



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Marsh Fork Dust Investigation
October 16, 2006

This document is an assessment of dust and dust conditions at the Marsh Fork Elementary School, and at the Goals Coal Company and Independence Coal Company plants by the U.S. Environmental Protection Agency, Region III (EPA), during an inspection conducted between August 15 through 17, 2006. This document does not present any legal or administrative conclusions or determinations by EPA with respect to any statute or regulation administered by EPA. Separate regulatory inspection reports have been completed for both the School and the coal companies. [See Multimedia Compliance Inspection Report for Goals Coal Company and Independence Coal Company, dated October 16, 2006, and Multimedia Compliance Inspection Report for Marsh Fork Elementary School, October 16, 2006.]

Background

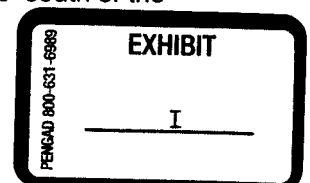
A team of personnel from the EPA Office of Enforcement, Compliance and Environmental Justice (OECEJ) and the Agency for Toxic Substances and Disease Registry (ATSDR; part of the Public Health Service) conducted an investigation of the Marsh Fork Elementary School (School) and the Goals Coal Preparation Plant (Goals or Facility) on August 15-17, 2006. Goals is a Division of Massey Energy (Massey). The investigation was conducted at the request of the Raleigh County School District (School District) due to ongoing concern for coal dust from the adjacent Goals Facility. EPA requested ATSDR assistance to evaluate potential health effects. An inspection of the School was performed on Tuesday (8/15) followed by a two-day unannounced inspection of the Goals Facility (8/16 & 17). Half the team investigated regulatory compliance pursuant to all Federal regulations administered by EPA. The other half of the team investigated dust and dust sources.

Location

Both the School and the Facility are located on West Virginia Route 3 near the community of Naoma in Raleigh County, West Virginia. They are located in the narrow valley of the Marsh Fork River in what is locally called the Coal River Valley. The School is on the north bank of the Marsh Fork. The Facility is primarily on the south bank of the Marsh Fork. The Marsh Fork is 10 to 20 yards wide adjacent to the School and separates the School property from the Facility.

School Description

The School is an elementary school with a pre-school program and has about 215 students/children in all. The main building at the School is a one-story brick and cinderblock building. The oldest portion of the building was rebuilt from its original floors and foundation after a fire in (about) 1981. The newer portions of the School were built sometime after the fire. The School property has several out-buildings. Most of the out-buildings are unoccupied and/or abandoned but one out-building houses a small block of special emphasis classrooms. This out-building is a wood-frame, vinyl-sided structure and is connected to the main School by a covered walk-way. The School is located due west of the Facility. The nearest Facility operation (to the School) is the Loading Silo which is approximately 250' south of the



main School building. The majority of Facility operations are located approximately 500' to 700' due east of the School.

Facility Description

For purposes of this investigation, the Facility includes all operations managed under the Goals name and certain coal handling operations managed under the Independence Coal Mine (Independence) name, both of which are owned by Massey Energy. The Facility processes and ships coal produced by Independence from deep mining and surface mining operations. The mine operations are approximately ¾ to 1 mile due south of the School/Facility. The mines were not part of the investigation but are noted as a potential dust source. The Facility, for purposes of this investigation, comprises all coal moving, handling, storage and processing operations from the point the coal leaves the mine operations regardless of whether it is a Goals or an Independence operation. "Up-mountain" and "down-mountain" are frequently used, herein, in describing the Facility. "Up-mountain" is a term used by Facility personnel to describe everything above the Coal Slurry Impoundment, including the mining operations. "Down-mountain" is EPA's term to distinguish the Facility operations in the Marsh Fork valley at the bottom of the Coal Slurry Impoundment dam. The major components of the Facility coal handling operations are:

- The raw coal belts (conveyors), and transfer points, including the "up mountain" coal crusher or "Coal Sizer" which transport the raw coal from "up mountain" mines down to the "Raw Coal Silo;"
- The Raw Coal Silo and conveyors, which transport the coal from the Raw Coal Silo to the "Prep Plant" or to the "Loading Silo" belt, and the "Lowering Tube" which drops the coal from the elevation of the top of the Raw Coal Silo to the Loading Silo belt at ground level;
- The Coal Prep Plant (where the coal is processed to remove rock and other impurities);
- The processed coal conveyor belts which transport the processed coal from the Prep Plant to the Processed Coal Storage Area or to the Loading Silo belt;
- The Processed Coal Storage Area, including the two "Stacking Tubes," where processed coal is stored on the ground awaiting transport to the Loading Silo and the pits and underground conveyors which transport the stored coal to the Loading Silo belt;
- The Loading Silo where coal is loaded onto rail cars for transport to customers as far away as Florida and the Loading Silo belt;
- The refuse conveyors which transport rock and larger solid wastes from the Prep Plant (after coal processing) "up-mountain" to disposal area adjacent to the "Coal Slurry Impoundment;"
- The "Coal Slurry Treatment Plant" which treats the coal slurry and the pipes and pumps which transport the treated coal slurry waste up to the Coal Slurry Impoundment;
- The Coal Slurry Impoundment which is a 300' (plus) high earthen berm or dam which fills the mouth of the former hallow or tributary stream valley in the mouth of which the Facility is situated. The Coal Slurry Impoundment has impounded a lake/pond of about 50 acres into which the coal slurry is pumped;
- The pumps, pipes, and decant pipe which transport the "clean" water from the far back-end of the Coal Slurry Impoundment to the front/bottom of the Coal Slurry impoundment where it enters the NPDES treatment ponds and system;
- The NPDES Settling and Treatment ponds which hold all the "clean" water and surface water from the lower "down-mountain" operational area before being discharged from the main NPDES outfall into the Marsh Fork;
- Also noted were the "Coal Drier," "Coal Crusher," and "Truck Hopper" that are now out of operation. The Drier is located next to the Coal Prep Plant. The Coal Crusher is located across the Marsh Fork by the Facility entrance and the Truck Hopper is located next to the Coal Crusher.

Investigation Process

The investigation was conducted in two parts. The first part was the inspection of the School on Tuesday August 15, 2006 followed by the inspection of the Facility on Wednesday and Thursday, August



16 & 17. The investigation of dust was conducted over all three days and was not limited to either the School or the Facility. During three days in the Marsh Fork area the team also contacted and met with members of the community as part of EPA's community outreach effort. A single air monitoring event was also conducted as part of the inspection. Air monitoring was conducted in the late afternoon and evening of 8/16 in an attempt to see whether train loading operations could be shown to increase dust particles in the air.

Participating in the inspection were Garth Connor, Troy Jordan, and Bill Steuteville, all of EPA's Office of Enforcement, Compliance and Environmental Justice (OECEJ), and Jack Kelly of the Agency for Toxic Substances and Disease Registry (ATSDR). Troy Jordan was present for the Facility inspection on 8/16 & 17, only. Garth Connor was present for the School inspection and the first day of the Facility inspection. Jack Kelly was present for the School inspection and the first day of the Facility Inspection.

[Much of the dust investigation relies on first hand observations by members the team. Bill Steuteville was the OECEJ lead for the Marsh Fork Investigation and compiled the Dust Investigation Report. "I" or "me" refers to Bill Steuteville.]

School Investigation

Garth Connor, Jack Kelly and I, met the Principal of the Marsh Fork Elementary School, Don Price, at 9:00 AM on Tuesday (8/15). Also present were two representatives of the WV Department of Education, Bill Elswick and Ken Hughart. At the School during the inspection were two maintenance personnel who took us around the School and answered questions. Several teachers were in and out of the School on Tuesday and the next two days.

The School inspection began with an introduction of our purpose and proposed activities. Garth Connor asked general questions about the School and its operations, including the building history and heating/air conditioning.

Mr. Price then gave us a tour of the School. This was followed by a detailed inspection of all areas of the School in order to visually observe dust and evidence of historic dust accumulations. To our knowledge, Jack Kelly and I looked in every room, closet and out-building, except one. The one exception was the small building directly south of the School housing the small water treatment plant operated by the Raleigh County Public Service District (PSD). The building is only accessed by the PSD and the School does not have a key. We also went throughout the School with a ladder to access and look above the ceiling panels to look at dust loading in the rafters and to look at high ledges in the gymnasium that are never or rarely cleaned. Outside the main building we looked into all out-buildings and looked for exterior locations and surfaces where dust could accumulate without being disturbed and washed by rain. We looked all over the main roof (not the gymnasium roof) and opened all air conditioner units looking for dust and looked at the air filters. I looked in the crawl space below the School which was identified in the Asbestos Management Plan. Finally, I walked the perimeter of the School grounds and the playground.

During the inspection we learned that, up until 5 years ago, the School was heated by coal. It is now heated by natural gas. The School had been out of session since June. We were told that the newer portion of the School building (those portions cooled by rooftop AC units) had been used by a Summer school program. The older portions had been largely undisturbed since June except for floor cleaning. In the older classrooms, many shelves, computers and other equipment and supplies were covered by dust covers that teachers had put on before the Summer break and were apparently undisturbed over the summer.

We observed many surfaces that either had never been cleaned (roof rafters), not cleaned in several years (abandoned out-buildings), or not been disturbed all Summer (rooms in older portions of the School). Several of the out-buildings were not, in any sense, air-tight and we observed cracks and openings allowing for significant air flow and dust to enter the buildings. Nowhere in our inspection of the School did we observe any excessively dusty conditions—the dust accumulation(s) were apparently proportional to the length of time the dust had accumulated.

The most significant dust loading was observed on rafters in the oldest parts of the School. Rafters in newer areas had notably less dust loading. This difference was attributed to age (total years of dust loading) but may also be attributable to the air conditioning (AC) systems. The older portions of the School have window mounted AC units. The newer portions of the School have roof-mounted AC units with specific replaceable air filters. In the roof rafters and, particularly, on rafters in the oldest part of School the dust looked to be darker and/or appeared to have a dark/black component to it. This darkness may be attributable to a coal dust component of the dust and, given the proximity to the Goals facility and historic use of coal to heat the School, EPA assumed the dark coloration was attributable to a coal dust component. This apparently darker coloration of the dust was also observed on weather-protected (covered) portions of the vinyl siding on the detached building containing special emphasis classrooms and in dust wiped from the playground equipment. The playground is nearer to the road and the dark coloration might also be attributable to road dust. The dust loading did not appear unusual in these locations, but the coloring appeared to be qualitatively darker. Darker colored dust was not observed elsewhere, although the small quantities of dust observed in most places may have made color distinctions undetectable by eye.

In one location the dust appeared to be qualitatively different. This one exception was on higher ledges inside the gymnasium. There was significant dust loading on these ledges (it appeared they had not been cleaned for years, which was verified by the maintenance staff) and it appeared to be a distinctly lighter color compared to the other areas of significant dust loading. It also appeared to have an overall coarser texture including significant quantities of fibrous material. It did not have the darker appearance of roof rafter dust. The gymnasium is not air conditioned. It has large vents and fans for circulating outside air. The fans and vents appear to allow significant air flow to and from the outside air even when the fans are not running.

As part of the investigation for dust, I entered the crawl space beneath the School. The crawl space was a location where historic dust loading may have accumulated. The dirt floor had significant debris but the dirt surface appeared to have a crusty surface rather than a loose or dusty surface nor was the surface qualitatively darker. The crust may be attributable to repeated moistening and drying due to condensation during changing seasons and weather conditions over the years. However, very significant quantities of potential asbestos containing material (ACM) used as pipe insulation was present. The potential ACM was in very poor condition, hanging loose from the pipes, and laying on the ground. Because of the potential ACM, I stayed in the crawl space only briefly and re-entered the crawl space briefly on Thursday (8/17) to take pictures of the potential ACM.

The inspection of the School was planned and scheduled in advance with the School District. When OECEJ conducts an announced inspection, OECEJ is cognizant of the possibility the entity we inspect may prepare for the inspection by altering operations and conditions. In this case, we considered the possibility that the School could have been specially cleaned prior to our inspection. (EPA had and has no reason to believe this occurred at the School, but we were aware of the possibility.) EPA asked the maintenance staff directly if they had specially cleaned prior to our inspection. They said they had not done any cleaning other than their regular cleaning. Regular cleaning included cleaning and waxing of floors throughout the School, including the older portions of the School but no other cleaning of the classrooms in the older portion of the School. This was evident from the dust covers remaining in many rooms that had been undisturbed for the summer. It was also apparent that many remote and largely inaccessible surfaces we inspected had never been cleaned or not cleaned in many years. It was clear that most of the out-buildings were not being used and had not been cleaned recently.

In conducting the inspection, EPA did not observe the dust microscopically or analyze the dust for coal. However, due to the proximity of the Goals Facility and the history of coal burning (for heat) in the School, EPA assumed that the darker coloration we observed in some dust was attributable to a coal dust component. The accumulations of dust we observed, including the dust containing the darker coloration, were apparently proportional to the length of time the dust had accumulated on any given surface and did not appear to reflect excessive dust accumulations. EPA did not observe excessive accumulations of coal dust by itself or as a component of excessive or unusual dust accumulations at the School.



EPA and ATSDR asked the principal, teachers and maintenance personnel about community interest and concern. Specifically, we asked for contacts among parents. Jack Kelly and I left our names and phone numbers with staff we met, asking that they give it to parents or teachers who had concerns and express our interest/request that they call us. EPA returned to the School several times on 8/16 & 17 and left our names and phone numbers with any staff we encountered on those dates as well.

Facility Investigation

The Facility inspection lasted two days, Wednesday and Thursday, August 16 & 17, 2006. Garth Connor, Jack Kelly and I arrived at the Facility unannounced at about 9:45AM on 8/16. Facility personnel were aware that we had been at the School the day before. They apparently learned this by word of mouth through teachers/staff we had contacted.

When Garth Connor, Jack Kelly and I arrived on the Facility we identified ourselves, announced our purpose, and asked to meet with the supervisor and/or the environmental manager. We were told that they had been contacted and they would meet us shortly. We were shown to the Facility office, which consisted of the one main office and the Superintendent's Office, and asked to wait. Within 15 minutes we were met by the Goals Environmental Manager, Paul McCombs, and, soon thereafter, by the Goals Superintendent, Robert Ward. Troy Jordan joined us at about 10:30AM and Fred Teel, with the West Virginia Department of Environmental Protection (WVDEP) joined us shortly thereafter. WVDEP was present at EPA's request as an observer and, specifically, as a source of information for EPA about the Facility and its air permit.

We introduced ourselves and explained that EPA was investigating concerns for the Marsh Fork School at the request of the School District and that we were inspecting the Goals Facility as part of our investigation into the concerns at the School. We further explained that our inspection would be comprehensive; EPA would inspect all areas that fall under Federal regulations administered by EPA and all potential dust generating operations at the Facility. We cited several potential areas of EPA regulation and asked several questions about Federal regulations with respect to the Facility. We then asked for an overview of the Facility's operations and an overall tour of the Facility. Paul McCombs gave us the Facility overview and McCombs and Robert Ward took us on an overall Facility tour starting "down-mountain" and going "up-mountain," including viewing the Coal Slurry Impoundment and earthen dam. They pointed out the various belts, transfer points, silos, storage areas, etc., along the way. These activities took us until lunch.

After lunch, we broke into two groups. The first group consisted of Garth Connor and Troy Jordan who worked with the Environmental Manager, Paul Combs, and focused on regulatory compliance, including review of the Facility's air and water permits, and the applicability of the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), Community Right to Know Act, Spill Prevention Control and Countermeasures (SPCC) Plan requirements, and other regulations applicable to the Facility's operations. The first group reviewed relevant documentation and inspected areas of regulatory interest. The second group consisted of Jack Kelly and me, accompanied by Fred Teel of WVDEP. We focused on the dust sources and worked directly with the Facility Superintendent, Robert Ward. We also informed Mr. Ward that we wanted to conduct air monitoring during a rail car loading operation and we would require several hours notice in order to set up our equipment. He informed us that the next loading operation would be the afternoon or evening of 8/16.

As part of our investigation of dust, Jack Kelly and I requested that we be shown the entire coal handling, processing and loading operation, preferably when coal and/or refuse was being actively handled, moved and processed. On the first day of EPA's inspection, the Prep Plant was shut down for maintenance. According to Ward, this was a scheduled shut-down. The Prep Plant is shut down three operating shifts per week for routine inspection, maintenance and cleaning. The Facility operates in two shifts: a day and an evening shift. The Prep Plant was scheduled to re-start during the evening shift.

We started the dust inspection by looking at the major "down-mountain" operations. Ward pointed



out the major buildings, belts and transfer points and explained their purpose and how they work together. Ward took us to the top of the Prep Plant and explained the coal processing operation from where the coal entered the Prep Plant (at the top of the building) and the various coal processing steps. We also observed maintenance operations during Prep Plant shut-down.

According to Ward, Goals' coal processing involves four primary process steps. The first two process steps involve separation by size and density (mass). These two separation steps use water, screens, shaking, magnetite (iron ore) and cyclones. Large quantities of water are added to the coal as it enters the Prep Plant. In both of the first two processes, the coal and rock are run through screens and the largest coal and rock pieces are separated from the "slurry." The large coal and rock fractions are sent through cyclones which separate the lighter coal fraction from the denser/heavier rock fraction. Magnetite is added in both of the cyclone processes and most of the magnetite is recycled in each process. The difference between the first and second step are the size of the screen mesh (the first step uses a bigger mesh—larger holes) and the addition of water pressure in the second cyclone separation.

The third process step involves a still smaller screen mesh and a spiral water flume. The coal and rock fractions separated by the screening are sent through the flume. In the flume, the heavier rock tends to move to the outside of the flume and lighter coal to the inside. A paddle separates the majority coal fraction from the majority rock fraction. No magnetite, or any other additives except water, is used in the third process.

The fourth process step involves "froth" cells. Diesel oil, salt water, and a flocculent are used in the fourth process step. Diesel is added to the slurry and coats the coal. The oil coated coal (carbon) is suspended in the froth. The water is decanted from the froth centrifugally. The refuse is treated with the flocculent to remove the rock fraction. The remaining slurry is sent to the Slurry Treatment Plant.

The coal and rock fractions removed at all four steps are sent directly to the processed coal and refuse conveyors, respectively, and are not further processed. The "slurry" remaining from the first process is the "feed stock" for the second step. The remaining slurry from the second process is the feed stock for the third process step. The remaining slurry from the third process is the feed stock for the fourth process step. The slurry left after the fourth process is treated in the Slurry Treatment Plant and disposed. In the Slurry Treatment Plant, the slurry is consolidated by settling and pH adjustment using anhydrous ammonia, and then pumped to the Coal Slurry Impoundment.

Ward explained that he had reduced ammonia use in the Slurry Treatment Plant by more than one-half by automating the pH adjustment. He also stated that, despite its age, the Goals Facility was one of the most efficient coal processing plants run by Massey and he used approximately one third the magnetite allotments per ton of coal processed.

We next walked around the Prep Plant where he showed us, from the outside, what happened to the coal slurry after it left the Prep Plant and what was associated with treating it. It was during this part of tour that I observed the two, 1000-gallon anhydrous ammonia tanks and first expressed concern for the anhydrous operations.

Ward next pointed out the Coal Drier and explained that it had been taken out of operation in about 1999. It had not been operated by Goals since then but had remained on Goals Air Permit until 2005. Since 2005 its use has not been "permitted." It is scheduled to be dismantled for scrap. He also showed us the "Truck Hopper" and "down-mountain" Coal Crusher. The Truck Hopper had been used to unload trucks carrying "up-mountain" coal, as well as, unload coal from other sources (off-Facility sources). He explained that this equipment had not been in operation for several years and that they had no plans to dismantle it but had no plans to operate it again. EPA observed that the Coal Crusher was in apparently poor condition. Ward confirmed that it was in poor condition, had been "robbed for parts" and said it would cost about \$1 million to restore to operation. He further explained that the Truck Hopper and Coal Crusher had been made obsolete by improvements made since he took-over management of the Goals Facility. Goals had constructed the raw coal conveyor belt system to bring the coal "down-mountain" which eliminated the need for the Truck Hopper. Goals had added the "up-mountain" "Coal



Sizer" to the Facility process. The "up-mountain" Coal Sizer eliminated the need for the "down-mountain" Coal Crusher. Goals had also stopped accepting coal from other sources (other than the "up-mountain" Independence mines.)

Ward explained that the Coal Drier was (had been) the most significant dust generating source on the Facility and the "down-mountain" Coal Crusher was (had been) the second most significant dust generating source. Goals had eliminated the two biggest dust sources at the Facility. Ward explained that these process changes were made to cut costs but they also had significant environmental benefit. As a result of eliminating the Coal Drier, the Goals Facility no longer fell under the provisions of Title V ("major source") air permitting requirements and, instead, Goals now operated under a Title 13 air permit. This permit change was confirmed by WVDEP. While the Coal Drier is permanently out of service, Ward did not foreclose the possibility of restoring and operating the Coal Crusher and Truck Hopper. But, he explained, repairing and operating the Coal Crusher and Truck Hopper were not part of Goals future operating plans or budget at this time.

EPA requested access to the top of the Raw Coal Silo. The Raw Coal Silo was accessed by driving part way up the Slurry Impoundment berm/dam, climbing (via ladder) to the raw coal conveyor belt and walking along the raw coal conveyor for approximately 600 feet to where it reached the top of the Raw Coal Silo (reportedly 120' high.) The raw coal conveyor belt is "covered;" it has a half tube cover which is open on one side to allow maintenance of the belt. [All major coal belts on the Facility were similarly covered.] The raw coal belt was operating and carrying coal off the mountain at the time. Ward said that the coal was "direct shift coal."

According to Ward, Direct Shift Coal is coal from the surface mining operation, which is also the cleanest coal seam, and does not need further processing to remove rock and other impurities. In other words, this Direct Shift Coal was of sufficient quality to meet some customers' needs without processing. The Direct Shift Coal is "crushed" in the "up-mountain" Coal Sizer but no water or anything else is added to the coal, nor is anything removed from the Direct Shift Coal anywhere in the handling process. [A sticking agent is added onto the top of all coal as it is loaded on the train. This is required by the Railroad and limits coal loss during transport.] According to Ward, the Direct Shift Coal posed the greatest potential for dust generation because it is potentially the driest coal (surface mined) and is not wetted during processing. EPA observed the Direct Shift Coal being transferred (conveyed) from "up-mountain" directly to the Loading Silo. EPA did not observe any visible dust.

At the top of the Raw Coal Silo (the coal never entered the Raw Coal Silo) the Direct Shift Coal was dropped onto another belt and then conveyed approximately 60' to an enclosed concrete "Lowering Tube" where it was dropped to the Loading Silo belt at ground level. The Loading Silo conveyor carried it directly to the Loading Silo. [We later observed the same Direct Shift Coal being loaded onto rail cars that evening.] I walked the coal conveyor over to the top of the Lowering Tube and observed, from above, the coal being dropped down (into) the Lowering Tube. No visible dust was observed at the top of the silo or at the bottom where the coal was coming out on the Loading Silo conveyor belt.

This was EPA's first close-up look at coal handling processes. EPA did not observe any visible dust during these conveyance processes. We asked Ward why there was no dust. Ward explained that the coal comes out of the mine with moisture in it. The dampness of the coal inhibits dust.

While we were on top of the Raw Coal Silo, the raw coal conveyor ran empty (the coal stopped but the conveyor belt continued to run). After several minutes a very small amount of dust could be observed emitting from the empty (running) conveyor belt. We asked Ward about it. He explained that when the belt runs empty, the belt is dried by the sun and air and the damp coal particles that adhered to the belt become dry and drop off (shake off) as dust while the conveyor is running.

It was after 4:00PM and train loading was scheduled to begin at approximately 5:30PM. Jack Kelly and I began preparing the Data Rams for air monitoring during loading operations. Troy Jordan, Garth Connor and Fred Teel left for the day.



We set up Data Rams, which monitor particulate (dust) concentrations in the air, in five locations: approximately 100' upwind/west of the loading silo; approximately 50' downwind/east of the Loading Silo; approximately 300' downwind/east of the Loading Silo (also near the Facility main access road); approximately 200' northwest/crosswind of the Loading Silo in the School yard; and, in the School playground which is approximately 400' due north of the Loading Silo. There was a very slight breeze from west to east when we set-up the Data Rams. There was no breeze when we picked them up. We set the Data Rams in place and started the last one (Data Ram #6) around 5:55 PM. Train loading operations began at 6:33PM. Jack Kelly observed the start-up of the train loading operations from inside the loading bay of the Loading Silo. I observed the beginning of the train loading from approximately 400' down the tracks while waiting for an escort to enter the Prep Plant. From that distance I could see the coal shoot and could see the diesel exhaust from the train engine through the loading bay (the engine was on the other side of the Loading Silo bay). There was no dust visible from that distance.

After we started the Data Rams, I went to the Coal Prep Plant which was scheduled to start-up that evening. The Prep Plant had been shut-down all day for maintenance. I entered the Coal Prep Plant control room on the fourth floor and observed the operator going through the start-up procedures which took approximately 20 minutes. There was a problem with the raw coal and the start-up was delayed.

I proceeded to the Loading Silo where I met Jack Kelly and watched the train loading in progress. During loading operations, the train (coal cars) moves slowly and steadily through the loading bay. As the cars (called "gondolas") move past, the operator manually adjusts the height of the coal shoot, manually opens the coal shoot, manually begins the spray which applies a tacking agent to the top surface of the coal in the gondola, and manually shuts off the coal shoot at the end of the gondola. When the coal shoot is opened, the coal rapidly fills the front of the gondola to the level of the coal shoot. The coal angles out to the edges of the gondola and then slowly fills the rest of gondola as the gondola moves past the coal shoot. The movement of the car fills the gondola without overfilling it.

When the operator opens the coal shoot into each new car and the initial drop of coal hit the empty car, a small amount of dust was observed. We were told that the dust was caused by the initial impact of the coal on the bottom of the gondola. Residual coal particles from previous loads had stuck and dried on the bottom and sides of the gondola. The impact of the first drop of coal caused some of the particles to break loose as dust. Other than this initial dust, no dust could be observed during loading. We observed the train loading operation until nearly one-half the gondolas were filled. We then checked the Data Rams and left for dinner.

Jack Kelly and I returned to the Facility at approximately 10:00 PM. We were told that they had filled half the gondolas and had been in the process of switching out the second half of the rail cars when five rail cars had derailed. (Due to the length of the rail siding on the Facility, Gondolas can only fill 50 cars at one time. In total, this was a 100 car train.) We were told they could not finish filling the gondolas that night. Jack Kelly checked the Loading Silo operators log to learn when the last car had finished loading. They had finished loading the last gondola at 7:41PM.

We collected the Data Rams. Jack Kelly recorded the final numbers on each Data Ram before we turned them off. When we recovered it, Data Ram #2 had stopped running. We turned Data Ram #2 back on and the display indicated that it had stopped recording approximately 5 minutes before we picked it up. We assumed the battery had run down. We picked up the last Data Ram (Data Ram #6) at 10:55PM.

On 8/17/06, Troy Jordan and I returned to the Facility at approximately 10:00AM. Troy continued his assessment of Facility compliance and I continued the dust investigation. I was joined, again, by Fred Teel of WVDEP. Goals Superintendent, Robert Ward, had a prior commitment and could not accompany me the second day.

I went to the Loading Silo to look at the derailed train. The five derailed gondolas had been put back on the tracks and the remaining gondolas were being readied to be loaded. Looking back from the Loading Silo toward the main area of the Facility's "down-mountain" operations, I observed and took a



picture of a truck using the main access road through the Facility. The truck was causing a distinct dust cloud (which is visible in the photograph). EPA also observed dust from other vehicles on this road at other times. During two days at the Facility, EPA did not observe dust control operations on this main road, part of which is paved and part is dirt/gravel. There is a truck washing station directly in front of the Prep Plant which wets a small area of the main Facility road immediately in front of the Prep Plant. The truck wash station was ineffective in wetting or controlling dust on the great majority of this heavily trafficked access road. The truck washing station is designed to wash one side of the vehicles as they were leaving the Facility. EPA did not observe any trucks that turned around and washed both sides before leaving the Facility and most vehicles simply by-passed the washing station.

The road dust EPA observed on the main "down-mountain" access road was in contrast to the effective dust control EPA observed on most other Facility roads. In particular, the road which climbs the outside face of the Coal Slurry Impoundment (the part of the berm visible from the main Facility buildings and WV Rte 3) had been treated with a tacking agent. Road dust was effectively controlled on this section of road. Vehicles using this road caused only a very small amount of visible road dust. EPA did observe a water truck spraying "up-mountain" roads.

Next we inspected the Prep Plant. It was fully operational during this inspection. We began at the top of the Prep Plant where the raw coal enters the plant via the raw coal belt. At the time, the raw coal belt was operating and conveying raw coal into the Prep Plant. No dust could be observed. We proceeded down through the lower floors observing all the operations that Robert Ward had explained the day before. The building was very wet with water spray and water dripping from upper floors and process equipment. The water droplets in the air may have contained coal particles (suspended in the water droplets) but there was no dust.

We continued outside the Prep Plant looking at the refuse belts where they leave the Prep Plant. The refuse belts were operating and carrying coal refuse from the Prep Plant back "up-mountain." No visible dust was observed from the refuse belts and transfer points.

We inspected the Slurry Water Treatment Plant in operation and took pictures of the anhydrous ammonia tanks.

We inspected the processed coal belt where it leaves the Prep Plant. No visible dust was observed. I proceeded to the processed coal transfer point where it is either loaded directly onto the Loading Silo belt or is sent to the Processed Coal Storage Area. At the time, the processed coal was being sent to the Processed Coal Storage Area for storage on the ground. The Processed Coal Storage Area consists of two cement "Stacking Tubes" (towers) and conveyor belts. The Stacking Tubes are approximately 40 feet high. The processed coal conveyors carry the coal to the top of one of the Stacking Tubes (they operate one at any time). The coal is dropped from shoots on each side of the Stacking Tube and falls to the ground directly below the Stacking Tube. As the coal builds up on the ground, it forms a double cone which joins to form one approximate cone around the Stacking Tube. I climbed out along the processed coal belts and observed the processed coal dropping from the Stacking Tube from above. No visible dust could be observed.

I then climbed down from the belts and walked through the Processed Coal Storage Area to the bottom of the Stacking Tube and watched the coal dropping from the Stacking Tube onto the stock pile on the ground. (I was now looking up from the base of the stock pile.) No visible dust was observed. I did observe coal dust from my foot steps in the coal layer on the ground. [This observation requires further explanation of the stockpile operation.]

The processed coal is dropped from the Stacking Tube onto the ground (the coal falls through the air to the ground.) As the pile builds up on the ground, it forms a cone around the Stacking Tube that can reach the height of the Stacking Tube. The coal is removed from the Processed Coal Storage Area via an underground conveyor belt. (This belt carries the processed coal to the Loading Silo belt where it is carried up to the Loading Silo.) There is a pit to the side and bottom of each Stacking Tube which opens over the processed coal conveyor. When the pit is open, the processed coal feeds by gravity into the pit



where it is removed by conveyor belt. Eventually, all the processed coal that can fall into the pit by gravity falls in and forms a void in the shape of an "inverse cone" in the coal stock pile. A bulldozer is then used to push the remaining processed coal pile into the pit and onto the conveyor belt. At the time of the inspection, the bulldozer was not operating. When the bulldozer had last pushed the processed coal into the pit, it had left a layer of coal on the ground. This layer of coal had dried in the sun and air and it was dry at the time of my inspection. My footsteps in this dry coal caused dust. Each footfall caused small puffs of visible dust. This was the most significant "coal dust" EPA observed during the entire Facility inspection. [Truck traffic and surface mining operations caused much more dust, but the source of that dust was not coal]

I then climbed the Loading Silo Belt and walked to the top of the Loading Silo. The Loading Silo belt was not operating at the time and gondolas were not being loaded at the time of my climb up the Loading Silo. There was a thin film of coal on the hand rails walking up the Loading Silo belt. I noted this because it came off on my hand. No significant accumulation of dust along the Loading Silo belt structure or on top of the Loading Silo was observed. On top of the Loading silo, accumulations of coal in the size range of large grains of sand were observed. I had observed these accumulations on floor surfaces at other coal handling operations and transfer points, including inside the Loading Silo bay during loading operations. When these operations were running, these sand-sized particles could be observed "bouncing" off of, and falling away from, the coal as it was dropped to the lower belt or into the coal cars, etc. These were not dust particles. These were distinct, sand-sized grains and they bounced about as they fell. I observed these particles move several feet in the air but did not become entrained in the air (they were falling). These sand-sized particles were not observed to carry longer distances in the air.

After I climbed down from the Loading Silo, Fred Teel and I left the Facility to get lunch. I stopped at the Marsh Fork Elementary School to take pictures of the potential ACM insulation I had previously observed in the crawl space. I again talked to the maintenance staff and teachers who were present about contacting any parents who were concerned or had questions about the issues relating to the adjacent coal Facility.

Fred Teel and I went to the Dairy Queen located approximately 5 miles from the Facility. While I was at the Dairy Queen, I approached (in my EPA logo clothing) several adults with children and asked if their children went to the Marsh Fork School. None of them said their children attended the Marsh Fork Elementary School. Most said they had friends or relatives who had children at the School. I gave them my name and number asking that they give it to anyone they knew who had children at the School in case they had questions or concerns.

We returned to the Facility at about 2PM. I still needed to inspect the "up-mountain" coal handling, transfer, and crushing operations, and the refuse disposal operations. I requested an escort to go "up-mountain." Garth Connor had returned to the Facility and joined me in my trip "up mountain." We stopped at several transfer points where either raw coal is transferred to other coal belts or refuse is transferred to other refuse belts.

We stopped where I had climbed up to the Raw Coal Belt the day before. I took pictures of a phenomenon I had observed the day before: Directly beneath the Raw Coal belt, the foliage was covered with a thick gray crust. The crust was apparently a dried sludge-like material that had dripped in a liquid form from the Raw Coal belt. I had asked Robert Ward about it the day before and he explained that, in the rain, when the belts run dry (without coal) the rain water speeds down the belt faster than the belt or the running coal behind it and carries sediment from the coal and the belt with it. This splashes from the belt to the ground and onto whatever is below the belt. This was notable to me because I had been looking for, and had not observed, dust accumulations on foliage near the coal handling operations. I looked at foliage at the Facility as an indication of dusty conditions in the immediate past. No dust covered foliage or dusty foliage was observed.

We stopped farther up near the refuse belt carrying refuse back "up-mountain" for disposal. The refuse belt was running and carrying refuse. No visible dust was observed. [Most refuse belts on the Facility are not covered. This refuse belt was one of the few that is covered.] Many of the cover panels



were missing from this refuse belt.

We stopped at one particular transfer point where the Raw Coal belt passes through a rock (native rock) wall where a small area of coal seam had been left and the over burden was still in place. The Raw Coal Belt ran through this rock ledge. I wanted to observe this location because I had observed a stream of water from a hose at this point during the initial tour of the Facility. At the time, I had assumed the water spray was being used to dampen the coal to prevent dust. Later when Mr. Ward stated that Goals "did not add any water to the coal before it reached the Prep Plant," I had thought of this transfer point. Previously, I had only briefly glanced at it from 100 feet away while driving past. At the time, it had appeared to me that the raw coal was being sprayed with water. Upon closer inspection, I could see the water spray was not directed onto the coal or coal belt but was spraying directly onto the ground below the coal belt transfer point. I was told that is done to prevent a build-up of spilled material below the conveyor belt.

[All the raw coal EPA observed coming off the mountain during two days at the Facility was wet; damp rather than dry and dusty. EPA observed no water being added to the raw coal at any point in the coal handling nor was apparatus observed designed to add or spray water onto the raw coal.]

We stopped on the road where the refuse belt passes under the access road to observe the refuse belts in operation. No dust was observed.

Farther up, we stopped at a point in the road nearest the Refuse Disposal Area operations. [I estimate I was approximately 150 yards away and 100 feet above the refuse Disposal Operations.] No visible dust was observed from that distance.

When we inspected the Coal Sizer, it was not in operation. We climbed through the Coal Sizer and inspected its interior and exterior surfaces for signs of dust. No significant accumulations of dust-sized particles were observed.

Directly above the Coal Sizer is the "up-mountain" Raw Coal Storage Area and underground belts that bring coal out of the mountain from deep mines. From a distance of approximately 150 feet, no dust was observed from the raw coal storage operation.

At this level you could see the nearest surface mining operations at least 300 to 400 yards distant and 100 to 200 feet in elevation above us. We could see and hear heavy equipment and trucks. Large dust clouds were observed from the earth moving operations. This dust was brown in color and, we assumed, were from earth and rock rather than coal dust. I took pictures in which the dust clouds are distinctly visible. It is our understanding that these surface mine operations are not part of the Goals air permit nor are they directly regulated by EPA. The mining operations fall under the direct regulatory responsibility of the Mine Safety and Health Administration of the Department of Labor and/or under the regulatory responsibility of the Office of Surface Mines in the Department of Interior. These activities are clearly sources of dust which, by appearance, was dust from earth and rock moving activities. I estimate this dust source is $\frac{3}{4}$ of a mile to one mile, and more, from the School, 500 to 700 feet above the School in elevation, and over one ridge. It is a remote dust source.

We then drove back down the mountain to the Facility Office. Troy Jordan had finished his inspection and had briefed Paul McCombs on his inspection. Robert Ward was not available to brief before I left.

The Coal Slurry Impoundment and NPDES water handling and treatment operations were observed by me and inspected by others for purposes of regulatory compliance with Federal environmental statutes. They are liquid operations and were not considered to be significant dust sources. The Coal Slurry Impoundment and the NPDES water treatment systems and structures do have an important role in containing most direct off-site run-off of surface water, storm water and Facility wastes. This system also provides effective secondary containment for spills and discharges of oil or other products at the Facility should one occur. As observed from the top(s) of the Raw Coal and Loading



Silos and from ground observations, I could see that this system effectively encompasses all significant (current) Facility operations and contains surface water from the majority of operational areas of the Facility. All significant surface water runoff ends up in the NPDES ponds and, eventually, discharges through the NPDES outfall.

We left the Facility shortly after 3PM. Garth Connor and I had a pre-arranged meeting with representatives of the Coal River Mountain Watch (CRMW). We met with four representatives of CRMW at the home of one member in Naoma, West Virginia. We explained why we were in Naoma and what we had inspected. We then asked them to relate to us their concerns. They expressed to us many concerns for the health and safety of the Marsh Fork Elementary School, including dust problems, health problems among students and teachers and former students and teachers, regulatory concerns, and mistrust of agencies and personnel involved. We compiled a list of specific questions and requests they had. We spent a little over an hour meeting with CRMW.

Through the course of the three days at the School and Facility, we met with numerous individuals who expressed a range of opinions about the "Marsh Fork" issues. We spoke with the Principal, two maintenance personnel and, at least, five teachers. Another teacher left a voicemail message on my office phone. She left her name but no telephone number. They all said there was not a dust problem at the School. We asked if they could identify any parents we could speak to in order to discuss the issues from a "parent's perspective." We left our names and numbers. One parent, the President of the Marsh Fork Elementary School PTO, subsequently called me. She expressed her belief that the School is safe but frustration at the lack of direct communication with parents and lack of written information for parents. She thought the media portrayed one side of the issue and some parents don't know what to think. I asked if she could give my name to parents to call me. She said she would put my name and number in the next PTO newsletter but the newsletter was delayed because there was no Principal assigned to the Marsh Fork Elementary School (at the time of our conversation).

The teacher who had left a voice message had a slightly different story, but expressed the same belief in the safety of the School. She expressed her belief that the Facility was much less dusty than it had been several years prior and that the new (second) loading silo would act to reduce dust further (DEP disapproved the permit for the second silo). Her account was the only account—other than remarks by Goals personnel—which indicated that dust may have been more significant in the past. [Goals personnel had indicated to EPA that the former drying and "down-mountain" truck-hopper and crushing operations had been significantly dustier than current operations.]

Jack Kelly and I talked to several Goals personnel. We didn't ask specific questions, we just asked: "what they thought about the Marsh Fork School and dust issue?" Some were reluctant to respond. Others expressed skepticism about the significance of the issue. Some expressed belief that the School was safe and dust was not a problem. Some expressed confidence in the safety of Massey's operations. No Goals personnel suggested that the School or the Massey operations were unsafe.

Post-Inspection Actions

On Monday, August 22, I downloaded the data from the Data Rams and returned the Data Rams to EPA Region III's Equipment Storage Warehouse in Boothwyn, PA. Looking at the data, I learned that Data Ram #2 (which had turned itself off before we picked it up on Wednesday night presumably due to a low battery) had logged data up until 10:25, a few minutes before we picked it up at 10:30 Wednesday night. I also discovered that Data Ram #6 had not logged any data. [This was almost certainly the result of a programming error by me.] However, Jack Kelly had recorded the final readings from Data Ram #6 (and the other Data Rams) before we shut it off. From Jack's notes, we had the average total particulate mass for Data Ram #6 and its final reading to compare against the other Data Rams.

EPA's analyses of the Data Ram data found that the train loading operations had no impact on the concentration of airborne dust particles measured by the Data Rams that evening. This was a limited air monitoring event and EPA can not draw broader conclusions from it. The Data Ram showing the highest particulate concentrations was Data Ram #4. Data Ram#4 was located near the Facility access road and,



based upon our visual observations, the higher readings may be attributable to road traffic/road dust.

Following a review of the asbestos observations in the crawl space of the School, EPA contacted the Raleigh County School District and expressed concern for the asbestos because school was scheduled to start within one week (on August 28, 2006.) The School District agreed to immediately seal the crawl space and sample the occupied areas of the School to test for asbestos fibers before school started. The School District further planned to remove the asbestos and contaminated soils from the crawl space and resample occupied areas of the School over the Thanksgiving break. The School District sealed the crawl space and tested the air in the School. The test results showed that air in the occupied areas of the School was below Federal regulatory standards for asbestos in schools. [The results showed that no asbestos fibers were detected at detection limits below the 70 structures per mm² regulatory limit.]

EPA assessed the risk of an accidental release of anhydrous ammonia from the tanks at the Facility. Anhydrous ammonia is a gas and is classified, by EPA, as an "extremely hazardous substance" because of the significant risk it can pose to downwind populations in the event of an accident. EPA found that the School was within the zone that could, potentially, be seriously impacted by ammonia fumes in the event of such an accident. EPA contacted Goals and suggested that Goals undertake immediate voluntary steps to mitigate and/or eliminate the risk to the School and nearby populations. Goals subsequently replaced the anhydrous ammonia system with a caustic soda (sodium hydroxide) system and emptied and disconnected the anhydrous ammonia tanks.

At the outset of EPA's planning for the Marsh Fork Elementary School inspection, EPA requested the support of ATSDR. Jack Kelly was assigned by ATSDR to assist EPA. Before beginning the inspection and continuing after the inspection, Jack Kelly researched scientific literature on the toxicity of coal dust and community (non-mine) coal dust exposures. He was specifically interested in determining if individual coal dust constituents posed a health concern. He also sought guidance from experts at ATSDR and other Federal health agencies.

To date, limited published information and references for the metals content of coal have been found. This information suggests that the metals content of coal dust likely is not a health concern. A great deal of information was found on the hazards of coal dust silica content and it is widely accepted that the higher the silica content the greater the health threat.

Apparently, there is very little scientific research or literature on the health effects of low concentrations of coal dust (roughly less than 0.5 milligrams/cubic meter; a common detection limit for occupational coal dust analysis) because estimating health hazards below this value involves considerable uncertainty. Only two studies were found evaluating community (non-mine) exposures to coal dust but the studies were inconclusive and were conducted in Europe and may not be representative of U.S. coal mine operations let alone the Marsh Fork situation. Except for these two studies, no additional medical or scientific research was uncovered indicating that low concentrations of coal dust might cause adverse health effects in the general public (non-mine exposure). Conversely, no specific research was found that indicated low-level exposure to coal dust is "safe". Until additional research information is available, and based on our observations during this inspection, it appears that EPA ambient air quality criteria for respirable dust may well be the most appropriate measure for determining if a community located downwind of a coal operation potentially could be adversely affected by particulate air emissions.

I contacted the West Virginia University, School of Mining Engineering (WVUSME), in Morgantown, West Virginia and the National Institute of Occupational Safety and Health (NIOSH) Research Labs in Pittsburgh, Pennsylvania in order to better to understand EPA's observations. At WVUSME, I spoke with Professor Felicia Peng, PhD. At the NIOSH Research labs, I spoke with Research Physicist, Steven J. Page.

According to both Peng and Page, coal contains moisture when it comes out of the ground. According to Peng, surface mining operations do produce the driest coal because no water is used in the surface mining operation. [Water is used in below-ground mining and high wall drilling mining operations.



In these operations significant amounts of water is used which can increase the moisture content of coal and dust characteristics.] Both Peng and Page explained that the generation of dust is dependent upon many factors, including the moisture of the coal. They both confirmed that, if the coal is damp, simply handling the coal (belting, transferring, and loading the coal) is not, by itself, necessarily dusty.

Page explained that the most significant dust producing operations in coal mining and processing are the "breaking" operations, first in the mine itself when the coal is extracted from the coal seam and, second, in the coal crushing/sizing operation. According to Page, these operations can cause dust even if the coal is wet. Page cautioned that there can be dust, including respirable sized dust particles, even when there is no visible dust but, generally, the invisible dust will not be appreciable. He further stated that the only way of knowing the dust concentration for certain is to measure it.

According to Peng, stockpiling operations can result in dust if the coal is dry, and it is windy and/or if the coal is disturbed. This is consistent with EPA's observations. According to Peng, dust control measures are standard industry practice during stockpiling operations in dry and windy weather.

Page said that distance from a dust source is a very significant factor in considering potential dust concentrations and impacts. Page explained that, due to volumetric mixing in the atmosphere, the concentration of dust decreases significantly as the distance from the source increases. Remote dust sources would not be expected to have much impact on a distant receptor compared to closer dust sources. [Since Goals stopped using the Coal Crusher, all Goals "breaking" operations are all located "up-mountain" and are remote from the School.]

General Observations & Conclusions

1. Dust Sources – EPA observed five current sources of visible dust at the Facility. Three are sources of coal dust.

The first source is "dry" coal conveyor belts. When the coal conveyor belts are operating (running) without coal under dry conditions, they emit coal dust from coal particles adhering to the belt. This produces very small quantities of visible dust.

The second source is loading "dry" coal cars (gondolas). When the first load of coal hits the side and bottom of a dry gondola, the impact of the coal causes a small amount of visible coal dust to be released from particles of dust adhering to the sides and bottoms of the gondolas. This produces very small quantities of visible coal dust.

The third source is the Processed Coal Storage Area. The surface of the processed coal dries in the air and sun under dry weather conditions and, when disturbed, it can cause dust. If disturbed on a windy day, this could be a significant coal dust source if not properly managed.

The fourth dust source is road dust from the main Facility access road (or potentially any road where dust control measures were not adequate). EPA observed truck traffic causing dust on the main Facility road but not on other roads. EPA did not observe dust controls being used on this road.

The fifth source is the "up-mountain" surface mining operations. Plumes of dust, brown colored dust, could be seen from a quarter to a half mile away. This source is remote from the School. These operations are regulated by MSHA and/or USDOJ Office of Surface Mines.

2. School Dust Loading – EPA did not observe evidence of unusual or excessive dust at the Marsh Fork Elementary School.

EPA identified and inspected several reservoirs of dust which EPA believes are good indicators of current and historic dust loading in the School. Neither the current nor the historic dust loading appeared to be excessive or unusual.



In a few locations in and around the School, dust appeared to be darker or have a dark component to it. Due to the proximity of the Goals facility and the historic use of coal to heat the School, EPA assumes this dark color is attributable to a coal dust component in the total dust loading.

EPA is also satisfied that cleaning prior to our inspection, if any had been undertaken, could not have hidden indications of excessive dust loading.

3. Facility Dust Emissions – EPA did not observe significant coal dust emissions at the Facility nor coal dust emissions that appeared to be of regulatory significance.

EPA did observe dust, and did observe specific instances where coal dust was generated. EPA also observed one operation where significantly more coal dust could, potentially, be generated under specific circumstances without good management control. [See “the third dust source” in Current Dust Sources, above.] Other than that one exception, EPA’s observations of the current coal handling and processing operations indicates, that the operations are not inherently “dusty” nor are they likely to generate quantities of coal dust of regulatory significance under normal circumstances.

Based on EPA’s observations and understanding of the coal handling process, the reason that the current coal handling and processing operations are not dusty is moisture. The coal comes out of the mountain wet (damp), and it stays damp under most circumstances and during processing. EPA observed routine handling of what should have been the driest coal (Direct Shift Coal) and EPA did not observe visible dust from these routine operations.

However, when the coal is dry, even minor disturbances can cause dust. For example, footsteps in the dried coal in the Processed Coal Storage Area caused more visible coal dust than any (other) coal handling operation EPA observed. If good management controls are not employed, the Processed Coal Storage Area may be a source of significant dust.

Road traffic and surface mining operations caused dust. With respect to road dust, Goals’ dust control measures on the main Facility access road were not effective and vehicular traffic was observed to cause dust on this road. Much of this road dust could be controlled as evidenced by the effective dust control measures observed on other Facility roads.

4. School Safety – EPA observed two circumstances which were of significant concern to EPA for the immediate safety of children and staff. Both causes for concern have since been mitigated or eliminated.

The first circumstance for concern was the asbestos in the crawl space. The School District has sealed crawl space and conducted air sampling which showed that asbestos is not a problem (it was not detected) in the occupied areas of the School. EPA is satisfied that the children and staff at the School are safe from exposure to the asbestos in or from the crawl space.

The second circumstance for concern was the anhydrous ammonia tanks at the Facility. Goals replaced the anhydrous ammonia system with a system which does not pose a risk to the School and has emptied and disconnected the anhydrous ammonia tanks.

[See Conclusions and Future Actions on next page]



5. Conclusions

School:

- EPA's immediate concerns for the safety of the School have been addressed.
- Excessive dust does not appear to be current problem at the Marsh Fork Elementary School.
- However, there has been no specific sampling for ambient particulate concentrations at the School. There has been little research on public exposure(s) to coal dust in non-mine settings (i.e. concentrations below that seen in the coal mining occupational setting). Only a very few studies exist focusing on the health of communities residing near coal mine operations.

Facility:

- Current operations at the Goals Facility do not result in significant coal dust emissions under normal circumstances.
- There are operations that generate small quantities of visible coal dust and there is one operation that could, potentially, cause significant coal dust emissions under certain weather conditions if not properly managed.
- Goals is not effectively controlling road dust on the main access road.

6. Future Actions:

EPA may consider further action if additional information becomes available.

