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April 13, 2010

Allen Luttrell, Director
Division of Mine Permits
Department for Natural Resources
Environment and Public Protection Cabinet
#2 Hudson Hollow
Frankfort, Kentucky 40601

Re: Harlan Reclamation Services, LLC
Permit Application No. 848-5458
DMRE ID No. 012918

Dear Director:

These comments are submitted on behalf of the Kentucky Resources Council, Inc. (Council) on behalf of members who live and work in the community of Lynch, Benham and Cumberland and in Harlan County, and who will be adversely affected and aggrieved within the meaning of the applicable statutes, if the permit requested by Harlan Reclamation Services LLC is issued. These comments will be tendered at the permit conference this evening by KRC member Roy Silver, and is also being transmitted in electronic format to your attention. The permit comments are timely filed within the meaning of the applicable regulations.

Harlan Reclamation Services LLC (HRS) has requested an underground coal mining permit to conduct coal removal from the Owl Seam, and has requested authorization for 812.1 acres of underground coal extraction area and an additional .7 acres of mining face up area, 12 acres of roads, .2 acres of ponds, and 6.4 acres of "mine management area"

for a total surface disturbance of 19.3 acres. According to the permit application, the Owl Seam has an average thickness of 41 inches, a sulfur content of .91%, pyritic sulfur of .18% and an elevation of 1845'. On the basis of knowledge and belief, the Owl Seam is located 100 or less feet above the Kellioka Seam, with the Darby Seam about midway in distance between the seams.

As the agency is aware, both the cities of Benham and Lynch supply water to their residents from underground reservoirs in formerly-mined seams which underlie the proposed mining in the Owl Seam - the City of Benham, from a reservoir located in the Kellioka seam, and the City of Lynch, from the Darby seam. Additionally, Gap Branch Stream, provides some 30% of the supply for the Lynch reservoir, with Looney Creek the other major source of recharge for the Lynch reservoir through a streambed borehole. The permit application identifies the proposed underground mine area as or being adjacent to the pre-law US Steel Corp mines in the Darby and Kellioka seams, and overlapping the underground boundary of an HRS mine in the Harlan seam.

SUMMARY OF OBJECTIONS

Among the reasons that the Council respectfully requests that the permit be denied are these:

1. The application lacks an adequate hydrologic protection and hydrologic reclamation plan, and the Cabinet has not conducted an adequate and sufficient Cumulative Hydrologic Impact Assessment of the probable cumulative impacts of all anticipated mining on the hydrologic balance within the cumulative impact area.
2. The applicant has failed to adequately address the potential adverse hydrologic consequences of the proposed mining to the existing Benham and Lynch reservoirs in the Darby and Kellioka seams, and to identify a replacement water supply in the event that mining damages the retention capacity for either or both of the existing water reservoirs.
3. The subsidence control plan should evaluate the potential for subsidence of the roof of the pre-law underground mines in the Darby and Kellioka seams due to the concentration of stress from pillars left in the room and pillar mining of the Owl seam.

OBJECTIONS

- 1. The application lacks an adequate hydrologic reclamation plan, and the Cabinet has not conducted a proper Cumulative Hydrologic Impact Assessment.**

Both SMCRA and the Kentucky program impose on Kentucky DNR a mandatory, non-discretionary duty to withhold approval of any application for (1) a new surface mining permit or (2) a significant revision of any previously issued surface mining permit, unless and until the application affirmatively demonstrates and Kentucky DNR finds in writing -

- on the basis of the information set forth in the application or from information otherwise available which Kentucky DNR documents in its approval papers -- that, among other things:

(1) the permit application is accurate and complete;

(2) all the requirements of SMCRA and the Kentucky program have been complied with; and

(3) based on an assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance, the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

30 U.S.C. § 1260(b)(1), (b)(3); 30 C.F.R. §§ 773.15(c)(1), (c)(5); K.R.S. 350.060(2); 405 K.A.R. 8:010 §14(1)-(3).

As part of every cumulative hydrologic impact assessment (“CHIA”), SMCRA and the Kentucky program require Kentucky DNR to, among other things:

(1) base the agency’s designation of the cumulative impact area for the proposed or revised operation on a scientific, data-based analysis of the area within which impacts that likely will result from the proposed operation may interact with impacts of all anticipated mining on surface and groundwater systems, in accordance with 30 C.F.R. §§ 701.5 (cumulative impact area), 733.11, 773.15(e), 780.21, 784.14(f), and 405 K.A.R. 8:001 § 1(28);

(2) specify all anticipated mining within the cumulative impact area according to the standards stated in 30 C.F.R. § 701.5 (cumulative impact area) and 405 K.A.R. 8:001 § 1(28)(a)-(d);

(3) define, for the designated cumulative impact area, the threshold limits or ranges of cumulative hydrologic impact which, if exceeded, would constitute material damage to the hydrologic balance in the cumulative impact area, including among such threshold limits or ranges, at a minimum, the applicable numeric criterion or criteria for each pertinent water quality standard applicable to each water resource within the designated cumulative impact area, in accordance with the requirements of 405 K.A.R. 8:010 § 14(3), 405 K.A.R. 8:030 § 32(3)(b), and 405 K.A.R. 8:040 § 32(3)(b) [as those regulations must be interpreted in light of 30 C.F.R. §§ 780.21, 783.14, and 48 Fed. Reg. 43,973 (Sept. 26, 1983)]; and

(4) determine whether (a) the permit applicant’s proposed hydrologic monitoring plans are capable of detecting any exceedance or trend toward exceedance of each material damage criterion defined in the CHIA and (b) the hydrologic reclamation plan presented in the permit application is capable of forestalling or, if necessary, correcting any actual occurrence of material damage to the hydrologic balance outside the permit area, so as to

establish a rational basis for the “prevention of material damage” finding that 30 U.S.C. § 1260(b)(3) and 405 K.A.R. 8:010 § 14(3) require. See also 30 U.S.C. § 1258(a)(13); 30 C.F.R. §§ 780.21(h)-(j), 784.14(g)-(i); 405 K.A.R. 8:030 § 32; 405 K.A.R. 8:040 § 32.

To ensure that mining operations do in fact prevent material damage to the hydrologic balance outside the permit area, the Kentucky program requires that, as part of a complete permit application, each applicant formulate surface and ground water monitoring plans which will, among other things: (1) identify the quantity and quality parameters to be tested during each sampling event; and (2) describe how monitoring data will be used to determine the impact of the operation on the hydrologic balance both on the permit area and adjacent areas. 405 K.A.R. 8:030 § 32(4)(b)(1)-(2) and 405 K.A.R. 8:040 32(4)(b)(1)-(2) [as those regulations must be interpreted in light of 30 C.F.R. §§ 780.21(i) and (j), 783.14(h) and (i)].

During mining and reclamation, the Kentucky program requires the Kentucky DNR to enforce the requirements that (1) each permittee conduct surface coal mining and reclamation operations in a manner that prevents material damage to the hydrologic balance outside the permit area and (2) discharge from disturbed areas shall not cause or contribute to a violation of applicable water quality standards. 405 K.A.R. 16:070 § 1(g); 405 K.A.R. §18:070 § 1(g) [as those regulations must be interpreted in light of 30 C.F.R. §§ 816.41(a), 816.42, 817.41(a), 817.42]. Among other things, the water quality standards applicable at Kentucky coal mines require, at a minimum, that no industrial waste cause or materially contribute to the presence in Kentucky waters of materials in concentrations that “injure or are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, or fish and other aquatic life.” 401 K.A.R. 10:031 § 2. Specifically, water quality standards applicable in Kentucky streams include specific numeric limits on concentrations of the following pollutants that, among others, are associated with wastewater discharges from surface coal mining and reclamation operations:

- Arsenic
- Iron
- Beryllium
- Lead
- Cadmium
- Mercury
- Chloride
- Nickel
- Copper
- Selenium
- Cyanide
- Silver
- Hexavalent chromium
- Zinc

401 K.A.R. 10.031 § 6 Table 1.

No mining permit may lawfully be approved without performing a CHIA in accordance with the requirements of SMCRA and the Kentucky regulations. HRS cannot be approved to conduct the proposed underground coal mining operations unless and until the applicant provides an adequate hydrologic protection plan and Kentucky DNR undertakes a Cumulative Hydrologic Impact Assessment that includes these actions:

(1) analysis and definition of the specific area within which impacts resulting from the proposed operation may interact with the impacts of all anticipated mining on surface and groundwater systems;

(2) use of that analysis as the basis for determining the cumulative impact area for the proposed operation. 30 U.S.C. § 1260(b)(3), K.R.S. 350.060(2), 405 K.A.R. 8:010 §14(1)-(3), and 405 K.A.R. 8:001 §1(28) impose on the agency;

(3) a written determination of all anticipated mining in the cumulative impact area, 30 U.S.C. §1260(b)(3) and 405 K.A.R. 8:001 § 1(28)(a)-(d);

(4) determination of the threshold limits or ranges of cumulative hydrologic impact that constitute material damage to the hydrologic balance in the cumulative impact area of the proposed operation, 30 U.S.C. § 1260(b)(3), 30 C.F.R. §§ 780.21, 783.14 (as interpreted at 48 Fed. Reg. 43,973 (Sept. 26, 1983)), 405 K.A.R. 8:010 § 14(3), 405 K.A.R. 8:030 § 32(3)(b), and 405 K.A.R. 8:040 § 32(3)(b);

(5) determination of whether: (a) the permit applicant's proposed hydrologic monitoring plans as designed are capable of detecting any exceedance or trend toward exceedance of each applicable material damage criterion, and (b) the hydrologic reclamation plan presented in the permit application is capable of forestalling or, if necessary, correcting any actual occurrence of material damage to the hydrologic balance outside the permit area, so as to establish a rational basis for the "prevention of material damage" finding that 30 U.S.C. § 1260(b)(3) and 405 K.A.R. 8:010 §14(3);

(6) requiring that the groundwater and surface water monitoring plan that meet minimum regulatory requirements of 30 U.S.C. § 1260(b)(1), K.R.S. 350.060(2), 405 K.A.R. 8:010 §14(1), 405 K.A.R. 8:030 § 32(4), and 405 K.A.R. 8:040 § 32(4), by requiring that the permittee (a) monitor each water quality parameter applicable to each receiving stream, (b) describe how surface water or ground water monitoring data will be used to determine the impact of the operation on the hydrologic balance on the permit area and adjacent areas, and (c) require the permit applicant to produce data from which your agency or the public can determine the effects of the permitted mining and reclamation operations on the hydrologic balance, according to 405 K.A.R. §§ 16:110 and 18:110.

A review of the proposed permit application reflects that the probable hydrologic consequences determination and data set provided are inadequate to satisfy the PHC determination, and are also insufficient to support a cumulative hydrologic impact determination by the agency.

Among the deficiencies are these:

According to the permit application, only six months of premining data were collected. There is no demonstration that the data captures all seasonal variation over a year period. Additional baseline data collection regarding the quality of the raw water influent to those reservoirs, and information regarding the structural stability of those reservoirs, is necessary both at baseline and during mining, in order to provide early detection of any adverse changes in recharge, discharge, quality or supply of water to those reservoirs. Additionally, sufficient up and down-gradient groundwater sampling, flow measurement, and chemical composition data is necessary to allow a reasoned determination of the baseline conditions in the vertical and linear “area” in which the proposed mining will occur, and to enable a scientifically-sound determination that the mining activity is designed, located, and proposed to be conducted in a manner that individually and cumulatively will not adversely affect the hydrology of the area.

Additionally, the use of a “net” approach to determining the potential for acid or toxic drainage, rather than an assessment of the acid or toxic-producing characteristics of each strata and a management plan for isolating strata that are acid or toxic producing, may be inadequate to allow for reasoned assessment of the potential for adverse changes in water chemistry from exposure of the disturbed strata to precipitation. Such a net approach assumes complete mixing of strata so that acid or toxic-producing strata exposed to precipitation and infiltration of rainwater will be neutralized, yet no data is provided to support such an assumption.

With respect to conductivity, as the agency is aware, EPA has adopted an interim guidance recommending that in order to protect against adverse impacts on aquatic communities in headwater streams, conductivity values should be maintained at levels below what is typically found at many disturbed mine sites:

“Based on the science, as a general matter, EPA expects that in-stream conductivity levels maintained at or below 300 $\mu\text{S}/\text{cm}$ will meet water quality standards and that in-stream conductivity levels above 500 $\mu\text{S}/\text{cm}$ are likely to be associated with adverse impacts that may rise to the level of exceedances of narrative state water quality standards.”

Upstream sampling in the Looney Creek drainage basin appears to have identified baseline conductivity values at around 200. Assuming that the 6-months of data is representative of year-round hydrologic variability, in order to assure that the new disturbance will not cause an exceedance of the 300 μS

value, each disturbed strata that will be exposed to precipitation in the temporary spoil fill, must be analyzed to determine the potential to leach chlorides and sulfates and to elevate conductivity values in stream.

Since the permit application does not include these requisite demonstrations, and the permit file does not contain documentation of the required analyses by the Cabinet based on data provided by the applicant and other site-specific information allowing the Cabinet to evaluate the proposed impacts on the hydrologic balance in conjunction with the impacts of other anticipated mining, the Cabinet is obligated by law to deny the permit application. 405 KAR 8:010 Section 14(3).

2. The applicant has failed to adequately address the potential for mining to disrupt the Darby and Kellioka seam reservoirs, and to identify a replacement water supply in the event that mining damages the retention capacity for either or both of the existing water reservoirs.

The application pays scant attention to the proximity of the proposed underground mine to the Darby and Kellioka Seam reservoirs that supply the cities of Benham and Lynch. The PHC determination with respect to groundwater provides a conclusory statement regarding the potential to adversely affect groundwater quality and no discussion at all of the potential of the underground mining activity to cause adverse impacts on the existing reservoirs from such failure mechanisms as:

- blasting or other vibration-induced subsidence of the roofs of the mined-out seams;
- roof failures of the existing mined-out seams caused by stress created by the extraction of 55% of the coal from the Owl Seam and the increased stress of the remaining pillars on the voids below;
- encountering or propagating fractures that may cause drainage into those reservoirs; and
- structural damage to the existing mine seals from the new mining activity and associated vibrations from mining and from blasting that the permit application indicated will be conducted on the surface, and within 500 feet of existing underground works.

The application does not adequately describe the “adequacy of alternate sources of water supply that could be developed” in the event of contamination, diminution or interruption of the water supply for Benham or Lynch. Rather, Attachment 19.2A merely parrots the requirements to provide replacement water supply, without identifying how the applicant would proposed to replace the water supply reservoirs for these two communities, or either one, in the event of damage to or loss of those water sources.

Finally, consideration must be given to replacement of water supply in the event that mining in the vicinity of the Gap Branch Stream, which supplies some 30% of the

recharge volume for the Lynch Reservoir, and in the vicinity of Looney Creek, which supplies the remainder of the recharge volume, damages those streams through undermining of the streams or encountering fractures or bedding planes that recharge the streams and diverts that flow into the mine. Specific subsidence control measures should be employed to mitigate against the possibility that mining could disrupt the recharge or discharge of the stress relief valley bottom aquifer system that likely supports Gap Branch Stream and Looney Creek, and appropriate monitoring should be required to assure that during- and post-mining recharge is not affected. The applicant should be required to demonstrate using site-specific data that any proposed restrictions in the amount of coal recovery near those streams is sufficiently wide to avoid communication with the hydrologic system of those streams.

3. The subsidence control plan should evaluate the potential for subsidence of the roof of the pre-law underground mines in the Darby and Kellioka seams due to the concentration of stress from pillars left in the room and pillar mining of the Owl seam.

The application appears to lack any discussion or assessment of the potential for subsidence of the roof of the previously mined areas of the Darby and Kellioka seams that might be triggered by the room-and-pillar mining of overlapping and nearby areas of the Owl seam. The extraction of 55% of the coal by room and pillar methods will increase the stress and weight borne by the remaining coal pillars, and depending on the orientation of the pillars in the Owl seam relative to those in the Darby and Kellioka seams, could cause failure of the roof of one or both seams. There is no discussion in the application of mitigation measures such as stacking the pillars in the various mining horizons to minimize this possibility.

Conclusion

For any and all of these reasons, on behalf of its members who reside in the communities of Benham and Lynch and who utilize the water resources of those communities for beneficial purposes, KRC respectfully requests that the permit application be denied.

Cordially,

Tom FitzGerald