Wyoming Ambient Air Monitoring Annual Network Plan 2011

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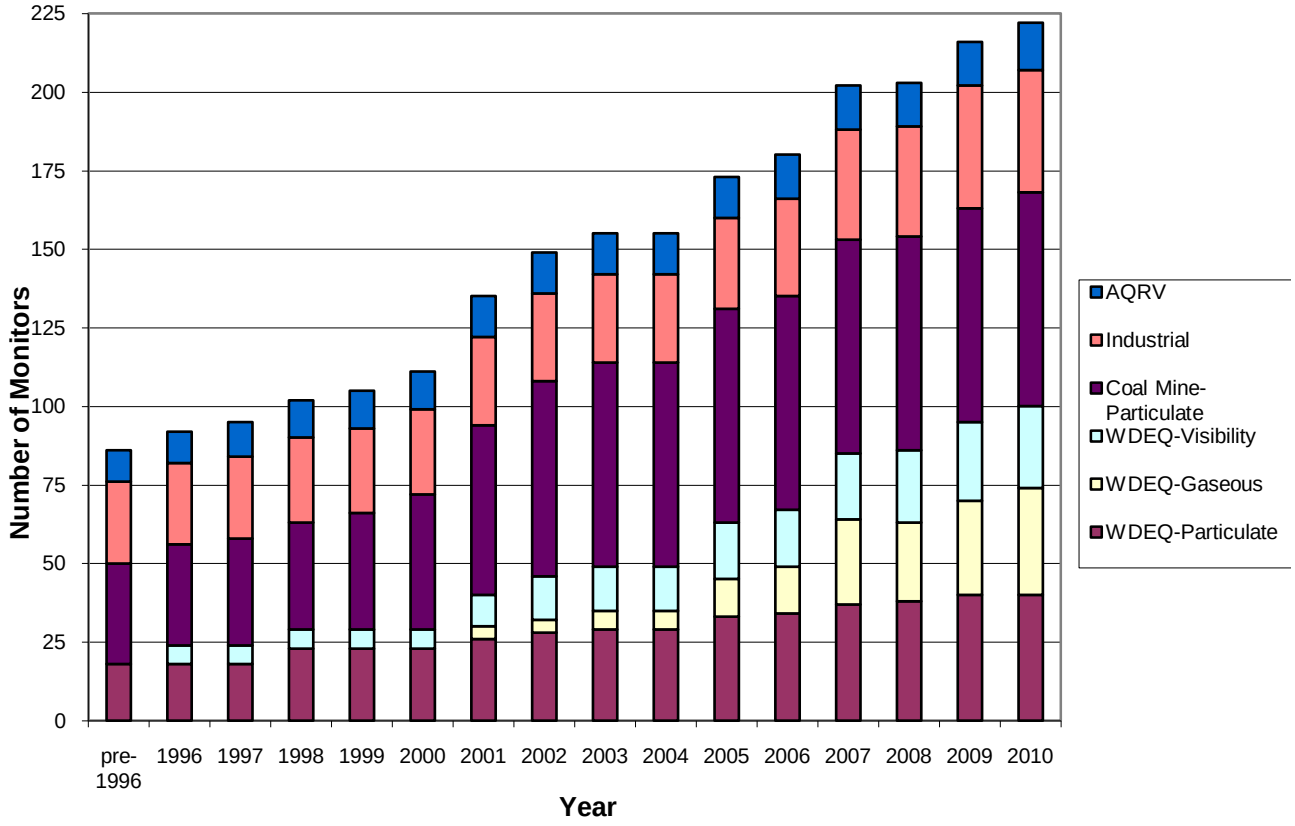
1.0 Introduction

The United Sates Environmental Protection Agency (EPA) through the Code of Federal Regulations (CFR) and the Performance Partnership Agreement requires the State of Wyoming Department of Environmental Quality, Air Quality Division (AQD) to complete the Wyoming Ambient Air Monitoring Annual Network Plan for the State's ambient air monitoring sites. The Wyoming Department of Environmental Quality (WDEQ) strives to protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

1.1 The AQD Monitoring History

Since the 1970's the AQD Monitoring Program has been working actively to evaluate monitoring requirements and use available resources effectively for the State of Wyoming. The Air Quality Resource Management Program serves the Division by looking at monitored data in conjunction with emission inventory trends and planned development to shape the AQD's air quality management policies in the future. Not only does the AQD run the State and Local Air Monitoring Sites (SLAMS) to monitor public health, but also runs or oversees several special purpose monitors (SPM) to track impacts from the many industrial sources that reside in Wyoming. The AQD also helps fund and evaluate data from Air Quality Related Value (AQRV) monitoring within Wyoming, such as visibility and acid deposition. The following graph shows the number of monitors the AQD runs or oversees by year since 1996.



1.2 General Monitoring Goals and Objectives

The Wyoming AQD has the responsibility to protect, conserve, and enhance the quality of Wyoming's air resource. The AQD helps ensure the ambient air quality in the State of Wyoming is maintained in accordance with the National Ambient Air Quality Standards (NAAQS). To carry out this goal, the AQD operates and maintains a network of ambient air quality monitors and requires industrial pollution sources to conduct source specific ambient air monitoring.

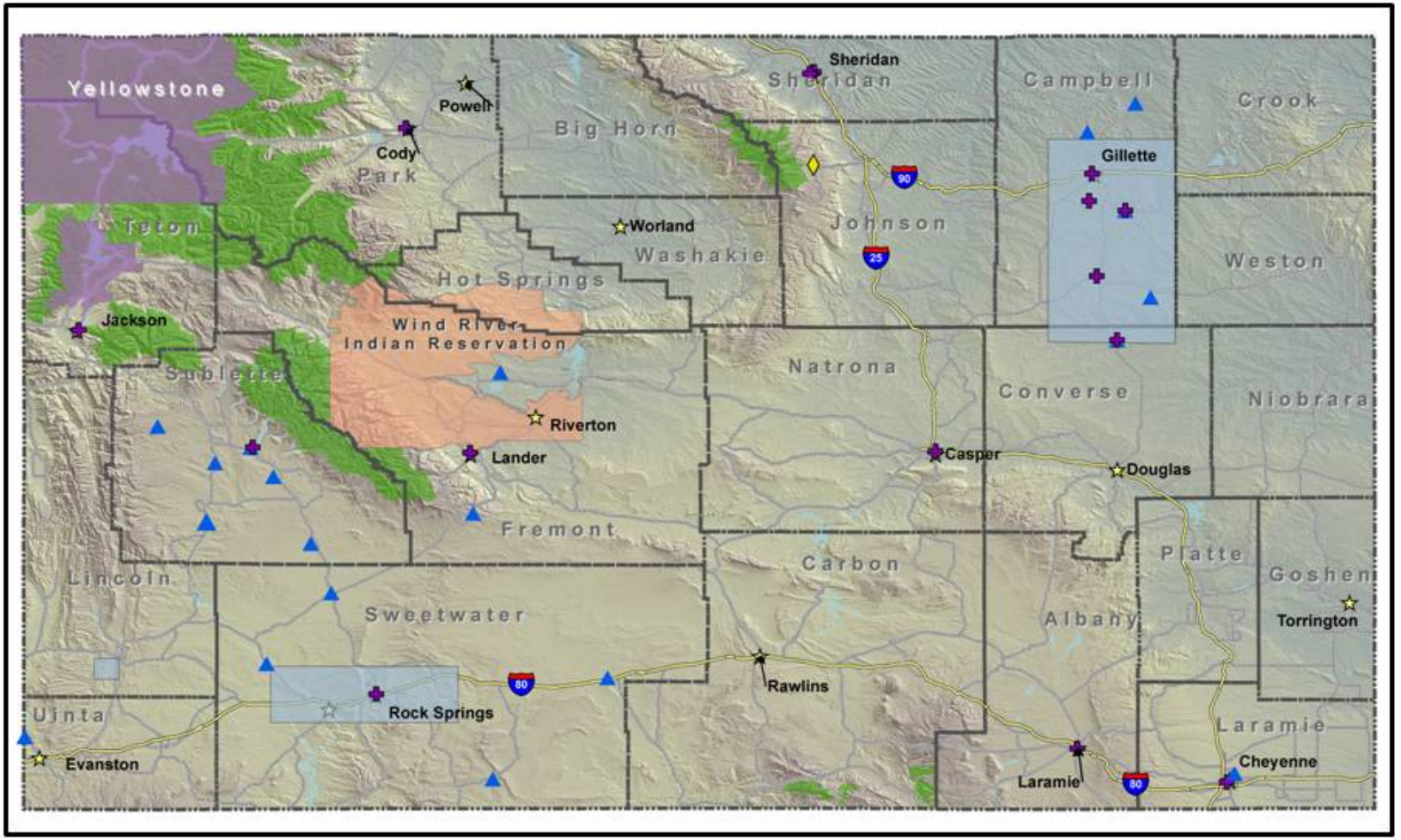
The Wyoming monitoring network, as a whole, is designed to meet the following seven basic ambient air monitoring objectives:

1) Determine representative concentrations in areas of high population density
2) Determine impact on ambient air quality from significant sources
3) Determine general background concentration levels
4) Determine the extent of regional pollutant transport among populated areas and in rural and remote areas
5) Determine welfare-related impacts in support of secondary standards
6) Determine highest concentration expected to occur in the area covered by the network
7) Research pollutant and meteorological behaviors in areas of concern

Not every monitor will meet each one of the objectives, but the complete monitoring network will encompass all seven objectives.

The following map shows the Wyoming monitor locations separated into Particulate Matter, Gaseous and Visibility sites. The shaded areas on the map denote large industrial networks in Campbell, Sweetwater, and Lincoln Counties.

The table below provides a brief overview of the Wyoming Monitoring Network.


Yellowstone
Powell
Cody
Park
Big Horn
Sheridan
Sheridan
Campbell
Crook
Gillette
Teton
Worland
Washakie
Johnson
Weston
Hot Springs
Jackson
Wind River
Indian Reservation
Sublette
Natrona
Converse
Niobrara
Riverton
Lander
Casper
Douglas
Fremont
Carbon
Platte
Goshen
Lincoln
Sweetwater
Albany
Torrington
Rawlins
Rock Springs
Uinta
Laramie
Evanston
Cheyenne
Laramie
Air Quality
Monitoring Network
Map Produced by
WDEQ
Air Quality Division
City
State-Gaseous
State-PM
State-Visibility
Industrial Network
Wind River Indian Reservation
Forest Service Class 1
National Park Service Class 1
0 12.5 25 50 75 100
Miles
1:3,000,000

Overview of Wyoming Monitors

Name	County	PARAMETER										
		PM_{10} (manual)	PM_{10} (continuous)	$PM_{2.5}$ (manual)	$PM_{2.5}$ (continuous)	NO_X	O_3	SO_2	CO	Camera	Met	Other
Laramie	Albany Co	X		X								
Belle Ayr Mine	Campbell Co				X	X					X	
Black Thunder Mine	Campbell Co				X							
Buckskin Mine	Campbell Co				X							
Campbell County	Campbell Co		X			X	X			X	X	
Gillette	Campbell Co	X										
Thunder Basin	Campbell Co					X	X			X	X	Visibility
Wright	Campbell Co	X										
Antelope Mine	Converse Co				X	X					X	
Lander	Fremont Co	X		X								
Pavillion	Fremont Co		X		X	X	X			X	X	Methane/NMHC*
South Pass	Fremont Co		X			X	X			X	X	Aerosol
Cloud Peak	Johnson Co									X	X	Visibility
Cheyenne	Laramie Co	X		X								
Cheyenne NCore	Laramie Co			X	X	X	X	Trace	Trace	X	X	NO/NOy, $PM_{10-2.5}$, Speciated $PM_{2.5}$
Casper	Natrona Co	X		X								
Cody	Park Co	X		X								
Sheridan - Highland Park	Sheridan Co	X		X								
Sheridan - Police Station	Sheridan Co		X	X								
Big Piney	Sublette Co		X		X	X	X			X	X	Methane/NMHC*
Boulder	Sublette Co		X			X	X			X	X	Visibility Methane/NMHC* Photolytic NO_2
Daniel South	Sublette Co		X			X	X			X	X	
Farson	Sublette Co										X	
Juel Spring	Sublette Co					X	X			X	X	
Pinedale	Sublette Co			X	X	X	X			X	X	
Hiawatha	Sweetwater Co						X			X	X	
Moxa	Sweetwater Co		X			X	X	X		X	X	
Rock Springs	Sweetwater Co	X		X								
Wamsutter	Sweetwater Co		X			X	X			X	X	
Wyoming Range	Sweetwater Co		X		X	X	X			X	X	
Jackson	Teton Co	X		X								
Murphy Ridge	Uinta Co		X		X	X	X			X	X	

*Non Methane Hydrocarbons

2.0 Air Monitoring Plan in 2011

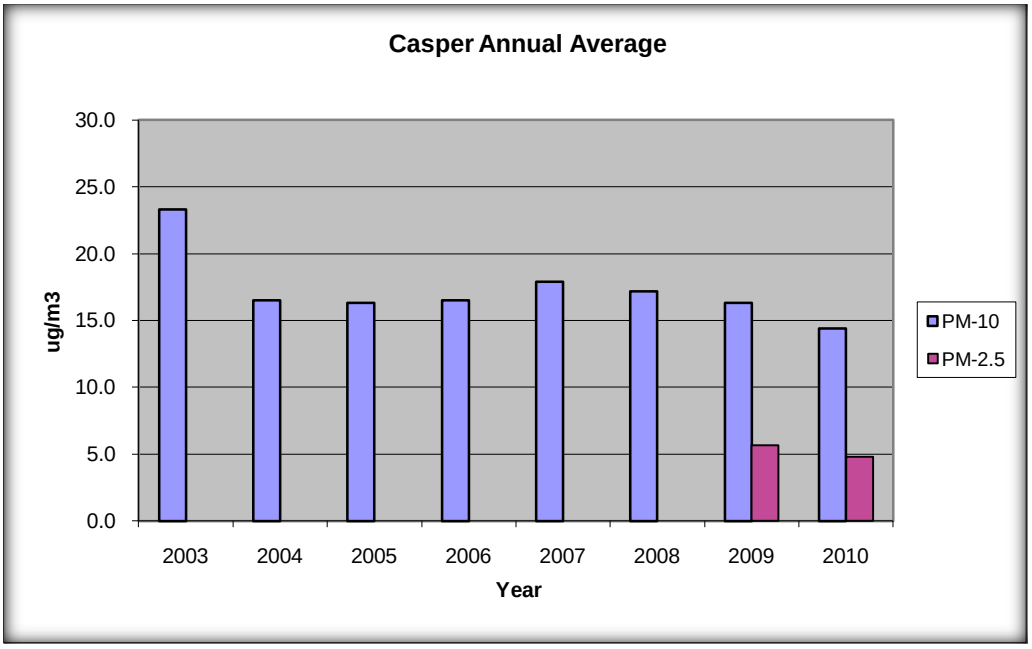
2.1 State and Local Air Monitoring Sites (SLAMS)

The State and Local Air Monitoring Sites (SLAMS) are used for supplying general monitoring data for criteria pollutants and determining compliance with the NAAQS. The SLAMS are relatively stable sites that must meet and follow specific quality assurance, monitoring methodology, sampling objective and siting requirements. The AQD SLAMS sites have been placed in Wyoming's most populous towns with the purpose of determining compliance with NAAQS for the protection of public health. The ten sites specified as Wyoming SLAMS locations are described below:

2.1.1 Casper

Casper Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Casper PM_{10} with collocation	City, County Bldg; Center & C Streets (Casper MSA)	56-025-0001	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Casper $PM_{2.5}$	City, County Bldg; Center & C Streets (Casper MSA)	56-025-0001	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

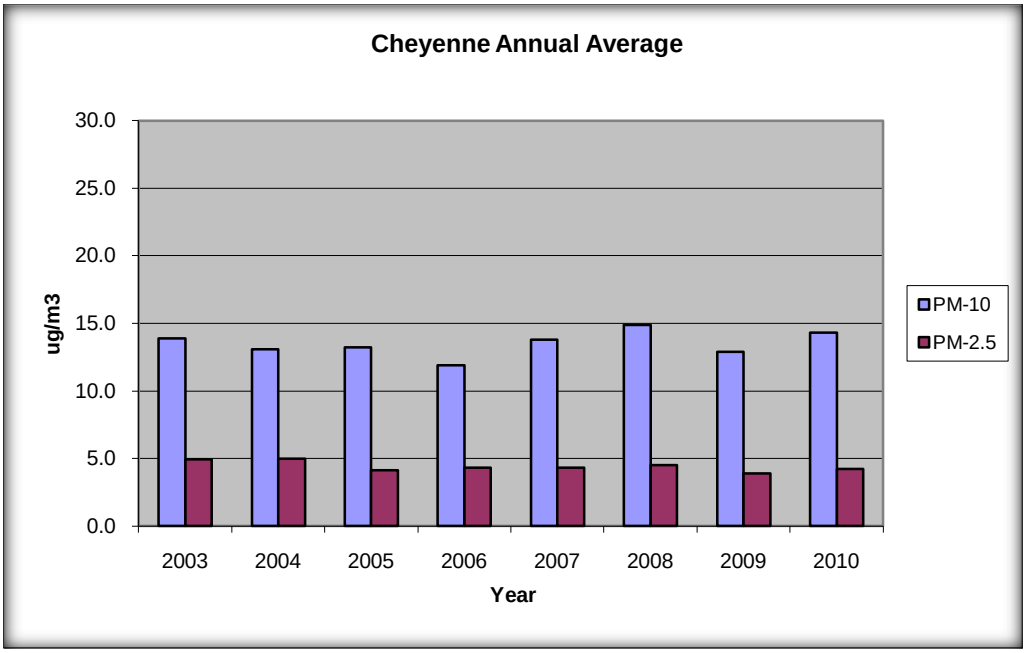
This site is located in downtown Casper, a city of approximately 55,300 people. Casper is the second largest city in Wyoming, located in Natrona County near the center of the State. This site is in the Casper, Wyoming Metropolitan Statistical Area (MSA). PM_{10} sampling began at this site in 1991. A collocated PM_{10} sampler was added in 2001. The Casper monitoring site hi-volume PM_{10} samplers were replaced with low-volume partisols during 2010. The AQD added $PM_{2.5}$ sampling at the Casper site on May 22, 2009. The AQD is interested in monitoring $PM_{2.5}$ concentrations in Casper because it is one of Wyoming's most heavily populated areas.



2.1.2 Cheyenne

Cheyenne Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Cheyenne PM_{10} with collocation	State Office Building 23rd & Central Ave. (Cheyenne MSA)	56-021-0001	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Cheyenne $PM_{2.5}$ with collocation	State Office Building 23rd & Central Ave. (Cheyenne MSA)	56-021-0001	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

The Cheyenne monitoring site is located in downtown Cheyenne on a State of Wyoming building. Cheyenne's population is approximately 59,500 people; it is the capital and largest city in Wyoming. This site is in the Cheyenne, Wyoming MSA. The PM_{10} sampling began at this site in 1991. A collocated PM_{10} sampler was added in 2002. The $PM_{2.5}$ monitors were installed in 1998. A collocated $PM_{2.5}$ sampler was added in March, 2009 to comply with 40 CFR Part 58 requirements for collocation of samplers.

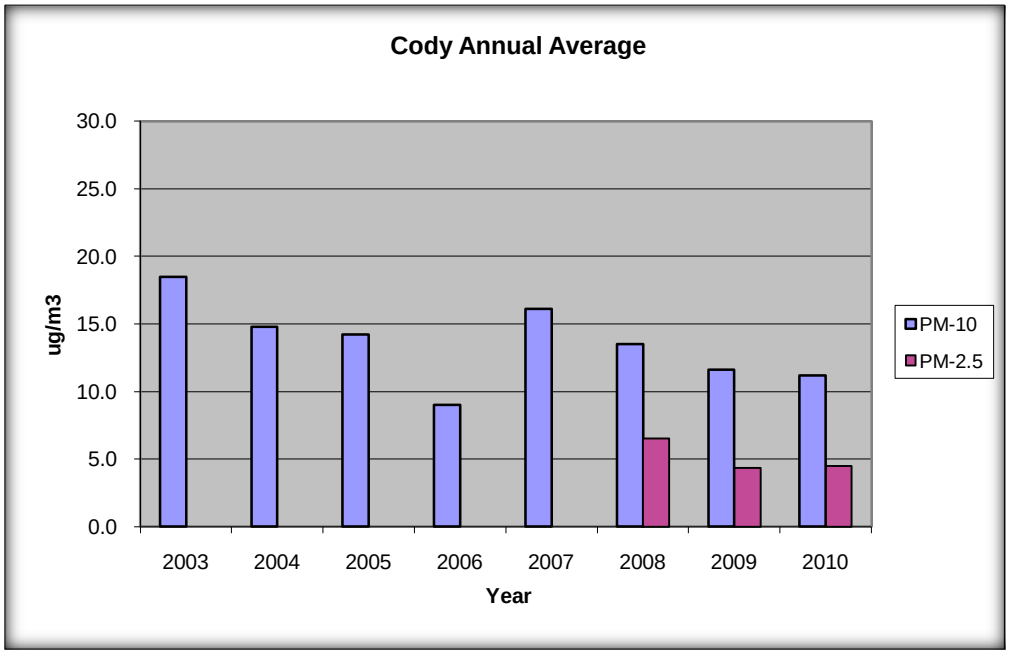

Cheyenne Annual Average
30.0
25.0
20.0
15.0
10.0
5.0
0.0
ug/m3
2003
2004
2005
2006
2007
2008
2009
2010
Year
PM-10
PM-2.5

2.1.3 Cody


120
14
291
16

Cody Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Cody PM_{10}	Cody Jr. High School	56-029-0001	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Cody $PM_{2.5}$	Cody Jr. High School	56-029-0001	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

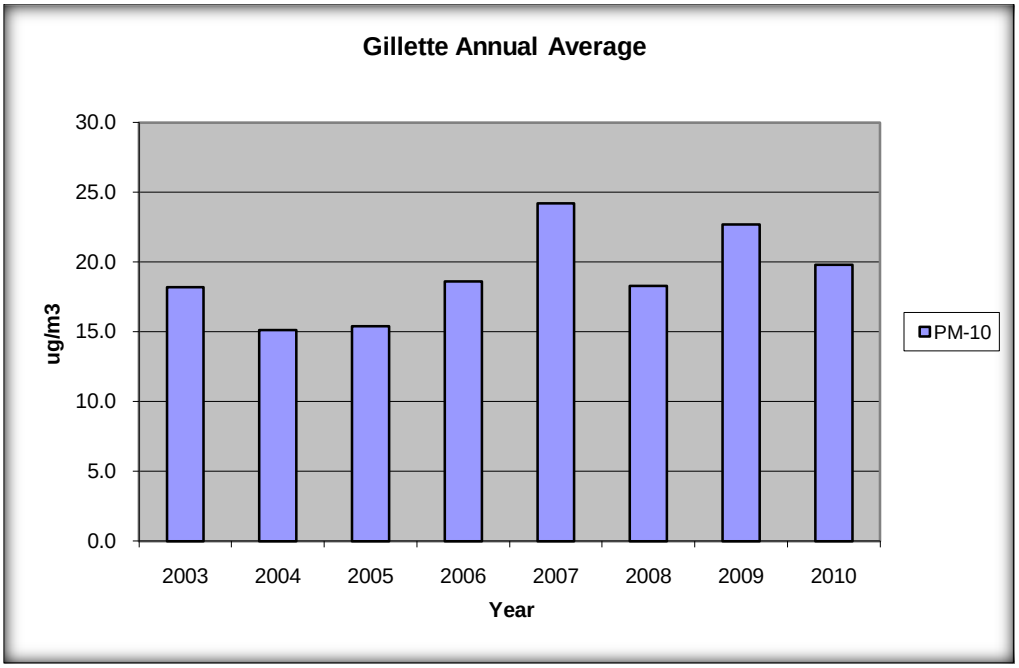
Cody is located in the northwest portion of the State situated in Park County; its population is approximately 9,500. PM_{10} sampling began at this site in 1988. Cody $PM_{2.5}$ monitoring started in June, 2008. The AQD is interested in monitoring $PM_{2.5}$ concentrations in Cody to monitor impacts from wintertime sanding, wood smoke, summertime forest fires, and the nearby lake bed that can be exposed when available water is low. The Cody PM_{10} samplers were upgraded to more reliable low-volume samplers during 2010.



2.1.4 Gillette

Gillette Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Gillette PM_{10}	1000 West 8th Street	56-005-1002	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/6	No planned changes

Gillette is located in Campbell County Wyoming; its population is approximately 29,100 and is considered a micropolitan statistical area. PM_{10} sampling began at this site in 1991. The Gillette PM_{10} sampler was upgraded to a more reliable low-volume sampler during 2010.

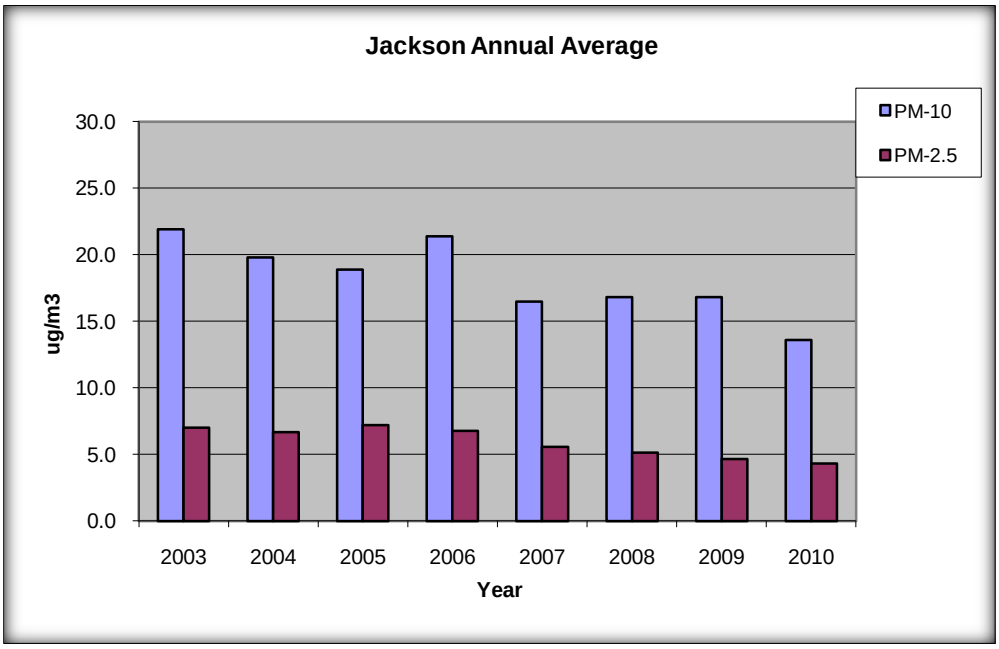

Gillette Annual Average
30.0
25.0
20.0
15.0
10.0
5.0
0.0
ug/m3
2003
2004
2005
2006
2007
2008
2009
2010
Year
PM-10

2.1.5 Jackson


26
22

Jackson Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Jackson PM_{10}	40 E Pearl Ave.	56-039-1006	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Jackson $PM_{2.5}$	40 E Pearl Ave.	56-039-1006	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

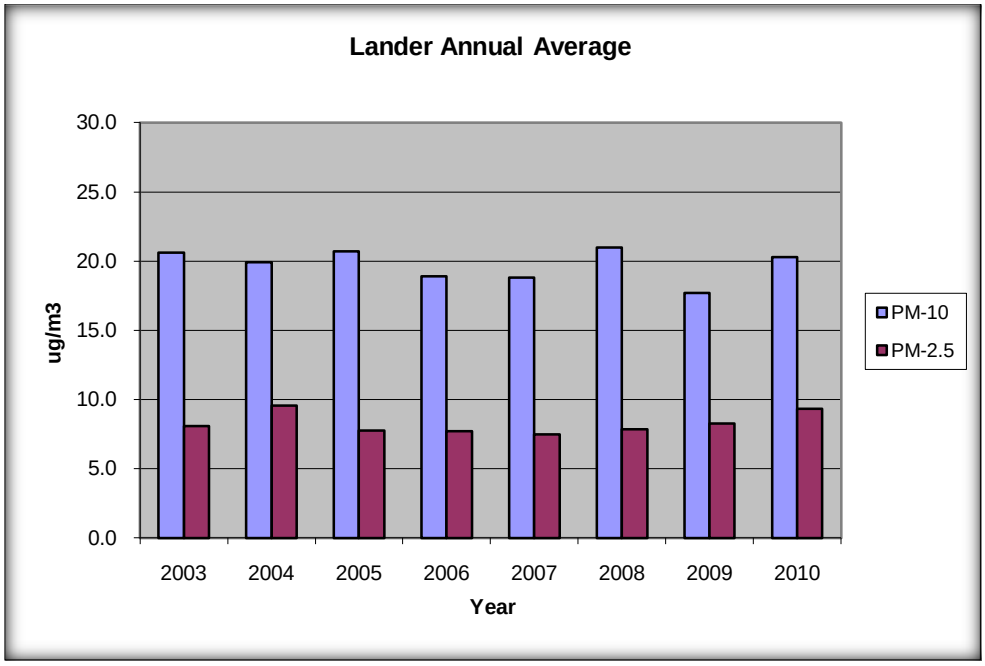
Jackson is located in Teton County in northwest Wyoming. Jackson is considered a micropolitan statistical area with a population of approximately 9,600. PM_{10} and $PM_{2.5}$ sampling began in Jackson in 2001. Sampling at the current location began in 2006.



2.1.6 Lander

Lander Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Lander PM_{10}	600 Washington	56-013-1003	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Lander $PM_{2.5}$	600 Washington	56-013-1003	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

The Lander monitoring site is located at 600 Washington. Lander is located in Fremont County and has a population of approximately 7,500. PM_{10} sampling began at this site in 1989. The $PM_{2.5}$ monitors were installed in 2001.

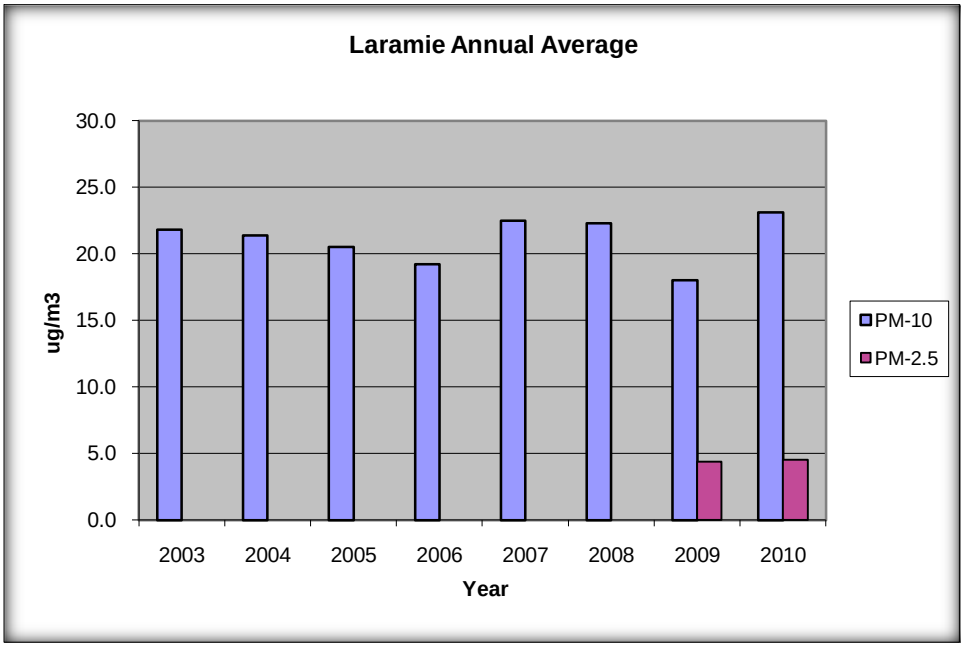

Lander Annual Average
30.0
25.0
20.0
15.0
10.0
5.0
0.0
ug/m3
2003
2004
2005
2006
2007
2008
2009
2010
Year
PM-10
PM-2.5

2.1.7 Laramie

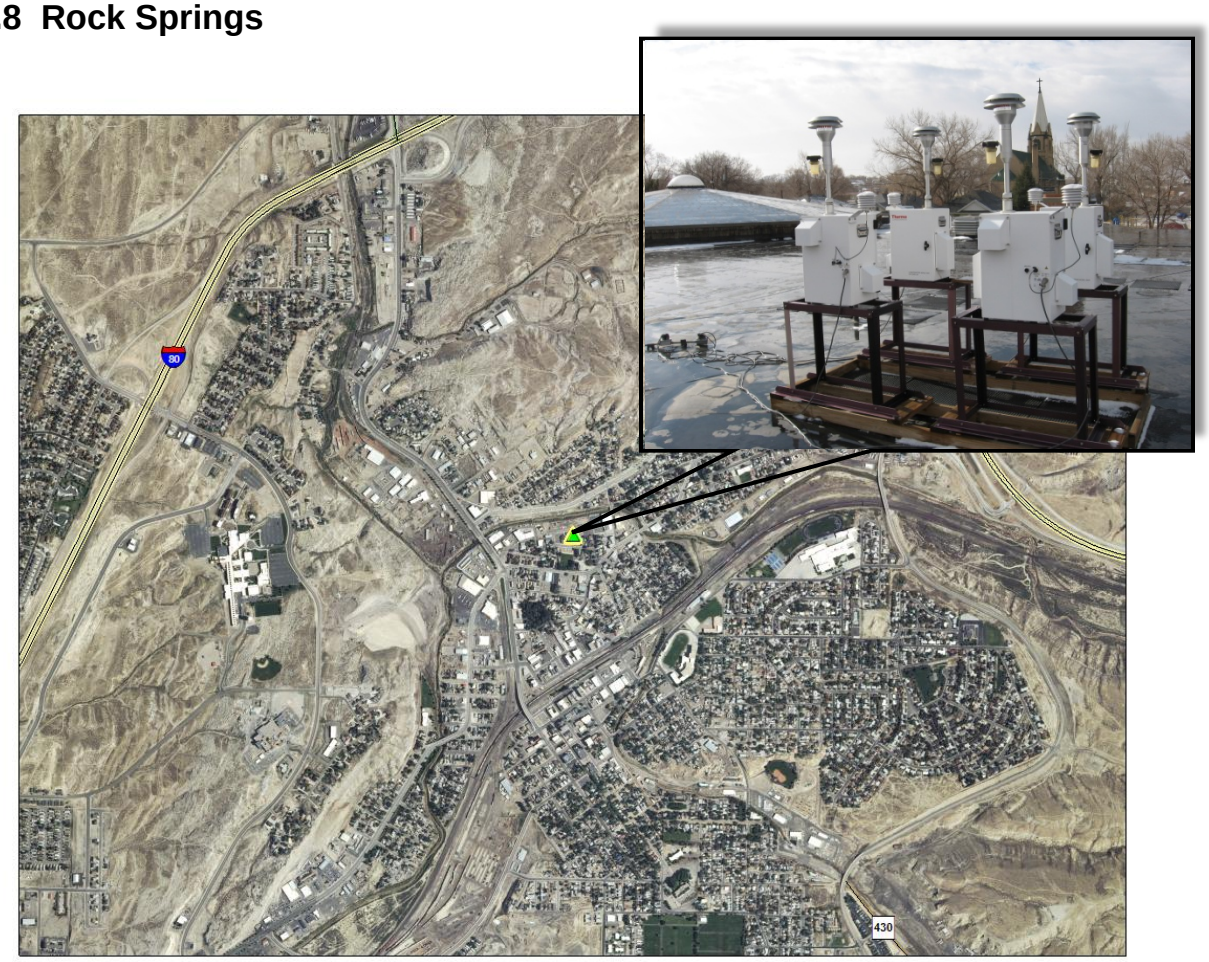

287
130
80

Laramie Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Laramie PM_{10}	406 Ivinson	56-001-0006	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Laramie $PM_{2.5}$	406 Ivinson	56-001-0006	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

Laramie is located in the southeast portion of Wyoming in Albany County. Laramie has a population of approximately 30,800 and is considered a micropolitan statistical area. PM_{10} sampling began at this site in 1989. The AQD began $PM_{2.5}$ sampling in Laramie on July 12, 2009. The AQD is interested in $PM_{2.5}$ sampling at this location to monitor impacts from wintertime sanding, wood smoke, and summertime forest fires. The AQD upgraded the Laramie site PM_{10} samplers to low-volume samplers during 2010.

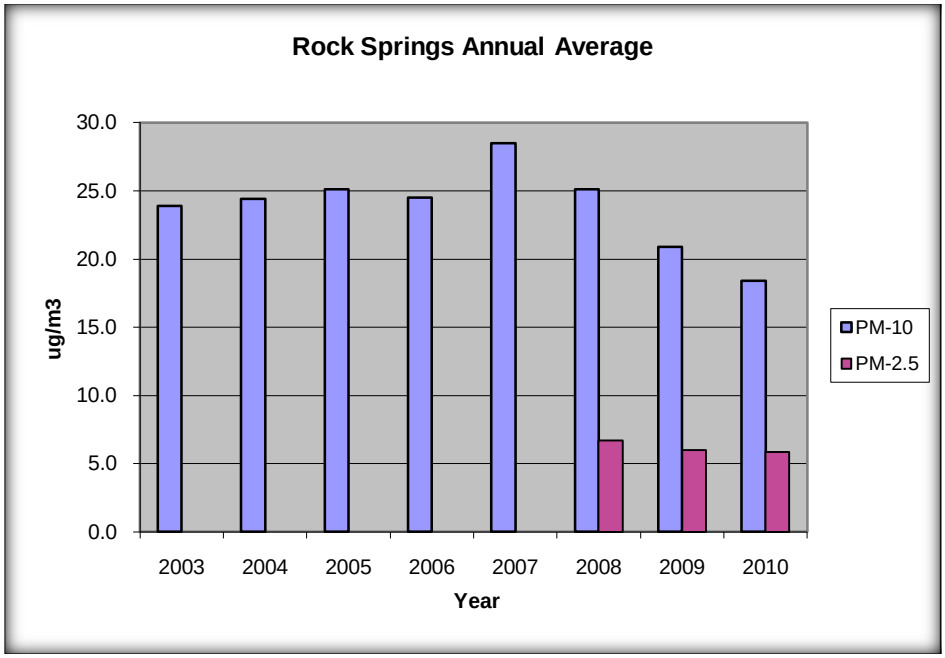


2.1.8 Rock Springs



Rock Springs Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Rock Springs PM_{10}	625 Ahsay Ave.	56-037-0007	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Rock Springs $PM_{2.5}$	625 Ahsay Ave.	56-037-0007	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

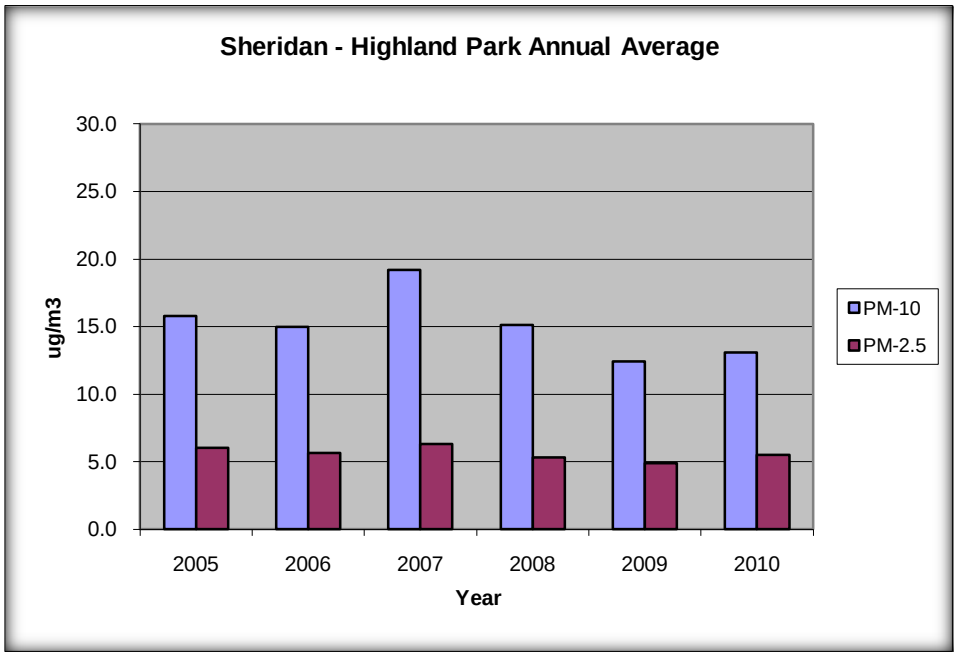
Rock Springs is located in Sweetwater County in southwest Wyoming. Rock Springs is a micropolitan statistical area and has a population of approximately 23,000. PM_{10} sampling began at this site in 1989. The AQD added $PM_{2.5}$ monitoring to Rock Springs in March, 2008. The AQD is interested in monitoring $PM_{2.5}$ concentrations in Rock Springs due to the substantial population growth and energy development occurring in the area.



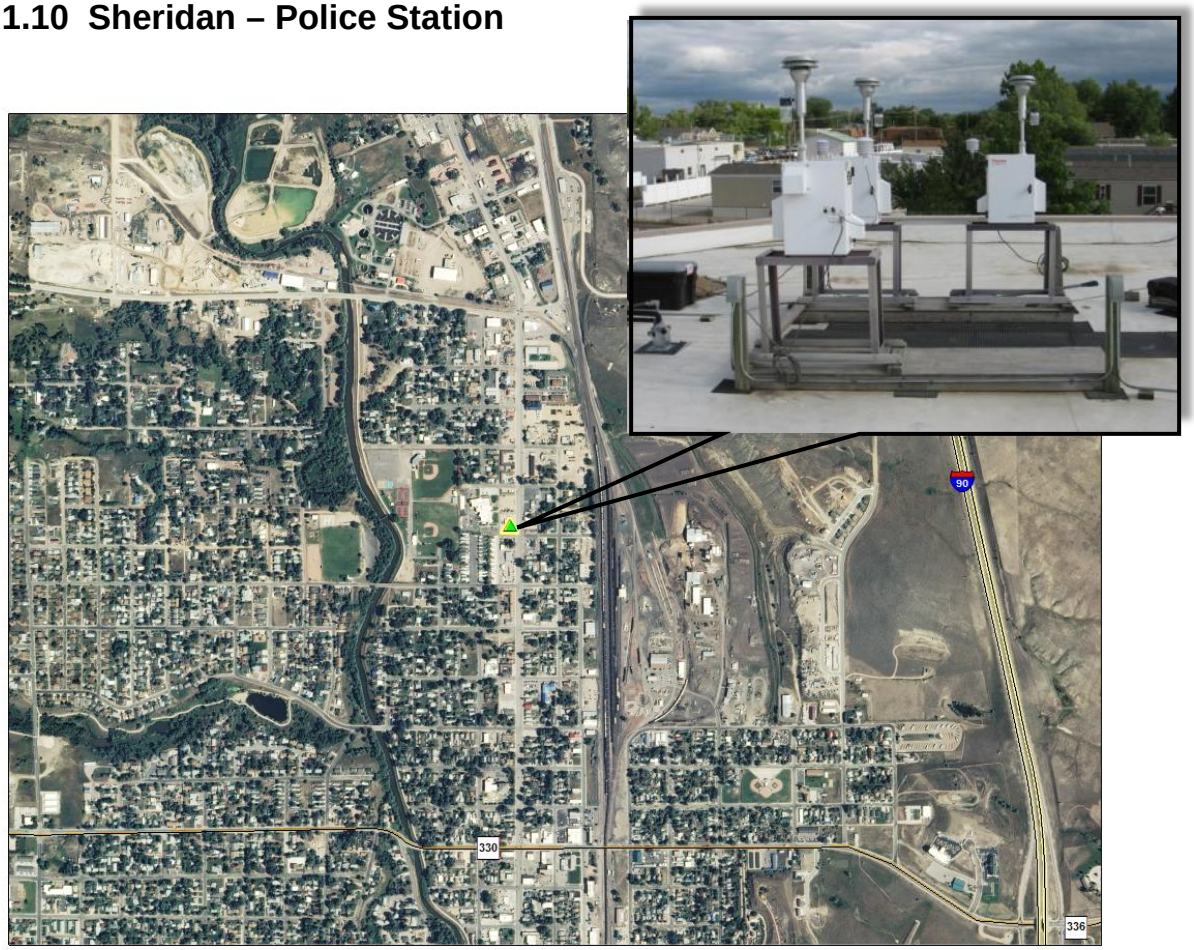
2.1.9 Sheridan – Highland Park

Sheridan – Highland Park Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Sheridan – Highland Park PM_{10} with collocation	1301 Avon	56-033-0003	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes
Sheridan – Highland Park $PM_{2.5}$	1301 Avon	56-033-0003	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

Sheridan – Highland Park is one of two monitoring stations in the city of Sheridan, a micropolitan statistical area. Sheridan is located in Sheridan County and has a population of approximately 17,400. The City of Sheridan is Wyoming's only non-attainment area for PM_{10}. In June of 2005, the PM_{10} and $PM_{2.5}$ sampling were moved from the Sheridan Middle School to the Highland Park School, when the Middle School was torn down. Prior to 2005, PM_{10} had been monitored at the Middle School since 1998. The Highland Park monitoring location was chosen as being representative of population exposure in a residential neighborhood. A collocated PM_{10} monitor was placed at the Highland Park Station, in 2007, to fulfill collocation requirements for the SLAMS network.

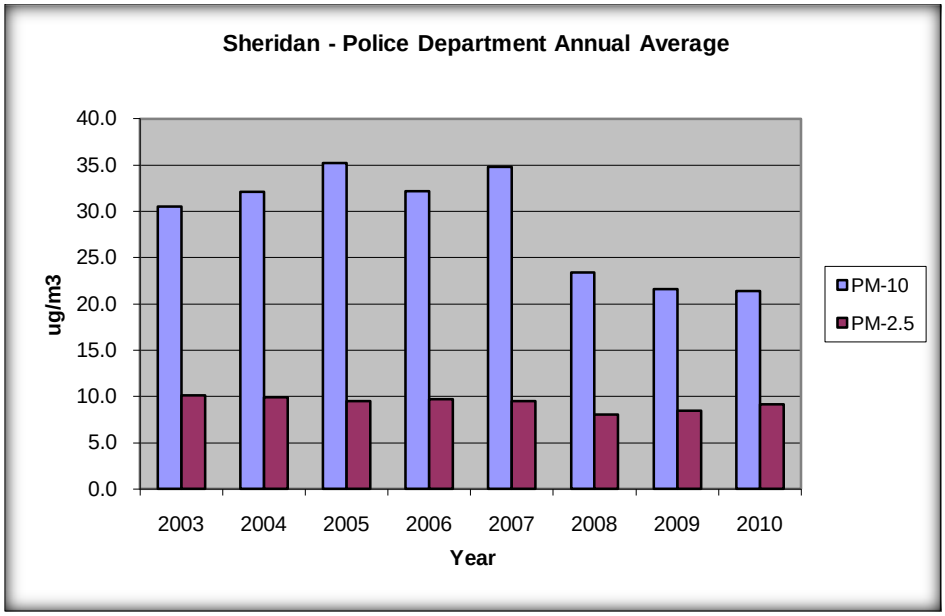


2.1.10 Sheridan – Police Station



Sheridan – Police Station Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Sample Frequency**	**Operational Status**
Sheridan – Police Station PM_{10}	45 West 12th Street	56-033-0002	PM_{10}	Continuous TEOM	Neighborhood	Hourly	No planned changes
Sheridan – Police Station $PM_{2.5}$ with collocation	45 West 12th Street	56-033-0002	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

The Sheridan – Police Station site is one of the oldest monitoring sites in Wyoming. Sheridan has a population of approximately 17,400 and is considered a micropolitan statistical area. Sheridan is a non-attainment area for 24-hour PM_{10}. Filter-based PM_{10} sampling began at this site in 1985. A PM_{10} continuous TEOM sampler replaced the filter-based monitors on October 1, 2007. This allows the AQD to run year-round everyday sampling in Sheridan in an efficient and cost effective manner. Additionally, meteorology instrumentation was added to the Police Station site in 2008 to monitor weather conditions, giving the AQD better information to work with the community to prevent PM_{10} exceedances. $PM_{2.5}$ sampling started in 1998 at this site.



2.2 Special Purpose Monitoring (SPM)

The Special Purpose Monitoring (SPM) sites are used to support the SLAMS sites and provide special studies and information needed by the State and local agencies to support air program activities. The SPMs can be adjusted to accommodate changing circumstances, needs and priorities. Section 2.2 includes SPM stations operating in Wyoming as of May 2011.

The following SPM sites have a spatial (measurement) scale associated with each parameter at each site used to allow for an understanding of what the ambient air monitor represents in terms of a surrounding, relatively homogeneous parcel of air. These spatial scales are spelled out in 40 CFR Part 58. A scale is assigned to each parameter at the site to indicate what the measurement scale of a particular monitor represents. The monitoring objective and spatial scale are determined when the monitoring station is initiated and may be updated if the monitoring objective changes throughout the life of the monitoring station.

2.2.1 Boulder

Boulder Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Boulder	5 mi. SW of Boulder, WY	56-035-0099	Ozone	Real Time	Neighborhood/ Urban	Hourly	No planned changes
			Nitric Oxide	Real Time	Neighborhood	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Neighborhood	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Neighborhood	Hourly	No planned changes
			Methane/ NMHC	Real Time	Regional	Hourly	No planned changes
			PM_{10}	Continuous TEOM	Neighborhood	Hourly	No planned changes

The Boulder Site is located approximately 5 miles southwest of Boulder, Wyoming and is used to track air quality in an area of natural gas development. The Boulder Station includes gaseous (NO_x and ozone), continuous particulate (PM_{10} TEOM), methane/non-methane hydrocarbons, nephelometer, camera system and meteorological monitoring. The Boulder Monitoring Station was also a hub for the AQD's 2007 - 2011 Upper Green Winter Ozone Studies. During the past year the site also housed methane/non-methane hydrocarbon monitoring, photolytic NO_2, Nitrous Acid (HONO) monitoring, VOC monitoring, NO_y monitoring, speciated $PM_{2.5}$, UV radiometers, and upper air monitoring. Shell Exploration and Production assisted with funding for this site and uses the site, since December 2006, to monitor for ammonia.

2.2.2 Cloud Peak

The Cloud Peak Site is located approximately 15 miles west of Buffalo, WY and is used to track visibility and meteorology in the area. The Cloud Peak Station includes a nephelometer, camera system and meteorological monitoring.

2.2.3 Farson

The AQD established a meteorological monitoring site to obtain meteorological data for the purposes of characterizing the general air quality near Farson, Wyoming. This general area was targeted, in the Southwest Wyoming and 2010 Network Assessment, as a location to help fill a gap in needed meteorological data. The data collected at this site will be used for AERMOD modeling and comparison with other ambient air monitoring data.

2.2.4 Hiawatha

Hiawatha Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Hiawatha	35 mi. S of Rock Springs, WY	56-037-0077	Ozone	Real Time	Regional	Hourly	No planned changes

The AQD began operation of the Hiawatha monitor in May, 2011. This is the AQD's first monitoring station that uses renewable energy as its primary power source. The new solar/wind powered monitoring station is located 35 miles south of Rock Springs, in the Hiawatha Gas Field. The monitoring station was established to assess ambient air quality in an area of oil and gas development. The Hiawatha station includes ozone, camera system, and meteorological monitoring.

2.2.5 Juel Spring

Juel Spring Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Juel Spring	20 miles NW of Farson, WY	56-035-1002	Ozone	Real Time	Urban	Hourly	No planned changes
			Nitric Oxide	Real Time	Urban	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Urban	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Urban	Hourly	No planned changes

The Juel Spring monitoring began in December 2009. This site is located downwind from the Jonah Gas Field, an area of heavy oil and gas development. The Juel Spring Station includes gaseous (NO_x and ozone), camera system and meteorological monitoring. This station is located in conjunction with the Union Cellular Juel Spring Tower site. It is located approximately 15 miles southeast of the old Jonah monitoring site. The results of the AQD's Network Review in 2008 for Southwest Wyoming; concluded that the old Jonah monitor was no longer meeting its original objective as a downwind monitoring site for the Jonah Gas Field. This area was suggested as a superior location for meeting this downwind objective.

2.2.6 Moxa

Moxa Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Moxa	25 miles NW of Green River	56-037-0300	Ozone	Real Time	Urban	Hourly	No planned changes
			Sulfur Dioxide	Real Time	Urban	Hourly	No planned changes
			Nitric Oxide	Real Time	Urban	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Urban	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Urban	Hourly	No planned changes
			PM_{10}	Continuous TEOM	Urban	Hourly	No planned changes

The Moxa site was installed in May 2010. This site is located approximately 25 miles northwest of Green River. The purpose of this monitoring site is to characterize and monitor meteorology and air quality in an area of heavy energy development. This site includes NO_x, SO_2, ozone, continuous particulate (PM_{10} TEOM), camera system, and meteorology monitors.

2.2.7 Murphy Ridge

Murphy Ridge Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Murphy Ridge	Bear River, WY	56-041-0101	Ozone	Real Time	Regional	Hourly	No planned changes
			Nitric Oxide	Real Time	Regional	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Regional	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Regional	Hourly	No planned changes
			PM_{10}	Continuous TEOM	Regional	Hourly	No planned changes

The Murphy Ridge Air Quality Monitoring Station began operations during 2007. The station is located in the Town of Bear River, approximately ten miles north of Evanston on the Wyoming/Utah border. The Murphy Ridge site is located approximately 1 mile from the Murphy Ridge NADP wet deposition site. The purpose of this station is to monitor the air masses coming from Utah and to provide insight on these air masses in conjunction with the data collected from the Murphy Ridge NADP monitor. This site monitors NO_x, ozone, continuous particulate (PM_{10} TEOM), and meteorology. The site is also equipped with a camera.

2.2.8 Pinedale

Pinedale $PM_{2.5}$ Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Pinedale $PM_{2.5}$	101 East Hennick	56-035-0705	$PM_{2.5}$	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/3	No planned changes

Pinedale is located in Sublette County with a population of approximately 2,000 people. $PM_{2.5}$ sampling started in 2005 at this site.

Pinedale Gaseous Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Pinedale	West side of City Park and Pine Creek	56-035-0101	Ozone	Real Time	Urban	Hourly	No planned changes
			Nitric Oxide	Real Time	Urban	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Urban	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Urban	Hourly	No planned changes
			$PM_{2.5}$	Continuous BAM	Urban	Hourly	No planned changes

In January 2009, the AQD added a gaseous monitoring site in Pinedale, Wyoming. This station includes ozone, NO_X, continuous $PM_{2.5}$ BAM, camera system and meteorology within the town of Pinedale to monitor concentrations in this increasingly populated area. Please note that since the $PM_{2.5}$ BAM monitor is a new technology for the AQD, the operation of this monitor will be under the guidance for "long-term field evaluation" of an FEM or ARM (Chet Wayland memo, 2008). While this monitor meets the 40 CFR Part 58 criteria, the AQD does not plan to classify it as a SLAMS monitor when the field evaluation is over.

2.2.9 South Campbell County

South Campbell County Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
South Campbell County	15 mi. SSW of Gillette	56-005-0456	Ozone	Real Time	Urban	Hourly	No planned changes
			Nitric Oxide	Real Time	Urban	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Urban	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Urban	Hourly	No planned changes
			PM_{10}	Continuous TEOM	Urban	Hourly	No planned changes

The South Campbell County site is located approximately 15 miles southwest of Gillette and is used to track air quality in an area of heavy coal-bed methane development. This station includes gaseous (NO_x and ozone), continuous particulate (PM_{10} TEOM), camera system and meteorological monitoring.

2.2.10 South Daniel

South Daniel Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
South Daniel	5 mi. south of Daniel	56-035-0100	Ozone	Real Time	Regional	Hourly	No planned changes
			Nitric Oxide	Real Time	Regional	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Regional	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Regional	Hourly	No planned changes
			PM_{10}	Continuous TEOM	Regional	Hourly	No planned changes

The South Daniel monitor is located in Sublette County and is used to track air quality upwind of an area of extensive natural gas development. The South Daniel Station includes gaseous (NO_x and ozone), continuous particulate (PM_{10} TEOM), camera system and meteorological monitoring. The South Daniel monitor began operation in July 2005.

2.2.11 South Pass

South Pass Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
South Pass	South Pass, WY	56-013-0099	Ozone	Real Time	Urban	Hourly	No planned changes
			Nitric Oxide	Real Time	Urban	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Urban	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Urban	Hourly	No planned changes
			PM_{10}	Continuous TEOM	Urban	Hourly	No planned changes

The South Pass Air Quality Monitoring Station began operation in 2007. The station is located on South Pass at the southern end of the Wind River Range. The purpose of this station is to monitor air quality on the southern end of the range which sees air masses from both the Upper Green River Basin to the northwest and from the southwestern corner of the State. The station has NO_x, ozone, continuous particulate (PM_{10} TEOM), meteorology, a camera, and the B and C modules of an IMPROVE-type aerosol monitor. The gaseous and aerosol measurements are used in conjunction with NADP data from the South Pass NADP site to examine nitrogen and sulfur in various phases. Additionally the aerosol concentrations of nitrates, sulfates, and carbon

can be used to compare with aerosol concentrations collected at the north end of the range and at all IMPROVE-type aerosol samples collected throughout Wyoming. The AQD added a nephelometer to this location in 2010 to further monitor visibility.

2.2.12 Thunder Basin

Thunder Basin Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Thunder Basin	30 mi. NE of Gillette	56-005-0123	Ozone	Real Time	Regional	Hourly	No planned changes
			Nitric Oxide	Real Time	Regional	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Regional	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Regional	Hourly	No planned changes

The Thunder Basin Site is located approximately 30 miles northeast of Gillette, Wyoming and is used to track visibility, meteorology, and air quality in the area. The Thunder Basin Station includes gaseous (NO_x and ozone), nephelometer, camera system and meteorological monitoring.

2.2.13 Wamsutter

Wamsutter Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Wamsutter	2 mi. west of Wamsutter	56-037-0200	Ozone	Real Time	Urban	Hourly	No planned changes
			Sulfur Dioxide	Real Time	Urban	Hourly	Will be shut down
			Nitric Oxide	Real Time	Urban	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Urban	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Urban	Hourly	No planned changes
			PM_{10}	Continuous TEOM	Urban	Hourly	No planned changes

The Wamsutter Station is approximately two miles west of the town of Wamsutter in Sweetwater County and is used to track meteorology and air quality downwind of an area of extensive natural gas development. The Wamsutter Station includes gaseous (NO_x and ozone), continuous particulate (PM_{10} TEOM), camera system and meteorological monitoring. This station began operations on March 13, 2006. In 2011 the AQD plans to add methane/non-methane hydrocarbon monitoring to the Wamsutter Station as part of the Three–State Study agreement.

2.2.14 Wright

Wright Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Wright PM_{10}	Adjacent to Wright Junior -Senior High School	56-005-0099	PM_{10}	Manual Filter-based Gravimetric (partisol)	Neighborhood	1/6	No planned changes

The Wright monitoring site is located in Campbell County in northern Wyoming. Wright is a community located west of the southern group of the Power River Basin coal mines. The purpose of this monitor is to track population exposure to PM_{10} in a community that is downwind of the coal mines. The AQD upgraded the hi-vol PM_{10} sampler to a low-volume sampler during 2010.

2.2.15 Wyoming Range

Wyoming Range Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Wyoming Range	16 mi. S of Bondurant, WY	56-035-0097	Ozone	Real Time	Regional	Hourly	No planned changes
			Sulfur Dioxide	Real Time	Regional	Hourly	Will be shut down
			Nitric Oxide	Real Time	Regional	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Regional	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Regional	Hourly	No planned changes
			PM_{10}	Continuous BAM	Regional	Hourly	No planned changes
			$PM_{2.5}$	Continuous BAM	Regional	Hourly	No planned changes

The Wyoming Range air quality monitoring station is located in Sublette County approximately 16 miles south of Bondurant and east of the Wyoming Range. Monitoring at this station began in January 2011. The Wyoming Range station includes gaseous (NO_x and ozone), continuous particulate (PM_{10} BAM and $PM_{2.5}$ BAM), camera system and meteorological monitoring. The primary objective of this station is to monitor transported pollutants entering the Upper Green River Basin from the west.

2.2.16 Powder River Basin (PRB) NO_x

The Powder River Basin NO_x network began operation in January 2001 through a cooperative agreement between the AQD and the Wyoming Mining Association. The purpose of the

network is to monitor regional NO_2 concentrations in the Powder River Basin. The Belle Ayr Monitor is located near the railroad and represents a "maximum concentration" in and around the coal mines. The Antelope monitor is located away from mining activities and is considered to be background. The AQD also collects and uploads data from the Thunder Basin Coal Company's monitor at the Tracy Ranch; this monitoring site is considered downwind of mining activity. The AQD did not list the Tracy Ranch monitor below because the monitor is funded solely by the Thunder Basin Coal Company. Due to lack of funding, the PRB NO_x monitoring network was shut down from March 2007 until April 2009. The Wyoming Mining Association, in cooperation with the AQD, contributed funding to upgrade the stations and resume operation. The Antelope monitor was temporarily mothballed due to power constraints at the site. During 2011, the AQD will evaluate options for upgrading power or moving the background monitor to a location, which can handle both the $PM_{2.5}$, and NO_x monitoring.

PRB NOx Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Antelope Mine	Converse County	56-009-0819	Nitric Oxide	Real Time	Regional	Hourly	Site changes needed
			Nitrogen Dioxide	Real Time	Regional	Hourly	Site changes needed
			Oxides of Nitrogen	Real Time	Regional	Hourly	Site changes needed
Belle Ayr Mine	Campbell County	56-005-0892	Nitric Oxide	Real Time	Micro Scale	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Micro Scale	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Micro Scale	Hourly	No planned changes

2.2.17 Powder River Basin (PRB) $PM_{2.5}$

The Powder River Basin $PM_{2.5}$ Network began official operation in 1999. The purpose of the network is to characterize ambient fine particulate at and around the PRB coal mines. One monitor is located at each "group" of mines (north, middle and south) and one monitor is located away from mining activities to represent background. The AQD temporarily discontinued collection of data from these monitors in September 2007, due to cuts in federal funding for $PM_{2.5}$ monitoring. PRB $PM_{2.5}$ Network operations resumed in June, 2008 with the help of a funding agreement with the Wyoming Mining Association. Due to the age of the instrumentation in the network, the AQD upgraded the instruments to continuous Thermo 1405DF TEOM monitors in 2010.

PRB $PM_{2.5}$ Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Antelope Mine	Converse County	56-009-0819	$PM_{2.5}$	Manual Filter-based Gravimetric	Regional	Hourly	Site changes needed
Belle Ayr Mine	Campbell County	56-005-0892	$PM_{2.5}$	Manual Filter-based Gravimetric	Neighborhood	Hourly	No planned changes
Black Thunder Mine	Campbell County	56-005-0891	$PM_{2.5}$	Manual Filter-based Gravimetric	Neighborhood	Hourly	No planned changes
Buckskin Mine	Campbell County	56-005-1899	$PM_{2.5}$	Manual Filter-based Gravimetric	Neighborhood	Hourly	No planned changes

2.3 Mobile Monitoring Trailers

Three (3) mobile monitoring trailers have been established and are being operated to help characterize air quality at various locations throughout the State of Wyoming. The mobile monitoring stations are self-contained monitoring shelters that may be moved to different locations in relatively short time frame. The trailers include gaseous monitors (NO_x, O_3 and methane/non-methane hydrocarbons), continuous PM_{10}, continuous $PM_{2.5}$, camera system, and meteorological instrumentation. The mobile monitoring stations may be used to monitor and characterize events, trends in air quality or areas downwind of industrial development areas. The AQD is planning to locate and operate the mobile monitoring trailers at a site for approximately one (1) year at a time. Initial locations for the three mobile trailers include: Big Piney, Pavillion and Gillette. As of May 2011, the Gillette mobile monitoring station is in the initial stages of deployment; more information about the Gillette location can be found in Section 5.1 of this Network Plan.

2.3.1 Big Piney

Big Piney Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Big Piney	4 mi. South of Big Piney, WY	56-035-0700	Ozone	Real Time	Regional	Hourly	No planned changes
			Nitric Oxide	Real Time	Regional	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Regional	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Regional	Hourly	No planned changes
			Methane/ NMHC	Real Time	Regional	Hourly	No planned changes
			PM_{10}	Continuous BAM	Regional	Hourly	No planned changes
			$PM_{2.5}$	Continuous BAM	Regional	Hourly	No planned changes

The Big Piney air quality mobile monitoring station began operation in March 2011. The mobile station is located 4 miles south of the Town of Big Piney. A digital camera, ozone analyzer, oxides of nitrogen analyzer, methane/non methane hydrocarbons, continuous PM_{10} beta attenuation monitor (BAM), $PM_{2.5}$ BAM monitor and meteorology equipment are located at this site. The objective of this station is to monitor near the Big Piney and LaBarge Gas Fields. The station is scheduled to operate for one year at this site.

2.3.2 Pavillion

Pavillion Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Pavillion	5.75 mil E of Pavillion, WY	56-041-0101	Ozone	Real Time	Regional	Hourly	No planned changes
			Nitric Oxide	Real Time	Regional	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Regional	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Regional	Hourly	No planned changes
			Methane/ NMHC	Real Time	Regional	Hourly	No planned changes
			PM_{10}	Continuous BAM	Regional	Hourly	No planned changes
			$PM_{2.5}$	Continuous BAM	Regional	Hourly	No planned changes

The Pavillion air quality mobile monitoring station began operation in January 2011. The mobile station is located 5.75 miles east of the Town of Pavillion. The site's objective is to monitor a rural residential area that is intermingled with gas development. A digital camera, ozone analyzer, oxides of nitrogen analyzer, methane/NMHC, continuous PM_{10} BAM, $PM_{2.5}$ BAM monitor and meteorology equipment are located at this site. The station is scheduled to operate for one year at this site.

2.4 Cheyenne National Core (NCore) Multi Pollutant Site

Cheyenne NCore Monitoring Site Specifications							
Site Name	**Location**	**AQS ID**	**Parameter**	**Analysis Method**	**Scale**	**Operating Schedule**	**Operational Status**
Cheyenne NCore	6909 Chief Washakie Ave.	56-021-0100	Ozone	Real Time	Neighborhood	Hourly	No planned changes
			Trace Sulfur Dioxide	Real Time	Neighborhood	Hourly	No planned changes
			Trace Carbon Monoxide	Real Time	Neighborhood	Hourly	No planned changes
			Nitric Oxide	Real Time	Neighborhood	Hourly	No planned changes
			Nitrogen Dioxide	Real Time	Neighborhood	Hourly	No planned changes
			Oxides of Nitrogen	Real Time	Neighborhood	Hourly	No planned changes
			Total Reactive Nitrogen	Real Time	Neighborhood	Hourly	No planned changes
			$PM_{10-2.5}$	Manual Filter-based Gravimetric	Neighborhood	1/3	No planned changes
			$PM_{2.5}$	Manual Filter-based Gravimetric	Neighborhood	1/3	No planned changes
			$PM_{2.5}$	Continuous BAM	Neighborhood	Hourly	No planned changes
			Speciated $PM_{2.5}$	Manual Filter-based Gravimetric	Neighborhood	1/3	No planned changes

The Wyoming NCore monitoring site is located in the City of Cheyenne, North Soccer Complex Park. The NCore monitoring site was established during the summer of 2010 and became fully operational January 1, 2011. This site was incorporated as part of the National Core Monitoring Network. The NCore sites will be the basis for developing a representative report card on air quality across the nation, capable of delineating differences among geographic and climatological regions. The monitored data will be used to characterize and monitor trends in air quality, air quality standards' compliance and may be used for national health assessments, model evaluations, and comparison with other ambient air monitoring data.

2.5 Industrial Monitoring Sites

Historically, the AQD has required several industrial sources in the State to conduct ambient monitoring for criteria pollutants in and around specific facilities. AQD's largest industrial network is at the Power River Basin coal mines and consists of approximately 50 PM_{10} monitoring locations. The AQD also requires extensive networks of PM_{10} monitoring at the Trona facilities outside of Green River and coal mines in southwest Wyoming. As facilities obtain construction or modification permits from the AQD's New Source Review program, they are often required to monitor for compliance with the ambient air quality standards downwind of their facilities. The monitoring program receives these data on a quarterly basis, and checks for compliance with the NAAQS as well as confirming that the facilities are following appropriate quality assurance measures.

2.6 IMPROVE Network

The purpose of the Interagency Monitoring of Protected Visual Environments (IMPROVE) network is to establish current visibility and aerosol conditions along with characterization of broad regional trends and visibility conditions using monitoring data collected in or near Class I Areas across the United States. Wyoming has five (5) IMPROVE locations which include: Yellowstone National Park, Est. 1988; Bridger Wilderness Area, Est. 1988; North Absaroka Wilderness Area, Est. 2000; Thunder Basin National Grasslands, Est. 2002; and Cloud Peak Wilderness Area, Est. 2002.

3.0 Compliance with NAAQS

The primary purpose of the AQD's SLAMS and SPM networks is to evaluate compliance with the NAAQS. The AQD's SLAMS and SPMs employ reference or equivalent method technologies and are run according to SLAMS or PSD quality assurance specifications and therefore may be compared with the NAAQS. The AQD's SLAMS and SPM networks currently operate under project specific quality assurance plans, which are available in the Cheyenne State Office for viewing. The AQD is currently working with U.S. EPA Region 8 staff to develop a general monitoring quality assurance plan that references the specific project plans.

The following tables show 2008 through 2010 data and design values for each SLAMS and SPM monitor. All sites operated by the AQD are in compliance with the NAAQS from 2008-2010, with the exception of the Boulder monitor for ozone.

3.1 Particulate Matter (PM_{10})

In the Wyoming Monitoring Network there are twenty-one (21) sites with PM_{10} monitors. The PM_{10} SLAMS network, consisting of ten sites, has two types of monitors. The Thermo Partisol 2000 PM_{10} monitors, in the network, have 30% collocation. This fulfills the collocation requirements in 40 CFR 58 Appendix A. The Sheridan Police Department PM_{10} TEOM is not required to have another analyzer collocated for precision purposes according to 40 CFR 58, Appendix A. The AQD network has seven (7) sites that have continuous TEOM PM_{10} monitors. To comply with the 24-hour PM_{10} NAAQS, a monitor must record one or less "exceedance" (24-hour concentration greater than 150 $\mu g/m^3$) per year over a three year period. The design value is the average number of exceedances per year from 2008-2010. Wyoming also has an annual ambient air quality standard for PM_{10}. Compliance with the annual PM_{10} Wyoming Ambient Air Quality Standards (WAAQS) is determined by the three year average of the annual mean. The three year average of the means must be below 50 $\mu g/m^3$.

PM_{10} Compliance with WAAQS of 50 $\mu g/m^3$ Annual Arithmetic Mean ($\mu g/m^3$)					
Site Name	2008	2009	2010	Average ('08-'10)	In Compliance
SLAMS					
Casper	17	16	14	16	Yes
Cheyenne	15	13	14	14	Yes
Cody	12	12	11	12	Yes
Gillette	18	23	20*	20	Yes
Jackson	17	17	14	16	Yes
Lander	20*	18	20	19	Yes
Laramie	22	18	23*	21	Yes
Rock Springs	24	21	18	21	Yes
Sheridan – Highland Park	15	12	13	13	Yes
Sheridan – Police Dept.	23	22	21	22	Yes
PM_{10} Compliance with WAAQS of 50 $\mu g/m^3$ Annual Arithmetic Mean ($\mu g/m^3$)					
Site Name	2008	2009	2010	Average ('08-'10)	In Compliance
SPM					
Boulder	11	9	9	10	Yes
Jonah	17*	N/A	N/A	N/A	N/A
Moxa	N/A	N/A	8.3*	N/A	N/A
Murphy Ridge	12	11	12*	12	Yes
South Campbell County	20*	12	12	15	Yes
South Daniel	8*	8*	8*	8	Yes
South Pass	12	11*	9	11	Yes
Wamsutter	15	15	14*	15	Yes
Wright	17	12*	12*	14	Yes

N/A – data not available

* - site has one or more quarterly reports that did not meet data completeness

PM_{10} Compliance with NAAQS of 150 µg/m^3 Highest 24- Hour Average (µg/m^3)					
Site Name	2008	2009	2010	Design Value ('08-'10)	In Compliance
SLAMS					
Casper	46	93	45	0	Yes
Cheyenne	55	38	41	0	Yes
Cody	91	78	29	0	Yes
Gillette	58	73	49*	0	Yes
Jackson	93	86	79	0	Yes
Lander	95*	49	44	0	Yes
Laramie	73	60	94*	0	Yes
Rock Springs	102	66	68	0	Yes
Sheridan – Highland Park	56	27	36	0	Yes
Sheridan – Police Dept.	103	99	70	0	Yes
SPM					
Boulder	97	61	37	0	Yes
Jonah	127*	N/A	N/A	N/A	N/A
Moxa	N/A	N/A	48*	N/A	N/A
Murphy Ridge	157^P	75	103	0.33	Yes
South Campbell County	67*	43	36	0	Yes
South Daniel	27*	57*	45*	0	Yes
South Pass	78	82*	65	0	Yes
Wamsutter	76	99	56*	0	Yes
Wright	56	31*	27*	0	Yes

N/A – data not available

P – Exceeds the Primary Standard. The exceedance at Murphy Ridge occurred on April 19, 2008. The AQD has flagged this value as a high wind event eligible under the Exceptional Events Rule. The AQD is waiting for concurrence from U.S. EPA Region 8 on this event.

* - site has one or more quarterly reports that did not meet data completeness

3.2 Particulate Matter ($PM_{2.5}$)

There are ten (10) State run monitoring sites that collect $PM_{2.5}$ data along with the four (4) monitors in the PRB $PM_{2.5}$ network. Within the $PM_{2.5}$ SLAMS network, which includes Thermo Partisol 2000 $PM_{2.5}$ monitors in Casper, Cheyenne, Cody, Jackson, Lander, Laramie, Rock Springs, Sheridan – Highland Park, and Sheridan – Police Department, the AQD has 22.2% of the monitors collocated. This meets the 40 CFR 58 Appendix A requirement for collocation. All fourteen (14) monitors can be compared to the annual $PM_{2.5}$ NAAQS as defined by 40 CFR 58.30. The annual $PM_{2.5}$ standard is attained when the three (3) year average is less than or equal to 15.0 µg/m^3. Compliance with the 24-hour $PM_{2.5}$ NAAQS is met when the 3-year average of the 98th percentile concentration is less than or equal to 35 µg/m^3.

$PM_{2.5}$ Compliance with NAAQS of 15.0 µg/m^3 Annual Arithmetic Mean (µg/m^3)					
Site Name	2008	2009	2010	Average ('08-'10)	In Compliance
SLAMS					
Casper	N/A	4.4*	4.6	N/A	N/A
Cheyenne	4.5	3.9	4.2	4.2	Yes
Cody	5.7*	4.3	4.5	4.8	Yes
Jackson	5.2	4.7	4.3	4.7	Yes
Lander	7.8	8.3	9.3	8.5	Yes
Laramie	N/A	5.7*	4.8	N/A	N/A
Rock Springs	6.8	6.0	5.9*	6.2	Yes
Sheridan – Highland Park	5.3	4.9	5.5	5.2	Yes
Sheridan – Police Dept.	8.0	8.4	8.7	8.4	Yes
SPM					
Antelope Mine	3.9*	3.5*	2.8*	3.4	Yes
Belle Ayr Mine	6.2*	5.1	3.6*	5.0	Yes
Black Thunder Mine	5.5*	4.1*	5.1*	4.9	Yes
Buckskin Mine	5.5*	5.6	5.3*	5.5	Yes
Pinedale 2.5	6.6*	5.5*	6.0	5.9	Yes
Pinedale Gaseous	N/A	4.2	3.1	N/A	N/A

N/A – data not available

* - site has one or more quarterly reports that did not meet data completeness

$PM_{2.5}$ Compliance with NAAQS of 35 µg/m^3 98% 24- Hour Average (µg/m^3)					
Site Name	2008	2009	2010	Average ('08-'10)	In Compliance
SLAMS					
Casper	N/A	8*	12	N/A	N/A
Cheyenne	10	9	9	9	Yes
Cody	22*[F]	10	11	14	Yes
Jackson	14	14	9	12	Yes
Lander	23	35	32	30	Yes
Laramie	N/A	14*	14	N/A	N/A
Rock Springs	19	12	13*	15	Yes
Sheridan – Highland Park	14	10	14	13	Yes
Sheridan – Police Dept.	24	21	27	24	Yes
SPM					
Antelope Mine	9*	7*	13*	10	Yes
Belle Ayr Mine	16*	12	10*	13	Yes
Black Thunder Mine	17*	10*	11*	13	Yes
Buckskin Mine	12*	12	8*	11	Yes
Pinedale 2.5	17*[F]	16*	15	16	Yes
Pinedale Gaseous	N/A	10	10	N/A	N/A

N/A – data not available

F -- In August 2008, the AQD monitored elevated $PM_{2.5}$ concentrations in Pinedale and Cody due to impacts from wildfires. The AQD has flagged data from August 1, 2008 (Cody) and August 4, 2008 (Pinedale) as natural events under the Exceptional Events Rule. The AQD is waiting for concurrence from U.S. EPA Region 8 on these events.

* - site has one or more quarterly reports that did not meet data completeness

3.3 Nitrogen Dioxides (NO_2)

There were eleven (11) State run SPM sites that monitored for NO_2 in 2010. The PRB NO_x monitors (Antelope and Belle Ayr Mine sites) were restarted during 2009. Compliance with the annual primary NO_2 NAAQS is met when the annual average concentration in the calendar year is less than or equal to 53 ppb. The primary standard 1-hour average concentration is 100 ppb. The maximum 1-hour concentration per year is listed in the second NO_2 table below. The NO_2 calculated design value is met when the three-year average of the annual 98th percentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb. This calculated three-year design value is located in the second NO_2 table below.

NO_2 Compliance with NAAQS of 53 ppb Annual Arithmetic Mean (ppb)				
Site Name	2008	2009	2010	In Compliance
Antelope Mine	N/A	1*	3*	N/A
Belle Ayr Mine	N/A	5*	7	Yes
Boulder	3*	4	3	Yes
Jonah	17*	N/A	N/A	N/A
Juel Spring	N/A	N/A	1	Yes
Moxa	N/A	N/A	1*	N/A
Murphy Ridge	3	3	1	Yes
Pinedale	N/A	3*	3	Yes
South Campbell County	3	3	3	Yes
South Daniel	3	3	0	Yes
South Pass	1*	0	0	Yes
Thunder Basin	2*	2	2	Yes
Wamsutter	5	5	5	Yes

N/A – data not available

* - site has one or more quarterly reports that did not meet data completeness

NO_2 Compliance with NAAQS of 100 ppb Maximum 1-hour average concentration per year and the 3-year 98% 1-hour Design Value (ppb)					
Site Name	2008	2009	2010	Design Value (‘08-‘10)	In Compliance
Antelope Mine	N/A	32*	34*	N/A	N/A
Belle Ayr Mine	N/A	74*	70	N/A	N/A
Boulder	37	54	66	37	Yes
Jonah	137	N/A	N/A	N/A	N/A
Juel Spring	N/A	N/A	28	N/A	N/A
Moxa	N/A	N/A	32*	N/A	N/A
Murphy Ridge	41	24	61	17	Yes
Pinedale	N/A	34*	43	N/A	N/A
South Campbell County	48	40	35	31	Yes
South Daniel	14	13	13	8	Yes
South Pass	10*	9	12	5	Yes
Thunder Basin	14*	14	15	11	Yes
Wamsutter	51	45	59	39	Yes

N/A – data not available

* - site has one or more quarterly reports that did not meet data completeness

3.4 Sulfur Oxides

The Moxa monitoring station began monitoring for SO_2 in May, 2010. Beginning January 2011, the AQD will be conducting Trace SO_2 monitoring at the Cheyenne NCore site. In past years the State of Wyoming has operated sites that have monitored for this parameter. Most SO_2 levels were relatively low and the benefit of monitoring at SPM locations was not justified for a long-term period. For SO_2, the AQD has the Wyoming Ambient Air Quality Standards (WAAQS) along with the revised NAAQS for comparison purposes. On an annual basis, the WAAQS SO_2 standard is exceeded if the annual mean monitored value is greater than 0.02 ppm. On a 24-hour basis the WAAQS standard is exceeded if a 24-hour concentration exceeds 0.10 ppm more than once per year. On a 3-hour basis, the WAAQS standard is exceeded if the 3-hour concentration is 0.50 ppm more than once in a year. The AQD has not reported any exceedances of the WAAQS 3-hour, 24-hour, or annual SO_2 standards in 2010. The table below compares the monitored values with the NAAQS rather than the WAAQS. The level of the national 1-hour annual ambient air quality standard for SO_2 is 75 ppb. The NAAQS 1-hour primary standard is met when the three-year average of the annual (99^{th} percentile) of the daily maximum 1-hour average concentrations is less than or equal to 75 ppb.

SO_2 Compliance with NAAQS of 75 ppb
Maximum 1-hour average concentration per year and the 3-year 99% 1-hour average (ppb)

Site Name	2008	2009	2010	Design Value ('08-'10)	In Compliance
Moxa	N/A	N/A	40	N/A	N/A

3.5 Carbon Monoxide

In past years the State of Wyoming has operated sites that have monitored for Carbon Monoxide (CO). Most CO levels were relatively low and the benefit of monitoring at SPM locations was not justified for a long-term period. Starting January 2011, the AQD will be conducting Trace CO monitoring at the Cheyenne NCore site.

3.6 Ozone

The AQD operated nine (9) O_3 monitoring sites in Wyoming during 2010, and all of the sites are SPMs. To comply with the 8-hour ozone NAAQS, the daily maximum 8-hour ozone averages are ranked over a year. The 3 year average of the 4^{th} highest yearly value must be less than or equal to 0.075 ppm. On March 12, 2009, Wyoming's Governor submitted a recommendation of non-attainment for Sublette and parts of Sweetwater and Lincoln Counties based on non-compliance at the Boulder monitor. On September 16, 2009, the EPA proposed to stay the 2008 standards for the purpose of attainment and non-attainment area designations. During the stay, activity will not proceed on the proposed nonattainment area. EPA proposed to institute an accelerated ozone designation process for the reconsidered standards.

O_3 Compliance with NAAQS of 0.075 ppm 4th Highest 8-Hour Average (ppm)					
Site Name	2008	2009	2010	Design Value ('08-'10)	In Compliance
Boulder	0.101	0.066	0.067	0.078	No*
Jonah	0.082	N/A	N/A	N/A	N/A
Juel Spring	N/A	N/A	0.064	N/A	N/A
Moxa	N/A	N/A	0.066	N/A	N/A
Murphy Ridge	0.064	0.060	0.065	0.063	Yes
Pinedale	N/A	0.056	0.062	N/A	N/A
South Campbell County	0.064	0.060	0.061	0.062	Yes
South Daniel	0.074	0.062	0.063	0.066	Yes
South Pass	0.066	0.080	0.068	0.071	Yes
Thunder Basin	0.066	0.062	0.063	0.064	Yes
Wamsutter	0.064	0.062	0.067	0.064	Yes

N/A – data not available

* -- Non-compliance at the Boulder monitor waiting on accelerated ozone designation process and reconsidered standard

4.0 Special Studies

In addition to the AQD's extensive network of long-term monitoring, the AQD is also conducting several short-term special studies. Primarily these studies revolve around continuing investigation into ozone formation and oil and gas source growth in the Upper Green River Basin. The AQD has completed the Network Assessment that is due to EPA in 2010. The AQD is also setting up a continuous $PM_{2.5}$ monitor for deployment in areas that are experiencing smoke from forest fires or agricultural burning.

4.1 Upper Green Winter Ozone Study (UGWOS)

In the winters of 2005 and 2006, primarily in the month of February, the AQD measured 8-hour ozone concentrations greater than 80 ppb at the Daniel South, Jonah and Boulder monitoring stations. Elevated ozone concentrations are uncommon during the winter months; however, they do not appear to be an anomaly because these conditions were recorded in both February 2005 and February 2006. After recording elevated values for two (2) years, the AQD decided to conduct a study of winter ozone formation. The purposes of the study were, originally, to better understand the formation mechanisms and collect data to form a conceptual model of the winter ozone formation. Since 2007 the objectives of the study have been modified to fill gaps in data and conceptual understanding of winter ozone formation with the ultimate intent of developing a working photochemical model for the Upper Green River Basin.

The 2011 monitoring study focused on vertical measurements of meteorology and ozone precursors. The AQD also contracted with various firms to measure nitrous acid (HONO), NO_{xy}, speciated particulate, and speciated VOCs.

Quality Assurance Plans and data from the 2007, 2008, 2009, 2010, and 2011 UGWOS campaigns can be downloaded at http://deq.state.wy.us/aqd/Upper%20Green%20Winter%20Ozone%20Study.asp . Final 2007, 2008, 2009, and 2010 reports can also be downloaded at the site. During summer 2011, the AQD will be critically evaluating all studies conducted in the Upper Green to determine whether specific aspects of winter ozone formation will still need to be monitored in the future.

4.2 Sublette County Air Toxics Study / Health Risk Assessment

In 2008, citizens of Sublette County requested that a study of air toxics and a risk assessment be performed in Sublette County. During 2009 and first quarter of 2010, the AQD cooperated with the Sublette County Commissioners and the Wyoming Department of Health to conduct air toxics monitoring in the Upper Green River Basin. The study monitored ozone and air toxics in community locations around Sublette County. The study plan and data can be found at http://deq.state.wy.us/aqd/Ozone%20Air%20Toxics_Sublette%20County.asp. Sublette County contracted with a consulting firm to perform a risk assessment with the ozone and HAPs data collected during the study period. The risk assessment results can be found at http://www.sublettewyo.com/index.aspx?nid=86 .

4.3 VOC Monitoring

The AQD also committed to performing VOC and/or Hazardous Air Pollutant (HAP) Monitoring in the Southwest Wyoming Operator's Agreement. In 2007 and 2008, the AQD performed limited VOC monitoring in the Upper Green River Basin during the Upper Green Winter Ozone Study (UGWOS). During UGWOS 2009, more VOC samples were collected and the AQD ran a trial field study of a "continuous" speciated VOC instrument with a pneumatic focusing gas chromatograph (PFGC). During the field test, the AQD learned that this type of instrument was not reliable enough for long term field deployment. For 2010, the AQD tested a continuous methane/non-methane hydrocarbon (NMHC) analyzer at the Boulder station. To compliment this instrument, a series of canisters were pulled to obtain a speciation profile of the NMHC component. The AQD continues to perform methane/non-methane measurements at the Boulder location in addition to pulling canisters. The AQD is also operating a methane/non-methane hydrocarbon analyzer in the Big Piney, Pavillion and Gillette trailers. The AQD has plans to install a methane/non-methane hydrocarbon analyzer at the Wamsutter monitoring station during 2011.

4.4 Network Assessment

During 2010, the AQD performed a network assessment for the entire AQD monitoring network to fulfill part of the 40 CFR Part 58.10 requirements. The purpose of the assessment was to determine efficient and effective placement of gaseous, particulate, and meteorological monitoring stations in the current Wyoming network. Results of the network assessment will be used to guide future monitor placement in Wyoming. Results of the Network Assessment can be found at http://deq.state.wy.us/aqd/Wyoming%20Network%20Assessments.asp. In 2011, the AQD plans to implement two of the findings from the network assessment, ozone monitoring in Gillette and Casper.

4.5 Beta Attenuation Monitor (BAM) Deployment

The AQD has outfitted a portable continuous BAM PM_{10} and $PM_{2.5}$ monitoring devices for deployment in communities that may be impacted by smoke from wildfire activity or agricultural burning. This portable system will allow the AQD to monitor near real-time PM_{10} and $PM_{2.5}$ concentrations, and meteorological conditions so the AQD can properly inform the public when particulate levels may cause adverse health effects.

5.0 Future Air Monitoring Modifications

The State of Wyoming is experiencing rapid energy development, especially in the northeast and southwest quadrants of the State. Energy development is also anticipated to increase in southeast Wyoming. The AQD continues to add new special purpose monitoring sites to monitor for possible impacts from increased development. The AQD tries to anticipate network monitoring requirements before they are needed and is continually updating the future monitoring placement plan for the Monitoring Section. At this time, the AQD is not planning to add or remove any SLAMS locations or monitors in 2011.

5.1 Gillette

The AQD is working to establish a monitoring location to help characterize air quality in Gillette, Wyoming. One conclusion of the 2010 Network Assessment was that population-based ozone monitoring was needed in Gillette. The AQD decided that one (1) of the three (3) mobile monitoring trailers would be sited in Gillette for approximately one year. The trailer includes gaseous monitors (NO_x, O_3 and Methane/Non-Methane Hydrocarbons), continuous PM_{10}, continuous $PM_{2.5}$, camera system, and meteorological instrumentation. The AQD is anticipating this monitoring station be up and running during the summer of 2011.

5.2 Casper

The 2010 Network Assessment included Casper as a population-based area that needed ozone monitoring. The AQD is considering funding sources needed to place a monitoring station in the City of Casper.

5.3 Grand Teton

The AQD is working cooperatively with the Nation Park Service to install a Grand Teton Monitoring Station near the Teton Science School located in Grand Teton National Park. This monitoring station will include ozone, NADP wet deposition, nephelometer, camera system and meteorological instrumentation. This monitoring station is slated to be up and running during the summer of 2011.

5.4 Three-State Study

During 2010 and 2011, the AQD will be participating in a cooperative activity known as the "Three-State Study". The Wyoming AQD will be cooperating with Colorado and Utah State agencies as well as Federal Land Managers and EPA to develop systems which will aid in modeling and predicting impacts from energy development. As part of this study, the Federal Government has committed to partially fund one new monitoring station in Southwest Wyoming.

The Hiawatha station was installed during spring of 2011, more information about the Hiawatha station can be found in Section 2.2.4 of this document. The AQD also received funding to install a methane/non-methane hydrocarbon analyzer along with speciated canisters at the Wamsutter monitoring station. This monitoring will be deployed in Summer 2011.

5.5 Abandoned Mining Lands Funding

In light of the rapid energy development slated to take place in the next several years throughout Wyoming, the 2009 Legislature appropriated over three million dollars in Abandoned Mining Lands Funds to expand air quality monitoring related to energy development. The AQD has received approval to spend these funds on new monitoring focused on energy development. These funds were used to purchase the three mobile monitoring trailers that will be located in Pavillion, Big Piney, and Gillette. The Monitoring Section was also allocated a temporary employee for a period of three years to help with the new monitoring projects. AML funding will also be used for monitoring station upgrades and operations of existing monitoring sites.

5.6 PAPO Funding

In September 2008, the Pinedale Anticline Supplemental Environmental Impact Statement Record of Decision (PAPA ROD) was signed. In the PAPA ROD, oil and gas operators committed over $1.5 million dollars to the AQD's Monitoring Section to help mitigate impacts to air quality from oil and gas development in the PAPA. The funds are to be used to enhance data management and communication to the public, for a new 2-year data analyst position, and to implement monitoring related to emissions from the Pinedale Anticline as determined by the Southwest Wyoming Network Assessment. In 2010, the AQD used a portion of the funding to install and operate methane/non-methane hydrocarbon analyzer at the Boulder station. In 2011, PAPO funding will also be used to study speciate particulate at the Boulder station. The AQD is in the process of developing the data management system. More information on the PAPA ROD can be found at: http://www.blm.gov/wy/st/en/field_offices/Pinedale/anticline.html

6.0 Conclusion

There is an ongoing effort to help ensure the Wyoming Ambient Air Monitoring Network demonstrates adequate coverage across the entire State. As the State's population and industry changes, the AQD works to make sure the monitoring needs in the State of Wyoming are being met. At this time, the AQD plans to add monitors in 2011 to determine impacts from energy development and population growth around Wyoming.

Data collected at the AQD monitoring stations though 2010 show that all monitors are attaining NAAQS for PM_{10}, $PM_{2.5}$, NO_2, SO_2, and CO. Currently, all of the AQD monitors, except for Boulder, are attaining the NAAQS for ozone. The Boulder area ozone issue will be addressed once the accelerated ozone designation process and reconsidered standards are final.

The AQD continually evaluates data collected at the AQD, industrial and AQRV monitors to determine if changes in policy are needed to continue to manage the air resource in the State of Wyoming.

Any comments pertaining to the Wyoming Ambient Air Monitoring Annual Network Plan should be sent to the following contact:

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Appendix A

AQS ID	Site Name	Address	Land Use Type	Location Type	Monitor Type	Monitor Objective	Longitude	Latitude	Site Start Date
56-025-0001	Casper	City County Bldg - Center & C Streets	Commercial	Urban And Center City	SLAMS	Population Exposure	-106.3256921	42.85146789	10/15/1998
56-021-0001	Cheyenne	State Office Bldg 23rd & Central Avenue	Residential	Urban And Center City	SLAMS	Population Exposure	-104.8176611	41.13686502	1/1/1979
56-029-0001	Cody	Cody Jr High School	Residential	Suburban	SLAMS	Population Exposure	-109.0685071	44.52464211	1/1/1975
56-005-1002	Gillette	1000 West 8th St	Commercial	Urban And Center City	SLAMS	Population Exposure	-105.516389	44.288056	1/1/1978
56-039-1006	Jackson	40 E Pearl Ave.	Commercial	Urban And Center City	SLAMS	Population Exposure	-109.0685071	44.52464211	6/8/2007
56-013-1003	Lander	600 Washington	Residential	Suburban	SLAMS	Highest Concentration, General/Background	-108.735562	42.84222775	1/1/1987
56-001-0006	Laramie	406 Ivinson	Commercial	Urban And Center City	SLAMS	Population Exposure	-105.591725	41.31158614	1/1/1968
56-037-0007	Rock Springs	625 Ahsay Ave	Residential	Urban And Center City	SLAMS	Population Exposure	-109.220125	41.59259168	1/1/1983
56-033-0002	Sheridan - Police Station	45 West 12th St	Commercial	Urban And Center City	SLAMS	Highest Concentration, Population Exposure	-106.955933	44.815142	10/5/1983
56-033-0003	Sheridan-Highland Park	1301 Avon	Residential	Urban And Center City	SLAMS	Population Exposure	-106.9762423	44.80549148	7/1/2005
56-009-0819	Antelope	Antelope Site 3	Industrial	Rural	Special Purpose	General/Background	-105.386161	43.426103	9/1/1982
56-005-0892	Belle Ayr	Belle Ayr Ba-4,5N,5S	Industrial	Rural	Special Purpose	Highest Concentration, Source Oriented	-105.343164	44.097074	7/9/1991
56-035-0700	Big Piney	4 miles south of Big Piney, Wy	Residential	Rural	Special Purpose	Source Oriented, General/Background	-110.0989	42.4864	3/30/11
56-005-0877	Black Thunder PM2.5	Black Thunder BTM 26-2	Industrial	Rural	Special Purpose	General/Background	-105.2	43.677	1/1/1985
56-035-0099	Boulder	5 miles southwest of Boulder, Wy	Desert	Rural	Special Purpose	Source Oriented, General/Background	-109.753	42.719	2/1/2005
56-005-0899	Buckskin	Triton Coal Gillette, Wy	Industrial	Rural	Special Purpose	General/Background	-105.6	44.472	4/10/1994
56-005-0456	Campbell County	Approx 15 Miles SSW of Gillette, Wy	Desert	Rural	Special Purpose	Source Oriented, General/Background	-105.529994	44.146964	7/15/2003
56-021-0100	Cheyenne – NCore	6909 Washakie Ave. Cheyenne, Wy	Residential	Suburban	NCore	National Core Monitoring Site	-104.77842	41.18235	1/1/2011
56-035-0100	Daniel South	5 miles south of Daniel, Wy	Desert	Rural	Special Purpose	General/Background	-110.0551	42.7907	7/1/2005

AQS ID	Site Name	Address	Land Use Type	Location Type	Monitor Type	Monitor Objective	Longitude	Latitude	Site Start Date
56-035-1000	Farson Met	0.7 miles NW of intersection of HWY 191 & State Route 28	Desert	Rural	Special Purpose Met	General Background	-109.4541	42.1184	4/27/2011
56-037-0077	Hiawatha	Bitter Creek Rd. 43 miles SE of Rock Springs, Wy	Desert	Rural	Special Purpose	General Background	-108.6176	41.1545	3/30/2011
56-035-1002	Juel Spring	20 miles NW of Farson, Wy	Desert	Rural	Special Purpose	Source Oriented, General/Background	-109.5604983	42.37349916	12/11/2009
56-037-0300	Moxa	25 miles NW of Green River, Wy	Desert	Rural	Special Purpose	Source Oriented, General/Background	-109.788654	41.751009	5/27/2010
56-041-0101	Murphy Ridge	Near Wyoming Utah Border	Agricultural	Rural	Special Purpose	General/Background	-111.0417	41.373	1/1/2007
56-013-0900	Pavillion	West Power Line Road	Industrial	Rural	Special Purpose	Source Oriented, General/Background	-108.5789	43.2586	1/31/2011
56-035-0705	Pinedale PM-2.5	101 East Hennick	Residential	Suburban	Special Purpose	Population Exposure	-109.8601978	42.87060057	7/1/2005
56-035-0101	Pinedale Gaseous	West side of City Park and Pine Creek	Residential	Suburban	Special Purpose	Population Exposure	-109.87076	42.869824	1/1/2009
56-013-0099	South Pass	South Pass, Wy	Forest	Rural	Special Purpose	General/Background	-108.7200027	42.52999916	3/12/2007
56-005-0123	Thunder Basin	Thunder Basin Grassland Site 30 Mi N-NE of Gillette, Wy	Desert	Rural	Special Purpose	General/Background	-105.2903	44.6522	5/1/2001
56-037-0200	Wamsutter	2 miles west of Wamsutter, Wy	Desert	Rural	Special Purpose	Source Oriented, General/Background	-108.0238889	41.6775	3/1/2006
56-005-0099	Wright	Adjacent To Wright Jr-Senior High School	Residential	Rural	Special Purpose	General/Background, Population Exposure	-105.490771	43.757812	11/1/2002
56-035-0097	Wyoming Range	Wyoming Range/West Fontenelle Drive	Agricultural	Rural	Special Purpose	General/Background	-110.3530	42.9800	1/1/2011

Appendix B

2010 SLAMS Precision and Accuracy

Parameter	Site AQS I.D.	POC	Site Name	Precision Checks (Number - Type)	Accuracy Audit				Flow Verification			
					1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q
PM_{10}	56-025-0001	POC 1	Casper	21 - Hi-Vol	1	0	Monitor Closed 23 SEP 10	0	1	1	Monitor Closed 23 SEP 10	0
	56-025-0001	POC 2	Casper	Hi-Vol	1	0	Monitor Closed 23 SEP 10	0	1	1	Monitor Closed 23 SEP 10	0
	56-025-0001	POC 4	Casper	Lo-Vol Partisol	0	0	Start Up Audit 23 SEP 10	0	0	0	1	3
	56-025-0001	POC 5	Casper	Lo-Vol Partisol	0	0	Start Up Audit 23 SEP 10	0	0	0	1	3
	56-021-0001	POC 1	Cheyenne	15 - Partisol	1	0	1	0	3	3	3	3
	56-021-0001	POC 2	Cheyenne	N/A	1	0	1	0	3	3	3	3
	56-029-0001	POC 2	Cody	Hi-Vol	0	1	Monitor Closed 12 JUL 10	0	1	1	Monitor Closed 12 Jul 10	0
	56-029-0001	POC 3	Cody	Lo-Vol Partisol	0	0	Start Up Audit 12 JUL 10	0	0	0	3	3
	56-005-1002	POC 3	Gillette	Hi-Vol	0	1	Monitor Closed 8 AUG 10	0	1	1	Monitor Closed 8 AUG 10	0
	56-005-1002	POC 5	Gillette	Lo-Vol Partisol	0	0	Start Up Audit 8 AUG 10	1	0	0	2	2
	56-039-1006	POC 1	Jackson	N/A	0	1	0	1	3	3	3	3
	56-013-1003	POC 3	Lander	N/A	0	1	0	1	3	3	2	3
	56-001-0006	POC 2	Laramie	Hi-Vol	1	0	Monitor Closed 25 AUG 10	0	1	1	Monitor Closed 25 AUG 10	0
	56-001-0006	POC 5	Laramie	Lo-Vol Partisol	0	0	Start Up Audit 25 AUG 10	0	0	0	1	3
	56-037-0007	POC 2	Rock Springs	N/A	0	1	0	1	2	3	3	3

Parameter	Site AQS I.D.	POC	Site Name	Precision Checks (Number - Type)	Accuracy Audit				Flow Verification			
					1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q
PM_{10}	56-033-0002	POC 1	Sheridan Police Dept.	N/A	1	0	1	0	3	3	3	3
	56-033-0003	POC 1	Sheridan Highland Park	59 - Partisol	1	0	1	0	3	3	3	3
	56-033-0003	POC 2	Sheridan Highland Park	N/A	1	0	1	0	3	3	3	3
$PM_{2.5}$	56-021-0001	POC 1	Cheyenne	31 - Partisol	1	0	1	0	3	3	3	3
	56-021-0001	POC 2	Cheyenne	N/A	1	0	1	0	3	3	3	3
	56-025-0001	POC 1	Casper	N/A	1	0	1	0	3	3	2	3
	56-039-1006	POC 1	Jackson	N/A	0	1	0	1	3	2	2	3
	56-029-0001	POC 1	Cody	N/A	0	1	0	1	3	3	3	3
	56-013-1003	POC 1	Lander	N/A	0	1	0	1	3	3	2	3
	56-001-0006	POC 1	Laramie	N/A	1	0	1	0	3	3	2	2
	56-037-0007	POC 1	Rock Springs	N/A	0	1	0	1	2	3	3	3
	56-033-0002	POC 1	Sheridan Police Dept.	57 - Partisol	1	0	1	0	3	3	3	3
	56-033-0002	POC 2	Sheridan Police Dept.	N/A	1	0	1	0	3	3	3	3
	56-033-0003	POC 1	Sheridan Highland Park	N/A	1	0	1	0	3	3	3	3