AMBIENT AIR MONITORING NETWORK PLAN

2014

STATE OF NEVADA
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY PLANNING

Contact: Daren Winkelman
Ambient Monitoring Program
Bureau of Air Quality Planning
901 S. Stewart Street, Suite 4001
Carson City, Nevada89701
(775) 687-9342 or (775) 687-6396 fax
Email: dwinkelman@ndep.nv.gov

Table of Contents

List of Figures and Tables……..... iii

Acronyms and Abbreviations…… iv

Overview……. 1

Goals…….…….…….. 1

Background…….…… 2

Network Design..... 3

Minimum Monitoring Requirements…… 6

Changes in Monitoring Network……..... 8

Purpose of Monitors……..……. 8

Overview of Monitored Parameters……. 9

Site Information…..... 12

Appendix A: Ozone Seasonality Approval Letter……..... 42

Appendix B: Manse PM_{10} Monitor Relocation Approval……....43

Appendix C: 5th Street Relocation Approval…….44

Appendix D: Comment Submittal Information……46

List of Figures

Figure 1 – Site Map……. 11

Figure 2 – Elko Grammar School #2, 1055 7th Street, Elko, NV……... 14

Figure 3 – West End Elementary School, 280 S. Russell Street, Fallon, NV … 17

Figure 4 – Fernley Intermediate School, 320 Hardie Lane Fernley, NV.....20

Figure 5 – Carson City Armory, 2601 S. Carson Street, Carson City, NV…... 23

Figure 6 – Church Site, 781 E. Gamebird Pahrump, NV ……..... 26

Figure 7 – Manse Elementary, 1020 E. Wilson Road Pahrump, NV ……... 29

Figure 8 – 145 Glen Oaks St., Pahrump, NV ……. 32

Figure 9 – 8825 N. Linda Pahrump, NV ……. 35

Figure 10 – Ranchos Aspen Park, 820 Lyell Way Gardnerville, NV…… 38

Figure 11 – Mahoney Forest Service IMPROVE Station, Jarbidge, NV …… 41

List of Tables

Table 1 – NDEP's Ambient Air Monitoring Network……. 5

Table 2- NDEP's Minimum Monitoring Requirements by Pollutant…… 7

Acronyms and Abbreviations

AADT:	Annual Average Daily Traffic
AQS:	Air Quality System
BAQP:	Bureau of Air Quality Planning
BAM:	Beta Attenuation Monitor
CFR:	Code of Federal Regulations
CO:	Carbon Monoxide
DCNR:	Department of Conservation and Natural Resources
FEM:	Federal Equivalent Method
FRM:	Federal Reference Method
IMPROVE:	Interagency Monitoring of Protected Visual Environments
MOU:	Memorandum of Understanding
MSA:	Metropolitan Statistical Area
NAAQS:	National Ambient Air Quality Standard
NAC:	Nevada Administrative Code
NDEP:	Nevada Division of Environmental Protection
O_3:	Ozone
PM:	Particulate Matter (2.5 or 10 microns)
POC:	Pollutant Occurrence Code
QAPP:	Quality Assurance Project Plan
QMP:	Quality Management Plan
SLAMS:	State and Local Air Monitoring Station
SPMS:	Special Purpose Monitoring Station
USEPA:	United States Environmental Protection Agency

This Page Intentionally Left Blank

Overview

The monitoring program of the Nevada Division of Environmental Protection Bureau of Air Quality Planning (NDEP-BAQP) operates an ambient air quality monitoring network of gaseous and particulate pollutant monitors. The monitors are located in small communities throughout rural Nevada. In the metropolitan areas of Reno and Las Vegas, the Washoe County District Health Department, Air Quality Management Division and the Clark County Department of Air Quality and Environmental Management operate and maintain their respective monitoring networks separate from the NDEP-BAQP. Those agencies submit their Network Plans independently to the United States Environmental Protection Agency (USEPA). Also, there are several federally recognized tribes that conduct air monitoring within Nevada and submit their own Annual Network Plans to the USEPA.

The NDEP Bureaus of Air Quality Planning and Air Pollution Control regulate air quality to protect public health and the environment. Monitoring data is a crucial component of regulations used to determine compliance with the USEPA primary and secondary air quality standards. Other important uses of these monitors include support and issuance of air quality forecasts; support of long-term health assessments; and tracking long-term air quality both to gauge effectiveness of emission control and abatement strategies and to quantify accuracy of ambient pollutant monitoring.

Goals

The NDEP-BAQP created an ambient air quality monitoring program to provide useful and accurate information on air quality, which is used to evaluate the success of the State's air quality programs. The Clean Air Act of 1970, and subsequent amendments, requires the USEPA to define national ambient air quality standards (NAAQS) for various air pollutants necessary to protect the public from injurious pollution concentrations. Air pollution concentrations that exceed the NAAQS can cause a public health hazard, or cause damage to flora, fauna and personal property.

The NAAQS, published by the USEPA, can be found in Title 40 of the Code of Federal Regulations (CFR) Part 50. The NAAQS for each pollutant defines the levels of air quality

necessary to protect human health and welfare. An area is considered to be in nonattainment for a pollutant if it has violated the NAAQS for that pollutant. The CFR includes procedures for evaluating measured air quality against the NAAQS. State air quality standards can be found in Nevada Administrative Code (NAC) 445B.22097.

Background

The State of Nevada has four jurisdictions that independently manage their own air programs as designated by statute: Department of Conservation and Natural Resources (DCNR), NDEP-BAQP; Washoe County District Health Department, Air Quality Management Division; Clark County Department of Air Quality and Environmental Management; and various tribal agencies.

State agencies that conduct ambient air monitoring using State and Local Air Monitoring Stations (SLAMS) or Special Purpose Monitoring Stations (SPMS), must use Federal Reference Methods (FRM) or Federal Equivalent Methods (FEM) that comply with federal quality assurance requirements listed in 40 CFR 58, Appendix A. In conjunction with the Network Plan, a BAQP quality assurance plan was developed to form the framework for planning, implementing, assessing and reporting work performed by the BAQP and for implementing quality assurance and quality control protocols.

The Ambient Air Monitoring Program Quality Assurance Project Plan (QAPP) was developed to address quality management as well as quality assurance. The QAPP defines the policies, procedures, specifications, standards, and documentation necessary to 1) provide data of adequate quality to meet monitoring objectives, and 2) minimize loss of air quality data due to malfunctions or out-of-control conditions. As part of the QAPP, the Quality Management Plan (QMP) describes the organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces between planning, implementing, assessing and reporting activities involving environmental data operations. Both the QAPP and QMP will be updated during this network plan year.

Additionally, the BAQP has developed ambient monitoring guidelines in order to ensure that ambient air quality data collected, at regulated facilities in the State, are of the highest quality and conform to federal requirements for quality assurance listed under 40 CFR 58.

Ambient air quality monitoring data must be certified on an annual basis as accurate and complete. The certification process begins with the complete submittal of all SLAMS data to the federal Air Quality System (AQS) for the calendar year. The 2012 data was submitted for certification on March 28, 2013 and the 2013 data was submitted on May 1, 2014. Submittal of precision and accuracy data into AQS for 2012 was accomplished on January 4, 2013. Submittal of precision and accuracy data into AQS for calendar year 2013 was accomplished by January 14, 2014.

Network Design

Air quality monitoring is represented by ten SLAMS and one SPMS for a total of eleven ambient air quality monitoring stations in Nevada under the jurisdiction of the NDEP-BAQP. The ozone monitoring conducted by the NDEP is done on a seasonal basis from April 1st to October 31st of each year. The USEPA's approval of a seasonal ozone monitoring schedule for the NDEP is documented in Appendix A. There are three meteorological stations, one in Carson City, one in Pahrump, and one mobile tower that is deployed at various locations within the State. These meteorological stations are used to confirm the local meteorological data from the monitoring stations.

In addition to these four independent monitoring networks, air quality monitoring is conducted through the Interagency Monitoring of Protected Visual Environments (IMPROVE) network by the federal land management agencies. There are two IMPROVE monitoring sites in Nevada. One is at the Jarbidge Wilderness area and the other is at Great Basin National Park, Lehman Caves. The IMPROVE program is a cooperative measurement effort governed by a steering committee composed of representatives from federal and regional-state organizations. The IMPROVE monitoring program was established in 1985 to aid in the creation of state and federal implementation plans for the protection of visibility in federal Class I areas. In order to meet the site objectives, the IMPROVE site must meet the methodologies and quality assurance and quality control (QA/QC) procedures approved by the USEPA Regional Administrator. Utilizing the criteria set for the Jarbidge site, the NDEP-BAQP is able to satisfy the USEPA's regional and transport monitoring requirements. According to 40 CFR Part 58 Appendix D 4.7.3, "each state

shall install and operate at least one $PM_{2.5}$ site to monitor for regional background and regional transport." The NDEP-BAQP utilizes the Jarbidge site to meet this particular requirement.

The following table shows the locations and types of monitors operated by NDEP.

Table 1: NDEP'S Ambient Air Monitoring Network

Location	Ozone	Carbon Monoxide	PM10	PM2.5
Elko			1 (SLAMS)	
Fallon	1 (SLAMS)			
Fernley	1 (SLAMS)			
Carson City Armory	1 (SLAMS)			2 (SLAMS)
Pahrump-Church Site			1 (SLAMS)	
Pahrump-Manse Elementary			1 (SLAMS)	
Pahrump-Glen Oaks			1 (SLAMS)	
Pahrump-Linda Street			1 (SLAMS)	
Gardnerville Ranchos				1 (SPMS)
Total	3		5	3

SLAMS – State and Local Air Monitoring Station

SPMS – Special Purpose Monitor Station

Minimum Monitoring Requirements

The USEPA provides minimum site requirements to monitor for ozone (O_3) and particulate matter (PM) based on metropolitan statistical area (MSA) population. The NDEP-BAQP's air monitoring network meets or, in most cases, exceeds the minimum network requirements. The monitors currently required in the NDEP-BAQP monitoring network by the USEPA are located in Carson City (O_3), Fallon (O_3), Fernley (O_3) and Pahrump (PM_{10}). The four PM_{10} monitoring sites in Pahrump are required through a Memorandum of Understanding (MOU) between the NDEP, USEPA, Nye County and the Town of Pahrump. Otherwise, according to 40 CFR Part 58 Appendix D, Tables D-4 and D-5, sections 4.2, 4.3.2, 4.3.3, 4.4.2 and 4.5, additional monitoring for criteria pollutants is not presently required. However, based on data obtained through special study monitoring in Carson City and Gardnerville, the NDEP-BAQP has established a $PM_{2.5}$ monitoring network. These sites will allow the NDEP-BAQP to establish credible data to ascertain $PM_{2.5}$ conditions within both areas. Within three years, after a valid design value is established, the NDEP-BAQP will evaluate the program and determine if increased $PM_{2.5}$ monitoring is needed within the SPMS areas. The following table outlines the minimum required monitors within the NDEP ambient air monitoring network.

Table 2: Minimum Monitoring Requirements by Pollutant

Pollutant	Minimum # of Monitors Required	# of Monitors Active	# of Monitors needed	Location	CSA/MSA	County	County Pop. (2013)	Design Values
Ozone	3	3	0	Carson City	Reno-Carson City-Fernley CSA and Carson City Metropolitan Statistical Area (MSA)	Carson City	54,668	67 ppb (2011-2013)
				Fallon	Fallon Micropolitan Statistical Area (MSA)	Churchill	25,322	57 ppb (2011-2013)
				Fernley	Reno-Carson City-Fernley Combined Statistical Area (CSA) and Fernley Micropolitan Statistical Area (MSA)	Lyon	52,960	69 ppb (2011-2013)
Lead*	0	0	0	N/A	N/A	N/A	N/A	N/A
SO_2*	0	0	0	N/A	N/A	N/A	N/A	N/A
NO_2*	0	0	0	N/A	N/A	N/A	N/A	N/A
PM_{10}	4	5	0	Elko (1)	Elko Micropolitan Statistical Area (MSA)	Elko	53,384	0.0 (2011-2013)
				Pahrump (4)	Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area (MSA)	Nye	44,749	Manse = 1.0 Church = 0.3 Glen Oaks = N/A Linda Street = 0.3 (2011-2013)
$PM_{2.5}$	0	2	0	Carson City	Reno-Carson City-Fernley CSA and Carson City Metropolitan Statistical Area (MSA)	Carson City	54,668	New Site
$PM_{2.5}$	0	1	0	Gardnerville	Reno-Carson City-Fernley CSA and Gardnerville Ranchos Micropolitan Statistical Area (MSA)	Douglas	48,478	New Site
Total	7	11	0					

ppb: parts per billion

*Based on 40 CFR Part 58 Appendix D, Tables D-4 and D-5 and sections 4.2, 4.3.2, 4.3.3, 4.4.2 and 4.5, additional monitoring for criteria pollutants is not presently required. Additionally, based on the 2008 Lead NAAQS Final Rule, 2010 SO_2 NAAQS Final Rule, and the 2010 NO_2 NAAQS Final Rule, the NDEP-BAQP is not required to monitor for these criteria pollutants.

Changes in Monitoring Network

In 2011, the NDEP-BAQP was informed that it had to relocate the PM_{10} monitor located at the Manse School in Pahrump due to the school closing. In February 2011, the NDEP-BAQP submitted a letter to the USEPA requesting approval to relocate the monitor, which approval was received in March of 2011 to move the existing monitor to the Nye County School District building. However, the Pahrump School District found a new use for the school, allowing the NDEP-BAQP's monitor to remain at the existing site. At this time, the NDEP-BAQP will continue to monitor at the Manse School. If needed, the NDEP-BAQP has access to the Nye County School District building as a back-up site.

The monitoring start date for both $PM_{2.5}$ monitors at the Carson Armory site was entered incorrectly in last year's annual network plan. The corrected monitoring start date has been changed from March 1, 2013 to April 1, 2013. There are no further expected changes for this next year. Over the next five years, through 2019, the NDEP-BAQP will evaluate the current network to determine if any new sites or monitors are required to be added to the existing monitoring network. In the event that a review of changes to the $PM_{2.5}$ monitoring network were required, the annual network plan and five year network assessment would be used to provide for this review. No changes are proposed for the $PM_{2.5}$ monitoring network for 2013-2014.

Purpose of Monitors

The purpose of the Nevada Air Monitoring Network is to provide useful and accurate information on air quality, which is used to evaluate the success of the State's air quality programs. To accomplish this task, the NDEP-BAQP utilizes the NAAQS for each criteria pollutant set forth in the Clean Air Act: Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO_2), Ozone (O_3), coarse and fine particulate matter (PM_{10} and $PM_{2.5}$), and Sulfur Dioxide (SO_2). By measuring pollutant concentrations in outdoor air and comparing the measured concentrations to corresponding standards, the NDEP-BAQP is able to identify the ambient air quality status of an area as either attainment or nonattainment.

The NAAQS are broken down into primary and secondary standards. Primary standards are those established to protect public health. Secondary standards are those established to protect

the public welfare from adverse pollution effects on soils, water, vegetation, man-made materials, animals, weather, visibility, climate, property, and the economy. The scientific criteria upon which the standards are based are reviewed periodically by the USEPA, which may reestablish or change the standards according to its findings.

A pollutant measurement that is greater than the ambient air quality standard for its specific averaging time is called an exceedance. This is not necessarily a synonym for a violation; for each pollutant, there are specific rules about how many exceedances are allowed in a given time period before a pattern of exceedances is considered to be a violation of the NAAQS. A violation may result in regulatory action to clean-up the area's air. Exceptions are made to allow for certain limited exceedances of the standard that may occur, for example, during exceptional events, such as an unusual weather pattern or wildfire. Regulatory action is typically reserved for cases where the exceedances are too large or too frequent.

Historically, ambient air quality monitoring by the NDEP-BAQP has looked at trends in air quality to aid in the local planning process. Traffic, wood burning stoves, and growth-related activities have prompted air quality monitoring in specific areas around the State. Data from these sites has led to public education and outreach to communities, identifying the potential health effects caused by air pollutants in the environment. Ordinances have also been developed and implemented to help control surface area disturbances and other related activities that produce dust.

Overview of Monitored Parameters

Carbon Monoxide (CO)

CO is a poisonous gas that, when introduced into the bloodstream, inhibits the delivery of oxygen to body tissue. According to the USEPA, the health risk is greatest for individuals with cardiovascular disease.

Ozone (O_3)

Ground-level ozone, or photochemical smog, is not emitted into the atmosphere as ozone, but rather is formed by the reactions of other pollutants. The primary pollutants entering into this reaction, volatile organic compounds (VOCs) and oxides of nitrogen, create ozone in the

presence of sunlight. According to the USEPA, ozone is a strong irritant of the upper respiratory system and also causes damage to crops.

Particulate Matter (PM_{10})

Particulate matter with an aerodynamic diameter of 10 microns or less is emitted from transportation and industrial sources. According to the USEPA, exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Fine Particulate Matter ($PM_{2.5}$)

Fine particulate matter with a diameter of 2.5 microns or less is created primarily from industrial processes and fuel combustion. According to the USEPA, these particles are breathed deeply into the lungs. Exposure to fine particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Site Map

Figure 1: A map showing the locations of the monitoring stations maintained in the NDEP-BAQP's network.

Elko: Detailed Site Information

Prior to 1992 the location for this sampler was the fire station at 723 Railroad Street (ID #32-007-003) in a commercial area. In November of 1992 this continuous PM_{10} monitoring site was relocated to the roof of the State offices at 850 Elm Street in a predominantly residential area. The monitoring objective was to determine typical concentration/population oriented. The manual sampler was replaced with a continuous Tapered Element Oscillating Microbalance (TEOM) PM_{10} monitor in December 1998. In September 2008, the TEOM monitor was closed and a new BAM 1020 monitor was sited at the Elko Grammar School #2.

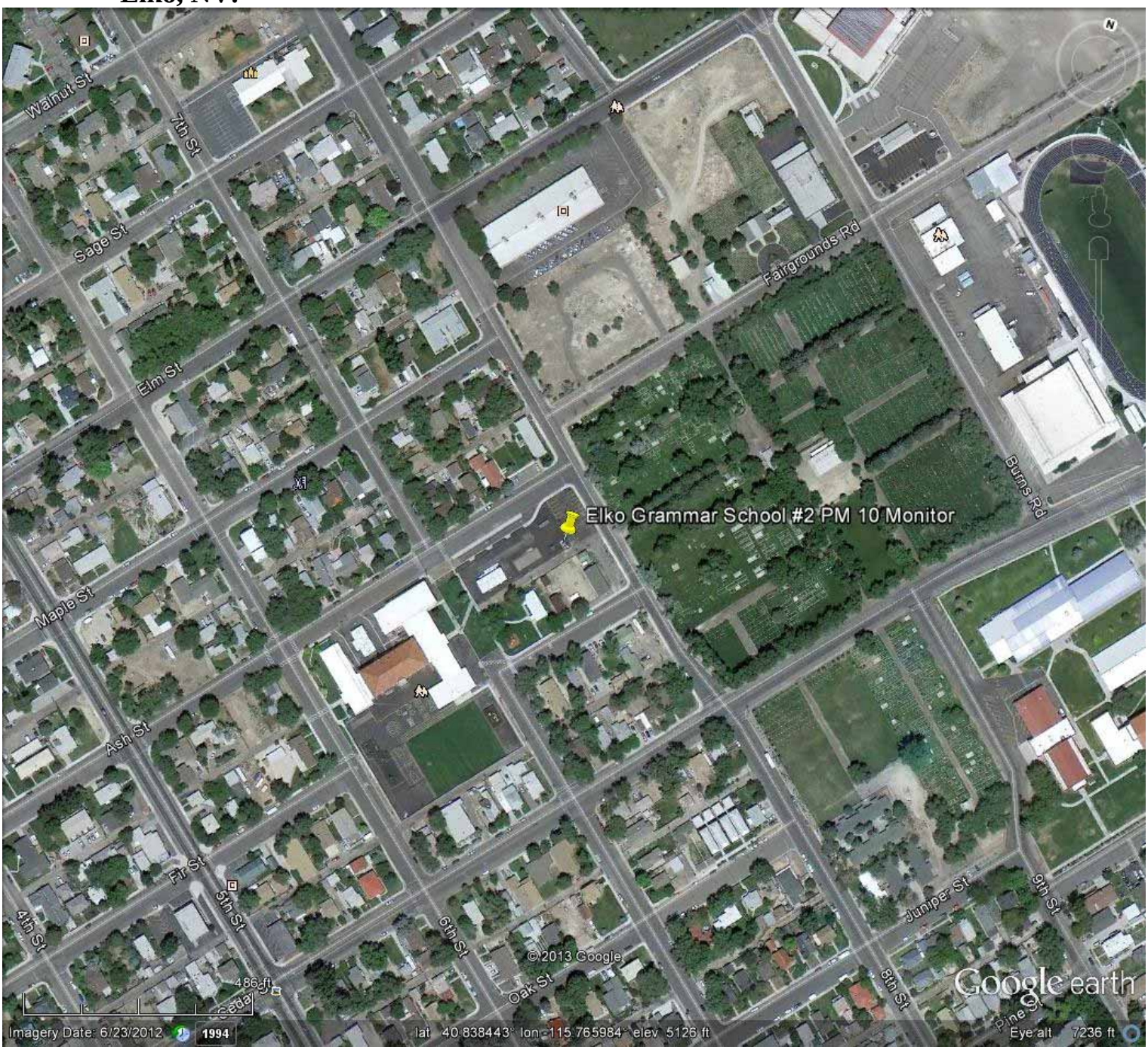
Site Name	**Elko**
AQS ID	**32-007-0005**
GIS Coordinates	**Lat +40.838350** **Long -115.766029**
Location	**Elko Grammar School #2**
Address	**1055 7th Street**
County	**Elko**
Distance to Road	**18 Meters**
Traffic Count	**2600 AADT (2012) Station #0070208**
Groundcover	**Asphalt**
Representative Area	**Elko Micropolitan Statistical Area (MSA)**

Pollutant, POC	**PM_{10}; 1**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population exposure**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Neighborhood**
Monitoring start date	**09/25/2008**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**2.6 Meters**
Dist. fm. supporting structure	**Vertical Distance =1.2 meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. Obstructions not on roof (meters)	**N/A**
Dist. fm. trees	**27 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**
Unrestricted air flow	**360 degrees**
Probe material	**Aluminum**
Residence time	**N/A**

Elko: Detailed Site Information (Cont.)

Changes in the next 18 months?	**No**
Suitable for $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**6/19/2013, 11/20/2013**

Figure 2: PM_{10} Monitor located at Elko Grammar School #2, 1055 7th Street, Elko, NV.



Fallon: Detailed Site Information

The ozone monitoring site at 280 South Russell Street is at the West End Elementary School in a residential neighborhood that may be affected by agricultural operations surrounding the City of Fallon. The monitoring objective is to determine typical concentration/population oriented. PM_{10} sampling commenced at this site in May 1993 and was discontinued at the end of June 1998. Monitoring for ozone began in October 1999 as an ozone transport site downwind of Reno and Fernley.

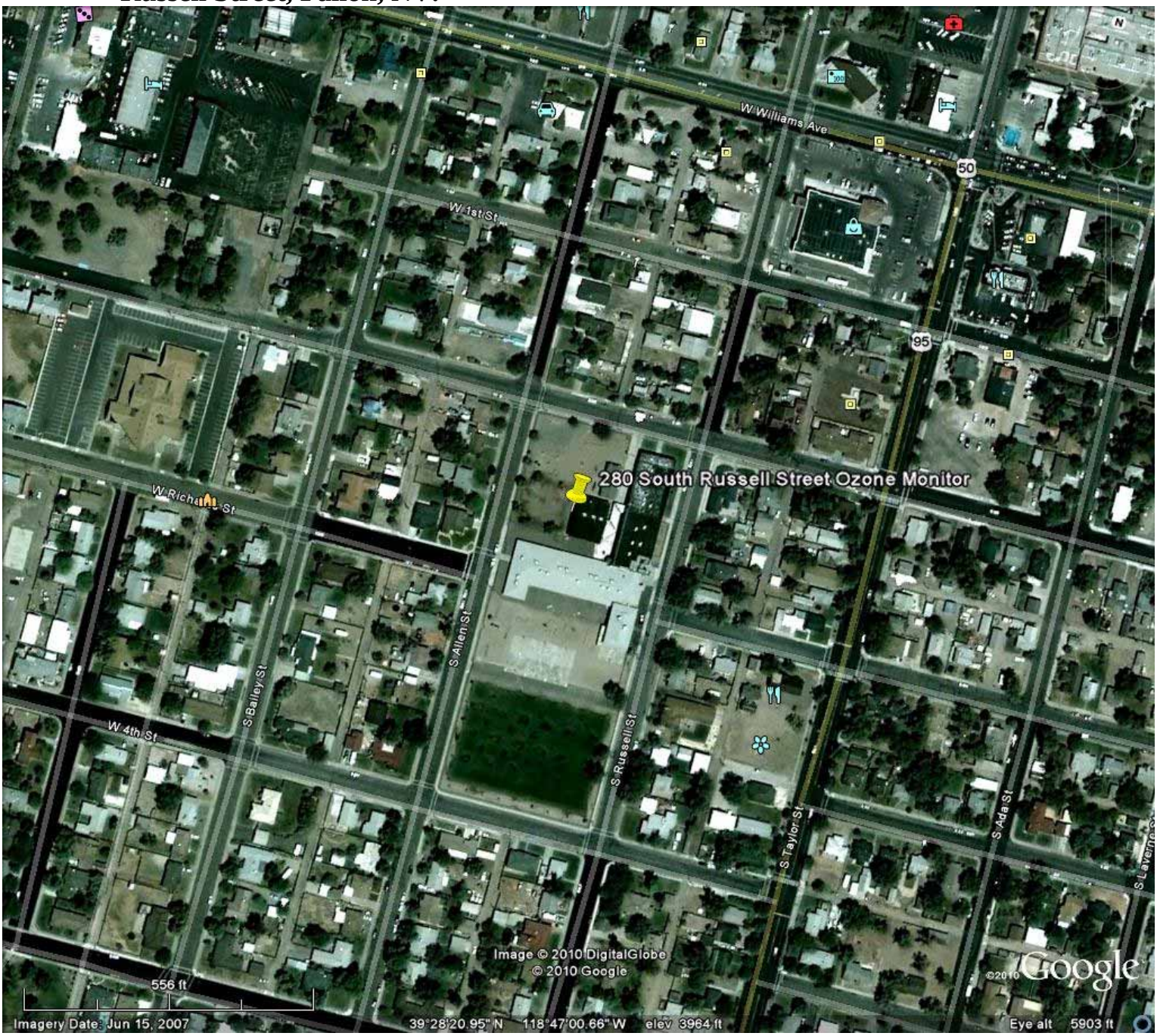
Site Name	**Fallon**
AQS ID	**32-001-0002**
GIS Coordinates	**Lat +39.472471** **Long -118.783624**
Location	**West End Elementary School**
Address	**280 South Russell Street**
County	**Churchill**
Distance to Road	**65 Meters**
Traffic Count	**250 AADT (2012) Station #0010135**
Groundcover	**Dirt and Gravel**
Representative Area	**Fallon Micropolitan Statistical Area (MSA)**

Pollutant, POC	**Ozone, 1**
Parameter Code	**44201**
Basic monitoring objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Monitor type(s)	**SLAMS**
Instrument manufacturer and model	**Teledyne API Model 400 Series**
Method Code	**087**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Neighborhood**
Monitoring start date	**10/01/1999**
Current sampling frequency	**Seasonal**
Calculated sampling frequency	**N/A**
Sampling season	**04/01-10/31**
Analysis Method	**EQOA-0992-087**
Probe Height	**3.2 Meters**
Dist. fm. supporting structure	**1 meter from wall**
Dist. fm. obstructions on roof	**N/A**
Distance from obstruction not on roof (meters)	**22 Meters**
Distance fm. trees	**Greater than 10 meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors (meters)	**N/A**
Unrestricted airflow	**180 Degrees**
Probe material	**Teflon**

Fallon: Detailed Site Information (Cont.)

Residence time	**9.4 seconds**
Changes in the next 18 months?	**No**
Suitable for PM 2.5 comparison?	**N/A**
Frequency of flow rate verification Manual PM	**N/A**
Frequency of flow rate verification automated PM	**N/A**
Frequency of one point QC check (gaseous)	**Every two weeks during sampling season**
Last Annual Performance Evaluation (Gaseous)	**09/18/2013**
Last two semi-annual flow rate audits for PM	**N/A**

Figure 3: Ozone Monitor located at West End Elementary School, 280 S. Russell Street, Fallon, NV.



Fernley Intermediate School: Detailed Site Information

Ozone monitoring is done at the Fernley Intermediate School, which is located at 320 Hardie Lane. This is an area of mainly residential and agricultural use. There has recently been a large growth of industry both upwind and downwind of this site. Monitoring for PM_{10} at this site commenced on May 1995 to determine the agricultural and industrial source impacts and population exposure. PM_{10} sampling was discontinued in November 1998. Ozone monitoring began at this site in July 2007. However, ozone monitoring (SPMS) was previously conducted at the Fernley Volunteer Fire Department starting in October 1997 and discontinued in October 2003.

Site Name	**Fernley**
AQS ID	**32-019-0006**
GIS Coordinates	**Lat +39.602787** **Long -119.247741**
Location	**Fernley Intermediate School**
Address	**320 Hardie Lane**
County	**Lyon**
Distance to Road	**119 Meters**
Traffic Count	**8600 AADT (2012) Station # 0190022**
Groundcover	**Paved, cement, gravel and dirt**
Representative Area	**Reno-Carson City-Fernley Combined Statistical Area (CSA) and Fernley Micropolitan Statistical Area (MSA)**

Pollutant, POC	**Ozone, 1**
Parameter Code	**44201**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Teledyne API Model 400 Series**
Method Code	**087**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Neighborhood**
Monitoring start date	**07/06/2007**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**04/01-10/31**
Analysis Method	**EQOA-0992-087**
Probe Height	**7 meters**
Dist. fm. supporting structure	**Vertical Distance above 2.1 meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. Obstructions not on roof (meters)	**N/A**
Dist. fm. trees	**15 Meters**
Distance to furnace or incinerator flue	**N/A**

Fernley Intermediate School: Detailed Site Information (Cont.)

Distance between collocated monitors in (meters)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Teflon**
Residence time	**9.5 Seconds**
Changes in the next 18 months?	**No**
Suitable for PM 2.5 comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**N/A**
Frequency of one point QC check (gaseous)	**Every two weeks during sampling season.**
Last Annual Performance Evaluation (gaseous)	**06/27/2013**
Last two semi-annual flow rate audits for PM	**N/A**

Figure 4: Ozone Monitor located at Fernley Intermediate School, 320 Hardie Lane Fernley, NV.

2601 S. Carson Street: Detailed Site Information

Due to the city of Carson City re-purposing use of the old monitoring location on 3300 East Fifth Street, the new SLAMS monitoring site is now adjacent to Hwy 395, in a residential neighborhood and a light industrial area. The new collocated $PM_{2.5}$ and ozone monitoring site is located at 2601 S. Carson Street where the old Army National Guard site used to reside. The monitoring objective for $PM_{2.5}$ and ozone is to determine maximum concentration based on Appendix D CFR 58 (4.1) (b) for this site.

Site Name	**Carson City Armory**
AQS ID	**32-510-0020**
GIS Coordinates	**Lat +39.1447** **Long -119.7661**
Location	**Carson City**
Address	**2601 S. Carson Street**
County	**Carson**
Distance to Road	**109 Meters**
Traffic Count	**43,500 AADT (2012) Station #0250148**
Groundcover	**Gravel**
Representative Area	**Reno-Carson City-Fernley CSA and Carson City Metropolitan Statistical Area (MSA)**

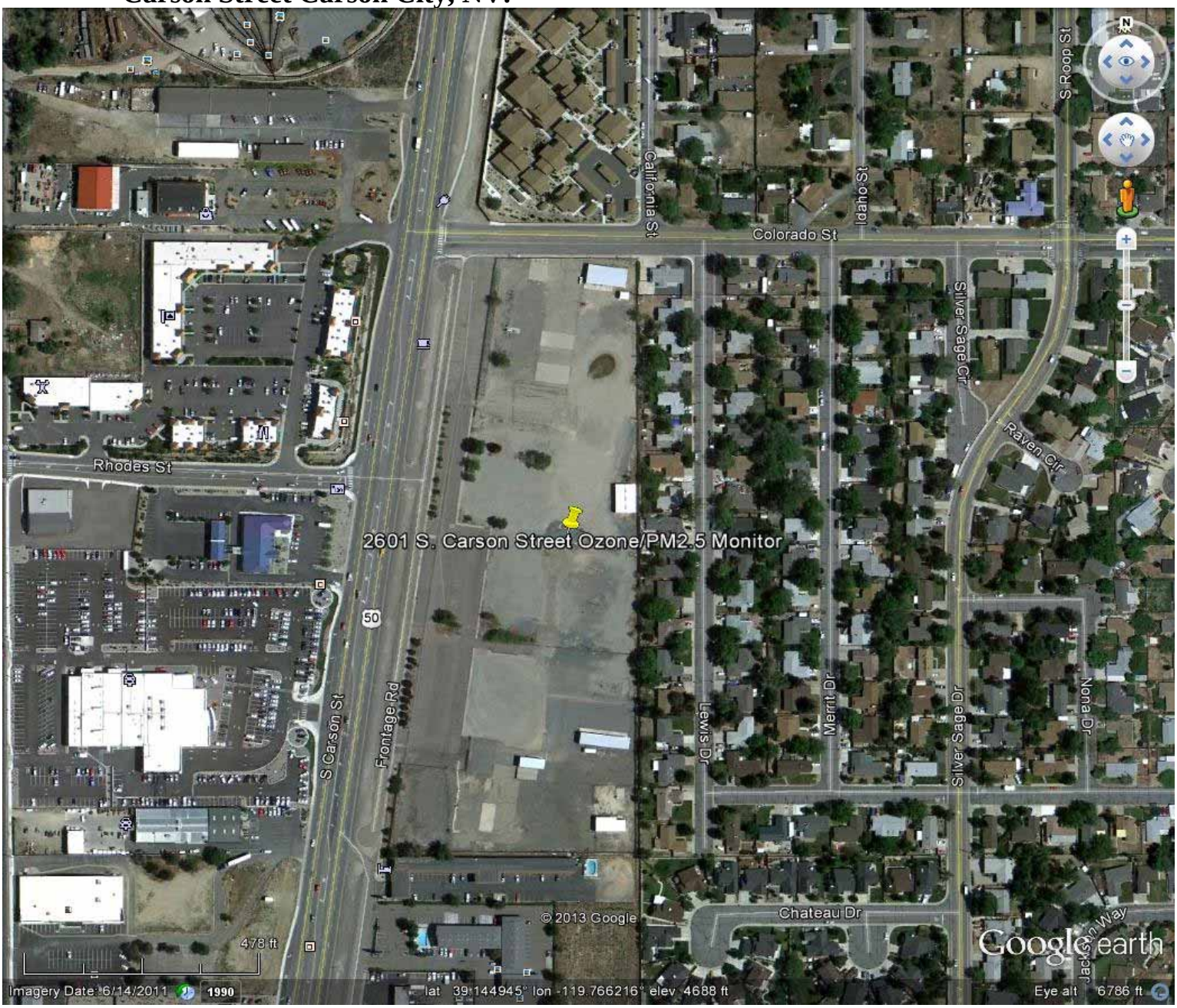
Pollutant, POC	**$PM_{2.5}$, 1**	**$PM_{2.5}$, 2**	**Ozone, 1**
Parameter Code	**88101**	**88101**	**44201**
Basic monitoring objective(s)	**NAAQS**	**NAAQS**	**NAAQS**
Site type(s)	**Max concentration**	**Max concentration**	**Max Concentration**
Monitor type(s)	**SLAMS**	**QA COLLOCATED**	**SLAMS**
Instrument manufacturer and model	**MET ONE BAM 1020**	**BGI PQ200**	**TELEDYNE 400 Series**
Method Code	**170**	**116**	**087**
FRM/FEM/ARM/other	**FEM**	**FRM**	**FEM**
Collecting Agency	**NDEP-BAQP**	**NDEP-BAQP**	**NDEP-BAQP**
Analytical Lab	**N/A**	**Desert Research Institute**	**N/A**
Spatial Scale	**Neighborhood**	**Neighborhood**	**Neighborhood**
Monitoring start date	**04/01/2013**	**04/01/2013**	**04/01/2013**
Current sampling frequency	**Continuous**	**1:6**	**Seasonal**
Calculated sampling frequency	**N/A**	**N/A**	**N/A**
Sampling season	**01/01-12/31**	**01/01-12/31**	**04/01-10/31**
Analysis Method	**EQPM-0308-170**	**RFPS-0498-116**	**EQOA-0992-087**
Probe Height	**4.9 Meters**	**4.9 Meters**	**4 Meters**
Dist. fm. supporting structure	**1.5 Meters**	**1.5 Meters**	**1 Meter**

2601 S. Carson Street: Detailed Site Information (Cont.)

Dist. fm. obstructions on roof	**N/A**	**N/A**	**N/A**
Distance from obstruction not on roof (meters)	**N/A**	**N/A**	**N/A**
Distance fm. trees	**37 Meters to West**	**37 Meters to the West**	**37 Meters to the West**
Distance to furnace or incinerator flue	**N/A**	**N/A**	**N/A**
Distance between collocated monitors (meters)	**3 Meters**	**3 Meters**	**N/A**
Unrestricted airflow	**360 Degrees**	**360 Degrees**	**360 Degrees**
Probe material	**N/A**	**N/A**	**N/A**
Residence time	**N/A**	**N/A**	**5.7 Seconds**
Changes in the next 18 months?	**No**	**No**	**No**
Suitable for $PM_{2.5}$ comparison?	**Yes**	**Yes**	**N/A**
Frequency of flow rate verification Manual PM		**Monthly**	**N/A**
Frequency of flow rate verification automated PM	**Monthly**		**N/A**
Frequency of one point QC check (gaseous)	**N/A**	**N/A**	**Every two weeks during sampling season.**
Last Annual Performance Evaluation (Gaseous)	**N/A**	**N/A**	**09/24/2013**
Last two semi-annual flow rate audits for PM	**11/01/2013 ****	**11/01/2013 ****	**N/A**

** Only one semi-annual flow rate was required for this new site due to the initial operational period of 9 months.

Figure 5: Ozone/$PM_{2.5}$ Monitors located at Carson City Armory, 2601 S. Carson Street Carson City, NV.



Church: Detailed Site Information

The Church Site began operation in 2004 to complement the existing three other sites in the Pahrump monitoring network. Monitoring is accomplished with a continuous beta attenuated monitor located in the southeast corner of the Catholic Church. This site represents the southern-most monitoring location in Pahrump Valley. The monitoring objective of this site is a significant source of PM_{10}. The surrounding area is characterized by residential use with little commercial use, as well as some native desert with a mix of dirt and paved roads.

Site Name	**Church**
AQS ID	**32-023-0013**
GIS Coordinates	**Lat + 36.159639** **Long -115.996263**
Location	**Pahrump**
Address	**781 E. Gamebird**
County	**Nye**
Distance to Road	**100 Meters**
Traffic Count	**950 AADT (2012) Station #0230010**
Groundcover	**Desert**
Representative Area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area (MSA)**

Pollutant, POC	**PM_{10}, 1**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Source Oriented – Dry lake bed 6 miles to the south**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Urban**
Monitoring start date	**02/14/2004**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**4 Meters**
Dist. fm. supporting structure	**Vertical distance above 2 meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. Obstructions not on roof (meters)	**14 Meters**
Dist. fm. trees	**50 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**

Church: Detailed Site Information (Cont.)

Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**05/21/2013, 11/18/2013**

Figure 6: PM_{10} Monitor located at Church Site, 781 E. Gamebird Pahrump, NV.

Manse Elementary: Detailed Site Information

The Manse site represents the monitoring objective for the highest concentrations of PM_{10} in Pahrump. This site replaces the Community Pool site, which at the time it was operating, represented the highest concentrations of PM_{10} in Pahrump. Located at 1020 E. Wilson Road, the Manse Elementary site is located on the roof of the school and monitors for PM_{10} using the continuous beta attenuation monitor. The area adjacent to this site is characterized by mostly commercial use with some residential use, and is adjacent to the busiest activity area of Pahrump. This site is located downwind from residential construction developments that have cleared large parcels of ground for building, as well as agricultural areas that cultivate large areas of farm-ground and raise livestock. Roads surrounding this site are both paved and dirt.

Site Name	**Manse Elementary**
AQS ID	**32-023-0014**
GIS Coordinates	**Lat +36.212787** **Long -115.994802**
Location	**Pahrump**
Address	**1020 E. Wilson Road**
County	**Nye**
Distance to Road	**50 Meters**
Traffic Count	**11,000 AADT (2012) Station #0230006**
Groundcover	**Gravel Schoolyard**
Representative area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area (MSA)**
Pollutant, POC	**PM_{10}, 1**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Highest Concentration**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Middle**
Monitoring start date	**11/17/2005**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**3.0 Meters**
Dist. fm. supporting structure	**Vertical distance above 1 meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. Obstructions not on roof (meters)	**N/A**
Dist. fm. trees	**10 Meters**
Distance to furnace or incinerator flue	**N/A**

Manse Elementary: Detailed Site Information (Cont.)

Distance between collocated monitors in (meters)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**5/21/2013, 11/18/2013**

Figure 7: PM_{10} Monitor located at Manse Elementary, 1020 E. Wilson Road Pahrump, NV.

Glen Oaks: Detailed Site Information

Monitoring began at the Willow Creek site in 2003. The monitor was located at 1500 Red Butte on the roof of a building in which irrigation equipment for a golf course was housed. The monitoring objective of this site was to measure typical concentrations/population oriented of PM_{10} using the beta attenuation monitor. The surrounding area adjacent to this site was fairway/golf course and residential structures. Due to closure of the golf course, the Willow Creek site was relocated to the Glen Oaks sewage treatment plant in 2009. The Glen Oaks site is a short distance away from the existing golf course site and the monitoring objective did not change.

Site Name	**Glen Oaks**
AQS ID	**32-023-0015**
GIS Coordinates	**Lat +36.193469** **Long -116.007584**
Location	**Pahrump**
Address	**145 Glen Oaks St.**
County	**Nye**
Distance to Road	**200 Meters**
Traffic Count	**11,000 AADT (2012) Station #0230006**
Groundcover	**Grass/Gravel**
Representative Area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area (MSA)**

Pollutant, POC	**PM_{10}, 1**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Neighborhood**
Monitoring start date	**07/10/2009**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**6.0 Meters**
Dist. fm. supporting structure	**Vertical Distance above 3 meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. Obstructions not on roof (meters)	**15 Meters**
Dist. fm. trees	**12 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**

Glen Oaks: Detailed Site Information (Cont.)

Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**5/21/2013, 11/18/2013**

Figure 8: PM_{10} Monitor located at 145 Glen Oaks St., Pahrump, NV.

Linda Street: Detailed Site Information

Monitoring at the Linda Street site was started in 2003. The site is located at 8825 North Linda Street. The beta attenuation monitor is located on the roof of an old railroad box car and represents not only the northern-most site in the Pahrump monitoring network, but the most rural area. There is some residential surrounding this site, but mainly native desert vegetation with little or no surface disturbances. The monitoring objective for this site is general background levels of PM_{10} in Pahrump.

Site Name	**Linda Street**
AQS ID	**32-023-0011**
GIS Coordinates	**Lat +36.349408** **Long -116.031976**
Location	**Pahrump**
Address	**8825 N. Linda**
County	**Nye**
Distance to Road	**20 Meters**
Traffic Count	**22,500 AADT (2012) Station #0230008**
Groundcover	**Desert**
Representative Area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area (MSA)**
Pollutant, POC	**PM_{10}, 1**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**General Background**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Regional**
Monitoring start date	**05/03/2003**
Current sampling frequency	**continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**6.7 Meters**
Dist. fm. supporting structure	**Vertical Distance above 3 meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. obstructions not on roof (meters)	**21 Meters**
Dist. fm. trees	**10 Meters**
Distance to furnace or incinerator flue	**N/A**

Linda Street: Detailed Site Information (Cont.)

Distance between collocated monitors in (meters)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**5/21/2013, 11/18/2013**

Figure 9: PM_{10} Monitor located at 8825 N. Linda Pahrump, NV.

Ranchos Aspen Park: Detailed Site Information

The Ranchos Aspen Park site is a new Special Purpose Monitoring (SPM) site within the NDEP network. The monitoring objective is to determine typical concentration/population exposure.

Site Name	**Ranchos Aspen Park**
AQS ID	**32-005-0007**
GIS Coordinates	**Lat +38.897557** **Long -119.732507**
Location	**Gardnerville**
Address	**820 Lyell Way**
County	**Douglas**
Distance to Road	**20 Meters**
Traffic Count	**5600 AADT (2012) Station #0050066**
Groundcover	**Gravel**
Representative Area	**Reno-Carson City-Fernley CSA and Gardnerville Ranchos Micropolitan Statistical Area (MSA)**
Pollutant, POC	**$PM_{2.5}$, 1**
Parameter Code	**88101**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population exposure**
Monitoring type(s)	**SPMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**170**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Spatial Scale	**Neighborhood**
Monitoring start date	**04/01/2013**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**NA**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0308-170**
Probe Height	**6.7 Meters**
Dist. fm. supporting structure	**Vertical Distance above 3 meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. Obstructions not on roof (meters)	**7 Meters**
Dist. fm. trees	**10 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**

Ranchos Aspen Park: Detailed Site Information (Cont.)

Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for $PM_{2.5}$ comparison?	**Yes**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**10/28/2013 ****

** Only one semi-annual flow rate was required for this new site due to the initial operational period of 9 months.

Figure 10: $PM_{2.5}$ Monitor located at Ranchos Aspen Park, 820 Lyell Way Gardnerville, NV.

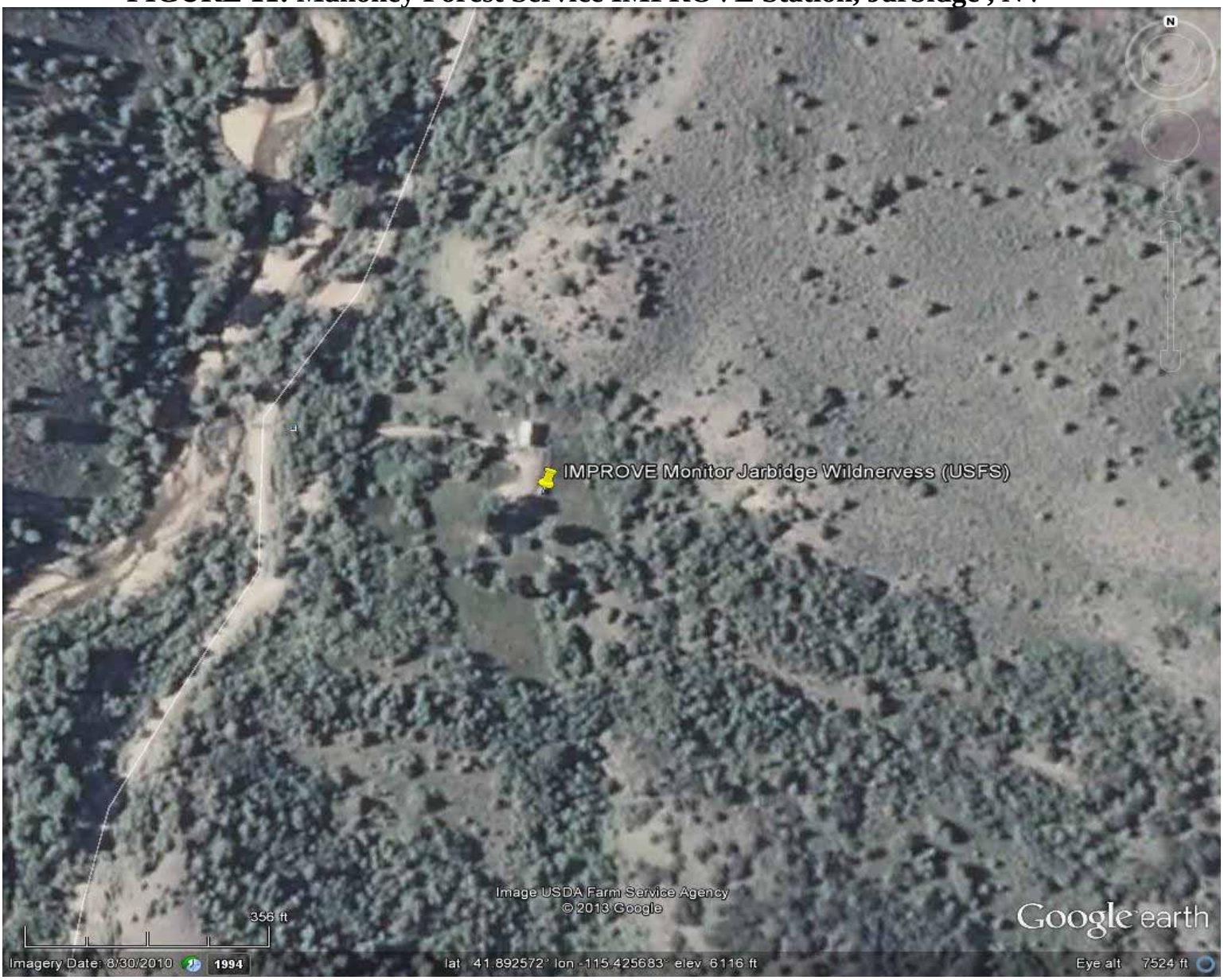
IMPROVE Station: Detailed Site Information

Site Name	**Jarbidge Wilderness IMPROVE**
AQS ID	**32-007-9000**
GIS Coordinates	**Lat +41.8926** **Long -115.4261**
Location	**Mahoney Forest Service Station**
Address	**Jarbidge Wilderness**
County	**Elko**
Distance to Road	**100 Feet**
Traffic Count	**N/A**
Groundcover	**Dirt/Grass**
Representative Area	**Rural (Not in an urban area)**
Pollutant, POC	**$PM_{2.5}$, 1**
Parameter Code	**88101**
Basic monitor objective(s)	**Other**
Site type(s)	**General/Background**
Monitoring type(s)	**IMPROVE**
Instrumental manufacturer and model	**Crocker Nuclear Lab, IMPROVE Sampler Version II**
Method Code	**N/A**
FRM/FEM/ARM/other	**Other**
Collecting Agency	**US Forest Service (USFS)**
Analytical Lab	**Crocker Nuclear Lab**
Spatial Scale	**Regional**
Monitoring start date	**01/1988**
Current sampling frequency	**1:3 Filters Collected Weekly**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**N/A**
Probe Height	**4 Meters**
Dist. fm. supporting structure	**2 Meters**
Dist. fm. obstructions on roof	**N/A**
Dist. fm. Obstructions not on roof (meters)	**18 Meters**
Dist. fm. trees	**15 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**
Unrestricted air flow	**Yes**
Probe material	**Aluminum**
Residence time	**N/A**

IMPROVE Station: Detailed Site Information (Cont.)

Changes in the next 18 months?	**No**
Suitable for $PM_{2.5}$ comparison?	**No**
Frequency of flow rate verification manual PM	**Unable to Determine**
Frequency of flow rate verification automated PM	**N/A**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**Unable to Determine**

FIGURE 11: Mahoney Forest Service IMPROVE Station, Jarbidge , NV



Appendix A.

Ozone Seasonality Approval Letter

STEVE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FEBRUARY 6, 2002

Mr. Chester Sergent, Supervisor
Ambient Air Monitoring Branch
Bureau of Air Quality Planning
Division of Environmental Protection
Department of Conservation and Natural Resources
333 W. Nye Lane, Room 138
Carson City, NV 89706

Dear Mr. ~~Sergent~~ Chet:

I have received your letter of January 29, 2002 requesting permission to adjust the ozone monitoring season from year round to April 1 through October 31. We have reviewed the information you provided and approve your request to reduce the ozone monitoring season.

One issue that needs to be addressed is ensuring that EPA's AIRS database is updated to reflect this change in the ozone monitoring season. Failure to do so will result in AIRS showing incomplete ozone data capture rates for the Carson City, Fernley and Fallon monitoring sites. Please have your staff contact our AIRS database manager, Jim Forrest, at (415) 947-4135 to discuss the appropriate procedure for making this change. Please feel free to contact me at (415) 947-4128 if you have any questions.

Sincerely,

Robert S. Pallarino
Technical Support Office
Air Division

cc: Colleen Cripps, DCNR/DEP
Jim Forrest, US EPA

Appendix B.

Manse PM_{10} Monitor Relocation Approval

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAR 22 2011

RECEIVED
MAR 25 2011
ENVIRONMENTAL PROTECTION

Nevada
Environmental Protection
MAR 25 2011
BAPC/BAQP

Mr. Daren Winkelman, Supervisor
Ambient Air Quality Monitoring Program
Bureau of Air Quality Planning
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701

RE: Response to discontinuation and relocation request of Manse Elementary SLAMS PM_{10} monitor (AQS ID: 32-023-0014-81102-1)

Dear Mr. ~~Winkelman~~ Daren:

On February 24, 2011 we received your official request for the discontinuation of the PM_{10} monitor at Manse Elementary School (AQS ID: 32-023-0014-81102-1) and the subsequent relocation of the PM_{10} monitor to the nearby Nye County School District office.

After a visit to the proposed relocation site and upon our review of the documentation you have provided, pursuant to 40 CFR 58.14, we approve your selection of the Nye School District building for replacement of the current Manse Elementary School site. Specifically, we have determined that your request meets the provisions under 40 CFR 58.14(c)(6), namely that logistical problems beyond NDEP's control make it impossible to continue operation at the current site and that the replacement site is a nearby location with the same scale of representation. We request that you list the official site address as 208 Dahlia Street, Pahrump, NV 89048 with GPS coordinates (in decimal degrees): 36.212989, -115.996875.

Thank you for your cooperation throughout this process and please feel free to contact Elfego Felix (415) 947-4141 from my staff or myself (415) 972-3851 with any questions or concerns in regards to this matter.

Sincerely,

Matthew Lakin, Manager
Air Quality Analysis Office

Appendix C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 11, 2012

Mr. Rob Bamford
Chief, Bureau of Air Quality Planning
Nevada Division of Environmental Protection
901 S. Stewart St., Ste 4001
Carson City Nevada 89701

Dear Mr. Bamford:

This letter is in response to the Nevada Division of Environmental Protection's (NDEP's) request for approval for the relocation of SLAMS (State/Local Air Monitoring Station) ozone monitoring at 3300 E. 5th Street (Site ID: 32-510-0002) to 2601 S. Carson Street in Carson City, NV. NDEP has also documented the proposed change to the network in the most recent *Ambient Air Monitoring Network Plan* for 2012 (Page 5). NDEP made the plan available for public inspection prior to its submittal to EPA and received no public comments on this proposed monitoring network change.

Per 40 CFR 58.14, monitoring agencies are required to obtain EPA approval for the discontinuation of SLAMS monitors. In a letter to EPA dated May 2, 2012, NDEP explained that the Carson City Public Works requested the 5th Street monitoring site be moved to a new location, and that continued operation at the site would not be possible. NDEP later followed up with additional information in support of the proposed S. Carson Street location, including verification that the new site would meet 40 CFR 58 Appendix D and E siting requirements and be located in a more densely populated area (compared to the 5th Street site) of Carson City.

In addition to the supporting information provided by NDEP for the site relocation, EPA evaluated the comparability of ozone concentrations in the nearby Carson City area, including those coming from monitors along the Carson City predominant wind direction (i.e. from the southwest towards the northeast). Monitors evaluated included:

- *Incline* (Site ID: 32-031-2002): North Tahoe region.
- *Little Norway/ Echo Summit* (Site ID: 06-017-0012): South Tahoe region.
- *Long St.* (Site ID: 32-510-0004): Carson City monitor in operation until 2007.
- *5th St.* (Site ID: 32-510-0002): Current Carson City monitor in operation since 2008.
- *Fernley* (Site ID: 32-019-0006): Closest downwind monitor, northeast of Carson City.
- *Fallon* (Site ID: 32-001-0002): 2nd Closest downwind monitor, northeast of Carson City.

Specifically, EPA examined 8-hour 4th maximum ozone yearly trends for 2001-2011, along with 8-hour daily maximum ozone concentrations for 2011. EPA's analysis indicated that it is unlikely that a major shift in ozone concentrations would occur for this relatively small scale ozone site relocation within the Carson City Metropolitan Statistical Area (MSA). Furthermore, since the relocation is less than four kilometers away, the site would remain within the same neighborhood spatial scale of representation. On a larger scale, EPA's analysis showed that a gradient may be present between South Tahoe and northeast of Carson City (i.e. in the Fernley and Fallon direction). On this larger scale, higher ozone

concentrations were generally observed coming from the South Tahoe upwind direction and decreasing as they passed through Carson City and on to Fernley/Fallon. This gradient is unlikely to have major implications for the proposed small scale ozone site relocation within Carson City. Enclosed are plots of the yearly and daily trends examined during EPA's analysis, as well as a maps showing the ozone monitor locations.

Based on the weight of the evidence and pursuant to 40 CFR 58.14(c)(6), EPA approves NDEP's relocation of SLAMS ozone monitoring at 3300 E. 5th Street to 2601 S. Carson Street in Carson City, NV. Upon installation and operation of the Carson Street site, EPA recommends that NDEP evaluate whether the new site reports concentrations consistent with the previous site and take appropriate action if lower ozone concentrations are observed. An appropriate forum to report the analysis of ozone concentrations would be NDEP's next 5-year air monitoring network assessment, due in 2015.

If there are any questions regarding this letter, please feel free to contact me at (415) 972-3851 or Elfego Felix of my staff at (415) 947-4141.

Sincerely,

/s/

Matthew Lakin, Manager
Air Quality Analysis Office

Enclosures
Attachment A: Map of Larger Carson City Area Ozone monitors.
Attachment B: Map of Carson City Ozone monitors.
Attachment C: Plot of 2001-2011 Carson City Area 8-hour Ozone 4th maximum values.
Attachment D: Plot of 2011 Carson City Area Daily maximum 8-hour Ozone.

cc: Daren Winkelman, Monitoring Supervisor, NDEP-BAQP

Appendix D.

Comment Submittal Information

The proposed 2014 Ambient Air Monitoring Network Plan is posted on the NDEP website for review and comment for thirty (30) days.

Comments may be emailed to
Daren Winkelman (dwinkelman@ndep.nv.gov)
or mailed to,
Daren Winkelman
Ambient Monitoring Program
Bureau of Air Quality Planning
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701