

NPDES Permit No. IL0078221
Notice No. 5868c

Public Notice Beginning Date: **July 14, 2011**

Public Notice Ending Date: **August 15, 2011**

National Pollutant Discharge Elimination System (NPDES)
Permit Program

Draft New 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:

Capital Resources Development Company, L.L.C.
3008 Happy Landing
Springfield, IL 62711

Name and Address of Facility:

Capital Resources Development Company, L.L.C.
North Canton Mine
P.O. Box 97
Canton, IL 61520
3.0 miles northeast of Canton, Illinois
(Fulton County)

The Illinois Environmental Protection Agency (IEPA) 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 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. Commentors shall provide his or her name and address and the nature of the issues proposed to be raised and the evidence proposed to be presented with regards to those issues. Commentors 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 Section 309.115(a) of the Act, 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 Sections 309.109 through 309.112 of the Act 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 a new surface coal mine (SIC 1221). Mine operations will result in the discharge of alkaline mine drainage.

Application is made for six (6) new discharge(s) which are located in Fulton County, Illinois. The following information identifies the discharge points, receiving streams and stream classifications:

<u>Outfall</u>	<u>Receiving Stream</u>	<u>Latitude (North)</u>	<u>Longitude (West)</u>	<u>Stream Classification</u>
001	Middle Branch Copperas Creek	40°36'26"	89°58'47"	General Use
002	Middle Branch Copperas Creek	40°36'05"	89°58'18"	General Use
003	Unnamed tributary to West Branch Copperas Creek	40°35'50"	89°59'09"	General Use
004	West Branch Copperas Creek	40°35'55"	89°59'41"	General Use
005	West Branch Copperas Creek	40°36'04"	90°00'14"	General Use
006	West Branch Copperas Creek	40°36'08"	90°00'21"	General Use

The stream segment DZHAB of Middle Branch Copperas Creek receiving the discharge from Outfalls 001 and 002 is not on the draft 2010 303(d) list of impaired waters.

The stream segment DZHA of West Branch Copperas Creek receiving the flow from the unnamed tributary into which Outfall 003 discharges is not on the draft 2010 303(d) list of impaired waters.

The stream segment DZHA of West Branch Copperas Creek receiving the discharge from Outfalls 004, 005 and 006 is not on the draft 2010 303(d) list of impaired waters.

It is noted that stream segment DZHA of West Branch Copperas Creek receiving the discharges from the unnamed tributary into which Outfall 003 discharges, and receiving the discharges from Outfalls 004, 005 and 006, is ultimately tributary to Canton Lake which is on the draft 2010 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairment of Canton Lake.

Draft 2010 303(d) List:

Potential Causes

Mercury, Manganese, Total
Dissolved Solids (TDS), Total
Suspended Solids (TSS),
Aquatic Plants
(Macrophytes), Aquatic
Algae

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

Outfall: 001:

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)	Mercury	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	1909	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1909	500	2.82	Monitor only	Monitor only	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. 12.
 - 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 or 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 4.45 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. 12 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 001, being approved after July 27, 1987, 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.

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

Outfall: 002:

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)	Mercury	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	1909	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1909	500	2.82	Monitor only	Monitor only	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. 12.
 - 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 or 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 4.45 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. 12 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 002, being approved after July 27, 1987, 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.

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

Outfall: 003, 004, 005, 006

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)	Mercury	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	1995	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1995	500	1.0	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1995	500	1.0	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1995	500	1.0	Monitor only	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 or 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 4.45 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 Outfalls 003, 004, 005 and 006, being approved after July 27, 1987, 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.

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 Section 12, Township 7 North, Range 4 East, 4th P.M., and Sections 7 and 18, Township 7 North, Range 5 East, 4th P.M. Fulton County, Illinois.

Capital Resources Development Company, L.L.C. - North Canton Mine
NPDES No. IL0078221
Fulton County
Township 7 North, Range 4 East
Township 7 North, Range 5 East



**Antidegradation Assessment
Capital Resources Development Company, L.L.C.
North Canton Mine
NPDES Permit No. IL0078221**

A new surface coal mine is proposed. An application for an NPDES permit for storm related discharges of wastewater from a 1,084.5 acre mine site has been received. Six operational outfalls from sedimentation ponds are proposed. Two of the outfalls (001 and 002) will discharge directly, via short effluent ditches, to the Middle Branch of Copperas Creek. These two outfalls will contain all disturbed area runoff. The other four outfalls will discharge to the West Branch Copperas Creek, however, only runoff from undisturbed or reclaimed areas will drain to these sedimentation ponds. Materials used in this review were obtained from the applicant under covers dated May 11, 2010, Antidegradation Assessment North Canton Mine and No Net Loading Demonstration West Branch Copperas Creek North Canton Mine by Rapps Engineering & Applied Science, and August 21, 2010, Stream Bioassessment Canton Mine, West Branch Copperas Creek and Middle Branch Copperas Creek by Northwater Consulting.

Identification and Characterization of the Affected Water Body.

The Middle Branch of Copperas Creek (segment DZHAB) has a 7Q10 flow of zero cfs and is a General Use water. As it leaves the mine site, the stream has a watershed area of approximately 12.3 square miles. The stream is not listed on the Illinois Integrated Water Quality Report and Section 303(d) List – 2010 (draft). The stream is not listed as 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. The stream is not an enhanced water body pursuant to the dissolved oxygen water quality standard. The IDNR WIRT system lists no threatened or endangered species as inhabiting the receiving stream. The same information applies for the West Branch Copperas Creek. The West Branch Copperas Creek (segment DZHA) feeds Canton Lake approximately 2.5 miles below the outfalls. At the downstream end of the mine site the watershed size is 6.5 square miles. Canton Lake is listed as impaired for fish consumption, public water supply and aesthetic quality uses on the Illinois Integrated Water Quality Report and Section 303(d) List – 2010 (draft). The causes of impairment are given as mercury, manganese, total dissolved solids, total suspended solids, aquatic plants (macrophytes) and aquatic algae. The WIRT system lists no endangered species from Canton Lake.

The Northwater stream survey report cited above gives the results of a macroinvertebrate and fish study conducted on each receiving stream in July 2010. The streams had similar macroinvertebrate populations in the "fair" range. Fish populations were typical of small streams with the Middle Branch having a few more species, in keeping with its larger watershed. No threatened or endangered species were found. Physical attributes of the streams were also reported in this document. The streams are typical small, zero 7Q10 flow west central Illinois streams. Chemical data from the streams is reported in the antidegradation assessment document cited above. This data is used to determine sulfate limits for the permit and is also typical for this size and type of stream.

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

The mine outfalls will be classified as alkaline 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, chlorides and manganese from Outfalls 001 and 002 will constitute an increase in loading to the Middle Branch Copperas Creek as a result of the mining activities. Additionally, since the sedimentation ponds will only discharge as a result of a storm event, the receiving stream will have flow that will dilute the effluent whenever it is discharged. Sulfate and chloride will meet water quality standards at end-of-pipe. Manganese will be granted allowed mixing based on effluent quality estimates. Outfalls 003 through 006 will not result in increases in loading to West Branch Copperas Creek.

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. Manganese may become part of the bed sediments or may remain in the water column. 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 surface mine will extract the coal resources of the site. According to information given in the antidegradation assessment document cited above, opening a new mine will provide jobs for approximately 50 local residents with an annual payroll of approximately \$4.0 million. In addition, other local businesses would also benefit from the wealth created by the mine. Local and state taxes will increase by \$8.4 million as a result of the mine. Property taxes supporting many facets of local government will increase over that now collected from the existing farmland. Fulton County currently has an unemployment rate of 13.3%. In 2008, 9.9% of county residents were living below the poverty level.

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

Stormwater control at surface coal mines is a matter of applying established best management practices. The final step in these practices involves sedimentation ponds to catch all runoff from the mine, settle out solids, provide a venue for pH adjustment if necessary and allow a controlled discharge of the effluent to the receiving stream. Prior steps involve the minimization of exposed earth and coal refuse to the elements. Alternatives to this system of prevention and treatment of pollutants have been evaluated by the mine company in the antidegradation assessment document:

No discharge. Given the climate of Fulton County, the mine company concludes that it is not feasible to construct ponds so large that discharge will never occur.

Discharge to POTW or Other Sources. The nearest POTW is Norris, with Canton the next nearest plant. POTWs are not designed to treat wastewaters containing dissolved substances such as chloride or sulfate. Capacity at the Norris or Canton POTWs would be insufficient to handle stormwater flows from the mine. This option is not feasible.

Treat water to eliminate pollutants. Given the intermittent nature of stormwater runoff, facilities to treat the effluent for sulfate and chloride would be subject to large volumes for a few days per year and little or no effluent to treat for the remainder of the year. This has implications for sizing of the treatment facilities and maintenance of idled equipment that makes treatment for these substances infeasible. Additionally, each identified option has these or other drawbacks as described.

Filtration. Filtration will not remove dissolved substances, which are the primary potential pollutants present in sedimentation pond effluent. Filtration also requires a steady stream of wastewater. The effluent at the North Canton Mine will be intermittent, dependent on rainfall for flow.

Chemical Precipitation. Alkaline chemicals may be added to acid mine effluent to precipitate metals. The sludges produced must be disposed of and in some cases will contain hazardous materials added to the wastewater to attain precipitation. The chemistry of chemical precipitation does not lend itself to being turned on and off in relation to runoff events. The additives used require mining in their own right. The water discharged may contain these additives, such as aluminum, in elevated concentrations. These drawbacks make chemical precipitation infeasible.

Ion Exchange. Ordinary ion exchange would produce a high strength waste water that would have to be disposed of offsite. The ion exchange equipment would not operate successfully with an intermittent runoff-related effluent stream such as that found at coal mines. These drawbacks make ion exchange infeasible for use at the coal mine.

Membrane Processes. Standard reverse osmosis (RO) treatment would not be feasible as it has high energy and maintenance requirements and produces a waste stream that must be disposed of offsite. Membrane systems would not be amenable to sudden surges in wastewater typical of stormwater runoff events because they have limited capacity and are not easily started after periods of no flow. For these reasons membrane processes would be infeasible for use at the coal mine.

Biological treatment in wetlands or reactors. Anaerobic conditions must be maintained in wetlands for sulfate to be reduced by bacteria. Large wetlands would be required and treatment would be very hard to control. Hydrogen sulfide gas may be generated by this process. This method is not feasible for the conditions of intermittent flow present at this mine. Likewise, biological reactors must maintain bacteria under anaerobic conditions. The intermittent nature of the stormwater runoff effluent would also make this treatment infeasible as the bacteria would be difficult to maintain without a constant food supply.

Cost Effective Sulfate Removal (CESR) process. This is a proprietary technology that uses hydrated lime and proprietary chemicals to precipitate gypsum, metals and ettringite. Sludges would be produced that would require landfill disposal. The proprietary technology is still being developed. These drawbacks make the CESR process infeasible for use at the North Canton Mine.

Manganese Treatment. Manganese is subject to precipitation at high pH levels. Permit limits for manganese based on the water quality standard must be met; otherwise some level of manganese treatment must be employed. Manganese treatment is considered infeasible when the effluent meets the manganese limit because of the volume of sludge generated and the health and safety concerns over the chemicals used in this process.

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

The Illinois Department of Natural Resources was consulted on endangered species issues and concluded in an October 8, 2009, letter that adverse impacts on endangered or threatened species are unlikely. Consultation was terminated.

Agency Conclusion.

This assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard). We find that the proposed activity will result in the attainment of water quality standards. All existing uses will be fully protected. 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. This activity will benefit the community at large by providing jobs. The proposed activity is therefore compliant with the Antidegradation standard.

NPDES Permit No. IL0078221
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

New NPDES Permit

Expiration Date:

Issue Date:
Effective Date:

Name and Address of Permittee:

Capital Resources Development Company, L.L.C.
3008 Happy Landing
Springfield, Illinois 62711

Facility Name and Address:

Capital Resources Development Company, L.L.C.
North Canton Mine
P.O. Box 97
Canton, IL 61520
3.0 miles northeast of
Canton, Illinois
(Fulton County)

Discharge Number and Classification:

001, 002 Alkaline Mine Drainage
003 Alkaline Mine Drainage
004, 005, 006 Alkaline Mine Drainage

Receiving waters

Middle Branch Copperas Creek
Unnamed tributary to West Branch
Copperas Creek
West Branch Copperas Creek

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.

Ronald E. Morse, Manager
Mine Pollution Control Program
Bureau of Water

REM:LDC:cs/5607c/07-08-11

NPDES Coal Mine Permit
NPDES Permit No. IL0078221
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*: 001 (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 ***	Mercury see Special Condition No. 16	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	1909	500	1.0	Monitor only	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1909	500	2.82	Monitor only	Monitor Only	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. 12.
- 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 or 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 4.45 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. 12 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, a 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, chloride and manganese in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition Nos. 8 and 12 for the discharges from Outfall 001 and the Middle Branch Copperas 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 Coal Mine Permit
 NPDES Permit No. IL0078221
 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*: 002 (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 ***	Mercury see Special Condition No. 16	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	1909	500	1.0	Monitor only	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1909	500	2.82	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1909	500	2.28	Monitor only	Monitor Only	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. 12.
- 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 or 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 4.45 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. 12 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, a 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, chloride and manganese in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition Nos. 8 and 12 for the discharges from Outfall 002 and the Middle Branch Copperas 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 Coal Mine Permit
NPDES Permit No. IL0078221
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*: 003, 004, 005, 006 (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 ***	Mercury see Special Condition No. 16	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	1995	500	1.0	Monitor only	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1995	500	1.0	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1995	500	1.0	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1995	500	1.0	Monitor only	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 or 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 4.45 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, a 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, chloride and manganese must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition Nos. 8 and 13 for the discharges from Outfalls 003, 004, 005 and 006, and the unnamed tributary to West Branch Copperas Creek and the West Branch Copperas 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 Coal Mine Permit
NPDES Permit No. IL0078221
Effluent Limitations and Monitoring

Upon completion of Special Condition 9 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 001, 002 (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	1909	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1909	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1909	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1909	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 or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.45 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 14 for the discharges from Outfalls 001 and 002 and the Middle Branch Copperas 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 Coal Mine Permit
NPDES Permit No. IL0078221
Effluent Limitations and Monitoring

Upon completion of Special Condition 9 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 003, 004, 005, 006 (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	1995	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1995	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1995	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1995	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 or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.45 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfalls 003, 004, 005 and 006, and the unnamed tributary to West Branch Copperas Creek and West Branch Copperas 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 Coal Mine Permit
 NPDES Permit No. IL0078221
 Effluent Limitations and Monitoring

Upon completion of Special Condition No. 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 (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.

* 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. IL0078221

Construction Authorization No. 2292-06

C.A. Date: July 6, 2011

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

A surface mine containing a total of 1084.5 acres, identified as IDNR/OMM Permit No. 385, located in Section 12, Township 7 North, Range 4 East and Sections 7 and 18, Township 7 North, Range 5 East, 4th P.M., Fulton County, Illinois, as described and depicted in IEPA Log Nos. 2292-06, 2292-06-B, 2292-06-E, 2292-06-F and 2292-06-I.

The facilities at this surface mine include an office building, equipment shop and storage building, truck scale, drainage control structures (ditches), sedimentation basins, borrow pit areas, soil storage areas, haul roads and coal storage site.

Surface drainage control is provided by six (6) sedimentation ponds with discharges designated as Outfalls 001, 002, 003, 004, 005 and 006 all classified as alkaline mine drainage. Outfalls 001 and 002 discharge to Middle Branch Copperas Creek, Outfall 003 discharges to unnamed tributary to West Branch Copperas Creek and Outfalls 004, 005 and 006 discharge to West Branch Copperas Creek.

<u>Outfall</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Receiving Water</u>
001	40° 36' 26"	89° 58' 47"	Middle Branch Copperas Creek
002	40° 36' 05"	89° 58' 18"	Middle Branch Copperas Creek
003	40° 35' 50"	89° 59' 09"	Unnamed tributary to West Branch Copperas Creek
004	40° 35' 55"	89° 59' 41"	West Branch Copperas Creek
005	40° 36' 04"	90° 00' 14"	West Branch Copperas Creek
006	40° 36' 08"	90° 00' 21"	West Branch Copperas Creek

As described in IEPA Log No. 2292-06-F, all runoff from disturbed area that includes exposed consolidated materials will be routed, collected and pumped or otherwise directed to treatment basins with discharges designated as Outfalls 001 and 002 which are both tributary to Middle Branch Copperas Creek. The disturbed area which includes exposed consolidated materials is identified as the active pit from the highwall from which unconsolidated material has been removed exposing the underlying shales to the spoil side of the pit where excavated shales have yet to be covered with unconsolidated material. Only stormwater runoff from areas where no consolidated materials are exposed may be directed to basins and Outfalls 003, 004, 005 and 006 for discharge to West Branch Copperas Creek.

No coal preparation plant facilities or coal related refuse disposal is proposed or approved for this facility. Coal will be temporarily stockpiled, shipped directly to consumer, or transported to off-site coal preparation plant facility.

Groundwater monitoring for this area will consist of Monitoring Well Nos. MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8 and MW-9 as depicted in IEPA Log No. 2292-06-I. Groundwater monitoring requirements are outlined in Condition No. 12.

Compacted clay liners as discussed and described in IEPA Log No. 2292-06-I shall be installed beneath the coal stockpile areas, beneath the Stormwater Detention Basin and in the drainage control ditch that conveys runoff from the coal stockpiles to the stormwater detention basin. Construction of the compacted clay liners shall be subject to and in accordance with the specifications and requirements of Condition No. 13.

Prior to issuance of this Permit, the permittee has undergone a transfer and name change from Capital Resources Development Company to Capital Resources Development Company, L.L.C., pursuant to information contained in IEPA Log No. 0086-08.

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109 as detailed in Log Nos. 2292-06, 2292-06-B and 2292-06-E.

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

NPDES Permit No. IL0078221

Construction Authorization No. 2292-06

C.A. Date: July 6, 2011

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 person indicated on Page 1 as approved shall constitute part of this permit and are identified by Log Nos. 2292-06, 2292-06-B and 2292-06-E in the records of the Illinois Environmental Protection 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 Illinois Environmental Protection Agency and a supplemental permit issued.
5. The permit holder shall notify the Environmental Protection 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, 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 reporting to the basin should be reclassified in a manner consistent with the applicable rule of 35 Ill. Adm. Code 406 as amended in R84-29 at 11 Ill. Reg. 12899. 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 ($\text{Al}_2(\text{SO}_4)_3$), hydrated lime ($\text{Ca}(\text{OH})_2$), 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 permitted 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. After settling, recirculation water which meets the requirements of 35 Ill. Adm. Code 406.106 and 406.202, may be discharged. The use of additives in the recirculation water which require treatment other than settling to comply with the Act will require a revised permit.

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Construction Authorization No. 2292-06

C.A. Date: July 6, 2011

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. Groundwater monitoring requirements for the OMM Permit No. 385 area as described in IEPA Log Nos. 2292-06, 2292-06-B, 2292-06-E, 2292-06-F and 2292-06-I are as follows:
- a. Groundwater monitoring shall consist of Well Nos. MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8 and MW-9 as depicted in IEPA Log No. 2292-06-I. Drill logs and well completion diagrams shall be submitted to the Agency within 30 days of well installation.
 - b. 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
Cadmium	Mercury	Acidity
Chloride	Molybdenum	Alkalinity
Chromium	Nickel	Hardness
Cobalt	Phenols	Water Elevation
Copper	Selenium	
Cyanide	Silver	
 - c. Following the ambient monitoring as required under 12(b) above, routine monitoring shall continue on a quarterly basis as follows:
 - i. Monitoring Well Nos. MW-6, MW-7, MW-8 and MW-9 shall continue to be monitored quarterly for the contaminants identified in 12(b) above.

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C.A. Date: July 6, 2011

- ii. Monitoring Well Nos. MW-1, MW-2, MW-3, MW-4 and MW-5 shall be monitored quarterly as required by IDNR/OMM for the following list of constituents:

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

- d. 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 12(b) above.
- e. Groundwater monitoring reports shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 5 of this NPDES permit.
- f. A statistically valid representation of background (existing) and/or post-mining groundwater quality required under Condition 12(b) and 12(d) 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 groundwater quality.

- i. Determine the arithmetic mean \bar{X}_b of each parameter for the sampling period. If more than one well is used, an equal number of samples must be taken from each well.

$$\bar{X}_b = \frac{X_1 + X_2 + \dots + X_n}{n}$$

Where:

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

X_n = Values for each upgradient sample

n = the number of samples taken

- ii. Calculate the 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:

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

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

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

$$CL = \bar{X}_b \pm t \sqrt{1 + 1/n}$$

Where:

CL = upper confidence limit prediction
(upper and lower limits should be calculated for pH)

t = one-tailed t value at the required significance level and at n-1 degrees of freedom from Table 1
(a two-tailed 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 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 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 t-Tables Level of Significance

Degrees of freedom	t-values (one-tail)		t-values (two-tail)*	
	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. IL0078221

Construction Authorization No. 2292-06

C.A. Date: July 6, 2011

13. The compacted clay liners to be constructed beneath the coal stockpile areas, beneath the Stormwater Detention Basin and in the drainage control ditch that conveys runoff from the coal stockpile areas to the stormwater detention basin shall be subject to the following requirements and procedures as well as additional specifications as detailed in IEPA Log No. 2292-06-I.

Foundation and Subgrade

- a. All vegetation and surface materials shall be removed to the lines and grades in accordance with the approved plan.
- b. All joints, fractures and depressions shall be filled as necessary to prevent damage to liner.
- c. Any sand lenses or moisture seeps will be removed and the area backfilled with appropriate foundation materials.

Construction Specifications

- a. The clay liners will be constructed utilizing on-site materials with such material to be placed in lifts not to exceed eight (8) inches (loose).
- b. The final compacted clay liners shall be a minimum of 2 ft. in thickness.
- c. Compactive effort shall be applied to each soil lift to achieve a hydraulic conductivity at 1×10^{-7} cm/sec, or less.
- d. All construction materials shall be free of grass, vines, vegetation, roots and rock or stone greater than 4 inches in diameter.
- e. Placement of frozen material or the placement of material on frozen ground is prohibited.

Testing Specifications

- a. Testing of the construction materials and compacted clay liner lifts shall include Atterburg Limits, Grain Size Distribution, Standard Proctor Density, Nuclear Density and Laboratory Permeability.
- b. Testing frequency of the above cited tests shall be a minimum of 1 test/10,000 cu. yds. of material placed.
- c. Results of all testing shall be submitted to the Agency within 60 days of completion of each compacted clay liner.

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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

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

Attn: Compliance Assurance Section

Should electronic filing be available and elected for any periodic monitoring and reporting requirements, the Agency shall be notified via correspondence or e-mail at such time that the electronic filing has been completed.

Special Condition No. 4: Completed Discharge Monitoring Report (DMR) forms and stream monitoring results, 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	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 forms (DMR's) using one such form for each applicable Discharge Condition each month.

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: 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. 7: 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.

Special Condition No. 8: Plans must be submitted to and approved by this Agency prior to construction of a sedimentation pond. 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.

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Special Condition No. 9: 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 45 days prior to the month that the permittee wishes the discharge be classified as a reclamation area discharge. The Agency will notify the permittee upon approval of the change.

Special Condition No. 10: The special stormwater effluent standards apply only on approval from the Agency. To obtain approval, a request with supporting documentation shall be submitted 45 days prior to the month that the permittee proposes 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. 11: Annual stormwater monitoring is required for all discharges not reporting 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. 12: Sediment Pond Operation and Maintenance (Outfalls 001 and 002):

- a. No discharge is allowed from Outfall Nos. 001 and 002 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. For purposes of this Special Condition "low flow" shall be defined as any condition wherein 25% of the upstream flow available for mixing is less than the ratio times the flow rate being discharged from the respective outfall. These ratios based on 25% of the receiving stream flow are as follows:

Outfall No.	Flow Ratio of Receiving Stream to Outfall Discharge
001	3.4:1
002	2.9:1

Pursuant to 35 Ill. Adm. Code 302.102, discharges from the referenced outfalls that otherwise would not meet the water quality standards of 35 Ill. Adm. Code 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 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. Following any such stormwater discharge, but prior to the flow in the receiving stream subsiding, the impounded water in the basin may be pumped or otherwise evacuated sufficiently below the discharge elevation to provide capacity for holding a sufficient volume of mine pumpage and/or surface runoff to preclude the possibility of discharge until such time that a subsequent precipitation event results in discharge from the basin. Should the Permittee elect to pump impounded water from the basin in accordance with this Special Condition, the pump intake shall be "floated" near the impounded water surface or otherwise managed to prevent re-suspension and subsequent discharge of previously accumulated sediments. At times of stormwater discharge, 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 Nos. 001 and 002 shall be monitored and reported for Discharge Rate, Sulfate, Chloride, Manganese and Hardness.

- b. The following sampling and monitoring requirements are applicable to flow in The Middle Branch Copperas Creek which receives the discharges from Outfalls 001 and 002.
 - i. All sampling and monitoring required under 12(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.
 - ii. The Middle Branch Copperas Creek shall be monitored and reported quarterly for Discharge Rate, Sulfate, Chloride, Manganese 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

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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 Middle Branch Copperas Creek shall be monitored and reported annually for Discharge Rate, Sulfate, Chloride, Manganese and Hardness upstream of the associated outfall.

Special Condition No. 13: Sediment Pond Operation and Maintenance (Outfalls 003, 004, 005 and 006):

- 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 003, 004, 005 and 006 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 West Branch Copperas Creek which receives the discharge from Outfall 003 and the West Branch Copperas Creek which receives discharges from Outfalls 004, 005, and 006.
 - 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. The unnamed tributary to West Branch Copperas Creek and the West Branch Copperas 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. The unnamed tributary to West Branch Copperas Creek and the West Branch Copperas 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 (Outfalls 001 and 002 – Reclamation Area Discharge):

- 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 and 002 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 Branch Copperas Creek which receives discharges from Outfalls 001 and 002.
 - 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. The Middle Branch Copperas 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. The Middle Branch Copperas Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of the associated outfall.

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Special Condition No. 15: Data collected in accordance with Special Condition Nos. 12, 13 and 14 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. 16: Mercury shall be monitored quarterly until a minimum of ten (10) samples have been collected. Samples shall be collected and tested in accordance with USEPA 1631E using the option at Section 11.1.1.2 requiring the heating of samples at 50°C for 6 hours in a BrCl solution in closed vessels. This test method has a Method Detection Limit (MDL) of 0.001 ug/l. The results of such testing must be submitted with the quarterly Discharge Monitoring Reports (DMRs). The Permittee may submit a written request to the Agency to discontinue quarterly Mercury monitoring if the sampling results show no reasonable potential to exceed the Mercury water quality standard.