BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PRAIRIE RIVERS NETWORK and SIERRA CLUB, Petitioners	)	
v.	)	**PCB (APPEAL FROM IEPA DECISION GRANTING NPDES PERMIT)**
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and SUGAR CAMP ENERGY, L.L.C. ,	)	
Respondents	)	

NOTICE OF FILING

To:

John Therriault, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph St., Suite 11-500
Chicago, IL 60601

Division of Legal Counsel
Illinois Environmental Protection Agency
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P.O. Box 19276
Springfield, IL 62794-9276

Sugar Camp Energy, L.L.C.
430 Harper Park Drive
Beckley, WV 25801

PLEASE TAKE NOTICE that the attached **Petition for Review of a Decision by the Illinois Environmental Protection Agency** was electronically filed today, January 5th, 2009, a copy of which is herewith served upon you.

Respectfully Submitted,

Albert Ettinger (Reg. No. 3125045)
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Counsel for Prairie Rivers Network and Sierra Club

Environmental Law and Policy Center
35 E. Wacker Dr. Suite 1300
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DATED: January 5th, 2009

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PRAIRIE RIVERS NETWORK and SIERRA CLUB, Petitioners	)	
	)	**PCB**
	)	**(APPEAL FROM IEPA**
v.	)	**DECISION GRANTING**
	)	**NPDES PERMIT)**
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and SUGAR CAMP ENERGY, L.L.C. ,	)	
Respondents	)	

PETITION FOR REVIEW OF A DECISION BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Pursuant to 415 ILCS 5/40(e)(1) and 35 Ill. Adm. Code Section 105, Prairie Rivers Network and the Sierra Club (collectively, "Petitioners") hereby petition for review of the December 2, 2008 decision of the Illinois Environmental Protection Agency ("IEPA") to grant a new National Pollutant Discharge Elimination System ("NPDES") permit (Permit No. IL 0078565) to Sugar Camp Energy, L.L.C. to discharge pollutants from a coal mining site into Middle Fork Big Muddy River, two unnamed tributaries of the Middle Fork, Akin Creek and three unnamed tributaries of Akin Creek (See Final Permit and Responsiveness Summary at http://www.epa.state.il.us/public-notices/2008/sugar-camp-energy/final-permit.pdf).

In support of their petition, Petitioners state:

Petitioners

1. Prairie Rivers Network is an Illinois not-for-profit corporation concerned with river conservation and water quality issues in Illinois. It works with concerned citizens throughout the state to address those issues that impact Illinois streams. Among

Prairie Rivers Network members are those who live in the Big Muddy River watershed and are concerned with pollution that would affect their ability to enjoy recreation activities dependent on the ecological health of the Big Muddy watershed including fishing, boating, canoeing, nature study and hiking. (See Transcript of Proceedings, September 23, 2008, http://www.epa.state.il.us/public-notices/2008/sugar-camp-energy/hearing-transcript.pdf, p. 48; Joint Comment Letter of Prairie Rivers Network, Sierra Club and American Bottom Conservancy, August 25, 2008, Ex. A; Post-Hearing Comments of Prairie Rivers Network, Sierra Club and American Bottom Conservancy, October 22, 2008, Ex. B).

2. The Sierra Club is a California not-for-profit corporation, which has among its purposes to protect and restore the quality of the natural and human environment. The Sierra Club has over 25,000 members residing in the State of Illinois and has members who are adversely affected by any degradation of the Middle Fork of the Big Muddy River, Akin Creek and tributaries thereto that could affect the uses of those waters. Sierra Club members live in the Big Muddy River watershed, and many Sierra Club members are concerned with pollution that would affect their ability to enjoy recreational activities dependent on the ecological health of the Middle Fork of the Big Muddy River, Akin Creek and tributaries of both of these rivers including fishing, canoeing, kayaking, bird watching, nature study and hiking. Sierra Club members are adversely affected by the unnecessary degradation of water quality that occurs as a result of suspended solids, sediment, sulfates, chlorides, iron, manganese and other pollution discharged into the Middle Fork of the Big Muddy River, Akin Creek and their tributaries. (See Transcript and Exhibits A-C)

3. Members of the Petitioners, including Traci Barkley, Barb McKasson, Becki Clayborn, Terri Treacy, and Joyce Blumenshine appeared at the hearing held in this proceeding or submitted comments in opposition to the permit. They and other members of Petitioners are so situated as to be affected by the permit and by violations of water quality standards in the Middle Fork of the Big Muddy, Akin Creek and tributaries of both rivers. (See Transcript and Exhibits A-C).

The Middle Fork of the Big Muddy River and Akin Creek

4. The Middle Fork of the Big Muddy River and Akin Creek lie within the Big Muddy River watershed. The entire watershed of the Middle Fork of the Big Muddy has been identified as a Resource Rich Area (RRA) by the Illinois Department of Natural Resources. Resource Rich Areas are those areas identified as being rich in biological resources. Only thirty Resource Rich Areas have been so designated in the state. The Middle Fork of the Big Muddy RRA is one of the few places in the state that still contains large tracts of bottomland forests. The watershed provides habitat for the state-threatened marsh rice rat, among other aquatic species dependent on an intact, healthy riverine environment. (See Inventory of Resource Rich Areas of Illinois: An Evaluation of Ecological Resources, Ex. D).

5. The Middle Fork of the Big Muddy River has been identified as an impaired water by IEPA. The river's aquatic life uses are listed as impaired by manganese, low dissolved oxygen, and sedimentation/siltation (See Responsiveness Summary p. 21, 47).

Statement of Issues Raised

6. On July 25, 2008, IEPA gave notice that it had made a tentative decision

to issue a new NPDES permit to Sugar Camp Energy, L.L.C. for discharges into the Middle Fork of the Big Muddy River, Akin Creek and tributaries of both water bodies. The new permit would allow Sugar Camp Energy to discharge mine drainage, reclamation area drainage and stormwater runoff into these receiving streams. After reviewing a copy of the draft permit, Petitioners submitted written comments on August 25, 2008, testified at a public hearing held on the draft permit on September 23, 2008, and submitted post-hearing written comments on October 22, 2008 (See Transcript and Exhibits A-C).

7. In their written comments and testimony, Petitioners raised legal and scientific issues regarding flaws in the draft permit and in IEPA's consideration of the draft permit and asked that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loadings be incorporated into the permit and that the permit be improved in a number of respects. These comments requested that:

a) Proper identification and quantification of all pollutant loadings, analysis of the potential impacts of those increases on the receiving streams, and assurance that the permit would not allow discharges that could cause or contribute to violations of any numeric or narrative water quality standard;

b) Completion of an appropriate biological study to assure that the discharge would not adversely affect the existing uses of the receiving streams;

c) Separation of mine drainage treatment basins from stormwater basins in order to improve treatment options and to decrease the likelihood that additional loadings will contribute to a violation of water quality standards;

d) Incorporation into the permit conditions of various best management practices regarding the minimization of sulfate formation and chloride leaching.

e) Evaluation of the need for clay liners in sedimentation basins 002, 005, 006, 007, and 008.

f) Appropriate drainage control for an on-site soil stock pile in accordance with Title 35 Ill. Administrative Code 406.108.

g) Incorporation of alternative treatment technologies for minimizing increases in pollutant loadings (sulfate, chloride, iron, manganese, etc); and that

h) IEPA properly control discharges of sanitary waste from the site.

8. On December 2, 2008, Illinois EPA issued the permit that is the subject of the current appeal. While substantial changes were made to the draft permit, the final permit did not remedy many of the flaws discussed above that were raised by Petitioners in oral and written comments.

Specifically with regard to issues that had been raised by Petitioners during the hearing and public comment period:

a) Relating to the comment showing that the draft permit and supporting documents did not comply with Illinois' antidegradation rules requiring the IEPA to identify and quantify proposed pollutant load increases and the potential impacts of those increases on the affected waters, 35 Ill. Adm. Code Section 302.105 (f), IEPA initially stated that underground mine pumpage was outside the scope of its NPDES permit review. Upon objection by Petitioners, IEPA conceded that underground mine pumpage is subject to regulation under the permit. The applicable sections, demonstrating that

mine pumpage is within the scope of NPDES permit review, are noted below, with emphasis in italics.

Title 35 Ill Adm. Code, Subtitle D Regulations:

401.403. Purpose

The purpose of this Subtitle D is to prevent pollution of water of Illinois caused by the failure to plan proper environmental safeguards for the location, preparation, operation and abandonment of *mining activities, mining* and mine refuse operations. A permit system is established to control the multitude of contaminating point and non-point source discharges, visible and hidden, continuous and fluctuating, which are potentially present in mining activities, mining and mine refuse operations.

402.101. Definitions

"mine discharge": any point source discharge, whether natural or manmade, from a mine related facility. Such discharges include but are not limited to *mechanical pumpages*, pit overflows, spillways, drainage ditches, seepage from mine or mine refuse areas, effluent from processing and milling or mineral preparation plants.

"mining activities": all activities on a facility which are directly in furtherance of mining, including mining activities before, during and after mining. The term includes, but is not limited to, the following:

Preparation of land for mining activities;
Construction of mine related facilities which could generate refuse, result in a discharge or have the potential to cause water pollution;
Ownership or control of a mine related facility;
Ownership or control of a coal storage yard or transfer facility;
Generation or disposal of mine refuse;
Mining;
Opening a mine;
Production of a mine discharge or non-point source mine discharge;
Surface drainage control; and
Use of acid-producing mine refuse.

"mining": the surface or underground extraction or processing of natural deposits of coal, clay, fluorspar, gravel, lead bearing ores, peat, sand, stone, zinc bearing ores or other minerals by the use of any mechanical operation or process. The term also includes the recovery or processing of the minerals from a mine refuse area.

405.100. Preamble

Part 405 governs the issuance of both state and NDPES permits and contains substantive rules governing mining activities and construction of mine related facilities.

405.104. Permit Applications

(b) An application for a state or NPDES permit shall include:

(15) The location of all mine discharge points and non-point source mine discharge sources, method or type of sediment basins, erosion control devices and

wastewater treatment facilities for all mine related facilities including designation of collection points for water *discharged from all mechanical pumping* or gravity flow systems used for draining the mine and mine refuse area.

Despite this language, there is no evidence that IEPA considered the additional pollutant loadings in its water quality modeling in development of the NPDES permit parameters except that it appears that IEPA decided that the pumpage would not be significant (Responsiveness Summary p. 61). However, based on experience at the Pond Creek Mine, the applicant estimated that initial mine pumpage will average 360,000 gallons per day for the first longwall panel. It further estimated that additional pumpage of 30,000-60,000 gallons per day may be required for each additional panel, proposed to be mined at a rate of one panel per year. Because this water will be in contact with coal fines and solids as well as with other rock material, it will carry both dissolved and suspended solids when pumped to the surface sedimentation basins. These pollutants have not been identified and quantified as required by 35 Ill. Adm. Code Section 302.105 (f).

b) With regard to the comment that the draft permit and supporting documents did not comply with Illinois' antidegradation rules requiring protection of the existing uses of the receiving waters, 35 Ill. Adm. Code Section 302.105(a), IEPA failed to consider the impact of suspended solids and sediment on existing uses. IEPA also failed to consider the impact on existing uses of the additional pollutant loadings from underground mine pumpage. Fish and invertebrate samples collected from stations in the Middle Fork Big Muddy River and Akin in 2008 had not been fully analyzed at the time the permit was issued (Responsiveness Summary at p. 43).

c) Despite Petitioner's requests regarding the incorporation of appropriate

best management practices into the permit conditions, IEPA failed to include special conditions requiring minimization of sulfate formation and chloride leaching. IEPA also failed to include a special condition requiring appropriate drainage control for non-point source mine discharge in accordance with Title 35 Ill. Adm. Code 406.108, and to evaluate the need for clay liners in five of the eight sedimentation ponds.

d) Despite Petitioners' repeated urgings that IEPA take the steps necessary to comply with 35 Ill. Adm. Code Section 302.105(c) by assuring that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loadings be incorporated into the permit and that IEPA perform the required financial analyses regarding pollution control costs, IEPA never adequately weighed pollution control alternatives and completely failed to determine both the costs of the various alternatives and the impact of those costs on the viability of the proposed project.

(i) The IEPA dismissed pollution control alternatives (Responsiveness Summary at p.45-46) presented by the Petitioners (See Ex. A,B) stating "the alternative treatment technology descriptions provided by the commenter have little information connecting them to treatment of stormwater runoff at Illinois coal mines." IEPA also stated that "the supplemental information submitted, namely a memorandum date October 15, 2008 from Carpenter Environmental Associates, Inc., (and the references cited in this memorandum) does not serve to objectively evaluate conditions specific to this permit" (Responsiveness Summary p. 49). Finally, IEPA faults Petitioners for failing to make cost estimates of the alternatives. However, it was not Petitioners' duty under the regulations to make cost estimates or even to provide alternatives. Petitioners

provided information regarding possible alternative treatments to assist IEPA to perform its duty to "assure…all technically feasible and economically reasonable measures to avoid or minimize the extent of the proposed increase of pollutant loading [be] incorporated into the proposed activity. 35 Ill. Adm. Code 302.105 (c) (2) (B) (iii)."

(ii) Under the Board's rules, the permit application must provide:

> Assessments of alternatives to proposed increases in pollutant loading or activities subject to Agency certification pursuant to Section 401 of the CWA that result in less of a load increase, no load increase or minimal environmental degradation. Such alternatives may include:
>
> i) Additional treatment levels, including no discharge alternatives;
>
> ii) Discharge of waste to alternate locations, including publicly-owned treatment works and streams with greater assimilative capacity; or
>
> iii) Manufacturing practices that incorporate pollution prevention techniques.

35 Ill. Adm. Code 302.105 (f)(D). The permit application did not include such an assessment and no proper assessment of this nature was ever provided by the applicant.

(iii) While the IEPA did ask the mine company to perform an analysis of the treatment technologies provided by the Petitioners, this report, entitled Sugar Camp Mine, November 20, 2008, provides no real analysis of proposed alternatives. For instance, a cost per gallon estimate ($3-10/1000 gallons treated) was provided for only one of the alternatives. This estimate, moreover, provides no information about the total cost of using the alternative because no figure is given as to how much water will be treated.

Two alternatives (ion exchange and the CESR process) were described as having some application but they were not actually explored. One was dismissed because it was described as being directed to acidic mine drainage while the drainage from the subject mine is "**expected** to be alkaline." No information was provided that substantiated that

the technology would not work for alkaline discharges. Another alternative was dismissed because it was anticipated that field testing would be required but no showing was made that field testing was impracticable. The other technologies presented by the Petitioners were similarly based on little or no evidence.

Further, the mine company rejected alternatives on the basis that they would require steady inflow rates, ignoring the fact that Petitioners had requested that the site utilize separate treatment (sedimentation) and stormwater basins which would offer the opportunity for more defined flows of internal discharges needing treatment, such as coal processing wastewater. In addition, neither the applicant nor IEPA apparently ever estimated the costs of building larger lagoon(s) that would be needed to make the discharges more regular. The claim that increased lagoon sizes and better treatment would use additional land is not supported by estimates of the amount of land that would be needed or the value of the land that would be used. Indeed, perhaps such lagoons could be placed to some extent in land areas that the applicant intends to destroy through longwall subsidence.

e) Despite Petitioners' comments that IEPA cannot properly issue a permit to a new source that will cause or contribute to a violation of water quality standards, see 40 C.F.R. Section 122.4(i), 122.44(d), and the fact that the Middle Fork of the Big Muddy River is impaired due to manganese and sedimentation/siltation (See Ex. E), the final permit allows for additional loadings of both manganese and sediment, which will contribute to the impairments by allowing pollution of water that currently serves to dilute pollution from other sources. Further, although IEPA acknowledged the likelihood of iron being associated with the coal (Responsiveness Summary p. 52), IEPA did not

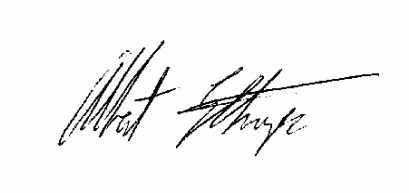
place a concentration or load limit on iron discharges (Responsiveness Summary p. 47). Thus, the permit violates 35 Ill. Adm. Code 302.105 (c)(B), Ill. Adm. Code 304.105 and 35 Ill. Adm. Code 309.141.

e) IEPA decided not to limit discharges of the sanitary wastes to be generated on the site, relying on regulation by the county health department (Responsiveness Summary p. 33). However, such local regulation is an inadequate substitute for required Clean Water Act regulation. There is no exception to the Clean Water Act for small discharges. The permit, by failing to control what must be controlled under federal law, violates applicable Board regulations. See 35 Ill. Adm. Code 309.141(d).

9. Members of Petitioners will be adversely affected when pollution discharged under the permit causes unnecessary degradation of the water quality in the Middle Fork of the Big Muddy River, Akin Creek and tributaries thereto. They will also be adversely affected when permitted discharges cause or contribute to the degradation of the existing uses of these receiving streams and otherwise injure the ecology of the streams as a result of IEPA's failure to require a proper antidegradation analysis.

WHEREFORE, Prairie Rivers Network and the Sierra Club ask that the Pollution Control Board set aside the NPDES permit (No IL0078565) issued to Sugar Camp Energy, L.L.C. as not sufficiently protective of the environment and not in accord with law, and direct that the Agency reconsider the permit in order to establish conditions and limits necessary to protect Illinois waters, assure protection of Illinois water quality

standards, and comply with the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq., and Illinois law.



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Counsel for Prairie Rivers Network and Sierra Club

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312 795 3707

January 5, 2009

CERTIFICATE OF SERVICE

I, Albert E. Ettinger, the undersigned, hereby certify that I have served the attached **Petition for Review of a Decision by the Illinois Environmental Protection Agency** upon:

Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601

via electronic filing on January 5th, 2009; and upon the attached service list by depositing said documents in the United States Mail, postage prepaid, in Chicago, Illinois on January 5th, 2009.

Respectfully Submitted,

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SERVICE LIST-
January 5th, 2009

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Sent via regular mail and email to larry.crislip@illinois.gov and Kent.Mohr@Illinois.gov

August 25, 2008

Larry D. Crislip
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Re: NPDES Permit No. IL0078565, Notice No. 4953c, Sugar Camp Energy LLC, Sugar Camp Mine

Dear Mr. Crislip:

Prairie Rivers Network, the American Bottom Conservancy and the Illinois Chapter of Sierra Club object to the draft NPDES permit planned to be issued to Sugar Camp Energy for discharges of alkaline mine drainages from the proposed new Sugar Camp Mine to be located in eastern Franklin County, Illinois. We appreciate that a public hearing has been scheduled for September 23, 2008 in West City, Illinois. This letter contains issues we'd like to discuss at the public hearing and questions we would like answered.

The proposal includes a mine permit boundary of approximately 1,264 acres located in sections 2, 3, 4, 9, and 10 of Township 06 South, Range 04 East near the town of Macedonia and approximately 10,839 acres of mine shadow area which lie east and northeast of the proposed mine permit boundary. Members of our groups live and recreate in Franklin County and depend on clean waters in streams and wetlands in the Middle Fork Big Muddy River watershed for activities including fishing, boating, birdwatching and other wildlife viewing.

The Illinois Dept. of Natural Resources has listed the entire watershed as one of only thirty Resource Rich Areas found in the state (Critical Trends Assessment Phase II, Inventory of Resource Rich Areas in Illinois: An Evaluation of Ecological Resources, Prepared for the Department of Natural Resources by Liane Suloway, Mark Joselyn, and Patrick W. Brown, Center for Wildlife Ecology, Illinois Natural History Survey, 1996). See Resource Rich Area Summary[1]. The state-threatened marsh rice rat, a semi-aquatic species, is found in the watershed.

The surface facilities at this underground mine (OMM Permit No. 382) contains the incline slope to reach the coal seam, two vertical shafts, coal preparation plant, reclaim tunnels, rail loading loop, rail loadout, parking lots, access roads, drainage control structures, office buildings, change rooms, assembly rooms, warehousing facilities, administration building, storage facilities, elevator facilities, ventilation facilities, refuse disposal areas, overland conveyors, screens, crusher, power distribution facilities, power lines, water lines, parking lots, topsoil and subsoil stockpile areas. According to the draft 404 permit public notice, two freshwater lakes will be constructed for water storage to support coal processing and cleaning. Longwall mining will begin after the entries are completed for the first panel and will be the primary

method used for coal recovery. As mining operations progress beneath the shadow area, longwall mining will allow for deep mining, complete coal extraction, and facilitate the subsidence of overburden material.

As this unique area will be greatly impacted by the proposed mine, we have already requested that the Army Corps of Engineers hold a public hearing and prepare an Environmental Impact Statement be for this project for the described activities (destruction of 5416 linear feet of stream tributary to Akin Creek and the Middle Fork Big Muddy River and 7.92 acres of wetland within the proposed mine surface permit boundary) requiring a 404 permit and undescribed impacts that will result from changes in hydrology in the watershed due to projected land subsidence from underground mining activities.

We are equally concerned about the impacts on water quality in the watershed resulting from the proposed surface facilities for the processing and storage of raw and clean coal and onsite coal refuse disposal.

Objections

As detailed below, we object to the issuance of this permit for the following reasons which are described in further detail in the following paragraphs:

- Issuance of the proposed NPDES permit will allow the development of surface facilities for underground long wall mining, complete coal extraction and land subsidence whose impacts have not been fully anticipated or addressed.
- Because the composition of the discharge has not been studied adequately, the discharges allowed by the permit may cause or contribute to a violation of state water quality standards in violation of 40 CFR §§122.4, 122.44(d) and 35 Ill. Adm. Code 302.105(c)(2)(B)(i),(ii), 304.105, 309.141(d) and 309.142.
- Illinois Antidegradation Rule, 35 Ill. Adm. Code 302.105 (c)(B)(iii) has also not been satisfactorily addressed in that alternatives for minimizing increases in pollutant loadings (sulfate, chloride, iron, manganese, etc) have not been fully explored.

The proposed NPDES permit inadequately captures the impacts of the proposed mining activity. The proposed permit fails to address impacts to water quality likely to occur due to land subsidence caused by proposed longwall mining activities.

Proposed Permit Does Not Minimize Increases in Pollutant Discharges

The Antidegradation Assessment asserts that 'sedimentation ponds…are the only option available to mines for controlling stormwater runoff'. At the public hearing we would like to discuss other options we have become of aware of through our research on this issue as outlined below.

The proposed mining facility has failed to satisfy antidegradation regulations.

The state antidegradation regulations at 35 IAC 302.105(c) (2) require that all reasonable measures be taken to avoid or minimize increased pollutant loading. The applicant has not considered alternatives to the use of sedimentation ponds for treating runoff from raw and clean coal storage areas as well as other areas on the mine site, including a coal refuse storage area. Alternatives to sedimentation exist that could facilitate the avoidance or minimization of increased discharges of sulfates, chlorides, manganese, iron, mercury and suspended solids. In practice, sedimentation ponds only address dissolved pollutants like sulfates and chlorides by holding them until they can be discharged during a rain event when they can take advantage of the dilution. A short survey of experts and consultants in the field of mine wastewater treatment found the following opportunities to prevent unnecessary new pollution as our Tier 2

antidegradation policy requires. We request these alternatives be evaluated to "assure…all technically feasible and economically reasonable pollutant loading [be] incorporated into the proposed activity."

1) Filtration is a well-established method for removing suspended solids by passing wastewater through a filter bed composed of granular material. Filtration may also take the form of ultrafiltration or nanofiltration, in which a membrane or other semi-permeable device (such as a ceramic filter) is used as the filter medium. Filtration is commonly used in treating mine wastewater for the reduction of sediment, metals, sulfate, and cyanide, thallium and other contaminants. Nanofiltration mechanisms, designed to remove sulfate, are being applied at the Tyron copper mine in New Mexico[2] and have been developed cooperatively by Dow Chemical Company and Marathon Oil Company.[3]
2) Bioremediation is a process in which microorganisms are used to treat pollutants. Bioremediation is extensively used in the treatment of acidity, sulfate, nutrients and cyanide.
3) Reverse Osmosis uses a driving force or pressure across a membrane to cause water to flow from the stronger solution to the weaker, effecting a separation of water from soluble contaminants. It is highly effective for removing soluble metals, including low to medium molecular weight ionic species, including nitrate, potassium, magnesium, chloride and sulfate. Recent advances in operation and membrane maintenance have made RO effective on cyanide and metals, including arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver and zinc. RO has been used in the mining industry for the treatment of discharges containing cyanide and metals resulting from heap leach operations and tailings ponds, with removal efficiencies of greater than 95%.
4) Coagulation-Precipitation is a process by which coagulation removes ultra fine colloidal particles and metal ions by causing the particles to come into contact with each other and bind together, forming a precipitate of a size large enough for removal by filtration. In industrial applications, coagulation-precipitation is routinely used for the treatment of total suspended solids, and in specific cases can remove sulfate, nitrogen compounds, and metals, including arsenic, chromium and mercury. It is used to treat mining wastewater for sulfate (heavy density sludge) metal precipitates including arsenic, zinc and copper and also to treat wastewater containing cyanide.
5) Ion exchange removes unwanted ions from water by transferring them to a solid material, called an ion exchanger, which accepts them while giving back an equivalent number of desirable ions contained in the ion exchanger. In the simplest terms, water softening is a form of ion exchange in which sodium, from salt, is exchanged with the calcium responsible for water "hardness." Ion exchange has been used to treat mine wastewater for metals and nitrate removal. An example of this method being utilized for sulfate removal is at the Sierrita copper mine in Arizona.[4]
6) The Cost Effective Sulfate Removal (CESR) process was developed to address the shortcomings of other technologies used for sulfate removal. The CESR process is an extension of wastewater treatment with lime in that it can meet more stringent requirements for sulfate removal. Addition of the CESR reagent to lime-treated water precipitates sulfate as a nearly insoluble calcium-alumina-sulfate compound known as ettringite. Ettringite formation can also provide a polishing effect, allowing precipitation of difficult-to-remove metals such as chromium, arsenic, selenium and cadmium, often below their respective analytical detection limits. Boron, fluoride and up to 30 percent of the chloride and nitrate in water have also been removed. Metals and other constituents which the ettringite removes are typically not leachable, allowing disposal as a nonhazardous waste. Unlike treatment methods such as

sodium aluminate addition, all of the chemicals added during the CESR process can be precipitated. Water treated by the CESR process typically meets or exceeds recommended drinking water standards for sulfate, metals and other parameters. The process produces a net reduction in total dissolved solids (TDS). Additional information is available at: http://www.wateronline.com/article.mvc/A-New-Process-For-Sulfate-Removal-From-Indust-0001?VNETCOOKIE=NO

7) The Supervac of Supervac Canada Inc. is a system of high density solids transfer pumps that can recover collected solids from settling ponds and transfer them through a sealed pipeline up to 3,000 feet away for permitting disposal. This can be an effective, low-cost operation to lower the TSS in high solids content drainage water in typical mining operations.

Public Has Not had Opportunity to Assess Impacts on Threatened and Endangered Species

The Public Notice/Fact Sheet indicates that the public is being asked to comment on the impacts on threatened and endangered species without the benefit of knowing concerns raised by the Illinois Dept. of Natural Resources since the permit was placed on public notice before IDNR had completed its consultation. This is a concern because of the presence of the state-threatened marsh rice rat in the watershed. From our review of the IDNR Office of Mines and Mineral files, we know IDNR has concerns about the impacts of this project. In IDNR letter 'Modification to Permit No. 382' dated Nov. 28, 2007 to Mr. Michael Beyer, Sugar Camp Energy, it is stated that IDNR 'has several concerns regarding endangered species and habitats of **unusually high value'**(emphasis added) and 'The area of the proposed drainage work [referring to 'a large scale drainage project of the Middle Fork of the Big Muddy River and Akin Creek as part of the subsidence mitigation plan.'] clearly includes habitats of unusually high value, including wetlands, important streams and riparian areas.'

Questions

1. Has the Agency performed any review of the planned subsidence for Sugar Camp Mine within the 10,839 mine shadow area and its potential to change the discharge of pollutants in the waterways draining the mine shadow area?
2. The Antidegradation Assessment states that 'management practices for minimizing sulfate formation and chloride leaching are available and will be encouraged'. What are these practices and why aren't they being required of the applicant in order to minimize pollutant loading?
3. How has the discharger and the agency determined exactly what metals and other pollutants will be contained in the discharge?
4. Why is no monitoring of mercury required for Outfalls 002, 006 and 007?
5. Is there text missing from the second footnote on pages 4 and 5 of the draft permit?
6. What is the anticipated daily volume of mine pumpage? Is the volume anticipated to increase as the underground mined area expands?
7. What is the volume of pond 001? How was the sizing of pond 001 determined?
8. Can the agency please provide a map which shows the ponds described in the public notice and which outfalls they each drain to?
9. Given the documented impairment of the Middle Fork Big Muddy River due to sedimentation/siltation, why does the draft permit require monitoring 'only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snow melt total'? Shouldn't monitoring be required whenever there is a discharge?
10. Can the agency please describe how it classifies the groundwater underlying the mine permit boundary area and the mine shadow area?

11. Can the agency address how it plans to handle the review and permitting of the areas described as 'future refuse disposal areas' on the Surface Mining Operations Map from OMM permit application #382[5]?
12. Can the agency show on a map the areas of the site that are not planned to drain to a sedimentation pond and describe the anticipated quality of runoff from these areas?
13. Can the agency please describe the plans for onsite sanitary wastewater treatment system to be permitted by the Illinois Dept. of Public Health?
14. How has the Agency addressed the issue of flooding, especially for areas within the permit area which lie in the 100 year floodzone?
15. Can the agency please describe the makeup of the materials to be disposed in the proposed slurry pit on the site and the longterm plans for this pit?
16. Can the agency please describe the makeup of materials to be disposed in the coarse refuse area?
17. Can the agency please describe the quantity, use and disposal of any water that is planned to be pumped from the Middle Fork Big Muddy River for the proposed mining operations?

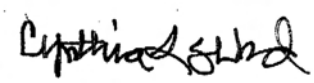
Requests

We ask that maps showing all surface operations, existing and proposed drainage patterns, sedimentation ponds, other impoundments, existing wetlands and streams, locations of surface and groundwater monitoring points within both the proposed mine permit boundary and mine shadow area be displayed at the public hearing.

We request the Agency and applicant provide, present and discuss additional information at the scheduled public hearing in answer to the issues and questions raised above so residents of Franklin County can make sure that the water quality of the Resource-rich Middle Fork Big Muddy Creek is being protected.

Thank you for this opportunity to raise our concerns with the Agency.

Sincerely,



Cynthia L. Skrukrud, Ph.D.
Clean Water Advocate

Phone: 815-675-2594
Email: cindy.skrukrud@sierraclub.org

Cc: Sugar Camp Energy LLC

Attachments

[1] Middle Fork Big Muddy River Resource Rich Area Summary, information taken from a web based reproduction of the printed volume of Inventory of Resource Rich Areas in Illinois: An Evaluation of Ecological Resources, IDNR/EEA-96/08 3M/1996 found at:
http://www.inhs.uiuc.edu/cwe/rra/site26.html

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[2] Water Treatment as a Mitigation Method for Pit Lakes, Southwest Hydrology, Sept./Oct. 2002

[3] Sulfate Removal from Injected Water in Oilfield Operations (found at http://www.dow.com/liquidseps/prod/sp_oil.htm

[4]Sulphate removal demonstration plant using BioteQ's proprietary Sulf-IX ion-exchange technology (www.bioteq.ca)

[5] Mining Operations Map-Surface from OMM Permit No. 382 application

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Via email to Kent.Mohr@Illinois.gov

October 22, 2008

Hearing Officer Kent Mohr #21
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, IL 62794-9276

RE: Post-Hearing Comments on NPDES Permit No. IL0078565,
Sugar Camp Energy, LLC, Sugar Camp Mine No. 1

Dear Mr. Mohr:

On behalf of the Illinois Chapter of the Sierra Club (SC), American Bottom Conservancy (ABC) and the Prairie Rivers Network (PRN), we provide post-hearing comments and recommendations on the proposed NPDES permit to be issued to Sugar Camp Energy for discharges of alkaline mine drainage from the planned Sugar Camp Mine No. 1 to be located in Franklin County, 8.5 miles northeast of Benton, Illinois. These comments are follow-up to the issues and questions we raised in our initial request-for-hearing letter of August 25, 2008 on the draft NPDES permit and the oral and written comments submitted at the public hearing held on September 23, 2008.

Prairie Rivers Network is a statewide river conservation organization that works to protect Illinois' rivers and streams for people, fish and wildlife. The Illinois Chapter of the Sierra Club is committed to the responsible use of the earth's ecosystem and resources and has a strong membership base of over 25,000 throughout Illinois with over 100 members in Franklin and Hamilton counties. American Bottom Conservancy is an Illinois not-for-profit organization working to protect the people and resources of Southern Illinois. Many of our organizations' members live and recreate in the Big Muddy River watershed. They depend on clean waters in the Big Muddy River and its tributaries for recreational activities including fishing, canoeing, birdwatching and other wildlife viewing.

Our organizations object to the issuance of draft NPDES permit IL0078565 as it is currently written. Facility operations would result in alkaline mine drainage and stormwater runoff to the Middle Fork of the Big Muddy River, Akin Creek and their tributaries. Our objections are as follows:

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Objections

- Issuance of the proposed NPDES permit will allow the development of surface facilities for underground long wall mining, complete coal extraction and land subsidence whose impacts have not been fully anticipated or addressed.
- Because the composition of the discharge has not been studied adequately, the discharges allowed by the permit may cause or contribute to a violation of state water quality standards in violation of 40 CFR §§122.4, 122.44(d) and 35 Ill. Adm. Code 302.105(c) (2) (B) (i), (ii), 304.105, 309.141(d) and 309.142.
- Illinois Antidegradation Rule, 35 Ill. Adm. Code 302.105 (c)(B)(iii) has also not been satisfactory addressed in that alternatives for minimizing increases in pollutant loadings (sulfate, chloride, iron, manganese, etc) have not been fully explored.

Concerns

The Middle Fork of the Big Muddy River Resource Rich Area needs to be protected.
The Illinois Department of Natural Resources has listed the entire watershed as one of only thirty Resource Rich Areas found in the state (Critical Trends Assessment Phase II, Inventory of Resource Rich Areas in Illinois: An Evaluation of Ecological Resources, Prepared for the Department of Natural Resources by Liane Sulloway, Mark Joslyn, and Patrick W. Brown, Center for Wildlife Ecology, Illinois Natural History Survey, 1996). See Resource Rich Summary. [i] The state-threatened marsh rice rat, a semi-aquatic species, is found in the watershed. When consulted on the potential impacts of activities associated with the Sugar Camp mining's impact on aquatic resources, the Illinois DNR's Office of Realty and Environmental Planning cited[ii] "adverse effects on fish and wildlife" including "destruction of any instream habitat structure utilized by fish and invertebrates…loss of streamside vegetation…increased siltation and turbidity...direct mortality to any mussel resource that may be present…increased turbidity and blanketing (of) desirable substrates". They further object to issuance of the permit stating "Because the proposed activities will result in the alteration of lengthy segments of two tributaries to the Big Muddy River and will permanently alter flow conditions, sediment deposition patterns, and stream habitat, OREP does not support the issuance of a permit."

Source specific pollutants must be considered in protection of downstream surface waters.
Because of our concerns about preventing pollution of downstream waters which support sensitive aquatic life and serve as drinking water sources from toxic constituents found in coal (such as the bioaccumulative selenium for which USEPA's Current National Recommended Water Quality Criterion (chronic) is 5 ug/L; whereas Illinois' current water quality standard is 1 mg/L, 2000 times higher and heavy metals like cadmium, lead and zinc.), we believe it is important that the levels of such pollutants in the runoff from Sugar Camp be anticipated and minimized. We wish to place the following documents into the hearing record as they provide

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information on the levels of such toxics in Illinois coal, specifically for the Herrin No. 6 coal seam planned to be mined at Sugar Camp mine.

J. R. Hatch, R. H. Affolter, Resource Assessment of the Springfield, Herrin, Danville, and Baker Coals in the Illinois Basin. U.S. Geological Survey Professional Paper 1625–D, Version 1.0, 2002. Available at http://pubs.usgs.gov/pp/p1625d/.

Trace Elements in Coal: Occurrence and Distribution. Illinois State Geological Survey. Circular 499 1977. 154p.
Available at http://www.isgs.uiuc.edu/maps-data-pub/publications/coalpubs/quality.shtml

Mineral Matter and Trace Elements in the Herrin and Springfield Coals, Illinois Basin Coal Field. C/G 1983-4 EPA-600/7-84-036. 1983. 162p.
Available at http://www.isgs.uiuc.edu/maps-data-pub/publications/coalpubs/quality.shtml

With this information available, as well as in-practice examples of washing, preparing, holding, settling and storing raw, clean and refuse coal at other facilities using coal from the Herrin No. 6 coal seam, we expect a more thorough analysis on the appropriateness of proposed activities such as drainage controls and liner specifications. We request the Agency to provide a more developed evaluation of the constituents of the Herrin No. 6 coal seam and their potential for leaching through 1) the lined portions of the permit area including the slurry impoundment, course refuse pile and sedimentation basins, and 2) the unlined portions of the permit area including raw and clean coal storage piles and sedimentation basins. Information and leachate potential analyses from other facilities with similar operations and coal source specifications will suffice.

Drinking water resources must be protected

Both surface and groundwater drinking water supplies need to be protected from pollution emanating from the proposed coal mining activity. The groundwater underlying the permit area is classified as Class I: Potable Resource Groundwater. As part of the ongoing process to propose upgraded groundwater quality standards to the Illinois Pollution Control Board (Case R08-18), Rick Cobb, Deputy Manager for IEPA's Division of Public Water Supplies, testified[iii], to the following:

"In summary, the conclusions and facts, provided above, clearly provide the supporting foundation for Standards, as follows:

• The original Act and regulations establish that no person shall discharge contaminants that threaten, cause or allow contamination;

• The intent of this multi-tiered standard is to prevent degradation of the resource up to the numerical standard;

• The Board clearly established that current and potential sources of potable resource groundwater were to be protected;

• Section 12(a) of the Act is integrated with Board regulations to prohibit polluting up to the numerical standards in such regulations;

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• The Board's opinions in the matters, quoted above, indicate that resource groundwater should be protected such that a private water supply would be able to obtain clean drinking water through ordinary treatment processes;
• The Board's opinion on Illinois' Groundwater Protection Plan is "...that unreasonable waste and degradation of the resources be prohibited;"
• Public Act 85-863 indicates that waste and degradation of the resources be prevented and includes this as a factor that the Board must consider in adopting comprehensive groundwater quality standard regulations;
• The Illinois Supreme Court has upheld the Board's view that any contamination that prevents the State's water resources from being usable would constitute pollution, thus allowing the Board to protect those resources from unnecessary diminishment; and
• The Board's final opinion and order on groundwater quality standards indicates that the numerical standard is not meant to be a level to pollute up to and included specific preventive standards prohibiting contamination above detectable levels that threaten a preclusion of use."

When asked at the public hearing if the Agency reviewed whether other locations existed for the slurry impoundment where the underlying groundwater reserves were of lower quality, Bill Buscher of the IEPA Groundwater Section replied that "No, we looked at where they had proposed it." (Hearing Transcript, p.51) From the above-referenced testimony of Mr. Cobb, Manager of the Groundwater Section of the Division of Public Water Supplies for the Illinois EPA, "Groundwater resources should be utilized for beneficial and legitimate purposes; waste and degradation of the resource should be prevented; and the underground water resources should be managed to allow for maximum benefit of the State. Groundwater used as drinking water is one of the highest beneficial uses of the groundwater resource." We feel it would be prudent to investigate whether alternative locations with lower permeability and thus less risk of contamination of potable groundwater, exist for the slurry impoundment.

Further, groundwater monitoring data from wells MW-1 through MW-8 from Attachment III.2B.2 [iv], show elevated levels of pollutants including: antimony, beryllium, manganese, arsenic, lead, and sulfate. A review of this data is summarized in the following table. It is not clear how the proposed activities at the Sugar Camp Mine will not further contribute to the degradation of this Class I resource and violate the nondegradation provisions of the Illinois Groundwater Protection Act(415 ILCS 55/8) (from Ch. 111 1/2, par. 7458).

Constituent	Class I WQS (mg/L)	# of exceedances in available data	Range of values
Antimony	0.006	23 of 48	0.014-0.327
Beryllium	0.004	10 of 48	0.004-0.009
Manganese	0.15	31 of 72	0.111-8.590
Arsenic	0.05 (0.01 currently proposed before the	3 of 48	0.010-0.036

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	IPCB)		
Lead	0.0075	9 of 48	0.10-0.034
Sulfate	400.0	28 of 72	430-2950

Concerns for protection of potable water supplies were raised at the public hearing by:

- Danny Richardson, resident adjacent to Sugar Camp Mine who stated: "My house is above the mine that's about to come underneath me. And I've got a pipe well right now. I'm not hooked onto city water. And I'm concerned about what's gonna happen, 'cause my pipe well's 347 feet deep, and it's soft water, and it's the best water I've ever had, and I hate to lose it. So I'm a little concerned about that. And the mine coming over, or under my house, and I've looked at the vein. I'm smack dab in the middle of the vein." (Transcript at p. 22)
- Steven Sniderwin who stated "I own the property right here. I boundary the mine on the south side and on the west sides. Four of your sediment ponds are gonna' drain into Akin Creek. Akin Creek runs right through the middle of my 120-acre farm. I got 80 acres of prime farmland there. And my question is, if we have something go haywire, is there a possibility my land could get contaminated by something from this coal mine? Let me add to that. If it comes a three-inch rain, let's say in an hour and a half, two hours, this 80 acres all floods. So if there's gonna' be something from this mine in this creek, it's gonna' be spread out over my farmland. And there's also other tributaries from the coal mine property that drains onto my property." (Transcript at p. 66-67)

In fact, from review of materials submitted in support of the IDNR mining permit[v], it appears that twelve (12) homesteads located within and adjacent to the shadow area of the Sugar Camp Mine No.1, rely on well water exclusively. An additional eight (8) homesteads have wells which may supply water for livestock, pets, domestic gardens or agricultural fields, though are also connected to the Akin public water supply. Here we would like to note that the impacts of land subsidence in the Middle Fork of the Big Muddy River watershed on the quality and quantity of the groundwater supply need to be addressed before the mine is granted any permits. In particular, we would like to draw attention to the fact that natural gas and domestic water supply pipelines cross through the permit and shadow area and may be affected by the longwall mining. In addition, we note that at least one hog confinement unit is located within or adjacent to the shadow area for which we expect a lagoon(s) is used for holding of hog waste and would pose a threat to surface and groundwater quality if caused to leak.

In our Recommendations section below, we discuss additional treatment measures, ground and surface monitoring requirements, groundwater protection measures and dust minimization measures needed to address these concerns.

Impact of seismic events on liners under coal slurry area and sedimentation basins have not been adequately considered.

Seismologists have provided us with an estimated probability of 40% to 60% for the occurrence of a 6.5R earthquake happening in the New Madrid Fault (fault system extends 150 miles

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southward from Cairo, Illinois through New Madrid and Caruthersville, Missouri, down through Blytheville, Arkansas to Marked Tree, Arkansas) within the next 15 years. Their probability projections for the 6.5R earthquake are 93 % to 98 % within the next 50 years. Estimates for 6.5R earthquakes based on the actual seismic event occurrence are one to occur every 55 to 85 years. Looking at the last event in that range (6.2R) in 1895 and adding 85 years to that date, 6.5R activity should have presented itself during 1980. In fact, when members of the Future Gen alliance chose Mattoon and Tuscola as finalists for the proposed clean coal power plant over sites in Southern Illinois, they cited the relative lack of seismic activity in central Illinois.

It is unclear how, if at all, the Agency has taken into consideration what environmental damage and threats to water quality will result from projected seismic activity. What controls and specifications have been considered in the 1) location of the coal slurry area and the sedimentation basins, and 2) the design of the liners for the coal slurry impoundment and sedimentation basins? Considering that Class I[vi] resources are located beneath the Sugar Camp mine permit area, we are concerned that should such a catastrophe take place, the potable drinking water supply for thousands of residents would be forever contaminated and unavailable for use. Please provide an explanation as to what anticipated consequences have been considered and prevented or mitigated by the proposed permit requirements.

Water quality impacts have not been adequately anticipated for land subsidence, flooding, and underground mine pumpage

Land subsidence. Impacts to streams due to planned subsidence include water backup in existing stream channels and over-the-bank backup into low lying areas. This is sure to introduce more contaminants directly into waterways.

Flooding. Map shows lots of acreage in the 100yr floodzone, flooding of a magnitude that now occurs more frequently than every 100 years. The soil resources map submitted to IDNR by Sugar Camp Energy, LLC, shows three kinds of soil extensively present that were described as "frequently flooded" = 3072 Sharon silt loam, 3108 Bonnie silt loam, 3382 Belknap silt loam. Flooding of these areas introduces potential for the inundation of ponds and washing away of and movement of pollutants.

Mine pumpage. IEPA did not consider the additional loading of pollutants from pumping of the underground mine acres (>10,000) We have seen both in writing and have been told by Agency personnel that activities associated with underground mining operations are outside of the scope of Subtitle D regulations and therefore not to be considered part of the NPDES permit process. We respectfully disagree. Our review of Subtitle D regulations finds the following (emphasis in italics):

> **401.403. Purpose**
> The purpose of this Subtitle D is to prevent pollution of water of Illinois caused by the failure to plan proper environmental safeguards for the location, preparation, operation and abandonment of mining activities, mining and mine refuse operations. A permit system is established to control the multitude of contaminating point and non-point

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source discharges, visible and hidden, continuous and fluctuating, which are potentially present in mining activities, mining and mine refuse operations.

402.101. Definitions

"mine discharge": any point source discharge, whether natural or manmade, from a mine related facility. Such discharges include but are not limited to mechanical pumpages, pit overflows, spillways, drainage ditches, seepage from mine or mine refuse areas, effluent from processing and milling or mineral preparation plants.

"mining activities": all activities on a facility which are directly in furtherance of mining, including mining activities before, during and after mining. The term includes, but is not limited to, the following:

Preparation of land for mining activities;
Construction of mine related facilities which could generate refuse, result in a discharge or have the potential to cause water pollution;
Ownership or control of a mine related facility;
Ownership or control of a coal storage yard or transfer facility;
Generation or disposal of mine refuse;
Mining;
Opening a mine;
Production of a mine discharge or non-point source mine discharge;
Surface drainage control; and
Use of acid-producing mine refuse.

"mining": the surface or underground extraction or processing of natural deposits of coal, clay, fluorspar, gravel, lead bearing ores, peat, sand, stone, zinc bearing ores or other minerals by the use of any mechanical operation or process. The term also includes the recovery or processing of the minerals from a mine refuse area.

405.100. Preamble

Part 405 governs the issuance of both state and NDPES permits and contains substantive rules governing mining activities and construction of mine related facilities.

405.104. Permit Applications

(b) An application for a state or NPDES permit shall include:

(15) The location of all mine discharge points and non-point source mine discharge sources, method or type of sediment basins, erosion control devices and wastewater treatment facilities for all mine related facilities including designation of collection points for water discharged from all mechanical pumping or gravity flow systems used for draining the mine and mine refuse area.

Permit determination does not reflect previous water pollution by Sugar Camp Energy parent company and subsidiaries.

In light of prior violations of Williamson Energy, LLC, a subsidiary to Foresight Energy (also owners of Sugar Camp Energy LLC), IL EPA should impose much more stringent permit terms and conditions on Sugar Camp Energy, LLC.

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The Illinois Environmental Protection Act authorizes the IL EPA to consider a permit applicant's past acts of non-compliance in making permit determinations. The Act states:

> "In making its determinations on permit applications under this section the Agency may consider prior adjudications of noncompliance with this Act by the applicant that involved a release of a contaminant into the environment. In granting permits, the Agency may impose reasonable conditions specifically related to the applicant's past compliance history with this Act as necessary to correct, detect, or prevent non-compliance."
> 415 ILCS 5/39(a).

A list of violations of subsidiaries of Foresight Energy between July 1, 2003 and June 1, 2006 is located in the Sugar Camp Mine application #382 to IDNR, on page 65. The list includes 31 violations in West Virginia and 4 violations in Illinois. All four of the Illinois Violations are water related violations of the Pond Creek permit # 275. The nature of the first Notice of Violation, number 28-1-05[vii] was "Disturbed area drainage was leaving the permit area without passing through a siltation structure". The nature of the second Notice of Violation, number 37-5-05[viii] was "Sedimentation Pond 001 is discharging prior to the department receiving a PE Certified as-built inspection report". The nature of the third Notice of Violation, number 37-6-05[ix] was "Failure to submit quarterly groundwater monitoring reports for third quarter 2005." And finally, the nature of the forth Notice of Violation, number 37-1-06[x] was "Conducting mining activities on surface land not currently permitted".

IEPA should require more stringent requirements in the Sugar Camp permit in order to prevent such violations from occurring again. Proposals for additional monitoring and special conditions to be imposed in the NPDES permit are included in our Recommendations section below.

Recommendations

Proposed Permit Must Minimize Increases in Pollutant Discharges

The Middle Fork of the Big Muddy River is impaired due to manganese, low dissolved oxygen and sedimentation/siltation. Baseline Surface Water Sample Site Data[xi], sites SW-MF 1, 2 and 3 and SW-AC 1, 2 and 3, shows many existing water quality problems including total suspended solids, total dissolved solids, pH, alkalinity vs. acidity, iron, and manganese. Further pollutant loading to a waterbody already impaired violates Illinois anti-degradation policy which is designed to protect water bodies from further degradation. Under Illinois law, which incorporates the requirements of the Clean Water Act, increased discharges of a pollutant are not allowed into a water body that is already violating standards as to that pollutant. 33 Ill. Adm. Code 304.105, 309.141(d), 40 CFR 122.44(d), In the Matter of the Cities of Annandale and Maple Lake NPDES/SDS Permit Issuance for the Discharge of Treated Wastewater, 702 N.W.2d 768; (Mn. Ct. App. 2005)

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Illinois Antidegradation Rule has not been satisfactorily addressed in the draft NPDES permit in that alternatives for minimizing increases in pollutant loadings (sulfate, chloride, iron, manganese, etc) have not been fully explored. 35 IAC Section 302.105(c) (2) states that in making the antidegradation assessment, "the Agency must: (B) Assure the following: (iii) 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." Further, under 35 IAC Section 302.105(f) (1) "A permit application for any proposed increase in pollutant loading that necessitates the issuance of a new, renewed, or modified NPDES permit or a CWA Section 401 certification must include, to the extent necessary for the Agency to determine that the permit application meets the requirements of this Section, the following information : (D) Assessments of alternatives…may include: (i) additional treatment levels, including no discharge alternatives; (ii) Discharge of waste to alternate locations, including publicly –owned treatment works and streams with greater assimilative capacity; or (iii) Manufacturing practices that incorporate pollution prevention techniques." The applicant has not considered, nor has the Agency required them to, alternatives to the use of sedimentation ponds for treating runoff from raw and clean coal storage areas as well as other areas on the mine site, including a coal refuse storage area. Alternatives to sedimentation exist that could facilitate the avoidance or minimization of increased discharges of sulfates, chlorides, manganese, iron, mercury, selenium, cadmium, other metals and suspended solids.

The Illinois Chapter of the Sierra Club, however, has committed resources to do complete some of what state regulations define as the applicant and the Agency's responsibility. The attached memo from Carpenter Environmental Associates (CEA)[xii] provides information on treatment opportunities for preventing unnecessary new pollution as our Tier 2 antidegradation policy requires. We request these alternatives be evaluated to "assure…all technically feasible and economically reasonable pollutant loading [be] incorporated into the proposed activity." 35 Ill. Adm. Code 302.105 (c) (2) (B) (iii). (Papers (without online access) referenced in the CEA memo are attached at[xiii],[xiv],[xv],[xvi],[xvii],[xviii]and [xix].)

Separate treatment basins from stormwater basins

The draft permit describes eight outfalls, all of which are from sedimentation ponds. As described in the antidegradation assessment, "The sedimentation ponds will treat runoff from refuse and both raw and clean coal storage areas as well as other areas on the mine site. Later in the assessment, "Sedimentation ponds will be constructed using best management practices and are the only option available to mines for controlling stormwater runoff…Other alternatives do not exist for treatment or control of runoff from mine areas." We are unclear as to which purpose the basins will be designed: treatment or for controlling stormwater. We understand from the engineering perspective that a basin cannot be designed to serve in both capacities. Please see the following excerpt from Unit 9 of the Soil Erosion and Sedimentation Control Training Manual, available from the Michigan Department of Environmental Quality, Water Bureau at http://www.deq.state.mi.us/documents/deq-land-sesc-trainingmanual.pdf

THE DIFFERENCE BETWEEN STORM WATER BASINS AND SEDIMENTATION BASINS

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It is important to draw a distinction between storm water basins and sedimentation basins. Storm water basins are permanent structures designed to replace the natural water storage of a site and provide some water quality improvement after the site is completed. Historically, the primary purpose of storm water basins was to reduce on-site and downstream flooding by controlling the rate of storm water discharge. Secondary benefits include water quality improvement such as sediment removal, aesthetics, and recreational opportunities. Many of these secondary benefits are now being incorporated into the design of storm water basins. However, it is important to remember that most storm water basins are not designed to remove sediment and they generally do not work well for that purpose.
Sedimentation basins are used during construction and are specifically designed to control off-site migration of sediment. The primary purpose of basins is to trap sediment and other coarse material. Secondary benefits can include controlling runoff and preserving the capacity of downstream reservoirs, ditches, diversions, waterways, and streams. Once construction is completed, sedimentation basins are often filled to match the final site grade or converted to function as storm water basins.

It is imperative that the type of basin to be constructed is identified in the project-planning phase, i.e. sedimentation or storm water. There are distinct design criteria to achieve these different functions. If the intention is for a storm water basin to serve as a temporary sedimentation basin during construction, then the design criteria to maximize sediment settling must be incorporated in the initial design. Some storm water basins control higher design flows and allow smaller design flows to pass through. To be used as sedimentation basins, they would need to control the smaller flows as well. This unit describes sedimentation basin review criteria; other manuals should be consulted for the review and design of storm water basins.

We request the basins at the Sugar Camp site to be constructed according to the distinct design criteria required to achieve the desired function, either treatment to improve water quality through settling or control of stormwater runoff. In addition, all stormwater runoff from this industrial site should be controlled. We are concerned that Special Condition No. 10 indicates that the release of some stormwater from the site will not be controlled.

Best Management Practices to prevent coal spillage and control dust should be required of Sugar Camp Mine No. 1

From an article in *Power Engineering International, May 1999*[xx], we see that there are several ways in which fugitive dust can be controlled. Considering that fugitive dust control is under the jurisdiction of the Illinois EPA (as well as the Illinois Department of Natural Resources), we request that these opportunities to control and reduce fugitive dust at the Sugar Camp mining site

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be evaluated and considered for implementation in order to reduce the amount of pollutants running off and settling into waters of the state.

We are aware of several coal mining facilities in the United States that employ measures and mechanisms for controlling fugitive dust including the use of coal storage silos at Cordero Rojo Coal Mine, WY (Coal storage facilities consists of 65,400 T-capacity in six silos**),** Gibson County Coal in Princeton, IN (5,000 Ton Raw Coal Silo and 10,000 Ton Clean Coal Silo) and at the Cline Mining Corporation-owned New Elk Coal Company in Colorado. The North Antelope Rochelle Mine, WY uses both plastic-enclosed conveyors and coal storage silos.

Best Management Practices discussed at the public hearing need to be incorporated into the NPDES permit

A number of best management practices (BMP) and ground and surface water protection measures are not reflected in the conditions of the draft NPDES permit. We request that the following items be incorporated into the permit:

- We learned at the Deer Run hearing that five of the seven proposed sedimentation ponds for the Deer Run site are to be lined. According to Larry Crislip, "Sediment ponds that are receiving runoff from refuse area and coal stockpiles, they are also receiving compacted clay liners." (Transcript at p. 84, Deer Run hearing) and "As I recall, the application indicates that any ponds receiving refuse or coal runoff will be lined, so basically, if you looked at our permit and take a look at the outfalls that get mercury monitoring, those likely are the ones that will be lined." (Transcript at p. 194). Following and applying this logic to the design and operations of the Sugar Camp Mine No. 1, we request that sedimentation basins including 001, 003 and 004 also be required in the NPDES permit to use compacted clay liners.

  We request that Special Condition No. 7 be revised to describe the clay liners planned for sedimentation basins 001, 003, and 004 as well as the specifications for construction and testing of the compacted clay liners.

  In addition, we ask that the Agency evaluate the potential need for liners in the four other planned basins (or any additional basins installed as result of our recommendation above that separate basins for treatment and stormwater runoff management be incorporated into the site design) based on the potential for coal contaminants or other contaminants such as oil or grease to enter unlined ponds due to surface runoff.

- The Antidegradation Assessment states ""Management practices for minimizing sulfate formation and chloride leaching are available and will be required as part of an ongoing Illinois EPA effort to reduce pollutant loading from coal mines." We request that the described BMPs to be utilized at the mine site be incorporated in the NPDES permit as special conditions.

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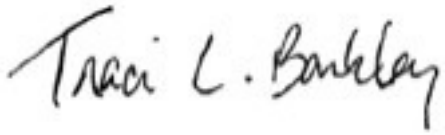
- The soil stockpile northeast of the Freshwater Lake, Stage 1, does not appear to have any drainage control. Title 35 IAC Section 406.108 covering non-point source mine discharges states "Surface drainage from the affected land of a coal mine, including disturbed areas which have been graded, seeded or planted, shall be passed through a sedimentation pond or a series of sedimentation ponds before leaving the facility." We request that the permit be modified to ensure compliance with Section 406.108.
- We request that the constituents to be monitored quarterly per IDNR/OMM requirements in monitoring wells Nos. GW-1 through GW-12 be listed in the permit.

* * * * *

We appreciate your consideration of these comments in addition to previously submitted written comments and oral testimony.

Sincerely,



Traci L. Barkley
Water Resources Scientist

CC: Sugar Camp Energy LLC
Dr. Cynthia Skrukrud, Illinois Chapter of the Sierra Club
Kathy Andria, American Bottoms Conservancy

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[i] Critical Trends Assessment Phase II, Inventory of Resource Rich Areas in Illinois: An Evaluation of Ecological Resources. Available at http://www.inhs.uiuc.edu/cwe/rra/rra.html.
[ii] Letter from IDNROREP to IDNROMM re impact of dredging
[iii] Pre-filed Testimony of Richard P. Cobb from R08-18: Proposed Amendments to Groundwater Quality Standards, 35 IL. Adm. Code 620
[iv] Groundwater Monitoring Well Data, Sugar Camp Mine
[v] Parcels and Structures within and adjacent to Shadow Area
[vi] Letter from IEPA to IDNR indicating Class I Groundwater at Sugar Camp Mine
[vii] Williamson violations 28-5-01
[viii] Williamson violations 37-5-05
[ix] Williamson violations 37-6-05

[x] Williamson violations 37-1-06
[xi] Baseline Surface Water Sample Site Data

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[xii] CEA No. 08047 Treatment Technologies for Coal Mine Runoff
[xiii] Acid Mine Drainage - Innovative Treatment Technologies
[xiv] DOE & NETL - The Passive Treatment of Coal Mine Drainage
[xv] Applications of Passive Treatment to Trace Metals Recovery
[xvi] Rapid Manganese Removal from Mine Waters Using an Aerated Packed-Bed Bioreactor
[xvii] Treatment Technology Summary for Critical Pollutants of Concern in Power Plant Wastewaters
[xviii] VSEP Filtration of Acid Mine Drainage
[xix] VSEP Treatment of RO Reject from Brackish Well Water
[xx] Fugitive dust control

Barbara McKasson
899 Rowan Rd.
Makanda, IL 62958

October 23, 2008

Hearing Officer Kent Mohr #21
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
Kent.Mohr@illinois.gov

Re: comments on the NPDES permit No. IL0078565, Notice No. 4953c for the proposed Sugar Camp Mine No. 1 for Sugar Camp Energy, LLC

I will be sending these comments by Email before midnight today, October 23, 2008, with a hard copy being sent through the U.S. Postal Service.

Dear Mr. Mohr:

As chair of Shawnee Group Sierra Club, and as a resident of southern Illinois, I am concerned about the effects of the proposed longwall mine on the health and welfare of our members and other citizens in Franklin and Hamilton Counties, and also on the environment in the watershed of the Middlefork of the Big Muddy River. In addition, I live in the watershed of the Big Muddy River, downstream from the proposed discharges of Sugar Camp Mine. I even occasionally canoe on the Big Muddy River, and take hikes along the Big Muddy River, such as in the Little Grand Canyon area in Shawnee National Forest. Shawnee Group Sierra Club has held hikes and canoe outings on the Big Muddy River, and will likely continue to do so in the future.

I wish to go on record as opposing this water discharge permit as currently proposed for the reasons given below.

Anti-degradation of Surface Waters

This permit as it is proposed is inadequate for the purpose of protecting the water quality of Akin Creek and the Middlefork of the Big Muddy River. The permit proposes to use only settling ponds and moats - the most basic means of pollution control to keep heavy metals, sulfates, chlorides and sediments from being washed into public waters of the state.

The sedimentation ponds are especially inadequate for reducing discharge of dissolved pollutants whenever the ponds may overflow due to a heavy rain event. To completely satisfy anti-degradation policies, it seems the IEPA is really required to evaluate the best available technology in order to reduce the discharge of dissolved pollutants into our waters. A variety of methods has been suggested, including: filtration, bioremediation, ion exchange, reverse osmosis, coagulation to precipitates, and the Cost Effective Sulfate Removal process. IEPA should require additional method(s) to add another level of protection from mine refuse and sedimentation pond areas.

The concern of IEPA should be elevated because global warming is predicted to continue to cause extremes of weather events, such as droughts and heavy rainfall. It is no longer uncommon to have eight inches of rainfall within 2-3 days, thus increasing the episodes of discharge of polluted water from settling ponds and refuse piles. Damage to dams and moats would increase the need for repairs, and also a need to have more levels of protection to contain pollutants.

Another reason to raise your level of concern is the recent seismic activity near the proposed mine. This year, there was an earthquake of 5.2 magnitude, with several aftershocks, caused by a fault by the Wabash River, near Olney, Illinois. Earthquakes could easily cause a fracture in the clay lining of a sediment pond. This area is also affected by the New Madrid Fault, which has caused earthquakes of 3 to 5 magnitude or more within the last twenty years.

Geologists have found that earthquakes not only can cause mine collapse, but also that mine collapse can cause earthquakes. So, the proposed mine activity could even increase the incidence of earthquakes in southern Illinois.

Non-degradation of groundwater

IEPA should be giving better protection for sources of current and future drinking water, including groundwater. Even if there presently are not many private or public wells in the area of the proposed mine, water sources should be protected for future use and future generations. During times of drought, more people may be forced to turn to groundwater for household use, especially considering the very real threat of climate instability that is sure to increase with the increase in global warming.

In the case of this proposed permit, a major concern is that the slurry impoundment is proposed to be located over a high quality groundwater area. The groundwater under the permit area has been identified as potable resource groundwater that is Class I Groundwater.

The threat of earthquakes from the New Madrid and Wabash area faults also increases our level of concern for the protection of the groundwater. Considering that small amounts of some pollutants found in coal mining (such as mercury) can contaminate large bodies of water, extra precautions should be taken to protect our groundwater resources. It is our understanding that the IEPA Division of Public Water Supplies has proposed upgrading groundwater quality standards. Thus, even an area that IEPA presently considers "impermeable" may develop cracks caused by seismic activity in this area, which is close to two major faults. In addition, underground aquifers have not been adequately mapped in Illinois, and connections of aquifers to other aquifers, plus connections between groundwater and surface waters are not completely known. Thus, slurry ponds and sedimentation ponds are really not failsafe in this area- even if they have a thick clay lining.

Another consideration which raises concern is the change in hydrology that would be caused by the longwall mining and the resulting subsidence. The proposed permit is not adequately considering those impacts. In fact, the change in hydrology brought on by this proposed mining operation has not really been examined. Changes in hydrology could affect the level of pollution discharges.

Monitoring and Enforcement Concerns

Consultants for Sugar Camp Energy have stated that manganese concentrations could reach almost to 4.0mg/L. However, the water quality standard is 1.0mg/L. How will IEPA ensure that the mining company will in fact somehow control the manganese concentrations in runoff from the coal mine? How will IEPA be able to make sure these high concentrations of manganese do not in fact discharge into state waters? Will there be monitoring wells that record concentrations of manganese? How will any measurements by the mining company be checked for accuracy? Will IEPA make periodic checks on manganese concentrations?

I am especially concerned about enforcement, because I have personally witnessed inadequate management practices at Pond Creek Mine, which is owned and managed by the same people who own Sugar Camp Energy. A berm around the Pond Creek Mine operations was obviously very eroded by overtopping of water runoff. It was obvious that the mining company was not planting vegetation or placing other means of erosion control on the berm surrounding the moat. In addition, the company was just beginning to put vegetation on their huge refuse pile, thus exposing the coal refuse to rain and wind erosion.

I am also concerned about proposed "future refuse areas." At the hearing in September, we were told that since the future refuse areas on the map were located on two tributaries of Akin Creek, they would be eliminated. We are glad to hear that, but that then raises the question of the new location of the future refuse areas. Please clarify the location(s) on the map.

On the grounds of enforcement of the Illinois anti-degradation regulations, plus the protection of surface and groundwater resources of the Middlefork of the Big Muddy River, and as a user of waters in the Big Muddy River downstream of the mining area, I strongly urge you to deny the issuance of the proposed permit.

Sincerely,

Barbara McKasson, Chair
Shawnee Group Sierra Club

Attachment 1

MIDDLE FORK OF THE BIG MUDDY

The marsh rice rat is semiaquatic, inhabiting marshes, swamps, and shores of lakes and ponds. Because of the loss of many natural wetlands, rice rats make use of available areas of standing water with emergent, herbaceous vegetation found in areas such as roadside ditches, farm ponds, and railroad rights-of-way in Illinois. Despite its extensive range in the U.S., the rice rat is uncommon in Illinois (it is a state-threatened species) and limited to the southern part of the state.

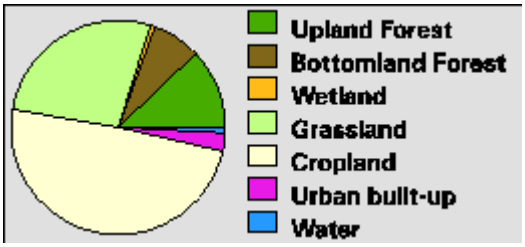
Map of Site
Land Cover Map of Site

SIZE: 114,908 acres; 180 square miles

LOCATION: Southern Illinois; Franklin, Hamilton, and Jefferson counties

The Middle Fork of the Big Muddy River RRA is a small, single watershed site. The significant natural features are the large tracts of forest located along the river.

LANDCOVER : Approximately half the landcover in this RRA is cropland. It ranks fifth in percentage of grassland, which accounts for 27% of the land area. Nineteen percent of the area is wooded. This RRA ranks eighth for percentage of bottomland woods and 15th for percentage of nonforested wetlands.



NATURAL AREAS : The Freeman Coal Company Forest is the only Natural Area.

BIOLOGICALLY SIGNIFICANT STREAMS : There are no BSS streams.

HERITAGE SITES : Two Heritage sites, a floodplain forest and one animal species, are located in the RRA.

STATE AND FEDERAL LAND : A 22-acre site, Ten Mile Creek Fish and Wildlife Area, is the only state or federal land.

NATURE PRESERVES : No Nature Preserves are located in the site.

NATURAL DIVISIONS : The Middle Fork of the Big Muddy River RRA is entirely within the Southern Till Plain Division.

SUMMARY OF SITE CHARACTERISTICS: SIZE, BIOLOGIC RESOURCES, AND PUBLIC LANDS

Total Acreage	114,908
Natural Areas	
Acreage	388
Number	1
Biologically Significant Stream Mileage	0
Natural Heritage Sites	2
State Land	
State Parks	0
State Conservation Areas	0
State Forests	0
State Fish & Wildlife Areas	1
Acreage	22
Percentage of RRA	0.0
Federal Land	
Acreage	0
Percentage of RRA	0.0

LANDCOVER	Acres	% of RRA
Upland forest	13,903.45	12.10
Bottomland forest	8,404.05	7.31
Wetland- nonforested	832.34	0.72
Grassland	31,218.95	27.17
Cropland	56,449.57	49.13

Urban/Built-up	3,164.97	2.75
Water	934.30	0.81
TOTAL	114,907.63	99.99

ILLINOIS NATURAL AREAS INVENTORY SITES

	Acres
Freeman Coal Company Forest	388

BIOLOGICALLY SIGNIFICANT STREAMS

None

NATURAL HERITAGE CATEGORIES

Communities	Occurrences	Types/Species
Floodplain Forest	1	1
Threatened and Endangered Animals		
Mammal	1	1

STATE AND FEDERAL LAND	Acres
State Parks	0
State Conservation Areas	0
State Forests	0
State Fish and Wildlife Areas	
Ten Mile Creek (Tva)	22
Federal Land	0

ILLINOIS NATURE PRESERVES

None

Site Map of Middle Fork of the Big Muddy