NPDES Permit No. IL0077666
Notice No. 7516c

Public Notice Beginning Date: **July 12, 2019**

Public Notice Ending Date: **August 12, 2019**

National Pollutant Discharge Elimination System (NPDES)
Permit Program

Draft Renewed NPDES Permit to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois Environmental Protection Agency
Bureau of Water, Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-0610

Name and Address of Discharger:

Williamson Energy, LLC
P.O. Box 300
Johnston City, Illinois 62951

Name and Address of Facility:

Williamson Energy, LLC
Pond Creek Mine
4 miles east of Johnston City, Illinois
(Williamson and Franklin Counties)

The Illinois Environmental Protection Agency (IEPA or Agency) has made a tentative determination to issue an NPDES permit to discharge into waters of the state and has prepared a draft permit and associated fact sheet for the above named discharger. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice/Fact Sheet. Comments will be accepted until midnight of the Public Notice period ending date indicated above, unless a request for an extension of the original comment period is granted by the Agency. Interested persons are invited to submit written comments on the draft permit to the IEPA at the above address. Commenters shall provide his or her name, address and the nature of the issues raised and the evidence supporting those issues. Commenters may include a request for public hearing. The NPDES permit and notice number(s) must appear on each comment page.

The application, engineer's review notes, Public Notice/Fact Sheet, draft permit, comments received, and other documents are available for inspection and may be copied at the IEPA between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

As provided in 35 Ill. Adm. Code 309.115(a) any person may submit a request for a public hearing and if such written comments or requests indicate a significant degree of public interest in the draft permit, the permitting authority may, at its discretion, hold a public hearing. The Agency shall issue public notice of such hearing no less than thirty (30) days prior to the date of such hearing in the manner described by 35 Ill. Adm. Code 309.109 through 309.112 for public notice. The Agency's responses to written and/or oral comments will be provided in the Responsiveness Summary provided when the final permit is issued.

The applicant proposes additional surface facilities area to an existing underground coal mine (SIC 1222). Mine operations result in the discharge of alkaline and acid mine drainage.

Public comments are invited on the entire draft permit. The following proposed modifications were incorporated into this Permit renewal:

Incorporated three (3) new outfalls designated as Outfall Nos. 009, 009ES and 011.

Various mining operation and drainage control plan revisions.

229.78 acres incorporated for new Refuse Disposal Area No. 3.

70.7 acres incorporated for the pipeline to the Big Muddy River.

145.32 acres for various IBR’s for additional permit area.

Addition of bi-annual metals monitoring of discharges from Outfall Nos. 006, 007, 008,009, 009ES and 011.

Incorporated previously issued State Construction and Operating Permits (Subtitle D Permits).

This facility has eight (8) existing discharges which are located in Williamson County, Illinois. The following information identifies the discharge points and receiving streams:

Outfall	Receiving Stream	Latitude (North)	Longitude (West)
001	Unnamed tributary of Pond Creek	37° 50' 59.2"	88° 49' 37.5"
002	Unnamed tributary of Pond Creek	37° 50' 26.0"	88° 49' 51.5"
003	Unnamed tributary of Pond Creek	37° 50' 26.0"	88° 49' 58.0"
004	Unnamed tributary of Pond Creek	37° 50' 25.0"	88° 49' 56.6"
005	Unnamed tributary of Pond Creek	37° 50' 9.1"	88° 50' 00.0"
006	Unnamed tributary of Pond Creek	37° 50' 28.4"	88° 50' 40.6"
007	Unnamed tributary of Pond Creek	37° 50' 29.5"	88° 49' 34.0"
008	Unnamed tributary of Pond Creek	37° 50' 31.4"	88° 49' 33.9"

The stream segment NG-02 of Pond Creek receiving the flow from the unnamed tributary into which Outfall 001, 002, 003, 004, 005, 006, 007 and 008 discharges is not on the 2016 303(d) list of impaired waters.

Application is made for three (3) new discharges which are located in Williamson and Franklin Counties, Illinois. The following information identifies the discharge points and receiving streams:

Outfall	Receiving Stream	Latitude (North)	Longitude (West)
009	Pond Creek	37° 51' 16.1"	88° 49' 25.5"
009ES	Unnamed tributary to Pond Creek	37° 50' 52.3"	88° 48' 43.7"
011	Big Muddy River	37° 52' 37"	89° 01' 49"

The stream segment NG-02 of Pond Creek receiving the discharge from Outfalls 009 and 009ES is on the 2016 303(d) list of impaired waters.
The following parameters have been identified as the pollutants causing impairment.

Outfall	Pollutant
009, 009ES	Alteration in stream-side or littoral vegetative cover Changes in stream depth and velocity patterns Chlorides Loss of instream cover, dissolved oxygen, Sedimentation/siltation

The stream segment N-11 of Big Muddy River receiving the discharge from Outfall 011 is on the draft 2016 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairment.

Outfall	Pollutant
011	Iron, Oxygen, dissolved; Sedimentation/Siltation Total Suspended Solids (TSS) Mercury, Polychlorinated biphenyls Fecal Coliform

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfalls: 001, 002, 003, 004, 005

Discharge Condition	Parameters											
	Total Suspended Solids (3) (mg/l)		Iron (total) (3) (4) (mg/l)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/l)	Chloride (mg/l)	Cadmium (Cd) (mg/l) (6)	Hardness (5)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
(3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 001, 002, 003, 004 and 005 are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limit.
(6) The Cadmium water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).

The acid mine discharge from this facility shall be monitored and limited at all times as follows:

Outfalls: 006, 007

Discharge Condition	Parameters												
	Total Suspended Solids (3) (mg/L)		Iron (total) (3) (4) (mg/L)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/L)	Chloride (mg/L)	Cadmium (Cd) (mg/l) (6)	Mn (total) (mg/L)	Hardness (5)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hours precipitation event, but less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hours precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for acid mine drainage discharges are contained in 35 Ill. Adm. Code 406.110(b), (c), and (d).
(3) Effluent limitations for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 006 and 007 are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.
(6) The Cadmium water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).

The acid mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 008

Discharge Condition	Parameters											
	Total Suspended Solids (3) (mg/L)		Iron (total) (3) (4) (mg/L)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/L)	Chloride (mg/L)	Mn (total) (mg/L)	Hardness (5)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	1.0	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	1.0	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hours precipitation event, but less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hours precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for acid mine drainage discharges are contained in 35 Ill. Adm. Code 406.110(b), (c), and (d).
(3) Effluent limitations for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 008 are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 009

Discharge Condition	Parameters													
	Total Suspended Solids (3) (mg/L)		Iron (total) (3) (4) (mg/L)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/L)	Chloride (mg/L)	Mn (total) (mg/L)		Hardness (5)	Copper (CU) (mg/L)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum				
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	See Special Condition No. 14	-	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	See Special Condition No. 14	-	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1250	See Special Condition No. 14	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall at times of "low flow" or "no flow" conditions in the receiving stream as defined in Special Condition No. 14.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. At such time that receiving stream flow subsides to the degree that the mixing ratio specified in Special Condition No. 14 is not available, monitoring requirements and permit limitations shall revert to Discharge Condition I.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
(3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 009 are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 009ES

Discharge Condition	Parameters													
	Total Suspended Solids (3) (mg/L)		Iron (total) (3) (4) (mg/L)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/L)	Chloride (mg/L)	Mn (total) (mg/L)		Hardness (5)	Copper (CU) (mg/L)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum				
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1250	500	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
(3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 009ES are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 011

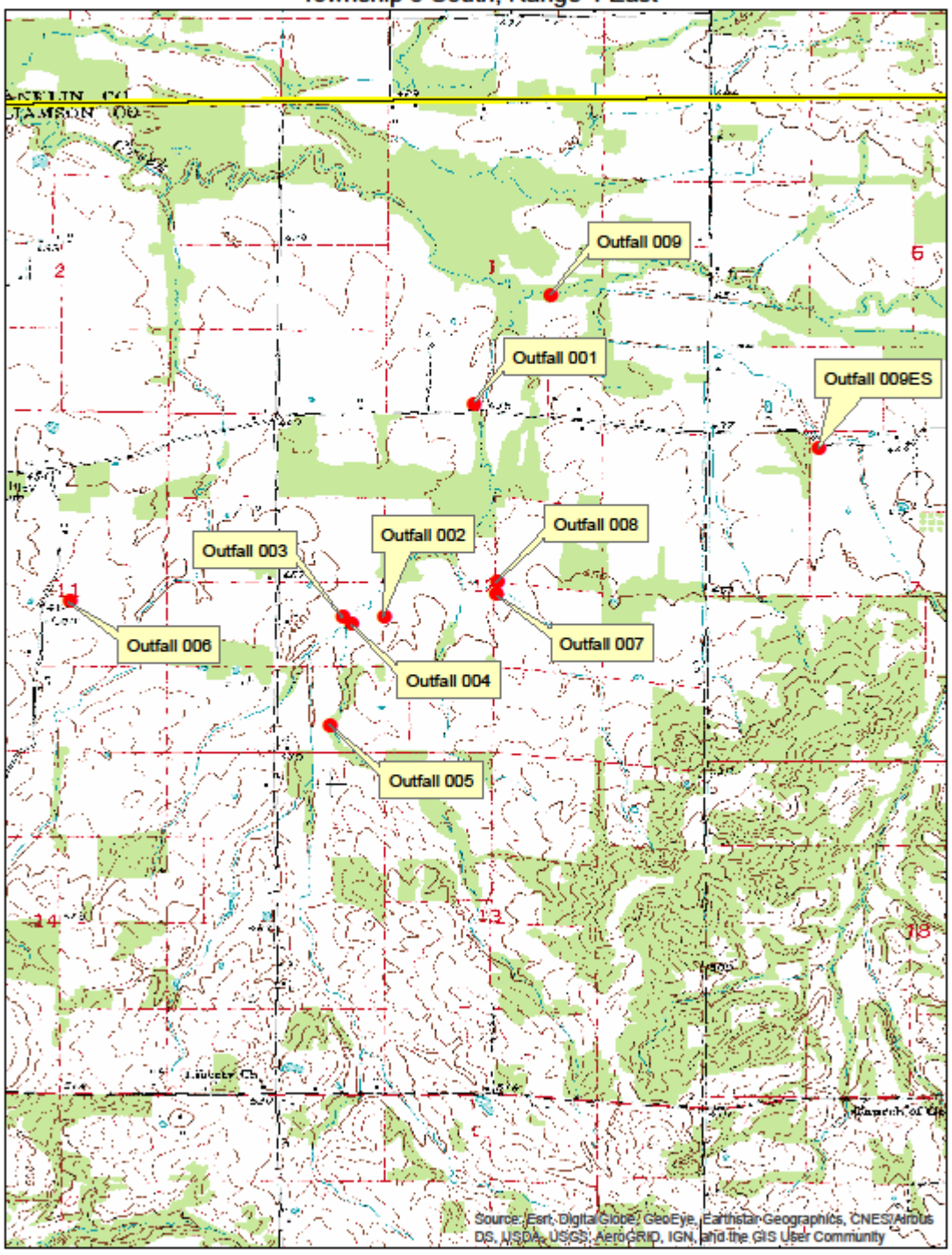
Parameters														
Total Suspended Solids (1) (mg/l)		Iron (total) (2) (mg/l)		pH (3) (S.U.)	Alkalinity/ Acidity (4)	Sulfate (5) (mg/l)	Chloride (mg/l)	Mn (total) (mg/l) (2)		Hardness (6)	Nickel (mg/L)	Copper (mg/L)	Flow (MGD)	Iron (Dissolved)
30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum					
35	70	3.0	6.0	6.0-9.0	Alk.>Acid	See Special Condition No. 16	See Special Condition No. 16	2.0	4.0	Monitor only	See Special Condition No. 16	See Special Condition No. 16	Measure When Sampling	See Special Condition No. 16

For any discharge not meeting the water quality standard for any of the above parameters, such discharge shall be subject to the limitations and monitoring requirements of Special Condition No. 16.

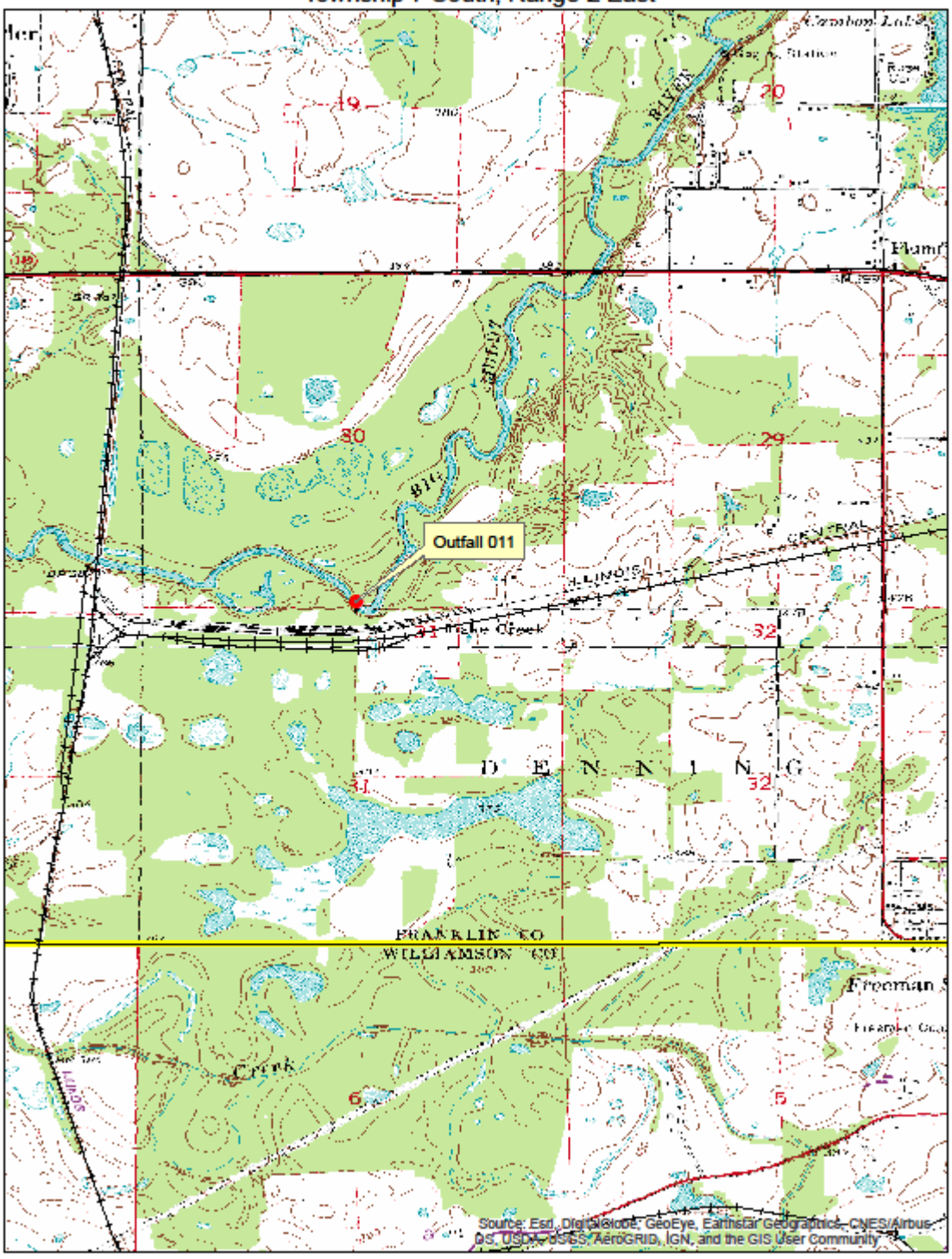
(1) Effluent standards for Total Suspended Solids in mine discharges are established pursuant to 35 Ill. Adm. Code 406.106.
(2) Effluent standards for Iron and Manganese are established pursuant to 35 Ill. Adm. Code 304.124.
(3) Pursuant to 35 Ill. Adm. Code 406.106, pH shall not be less than 6.0 or greater than 9.0 S.U.
(4) Pursuant to 35 Ill. Adm. Code 406.106, total acidity shall not exceed total alkalinity.
(5) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(6) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.

To assist you in identifying the location of the discharges, please refer to the attached map. The permit area for this facility is located in Sections 2, 3, 4, 7, 8, 9, 10, 12, 14, 15, 16, 17, 18 and 29, Township 8 South, Range 4 East, and Sections 11, 12, 13, 35, 36, Township 8 South, Range 3 East, Williamson County, 3rd P.M., Illinois, and Sections 1, 2 and 12, Township 8 South, Range 2 East, and Sections 7, 8, 9, 11, 14, 15, 16, and 17, Township 8 South, Range 3 East, and Sections 27, 28, 29, 30, 31, 32, 34 and 35, Township 7 South, Range 2 East, Franklin County , 3rd P.M., Illinois.

Williamson Energy, L.L.C. - Pond Creek Mine No. 1
NPDES No. IL0077666
Williamson County
Township 8 South, Range 3 East
Township 8 South, Range 4 East



Williamson Energy, L.L.C. - Pond Creek Mine No. 1
NPDES No. IL0077666
Franklin County
Township 7 South, Range 2 East



Antidegradation Assessment for RDA #3
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Williamson Energy, LLC –Pond Creek Mine No. 1 is creating a new Refuse Disposal Area No. 3. This proposed disposal area will tie into the existing Refuse Disposal Area No. 1 & 2. Associated with the new Refuse Disposal Area No. 3, a new sediment basin will be installed to control the rainfall that falls on the out-slopes of the sediment basin and will discharge through new Outfalls 009 and 009ES.

The facility is also requesting a modification to Outfall 005. The facility is proposing to stop using the geotextile tubes, which were operated in a no discharge configuration. The facility was using the geotextile tubes to remove fine refuse and collecting the water and pumping it to the existing refuse disposal area. Williamson Energy, LLC is requesting to modify the drainage control plan to allow stormwater runoff from the area to discharge through sediment ditches and spillway, into Ditch D-5C and through Pond 005. This drainage pattern is not a deviation from the originally approved drainage plan. Due to the nature of the geotextile tubes, surface water quality is not anticipated to be affected once the geotextile tubes are out of service and no longer being utilized.

To not increase chlorides and sulfates due to the construction of RDA No. 3, the mine is eliminating or reclaiming the outslopes of RDA No. 1 and RDA No. 2 that previously discharged through Outfalls 007 and 008. Therefore, there will not be an increase in loading due to the construction of RDA No. 3.

The information in this antidegradation assessment came from the December 2014 NPDES Renewal #2 for Permit #IL0077666 report by Alliance Consulting, Inc. titled “Pond Creek Mine No. 1 & Refuse Disposal Area No. 3” and the anti-degradation assessment provided on November 18, 2016.

Identification and Characterization of the Affected Water Body.

The subject facility proposed to discharge to Pond Creek through Outfall 009 at a point where 0 cfs of flow exists upstream of the outfalls during critical 7Q10 low-flow conditions. Pond Creek is classified as a General Use Water. Pond Creek is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources Publication *Integrating Multiple Taxa in a Biological Stream Rating System*, nor is it given an integrity rating in that document. Pond Creek, Waterbody Segment, NG-02, is listed on the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as alteration in stream-side or littoral vegetative cover (non-pollutant), changes in stream depth and velocity patterns (non-pollutant), chlorides, loss of instream cover (non-pollutant), dissolved oxygen (non-pollutant), and sedimentation/siltation. Primary contact recreation and secondary contact uses are fully supported. Pond Creek is not subject to enhanced dissolved oxygen standards.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

The mine outfalls will be classified as acid mine drainage. Suspended solids will be treated in the sedimentation ponds. Effluent discharged from these ponds will contain suspended solids loadings that are similar to those occurring from the land in its present use. Sulfates and chlorides will undergo an increase in loading to the receiving streams as a result of the mining activities. Based on estimated effluent concentrations for this mine, chloride and sulfate will meet water quality standards in the receiving stream based on the mixing provided by my December 13, 2016 water quality memo.

Fate and Effect of Parameters Proposed for Increased Loading.

Suspended solids discharged will eventually be incorporated into bed sediments and will continue to move downstream. Sulfate and chloride will remain dissolved in the water and will move through the downstream continuum. Small amounts of these substances will be removed by organisms as these substances are necessary for life. No adverse impacts to the receiving streams will occur as all water quality standards will be met.

Purpose and Social & Economic Benefits of the Proposed Activity.

The disposal of excess water, including the water infiltrating the mine, will allow the mine to continue to operate. The Pond Creek Mine is expected to generate 5 - 6 million tons of useable coal annually. According to information given in a document dated November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit IL0077666, continued operation of the existing mine will continue to provide jobs for 203 employees with an annual payroll of approximately $18 million. In addition to these 203 direct employees, it is estimated that another 100 persons are employed in daily work associated with the Mine’s production. This includes truck drivers, supply and support personnel, train crews, and technical personnel. In addition, other local businesses would also benefit from the wealth created by the mine. The operation of the mine provides tax revenues through payroll, coal severance, and mineral resource taxes for the surrounding counties and the State of Illinois. The total local, state, and federal revenues generated by the continuation of this Mine are approximately $78 million annually. Current employment statistics indicate that the unemployment rate for Williamson County was 7.5%.

Antidegradation Assessment for RDA #3
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

Alternatives to discharge through Outfall 009 have been evaluated by the mine company in a document dated November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit and are summarized as follows:

Chloride and Sulfate

Membrane Processes. Standard reverse osmosis (RO) treatment results in a waste stream of water with a high concentration of contaminants that is typically 25% of the flow being sent to the RO treatment system. The reject stream must still be disposed of in a responsible manner. Due to the disposal issue, the Membrane Process is not viable.

Deep Well Injection of the Entire Groundwater Stream. The untreated groundwater infiltrate could be discharged directly to a deep well. Considering the cost and operational difficulties experienced to date for the two wells that have been installed at the nearby Sugar Camp Coal facility to accept 0.45 MGD each, deep well injection of the untreated groundwater infiltrate is not considered either applicable or feasible for the operation of the Mine.

Discharge to POTW or Other Sources. POTWs are not designed to treat wastewaters containing dissolved substances such as chloride or sulfate. This option is not feasible.

No discharge. Given the climate of Williamson County, the mine company concludes that evaporation is not a viable option for disposal of the stormwater runoff mine effluent.

Mechanical Evaporation. Mechanical evaporation uses high temperatures and pressure to remove the water. The equipment is expensive to construct/install, operate, and maintain. Also, there would be materials to dispose of either in a landfill or in the Injection Wells that have been found to be unreliable for nearby mines. Therefore, this option is not considered either applicable or feasible for the operation of the mine.

Crystallizaton. Crystallization equipment is expensive to construct/install, operate and maintain. The cost is estimated at $0.25/gallon, the mine company concludes that crystallization is not a viable option for disposal of the stormwater runoff mine effluent.

Cost Effective Sulfate Removal (CESR) process. This is a proprietary technology that uses hydrated lime and proprietary chemicals to precipitate gypsum, metals and ettringite. Sludge would be produced that would require landfill disposal. The proprietary technology is still being developed. Additionally, this method is not proven to remove chlorides. These drawbacks make the CESR process infeasible for use at the coal mine.

Chemical Precipitation. Alkaline chemicals may be added to acid mine effluent to precipitate metals. The sludge produced must be disposed of and in some cases will contain hazardous materials added to the wastewater to attain precipitation. The additives used require mining in their own right. The water discharged may contain these additives, such as aluminum, in elevated concentrations. Additionally, this method is not proven to remove chlorides. These drawbacks make chemical precipitation infeasible.

Sedimentation/Siltation

Sedimentation. The facility is proposing to pump the groundwater infiltration to a Water Staging Cell where the water will have an opportunity for solids to settle out. The water will then be discharged to the Big Muddy River though the diffuser.

Use alternate sediment control and treatment devices. Alternatives to the use of sediment control ponds exist for control of discharge of settleable solids. Such alternatives include chemical soil stabilizers, erosion control blankets, geotextile filter bags, fiber rolls, silt fencing, straw mulch, straw bale dikes, and temporary seeding. These measures are aimed at minimization of the generation of settable solids. Most of these measures have been used previously during the construction and operations and in accordance with the current permit, as supplemental treatment and prevention of generation of settable solids. The use of alternative sediment control measures is considered practical and cost effective for the treatment and control of surface runoff in conjunction with sediment control ponds. However, the use of these practices to eliminate the proposed sediment control ponds is not feasible. Instead, it is being proposed that these BMPs be incorporated into the proposed alternative as needed.

No discharge. Given the climate of Williamson County, the mine company concludes that evaporation is not a viable option for disposal of the stormwater runoff mine effluent.

Filtration. Filtration is a technology that is not feasible for the proposed facility because: filtration is much more expensive than sediment ponds, filtration processes require a steady stream of water for treatment which is not the case in treating stormwater runoff, a large area of land would be required for such a facility, and maintenance and supervision of the filtration and sludge disposal operation would be burdensome and would increase production costs.

Antidegradation Assessment for RDA #3
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Constructed Wetlands. Constructed wetlands have proven to be effective for treatment of suspended solids with several limitations. These limitations include; low and consistent rates of inflow, eventual sludge accumulation requiring dredging and wetland reconstruction, and release of hydrogen sulfide and other digestive gases into the atmosphere from sulfate digestion processes. Use of wetlands in mine stormwater runoff treatment would be limited by the enormous amount of land required to construct a wetland of sufficient size for the flow rates to be expected from such an operation.

Chemical Precipitation. Alkaline chemicals may be added to acid mine effluent to precipitate metals. The sludge produced must be disposed of and in some cases will contain hazardous materials added to the wastewater to attain precipitation. The additives used require mining in their own right. The water discharged may contain these additives, such as aluminum, in elevated concentrations. Concerns with the use of chemical precipitation at the proposed coal mine include; worker safety regarding the chemicals to be used, treatment costs, process operation and maintenance, disposal of precipitate sludge in a landfill, necessity of treatment considering that acid water is not considered a factor for the proposed operation, susceptibility to system malfunction due to high volume flows from storm events, and improbability of actual improvement in overall water quality when compared to the use of sediment ponds. These drawbacks make chemical precipitation infeasible.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities

On November 2, 2016, the IDNR EcoCAT web-based tool was used and indicated that there were no aquatic endangered/threatened species present in the vicinity of the discharge. While the IDNR EcoCAT web-based tool did not terminate the consultation because of the nearby presence of Chuck-Will's-Willow (*Caprimulgus carolinensis*), future termination is likely.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time the draft permit was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; that all existing uses of the receiving stream will be maintained; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity will benefit the community at large by allowing the continuation of coal mining with all of its economic benefits to the local economy. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.

Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Williamson Energy, LLC operates the Pond Creek No. 1 Mine which is located in Williamson County. The mining complex contains an estimated 383.3 million tons of clean, recoverable coal reserves. Williamson Energy commenced construction of the Mine in 2005. The Mine has a life expectancy of more than 20 years. The mine has one operating longwall system. The Preparation Plant facilities are capable of processing 2,000 tons of coal per hour. The productive capacity of the mine is 5-6 million tons per year. Coal is shipped by rail, truck and barge (via railroad).

Williamson currently operates the mine under the existing Permit 375 and Permit 417 from the Illinois Department of Natural Resources, Office of Mines and Minerals (IDNR-OMM). The Mine currently discharges under NPDES Permits IL0077666.

The Pond Creek Mine has submitted an antidegradation report as part of the following NPDES permit activities:

- To respond to the over capacity of water on-site, a new outfall to the Big Muddy River is proposed. The outfall structure will be a multi-port diffuser and a mixing zone is being requested for the discharge; and
- The mine permit modification request includes the discharge of stormwater from stormwater ponds associated with the proposed Refuse Disposal Area No. 3 to Pond Creek. (Discussed under another antidegradation assessment.) A mixing zone is being requested for Pond Creek.

The mine uses water in two areas of operation; dust suppression during coal extraction and wash water in the preparation plant. The water used in the coal extraction process is fresh, untreated water purchased from the City of Johnston City and it not recoverable. The water used to wash the coal in the preparation plant comes from the fresh water lake. Over time, the fine solid particles present in the thickener underflow that is pumped to the Slurry Impoundment/RDA No. 3 settle to the bottom of the impoundment leaving clarified water on the surface. There is some loss of water during the washing process. Additionally, since the fines do not all settle immediately in the slurry impoundment, the quality of the clarified water results in a need for additional water for the preparation plant. Therefore, preparation plant water is supplemented with mine infiltration water and/or stormwater.

An aquifer above the coal seam causes an influx in water into the Mine. The infiltrating groundwater is from a saline aquifer, with a chloride content of approximately 1,099 to 2,799 mg/L. The sulfate ranges between 1,720 and 2,120 mg/L. Presently, the mine is removing 2.7 MGD of this high-chloride groundwater from the active mine. During normal coal processing operations, the preparation plant requires approximately 2.3 MGD. It is necessary to remove the water from the mine to protect the health and safety of the workforce, as well as, the overall mining operation.

Water will be stored in the Water Staging Cell and will be pumped to the Big Muddy River diffuser for mixing. An evaluation of the mixing zone will be reported in a separate memo.

The information in this antidegradation assessment came from the December 2014 NPDES Renewal #2 for Permit #IL0077666 report by Alliance Consulting, Inc. titled “Pond Creek Mine No. 1 & Refuse Disposal Area No. 3” and the anti-degradation assessment provided on November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit IL0077666

Identification and Characterization of the Affected Water Body.

The subject facility proposes to discharge to the Big Muddy River through Outfall 011 at a point where 37.0 cfs of flow exists upstream of the outfall during critical 7Q10 low-flow conditions. The Big Muddy River is classified as a General Use Water. The Big Muddy River is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources Publication *Integrating Multiple Taxa in a Biological Stream Rating System*, nor is it given an integrity rating in that document. The Big Muddy River, Waterbody Segment, N-11, is listed on the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as iron (dissolved), dissolved oxygen (non-pollutant), sedimentation/siltation (non-pollutant), and total suspended solids; fish consumption use with potential causes given as mercury and polychlorinated biphenyls; and primary contact recreation use with potential cause given as fecal coliform. Aesthetic quality use is fully supported. This segment of the Big Muddy River is not subject to enhanced dissolved oxygen standards.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

The constituents of concern are chloride, sulfates, manganese, iron, and total suspended solids. The chloride loading will range from 19,141 to 1,197,698 lbs/day at a concentration ranging from 1,699 to 12,000 mg/L. The sulfate loading will range from 9,720 to 476,031 lbs/day at a concentration ranging from 820 to 2,120 mg/L. The manganese loading will range from 33 to 336 lbs/day at a concentration ranging from 0.125 to 0.419 mg/L. The Iron (total) loading will range from 34 to 348 lbs/day at a concentration ranging from 0.216 to 1.835 mg/L. Iron (dissolved) is only a fraction of the Iron (total) and will meet the water quality standard at the end-of-pipe or at the edge of the mixing zone. The Nickel loading will range from 1 to 8 lbs/day at a concentration ranging from 0.004 to 0.014 mg/L. The Copper loading will range from 1 to 8 lbs/day at a concentration ranging from 0.011 to 0.32 mg/L. The TSS loading will range from 2,337 to 118,332 lbs/day at a concentration ranging from 7 to 70 mg/L.

Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Fate and Effect of Parameters Proposed for Increased Loading.

Chloride and sulfates would remain dissolved in the water and would move through the downstream continuum. Manganese, iron, Nickel, Copper, and total suspended solids will most likely settle and become part of the bed sediment load in the river. A mixing zone in the Big Muddy River will be utilized to dissipate chloride and sulfate to water quality standard levels. A zone of initial dilution will be utilized to dissipate Copper to water quality standard levels. Small amounts of chloride and sulfates would be removed by organisms as these substances are necessary for life. Because of the near real-time continuous monitoring of upstream and downstream conditions in the receiving stream, and the ability of the permittee's diffuser to adjust to flow and background concentration conditions, discharges will always be into a waterbody that is below water quality standards and in concentrations and flow combinations that will not cause or contribute to an exceedance downstream of the mixing zone. No adverse impacts to streams would occur as all water quality standards are expected to be met in the receiving water.

Purpose and Social & Economic Benefits of the Proposed Activity.

The disposal of excess water, including the water infiltrating the mine, will allow the mine to continue to operate. The Pond Creek Mine is expected to generate 5 - 6 million tons of useable coal. According to information given in a document dated November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit IL0077666, continued operation of the existing mine will continue to provide jobs for 203 employees with an annual payroll of approximately $18 million. In addition to these 203 direct employees, it is estimated that another 100 persons are employed in daily work associated with the Mine's production. This includes truck drivers, supply and support personnel, train crews, and technical personnel. In addition, other local businesses would also benefit from the wealth created by the mine. The operation of the mine provides tax revenues through payroll, coal severance, and mineral resource taxes for the surrounding counties and the State of Illinois. The total local, state, and federal revenues generated by the continuation of this Mine are approximately $78 million annually. Current employment statistics indicate that the unemployment rate for Williamson County was 7.5%.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

Excess water is proposed to be discharged to the Big Muddy River. Alternatives to this system have been evaluated by the mine company in a document dated November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit and are summarized as follows:

Chloride and Sulfate

Membrane Processes. Standard reverse osmosis (RO) treatment results in a waste stream of water with a high concentration of contaminants that is typically 25% of the flow being sent to the RO treatment system. The reject stream must still be disposed of in a responsible manner. Due to the disposal issue, the Membrane Process is not viable.

Deep Well Injection of the Entire Groundwater Stream. The untreated groundwater infiltrate could be discharged directly to a deep well. Considering the cost and operational difficulties experienced to date for the two wells that have been installed at the nearby Sugar Camp Coal facility to accept 0.45 MGD each, deep well injection of the untreated groundwater infiltrate is not considered either applicable or feasible for the operation of the Mine.

Discharge to POTW or Other Sources. POTWs are not designed to treat wastewaters containing dissolved substances such as chloride or sulfate. This option is not feasible.

No discharge. Given the climate of Williamson County, the mine company concludes that evaporation is not a viable option for disposal of the stormwater runoff mine effluent.

Mechanical Evaporation. Mechanical evaporation uses high temperatures and pressure to remove the water. The equipment is expensive to construct/install, operate, and maintain. Also, there would be materials to dispose of either in a landfill or in the Injection Wells that have been found to be unreliable for nearby mines. Therefore, this option is not considered either applicable or feasible for the operation of the mine.

Crystallizaton. Crystallization equipment is expensive to construct/install, operate and maintain. The cost is estimated at $0.25/gallon, the mine company concludes that crystallization is not a viable option for disposal of the stormwater runoff mine effluent.

Cost Effective Sulfate Removal (CESR) process. This is a proprietary technology that uses hydrated lime and proprietary chemicals to precipitate gypsum, metals and ettringite. Sludge would be produced that would require landfill disposal. The proprietary technology is still being developed. Additionally, this method is not proven to remove chlorides. These drawbacks make the CESR process infeasible for use at the coal mine.

Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Chemical Precipitation. Alkaline chemicals may be added to acid mine effluent to precipitate metals. The sludge produced must be disposed of and in some cases will contain hazardous materials added to the wastewater to attain precipitation. The additives used require mining in their own right. The water discharged may contain these additives, such as aluminum, in elevated concentrations. Additionally, this method is not proven to remove chlorides. These drawbacks make chemical precipitation infeasible.

Sedimentation/Siltation

Sedimentation. The facility is proposing to pump the groundwater infiltration to a Water Staging Cell where the water will have an opportunity for solids to settle out. The water will then be discharged to the Big Muddy River though the diffuser.

Use alternate sediment control and treatment devices. Alternatives to the use of sediment control ponds exist for control of discharge of settleable solids. Such alternatives include chemical soil stabilizers, erosion control blankets, geotextile filter bags, fiber rolls, silt fencing, straw mulch, straw bale dikes, and temporary seeding. These measures are aimed at minimization of the generation of settable solids. Most of these measures have been used previously during the construction and operations and in accordance with the current permit, as supplemental treatment and prevention of generation of settable solids. The use of alternative sediment control measures is considered practical and cost effective for the treatment and control of surface runoff in conjunction with sediment control ponds. However, the use of these practices to eliminate the proposed sediment control ponds is not feasible. Instead, it is being proposed that these BMPs be incorporated into the proposed alternative as needed.

No discharge. Given the climate of Williamson County, the mine company concludes that evaporation is not a viable option for disposal of the stormwater runoff mine effluent.

Filtration. Filtration is a technology that is not feasible for the proposed facility because: filtration is much more expensive than sediment ponds, filtration processes require a steady stream of water for treatment which is not the case in treating stormwater runoff, a large area of land would be required for such a facility, and maintenance and supervision of the filtration and sludge disposal operation would be burdensome and would increase production costs.

Constructed Wetlands. Constructed wetlands have proven to be effective for treatment of suspended solids with several limitations. These limitations include; low and consistent rates of inflow, eventual sludge accumulation requiring dredging and wetland reconstruction, and release of hydrogen sulfide and other digestive gases into the atmosphere from sulfate digestion processes. Use of wetlands in mine stormwater runoff treatment would be limited by the enormous amount of land required to construct a wetland of sufficient size for the flow rates to be expected from such an operation.

Chemical Precipitation. Alkaline chemicals may be added to acid mine effluent to precipitate metals. The sludge produced must be disposed of and in some cases will contain hazardous materials added to the wastewater to attain precipitation. The additives used require mining in their own right. The water discharged may contain these additives, such as aluminum, in elevated concentrations. Concerns with the use of chemical precipitation at the proposed coal mine include; worker safety regarding the chemicals to be used, treatment costs, process operation and maintenance, disposal of precipitate sludge in a landfill, necessity of treatment considering that acid water is not considered a factor for the proposed operation, susceptibility to system malfunction due to high volume flows from storm events, and improbability of actual improvement in overall water quality when compared to the use of sediment ponds. These drawbacks make chemical precipitation infeasible.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities.

On November 2, 2016, the IDNR EcoCAT web-based tool was used and indicated that there were no aquatic endangered/threatened species present in the vicinity of the discharge. While the IDNR EcoCAT web-based tool did not terminate the consultation because of the nearby presence of Chuck-Will's-Willow (*Caprimulgus carolinensis*), future termination is likely.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time the draft permit was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; that all existing uses of the receiving stream will be maintained; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity will benefit the community at large by allowing the continuation of coal mining with all of its economic benefits to the local economy. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.

Antidegradation Assessment for RDA #3 (Supplemental Information)
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Pond 009 has an emergency discharge via Outfall 009ES. During normal operations, Pond 009 will discharge directly to Pond Creek via Outfall 009 and has provisions for allowed mixing. Outfall 009ES is not expected to have a discharge, except during an emergency.

Identification and Characterization of the Affected Water Body.

The subject facility discharges to an unnamed tributary of Pond Creek through Outfall 009ES at a point where 0 cfs of flow exists upstream of the outfalls during critical 7Q10 low-flow conditions. The unnamed tributary of Pond Creek is classified as a General Use Water. The unnamed tributary of Pond Creek is not listed as a biologically significant streams in the 2008 Illinois Department of Natural Resources Publication *Integrating Multiple Taxa in a Biological Stream Rating System*, nor is it given an integrity rating in that document. The unnamed tributary of Pond Creek, tributary to Waterbody Segment, NG-02, is not listed on the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List since it has not been assessed. The unnamed tributary of Pond Creek is not subject to enhanced dissolved oxygen standards.

Agency Conclusion.

Upon completing the assessment, it has been determined that the proposed activity will result in only short-term, temporary increases in pollutant loading and will not result in long term or permanent impacts to existing uses including aquatic life habitat; therefore, we find that it is subject to Subsection (d) “Activities Not Subject to a Further Antidegradation Assessment” of 35 Ill. Adm. Code 302.105.

NPDES Permit No. IL0077666

Illinois Environmental Protection Agency

Division of Water Pollution Control

1021 North Grand Avenue, East

P.O. Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Renewed NPDES Permit

Expiration Date:

Issue Date:
Effective Date:

Name and Address of Permittee:

Williamson Energy, LLC
P.O. Box 300
Johnston City, Illinois 62951

Facility Name and Address:

Williamson Energy, LLC
Pond Creek Mine
4 miles east of Johnston City, Illinois
(Williamson and Franklin Counties)

Discharge Number and Classification:		Receiving waters
001, 002, 003, 004, 005	Alkaline Mine Drainage	Unnamed tributary to Pond Creek
006, 007, 008	Acid Mine Drainage	Unnamed tributary to Pond Creek
009	Alkaline Mine Drainage	Pond Creek
009ES	Alkaline Mine Drainage	Unnamed tributary to Pond Creek
011	Alkaline Mine Drainage	Big Muddy River

In compliance with the provisions of the Illinois Environmental Protection Act, Subtitle C and/or Subtitle D Rules and Regulations of the Illinois Pollution Control Board, and the Clean Water Act, the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Darin E. LeCrone, P.E.
Manager, Industrial Unit, Permit Section
Division of Water Pollution Control

DEL:IKW:cs/7516c/06-19-19

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 001, 002, 003, 004, 005 (Alkaline Mine Drainage)

Discharge Condition	Parameters											
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/l)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfalls 001, 002, 003, 004 and 005 and unnamed tributary of Pond Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 006, 007 (Acid Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/l) ***	Mn (total) (mg/L) ***	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfalls 006 and 007 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfalls 006 and 007 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 008 (Acid Mine Drainage)

Discharge Condition	Parameters											
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Mn (total) (mg/L) ***	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	1.0	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	1.0	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfalls 008 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfalls 008 and 009ES shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL000077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 009 (Alkaline Mine Drainage)

Discharge Condition	Parameters													
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Mn (total) (mg/L) ***		Hardness ***	Copper (Cu) ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum				
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	See Special Condition No. 14	-	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	See Special Condition No. 14	-	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1250	See Special Condition No. 14	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall at times of "low flow" or "no flow" conditions in the receiving stream are subject to Special Condition No. 14.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. At such time that receiving stream flow subsides to the degree that the mixing ratio specified in Special Condition No. 14 is not available, monitoring requirements and permit limitations shall revert to Discharge Condition I.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

Discharges from the above referenced outfall that are subject to the requirements of Discharge Conditions II, III and/or IV must meet the water quality standards for sulfate and chloride in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 14 for the discharges from Outfall 009 and Pond Creek receiving such discharges. Also, discharges from Outfall 009 shall be subject to the limitations, monitoring and reporting requirements of Special Condition No. 18.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL000077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 009ES (Alkaline Mine Drainage)

Discharge Condition	Parameters													
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Mn (total) (mg/L) ***		Hardness ***	Copper (Cu) ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum				
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1250	500	2.0	4.0	Monitor only	0.0245	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 14 for the discharges from Outfall 009ES and Pond Creek receiving such discharges. Also, discharges from Outfall 009ES shall be subject to the limitations, monitoring and reporting requirements of Special Condition No. 18.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 011* (Alkaline Mine Drainage)

Parameters														
Total Suspended Solids (mg/l)		Iron (total) (mg/l)		pH** (S.U.)	Alkalinity/ Acidity	Sulfate (mg/l)	Chloride (mg/l)	Mn (total) (mg/l)		Hardness	Nickel (mg/L)	Copper (mg/L)	Flow (MGD)	Iron (Dissolved)
30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum					
35	70	3.0	6.0	6.5-9.0	Alk.>Acid	See Special Condition No. 16	See Special Condition No. 16	2.0	4.0	Monitor only	See Special Condition No. 16	See Special Condition No. 16	Measure When Sampling	See Special Condition No. 16

All sampling shall be performed utilizing the grab sampling method.

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* Operation and management of pumpage to Outfall 011 is subject to the requirements of Special Condition No. 16. Also, discharges from Outfall 011 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

Upon completion of Special Condition 10 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 001, 002, 003, 004, 005, 006, 007, 008, 009, 009ES (Reclamation Area Drainage)

Discharge Condition	Parameters					
	pH** (S.U.) ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Hardness ***	Flow (MGD)	Settleable Solids (ml/l) ***
I	6.5-9.0	1250	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1250	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1250	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1250	500	Monitor only	Measure When Sampling	0.5

I Dry weather discharge (base flow, if present) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.109(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.109(c), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation area discharges, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method. A "no flow" situation is not considered to be a sample of the discharge.

*** One sample per month (1/month) shall be collected if and/or when a discharge occurs under either Discharge Condition I, II or IV and analyzed for the parameters identified in the table above. In addition, at least three (3) grab samples shall be taken each quarter from separate precipitation events under Discharge Condition III and analyzed for parameters indicated in the above table. For quarters in which there are less than 3 such precipitation events, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s).

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition Nos. 13 and 15 for the discharges from Outfalls 001, 002, 003, 004, 005, 006, 007, 008 and 009ES and unnamed tributary to Pond Creek and Outfall 009 tributary to Pond Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

Upon completion of Special Condition No. 11 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls: 001, 002, 003, 004, 05, 006, 007, 008, 009, 009ES (Stormwater Discharge)

Parameters	
pH* (S.U.) **	Settleable Solids (ml/l) **
6.0-9.0	0.5

Stormwater discharge monitoring is subject to the following reporting requirements:

Analysis of samples must be submitted with second quarter Discharge Monitoring Reports.

If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or updated previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency, indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

Annual stormwater monitoring is required for all discharges until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

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* No discharge is allowed from any above referenced permitted outfalls during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

** One (1) sample per year shall be collected and analyzed for the indicated parameter; however, such sampling and analysis is required only if and/or when a discharge occurs from the individual Outfall(s) identified above.

NPDES Permit No. IL0077666

Construction Authorization No. 3117-15

Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area described as follows:

Surface facilities in support of an underground mine containing a total of 986.10 acres, also identified as IDNR/OMM Permit Nos. 375 417 and 456, located in Sections 2, 3, 4, 7, 8, 9, 10, 12, 14, 15, 16, 17, 18 and 29, Township 8 South, Range 4 East, and Sections 11, 12, 13, 35, 36, Township 8 South, Range 3 East, Williamson County, 3rd P.M., Illinois, and Sections 1, 2 and 12, Township 8 South, Range 2 East, and Sections 7, 8, 9, 11, 14, 15, 16, and 17, Township 8 South, Range 3 East, and Sections 27, 28, 29, 30, 31, 32, 34 and 35, Township 7 South, Range 2 East, Franklin County , 3rd P.M., Illinois.

The surface facilities at this site contain drainage control structures (ditches) and nine (9) sediment basins, incline slope, coal preparation plant, coal stockpiles, refuse disposal areas, coal conveyors, railroad loop, ventilation shafts, parking areas, access roads, and office and maintenance buildings. The following additional areas are being added to the original facilities approved for this operation.

An additional area of 4.05 acres, identified as IBR No. 4 to OMM Permit No. 375, located in Section 12, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 2416-06 and 2416-06-A, installation of three (3) boreholes and associated pipeline to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 9.71 acres, identified as IBR No. 5 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 2380-06 and 2380-06-A, installation of the support facilities to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by two temporary catch basins, silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.20 acres, identified as IBR No. 10 to OMM Permit No. 375, located in Section 8, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 1396-07 and 1396-07-A, installation of two (2) boreholes and a vertical pump to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 12.50 acres, identified as IBR No. 11 to OMM Permit No. 375, located in Sections 4, 7 and 8, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 1525-07 and 1525-07-A, this area is incorporated for the installation of the water line from the Locust Grove Shaft area to Pond 006. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 0.36 acres, identified as IBR to OMM Permit No. 375, located in Sections 11 and 12, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 0190-08 and 0190-08-A, re-alignment of access road is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc

An additional area of 3.57 acres, identified as IBR No. 14 to OMM Permit No. 375, located in Section 9, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 0369-08, two (2) boreholes will be drilled and a vertical pump will be installed to ensure mine ventilation. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 8.1 acres, identified as IBR No. 25 to OMM Permit No. 375, located in Sections 9 and 10, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 8091-10, two (2) concrete transport boreholes and access road will be constructed and a turbine pump, buried waterline and power line will be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 2.13 acres, identified as IBR No. 55 to OMM Permit No. 375, located in Section 9 and 16, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5530-13 a buried pump discharge pipeline and electrical power line will be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 4.18 acres, identified as IBR No. 52 to OMM Permit No. 375, located in Section 15, Township 8 South, Range 4 East, Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5168-13, this area is being incorporated for the construction of an underground mine support facility including a borehole and installation of an electric vertical turbine pump. The area will also include a buried pipeline and electric power line. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.3 acres, identified as IBR No. 57 to OMM Permit No. 375, located in Section 18, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 4088-14, two (2) boreholes will be constructed and a pump and waterline will be installed to pump underground mine pumpage to an existing waterline along Jordan Fort Road. Topsoil stockpiles will also be located with the IBR area. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.3 acres, identified as IBR No. 58 to OMM Permit No. 375, located in Sections 8 and 17, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5477-13, two (2) boreholes will be constructed and a pump and waterline will be installed to pump underground mine water and to ensure underground ventilation. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 9.89 acres, identified as IBR No. 60 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, Williamson County, Illinois. As proposed and depicted in IEPA Log No. 4237-14, this area is for the development of topsoil and subsoil storage areas and construction of associated drainage ditches. Two (2) drainage ditches, identified as Collection Ditch Nos. D-5E-1 and D-5D-1, directs runoff from this area to existing Ditch D-5c and Pond 005.

An additional area of 1.0 acres, identified as IBR No. 78 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, and Sections 7 and 18, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 9082-19, this area is incorporated into this permit for a buried four-inch waterline to be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 19.9 acres, identified as IBR No. 79 to OMM Permit No. 375, located in Sections 35 and 36, Township 7 South, Range 3 East, in Franklin County, Illinois. As proposed and depicted in IEPA Log No. 9083-19, this area is incorporated into this permit for installation of a supply shaft to transport supplies underground as required for the continued effective operation of approved mine plan, belt air shaft and fan to supply required ventilation along with six (6) steel cased boreholes with a diameter less ten 10 5/8 inches for power and other supplies, power substation, dry storage barn and equipment yard. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 17.01 acres, identified as IBR No. 83 to OMM Permit No. 375, located in Sections 2, 3, 9 and 10, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 9109-19, this area is incorporated into this permit for a access roadway, one 16.5 foot bleeder shaft, utility boreholes, concrete pad for transformer, a compressor station and a portable crib plant. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

As described in IEPA Log No. 7395-11 and previously approved under Subtitle D Permit No. 2012-MA-7395-1, a permit area consisting of 9.82 acres located in Section 10, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of compressor bore hole, installation of a buried power line and an access road. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 11 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6141-12 and previously approved under Subtitle D Permit No. 2012-MA-6141-1, a permit area consisting of 0.64 acres located in Section 13, Township 8 South, Range 3 East, Williamson County, is incorporated into this permit for the construction of borehole for the batch material supply of crushed stone and concrete to the underground mine. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 11 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6562-12 and previously approved under Subtitle D Permit No. 2013-MA-6562, a permit area consisting of 3.81 acres located in Section 16, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of a steel-liner drill hole and temporary installation of a pumpable cement product mixing plant used for underground mine. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 11 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6039-12 and previously approved under Subtitle D Permit No. 2015-MA-6039, a permit area consisting of 4.65 acres located in Section 14, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for installation of ventilation shaft site. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 11 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 2273-16 and previously approved under Subtitle D Permit No. 2016-MA-2273, a permit area consisting of 6.5 acres located in Section 29, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of a concrete lined South District Supply Shaft to provide supplies to underground workings, three (3) boreholes, a pole barn and an access road. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 11 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As previously approved under Subtitle D Permit No. 2014-MW-4275, a fine coal refuse (slurry) disposal area incorporating the use of geotextile tubes was developed at Pond Creek Mine site. As described and depicted in IEPA Log Nos. 4275-14, 4275-14-A, 4275-14-B, 1475-14-C development of this area included construction of a low permeability liner consisting of four (4) foot compacted clay with a hydraulic conductivity of 1 x 10^{-7} cm/sec, or less. Surface runoff and dewatering of the geotextile tubes is collected in a "no-discharge" perimeter containment basin and pumped to existing refuse disposal area or coal preparation plant. Hereby incorporated into this permit is a modification of the drainage control plan to allow stormwater runoff from the area to discharge through sediment ditches and spillway into existing Ditch D-5C and through Pond No. 005, as described and depicted in IEPA Log No. 3117-15. Reclamation of the geotextile tube refuse disposal area shell consists of construction of a low permeability cap consisting of four (4) foot compacted clay with hydraulic conductivity of 1x10^{-7}cm/sec, or less. Rooting medium and topsoil required for establishment of vegetative cover shall be in addition to the four (4) foot compacted clay low permeability cap. Four (4) monitoring wells identified as Well Nos. GW-29, GW-30, GW-31 and GW-32 shall be installed at each corner of the geotextile tube placement area. Groundwater monitoring shall be performed in accordance with Special Condition No. 12.

As described in IEPA Log Nos.1186-17, 1186-17-Band 1385-17, and previously approved under Subtitle D Permit No. 2017-MA-1186-1, a permit area consisting of 17.7 acres located in Section 12, Township 8 South, Range 3 East, Williamson County, is incorporated into this permit for construction of a Water Management Facility consisting of three (3) water holding cells. Construction and development of the water Management facility includes topsoil removal, grading, foundation preparation and installation of a low permeability liner consisting of four (4) foot compacted clay liner with a hydraulic conductivity of 1 x 10 $^{-7}$ cm/sec within the water holding cells. Compacted clay liner shall also be subject to and in accordance with the specifications and testing requirements of Condition No. 12. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 11 of this NPDES Permit. This additional area is included in the total permit acreage cited above. Four (4) monitoring wells identified as Well Nos. GW-33, GW-34, GW-35 and GW-36 shall be installed as depicted in IEPA Log Nos. 1186-17, 1186-17-B and 1385-17 Groundwater monitoring shall be performed in accordance with Special Condition No.13. This additional area is included in the total permit acreage cited above.

The following mining operations plan changes are incorporated into this permit:

Log No. 2413-06	The Mining Operations Plan has been revised to include the construction of an access tunnel under the railroad loop and administration building.
Log No. 2414-06	The Mine Operations Map has been revised to depict the revised various structures within the support facility.
Log No. 0371-08	Installation of a concrete sump at the existing road tunnel and a pipeline which will discharge to Sediment Pond No. 003, identified as IPR No. 13 to OMM Permit No. 375.

Surface drainage control is provided by eleven (11) sedimentation ponds with discharges designated as 001, 002, 003, 004, 005, 009, 09ES and 011 classified as alkaline mine drainage, and Outfalls 006, 007, 008 classified as acid mine discharge. The sanitary wastewater water treatment system will be approved by the Illinois Department of Public Health.

The location and receiving stream of the Outfalls at this facility is as follows:

Outfall No.	Latitude			Longitude			Receiving Water
	DEG	MIN	SEC	DEG	MIN	SEC	
001	37°	50'	59.2"	88°	49'	37.5"	Unnamed tributary to Pond Creek
002	37°	50'	26.0"	88°	49'	51.5"	Unnamed tributary to Pond Creek
003	37°	50'	26.0"	88°	49'	58.0"	Unnamed tributary to Pond Creek
004	37°	50'	25.0"	88°	49'	56.6"	Unnamed tributary to Pond Creek
005	37°	50'	9.1"	88°	50'	00.0"	Unnamed tributary to Pond Creek
006	37°	50'	28.4"	88°	50'	40.6"	Unnamed tributary to Pond Creek
007	37°	50'	29.5"	88°	49'	34.0"	Unnamed tributary to Pond Creek
008	37°	50'	31.4"	88°	49'	33.9"	Unnamed tributary to Pond Creek
009	37°	51'	16.1"	88°	49'	25.5"	Pond Creek
009ES	37°	50'	52.3"	88°	48'	43.7"	Unnamed tributary to Pond Creek
011	37°	52'	37"	89°	01'	49"	Big Muddy River

Original Sedimentation Ponds with discharges designated as Outfall Nos. 007 and 008 have been re-designed as described and depicted in IEPA Log No. 8554-10.

Refuse disposal
Refuse Disposal Area as previously approved in IEPA Log No. 3054-05, was constructed in phases as depicted and described in IEPA Log No. 2377-06 (RDA No. 1), Refuse Disposal Area No. 2 was constructed at Pond Creek Mine facilities as proposed and described in IEPA Log Nos. 1465-07, 1465-07-B, 1465-07-D, 1465-07-E, 1465-07-G, 1520-07, 0346-08, 9005-09, 9198-09, 9198-09-A, 8114-10, 8114-10-A, 7185-11, 7225-11, 6431-12, 6431-12-A and 5378-13.

As previously approved under Subtitle D Permit No. 2015-MA-3432, construction and development of Refuse Disposal Area No. 3 includes topsoil removal, grading, foundation preparation for refuse area, also construction of the water holding cell and installation of four (4) foot compacted clay liner was performed in accordance with the procedures discussed and outlined in IEPA Log No. 3432-15. As described in IEPA Log No. 3432-15, all stormwater runoff from the deposited coarse refuse within the RDA No. 3 is collected and maintained within the RDA No. 3 and/or is pumped into the slurry impounding structure of the existing RDA, which is an integral part of the Pond Creek Mine No. 1 coal preparation plant closed circuit wastewater handling system.

As described and depicted in IEPA Log Nos. 3001-15 and 3001-15-C Refuse Disposal Area No. 3 (RDA 3) is approved for construction. RDA 3 is located immediately east of the RDA 1 and RDA 2 areas, contains 229.78 acres, and is included in the above cited total Permit acreage. The area for RDA 3 is located in Section 12, Township 8 South, Range 3 East and Section 7, Township 8 South, Range 4 East, Williamson County, Illinois. To not increase chloride and sulfates due to construction of RDA 3, the mine is reclaiming the outslopes of the RDA 1 and RDA 2 that previously discharged through Outfalls 007 and 008. There will be no increase in loading due to the construction of RDA 3. Runoff from this area will be tributary to previously constructed water holding cell with the designated NPDES Outfalls 009 and 009ES, as depicted in IEPA Log No. 3117-15-A. Construction of four (4) foot compacted clay liners for the Refuse Disposal Area No. 3, Sediment Pond 009 and associated drainage control structures shall be subject to and in accordance with the specifications and testing requirements of Condition No. 12. With prior approval as to thickness and installation procedures, an HDPE synthetic liner may be utilized in lieu of the compacted clay liners proposed.

Mixing Zone (Big Muddy River)
Excess water will be transported from the Pond Creek Mine to Outfall No. 011 on the Big Muddy River through a high-density polyethylene (HDPE) pipeline. Water will be pumped from the Water Holding Cell by pumps through approximately 12.5 miles of pipe to the diffuser located at the mixing zone location. The pipeline ROW will be approximately 50 feet in width with a total permitted area of approximately 70.7 acres. The amount of water that could be discharged through the Pipeline depends upon the chloride concentration in the discharge stream, the background chloride content and the flow in the Big Muddy River. The upper limit to the discharge will be based on the pumping capacity of the facility. Maximum pumping rate of 5,000 gallons per minute or 11.1 cfs. from the facility. The volume of water discharged to Big Muddy River will be dependent upon the flow in the Big Muddy River and the chloride concentration of the water in the Water Holding Cell and the chloride concentration coming downstream in the River.

During operations of the pipeline, continuous flow monitors will be installed to provide protection against leakage. Flow will be monitored near the pump discharge while the pipeline is within the sediment control structure of Pond Creek Mine. Flow will also be monitored at the mixing zone location. This instrumentation will be connected to an alarm monitoring system and flow data will be transmitted to a central location for tracking and assessing system operations. The flow monitoring system operation and maintenance is subject to the requirements of Special Condition No. 16.

Groundwater monitoring for the facility will consist of Monitoring Well Nos.GW-1, GW-2, GW-3, GW-4, GW-5GW-9, GW-30, GW-33, GW-34, GW-35 and GW-36. Monitoring Well Nos. MW-8R, MW-10, MW-11, MW-12, MW-13, MW-14 and MW-28, as depicted in IEPA Log No. 3001-15, will monitor effects of the initial refuse disposal area. Groundwater monitoring requirements are outlined in Condition No. 13.

This Construction Authorization replaces Construction Authorization No. 3054-05.

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109.

All water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.202. For the constituents not covered by 35 Ill. Adm. Code Parts 302 or 303, all water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.106.

NPDES Permit No. IL0077666

Construction Authorization No. 3117-15

This Authorization is issued subject to the following Condition(s). If such Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval to secure issuance of a Supplemental Authorization to Construct.

1. If any statement or representation is found to be incorrect, this permit may be revoked and the permittee thereupon waives all rights thereunder.

2. The issuance of this permit (a) shall not be considered as in any manner affecting the title of the premises upon which the mine or mine refuse area is to be located; (b) does not release the permittee from any liability for damage to person or property caused by or resulting from the installation, maintenance or operation of the proposed facilities; (c) does not take into consideration the structural stability of any units or parts of the project; and (d) does not release the permittee from compliance with other applicable statutes of the State of Illinois, or with applicable local laws, regulations or ordinances.

3. Final plans, specifications, application and supporting documents as submitted by the permittee and approved by the Agency shall constitute part of this permit in the records of the Agency.

4. There shall be no deviations from the approved plans and specifications unless revised plans, specifications and application shall first have been submitted to the Agency and a supplemental permit issued.

5. The permit holder shall notify the Agency (217/782-3637) immediately of an emergency at the mine or mine refuse area which causes or threatens to cause a sudden discharge of contaminants into the waters of Illinois and shall immediately undertake necessary corrective measures as required by 35 Ill. Adm. Code 405.111. (217/782-3637 for calls between the hours of 5:00 p.m. to 8:30 a.m. and on weekends.)

6. The termination of an NPDES discharge monitoring point or cessation of monitoring of an NPDES discharge is not authorized by this Agency until the permittee submits adequate justification to show what alternate treatment is provided or that untreated drainage will meet applicable effluent and water quality standards.

7. Initial construction activities in areas to be disturbed shall be for collection and treatment facilities only. Prior to the start of other activities, surface drainage controls shall be constructed and operated to avoid violations of the Act or Subtitle D. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed, for the parameters designated as 1M through 15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet the standards of 35 Ill. Adm. Code 406.106 or applicable water quality standards, a Supplemental Permit must be obtained. Discharge from ponds is not allowed unless applicable effluent and water quality standards are met in the basin discharge(s).

8. This Agency must be informed in writing and an application submitted if drainage, which was previously classified as alkaline (pH greater than 6.0), becomes acid (pH less than 6.0) or ferruginous (base flow with an iron concentration greater than 10 mg/L). The type of drainage discharging to the basin should be reclassified in a manner consistent with the applicable provisions of 35 Ill. Adm. Code Part 406. The application should discuss the treatment method and demonstrate how the discharge will meet the applicable standards.

9. A permittee has the obligation to add a settling aid if necessary to meet the suspended solids or settleable solids effluent standards. The selection of a settling aid and the application practice shall be in accordance with a. or b. below

    a. Alum ($Al_2(SO_4)_3$), hydrated lime ($Ca(OH)_2$), soda ash (Na_2CO_3), alkaline pit pumpage, acetylene production by-product (tested for impurities), and ground limestone are acceptable settling aids and are hereby permitted for alkaline mine drainage sedimentation ponds.

    b. Any other settling aids such as commercial flocculents and coagulants are permitted only on prior approval from the Agency. To obtain approval a permittee must demonstrate in writing to the Agency that such use will not cause a violation of the toxic substances standard of 35 Ill. Adm. Code 302.210 or of the appropriate effluent and water quality standards of 35 Ill. Adm. Code parts 302, 304, and 406.

10. A general plan for the nature and disposition of all liquids used to drill boreholes shall be filed with this Agency prior to any such operation. This plan should be filed at such time that the operator becomes aware of the need to drill unless the plan of operation was contained in a previously approved application.

11. Any of the following shall be a violation of the provisions required under 35 Ill. Adm. Code 406.202:

    a. It is demonstrated that an adverse effect on the environment in and around the receiving stream has occurred or is likely to occur.

b. It is demonstrated that the discharge has adversely affected or is likely to adversely affect any public water supply.

c. The Agency determines that the permittee is not utilizing Good Mining Practices in accordance with 35 Ill. Adm. Code 406.204 which are fully described in detail in Sections 406.205, 406.206, 406.207 and 406.208 in order to minimize the discharge of total dissolved solids, chloride, sulfate, iron and manganese. To the extent practical, such Good Mining Practices shall be implemented to:

i. Stop or minimize water from coming into contact with disturbed areas through the use of diversions and/or runoff controls (Section 406.205).

ii. Retention and control within the site of waters exposed to disturbed materials utilizing erosion controls, sedimentation controls, water reuse or recirculation, minimization of exposure to disturbed materials, etc. (Section 406.206).

iii. Control and treatment of waters discharged from the site by regulation of flow of discharges and/or routing of discharges to more suitable discharge locations (Section 406.207).

iv. Utilized unconventional practices to prevent the production or discharge of waters containing elevated contaminant concentrations such as diversion of groundwater prior to entry into a surface or underground mine, dewatering practices to remove clean water prior to contacting disturbed materials and/or any additional practices demonstrated to be effective in reducing contaminant levels in discharges (Section 406.208).

12. The four (4) foot compacted clay liner to be constructed course refuse disposal area, fine coal refuse area (RDA No. 3) and Sedimentation Basin 009 shall be subject to the specifications and procedures presented in IEPA Log No. 3001-15-C.

Construction Specifications

a. All soils to be used for the compacted clay liner shall be free of grass, vines, vegetation and rock or stones greater than four (4) inches in diameter.

b. Samples collected from the borrow area shall be evaluated in accordance with ASTM D422, D4318 and D2487 to ensure classification criteria are met.

c. Each successive soil lift shall be placed to a 6 to 8 inch loose thickness; however, in no instance shall the loose lift thickness exceed the length of the pads or feet on the compactor or roller.

d. Each soil lift shall be compacted to the minimum Standard Prototor (ASTM D698) density identified in item no. 12(q) below, at a moisture content of 0% to 5% above the optimum moisture content of the soil.

e. Inter-lift surfaces shall be adequately scarified to ensure inter-lifting bonding.

f. Liner construction shall be performed to consistent achievement of density, moisture content, and hydraulic conductivity for each successive lift.

g. The placement of frozen material or the placement material on frozen ground is prohibited.

h. Contemporaneous placement or protective covering shall be provided to prevent drying, desiccation and/or freezing where necessary.

i. Liner construction shall be completed in a manner which reduces void spaces within the soil and liner.

j. All construction stakes shall be removed during construction, and all test holes (Shelby tube samples) are to be backfilled with bentonite.

k. The compacted clay liner shall be constructed in a manner to achieve a uniform barrier with a hydraulic conductivity of 1×10^{-7} cm/sec.

l. In the event that acceptable compaction results are not achieved, the soil lift shall be reprocessed or removed and replaced. If moisture content is less than optimum, or greater than 5% above optimum, the falling material shall be wetted or dried to a moisture content within specification and re-compacted. If the dry density is below specification, the failing material shall be re-compacted until a passing test is achieved.

m. In the event of a failing conductivity test, the soil may be removed or re-compacted and retested until a passing result is obtained; or the soil immediately above and below the test specimen from the same Shelby tube may be tested. If both tests pass, the original test shall be nullified. If either test fails, that portion of the liner shall be rejected and shall be reconstructed and retested until passing results are obtained. The limits of necessary reconstruction shall be determined by additional sampling and testing within the failed region, thereby isolating the failing area of work.

Testing Specifications

n. Prior to initiating soil liner construction, borrow soils shall be identified, qualified, and verified. At minimum, a representative sample of each soil type identified within the borrow area is to be collected and analyzed for gradation, compaction, and hydraulic conductivity characteristics.

o. Samples collected from borrow area shall be evaluated in accordance with ASTM D422, D4318 and D2487 to ensure classification criteria are met.

p. Samples collected from the borrow area shall be tested in accordance with ASTM D 698 to determine maximum dry density and optimum moisture content of the soil.

q. Samples collect from the borrow area shall be compacted to 90% and 95% standard Proctor density at or near optimum moisture content. The hydraulic conductivity of the re-compacted samples shall be determined in accordance with ASTM D5084 procedures. The results of this testing shall be used to establish the minimum dry density for soil liner compaction necessary to achieve a hydraulic conductivity of 1×10^{-7} cm/sec or less.

r. Moisture and density testing by nuclear methods (ASTM D2922 and D3017) shall be conducted at a rate of at least one test per 1,000 cubic yards placed. Testing locations shall be random and shall not be known to the earthwork contractor prior to lift placement.

s. To ensure the accuracy and reproducibility of the nuclear testing, all nuclear density gauges shall be certified to calibration. Soil compaction tests shall be double-checked with independent test methods. A drive cylinder test and laboratory moisture content determination shall be conducted and compared to gauge readings. These independent checks shall be made at the outset of construction and on a bi-weekly basis (e.g., every ten working days) thereafter.

t. Samples for hydraulic conductivity verification shall be retrieved from the compacted soil liner and tested in accordance with ASTM D5084 procedures. Samples shall be retrieved using three-inch Shelby tubes. Samples shall be completed at frequency of one sample/test per 20,000 cubic yards placed. The vertical location of the recovered samples shall be varied so that representative portions or lifts of the contractor prior to soil liner construction.

u. Survey checks shall be conducted at a minimum spacing of 100 ft. centers, and at 100 ft. intervals along each line where a break in slope occurs, to verify liner thickness. To verify liner thickness, the survey checks shall be taken before and after liner construction.

13. Groundwater monitoring requirements for Well Nos. MW-12, MW-13, MW-14, MW-8R and MW-28 are as follows:

a. Ambient background monitoring shall be performed for all referenced wells. Such ambient monitoring shall consist of six (6) samples collected during the first year (approximately bi-monthly) following well installation but no later than during the first year of operation or disturbance to determine ambient background concentrations. Background monitoring shall include the following list of constituents:

Aluminum	Fluoride	Sulfate
Antimony	Iron (dissolved)	Thallium
Arsenic	Iron (total)	Total Dissolved Solids
Barium	Lead	Vanadium
Beryllium	Manganese (dissolved)	Zinc
Boron	Manganese (total)	pH (field)
Cadmium	Mercury	Acidity
Chloride	Molybdenum	Alkalinity
Chromium	Nickel	Hardness
Cobalt	Phenols	Static Water Elevation
Copper	Selenium	
Cyanide	Silver	

b. Following the ambient monitoring as required under Condition No. 13(a) above, routine monitoring shall continue on a quarterly basis as follows:

i. Monitoring Well Nos. MW-12, MW-13, MW-14, MW-8R and MW-28 shall continue to be monitored quarterly for the contaminants identified in Condition No. 12(a) above.

ii. Monitoring Well Nos. MW-12, MW-13, MW-14, MW-8R and MW-28 shall be monitored quarterly as required by IDNR/OMM for the following list of constituents:

Chloride	Total Dissolved Solids
Iron (dissolved)	Hardness
Iron (total)	Acidity
Manganese (dissolved)	Alkalinity
Manganese (total)	pH
Sulfate	Static Water Elevation

c. Following completion of active mining and reclamation, post-mining monitoring of all above referenced wells shall consist of six (6) samples collected during a 12-month period (approximately bi-monthly) to determine post-mining concentrations. Post-mining monitoring shall include the list of constituents identified in Condition No. 13(a) above.

d. Groundwater monitoring reports shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 5 of this NPDES permit.

e. A statistically valid representation of background and/or post mining water quality required under Condition No. 13(b) above shall be submitted utilizing the following method. This method shall be used to determine the upper 95 percent confidence limit for each parameter listed above.

Should the Permittee determine that an alternate statistical method would be more appropriate based on the data being evaluated, the Permittee may request utilization of such alternate methodology. Upon approval from the Agency, the alternate methodology may be utilized to determine a statistically valid representation of background and/or post mining water quality.

The following method should be used to predict the confidence limit when single groundwater samples are taken from each monitoring (test) well.

i. Determine the arithmetic mean $\left(\overline{X}_b\right)$ of each indicator parameter for the sampling period. If more than one well is used, an equal number of samples must be taken from each well.

$$\overline{X}_b = \frac{X_1 + X_2 + \ldots X_n}{n}$$

Where:

$\overline{X}_b$ = Average value for a given chemical parameter

X_n = Values for each sample

n = the number of samples taken

ii. Calculate the background and/or post mining variance (S_b^2) and standard deviation (S_b) for each parameter using the values (X_n) from each sample of the well(s) as follows:

$$S_b^2 = \frac{(X_1 - \overline{X}_b)^2 + (X_2 - \overline{X}_b)^2 + \ldots + (X_n - \overline{X}_b)^2}{n-1}$$

$$S_b = \sqrt{S_b^2}$$

iii. Calculate the upper confidence limit using the following formula:

$$CL = \overline{X}_b \pm t\sqrt{1 + 1/n}\ \left(S_b\right)$$

Where:

CL = upper confidence limit prediction
(upper and lower limits should be calculated for pH)
t = onetailed t value at the required significance
level and at n1 degrees of freedom from Table 1
(a twotailed t value should be used for pH)

iv. If the values of any routine parameter for any monitoring well exceed the upper confidence limit for that parameter, the permittee shall conclude that a statistically significant change has occurred at that well.

v. When some of the background and/or post mining values are less than the Method Detection Limit (MDL), a value of one-half (1/2) the MDL shall be substituted for each value that is reported as less than the MDL. All other computations shall be calculated as given above.

If all the background and/or post mining values are less than the MDL for a given parameter, the Practical Quantitation Limit (PQL), as given in 35 Ill. Adm. Code Part 724 Appendix I shall be used to evaluate data from monitoring wells. If the analytical results from any monitoring well exceed two (2) times the PQL for any single parameter, or if they exceed the PQLs for two or more parameters, the permittee shall conclude that a statistically significant change has occurred.

Table 1
Standard tTables Level of Significance

Degrees of freedom	tvalues (onetail)		tvalues (twotail)*	
	99%	95%	99%	95%
4	3.747	2.132	4.604	2.776
5	3.365	2.015	4.032	2.571
6	3.143	1.943	3.707	2.447
7	2.998	1.895	3.499	2.365
8	2.896	1.860	3.355	2.306
9	2.821	1.833	3.250	2.262
10	2.764	1.812	3.169	2.228
11	2.718	1.796	3.106	2.201
12	2.681	1.782	3.055	2.179
13	2.650	1.771	3.012	2.160
14	2.624	1.761	2.977	2.145
15	2.602	1.753	2.947	2.131
16	2.583	1.746	2.921	2.120
17	2.567	1.740	2.898	2.110
18	2.552	1.734	2.878	2.101
19	2.539	1.729	2.861	2.093
20	2.528	1.725	2.845	2.086
21	2.518	1.721	2.831	2.080
22	2.508	1.717	2.819	2.074
23	2.500	1.714	2.807	2.069
24	2.492	1.711	2.797	2.064
25	2.485	1.708	2.787	2.060
30	2.457	1.697	2.750	2.042
40	2.423	1.684	2.704	2.021

Adopted from Table III of "Statistical Tables for Biological Agricultural and Medical Research" (1947, R.A. Fisher and F. Yates).

* For pH only when required.

NPDES Permit No. IL0077666

Special Conditions

Special Condition No. 1: No effluent from any mine related facility area under this permit shall, alone or in combination with other sources, cause a violation of any applicable water quality standard as set out in the Illinois Pollution Control Board Rules and Regulations, Subtitle C: Water Pollution.

Special Condition No. 2: Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.

Special Condition No. 3: All periodic monitoring and reporting forms, including Discharge Monitoring Report (DMR) forms, shall be submitted to the Agency according to the schedule outlined in Special Condition No. 4 or 5 below with one (1) copy forwarded to each of the following addresses:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Ave., East
P.O. Box 19276
Springfield, IL 62794-9276

Attn: Compliance Assurance Section

Illinois Environmental Protection Agency
Mine Pollution Control Program
2309 West Main Street, Suite 116
Marion, Illinois 62959

The Permittee will be required to submit electronic DMRs (NetDMR) instead of mailing paper DMRs to the IEPA, unless a waiver is approved by the Agency. More information, including registration information for the NetDMR program, can be obtained on the IEPA website, https://www2.illinois.gov/epa/topics/water-quality/surface-water/netdmr/Pages/quick-answer-guide.aspx.

Special Condition No. 4: Completed Discharge Monitoring Report (DMR) forms and as well as upstream and downstream monitoring results, shall be retained by the Permittee for a period of three (3) months and shall be submitted electronically (or mailed if waiver is approved by the Agency) and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

Period	Received by IEPA
January, February, March	April 15
April, May, June	July 15
July, August, September	October 15
October, November, December	January 15

The Permittee shall record discharge monitoring results on Discharge Monitoring Report (DMR) forms using one such form for each Outfall and Discharge Condition each month. In the event that an Outfall does not discharge during a monthly reporting period or under a given Discharge Condition, the DMR form shall be submitted with "No Discharge" indicated.

Any and all monitoring results, other than NPDES outfall discharge results reported through NetDMR, shall be submitted to the Agency at the addresses indicated in Special Condition No. 3 above.

Special Condition No. 5: Completed periodic monitoring and reporting, other than DMR's and stream monitoring (i.e., groundwater monitoring, coal combustion waste analysis reports, etc.), shall be retained by the Permittee for a period of three (3) months and shall be mailed and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

Period	Received by IEPA
January, February, March	May 1
April, May, June	August 1
July, August, September	November 1
October, November, December	February 1

Special Condition No. 6: The Agency may revise or modify the permit consistent with applicable laws, regulations or judicial orders.

Special Condition No. 7: If an applicable effluent standard or limitation is promulgated under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the NPDES Permit, the Agency shall revise or modify the permit in accordance with the more stringent standard or prohibition and shall so notify the permittee.

Special Condition No. 8: The permittee shall notify the Agency in writing by certified mail within thirty days of abandonment, cessation, or suspension of active mining for thirty days or more unless caused by a labor dispute. During cessation or suspension of active mining, whether caused by a labor dispute or not, the permittee shall provide whatever interim impoundment, drainage diversion, and wastewater treatment is necessary to avoid violations of the Act or Subtitle D Regulations.

Special Conditions

Special Condition No. 9: Plans must be submitted to and approved by this Agency prior to construction of any future sedimentation ponds. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed for the parameters designated as 1M-15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet these standards, a Supplemental Permit must also be obtained. Discharge from a pond is not allowed unless applicable effluent and water quality standards are met.

Special Condition No. 10: The special reclamation area effluent standards of 35 Ill. Adm. Code 406.109 apply only on approval from the Agency. To obtain approval, a request form and supporting documentation shall be submitted to request the discharge be classified as a reclamation area discharge. The Agency will notify the permittee upon approval of the change.

Special Condition No. 11: The special stormwater effluent standards apply only on approval from the Agency. To obtain approval, a request with supporting documentation shall be submitted to request the discharge to be classified as a stormwater discharge. The documentation supporting the request shall include analysis results indicating the discharge will consistently comply with reclamation area discharge effluent standards. The Agency will notify the permittee upon approval of the change.

Special Condition No. 12: Annual stormwater monitoring is required for all discharges not tributary to a sediment basin until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

a. Each discharge must be monitored for pH and settleable solids annually.

b. Analysis of samples must be submitted with second quarter Discharge Monitoring Reports. A map with discharge locations must be included in this submittal.

c. If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or update previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

Special Condition No. 13: Sediment Pond Operation and Maintenance (Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 009ES):

a. For discharges resulting from precipitation events, in addition to the alternate effluent (Discharge Condition Nos. II and III) monitoring requirements, as indicated on the applicable effluent pages of this Permit, discharges from Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 009ES shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.

b. The following sampling and monitoring requirements are applicable to flow in the unnamed tributary to Pond Creek which receive discharges from Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 009ES.

    i. All sampling and monitoring required under 13(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.

    ii. Unnamed tributary to Pond Creek shall be monitored and reported quarterly for Discharge Rate, Chloride, Sulfate and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding receiving stream flow characteristics and in-stream contaminant concentrations the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

    In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

    iii. Unnamed tributary to Pond Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of the associated outfall.

Special Condition No. 14: Sediment Pond Operation and Maintenance (Outfall 009):

a. No discharge is allowed from Outfall No. 009 during "low flow" or "no flow" conditions in the receiving stream, unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.

Pursuant to 35 Ill. Adm. Code Part 302.102, discharges from the referenced outfalls that otherwise would not meet the water quality standards of 35 Ill. Adm. Code Part 302 may be permitted if sufficient flow exists in the receiving stream to ensure that applicable water quality standards are met. That is, discharges not meeting the water quality standards of 35 Ill. Adm. Code Part 302 may only be discharged in combination with stormwater discharges from the basin, and only at such times that sufficient flow exists in the receiving stream to ensure that water quality standards in the receiving stream beyond the area of allowed mixing will not be exceeded.

The permittee shall determine the effluent limitation for chloride and/or the maximum effluent flow rate allowable to maintain water quality in the receiving stream. The following equations shall be used to make such determinations:

$$C_{DS} = [C_E Q_E + 0.25 C_{US} Q_{US}]/ (0.25 Q_{US} + Q_E)$$

Where:

C_E = Effluent concentration (mg/L)

Q_E = Effluent flow rate (cfs) for Outfall 009

Q_{US} = Upstream flow rate (cfs)

C_{US} = Upstream concentration (mg/L)

C_{DS} = Downstream concentration

The “calculated” downstream concentration shall be less than 500 mg/L for chloride and reported on the discharge monitoring reports (DMRs).

The permittee shall install a gauging station and conductivity monitor upstream of the discharge to determine an upstream flow (Q_{US}) and a chloride concentration (C_{US}) correlated to the conductivity value. In addition, the permittee shall install a continuous conductivity monitor downstream to ensure that the chloride concentration (correlated to the conductivity value) stays within the chloride water quality standard. The daily maximum downstream chloride concentration controlled to conductivity shall be reported on the DMR”s.

If there is no upstream mixing available for Outfall 009, the NPDES permit shall be regulated at 500 mg/L for Chloride and 1250 mg/L for Sulfate.

The upstream and downstream conductivity monitoring locations need to be approved by the Agency.

b. The following sampling and monitoring requirements are applicable to flow in Pond Creek which receives the discharges from Outfall 009.

   i. All sampling and monitoring required under 14(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.

   ii. Pond Creek shall be monitored and reported quarterly for Discharge Rate, Sulfate, Chloride and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding stream flow characteristics and in-stream contaminant concentrations, the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

   In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

   iii. Pond Creek shall be monitored and reported annually for Discharge Rate, Sulfate, Chloride and Hardness upstream of the associated outfall.

Special Condition No. 15: Sediment Pond Operation and Maintenance (Outfall 009 – Reclamation Area Discharge Classification):

a. For discharges resulting from precipitation events, in addition to the alternate effluent (Discharge Condition Nos. II and III) monitoring requirements, as indicated on the applicable effluent pages of this Permit, discharges from Outfall 009 shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.

b. The following sampling and monitoring requirements are applicable to flow in the Middle Fork Big Muddy River which receive discharges from Outfall 009.

Special Conditions

i. All sampling and monitoring required under 15(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.

ii. Middle Fork Big Muddy River shall be monitored and reported quarterly for Discharge Rate, Chloride, Sulfate and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding receiving stream flow characteristics and in-stream contaminant concentrations the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

iii. Middle Fork Big Muddy River shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of the associated outfall.

Special Condition No. 16: Sediment Pond Operation and Maintenance (Outfall 011):

a. Pursuant to 35 Ill. Adm. Code Part 302.102, discharges from the referenced outfalls that otherwise would not meet the water quality standards of 35 Ill. Adm. Code Part 302 may be permitted if sufficient flow exists in the receiving stream to ensure that applicable water quality standards are met. That is, discharges not meeting the water quality standards of 35 Ill. Adm. Code Part 302 may only be discharged in combination with stormwater discharges from the basin, and only at such times that sufficient flow exists in the receiving stream to ensure that water quality standards in the receiving stream beyond the area of allowed mixing will not be exceeded.

The permittee shall determine the effluent limitation for chloride and/or the maximum effluent flow rate allowable to maintain water quality in the receiving stream. The following equations shall be used to make such determinations:

$$C_{DS} = [C_E Q_E + 0.25 C_{US} Q_{US}]/ (0.25 Q_{US} + Q_E)$$

Where:

C_E = Effluent concentration (mg/L)

Q_E = Effluent flow rate (cfs) for Outfall 011

Q_{US} = Upstream flow rate (cfs)

C_{US} = Upstream concentration (mg/L)

C_{DS} = Downstream concentration

The “calculated” downstream concentration (CDS) shall be less than 500 mg/L for chloride and reported on the discharge monitoring reports (DMRs).

Chloride is limited in the NPDES permit at the limits described below. The maximum flow from Outfall 011 is 5,000 gpm and the maximum chloride concentration is 12,000 mg/L.

Sulfate and Iron (dissolved) shall be monitored from the effluent monthly when discharging.

The permit only allows a discharge when the Big Muddy River is flowing above 30 cfs. The maximum dispersion required for all water quality parameters is 34:1. Model predictions have been made for a maximum effluent total flow rate of 11.1 cfs. At the maximum chloride concentration of 12,000 mg/L, this maximum discharge requires a river flow of 1,734 cfs to meet a dispersion of 34:1 in less than 25 % of the river volume. The maximum distance to meet the water quality standard for all scenarios is 251 feet downstream with a plume width of 25 feet. The maximum zone of initial dilution to meet the acute Copper water quality standard for all scenarios is 18.2 feet downstream with a plume width of 4 feet.

The upstream flow (Q_{US}) should be based on the full flow measurement upstream of the proposed Outfall 011 that shall be approved by the Agency.

The upstream and downstream conductivity monitoring locations need to be approved by the Agency.

Special Conditions

The permittee shall install a conductivity monitor upstream of the discharge to determine a chloride concentration (C_{US}) correlated to the conductivity value. In addition, the permittee shall install a continuous conductivity monitor downstream to ensure that the chloride concentration (correlated to the conductivity value) stays within the chloride water quality standard. The daily maximum downstream chloride concentration controlled to conductivity shall be reported on the DMR's.

b. The following sampling and monitoring requirements are applicable to flow in Big Muddy River which receives the discharges from Outfall 011.

i. All sampling and monitoring required under 16(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.

ii. The Big Muddy River shall be monitored and reported quarterly for Discharge Rate, Sulfate, Chloride and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding stream flow characteristics and in-stream contaminant concentrations, the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

iii. The Big Muddy River shall be monitored and reported annually for Discharge Rate, Sulfate, Chloride and Hardness upstream of the associated outfall.

Special Condition No. 17: Data collected in accordance with Special Condition Nos. 13, 14, 15 and 16 above will be utilized to evaluate the appropriateness of the effluent limits established in this Permit. Should the Agency's evaluation of this data indicate revised effluent limits are warranted; this permit may be reopened and modified to incorporate more appropriate effluent limitations. This data will also be used for determination of effluent limitations at the time of permit renewal.

Special Condition No. 18: Discharges from Outfalls 006, 007, 008, 009, 009ES and 011 shall be monitored twice annually with such monitoring spaced at approximately 6-month intervals during the entire 5-year term of this NPDES Permit. Sampling of the discharges shall be performed utilizing the grab sampling method and analyzed for total (unfiltered) concentrations. The results of the sampling required under this Special Condition shall be submitted twice annually to the Agency in January and July of each calendar year to the addresses indicated in the Special Condition No. 3 above. The parameters to be sampled and the detection limits (minimum reported limits) are as follows:

Parameter	Detection Limit
Arsenic	0.05 mg/L
Barium	0.50 mg/L
Cadmium	0.001 mg/L
Chromium (hexavalent)	0.01 mg/L
Chromium	0.05 mg/L
Copper	0.005 mg/L
Lead	0.05 mg/L
Manganese	0.50 mg/L
Mercury*	1.00 ng/l**
Nickel	0.005 mg/L
Phenols	0.005 mg/L
Selenium	2.000 µg/l***
Silver	0.003 mg/L
Zinc	0.025 mg/L

* Utilize USEPA Method 1631E and the digestion procedure described in Section 11.1.1.2 of 1631E.
** 1.00 ng/l (nanogram/liter) = 1 part per trillion.
*** µg/l = micrograms/liter