Department of Environmental Quality
Air Quality Division
Annual Inspection for Fiscal Year 2005

NAME OF FIRM:	Antelope Coal Company
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:	Gary Rivenes
ENVIRONMENTAL CONTACT:	Greg Gannon, Environmental Engineer
CORPORATE ADDRESS:	Caller Box 3008, Gillette, WY 82717
TELEPHONE:	Greg Gannon (307)-464-2505 Plant (307)-464-1133
DATE OF INSPECTION:	June 9, 2005
DIVISION REPRESENTATIVE:	Jeff Hancock - Senior Analyst
LAST ANNUAL INSPECTION AND REPORT DATES:	July 20, 2004 (inspection) July 28, 2004 (report)
STAFF REVIEW:	Dan Olson - Administrator Bob Gill - Compliance Program Manager Chris Hanify - District Engineer CH July 19, '05
REPORT DATE:	June 17, 2005

YEAR 2005 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 2005 AIR QUALITY CONCERNS:

1. Under a May 16, 2005 cover letter, Antelope Coal Company (ACC) 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 is approved ACC estimates that emissions would decrease by 10 tons per year. The PECS control emissions very similar to a stilling shed. ACC 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. As part of this inspection ACC should continue working with Chapter 6, Section 2 permitting group in getting this permit issued.

MEDICINE BOW
EXHIBIT O
PRE-HRG MEMO

YEAR 2004 AIR QUALITY CONCERNS AND COMPLIANCE STATUS:

The file review and inspection of the mine revealed no air quality concerns, therefore the mine was determined to be operating in compliance with applicable air quality standards and regulations.

AIR QUALITY PERMITS:

Air Quality Permit MD-616 (April 30, 2001)

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 is 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.

Date	Source	Content
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 though 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 is 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, ACC 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 is 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 ACC 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). Thus, if mining (and therefore construction) continues without cessation lasting longer than 1 year, then no concern is noted with installation of the HCMA crusher baghouse. During the Year 2005 Inspection Pat Bowman informed us that ACC has not set a construction date and has made no progress since the Year 2004 Inspection. The conveyor, crusher and truck dump will be new or ACC will not try to utilize equipment from the Old NEMA conveyor. The path of the conveyor will be across the central mining area (CMA). The CMA has been mined out and reclaimed. The HCMA crusher will be at the truck dump and will do both primary and secondary crushing. The HCMA conveyor will tie into the New NEMA conveyor and transport coal to the silos. During the Year 2004 inspection it appeared as if ACC has constructed a pocket for the truck dump that was visible during the Year 2005 inspection.

ACC submitted an application to the Bureau of Land Management (BLM) to extend the western area of mining. ACC obtained the lease on December 2004 and this lease area is referred to as West Antelope. A permit application is being prepared that will increase production to 36 million tons a year. To process the coal ACC will 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. ACC does not anticipate having to add or move any of the ambient particulate monitors.

During the Year 2003 inspection ACC was hauling in parts to construct a second dragline at the mine. During the Year 2004 inspection Pat Bowman informed us that ACC has purchased all the parts to construct the dragline, but the decision on where to construct the dragline has yet to be made. During the Year 2005 inspection ACC informed us that the dragline was moved to the Jacobs Ranch mine. At this time ACC has one dragline and it was in operation during the inspection.

ACTIVE PERMIT APPLICATIONS

Permit Application AP-3402 (May 16, 2005)

Under a May 16, 2005 cover letter, ACC 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 is approved ACC estimates that emissions would decrease by 10 tons per year. The

PECS control emissions very similar to a stilling shed. Attached to the inspection report is a diagram of the PECS system. ACC 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. As part of this inspection ACC should continue working with Chapter 6, Section 2 permitting group in getting this permit issued.

CHAPTER 6 § 3 OPERATING PERMIT:

The Antelope Coal Company - Antelope Coal Mine is a minor source for the purposes of the Title V operating permit program. As stated in the analysis for MD-616, Antelope Coal is not considered a "major source" as defined in Chapter 6 § 3 of the WAQSR. Below is an accounting of the Chapter 6 § 3 applicable emissions for this facility.

Chapter 6 § 3 Applicability - PM_{10} Emissions (TPY)	
PM-10 Point Source Emissions	63.9
PM-10 Fugitive Truck Dump Emissions	9.2
Emission Total	**73.1**

PROCESS DESCRIPTION:

The ACC Coal Mine 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 innerburden 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 scrapers followed by overburden removal using a Marion 82 dragline or truck shovels. 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. ACC has 6 track dozers of 3 dozers with rubber tires.

ACC has twenty 240-ton and four 190-ton end dump haul trucks for coal transportation to the tipples and hauling overburden/innerburden. ACC applies water to the haul roads with two CAT 789 haul trucks with 42,500 gallon water tanks and a 10,000 gallon tank mounted to a scraper. To load the coal or overburden into haul trucks ACC uses 3 P & H 2300, one P & H 4100 and a LeTourneau 2750. To place rock on the roads ACC uses 2 Cat 687 scrapers. ACC also has 3 blades to smooth 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 3 truck dumps that are named after the pits they were constructed to serve: the South Mining Area (SMA) and the new or old Northeast Mining Areas (NEMA.) Emissions from haul truck unloading at the SMA, new NEMA, and old NEMA truck dumps are controlled by stilling sheds that have an allowable

opacity of 20%. The SMA, new NEMA, and old NEMA truck dumps are referred to as emission sources SMA1, NEMA1, and NEMA2 (respectively) in the source table that accompanies this report. The old NEMA truck dump was decommissioned by ACC in May of 2003, but it is still a source of potential emissions from a permitting standpoint.

The new NEMA truck dump is equipped with both a primary and secondary crushers while the old NEMA and SMA truck dumps are each set up with primary crushing only. After the coal has been crushed by the primary/secondary crushers at the new NEMA truck dump, it leaves with a diameter no larger than 2". Emissions from the new NEMA crushing equipment are controlled by a baghouse (source K.) Coal processed by the primary crushers at the old NEMA and SMA truck dumps is reduced to a diameter of 8", with emissions controlled by baghouses (sources B and F, respectively.) This 8" coal from both of these truck dumps is then conveyed to a single secondary crusher in the coal preparation area where it is broken down to a diameter of 2 - 3". The secondary crusher in the coal preparation area is equipped with a negative pressure baghouse (source B.)

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 new NEMA truck dump can only be sampled at a site known as the "Sample Station"; emissions from this sampler are controlled by a baghouse (source L.) Processed coal from the prep plant is sampled at the "Sample Building", controlled by the source D baghouse. 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. One 45,000 acfm baghouse controls emissions from both silos. 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 Hanify and I arrived at the mine at 10:40 A.M. on June 9, 2005. At the office, Chris Hanify and I met with Greg Gannon and Pat Bowman to conduct an annual inspection of the coal mine. Pat Bowman informed us that this would be his last inspection because he was promoted to Project Superintendent. In the office we discussed the mining sequence, new dragline and the HCMA truck dump and crusher (for discussion see Air Quality Permit MD-616).

Greg Gannon informed us that from January 1, 2005 through April 31, 2005 the mine moved 29.4 million cubic yards of overburden, produced 9.95 million tons of coal and moved 0.4 million cubic yards of top soil. To control dust from January to May 31, 2005 ACC applied 55.1 million gallons of water and 38,000 gallons of magnesium chloride to the haul roads.

The Old NEMA (North East Mining Area) truck dump and conveyor line has been decommissioned. The conveyor belt has been cut and ACC has removed the motor and other parts from the crusher to repair the New NEMA conveyor. Eventually the Old NEMA conveyor will be taken down, but a definitive date has not been set. With the

Old NEMA conveyor out of service ACC can move coal with South Mining Area (SMA) conveyor and New NEMA conveyor.

On average the SMA and New NEMA conveyors move 2,000 and 3,000 tons per hour when they are operating. Each train carries 13,000 tons of coal, which is very close to the quantity of coal contained in a silo.

Ambient Monitoring Data
Greg Gannon informed us that from January 1 to June 9, 2004, no TSP or PM-10 readings over 150 micrograms per cubic meter were recorded. Antelope Coal is on a 3 day monitoring cycle with the two particulate filters being changed every 6 days. Antelope Coal operates 4 monitoring sites. Site 3 has a PM-10 monitor. Site 4 and 5 each have a PM-10 monitor. Site 6 contains two TSP monitors and a PM-10 monitor.

Open Gates
MD-616 condition 18 states that ACC will limit public access to the lands defined by the Administrator as necessary to conduct mining operations. In a March 17, 2004 E-Mail, ACC informed the Division that on April 1, 2004, they will have a guard patrolling the front gate 24 hours a day. The guard service that ACC has contracted to monitor the main gate is Securatas and they were on duty during our visits in the Year 2004 - 2005.

Water Truck Activity/Haul Roads
Water is applied with two CAT 789 haul trucks with 42,500 gallon water tanks (Trucks 305 and 306), a scraper with a 10,000 gallon tank (Scraper 101). During the inspection no water trucks were needed because the haul roads were muddy from the rain earlier in the morning. Greg Gannon informed us that during the month of May 3.65 inches of rain was recorded. The water trucks can obtain water from two water wells.

The longest haul to NEMA truck dump is approximately 10,500 feet and the longest haul to SMA truck dump is approximately 5,000 feet. In the future ACC will be constructing a truck dump at the Horse Creek Box Cut and a conveyor that will cross Horse Creek and the Central Mining Area to reach the silos, which will shorten the length of some of the coal hauls.

ACC is currently dumping approximately 66 percent of the coal in the NEMA truck dump and 33 percent of the coal in the SMA truck dump. Emissions from all the coal haul roads, overburden haul roads and the entrance road were well controlled.

Pit Activity
On the day of the inspection there was no wind, the ambient temperature was close to 60°F. During the inspection only two small coal fires were burning. Listed below are the mining areas with activity during the inspection and areas with high visible emissions.

Train Loadout
- In operation no emissions

Secondary Crusher Baghouse
- In operation no emissions

SMA Sample Building Baghouse
- In operation no emissions

NEMA Sample Building Baghouse
- In operation no emissions

6 - 7 Transfer Baghouses
- In operation no emissions

5 - 6 Transfer Baghouses
- In operation no emissions

SMA Truck Dump and Crusher
- Stilling shrouds in good condition, one shroud hanging over side
- Coal was being hauled to the SMA truck dump from the NWMAN and Horse Creek Box cut pits.

North West Mining Area North (NWMAN)
- 5 truck coal haul to SMA truck dump

North West Mining Area North (NWMAS)
- 4 truck coal haul to SMA or NEMA truck dumps

Horse Creek Box Cut
- 4 truck short overburden haul
- dragline in operation

NEMA Truck Dump and Crusher Baghouse
- truck dump in operation
- no visible emissions from baghouse
- stilling shrouds in good condition

No unusual or excessive emissions were detected during the inspection. At 1:30 P.M. Chris Hanify and I departed the mine.

NEMA TRUCK DUMP AND STILLING SHED:

In a December 15, 2004 E-Mail, ACC 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, ACC informed the AQD the repairs to the NEMA truck dump baghouse are on-schedule and may be a completed sooner than planned. ACC 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, ACC informed the AQD that NEMA baghouse was back in operation.

In a February 21, 2005 E-Mail, ACC 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 become a safety hazard to employees. ACC planned to begin dismantling the stilling shed on February 23, 2005. ACC expected the process of dismantling and reconstruction to take 31 days. The baghouse at NEMA crusher was going to remain functional throughout this period. ACC requested to be allowed to continue to use the truck dump/crusher while the dismantling and reconstruction is underway.

In a February 22, 2005 phone conversation, the Division informed ACC 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. ACC was instructed to contact the Chapter 6, Section 2 permitting group in Cheyenne.

In a February 23, 2005 letter, ACC 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 is a safety hazard and must be rebuilt. ACC proposed continued use of the NEMA #1 truck dump during construction without a stilling shed to control emissions. To minimize emissions ACC proposed maximizing the coal dumping at SMA #3 and expediting the construction of the new NEMA #1 stilling shed. ACC 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 is 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, ACC modified their February 23, 2005 letter, to include the installation of water sprays to be operated 30 seconds during each truck dump. ACC 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. ACC 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. ACC was required to report the completion date of the project no later than April 15, 2005.

In a March 4, 2005 E-Mail ACC 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, ACC stated that they completed construction of the NEMA stilling shed on April 6, 2005. ACC 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.

DUST CONTROL MEASURES EMPLOYED IN 2004:

Annually, with the 4th quarter ambient monitoring report, a report addressing road dust control measures employed during the past calendar year and projected control measures for the upcoming year is to be submitted. This plan includes the following:

- Map of all roads treated with water and/or dust suppressant;
- Type of dust suppressant, quantity and application procedure, rate and schedule;
- Number of water trucks, capacities, operating hours, and water usage.

Typically, dust suppressant is applied to the haul roads during the dryer months. Prior to the application of magnesium chloride ($MgCl_2$), the road surface is scarified with a motor grader. $MgCl_2$ 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^2 during the dry months.

The mine mixes the $MgCl_2$ with water and applies it at 10:1 ratio. ACC 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	$MgCl_2$ gallons	Water Gallons
1999	19,480	26,780,000
2000	19,554	58,700,000
2001	26,579	46,100,000
2002	275,000	160,900,000
2003	277,250	153,166,800
2004	267,250	164,771,500
First Quarter 2005	28,400	29,430,000

ACC upgraded their water trucks and increased the water flow rates from the wells in the Year 2002. At this time ACC applies water with two (2) CAT 789 haul trucks with a 42,500 gallon water tanks and a scraper with a 10,000 gallon tank mounted to it. Water is supplied by a high flow water truck fill system. ACC can fill the water trucks from two wells that flow between 250 and 300 gallons per minute.

PRODUCTION DATA:

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[1] (MM BCY)	Coal Shipped (MM Tons)	Reclamation (MM BCY)
Calendar Year 1998	37.7	19.4	
Calendar Year 1999	48.5	22.7	1.977
Calendar Year 2000	41.5	23.0	1.792
Calendar Year 2001	73.2	24.6	3.8
Calendar Year 2002	66.2	26.8	1.4
Calendar Year 2003	73.3	29.5	0.5
Calendar Year 2004	76.6	29.7	0.7
First Quarter 2005	23.1	7.4	0.3

(1) Quarterly overburden volumes include prime, topsoil, rehandle, and contractor activities.

In every year of operation coal production was been below the limit set by Air Quality Permit MD-616.

AMBIENT MONITORING REVIEW:

Ambient Monitoring Network Description

Antelope Coal operates an ambient particulate monitoring network around the mine that has 3 TSP monitors and 3 PM_{10} monitors spread among four locations. Downwind monitoring stations include sites #4, #5, and #6, while #3 is the only upwind (background) station. Site 3 is also the location of a $PM_{2.5}$ monitor. Site #4 is outfitted with a PM_{10} monitor while a TSP monitor operates at site #3. At site #5, a TSP monitor operated until December 2001 when a PM_{10} monitor was installed. Collocated TSP monitors are installed at site #6 (monitors 6A and 6B) with a PM_{10} monitor added in April 1997. Each PM_{10} monitor in this network is set up with a satellite PM_{10} inlet (explained below.) Antelope Coal Company 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 and written reports are being submitted.

Ambient Standards

Chapter 2 § 2 of the WAQSR limits the PM_{10} annual arithmetic mean to 50 $\mu g/m^3$ and the 24-hour average PM_{10} concentration to 150 $\mu g/m^3$ (not to be exceeded more than once per year.) Under the standards, PM_{10} 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_{10} 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 1997, PM_{10} concentrations were reported at standard temperature and pressure (STP.) Beginning January 1, 1998, PM_{10} 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/m³ per 24_hour period, not to be exceeded more than once per year; this standard was removed from WAQSR March 30, 2000, and the ambient $PM_{2.5}$ standard adopted in its stead.

Particulate Monitoring Results

In the table below are the Year 2004 monitor availabilities, Year 2004 high and second high readings, the mean particulate concentration recorded in the Years 2001 - 2004.

Site	Legal Description	Monitor Available (%)	High Reading (µg/m³)	Second High (µg/m³)	2004 Mean (µg/m³)	2003 Mean (µg/m³)	2002 Mean (µg/m³)	2001 Mean (µg/m³)
TSP #3	S-21, SW, T40N, R71W	98.4	61	57	21.5	24.7	27.1	24
PM10 #4	S-13, NW, T40N, R71W	98.4	43	38	16.8	16.9	17.5	17
PM10 #5	S-12, NENW, T40N,R71W	98.4	65	65	25.8	23.7	25.2	-
TSP #6A	S-6, NWSE,T40N, R71W	100	217	129	70.7	64.4	67.8	72.8
TSP #6B	S-6, NWSE,T40N, R71W	98.4	221	140	74.3	62.9	71.0	76.3
PM10 #6	S-6, NWSE, T40N, R71W	100	93	91	30.0	25.7	27.0	29

The meteorological station is located in Section 2, T40N, R71W.

In the table below are the ambient monitoring results from the first quarter of 2005.

Site	Legal Description	Monitor Available (%)	High Reading (µg/m³)	Second High (µg/m³)	Mean (µg/m³)
TSP #3	S-21, SW, T40N, R71W	100	31	31	18.0
PM10 #4	S-13, NW, T40N, R71W	96.7	40	35	18.5
PM10 #5	S-12, NENW, T40N,R71W	100	52	50	27.8
TSP #6A	S-6, NWSE,T40N, R71W	100	156	118	75.1
TSP #6B	S-6, NWSE,T40N, R71W	100	133	118	73.3
PM10 #6	S-6, NWSE, T40N, R71W	83.3	74	68	34.7

PM_{10} Sampling Frequency

In November 1997, the Division notified operators of PM_{10} monitors that the new particulate standard had been promulgated in the Federal Register July 18, 1997 requiring that all PM_{10} sampling sites operate on an every third day schedule (1/3.) Facilities that had sites measuring low PM_{10} concentrations (60-70% of standard range) were informed that they would probably qualify for a sampling frequency exemption. For the Antelope Coal Mine, a frequency exemption was requested with a sampling waiver issued December 15, 1997.

In a letter dated October 26, 2001, this waiver was rescinded by the Division for 2 reasons: exceedances of the standard had been measured at other mines in the region and the annual average concentrations were beginning to rise. With that, all existing Powder River Basin (PRB) PM_{10} samplers were required to begin sampling on a 1/3 day schedule beginning January 1, 2002 while TSP samplers were allowed to remain on the existing 1/6 day schedule. The Division's letter did state, however, that the TSP sampling schedule would only be allowed to continue on this schedule until such time

as a 24-hour TSP concentration in excess of 150 µg/m³ is recorded or an annual TSP arithmetic average in excess of 50 µg/m³ is present. ACC has recorded TSP readings in excess of 150 µg/m³ at Site 6, but Site 6 also has a PM-10 monitor. The PM-10 monitor at Site 6 allows the TSP monitors at Site 6 to stay on 1/6 day monitoring schedule.

To facilitate this increased monitoring schedule, ACC requested that the Division allow installation of satellite PM_{10} inlets to the three existing Partisol samplers. They further explained that these devices allow filter change outs to occur on a 1/6 day cycle while meeting the 1/3 sampling schedule. Division approval of this request was provided in a November 19, 2001 letter. The only condition added to this approval was that the QA/SOP documentation would need to be revised to reflect the addition of the satellite inlets and any additional operation/maintenance procedures they require. ACC submitted the QA/SOP information on March 27, 2002 and the Division approved it on May 15, 2002.

In a February 18, 2004, letter the Division informed ACC that at Site 6 the two TSP monitors could be removed if a second PM-10 monitor was installed. The Division also allowed ACC to reduce the PM-10 monitoring at collocated PM-10 sites from a 1 in 3 day schedule to a 1 in 6 day schedule. The Division requested that ACC respond to the Division's proposal by March 15, 2004. In a March 3, 2004 letter, ACC rejected the Division's proposal of February 18, 2004. ACC planned to continue to operate Site 6 with the monitors at this site and will not install a second PM-10 monitor.

$PM_{2.5}$ Monitoring

Site 3 is the location of a $PM_{2.5}$ monitor. This monitoring station was installed by Wyoming Mining Association to gauge the impact of the mines in the northern part of the Powder River Basin on ACC mine (the most southern mine). Under normal wind direction the particulate data collected at this site is not produced by ACC, thus it is background data. Chapter 2 § 2 of the WAQSR limits the $PM_{2.5}$ annual arithmetic mean to 15 µg/m³ and the 98th percentile of the 24-hour average PM_{10} concentration to 60 µg/m³. As shown in the table below the particulate concentrations at Site 3 are well below both standards.

98th percentile of the 24-hour average PM_{10} concentration limited to 60 µg/m³

Site	Legal Description	2004 (µg/m³)	2003 (µg/m³)	2002 (µg/m³)	2001 (µg/m³)	2000 (µg/m³)
PM 2.5 #3	S-21, SW, T40N, R71W	8.8	12.7	8.3	7.0	12.9

$PM_{2.5}$ annual arithmetic mean limit is 15 µg/m³

Site	Legal Description	2004 Mean (µg/m³)	2003 Mean (µg/m³)	2002 Mean (µg/m³)	2001 Mean (µg/m³)	2000 Mean (µg/m³)
PM 2.5 #3	S-21, SW, T40N, R71W	3.30	4.30	3.40	3.78	3.33

Nitrogen Oxide Monitoring

An ambient nitrogen oxide monitor was installed by the Wyoming Mining Association. Under normal wind direction the nitrogen oxide data collected at this site is not produced by ACC, thus it is background data. Chapter 2, Section 3 limits the annual arithmetic mean nitrogen dioxide concentration to 100 micrograms per cubic meter or 0.05 ppm. Listed in the table below is annual arithmetic mean nitrogen dioxide concentration for the Years 2001 – 2004.

Site	Legal Description	2004 Mean ($\mu g/m^3$)	2003 Mean ($\mu g/m^3$)	2002 Mean ($\mu g/m^3$)	2001 Mean ($\mu g/m^3$)
PM 2.5 #3	S-21, SW, T40N, 71W	2.93	8.08	6.15	6.92

MONTHLY INSPECTIONS:

In Fall 2001, it was apparent to the Division that attainment in the PRB was being threatened. This was evidenced by the increased 24-hour and annual PM_{10} concentrations in the region, increased to the point where 4 exceedances of the 150 $\mu g/m^3$ 24-hour standard had been measured so far that year. To address this issue, on November 28, 2001, the PRB coal producers met with the DEQ to discuss ambient particulate concentrations (file memo - December 3, 2001.) During that meeting, coal producers were informed that the Division had instituted procedure I of the Memorandum of Agreement which included increased compliance oversight to verify that all reasonable steps are being taken, with enforcement likely if excursions are detected. Monthly inspection of the Antelope Coal Mine commenced in December 2001. The Division discontinued in the monthly inspections in March 2004.

CONTINUOUS EMISSION MONITORING:

No emission source at the mine requires continuous monitoring of its emissions.

ANNUAL EMISSIONS:

In a December 30, 2003, the Division requested an emissions inventory for the Year 2003. ACC submitted the annual emissions inventory for the Year 2003 on April 15, 2003. The Division reviewed the inventory in memorandum of June 28, 2004. For the last 4 years, emissions for the facility were as presented below.

ANNUAL EMISSIONS (tons)

Year	TSP	PM_{10}
2000	1,954.4	612.3
2001	2,042.6	634.5
2002	2,348.7	729.9
2003	2,575.2	796.7
2004	2,748.3	848.0

The increase in emissions is related to an increase in coal production since the coal production increase is roughly proportional to the increase in emissions.

NEW SOURCE PERFORMANCE STANDARDS (NSPS):

ACC 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.

FIRE TRAINING:

In a May 23, 2005 letter, the Division approved ACC May 20, 2005 request, for permission to burn 16 gallons of diesel/unleaded gasoline mixture for fire fighting training. The Division approved the subject to the following conditions:

1. Only products described in the application will be burned. No other waste products or garbage may be burned in the fires.

2. Burning will be conducted in a safe manner such that the threat of fire spreading to other combustible materials is eliminated.

3. Local fire officials are to be notified prior to the burning session and any conditions set by these officials are to be satisfied before burning commences.

4. Kennecott Energy will notify the local fire authority of the date selected to complete this burning.

5. All burning shall be conducted in such a manner that it neither becomes a public nuisance nor causes violations of the ambient air quality standards.

This permit remained valid only until through May 25, 2005.

During the Year 2005 inspection Greg Gannon informed us that the fire fighting went very well.

Table I: Antelope Coal Company Emission Summary

Emission Point	Description (Date Installed)	Capacity	Control Equipment (Date Installed)	Pollutant	Allowable Emissions	Estimated Emissions
Permitted under MD-616 (April 30, 2001)						
NEMA2 (ONEMA1)	Old NEMA Truck Dump (May 1990)	2400 TPH	Stilling Shed	Particulate (Fugitive)	none	0 TPY [a]
A	NEMA #1 Primary Crusher (May 1990)	2400 TPH	6,941 scfm Baghouse (May 1990)	Particulate	1.2 pph (0.02 grains/DSCF)	1.2 pph [a]
B	Secondary Crusher (October 1985)	1800 TPH	6,158 scfm Baghouse (October 1985)	Particulate	1.1 (0.02 grains/DSCF)	1.1 pph [a]
C	NEMA Transfer Point (1993)	2400 TPH	4,510 scfm Baghouse (1993)	Particulate	0.8 (0.02 grains/DSCF)	0.8 pph [a]
D	Sample Building (October 1985)	1800 TPH	4,845 scfm Baghouse (October 1985)	Particulate	0.8 (0.02 grains/DSCF)	0.8 pph [a]
SMA1	SMA Truck Dump (1986) (Relocated _ 2000)	1800 TPH	Stilling Shed (1986) (Relocated 2000)	Particulate (Fugitive)	none	12.5 TPY [a]
F	#2 SMA Crusher (Originally _ 1986) (Relocated _ 2000)	1800 TPH	14,500 scfm Baghouse (June 2000)	Particulate	1.2 (0.01 grains/DSCF)	0.24 pph [b]
					Tested Emission Rate: 0.24 pph (0.0055 grains/DSCF) (review - December 2000)	
H	Silo #1 & #2 (June 1988)	3250 TPH (Silo #1) 1400 TPH (Silo #2)	40,586 scfm Baghouse (1997)	Particulate	3.5 (0.01 grains/DSCF)	0.43 pph [b]
					Tested Emission Rate: 0.43 pph (0.0013 grains/DSCF) (review - May 1998)	
I	Transfer 05/06 (1997)		11,725 scfm Baghouse (1997)	Particulate	1.0 (0.01 grains/DSCF)	0.32 pph [b]
					Tested Emission Rate: 0.32 pph (0.0031 grains/DSCF) (review - May 1998)	
J	Transfer 06/07/08 (1997)		16,505 scfm Baghouse (1997)	Particulate	1.4 (0.01 grains/DSCF)	0.37 pph [b]

Table I: Antelope Coal Company Emission Summary

Emission Point	Description (Date Installed)	Capacity	Control Equipment (Date Installed)	Pollutant	Allowable Emissions	Estimated Emissions
					Tested Emission Rate: 0.37 pph (0.0031 grains/DSCF) (review - May 1998)	
NEMA1	NEMA Truck Dump (May 1997)		Stilling Shed (1997)	Particulate (Fugitive)	none	21 TPY [a]
K	North Primary/ Secondary Crusher (1997)		13,078 scfm Baghouse (1997)	Particulate	1.1 (0.01 grains/DSCF)	0.21 pph [b]
					Tested Emission Rate: 0.21 pph (0.0022 grains/DSCF) (review - May 1998)	
L	Sample Station (1997)		2,706 scfm Baghouse (1997)	Particulate	0.2 (0.01 grains/DSCF)	0.01 pph [b]
					Tested Emission Rate: 0.01 pph (0.0006 grains/DSCF) (review - May 1998)	
HCMA1	HCMA Truck Dump (not yet constructed)		Stilling Shed (not yet constructed)	Particulate (Fugitive)	none	n/a
N	HCMA Primary/ Secondary Crusher #1 (not yet constructed)		13,078 scfm Baghouse (not yet constructed)	Particulate	1.1 (0.01 grains/DSCF)	n/a
HCMA2	HCMA Truck Dump (not yet constructed)		Stilling Shed (not yet constructed)	Particulate (Fugitive)	none	n/a
O	HCMA Primary/ Secondary Crusher #2 (not yet constructed)		13,078 scfm Baghouse (not yet constructed)	Particulate	1.1 (0.01 grains/DSCF)	n/a

(a) - estimated emissions taken from MD-616
(b) - estimated emissions taken from recent test data (where applicable)

APPENDIX I: INACTIVE OR 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		
1991	6,645,000	1993 _ 2003	6,900,000

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 is 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 is 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 witnin 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 tc 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 is staffed), or by card activated automatic gates during off hours (when the main office is 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.

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 witn a copy of tne 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 is 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 is 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	TESTED		LIMIT		TESTED	LIMIT
PARTICULATE	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 is limited to 20%; opacity of the truck dumps is 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 is 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.

<u>wv-U00 (August 1, 2000)</u>
<u>Southern Mining Area Crusher baghouse waiver</u>

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.

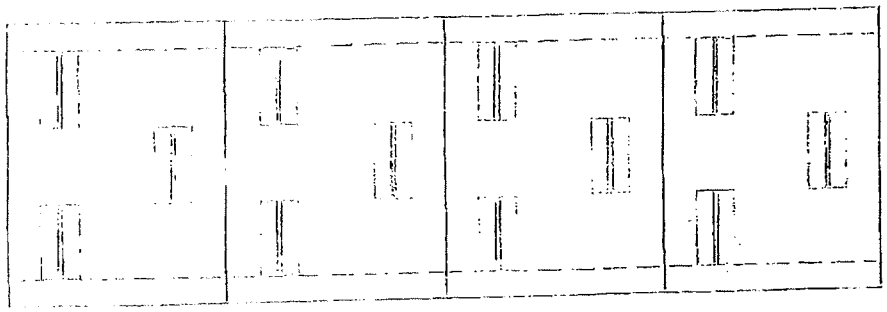
On September 26, 2000, the baghouse on the South Mining Area (SMA) Crusher was tested for particulate. The results were submitted on November 24, 2000 and the Division reviewed the test results in the memorandum of December 14, 2000. The testing was required under the permit waiver of August 1, 2000. 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

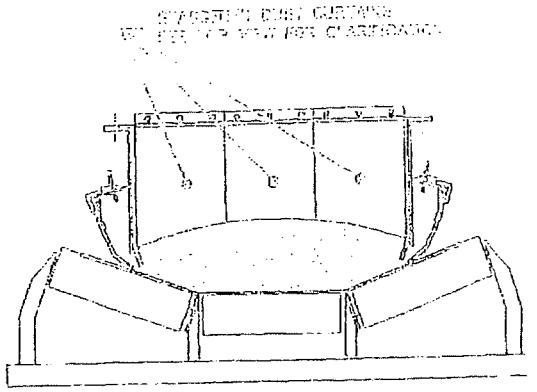
As shown in the table above the results from Run #1 are considerably higher than the results from the other two runs. As stated in Western Environmental Services & Testing (WEST) test report, "WEST and Antelope Coal contributed the higher Run 1 emissions to particulate loosened during the port installation 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). ACC 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 is 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.

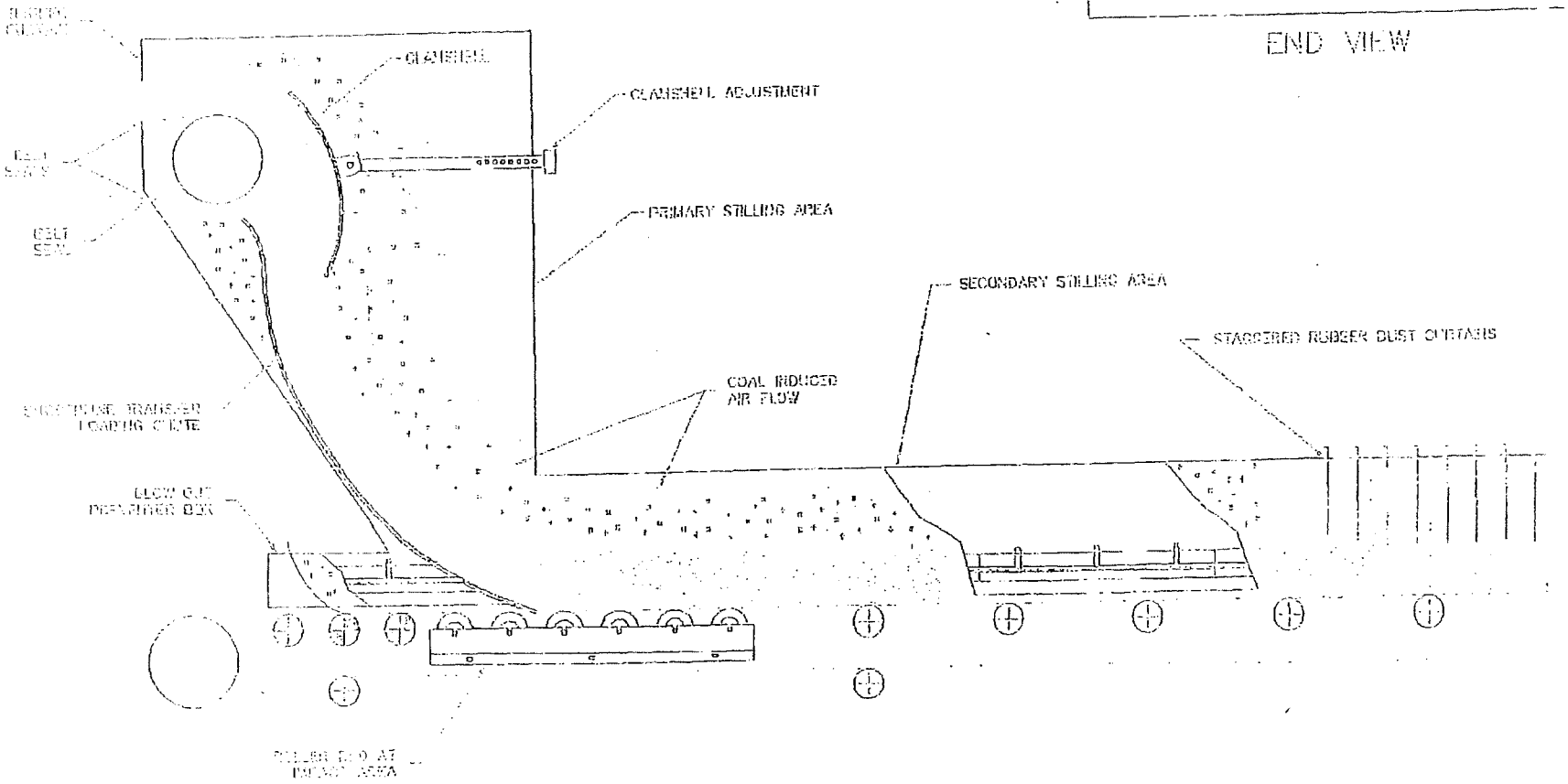
This waiver has now been incorporated into MD-616, described elsewhere in this report.



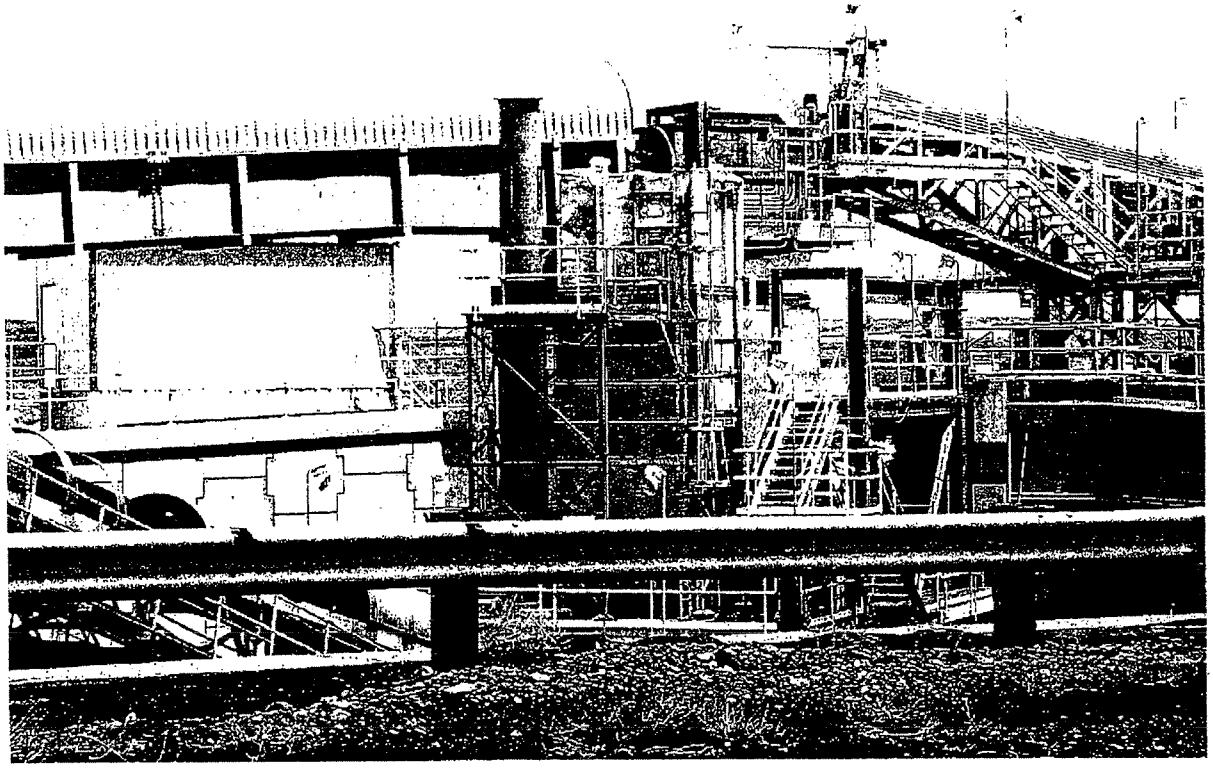
TOP VIEW



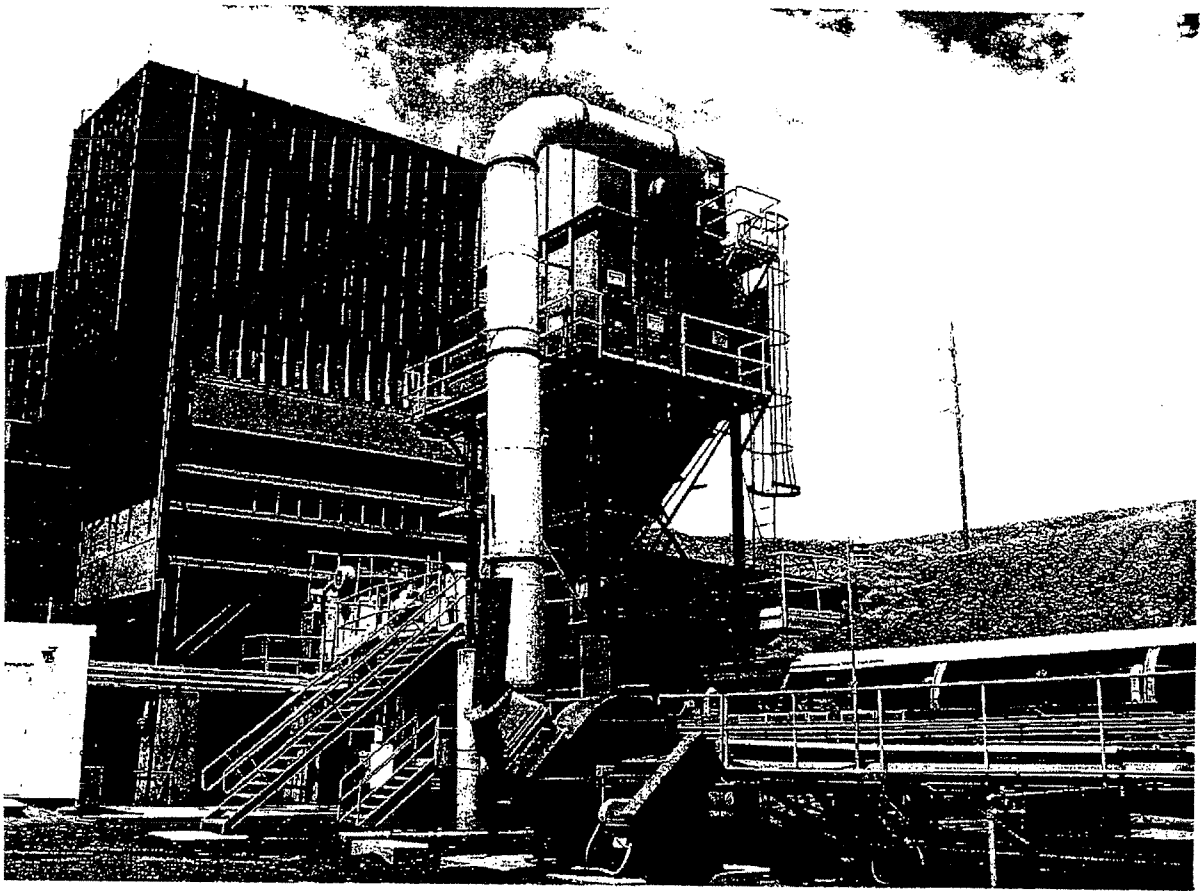
END VIEW



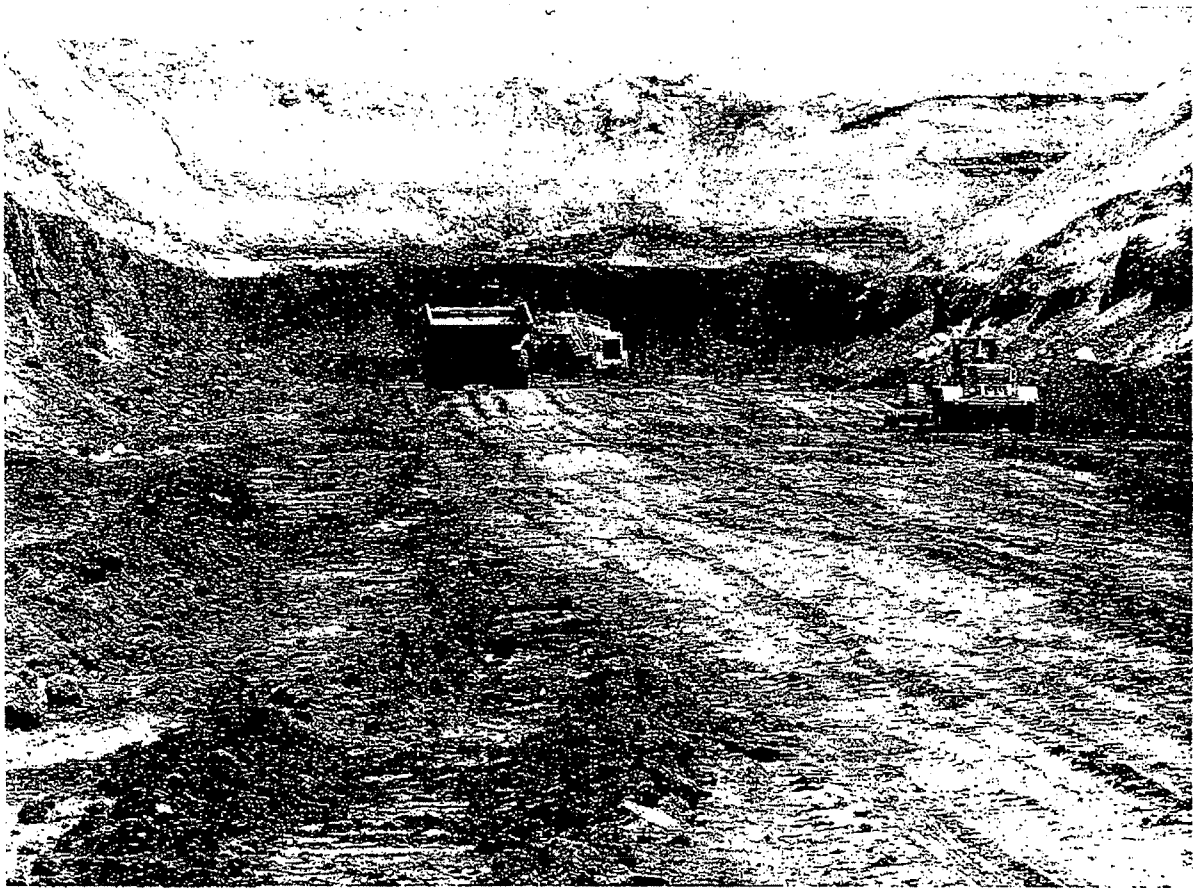
PASSIVE ENCLOSURE DUST CONTROL SYSTEM (PECS)



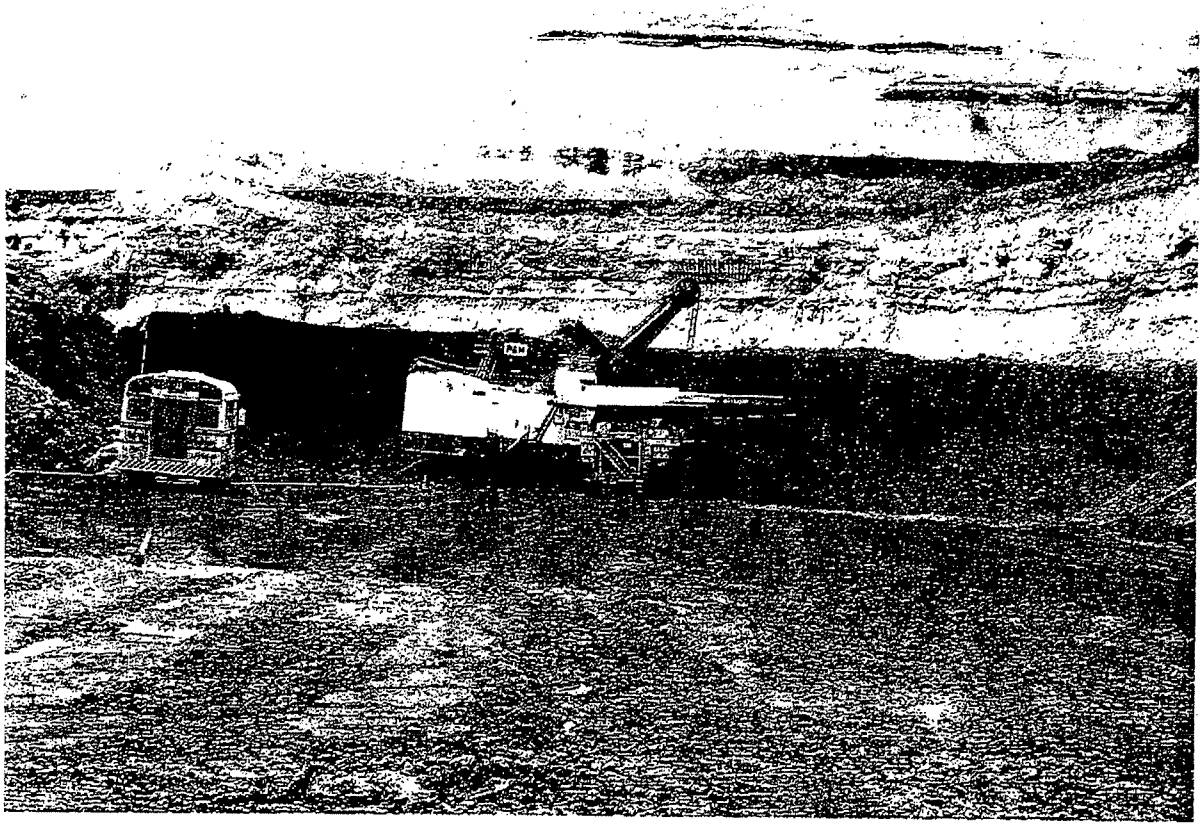
Facility: Antelope Coal Mine
Subject: SMA secondary crusher baghouse
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.



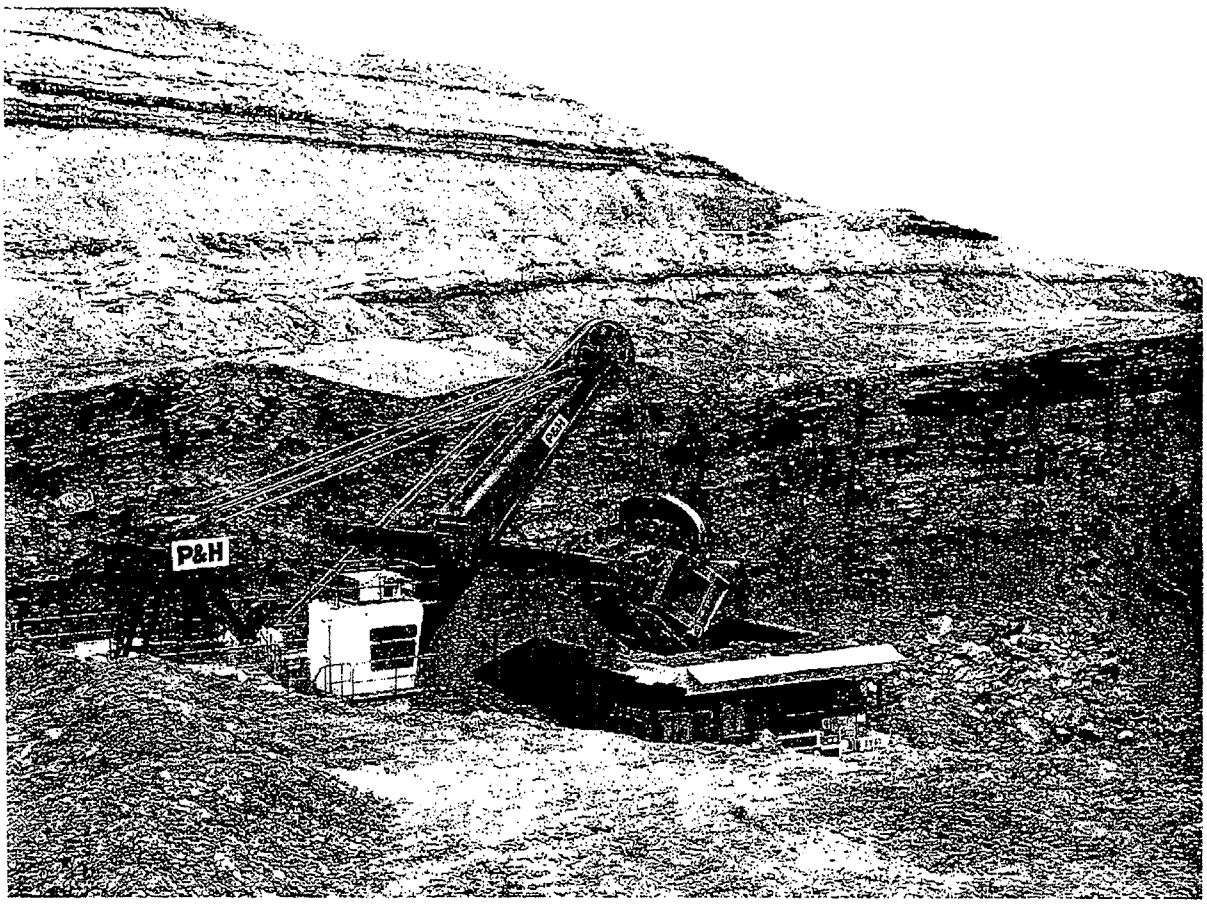
Facility: Antelope Coal Mine
Subject: SMA primary crusher baghouse - no emissions
County: Converse
Date: May 9, 2005
Time: 11:30 A.M.



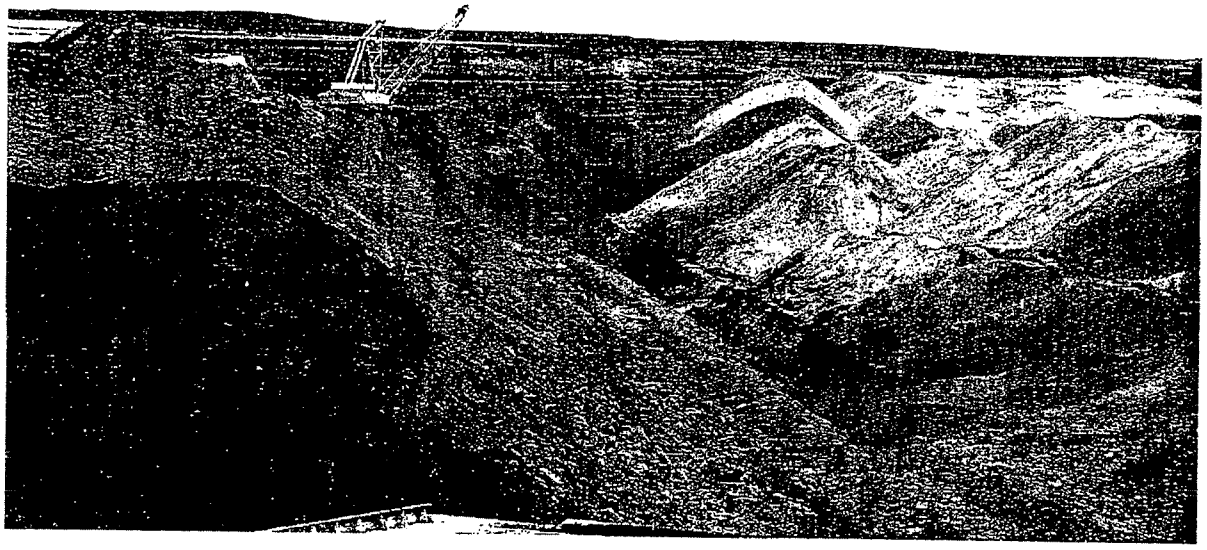
Facility: Antelope Coal Mine
Subject: Pit of Horse Creek Box Cut
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.



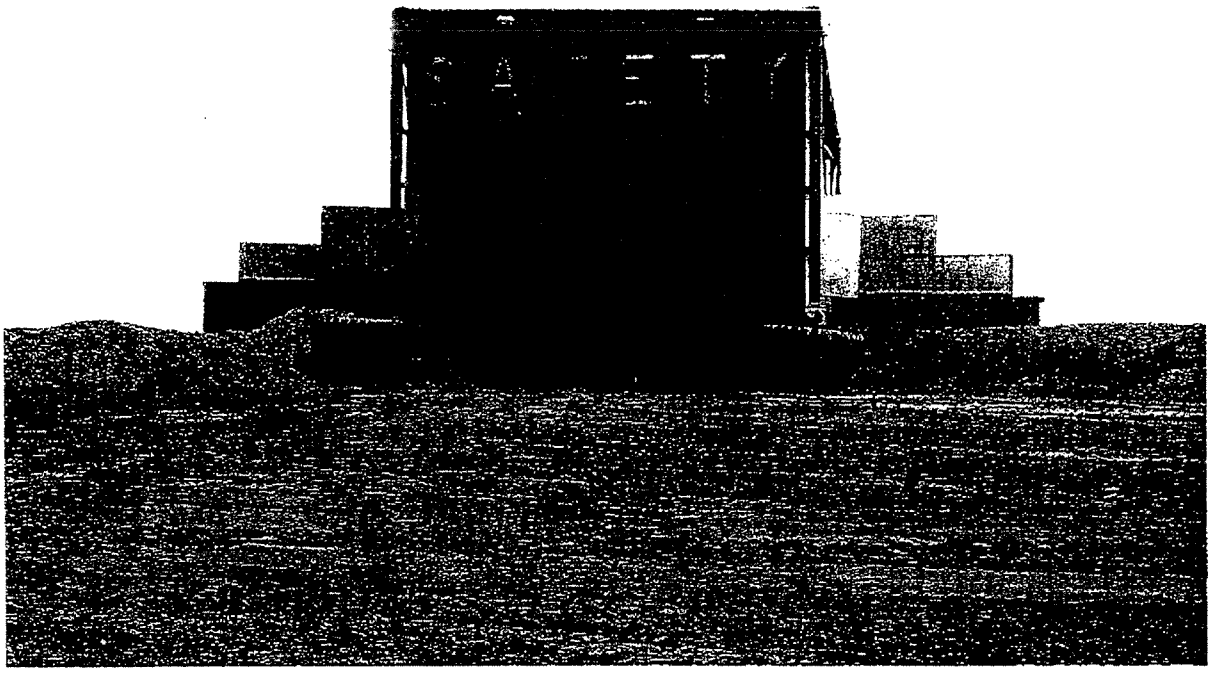
Facility: Antelope Coal Mine
Subject: Pit of the NWMAN
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.



Facility: Antelope Coal Mine
Subject: NWMAS overburden loading
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.



Facility: Antelope Coal Mine
Subject: Dragline in Horse Creek Box Cut
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.



Facility: Antelope Coal Mine
Subject: NWMA Truck Dump after rebuilt
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.

Facility: Antelope Coal Mine
Subject: Baby Owl at Old NEMA Truck Dump
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.

Facility: Antelope Coal Mine
Subject: Baby Owl at Old NEMA Truck Dump
County: Converse
Date: June 9, 2005
Time: 11:30 A.M.