UNITED STATES DISTRICT COURT
FOR THE
DISTRICT OF VERMONT

Ernest Brod, et al. Plaintiffs,	:	
v.	:	File No. 2:05-CV-182
Omya, Inc., and Omya Industries, Inc., Defendants.	:	

ORDER
(Papers 197, 204, 210, 238, 241)

On July 1, 2008, this Court found that Defendants had violated the provisions of Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6901 et seq., because Defendants' quarrying activities had contributed to the presence of aminoethylethanolamine ("AEEA") in the groundwater, thereby creating an "imminent and substantial endangerment to health or the environment" under 42 U.S.C. § 6972(a)(1)(B). Plaintiffs are residents who live near the quarry. Familiarity with the July 1, 2008 Opinion and Order ("Order")is presumed.

Defendants subsequently filed a Motion to Dismiss (paper 197) and Motion to Vacate (paper 214). Plaintiffs filed a Motion for a Permanent Injunction (paper 210), a

Motion for Injunctive Relief (paper 238), and a Motion for Costs Including Attorney Fees and Expert Fees (paper 241).

In the Order the Court concluded that the precise remedy for the RCRA violation was unclear. Accordingly, the Court ordered an evidentiary hearing to determine the appropriate remedy for the violation. The hearing was held March 23-25, 2009. The parties have submitted proposed findings of fact for the Court's consideration. Based upon a review of the entire record including the exhibits and testimony, the Court concludes that Plaintiffs have failed to meet their burden to show that Defendants' actions have created a imminent and substantial endangerment to the health or the environment.

Background

Defendants (collectively "Omya") operate a mineral processing facility in Florence, Vermont (hereinafter "the Facility" or "the Plant") at which minerals removed from Defendants' quarries are processed into finished products. The mineral products are shipped from the Plant in dry form and slurry. In connection with the process, Omya utilizes a flotation reagent to remove naturally occurring mineral impurities from the crushed, pulverized ore supplied from the quarries. The flotation reagent binds with the

impurities and the combined flotation reagent/impurities mixture floats to the top of the tanks from which it is skimmed. The remaining water/flotation reagent/impurities mixture is then piped to settling cells where the solids settle to the bottom of the cells. Water is collected from the top of the settling cells and is piped back to the Plant for use. After the solids have settled, they are excavated, placed into trucks, and deposited in the on-site Tailings Management Areas ("TMAs").

The TMAs are unlined, exhausted quarries located at the Facility. The excavated solids, together with the water that remains in them after excavation, are referred to as "tailings." Typically, the tailings are about 60–70% water, 30% mineral impurities, and less than 0.5% flotation reagent.

The flotation reagent is a mixture of three chemicals: tall oil hydroxyethyl imidazoline (TOHI), amine acetate (AA), and AEEA. AEEA is a residual component of the flotation agent. It is used by the manufacturer in the creation of the floatation agent. When the environmental Section 5 Report (the "Report") was issued in February 2008, AEEA constituted about 2% of the flotation reagent. The

manufacturer, at Omya's request, has reduced the amount of AEEA to approximately 0.6% of the flotation reagent.

The Report formed the basis for the Court's determination that Omya had violated RCRA. The parties agreed that the Report was admissible. The Report concluded: "AEEA is a potent cause of a specific and rare birth defect in laboratory rats and, at sufficiently high exposures, might cause such a defect in human fetuses as well." Order at 13. As the Court noted in its Order:

> The Report found that the groundwater on site at the Florence Facility contained elevated levels of iron, manganese, arsenic, and [AEEA]. The Report also found that spring water off-site had a small amount of AEEA and stearic acid, both of which came from the Florence Facility. However, the parties agree that the spring water is not used for drinking water. Tests of the drinking water wells around the Florence Facility did not find any contaminants from the processing at the Florence Facility. The Section 5 Report found no immediate danger to drinking water from Omya's operations; however, the Report recommended expanded monitoring and testing of the groundwater and springs in the area to ensure safety.

Order at 4.[1] Based on the potential toxicity to humans and proximity to sources of drinking water, as well as evidence that Omya was the source of AEEA, the Court found that Omya

[1] Appendix C.6 of the Report noted that the AEEA findings were at best preliminary and uncertain and had not been published in relevant scientific and trade journals. The parties did not submit the Appendices to the Court until the March 2009 evidentiary hearing.

had created a risk of endangerment to human health and the environment. The Court then conducted an evidentiary hearing to determine the appropriate remedy for the violation.

At the hearing Omya attempted to question the validity of the Report with respect to both toxicity and danger to the drinking water. Essentially, Omya argued that the Court should grant its Motion to Dismiss (paper 197) and Motion to Vacate (paper 204) because conclusions on toxicity in the Report were not scientifically valid or, in the alternative, there was no evidence that AEEA was an imminent and substantial danger to the Plaintiffs. Furthermore, Omya contended that its current monitoring, remediation including a 10 million dollar dewatering system, and eventual closure of the site pursuant to the requirements of the State of Vermont were adequate to protect the Plaintiffs.

Plaintiffs maintain that the Court should require Omya to conduct additional monitoring, including the drilling of new wells at different levels to ascertain the exact extent of the danger. Specifically, Plaintiffs question the validity of Omya's test results and seek discrete zone testing. Plaintiffs claim that discrete zone testing including the drilling of wells on the western edge of the

site will more accurately reveal the concentration and migration of AEEA in the proximity of Plaintiffs' water sources.

Toxicity

The Report stated that in two studies (414 & 421) AEEA had been shown to cause birth defects in laboratory rats. The validity of this conclusion as well as the impact on humans is not clear. Omya presented expert testimony attacking the validity of the studies used as the basis for the conclusion. The studies themselves raised questions about the level of toxicity. Furthermore, the test results off-site for AEEA were between 3 and 9 parts per billion(ppb), much lower than the suggested Vermont drinking water standard of 20 ppb. Accordingly, at best, the Court is left with the conclusion that the effect of AEEA on humans and the environment is unknown.

Discussion

In the Order the Court relied heavily on the language in Dague v. City of Burlington, 935 F.2d 1343, 1355 (2d Cir. 1991), *rev'd on other grounds*, 505 U.S. 557 (1992). Specifically, the Court found persuasive Dague's admonition that equitable relief was mandated "to eliminate *any risk*

posed by toxic wastes." Order at 12. Finding that relief was appropriate if there was the *possibility* of an imminent and substantial endangerment to the health and environment, the Court concluded that Plaintiffs were entitled to relief. On July 31, 2009, the Second Circuit clarified Dague by more clearly defining the appropriate standard that plaintiffs must meet to satisfy their burden. In Simsbury-Avon Preservation Society, LLC v. Metacon Gun Club, Inc., 575 F.3d 199 (2009), the court explained the "any risk" language in Dague in connection with the terms "imminent" and "substantial" endangerment as used in RCRA.

In Metacon the Second Circuit reaffirmed its holding in Dague that "the imminent and substantial standard is a broad one." Id. at 210. However, the court emphasized that a plaintiff must produce evidence not only that a risk exists but also that the risk is imminent and substantial. Id. To be imminent the "risk of threatened harm [must be] present." Id. (quoting Dague)(other citations omitted). In other words there must be a present risk of harm even if the harm may not reasonably occur until the future. Id. With respect to the *substantial* nature of the risk or endangerment, the court, noting that RCRA fails to define

this term and the court itself did not comment on this term in Dague, held that *substantial* means *serious*. Id. However, the seriousness of the harm cannot be quantified and depends on the facts of the particular case. In sum, the court adopted the following standard: "[T]he combination of the word 'may' with the word 'endanger,' both of which are probabilistic, leads us to conclude that a reasonable prospect of future harm is adequate to engage the gears of [§6972(a)(1)(B)] so long as the threat is near-term and involves potentially serious harm." Id. at 211 (quoting Me. People's Alliance v. Mallinckrodt, Inc., 471 F.3d 277, 296 (1st Cir. 2006)). We now apply this standard based on the evidence in the record including the testimony and exhibits admitted at the hearing.

Application of the Standard

The Report served as the basis for the Court's determination that Defendants had violated RCRA. Specifically, the Court relied on the Report's conclusion that AEEA was found on the site and that "AEEA is a potent cause of a specific and rare birth defect in laboratory rats and, at sufficiently high exposures, might cause such a defect in human fetuses as well." This conclusion was grounded on Appendix C.6 of the Report that was not

submitted to the Court until after the Court had issued its Order. The Appendix states that this conclusion was "based on two developmental toxicity studies of AEEA in laboratory rats." Report at 4. These studies were the 414 and 421 studies as noted earlier. The authors of the Report stated that their estimates of acceptably small doses of AEEA is uncertain, the rat studies had not been published in scientific journals, and there was no direct data to support or refute their judgment of toxicity. Furthermore, the authors assumed that the risk for humans was the same as for rats, without the benefit of further studies.

Based on the testimony at the hearing and the Report, it is clear that the relative toxicity of AEEA to humans and the environment is unknown. The relative toxicity of AEEA depends on tentative conclusions and certain assumptions for which no data is cited or is claimed to exist, and is not supported by peer-reviewed or other generally accepted scientific reports or studies.

Defendants' experts Michael Greenberg and Jeffrey Brent, medical toxicologists, were very persuasive witnesses. Dr. Brent stated that the 414 test showed no AEEA-induced abnormalities. Def. Ex. R, Dep. at 15-16. With respect to the 421 test that showed a particular type

of abnormality (dissected aortic aneurysm) in rats, Dr. Brent stated that due to the low dose given in the test, the result of abnormalities would be the same as zero (no AEEA given). He concluded that based on the data relied by the authors of the Report he could not say to a reasonable degree of scientific certainly that AEEA was hazardous or toxic to humans. Id. at 37. Similarly, Dr. Greenberg questioned the validity of the 421 test. He testified that the study was a bad test and that based on that test, the Report made unsupported assumptions. He did not believe that AEEA was toxic to humans and even questioned its toxicity to rats. Their conclusions that the positive 421 test results did not contain reliable information to demonstrate toxicity to animals much less to humans are accepted. Accordingly, the Court finds that the 421 test cannot be considered reliable as competent evidence of toxicity because of its lack of scientific acceptance, the caveats of the Organization for Economic Cooperation and Development guidelines themselves respecting the use of 421 test results, the fact that it is used, and is intended to be used, only as a screening mechanism, and because it often is found to have yielded false positive results. Finally, the fact that any test results might have formed the basis

for setting AEEA state standards cannot be determinative. Metacon, 575 F.3d at 212 (noting that "state environmental standards do not define a party's federal liability under RCRA.")(quoting Interfaith Cmty. Org. V. Honeywell Int'l. Inc., 399 F.3d 248, 261 n.6 (3d. Cir. 2005)). Furthermore, as noted earlier, AEEA levels off-site were below the state-suggested ppb for drinking water.

At best, the evidence supports a finding that there is a *possibility* that AEEA may be harmful to humans in the environment in undetermined dosages. However, this is not sufficient to establish that there is a *probability* of a safety risk that is both imminent and substantial.

The final factor supporting the Court's conclusion is the absence of AEEA in any water currently used as drinking water. AEEA has never been detected in the groundwater off-site. AEEA has been detected in surface water off-site only twice, in May and August 2007, both times at the Chrusiciel Spring. The amount of AEEA detected was 3 and 9 parts per billion, below the Report's 20 ppb maximum safety level. The Report itself concluded that the measured AEEA levels in the spring water were too small to threaten humans or wildlife.

Conclusion

The Court's previous Order failed to go beyond a finding that there was a risk of endangerment. The Court did not analyze the imminency and seriousness of the risk as Metacon requires. The Court merely relied on the conclusions of the Report without having the benefit of the underlying test data. Upon examination of the Appendices of the Report and the testimony at the remedy hearing, the Court finds that Plaintiffs' evidence is merely speculative of future harm and is not sufficient for the trier of fact to find that the alleged potential harm claimed constitutes a serious endangerment.

Accordingly, Defendants' Motion to Vacate (paper 204) is GRANTED. Defendants' Motion to Dismiss (paper 197) is GRANTED. Plaintiffs' Motion for Permanent Injunction (paper 210) is DENIED. Plaintiffs' Motion for Injunctive Relief (paper 238) is DENIED. Plaintiffs' Motion for Costs and Attorney Fees (paper 241) is DENIED.

Dated at Burlington, in the District of Vermont, this 30th day of September, 2009.

/s/ Jerome J. Niedermeier
Jerome J. Niedermeier
United States Magistrate Judge