vining - partisol***
AQS Number	*06-051-0005*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Lizard Tail***
AQS Number	*06-027-0028*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Lone Pine MET***
AQS Number	*06-027-0019*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Lone Pine TEOM***
AQS Number	*06-027-0004*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Mammoth***
AQS Number	*06-051-0001*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Mill***
AQS Number	*06-027-0030*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Mono Shore***
AQS Number	*06-051-0011*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Ncore/WMRC***
AQS Number	*06-027-0002*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

GBUAPCD Site Photos

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Site Name	***North Beach***
AQS Number	*06-027-0029*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

Great Basin Unified Air Pollution Control District
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Site Name	***Olancha***
AQS Number	*06-027-0021*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Shell Cut***
AQS Number	*06-027-0025*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Simis***
AQS Number	*06-051-0007*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo:

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Site Name	***Stanley***
AQS Number	*06-027-0026*

Site Photo:

North-facing photo:

East-facing photo:

West-facing photo:

South-facing photo: