

ILLINOIS POLLUTION CONTROL BOARD  
October 20, 1994

FREEMAN UNITED COAL MINING	)	
COMPANY,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 94-194
	)	(Variance)
ILLINOIS ENVIRONMENTAL	)	
PROTECTION AGENCY,	)	
	)	
Respondent.	)	

OPINION AND ORDER OF THE BOARD (by G. T. Girard):

On July 15, 1994, Freeman United Coal Mining Company (Freeman) filed a request for variance from the Board's regulations which limit the discharge for mine related effluent to 1,000 mg/l of chloride. (35 Ill. Adm. Code 406.203(c)(1)(A).) Freeman seeks a variance to allow a discharge of 1,500 mg/l of chloride from its mine known as Orient #6 in rural Jefferson County. Freeman asks for this temporary relief for two years to allow Freeman to conduct a stream study of the effect of the higher chloride concentrations.

On August 24, 1994, the Illinois Environmental Protection Agency (Agency) filed its recommendation with a motion to file the recommendation instanter. The Board granted the motion to file instanter on September 1, 1994. The Agency is recommending that the variance be granted with certain conditions. Freeman waived hearing and no hearing was held.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act). (415 ILCS 5/1 et seq. (1992).) The Board is charged there in with the responsibility of granting variance from Board regulations whenever it is found that compliance with the regulations would impose an arbitrary or unreasonable hardship upon the petitioner. (415 ILCS 5/35(a).) The Illinois Environmental Protection Agency is required to appear in hearings on variance petitions. (415 ILCS 5/4(f).) The Agency is also charged, among other matters, with the responsibility of investigating each variance petition and making a recommendation to the Board as to the disposition of the petition. (415 ILCS 5/37(a).)

BACKGROUND

Freeman is seeking this variance for discharges from Freeman's clarified pond (outfall 002) and the sediment pond (outfall 003) used at Freeman's mine known as Orient #6 located

in rural Jefferson County. (Pet. at 2.)<sup>1</sup> Orient #6 is adjacent to the Rend Lake Project's Big Muddy Subimpoundment Area. (Id.) The mine encompasses 535 surface acres and over 9,000 acres of underground mine area. (Id.) The mine employs about 250 people and produces about 1.4 million tons of clean coal annually. (Id.) Outfall 002 discharges to Buck Creek and outfall 003 discharges to an unnamed tributary of the Big Muddy River. (Pet. at 6.)

During clean coal production, mineralized groundwater and other undesired mineral materials, all containing chlorides, are removed with the raw coal. (Pet. at 2.) These materials are subsequently removed during the raw coal processing and chlorides are dissolved in the process water and accumulated in the coal preparation plant water circuit. (Id.) The quantity of chloride accumulated for release is dependent on the amount of chloride materials mined with the coal, and cannot be controlled by changes to mining or processing systems. (Pet. at 2-3.)

In June 1989, Freeman changed the extraction method for coal at Orient #6 and began using the longwall mining method to increase production, decrease cost and maintain competitiveness. (Pet. at 3.) As a result of either the "new mining method or the hydrogeology of the area" groundwater with a highly mineralized content began to seep into the underground mine. (Id.) The mine had been "essentially dry" before beginning to extract coal in the current longwall manner. (Id.) The amount of high-chloride groundwater encountered has risen from near zero to 50,000 gallons per day. (Id.)

Processing the coal also adds to the chloride content of the discharge. During processing a coarse, fine refuse stream is produced. Process water is used to pump the fine refuse to a slurry disposal area where solids settle out. The water is clarified and stored for reuse. (Pet. at 3.) Water from the slurry pond is decanted to the clarified pond also for reuse. Pumpage from the clarified pond to the coal preparation plant is at a rate of about 1600 gallons per minute for reuse in processing coal. (Id.)

In the past Freeman diluted the chloride-containing water using rainfall and two other fresh water sources. However, after the change in mining methods in June 1989, there has been insufficient dilution water available to lower the chloride levels below the discharge standard. (Pet. at 4; Rec. at 3.) As a result, chlorides have been accumulating in the system and Freeman is now unable to discharge "without risking a violation

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<sup>1</sup> The petition will be cited as "Pet. at \_\_\_"; the Agency recommendation will be cited as "Rec. at \_\_\_".

of its permit conditions". (Pet. at 4.) Freeman's clarified pond currently has chloride levels of about 1,200 mg/l, while the slurry pond has in excess of 1,300 mg/l. (*Id.*)

Freeman exceeded the 1,000 mg/l discharge standard for chlorides during fourteen out of the fifteen months that outfall 002 discharged during 1992 and 1993. During that same period, the discharge standard was exceeded three times from outfall 003. (Pet. at 6.) During the fifteen months in 1992 and 1993, the rate of discharge from 002 was on the average 780 gallons per minute (gpm) with a maximum rate of 3,500 gpm. The discharged chloride concentrations averaged 1,130 mg/l with a maximum of 1,232 mg/l. (Pet. at 5.) The discharge from 003, which discharged every month, averaged 15 gpm with a maximum of 75 gpm. Chloride concentrations measures at outfall 003 averaged 625 mg/l with a maximum of 1,100 mg/l. (Pet. at 5.)

#### REGULATORY FRAMEWORK

Freeman is requesting a variance from the regulations at 35 Ill. Adm. Code 406.203(c)(1)(A), mine waste effluent and water quality standards. Section 406.203 sets forth the procedures by which water quality-based permits conditioned for chloride, total dissolved solids, sulfate, iron and manganese may be established by the Agency. Section 406.203(c)(1)(A) specifically provides:

The Agency shall establish permit conditions under this section if all of the following conditions are met:

- 1) the applicant proves to the Agency that the discharge will not cause an adverse effect on the environment in and around the receiving stream, by either:
  - A) Demonstrating that the discharge will contain a concentration less than or equal to 3500 mg/l sulfate and 1000 mg/l chloride; or
  - B) Through actual stream studies.

In determining whether any variance is to be granted, the Act requires the Board to determine whether a petitioner has presented adequate proof that immediate compliance with the Board regulations at issue would impose an arbitrary or unreasonable hardship. (415 ILCS 5/35(a) (1992).) Furthermore, the burden is upon the petitioner to show that its claimed hardship outweighs the public interest in attaining compliance with regulations designed to protect the public (Willowbrook Motel v. Pollution Control Board (1st Dist. 1977), 135 Ill. App. 3d 343, 481 N.E.2d 1032). Only with such a showing can the claimed hardship rise to the level of arbitrary or unreasonable hardship.

A further feature of a variance is that it is, by its nature, a temporary reprieve from compliance with the Board's regulations (Monsanto Co. v. IPCB (1977), 67 Ill.2d 276, 367 N.E.2d 684), and compliance is to be sought regardless of the hardship which the task of eventual compliance presents an individual polluter. (Id.) Accordingly, except in certain special circumstances, a variance petitioner is required, as a condition to grant of variance, to commit to a plan which is reasonably calculated to achieve compliance within the term of the variance.

#### COMPLIANCE PLAN

Freeman states that it plans to "achieve compliance with the applicable regulations by first conducting a site-specific stream study to determine what effects, if any, the high chloride discharges will have on the local stream environment and use". (Pet. at 7-8.) Freeman asserts that the authority for this approach is contained in the Section 406.203(c)(1). Freeman argues that the regulation "assumes that a 1,000 mg/l chloride concentration discharge limitation will not cause an adverse effect on the environment, but also provides that stream studies may be used to justify additional, alternative discharge limitations". (Pet. at 8.)

The anticipated stream study will require chemical and biological sampling and analysis of the receiving stream during all four seasons. Freeman will then submit the analyzed data and conclusion to the Agency for consideration. Freeman anticipates that the study will take approximately 18 months to complete and cost between \$30,000 and \$50,000. (Pet. at 8-9.)

The Agency in its recommendation notes that Freeman has not addressed any "adverse impact to the Rend Lake Conservancy District public water supply that must be proven pursuant to 35 Ill. Adm. Code 406.203(c)(2)" in its stream study plan. (Rec. at 7.) Further, petitioner has not proposed an actual stream study for the unnamed tributary that receives outfall 003 nor has petitioner addressed a contingent compliance plan if the actual stream study reveals an adverse impact in Buck Creek or the unnamed tributary. (Rec. at 7.) The Agency, however, believes that even with these deficiencies a variance should be granted. (Id.) The Agency does believe that certain conditions to address those deficiencies should be required if this variance is granted. (Id.)

#### HARDSHIP

Freeman has attempted to comply with the 1,000 mg/l standard through several past efforts including construction of two freshwater lakes on the mine property to collect precipitation runoff to provide water for dilution. (Pet. at 10.) Freeman has

also constructed large slurry disposal ponds for storage and recycling and constructed a pumping system to pump fresh water from Buck Creek and the Big Muddy rivers. (*Id.*) Such sources were sufficient until mid-1991 when excessive groundwater began to infiltrate the mine. (Pet. at 11.) The groundwater had to be removed from the mine for safety reasons at rates approaching 50,000 gallons per day. (*Id.*) The pumped groundwater contained chloride levels exceeding 10,000 mg/l. (*Id.*)

Freeman has "exhausted all known supplies of dilution water" and therefore has examined several methods for controlling the amount of mineralized groundwater pumped from the underground mining area. (Pet. at 11.) Rerouting the water into abandoned underground portions of the mine poses a risk due to geologic fault systems transecting the operation which might allow the disposed water to migrate into other active areas. (Pet. at 11-12.) Freeman argues that rerouting could cause the mine to flood putting the employees in serious jeopardy and requiring that operations terminate. (Pet. at 12.)

Pumping the water into separate abandoned underground mines in the area could lead to groundwater contamination and subsidence due to water inundation. (Pet. at 12.) Freeman has sealed off a portion of the longwall mining area where the mineralized groundwater is generated. However, it is unclear whether this action will contain the water to the sealed area. (*Id.*)

Freeman argues that treatment techniques for the removal of chlorides are prohibitively expensive and not suited for the large quantities of water utilized at the mine. (*Id.*) The methods are so expensive, according to Freeman, that if required the operation could be rendered unprofitable and no longer viable. (*Id.*)

Freeman argues that absent the variance it will be unable to discharge without violating the permit condition and the standard at Section 406.203(c)(1)(A). If Freeman is unable to discharge, Freeman asserts that it will have no alternative but to close the mine as continued build-up of chlorides will damage the process equipment. (Pet. at 13.) Closure of the mine will result in a loss of jobs as well as coal resources and would be a detriment to "fair competition with neighboring coal mines" which already have similar variances. (Pet. at 13-14.) Therefore, Freeman argues that, denial of the variance would be an "arbitrary and unreasonable" hardship. (Pet. at 14.)

#### ENVIRONMENTAL IMPACT

Freeman points out that two other coal mines in the area are allowed higher chloride discharges. Consolidation Coal Company's Rend Lake Mine, three miles south of Freeman's Orient #6, is

permitted to discharge 2000 mg/l of chlorides. Ziegler Coal Company's Old Ben #21 located six miles south of Orient #6, is permitted to discharge 2800 mg/l. (Pet. at 14.) Thus, Freeman states that "petitioner believes there is no reason to anticipate any adverse effects on the stream environment or downstream lake environment during the variance period". (Pet. at 10.)

The Agency points out that the purpose of the proposed variance is to allow Freeman to conduct a study to determine the actual effects of higher chloride discharges. (Rec. at 6.) The Agency believes that given the proposed chloride discharge increase (from 1,000 mg/l to 1,500 mg/l) the potential for adverse impact appears minimal. (Rec. at 6.)

#### CONSISTENCY WITH FEDERAL LAW

Freeman asserts that the variance requested is consistent with the Clean Water Act (33 U.S.C. 1251 et. seq.) as well as USEPA effluent guideline and federal regulations. (Pet. at 14.) The Agency also believes that there is no conflict with other state or federal laws if the Board grants the variance. (Rec. at 8.) The Agency points out that there is no federal effluent guideline for chlorides. (*Id.*)

#### CONCLUSION

Based on the record the Board finds that Freeman has established that compliance with Section 406.203(c)(1)(A) constitutes an arbitrary or unreasonable hardship. Freeman has shown that alternative methods of compliance with the 1,000 mg/l chloride discharge standard are less safe and less cost-efficient. Without this variance Freeman may cease mining operations.

The Board finds that temporary release of a higher concentration of chloride, at levels specified in the variance, does not pose a significant risk to environmental health. Freeman will be conducting stream studies for 18 months to examine the environmental impacts of the elevated chloride levels during the term of the variance. Therefore, the Board and the Agency will have more specific data available for making future decisions at the conclusion of this variance.

The Board does share the concern expressed by the Agency that the petition lacks a sufficient compliance plan. The petition fails to explain how compliance will be achieved if the stream study indicates a significant impact on the environment of the higher discharge rate. Of a larger concern, is the petitions failure to consider the impact to the Rend Lake Conservancy District public water supply. For these reasons, the Board will grant the variance with the conditions recommended by the Agency.

The Board finds that petitioner has established that a variance should issue to Freeman's facility known as Orient #6.

This opinion constitutes the Board findings of fact and conclusions of law in this matter.

ORDER

The Board hereby grants to Freeman United Coal Mining Company a variance from 35 Ill. Adm. Code 406.203(c)(1)(A) for chloride discharges from outfalls 002 and 003 only, at the facility known as Orient #6 in rural Jefferson County, Illinois, with the following conditions to protect the environment in the short term and generate sufficient information for a long-term solution:

- a) Variance shall commence on the date of the final Board order and extend for a period of two (2) years. During the term of the variance, chloride concentration in the effluent shall not exceed 1500 mg/l.
- b) Stream study plans for both discharges must be finalized and submitted to the Illinois Environmental Protection Agency within sixty (60) days of the final Board order for comment and approval prior to their implementation. The Agency has already sent Petitioner a copy of the Agency's Quality Assurance and Field Methods Manual (1987 revision) to ensure consistency with other stream studies. Petitioner may contact the Agency's regional biologist, Robert Hite, at the Agency office in Marion for additional assistance.
- c) Petitioner shall conduct an actual stream study to determine if the discharge of elevated chlorides will or will not cause an adverse impact on the environment in and around Buck Creek, the stream receiving discharge from outfall 002 and on the unnamed tributary receiving from outfall 003.
- d) Petitioner shall develop a contingency plan to reduce and control chloride concentrations within basins tributary to outfalls 002 and 003.
- e) Petitioner shall conduct an evaluation of the projected long-term effects of elevated chloride discharges on the Rend Lake Conservancy District Public Water Supply. The evaluation must address the cumulative impact of all reasonably known elevated chloride discharges to Rend Lake.

- f) During the actual stream study the petitioner shall endeavor to continue its current dilution practices using existing dilution water sources.
- g) The Petitioner shall submit to the Agency, at least one hundred eighty (180) days prior to the expiration of this variance, the results of the actual stream study and the results of the chloride reduction and control practices addressed above, and either:
1. A NPDES permit application requesting an increase in permit #IL0004707 effluent limitations for chlorides, in accordance with 35 Ill. Adm. Code 406.203, or
  2. A NPDES permit application which includes a complete compliance plan to reduce the discharge chloride concentrations to less than 1000 mg/l, to comply with 35 Ill. Adm. Code 406.203(c)(1)(A).
- h) If an extension of the variance is necessary, the Petitioner may submit a petition to extend the variance, with the above studies and a complete compliance plan, as required by 35 Ill. Adm. Code 104.123.
- i) Petitioner shall make interim progress reports to the Agency at ninety (90) day intervals beginning at ninety (90) days from the Board Order. These interim progress reports shall address all the above studies and should be sent to:
- Illinois Environmental Protection Agency  
 Mine Pollution Control Program  
 Attn: William C. Ryan  
 2309 West Main Street  
 Marion, Illinois 62959
- j) All other provisions of the NPDES Permit and Board effluent limitations shall be met.

Within forty-five (45) days of the date of the final Board order in this PCB 94-194 proceeding, Petitioner shall execute and forward to Richard C. Warrington, Division of Legal Counsel, Illinois Environmental Protection Agency, 2200 Churchill Road, P.O. Box 19276, Springfield, Illinois 62794-9276, a Certificate of Acceptance and Agreement to be bound to all terms and conditions of the variance granted. The forty-five (45) day period will be held in abeyance during any period that this matter is being appealed. Failure to execute and forward this Certificate within



forty-five (45) days shall render the variance null and void. The form of the Certificate shall be as follows:

CERTIFICATION

I (We), \_\_\_\_\_, hereby accept and agree to be bound by all terms and conditions of the Pollution Control Board's \_\_\_\_\_, 1994 order in PCB 94-194.

\_\_\_\_\_  
Petitioner

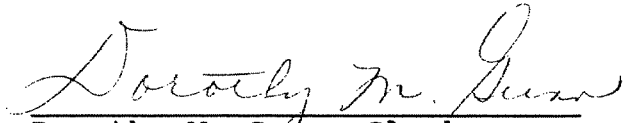
\_\_\_\_\_  
Authorized Agent

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 20<sup>th</sup> day of October, 1994, by a vote of 5-0.

  
\_\_\_\_\_  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board