

## **Maunder, Darryl (CPE)**

---

**From:** Maunder, Darryl (CPE)  
**Sent:** Monday, March 30, 2015 9:17 AM  
**To:** Daniel Sharon; Chris Hanify; Cara Keslar (cara.keslar@wyo.gov)  
**Cc:** Kevin Chartier <kchartier@imlinc.com> (kchartier@imlinc.com)  
**Subject:** Air Exceptional Event - Antelope Coal Mine

Dan and Chris,

To follow up on my phone call this morning to Cara Keslar, and on behalf of Antelope Coal Mine:

- The National Weather Service issued a blowing dust alert on Saturday, March 28<sup>th</sup>.
- High wind speeds began at about 10:00 am and persisted for the remainder of the day
- Preliminary results indicate that the Antelope TEOM experienced a PM-10 24 hour concentration of around 175 ug/m3

Please note that this is initial notification of the circumstances related to this high wind event. Cloud Peak Energy is in the process of gathering all of the related meteorological, particulate monitoring and operational data and will provide that to the Air Quality Division once it is compiled.

Feel free to call me with any questions you may have.

Thanks.

Darryl Maunder

### **Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

#### **CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)  
P.O. Box 3009  
Gillette, WY 82717-3009  
Phone: (307) 687-6061  
Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy Inc Data Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

## **Maunder, Darryl (CPE)**

---

**From:** Daniel Sharon <daniel.sharon@wyo.gov>  
**Sent:** Monday, March 30, 2015 1:40 PM  
**To:** Maunder, Darryl (CPE)  
**Cc:** Chris Hanify; Cara Keslar (cara.keslar@wyo.gov); Weinand, Nate (CPE); Kevin Chartier  
**Subject:** Re: Air Exceptional Event - Antelope Coal Mine

Hello Darryl,

Thank you for notifying the Division of this exceedance. Could you please provide us with the actual 24-hour average PM10 concentration at the 6 Site TEOM for this day? We need a specific value for tracking and EPA reporting purposes.

Thank you,

Daniel Sharon  
Air Quality Monitoring Project Manager  
Wyoming DEQ, Air Quality Division  
122 West 25th Street  
Cheyenne, WY 82002  
Office: (307) 777-7104  
Email: [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)

On Mon, Mar 30, 2015 at 9:16 AM, Maunder, Darryl (CPE) <[Darryl.Maunder@cldpk.com](mailto:Darryl.Maunder@cldpk.com)> wrote:

Dan and Chris,

To follow up on my phone call this morning to Cara Keslar, and on behalf of Antelope Coal Mine:

- The National Weather Service issued a blowing dust alert on Saturday, March 28<sup>th</sup>.
- High wind speeds began at about 10:00 am and persisted for the remainder of the day
- Preliminary results indicate that the Antelope TEOM experienced a PM-10 24 hour concentration of around 175 ug/m<sup>3</sup>

Please note that this is initial notification of the circumstances related to this high wind event. Cloud Peak Energy is in the process of gathering all of the related meteorological, particulate monitoring and operational data and will provide that to the Air Quality Division once it is compiled.

Feel free to call me with any questions you may have.

Thanks.

Darryl Maunder

**Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

**CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)  
P.O. Box 3009  
Gillette, WY 82717-3009  
Phone: (307) 687-6061  
Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy IncData Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

## Maunder, Darryl (CPE)

---

**From:** Maunder, Darryl (CPE)  
**Sent:** Monday, March 30, 2015 2:25 PM  
**To:** 'Daniel Sharon'  
**Subject:** RE: Air Exceptional Event - Antelope Coal Mine

Hello Dan,

Yes, we'll certainly provide that. We have asked IML to look into that as well as providing the concentrations from the other ACM sites as soon as possible.

Thanks.

Darryl

**From:** Daniel Sharon [<mailto:daniel.sharon@wyo.gov>]  
**Sent:** Monday, March 30, 2015 1:40 PM  
**To:** Maunder, Darryl (CPE)  
**Cc:** Chris Hanify; Cara Keslar ([cara.keslar@wyo.gov](mailto:cara.keslar@wyo.gov)); Weinand, Nate (CPE); Kevin Chartier  
**Subject:** Re: Air Exceptional Event - Antelope Coal Mine

Hello Darryl,

Thank you for notifying the Division of this exceedance. Could you please provide us with the actual 24-hour average PM10 concentration at the 6 Site TEOM for this day? We need a specific value for tracking and EPA reporting purposes.

Thank you,

Daniel Sharon  
Air Quality Monitoring Project Manager  
Wyoming DEQ, Air Quality Division  
122 West 25th Street  
Cheyenne, WY 82002  
Office: (307) 777-7104  
Email: [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)

On Mon, Mar 30, 2015 at 9:16 AM, Maunder, Darryl (CPE) <[Darryl.Maunder@cldpk.com](mailto:Darryl.Maunder@cldpk.com)> wrote:

Dan and Chris,

To follow up on my phone call this morning to Cara Keslar, and on behalf of Antelope Coal Mine:

- The National Weather Service issued a blowing dust alert on Saturday, March 28<sup>th</sup>.

- High wind speeds began at about 10:00 am and persisted for the remainder of the day
- Preliminary results indicate that the Antelope TEOM experienced a PM-10 24 hour concentration of around 175 ug/m3

Please note that this is initial notification of the circumstances related to this high wind event. Cloud Peak Energy is in the process of gathering all of the related meteorological, particulate monitoring and operational data and will provide that to the Air Quality Division once it is compiled.

Feel free to call me with any questions you may have.

Thanks.

Darryl Maunder

## **Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

## **CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)  
P.O. Box 3009  
Gillette, WY 82717-3009  
Phone: (307) 687-6061  
Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy Inc Data Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

## **Mauder, Darryl (CPE)**

---

**From:** Daniel Sharon <daniel.sharon@wyo.gov>  
**Sent:** Monday, March 30, 2015 2:30 PM  
**To:** Mauder, Darryl (CPE)  
**Cc:** Cara Keslar  
**Subject:** Re: Air Exceptional Event - Antelope Coal Mine

Great, thank you Darryl. Please let us know within 7 days of the exceedance (by April 4, 2015) so that we can notify the EPA. Since the rest of Antelope's monitors are filter-based, we don't expect notification of any possible exceedances at those sites until 7 days after you get lab results back.

Thank you,

Daniel Sharon  
Air Quality Monitoring Project Manager  
Wyoming DEQ, Air Quality Division  
122 West 25th Street  
Cheyenne, WY 82002  
Office: (307) 777-7104  
Email: [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)

On Mon, Mar 30, 2015 at 2:24 PM, Mauder, Darryl (CPE) <[Darryl.Mauder@cldpk.com](mailto:Darryl.Mauder@cldpk.com)> wrote:

Hello Dan,

Yes, we'll certainly provide that. We have asked IML to look into that as well as providing the concentrations from the other ACM sites as soon as possible.

Thanks.

Darryl

**From:** Daniel Sharon [<mailto:daniel.sharon@wyo.gov>]  
**Sent:** Monday, March 30, 2015 1:40 PM  
**To:** Mauder, Darryl (CPE)  
**Cc:** Chris Hanify; Cara Keslar ([cara.keslar@wyo.gov](mailto:cara.keslar@wyo.gov)); Weinand, Nate (CPE); Kevin Chartier  
**Subject:** Re: Air Exceptional Event - Antelope Coal Mine

Hello Darryl,

Thank you for notifying the Division of this exceedance. Could you please provide us with the actual 24-hour average PM10 concentration at the 6 Site TEOM for this day? We need a specific value for tracking and EPA reporting purposes.

Thank you,

Daniel Sharon

Air Quality Monitoring Project Manager

Wyoming DEQ, Air Quality Division

122 West 25th Street

Cheyenne, WY 82002

Office: (307) 777-7104

Email: daniel.sharon@wyo.gov

On Mon, Mar 30, 2015 at 9:16 AM, Maunder, Darryl (CPE) <Darryl.Maunder@cldpk.com> wrote:

Dan and Chris,

To follow up on my phone call this morning to Cara Keslar, and on behalf of Antelope Coal Mine:

- The National Weather Service issued a blowing dust alert on Saturday, March 28<sup>th</sup>.
- High wind speeds began at about 10:00 am and persisted for the remainder of the day

- Preliminary results indicate that the Antelope TEOM experienced a PM-10 24 hour concentration of around 175 ug/m3

Please note that this is initial notification of the circumstances related to this high wind event. Cloud Peak Energy is in the process of gathering all of the related meteorological, particulate monitoring and operational data and will provide that to the Air Quality Division once it is compiled.

Feel free to call me with any questions you may have.

Thanks.

Darryl Maunder

## **Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

### **CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)  
P.O. Box 3009  
Gillette, WY 82717-3009  
Phone: (307) 687-6061  
Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy IncData Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

E-Mail to and from me, in connection with the transaction

of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

## **Maunder, Darryl (CPE)**

---

**From:** Maunder, Darryl (CPE)  
**Sent:** Monday, March 30, 2015 2:36 PM  
**To:** 'Daniel Sharon'  
**Cc:** Cara Keslar  
**Subject:** RE: Air Exceptional Event - Antelope Coal Mine

Oh – Ok. Thanks for the heads up on the 7 day notification requirement. That's much appreciated and we will make sure to get a formal notification over to you and the concentration IML validates from the data.

Thanks!

**From:** Daniel Sharon [<mailto:daniel.sharon@wyo.gov>]  
**Sent:** Monday, March 30, 2015 2:30 PM  
**To:** Maunder, Darryl (CPE)  
**Cc:** Cara Keslar  
**Subject:** Re: Air Exceptional Event - Antelope Coal Mine

Great, thank you Darryl. Please let us know within 7 days of the exceedance (by April 4, 2015) so that we can notify the EPA. Since the rest of Antelope's monitors are filter-based, we don't expect notification of any possible exceedences at those sites until 7 days after you get lab results back.

Thank you,

Daniel Sharon  
Air Quality Monitoring Project Manager  
Wyoming DEQ, Air Quality Division  
122 West 25th Street  
Cheyenne, WY 82002  
Office: (307) 777-7104  
Email: [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)

On Mon, Mar 30, 2015 at 2:24 PM, Maunder, Darryl (CPE) <[Darryl.Maunder@cldpk.com](mailto:Darryl.Maunder@cldpk.com)> wrote:

Hello Dan,

Yes, we'll certainly provide that. We have asked IML to look into that as well as providing the concentrations from the other ACM sites as soon as possible.

Thanks.

Darryl

**From:** Daniel Sharon [mailto:[daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)]  
**Sent:** Monday, March 30, 2015 1:40 PM  
**To:** Maunder, Darryl (CPE)  
**Cc:** Chris Hanify; Cara Keslar ([cara.keslar@wyo.gov](mailto:cara.keslar@wyo.gov)); Weinand, Nate (CPE); Kevin Chartier  
**Subject:** Re: Air Exceptional Event - Antelope Coal Mine

Hello Darryl,

Thank you for notifying the Division of this exceedance. Could you please provide us with the actual 24-hour average PM10 concentration at the 6 Site TEOM for this day? We need a specific value for tracking and EPA reporting purposes.

Thank you,

Daniel Sharon

Air Quality Monitoring Project Manager

Wyoming DEQ, Air Quality Division

122 West 25th Street

Cheyenne, WY 82002

Office: [\(307\) 777-7104](tel:(307)777-7104)

Email: [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)

On Mon, Mar 30, 2015 at 9:16 AM, Maunder, Darryl (CPE) <[Darryl.Maunder@cldpk.com](mailto:Darryl.Maunder@cldpk.com)> wrote:

Dan and Chris,

To follow up on my phone call this morning to Cara Keslar, and on behalf of Antelope Coal Mine:

- The National Weather Service issued a blowing dust alert on Saturday, March 28<sup>th</sup>.
- High wind speeds began at about 10:00 am and persisted for the remainder of the day
- Preliminary results indicate that the Antelope TEOM experienced a PM-10 24 hour concentration of around 175 ug/m<sup>3</sup>

Please note that this is initial notification of the circumstances related to this high wind event. Cloud Peak Energy is in the process of gathering all of the related meteorological, particulate monitoring and operational data and will provide that to the Air Quality Division once it is compiled.

Feel free to call me with any questions you may have.

Thanks.

Darryl Maunder

## **Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

## **CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)  
P.O. Box 3009  
Gillette, WY 82717-3009  
Phone: (307) 687-6061  
Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy Inc Data Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.



April 2, 2015

Daniel Sharon  
Air Quality Monitoring Project Manager  
Wyoming DEQ, Air Quality Division  
122 West 25th Street  
Cheyenne, WY 82002

Dear Mr. Sharon,

The purpose of this letter is to follow up on our March 30<sup>th</sup> telephone conversation and formally advise you that on March 28, 2015, Antelope Mine experienced a concentration of 174.9 ug/m<sup>3</sup> at its TEOM continuous air monitor located at site 6.

As you are aware, the National Weather Service issued a high wind warning for that day. Antelope Mine experienced sustained high wind speeds during this event and based upon a preliminary review of the meteorological conditions formally request that Air Quality Division flag this as an exceptional event.

Antelope Mine's other air monitors are all gravimetric and as such, analysis of the concentrations from those monitors will take somewhat longer, but I expect to be able to inform you if any of those instruments indicate high values either near the end of this week or early the week of April 6<sup>th</sup>.

We are in the process of gathering the relevant meteorological and particulate monitoring data as well as the operational aspects and actions related to the event. We expect to file this with your office as a formal exceptional events package for your consideration as soon as possible.

Feel free to contact me at 307-687-6061 with any questions you may have concerning this.

Best Regards,

A handwritten signature in cursive script that reads "Darryl Maunder".

Darryl Maunder  
Manager Environmental and Regulatory Affairs  
Cloud Peak Energy

cc:  
Greg Mager – ACM  
Kevin Chartier – IML  
Chris Hanify - WY DEQ, AQD

## **Maunder, Darryl (CPE)**

---

**From:** Maunder, Darryl (CPE)  
**Sent:** Saturday, April 04, 2015 10:42 AM  
**To:** 'Daniel Sharon'; Chris Hanify (chris.hanify@wyo.gov)  
**Subject:** Antelope Mine Particulate Monitoring

Hello Dan,

You had requested that as soon as we had them, to let you know the results from the other Antelope Mine air monitoring sites for March 28<sup>th</sup>. IML has processed the filters and determined that although the values were elevated, none of them went over 150ug/m3.

As noted in previous correspondence, we will be providing additional details to you related to this event.

Feel free to contact me if you have any questions concerning this.

Darryl

### **Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

#### **CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)

P.O. Box 3009

Gillette, WY 82717-3009

Phone: (307) 687-6061

Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy IncData Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

## **Maunder, Darryl (CPE)**

---

**From:** Daniel Sharon <daniel.sharon@wyo.gov>  
**Sent:** Monday, April 06, 2015 7:46 AM  
**To:** Maunder, Darryl (CPE)  
**Cc:** Chris Hanify (chris.hanify@wyo.gov); Cara Keslar  
**Subject:** Re: Antelope Mine Particulate Monitoring

Good morning Darryl,

That's good news! We still need to know what the average concentration was at the 6 Site TEOM on this day. Your original notification gave a 24-hour average concentration of approximately 175 ug/m<sup>3</sup> but for tracking and EPA notification purposes, we need the precise value.

Thank you,

Daniel Sharon  
Air Quality Monitoring Project Manager  
Wyoming DEQ, Air Quality Division  
122 West 25th Street  
Cheyenne, WY 82002  
Office: (307) 777-7104  
Email: [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)

On Sat, Apr 4, 2015 at 10:42 AM, Maunder, Darryl (CPE) <[Darryl.Maunder@cldpk.com](mailto:Darryl.Maunder@cldpk.com)> wrote:

Hello Dan,

You had requested that as soon as we had them, to let you know the results from the other Antelope Mine air monitoring sites for March 28<sup>th</sup>. IML has processed the filters and determined that although the values were elevated, none of them went over 150ug/m<sup>3</sup>.

As noted in previous correspondence, we will be providing additional details to you related to this event.

Feel free to contact me if you have any questions concerning this.

Darryl

**Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

**CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)

P.O. Box 3009

Gillette, WY 82717-3009

Phone: (307) 687-6061

Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy IncData Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

## Maunder, Darryl (CPE)

---

**From:** Maunder, Darryl (CPE)  
**Sent:** Monday, April 06, 2015 3:11 PM  
**To:** 'Daniel Sharon'  
**Subject:** RE: Antelope Mine Particulate Monitoring

Hello Dan,

It was 174.9 ug/m<sup>3</sup>. I sent a letter out at the end of last week to you to that effect you should be getting it soon.

Let me know if you have any other questions.

Thanks.

### Darryl Maunder

*Manager Environmental and Regulatory Affairs*

#### CLOUD PEAK ENERGY

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)  
P.O. Box 3009  
Gillette, WY 82717-3009  
Phone: (307) 687-6061  
Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy Inc Data Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

**From:** Daniel Sharon [<mailto:daniel.sharon@wyo.gov>]  
**Sent:** Monday, April 06, 2015 7:46 AM  
**To:** Maunder, Darryl (CPE)  
**Cc:** Chris Hanify ([chris.hanify@wyo.gov](mailto:chris.hanify@wyo.gov)); Cara Keslar  
**Subject:** Re: Antelope Mine Particulate Monitoring

Good morning Darryl,

That's good news! We still need to know what the average concentration was at the 6 Site TEOM on this day. Your original notification gave a 24-hour average concentration of approximately 175 ug/m<sup>3</sup> but for tracking and EPA notification purposes, we need the precise value.

Thank you,

Daniel Sharon  
Air Quality Monitoring Project Manager  
Wyoming DEQ, Air Quality Division  
122 West 25th Street  
Cheyenne, WY 82002  
Office: (307) 777-7104

Email: [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov)

On Sat, Apr 4, 2015 at 10:42 AM, Maunder, Darryl (CPE) <[Darryl.Maunder@cldpk.com](mailto:Darryl.Maunder@cldpk.com)> wrote:

Hello Dan,

You had requested that as soon as we had them, to let you know the results from the other Antelope Mine air monitoring sites for March 28<sup>th</sup>. IML has processed the filters and determined that although the values were elevated, none of them went over 150ug/m3.

As noted in previous correspondence, we will be providing additional details to you related to this event.

Feel free to contact me if you have any questions concerning this.

Darryl

## **Darryl Maunder**

*Manager Environmental and Regulatory Affairs*

## **CLOUD PEAK ENERGY**

[darryl.maunder@cldpk.com](mailto:darryl.maunder@cldpk.com) \*NOTE NEW EMAIL ADDRESS

505 S. Gillette Ave. (82716)  
P.O. Box 3009  
Gillette, WY 82717-3009  
Phone: (307) 687-6061  
Mobile: (307) 689-7800

CONFIDENTIAL and PROPRIETARY information of Cloud Peak Energy Inc (C) 2009. All rights reserved. This work contains information that is confidential and proprietary to Cloud Peak Energy Inc. The senders contact information is also protected by the Cloud Peak Energy Inc Data Protection Policy, and should not be circulated. Removal of this notice, transfer, republication, disclosure and/or copying of all or part of this message, or its attachments, is strictly prohibited, except with the express, written permission of Cloud Peak Energy Resources. If you have received this e-mail message in error please return it and contact Darryl maunder at 307.687.6061.

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

**ANTELOPE MINE**

**DEMONSTRATION OF EXCEPTIONAL EVENT – HIGH WINDS**

**Site 6 PM10 MONITOR**

**MARCH 28, 2015**

**Prepared for**

**WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY**

**AIR QUALITY DIVISION**

**May 29, 2015**



**CLOUD PEAK**  
**ENERGY®**

## Report of Elevated PM<sub>10</sub> Concentration, March 28, 2015

Cloud Peak Energy

Antelope Mine

Sampler: Site 6 TEOM

Date of Sample: March 28, 2015

24-hour PM<sub>10</sub> concentration: 174.9 µg/m<sup>3</sup>

*All PM<sub>10</sub> concentrations discussed are reported at standard temperature and pressure.*

### Summary

On March 28, 2015 Antelope Mine's Site 6 TEOM continuous sampler recorded a PM<sub>10</sub> concentration in excess of the 24-hour standard in Wyoming. The purpose of this document is to demonstrate that the measured exceedance was caused by a high wind event. High winds of significant duration and velocity were recorded at the meteorological station on that same date. Analysis shows that the elevated sampler readings directly correlate with the high wind speeds. Operating personnel made an assessment of conditions, and took action to reduce the generation of emissions from mining activities. Actions included focusing water trucks on active areas, spraying an exposed scoria stockpile, spraying the exposed dump area in the scoria pit, and reducing overburden excavation activity on the site. Control measures almost certainly reduced dust generation but because of the extended period of high and increasing wind speeds, were unsuccessful in reducing the 24 hour average to below the daily standard.

As required by 40 CFR parts 50 and 51, the following discussion and analysis demonstrates:

1. An air quality event occurred at the Antelope Site 6 on March 28, 2015
2. The air quality event was caused by a natural event, i.e., sustained high wind speeds
3. The event was not reasonably controllable or preventable
4. The event was in excess of normal historical fluctuations
5. There was a clear causal relationship between the event and the high winds
6. There would have been no exceedance but for the high wind event

On and before 3/28/15, Antelope Mine was in compliance with Air Quality Permit MD-13361.

### I. Discussion of Event and Demonstration That Air Quality Was Affected

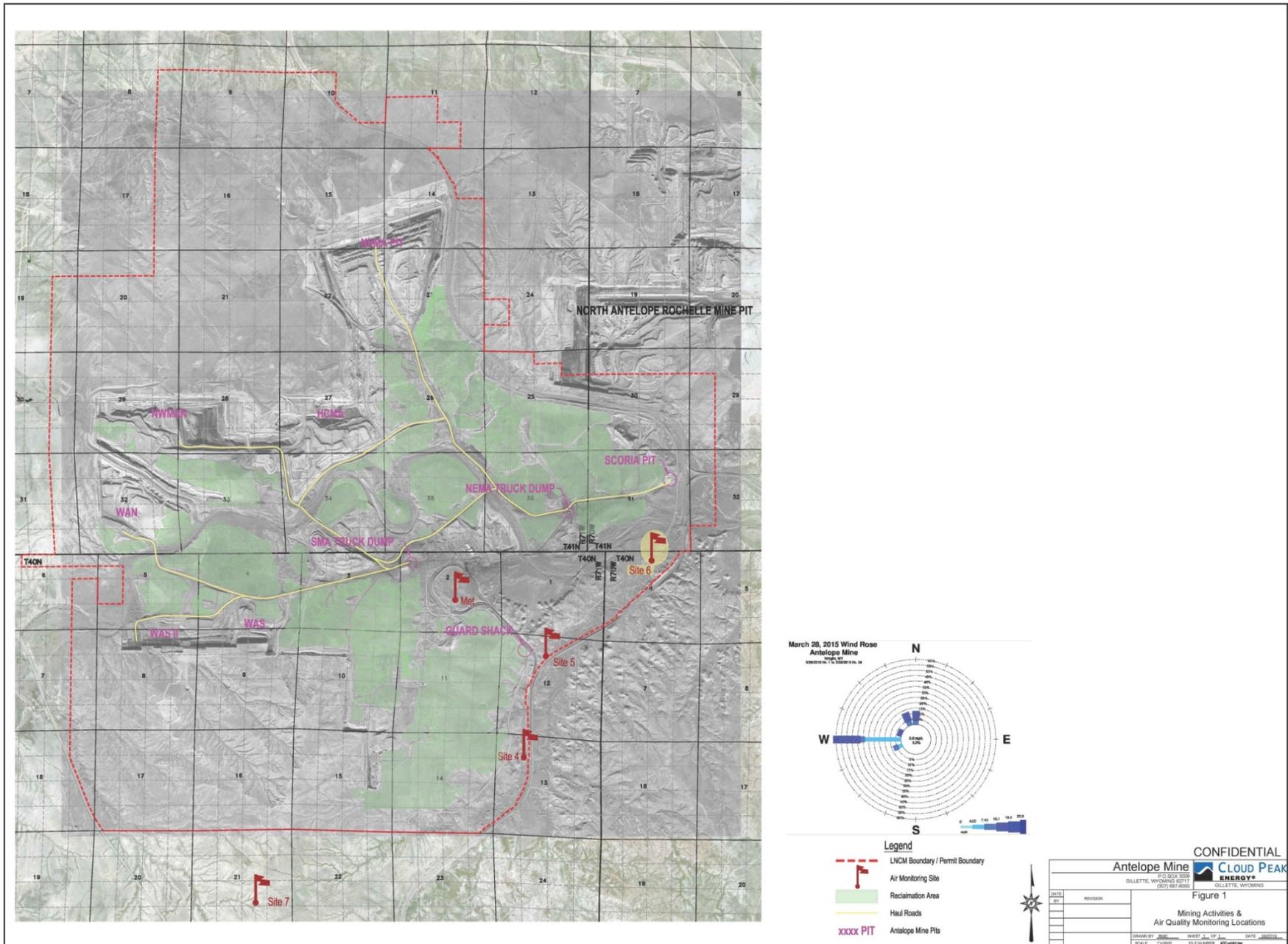
On the morning of Saturday, March 28, 2015, the District 3 Air Quality Engineer forwarded a high-wind warning and blowing dust alert. The alert stated:

Blowing Dust Health Alert In Effect For All Of Powder River Basin Of Northeastern Wyoming From 3 Pm This Afternoon Until Midnight Tonight - West Wind Of 20 To 35 Mph Early This Afternoon Will Shift To The Northwest And Increase To 30 To 40 Mph - With Gusts To 60 Mph. The Winds Will Decrease Around Midnight.

This forecast was borne out by subsequent hourly meteorological measurements at the mine.

On March 28 Antelope Mine was operating in three mine pits - NEMA, NWMAN and WAS II. The mine has one dragline and it was operating in the NEMA pit. The NEMA pit is the closest of Antelope's mine pits and is approximately 4 miles northwest from the Site 6 monitor. Figure 1 shows the mine air monitoring locations and active areas on the subject date.

Figure 1 – Antelope Mine Map



The Site 6 TEOM is connected to an alarming system that notifies mine personnel when hourly and cumulative average PM<sub>10</sub> concentrations reach certain threshold levels. The first dust alert was issued by the system at 5:25 pm for an hourly concentration of 740.1 ug/m<sup>3</sup> as shown:

Alert issued For This Time	Alert Issued At	24 hr Rolling Average	1 hr Average
4:00:05 PM	5:25PM	-----	740.12 ug/m"3
5:00:05 PM	6:25PM	115.95 ug/m"3	-----
10:00:05 PM	11:25 PM	172.35 ug/m"3	-----

The shift supervisor immediately began to evaluate conditions related to potential sources of dust as well as control measures. These observations were unable to identify any individual source as the entire area for miles in all directions was observed to be experiencing heavy blowing dust conditions due to high winds. The photographs in Figures 3 through 5 confirm high dust levels in the area on March 28, 2015.

## II. Demonstration That Air Quality Was Caused by High Winds

### Overview of Hourly Wind Data

Average hourly wind speeds generally climbed on the morning of March 28, 2015 with the average hourly wind speed reaching 20.4 mph at 10am. Values continued to rise until 5 pm when the average wind speed peaked at 37.0 mph with gusts over 55 mph. Wind speeds continued to be elevated during the remaining seven hours of the day with average hourly wind speeds ranging from 20.1 mph to 35.6 mph and gusts ranging from 32.0 mph to 50.1 mph. Figure 2 graphs hourly average PM<sub>10</sub> concentrations alongside hourly average and peak wind speeds for March 28, 2015.

**Figure 2 – ACM Hourly TEOM Values vs. Wind Speed on 3/28/15**

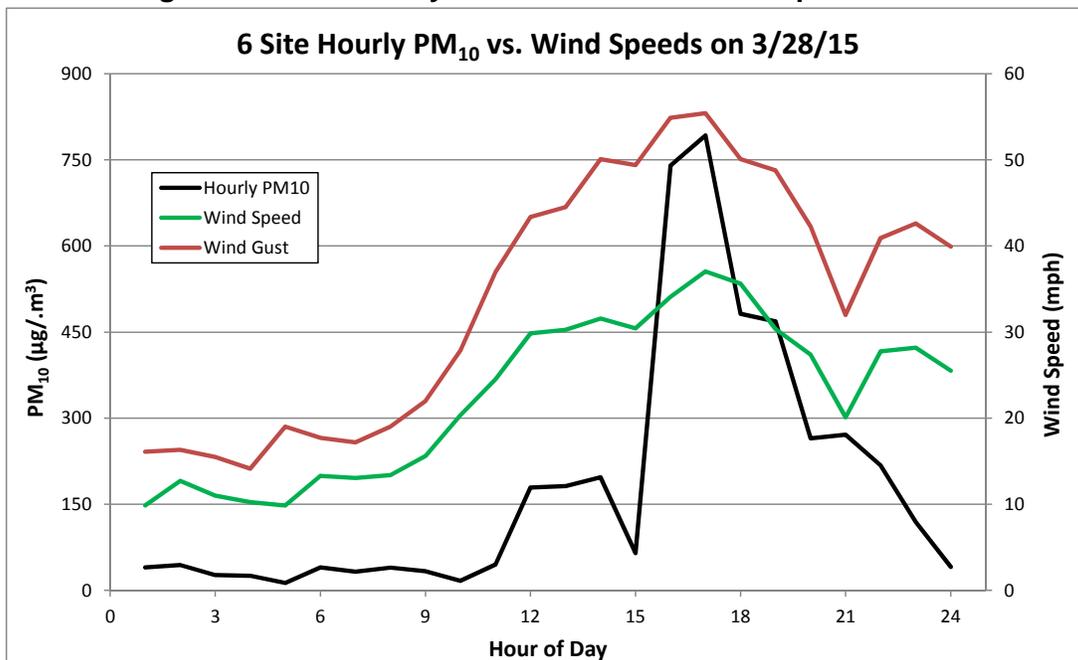


Figure 3 Taken from guard shack. Looking South over native rangelands. Taken at approximately 7:00 pm 3/28/15.



Figure 4 Taken from near the ACM office building. Looking North towards the NEMA Pit. Taken at approximately 7:00 pm 3/28/15.



Figure 5 Taken about 0.75 miles east of the guard shack. Looking East towards adjacent mine's area. Taken at approximately 7:00 pm 3/28/15.



Table 1 lists hourly average wind speed, peak hourly wind gust, hourly average wind direction and hourly average PM<sub>10</sub> concentration for the Site 6 monitor on March 28, 2015. Hourly average wind speeds ranged from 20 to 37 mph from 10:00 am through the rest of the day. Wind direction was generally out of the west until 6:00 pm, after which an abrupt change in wind direction is evident at 7:00 pm, from west-southwest to north-northwest. This coincided with the passage of a strong storm front through the area. Given the spatial distribution of mining activity described above, it is likely that both wind directions caused heavy impacts to PM<sub>10</sub> concentrations at the Site 6 monitor

**Table 1 – Concurrent Hourly Wind and Air Quality Data**

Hour	Wind Speeds (mph)		Wind Direction (° CW from North)	Hourly Average PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )
	Average	Gust		6 Site
1	9.8	16.1	259	40.1
2	12.7	16.3	255	44.1
3	11.0	15.5	264	26.6
4	10.2	14.1	267	25.4
5	9.9	19.0	261	12.9
6	13.3	17.7	266	39.8
7	13.0	17.2	263	32.5
8	13.4	19.0	264	39.5
9	15.6	22.0	266	33.3
10	20.4	27.9	259	16.6
11	24.5	37.0	262	44.8
12	29.8	43.4	268	179.2
13	30.3	44.5	269	181.7
14	31.6	50.1	268	196.9
15	30.4	49.4	261	64.8
16	34.1	54.9	265	740.1
17	37.0	55.4	281	792.5
18	35.6	50.1	290	481.7
19	30.3	48.8	352	468.4
20	27.4	42.3	350	265.0
21	20.1	32.0	350	271.1
22	27.8	40.9	346	217.9
23	28.2	42.6	344	119.0
24	25.5	39.9	331	40.7

Overview of Related Meteorological Data

Weather conditions on March 28, 2015 were unusually dry and mild at Antelope Mine. Ambient temperatures ranged from 57 °F to 77 °F. There was no measureable precipitation at Antelope Mine on that day. Precipitation during the first three months of 2015 totaled 0.40 inches, well below normal. The most recent measurable precipitation before March 28<sup>th</sup> was 0.01 inches on

March 23<sup>rd</sup>, and before that, 0.01 inches on March 5<sup>th</sup>. The most recent significant precipitation was 0.10 inches on February 20, 2015.

### **III. Demonstration That The Event Was Not Reasonably Controllable or Preventable**

#### Reactionary Control Measures

Antelope Mine was operating on March 28, 2015 in three of its six mine pits - NEMA, NWMAN and WAS II (please refer to Figure 1). In the morning hours the mine was operating two water trucks to control haulroad and dump area emissions. Because of noticeable increases of visible dust, the shift supervisor brought a third water truck into service at 11:00 am, before there was any dust alert issued by the monitoring system. A total of 1.028 million gallons of water was applied at the Antelope Mine throughout the day and night on March 28, 2015.

All three water trucks were operated for the remainder of the day. Antelope Mine's fourth water truck was under repair and did not become available during this period. Watering was focused on all roads in the mining area. The scoria crushing stockpile is proximal to the Site 6 monitor and was considered to be a potential source of dust and watering was directed to there to wet the pile and reduce that possibility.

The second-shift supervisor noted that potential sources of dust included the NEMA coal haulroad, dragline mining activity, roadways, spoil dumps, and the topsoil removal area in the NEMA pit. Motor graders working the NEMA road were re-directed to other pits and low areas, one water truck was specifically assigned to the NEMA coal haulroad. It should be noted that no coal was hauled on the NEMA haulroad or dumped at the NEMA hopper during the period of the highest hourly concentrations. Dragline use was reduced or completely discontinued between the hours of 9:00 pm on March 28, 2015 until about 2:00 am on the following day, and water continued to be focused on the scoria pit exposed areas. It should be noted that no topsoil was removed on March 28, 2015 at Antelope Mine.

Antelope mine operates 24 hours a day, running two shifts from 7:00 am to 7:00 am the next day. The shift schedule does not correspond to the normal 24-hour daily period however hourly production statistics have been generated for March 27, 2015 through March 29, 2015 and are included in Table 2. This summary of activity clearly shows reduced activity on March 28, 2015 as compared to either the day before or day after the high wind event. Total overburden production was 47% lower on March 28, 2015 vs March 27, 2015, and 39% lower than the following day (March 29, 2015). Coal production was 6% lower on March 28, 2015 vs March 27, 2015 and 59% less than March 29, 2015.

**Table 2 – Antelope Mine Production March 27 – 29, 2015**

27-Mar-15				28-Mar-15				29-Mar-15			
Time	Dragline OB	Total OB	Total Coal	Time	Dragline OB	Total OB	Total Coal	Time	Dragline OB	Total OB	Total Coal
24:00-01:00	11,882	30,698	3,856	24:00-01:00	11,649	14,124	0	24:00-01:00	0	11,011	6,000
01:00-02:00	9,033	29,626	4,588	01:00-02:00	9,750	12,218	0	01:00-02:00	282	14,282	6,757
02:00-03:00	11,179	22,927	1,842	02:00-03:00	12,061	8,446	1,446	02:00-03:00	7,205	16,476	3,515
03:00-04:00	9,387	20,032	2,297	03:00-04:00	9,846	12,022	482	03:00-04:00	7,171	22,572	4,822
04:00-05:00	8,958	24,365	3,579	04:00-05:00	10,304	12,259	1,446	04:00-05:00	7,066	21,710	4,295
05:00-06:00	10,048	25,431	3,930	05:00-06:00	9,246	14,840	1,446	05:00-06:00	8,108	22,857	5,018
06:00-07:00	6,388	23,054	2,545	06:00-07:00	7,884	12,084	964	06:00-07:00	7,534	23,223	4,831
07:00-08:00	7,646	16,843	1,405	07:00-08:00	8,573	8,042	1,448	07:00-08:00	7,689	14,823	2,231
08:00-09:00	7,179	25,693	1,833	08:00-09:00	8,189	14,923	2,654	08:00-09:00	5,700	18,513	4,647
09:00-10:00	6,633	24,320	1,859	09:00-10:00	8,052	14,663	723	09:00-10:00	5,509	20,581	3,203
10:00-11:00	7,373	22,944	3,664	10:00-11:00	7,284	14,571	0	10:00-11:00	10,961	27,108	2,699
11:00-12:00	8,157	27,526	1,559	11:00-12:00	8,106	13,928	0	11:00-12:00	8,787	24,701	1,447
12:00-13:00	6,597	23,618	0	12:00-13:00	6,574	13,844	0	12:00-13:00	4,199	18,351	2,685
13:00-14:00	12,320	30,612	515	13:00-14:00	8,206	14,932	0	13:00-14:00	10,491	23,358	3,232
14:00-15:00	10,924	23,451	2,067	14:00-15:00	5,360	8,736	0	14:00-15:00	10,812	22,786	2,065
15:00-16:00	10,069	29,284	2,401	15:00-16:00	10,692	14,209	0	15:00-16:00	8,757	19,140	3,217
16:00-17:00	10,922	30,793	1,881	16:00-17:00	10,130	16,003	0	16:00-17:00	9,812	23,670	4,802
17:00-18:00	8,005	26,084	510	17:00-18:00	10,313	14,333	2,895	17:00-18:00	6,960	19,843	2,876
18:00-19:00	7,870	22,117	0	18:00-19:00	9,764	9,182	3,617	18:00-19:00	7,255	21,019	3,884
19:00-20:00	8,314	18,639	0	19:00-20:00	8,846	9,109	3,135	19:00-20:00	7,304	17,031	2,473
20:00-21:00	9,152	23,890	0	20:00-21:00	6,931	12,684	4,341	20:00-21:00	7,205	24,286	4,038
21:00-22:00	8,038	19,799	0	21:00-22:00	5,171	12,736	2,894	21:00-22:00	10,242	24,803	4,542
22:00-23:00	9,052	19,227	0	22:00-23:00	2,352	12,994	5,066	22:00-23:00	8,231	24,914	5,052
23:00-24:00	6,516	19,430	0	23:00-24:00	0	13,979	5,306	23:00-24:00	7,810	24,679	4,115
TOTAL	211,642	580,403	40,331	TOTAL	195,283	304,861	37,863	TOTAL	175,090	501,737	92,446

### Best Available Control

In addition to the specific response plan actions reported above, Antelope Coal, LLC had implemented numerous preventive control measures prior to March 28, 2015. Best Available Control Measures that were employed at Antelope Mine on or before March 28, 2015 include the following:

- All out-of-pit overburden stockpiles had been revegetated.
- All topsoil stockpiles that were not active had been revegetated.
- Revegetating disturbed areas is a priority and the site reclaimed 368 acres to permanent status in 2014. Large areas of land upwind of the Site 6 TEOM sampler have been permanently reclaimed by Antelope Mine and are depicted on the map in Figure 1.
- Regrading/Surface roughness – Antelope Mine rips or leaves regarded surfaces in a rough condition to reduce wind erosion from those areas, 34.2 acres were regarded and left in rough condition in the first quarter of 2015.
- In addition to the permanent revegetation conducted in 2014, Antelope Mine has seeded 440 acres in the first quarter of 2015.
- Topsoil stockpiles that were active were left in a roughened condition to minimize wind erosion and increase the potential for infiltration of any precipitation.
- Contractors involved in topsoil salvage were required, through their contract, to operate water trucks at all times that the scraper fleet operates.
- ACM promptly extinguished all coal fires and on an on-going basis. The mine employs a high pressure water hose and man-lift to perform this safely and efficiently.

### Primary Dust Abatement

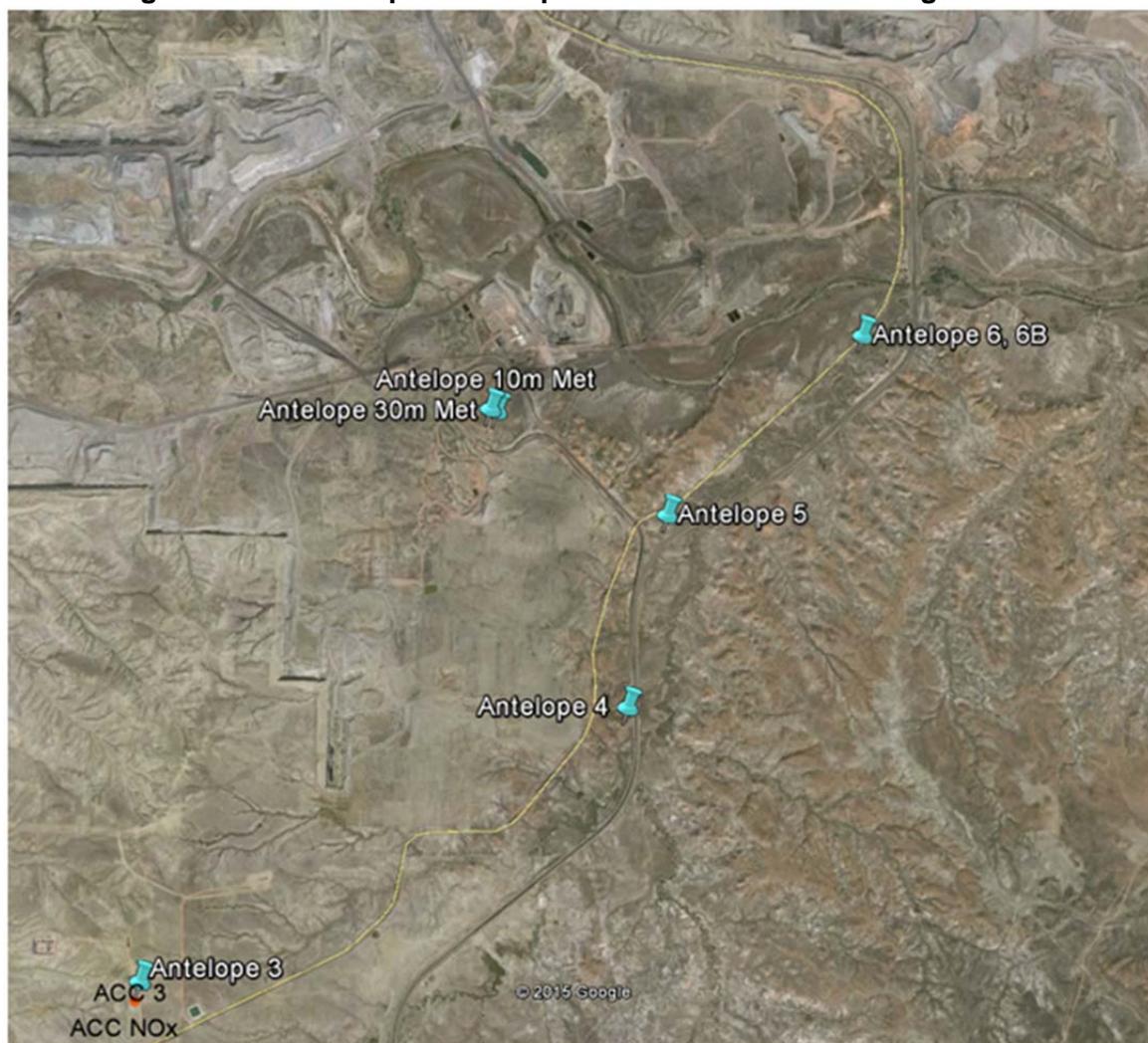
Antelope Mine employs dust abatement on a continual and on-going basis. The site utilizes four (4) 42,500 gallon water trucks that apply water and Mag Chloride for dust abatement purposes. When topsoil contractors are operating on site they are required to operate water trucks to control dust from topsoil stripping operations. In 2014 Antelope applied 169.1 million gallons of water to haul roads and 92,764 gallons of Mag Chloride. The dirt contractor used two water trucks and applied 6.4 million gallons of water. The total water applied to road surfaces in 2014 was 175.6 million gallons. In addition, Antelope and its' contractors applied 59 million gallons of water onto the access and haul roads during the 1st quarter of 2015. Two thirds of this amount was applied in March. The more than one million gallons applied on March 28<sup>th</sup> was nearly twice the 2014 application rate and demonstrates that extreme measures were taken to mitigate road dust.

In addition to haul road treatment, other standard dust abatement practices were in force at Antelope Mine on March 28, 2015. The two truck dumps are equipped with stilling sheds and wet fogging systems. Plant and long conveyor runs are covered and utilize Passive Enclosure Control (PEC) systems to control dust.

#### IV. Demonstration That The Event Was in Excess of Normal Historical Fluctuations

March 28<sup>th</sup> coincided with a run day for two manual PM<sub>10</sub> samplers at Antelope Mine, the 4 Site and the 5 Site. These two samplers are also downwind from mining activities. Antelope Mine monitors hourly average wind conditions at its 30-meter meteorological station. These monitoring sites are shown in Figure 6.

**Figure 6 – Aerial Map of Antelope Coal Mine and Monitoring Stations**



The continuous TEOM (Site 6) that exceeded the standard and the two manual sampler sites that ran on the day of the exceedance were evaluated for historical fluctuations in PM<sub>10</sub> concentration. Figure 7 shows that on 3/28/15 the PM<sub>10</sub> concentration at Site 6 was the highest recorded over the year in which the TEOM has been operating. It was also 40% higher than the second highest daily average.

Figure 7 – Antelope Coal Mine TEOM Monitoring History

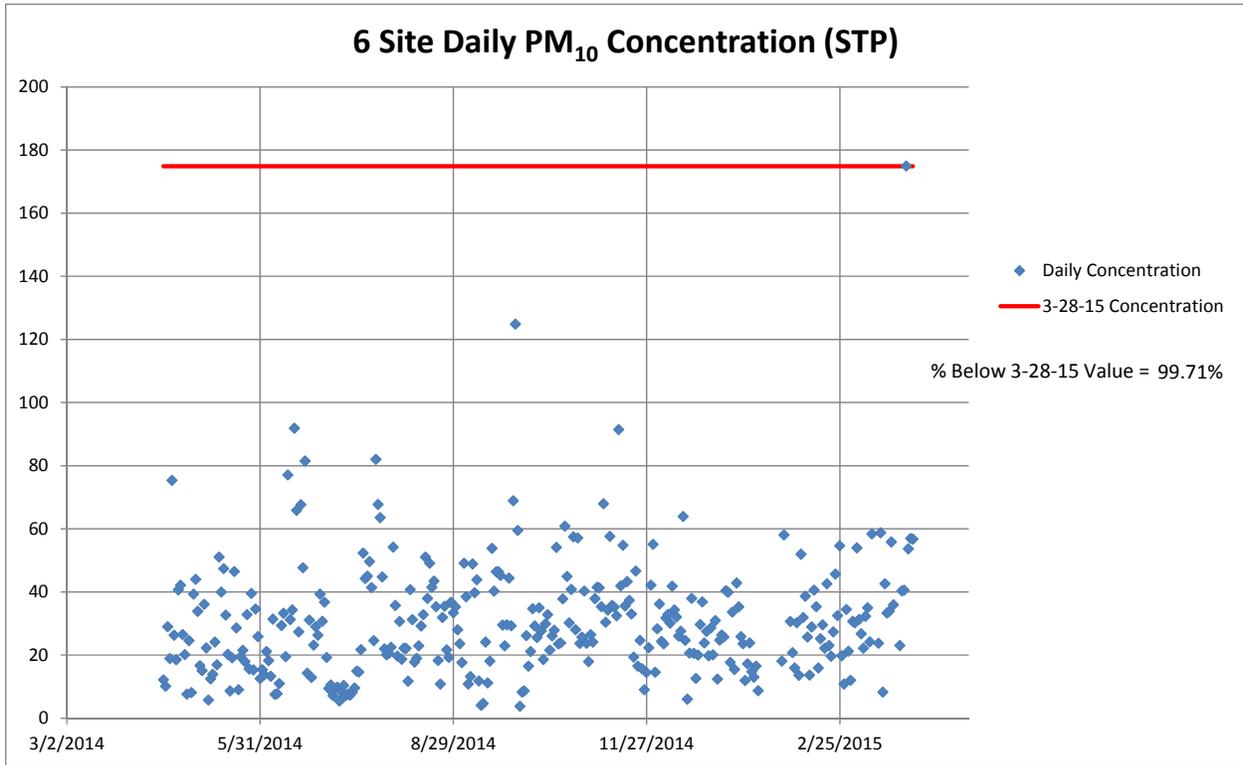


Figure 8 and Figure 9 graph the last five years of 1<sup>st</sup>-quarter daily average PM<sub>10</sub> concentrations for the two manual samplers. Although these sites did not measure exceedances, the 3/28/15 values were the highest 24-hour averages measured at those sites during the 1<sup>st</sup>-quarter over the last five years. The 63.2  $\mu\text{g}/\text{m}^3$  at the 4 Site and the 108.9  $\mu\text{g}/\text{m}^3$  at the 5 Site are substantially above the normal fluctuations for January through March. Both values represent the 99.3 percentile out of a total of 145 and 134 valid run days, respectively.

Figure 8 – Antelope Coal Mine 4 Site Manual Sampling History

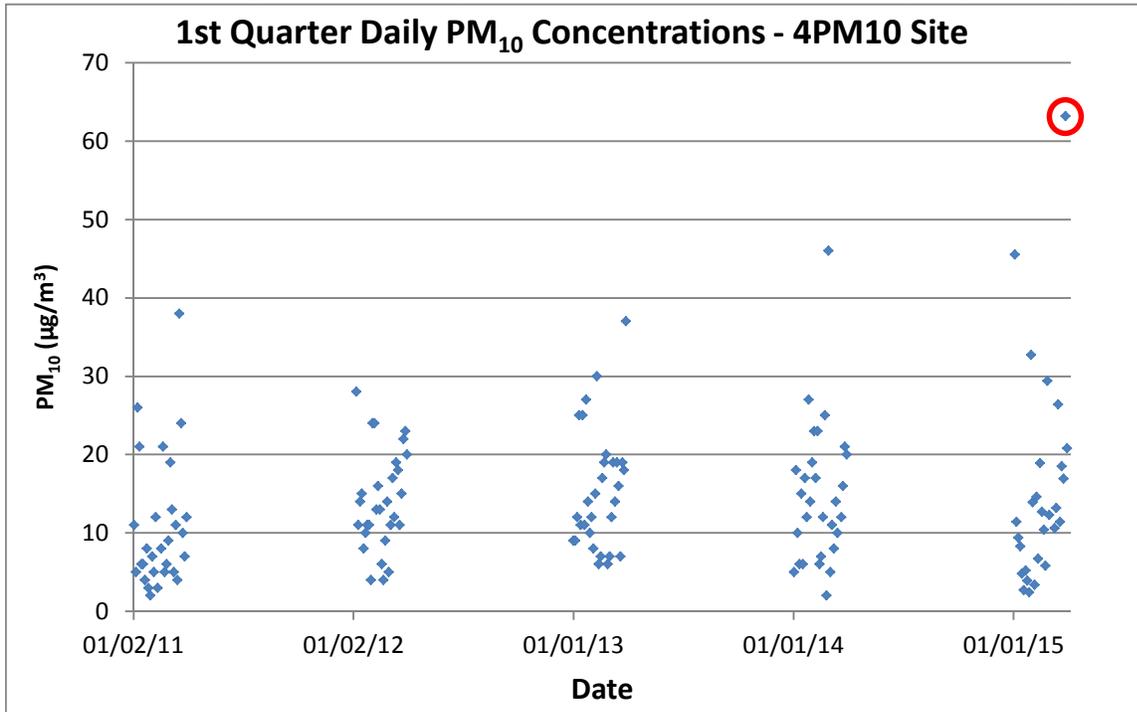
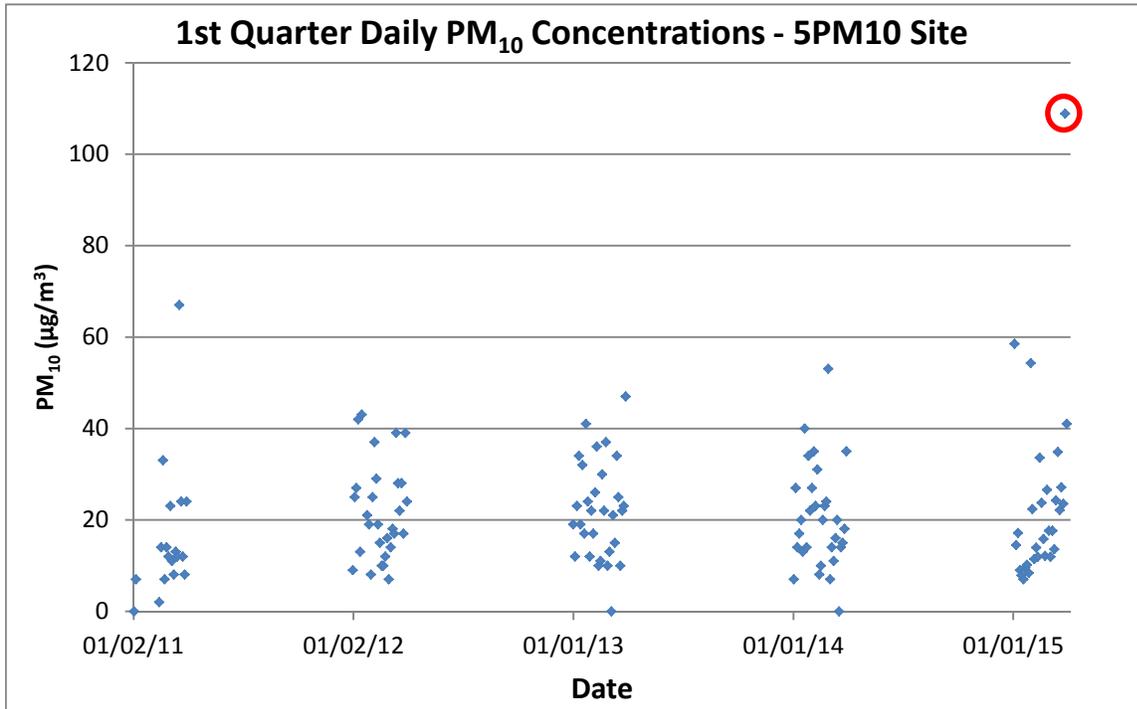


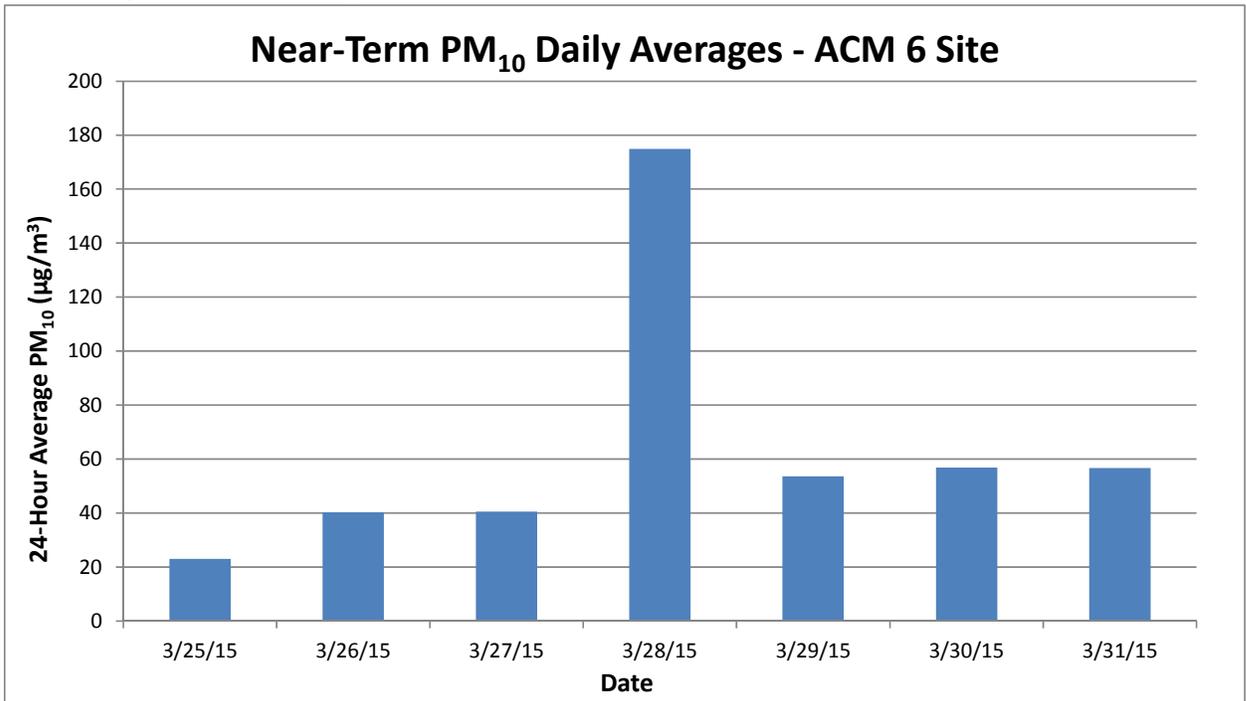
Figure 9 – Antelope Coal Mine 5 Site Manual Sampling History



Considering year-round sampling results for the last five years, the 3/28/15 concentrations represent the 98.4 percentile for the 4 Site and the 99.6 percentile for the 5 Site, out of a total of 571 and 538 valid run days, respectively. Therefore, all three monitors active on 3/28/15 measured 24-hour average PM<sub>10</sub> concentrations well above historical fluctuations.

As illustrated in Figure 10, a near-term comparison supports the unusual nature of the PM<sub>10</sub> concentration measured at Site 6 on 3/28/15. This site not only exceeded the 24-hour standard on that day, but it registered three to four times the concentrations measured on all other days of the week during which the exceedance occurred. This near-term comparison effectively eliminates differences in anthropogenic emission sources as the cause of the high PM<sub>10</sub> values, since these would not be expected to change significantly from day to day.

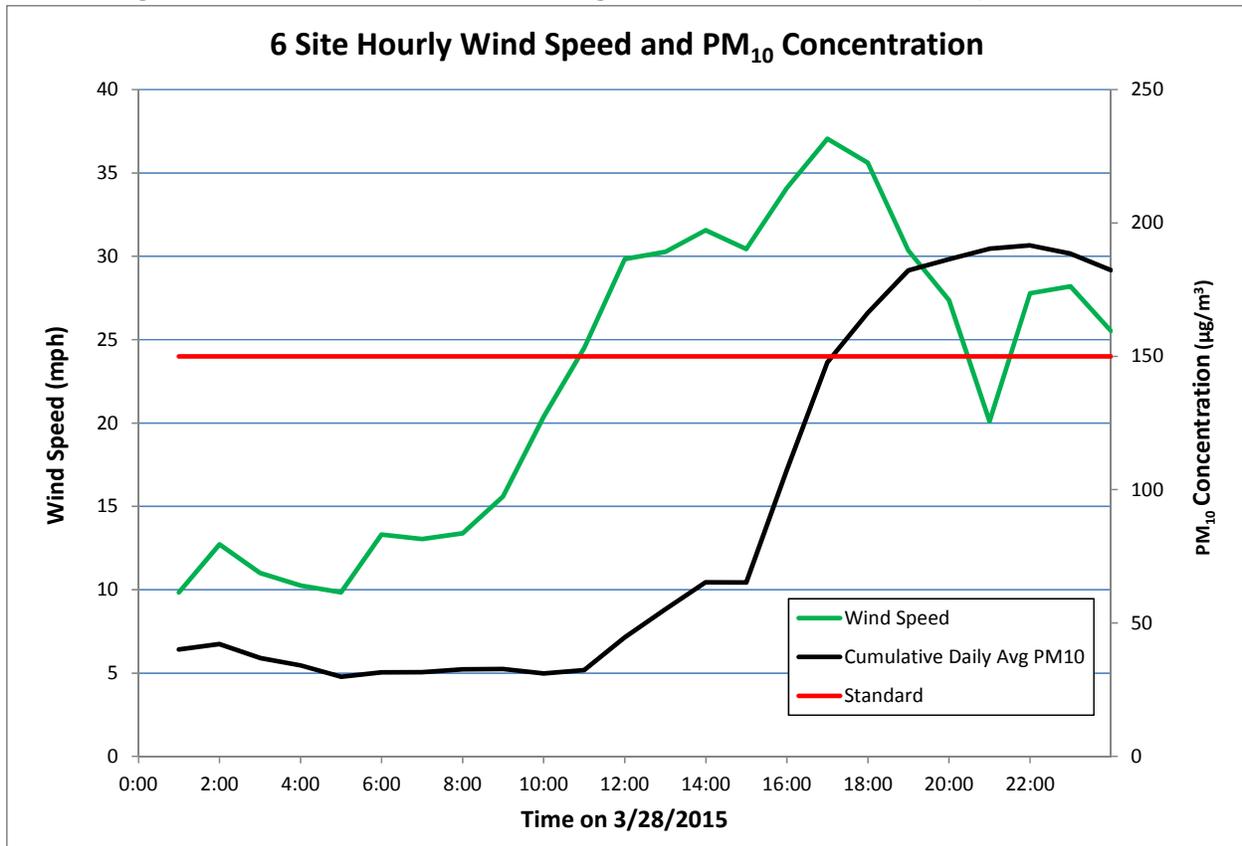
**Figure 10 – Antelope Coal Mine TEOM Values for Week of March 28, 2015**



## V. Demonstration of a Clear Causal Relationship Between the Event and the High Winds

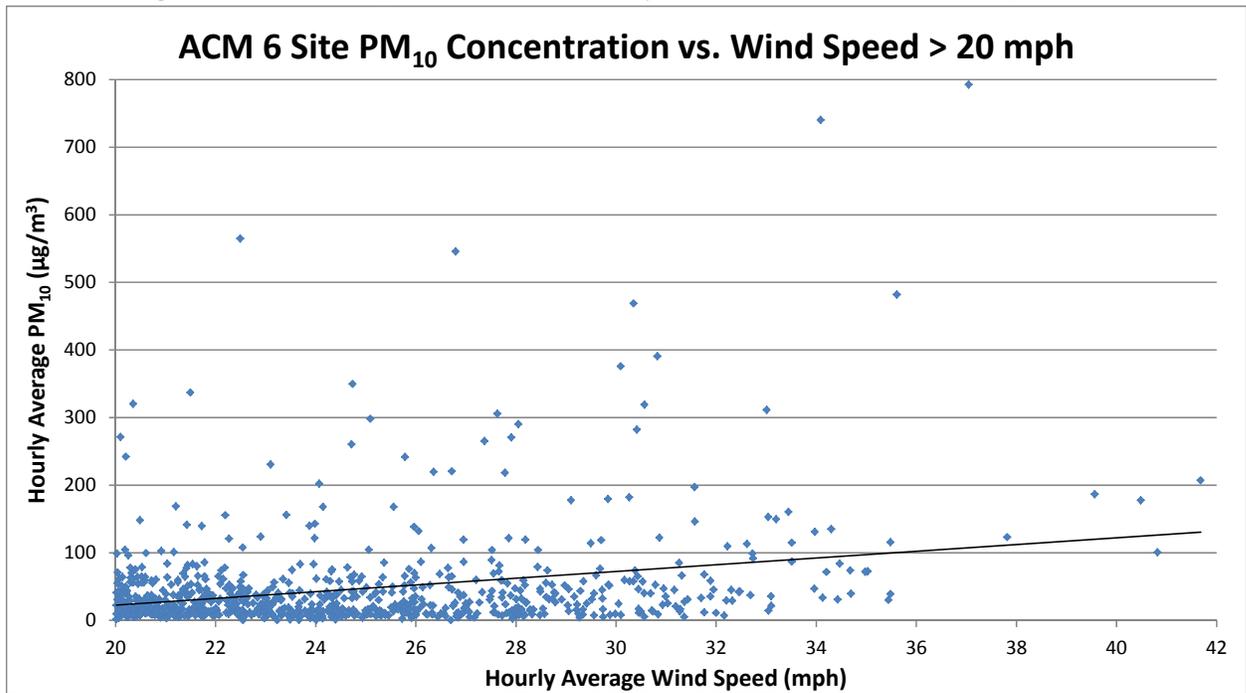
Figure 11 shows a causal relationship between elevated 24-hour average  $PM_{10}$  values and wind speeds on the day of the exceedance. The cumulative daily average  $PM_{10}$  concentration exceeded the standard approximately 6 hours after rising hourly average wind speeds first exceeded 25 mph. Figure 11 shows that prior to the wind reaching 25 mph the cumulative daily average  $PM_{10}$  concentration remained relatively flat at approximately  $30 \mu\text{g}/\text{m}^3$ .

Figure 11 – ACM Cumulative Average TEOM Values vs. Wind Speed on 3/28/15



Aside from a clear relationship on March 28, 2015, a general causal relationship can be shown between elevated  $PM_{10}$  values and high wind speeds at Antelope Mine. For this purpose, hourly wind speed and  $PM_{10}$  data were synchronized for the year in which the TEOM has operated at the ACM Site 6. These data were filtered to eliminate lower wind speeds which do not correlate positively with  $PM_{10}$  concentrations (in fact they correlate negatively at very low wind speeds due to poor atmospheric mixing). The scatter plot in Figure 12 contains over 800 data points from the Site 6, showing a weak linear correlation between hourly wind speeds above 20 mph and hourly  $PM_{10}$  concentrations.

**Figure 12 – Antelope Coal Mine Hourly TEOM Values vs. Wind Speed**

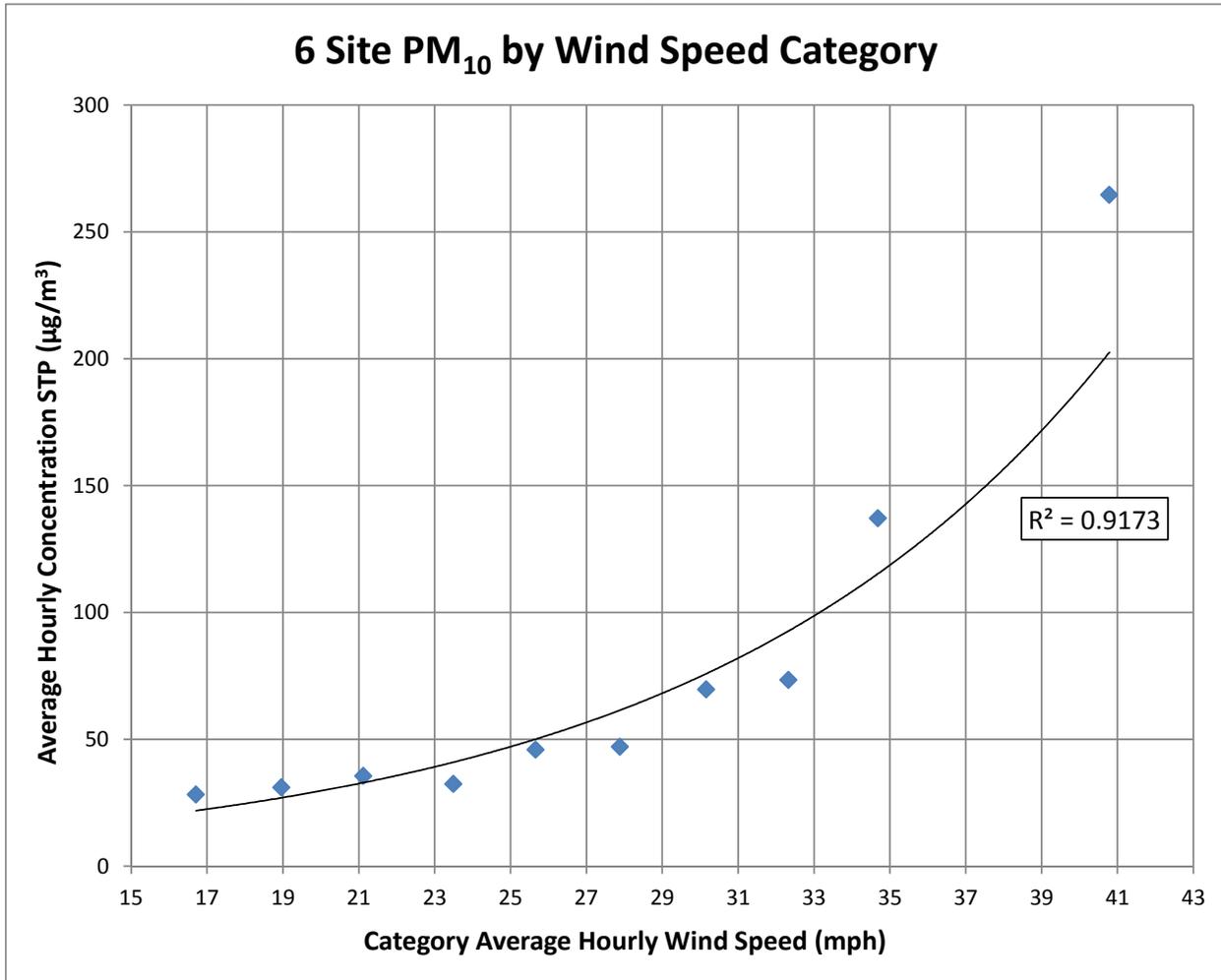


With large data sets in which the random variation is dominant over the systematic or predictable variation, it is helpful to categorize the data. For this purpose, hourly wind speeds were classified into 2-mph increments beginning with 15 mph. This produced a more manageable data set with 12 wind speed categories and an average PM<sub>10</sub> concentration for each category. Figure 13 shows an exponential relationship between PM<sub>10</sub> concentration and wind speed at the Site 6. An  $R^2$  value of 0.92 indicates the relationship is strong. This is confirmed by a linear correlation between wind speed and the natural logarithm of PM<sub>10</sub> concentration, which yields a correlation coefficient  $R$  of 0.96. Since the causal factors behind wind speed (i.e., atmospheric pressure and/or temperature differences) have no direct effect on air particulates, the wind speed itself must be the causal factor behind the strong relationship demonstrated above.

In Figure 13 average PM<sub>10</sub> concentration shows low sensitivity to wind speed in those classes with central values of 16.7 mph up to 23.5 mph. At 25.7 mph and above, however, the sensitivity of average PM<sub>10</sub> concentration to wind speed increases rapidly.

In addition to this direct evidence, the clear causal relationship between high winds and high ambient concentrations of PM<sub>10</sub> has been established or inferred by state and federal guidance. EPA states, "For purposes of qualifying for the exclusion of data affected by wind events with sustained wind speeds above 25 miles per hour (or above another threshold determined to be appropriate for a particular area), the demonstration of reasonable controls applied to disturbed landscapes and other anthropogenic sources of dust could be less rigorous because: (1) the contribution from natural undisturbed lands is likely to be high and, (2) at such high wind speeds many available controls would have been ineffective in significantly reducing wind-generated dust emissions" (EPA 2013a).

Figure 13 – ACM Historical Hourly TEOM Values vs. Wind Speed



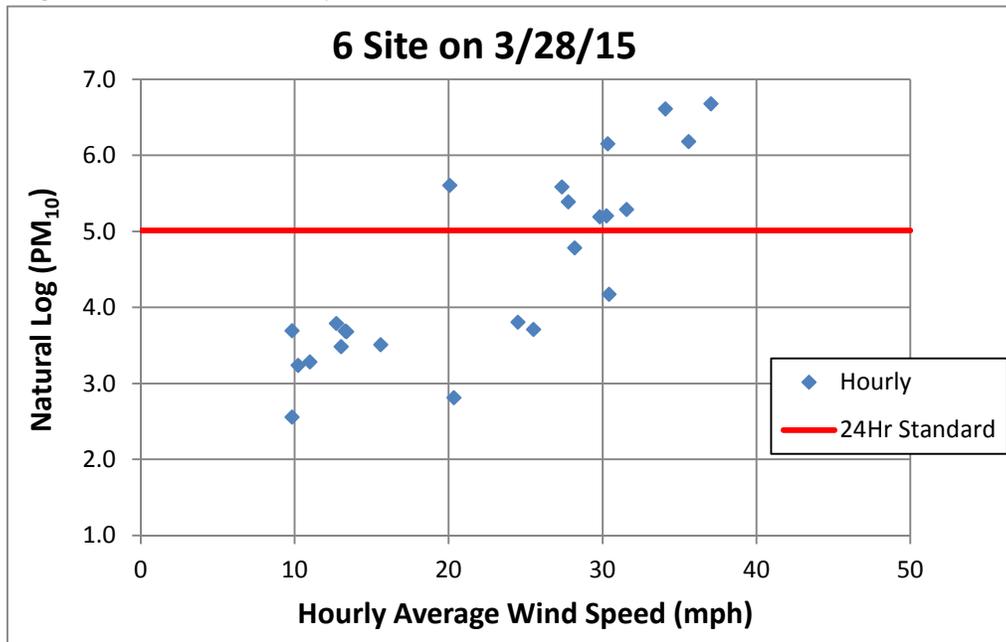
EPA reinforces the 25-mph threshold in its Interim High Winds Guidance. “If an agency is unable to develop an area-specific high wind threshold, the EPA generally will accept a threshold of a sustained wind of 25 mph for areas in the west provided the agencies support this as the level at which they expect stable surfaces (i.e., controlled anthropogenic and undisturbed natural surfaces) to be overwhelmed” (EPA 2013b). In the case of the Wyoming Powder River Basin (PRB), a threshold wind speed of 20 mph was established in the Natural Events Action Plan for surface coal mines (WDEQ 2007). Above this threshold, wind speed tends to be the most consistent factor influencing ambient PM<sub>10</sub> concentrations. The 20 mph threshold was based on a basin-wide correlation of hourly average wind speeds and hourly PM<sub>10</sub> concentrations.

The exceedance on 3/28/15 corresponded to hourly average wind speeds significantly higher than the PRB threshold of 20 mph and the EPA default threshold of 25 mph. High hourly PM<sub>10</sub> concentrations at Site 6 occurred during a 13-hour period when the wind speed averaged 30 mph. It is reasonable to assume (1) the contribution from natural undisturbed lands was high and, (2) at such high wind speeds the available controls were ineffective in significantly reducing wind-generated dust emissions from anthropogenic sources at the mine.

## VI. Demonstration That There Would Have Been No Exceedance But For the High Wind Event

Figures 2 and 11 above clearly show that high dust concentrations followed high winds, and  $PM_{10}$  concentrations did not exceed the 24-hour standard until sustained wind speeds over 25 mph occurred. To account for the exponential relationship demonstrated above, the natural logarithm of hourly  $PM_{10}$  concentration was graphed against hourly wind speed for Site 6 on March 28, 2015 (Figure 14). All of the hourly concentrations in excess of the 24-hour standard coincided with hourly average wind speeds above 20 mph.

Figure 14 – ACM Hourly TEOM Values vs. Wind Speed on March 28, 2015



Since each hourly value exceeding the 24-hour standard on 3/28/15 was associated with a high wind speed, and since the lower hourly wind speeds on that day corresponded to  $PM_{10}$  values below the standard, it is clear that the high 24-hour  $PM_{10}$  concentrations would not have occurred without the high winds. Figure 11 demonstrates that the cumulative daily average  $PM_{10}$  concentration on 3/28/15 did not exceed the standard until the onset of an extremely high hourly average wind speed (37 mph).

Wind gusts may have exacerbated the suspension of particulate matter that led to the exceedance at Antelope Mine. Figure 2 graphs hourly TEOM values with hourly average wind speeds and peak gusts. The highest gust exceeded 55 mph at 5:00 PM, the time at which the cumulative daily average  $PM_{10}$  concentration went above the standard.

## **Conclusion**

Antelope Mine was in compliance with its air quality permit conditions and employed every reasonable means to avoid the exceedance on March 28, 2015. Unusually high wind speeds on that day overwhelmed these control measures. Therefore, Antelope Coal, LLC requests that the exceedance be flagged as an exceptional event.

The most recent Air Quality Division Inspection Report is attached as Appendix A. Correspondence between Antelope Mine and the Air Quality Division regarding the March 28, 2015 exceedance is documented in Appendix B.

## References

EPA 2013a, *Memorandum on Interim Guidance to Implement Requirements for the Treatment of Air Quality Monitoring Data Influenced by Exceptional Events*, USEPA, May 2013.

EPA 2013b, *Interim Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Ambient Air Quality Data Affected by High Winds Under the Exceptional Events Rule*, USEPA, May 2013.

NOAA 2015, Friendly Forecast website, Historical Hazards, March 28, 2015;  
<http://www.friendlyforecast.com/usa/archive/archive.php?region=WY&id=326283&?-Forecast-Wright-Wyoming&date=20150328000000&sort=hour#Hazard>

WDEQ 2007, *Natural Events Action Plan for the Coal Mines of the Powder River Basin of Campbell & Converse Counties*, Revision 1/23/07, Wyoming Department of Environmental Quality, Air Quality Division.

**APPENDIX A**

**Antelope Mine 2014 Annual Inspection Report**



# Department of Environmental Quality

*To protect, conserve, and enhance the quality of Wyoming's  
environment for the benefit of current and future generations.*



Matthew H. Mead, Governor

152 N. Durbin St., Suite 100 · Casper, WY 82601 · (307) 473-3450

Todd Parfitt, Director

January 15, 2015

Kyle Wendtland  
Senior Environmental Engineer  
Antelope Coal Company  
Caller Box 3008  
Gillette, WY 82717

Re: Antelope Coal Mine FY'14 Annual Inspection

Dear Mr. Wendtland:

Enclosed is a copy of the FY'14 Annual Inspection Report for the Antelope Coal Mine (inspection date - June 9, 2014.) As stated in the report, no compliance issues were noted while one concern is listed, though it needs no response from Antelope Coal Company.

The listed concern in the enclosed report is regarding the authorization to construct under Air Quality Permit MD-13361. On November 5, 2012, Permit MD-13361 was issued to construct a near pit truck dump and overland conveyor from the north pits to the preparation area of the plant. In an October 23, 2013 letter, Antelope Coal notified the Division that coal market conditions have changed and the construction of near pit truck dump would not commence until the year 2015. As described in the enclosed report Antelope Coal modified the SMA truck dump under this permitting action, achieving startup on May 3, 2013 (Antelope Coal letter - May 14, 2013.) Therefore, Antelope Coal has until May 3, 2015 to commence construction on the other modifications allowed by MD-13361 or to petition the Administrator for an extension to commence initial construction.

Although no response to this letter is needed, it is suggested that the enclosed report be reviewed for accuracy and, if errors of substance are detected, that corrections deemed necessary be forwarded to the Division. Speaking for the Division, I would like to thank Antelope Coal Company for its cooperation in conducting this inspection. For questions regarding the contents of this correspondence, please don't hesitate to contact the Division's Casper Field Office.

Sincerely,

Chris Hanify  
Air Quality District Engineer

enclosure

cc (without enclosure): file  
Air Quality – Cheyenne





**Department of Environmental Quality  
Air Quality Division  
Annual Inspection for Fiscal Year 2014**

**NAME OF FIRM:** Antelope Coal LLC  
**NAME OF FACILITY:** Antelope Coal Mine  
**LOCATION OF MINE:** 4 miles west of Highway 59 along Antelope Coal Mine road, 55 Miles north of Douglas (T40-41W, R71W, Campbell and Converse Counties)  
**MINE MANAGER:** Steve Cowan  
**ENVIRONMENTAL CONTACT:** Kyle Wendtland, Senior Environmental Engineer  
Nate Weinland, Environmental Engineer  
**CORPORATE ADDRESS:** Caller Box 3008, Gillette, WY 82717  
**TELEPHONE:** Kyle Wendtland (307)-464-2571  
Nate Weinland (307)-464-2849  
Plant (307)-464-1133  
**DATE OF INSPECTION:** June 9, 2014  
**DIVISION REPRESENTATIVE:** Jeff Hancock - Engineer   
Chris Hanify - District Engineer  
**LAST ANNUAL INSPECTION AND REPORT DATES:** August 20, 2013 (inspection)  
September 27, 2013 (report)  
**STAFF REVIEW:** Steve Dietrich - Administrator  
Fred DiLella - Compliance Program Manager  
Chris Hanify - District Engineer   
**REPORT DATE:** July 1, 2014 

**YEAR 2014 COMPLIANCE STATUS:**

At the time of the inspection, the Antelope Coal Mine (ACM) was determined to be operating in compliance with applicable air quality standards and regulations.

**YEAR 2014 AIR QUALITY CONCERNS:**

The site inspection and file review revealed one air quality concerns.

MD-13361 was issued on November 5, 2012 to construct a near pit truck dump and overland conveyor from the north pits to the preparation area of the plant. The ACM will need to submit construction and startup notifications for the North Pits Near-Pit (NPNP) truck dump and associated coal processing equipment required by conditions 6 and 5. The ACM will also need to conduct opacity performance testing of the NPNP Truck Dump and passive enclosure control (PEC) systems associated with the overland

conveyor required by Condition 8 within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial startup.

In an October 23, 2013 letter ACM notified the AQD that coal market conditions have changed and the construction of near pit truck dump will not commence until the year 2015. Condition 6 stated approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension. In a May 14, 2013 letter ACM informed the AQD the SMA truck dump was restarted on May 3, 2013 (date of startup of modified truck dump). Therefore, ACM has until May 3, 2015 to begin construction on the other modifications allowed by MD-13361 before they will have to petition the Administrator.

### **2013 AIR QUALITY CONCERNS AND COMPLIANCE STATUS:**

Under a May 23, 2014 cover letter the Division provided the Antelope Coal Mine (ACM) a copy of the Year 2014 Inspection Report. The report contained one air quality concern shown below:

MD-13361 was issued on November 5, 2012 to construct a near pit truck dump and overland conveyor from the north pits to the preparation area of the plant. The ACM will need to submit construction and startup notifications for the North Pits Near-Pit (NPNP) truck dump and associated coal processing equipment required by conditions 6 and 5. The ACM will also need to conduct opacity performance testing of the NPNP Truck Dump and passive enclosure control (PEC) systems associated with the overland conveyor required by Condition 8 within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial startup.

### **NAME CHANGE:**

In a March 23, 2009 letter the AQD responded to ACM's letter of December 24, 2008 that requested a name change to Antelope Coal LLC from Antelope Coal Company.

### **AIR QUALITY PERMITS:**

#### **AIR QUALITY PERMIT MD-13361 (November 5, 2012)**

On May 1, 2012 the AQD received a permit application to increase production from 42 to 52 MM tpy, modify the SMA system, construct a near pit truck dump and overland conveyor from the north pits to the preparation area of the plant, decommission the NEMA truck dump when the near pit truck dump is operational, modify the NEMA sampling system and adjust the mining boundary. In a May 8, 2012 letter the AQD assigned the permit application AP-13361.

In a June 26, 2012 letter Antelope provided replacement maps that showed one acre ambient air boundary surrounding PM-10 monitoring sites 4, 5 and 6. In a June 29, 2012 letter Antelope stated they were in agreement with the AQD that PM-10 monitoring sites 4, 5 and 6 needs to be in an ambient air location and the best way to accomplish this is to have a one acre ambient air boundary surrounding them.

In an August 20, 2012 letter the AQD stated that permit application AP-13361 was complete. In a September 14, 2012 letter the AQD provided ACM a copy of the permit application analysis and stated the permit application would go to public comment on September 20, 2012.

MD-13361 was issued on November 5, 2012 for the following modifications: increase the maximum permitted coal production rate from 42 million tons per year (MMTPY) to 52 MMTPY; adjust the Land Necessary to Conduct Mining (LNCM) Boundary; construct a near-pit truck dump and overland conveyor system from the North Pits to the preparation plant by 2015; decommission the existing NEMA truck dump when the near-pit truck dump becomes operational; modify the SMA truck dump by changing the design of the feed hopper, eliminate a 15-foot section of flight beds just upstream of the feeder breaker, and installing a new feed chute to the overland conveyor; and, modify the design of the NEMA sampling system to stabilize the structure to improve the function of the sampler system, and install a new skirting system to minimize potential spillage. The conditions of operation are shown below:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That a permit to operate, in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR, is required after a 120-day startup period in order to operate this facility.
4. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 152 North Durbin Street, Suite 100, Casper, WY 82601.
5. That written notification of the anticipated date of initial startup of the North Pits Near-Pit truck dump and associated coal processing equipment and SMA truck dump modification, in accordance with Chapter 6, Section 2(i) of the WAQSR, is required not more than sixty (60) days or less than thirty (30) days prior to such date. Notification of the actual date of startup is required within fifteen (15) days after startup.
6. That the date of commencement of construction of the North Pits Near-Pit truck dump and associated coal processing equipment and SMA truck dump modification shall be reported to the Administrator within thirty (30) days of commencement. In

accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

7. That a minimum of one hundred twenty (120) days prior to starting construction of the North Pits Near-Pit truck dump and associated coal processing equipment, Antelope Coal, LLC shall submit plans detailing construction designs to the Division. These plans should include schematics and basic engineering design and shall show the exact location of the facilities to be constructed. Plans shall include the stilling shed design and the number and location of the passive enclosure control systems (PECS). This information shall be reviewed and approved by the Division prior to starting construction.

8. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial startup of the North Pits Near-Pit truck dump and associated coal processing equipment, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within ninety (90) days of startup, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.

9. Initial performance testing, as required by Condition 8 of this permit, shall be conducted on the following sources:

- i. North Pits Near-Pit Truck Dump and passive enclosure control (PEC) systems associated with the overland conveyor system, and SMA truck dump:

Opacity: Performance testing shall follow the requirements of Chapter 5, Section 2(i) of the WAQSR.

Results shall be submitted to the Division within forty-five (45) days of completion.

10. That Antelope Coal, LLC shall decommission the NEMA truck dump and associated overland conveyor system within thirty (30) days of startup, as identified under Condition 5 of this permit, of the North Pits Near-Pit truck dump and associated coal processing equipment.

11. That the following transfer points shall be controlled with a passive enclosure control (PEC) system:

Source ID	Description
B	SMA Secondary Crusher
F	SMA Primary Crusher
H	Silo #1 & #2
I	Transfer 5/6
J	Transfer 6/7
K	NEMA Primary & Secondary Crusher
--	North Pits crusher and overland conveyor

12. That the following requirements shall be met for all passive enclosure control (PEC) systems at the mine:

- a. The PEC systems shall be operated and maintained so the system enclosure exhibits no visible emissions as determined by Method 22 of appendix A, 40 CFR part 60.
- b. Antelope Coal, LLC shall conduct, at minimum, daily visual observations of the PEC systems to determine the presence of visible emissions. Records shall be kept documenting whether visible emissions are noted and the corrective action taken. These records shall be maintained for a period of five (5) years and shall be made available to the Division upon request.
- c. Antelope Coal, LLC shall utilize 40 CFR §60.255(f) of Subpart Y to demonstrate continuous compliance with part (a) of this condition for the transfer points in the North Pits overland conveyor system which are controlled with PEC systems.
- d. Antelope Coal, LLC may utilize 40 CFR §60.255(f) of Subpart Y in lieu of utilizing (b) of this condition to demonstrate continuous compliance for all other PEC systems not listed in (c) of this condition.

13. That Antelope Coal, LLC shall comply with the applicable requirements of 40 CFR part 60, subpart Y.

14. That the following requirements shall be met for the coal samplers (Source ID's D and L) at the Antelope Mine:

- a. The coal sampler shall be operated and maintained so the system enclosures exhibits no visible emissions as determined by Method 22 of 40 CFR part 60, Appendix A.
- b. Antelope Coal, LLC shall conduct, at a minimum, daily visual observations of the coal samplers to determine the presence of visible emissions. Records shall be kept documenting whether visual emissions are noted and the corrective action taken. These records shall be maintained for a period of five (5) years and shall be made available to the Division upon request.

15. That Antelope Coal, LLC shall conduct the following for the North East Mining Area (NEMA) and South Mining Area (SMA) truck dumps at the Antelope Mine:

i. Antelope Coal, LLC shall conduct, at minimum, a control effectiveness demonstration on the truck dump control system each calendar quarter. Control effectiveness for the truck dump control system shall be determined by using the methodology in 40 CFR §60.255(h)(1)(i) and (ii). The Division shall consider the threshold defining relative control effectiveness to be no greater than twenty percent (20%) opacity for the NEMA and SMA truck dumps. Observations shall be conducted by an observer certified in accordance with Section 3.1 of Method 9.

ii. A control effectiveness demonstration with an opacity of twenty percent (20%) or greater shall prompt immediate inspection and, if necessary, corrective action. Corrective action must be initiated when the control device is determined to be improperly maintained or operated as determined by inspection. Antelope Coal, LLC shall document any inspection of the truck dump control system and any corrective actions taken. The duration of any corrective action taken to resolve any items found during an inspection shall be noted along with any justification for delays. Upon completion of the corrective action at the truck dump, Antelope Coal, LLC shall conduct a demonstration of the control effectiveness of the truck dump control system, as described in (i) of this condition.

16. That the NEMA and SMA truck dumps shall be limited to less than twenty percent (20%) opacity, per the requirements of Subpart Y of 40 CFR part 60. Compliance with the twenty percent (20%) percent opacity limit at truck dump will be determined by Method 9 of appendix A, 40 CFR part 60.

17. That Antelope Coal, LLC shall conduct an annual Method 9 observation (one 6 minute average) of the NEMA and SMA truck dumps to measure the opacity of any fugitive emissions. The Method 9 observations shall be conducted by an observer certified in accordance with Section 3.1 of Method 9 and shall follow the requirements and procedures of Method 9 as contained in appendix A, 40 CFR part 60.

18. That the North Pits Near-Pit truck dump shall be limited to less than ten percent (10%) opacity, per the requirements of Subpart Y of 40 CFR part 60.

19. That Antelope Coal, LLC shall conduct the following for the North Pits Near-Pit truck dump at the Antelope Mine:

i. Compliance with the opacity limit in Condition 18 at the North Pits Near-Pit truck dump shall be determined, at minimum, at least once each calendar quarter using the methodology in 40 CFR §60.255(h)(1)(i) and (ii). Observations shall be conducted by an observer certified in accordance with Section 3.1 of Method 9.

- ii. An opacity of ten percent (10%) or greater shall prompt immediate inspection and, if necessary, corrective action. Corrective action must be initiated when the control device is determined to be improperly maintained or operated as determined by inspection. Antelope Coal, LLC shall document any inspection of the North Pits Near-Pit truck dump control system and any corrective actions taken. The duration of any corrective action taken to resolve any items found during an inspection shall be noted along with any justification for delays. Upon completion of the corrective action at the North Pits Near-Pit truck dump, Antelope Coal, LLC shall conduct an opacity observation of the North Pits Near-Pit truck dump control system, as described in (i) of this condition.
20. Antelope Coal, LLC shall conduct, at minimum, weekly inspections of the truck dump control systems installed at the NEMA, SMA and North Pits Near-Pit truck dumps to determine any repair measures necessary to minimize fugitive dust emissions and maintain proper operation of the control system.
21. The coal truck dump pads shall be cleaned, treated, and maintained to minimize the coal fines that accumulate due to spillage from the trucks. Cleaning practices or treatment of the road surfaces shall be maintained on a continuous basis to the extent that cleaning or the surface treatment remains a viable control measure that will be adequate to control fugitive dust emissions.
22. That Antelope Coal, LLC shall submit an applicability determination for the modified SMA truck dump with respect to reconstruction under Subpart Y within thirty (30) days of the startup of the modified SMA truck dump. This determination shall provide the Division sufficient detail on whether the SMA truck dump has been reconstructed as defined under §60.15, and is subject to the requirements for truck dumps constructed, reconstructed, or modified after April 28, 2008.
23. That all permanent haul roads shall be treated with a chemical dust suppressant, in addition to water, to control fugitive dust emissions, and shall be maintained continuously to the extent that such treatment remains a viable control measure.
24. That all temporary haul routes, including pit floor haul routes, shall be treated with water and/or chemical dust suppressants on a schedule such that treatment remains a viable control measure.
25. That Antelope Coal, LLC shall submit to the Division by April 1st of each year, a report addressing road dust control measures employed during the past year and a disturbed acreage report for the year. This plan shall include the following:
  - a. A map based on the past year end conditions with the following information:
    - All roads existing at the end of the calendar year, which have been treated with water and/or dust suppressant.

- Locations of active operations, treated disturbed areas, and reclaimed areas.
- b. Type and annual quantity of dust suppressants used for the past year and a description of the general application procedures and schedule.
- c. Number of water trucks, capacities of each water truck, and quantity of water used for the past year.
- d. Operating hours by water truck and total water truck fleet hours for the past year.
- e. Total length in miles of permanent and temporary haul roads existing at the end of the calendar year, which have been treated with water and/or dust suppressant.
- f. Overburden and coal production rates for the past year.
- g. A table summarizing, by calendar quarter, the acreages and control measures or BMP uses/applied by active operations, treated disturbed areas, and reclaimed areas.

26a. Topsoiled areas greater than 150 contiguous acres that will not be revegetated within 60 days of completion of topsoil laydown and regraded backfill areas greater than 150 contiguous acres that will not be topsoiled within 60 days, shall be ripped or chiseled to create a roughened surface, seeded with a temporary vegetative cover, or otherwise effectively stabilized against wind erosion.

26b. Topsoiled areas less than 150 contiguous acres that will not be immediately revegetated and regraded backfill areas less than 150 contiguous acres that will not be topsoiled for an extended period of time, shall be ripped or chiseled to create a roughened surface, seeded with a temporary vegetative cover, or otherwise effectively stabilized against wind erosion as soon as feasible.

27. That Antelope Coal, LLC shall utilize a program to mitigate coal fires that result from spontaneous combustion. Attempts to extinguish coal fires must be initiated within twenty-four (24) hours of discovering the fire and pursued until the fire is extinguished, unless operational safety issues are present. For all coal fires where efforts to extinguish the fire were not initiated within twenty-four (24) hours, or for fires which were not extinguished within twenty-four (24) hours of the initial attempt to extinguish the fire, Antelope Coal, LLC shall document the measures taken to extinguish the fire and the reasons for any delays.

28. That Antelope Coal, LLC shall operate, in accordance with the requirements of 40 CFR parts 50 and 58, an approved ambient particulate monitoring program that includes an ambient PM10 monitoring network at the Antelope Mine to demonstrate compliance with the ambient particulate standards in Chapter 2, Section 2 of the WAQSR. Antelope Coal, LLC shall maintain a quality assurance plan for the monitoring network, as required by 40 CFR part 58 and shall be approved by the Division.

29. Antelope Coal, LLC shall comply with all commitments made in the quality assurance plan for the ambient PM10 monitoring network in Condition 28 for the

Antelope Mine, and the data generated by the ambient PM10 monitoring network shall be submitted in a Division approved format on a quarterly basis, within sixty (60) days following the end of the quarter.

30. Antelope Coal, LLC shall notify the Division within thirty (30) days of a monitored exceedance at any filter based monitor in the ambient PM10 monitoring network at the Antelope Mine. If a continuous particulate monitor is installed, Antelope Coal, LLC shall notify the Division within fifteen (15) days of a monitored exceedance at any continuous monitor(s).

31. That annually, Antelope Coal, LLC shall submit to the Division a demonstration that the ambient PM10 monitoring network is sufficient for monitoring impacts and demonstrating compliance with the ambient particulate standards in Chapter 2, Section 2 of the WAQSR from current as well as future (5-year projection) mining activities. This demonstration shall consist of a discussion of the ambient monitoring network along with an annual windrose, and current UTM coordinate locations of the monitors. In addition, a map showing current monitor locations in relation to active mining areas along with projected mining areas shall be included. The ambient monitoring network demonstration shall be submitted along with the annual report required for dust control measures in Condition 25, and a copy shall be submitted to the Air Quality Monitoring Program located in Cheyenne. The Administrator may require Antelope Coal, LLC to modify their ambient monitoring network, including monitor locations, based on a review of the demonstration.

32. That Antelope Coal, LLC shall submit, if required by the Administrator, a contingency action plan for high particulate events at the Antelope Mine. Upon approval, the contingency action plan shall be considered part of this permit, and may be revised without administratively amending the permit, but revisions shall be approved by the Division prior to implementation.

33. That Antelope Coal, LLC shall maintain a meteorological station at the Antelope Mine acceptable to the Division. Surface air meteorological data measurements shall be collected at the Antelope Mine, as specified in the EPA document: Meteorological Monitoring Guidance for Regulatory Modeling Applications. The meteorological data measurements shall consist of hourly observations of:

- a. Wind speed using an anemometer height of 10 meters
- b. Wind direction
- c. Ambient temperature
- d. Vertical temperature difference (delta-temperature) between 2 meters and 10 meters
- e. Solar radiation

34. The meteorological data specified in Condition 33 shall be submitted in an electronic format on a quarterly basis.

35. Antelope Coal, LLC shall install instrumentation to measure the vertical temperature difference and solar radiation as required in Conditions 33(d) and 33(e) within sixty (60) days of permit issuance.
36. That Antelope Coal, LLC will limit public access at the Antelope Mine to the lands defined by the Administrator as necessary to conduct mining operations. The Administrator has determined that Lands Necessary to Conduct Mining boundary is described on a map shown in Figure 1. The following will be required of Antelope Coal, LLC to comply with the limitations of public access:
- i. That Antelope Coal, LLC restricts public access to these lands by fences posted with signs at one quarter mile intervals and card activated automatic gates or by security patrol of the mine facilities at regular intervals.
  - ii. All mine lands which are not currently enclosed by fences will be subject to compliance with ambient standards, including any public roads which intersect the mine permit areas.
  - iii. Any mining operations which, in the future, may extend beyond fenced boundaries, shall be enclosed with appropriate fences to restrict public access at such time as active mining operations commence in such areas.
37. The maximum coal production by year at the Antelope Mine shall not exceed a production rate of fifty-two (52) million tons per year. Mining may continue through the year 2035 as described in the mine plan contained in the application for this permit.
38. That Antelope Coal, LLC shall comply with the applicable requirements of 40 CFR part 60, subpart IIII for the emergency fire water pump engine (Cummins QSB).
39. That Antelope Coal, LLC shall comply with the applicable requirements of 40 CFR part 60, subpart JJJJ for the emergency generator engine (John Deere 4024HF285).
40. That Antelope Coal, LLC shall comply with the applicable requirements of 40 CFR part 63, subpart ZZZZ for the emergency fire water pump engine (Cummins QSB) and emergency generator engine (John Deere 4024HF285).
41. That Antelope Coal, LLC shall retain, at the Antelope Mine, records of the daily inspections, monthly observations, PM records, Method 22 observations, and support information as required by this permit for a period of at least five (5) years from the date such records are generated and the records shall be made available to the Division upon request.
42. That this permit shall supersede all previous Chapter 6, Section 2 air quality permits and waivers for Antelope Coal, LLC's Antelope Mine.

COMPLIANCE WITH PERMIT MD-13361 CONDITIONS

Condition 5 required written notification of the anticipated date of initial startup of the North Pits Near-Pit truck dump and associated coal processing equipment and SMA truck dump modification, is required not more than sixty (60) days or less than thirty (30) days prior to such date. Notification of the actual date of startup is required within fifteen (15) days after startup. In a February 28, 2013 letter ACM stated that modifications to the SMA truck dump began on April 15, 2013 and startup was scheduled for April 26, 2013. In an April 5, 2013 letter ACM notified the AQD that modifications to the SMA truck dump have been rescheduled to begin on April 23, 2013 with initial startup planned for May 4, 2013.

In a May 14, 2013 letter ACM informed the AQD the SMA truck dump was out of service from April 23 to May 3, 2013 for modifying the truck dump. The truck dump was restarted on May 3, 2013 (date of startup of modified truck dump).

In an October 23, 2013 letter ACM notified the AQD that coal market conditions have changed and the construction of near pit truck dump (NPTD) will not commence until the year 2015. A new construction notification will be submitted when construction commences. During the 2014 inspection we were informed that ACM expects to start construction in 2015 and have the NPTD operational in the year 2016 – 2017. ACM is still working on the design, but has not received authorization to commence construction.

Condition 6 stated approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension. In a May 14, 2013 letter ACM informed the AQD the SMA truck dump was restarted on May 3, 2013 (date of startup of modified truck dump). Therefore, ACM has until May 3, 2015 to begin construction on the other modifications allowed by MD-13361 before they will have to petition the Administrator.

North Pits Near-Pit truck dump

Condition 7 required that a minimum of one hundred twenty (120) days prior to starting construction of the North Pits Near-Pit truck dump and associated coal processing equipment the ACM shall submit plans detailing construction designs to the Division. These plans should include schematics and basic engineering design and shall show the exact location of the facilities to be constructed. Plans shall include the stilling shed design and the number and location of the passive enclosure control systems (PECS). This information was to be reviewed and approved by the Division prior to starting construction.

In a June 18, 2013 letter the ACM submitted design schematics and drawings for the North Pits Near-Pit truck dump and associated coal processing equipment. The drawings contained the UTM coordinates of the truck dump and transfer point. The

truck dump will be doubled sided to allow two trucks to unload simultaneously. Emissions would be controlled by water fogging spray bars and stilling shrouds enclosed in a stilling shed. There will be two coal hoppers and each hopper can contain 500 tons of coal. From the hoppers a single conveyor will transport coal at 7000 tons per hour to two roller blade gates that will split the coal stream. Each gate will send the coal to a scalping grizzly to remove the undersized material. From the two grizzlies the oversized coal will be sent a dedicated crusher. The two crushers have three rollers per crusher. The undersized coal and the coal that has been crushed will be dropped onto a conveyor.

The ACM did not indicate how the coal dust from the drop onto to the conveyor at the crusher will be controlled or how emissions from the crushing station transfer point would be controlled. In a July 10, 2013 conversation with Kyle Wendtland the AQD was informed that these emission points would be the controlled by a fogger and passive enclosure control (PEC) designed for the transfer and not modified to fit the existing conveyor as was the case for the existing NEMA conveyor. The new conveyor will tie into the existing NEMA conveyor at the 6-7 transfer point. In a July 23, 2013 letter the AQD requested that ACM submit the design schematics and drawings for the drop onto to the conveyor at the crusher PEC and the PEC that will control emissions from the crushing station transfer point. During the 2014 inspection we were informed that ACM is still working on the design of the PECs on the NPTD and will supply them to the AQD after they are completed.

Condition 8 - 10 take effect after the North Pits Near-Pit truck dump and SMA modifications are complete and these systems are in operation.

Compliance tests on the PEC on the drop from the SMA crusher to the conveyor (Source F)

Condition 9 required initial performance testing be conducted on the SMA truck dump in accordance with Chapter 5, Section 2(i) of the WAQSR.

Under a June 13, 2013 letter the ACM submitted the test results for the PEC on the drop from the SMA crusher to the conveyor (Source F). ACM conducted the testing on June 12, 2013. The test report was reviewed in the AQD memorandum of July 24, 2013. The visible emission test forms were attached to the correspondence. Each Method 22 visible emission test was forty five minutes. The opacity was read from all six sides of the enclosure. ACM was able to view two sides of the enclosure, thus three observations of 45 minutes each were conducted. No visible emissions were observed from the PEC on the drop from the SMA crusher to the conveyor (Source F) and the PEC passed the Method 22 performance test.

Condition 12 and 14 – PEC Systems and Coal Samplers

Condition 12 and 14 required the PEC systems and coal samplers be operated and maintained so the system enclosure exhibits no visible emissions; ACM must conduct, at a minimum, daily visual observations of the passive enclosure dust control systems to determine the presence of visible emissions. Records must be kept documenting

whether visual emissions are noted and the corrective action taken. These records must be maintained for a period of five (5) years and be made available to the Division upon request. Section 60.255(f) of Subpart Y can also be used for determining compliance for the PEC system.

In a March 26, 2014 letter ACM stated fogging systems were installed on NEMA Sample Station, SMA Sample Station, 6/7 transfer point and 04 conveyor system. The installation of the foggers commenced on July 15, 2013 and was completed on January 15, 2014. The fogger on the 04 conveyor system is at the top of the silo at the crossover point between the two silos.

ACM is checking the PECS twice daily once during each shift for visible emissions (see or no see emissions). The visual observations of the PECS are made by plant personnel. The plant personnel who conduct the see / no see visual emission monitoring are not required to be Method 9 certified. During the inspection we reviewed ACM records. The observations are recorded on the plant shift inspection log form. The inspection log forms are collected and bound in monthly reports. Included in the reports are any hazards discovered and the corrective action taken to remove them. EMTSHA requires that records be kept for one month and the plant personnel did not realize that the AQD required PEC inspections (condition 12) and truck dump inspections (condition 20) are also kept on the same form. Plant personnel threw out the records for November 2013 – April 2014. ACM will separate out the AQD required visual observations from the maintenance checks conducted in the plant into separate reports. Separating them into two reports will prevent future reports from being thrown out.

The AQD reviewed the records for May and June 2014 and the review revealed that plant personnel have conducted all the see no see visible emissions observations on the PECS. The AQD's review revealed that no visual emissions were observed, but several hazards were discovered that they needed to be cleaned up or repaired.

#### Condition 13 – Coal Processing and Conveying

Condition 9 states the coal preparation facilities are subject to 40 CFR part 60, Subpart Y. Subpart Y limits opacity from any coal processing and conveying equipment, including coal crushers and breakers, coal storage systems, and coal transfer and loading systems to less than 20 percent. All the PECS and baghouses were in compliance with the 20 percent opacity standard on the day of the inspection.

#### Condition 15 to 17 – Truck Dumps and Stilling Sheds

Condition 15 required ACM to conduct, at minimum, a control effectiveness demonstration on the truck dump control system each calendar quarter. Control effectiveness for the truck dump control system shall be determined by using the methodology in 40 CFR §60.255(h)(1)(i) and (ii).

Section 60.255(i) and (ii) states that the opacity readings shall be taken during the duration of three separate truck dump events. Each truck dump event commences

when the truck bed begins to elevate and concludes when the truck bed returns to a horizontal position. Compliance with the applicable opacity limit is determined by averaging all 15-second opacity readings made during the duration of three separate truck dump events. The Division considers the threshold defining relative control effectiveness to be no greater than twenty percent (20%) opacity for the NEMA and SMA truck dumps. Observations shall be conducted by an observer certified in accordance with Section 3.1 of Method 9.

A control effectiveness demonstration with an opacity of twenty percent (20%) or greater shall prompt immediate inspection and, if necessary, corrective action. Corrective action must be initiated when the control device is determined to be improperly maintained or operated as determined by inspection. ACM was required to document any inspection of the truck dump control system and any corrective actions taken. The duration of any corrective action taken to resolve any items found during an inspection shall be noted along with any justification for delays. Upon completion of the corrective action at the truck dump the ACM was required to conduct a demonstration (opacity reading) of the control effectiveness of the truck dump control system.

Condition 15 required the Method 9 observations to consist of one 6-minute average. ACM is reading the opacity for the dumping of six haul trucks and each opacity reading is for one minute. In the table below are the results from the control effectiveness opacity reading conducted by ACM for the SMA and NEMA truck dumps since the last inspection:

Date	SMA truck dump	NEMA truck dump
3rd quarter of 2013	12.3	12.1
4th quarter of 2013	9.2	11.5
1 <sup>st</sup> quarter of 2014	3.28	11.04

Condition 16 states the truck dumps be limited to less than 20 percent opacity. Compliance with the twenty percent (20%) percent opacity limit at truck dump will be determined by Method 9

Condition 17 required the ACM to conduct an annual Method 9 observation (one 6 minute average) of the NEMA and SMA truck dumps to measure the opacity of any fugitive emissions. The Method 9 observations shall be conducted by an observer certified in accordance with Method 9 and shall follow the requirements and procedures of Method 9.

The quarterly Method 9 observations were being made by Chris Fare and are now conducted by Nate Weinland. The opacity readings are contained in the quarterly ambient monitoring reports. The ACM had Nate Weinland and Zack Liesenfeld attend the Karl Kuntz smoke school in Casper. Kyle Wendtland was unable to attend the class. ACM has had all the mechanics and blasters attend one smoke school to get an idea of what opacity is.

### Methods for Determining Level of Particulate Emissions

There are three methods for determining the level of particulate emissions from a truck dump, BACT opacity, effectiveness opacity and compliance opacity. Effectiveness is the measure of how well the emissions from truck dump operations are being contained. The effectiveness opacity is determined by reading the opacity every 15 seconds as a truck is dumping coal with a minimum of two (2) trucks being observed. Compliance with the 20 percent opacity limit is based on reading the opacity every 15 seconds over 6 minutes (includes time when a truck is not dumping).

The BACT opacity is the highest opacity observed from a truck dumping. The BACT opacity standard applies to newly constructed truck dumps and only has to be determined once. The BACT opacity is determined by taking the maximum instantaneous opacity of fugitive emissions observed from each truck dump activity, averaged for ten trucks. The BACT opacity of the SMA truck dump was determined during the 2008 inspection to be 17 percent opacity, which is in compliance with the 20 percent opacity limit. The cost to modify the hopper by changing the design of the feed hopper, eliminate a 15-foot section of flight beds just upstream of the feeder breaker, and installing a new feed chute to the overland conveyor did not meet the definition of reconstruction and a BACT opacity determination did not have to be conducted as discussed in condition 22.

After the BACT reading the ACM resumed determining the effectiveness opacity by the following method: it takes approximately one minute for a truck to empty the bed of coal, ACM starts the reading opacity when the truck starts to empty and reads the opacity four times at 15 second intervals, at least 6 trucks are read for each opacity reading. The effectiveness opacity is used to show compliance with Condition 15. It takes considerably longer for a truck to empty the contents of the bed as discussed in the inspection observations section of this report.

The larger haul trucks have increased the opacity of the truck dumps. Reducing the size of the coal produced from the pit reduces the amount of time it takes to crush the coal, but it also increased the emissions from the truck dumps by increasing the amount of fines contained in the coal. Another reason for the truck dumps being dustier is that sometimes the coal being mined has lower moisture content. The opacity of a truck dump is also dependent on whether the hopper is fully empty. The haul trucks are not dedicated to one truck dump, because a dispatcher will direct them to the truck dump with the least activity. Attached to the inspection report are several photographs of the NEMA and SMA truck dumps during the inspection. During the inspection the NEMA and SMA truck dumps were in operation.

#### SMA Truck Dump

The AQD's opacity reading from the SMA truck dump are contained in the inspection observations section of this report. The SMA truck dump was in operation and in compliance with the 20 percent opacity limit.

The SMA hopper was designed for 80 ton haul trucks and the ACM is running trucks that carry 240 tons. The SMA truck dump's stiling shed was replaced with a larger stiling shed to accommodate the larger haul trucks that went into operation on September 11, 2008. To reduce the opacity of the SMA truck dump ACM removed the soft walls and installed tin, lengthened and increased the number of stiling shrouds. Even though the stiling shed can accommodate larger haul trucks the hopper was too small. The amount of coal conveyed on the SMA conveyor is limited by the crusher, which was not replaced.

Under a June 13, 2013 letter the ACM stated the modifications (widened throat) to the SMA truck dump allowed more trucks to use the truck dump. Prior to the modification these trucks had to use the NEMA truck dump resulting in longer haul distances. ACM attached the Method 9 opacity reading conducted on June 12, 2013. The 10 one minute opacity readings ranged from 5 to 12.5 percent opacity with an average opacity of 9.37 percent. No changes were made to the stiling shed and the opacity of the truck dump remained unchanged. However, the ACM replaced most of the stiling shrouds in the truck dump.

To reduce emissions from both the NEMA and SMA truck dumps the ACM instated a correct dumping procedures for the haul truck drivers. Haul truck drivers were instructed to slowly lift the truck bed (coal enters the hopper slowly) and to keep the truck bed elevated (traps dust in stiling shed) until all the coal had been emptied from the truck bed. A truck driver is only able to see his bed or he cannot see how much coal is in the hopper. This dumping procedure increased the time a truck is at the truck dump, but greatly reduced emissions. A longer dump time also helped eliminate plugging problems in the throat of the hopper. The SMA conveyor moves coal at 2600 tons per hour, the haul trucks hold 240 tons and the size of the hopper is 240 tons. Based on these parameters the time to remove all the coal from one haul truck is 5.54 minutes. Having the truck bed raised while the coal is being crushed traps the dust inside the stiling shed and reduces emissions.

During the 2010 - 2012 inspections the correct dumping procedures resulted in the dump times at the SMA truck dump being close to 5 minutes and the average opacity was less than 1 percent. The SMA truck dump was not in operation during the 2013 inspection. During the 2014 inspection the dump times at the SMA truck dump were between 2 and 6 minutes and the average opacity was 4.56 percent. The difference in dump times was a result of how full the hopper was before the operator began dumping the coal and how long the driver wanted to wait at the truck dump.

ACM's correct dumping procedure is of critical importance at the SMA truck dump if it is to show compliance with the opacity limit. ACM also informed us that the conveyors operate better if the belt is kept full (no transitioning from full to empty belt).

In regards to the ACM's quarterly opacity readings they will continue to use the effectiveness opacity because the majority of the emissions occur during the first minute after the truck bed has been lifted.

Condition 22 required the ACM to submit an applicability determination for the modified SMA truck dump with respect to reconstruction under Subpart Y within thirty (30) days of the startup of the modified SMA truck dump. This determination shall provide the Division sufficient detail on whether the SMA truck dump has been reconstructed as defined under §60.15, and is subject to the requirements for truck dumps constructed, reconstructed, or modified after April 28, 2008. Under an August 23, 2013 cover letter ACM submitted the applicability determination for the SMA truck dump. The cost to modify the SMA truck dump was \$501,141 and the cost to build a new truck dump was over \$24,527,086 (based on the cost of NPNP truck dump). The cost of improving the SMA truck was less than 50 percent of a new truck dump, therefore the truck dump was not reconstructed.

#### NEMA Truck Dump

The opacity of the NEMA truck dump was never an issue until the 2008 inspection. The emissions from the NEMA truck dump were considerably higher during the 2008 inspection than they were during any of the previous inspections. When coal being dumped at the NEMA truck dump was dry or was shot to a very small diameter (a lot of fines) the opacity of the truck dump was 18 to 19 percent opacity. The opacity was too close to the limit (20 percent opacity) and the ACM decided to install a fogger in the truck dump. ACM installed a fogging system on the NEMA truck dump that operates any time the NEMA truck dump is operation. The past practice of operating the foggers when the opacity of the truck dump is higher than normal has been abandoned.

The concrete pad that supported the baghouse for the crusher is the location of the air compressor and water pumps for the fogging system. ACM installed a backup air compressor and a cat walk around the NEMA truck dump to maintain the fogger. ACM completed the installation of the fogging system in the NEMA crusher on January 8, 2010.

The fog is created by mixing water with high pressure air. ACM has the air at 40 psig and the water is at 10 psig. The foggers use a maximum of 12 gallons per minute of water if all the nozzles are in operation. In the winter the foggers are activated by sonar, which detect when a truck is in front of the truck dump and the foggers operate for 75 seconds before shutting off. In the summer the ACM operates the foggers continuously when the NEMA truck dump is in operation. The haul trucks wait for the hopper to empty before backing up to the truck dump.

The NEMA conveyor moves coal at 4200 tons per hour, the haul trucks hold 240 tons and the size of the hopper is 800 tons. Based on these parameters the time to remove all the coal from one haul truck is 3.43 minutes, however the hopper can hold 3.33 trucks loads of coal.

A comparison of the operation the NEMA truck dump before and after the correct dumping procedures were instituted revealed that the ACM had increased the amount of time it takes a truck to dump. Time begins when the truck bed is elevated and ends when the bed is flat on the truck. The main factor on how long it takes a truck to dump is how full the hopper is. The discussion of the longer dumps times at the SMA truck

dump is also applicable to the NEMA truck dump. With the fogger in continuous operation the dump times and opacity during the 2011 – 2014 inspections were as follows:

Year of Inspection	Dump Time	Percent Opacity
2014	40 sec to 1 minute	8.44
2013	1.3 minutes	12.85
2012	1.8 minutes	10.34
2011	1.25 minutes	5.2

The higher opacity in 2012 was contributed to the drought, which reduced the moisture content of the coal. The higher opacity during the 2013 inspection was partly caused by smokey / hazy background. The opacity reading from the NEMA truck dump are contained in the inspection observations section of this report. The NEMA truck dump was in compliance with the 20 percent opacity limit.

#### Condition 18 and 19 - North Pits Near-Pit (NPNP) dump

Condition 18 stated that the North Pits Near-Pit (NPNP) dump shall be limited to less than ten percent (10%) opacity. Condition 18 will take effect after the NPNP truck dump is in operation. After the NPNP truck dump is in operation the NEMA truck dump will no longer be used.

Condition 19 required the opacity of the NPNP truck dump be determined, at minimum, at least once each calendar quarter. An opacity of ten percent (10%) or greater shall prompt immediate inspection and, if necessary, corrective action. The ACM was required to document any inspection of the truck dump control system and any corrective actions taken. The duration of any corrective action taken to resolve any items found during an inspection shall be noted along with any justification for delays. Upon completion of the corrective action ACM was required to conduct an opacity observation. The ACM is still in the design phase for the NPNP truck dump and hopes to have it in operation in the year 2015 if the coal market improves.

ACM is leaning towards installing steel stilling shrouds in the truck dump rather than rubber. The steel shrouds are 3/8 inch thick and they weigh about the same as the rubber shrouds. The primary advantage of steel over rubber is that rubber shrouds tend to warp. Installing different lengths of steel shrouds could make the NPNP stilling shed a wind chime on very windy days.

#### Condition 16, 20, 21, 23 and 24 – Truck Dump Pads, Stilling Sheds and Haul Roads

Condition 20 states that ACM conduct weekly inspections of the truck dump control systems installed at the NEMA, SMA and NPNP truck dumps to determine any repair measures necessary to minimize fugitive dust emissions and maintain proper operation of the control system. The ACM has been conducting all the required inspections.

As mentioned in Condition 12 and 14 (PEC Systems and Coal Samplers) the weekly observations are recorded on the plant shift inspection log form. The inspection log forms are collected and bound in monthly reports. Included in the reports are any

hazards discovered and the corrective action taken to remove them. EMTA requires that records be kept for one month and the plant personnel did not realize that the AQD required PEC inspections (condition 12) and truck dump inspections (condition 20) are also kept on the same form. Plant personnel threw out the records for November 2013 – April 2014. ACM will separate out the AQD required visual observations from the maintenance checks conducted in the plant into separate reports. Separating them into two reports will prevent future reports from being thrown out. The condition of the stilling sheds is contained in the inspection observations section of this report.

Condition 21 requires the truck dump pads be cleaned, treated, and maintained to minimize the coal fines that accumulate due to spillage from the trucks. Cleaning practices or treatment of the road surfaces must be maintained on a continuous basis to the extent that cleaning or the surface treatment remains a viable control measure that will be adequate to control dust problems. The condition of the truck dump pads and haul roads are contained in the inspection observations section of this report.

Condition 23 requires that all permanent haul roads and access roads be treated with a chemical dust suppressant in addition to water to control fugitive dust emissions and be maintained continuously to the extent that such treatment remains a viable control measure. A discussion of the treatment of the haul roads with dust suppressant is contained in the section of this inspection report titled Dust Control Measures Employed on Haul Roads.

Condition 24 requires that all temporary haul routes, including pit floor haul routes, be treated with water on a schedule such that treatment remains a viable control measure. The condition of the temporary haul roads is in the inspection observations.

Condition 16 states that ACM submit to the Division with the fourth quarter/annual monitoring report, a report addressing road dust control measures employed during the past calendar year and projected control measures for the upcoming year; a disturbed acreage report. A discussion of the report is included in this inspection report under the heading Dust Control Measures Employed on Haul Roads.

#### Condition 26 Topsoiled Areas

Condition 26a and b states that topsoiled areas that will not be immediately revegetated and regraded, backfill that will not be topsoiled for an extended period of time, must be ripped or chiseled to create a roughened surface, seeded with a temporary vegetative cover, or otherwise effectively stabilized against wind erosion as soon as feasible.

The AQD's observations of the open acres and reclamation activities on the day of the inspection are contained in the inspection observations.

#### Condition 27 – Coal Fires

Condition 18 states that ACM adhere to their program to mitigate coal fires that result from spontaneous combustion. Diligent efforts to extinguish all fires must be initiated within 24 hours, and pursued until the fire is extinguished, unless operational safety

issues are present. For all coal fires where efforts to extinguish the fire were not initiated within twenty-four (24) hours, or for fires which were not extinguished within twenty-four (24) hours of the initial attempt to extinguish the fire the ACM must document the measures taken to extinguish the fire and the reasons for any delays. The ACM has had no fires that burned longer than 24 hours and all coal fires have been extinguished in the first attempt.

ACM puts out all coal fires. Common practices used in extinguishing small coal fires include digging them out and burying them in backfill, smothering them by covering them with overburden, or using water. ACM is putting out the large coal fires with a high pressure hose that can be moved up the exposed coal face with a man lift. To put out a large coal fire the ACM will also use explosives. The Year 2012 was a real dry year and the light rains caused two large coal fires. No coal fires were burning during the 2013 and 2014 inspections.

#### Condition 28 - 35 Ambient Particulate Monitors and Meteorological Station

Condition 28 states that ACM operate an ambient particulate monitoring program in accordance with the requirements of 40 CFR parts 50 and 58. Condition 29 requires the data generated by the ambient PM10 monitoring network shall be submitted in a Division approved format on a quarterly basis. Condition 30 requires within thirty (30) days of a monitored exceedance at any filter based monitor the AQD will be notified within 15 days. Condition 31 requires that annually, ACM submit a demonstration that the ambient particulate monitoring network is sufficient for monitoring impacts and demonstrating compliance with the ambient particulate standards.

Under a March 25, 2014 cover letter ACM submitted the ambient particulate monitoring network demonstration. A map was attached that showed the current mining locations and the projected mining progression. ACM also included the location of the new monitoring location for Site 3.

If required by the Administrator Condition 32 would come into effect and require the ACM to submit a contingency action plan for high particulate events. This would only be required by the AQD after a high particulate event.

Condition 33 and 34 states that ACM operate and maintain a meteorological station with the data submitted electronically each quarter. The ACM is operating a meteorological station and has submitted the data electronically each quarter.

Condition 35 required ACM to install instrumentation to measure the vertical temperature difference and solar radiation. In a January 2013 letter ACM stated that the instrumentation to measure the temperature at 2 and 10 meters and the solar radiation was installed on December 20, 2012 at the meteorological station. A quality assurance audit was completed on September 17, 2012. A meteorological station update was completed on December 20, 2012. Solar and temperature data reporting will begin the 1st quarter of 2013.

Under an October 11, 2013 letter ACM submitted the quality assurance project plan for the ambient monitors.

A discussion of the ambient monitoring data is contained in the section of this inspection report devoted to the ambient monitoring data. The ambient particulate data is reviewed by the Ambient Monitoring Section of the AQD.

#### Condition 36 – Limit Public Access

Condition 36 required ACM to limit public access to the lands as necessary to conduct mining operations. ACM is required to comply with the limitations of public access: restrict public access by fences, signs, card activated automatic gates or by security patrol to all mine lands subject to compliance with ambient standards. The guard service that ACM has contracted to monitor the main gate is Securatas and they were on duty during our visits in the Year 2004 - 2014.

#### Condition 37 – Maximum Coal Production

Condition 37 stated that the maximum coal production will not exceed 52 million tons per year. Annual coal production is reported with the annual report required for dust control measures. Year to date coal production is submitted with quarterly ambient monitoring data. Past coal production has been less than 52 million tons per year. See the section of this inspection report entitled production data for a complete discussion.

#### NSPS and NESHAP Requirements

Condition 38, 39 and 40 required the ACM to comply with NSPS and NESHAP regulations. A discussion of the requirements of NESHAP Subpart ZZZZ, NSPS Subpart JJJJ and NESHAP Subpart HH is contained in the section of this report entitled New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP).

#### Condition 41 – Maintain Records

Condition 41 required ACM to retain records of the daily inspections, monthly observations, PM records, Method 22 observations and support information as required by this permit for a period of at least five years from the date such records are generated and the records be made available to the Division upon request.

ACM is recording all the required information. The records are kept in bound quarterly folders.

### **CHAPTER 6 § 3 OPERATING PERMIT:**

The ACM is a minor source for the purposes of the Title V operating permit program. The ACM is not considered a "major source" as defined in Chapter 6 § 3 of the WAQSR. The Division determines major source applicability based on point sources and includes fugitive emissions from sources which are subject to new source performance standards, which were in effect as of August 7, 1980. The truck dumps at the mine are subject to a new source performance standard (Subpart Y); therefore, emissions from the truck dumps are counted toward major source applicability, and are

estimated at 14.9 tpy based on a maximum annual production rate of 52 MMTPY of coal. Emission totals at the ACM subject to the definition of a major source under Chapter 6, Section 3 are shown below:

<b>Major Source (Title V) Applicability</b>							
	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	VOC	HAPs
Point Source Emissions <sup>1</sup>	--	--	--	--	--	--	--
Fugitive Truck Dump Emissions	14.9	1.5	--	--	--	--	--
<b>Totals</b>	<b>14.9</b>	<b>1.5</b>	--	--	--	--	--

All point sources are controlled with PEC systems, which are assumed to have no emissions with no visible emission limit. The table above reflects the PM10 emissions based on truck dumps controlled with a stilling shed with a control efficiency of 85%.

The ACM has installed PECS at points which were controlled by baghouses for all emissions points. The following table shows these point sources.

<b>Antelope Mine Point Source Particulate Matter (PM10) Emission Limits</b>				
Source ID	Description	Method	lb/hr	TPY
MD-1543 and MD-7698				
B	SMA Secondary Crusher	Controlled with PEC 1	--	--
D	Sample Building	Controlled with PEC 1	--	--
F	SMA Primary Crusher	Controlled with PEC 1	--	--
H	Silo #1 & #2	Controlled with PEC 1	--	--
I	Transfer 5/6	Controlled with PEC 1	--	--
J	Transfer 6/7	Controlled with PEC 1	--	--
K	NEMA Primary & Secondary Crusher	Controlled with PEC 1	--	--
L	Sample Station	Controlled with PEC 1	--	--
		Total	--	--
1 The PECS are subject to no visible emissions as determined by Method 22 of 40 CFR part 60, Appendix A.				

Fogging systems are installed on the NEMA Sample Station, SMA Sample Station, 6/7 transfer point, 5/6 transfer point, NEMA primary and secondary crusher, SMA secondary crusher, SMA primary crusher and the NEMA truck dump. The fogger on the 04 conveyor system is at the top of the silo at the crossover point between the two silos.

#### **MAJOR EQUIPMENT:**

Equipment utilized at the mine changes from year to year depending on several operational factors. In general, as older, smaller equipment is retired, it is replaced with new, larger equipment. In the table below is the major equipment from the permit application AP-13361 and the equipment in operation at the time of the inspection.

Equipment	Type/Size	Operating in 2014	To Operate at 52 MMTPY
Dragline	Marion 8200 (electric)	1	1
Shovels	P&H 2300 (electric)	3	3
	P&H 2800 (electric)	1	1
	P&H 4100 (electric)	3	4
Trucks	Komatsu 240-ton	22	28
	Komatsu 340-ton - dirt	15	22
Front End Loader	Letourneau 1850	1	1
Rubber Tire Dozers	Cat 834	3	3
	Cat 844	1	1
	Cat 854	1	1
	Tiger 690D	1	1
Track Dozers	Cat D10	4	5
	Cat D11	9	9
Track Backhoe	Komatsu 1250	1	1
	Komatsu PC 600	1	1
	CAT 385	1	1
Scrapers	Cat 637	3	3
Graders	Cat 16	3	4
	Cat 24	4	3
Water Trucks	Cat 793	4	4
Drills (OB & Coal)	PV275	2	2
	Atlas DM3	1	1
	Atlas DML	1	1

**PROCESS DESCRIPTION:**

The ACM is a surface mining facility approximately 25 miles south of Wright in Converse County. There are two coal seams at the Antelope Mine, the lower Canyon seam (35 feet thick) and the upper Anderson seam (30 feet thick). In some places the two coal seams come together, however usually 20 feet of inner burden is between them. The sulfur content and heating value of the coal remains fairly constant at 0.3% and 8,800 Btu/lb. However, the coal contains varying amounts of sodium.

Mining begins with topsoil stripping with track hoes and bottom dump off-highway earth wagons followed by overburden removal using a Marion 8200 dragline or truck shovels. The ACM has fifteen Komatsu 340-ton haul trucks that are only used for dirt hauls. Once the coal is exposed, shovels and/or front end loaders are used to load it into haul trucks for transport to the truck dumps. ACM has 13 track dozers and 6 dozers with rubber tires. ACM has 22 Komatsu 240-ton end dump haul trucks for coal transportation to the truck dumps. ACM applies water to the haul roads with four CAT 793 haul trucks with 42,500 gallon water tanks.

To load the coal or overburden into haul trucks ACM uses three P & H 2300 shovels, one P & H 2800 shovel, three P & H 4100 shovels and one LeTourneau 1850 front end loader. To place rock on the roads ACM uses three Cat 637 scrapers. ACM also has

seven Cat blades to grade the roads.

Once the coal is dropped off at the truck dump, crushers reduce the size before it is deposited on conveyor belts that transfer it to the 2 coal storage silos and railcar loadout. Use of this conveyor system reduces the haul distance and fugitive haul traffic emissions. This mine has 2 truck dumps that are named after the pits they were constructed to serve: the South Mining Area (SMA) and the Northeast Mining Area (NEMA.) Emissions from haul truck unloading at the SMA and NEMA truck dumps are controlled by stilling sheds that have an allowable opacity of 20%. The NEMA truck dump also has a fogging system. The SMA and NEMA truck dumps are referred to as emission sources SMA and NEMA (respectively) in the source table that accompanies this report.

At the SMA truck dump the coal is sent to a primary crusher, which reduces the size to 8 inch. From the primary crusher the conveyor moves the coal to the SMA secondary crusher, which reduces the size to 2 inches. Emissions from the primary and secondary crushers on SMA conveyor are controlled by a passive enclosure control system (PECS) that have fogging systems. The NEMA truck dump uses a single crusher to reduce the size of the coal to two inches. Coal dust from the NEMA crusher is controlled by a PEC (Source K) and a fogging system. The NEMA conveyor has two transfer points that are controlled by PECS with foggers (Sources I and J).

Once the coal has been reduced to its final size, it is transferred to the coal storage silos after it has been sampled. Coal from the NEMA truck dump can only be sampled at a site known as the "Sample Station"; emissions from this sampler are controlled by a PEC with fogger (source L.) Processed coal from the prep plant is sampled at the "Sample Building", controlled by a PEC with fogger (source D). The #1 storage silo has a design capacity of 12,500 tons while the #2 storage silo has a design capacity of 15,000 tons. Emissions from both silos are controlled by PECS with a fogger. The coal is shipped out via Burlington Northern, Union Pacific, and Chicago Northwestern railcars to consumers in the Rocky Mountain area and the eastern United States.

#### **INSPECTION OBSERVATIONS:**

Chris and I arrived at the mine at 9:45 A.M. on June 10, 2014. At the office we met with Kyle Wendtland (Senior Environmental Engineer), Nate Weinland (Environmental Engineer), Chris Fare (Environmental Engineer), Zack Liesenfeld (Environmental Engineer) and Bruce Hokanson (Plant Planner) to conduct an annual inspection of the coal mine.

Air Quality Permit MD-13361 allowed ACM to increase the production from 42 to 52 MM tpy, modify the SMA system, construct a near pit truck dump and overland conveyor from the north pits to the preparation area of the plant, decommission the NEMA truck dump when the near pit truck dump is operational, modify the NEMA sampling system and adjust the mining boundary. The modifications to the SMA truck dump have been completed, but did not increase production.

The North Pits Near-Pit (NPNP) dump will tie into the existing NEMA conveyor after the 6/7 transfer on the #7 belt. The 5/6 transfer point will not be part of NPNP conveyor system. The near truck dump will be a two sided truck dump designed for 340 ton coal dumps with both sides controlled by water sprays. The belt length to the tie in at the 7 belt will be 2.4 miles of new conveyor. After the new truck dump and conveyor is installed the capacity of the system will be 7000 tons per hour. ACM hopes to have the NPNP truck dump and conveyor in operation in the year 2015. After the NPNP system is in operation the coal hauls will be considerably shorter. The ACM plans on installing foggers on all the transfer points for NPNP conveyor system. Each transfer point will have its own air compressor.

As discussed in MD-13361 ACM has delayed the construction of the NPNP project because of the decrease in coal production. Converse County is seeing a large oil boom that resulted in the oil being shipped by railcar. Shipping oil out of Converse County has resulted in the ACM having a harder time getting trains into the mine. On the day of the inspection ACM had just finished loading a train. Coal production on this day was going to be enough to fill the silo because no trains were scheduled to be loaded. The haul trucks waited for the AQD to arrive so that the AQD could witness the operation of the mine producing coal.

The changes in the average production rate is effected by what pits the ACM is producing from (production from pits closer to the truck dumps will increase the average production rate). The bypass chute installed on the NEMA conveyor in 2009 increased the average production rate to 4200 tons per hour. The average production rate for the SMA conveyor is 2,600 tons per hour. The maximum production rates for the SMA and NEMA conveyors were estimated to be 3,000 and 6,000 tons per hour. The coal on the conveyors is transported to the two coal silos. Each train carries 13,000 tons of coal, which is very close to the quantity of coal contained in a silo.

The average coal haul at the mine is 4.17 miles. The longer the haul the greater the potential emissions are from the haul trucks for each ton of coal produced. ACM is dumping approximately 65 percent of the coal at the NEMA truck dump and 35 percent of the coal in the SMA truck dump.

As discussed in the ambient monitoring section of this report downwind monitoring stations are sites #4, #5, and #6. Site #3 was the upwind (background) station, but it is no longer in operation after an oil well was constructed next to the monitoring station. All the monitoring sites have a single PM<sub>10</sub> monitor with the exception of Site #5, which has collocated (two) PM<sub>10</sub> monitors. There are no TSP monitors at the mine. The ACM is on a 3 day PM<sub>10</sub> monitoring cycle at site #4 and site #7 (after constructed); while site #3 (when in operation) and site #5 are on a six day monitoring schedule. Site 6 is on a continuous monitoring schedule after May 2014 as a result of an exceedance of the 24-hour PM<sub>10</sub> standard on September 15, 2012 as discussed in the ambient monitoring section of this report.

The Year 2013 has had average precipitation. Year to the date of the inspection

precipitation was 4.1 inches. The ACM was producing close to 3.1 million tons of a coal a month in the year 2013, but average coal production for the first three months of 2014 was 2.77 tons per month. The water application rate and magnesium chloride rate from the first of the year through March 31st were obtained from the ambient monitoring reports and are contained in the dust control measures employed on the haul roads section of this report. The coal and overburden production data, for the same time period are in the section of this report devoted to production data.

Water is applied with four CAT 793 haul trucks with 42,500 gallon water tanks (Trucks 305, 307, 308 and 309). Normal procedure is for the ACM to operate three water trucks while the fourth is being serviced. In addition to the ACM water trucks the reclamation contractor has two water trucks with 10,000 and 4,000 gallon tanks (required by reclamation contract). Emissions from the haul trucks were well controlled by the water trucks. On the day of the inspection all four water trucks were in operation.

The water trucks can obtain water from four high pressure fill stations. ACM has constructed the WS 4 well that will serve the haul roads for the north pit. The high pressure fill station greatly reduces the amount of time it takes to fill a water truck. The ACM collects the storm water in holding ponds and applies it the haul roads. ACM can also move the water from one holding pond to another. A discussion of the amount of water and dust suppressant applied to the haul roads is contained in the section of the report devoted to dust control measures applied to the haul roads.

The haul roads have been in service for several years and the surface was extremely hard with very little emissions from the haul trucks. If the road surface is hard the emissions from the straight-a ways are less than the corners and the level of emissions are directly related to the speed of the haul truck and whether or not the truck is full. Emissions from road corners are higher because breaking, turning and accelerating the 250 ton haul trucks rips this section of road to pieces. Eliminating sharp corners from the haul road design would reduce emissions from the mine.

All B Excavating is allowed to conduct scoria mining at the mine under Air Quality Permit CT-4103. At the time the inspection the scoria crushing and screening equipment were in operation as discussed in the temporary crushing and screening equipment section of this report.

On the day of the inspection the wind was from the southwest at 12 mph, the ambient temperature was 70 increasing to 81°F and the sky was mostly sunny. Chris Hanify, Chris Fare, Bruce Hokanson, Nate Weinland, Zack Liesenfeld (summer intern) and I inspected all the PECs at the transfer points and crushers. We also inspected the NEMA and SMA truck dump. The coal silos PEC, and NEMA sample buildings were inspected by Chris Hanify, Nate Weinland and Bruce Hokanson. Chris Fare, Zack Liesenfeld and I inspected the overburden and coal production pits. The water trucks were in operation and were doing a good job of controlling the emissions from the haul roads and truck pads.

Listed below are the mining areas with activity during the inspection.

#### Train Loadout

The train loadout was not in operation.

#### Coal Sampler PECS

Antelope Coal installed foggers on both of the sampler system PECS. During the FY'13 Annual Inspection, a new compressor was being installed to serve these fogger systems. These foggers systems were in service during this Annual Inspection. Antelope Coal installed one compressor to serve the foggers on the NEMA sampler and SMA sampler fogger systems. To make sure that the fogger systems are available, a backup compressor is also installed.

#### SMA Sample Building PECS

- Four new foggers installed on the SMA sampler with ports installed for 2 more if needed
- No dust observed on the 3 samples observed (no more samples could be observed because coal hauling was about to shut down for a coal blast)

#### NEMA Sampler PECS

- Six new foggers installed on PECS
- No dust observed on the 3 samples observed before belt went empty

#### Coal Silo PECS Description

On top of the #1 coal silo, the SMA and NEMA conveyor systems terminate (3 belt and 7 belt, respectively.) A crossover conveyor (4 belt) runs from the #1 Silo to the #2 Silo, and can serve either the NEMA or SMA conveyor system.

PECS on the SMA, NEMA, and crossover conveyor head-drive pulleys are enclosed on the top, both sides, and the back with the bottom set down on top of the silo, so only 5 sides can be read for visible emissions. No visible emissions are expected from the top, sides, and back, making the front the most the likely point for visible emissions to be observed since this is where the belt enters loaded and comes out empty.

In 2012, Antelope Coal replaced the spring-loaded belt scrapers with gas charged belt scrapers on the head-drive end of the conveyors. In the past, each head pulley had a set of 3 belt scrapers that used spring-loaded tensioners that had a very small window of adjustment given the properties of spring steel. Now, each head pulley has been set up with 4 belt scrapers, with a gas charged tensioner that looks like a shock absorber on the end of a lever arm connected to each end of each belt scraper. Nitrogen gas from a storage canister with a pressure regulator maintains even load on each pair of tensioners. Each gas charged belt scraper runs at its own operating pressure.

Coal from the 3 belt or 7 belt is transferred to the 4 belt through the 4 belt transfer

PECS. The 4 belt crossover conveyor transfer PECS is open on each end where the belt enters and exits with skirting installed on both sides, so it has multiple points where visible emissions could be observed.

Inspection of the PECS on top of the coal silos involved Antelope Coal's Bruce Hokanson and Nate Weinand and the Air Quality Division's Chris Hanify.

7 Belt (NEMA) Head-Drive Pulley PECS

- System not observed because it had no coal.

3 Belt (SMA) Head-Drive Pulley PECS

- SMA system in operation (it was down last year), PECS working well with gas charged belt scrapers at 12:50
- No visible emissions

4 Belt (Crossover) Head-Drive Pulley PECS

- System in operation, PECS working well with gas charged belt scrapers
- No visible emissions

4 Belt Transfer (Tail Pulley) PECS

- Six new foggers installed and in operation
- System in operation
- No dusting seen, even when the belt went empty

SMA Secondary Crusher PEC with Fogger

The SMA secondary crusher and fogger were in operation with no emissions.

6 - 7 Transfer PEC

A new fogger system was installed on this transfer point with a "pre-fog" on the tail end (2 fogger nozzles), 2 fogger nozzles on the transfer chute, and 2 more nozzles installed on the front end of the PECS. No visible emissions were observed from this transfer point.

5 - 6 Transfer PEC

In operation with no visible emissions. The 5 - 6 Transfer PEC will not be in service after the NPNP conveyor is completed.

Haul Roads

All the roads were in good shape and the emissions were well controlled by the four water trucks.

SMA Crusher controlled by PEC with fogger

The SMA crusher and fogger were in operation with no visible emissions.

SMA Truck Dump

- Truck dump in operation

- Stilling shrouds in place.
- Sides of stilling shed were in place.
- Emissions from truck pad well controlled

To reduce emissions from both the NEMA and SMA truck dumps the ACM instated correct dumping procedures for the haul truck drivers. Haul truck drivers were instructed to slowly lift the truck bed (coal enters the hopper slowly) and to keep the truck bed elevated (traps dust in stilling shed) until all the coal has been emptied from the bed of the truck. ACM starts their readings when the bed begins to elevate and reads the opacity for one minute. More details on the SMA truck dump are contained in Air Quality Permit MD-13361. In the table below is the AQD's opacity reading for 4 trucks at the SMA truck dump.

Truck	Start	15 seconds	30 seconds	45 seconds	Average
1	0	5	5	0	2.5
2	0	10	10	5	6.25
3	0	0	5	10	3.75
4	0	0	20	5	6.25
Average					4.69

#### NEMA Truck Dump

- Truck dump in operation
- Stilling shrouds in place.
- Sides of stilling shed were in place.
- Fogger in operation during the opacity readings
- Emissions from truck pad well controlled

In the table below is the AQD's opacity reading for 4 trucks at the NEMA truck dump.

Truck	Start	15 seconds	30 seconds	45 seconds	Average
1	0	0	20	20	10
2	0	0	25	20	11.25
3	0	5	15	10	7.5
4	0	5	10	5	5
Average					8.44

As shown in the table above all the trucks were in compliance with the 20 percent opacity standard. The haul trucks wait for the hopper to empty before backing up to the truck dump, which allows the fogger time to fill the stilling shed with fog. The trucks unloading times were 40 seconds to one minute. During all the opacity readings the background was good and the fog was visible. More details on the NEMA truck dump are contained in Air Quality Permit MD-13361.

#### NEMA PEC on Crusher

- PEC working well
- No emissions
- Foggers making a lot fog

Ambient Monitoring Site 6

Most of the activity that will effect this monitor are from the North Antelope Rochelle Mine. Limited impacts from ACM's NEMA truck dump and Scoria coal pit.

NEMA Pit

- Coal haul, but stopped hauling for coal shot.

Scoria Pit – Coal Mining

- The site of the old scoria mine was being mined for coal.  
- Overburden shovel and one haul truck were in operation.  
- ACM will remove 1.5 million tons from this pit.

NWMAN Pit

- Very deep, long and wide coal pit.  
- Coal and dirt hauls.

No unusual or excessive emissions were detected during the inspection. At 2:45 P.M. we departed the mine.

**DUST CONTROL MEASURES EMPLOYED ON HAUL ROADS:**

Condition 23 of MD-13361 requires that all permanent haul roads and access roads be treated with a chemical dust suppressant in addition to water to control fugitive dust emissions and be maintained continuously to the extent that such treatment remains a viable control measure.

Condition 24 of MD-13361 requires that all temporary haul routes, including pit floor haul routes, be treated with water and/or chemical dust suppressants on a schedule such that treatment remains a viable control measure.

Condition 25 of MD-13361 required the ACM to submit to the Division by April 1st of each year, a report addressing road dust control measures employed during the past year and a disturbed acreage report for the year. This plan shall include the following:

- a. A map based on the past year end conditions with the following information:
  - All roads existing at the end of the calendar year, which have been treated with water and/or dust suppressant.
  - Locations of active operations, treated disturbed areas, and reclaimed areas.
- b. Type and annual quantity of dust suppressants used for the past year and a description of the general application procedures and schedule.
- c. Number of water trucks, capacities of each water truck, and quantity of water used for the past year.
- d. Operating hours by water truck and total water truck fleet hours for the past year.
- e. Total length in miles of permanent and temporary haul roads existing at the end of the calendar year, which have been treated with water and/or dust suppressant.

- f. Overburden and coal production rates for the past year.
- g. A table summarizing, by calendar quarter, the acreages and control measures or BMP uses/applied by active operations, treated disturbed areas, and reclaimed areas.

Typically, dust suppressant is applied to the haul roads during the dryer months. Prior to the application of magnesium chloride (MgCl<sub>2</sub>), the road surface is scarified with a motor grader. MgCl<sub>2</sub> is then applied, worked into the surface, and wheel rolled to recompact the surface. Dust suppressant is applied monthly at a maximum application rate of 0.0025 gal/yd<sup>2</sup> during the dry months. The access road to the mine is paved.

The mine mixes the MgCl<sub>2</sub> with water and applies it at 10:1 ratio. ACM applies the dust suppressant where it is needed. Therefore, some areas receive more than one treatment and others are not treated. Application areas included the following: entrance road, haul roads, overburden dump areas, pit floors, the truck dumps and around the office/warehouse/shop facilities.

Year	MgCl <sub>2</sub> gallons	Total Water Gallons	Reclamation Water Gallons
2009	77,422	142,900,000	5,810,000
2010	271,628	191,881,100	4,330,000
2011	92,770	178,011,500	6,779,000
2012	194,798	238,051,638	14,500,000
2013	114,613	273,456,723	6,620,000
Jan 1 – March 31, 2014	0	23,742,500	410,000

Less dust suppressant was applied to the haul roads in 2009 and less water was used to control emissions from the haul roads. In 2010 water and dust suppressant application rates were very high. Less dust suppressant was applied in 2011, but the application rate for 2012 was higher (dry year). In 2013 more water was applied than in other year. The longer a well-designed haul road is in use the lower be the dust suppression application rates.

From the Year 2002 – 2007 ACM operated two 42,500 gallon water trucks and a scraper with a 10,000 gallon tank mounted to it. The scraper with a 10,000 gallon tank was decommissioned in 2009. ACM added a third 42,500 gallon water truck in the Year 2007. In 2009 the ACM was operating three water trucks with 42,500 gallon tanks. In the Year 2011 ACM added a fourth water truck with a 42,500 gallon tank. How many water trucks are in operation depends on haul truck activity and dust conditions. In the table below are the operating hours of the water trucks.

Year	Operating Hours
2009	7002.8
2010	8217.3
2011	9031.8
2012	12,842.2
2013	9,649.8
Jan 1 – March 31, 2013	1573.5

The water trucks can obtain water from four high pressure fill stations (250 to 300 gallons per minute). The high pressure fill station greatly reduces the amount of time it takes to fill a water truck. The ACM collects the storm water in holding ponds and applies it the haul roads. ACM can also move the water from one holding pond to another. In the table below are the fill stations and the source of the water.

Fill Station	Source of Water
WS-2	Deep Water Well
WS-3	Deep Water Well
WS-4	Deep Water Well being constructed
SP-72	Pipe from WS-3, water runoff holding ponds and the water in the bottom of the production pits
SP-71	Most of the time water is obtained from the runoff holding ponds. Additional water is obtained from the bottom of the production pits and reusing the water that is used to wash down the plant. Occasionally water is obtained from the WS-1 well (not high flow).

WYPDES Permit WY0030198 allows the ACM to discharge into Antelope Creek, but the ACM usually chooses not to because of water conservation purposes.

### **PRODUCTION DATA:**

Condition 37 of MD-13361 requires the maximum yearly coal production at the Antelope Mine not exceed 52 million tons per year. Annual coal and overburden production rates were required to be reported with the annual report required for dust control measures by Condition 25.

Mining production and activity data is provided by the company with the quarterly ambient monitoring reports. For the most recent years, coal production, overburden handling, and reclamation operations were as presented below:

Quarter	Overburden Moved (MM BCY)	Coal Shipped (MM Tons)
Calendar Year 2009	117.3	34.0
Calendar Year 2010	143.0	35.9
Calendar Year 2011	147.0	37.1
Calendar Year 2012	132.4	34.3
Calendar Year 2013	137.4	31.3
Jan 1 – March 31, 2014	36.4	8.3

In every year of operation coal production was been below the limit set by the Air Quality Permits.

### **AMBIENT MONITORING REVIEW:**

Condition 28 of MD-13361 required ACM to operate, in accordance with the requirements of 40 CFR, Parts 50 and 58, an approved ambient particulate monitoring program that includes an ambient particulate monitoring network to demonstrate compliance with the ambient particulate standards. Condition 29 requires the data generated by the ambient PM<sub>10</sub> monitoring network shall be submitted in a Division approved format on a quarterly basis. ACM contracts the processing of the data, calibrating the monitors, and accuracy audits out to Intermountain Laboratories. Ambient monitoring data is being submitted electronically within 60 days following the end of the quarter.

#### Ambient Monitoring Network Description

ACM operates an ambient particulate monitoring network that has four monitoring locations. Downwind PM<sub>10</sub> monitoring stations include sites #4, #5, and #6, while #3 was the upwind/background station (going to be replaced with site #7). Collocated PM<sub>10</sub> monitors were installed at site #6, but were replaced by one continuous PM<sub>10</sub> monitor. Collocated PM<sub>10</sub> monitors are installed at site #5. Each PM<sub>10</sub> monitor in this network is set up with a satellite PM<sub>10</sub> inlet (explained below.)

In a June 27, 2013 letter the ACM stated that an oil and gas access road was built 50 meters from monitoring Site 3. The AQD visited the ACM on June 21, 2013 to observe the ambient monitoring sites. The ACM requested that Site 3 be shut down. In a June 28, 2013 letter the AQD stated that based on the AQD's observations (road is 93 feet from monitor) that it will allow the ACM to shut down Site 3 until further notice. Site 3 is also the location of State of Wyoming's particulate and NO<sub>x</sub> monitors. ACM will be submitting a request to rename Site 3 – Site 7 and move the monitors 800 to 1000 feet west of their present location. Site 7 will also have an ozone monitor installed.

In September 19, 2013 E-Mail ACM stated that they had an incident of vandalism to site 6 the downwind PM<sub>10</sub> monitors. The equipment main panel was opened; two line vales closed, and some electrical wiring disconnected. ACM was investigating the incident, as this is the first occurrence on our site. The sample run was invalidated as a result of the collection and vacuum lines being tampered with.

### Ambient Standards

Chapter 2 § 2 of the WAQSR limits the PM<sub>10</sub> annual arithmetic mean to 50 µg/m<sup>3</sup> and the 24-hour average PM<sub>10</sub> concentration to 150 µg/m<sup>3</sup> (not to be exceeded more than once per year.) Under the standards, PM<sub>10</sub> sampling is required every third day, though sampling every sixth day may be allowed under certain conditions. For facilities that sample on the 1/6 sampling frequency, a single occurrence of exceeding the PM<sub>10</sub> standard is a violation of the standard based on the 99th percentile, whereas one exceedance is allowed at a site operating on a 1/3 sampling schedule.

Up through the year 1997, PM<sub>10</sub> concentrations were reported at standard temperature and pressure (STP.) Beginning January 1, 1998, PM<sub>10</sub> data was reported in terms of actual or local temperature and pressure (LTP), but STP data is still being reported and is used for compliance purposes.

TSP concentrations are reported at STP and LTP conditions. The TSP standard was limited to 150 µg/m<sup>3</sup> per 24-hour period, not to be exceeded more than once per year; this standard was removed from WAQSR on March 30, 2000, and the ambient PM<sub>2.5</sub> standard adopted in its stead.

### Particulate Monitoring Results

In the table below are the Year 2013 monitor availabilities, Year 2013 high and second high readings, the mean particulate concentration recorded in the Years 2010 - 2013.

Site	Legal Description	Monitor Available (%)	High Reading (µg/m <sup>3</sup> )	Second High (µg/m <sup>3</sup> )	2013 Mean (µg/m <sup>3</sup> )	2012 Mean (µg/m <sup>3</sup> )	2011 Mean (µg/m <sup>3</sup> )	2010 Mean (µg/m <sup>3</sup> )
PM10 #3	S-21, SW, T40N, R71W	96.7	49	38	14.4	17.3	11.0	10.2
PM10 #4	S-13, NW, T40N, R71W	96.7	87	75	19.8	24.5	17.2	17.9
PM10 #5	S-12, NENW, T40N, R71W	96.7	69	66	25.2	34.1	26.9	26.3
PM10 #6A	S-6, NWSE, T40N, R71W	96.7	78	75	30.3	38.2	29.3	29.6
PM10 #6B	S-6, NWSE, T40N, R71W	96.7	72	69	31.5	38.5	32.2	28.5

As shown in the table above 2012 was very dusty. Condition 30 of MD-13361 requires within thirty (30) days of a monitored exceedance at any filter based monitor the AQD will be notified within 15 days.

#### September 15, 2012 - 24-hour PM<sub>10</sub> Exceedance at Site 6

The mining activity at the ACM is moving further away from Monitoring Sites #5 and #6 and the source of emissions nearest these monitors is the North Antelope Rochelle Mine (NARM). If the wind direction is right the ACM could end up trying to explain an exceedance at Monitoring Sites #5 and #6 that was caused by the NARM. NARM was also concerned that their particulate monitors will be impacted by the ACM. For permit application AP-13361 the ACM and AQD agreed that ambient air (not part of mine) will be the one acre ambient air boundary surrounding PM-10 monitoring sites 4, 5 and 6. The AQD and ACM had discussed the location of the monitors before and concluded that ACM and NARM mining activities will continue to influence each other monitors. The largest effect comes from coal and overburden blasts. ACM suspected that

exceedances of the PM-10 standard will lead to the installation of continuous PM-10 monitors. An exceedance was recorded at Site 6 as discussed below:

On September 15, 2012 the Antelope (Antelope) Site 6 monitor recorded an exceedance of the 24-hour PM<sub>10</sub> standard. The final 24-hour concentration was 157 µg/m<sup>3</sup>. Antelope requested that this day be flagged under 40 CFR Part 50.14 "Treatment of Data Influenced by Exceptional Events" due to influence by wildfire. The ACM submitted an exceptional events package that contributed the exceedance to wildfire smoke. The packet was reviewed the AQD memorandum of April 5, 2012. PM<sub>10</sub> concentrations recorded on the day of the exceedance at Antelope sites 4, 5 and 6 were considered in the analysis. All three sites are within 2.5 miles of each other and lie to the south of the facility's Lands Necessary to Conduct Mining (LNCM) boundary. Meteorological data provided by ACM indicated that on the day of the exceedance the wind was from west-northwest and west. The 24-hour concentrations at sites 4 and 5 were 30 µg/m<sup>3</sup> and 60 µg/m<sup>3</sup>, respectively.

Other monitoring sites of interest were sites RO-1 and NA-8 at the neighboring North Antelope Rochelle Mine (northeast and east of site 6, respectively) and PRB-8, a PM<sub>2.5</sub> monitor southwest of site 6. The table below summarizes this data and shows facility ownership of the monitor, concentration at that monitor on the day of the exceedance and the quarterly average for that monitor.

Facility	Site	9/15/12 Concentration	Quarterly Average
Antelope	Site 6	157 µg/m <sup>3</sup>	62 µg/m <sup>3</sup>
Antelope	Site 5	60 µg/m <sup>3</sup>	52 µg/m <sup>3</sup>
Antelope	Site 4	30 µg/m <sup>3</sup>	42 µg/m <sup>3</sup>
NARM	RO-1	65.7 µg/m <sup>3</sup>	67.8 µg/m <sup>3</sup>
NARM	NA-8	91.1 µg/m <sup>3</sup>	48.4 µg/m <sup>3</sup>
AQD	PRB-8	9.3 µg/m <sup>3</sup>	7.7 µg/m <sup>3</sup>

Please note that the sampler at PRB-8 is a PM<sub>2.5</sub> sampler, not PM<sub>10</sub>

Two other sites in the area did show elevated concentrations of PM<sub>10</sub> on that day, but no monitors showed an exceedance of the NAAQS on September 15, 2012. The increases in PM<sub>10</sub> concentrations were likely due to wildfire smoke, but the increase at Antelope's Site 6 monitor was significantly higher than the nearby monitors, which would indicate that there were other contributing factors.

Smoke traveling long distances would have a homogeneous impact at all locations in its path and similar increases in concentration should have been seen at the other locations. The AQD concluded that the data submitted did not support Antelope's claim that their exceedance was caused by wildfire smoke. Were the fires responsible for the elevated PM<sub>10</sub> concentrations at site 6, the other monitors in the area should have shown similar increases to the concentrations seen at site 6. The AQD memorandum of April 5, 2012 concluded that forest fire smoke had a minor impact on monitors regionally, but it was not the primary factor in the September 15, 2013 exceedance and the AQD would not allow a flag for this exceedance under the Exceptional Events Rule.

Antelope Site 6 monitor had one exceedance in the past three year period, on September 15, 2012 (this event). 40 CFR 50.6 (a) states that the primary standard for PM<sub>10</sub> is met, "when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup>, as determined in accordance with appendix K to this part, is equal to or less than one." With an expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> of 1.0, this monitor is still attaining the 24-hour PM<sub>10</sub> standard. While this was not a violation of the Ambient Air Quality Standard, permitted facilities have an obligation to prevent exceedances of the Standard.

On July 16, 2013 representatives of the ACM meet with the AQD to discuss the September 15, 2012 exceedances. ACM presented the AQD with a supplemental exceptional event package that included CALPUFF ambient modeling. The model indicated an impact of 11.3 µg/m<sup>3</sup> from smoke from the fires. The ambient exceedances on September 15, 2012 exceeded the standard by 7 µg/m<sup>3</sup>. Thus, if it were not for the wildfires an exceedance would not have occurred.

A second AQD memorandum of August 2, 2013 discusses the exceedance and recommended that the AQC require ACM to move to every day sampling at Site 6.

In an October 18, 2013 E-Mail ACM summarized the September 15, 2013 meeting about the PM-10 exceedance at Site 6. ACM's E-Mail included primary factor for exceedance, smoke distribution, future monitoring considerations and concerns over enforcement action.

In a November 22, 2013 letter the ACM submitted a request for a flag under the exceptional events rule for the PM-10 exceedance at Site 6 that occurred on September 15, 2012. The letter was in response to AQD draft letter that was to imply that the ACM claim that the exceedance was caused by wildfire smoke from fires in western Wyoming was unsupported. ACM stated that the CALPUFF modeling clearly demonstrates that without the 11 µg/m<sup>3</sup> of PM<sub>10</sub> contributed by the wildfires, the ambient concentration at Site 6 would have been 146 µg/m<sup>3</sup> and would have complied with the applicable air quality standard.

In a December 3, 2013 letter the ACM submitted a second request for a flag under the exceptional events rule for the PM-10 exceedance at Site 6 that occurred on September 15, 2012. ACM noted that wild fire smoke had impacted the monitor. ACM also summarized the discussions between them and the AQD that led up to this letter and the requirement to commence everyday sampling. ACM intended to appeal the AQD decision that wild fire smoke attributed to the exceedance with additional information.

In a January 7, 2014 letter ACM notified the AQD of the plan to implement every day PM-10 sampling at Site 6. ACM purchased a Thermo Scientific 1405 TEOM continuous PM-10 monitor. ACM planned to have it operational by April 1, 2014. The AQD's December 3, 2013 letter required the monitor be installed and operated for one year.

In a January 23, 2014 letter the AQD approved the plan for continuous PM-10 monitoring at Site 6 with the following requirements: startup and shutdown audits must be conducted; site modifications forms must be submitted and the monitors must comply with 40 CFR parts 50 and 58.

In an April 16, 2014 E-Mail ACM stated the monitor was put into service April 15, 2014 as scheduled. ACM was still working through several IT issues.

During the 2014 inspection we discussed whether or not monitoring group decided to flag the event as an exceptional event (wild fire smoke attributed to the exceedance) or whether it would be recorded as an exceedance. ACM informed the AQD that they have still not received a letter stating the AQD's decision. Based on this letter ACM will decide whether or not they want to appeal the decision. Later, the Casper Field Office would be informed that the monitoring section of AQD was still working on the letter to ACM.

Recent Ambient Data

In the table below are the ambient monitoring results from the first and second quarters of 2014.

1st Quarter 2014					
Site	Legal Description	Monitor Available (%)	High Reading (µg/m³)	Second High (µg/m³)	Mean (µg/m³)
PM10 #3	S-21, SW, T40N, R71W	-	-	-	-
PM10 #4	S-13, NW, T40N, R71W	96.7	46	27	14.7
PM10 #5	S-12, NENW, T40N,R71W	96.7	53	40	21.1
PM10 #6A	S-6, NWSE, T40N, R71W	96.7	70	56	28.0
PM10 #6B	S-6, NWSE, T40N, R71W	93.3	66	40	29.4

The AQD reviews all the ambient monitoring reports. The reports for all the coal mines in the Powder River Basin are summarized by the AQD in a quarterly report. The quarterly report contains a graphical representation of five years of ambient monitoring data from each mine and whether an ambient PM-10 exceedance was recorded.

Meteorological Data

Condition 35 required ACM to install instrumentation to measure the vertical temperature difference and solar radiation. In a January 9, 2013 letter the ACM informed the AQD that the QA/QC audit on the meteorological station was completed on September 17, 2012. The system was updated to combine data management abilities on the 30 meter system on December 20, 2012. Data reporting of 2 and 10 meter temperature data and the solar radiation data will begin the first quarter of 2013.

Condition 33 of MD-13361 required the ACM to maintain a meteorological station acceptable to the Division. The meteorological data measurements shall consist of hourly observations of the following: wind speed using an anemometer height of 10 meters; wind direction; ambient temperature; vertical temperature difference (delta-

temperature) between 2 meters and 10 meters; and solar radiation. Condition 34 states that ACM must submit the data electronically each quarter. ACM has submitted all the data to the ambient monitoring section of the AQD. The meteorological station is located in Section 2, T40N, R71W.

#### Adequacy of the Collocated PM10 Sampler Network

Condition 31 of MD-13361 requires that annually, ACM submit a demonstration that the ambient particulate monitoring network is sufficient for monitoring impacts and demonstrating compliance with the ambient particulate standards. In a February 28, 2012 letter ACM submitted the Ambient Particulate Monitoring Network Demonstration for 2012. Included was map with the current and projected mining locations, wind rose and wind frequency table. In an April 30, 2012 letter the AQD approved the Ambient Particulate Monitoring Network Demonstration for 2012. A review of the ambient particulate monitoring network is required annually by Condition 22 of MD-1543.

Under a March 25, 2014 cover letter ACM submitted the 2014 ambient particulate monitoring network demonstration. A map was attached that showed the current mining locations and the projected mining progression. ACM also included the location of the new monitoring location for Site 3.

#### **ANNUAL EMISSIONS:**

In the Year 2011 the Resource Management Section of the AQD requested an electronic submittal that included the particulate emission sources as well as the following combustion emissions sources: haul trucks, heaters used for comfort heating, natural gas fired emergency electrical generators, stationary and portable diesel fired engines, road maintenance and earth moving equipment. The AQD did not request an inventory for the Year 2012 - 2013. For the years 2011 – 2013 emissions for the facility were as presented below.

Year	ANNUAL EMISSIONS (tons)				
	SO <sub>2</sub>	NO <sub>x</sub>	CO	TSP	PM <sub>10</sub>
2011	70.0	1082.5	277.8	3473.3	1044.3
2012	-	-	-	N/A	N/A
2013	-	-	-	N/A	1482.5

The increase in 2013 particulate emissions over the amount reported in 2011 is related to an increase in coal production because the coal production increase is roughly proportional to the increase in emissions.

#### **TEMPORARY CRUSHING AND SCREENING EQUIPEMENT:**

On March 4, 2013 the AQD received a relocate permit to allow All B Excavating to operate an impact crusher and screen to produce 150,000 tons of scoria. They expected to start production on February 25, 2013 and operate for 4 to 5 months. The crusher and screen were permitted in CT-4103 issued on November 21, 2005.

On November 21, 2013 the AQD received a relocate permit for CT-4103 from All B Excavating to install an impacter and screen at the ACM. Operation was expected to commence on November 21, 2013 and last approximately 3 months. Total production was expected to be between 80,000 and 100,000 tons. The screening train can operate at 100 to 150 tons per hour.

On May 27, 2014 the AQD received a relocate permit for CT-4103 from All B Excavating to install an impacter and screen at the ACM. Operation was expected to commence on May 12, 2014 and last approximately 6 months. Total production was expected to be 200,000 tons.

During the 2014 inspection we were informed that scoria was crushed in the fall of 2013 and scoria crushing began again in May 2014. We visited the scoria crushing and screening operation to inspect the operation for fugitive dust. The AQD requires that crushers, screens and drop points be equipped with water sprays to control emissions. All B Excavating did not have water at this location and consequently water sprays were not in operation. All B Excavating was represented by Lance Phillips who informed us that size the material was being crushed to and the amount of moisture in the scoria resulted in their decision not to apply water. As shown in the attached photographs emissions were controlled. The site of the crushing and screening is located in a small deep pit that is sheltered from the wind. ACM was going to keep an eye on the operation and require All B Excavating to install water sprays if emissions became excessive.

### **NEW SOURCE PERFORMANCE STANDARDS (NSPS) and NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP):**

#### NSPS Subpart Y

ACM is an affected facility under Chapter 5, Section 2, NSPS, Subpart Y - Standards of Performance for Coal Preparation Plants. Subpart Y limits the opacity of the coal processing and conveying equipment, coal storage system, coal transfer, and the processed coal loading system, to a maximum opacity of 20 percent.

#### NSPS Subpart IIII

NSPS Subpart IIII is the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and applies to owners and operators of stationary diesel engines that commence construction (date engine ordered) after July 11, 2005, where the stationary CI ICE are: manufactured after April 1, 2006, and are not fire pump engines; or manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; stationary compression ignition (CI) internal combustion engines (ICE) that are modified or reconstructed after July 11, 2005. The provisions of §60.4208 are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

In the table below is the information provided by the ACM.

	Use	Serial #	Manufactured	Installed	Subpart III
<b>850 hp</b> Cummins K38 (2300 cu-in) Diesel – 38 Liter	Shop Backup Generator	37105811	1982	2001	No
<b>80 hp</b> (60 kw) John Deere 4024HF285B Diesel - 2.4 Liter	Facility Backup Generator	2100341	2008	2009	Yes
<b>275 hp</b> Cummins OSB Diesel – 5.9 Liter	Fire Pump	46654639	2006	2007	Yes
<b>11 hp</b> Honda EM Inverter 5000 is (337 cc) four stroke lean burn gasoline	Guard Shack Backup Generator	EAJJ-1010191	2009	2010	No
<b>13 hp</b> Honda EU6500IS (389 cc) four stroke lean burn gasoline	Silo #1 Backup Generator	EASJ-1039828	2009	2010	No

Subpart III defines fire pump engine as an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection. In a March 4, 2013 telephone conversation with Chris Fare I was informed that the 275 hp John Cummins fire pump engine is used to run a pump and not generator that supplies power to a pump making this engine a fire pump engine.

In a March 7, 2013 telephone conversation with Chris Fare the AQD was informed that the 850 hp Cummins K38 was not rebuilt, but work was done on the engine before it was started. The engine has been at the mine for a long time, but it was never used. When the ACM decided that they needed backup power to the shop they decided to supply it by hooking up the Cummins K38 to a generator. In an April 1, 2013 phone call the ACM informed the AQD that the Cummins K38 was installed in 2001. Based on the preceding and the date the engine was ordered and manufactured the Cummins K38 should not be subject to Subpart III. The Honda engines are fueled on natural gas or they are not compression ignition engines and are exempt from Subpart III.

Section 60.4205 contains the emission standards for emergency CI internal combustion engines that apply to the owner or operator of a stationary engine. The emissions standards for the 275 hp John Cummins OSB Diesel fire pump engine are in Section 60.4205(c) as shown in the table below:

	Use	Manufactured	Emission Standard
<b>80 hp</b> (60 kw) John Deere 4024HF285B Diesel - 2.4 Liter	Facility Backup Generator	2008	Section 60.4202
<b>275 hp</b> Cummins OSB Diesel – 5.9 Liter – Fire pump	Fire Pump	2006	Table 4

Section 60.4202 applies to the manufacturers of diesel engines. Therefore, the 80 hp (60 kW) John Deere was manufactured to comply with the emissions limits and is covered under the manufacture requirements.

Section 60.4205(c) states that owners and operators of fire pump engines with a

displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants. The emission limits in for the 275 hp Cummins diesel fire pump engine are shown in the table below:

Maximum engine power	Model year(s)	NMHC + NO <sub>x</sub>	CO	PM
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)

Section 60.4206 states that owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 over the entire life of the engine.

Section 60.4211 contains the compliance requirements for the owner or operator of a stationary CI internal combustion engine. The emissions standards for the 275 hp John Cummins OSB Diesel fire pump engine are in Section 60.4205(c). This engine was manufactured before 2007.

Section 60.4211 (b) states if you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

- (1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.
- (2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.
- (3) Keeping records of engine manufacturer data indicating compliance with the standards.
- (4) Keeping records of control device vendor data indicating compliance with the standards.
- (5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

In a March 4, 2013 E-Mail the AQD supplied ACM with the five points listed above. On May 1, 2013 Chris Fare called to inform the AQD that the 850 hp Cummins K38 diesel

engine was manufactured in 1982 and Cummins does not keep a test database on this engine. Cummins informed the ACM that the 275 hp John Cummins OSB Diesel fire pump engine is compliant with the emission factors in Table 4. Chris Fare requested the test data from Cummins for the fire pump engine.

Section 60.4207(b) states beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. This regulation also applies to refineries.

Section 60.4208(h and i) applies if to the installation of another engine. The 80 hp (60 kW) John Deere was manufactured to comply with the emissions limits. The 275 hp John Cummins OSB Diesel engine was installed prior to Section 60.4208 taking effect.

Section 60.4209(a) states that if you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine. In a March 4, 2013 telephone conversation with Chris Fare I was informed that all the engines have hour meters. The AQD did not investigate whether or not the hour meters had to be installed, but it appears that one would not have been required for the 80 hp (60 kw) John Deere.

#### NESHAP Subpart ZZZZ

The ACM is not a major source of HAPs as defined by the WAQSR, as emissions are less than 10 tpy of any individual HAP, or 25 tpy of any combination of Hazardous Air Pollutants (HAPs). Therefore, the facility was not subject to a MACT standard for major sources of HAPs as defined in Chapter 5, Section 3 of the WAQSR. However, on October 19, 2010 EPA reissued the final rule for National Emission Standards for Hazardous Air Pollutants (NESHAP) for existing stationary engines that are located at area sources of HAPs. The ACM is an area source of HAPs.

40 CFR, Part 63, Subpart ZZZZ Section 63.6595 states that for an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations and operating limitations no later than May 3, 2013.

An affected source under the RICE MACT is any existing, new, or reconstructed stationary RICE. Described below are the basic engine categories (new, existing, and reconstructed) as applicable at area sources of HAPs.

**New:** New affected units are those that commenced construction on or after June 12, 2006.

**Reconstructed:** For RICE meeting the definition of reconstruction (per 40 CFR 63.2), a "reconstructed engine" is one that commenced reconstruction on or after June 12, 2006.

Existing: An existing unit commenced construction before June 12, 2006.

In the table below are details on the engine that affect how the engine will be regulated under Subpart ZZZZ.

	Installed	ZZZZ Status	Engine Type	Requirements
<b>850 hp</b> Cummins K38 (2300 cu-in) Diesel – 38 Liter	2008	New	Diesel	Subpart ZZZZ
<b>80 hp</b> (60 kw) John Deere 4024HF285B Diesel - 2.4 Liter	2009	New	Diesel	Subpart III
<b>275 hp</b> John Cummins OSB Diesel – 5.9 Liter	2007	New	Diesel	Subpart III
Honda EM Inverter 5000 is (337 cc) four stroke lean burn gasoline	2010	New	Gasoline	Subpart JJJJ
Honda EU6500IS (389 cc) four stroke lean burn gasoline	2010	New	Gasoline	Subpart JJJJ

Section 635.90(c) states that an affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part. Section 635.90(c)(1) exempts new or reconstructed stationary RICE located at an area source.

Section 63.6603 (a) states that if you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d and the operating limitations in Table 1b and Table 2b.

Table 1b contains the Operating Limitations for Existing, New, and Reconstructed Spark Ignition 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions and Existing Spark Ignition 4SRB Stationary RICE >500 HP Located at an Area Source of HAP Emissions. Table 1b does not apply to the 850-hp Cummins diesel generator.

Table 2b contains the Operating Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing Compression Ignition Stationary RICE >500 HP, and Existing 4SLB Stationary RICE >500 HP Located at an Area Source of HAP Emissions. The requirements of Table 2b are shown in the table below:

For each . . .	You must meet the following operating limitation . . .
1. 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to reduce CO emissions and using an oxidation catalyst; or 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst; or 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F. <sup>1</sup>
2. 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to reduce CO emissions and not using an oxidation catalyst; or 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; or 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst	Comply with any operating limitations approved by the Administrator.

The requirements of Table 2b do not apply to the 850-hp Cummins diesel generator because it does not have to comply with the requirement to reduce CO emissions by the installation of an oxidation catalyst.

Condition 4 of Table 2D applies to the 850-hp Cummins diesel generator.

Table 2d		
For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
4. Emergency stationary CI RICE and black start stationary CI RICE. <sup>2</sup>	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; <sup>1</sup>	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	

The 850-hp Cummins engine must also comply with the following: Monitoring, Installation, Collection Operation & Maintenance Requirements in Section 63.6625(e), (f), (h), (j); Continuous Compliance Requirements in Sections 63.6605 and 63.6640; Recordkeeping Requirements in 63.6655 except (c).

Section 63.6625(e) states that if you own or operate any of the following stationary

RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

Section 63.6625(f) states if you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed. The 850-hp Cummins engine has an hour meter.

Section 63.6625(h) states that if you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

Section 63.6625 (i) states that if you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d of this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d of this subpart.

#### Subpart JJJJ

NSPS Subpart JJJJ applies to all spark ignition engines and establishes emission limits for NO<sub>x</sub>, CO, and VOCs, based on engine manufacture dates. This standard includes reporting and recordkeeping requirements.

Section 60.4230(a) states the provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (5) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

Section 60.4230(a)(4) applies to owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

- (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP;

Based on Section 60.4230(a)(4)(iii) the small Honda emergency generator engines are subject to JJJJ. The remaining engines are fueled on diesel and are exempt from Subpart JJJJ because they are compression ignition.

In the table below are details on the engines and the Subpart JJJJ status.

	Use	Manu factured	Engine Type	Subpart JJJJ
<b>850 hp</b> Cummins K38 (2300 cu-in) Diesel – 38 Liter	Shop Backup Generator	1972	Diesel	No
<b>80 hp</b> (60 kw) John Deere 4024HF285B Diesel - 2.4 Liter	Facility Backup Generator	2008	Diesel	No
<b>275 hp</b> John Cummins OSB Diesel – 5.9 Liter	Fire Pump Electrical Generator	2006	Diesel	No
<b>11 hp</b> Honda EM Inverter 5000 is (337 cc) four stroke lean burn gasoline	Guard Shack Backup Generator	2009	Gasoline	Yes
<b>13 hp</b> Honda EU6500IS (389 cc) four stroke lean burn gasoline	Silo #1 Backup Generator	2009	Gasoline	Yes

Section 60.4233(a) states owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008, must comply with the emission standards in §60.4231(a) for their stationary SI ICE. The emission standards in §60.4231(a) must be met by the manufacturer of the engine. The Honda engines meets the standards applicable to new nonroad SI engines.

Section 60.4237 contains the monitoring requirements for owner or operators of an emergency stationary SI internal combustion engine. Section 60.4237(c) states that if you are an owner or operator of an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine. The ACM installed hour meters on both Honda engines.

Section 60.4243 contains the compliance requirements for owners and operators of a stationary SI internal combustion engines. Section 60.4243(a) states that if you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in §60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in §60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.

(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator.

(2) If you do not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, your engine will be considered a non-certified engine, and you must demonstrate compliance according to (a)(2)(i) through (iii) of this section, as appropriate.



Antelope Coal Source Table

Source	Description (Date Installed)	Capacity	Control Equipment (Date Installed)	Pollutant	Allowable Emissions	Estimated Emissions
Permitted under MD-7698 (7/8/08)						
B	Secondary Crusher (October 1985)	3000 TPH	PEC w/ fogger 2006	Particulate	0.0 pph	0.0 pph <sup>(a)</sup>
D	SMA Sample Building (October 1985)		PEC w/ fogger (2008)	Particulate	0.0 pph	0.0 pph <sup>(a)</sup>
SMA1	SMA Truck Dump (1986) (Relocated 2000) Rebuilt 2008 and 2013	3000 TPH	Stilling Shed (1986) (Relocated 2000) Rebuilt 2008	Particulate (Fugitive)	none	6.1 TPY <sup>(a)</sup>
F	#2 SMA Crusher (Originally 1986) (Relocated 2000)	3000 TPH	PEC w/ fogger 2006	Particulate	0.0 pph	0.0 pph <sup>(a)</sup>
I	Transfer 05/06	4000 TPH	PEC w/ fogger 2007	Particulate	0.0 pph	0.0 pph <sup>(a)</sup>
J	Transfer 06/07	4000 TPH	PEC w/ fogger 2007	Particulate	0.0 pph	0.0 pph <sup>(a)</sup>
H	Silo #1 & #2 (June 1988)	3250 TPH (Silo #1) 1400 TPH (Silo #2)	PEC w/ fogger 2009	Particulate	0.0 pph	0.0 pph <sup>(a)</sup>
NEMA1	NEMA Truck Dump (May 1997)		Stilling Shed (1997)	Particulate (Fugitive)	None	6.1 TPY <sup>(a)</sup>
K	North Primary/ Secondary Crusher 1997	4000 TPH	PEC w/ fogger (2007)	Particulate (Fugitive)	0.0 pph	0.0 pph <sup>(a)</sup>
L	NEMA Sample Station 1997		PEC w/ fogger (2008)	Particulate	0.0 pph	0.0 pph <sup>(a)</sup>

(a) - estimated emissions taken from MD-1543

(b) - estimated emissions taken from recent test data (where applicable)



## COMPLETED AIR QUALITY PERMITS AND WAIVERS

### CT-408 (October 8, 1981)

The Antelope Coal Mine (then a NERCO property) was initially permitted under CT-408 with a production capacity of 12 MM TPY. Conditions of this permit required that:

- Antelope Coal Company establish an ambient particulate monitoring program before initiating construction with data submitted quarterly within 60 days of the end of each reporting period;
- all haul roads be treated with suitable chemical dust suppressants in addition to water to control fugitive dust emissions; the permanent employee access road from highway 59 to the mine facilities will be surfaced with a semi-permanent material; as a minimum, the employee access road will have a stabilized base topped with a chip and seal surface; all treated road surfaces will be maintained continually to the extent that surface treatment remains viable as a control measure;
- Antelope Coal Company submit to the Division for review, final design and control specifications for the coal barn upon their completion;
- particulate emissions from the coal processing facilities be limited to the following rates:

Truck dump baghouse	1.0 pph
Crushing baghouse	1.6 pph
Loadout baghouse	1.0 pph.

This permit was amended by CT-408A as described below.

### CT-408A (July 13, 1982)

CT-408A amended permit CT-408 to allow the construction of temporary coal processing facilities to allow the company to process coal at the reduced rate of 1 MM TPY for the first five years of mining. This was subsequently amended as shown below.

### CT-408A-2 (February 4, 1985)

This permit allowed modification in coal production schedules and mining operations at the Antelope Mine. It also modified the condition requiring improvement to the access road to the following:

that upon initiating Phase I, the first 4 miles of the employee access road will be paved and the remaining 2 miles treated and maintained as required for the haul roads; upon initiating Phase II, the access road from Highway 59 to the mining facility was to be paved.

Mining of coal at this facility started in October 1985 with the first of the 67,000 tons mined that year being shipped November 5, 1985.

This permit was subsequently amended as shown below.

CT-735 (April 6, 1987)

An additional coal storage silo and modification of the throughput capacity of the coal feeding system were allowed by this permit.

MD-108 (August 7, 1989)

Operations at the Antelope Coal Mine were modified under this permitting action by revising the mine path, revising the coal production schedule, and allowing construction of additional in-pit crushing and conveying systems. Other than the standard condition regarding descriptions and commitments, this permit required:

annual coal production to be below rates listed in the permit and partially shown below:

Year	Coal Production (TPY)	Year	Coal Production (TPY)
1989	3,380,000	1992	6,895,000
1990	5,395,000	1993 _ 2003	6,900,000
1991	6,645,000		

that the coal preparation facilities were limited to the emission rates and factors set within the permit;

that the baghouse dust collectors be well maintained and operable during all coal processing activities;

treatment of haul roads with a chemical suppressant plus water to control fugitive dust emissions and be maintained continuously to the extent that such treatment remains viable control measure;

treatment and maintenance of the unpaved section of County Road #37 and employee access road with the permanent section of County Road #37, relocated in 1989, paved in conjunction with the relocation and paving of that portion of the road north of the mine facilities (to be completed by the year 2000); failure to fulfill this condition or resulting violations of ambient air standards resulted in the immediate requirement to pave all permanent relocated sections of County Road #37;

operation of the ambient monitoring program with data submitted within 60-days of the end of each quarter;

installation of corrective measures for the in-pit crusher and/or conveying system if it was determined that the ambient standards or opacity regulations are not being met;

limited public access to the lands necessary to conduct mining operations as determined by the Administrator with the following actions required to accomplish this goal:

- i) restrict public access to these lands by fences posted with signs at appropriate intervals and card activated automatic gates or by security personnel at all uncontrolled mine access entrance and by security patrol of the mine facilities at regular intervals;
- ii) all mine lands not currently fenced in will be subject to compliance with ambient standards, including any public roads which intersect the mine permit area.
- iii) any future mining operations that may extend beyond fenced boundaries are to be fenced to restrict public access at such time as active mining operations commence in those areas.

This permit was amended by MD-161 described below.

#### Temporary Production Increase Waiver (December 13, 1989)

In a letter dated November 22, 1989, Antelope Coal Company requested a waiver of the 1989 coal production limit of 3.38 MM TPY set in MD-108. A waiver granting this request was made December 13, 1989, allowing up to 3.8 MM Tons to be mined that year.

#### MD-161(November 25, 1991)

On November 16, 1989, the Division received a permit application to amend Air Quality Permit MD-108 to include the use of in-pit truck haulage for coal, baghouse controls on the in-pit truck dumps and primary crushers, increased handling of overburden volumes by dragline vs. truck-shovel haulback and to modify the coal mining sequence. In addition, Antelope Coal Company proposed to increase coal production to a maximum of 12 MM TPY in any year of mine life. Upon review of the application, the Division determined that the existing coal preparation facility was not able to process an annual throughput of 12 MM tons. As a result, the Division required Antelope Coal Company to revise the application to include additional processing equipment and/or revise annual coal production to levels that can realistically be achieved under existing operations. On January 23, 1991, the Division received additional information regarding modifications to the coal prep plant and a revised coal production rate. In the letter, Antelope Coal Company proposed modifications to the coal prep plant in the years 1993 and 2003 to accommodate increasing coal productions. The proposed modifications to the coal prep plant are as follows:

#### Year 1993

1. Replace the existing secondary crusher (design rating - 1400 TPH) and baghouse (8,500 cfm) with a still double roll crusher (design rating - 2400 TPH) and baghouse (17,500 cfm)
2. Replace the current 36 inch wide, two successive belt transfer system carrying coal

to Silo #1 with a single 48 inch wide belt traveling approximately 800 feet/minute extending from the secondary crusher to Silo #1. The baghouse associated with the transfer point would be retained to control emissions from the sampling system.

or

Upgrade the current two belt configuration between the secondary crusher and silo #1 from a 36 inch belt to a 48 inch belt traveling 800 feet/minute. The baghouse associated with the transfer point would be upgraded from 4,000 cfm to 8,500 cfm.

#### Year 2003

1. The proposed modifications in 1993 will have the capabilities to handle an annual throughput of 12 MM tons. As a result, no modifications to the secondary crusher and conveying system would be done at this time. Antelope Coal Company planned to expand the current coal storage facilities by adding #3 and #4 silos with design capacities of 12,500 tons and 15,000 tons, respectively. The proposed silos would be equipped with baghouses (Silo #3 - 17,500 cfm, Silo #4 - 8,500 cfm) for emissions control.

After completing the technical review, the Division published the public notice for this permit April 13, 1991; the only comments made were from Antelope Coal Company, received April 9, 1991. After Division review, the company's comments were appropriately incorporated into the final permit that was issued November 25, 1991.

Aside from the standard conditions regarding commitments, access, notifications, and descriptions, this permit required that:

- the annual coal production shall not exceed the following rates:

Year	Production Rate (MM TPY)
1991 - 1993	7.0
1994 - 2003	8.5
2004 - Life of Mine	12.0

- limited emissions from the coal preparation to the following:

Year of Service	1991-93		1993-2003		2004-LOM	
Emission Source	(lb/hr)	(TPY)	(lb/hr)	(TPY)	(lb/hr)	(TPY)
No. 1 Truck Dump/Primary Crusher						
(Baghouse - 5,500 cfm)	1.0	3	1.0	3	1.0	3
No. 2 Truck Dump/Primary Crusher						
(Baghouse - 5,500 cfm)	1.0	3	1.0	3	1.0	3
Secondary Crusher						
(Baghouse - 8,500 cfm)	1.4	4	---	---	---	---
(Baghouse - 17,500 cfm)	---	---	3.1	9	3.1	9
Transfer House						
(Baghouse - 4,000 cfm)	0.7	2	(1)0.7	2	0.7	2
(Baghouse - 8,500 cfm)	---	---	(2)1.4	4	1.4	4
Silo #1						
(Baghouse - 17,500 cfm)	3.1	9	3.1	9	3.1	9
Silo #2						
(Baghouse - 8,500 cfm)	0.7	2	0.7	2	0.7	2
Silo #3						
(Baghouse - 17,500 cfm)	---	---	---	---	3.1	9
Silo #4						
(Baghouse - 8,500 cfm)	---	---	---	---	0.7	2

- the baghouse dust collectors be well maintained and operable during all coal processing activities;
- opacities of the coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal to be limited to a maximum of 20%; a 20% opacity standard was also applied to the uncontrolled fugitive coal dust emissions from the truck dump, determined by using the maximum instantaneous opacity observed from each truck dump averaged for 10 trucks;
- haul roads be treated with a chemical suppressant plus water to control fugitive dust emissions and be maintained continuously to the extent that such treatment remains viable control measure;
- treatment and maintenance of the unpaved section of County Road #37 and employee access road with the permanent section of County Road #37 relocated in 1989 paved in conjunction with the relocation and paving of that portion of the road north of the mine facilities (to be completed by the year 2000); failure to fulfill this condition or resulting violations of ambient air standards resulted in the immediate requirement to pave all permanent relocated sections of County Road #37;
- all temporary haul routes, including pit floor haul routes, to be treated with water on a schedule such that treatment remains a viable control measure; should it be determined that fugitives from these roads are not adequately controlled by using

- water, application of dust suppressant as it applies to haul roads (noted above) may be instituted;
- road dust control reports be submitted with the fourth quarter/annual monitoring report that describes measures employed during the past calendar year and projected control plan for the upcoming year that includes: a map of all roads treated with water and/or dust suppressant; type of dust suppressant, quantity and application procedure, rate and schedule; and number of water trucks, capacities, operating hours, and water usage;
  - the ambient particulate monitoring program be operated with data submitted within 60 days of the end of each calendar quarter;
  - a meteorological station be operated;
  - a detailed modification plan be submitted prior to the commencement of 1993 and 2003 modifications of the coal prep plant;
  - performance tests using Methods 1-5 upon completion of the 1993 and 2003 modifications;
  - installation of corrective measures for the in-pit crusher and/or conveying system if it was determined that the ambient standards or opacity regulations are not being met;
  - limited public access to the lands necessary to conduct mining operations as determined by the Administrator with the following actions required to accomplish this goal:
    - i) restrict public access to these lands by fences posted with signs at appropriate intervals and card activated automatic gates or by security personnel at all uncontrolled mine access entrance and by security patrol of the mine facilities at regular intervals;
    - ii) all mine lands not currently fenced in will be subject to compliance with ambient standards, including any public roads which intersect the mine permit area.
    - iii) any future mining operations that may extend beyond fenced boundaries are to be fenced to restrict public access at such time as active mining operations commence in those areas.

Antelope Coal Company fulfilled the requirement to submit a detailed modification plan prior to modifying the coal prep plant in a letter dated February 3, 1993. As outlined in the Division's March 30, 1993 confirmation letter, changes to the coal preparation facilities included replacing the existing secondary crusher with a larger crusher using the existing baghouse and replacing the existing 36 inch, two belt sequence conveyor with a 48 inch, single belt conveyor. With that, the company was informed that Antelope Coal met the 1993 requirement of MD-161.

This permit has since been modified by MD-231.

#### Temporary Soda Ash Handling Waiver wv F96 (December 29, 1995)

In a December 21, 1995 letter, to the Division, Antelope Coal Company asked to temporarily construct a soda ash handling operation at the mine. This waiver was

issued based on a project duration of 3 months.

MD-231 (June 27, 1995)

Under a February 26, 1996 cover letter, Antelope Coal Company submitted a Section 21 permit application to increase coal production, upgrade the coal preparation facilities, and construct a new coal conveying system (permit application AP-L36 receipt notice - March 4, 1996.) By this application, coal production increased from 12 MM TPY to 30 TPY with a modified mine plan sequencing.

This permit application called for maximum use of near-pit crushing and overland conveying systems in the northeast mining area (NEMA), south mining area (SMA), and central and northwest mining areas (NWMA). Specifically, through the year 2000, a new near-pit system would be required for the NEMA area that would basically eliminate the need for the existing NEMA system. This new system, scheduled to come on line in 1996 - 1997, was designated as the North crushing/conveyor system and consisted of a single stage primary/secondary near-pit crusher and two transfer points. Once the North system was operational, the number of production hours from the existing NEMA system was to drop to 1000 hours per year while the new North system would be operated 6000 hours per year through the year 2000 to meet production demand.

In subsequent years, production would be shifted from both the NEMA and SMA areas to the central and NWMA. As these shifts occur, the near-pit systems serving the existing areas will be shifted as well. When the application was submitted the central and northwest systems were not yet designed so the company planned to make them identical to those being replaced, using existing equipment when possible.

Other modifications included replacing the current #1 and #2 silo baghouses with a single baghouse for both silos. This was planned for 1996. Antelope Coal Company also dropped the proposed silo #4 from MD-231 and planned to construct only silo #3 in 1998.

Permit application AP-L36 was published for public notice June 5, 1996 (letter - May 31, 1996) and issued in July 1996. Besides the standard conditions regarding commitments, access, notifications, and descriptions, permit MD-288 required:

- performance tests within the standard 30/90 day window;
- coal production was limited to 30 MM TPY;
- opacities of the coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal be limited to a maximum of 20%; a 20% opacity standard was also applied to the uncontrolled fugitive coal dust emissions from the truck dump, determined by using the maximum instantaneous opacity observed from each truck dump averaged for 10 trucks;
- particulate emissions up to and following year 2000 were specified within;
- treatment of haul roads with a chemical suppressant plus water to control fugitive dust emissions and maintained continuously to the extent that such treatment

- remains viable control measure;
- all temporary haul routes, including pit floor haul routes, to be treated with water on a schedule such that treatment remains a viable control measure; should it be determined that fugitives from these roads are not adequately controlled by using water, application of dust suppressant as it applies to haul roads (noted above) may be instituted;
  - submission with the fourth quarter/annual monitoring report of a road dust control report describing measures employed during the past calendar year and projected control plan for the upcoming year that includes: a map of all roads treated with water and/or dust suppressants; type of dust suppressant, quantity and application procedure, rate and schedule; and number of water trucks, capacities, operating hours, and water usage;
  - operation of the ambient particulate monitoring program with data submitted within 60 days of the end of each calendar quarter;
  - operation of a meteorological station with data annually;
  - submission of a detailed modification plan prior to the commencement of 1993 and 2003 modifications of the coal prep plant;
  - limited public access to the lands necessary to conduct mining operations as determined by the Administrator with the following actions required to accomplish this goal:
    - i) restrict public access to these lands by fences posted with signs at appropriate intervals and card activated automatic gates or by security personnel at all uncontrolled mine access entrance or by security patrol of the mine facilities at regular intervals (modified - December 1999 as described below);
    - ii) all mine lands not currently fenced in will be subject to compliance with ambient standards, including any public roads which intersect the mine permit area.
    - iii) any future mining operations that may extend beyond fenced boundaries are to be fenced to restrict public access when active mining operations commence in those areas.

In a July 13, '99 letter, Antelope Coal Company asked that the Division revise the language of MD-330, condition 9. As issued, condition 9 stated "that Antelope Coal Company restrict public access to these lands by fences posted with signs at on quarter mile intervals and card activated automatic gates or by security patrol of the mine facilities at regular intervals." As proposed, condition 9 would say "That Antelope Coal Company restrict public access to these lands by fences posted with signs at on quarter mile intervals and access controlled at the office during standard office hours (when the main office was staffed), or by card activated automatic gates during off hours (when the main office was not staffed.)" The Division deemed this revision acceptable and compliant with the intent of the language originally stated in MD-288 and issued a revision in a letter dated December 9, 1999.

This permit was subsequently modified by permit MD-330/330A (described below) and has since been superseded by permit MD-616.

Permit Application AP-J00 (August 31, 1999)

On August 31, 1999 the AQD received a permit application to construct a temporary coal stockpile. The permit application was assigned AP-J00, but the permit was never issued.

In an October 9, 2007 letter the AQD stated that permit application AP-J00 had no activity and the AQD was removing it from active status. The AQD stated if the ACM wanted to construct a temporary storage pile than a new application must be filed.

MD-330//MD-330A (August 5, 1997//February 22, 2000)

A permit application to modify MD-288 was submitted under a May 15, 1997 cover letter (permit application AP-S97 receipt letter - May 20, 1997.) By the permit application, this project would involve increasing the size of the north and central mine area conveyor belt widths, increasing several baghouses' flowrates, and constructing an additional sample building with a baghouse. A notice of publication letter with a copy of the Division's analysis was sent to the company under a June 25, 1997 cover letter.

As described in the Division's analysis, the size of the north and central mine area conveyor belt widths would be increased from 60 inches to 72 inches, thus requiring increased flow rates on the associated baghouses. An additional sample building was also proposed that would be equipped with a baghouse. Noteworthy in that analysis was that although the capacity of the two conveyors was being increased, annual coal production would remain at the 30 MM TPY permitted in MD-288. It was also noted that since issuance of MD-288, the mine plan was changed plus construction of the equipment allowed in that permit was not yet completed. Below is a list of the existing equipment before MD-288, the equipment permitted under MD-288, and a list of changes and new equipment proposed in AP-S97.

## Existing Equipment before MD-288:

- No. 1 Northeast Mining Area (NEMA) Primary Crusher Baghouse, 6927 SCFM
- No. 2 South Mining Area (SMA) Primary Crusher Baghouse, 4960 SCFM
- NEMA Transfer Point Baghouse, 4510 SCFM
- Secondary Crusher Baghouse, 6158 SCFM
- Existing Sample Building Baghouse, 4845 SCFM

## Equipment Permitted Under MD-288:

- North Truck Dump/Crusher Baghouse, 9922 SCFM
- 05/06 Transfer Point Baghouse, 9561 SCFM
- New Silo #1 and #2 Baghouse, 34092 SCFM
- Silo #3 Baghouse, 14252 SCFM (this baghouse was not to be installed)
- 05A-05 Transfer Point Baghouse, 9561 SCFM
- Central Mining Area (CMA) Truck Dump/Crusher Baghouse, 9922 SCFM (This baghouse was permitted in MD-288 and was to be constructed after the year 2000; by this action construction would be allowed sooner on permit issuance. In

addition, the flowrate was going to be increased over the level considered in MD-288.)

Proposed Changes to MD-288:

- North Truck Dump/Crusher Baghouse, 13078 SCFM
- 05/06 Transfer Point Baghouse, 11725 SCFM
- New Silo #1 and #2 Baghouse, 40586 SCFM
- 05A-05 Transfer Point Baghouse, 16505 SCFM (This point source was renamed the 06/07/08 Transfer Point Baghouse)
- Central Mining Area (CMA) Truck Dump/Crusher Baghouse, 13078 SCFM

Proposed New Equipment under AP-S97:

- New Sample Building Baghouse, 2706 SCFM

Following a 30 day public comment period (no comments were received), MD-330 was issued. Other than the standard conditions regarding access, notifications, and commitments and descriptions, this permit required:

- testing of the baghouses at the following locations: North Truck Dump/Crusher, 05/06 Transfer Point, New Silo #1 and #2, 06/07/08 Transfer Point, CMA Truck Dump/Crusher, New Sample Building;
- opacities of the coal processing and conveying equipment, coal storage system, or coal transfer and loading systems to be limited to a maximum of 20% with a 20% standard applied to the uncontrolled fugitive coal dust emissions from the truck dump; compliance with the truck dumps' 20% limit to be determined by using the maximum instantaneous opacity observed from each truck dump averaged for 10 trucks (Note: This condition was amended in MD-330A.)
- limited particulate emissions to the following:

Emission Point	pph	TPY	grains/DSCF
Existing SMA #2 Primary Crusher	0.85	3.72	0.02
Existing NEMA #1 Primary Crusher	1.19	5.20	0.02
Existing NEMA Transfer House	0.77	3.39	0.02
Existing Secondary Crusher	1.06	4.62	0.02
Existing Sample Building	0.83	3.64	0.02
New N. Prim/Sec Crusher	1.12	4.91	0.01
New Transfer 05/06	1.01	4.40	0.01
New Transfer 06/07/08	1.41	6.20	0.01
New Silo #1 & #2	3.48	15.24	0.01
New CMA Primary Crusher	1.12	4.91	0.01
New Sample Building	0.23	1.02	0.01

- reinforced all conditions, commitments, and descriptions set forth in the MD-288 application unless specifically superseded by specific conditions in this permit;

those conditions included the 30 MM TPY production limit, watering and treatment of roads and haul routes with submission of a dust control plan, ambient and meteorological monitoring, and limiting public access.

On May 14, 1998, Antelope Coal Company requested an operating permit in accordance with the permit contained in Air Quality Permit MD-330. Following the company's request for an operating permit, it was determined that action on this request was not appropriate given the changes authorized by waivers issued since the request and because MD-330 has since been superseded.

On April 8 and 9, 1998, the baghouses on the New NEMA conveyor belt were performance tested. The test results were reviewed in the memorandum of May 15, 1998. The particulate concentration, mass emission rates, tested flow rate and the flow rate used to set the particulate emission limits are shown below:

SOURCE OF PARTICULATE	TESTED		LIMIT		TESTED	LIMIT
	lb/hr	gr/dscf	lb/hr	gr/dscf	dscfm	dscfm
Truck Dump - Crusher	0.21	0.0022	1.12	0.0100	11,087	13,078
5/6 Transfer	0.32	0.0031	1.01	0.0100	12,347	11,725
6/7 Transfer	0.37	0.0031	1.41	0.0100	14,027	16,505
Sample Station	0.01	0.0006	0.23	0.0100	1,813	2,706
Silo	0.43	0.0013	3.48	0.0100	40,477	40,586

The permitted and stack tested flow rates are much closer than what they are in some other air quality permits. Therefore, the low particulate concentration (gr/dscf) was achieved by the baghouse being much more efficient than the 0.01 gr/dscf used to set the pound per hour emission limits. During all the tests the coal handling facilities were processing between 3,600 and 4,000 tons per hour.

As noted above, the truck dump opacity requirement was modified following permit issuance to reflect an agreement made between the Wyoming Mining Association and the Division. A permit amendment analysis dated January 11, 2000 described how this change affected coal producers in the Powder River Basin with a copy of that analysis was provided to Antelope Coal Company under a January 13, 2000 cover letter. Issued February 22, 2000, MD-330A amended the truck dump opacity by removing the condition requiring that compliance with the 20% opacity limit was to be determined by the 10 truck dump average (as noted above.) Thus, opacity for this facility was changed to the following:

- That the opacities of the coal processing and conveying equipment, coal storage system, or coal transfer and loading systems was limited to 20%; opacity of the truck dumps was limited to 20% per Subpart Y with compliance determined using Method 9;
- The control system specified in the application for the truck dumps will be maintained and operated to minimize fugitive dust emissions with repairs initiated

expeditiously when the control device was determined to be improperly maintained or operated.

Finally, when MD-330A was initially issued, particulate emission limits for the baghouses were unintentionally omitted; a corrected permit, still dated February 22, 2000, was issued October 2, 2000.

This permit has since been superseded by MD-616 as described elsewhere in this report.

wv-U00 (August 1, 2000)  
Southern Mining Area Crusher baghouse waiver

In an October 14, 1999 letter, Antelope Coal Company informed the Division that the South Mine Area Truck Dump/Primary Crusher was being moved to a new location to reduce hauling distances. As presented in that letter, this equipment was going to be moved 6500' north of the existing site and modified to increase the throughput from 1800 TPH to 2400 TPH. To accommodate this increase in throughput, the original 4800 acfm baghouse was being replaced with a 14,500 acfm unit. This latter unit was originally installed on the coal storage Silo #1 and removed during the 1998 modifications to the coal handling facilities. Since the crusher and baghouse had been previously permitted, it was Antelope Coal Company's position that no further permitting was necessary. This, however, could not be allowed since the change represented a modification inconsistent with the original permit. Thus, this notification was treated as a permit application.

A waiver for this installation was issued August 1, 2000 since the net particulate emission increase from this change was 1.6 TPY with annual TSP emissions totaling 82.77 TPY. This waiver required testing to demonstrate compliance with the following allowables:

1.22 pph        ;        5.35 TPY        ;        0.01 grains/DSCF.

On September 26, 2000, the baghouse on the South Mining Area (SMA) Crusher was tested for particulate. The results were submitted on November 24, 2000 and the Division reviewed the test results in the memorandum of December 14, 2000. The testing was required under the permit waiver of August 1, 2000. During the stack test the crusher was processing 1,750 tons per hour. In the table below is a comparison of the Division's results for Runs 1 - 3.

Parameter	Run 1	Run 2	Run 3	Limit
Flow Rate (dscfm)	5470	5505	5717	14,252
Particulate on Filter (mg)	3.00	3.90	2.50	
Particulate from Acetone Rinse (mg)	106.95	9.45	6.16	
Particulate (grains/dscf)	0.0513	0.0062	0.0039	0.0100
Particulate (lb/hr)	2.41	0.29	0.19	1.2

As shown in the table above the results from Run #1 are considerably higher than the results from the other two runs. As stated in Western Environmental Services & Testing (WEST) test report, "WEST and Antelope Coal contributed the higher Run 1 emissions to particulate loosened during the port installation and not allowing time for the system to stabilize". WEST initiated testing approximately 15 minutes after I.D. fan was restarted. During the first test run considerably more particulate was contained in the probe rinse, but the amount of particulate on the filter was comparable to the other two test runs. All three test runs had baghouse flow rates less than 40 percent of the flow rate used to set the mass emission limit. The isokinetic variations for each of the three runs were between 90 and 110 percent.

As shown in the table above, the SMA Crusher Baghouse three hour average particulate concentration (grains/dscf) exceeded the emission limits. However, the SMA Crusher Baghouse tested in compliance with the mass emission limit (lb/hr). Antelope Coal Co. proposed and the Division agreed that the results from Run #1 should be disregarded and only the average of Runs #2 and #3 should be used to show compliance with the emission limits. The average of Runs #2 and #3 was 0.24 lb/hr and 0.0055 grains/dscf. Therefore, the SMA Crusher Baghouse tested in compliance with the emission limits. Results of the Division's review were sent to the company in a January 22, 2001 letter.

This waiver has now been incorporated into MD-616, described elsewhere in this report.

Air Quality Permit MD-616 (April 30, 2001)  
Horse Creek Mining Area

Antelope Coal Company submitted a Chapter 6 § 2 permit application for the new Horse Creek lease under an October 11, 2000 cover letter (permit application AP-AZ1 receipt letter - October 18, 2000.) The Horse Creek lease was north of the current Antelope Coal Mine. Besides adding this coal lease and changing the boundary for lands necessary to conduct mining, this action allowed the company to increase the annual coal production, modify the coal progression sequence, and add conveyors and crushers. Equipment and control devices considered in this action included the following:

## Existing Equipment:

- [A] No. 1 Northeast Mining Area (NEMA) Primary Crusher Baghouse, 6,927 SCFM
- [B] Secondary Crusher Baghouse, 6,158 SCFM
- [C] NEMA Transfer Point Baghouse, 4,510 SCFM
- [D] Sample Building Baghouse, 4,845 SCFM
- [F] No. 2 South Mining Area (SMA) Primary Crusher Baghouse, 14,500 SCFM
- [H] Silo #1 and #2 Baghouse, 40,586 SCFM
- [I] 05/06 Transfer Point Baghouse, 11,725 SCFM
- [J] 06/07 Transfer Point Baghouse, 16,505 SCFM
- [K] North Primary/Secondary Crusher Baghouse, 13,078 SCFM
- [L] Sample Station, 2,706 SCFM
- Central Mining Area (CMA) Truck Dump/Crusher Baghouse, 13,078 SCFM (was never built and was removed in this permitting action)

## Proposed Equipment:

- [N] Horse Creek Mine Area South (HCMAS) Truck Dump, Primary and Secondary Crusher #1 with Baghouse, 13,078 SCFM
- [O] Horse Creek Mine Area North (HCMAN) Truck Dump, Primary and Secondary Crusher #2 with Baghouse, 13,078 SCFM

Per Antelope Coal's request, two separate operating scenarios for the mine were included in this permit. The first scenario consisted of utilizing the existing mining equipment at varying coal production rates. The production rate would start at 35 million tons of coal per year, decreasing thereafter until 2026. In the second scenario, a second dragline will be added to produce 32 million tons of coal per year for the life of the mine with extraction continuing until 2018.

More details of the permit can be found in the following file documents.

<u>Date</u>	<u>Source</u>	<u>Content</u>
10/11/00	ACC	application submitted
10/18/00	AQD	application AP-AZ1 receipt notice
11/02/00	AQD	incompleteness notification requesting: another copy of the permit application; copies of the modeling disk(s); current/proposed mine process description, including methods for topsoil removal, stockpiling, coal progression (loading, transportation, dumping), throughputs; controls for HCMA truck dumps complete with designs; transfer points; clarification whether the central truck dump was constructed
11/14/00	ACC	part of requested information provided
11/21/00	ACC	remaining requested information provided
12/21/00	AQD	administrative completeness notification
03/15/01	AQD	notice of publication
03/30/01	ACC	comment requesting a change allowing higher coal production from 2001 through 2005
04/30/01	AQD	response to comments disallowing proposed changes
04/30/01	AQD	MD-616 issued

Other than the standard conditions regarding commitments, access, and notifications, Permit MD-616 requires:

- testing of the HCMA crusher baghouses (sources N and O) within the standard 30/90 day period following the requirements of Subpart Y with a minimum of 3 - 1 hour tests;
- opacities of the coal processing and conveying equipment, coal storage system, or coal transfer and loading systems to remain below 20%;
- truck dumps' opacity to be less than 20%;
- that the control systems specified in the application for the truck dumps be maintained and operated to minimize fugitive dust emissions with repairs initiated expeditiously when the control device was determined to be improperly maintained or operated;
- particulate emissions limited to the following:

ID	Emission Point	Flowrate (scfm)	Concentration (grains/DSCF)	PM-10 (pph)	PM-10 (TPY)
A	NEMA #1 Primary Crusher	6,941	0.02	1.2	5.2
B	Secondary Crusher	6,158	0.02	1.1	4.6
C	NEMA Transfer Point	4,510	0.02	0.8	3.4
D	Sample Building	4,845	0.02	0.8	3.6
F	#2 SMA Crusher	14,500	0.01	1.2	5.4
H	Silo #1 & #2	40,586	0.01	3.5	15.2
I	Transfer 05/06	11,725	0.01	1.0	4.4
J	Transfer 06/07/08	16,505	0.01	1.4	6.2
K	North Prim./Sec. Crusher	13,078	0.01	1.1	4.9
L	Sample Station	2,706	0.01	0.2	1.0
N	HCMA Prim./Sec. Crusher #1	13,078	0.01	1.1	4.9
O	HCMA Prim./Sec. Crusher #2	13,078	0.01	1.1	4.9

- coal production was limited to the one of two scenarios with the requirement that the company select one of them before December 31, 2001; in a May 14, 2001 letter, Antelope Coal Co. selected the second scenario that uses a second dragline, limiting annual production to the rates shown below:

YEAR	PRODUCTION (MM TPY)	YEAR	PRODUCTION (MM TPY)	YEAR	PRODUCTION (MM TPY)
2001	32.06	2008	32.00	2015	32.00
2002	32.00	2009	32.00	2016	32.00
2003	32.00	2010	32.00	2017	32.00
2004	32.00	2011	32.00	2018	16.15
2005	32.00	2012	32.00	2019	20.93
2006	32.00	2013	32.00	2020	11.58
2007	32.58	2014	32.00	2021	0

- treatment of all permanent haul roads and access roads with a chemical suppressant in addition to water to control fugitive dust emissions, maintained continuously to the extent that such treatment remains a viable control measure;
- treatment of all temporary haul routes, including pit floor haul routes, with water on a schedule such that it remains a viable control measure; should the Division determine that fugitive emissions from these roads are not being adequately controlled using water, application of dust suppressant as set forth in the condition may be instituted;
- with the fourth quarter/annual monitoring report, submission of a road dust control report describing measures employed during the past calendar year and projected control plan for the upcoming year that includes: a map of all roads treated with water and/or dust suppressants; type of dust suppressant, quantity and application procedure, rate and schedule; and number of water trucks, capacities, operating hours, and water usage;
- operation of the ambient particulate monitoring program with data submitted within 60 days of the end of each calendar quarter;
- operation of the meteorological station with data reduced and compiled in a Joint Frequency Distribution (JFD) using the modified sigma-theta method for stability at least annually;
- the company to limit public access to the lands designated as "necessary to conduct mining operations," outlined in the "Life of Mine Progression" map included in the analysis; measures used to limit public access include:
  - restricting public access with fences posted with signs at ¼\_mile intervals and card activated automatic gates or by security patrol of the mine facilities at regular intervals;
  - lands not currently in use and enclosed by fences will be subject to compliance with ambient standards, including any public roads that intersect the mine permit areas;
  - future mining operations that may extend beyond fenced boundaries will be enclosed when active mining operations commence;
- this permit superseded Air Quality Permits MD-228 and MD-330A.

Under permit MD-616 condition 5, construction must commence within 24 months of the date of permit issuance; if construction was discontinued for more than 24 months, then the permit becomes invalid. Construction of the Horse Creek box cut commenced on January 1, 2002, well within the time allowed by this permit. Coal removal started in March 2002. In the permit application Antelope Coal Co. stated that the new truck dump and crusher would be built in on a schedule relative to mining activity.

Worst-case emission years selected for air modeling were 2006 and 2016 for the second dragline scenario (HCMA truck dump/crusher was included as source of emissions in the modeling). The conveyor, crusher and truck dump will be new or Antelope Coal Co. was not going to utilize equipment from the Old NEMA conveyor. The path of the conveyor was going to be across the central mining area (CMA). The CMA had been mined out and reclaimed. The HCMA crusher was going to be at the truck dump and would do both primary and secondary crushing. The HCMA conveyor was going to tie into the New NEMA conveyor and transport coal to the silos. A new conveyor and crusher were never constructed.

ACC submitted an application to the Bureau of Land Management (BLM) to extend the western area of mining. Antelope Coal Co. obtained the lease on December 2004 and this lease area was referred to as West Antelope. A permit application was being prepared that would increase production to 36 million tons a year. The application was submitted resulting in the issuance of MD-1304 (discussed in inactive air quality permits section of this inspection report). To process the coal Antelope Coal Co. was going to increase the speed of the south mining area conveyor from 2,000 to 3,000 tons per hour, increase the chute size of the crusher and speed up the conveyor. Antelope Coal Co. did not anticipate having to add or move any of the ambient particulate monitors.

This permit was superseded by Air Quality Permit MD-1304.

Permit Waiver AP-3031(February 24, 2005)  
NEMA TRUCK DUMP AND STILLING SHED:

In a December 15, 2004 E-Mail, Antelope Coal Co. informed the AQD that the truck dump baghouse caught on fire on December 15, 2004. The cause of the fire was thought to be excessive heat from a bearing causing a flash that ignited the coal. Parts were being ordered to repair the baghouse.

In a December 21, 2004 E-Mail, Antelope Coal Co. informed the AQD the repairs to the NEMA truck dump baghouse are on-schedule and may be a completed sooner than planned. Antelope Coal Co. expected to have the baghouse up and running no later than the middle of the following week. Emissions from the baghouse were reported as minimal because the snow storms had increased the moisture content of the coal. In a December 28, 2004 E-Mail, Antelope Coal Co. informed the AQD that NEMA baghouse was back in operation.

In a February 21, 2005 E-Mail, Antelope Coal Co. notified the AQD that the stilling shed at the NEMA Truck Dump had been damaged by haul trucks backing into the stilling shed causing extensive damage to the housing of the stilling shed. The damaged stilling shed became a safety hazard to employees. Antelope Coal Co. planned to begin dismantling the stilling shed on February 23, 2005. Antelope Coal Co. expected the process of dismantling and reconstruction to take 31 days. The baghouse at NEMA crusher was going to remain functional throughout this period. Antelope Coal Co. requested to be allowed to continue to use the truck dump/crusher while the dismantling and reconstruction was underway.

In a February 22, 2005 phone conversation, the Division informed Antelope Coal Co. that an allowance to operate in this manner could not be supported by Chapter 1, Section 5 because to continue operating would not be beyond the control of the operator. Antelope Coal Co. was instructed to contact the Chapter 6, Section 2 permitting group in Cheyenne.

In a February 23, 2005 letter, Antelope Coal Co. provided details of their plan to replace the NEMA #1 stilling shed. Dismantling would start on February 24, 2005 with construction expected to be completed by April 24, 2005. The stilling shed was damaged by haul trucks backing into the shed. The present stilling shed was a safety hazard and must be rebuilt. Antelope Coal Co. proposed continued use of the NEMA #1 truck dump during construction without a stilling shed to control emissions. To minimize emissions Antelope Coal Co. proposed maximizing the coal dumping at SMA #3 and expediting the construction of the new NEMA #1 stilling shed. Antelope Coal Co. did not consider the use of water sprays to be viable because the water will increase the moisture content of the coal to a level that was unacceptable to the purchasers of the coal. The primary and secondary crushers are located underneath the truck dump and the water will impact their mechanical operation.

In a February 24, 2005 letter, Antelope Coal Co. modified their February 23, 2005 letter, to include the installation of water sprays to be operated 30 seconds during each truck dump. Antelope Coal Co. proposed installing the water sprays in 2.5 days and maximizing the use of the SMA #3 truck dump during the installation of the water sprays.

In a February 23, 2005 letter, the Division waived permitting requirements for the replacement of NEMA #1 stilling shed subject to the conditions listed below.

1. A water spray system shall be installed and operated as interim control measure during the removal and reconstruction period. Water sprays were required to be installed by February 28, 2005.
2. The removal and reconstruction of the stilling shed must be completed within 45 days, no later than April 11, 2005.

3. Antelope Coal Co. shall maximize the use of the SMA #3 truck dump during the time period.

ACC was required to report the installation date of the water spray system and submit a description and schematic diagram of the control system no later than March 4, 2005. Antelope Coal Co. was required to report the completion date of the project no later than April 15, 2005.

In a March 4, 2005 E-Mail Antelope Coal Co. submitted the following information:

1. The installation date of the water spray system on the NEMA #1 dump was February 28, 2005.
2. The spray system consisted of two spray nozzles on the west side of the dump. Water was forced through those nozzles at approximately 50 gpm. On February 28, 2005, improvements were made to the spray system. Two additional spray nozzles were installed on the south wall. Water could now be injected into the system at 75 gpm. Over 90% of the truck dump was covered by the spray system, as the trucks dump. Sprays were initiated by weight sensors in the bin and were sustained for 30 seconds as the truck empties the bed.
3. Attached were four photos showing the four nozzles on the west and south walls. Antelope was investigating the installation of a fifth nozzle on the east wall. If this improvement increases dust control, it was going to be used in the future.
4. Antelope was maximizing the use of the SMA #3 dump. The new stilling shed was going to be completed by April 11, 2005.

In an April 8, 2005 E-Mail, Antelope Coal Co. stated that they completed construction of the NEMA stilling shed on April 6, 2005. Antelope Coal Co. stated that water sprays were utilized on the truck dump during the absence of the stilling shed. Antelope maximized the use of the SMA truck dump during the construction. Photos of the new NEMA stilling shed were included in the correspondence.

This permit waiver was incorporated into Air Quality Permit MD-1304, but it only pertained to the reconstruction of the truck dump.

Permit Waiver AP-3402 (June 16, 2005)  
Passive Emission Controls System on SMA Crushers

Under a May 16, 2005 cover letter, Antelope Coal Co. submitted a permit application to replace the #2 SMA Crusher Baghouse (ID F in MD-616) and Secondary Crusher baghouse (ID B in MD-616) with a passive emission control system (PECS). If the permit application was approved Antelope Coal Co. estimated that emissions would decrease by 10 tons per year. The PECS control emissions very similar to a stilling shed. Antelope Coal Co. estimated that there would be no emissions and no opacity

from the PECS system. In a May 17, 2005 letter, the Division assigned the permit application AP-3402.

Permit Waiver AP-3402 was issued on June 16, 2005 to replace the #2 SMA Crusher Baghouse (ID F) and Secondary Crusher Baghouse (ID B) with passive enclosure control systems (PECS) subject to the conditions listed below:

1. Written notification of the anticipated date of initial start-up, in accordance with Chapter 6, Section 2 of the WAQSR, is required not more than 60 days or less than 30 days prior to such date for the passive enclosure control systems. Notification of actual initial start-up is required 15 days after such date. The construction or modification must commence within 24 months of the date of permit issuance, in accordance with Chapter 6, Section 2(h) of the WAQSR, or the permit becomes invalid. The Administrator may extend the period based on a satisfactory justification of the requested extension. If the construction is discontinued for a period of 24 months or more then the permit will also become invalid.
2. That performance tests shall be conducted in accordance with Chapter 6, Section 2(j) on the passive enclosure dust control systems (#2 SMA Crusher and Secondary Crusher) to determine compliance with Condition 3. 40 CFR, Part 60, Appendix A, Methods 22 shall be used to determine fugitive particulate emissions. Performance tests shall be at least 30 minutes in duration, with observations taken from each side of the enclosure. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results shall be submitted to this Division within 30 days of completion.
3. That the passive enclosure dust control systems (#2 SMA Crusher and Secondary Crusher) shall be operated and maintained so that the system exhibits no visible emissions in accordance with 40 CFR Part 60, Appendix A, Method 22.
4. Antelope Coal Company shall conduct, at a minimum, daily visual observations of the passive enclosure dust control systems (#2 SMA Crusher and Secondary Crusher) to determine the presence of visible emissions. Records shall be kept documenting whether visual emissions are noted and the corrective action taken. These records shall be maintained for a period of five (5) years and shall be made available to the Division upon request.

In a March 2, 2006 letter, Antelope Coal Co. summarized the significant dates pertaining to permit waiver AP-3402. This letter was updated by the AQD to include E-Mails, letters and phone conversations that occurred after the letter was received. Listed below are the dates of the correspondence and a short summary of the contents.

May 3, 2005 Antelope Coal met with the WDEQ-AQD in Cheyenne to discuss options for a proposed permit waiver for replacing existing baghouses with passive enclosure

control systems (PEC5)

May 16, 2005 Antelope Coal submitted the request along with the WDEQ-AWD Permit Application Form to the Cheyenne AQD office

May 17, 2005 WDEQ-AQD Cheyenne office confirms receipt of the permit application and assigns Application Number AP-3 402 to the application

June 14, 2005 WDEQ-AQD Cheyenne office requests additional information to address preventative maintenance for the proposed PECs

June 14, 2005 Antelope Coal Co. submitted the PM plan for passive emission control system (PECs) permitted in AP-3402. The PM plan was very minimal because of the design. Routine visual observations would be used to determine the need for PM. Antelope Coal Co. anticipates that skirting system on the conveyor will need PM.

June 16, 2005 Permit Waiver AP-3402 issued

October 12, 2005 Antelope Coal submits letter detailing the "Anticipated Date of Initial Start-Up" as required by condition #1 of the June permit waiver

November 2, 2005 Antelope Coal shuts the SMA crushing and conveying system down for upgrades

November 4, 2005 Antelope Coal submits letter detailing the "Performance Testing" as required by condition #2 of the June permit waiver

November 11, 2005 Antelope Coal submits e-mail to WDEQ-AQD Casper office updating timing of anticipated performance test

November 29, 2005 Antelope Coal started the SMA conveyor system with the newly installed PECs in place and the baghouses are shut off

December 6, 2005 Antelope Coal submits e-mail to WDEQ-AQD Casper office updating timing and associated delays of the anticipated performance test resulting from technical installation issues

December 7, 2005 Antelope Coal receives e-mail from the WDEQ-AQD Casper that the December 6th e-mail will be forwarded to the WDEQ-AQD Cheyenne office

January 11, 2006 Permit MD-1304 issued and permit waiver AP-3402 was superseded by MD-1304.

**Air Quality Permit MD-1304 (January 11, 2006)**

At a July 21, 2005 meeting Antelope Coal Co. submitted a permit application to increase production from 32 to 36 million tons. The AQD would assign the permit application

number AP-3630. In an August 04, 2005 E-Mail, the AQD required the following information for AP-3630 to be complete: actual NOx inventory, NOx and CO emissions for the small generators, justification for the PM10 background used with the modeling results and the corrected tons per year NOx emissions. In an August 11, 2005 letter, Antelope Coal Co. submitted the information.

In an August 19, 2005 letter, the AQD stated that the permit application was complete. Under an August 25, 2006 cover letter, Antelope Coal Co. submitted supporting information. In a November 29, 2005 letter, the AQD supplied Antelope Coal Co. a copy of the permit application analysis for AP-3630 and stated that the permit would go to public comment on December 7, 2005. Air Quality Permit MD-1304 allowed Antelope Coal Co. to modify operations at the Antelope Mine to incorporate additional lease area, modify the mining sequence, modify the lands necessary to conduct mining, and to increase maximum permitted coal production from 32 million tons per year to 36 million tons per year subject to the conditions listed below:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That a permit to operate, in accordance with Chapter 6, Section 2 (a)(iii) of the WAQSR, is required after a 120-day start-up period in order to operate this facility.
4. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, 152 North Durbin Street, Suite 100, Casper, WY 82601.
5. That written notification shall be submitted to the Division not more than 60 days or less than 30 days prior to the installation of the passive enclosure dust control systems. Notification of the actual date of initial start-up is required 15 days after start-up.
6. That the date of commencement of construction of the passive enclosure systems (PECS) shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not

commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

7. That performance tests, in accordance with Chapter 6, Section 2(j), shall be conducted on the passive enclosure dust control systems (#2 SMA Crusher and Secondary Crusher) to determine compliance with Condition 11(a). Method 22, Appendix A, 40 CFR, Part 60 shall be used to determine fugitive particulate emissions. Performance tests shall be at least 30 minutes in duration, with observations taken from each side of the enclosure. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results shall be submitted to this Division within 30 days of completion.
8. That compliance tests for particulate matter shall be conducted on the following baghouses: Silo #1 & #2 (H), Transfer 5/6 (I), Transfer 6/7 (J), and the NEMA Primary & Secondary Crusher (K). The tests shall consist of three (3) tests (EPA Methods 1-5, front half only) in accordance with Chapter 5, Section 2, Subpart Y. A test protocol shall be submitted to this office for review and approval prior to testing and notification of the test date shall be provided to the Division at least 15 days prior to the test date. Performance tests shall be conducted no later than one (1) year following the permit issuance date. Test results shall be submitted to the Division.
9. That particulate emissions (PM<sub>10</sub>) from the following sources shall be limited as follows:

Source ID	Description	gr/dscf	lb/hr	tpy
D	Sample Building	0.02	0.8	3.6
H	Silo #1 & #2	0.01	3.5	15.2
I	Transfer 5/6	0.01	1.0	4.4
J	Transfer 6/7	0.01	1.4	6.2
K	NEMA Primary & Secondary Crusher	0.01	1.1	4.9
L	Sample Station	0.01	0.2	1.0

10. That the following requirements shall be met for all baghouse control systems at the Antelope Mine:
  - a. Antelope Coal Company shall, on a daily basis, check for the presence of any visible emissions at each of the baghouses on any day the baghouses are operating. The visual observations shall be conducted at each baghouse by personnel who are educated on the general procedures for determining the presence of visible emissions but not necessarily certified to perform Method 9 observations. Observation of any visible emissions from any of these units shall prompt immediate inspection and, if necessary, corrective action.

- b. Antelope Coal Company will institute a monthly preventative maintenance plan for each of the baghouses at their Antelope Mine as represented by the form attached in Appendix I. The monthly preventative maintenance plan and the check sheet may be revised without administratively amending the permit, but revisions shall be approved by the Division prior to implementation.
    - c. All baghouses will be subject to 40 CFR, Part 60, Subpart Y. Subpart Y limits opacity from the baghouses to less than 20 percent as determined by Method 9, Appendix A, 40 CFR, Part 60.
11. That the following requirements shall be met for all passive enclosure control systems (PECS) at the mine:
  - a. The PECS shall be operated and maintained so the system enclosure exhibits no visible emissions as determined by Method 22, Appendix A, 40 CFR, Part 60.
  - b. Antelope Coal Company shall conduct, at a minimum, daily visual observations of the passive enclosure dust control systems (#2 SMA Crusher and Secondary Crusher) to determine the presence of visible emissions. Records shall be kept documenting whether visual emissions are noted and the corrective action taken. These records shall be maintained for a period of five (5) years and shall be made available to the Division upon request.
12. That the coal preparation facilities are subject to 40 CFR, Part 60, Subpart Y. Subpart Y limits opacity from any coal processing and conveying equipment, including coal crushers and breakers, coal storage systems, and coal transfer and loading systems to less than 20 percent.
13. That the truck dumps shall be limited to less than 20 percent opacity, per the requirements of Subpart Y. Compliance with the 20 percent opacity limit at the truck dumps will be determined by Method 9, Appendix A, 40 CFR, Part 60.
14. That Antelope Coal Company shall conduct, at minimum, quarterly Method 9 observations (one 6-minute average) of the Antelope Mine truck dumps to measure the opacity of any fugitive emissions. The Method 9 observations shall be conducted by a qualified observer certified in accordance with Section 3.1 of Method 9 and shall follow the requirements and procedures of Method 9 as contained in 40 CFR, Part 60, Appendix A.
15. That Antelope Coal Company shall conduct, at minimum, weekly inspections of the stilling shed control systems installed at the truck dumps to determine any repair measures necessary to minimize fugitive dust emissions and maintain proper operation of each control system. Corrective action and repair measures must be initiated in an expeditious manner when the control device is determined to be improperly maintained or operated.

16. The truck dump pads shall be cleaned, treated, and maintained to minimize the coal fines that accumulate due to spillage from the trucks. Cleaning practices or treatment of the road surfaces shall be maintained on a continuous basis to the extent that cleaning or the surface treatment remains a viable control measure that will be adequate to control dust problems.
17. That all permanent haul roads and access roads shall be treated with a chemical dust suppressant in addition to water to control fugitive dust emissions and shall be maintained continuously to the extent that such treatment remains a viable control measure.
18. That all temporary haul routes, including pit floor haul routes, shall be treated with water on a schedule such that treatment remains a viable control measure. Should Division personnel determine that fugitive emissions from these roads are not being adequately controlled through the use of water the Division will require the application of dust suppressant as set forth in Condition #17.
19. That Antelope Coal Company shall submit to the Division with the fourth quarter/annual monitoring report, a report addressing road dust control measures employed during the past calendar year and projected control measures for the upcoming year. This plan shall include the following:
  - a. A map of all roads treated with water and/or dust suppressant.
  - b. Type of dust suppressant, quantity and application procedure, rate and schedule.
  - c. Number of water trucks, capacities, operating hours, and water usage.
20. Topsoiled areas shall be stabilized as soon as feasible after topsoil lay down. When appropriate, topsoiled areas shall be chiseled to roughen the surface to lessen wind erosion potential. Backfilled and regraded areas that will not be topsoiled or seeded for an extended period of time and are subject to wind-blown erosion shall be ripped to roughen the surface to help reduce wind erosion.
21. That Antelope Coal Company will adhere to their program to mitigate coal fires that result from spontaneous combustion. All fires are to be extinguished within 24 hours unless operational safety issues are present. A production supervisor will document extinguishing measures utilized when fires are considered significant. All documentation shall be maintained and made available to the Division upon request.
22. That Antelope Coal Company shall operate, in accordance with the requirements of 40 CFR, Parts 50 and 58, an approved ambient particulate monitoring program that includes an ambient particulate monitoring network, with wind speed and direction instruments at the Antelope Mine. The data generated by the network shall be submitted in an approved format on a quarterly basis, within 60 days following the end of the quarter. Antelope Coal Company shall maintain a quality

- assurance plan for the monitoring network, as required by 40 CFR, Part 58 and approved by the Division.
23. That Antelope Coal Company shall maintain a meteorological station at their Antelope Mine acceptable to the Division. Surface air meteorological data measurements shall be collected at the Antelope Mine, as specified in the EPA document: Meteorological Monitoring Guidance for Regulatory Modeling Applications. The meteorological data measurements shall consist of hourly observations of:
    - a. Wind speed using an anemometer height of 10 meters
    - b. Wind direction
    - c. Ambient temperature
  24. The meteorological data specified in Condition #23 shall be submitted in an electronic format on a quarterly basis and shall be compiled in a joint frequency distribution (JFD) utilizing the modified sigma theta method for stability.
  25. That Antelope Coal Company will limit public access at the Antelope Mine to the lands defined by the Administrator as necessary to conduct mining operations. The Administrator has determined that Lands Necessary to Conduct Mining boundary is described on a map shown in Figure 1. The following will be required of Antelope Coal Company to comply with the limitations of public access:
    - i. That Antelope Coal Company restricts public access to these lands by fences posted with signs at one quarter mile intervals and card activated automatic gates or by security patrol of the mine facilities at regular intervals.
    - ii. All mine lands which are not currently enclosed by fences will be subject to compliance with ambient standards, including any public roads which intersect the mine permit areas.
    - iii. Any mining operations which, in the future, may extend beyond fenced boundaries, shall be enclosed with appropriate fences to restrict public access at such time as active mining operations commence in such areas.
  26. The maximum coal production by year at the Antelope Mine shall not exceed the production rate of 36 million tons per year. Mining may continue through the year 2020 as described in the mine plan contained in the application. Annual coal and overburden production rates shall be reported with the annual report required for dust control measures by Condition #19.
  27. That Antelope Coal Company shall retain, at the Antelope Mine, records of the daily inspections, monthly observations, PM records, and support information as

required by this permit for a period of at least five years from the date such records are generated and the records shall be made available to the Division upon request.

28. That this permit shall supersede all previous Chapter 6, Section 2 air quality permits for Antelope Coal Company's Antelope Mine.

Condition 8 Testing of NEMA baghouses

Under an October 4, 2006 letter, Antelope Coal Co. submitted the test results for the NEMA baghouses.

On July 24, 2006 Optimal Testing submitted an electronic version of the bag house testing protocol for review. On July 26, 2006, the AQD received a copy of Optimal's test protocol from ACC. On July 28, 2006 Dan Klaussen of Optimal Testing called about using Method 17 for the testing. Optimal wanted to use Method 17 instead of Method 5 because the baghouses use ambient air (unfired), which would eliminate the need to heat the probe and filter. In a July 31, 2006 E-Mail, Mark Gagen approved Method 17 has the sampling method with the condition that if Optimal finds the gas stream temperature to be higher than ambient temp the sampling probe and filter will need to be heated. 40CFR60 Subpart OOO also states that Method 5 or Method 17 can be used to determine particulate concentration.

Optimal conducted the testing on August 8 - 12, 2006. The testing of the crusher baghouse on August 8, 2006 was witnessed by Jeff Hancock and his observations are contained in the 2006 Annual Inspection Report. The test was reviewed in the memorandum of November 1, 2006.

EPA Reference Methods 1 - 4 were used to calculate the following: sample and velocity traverse points, velocity, dry molecular weight and moisture content of the exhaust. Particulate emissions were determined with Method 17. The exhaust was ambient air, thus Optimal did not have to determine the oxygen and carbon dioxide concentrations.

The test results were submitted to DEQ for review and revealed that all test runs were conducted in accordance with the requirements of the reference methods. However, during Run #3 of the testing of the Transfer 6/7 baghouse the baghouse broke. Antelope Coal Co. received verbal approval from Chris Hanify to allow Run #3 to consist of a 48 minute test instead of the 96 minute test runs conducted during Runs #1 and #2. The results were checked for accuracy by recalculating the emission rate from the raw test data contained within the report.

SOURCE OF PARTICULATE	DEQ		ALLOWABLE	
	LB/HR	gr/dscf	LB/HR	gr/dscf
Truck Dump - Crusher	1.13	0.0091	1.1	0.0100
5/6 Transfer	0.25	0.0031	1.0	0.0100
6/7 Transfer	0.13	0.0016	1.4	0.0100
Sample Station	0.01	0.0013	0.2	0.0100
Silo	1.22	0.0038	3.5	0.0100

Air Quality Permit MD-1304 limited the pound per hour emissions from to the nearest tenth of a pound. If the stack tested emission rates are rounded from one hundredth of a pound to a tenth of a pound all the baghouses tested in compliance with the particulate emission limits.

In the table below, are each baghouses three run average stack tested flow rate and the flow rate used to set the particulate emissions limits.

NEMA Baghouse Source	Permitted Flow Rate (dscfm)	AQD Stack Tested Flow Rate (dscfm)	Coal Throughput (tons/hour)
Crusher	13,078	14486	3764
5/6 Transfer Point	11,725	9460	3820
6/7 Transfer Point	16,505	8936	3478
Sample Building	2,706	1181	3483
Coal Silo	40,586	37342	3437

As shown in the table above the flow rate used to permit the baghouse on the crusher at the NEMA truck dump was lower than the stack tested flow rate. All the remaining baghouses had flow rates less than those used to set the emission limits. Optimal included the coal throughput in the test report and it is shown in the table above. Antelope Coal Co. conducted Method 9 opacity readings during each test run and the opacity of each source was zero. Optimal included the opacity forms in the test report.

#### SMA PECS

Passive enclosure control systems (PECS) on the Primary and Secondary Crusher on the SMA (southern mining area)

The PECS on the Primary and Secondary Crusher on the SMA were originally permitted in Permit Waiver AP-3402. Permit Waiver AP-3402 was superseded by MD-1304. The discussions of the events relating to the visual emissions from PECS prior to the issuance of MD-1304 are discussed in Permit Waiver AP-3402. The events relating to PECS after the issuance of MD-1304 are listed below:

January 26, 2006 Antelope Coal submits e-mail to WDEQ-AQD Casper office

updating timing of anticipated performance test and details of attempts to achieve design through put.

February 21, 2006 Antelope Coal runs 1st "draft" run of the Method 22, through put on the conveyor had reached an average of 2,750 tons per hour (less than the desired target of 3,000 tph)

February 22, 2006 Antelope Coal's Environmental Department called WDEQ-AQD Casper office to discuss details of zero emission standard and testing requirements as per Method 22.

- A subsequent e-mail was forwarded to the Casper office requesting a response for further clarity of the Method 22, and WDEQ/AQD zero emission standards
- WDEQ-AQD Casper office replied further clarifying exactly what the Method 22 as per Condition #3 of the waiver states

February 24, 2006 WDEQ-AQD Casper District Engineer (Chris Hanify) meets with Antelope Coal to review status and conduct field inspection of the newly installed PECs. The following summarizes the onsite decisions: Antelope Coal Co. stated that the next scheduled major maintenance shutdown of the SMA system is March 8, 2006. During this shut down, Antelope Coal Co. would install a chute modification at the truck dump area, and a fogger system at the secondary crusher system. Once this is completed, Antelope Coal Co. would conduct the Performance Test within 48 hours of the SMA system startup and determine if compliance of the Method 22 is achieved with a zero emissions standard. AQD would be notified of these results following completion of the performance tests.

February 27, 2006 AQD memorandum covering observations for the passive dust control system. No visible emissions were observed from the SMA primary crusher PECS. The secondary crusher PECs was showing steady dusting at the PECs exit (estimated opacity - 15%) Antelope Coal Co. stated that they would install foggers to control fugitive emissions until modifications to the PECs could be made to get the unit to operate in compliance.

March 20, 2006 Antelope Coal Co. letter stated that replacement of the new chute is scheduled for April 12th, 2006.

April 21, 2006 Antelope Coal Co. E-Mail stated the chute work is completed, hydraulic drive motor was undersized for the desired throughput and subsequently it over heats and electrically trips out, achieved a throughput of 3,000 tph for a brief period. Method 22 observations show that there is potential (at that throughput) for a performance test results to go either way (pass/not pass). Therefore, a complete fogger system was being sized and requests for bids were being formalized for an installation during the next scheduled outage that will be on May 9th.

June 16, 2006 Antelope Coal Co. letter stated that recently installed foggers in the PECs to assist the system to assure 100% efficiency in dust removal. These foggers

were operating and the PECs were running at the approved/required efficiency. The SMA system is still not up to the desired throughput of 3,000 tons per hour. Items that continue to be hindering the desired throughput are motor(s), gearing and a chute issue. Antelope Coal Co. was going to continue to fine tune these items in an attempt to achieve the maximum desired throughput. Once achieved a new performance test would be conducted to assure 100% efficiency of the PECs.

Condition 7 of MD-1304 required that performance tests, in accordance with Chapter 6, Section 2(j), be conducted on the passive enclosure dust control systems (#2 SMA Crusher and Secondary Crusher) to determine compliance with Condition 11(a) (no visible emissions). Method 22, Appendix A, 40 CFR, Part 60 was required to be used to determine fugitive particulate emissions. Performance tests were required to be at least 30 minutes in duration, with observations taken from each side of the enclosure. Notification of the test date was required to be provided to the Division fifteen (15) days prior to testing. Results were required to be submitted to this Division within 30 days of completion. The tests were conducted as discussed in MD-1543.

This permit was superseded by MD-1543, which was issued on April 23, 2007.

#### **AIR QUALITY PERMIT MD-7698 (July 8, 2008)**

Under an April 25, 2008 cover letter ACM submitted a permit application to modify operations by revising the control strategy of the SMA and NEMA coal sampling areas. The SMA and NEMA coal sampling areas are housed in partial and/or full enclosures and are controlled with baghouses. MD-1543 authorized the installation of PECS at these locations in lieu of control with a baghouse. Based on these sites being partially and/or fully enclosed ACM requested to remove the use of PECS or baghouses at these locations and proposed complying with a no visible emission limit at the SMA and NEMA coal sampling areas by best engineering practice.

In a May 1, 2008 letter, the application was assigned AP-7698. Under a May 21, 2008 cover letter, the AQD supplied ACM the permit application analysis and informed ACM that the analysis would go to public comment on June 4, 2008. Air Quality Permit MD-7698 was issued on July 8, 2008 subject to the conditions of operation listed below:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That a permit to operate, in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR, is required after a 120-day start-up period in order to operate this facility.
4. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 152 North Durbin Street, Suite 100, Casper, WY 82601.
5. That the following requirements shall be met for the coal samplers (Source ID's D and L) at the mine:
  - a. The coal sampler shall be operated and maintained so the system enclosures exhibits no visible emissions as determined by Method 22 of 40 CFR part 60, Appendix A.
  - b. Antelope Coal Company shall conduct, at a minimum, daily visual observations of the coal samplers to determine the presence of visible emissions. Records shall be kept documenting whether visual emissions are noted and the corrective action taken. These records shall be maintained for a period of five (5) years and shall be made available to the Division upon request.
6. That the coal preparation facilities are subject to 40 CFR part 60, Subpart Y. Subpart Y limits opacity from any coal processing and conveying equipment, including coal crushers and breakers, coal storage systems, and coal transfer and loading systems to less than 20 percent.
7. That the conditions of this permit supersede the requirements under air quality permit MD-1543 and MD-1304 for the coal samplers (Source ID's D and L) to be controlled with either a passive enclosure control system (MD-1543) or a baghouse (MD-1304).

#### COMPLIANCE WITH PERMIT CONDITIONS

Condition 5 required the coal sampler be operated and maintained so the system enclosure exhibits no visible emissions. The SMA sample building and NEMA sample station involve the collection of a small amount of coal from the conveyor. The baghouses used to control the emissions from the coal dropping into the sample buildings. There is no clear definition of what comprises a PEC, thus ACM had a wide variety of options to control the emissions from the coal drop in the sample building. ACM controlled the emissions from the SMA sample building and NEMA sample station by enclosing the entire sample collection process, thus there is no emission point to the atmosphere.

Condition 5 required the ACM to conduct, at a minimum, daily visual observations of the coal samplers to determine the presence of visible emissions. Records were required to be kept documenting whether visual emissions are noted and the corrective action taken. The visible emission monitoring is discussed in MD-1543.

**Air Quality Permit MD-1543 (April 23, 2007)**

Under a May 24, 2006 cover letter, ACM submitted a permit application to increase production to 42 million tons per year and install passive enclosure control systems (PECS) at all point sources currently controlled with baghouses. In a May 2006 letter, the application was assigned AP-4809.

In a June 7, 2006 letter, the AQD informed ACM that to be complete AP-4809 needed some items to be clarified or provide: a map showing the locations of the monitoring network in relationship to the current mining activities, actual NO<sub>x</sub> emissions from the previous calendar year, preventative maintenance plans, daily check sheets, visual observation forms currently used at the mine to ensure that emission control devices are functioning properly, drawings for the passive enclosure control systems (PECS) that will be installed in the coal preparation plant.

The Casper field office never received a copy of ACM's reply to the AQD letter of June 7, 2006 letter. The Cheyenne field office conducted an extensive search of their files from January 14 – March 5, 2009. On March 5, 2009 the Casper Field Office contacted Kyle Wendtland who stated that ACM's response should be in July of 2006. The map showing the locations of the monitoring network in relationship to the current mining activities was submitted electronically. ACM's July correspondence should contain the preventative maintenance plans, daily check sheets, visual observation forms and drawings for the passive enclosure control systems (PECS). The NO<sub>x</sub> emissions were contracted out and submitted later. The ACM had archived this permit and Kyle Wendtland was only able to access what was on his predecessor's computer. With this information the Cheyenne field office resumed their search. On March 23, 2009 the Casper field office determined that they would request this correspondence again from the ACM if a need for it arose in the future.

Under a February 7, 2007 cover letter, the AQD supplied ACM the permit application analysis and informed ACM that the analysis would go to public comment on February 14, 2007. One comment concerning emission of fugitive coal fines from the trains as they travel down the tracks was received as discussed in the section following the permit conditions.

Air Quality Permit MD-1543 was issued on April 23, 2007 and contained the conditions of operation listed below:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-

compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That a permit to operate, in accordance with Chapter 6, Section 2(a)(iii) of the WAQSR, is required after a 120-day start-up period in order to operate this facility.
4. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, 152 North Durbin Street, Suite 100, Casper, WY 82601.
5. That written notification shall be submitted to the Division not more than 60 days or less than 30 days prior to the installation of the passive enclosure dust control systems. Notification of the actual date of initial start-up is required 15 days after start-up.
6. That the date of commencement of construction of the passive enclosure systems (PECS) shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
7. That performance tests, in accordance with Chapter 6, Section 2(j), shall be conducted on the passive enclosure dust control systems to determine compliance with Condition 8(a). Method 22 of 40 CFR part 60, Appendix A shall be used to determine fugitive particulate emissions. Performance tests shall be at least 30 minutes in duration, with observations taken from each side of the enclosure. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results shall be submitted to this Division within 30 days of completion.
8. That the following requirements shall be met for all passive enclosure control systems (PECS) at the mine:
  - a. The PECS shall be operated and maintained so the system enclosure exhibits no visible emissions as determined by Method 22 of 40 CFR part 60, Appendix A.
  - b. Antelope Coal Company shall conduct, at a minimum, daily visual observations of the passive enclosure dust control systems to determine the presence of visible emissions. Records shall be kept documenting whether visual emissions are noted and the corrective action taken. These records shall be maintained for a period of five (5) years and shall be made available to the Division upon request.

9. That the coal preparation facilities are subject to 40 CFR part 60, Subpart Y. Subpart Y limits opacity from any coal processing and conveying equipment, including coal crushers and breakers, coal storage systems, and coal transfer and loading systems to less than 20 percent.
10. That the truck dumps shall be limited to less than 20 percent opacity, per the requirements of Subpart Y. Compliance with the 20 percent opacity limit at the truck dumps will be determined by Method 9 of 40 CFR part 60, Appendix A.
11. That Antelope Coal Company shall conduct, at minimum, quarterly Method 9 observations (one 6-minute average) of the Antelope Mine truck dumps to measure the opacity of any fugitive emissions. The Method 9 observations shall be conducted by a qualified observer certified in accordance with Section 3.1 of Method 9 and shall follow the requirements and procedures of Method 9 as contained in 40 CFR part 60, Appendix A.
12. That Antelope Coal Company shall conduct, at minimum, weekly inspections of the stilling shed control systems installed at the truck dumps to determine any repair measures necessary to minimize fugitive dust emissions and maintain proper operation of each control system. Corrective action and repair measures must be initiated in an expeditious manner when the control device is determined to be improperly maintained or operated.
13. The truck dump pads shall be cleaned, treated, and maintained to minimize the coal fines that accumulate due to spillage from the trucks. Cleaning practices or treatment of the road surfaces shall be maintained on a continuous basis to the extent that cleaning or the surface treatment remains a viable control measure that will be adequate to control dust problems.
14. That all permanent haul roads and access roads shall be treated with a chemical dust suppressant in addition to water to control fugitive dust emissions and shall be maintained continuously to the extent that such treatment remains a viable control measure.
15. That all temporary haul routes, including pit floor haul routes, shall be treated with water on a schedule such that treatment remains a viable control measure. Should Division personnel determine that fugitive emissions from these roads are not being adequately controlled through the use of water the Division will require the application of dust suppressant as set forth in Condition 14.
16. That Antelope Coal Company shall submit to the Division with the fourth quarter/annual monitoring report, a report addressing road dust control measures employed during the past calendar year and projected control measures for the upcoming year. This plan shall include the following:

- a. A map of all roads treated with water and/or dust suppressant.
  - b. Type of dust suppressant, quantity and application procedure, rate and schedule.
  - c. Number of water trucks, capacities, operating hours, and water usage.
17. Topsoiled areas that will not be immediately revegetated, and regraded backfill that will not be topsoiled for an extended period of time, shall be ripped or chiseled to create a roughened surface, seeded with a temporary vegetative cover, or otherwise effectively stabilized against wind erosion as soon as feasible.
18. That Antelope Coal Company will adhere to their program to mitigate coal fires that result from spontaneous combustion. Diligent efforts to extinguish all fires must be initiated within 24 hours, and pursued until the fire is extinguished, unless operational safety issues are present. For significant fires, personnel will document the measures taken to extinguish them and the reasons for any delays. All documentation shall be maintained and made available to the Division upon request.
19. That Antelope Coal Company shall operate, in accordance with the requirements of 40 CFR, Parts 50 and 58, an approved ambient particulate monitoring program that includes an ambient particulate monitoring network at the Antelope Mine. The data generated by the network shall be submitted in an approved format on a quarterly basis, within 60 days following the end of the quarter. Antelope Coal Company shall maintain a quality assurance plan for the monitoring network, as required by 40 CFR, Part 58 and approved by the Division.
20. That Antelope Coal Company shall maintain a meteorological station at their Antelope Mine acceptable to the Division. Surface air meteorological data measurements shall be collected at the Antelope Mine, as specified in the EPA document: Meteorological Monitoring Guidance for Regulatory Modeling Applications. The meteorological data measurements shall consist of hourly observations of:
- a. Wind speed using an anemometer height of 10 meters
  - b. Wind direction
  - c. Ambient temperature
21. The meteorological data specified in Condition 20 shall be submitted in an electronic format on a quarterly basis and shall be compiled in a joint frequency distribution (JFD) utilizing the modified sigma theta method for stability.
22. That annually, Antelope Coal Company shall submit to the Division, a demonstration that the ambient particulate monitoring network is sufficient for monitoring impacts and demonstrating compliance with the ambient particulate standards in Chapter 2, Section 2 of the WAQSR from current as well as future (5-year projection) mining activities. This demonstration shall consist of a discussion of the ambient monitoring network along with an annual wind rose, and current UTM coordinate locations of the monitors. In addition, a map showing current monitor locations in relation to active mining areas along with projected mining areas shall be

included. The ambient monitoring network demonstration shall be submitted along with the annual report required for dust control measures in Condition 16, and a copy shall be submitted to the Air Quality Monitoring Program located in Cheyenne.

23. That Antelope Coal Company will limit public access at the Antelope Mine to the lands defined by the Administrator as necessary to conduct mining operations. The Administrator has determined that Lands Necessary to Conduct Mining boundary is described on a map shown in Figure 1. The following will be required of Antelope Coal Company to comply with the limitations of public access:

i. That Antelope Coal Company restricts public access to these lands by fences posted with signs at one quarter mile intervals and card activated automatic gates or by security patrol of the mine facilities at regular intervals.

ii. All mine lands which are not currently enclosed by fences will be subject to compliance with ambient standards, including any public roads which intersect the mine permit areas.

iii. Any mining operations which, in the future, may extend beyond fenced boundaries, shall be enclosed with appropriate fences to restrict public access at such time as active mining operations commence in such areas.

24. The maximum coal production by year at the Antelope Mine shall not exceed the production rate of 42 million tons per year. Mining may continue through the year 2020 as described in the mine plan contained in the application. Annual coal and overburden production rates shall be reported with the annual report required for dust control measures by Condition 16.

25. That Antelope Coal Company shall retain, at the Antelope Mine, records of the daily inspections, monthly observations, PM records, and support information as required by this permit for a period of at least five years from the date such records are generated and the records shall be made available to the Division upon request.

26. Antelope Coal Company shall submit to the Division within 90 days of permit issuance a narrative description and general design information for the replacement of the SMA truck dump stilling shed. The plans are to be reviewed and approved by the Division prior to replacement of the SMA stilling shed.

27. That this permit shall supersede all previous Chapter 6, Section 2 air quality permits for Antelope Coal Company's Antelope Mine. Condition 10 of MD-1304 for the baghouses shall remain in effect until such time that the respective baghouse control points are replaced with PECS.

#### COAL FINES EMITTED FROM MOVING RAILROAD CARS

During the public comment period the AQD received a letter dated February 26, 2007,

that was concerned about fugitive coal fines from the trains as they travel down the tracks. The AQD forwarded the citizen comment to ACM under a March 29, 2007 letter. The AQD letter of April 23, 2007 to the person who commented stressed the AQD's concern about these emissions. The AQD's letter is summarized below:

ACM uses a foaming process, at the customer's request, during the crushing process, which helps minimize coal fines from railcars. The foaming alters the coal chemistry and typically lowers the coal BTU value. Therefore, the foaming agent is only applied when included as part of the contractual agreement. ACM has operational practices to help reduce coal fine emissions, such as increasing the size of crushed coal and improving the groomed profile (load profiling) of the coal.

The Division also contacted other coal companies operating in the PRB concerning this issue. Responses from the mines echoed ACM's concerns regarding altering the coal specifications and contractual agreements. Coal companies also question who is responsible for the fugitive emissions from the trains. Contracts typically transfer the ownership of the coal to the end-customer or railroad once it has been loaded into a railcar.

The National Coal Transportation Association (NCTA), which is comprised of PRB coal customers, railroad companies operating in the PRB, and the coal companies, is actively addressing this issue. The NCTA has stake in reducing fugitive coal fines from railcars. Environmental impacts is on the list, but the coal fines cause ballast fouling and reduce joint line reliability. Potential sources of the fugitive coal fines are bottoms of railcars, spilling from railcar tops, blowing from tops of railcars and leakage from other miscellaneous railcar openings. NCTA is looking at solutions to address the sources of the coal fines, which include load profiling, railcar maintenance, and surface coating.

Solving the problem involves all the PRB coal mines, railroads and coal customers. The Division is refraining from establishing specific permit requirements to control fugitive coal fines from railcars originating from the ACM. The Division is working with PRB coal mines and railroads, and the National Coal Transportation Association, to evaluate potential practices to reduce fugitive coal fines from all railcars, not just those originating from ACM. The Division's preference is that industry develops solutions to minimize fugitive fines from railcars. The Division is refraining from imposing a regulatory solution as long as the groups involved are proactive in evaluating alternate control strategies and implementing effective controls.

### COMPLIANCE WITH PERMIT CONDITIONS

#### Condition 6 - Construction of the PECS

Condition 6 requires that the date of commencement of construction of the passive enclosure systems (PECS) be reported to the Administrator within 30 days of commencement.

Under a June 14, 2007 cover letter, ACM submitted the notice of installation for the

PECS at the 5-6 transfer, 6-7 transfer, and the NEMA truck dump. ACM attached drawing for the PECS and stated construction would begin on July 17 and end on July 20, 2007.

In a February 25, 2009 letter ACM stated that construction of the PECS on Silo #1 and #2 would begin on March 4, 2009 and should be completed on March 25, 2009. Attached to the letter were initial construction drawings. In a July 7, 2009 letter stated that the PECS on the coal silo became operational in early May 2009.

#### Condition 7 and 8 – Performance Test of the PECS

Condition 7 requires that Method 22 performance tests (at least 30 minutes in duration) for fugitive particulate emissions be conducted on the PECS to determine compliance with Condition 8(a). Notification of the test date must be provided to the Division fifteen (15) days prior to testing and the results must be submitted within 30 days of completion. Condition 8(a) states the PECS be operated and maintained so the system enclosure exhibits no visible emissions.

Under an October 18, 2007 letter, ACM submitted the test results for the PECS on the 5-6 transfer, 6-7 transfer, NEMA truck dump crusher, SMA primary crusher and the SMA secondary crusher. The compliance tests were reviewed in the AQD memorandum of February 22, 2008. The PECS on the SMA primary crusher and the SMA secondary crusher also have a fogging system to control particulate emissions that were in operation during the testing. ACM conducted the testing on October 4, 9 and 11, 2007. The visible emission test form was attached to the correspondence. Each Method 22 visible emission test was for thirty minutes. No visible emissions were observed from the PECS on the, 6-7 transfer, NEMA truck dump crusher, SMA primary crusher and the SMA secondary crusher point during the testing. The PECS on the 5-6 transfer did not pass the test. ACM contacted the contractor who installed the PEC and repairs were made. ACM conducted the retesting on November 30, 2007 and no visible emissions were observed.

Under a December 3, 2007 letter, ACM submitted the test results for the PEC on the 5-6 transfer point. The length of the chute for the 5-6 transfer point had to be increased so that PEC on the 5-6 transfer point could show compliance with the zero visible emissions stipulation. ACM conducted the testing on November 30, 2007. The visible emission test form was attached to the correspondence. No visible emissions were observed from the PEC on the 5-6 transfer point during the testing. The compliance test on the PEC on the 5-6 transfer point was reviewed in the AQD memorandum of December 18, 2007.

#### Coal Silo

In an April 15, 2009 E-Mail the ACM supplied the preliminary silo PEC performance tests. ACM stated that the contractor still needs to install a pressure relief stack in the 7/4 transfer and complete some final sheet metal work on the systems. ACM stated the project was not totally complete and no performance tests were conducted.

In an April 16, 2009 E-Mail the AQD requested the schedule for installing the pressure relief stack. In an April 16, 2009 E-Mail ACM stated the next preventative maintenance outage was scheduled for May 6th pending weather and wind. ACM would like to make the installation during this planned outage. In an April 20, 2009 E-Mail the AQD informed the ACM to wait until the Silo PEC installation is completed, and then perform the full Method 22 testing.

Under a July 7, 2009 letter, ACM submitted the test results for the PECS on the top of the coal silo. The PECS on the coal silo became operational in early May 2009. At the top of the coal silo there are the following transfer points: #3 belt transfer, #7 belt transfer, #4 belt transfer, #7/4 belt transfer. The #7/4 belt transfer uses a secondary control structure over the belt. ACM conducted the testing on May 18, 2009. The visible emission test forms were attached to the correspondence. Each Method 22 visible emission test was for ten minutes. In an August 10, 2009 E-Mail the AQD informed ACM that Condition 7 of MD-1543 requires that Method 22 performance tests be for at least 30 minutes in duration. Under an August 24, 2009 E-Mail the ACM resubmitted the opacity readings. The visible emission test forms were attached to the correspondence. Each Method 22 visible emission test was for thirty minutes. ACM conducted the testing on August 18, 2009.

In an August 14, 2009 E-Mail the AQD informed ACM that each Method 22 visible emission test must be for thirty minutes. Performance tests shall be at least 30 minutes in duration, with observations taken from each side of the enclosure.

Under an October 2, 2009 letter, ACM submitted the test results for the PECS on the #3 belt transfer, #7 belt transfer, #4 belt transfer, #7/4 belt transfer. ACM conducted the testing on September 17 and 23, 2009. The visible emission test forms were attached to the correspondence. Each Method 22 visible emission test was for 90 minutes. The opacity was read from all six sides of the enclosure. ACM was able to view two sides of the enclosure, thus three observations of 30 minutes each were conducted. No visible emissions were observed from the PECS on the #3 belt transfer, #7 belt transfer, #4 belt transfer, #7/4 belt transfer during the testing. The compliance tests were reviewed in the AQD memorandum of October 6, 2009.

#### Bypass chute

During the 2008 inspection ACM was considering increasing the NEMA conveyor capacity by building a bypass from the grizzly to the conveyor to allow small dimension coal to go around the crusher and directly to the conveyor. Installing a bypass chute could increase throughput from 4,000 TPH to 5,500 TPH. In a June 2, 2009 letter that accompanied the 2008 inspection report the AQD stated that if the NEMA system throughput is increased, then initial performance testing of the PECS will need to be completed again to demonstrate that the systems can operate in compliance with the no visible emissions limits.

In the June 2, 2009 letter the AQD informed ACM that New Source Review (Chapter 6 § 2) permitting requirements may also need to be addressed. Condition 24 of MD-1543

limited the maximum coal production at the Antelope Mine to 42 million tons per year. Therefore, increasing the coal conveyance speed will not affect compliance with condition 24 and permitting requirements do not need to be addressed.

Under a July 16, 2009 letter, ACM submitted the test results for the PECS on the 5-6 transfer, 6-7 transfer and the NEMA truck dump crusher. ACM conducted the testing on November 3, 2008. The visible emission test form was attached to the correspondence. Each Method 22 visible emission test was for seven minutes. In an August 14, 2009 E-Mail the AQD informed ACM that each Method 22 performance tests must be at least 30 minutes in duration, with observations taken from each side of the enclosure.

Under an October 2, 2009 letter, ACM submitted the test results for the PECS on the 5-6 transfer, 6-7 transfer and the NEMA truck dump crusher. ACM conducted the testing on September 29 and 30, 2009. The visible emission test forms were attached to the correspondence. Each Method 22 visible emission test was for 90 minutes. The opacity was read from all six sides of the enclosure. ACM was able to view two sides of the enclosure, thus three observations of 30 minutes each were conducted. The compliance tests after the bypass chute installed were reviewed in the AQD memorandum of October 6, 2009.

During the 2009 inspection the 6 - 7 Transfer PEC worked well when the belt was fully loaded, but the PEC allowed coal dust to loft off the belt when coal was placed on an empty belt (coal no coal). Since lofting of coal dust does not conform to the requirement for "no visible emissions," Antelope Coal was requested to take steps to eliminate the coal dust out of the 6 - 7 Transfer PEC. ACM wanted to determine if the fogging system (once installed and operating properly) in the NEMA crusher and additional moisture added to the coal and crushing system would result in a zero emissions at the 6 - 7 Transfer PEC when the belt transitions from empty to full. ACM still needed to conduct a visible emission test of the 6 - 7 Transfer PEC when the NEMA crusher fogging system was fully operational. On December 6, 2010 the ACM conducted Method 22 visible emission tests on the 6 - 7 Transfer PEC. The visible emission test forms were attached to the inspection response correspondence. No visible emissions were observed from the PEC. The observations were made at the front and top of the PEC, back and south side, bottom and north side. The total time of the visible emission test was two hours and thirty minutes.

#### Condition 26 – Replacement of the SMA Truck Dump Stilling Shed

Condition 26 required ACM to submit to the Division within 90 days of permit issuance a narrative description and general design information for the replacement of the SMA truck dump stilling shed. The plans were to be reviewed and approved by the Division prior to replacement of the SMA stilling shed.

The old SMA truck dump's stilling shed was too small for the 240 ton haul trucks. The stilling shed was sized for a 190 ton haul truck and at 240 tons there was too much coal for the hopper. Under a July 10, 2007 cover letter, ACM submitted a description and design for the SMA stilling shed. The new stilling shed and hopper is designed for 400

ton haul trucks and has five rows of curtains. The upper portion of the stilling shed will be cantilevered to extend out over the truck body. The AQD approved the design in a January 4, 2008 letter.

In a May 29, 2008 E-Mail, ACM submitted the final design of the SMA truck dump and stilling shed. ACM also stated the project should be completed by July 22, 2008.

In a June 17, 2008 phone call ACM informed the AQD that Hladky Construction was on site, doing the site clearing, and putting in footers. However, the steel was not available and stilling shed completion was being moved back up to 45 days.

In a June 25, 2008 E-Mail ACM informed the AQD that the baghouses replaced with dustless transfer control systems were being removed. Completion of the new SMA truck dump was expected to occur in late August.

In a July 21, 2008 E-Mail ACM stated that they have received a steel delivery date, and the contractor and subcontractors have firmed up their respective schedules for installation of the SMA stilling shed. The schedule was as follows: foundation and sub frame completion prior to August 17, 2008, old stilling shed removal and installation of new stilling shed structure beginning August 18, 2008. The planned outage was scheduled for five days ending August 22, 2008 provided ACM did not experience any high wind days that would prevent a critical pick (new stilling shed structure will be set in one pick).

On August 11, 2008 ACM telephoned to inform the AQD that the SMA truck dump and stilling shed was on schedule for completion in late August. The substructure was completed, 96 percent of steel on site and 60 percent of steel had been assembled. To tear and construct the new truck dump was going to take 6 days and completion was expected to occur around August 25<sup>th</sup>.

The SMA truck dump went into operation on September 11, 2008 and ACM was making design and operational changes to reduce the coal dust from the truck dump. The ACM was able to achieve a large reduction in emissions by installing tin walls on the sides of the stilling shed.

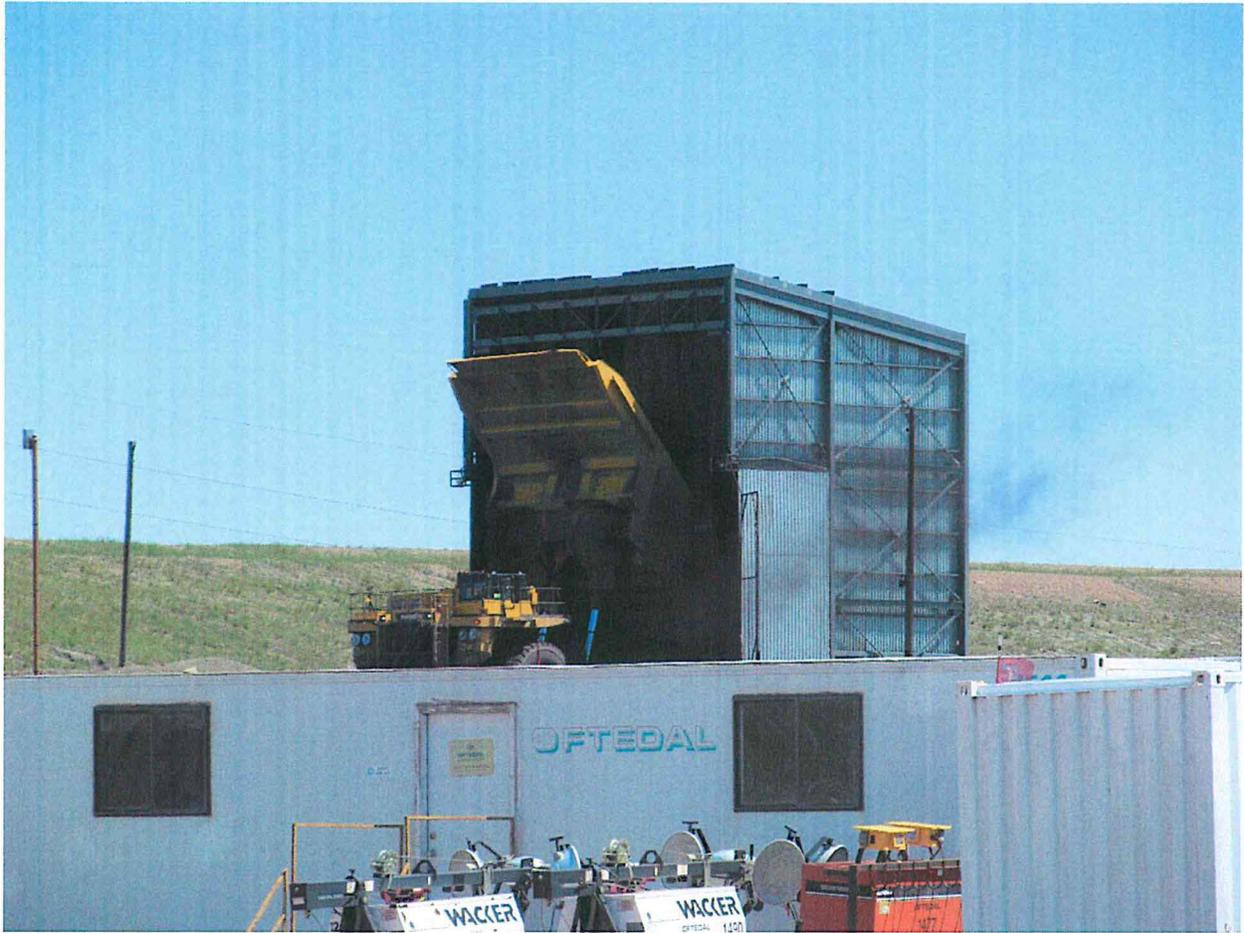


Picture One

**Facility:** Antelope Coal Mine

**Subject:** Truck backing up to the SMA truck dump

**Date:** June 10, 2013



Picture Two

**Facility:** Antelope Coal Mine

**Subject:** Coal dust from emptying haul truck at the SMA truck dump

**Date:** June 10, 2013



Picture Three

**Facility:** Antelope Coal Mine

**Subject:** SMA primary crusher discharge with foggers in operation

**Date:** June 10, 2013



Picture Four

**Facility:** Antelope Coal Mine

**Subject:** SMA secondary crusher with foggers in operation

**Date:** June 10, 2013



Picture Five

**Facility:** Antelope Coal Mine  
**Subject:** NEMA truck dump coal dust  
**Date:** June 10, 2013



Picture Six

**Facility:** Antelope Coal Mine  
**Subject:** NEMA truck dump coal dust  
**Date:** June 10, 2013



Picture Seven

**Facility:** Antelope Coal Mine  
**Subject:** NEMA truck dump coal dust  
**Date:** June 10, 2013

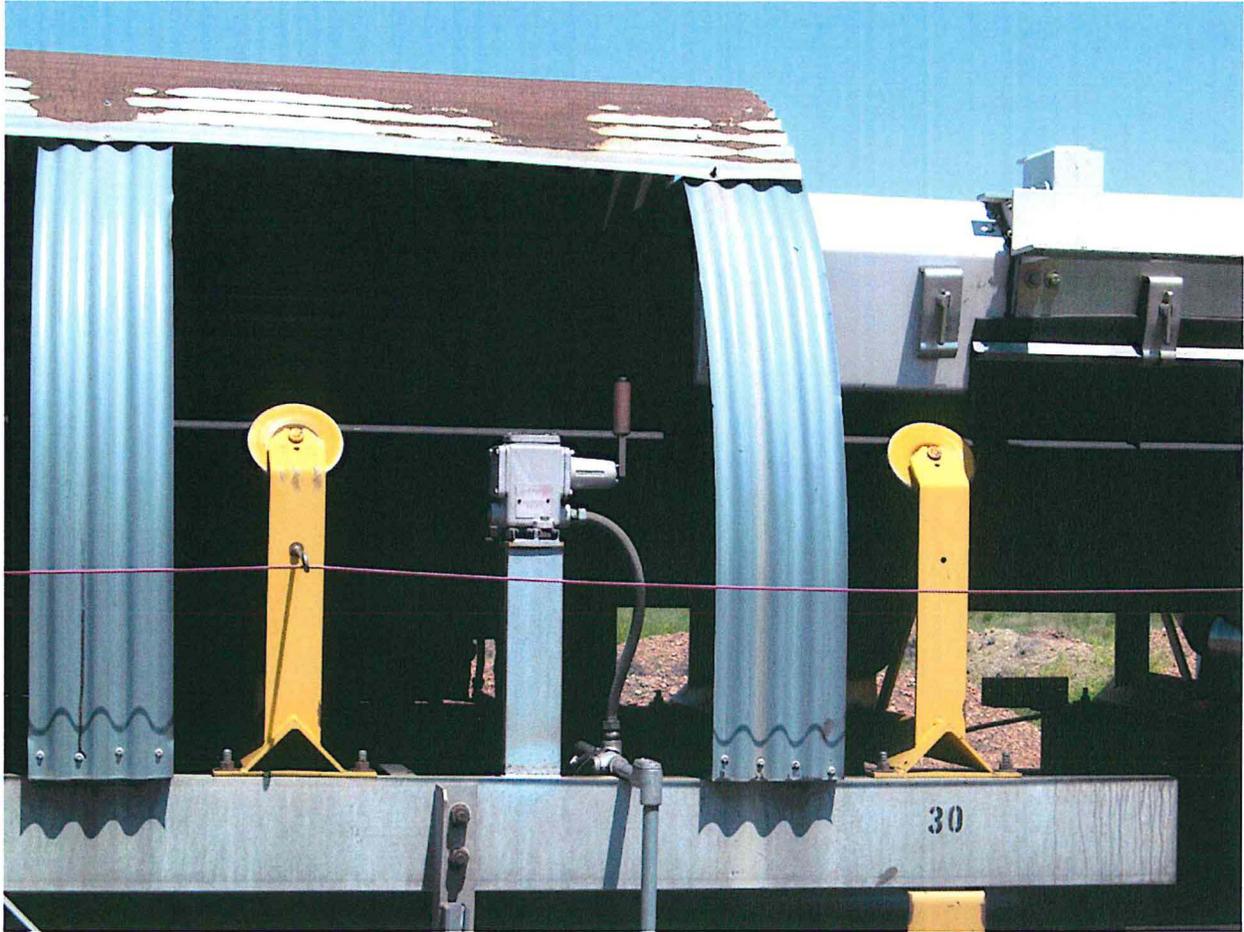


Picture Eight

**Facility:** Antelope Coal Mine

**Subject:** NEMA crusher PEC with foggers in operation

**Date:** June 10, 2013



Picture Nine

**Facility:** Antelope Coal Mine  
**Subject:** 5 - 6 Transfer (no fogger required)  
**Date:** June 10, 2013



Picture Ten

**Facility:** Antelope Coal Mine

**Subject:** All B Excavating – Scoria Crushing and Screening Train in Operation with low level of dust

**Date:** June 10, 2013



Picture Eleven

**Facility:** Antelope Coal Mine

**Subject:** All B Excavating – Scoria Crushing and Screening Train in Operation with low level of dust

**Date:** June 10, 2013



Picture Twelve

**Facility:** Antelope Coal Mine

**Subject:** Particulate Monitoring Site 6 with continuous particulate monitor

**Date:** June 10, 2013



Picture Thirteen

**Facility:** Antelope Coal Mine

**Subject:** From Particulate Monitoring Site 6 coal dust from NEMA truck dump is visible

**Date:** June 10, 2013



Picture Fourteen

**Facility:** Antelope Coal Mine

**Subject:** From Particulate Monitoring Site 6 looking at ACM Coal Silos and office complex

**Date:** June 10, 2013



Picture Fifteen

**Facility:** Antelope Coal Mine

**Subject:** From Particulate Monitoring Site 6 looking at Scoria Coal Pit

**Date:** June 10, 2013



Picture Sixteen

**Facility:** Antelope Coal Mine

**Subject:** From Particulate Monitoring Site 6 looking northwest at NARM overburden piles

**Date:** June 10, 2013



Picture Seventeen

**Facility:** Antelope Coal Mine

**Subject:** From Particulate Monitoring Site 6 looking northwest at NARM overburden shovel and drill for blasting

**Date:** June 10, 2013



**Picture Eighteen**

**Facility:** Antelope Coal Mine

**Subject:** Shovel removing overburden at the Scoria Coal Pit

**Date:** June 10, 2013



Picture Nineteen

**Facility:** Antelope Coal Mine

**Subject:** Front: Scoria Coal Pit. Back: NARM's overburden piles

**Date:** June 10, 2013



Picture Twenty

**Facility:** Antelope Coal Mine

**Subject:** NWMAN Pit

**Date:** June 10, 2013

## **APPENDIX B**

### **Exceptional Event Correspondence Log**

## Log of Relevant WDEQ-AQD Correspondence

Date/Time	Time	Form	Description
3/30/2015	8:38 AM	Phone Message	Telephone notification of possible excursion above 24hr PM-10 standard. Darryl Maunder (CPE) to Cara Keslar (AQD)
3/30/2015	9:17 AM	Email	Notification of possible excursion above 24 hour PM-10 standard. Preliminary value of 175 ug/m <sup>3</sup> reported. Darryl Maunder (CPE) to Dan Sharon (AQD), Cara Keslar (AQD), Chris Hanify (AQD), Kevin Chartier (IML).
3/30/2015	1:40 PM	Email	Request for actual 24 hr PM-10 concentration from the Site 6 TEOM. Dan Sharon (AQD) to Darryl Maunder (CPE), Chris Hanify (AQD), Cara Keslar (AQD), Nate Weinand (CPE) Kevin Chartier (IML).
3/30/2015	2:25 PM	Email	Affirmation that IML was recovering the actual concentration as well as concentrations at the other ACM air monitoring sites. Darryl Maunder (CPE) to Dan Sharon (AQD).
3/30/2015	2:30 PM	Email	Notification that the actual concentration is requested within 7 days (by April 4, 2015, other concentrations to be submitted after lab analysis obtained. Dan Sharon to Darryl Maunder (CPE), Cara Keslar (AQD).
3/30/2015	2:36 PM	Email	Affirmation That the actual concentration would be submitted by the due date. Darryl Maunder (CPE), Dan Sharon (AQD), Cara Keslar (AQD).

4/2/2015	Physical mail	Letter documenting specific concentration at Site 6 TEOM of 174.9 ug/m <sup>3</sup> , that 3/28/15 was a high wind warning day announced by the National Weather Service and Cloud peak Energy's intent to file an exceptional event package. Darryl mauder (CPE) to Dan Sharon (AQD), Chris Hanify (AQD), Greg Mager (CPE), Kevin Chartier (IML).
4/4/2015	10:42 AM Email	Notification that none of the other ACM monitoring sites recorded an excursion over 150ug/m <sup>3</sup> on 3/28/15. Darryl Mauder (CPE) to Dan Sharon (AQD).
4/6/2015	7:46 AM Email	Request for precise value of concentration for Site 6 TEOM on 3/28/15.
4/6/2015	3:11 PM Email	Notification that the concentration was 174.9 ug/m <sup>3</sup> , refernece to 4/2/15 letter. Darryl Mauder (CPE) to Dan Sharon (AQD).
5/29/2015		Submittal of quarterly air monitoring report for ACM and exceptional event package. Nate Weinand (CPE), to ?????



# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's  
environment for the benefit of current and future generations.*



Matthew H. Mead, Governor

Todd Parfitt, Director

July 7, 2015

Mr. Nate Weinand  
Antelope Coal, LLC  
Caller Box 3008  
Gillette, WY 82717-3008

**RE: May 29, 2015 Request for Flag under the Exceptional Event Rule for PM<sub>10</sub>, March 28, 2015 Exceedance**

Dear Mr. Weinand,

On March 28, 2015, the Antelope Coal, LLC (Antelope) 6 Site TEOM recorded an exceedance of the 24-hour PM<sub>10</sub> standard, with a final average concentration of 174.9 µg/m<sup>3</sup>.

On May 29, 2015 the Air Quality Division (AQD) received a request that data for the 6 Site TEOM on this day be flagged under 40 CFR Part 50.14 "Treatment of Data Influenced by Exceptional Events" due to high winds.

After review of the submitted materials, the AQD has decided to pursue Antelope's request to flag the PM<sub>10</sub> data collected at the 6 Site TEOM on March 28, 2015 under 40 CFR 50.14.

The next step in the process is a 30 day public comment period. In order to move forward, the AQD needs an electronic copy of all the documentation and correspondence submitted during the review process. All correspondence, starting with the original notification to the AQD, the original Exceptional Event packet, any requests for additional information, responses to those requests and other information submitted to the AQD during the review process should be combined into a single, chronologically ordered .pdf document and submitted to the AQD.

Once received, the chronological packet will be posted to the AQD's website and the public comment period will be advertised.

Antelope's final packet is requested on or before July 28, 2015. Please email it to [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov).



Please contact Daniel Sharon at (307) 777-7104 or [daniel.sharon@wyo.gov](mailto:daniel.sharon@wyo.gov) if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Cara Keslar', written in a cursive style.

Cara Keslar  
Monitoring Section Supervisor

Cc: Daniel Sharon, Monitoring Project manager  
Antelope Coal, LLC Monitoring File  
Chris Hanify, District 2 Engineer