

Memo

Date: January 28, 1988

To: Steven Pardieck, UIC Section Chief, Region 9 and Laurie Kermish,
Office of Regional Counsel, Region 9

From: Christopher Sproul, Office of Regional Counsel, Region 9

Re: **The meaning of "endangers" or "imminent and substantial endangerment" of drinking water sources under sections 1421 and 1431 of the Safe Drinking Water Act, especially in the context of Class V UIC wells.**

[Part Three of this memo is recommended for comparing the concept of "endangerment" as it relates to Reserve Mining Co. v. EPA and Ethyl Corp. v. EPA]

III. ENDANGERMENT AS DEFINED BY CASES ARISING UNDER OTHER ENVIRONMENTAL STATUTES

Perhaps the best way to understand what the agency must do to prove endangerment is to examine past cases where the agency succeeded in proving endangerment. Reserve Mining Co. v. EPA and Ethyl Corp. v. United States are two cases that can serve as models of successful endangerment arguments. [9/]

9/ Reserve mining was an enforcement action, and accordingly can serve as an enforcement action model. Ethyl Corp., however, concerned a challenge to EPA rulemaking and is thus less analogous to a Class V UIC enforcement action. The most notable difference is that in a judicial challenge to an EPA regulation, the EPA's definition of endangerment is itself "law" to which the court gives deference. See note 12 infra. Ethyl Corp. still usefully indicates what evidence a court will consider sufficient to establish endangerment.

A. Reserve Mining Co. v. EPA

In Reserve Mining Co. v. EPA, a U.S. district court found and the U.S. Court of Appeals for the Eighth Circuit agreed that Reserve Mining Company's daily discharge of 67,000 tons of taconite mining tailings into Lake Superior endangered the health of persons within the meaning of subsections 1160(c)(5) and (g)(1) of the Federal Water Pollution Control Act. [10/]

10/ As these sections existed prior to 1972 amendments of the Act.

[See 514 F.2d 492 (8th Cir. 1975) (en banc)]. Subsections 1160(c)(5) and (g)(1) authorized a court to issue "such judgment as the public interest and the equities of the case may require" "in the case of pollution of waters which is endangering the health or welfare of persons." Applying these provisions, the court of appeals ordered Reserve Mining to cease discharging taconite tailings into Lake Superior and find a suitable on-land disposal method for the tailings "within a reasonable time" or shut down. [514 F.2d at 535-38].

Reserve Mining Co.'s operations accounted for 12% of the total iron ore produced in the United States. The company, which had an annual payroll of \$31,700,000, was by far the largest employer in Silver Bay,

Minnesota, which depended virtually entirely on the company for its economic base. [514 F.2d at 536] Against these proven benefits of Reserve's operations, the threat to human health from its Lake Superior discharge was speculative.

Communities surrounding Lake Superior took their drinking water from the lake. The EPA offered indirect evidence that Reserve's discharge ended up in these communities' drinking water. The discharge contained minerals of the amphibole family. Water samples taken from the lake near Reserve's outfall and from public water system also contained amphibole fibers, and this concentration increased the closer the sample to Reserve's outfall. The EPA also offered evidence, which Reserve disputed, that natural sources of amphibole could not have produced the concentrations found. Reserve's discharge contained particles of the mineral cummingtonite-grunerite which the EPA contended is chemically and morphologically indistinguishable from amosite asbestos. Epidemiological studies have linked occupational exposures to amosite asbestos to asbestosis, lung cancer, and, to a lesser extent, gastrointestinal cancer. These studies, however, concerned workers who were exposed to amosite asbestos dust in ambient air. EPA offered the theory that excess gastrointestinal cancer in asbestos workers is caused by their swallowing the asbestos fibers that they inhale. EPA argued accordingly that drinking water laden with asbestiform fibers also might cause cancer.

The EPA's case had several weaknesses. To begin, the agency could not prove that Reserve's cummingtonite-grunerite fibers had the same pathogenic property as amosite asbestos. While epidemiological studies have conclusively shown amosite asbestos to be pathogenic, the property of amosite asbestos which renders its pathogenic unknown. Thus, the morphological and chemical similarity of Reserve's cummingtonite-grunerite to amosite asbestos only made it a suspected, not a proven pathogen. Even then, existing data showed that asbestos dust is a health hazard, leaving in doubt whether ingesting fibers in water is dangerous. Next, the level of exposure to asbestos of workers who contracted cancer or asbestosis suffered is essentially unknown, and essentially there is no evidence equating doses of asbestos to incidences of disease. On top of this uncertainty, the EPA did not have any firm evidence about the quantity of cummingtonite-grunerite fibers that the average citizen might be ingesting as a result of Reserve's discharge. Thus, the EPA could not offer evidence that citizens were being exposed to potentially pathogenic asbestiform fibers at levels known to cause disease. Furthermore, a tissue study of deceased residents of a nearby Lake Superior community showed no traces of cummingtonite-grunerite fibers. Also, a National Cancer Institute study of the area revealed no excess cancers of the types associated with asbestos exposure.

The court of appeals concluded that whether Reserve's discharge would cause disease lay "on the frontiers of scientific knowledge," making "proof with certainty ... impossible." [514 F.2d at 519-20] The court nevertheless felt that Congress intended the courts to grant relief in such situations when the EPA offered "evidence of potential harm" that "gives rise to a reasonable medical concern for the public health." [514 F.2d at 528-29] The court reasoned that Congress used the term endangering "in a precautionary or preventive sense." The court further explained (quoting language from another opinion) that determining whether activity endangered human health required risk analysis:

"Endanger, ... is not a standard prone to factual proof alone. Danger is a risk, and so can only be decided by assessment of risks. A risk may be assessed from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, or from probative preliminary data not yet certifiable as 'fact.'"

Applying this risk analysis to Reserve, the court evaluated the evidence as failing to establish "that the probability of harm is more likely than not." [514 F.2d at 520] Instead, the record revealed that Reserve's discharge "under an acceptable but unproved medical theory may be considered as carcinogenic." [514 F.2d at 529] The court deemed this sufficient to create a reasonable medical concern over the public health, its definition of endangerment. [See also United States v. Vertac, 489 F. Supp. 870, 880-885 (E.D. Ark. 1980)(applying Reserve to an action brought under the FWPCA)]

B. Ethyl Corp. v. United States

In Ethyl Corp. v. United States, the U.S. Court of Appeals for the D.C. Circuit sustained EPA's regulations requiring the phased reduction of lead in gasoline. [541 F.2d 1 (1976) (en banc), cert. denied, 426 U.S. 941] The EPA adopted these regulations pursuant to section 211(c)(1)(A) of the Clean Air Act, which authorizes the agency to control or prohibit any fuel or fuel additive "if any emission products of such fuel or fuel additive will endanger the public health or welfare."

In analyzing whether EPA regulations were consistent with section 211(c)(1)(A), the court thus had to define endangerment. The court explained its understanding of the term:

Case law and dictionary definition agree that endanger means something less than actual harm. When one is endangered, harm is threatened; no actual injury need ever occur. Thus, for example, a town may be "endangered" by a threatened plague or hurricane and yet emerge from the danger completely unscathed. A statute allowing for regulation in the face of danger is, necessarily, a precautionary statute. Regulatory action may be taken before the threatened harm occurs; indeed, the very existence of such precautionary legislation would seem to demand that regulatory action precede, and optimally, prevent, the perceived threat.

[541 F.2d at 13 (emphasis original)(footnotes omitted)]

Like the Eighth Circuit in Reserve Mining, the D.C. Circuit found that endangerment must be determined in any given case by risk analysis. The court explained that risk analysis should be performed on a case-by-case assessment of possible harm discounted by its probability: [11/]

11/ For the lawyers reading this--Learned Hand lives]

While the dictionary admittedly settles on "probable" as its measure of danger, we believe a more sophisticated case-by-case analysis is appropriate. Danger ... is not set by a fixed probability of harm, but rather is composed of reciprocal elements of risk and harm, or probability and severity.... That is to say, the public health may properly be found endangered both by a lesser risk of a greater harm and by a greater risk of a lesser harm. [541 F.2d at 18].

Like the Eighth Circuit in *Reserve Mining*, the D.C. Circuit found that the required risk analysis is satisfied by "a reasonable hypothesis supported by evidence." [541 F.2d at 45-47 & n.96]

In *Ethyl Corp.*, the EPA supported its regulations with medical evidence that excess lead in the human bloodstream causes lead poisoning that can be fatal. The EPA further offered evidence that lead is absorbed from ingesting lead-laden substances or breathing lead-laden air. The agency offered evidence that 90% of lead in the air comes from automobile emissions. The EPA concluded that lead in gasoline endangers human health both because it adds lead to the air people breathe and because it adds lead to dust that children with pica (the tendency to ingest non-food substances) might swallow.

There were some weaknesses to the agency's conclusions. To begin, the agency had no evidence linking lead in the air to corresponding levels of bloodstream lead in human populations. Lead comes from many dietary sources, is fungible once it is in the bloodstream, and thus it is impossible to trace the source of the lead present in any given individual's bloodstream. Moreover, substantial uncertainty exists what level of bloodstream lead causes illness. The only population to suffer widespread ill-health from lead poisoning are young children. The evidence, however, indicates that children with lead poisoning have consumed peeling lead-based paint particles. The agency theorized that leaded gasoline could have nevertheless contributed to children's lead poisoning or might contribute in the future because lead emissions settle in roadside dust which children also might have consumed or might consume in the future. The EPA offered studies showing that dust lead concentrations in residential sites in cities averaged 1,613 ppm compared to a normal range of 2-200 ppm. The agency had no direct evidence that any given child had ever eaten lead -contaminated dust, however.

The Eighth Circuit found that the agency's hypothesis about roadside dust posing a threat to children to be reasonable and supported by evidence of elevated levels of lead in city dust and children's tendency to pica. Added to EPA evidence that air-borne lead comes from automobile emissions and that air-borne lead is absorbed into the bloodstream, the court deemed EPA had sufficiently shown "a significant risk of harm to the health of urban populations, particularly to the health of city children." [12/]

12/ In Reserve Mining, the district court was asked in an enforcement action to enjoin a disposal activity on the basis that it constituted endangerment. The court independently judged whether Reserve's activities "endanger human health," turning only to the statute, legislative history, and principles from case law for authoritative guidance.

By contrast, in Ethyl Corp., the court of appeals reviewed EPA regulations adopted via informal rulemaking pursuant to section 4 of the Administrative Procedure Act (APA). The court thus reviewed the EPA's authoritative definition of endangerment. The APA provides that judicial review of regulations promulgated by an agency is limited to determining whether they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 USC Section 706(2)(A). This standard of review is a highly deferential one, and presumes agency action to be valid. [Overton Park v. Volpe, 401 U.S. 402 (1971); Ethyl Corp., 541 F.2d at 34. A reviewing court must uphold agency regulations if they have "a rational basis." Bowman Transportation, Inc. v. Arkansas-Best Freight Systems, Inc., 419 U.S. 281, 290 (1974); Ethyl Corp., 541

F.2d at 35 n.74]. The courts are not always clear or consistent in explaining what they do in determining whether regulations have a rational basis. A frequent explanation is that courts must engage in a "searching and careful" "substantial inquiry into the facts" and determine whether agency action was "based on a consideration of the relevant factors." [Overton Park, 401 U.S. at 415, 416; Ethyl Corp., 541 F.2d at 34-35]. In other words, courts must probe whether conclusions are logical--internally consistent and take into account all data.

A judicial EPA enforcement action against a Class V well based on the SDWA's prohibition of endangerment would be analogous to the enforcement action in Reserve Mining rather than the promulgation of lead regulations tested in Ethyl Corp. In a Class V enforcement suit, the EPA would have to prove to a preponderance of the evidence and a court would independently judge whether a well endangered human health. The agency would lack the benefit of the APA's arbitrary and capricious standard, under which an EPA rule defining endangerment would be sustained if it had a rational basis.

The standards applied by a court in reviewing an administrative compliance or penalty order duly issued by the EPA pursuant to section 1423(c) of the SDWA would differ from that applied in a judicial enforcement action, however. Whatever findings of fact the agency made (through an ALJ or the Administrator) would be reviewed to determine whether they are supported by "substantial evidence in the record, taken as a whole," or whether the decision "constitutes an abuse of discretion." SDWA, Section 1423(c)(6). This standard is in theory less deferential than the APA's arbitrary and capricious standard. Though in theory the "substantial evidence" standard creates a heightened judicial review, cases interpreting the same phrase in the APA indicate that this standard still creates considerable deference to agency actions. Indeed, in practice there is little substantive difference in the arbitrary and capricious and substantial evidence standards. Applying either standard, courts say they cannot substitute their judgment for that of the agency, but must limit themselves to testing whether the conclusions reached by an agency are consistent with the evidence relied upon. [Compare Universal Camera Corp. v. NLRB, 340 U.S. 474 (1951); Consolo v. Federal Maritime Comm'n, 388 U.S. 607 (1966); SEC v. New England Elec. System, 390 U.S. 207 (1968) with e.g., Ethyl Corp. at 36-37 & n.78].

As for conclusions of law (which probably includes a working definition of "endangerment"), the standard of judicial review is less clear. I have not researched cases of specifically treating agency legal conclusions rendered in administrative adjudications, but cases discussing agency determinations of legal issues in rulemaking proceedings probably indicate the judicial approach--which is, I repeat, less than clear. [Compare Chevron, U.S.A. v. Natural Resources Defense Council, 467 U.S. 837, 843-45, reh'g denied, American Iron and Steel Inst. v. Natural Resources Defense Council, 105 S. Ct. 28 (1984) with SEC v. Sloan, 436 U.S. 103, 117-18 (1978); Barnett v. Weinberger, 818 F.2d 953, 960-64 (D.C. Cir. 1987)].

C. Cases Under RCRA Section 7003 and CERCLA Section 106

Section 7003 of RCRA authorizes injunctive relief when the handling, storage, treatment, transportation or disposal of hazardous waste "may present an imminent and substantial endangerment to health or the environment." Similarly, section 106 of CERCLA authorizes injunctive relief when "there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility." [42 usc Section 9606] There are a number of cases granting injunctive relief pursuant to these provisions against owners, operators, and users of hazardous waste disposal sites which interpret the meaning of the phrase "imminent and substantial endangerment."

As discussed in more detail below, section 1431 of the SDWA also provides for enforcement in instances of "imminent and substantial endangerment," whereas section 1423 authorizes enforcement only on a showing of "endangerment." Thus, these RCRA and CERCLA cases are most on point for an action under section 1431.

When the facts and outcomes of cases where courts applied an "imminent and substantial endangerment" standard are compared to the facts and outcomes of cases under a mere "endangerment" standard, there seems to be little real difference. *United States v. Northeastern Pharmaceutical*, [579 F. Supp. 823 (W.D. Mo. 1984), aff'd 810 F.2d 726 (8th Cir. 1986)], when compared to *Reserve Mining and Ethyl Corp.*, exemplifies this. In *Northeastern Pharmaceutical*, wastes containing dioxin were placed in a trench disposal site. A subsequent EPA survey found no dioxin in nearby wells, but did find dioxin migration 30 inches into subsurface strata of the trench. The agency offered evidence that the soil underneath the trench was "such that particles, water and leachate may move rapidly down through the soil to the water table below." The agency also offered an expert's testimony that the underlying aquifer supplied nearby wells. The agency also introduced the results of a dye test that indicated movement of dye from boreholes in a nearby stream to nearby wells. This test did not directly demonstrate possible paths for the dioxin wastes as the boreholes were not in places known to be exposed to the dioxin, but it did show the general permeability of the area soil. The district court concluded, "Because of the soil conditions, there was a substantial likelihood of the hazardous wastes in the trench ... entering the environment and going into the ground water system; whereupon, the contaminants may have come into contact with members of the public who may have been adversely affected ..." [579 F. Supp. at 833] The court found this sufficient to establish imminent and substantial endangerment. [579 F. Supp at 846] [13/]

13/ The defendants did not appeal this finding, though they did appeal other aspects of the decision. See 810 F.2d at 749 and United States v. Conservation Chemical Co., 619 F. Supp. 162, 195 n.8 (D.C. Mo. 1985).

The district court, echoing *Ethyl Corp.*, explained that determining whether an imminent and substantial endangerment exists requires "a case-by-case assessment of the relationship between the magnitude of risk and harm arising from the presence of the hazardous waste." [579 F. Supp. at 846]

Courts interpreting "imminent and substantial endangerment" universally agree that the EPA need not establish actual harm to health or the environment, proof of risk or harm will suffice. For example, in *United States v. Price*, the court of appeals noted that RCRA section 7003 and SDWA section 1431 "have enhanced the courts' traditional equitable powers by authorizing the issuance of injunctions when there is but a risk of harm, a more lenient standard than the traditional requirement of threatened irreparable harm." [688 F.2d 204, 211 (3rd Cir. 1982); see also *Northeastern Pharmaceutical*, 579 F. Supp. at 846 n.28]

Though case under either an "endangerment" or an "imminent and substantial endangerment" standard seem to be highly similar, the courts do seem to employ a slightly more stringent analysis (at least in theory) under the latter standard. The courts, respecting the dictionary meaning of the word "imminent," consistently indicate that while

environmental statutes using the phrase allow enforcement without proof of actual harm and with only proof of risk of harm, there must be proof of "a present threat to the public health or environment." [See, e.g., United States v. Price, 688 F.2d at 214 (emphasis added).] Courts discussing "imminent and substantial endangerment" cite two passages from legislative history as the starting points to determine congressional intent in using the phrase. The House Committee Report accompanying section 1431 of the SDWA states:

"(I)mminence" must be considered in light of the time it may take to prepare administrative orders or moving papers to commence and complete litigation and to permit issuance, notification, implementation, and enforcement of administrative or court orders to protect the public health.

Furthermore, while the risk of harm must be "imminent" for the Administrator to act, the harm itself need not be. Thus, for example, the Administrator may invoke this section when there is imminent likelihood of the introduction into drinking water of contaminants that may cause health damage after a period of latency. [H.R. Rep. No. 1185, 93rd Cong., 2d Sess. 35-36, reprinted in 1974 U.S. Code & Cong. Ad. News. 6454, 6487-88, cited by Northeastern Pharmaceutical, 579 F. Supp. 846 n.28; United States v. Reilly Tar & Chemical Corp., 546 F. Supp. 1100, 1109-11 (D. Minn. 1982)] This language, though vague and even circular, seems to suggest that Congress intended to use "imminent" literally, and thus restrict enforcement under section 1431 to activities threatening to contaminate USDWs "soon." While how little time can pass before a prospective event is still "soon," is subjective. Most people (and judges) probably would agree that events more than a few years away are not "soon" to occur.

Legislative history behind recent amendment to RCRA section 7003, however, suggests a more expansive meaning to the phrase "imminent endangerment:"

An endangerment is "imminent" and actionable when it is shown that it presents a threat to human health or the environment, even if it may not eventuate or be fully manifest for a period of many years-- as may be the case with drinking water contamination, cancer, and many other effects. [United States v. Price ... and United States v. Reilly Tar & Chemical Co., (546 F. Supp. 1100, 1109-10). S. Rep. No. 284, 98th Cong., 1st Sess., at 59 (Oct. 28, 1984)]

The courts have not rigorously analyzed what events must occur "soon" (e.g., percolation of contaminants to subsurface areas near an aquifer, actually into the aquifer, into drinking water taken from a well, etc.), and how "soon" is soon enough before a risk of harm is deemed "imminent." The closest courts come are statements such as the following:

"(A)n endangerment is `imminent' if factors giving rise to it are present, even though the harm may not be realized for years." [United States v. Conservation Chemical Co., 619 F. Supp. 162, 193-94 (D.C. Mo. 1985)] "A hazard may be `imminent' even if its impact will not be apparent for many years." [Northeastern Pharmaceutical, 579 F. Supp. at 846 n.28] "An `imminent hazard' may be declared at any point in a chain of events which may ultimately result in harm to the public. It is not necessary that the final anticipated injury actually have occurred prior to a determination that an `imminent hazard' exists.

[United States v. Ottati & Goss, Inc., 630 F. Supp. 1361, 1394 (D.N.H. 1985)
quoting Environmental Defense Fund v. EPA, 465 F.2d 528, 525 (D.C. Cir. 1972)]

The significance of this for UIC enforcement is that the agency probably faces a somewhat higher, though even less defined standard when proceeding with enforcement under SDWA 1431 versus 1423.