BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R08-18
GROUNDWATER QUALITY STANDARDS,	)	(Rulemaking – Public Water Supply)
35 ILL. ADM. CODE 620	)	

NOTICE OF FILING

TO: Mr. John Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA ELECTRONIC MAIL)

Mr. Richard R. McGill, Jr.
Hearing Officer
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA U.S. MAIL)

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the COMMENTS OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP, a copy of which is herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
REGULATORY GROUP,

By: /s/ Katherine D. Hodge
Katherine D. Hodge

Dated: September 12, 2008

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CERTIFICATE OF SERVICE

I, Katherine D. Hodge, the undersigned, hereby certify that I have served the attached COMMENTS OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP upon:

Mr. John Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
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via electronic mail on September 12, 2008; and upon:

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by depositing said documents in the United States Mail, postage prepaid, in Springfield, Illinois on September 12, 2008.

/s/ Katherine D. Hodge
Katherine D. Hodge

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COMMENTS OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP

NOW COMES the Illinois Environmental Regulatory Group ("IERG"), by its attorneys Alec M. Davis and HODGE DWYER ZEMAN, and submits the following comments in the above referenced matter.

I. INTRODUCTION

IERG is a not-for-profit corporation affiliated with the Illinois Chamber of Commerce. IERG is composed of 56 member companies that are regulated by governmental agencies that promulgate, administer, or enforce environmental laws, regulations, rules, or other policies. IERG submits these comments following the testimony of Brian H. Martin, at the July 16, 2008 hearing in this rulemaking.

As discussed in Mr. Martin's pre-filed testimony, IERG has been working with the Illinois Environmental Protection Agency ("Illinois EPA" or "Agency"), both during the initial outreach, and in an on-going capacity during this rulemaking. Many of the concerns raised by IERG members will be addressed if the solubility basis for deriving standards is removed, as proposed by the Agency at the second hearing, and if molybdenum is removed from the proposal, as described below. *See* Supplemental Testimony of the Illinois EPA, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Adm. Code 620*, R08-18 at 6-8 (Ill.Pol.Control.Bd. July 11,

2008). The remainder of these comments are intended to address the questions posed by either the Illinois Pollution Control Board ("Board"), or the Agency at the July 16, 2008 hearing.

II. STANDARD FOR MOLYBDENUM

Based on communications with the Agency, IERG understands that the Illinois EPA intends to propose that molybdenum be removed from the proposed amendments to Part 620. IERG is supportive of the Agency making such a recommendation based on concerns that IERG has expressed to the Agency. IERG is concerned regarding the uncertain health affects of molybdenum and regarding the uncertainty of the extent to which molybdenum is present as a naturally occurring chemical as opposed to a pollutant. Additionally, IERG is concerned with the potential impacts of having a groundwater quality standard for molybdenum on corrective action and landfill programs, as well as concerned regarding the continued beneficial use of Coal Combustion Byproducts ("CCB"). IERG believes that such uncertainty strongly demonstrates a need for additional consideration to better understand molybdenum, especially in light of the impacts that such a standard would impose. Removal of molybdenum from the amendments, as currently proposed, will provide the opportunity to pursue such additional assessment.

A. Uncertainty of Health Affects of Molybdenum

Although molybdenum has a reference dose ("RfD") in the USEPA Integrated Risk Information System ("IRIS") database, and an entry in the USEPA Drinking Water Health Advisories (with a Drinking Water Equivalence Level of 0.2 mg/L), questions remain as to whether molybdenum poses a genuine concern to human health.

Molybdenum is not listed in either the priority or non-priority pollutants list that the USEPA develops as the National Recommended Water Quality Criteria. Notably, it has been absent from each of the USEPA listings published after the 1974 publication *Water Quality Criteria, 1972*. *See* USEPA, Office of Water Regulations and Standards, *Quality Criteria for Water* (1976) ("Red Book") and USEPA, Office of Water Regulations and Standards, *Quality Criteria for Water 1986* (May 1, 1986) ("Gold Book"); *see also* USEPA, Current National Recommended Water Quality Criteria, available at http://www.epa.gov/waterscience/criteria/wqctable/ (Sept. 11, 2008). These lists are required to be published by Section 304(a) of the Clean Water Act, for the protection of both human health and aquatic life. 33 U.S.C. § 1314(a). USEPA has also not deemed it necessary to regulate molybdenum under its primary or secondary drinking water standards. *See generally* 40 C.F.R. Parts 141 and 143. Further, note that according to the Northwestern University Feinberg School of Medicine website *Northwestern Nutrition*, "no cases of human molybdenum Toxicity have been reported." Feinberg School of Medicine, Northwestern University, "Nutrition Fact Sheet: Molybdenum," available at http://www.feinberg.northwestern.edu/nutrition/factsheets/molybdenum.html (Sept. 11, 2008).

B. Uncertainty of Non-Natural Occurrence of Molybdenum

Because the Illinois Groundwater Protection Act, 415 ILCS 55/1, *et seq.*, requires the Agency to address "contaminants which have been found in the groundwaters of the State," it is important to be able to distinguish those chemicals which are naturally present in the environment from those which are "contaminants." 415 ILCS 55/8(a).

Molybdenum is a naturally occurring inorganic element which is common in the environment. It is present in numerous minerals, and is resultantly present in soils. Additionally, molybdenum can be naturally present in waters due to erosion and leaching of limestone and other calcium or magnesium bearing minerals. Edward I. Stiefel and Henry H. Murray, "Molybdenum," *Metals in the Environment* at 503-29 (B. Sarker ed., CRC Press 2002). Also of note, molybdenum is commonly occurring in Illinois coal. Illinois State Geological Survey Coal Quality Database, available at http://www.isgs.uiuc.edu/maps-data-pub/coal-maps/nonconf_masterfile.xls (Sept. 11, 2008).

The number of detections of molybdenum in groundwater in Illinois, which can be clearly attributed to non-natural sources, may be insufficient to conclusively determine that molybdenum qualifies as a "contaminant." Because molybdenum is rarely a contaminant of concern, very little monitoring has been conducted. The datasets relied upon by the Illinois EPA, in determining which constituents to add to the current groundwater quality standards in this rulemaking, contained only a single detection of molybdenum. The detection at a federal cleanup site (the Chanute Air Force Base) was at a concentration (0.24 µg/L), which may or may not be within the range of naturally occurring molybdenum. The body of data regarding molybdenum in Illinois groundwater is insufficient to provide a criteria to determine if a given value is within the naturally occurring range or is a valid contaminant of concern.

C. Impact of a Molybdenum Standard on Corrective Action and Landfill Programs

Since molybdenum is a naturally occurring element, the addition of molybdenum to Part 620 and its interconnection with Illinois' corrective action programs (i.e., TACO, SRP, LUST and RCRA) as well as landfill programs, will have significant investigation impacts (i.e., increased cost for investigation and evaluation) without commensurate benefits. Currently, molybdenum is considered to be a contaminant of concern only when the site history and/or land use indicate that molybdenum may be present. The applicable remediation objective would have to be obtained from the Illinois EPA, developed by the responsible party using CERCLA guidance (i.e., classical risk assessment), or based on a determination of area background for molybdenum in groundwater on a case-by-case basis. At landfills, a site-specific area background would have to be developed for each groundwater unit associated with the landfill. In short, in instances where molybdenum is a contaminant of concern, the corrective action and landfill programs already contain provisions which are applicable to, and sufficient to address, the threat to groundwater. A Part 620 groundwater quality standard is not necessary in such cases.

If molybdenum is added to Part 620 as is currently proposed, molybdenum distribution in groundwater will have to be assessed at all SRP comprehensive No Further Remediation sites. This will be required even if all site history indicates that molybdenum is not present. If any concentrations above the proposed Part 620 standard are detected, the remedial applicant would be required to complete a determination of area background. Such a determination requires extensive and costly groundwater monitoring and complex statistical analysis.

D. Indirect Economic Impacts of a Class I Groundwater Standard for Molybdenum

Section 3.135 of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/3.135, specifies that for some specified beneficial uses, the CCB to be used "shall not exceed Class I Groundwater Standards for metals when tested utilizing test method ASTM D3987-85." 415 ILCS 5/3.135(a-5)(B). Thus, the initial step for determining whether CCB may be used is meeting the Class I groundwater standard. Discussion among industry representatives demonstrates that this threshold may well preclude the use of CCB in certain instances where such use is practical and makes good sense and environmental practice.

For example, in the case where CCB, which meets all Class I groundwater standards for metals, except the proposed molybdenum standard, is intended to be used to reclaim an abandoned mine, the Act functions to completely prohibit such use. The mere fact that the coal combustion material contains molybdenum would result in failure to meet the threshold test pursuant to Section 3.135(a-5)(B) of the Act, and bar its use, regardless of whether the use actually poses harm to the environment. Further, under such circumstances, the use is both environmentally practical and practicable, because waters beneath such abandoned mine sites have been disturbed by mining operations.

To further complicate this matter, with reference to Section 3.135(b) of the Act, which provides for beneficial use determination, IERG believes that use of CCB at abandoned mine sites present a unique situation. This section of the Act provides that a beneficial use determination may be made by Department of Natural Resources' Office of Mines and Minerals ("OMM") at sites governed by the federal Surface Mining Control and Reclamation Act of 1977 ("SMCRA"). Based on discussion with Mr. Scott Fowler

of OMM, IERG understands that SMCRA does not govern abandoned mine sites. IERG further understands, based on discussions with the Agency, that these abandoned sites are under no special purview of the Illinois EPA. The result of these discussions is uncertainty within the regulated community as to whether and/or how the use of CCB may ever be determined to be beneficial at such sites.

It is IERG's understanding that this potential for the Class I groundwater quality standard for molybdenum to adversely impact the continued use of CCB in Illinois was not foreseen by the Agency at the time that the rule was proposed. Therefore, by removing molybdenum from the proposal, the unintended impact can be further assessed.

III. THE ILLINOIS EPA PROCESS FOR IDENTIFYING CONSTITUENTS FOR INCLUSION IN PROPOSED STANDARDS

At the July 16, 2008 hearing, IERG committed to provide recommendations on "additional or alternative criteria for identifying commonly detected chemical constituents on a state-wide basis." Transcript of July 16, 2008 Hearing, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Adm. Code 620,* R8-18 at 30-31 (Ill.Pol.Control.Bd. July 28, 2008) (hereafter "Transcript"). Having obtained and reviewed the datasets relied upon by the Agency to determine what chemicals to add to Part 620 in the proposal, IERG is prepared to make the following observations and comments regarding the process used by the Agency. *See* Prefiled Testimony of Thomas Hornshaw, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Adm. Code 620*, R08-18 at 5 (Ill.Pol.Control.Bd. May 29, 2008).

It is IERG's understanding, based on communications with the Agency, that consideration of chemicals in the database for inclusion was limited to those chemicals with ten or greater detections in the state during the past 20 years. IERG agrees with this

approach in general, but thinks that in addition to a threshold based on the number of detections, attention needs to be paid to the number of distinct sites at which such detections are made. For example, alpha benzene hexachloride ("alpha-BHC") was detected 24 times, yet 23 of those 24 detections were at a single site. IERG suggests that the Illinois EPA, in addition to reviewing the total number of detections of a chemical, also analyze whether the diversity of locations indicates a need for a state-wide standard.

IERG has also noted, based on its analysis of the Illinois EPA data, that some of the chemicals added in the proposal have been detected only at federal cleanup sites (such as detection of explosive contaminants at military sites). IERG is concerned that requiring state-wide monitoring for additional chemicals, based solely on their occurrence at sites of unique character, could potentially amount to a great economic burden, without a commensurate environmental benefit. IERG would suggest that chemicals which are associated with only a few unique sites or processes would be better regulated on a basis tailored to site-specific conditions, rather than on a state-wide scale.

IV. ECONOMIC IMPACT ON COAL COMBUSTION BYPRODUCT USE

At the July 16, 2008 hearing, IERG was asked multiple questions relating to the potential economic impact of the proposed groundwater quality standards on the continued use of CCB. Transcript at 28, 31-32. In an attempt to fully describe the universe of industries potentially affected, IERG obtained data regarding the chemical analysis of CCB leachate in the state, the nature of the current uses of CCB, and the potential impact that the current rulemaking could have on the use of CCB.

A. CCB Leachate Data

As described above, Section 3.135 of the Act requires that for some specified uses of CCB, the "CCB shall not exceed Class I Groundwater Standards for metals when tested utilizing test method ASTM D3987-85." 415 ILCS 5/3.135 (a-5)(B). In pre-filed testimony, IERG stated that leachate from CCB has the potential to exceed the proposed standards for molybdenum, and potentially other metals. Pre-filed Testimony of Brian H. Martin, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Adm. Code 620*, R8-18 at 5 (Ill.Pol.Control.Bd. July 22, 2008) (hereafter "Martin Testimony"). At hearing, IERG did not have additional data readily available to further substantiate the concern.

IERG is able to provide analysis data based on testing to determine compliance with the requirements currently in place. Thus, very limited data is available regarding the occurrence of either molybdenum or vanadium in the various coal combustion materials. Additionally, various analyses reported arsenic to be "<0.05mg/L," which would place coal combustion material within the range of currently acceptable values. However, such a result is based on the detection limit, and does not provide insight into whether those same materials would be capable of meeting the proposed standard.

The analysis data, for the metals added or amended in the proposed amendments, is summarized below:

Molybdenum:

Sample Description	Extraction Method	Result (mg/L)
Fly Ash	ASTM D3987-85	0.34
Bed Ash	ASTM D3987-85	0.14
M Ash	"Shake"	0.098
Bed Ash	"Shake"	0.142
Fly Ash	"Shake"	3.49
P Ash	"Shake"	0.537
Composite Ash	"Shake"	0.534

Vanadium: No analysis records tested for vanadium.

Arsenic:

Sample Description	Extraction Method	Result (mg/L)
Fly Ash	ASTM D3987-85	0.003
Bottom Ash	ASTM D3987-85	0.003
Bed Ash	ASTM D3987-85	<0.05
Fly Ash	ASTM D3987-85	<0.05
Fly Ash	ASTM D3987-85	<0.02
Coal	ASTM D3987-85	<0.0040
Fly Ash	ASTM D3987-85	<0.0040
Bed Ash	ASTM D3987-85	0.002
Ash – 6 months	SPLP	<0.05
Ash – 6 months	TCLP	<0.01
New Ash	SPLP	<0.05
New Ash	TCLP	<0.01
Fly Ash	ASTM D3987-85	0.037
Fly Ash	TCLP	<0.10
Fly Ash	TCLP	<0.10
Bag House Carbon/Fly Ash	TCLP	<0.05
M Ash	TCLP	0.091
Bed Ash	TCLP	<0.05
Fly Ash	TCLP	0.187
P Ash	TCLP	<0.05
Composite Ash	TCLP	0.065
Annual Ash	TCLP	0.03
Fly Ash	ASTM D3987-85	<0.0075
Bottom Ash	ASTM D3987-85	<0.0075
Composite Ash	ASTM D3987-85	<0.0075

Thus, IERG is unable to categorically state the affect of the proposal on continued use of CCB. The quantity of information gathered, under the standards currently in

place, is insufficient to definitively determine whether coal combustion materials generated throughout the state can meet the proposed Class I groundwater standards for metals as required by the Act. The limited availability of data to fully assess whether or not CCB can meet the standards, as proposed, underscores the uncertainty behind the economic impact of the proposed amendments.

B. CCB Use in Illinois

IERG gathered and reviewed information regarding coal use, quantities of CCB currently put to use, and the potential economic impact that would result if CCB were no longer able to be used. Notice, that while the mine-haul back arrangements are common, other uses, as authorized by Section 3.135(a) of the Act, are utilized by industry. Martin Testimony at 5-6.

IERG's information represents a subset of industrial coal burners in the state, totaling approximately 34.7 million tons of coal consumed annually. Both Illinois and western coal were included in the data. The industries totaled approximately 2.13 million tons of CCB generated annually. (Note that these quantities represent a minimum based on information collected by IERG, and do not represent state-wide totals for either coal consumption or CCB generation). The uses for the CCB include: "returned to mine as mine fill," "land applied," "goes to limestone quarry as fill," "sold as product," "to reclaim an abandoned coal mine as alternative fill," "as direct replacement for cement," "structural fill," "road bed," "roofing materials," "traction control," "to solidify sludge generated on site," and "abrasive blast media," all of which are currently permitted beneficial uses under Section 3.135(a)(1) - (9) of the Act. 415 ILCS 5/3.135(a)(1) - (9).

None of the industrial information reported having conducted any studies of the impact of the proposed rule, but presented estimates of costs of alternatives to current use of CCB. Costs of alternatives varied widely, but estimates ranged from $7 to $10 per ton for company owned disposal (which is only an alternative where property availability is not an issue) to $19 to $45 per ton for disposal to a landfill. Such costs, when multiplied by the volumes of coal combustion materials generated, are potentially enormous. Thus, for the subset of industrial coal burners for which IERG has data, the minimum impact could range from a low of $14.9 million to $95 million.

C. Beneficial Use Determinations

Additionally, at the July 16, 2008 hearing, IERG was asked to describe industry's experience with the beneficial use determination process. Transcript at 33-34. IERG had acknowledged, in pre-filed comments, that the Act does contain a provision to allow for the use of CCB that does not meet the Class I groundwater standards for metals. Martin Testimony at 6. This provision, contained in Sec. 3.135(b), allows the Illinois EPA to approve of such uses, or, in the case of sites governed by SMCRA, grants the authority to OMM to approve the same. 415 ILCS 5/3.135(b). IERG asserted that due to costs and difficulties in receiving such determinations, such approvals may provide disincentive to put CCB to beneficial use. Martin Testimony at 6. In order to better describe industry experience in obtaining such approval, IERG gathered information regarding the informational requirements, the costs and technical difficulties in compiling an application, and experiences in communicating with the Agency to understand what was required in order to obtain a beneficial use determination.

In one reported instance, letters sent to the Illinois EPA regarding beneficial use were unanswered. In another instance, industry is having some success in working with the OMM, but is in very early stages of the process. Further, a separate report described two requests for beneficial use determinations, both of which resulted in the applicant withdrawing the request. In one instance the application was withdrawn because, after numerous revisions, the application still had not been approved, and in the other instance because the applicant's ability to comply was "nearly impossible." Specific details regarding the costs of applying were unavailable, but the lack of clear guidelines and the associated difficulties of complying with requirements reduced the financial benefit of using the CCB. The applicant stated that after attempting to follow the initial guidelines provided by the Agency, the informational requirements seemed to change with each subsequent submittal.

These experiences in applying for such beneficial use determinations, while a limited sample, exemplify the kinds of difficulties described by IERG at the second hearing. IERG would like to reiterate its concern for the potential impact of the proposed rule on the continued use of CCB, and ask the Board to consider these unintended economic impacts when considering the proposed amendments.

V. CONCLUSION

The concerns that IERG has regarding the economic and regulatory impacts of a standard for molybdenum, coupled with the uncertainty underlying both the health affects and the character of the element's natural occurrence in the environment, lead IERG to vigorously support the Illinois EPA in recommending that molybdenum be removed from the proposal currently under consideration. When the Agency considers chemicals for

state-wide regulation, IERG encourages the Agency to not only consider the number of times that a chemical under consideration has been detected, but also the diversity of sites at which the particular chemical has been previously detected. In addition, rather than subject the entire state to costly monitoring and analysis requirements, efforts to regulate certain chemicals might be better suited for regulation based on site-specific characteristics. Lastly, IERG would emphasize the large degree of uncertainty that is present in this rulemaking, specifically with regard to the economic impact that the proposed groundwater quality standards could potentially have on the continued use of CCB.

IERG would like to thank the Board for providing this opportunity to present comments on the proposed rule. Should the Board have additional questions, IERG would be pleased to provide any information it can make available.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
REGULATORY GROUP

Dated: September 12, 2008

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