Peabody Coulterville Mining, L.L.C.
Gateway Mine

National Pollutant Discharge Elimination System (NPDES) Permit

Responsiveness Summary (with corrected web links)

Regarding

March 31, 2015 Public Hearing

Illinois Environmental Protection Agency
Office of Community Relations
May 27, 2015

Peabody Coulterville Mining, L.L.C.

Gateway Mine

National Pollutant Discharge Elimination System (NPDES) Permit Responsiveness Summary

Table of Contents

Agency Permit Decision 3

Pre-hearing Public Outreach 3

Public Hearing of March 31, 2015 4

Background of Facility Owner 6

Responses to Comments, Questions and Concerns

- **NPDES Permit 8**
- **Antidegradation Assessment/Water Quality Standards 13**
- **Enforcement/Compliance Issues 20**
- **Groundwater 22**

Acronyms and Initials 25

Distribution of Responsiveness Summary 26

Who to Contact for Answers 26

Final May 27, 2015

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Peabody Coulterville Mining, L.L.C.
Gateway Mine
Renewed Permit
Permit Number IL0062189

AGENCY PERMIT DECISION

On May 27, 2015, the Illinois Environmental Protection Agency approved a renewed NPDES permit for the Gateway Mine.

The following changes were made to the draft permit that was public noticed on January 7, 2015:

-**The final permit no longer authorizes the use of sewage treatment plant sludge from the Village of Coulterville as a soil amendment.**

PRE-HEARING PUBLIC OUTREACH

The notice of the NPDES permit public hearing was published in *The Belleville News-Democrat* on February 13, 20, and 27, 2015.

The hearing notice was mailed or e-mailed to:

a) adjacent land owners;
b) Randolph County officials;
c) municipal officials in; Sparta, IL;
d) Corps of Engineers, the IDNR Office of Mines & Minerals; and the
e) Illinois Chapter of the Sierra Club, Prairie Rivers Network and the Environmental Law and Policy Center (hearing requestors).

The hearing notice was posted on the Illinois EPA website:
http://www.epa.illinois.gov/public-notices/npdes-notices/index#peabody-coulterville-gateway

Hearing notices were posted at the Illinois EPA headquarters in Springfield and in the Marion Regional Office.

March 31, 2015 PUBLIC HEARING

Hearing Officer Dean Studer opened the hearing March 31, 2015, at 6:00p.m. at the City of Sparta Council Chambers, 114 West Jackson, Sparta, Illinois.

Gateway Mine Presentation:

Ken Rogers--opening statement

Illinois EPA Hearing Participants:

Joanne Olson, Assistant Counsel, Bureau of Water
Scott Twait, Standards Section, Bureau of Water
Iwona Ward, Permit Section, Mine Program, Bureau of Water
Lynn Dunaway, Groundwater Section, Bureau of Water

Comments and questions were received from the audience.

Hearing Officer Dean Studer closed the hearing at 7:09p.m. on March 31, 2015.

Illinois EPA personnel were available before, during and after the hearing to meet with elected officials, news media and concerned citizens.

Approximately 85 persons representing neighbors, local government, businesses, miners, elected officials, environmental groups, interested citizens, and Gateway Mine, participated at and/or attended the hearing. A court reporter prepared a transcript of the public hearing which was posted on the Illinois EPA website at: http://www.epa.illinois.gov/Assets/iepa/public-notices/2015/peabody-coulterville-gateway/hearing-transcript.pdf.

The first hearing for the draft NPDES permit was held on June 8, 2011. Due to issues raised at the hearing, the Applicant became aware of additional permit areas and modifications that were needed to the facility operation to facilitate an efficient operation. In addition, the revised operational plan proposed under this initial draft permit included the conversion of the freshwater lake, which was considered a water of the State, to a treatment facility. The Agency informed the Applicant that the utilization or conversion of waters of the State to a treatment facility is unacceptable under the regulations. Therefore, the Applicant requested that the Agency delay the finalization of that initial draft modified and renewed permit, and place the draft on hold until such time that the Applicant could submit the necessary modifications that were under development. Once necessary information was submitted to the Agency following the 2011 public hearing, the Agency began the review process and addressed the follow up modifications as timely as possible. The draft permit was public noticed on January 7, 2015. The public hearing on the current draft permit was held on March 31, 2015 and the public comment period ended on April 15, 2015. At the 2015 hearing, it was made

clear that if an issue was raised at the hearing in 2011, then one would need to raise the issue again since there had been various changes that had taken place when the permit was first public noticed in 2011.

The hearing record remained open through April 15, 2015.

BACKGROUND OF Peabody Coulterville Mining, L.L.C.
Gateway Mine

The Illinois EPA Bureau of Water has prepared a draft renewed National Pollutant Discharge Elimination System (NPDES) permit for Peabody Coulterville Mining, L.L.C. for Gateway Mine. The address of the discharger is Peabody Coulterville Mining, L.L.C., 7100 Eagle Crest Boulevard, Suite 200, Evansville, IN. 47715-8152. The facility is located in Randolph County, approximately two miles south of Coulterville, Illinois.

Illinois EPA held this hearing for the purpose of taking comments on the draft permit prior to taking final action on the permit application. Issues relevant to this proceeding include the antidegradation analysis and the applicant's compliance with requirements of the federal Clean Water Act and Subtitles C and D, 35 Illinois Adm. Code. Because Illinois is mandated by state law to issue a permit if the applicant meets the requirements for obtaining a permit, those recommending denial of the permit application were instructed to state the regulation that is the basis of their recommendation.

The applicant operates surface facilities for an underground coal mine (SIC 1222). Mine operations result in the discharge of waste classified as alkaline mine drainage.

The draft reissued permit incorporated the following modifications:

1. Various modifications and/or additions to surface facilities including additional coal stockpile and coal loadout, removal of thickener pond, construction of a pole barn building structure and soil stockpiles;
2. Deletion of Outfall 005 and 20-acre area tributary to this basin as the watershed to the basin has been reclaimed in accordance with 35 Ill. Adm. Code 405.109 and the approved abandonment plan for the area.
3. Incorporation of 68.68 additional acres under Incidental Boundary Revisions (IBR's).
4. Incorporation of additional permit area for Refuse Cell 5 located on 100.0 acres and identified as OMM Permit No. 426.
5. Incorporation of four new discharges designated as Outfalls 009, 010, 011 and 012.
6. Incorporation of previously issued State Operating permits which approved utilization of water treatment plant lime sludge for neutralization of potentially acidic coal refuse.
7. Incorporation of previously issued State Operating permits which approved disposal of coal combustion waste in conjunction with coal refuse disposal.
8. Additional approvals for utilization of water treatment plant lime sludge for neutralization of potentially acidic coal refuse.
9. Permit transfer from Coulterville Coal Company, L.L.C. – Gateway Mine to Peabody Coulterville Mining, L.L.C. – Gateway Mine.
10. Surface drainage control revision for area tributary to Outfall 008 due to incorporation of new Outfall 009.

11. Surface drainage control revision to facilitate reclamation of refuse disposal Cell 2.

Responses to Comments, Questions and Concerns

Comments, Questions and Concerns in regular text
Agency responses in bold text

NPDES Permit

1. Will Outfall 009 discharge to a fresh water lake?

   Basin and Outfall 009 will be constructed to provide better sediment storage and additional treatment to improve the discharge water quality standards. Basin will be located east from basin identified as Harp Pound with outfall 008. Outfall 009 will discharge to Fresh Water Lake. Permit limits for Outfall 009 can be found on Page 7 of the NPDES permit.

2. Will coal ash still be permitted at this facility?

   Yes, as discussed in the construction authorization, coal combustion waste from sources identified as Anheuser Busch, University of Illinois (gypsum/ash mixture) and SIU-Carbondale (fly/bottom ash mixture) is approved for disposal at the Gateway Mine.

3. How much coal ash, roughly, is taken at this site? What is the process by which it's characterized? Where is the coal ash coming from?

   The NPDES permit authorizes the Gateway Mine to accept coal combustion waste from sources identified as in the response to Item No. 2 above. These materials were characterized and are routinely tested when disposed as discussed in the response to Item No. 4 below.

   The facility has not received coal combustion waste (CCW) for disposal since 2011. In 2010, this facility received 747.0 tons of coal combustion waste (CCW), while in 2011 the facility received approximately 3,564.19 tons of CCW for disposal. Annual disposal of CCW from Anheuser Busch, University of Illinois (gypsum/ash mixture) and SIU Carbondale (fly/bottom ash mixture) is limited to 25,000, 37,000 and 12,000 tons per year, respectively. Annual disposal of CCW from Anheuser Busch, University of Illinois (gypsum/ash mixture) and SIU Carbondale (fly/bottom ash mixture) is limited to 25,000, 37,000 and 12,000 tons per year, respectively. The Gateway mine has not received coal combustion waste (CCW) for disposal since 2011. In 2010, this facility received 747.0 tons of coal combustion waste (CCW), while in 2011 the facility received approximately 3,564.19 tons of CCW for disposal. The

NPDES permit authorizes the Gateway mine to accept coal combustion waste from sources identified in the response to Item No. 2 above.

4. Is toxicity characteristic leaching procedure (TCLP) still how the waste is characterized, or is EPA's newer leaching environmental assessment framework utilized?

   The Agency currently requires utilization of the TCLP testing procedure for characterization of coal combustion waste materials. Toxicity Characteristics Leaching Procedure (TCLP) testing is used to characterize the coal combustion waste (CCW). The procedures are described in a joint Memorandum of the IEPA and the then Department of Mines and Minerals dated October 27, 1992. Additional testing parameters were added in an August 11, 1994 amendment to the IEPA's Groundwater Quality Standards. This added antimony, beryllium and thallium to the list. A TCLP test is conducted for the following contaminants: Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Phenol. Selenium Silver, Thallium, Zinc. An appropriate leaching procedure is also conducted for Chloride, Cyanide, Fluoride and Sulfate. Appropriate laboratory analyses on a slurry paste include Acidity ($CaCO_3$) Equivalent, Alkalinity ($CaCO_3$) Equivalent, pH, Total Dissolved Solids and Net Neutralization Potential as required by 92-11 memo by OMM.

   Within 30 days of initiation of coal combustion waste disposal, applicant forwards to the Agency the representative sample of the CCW and a representative composite sample of the CCW and refuse mixture that is obtained and TCLP analysis performed. Applicant also submits to the Agency quarterly analysis of the individual coal combustion waste and a representative composite sample of the CCW and refuse mixture The Agency reviews the quarterly submittals to try to get an idea if there is any increasing trends in the concentrations in the CCW that would indicate that additional safeguards or protection should be considered.

5. The permit will authorize the use of lime sludge, utilization for neutralization on the refuse area, and in taking on coal combustion waste, sewage sludge and lime sludge. Has the Agency reviewed the potential impact of storing these materials together? Is there are any concerns that arise from the mixing of these materials? (T-41-42) What is there any sort of classification for these materials, such as Class A or Class B, or something with moisture content?

   The potential effect that disposal and/or utilization of these materials may have on discharges from this facility was considered in the anti-degradation analysis. In the event that adverse effects or elevated concentrations of contaminants in the discharges would have been anticipated, additional monitoring and/or reporting requirements would have been established for

the affected discharges. As the anti-degradation analysis determined that no effects on the discharges are anticipated, no additional outfall monitoring requirements were incorporated into the NPDES permit. There is no specific identification or physical characteristics that classifies the CCW materials; these materials are characterized only by the TCLP analysis as discussed in the response to Item No. 4 above.

On May 8, 2015, the applicant notified the Agency in writing they were withdrawing the approval for sewage sludge. Therefore, the Agency has removed the application of sewage sludge from the NPDES permit.

6. Can you describe the process of reclamation at RDA2? What happens generally, what materials are utilized in that process, and the time scale?

According to the Applicant, Refuse Cell 2, "RDA 2", permitted under ILDNR / OMM Permit #160 will be reclaimed with final fill, cover and capping of the refuse impoundment. Prior to placement of the final cover, impounded fine refuse will be dewatered to extents possible with decant discharge directed to approved NPDES treatment basins #160-2 and #160-3, outfalls 002 and 003 respectively.

Coarse refuse fill will be placed and graded over the refuse cell to form the first cover layer and foundation for an engineered low permeability cap. The engineered cover will be comprised of twelve inches of coarse refuse (into which agricultural limestone is incorporated at a minimum rate of twice the material's potential acidity) compacted to a minimum permeability of 1x10-7 cm/sec, overlain by two six-inch layers of soil material compacted to a minimum permeability of 1x10-7 cm/sec. The compacted layers will then be overlain by a two-foot (minimum) protective soil layer that will then be vegetated. Materials to be utilized in construction of the cap will be characterized and optimal moisture and density determined to meet the required compaction and permeability specifications.

Reclamation of RDA 2 will be initiated once the surface of the fine refuse is stable enough to support equipment and will proceed as cover material becomes available with development of Cell 5. Final grade will be completed with a slope adequate to promote surface drainage and prevent standing water, limiting potential infiltration. Reclamation of RDA 2 will be completed in a period of several years.

7. Has the Agency documented any instances of water material leaving the permit area, or if there are any provisions for addressing those concerns moving forward? (fugitive dust issue)

The Agency has not received complaints concerning fugitive dust from this site. If there are concerns with coal dust coming off the mine property,

citizens are encouraged to call the Illinois EPA's field office to report the problem. Illinois EPA will send staff out to investigate the complaint. The number of to the field office for complaints in Randolph County is 618-993-7200. Also, please see Condition 14(c) of the NPDES Permit.

8. Can you explain why it has taken so long to get a reissued permit for this mine considering the permit expired in 2000?

   Initially, several factors contributed to the delay in reissuance of the NPDES Permit, including workload, completing permits and Mine Program prioritization, and issues with the sulfate water quality standard that was under development and implementation at that time. After these various issues were resolved, the Agency began the permit renewal and modification review process in the mid to late 2008. Following the project review and compilation of additional information and clarification from the Applicant, the initial draft permit was prepared and a public hearing was held on June 8, 2011.

   Following the 2011 public hearing, the Applicant became aware of additional permit areas and modifications that were needed to the facility operation to facilitate an efficient operation. In addition, the revised operational plan proposed under this initial draft permit included the conversion of the freshwater lake, which was considered a water of the State, to a treatment facility. The Agency informed the Applicant that the utilization or conversion of waters of the State to a treatment facility is unacceptable under the regulations. Therefore, the Applicant requested that the Agency delay the finalization of that initial draft modified and renewed permit, and place the draft on hold until such time that the Applicant could submit the necessary modifications that were under development. Once necessary information was submitted to the Agency following the 2011 public hearing, the Agency began the review process and addressed the follow up modifications as timely as possible. The public hearing on the current draft permit was held on March 31, 2015 and the public comment period ended on April 15, 2015.

9. Are the new proposed Outfalls 009-012 being constructed in drainage ways, essentially by impounding a drainage way?

   The potential for offline basins was considered for outfalls 009 through 012. The sediment basins associated with outfall 009 and outfalls 010 are located offline. However due to the applicant's need to maximize the storage capacity of Refuse Cell 5, the sediment basins associated with outfall 011 and 012 were designed within the existing headwater stream channels. Refuse Cell 5 will be located directly contiguous to the existing refuse cells. The Cell 5 extent is limited by the existing refuse cells and three surrounding county roads (Jean Road, Zeigler Mine Road, and Sarah Road). The embankment will be constructed as close to the county roads as possible while maintaining

proper erosion and sediment control. As stated in the Gateway Cell 5 404 permit, if the disposal area and sediment basins had been designed to limit disturbance to the existing headwater stream corridor, the refuse cell's impounding capacity would be reduced by approximately 1/2 to 1/3 of its currently designed capacity. Approximately 20% more land area would be required to be disturbed in order to construct a structure with the same impounding capacity resulting in additional impacts elsewhere. Therefore the current design plan, which includes building the sediment basins within the existing headwater stream channels, maximizes the needed refuse storage capacity while also limiting disturbance to the smallest footprint. The location of Refuse Cell 5 is also in close proximity to Gateway's preparation plant allowing for direct access of construction equipment and direct placement of the refuse without increasing or disrupting traffic on local roads.

A 401 Certification (C-0053-12) was issued on January 5, 2015 for the construction of Refuse Cell 5 and the associated sedimentation basins (Outfalls 011 and 012).

10. This NPDES permit should include a monitoring requirement for PAHs.

Polycyclic aromatic hydrocarbons (PAHs) are lipophilic compounds, which means that they have a greater affinity to bind to organic substances rather than water. Because of these properties, PAHs are bound to sediment and other organic materials and are not expected to be readily transported in groundwater or present in surface water discharges from this mine. Therefore, permit limits or monitoring conditions are not required for this pollutant.

11. Any permit renewal for this site should incorporate monitoring (at least twice annually) for all pollutants of concern in coal combustion waste (CCW) for Outfall 009 and any other outfall that may discharge water that has come into contact with coal combustion waste.

The coal combustion waste (CCW) is proposed to be disposed of in the refuse cells. Water from the refuse cells is recycled to the preparation plant where the water is consumed or sent back to the refuse cell in the form of slurry. The refuse cells and preparation plant water is a closed loop; water from the refuse cells is not permitted to be discharged into Waters of the U.S.

Additionally, Special Condition No. 18 of this permit does in fact require bi-annual (twice annually) monitoring of the discharges under this permit for fourteen (14) contaminants. This monitoring is required during the entire term of this permit.

Antidegradation Assessment/Water Quality Standards

12. Another concern that I was wondering that you might be able to help me address is the impoundment location and the discharge in, from RDA five into streams that might lack mixing potential, and I'm wondering if the Agency has considered how the operator will meet water quality standards when limited flow for mixing is available.

    There is no discharge from RDA five. Water from the refuse cell is recycled to the preparation plant where the water is consumed or sent back to the refuse cell in the form of slurry.

13. One of the changes that's occurred over the 15 years since this permit has been out is we now have the North Gateway Mine operating, so my question is has that additional coal coming into this site been factored into this latest draft of the permit, and did that require antidegradation analysis?

    As the Gateway Mine finished mining coal, coal from the North Gateway Mine was transported to the preparation plant via a belt conveyer. No antidegradation assessment was necessary because the net processing of coal did not increase; therefore, there was no increase in loading of pollution into receiving waters.

14. In the permit submitted to the Department of Natural Resources, Number 426, several zones are designated as wetlands on that facility, and I'm wondering if this determination of wetlands, which could indicate the presence of a higher water table, been taken into account by IEPA?

    The Agency has evaluated the boring logs. The borings surrounding the wetlands encountered groundwater at 10 to 15 feet below the surface. Based on the available data, the Agency believes that the identified wetlands are due to perched surface water over low permeability soils instead of groundwater discharge.

15. What classification is the sewage sludge?

    On May 8, 2015, the applicant issued a letter withdrawing the approval for sewage sludge. The applicant indicated that the mine has not received sewage sludge from the Village of Coulterville for several years and no longer intends to use this material as a soil amendment. The Agency has removed the application of sewage sludge form the NPDES permit.

16. The permit states that alternatives to this system of prevention and treatment of pollutants have been evaluated by the mine company in a document dated March 28th, 2012 entitled: Peabody Coulterville Mining, LLC, Gateway Mine Revised Anti-degradation Analyses of Benefits and Alternatives to Lessen Water Quality Impact.

Are additional pollutants in waste streams like the sewage sludge and the potential for additional pumping and some of the other waste being taken and considered in this context, given that the document's from 2012, and is that sufficient for this permit?

The Agency did not evaluate additional pollutants in waste streams like the sewage sludge and coal combustion waste (CCW) for the reasons stated below. The sewage sludge and CCW is proposed to be disposed of in the refuse cells. Water from the refuse cells is recycled to the preparation plant where the water is consumed or sent back to the refuse cell in the form of slurry. The refuse cells and preparation plant water is a closed loop; which means water from the refuse cells is not permitted to be discharged into Waters of the U.S. Therefore, there is no additional loading associated with these parameters.

17. Can you explain in detail how Outfalls 008 and 009 will be used to reduce manganese discharges?

Outfall 008 is being replaced by Outfall 009. Outfall 008 was a vegetated long pond that was not adequate in meeting the permit limits. The facility is proposing to construct ponds that will discharge through Outfall 009 that are designed to handle the flows and meet water quality standards. Since, manganese attaches to particulates, as particulates are settled out in the settling ponds, manganese will be reduced.

18. Does the Agency have any metals data since 2010?

The Agency did not ask for any metals data for the mine pumpage water associated with Outfall 010, since the water is groundwater that has come into contact with the airshaft and flows into the mine. The groundwater will have minimal contact with any coal processing and will not have elevated levels of metals. The NPDES permit requires monitoring of metals two times per year for the 5 year term of the permit.

19. How does the water get to the preparation plant, is there any emergency outfalls proposed from the RDA 3 and proposed RDA 4 and where will they discharge to?

There is an emergency discharge structure out of the RDA 3 and there will be an emergency discharge structure out of the proposed RDA 4. Any emergency discharges will be to the recirculation pond. The water from the recirculation pond is used at the preparation plant and returned to the RDA that is currently in use.

20. Can the Agency explain why it was determined that biological treatment in wetlands or reactors were not possible at this site?

    It was not determined that biological treatment in wetlands or reactors were not possible at this site, however, it was determined that biological treatment in wetlands or reactors were not feasible at this site. Anaerobic conditions must be maintained in wetlands for sulfate to be reduced by bacteria. Large wetlands would be required and treatment would be very hard to control. This method is not feasible for the conditions of intermittent flow present at this mine. Likewise, biological reactors must maintain bacteria under anaerobic conditions. The intermittent nature of the stormwater runoff effluent would also make this treatment infeasible as the bacteria would be difficult to maintain without a constant food supply.

21. Can you explain why the sulfate and manganese limits were increased at Outfall 001 from the 2011 public notice?

    The reason that the manganese limit was increased at Outfall 001 from the 2011 public notice was because the manganese water quality standard was changed during this period. The 2011 public noticed limit for manganese was at the water quality standard. The 2015 public noticed limit for manganese was at the effluent standard, since the water quality standard was higher than the effluent standard.

    The reason that the sulfate limit was increased at Outfall 001 from the 2011 public notice was because the sulfate limit is based on stream specific data (hardness and chloride) and was re-evaluated.

22. Why are there chloride limits above 500, which is the water quality standard?

    Chloride NPDES permit limit at Outfall 003 is 1000 mg/L, which is greater than the water quality standard of 500 mg/L because the permit limit is based on allowed mixing. The facility demonstrated that during discharge events, there would be enough dilution available to meet the water quality standards outside of allowed mixing.

23. There are discharges between Outfall 002 and 003 to a fresh water lake. Are there any concerns about materials concentrating in the lake from the discharge upstream to a fresh water lake?

    The Agency determined from the allowed mixing analysis that the water quality standards would be met once the discharge is mixed with the receiving stream. There are no concerns that chlorides or sulfates will increase once the effluent reaches the fresh water lake.

24. The agency must also analyze the potential impacts of these pollutant loadings on the affected waters, including the fate and effect of each pollutant, to ensure full compliance with water quality standards and protection of existing uses. Failure to do so is a direct violation of the regulations and grounds for appeal. The antidegradation analysis must also show what pollution-minimizing alternatives were considered by the applicant to reduce the impact of the new pollution sources. (E-A-5) (E-A-10)

Antidegradation is a water quality standard (35 Ill. Adm. Code 302.105) that requires those seeking an NPDES permit or Section 401 water quality certification for new or expanded discharges or habitat alterations to investigate how their proposed activity can minimize pollutant loading or aquatic habitat impacts to the greatest practical extent. Applicants must submit an antidegradation assessment to the Illinois EPA outlining how they have evaluated alternatives to the planned activity that would result in less pollutant loading or less habitat disturbance. Illinois EPA must review the assessment and determine whether the provisions of the antidegradation standard have been met pursuant to Ill. Adm. Code Section 302.105.

In this case, the applicant submitted numerous documents for the antidegradation assessment. The information in the antidegradation assessment came from the August 19, 2014 letter from Peabody Coulterville Mining, LLC, the document dated October 13, 2010 "Analyses of Benefits and Alternatives to Lessen Water Quality Impact", an e-mail dated October 21, 2010 identifying the water quality of the seepage of water from the airshaft, an e-mail dated January 20, 2011 identifying the correct acreages, a letter dated March 28, 2012 (with a revised antidegradation analyses), the application for OMM Permit No. 426 (Log No. 4279-14), a letter dated August 19, 2014 to IEPA (Log No. 4306-14), a letter dated August 19, 2014 to IDNR (Log No. 4344-14), and a letter dated December 16, 2014 to IDNR (Log. No. 4555-14). Upon reviewing this submitted information, the Agency determined that the applicant has met the requirements of 35 Ill. Adm. Code 302.105 and proceeded to write the antidegradation assessment that was part of the public notice.

25. This NPDES permit should not be issued unless and until the Applicant or the Agency completes the studies necessary to adequately characterize the conditions and existing uses of each of the streams, as required by Ill. Adm. Code § 302.105.

Illinois EPA believes that headwater streams such as those receiving wastewater from the Peabody Coulterville Mining, L.L.C., Gateway Mine are valuable parts of the aquatic ecosystem. Illinois Pollution Control Board regulations recognize this in that all water quality standards fully apply to headwater streams no matter how small and ephemeral they may be. Aquatic communities found in these streams are highly variable depending on the water regime present in the months prior to a survey. Surveys conducted

during or soon after a drought would find no aquatic life present while surveys conducted after long periods of relatively wet conditions would find several species of fish and macroinvertebrates that are adapted to the temporary presence of water. However, application of the water quality standards to such streams would ensure protection of these species. Illinois headwaters that are not spring fed or have some other rare condition would not be expected to harbor communities that contain mixtures of unique endemics. Given the watershed size and topography present at this site (no springs or other constant water sources present), Illinois EPA can predict what aquatic life communities will occur during non-drought conditions. Further, the Illinois Department of Natural Resources ("IDNR") was consulted, via the EcoCAT system, for the presence of threatened and endangered species at the mine site. IDNR terminated consultation as there were no threatened or endangered species found in their system concerning this site. Therefore, the Agency determined that no biological survey was necessary to characterize these receiving streams based on the information the Agency had in consultation with IDNR.

26. Has the applicant and the Agency reestablished outfalls from each of the runoff and discharge streams at the point of entry into the Freshwater Lake or an alternative waterbody and assigned pollutant limits in the permit for each outfall to ensure water quality standards will be met in the Freshwater Lake?

    After the 2011 hearing, the applicant has re-designed their drainage plan. They are no longer considering using the Freshwater Lake as a settling pond. The applicant has designed a new pond with a discharge to the Freshwater Lake through Outfall 009. Water quality standards for sulfate and chloride will be met in the discharge of Outfall 009 and 002. Water quality standard will be met in the receiving stream after a small amount of mixing for Outfall 003. Therefore, water quality standards will be met in the Freshwater Lake.

27. Why did the Agency not conduct a reasonable potential analysis (RPA), which must be done using data representing all waste streams likely contributing to the discharge (i.e. alkaline mine drainage, acid mine drainage from preparation plant associated activities, coal refuse and coal ash disposal piles, lime sludge, and stormwater discharges)?

    A reasonable potential analysis was completed on January 12, 2012 for the data received for Outfall 007 and no reasonable potential to exceed any of the water quality standards were found. The results from this Outfall were determined to be representative of the other outfalls in the application. For the public's information, the next permit, metals will be collected at Outfall 002, 003, 006, 007, 008, 009, 010, 011 and 012 twice per year for five years.

28. Why does the draft permit not include an antidegradation analysis quantifying the impact of additional pollutant loading from the 68.68 acre mining expansion?

    The antidegradation analysis that was performed on December 18, 2014 includes the 68.68 acre mining expansion. The 68.68 acres are listed in the antidegradation individually as seen below:

    A. IEPA Log No. 2356-06: refuse area expansion (15.5 acres) (Outfalls 011 and 012)
    B. IEPA Long No. 9362-09: south airshaft (3.5 acres) (Outfall 010)
    C. Proposed rock dust hole #2 (1.0 acre) (Non-continuous Incidental Boundary Revision)
    D. Proposed OMM Permit No. 160 IBR#3 borrow area (20.0 acres) (Outfall 009)
    F. Proposed OMM Permit No. 53 area east of railroad access road (1.5 acres) (Outfall 009)
    G. IEPA Log No. 3283-05: access road construction (2.0 acres) (Incidental Boundary Revision)
    H. IEPA Log No. 2355-06: helicopter pad (5.18 acres) (Incidental Boundary Revision)
    J. IEPA Log No. 4555-14: additional soil stockpiling area (20.0 acres) (Outfall 008)

29. Why does the draft permit not include an antidegradation analysis quantifying the impact of additional pollutant loading from the coal ash sources permitted at this facility? The permit also fails to recognize that this permit, issued on June 27, 2008, expired on May 31, 2013.

    The coal combustion waste (CCW) is proposed to be disposed of in the refuse cells. Water from the refuse cells is recycled to the preparation plant where the water is consumed or sent back to the refuse cell in the form of slurry. The refuse cells and preparation plant water is a closed loop, which means, water from the refuse cells is not discharged into Waters of the U.S.

    Construction Authorization No. 8161-00 incorporates the CCW disposal project identified as IEPA Log No. 0146-08. This project and proposal was previously approved under Subtitle D Permit No. 2008-MW-0146. The Subtitle D Permit No. 2008-MW-0146 was issued on June 27, 2008 and expired on May 31, 2013; however, the C.A. approves the original project as proposed in IEPA Log No. 0146-08.

30. What is the hardness-based manganese water quality standard applicable for Mary's River and the streams tributary to it? Permit limits for manganese should be set at the water quality standard at all outfalls that discharge into tributaries to Mary's River, including Lick Branch, in order to not cause or contribute to violations of the manganese water quality standard in Mary's River. Water-quality based

effluent limits on manganese should be placed in the permit for all discharge conditions for outfalls 001, 002, 003, 007, 008, 009 and 010.

The Manganese water quality standard is dependent on the hardness of the water in the receiving stream. The critical hardness of Mary's River (II-03), East of Welge, is 315 mg/L as $CaCO_3$. The water quality standard for Manganese (dissolved) is 9.85 mg/L for the acute standard and 4.19 mg/L for the chronic standard. Outfalls 001, 002, 003, 007, 008, 009, and 010 have manganese regulated in the permit at the effluent standard of 2.0 mg/L (30-day average) and 4.0 mg/L (daily maximum) for conditions I and IV.

When the technology based manganese limits of 2.0 mg/L/4.0 mg/L are applied in NPDES permits, these limits are applied to only Discharge Condition Nos. I and IV, not to the precipitation driven discharge events which are Discharge Condition Nos. II and III. This is because manganese technology standards are not required to be monitoring under the alternate effluent limitations in Subtitle D (35 Ill. Adm. Code 406.109 and 406.110).

Enforcement/Compliance Issues

31. The operator has been in noncompliance for four of the last 12 quarters per the Enforcement and Compliance History Online Database (ECHO), for total iron, unauthorized discharges, and failure to notify. Exceedance are also reflected in the Illinois EPA's online database, including Total Iron discharged over the Daily Maximum and 30 day average at Outfall 8. How have these issues been resolved? Can you explain the process for investigating the noncompliance issues?

    The Enforcement and Compliance History Online Database (ECHO) report indicates an exceedance from Outfall 008 for total iron monthly average during the first quarter of 2012 and exceedances for total iron daily maximum during the second quarter of 2012 and the first quarter of 2013.

    According to the applicant, the exceedances observed at Outfall 008 were resolved by increasing sediment retention volume upstream of the gabion, applying approved settling agents, and utilizing pumps to reduce discharges. Water was redirected from the gabion to Harps Pond which had been created from the borrow area utilized by Alpena Vision Resources, LLC in the summer of 2012 for reclamation work at adjacent Permit #52. A pump was placed in Harps Pond so that the drainage could be pumped back to the Recirculation Lake for retention and reuse. A sump was also installed immediately upstream of the gabion and a second pump was placed in the structure so that any drainage reporting to 008 could be pumped back to Harps pond where it could be retained and treated, as needed, before being pumped back to the Recirculation Lake.

    Also, please refer to the response for Item No. 33 below concerning the ECHO report violations for unauthorized discharges and failure to notify.

32. The operator has been faced with several NPDES violations, including effluent violations for unauthorized discharges, and a reporting violation for failure to notify occurring on May 25, 2014. Can you describe the NPDES violation and what occurred?

    Around May 28, 2014, Peabody Coulterville Mining contacted the Agency that an incident had occurred on May 25, 2014. It was noted that during the process of decanting from slurry disposal pond (Cell #4) to an on-site non-discharging impoundment, there was a release of decant water. This decant water flowed to Outfall 008, which then flows to a tributary and eventually to Mary's River. The rock spillway was identified as Outfall 008, in the NPDES permit. In this permit, Outfall 008 was not authorized to release decant water from the pumping operation of another internal pond.

In response to the release reported by Peabody, the Agency conducted a Compliance Inspection of the facility on May 29, 2014. Based upon this inspection, a Violation Notice (VN), dated June 17, 2014, was issued to the facility. This case is currently in the enforcement process.

33. The permittee (1) is not utilizing good mining practices as defined and required per 35 Ill. Adm. Code 406.204 and (2) Is not complying with their NPDES special permit condition #11 contained in the Construction Authorization No. 8161-00.

The permit requires the permitee to use good mining practices (GMP) as required in 35 Ill. Adm. Code Section 406.204. These requirements are outlined in the NPDES permit on P. 22, Condition 11 of the Construction Authorization of the NPDES Permit.

GMPS are designed to minimize the dissolved and suspended solids in the runoff to the basins and the subsequent discharges. The permittee has proposed a drainage control plan that has been approved under the NPDES permit. This plan includes ditches, ponds, grading, re-vegetation, mulching, and other practices that demonstrate the permittee is using GMPS.

34. Peabody has discharged stormwater to waters of the state without a proper permit and constructed a slurry impoundment expansion (No. 4) without consideration of Illinois antidegradation regulations. As confirmed, by local residents at the 2011 hearing, the development and expansion of the fine coal (slurry) refuse disposal area had already commenced, though not yet and still not legally permitted under the NPDES permit and construction authorization No, 8161-00.

Illinois EPA is investigating this allegation and will be inspecting the mine to confirm what has been reported by the local residents. Should Illinois EPA find a violation, enforcement action against the permittee can be pursued under Section 31 of the Illinois Environmental Protection Act.

Groundwater Issues

35. What is the current state of the groundwater pollution at this site?

There are seven monitoring wells at the Gateway mine that have a monitoring history of five years or more (monitoring wells MW-04 – MW-10) and three newly installed monitoring wells (MW-11-MW-13), which have been sampled only once. Monitoring wells MW-06, MW-07, MW-08 and MW-10 are proximate to the refuse disposal areas, have had improving groundwater quality since they were first monitored and were in compliance with applicable groundwater standards during the most recent (first quarter 2015) monitoring event. Monitoring wells MW-12 and MW-13 were in compliance with applicable groundwater standards at the first quarter 2015 monitoring event (the only one available), while MW-11 shows exceedance of the total dissolved solids and sulfate standards. The other two monitoring wells proximate to the refuse disposal areas, MW-04 and MW-05 have a mixed sample history. Since monitoring began, groundwater quality has generally improved at MW-04, with recent monitoring having occasional spikes above the groundwater standards, and the most recent sample showing compliance for all parameters. Monitoring well MW-05 has had increasing trends in chloride over its sample history, with no corresponding increase in sulfate. The most recent sample event shows an exceedance of the chloride groundwater standard, with other parameters in compliance. The monitoring results from the proposed up gradient monitoring well can be periodically reviewed relative to any of the other down gradient well monitoring results. This will provide the Agency with a baseline of data against which to evaluate the groundwater quality in other monitoring wells. Monitoring well MW-09 sampling indicates slowly declining groundwater quality over its 20 plus years of sample history. However, MW-09 is located significantly further from the disposal areas than the other monitoring wells. Therefore, the decline in groundwater quality may be related to activities other than slurry disposal.

36. The Class 4 groundwater standards state that the source of any release of contaminants to groundwater has been controlled, and that's dealing with groundwater under a coal refuse disposal area; and given that the contaminants haven't been controlled in this instance and there's ongoing groundwater pollution, Why is the operator not bound to another standard like Class 2 standards?

The class of groundwater that applies immediately beneath the refuse disposal areas varies by the date on which operation began and if/when the structure ceased operation relative to the adoption of 35 Ill. Adm. Code, Part 620. However, beyond the foot print of the disposal areas, where groundwater is currently being monitored, the Agency agrees that a Class II groundwater standard applies at most of the wells. However, available construction and slug test information for MW-08 indicates that groundwater meeting the definition of Class I groundwater in 35 Ill. Adm. Code 620.210(a)(4) exists at that location.

37. Can you explain the monitoring wells at this site?

Please see the response to Item No. 35 above.

38. Have you made a determination whether those contaminants in wells 4 and 9 were naturally occurring, or mine pollutant related?

With no adequate up gradient well, such a determination is speculative. Permit Condition 15 requires the installation and monitoring of an up gradient well, so in the future the Agency can make such a determination.

Also, please see the response to Item No. 35 above.

39. On Page 23 of the draft permit, it states that compacted clay liners are to be constructed beneath RDA5, and it says that they'll be 32 inches. How did the Agency make that determination?

NPDES Permit Condition 12 on Page 23 of the permit states that a four foot compacted clay liner will be installed under refuse disposal area cell 5, sedimentation basins 011 A and B, and sedimentation basins 012 A and B. Condition 12 further states that a 32 inch compacted clay liner will be installed in the associated and connecting drainage control structures. Four feet of compacted clay was determined to be appropriate for impoundments because it provides twice the protection specified in 35 Ill Adm. Code 370 for sewage ponds, which have similar hydraulic head conditions. The ditches were allowed to be constructed with 32 inches (2.66 feet) of liner material because the ditches will be dry the majority of the time and will therefore not have hydraulic head to promote infiltration.

40. We maintain that sufficient evidence exists that shows that subsections 2), 3) and 4) are not being met at Gateway Mine, meaning that groundwater existing under the coal refuse area does not meet the criteria to be considered “Class IV: Other Groundwater” and instead should have to meet criteria and protections for Class II groundwater.

Please see response to Item No. 36 above.

41. We request that the Agency more clearly delineate the applicability of Class I and Class II standards within the permit.

The definitions pursuant to 35 Ill. Adm. Code 620.210 and 620.220 apply within the permit area outside the foot print of the disposal areas. Within the foot print of the disposal areas the applicable groundwater standard depends on the date a disposal area went into service and whether it has remained in operation, and if not in operation, when it ceased operation.

Also, please see the attached map and the NPDES permit for existing and proposed monitoring well locations.

42. Additional justification appears to be necessary in order to justify how ambient background concentrations can be accurately determined for a mine that has been in operation for four decades. Likewise, additional justification appears to be necessary for the Agency's provision allowing the delay of monitoring well installation on-site, given the continued nature of violations.

Regardless of the length of time a facility has been in operation, groundwater up gradient of the facility should not be impacted by operation of the facility. The only significant delay allowed in this permit for monitoring well installation is for monitoring wells proximate to sedimentation basins and the disposal area. The purpose of this delay is to prevent damage to newly installed wells during construction of these structures. Permit Condition 15 requires the installation of the up gradient well within 30 days of permit approval.

Acronyms and Initials

CCB	Coal Combustion By-product
CCW	Coal Combustion Waste
CFR	Code of Federal Regulations
CWA	Clean Water Act
ECHO	Enforcement and Compliance History Online
DMR	Discharge Monitoring Report
ICIS	Integrated Compliance Information System
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
ILCS	Illinois Complied Statutes
Ill. Adm. Code	Illinois Administrative Code
mg/L	Milligrams Per Liter
NPDES	National Pollutant Discharge Elimination System
OMM	Office of Mines and Minerals
PAHs	Polycyclic Aromatic Hydrocarbons
pH	A Measure of Acidity or Alkalinity of a Solution
RPA	Reasonable Potential Analysis
RDA	Refuse Disposal Area
SMCRA	Surface Mining Control and Reclamation Act of 1977 (federal)
TCLP	Toxicity Characteristic Leaching Procedures
TDS	Total Dissolved Solids
TSS	Total Suspended Solids

DISTRIBUTION OF RESPONSIVENESS SUMMARY

An announcement, that the NPDES permit decision and accompanying responsiveness summary is available on the Agency website, was mailed to all who registered at the hearing and to all who sent in written comments. Printed copies of this responsiveness summary are available from Barb Lieberoff, 217-524-3038, e-mail: barb.lieberoff@illinois.gov.

WHO CAN ANSWER YOUR QUESTIONS

Illinois EPA NPDES Permit:

Illinois EPA NPDES technical decisions:	Iwona Ward	618-993-7200
Legal questions	Stefanie Diers	217-782-5544
Water quality issues	Scott Twait	217-782-3362
Groundwater issues	Lynn Dunaway	217-782-1020
Public hearing of March 31, 2015	Dean Studer	217-558-8280

The public hearing notice, the hearing transcript, the NPDES permit and the responsiveness summary are available on the Illinois EPA website (it may be necessary to paste the web address into the window of you internet browser):

http://www.epa.illinois.gov/public-notices//npdes-notices/index#peabody-coulterville-gateway