

West Virginia Department of Environmental Protection
Division of Water and Waste Management
Environmental Enforcement

Fly Ash Dam/Landfill Condition Evaluation

November 2009

EXECUTIVE SUMMARY

DAMS

Fly ash dams in West Virginia are required to be designed in accordance with Dam Safety Rule (47CSR34) requirements, constructed according to approved plans/specifications, and adequately maintained. Owners of all structures, except two that were recently identified, hold Dam Safety Act Certificates of Approval. The Certificates may be extended annually as provided by the Dam Safety Rules. Based upon National Inventory of Dams (NID) criteria (see Appendix 2), of the 20 fly ash dams in West Virginia, eight are in Satisfactory condition, seven dams are in Fair condition, three dams are in Poor condition and two dams are in Unsatisfactory condition. Hazard potential classifications (see Appendix 1) regard the damage that is expected to occur downstream if the dam were to fail and do not reflect the condition of the dam.

Division of Water and Waste Management, Environmental Enforcement (DWWM EE) Dam Safety engineers conducted field inspections of all jurisdictional fly ash dams in Spring of 2009. No imminent danger of fly ash release was observed. Problems noted mainly involved control of animals and vegetation with some cases where embankment slopes exhibited stability issues. One abandoned reservoir (Dutch Hollow Dam, ID # 03922) had active piping of fly ash materials into a sediment control pond, but without discharge to the nearest stream.

DWWM EE/Dam Safety engineers reviewed stability documentation submitted under Orders issued on January 31, 2009. Most embankments were evaluated as meeting or exceeding Dam Safety Rule requirements for static and seismic stability. Notable exceptions include embankments without sufficient information provided or where the angle of the slopes combined with seepage levels resulted in substandard factors of safety. The Conner Run Dam (ID # 05102), in Marshall County, has the unusual issue of major seepage from the reservoir through a hillside abutment.

DEP Mining and Reclamation (DMR) provided review of the potential for breakthrough into underground mines. Many of the facilities are in areas without documented underground mining. Several dams, including Conner Run Dam (ID # 05102), Holz Dam (ID # 03902), Northern Dike Dam (ID # 03931), Ward Dam (ID # 03903), and 1301 Ash Pond Dam (ID # 05307) have mining under the dams or reservoirs, but at sufficient depth to prevent potential breakthrough, according to documents submitted by the owners and reviewed by DMR staff.

In August 2009, Environmental Enforcement inspectors brought the Little Broad Run dams in Mason County to the attention of the Dam Safety section. The dams are constructed of fly ash, meet the size limits for jurisdiction, but are not designed or constructed to Dam Safety Rule standards. DWWM issued an Order to address this matter in August 2009.

LANDFILLS

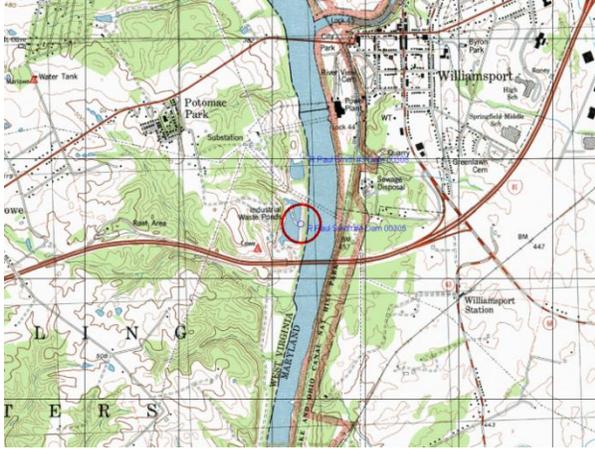
There are fifteen permitted dry coal combustion by-product landfills registered under WVNPDES permits. Twenty-two inspections of these facilities were conducted in the first half of 2009. These inspections resulted in the issuance of one warning, three Notices of Violation (NOV) and one Administrative Order.

There are six coal combustion by-product impoundments registered under WVNPDES permits. Three inspections of these facilities were conducted in the first half of 2009. These inspections resulted in the issuance of one warning.

With the exception of AEP's Little Broad Run Landfill and AEP's Quarrier Landfill, the dry coal combustion by-product landfills appear to be properly operated and maintained. Conditions at these two landfills have improved markedly since the initial inspections in February. Problems at Quarrier were primarily storm water related, including inadequate controls for sediment and erosion. Problems at Little Broad Run were more severe, stemming primarily from improper waste placement and sequencing. Various storm water issues including lack of diversions and inadequate sediment and erosion controls were also noted at Little Broad Run on the initial inspection. The Dam Safety section inspected the incidental impoundments that have resulted from the waste sequencing practices at Little Broad Run; subsequently Administrative Order # DS2009-0019 was issued to AEP requiring them to address the presence of these unpermitted impounding structures. Discussion between WVDEP and AEP is ongoing on this item.

INDIVIDUAL REPORTS
BY COUNTY

R. Paul Smith #4 Dam, Berkeley County, ID # 00305



Height:	41 feet
Max Storage:	335 acre-feet
Dam Safety Act Certificate of Approval:	Issued 02/25/1981
DEP Inspection Date:	02/09/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Fair
Owner:	Allegheny Power

The R. Paul Smith #4 Dam is an earthen structure with three sides of the rectangular reservoir being dikes. The dam is a pump storage structure located along the southern bank of the Potomac River and is not located across a natural stream. The dam is south of the R. Paul Smith #3 Dam and is used by Allegheny Supply's R. Paul Smith Power Plant (located across the Potomac River in Williamsport, Maryland), to pump slurry from the coal furnaces across the Potomac River into the reservoirs to remove the solids prior to final discharge into the Potomac River. As of the inspection date, the R. Paul Smith #4 Dam is at the maximum normal pool elevation and not in operation. Currently, waste water is pumped to the R. Paul Smith #3 Dam (ID # 00308). The material in R. Paul Smith #4 is currently in the process of drying and will be excavated in the near future and placed in the onsite landfill.

The R. Paul Smith #4 Dam does not have an emergency spillway. The reservoir level is controlled by a HDPE riser/decant structure that discharges into a HDPE pipe to a rock riprap channel which discharges into the Potomac River. Since the dam does not have an emergency spillway, the maximum normal pool was established at the top of the riser to allow enough storage in the reservoir to store the entire design storm with no discharge. The R. Paul Smith #4 Dam is currently operating at this maximum normal pool elevation.

Inspection Findings/Recommendations:

1. The reservoir is periodically excavated to remove fly ash to the landfill. Over excavation of the upstream embankment can compromise the clay liner.
2. Monitor possible slip near north end of the embankment.
3. Routine maintenance to maintain slopes and control vegetation.

Stability Issues:

Additional analyses of slope stability are necessary to establish the factor of safety for embankment areas that were over excavated or are lacking liners.

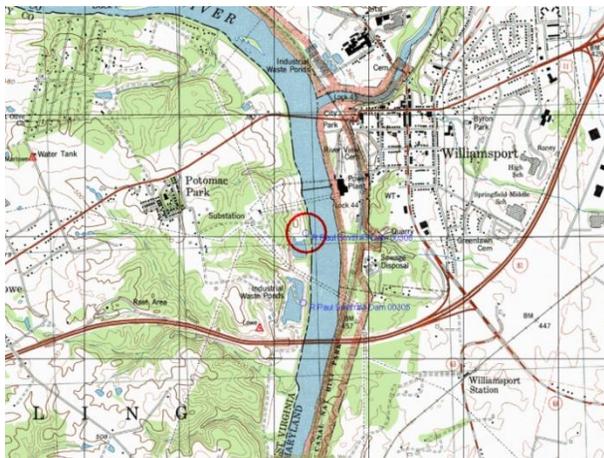
Underground Mine Issues:

WVDEP DMR review: Reviews by the owner's consultant and DMR staff indicated that break through into underground mines is not an issue at this site.

Further Action:

Documentation of slope stability for areas of the embankment that were over-excavated or are lacking liners will be necessary to establish adequate factors of safety.

R. Paul Smith #3 Dam, Berkeley County, ID # 00308



Height:	46 feet
Max Storage:	160 acre-feet
Dam Safety Act Certificate of Approval:	Issued 03/02/1999
DEP Inspection Date:	02/09/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Fair
Owner:	Allegheny Power

The R. Paul Smith #3 Dam is an earthen structure with three sides of the rectangular reservoir being dikes. The dam is a pump storage structure located along the southern bank of the Potomac

River, and is not located across a natural stream. The dam is the upstream or northern of two similar structures used by Allegheny Supply's R. Paul Smith Power Plant (located across the Potomac River in Williamsport, Maryland) to pump slurry from the coal furnaces across the Potomac River into the reservoirs to remove the solids prior to discharging into the Potomac River. Currently, the R. Paul Smith #3 Dam is in service with slurry being pumped into the reservoir for storage.

The R. Paul Smith #3 Dam does not have an emergency spillway. The reservoir level is controlled by a HDPE riser/decant structure that discharges through a HDPE pipe to a fabric form lined channel which discharges into the Potomac River. Since the dam does not have an emergency spillway, the maximum normal pool was established at the top of the riser to allow enough storage in the reservoir to store the entire design storm with no discharge. The current pool level is at approximately the third inlet level from the top of the riser rim.

Inspection Findings/Recommendations:

1. The reservoir is periodically excavated to remove fly ash to the landfill. Over excavation of the upstream embankment can compromise the clay liner.
2. Routine maintenance.

Stability Issues:

1. Information submittal from the owner is necessary to verify that the upstream slope configuration matches the design plan. Slope must be maintained when reservoir is excavated to avoid instability.
2. The majority of the embankment meets or exceeds stability requirements. The river bank and buttress areas do not meet minimum stability requirements.

Underground Mine Issues:

WVDEP DMR review: Reviews by the owner's consultant and DMR staff indicated that break through into underground mines is not an issue at this site.

Further Action:

Document and propose repair of the river bank/buttress area of instability.

Potomac Edison Company WV0079316 R. Paul Smith Landfill Berkeley Co.

Status: Active

Inspection Date: 2/9/09

Aerial Reconnaissance Date: 5/12/09

Inspection Summary: Minor erosion was observed on uncovered waste material in both the existing and the new cell (currently in a construction phase). Permittee states seeding for revegetation will be completed once the weather is suitable.



R. Paul Smith Landfill - Old Cell - 5/12/09



R. Paul Smith Landfill - New Cell - 5/12/09

Clonch Industries, Inc. **OER#2930** **Deepwater Landfill Fayette County**

Status: Closed

Inspection Date: 1/30/09

Inspection Summary: This facility has been closed for a number of years and is currently enrolled in the Brownfield program with the WVDEP Office of Environmental Remediation (OER). The landfill has a storm water management system comprised of several vegetated swales that flow to drop inlets throughout the site. The drop inlets discharge via two under drains to the Kanawha River. Both discharges were clear, and no evidence of the ash material was observed in the discharge channels. Some minor pooling of water on the top of the landfill was observed. This appears to be due to partial obstruction of the drop inlet structures and snow

cover that may have slowed drainage through the swales. A small slip was noted on the out slope of the fill about halfway along the landfill, approximately 100 yards from the Kanawha River. WVDEP DWWM Permit Section records indicate that this slip was first observed in 1998, and has shown no signs of movement since its discovery. Medium sized woody vegetation was observed throughout the slip area, and the slip appears to be stabilized.



Deepwater Landfill – 1/30/09

VEPCO

WV0077461

**Ash Mountain
Landfill**

Grant Co.

Status: Closed

Inspection Date: 2/19/09

Aerial Reconnaissance Date: 5/12/09

Inspection Summary: Facility appears to be well maintained. Well established grass cover.



Mt. Storm - Closed Ash facility – 5/12/09

VEPCO

WV0110256

**Mt. Storm Phase A&B
Landfill**

Grant Co.

Status: Active

Inspection Date: 2/19/09 5/20/09

Aerial Reconnaissance Date: 5/12/09

Inspection Summary: Facility appears to be well operated and maintained. Well established grass cover. Leachate discharges to Consol mine.



Mt. Storm - Active Ash Landfill – 5/12/09

Monongahela Power Company

WV0075795

**Harrison Ash
Disposal Site**

Harrison Co.

Status: Active

Inspection Date: 2/9/09

Aerial Reconnaissance Date: 2/11/09

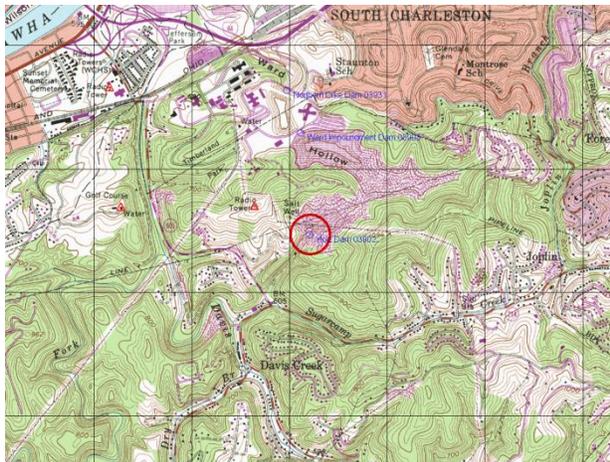
Warning Issued: Immediately direct water bypassing treatment at outlet 016 and flowing to outlet 012 back into outlet 016. Address minor erosion noted in the landfill when weather allows.

Inspection Summary: Landfill slopes are stable with positive drainage noted throughout. No noticeable slips or bulges. The vegetation on the landfill was good. Stormwater diversion away from the landfill is controlled with diversion ditches and in good condition in areas inspected. One small area in Cell No. 3 has erosion where water broke over the bank and eroded the slope somewhat. The breach has been repaired and the erosion on the slopes will need to be repaired. One small area near the toe of the new cell has some erosion that has undermined the concrete drainage ditches. The water causing this erosion is diverted. No. 1 sediment pond impoundment appears to be in good condition; no slips, bulges or seepage noted. The wetland treatment system appears to be in good condition this date, good vegetation throughout the system. Outlet 016 has a sediment pond for treatment. Outlet 012 does not.



Harrison Ash Disposal Site - 2/11/09

Holz Dam, South Charleston, Kanawha County, ID # 03902



Height:	225 feet
Max Storage:	1,280 acre-feet
Dam Safety Act Certificate of Approval:	Issued 01/22/1996
DEP Inspection Date:	03/05/2009
Hazard Potential Classification:	1 - High
Condition (NID Criteria):	Satisfactory
Owner:	Dow Chemical Company

The Holz Dam is composed of two embankments to create an impoundment between two natural hillsides. The larger embankment is southwest of the reservoir and the smaller is northeast of the reservoir.

Inspection Findings/Recommendations:

1. An erosion gully requires repair.
2. Owner to monitor seepage areas.
3. Investigate sediment that was apparently produced by several under drain outlets on the southwest embankment. Cut trees and brush near dam footprint.
4. Routine maintenance.

Stability Issues:

Review of submitted stability analyses concluded the dam meets or exceeds the Dam Safety Rule requirements for stability.

Underground Mine Issues:

WVDEP DMR review: DMR review of submitted evaluations could not completely rule out underground mining without supporting geotechnical information. Existing overburden thickness of approximately 150 feet beneath the Holz Dam down to the 5-Block seam is of sufficient thickness to likely mitigate any breakthrough [rupture] effects, even if a mine void does exist. This conclusion is based upon the Bureau of Mines' Information Circular 8741(IC8741).

Further Action:

No further action is necessary at this time.

Union Carbide Corp. WV00115355 Holz Impoundment Kanawha Co.

Status: Active

Inspection Date: 8/19/09

Aerial Reconnaissance Date: 2/17/09

Inspection Summary: This impoundment receives wastes from the South Charleston plant's water filtration unit, power house (fly ash and bottom ash) and sludge from the City of South Charleston's wastewater treatment plant. This impoundment has no direct discharge. Overflow is piped to the City of South Charleston wastewater treatment plant. No deficiencies were noted.



Holz Impoundment – 2/17/09

Ward Impoundment Dam, Kanawha County, ID # 03903



Height:	139 feet
Max Storage:	3,500 acre-feet
Dam Safety Act Certificate of Approval:	Issued 08/04/2003
DEP Inspection Date:	03/05/2009
Hazard Potential Classification:	1 - High
Condition (NID Criteria):	Fair
Owner:	Dow Chemical Company

The Ward Impoundment Dam is no longer used for fly ash disposal. The upper portion of the reservoir was previously divided from the lower (Northern Dike Dam) portion by a road fill. Approved modifications completed in 2004 increased the spillway function through the installation of a reinforced concrete spillway chute to prevent possible erosion of the abutment during severe storms.

Inspection Findings/Recommendations:

1. Repair emergency spillway tension cracks.
2. Remove vegetation.
3. Submit application to improve principal spillway inlet.
4. Monitor slope irregularities near left abutment.

Stability Issues:

Review of submitted stability analysis was inconclusive without additional information.

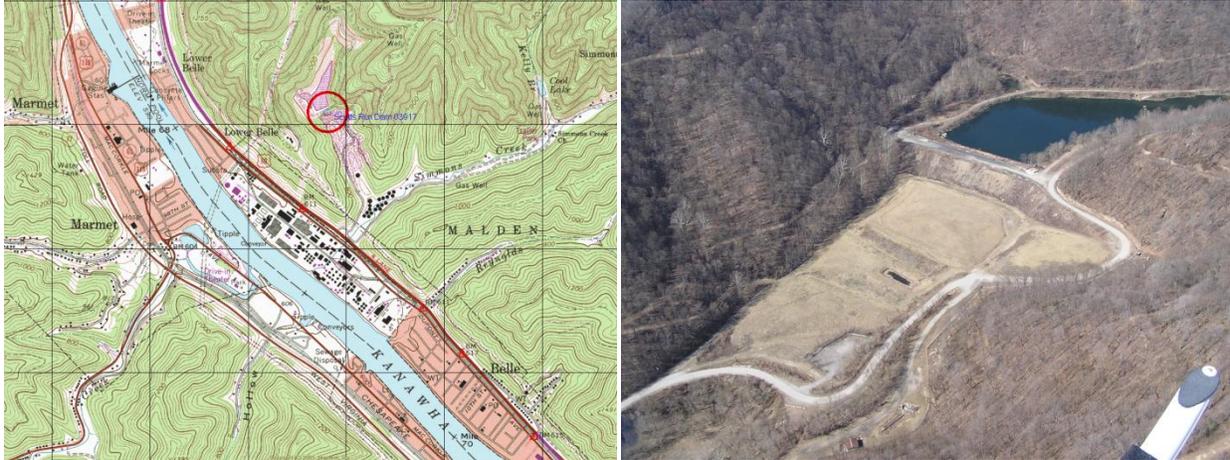
Underground Mine Issues:

WVDEP DMR review: DMR review of submitted evaluations could not completely rule out underground mining without supporting geotechnical information. Existing overburden thickness approximately 150 feet beneath the Holz Dam down to the 5-Block seam is of sufficient thickness to likely mitigate any breakthrough [rupture] effects, even if mine void does exist. This conclusion is based upon the Bureau of Mines' Information Circular 8741(IC8741).

Further Action:

1. Submit documentation of stability.
2. Cut/remove vegetation.

Scotts Run Dam, Kanawha County, ID # 03917



Height:	179 feet
Max Storage:	879 acre-feet
Dam Safety Act Certificate of Approval:	01/06/1994
DEP Inspection Date:	03/09/2009
Hazard Potential Classification:	1 - High
Condition (NID Criteria):	Satisfactory
Owner:	DuPont de Nemours

Scotts Run Dam is constructed of fly ash materials with a massive buttress of bottom ash material on the downstream face. Internal drains collect seepage water with discharge at the downstream toe at a single monitoring point. The reservoir is constructed to store the design storm and discharge it through a pipe principal spillway. The pipe spillway merges with surface drainage ditches at a transfer box along the right abutment on the crest of the embankment buttress.

Inspection Findings/Recommendations:

1. Remove vegetation from embankment and abutment areas.
2. Remove trash and debris from spillway transfer box.
3. Submit updated Monitoring and Emergency Action Plan (EAP).

Stability Issues:

Review of submitted stability analyses concluded the dam meets or exceeds the Dam Safety Rule requirements for stability.

Underground Mine Issues:

WVDEP DMR review: There are questions whether auger mining was conducted in association with the surface mining. Also, it still remains possible that underground mining is in the proximity of this facility, but not mapped. Perhaps initial dam designs and DuPont’s property knowledge, supplemented with visual reconnaissance, can aid in reducing such concerns.

Further Action:

1. Cut/remove vegetation from the dam embankment and within 25 feet of the embankment footprint per the Dam Safety Rule requirements.

FMC Retention Dam, Kanawha County, ID # 03921



Height:	28 feet
Max Storage:	620 acre-feet
Dam Safety Act Certificate of Approval:	10/09/1992
DEP Inspection Date:	03/09/2009
Hazard Potential Classification:	1 - High
Condition (NID Criteria):	Satisfactory
Owner:	FMC Corporation

The dam embankment tapers into the abutments with a principal spillway riser to the right of center, and a conduit to the left of center that conveys storm water from the plant area to Davis Creek via a culvert under the interstate ramp. Fly ash disposal at the site stopped several years ago. The Ward Hollow stream channel flows from natural ground at the left abutment and runs laterally below the embankment toe toward the center, where it combines with discharge from the conduit to flow under the interstate ramps. The reservoir is partially overgrown with young trees, brush, and cattails.

Inspection Findings/Recommendations:

1. Remove one tree.
2. Monitor two fly ash deposition areas on downstream face.
3. Submit updated Monitoring and Emergency Action Plan (EAP).

Stability Issues:

A review of the submitted stability analyses concluded the dam meets or exceeds the Dam Safety Rule requirements for stability.

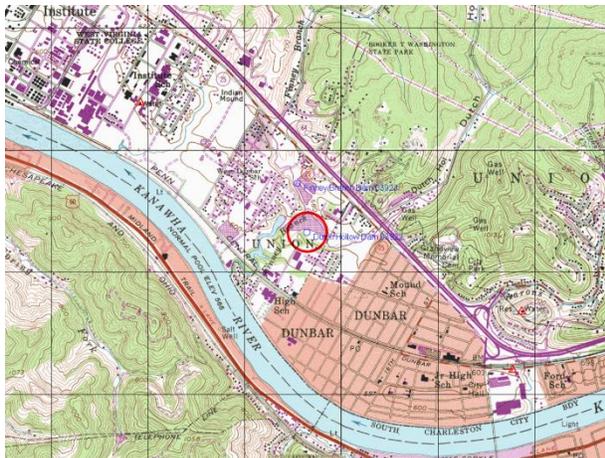
Underground Mine Issues:

WVDEP DMR review: A consultant report concludes that there are no operating, inactive, or abandoned mines located beneath or within the proximity of the dam or reservoir. Considering that this facility is constructed within the Kanawha River floodplain and that all underlying seams possess inadequate thicknesses to have been mined, it is reasonable to believe that no mining exists beneath the embankment or basin.

Further Action:

No further action is necessary at this time.

Dutch Hollow Dam, Kanawha County, ID # 03922



Height:	31 feet
Max Storage:	180 acre-feet
Dam Safety Act Certificate of Approval:	04/08/1998
DEP Inspection Date:	03/12/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Poor
Owner:	Hatfield Enterprises, Inc.

The reservoir of Dutch Hollow Dam was roughly square-shaped, filled with fly ash and capped with approximately one foot of soil and seeded with grass several years ago. The reservoir is

now utilized as a golf driving range. A small pond originally utilized as a polishing pond prior to water discharge from the site exists at the southwest abutment of the embankments.

Inspection Findings/Recommendations:

1. Cut/remove vegetation from embankments.
2. Submit application to repair fly ash migration from reservoir to polishing pond along discharge pipe, correct diversion ditch grades, repair sinkholes in the reservoir area, and verify stability of the south embankment.
3. Repair erosion and animal burrows.
4. Submit updated Monitoring and Emergency Action Plan (EAP) and Maintenance Plan.

Stability Issues:

Review of submitted stability analyses concluded stability is less than Rule requirements on Section 5 of the embankment.

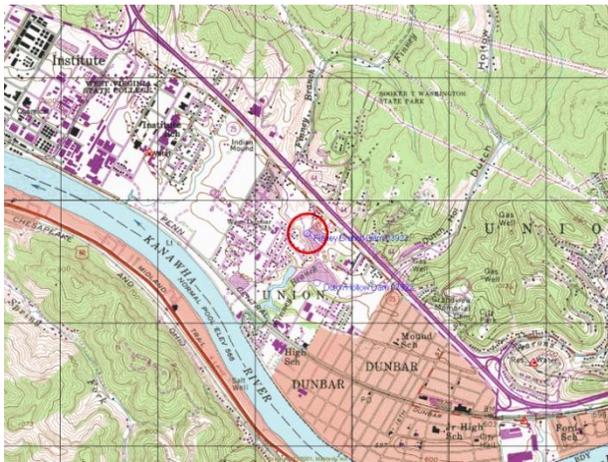
Underground Mine Issues:

WVDEP DMR review: The owner's consultant concludes that no mining exists beneath these structures. Considering the rationale presented and the dams' locations within the Kanawha River floodplain, WVDEP DMR had no reason to doubt this statement.

Further Action:

1. Cut or remove vegetation from the dam embankment and within 25 feet of the embankment footprint per the Dam Safety Rule requirements.
2. Submit an application to correct the piping of reservoir fly ash into polishing pond and to address stability issues on Section 5 of the embankment.

Finney Branch Dam, Kanawha County, ID # 03923



Height:	35 feet
Max Storage:	1,276 acre-feet
Dam Safety Act Certificate of Approval:	01/30/2007
DEP Inspection Date:	03/12/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Poor
Owner:	Hatfield Enterprises, Inc.

Finney Branch Dam was constructed across Finney Branch utilizing two earth embankments in series. Previous owners used the area between the embankments for fly ash disposal. The reservoir at Finney Branch Dam was filled with fly ash and capped with soil in the 1970s. Finney Branch Dam could potentially impound water in the area upstream from the two embankments in Finney Branch. The potential reservoir area upstream from the dam is normally in a drained condition due to a 72 inch RCP pipe. A channel emergency spillway was designed to cross the fly ash reservoir. The channel was designed to be excavated in fly ash with a liner of geo-textile erosion protection grid with grass growing through the grid. The channel was not constructed as designed and experienced significant erosion on the side slopes, leading to a DEP Order in 2004 to install the channel according to the approved plans. WVDEP granted the owner's request for exemption of the upstream reservoir area from jurisdiction in 1994, however, WVDEP retained jurisdiction over the fly ash disposal reservoir and the two earth embankments. WVDEP issued approval for abandonment in 1996 with provisions to monitor the fly ash saturation level for at least five years. To date, sufficient documentation to demonstrate saturation levels less than the definition of a "dam" has not been provided by the owner. As a result, WVDEP jurisdiction continues. In 2004, WVDEP ordered the owner to accomplish repairs to the pipe and channel spillways to prevent impoundment of water in Finney Branch.

Inspection Findings/Recommendations:

1. Conduct required inspection and submit fly ash saturation documentation.
2. Cut/remove vegetation.

3. Repair/clean inlet trash rack.
4. Submit application to repair sinkholes that exist at the pipe spillway junction box.
5. Repair damaged liner in emergency spillway channel.

Stability Issues:

The south embankment did not meet all Dam Safety Rule stability requirements.

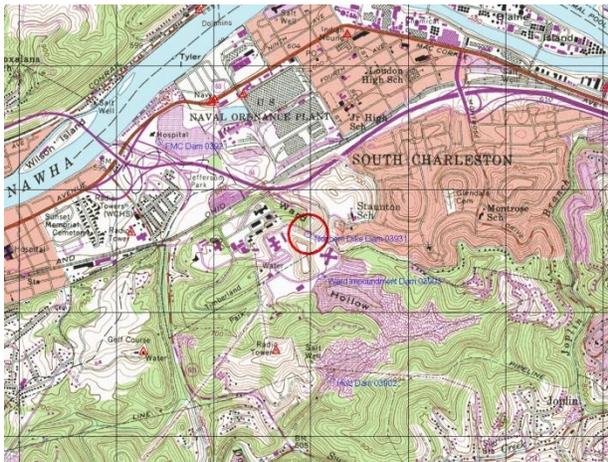
Underground Mine Issues:

The owner’s consultant concludes that no mining exists beneath these structures. Considering the rationale presented and the dams’ locations within the Kanawha River floodplain, WVDEP DMR had no reason to doubt this statement.

Further Action:

1. Submit application to repair sinkholes that exist at the pipe spillway junction box.
2. Submit application for correction of stability problems with south embankment.

Northern Dike (Lower Ward) Dam, Kanawha County, ID # 03931



Height:	152 feet
Max Storage:	1,050 acre-feet
Dam Safety Act Certificate of Approval:	05/05/2005
DEP Inspection Date:	03/05/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Fair
Owner:	Dow Chemical Company

The Northern Dike Dam is an inactive fly ash disposal site. The reservoir area was previously capped with earth materials to create the appearance of a landfill. The owner installed an asphalt parking lot on the right side of the reservoir next to Building 2000. WVDEP issued approval for

abandonment in 1994. Abandonment included construction of an emergency spillway channel at the left abutment and a rock fill buttress on the downstream face to stabilize the embankment. Monitoring wells were installed to document the fly ash saturation levels in the capped reservoir area.

Inspection Findings/Recommendations:

1. Cut or remove vegetation from the embankment.
2. Stabilize erosion at entrance and sides of spillway channel.
3. Submit updated Monitoring and Emergency Action Plan (EAP).
4. Submit application to address slip with bulges on downstream face and to provide positive water direction into the channel spillway entrance.

Stability Issues:

The owner's consultant referenced stability analysis information submitted in 1994, however, WVDEP is currently unable to locate the necessary documents. As a result, additional information may be required from the owner.

Underground Mine Issues:

DMR review of submitted evaluations could not completely rule out underground mining without supporting geotechnical information. Existing overburden thickness approximately 150 feet beneath the Holz Dam down to the 5-Block seam is of sufficient thickness to likely mitigate any breakthrough [rupture] effects, even if mine void does exist. This conclusion is based upon the Bureau of Mines' Information Circular 8741(IC8741).

Further Action:

1. Submit updated Monitoring and Emergency Action Plan (EAP).
2. Provide documentation of stability from 1994 analysis.
3. Submit application to address slip with bulges on downstream face and to provide positive water direction into the channel spillway entrance.

Monongahela Power Company	WV0050776	Rivesville New Ash Site	Marion Co.
Status:	Active		
Inspection Date:	2/9/09	5/28/09	
Aerial Reconnaissance Date: 2/11/09			

Inspection Summary: There were no noticeable slips around the perimeter of the landfill. The bank of the pond that collects leachate and storm water from landfill appeared to be adequately vegetated and stabilized. There were fissures on the surface of the landfill from storm water run-off. Rock check dams were present in the ditch that conveyed storm water to the pond to collect sediment. The monitoring wells observed had concrete aprons, a locked cap and were properly

labeled. There has not been much activity at the site. Discharge Monitoring Reports (DMRs) were reviewed for January through April 2009. The reports were accurate and complete.



Rivesville New Ash Site – 2/11/09

Monongahela Power Company WV0112160 Rivesville Closed Landfill Marion Co.

Status: Closed

Inspection Date: 2/9/09 5/28/09

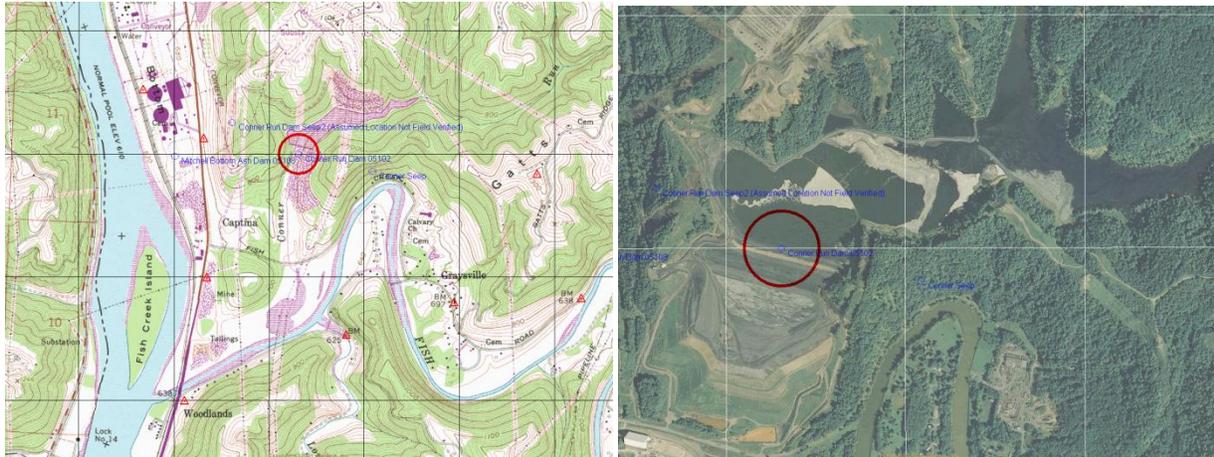
Aerial Reconnaissance Date: 2/11/09

Inspection Summary: Landfill has been closed for many years. No slips observed. Slopes covered with vegetative growth and trees. No storm water outlets.



Rivesville Closed Ash Site - 2/11/09

Conner Run Dam, Marshall County, ID # 05102



Height:	267 feet
Max Storage:	15,750 acre-feet
Dam Safety Act Certificate of Approval:	02/27/2004
DEP Inspection Date:	02/24/2009
Hazard Potential Classification:	1 - High
Condition (NID Criteria):	Fair
Owner:	American Electric Power

The Conner Run Dam is an earthen structure located on Conner Run, which is a tributary of Fish Creek/Ohio River. The main purpose of the structure is to dispose of fly ash and coal slurry in the reservoir area and coarse coal refuse on the downstream slope as a large buttress. Reservoir discharge is through a 72 inch RCP pipe at the left abutment. A major seepage zone is evident in the natural hillside on the left side of the reservoir that discharges to Fish Creek. A second smaller possible seepage zone may be located in the Ohio River hillside above the power station.

Inspection Findings/Recommendations:

1. Remove vegetation from spillway discharge channel.
2. Monitor two natural hillside seepage zones.
3. Monitor seepage into pipe spillway intake riser.

Stability Issues:

Review of submitted stability analyses concluded the dam meets or exceeds the Dam Safety Rule requirements for stability.

Underground Mine Issues:

WVDEP DMR review: Abandoned mine workings exist in the Pittsburgh coal seam. The abandoned Woodland Mine workings exist 102 feet horizontally from the downstream toe of the Bottom Ash Dam's east dike and 186 feet from the eastern pool limits (maximum design pool elevation @ 678.37 ft., NAVD). Approximately 170 ft. of overburden exists between these mine

workings and the bottom of the basin and 190 feet of cover exists between the mine and the east dike's embankment toe.

For the Conner Run Dam, the owner's engineer certifies that it is unlikely that existing underground mining will impact the embankment, its ancillary structures, or the impoundment. Consequently, the potential for pool breakthrough into underlying mine workings is thought to be low. These conclusions are supported by provisions of IC8741, a widely accepted design guideline for mining beneath bodies of water. Therefore, DMR agrees with this subsidence evaluation and conclusion.

Further Action:

1. Remove vegetation from spillway discharge channel.
2. Monitor two natural hillside seepage zones.
3. Monitor seepage into pipe spillway intake riser.

American Electric Power	WV0005304	Conner Run Impoundment	Marshall Co.
Status:	Active		
Inspection Date:	5/20/09		
Aerial Reconnaissance Date: 2/11/09			

Warning Issued: Take steps necessary to comply with 47CSR60.19.3 for abandonment of monitoring well MWL1.

Inspection Summary: The impoundment receives fly ash slurry from outfalls 104(AEP Mitchell Plant) and 204(AEP Kammer Plant) and coal mining waste from outfall 304(Consol McElroy Mine). The waste is pumped to the back of the impoundment by booster stations at the top of the hill near the saddle dam. All monitoring wells were observed and found to be in excellent condition, very well installed and maintained. Installation logs were reviewed and appeared to be satisfactory. Field logs for sampling were reviewed for sampling procedures and found to be satisfactory. They contained all data relevant to meeting permit Sec. C.21 requirements. DMRs were reviewed and spot checked against lab reports for 4th quarter 2008 and 1st quarter 2009 and found to be accurate and complete. Statistical analyses have been conducted on MWH1, MWU3, MWL3. MWU1 has reached the required ten samples and statistical analysis will be completed on the next report. Statistical Significant Increases (SSI) were found on MWH1 for temperature, SO₄, Zn, and Na. No other SSIs were found. Exceedances have been reported for As at MWH1, MWU3, and MWL3. An exceedance for Sb was reported at MWL3. The 2008 Annual Report shows waste received to be 440,665 tons from Mitchell, 42,555 from Kammer and 672,000 tons from Consol. The AEP operating record was reviewed and appeared satisfactory. An issue exists with an abandoned well, MWL1(4/06, collapsed screen), see fig. 6. Mr. Limes submitted the requested abandonment log, but it appears after review and site visit that it does not meet the requirements set forth in 47CSR60.19.2.3.



American Electric Power – Conner Run Impoundment – 2/11/09

Mitchell Bottom Ash Dam, Marshall County, ID # 05108



Height:	30 feet
Max Storage:	464 acre-feet
Dam Safety Act Certificate of Approval:	03/13/1975
DEP Inspection Date:	02/24/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Satisfactory
Owner:	American Electric Power

The dam is essentially a three sided earthen dike with a lower dike through the center of the impoundment. The reservoir is more or less parallel to the Ohio River. Heavier sludge material is pumped into the upper reservoir of the dam and water flows from the upper reservoir into the lower section after settling. The lower section has three small dikes across it that are approximately perpendicular to the river that appear to have been installed to increase retention

time in the reservoir. The bottom ash that remains in the upper section of the impoundment is removed by a bulldozer and end loader. The water leaves the lower portion of the reservoir through an overflow structure and is carried to a third settling pond, termed the clear water pond by plant personnel, before being released into an outfall structure to the Ohio River.

Inspection Findings/Recommendations:

1. Continue vegetation and animal control efforts on the embankments
2. Regrade slopes to facilitate inspections.

Stability Issues:

Based on the cross sections analyzed by the engineer and the different loading conditions the engineer's results indicate that the Mitchell Bottom Ash Dam meets or exceeds the minimum factors of safety required by the Dam Safety Act & Rule. The owner's engineer did not submit rapid drawdown analyses.

Underground Mine Issues:

WVDEP DMR Evaluation: Abandoned mine workings exist in the Pittsburgh coal seam. The abandoned Woodland Mine workings exist 102 feet horizontally from the downstream toe of the Bottom Ash Dam's east dike and 186 feet from the eastern pool limits (maximum design pool elevation @ 678.37 ft., NAVD). Approximately 170 ft. of overburden exists between these mine workings and the bottom of the basin and 190 feet of cover exists between the mine and the east dike's embankment toe. The owner's consultant concluded that the abandoned Woodland Mine workings are beyond the subsidence zone of influence; consequently, potential subsidence should not impact to the Mitchell Bottom Ash Dam facility. DMR agrees with this assessment.

Further Action:

Regrade downstream slope to facilitate inspection.

PPG Industries, Inc.	WV00110051	PPG Landfill	Marshall Co.
Status:	Active		
Inspection Date:	2/12/09		
Aerial Reconnaissance Date: 2/11/09			

Inspection Summary: Produced fly ash is not currently being disposed of on site. Material is being taken to a fill in Ohio. Working face of fill has been partially capped. Work needs to be completed with exposed area stabilized, seeded and mulched. There is some evidence of animal burrows in the fill. Those areas need to be repaired and the animals trapped and relocated if possible.



PPG Ash Landfill – 2/11/09

1301 Ash Pond Dam, Mason County, ID # 05307



Height:	30 feet
Max Storage:	961 acre-feet
Dam Safety Act Certificate of Approval:	06/09/2006
DEP Inspection Date:	03/11/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Satisfactory
Owner:	American Electric Power

The 1301 Ash Pond Dam is a rectangular structure, approximately 3,200 feet in crest length (east and west embankments). The north embankment crest length is approximately 1,000 feet and south embankment crest length is approximately 1,500 feet. The reservoir is sub-divided with dikes to allow alternating fly ash disposal in one area while cleaning out others.

Inspection Findings/Recommendations:

1. Wet area on the east exterior embankment.
2. Vegetation on east exterior slope.
3. Animal burrows.
4. Unsealed pipe for surface drainage at southwest embankment.

Stability Issues:

Review of owner's engineer stability analyses indicates factors of safety are acceptable with exception of rapid drawdown, which is an unlikely scenario. Additional information is necessary to complete review of the north embankment.

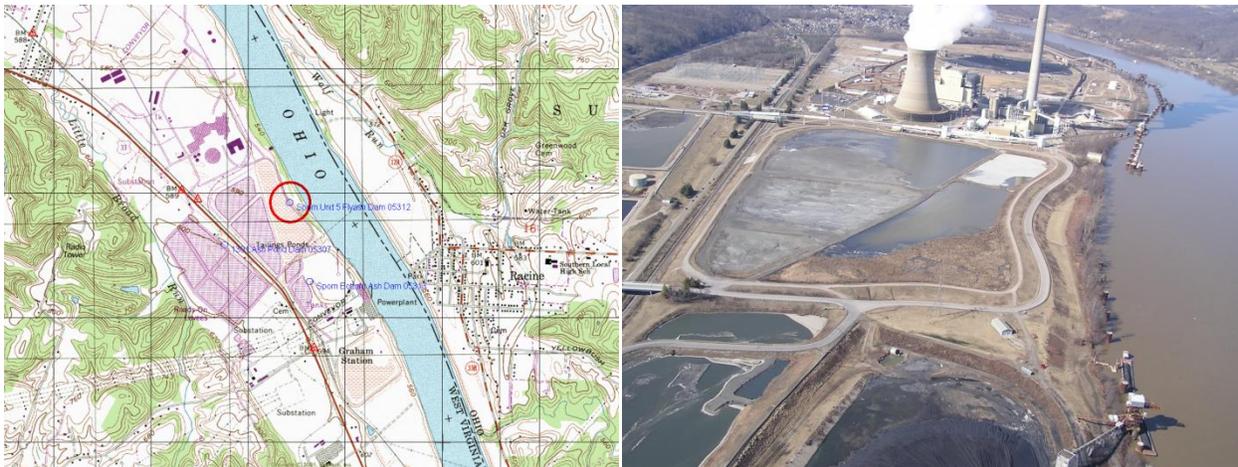
Underground Mine Issues:

WVDEP DMR Evaluation: Existing mine workings are present in underlying coal seams within the proximity of the three dam structures, plus Gatling, LLC proposes additional mining in this seam. The depth to this seam is approximately 150 feet; 20 to 50 feet of this depth is comprised of alluvial material. Existing mine workings present no concerns as they are located far enough from the facilities to pose no effects. However, the additional mining potentially could produce effects, but subsidence evaluation demonstrates that no significant subsidence impacts will affect the three aforementioned facilities. The owner's engineers conducted the subsidence analysis for the proposed mining. DMR agrees with their evaluation and conclusion. Provided Gatling follows the recommendations for mine design and they adhere to those aspects once mining progresses, there should be no adverse subsidence effects impacting this structure.

Further Action:

1. Investigate and correct wet area on east exterior embankment.
2. Submit documentation regarding stability of north embankment.

Sporn Unit 5 Fly Ash Dam, Mason County, ID # 05312



Height:	65 feet
Max Storage:	1,965 acre-feet
Dam Safety Act Certificate of Approval:	07/06/2001
DEP Inspection Date:	03/11/2009
Hazard Potential Classification:	2- Significant
Condition (NID Criteria):	Poor
Owner:	Appalachian Power

The dam is a rectangular structure next to the Ohio River. The reservoir is sub-divided with dikes to allow alternating fly ash disposal in one area while cleaning out others. In 2001, DEP approved an application to repair and modify the dam including reduction of crest height (except the east embankment), repair of instability in the west embankment near the northwest abutment using a rock buttress fill, and installation of a rock buttress across the southern portion of the lower east embankment. In 2006, DEP approved the installation of conveyor belt foundations in the north embankment.

Inspection Findings/Recommendations:

1. Cut/remove vegetation on embankments
2. Monitor seepage zones on west exterior slope, north exterior slope, and east exterior slope below the haul road.
3. Depressions on east exterior slope.
4. Submit application to stabilize slips on west exterior slope and depressions on east exterior slope below the haul road.
5. Determine the height of water and scour potential of the east embankment from the 100 year flood event on the Ohio River. Provide plans to protect against 100 year scour.

Stability Issues:

1. Corresponding previously submitted study soil parameters and soil names with the provided cross section names and the ones used in the engineer's analysis was nearly impossible. Clarification by the engineer of the exact soils and parameters and current cross sections to be used is necessary.
2. A number of problems were found especially with the upstream slopes of the cross sections. Many did not meet or exceed the minimum Dam Safety Requirements. Some Cross Sections used in the analysis did not match the configuration given in the drawings. The general configuration of the eastern dike cross sections (Sections J-J, K-K, L-L & M-M) are a major concern to this writer. Higher portions of the upper dike are built completely on Fly Ash with a thin layer of material between the upper and lower dike. Additional information regarding the thin layer is necessary. The fly ash appears to be still saturated from the upstream fly ash disposal area. A potential blow-out appears to be a possibility.

Underground Mine Issues:

WVDEP DMR Evaluation: Existing mine workings are present in underlying coal seams within the proximity of the three dam structures, plus Gatling, LLC proposes additional mining in this seam. The depth to this seam is approximately 150 feet; 20 to 50 feet of this depth is comprised of alluvial material. Existing mine workings present no concerns as they are located far enough from the facilities to pose no effects. However, the additional mining potentially could produce effects, but subsidence evaluation demonstrates that no significant subsidence impacts will affect the three aforementioned facilities. The owner's engineers conducted the subsidence analysis for the proposed mining. DMR agrees with their evaluation and conclusion. Provided Gatling follows the recommendations for mine design and they adhere to those aspects once mining progresses, there should be no adverse subsidence effects impacting this structure.

Further Action:

1. Submit application to investigate stability and provide embankment modification to the east, west, and north embankments to address stability issues.

Sporn Bottom Ash Dam, Mason County, ID # 05313



Height:	42 feet
Max Storage:	279 acre-feet
Dam Safety Act Certificate of Approval:	07/06/2001
DEP Inspection Date:	03/11/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Satisfactory
Owner:	Appalachian Power

The Sporn Bottom Ash Dam is a waste disposal structure formed as a rectangular dike for temporary storage of bottom ash materials generated at the Sporn power plant. The dam is an earth structure approximately 900 feet in crest length and 12 feet in height on the east embankment. Bottom ash is deposited via a slurry mixture and is excavated with heavy machinery after drying. An application for modification approved in 2001 resulted in rock buttress placement on the west embankment.

Inspection Findings/Recommendations:

1. Monitor wave erosion.
2. Cut/remove vegetation.
3. Repair erosion gullies.

Stability Issues:

A buttress of bottom ash exists on the upstream face of the embankment. Factors of safety less than required under the Dam Safety Rule were calculated in the bottom ash buttress in and under the water of the reservoir on the upstream slope of the embankments. No inadequate factors of safety were calculated that affected the overall integrity of the embankment. The bottom ash material, while apparently unstable by itself, provides weight against the existing dike material and apparently prevents slippage of the upstream slope under a number of conditions. The downstream slopes appear to meet or exceed Dam Safety Rule stability requirements. Therefore, the dam generally meets or exceeds the Dam Safety Rule stability requirements.

Underground Mine Issues:

WVDEP DMR Evaluation: Existing mine workings are present in underlying coal seams within the proximity of the three dam structures, plus Gatling, LLC proposes additional mining in this seam. The depth to this seam is approximately 150 feet; 20 to 50 feet of this depth is comprised of alluvial material. Existing mine workings present no concerns as they are located far enough from the facilities to pose no effects. However, the additional mining potentially could produce effects, but subsidence evaluation demonstrates that no significant subsidence impacts will affect the three aforementioned facilities. The owner’s engineers conducted the subsidence analysis for the proposed mining. DMR agrees with their evaluation and conclusion. Provided Gatling follows the recommendations for mine design and they adhere to those aspects once mining progresses, there should be no adverse subsidence effects impacting this structure.

Further Action:

No further action is necessary at this time.

Little Broad Run Dams, Mason County, ID # 05319 & 05320



Height:	approximate total 60 feet
Max Storage:	approximate total 70 acre-feet
Dam Safety Act Certificate of Approval:	NONE
DEP Inspection Date:	08/07/2009
Hazard Potential Classification:	1 - High
Condition (NID Criteria):	Unsatisfactory
Owner:	American Electric Power

The Little Broad Run site is designed as a fly ash landfill; however, design of storm water control measures resulted in the construction of two impoundments (Area 6 and Area 7) on the surface of the landfill. The height of both structures separately exceeds the 25 foot limit of the Dam Control and Safety Act. The impounding capacity threshold of the Act is 15 acre-feet for

structures over 25 feet in height. The lower Area 7 impounding capacity is approximately 19 acre-feet and the upper Area 6 is approximately 48 acre-feet.

Inspection Findings/Recommendations:

1. No spillway exists except for drainage through the landfill liner and one pump.
2. The embankments consist of highly erodible fly ash materials without apparent connection to natural ground foundation. No vegetation exists to stabilize the fly ash from erosion.
3. No emergency spillway or means to discharge the Dam Safety Rule design storm exists.
4. Downstream hazard potential appears to be high - loss of life is likely if the dams were to fail.

Stability Issues:

Stability of the dams is not documented.

Underground Mine Issues:

DEP EE/Dam Safety evaluation: Inactive deep mines appear to underlie the site at a depth of approximately 170 feet.

Further Action:

An order issued on August 20, 2009 required:

1. Prepare and submit for approval a proposed Monitoring and Emergency Action Plan (EAP) in accordance with the format of the example plan provided by Dam Safety. The plan must be submitted by 4:30 pm on September 25, 2009.
2. Prepare and submit for approval maintenance plans for the dams in accordance with the Dam Safety Rules (47CSR34-16) by 4:30 pm on September 25, 2009.
3. Prepare and submit applications for approval of the existing dams, or modification, removal, abandonment, or reduction in size by 4:30 pm on October 26, 2009. The applications must include all engineering plans, specifications and certifications as required by the Dam Safety Rules (47CSR34) and be signed by an engineer licensed in West Virginia.
 - a. In accordance with Dam Safety Rule provisions (47CSR34-7.4.b.1.D.1. and 47CSR34-7.4.b.1.D.4.), determine the minimum upstream and downstream embankment slope factors of safety for existing and design loading conditions and earthquake loading conditions. The determination shall utilize current and proposed embankment slopes, reservoir elevations, phreatic surface elevations, and seepage zones observed by inspection and as necessary for maximum design configuration.
 - b. In accordance with Dam Safety Rule provisions (47CSR34-7.1.b.3.) propose storage and discharge systems to handle required design storm(s).
4. Unless an equivalent inspection including the items listed below was accomplished within the previous twelve (12) months, in accordance with Dam Safety Rule provisions (47CSR34-15.4.a. and 47CSR34-15.4.c.) perform an inspection of the dams to evaluate and document the current condition of the dams, including but not limited to, the current

reservoir elevation, location/elevation and extent of seepage zones, slopes, bulges, scarps, vertical/horizontal displacement, excessive erosion, piping, phreatic surface elevations indicated by instrumentation, and other visible factors which could indicate potential failure of the embankment, embankment foundation, spillways, or other appurtenances. The inspection must note any condition that may result in the release of waste material. The inspection must be performed within 30 days of receipt of this Order by an engineer registered in West Virginia. An inspection report with photographs documenting the results of the evaluation and inspection, and bearing the signature and seal of an engineer registered in West Virginia, shall be submitted within 45 days after receipt of this Order.

5. In accordance with Dam Safety Rule provisions (47CSR34-6.4.d.3.A.7.), document the location of operating, inactive, or abandoned underground mines beneath or in proximity to the dams or reservoirs. In accordance with Rule provisions (47CSR34-7.3.a.), perform an evaluation of the potential for failure or breakthrough of the reservoirs into operating, inactive, or abandoned underground mines and the potential for mine subsidence that may affect the safety of the structures. A report with the evaluation, and bearing the signature and seal of an engineer registered in West Virginia, shall be submitted within 45 days after receipt of this Order.

American Electric Power WV0077038 Little Broad Run Landfill Mason County

Status: Active
Inspection Date: 2/11/09 5/29/09
 Aerial Reconnaissance Date: 2/17/09

NOV Issued: F09-26-065-JHH Failure to properly operate and maintain all facilities and systems of treatment and control to achieve compliance with NPDES permit.

Order Issued: 8/20/09 **Order # DS2009-0019.** Order to resolve presence of non-permitted regulated impounding structures in landfill.

Inspection Summary: 2/17/09 Large areas of the synthetic liner are uncovered and exposed. Slipping waste material, ponding water and erosion gullies all indicate that the collection system is not working properly. One liner tear was observed during the inspection and, according to the permittee; others have been noted and patched in the recent past.

Solids have accumulated in the leachate holding pond. Dredged solids adjacent to pond need to be removed. At the time of inspection measures were being taken to remove the solids in the pump sump area. Storm water outfalls 004 and 016 had significantly high results for both TSS and Total Recoverable Iron reported on the DMRs for the first and second half of 2008. Roadway above outlet 026 needs to be re-graded and stabilized. Gypsum offload area has inadequate drop inlet protection and conveyor system needs controls to prevent gypsum spillage onto ground. Several erosion gullies on site need to be corrected and stabilized. Storm-water from south side perimeter diversion ditch going into landfill cell #7. Rock armoring needs to be extended up right groin ditch of dike at cell #7. Access road on north side of cell #7 has not been stabilized and contributing sediment laden water to storm-water ponds. Coal combustion by-

products (CCB) being tracked on the haul road, washed off with process water, and discharged at a storm-water outfall. Several portions of the clay borrow area and the dike at cell #7 need to be revegetated. Too many cells open at one time creating potential for emergency situations and conditions that are extremely hard to manage. Large quantities of CCB are slipping and eroding within the landfill. As a result there is potential for impounded storm water and CCB material to destabilize and breach the dike between cell #6A and #6B. Also, as a result, large sections of the synthetic liner are exposed to equipment activity and the elements. No measures in place to control windblown gypsum dust at radial stack-out area.

5/29/09 Synthetic liner has been reinforced in problem areas. Chimney drains being regularly maintained for silting over. Ponding in Cell 7 being pumped out, restored dike and improved drainage in impounded area at Cell 6A. Leachate pond clean and free of solids. Intermediate cover being applied at Area #5. Diversion (on southeast side of Cell 7) still allowing storm water into Cell 7. Roadside diversion opposite leachate collection pond (north of outfall #026) needs to be maintained for solids/silt removal. Access road (northwest of Cell 7) not stabilized and contributing muddy water to Sediment Pond #1 (upper). Sediment and erosion controls need to be established along haul road in area draining to outfall #004. Placement and compaction *much improved from last inspection*, no large scale erosion or signs of material slippage. Still too much area open at once. Gypsum stackout area *much improved* with equipment and load-out technique modifications.



Little Broad Run Landfill – 2/17/09

American Electric Power WV0116114 Adair Run Landfill Mercer Co.

Status: New

Inspection Date: 1/30/09

Inspection Summary: This facility has not started. A portion of the area covered by the landfill permit is being utilized as a borrow area for a landfill in Virginia. The disturbed area for the borrow project is currently permitted under a General Permit for Stormwater associated Construction Activities.



Adair Run Landfill - Area of Future Landfill – 1/30/09

Monongahela Power Company WV0075752 Fort Martin Ash Site Monongalia Co.

Status: Active

Inspection Date: 2/9/09 5/28/09

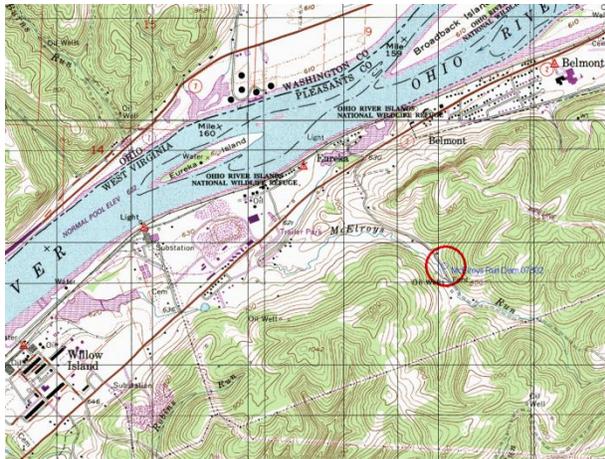
Aerial Reconnaissance Date: 2/11/09

Inspection Summary: No noticeable slips around the perimeter of the landfill. The banks of the four ponds that collect leachate and storm water from the landfill appeared to be adequately vegetated and stabilized. Lift stations that collect and pump pond effluent to the cooling tower appeared to be operating satisfactorily. The monitoring wells observed had concrete aprons, a locked cap, and were properly identified. A large pile of bottom ash is being stored on top of the landfill, the bottom ash will be used during construction of the leachate monitoring system for the new landfill across the road. Sampling data for the monitoring wells was satisfactory.



Fort Martin Ash Site – 2/11/09

McElroys Run Dam, Pleasants County, ID # 07302



Height:	243 feet
Max Storage:	19,896 acre-feet
Dam Safety Act Certificate of Approval:	02/07/1978
DEP Inspection Date:	03/10/2009
Hazard Potential Classification:	1 - High
Condition (NID Criteria):	Satisfactory
Owner:	Allegheny Power

McElroys Run Dam is a large waste disposal structure constructed with a clay filled cutoff trench at the upstream toe and clay blanket on the upstream slope as an impervious barrier. Downstream from the clay core, the dam is constructed of alternating layers of fly ash and bottom ash. The bottom ash is configured as blanket drains connected to sloping chimney drains that collect seepage to discharge pipes for monitoring. During later phases of construction, a concrete lined emergency spillway was installed at the left abutment and a large buttress of fly ash constructed

as a landfill which extended the downstream toe of the dam embankment. In order to prevent discharge of the principal spillway pipe into McElroys Run, the owner installed a double siphon system at the left abutment that maintains normal reservoir elevation and recycles reservoir water to the power station. Disposal of fly ash in the reservoir is accomplished using a floating boom and flexible discharge pipe.

Inspection Findings/Recommendations:

1. Control animals and vegetation on the embankment slopes.
2. Seal minor cracks in emergency spillway.
3. Replace one damaged piezometer.

Stability Issues:

Review of owner's engineer stability analyses indicates factors of safety are acceptable with exception of rapid drawdown, which is an unlikely scenario.

Underground Mine Issues:

WVDEP DMR review: The owner's consultant evaluated the subsidence/breakthrough potential incident to this facility. Based upon researched information, the engineer concluded that no underground mining has been conducted within a one-mile perimeter of the site. Consequently, there is no potential for breakthrough. Sources cited were the map records of the West Virginia Geological and Economic Survey and the US Office of Surface Mining databases. Again, this approach is a proper method to determine whether or not mine workings exist that could impact this facility, but relying solely on mapping database information can never conclusively rule out the presence of workings. Other source information like drilling or pertinent property information could increase the validity of a no-mining determination.

Further Action:

No further action is necessary at this time.

Cytec Industries	WV0115983	Willow Island	Pleasants Co.
Status:		Active	
Inspection Date:		2/19/09	
Aerial Reconnaissance Date:			

Inspection Summary: This facility is no longer being utilized. The impoundment was used for the disposal of material generated by the facility's coal fired boilers. In 2005 the facility changed to natural gas as their fuel source. Permittee reports that closure plans are being developed for the impoundment. Groundwater monitoring is still being conducted, but no active filling is occurring.



Cytec - Willow Island Flyash Impoundment – 2/19/09

Monongahela Power Company WV0050784 Albright Closed Ash Site Preston Co.

Status: Closed
Inspection Date: 2/19/09 5/21/09
Aerial Reconnaissance Date: 5/12/09

Inspection Summary: Significant amount of woody growth and trees are present on the lower slopes and terraces of the fill, otherwise facility appears to be well maintained. Grass cover is well established.



Albright Power Station - Closed Ash Cell - 5/12/09

Monongahela Power Company WV0075281 Albright Active Ash Site Preston Co.

Status: Active
Inspection Date: 2/19/09 5/21/09
Aerial Reconnaissance Date: 5/12/09

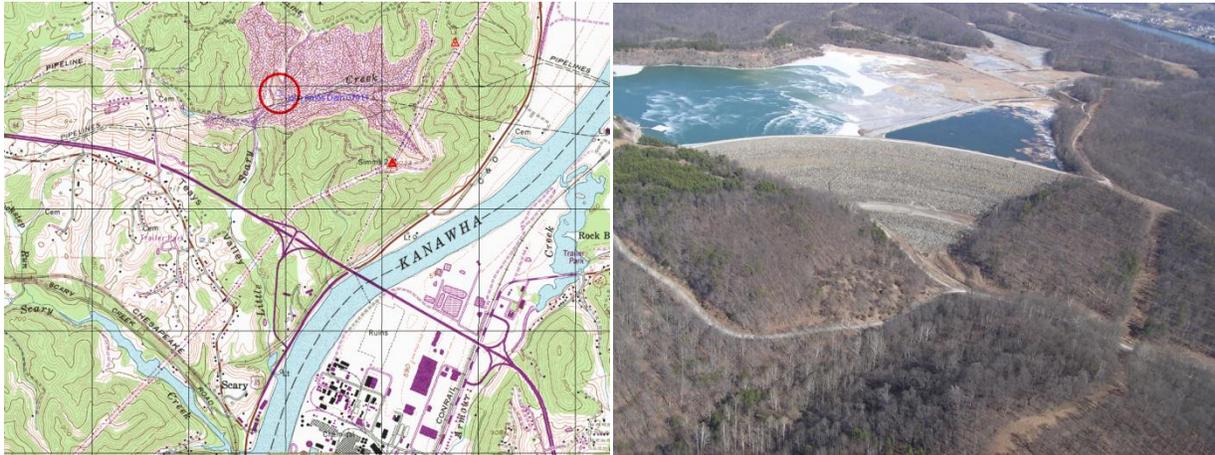
NOV Issued: W-09-39-15-202 For NPDES permit discharge limit violations

Inspection Summary: Some small woody growth on slopes and terraces, otherwise the facility appears to be well maintained and well operated. Grass cover is well established. Outlet 003 had four selenium excursions from September 2008 to April 2009.



Albright Power Station - Active Ash Cell – 5/12/09

John Amos Dam, Putnam County, ID # 07911



Height:	223 feet		
Current Storage:	3,932 acre-feet	Max Storage:	11,160 acre-feet
Dam Safety Act Certificate of Approval:	10/27/1975		
DEP Inspection Date:	02/10/2009		
Hazard Potential Classification:	1 - High		
Condition (NID Criteria):	Satisfactory		
Owner:	Appalachian Power Company		

The John Amos Fly Ash Dam is an earth & rockfill structure located in the headwaters of Little Scary Creek a tributary of the Kanawha River near Teays Valley, north of Scary in Putnam County. The dam has a concrete decant riser and discharge tunnel/pipe located in original ground off the northwest end of the dam, which discharges through the hillside into an adjacent tributary of Scary Creek. Also, excavated through the bedrock of the hillside northwest of the dam is an open channel emergency spillway. The purpose of the dam is to allow bottom ash to settle out of the John Amos Power Plants bottom ash slurry pumped to the site, then treating the water, as needed to meet environmental standards, prior to releasing the decant water to the natural stream. The bottom ash is stored/disposed off in the reservoir.

Inspection Findings/Recommendations:

1. Continue instrument monitoring.
2. Routine maintenance.

Stability Issues:

Factors of safety determined by the owner's engineer and EE/Dam Safety meet or exceed Dam Safety Rule requirements.

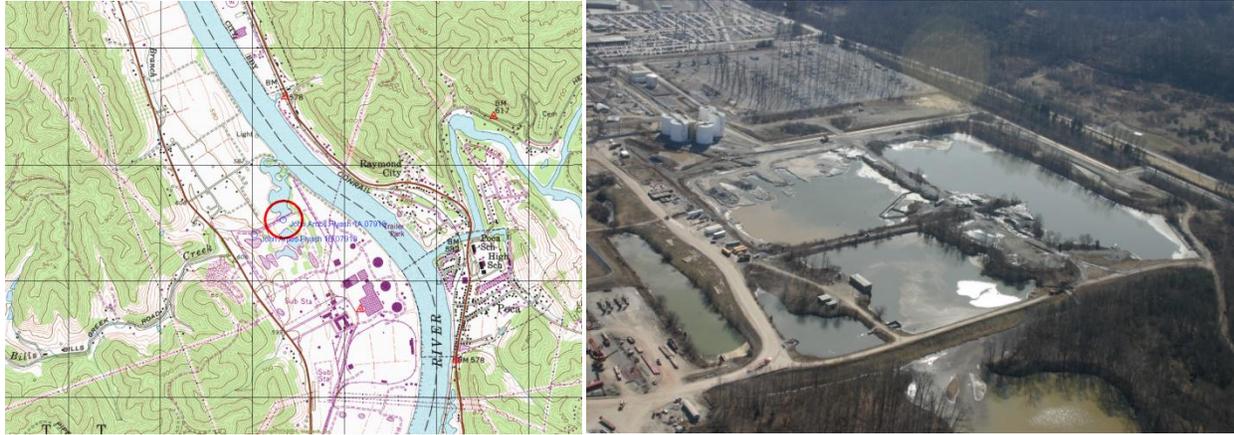
Underground Mine Issues:

The owner's consultant and DMR review indicated that break through into underground mines is not an issue at this site.

Further Action:

No further action is necessary at this time.

John Amos Fly/Bottom Ash Dams, Putnam County, ID # 07918 & 07919



Height:	24 feet
Max Storage:	357 acre-feet
Dam Safety Act Certificate of Approval:	06/25/2009
DEP Inspection Date:	02/10/2009
Hazard Potential Classification:	2 - Significant
Condition (NID Criteria):	Fair
Owner:	Appalachian Power Company

The John Amos 1A & 1B Dams are adjacent rectangular impoundments contained by a three-sided embankment and original ground. Two of the five existing ponds utilized for fly ash temporary disposal are large enough for DEP dam safety jurisdiction. The impoundments are alternated between receiving fly ash and cleaning of fly ash for disposal at the landfill. DEP recently approved modification to combine the two reservoirs into one structure by raising the surrounding embankments. Construction to accomplish the modification has not commenced. Height and storage numbers above reflect current, not proposed, conditions.

Inspection Findings/Recommendations:

1. Channel spillway filled with earth materials.
2. Control animals and vegetation.

American Electric Power WV0077046 Quarrier Landfill Putnam County

Status: Active

Inspection Date: 2/26/09

Aerial Reconnaissance Date: 2/17/09

NOV Issued: F09-40-066-JHH Failure to properly operate and maintain all facilities and systems of treatment and control to achieve compliance with NPDES permit.

Inspection Summary: Clean water diversion leading to outfall 011 has been routed to storm water pond, thus increasing the number of acres drained without increasing the pond's capacity. Unstabilized roadway runoff diverted directly to outfall 010 creating sediment deposits in the ditch line leading to the stream. Inadequate sediment / erosion controls and practices, insufficient revegetation. Fly ash deposits deposits in wetland area on both sides of haul road.



Quarrier Landfill – 2/17/09

American Electric Power WV0116254 John E. Amos Landfill Putnam County

Status: Active

Inspection Date: 2/27/09

Aerial Reconnaissance Date: 2/17/09

Inspection Summary: Landfill not yet active at time of inspection. Expected to become active in April. Extensive areas of disturbed, unstabilized soil.



John E. Amos Landfill – 2/17/09

Appendix 1
Hazard Potential Classification Definitions
47CSR34-3.5.b.

3.5.b. Hazard Classifications.

3.5.b.1. Class 1 (High Hazard) Dams - Class 1 dams are those dams located where failure may cause loss of human life or major damage to dwellings, commercial or industrial buildings, main railroads, important public utilities, or where a high risk highway may be affected or damaged. This classification must be used if failure may result in the loss of human life.

3.5.b.2. Class 2 (Significant Hazard) Dams - Class 2 dams are those dams located where failure may cause minor damage to dwellings, commercial or industrial buildings, important public utilities, main railroads, or cause major damage to unoccupied buildings, or where a low risk highway may be affected or damaged. The potential for loss of human life resulting from failure of a Class 2 dam must be unlikely.

3.5.b.3. Class 3 (Low Hazard) Dams - Class 3 dams are those dams located in rural or agricultural areas where failure may cause minor damage to nonresidential and normally unoccupied buildings, or rural or agricultural land. Failure of a Class 3 dam would cause only a loss of the dam itself and a loss of property use, such as use of related roads, with little additional damage to adjacent property. The potential for loss of human life resulting from failure of a Class 3 dam must be unlikely.

3.5.b.3.A. An impoundment exceeding forty (40) feet in height or four hundred (400) acre-feet storage volume shall not be classified as a Class 3 dam.

3.5.b.3.B. A waste disposal dam, the failure of which may cause significant harm to the environment, shall not be classified as a Class 3 dam.

Appendix 2
U. S. Army Corps of Engineers
National Inventory of Dams (NID)
Methodology
State and Federal Agency Manual
April 2008
Condition Assessment

Satisfactory: No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the applicable regulatory criteria or tolerable risk guidelines.

Fair: No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.

Poor: A dam safety deficiency is recognized for loading conditions which may realistically occur. Remedial action is necessary. POOR may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency. Further investigations and studies are necessary.

Unsatisfactory: A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.