Detailed Summary Statements on the Proposed Alba Disposal Well

Dear Mr. Bates,

Attached are the remainder of our files of signatories and comments, collected since 7/23/07, opposing the proposed injection well near Alba, MI. All together, over 500 individuals and organizations have voiced their disapproval of this proposed disposal well on our website or petitions. Also, please be advised that Antrim and Charlevoix County's Boards of Commissioners, East Jordan's City Council and Michigan's Chapter of Trout Unlimited have all passed unanimous resolutions opposing this well. This represents approximately 60,000 citizens opposing this proposed injection well. Most of these comments express "mere" conventional common sense and are not technical. They do, however, clearly demonstrate important policy considerations a discrete Administrator should review. We look forward to collaboratively seeking alternative solutions to this problem and need your leadership to move forward in this effort.

Sincerely, Dr. John W. Richter - President, Friends of the Jordan River Watershed Inc.

FOR IMMEDIATE RELEASE - July 30, 2007

CONTACT:
Dr. John Richter, President
Friends of the Jordan River Watershed
P.O. Box 412
East Jordan, MI 49727
(231) 536-3132

The Friends of the Jordan River Watershed collected over 500 signatures to a letter that requests denial from the US Environmental Protection Agency for a proposed injection well in Alba, MI by the Beeland Group LLC. The Antrim County Board of Commissioners, Charlevoix County Board of Commissioners and Michigan Council of Trout Unlimited have all passed resolutions to oppose the project. Beeland Group, LLC a subsidiary of CMS Energy is proposing to use the well to dispose of leachate collected from cement kiln dust piles at Bay Harbor. The comments were collected during a 30-day extension of the public comment period granted by the US EPA.

Two permits are needed for the well—one for the disposal from US EPA and a permit from the Michigan Department of Environmental Quality for the surface activities associated with the well. According to the US EPA a decision on the permits will likely be available in two to three months. The long time frame is needed to coordinate with the Michigan DEQ and to review the comments received.

The Friends of the Jordan River Watershed oppose the well based on the risk of contamination to the ground water that is a significant source of the Jordan River and the risk of contamination to drinking water supplies. More than 500 people signed on to the letter requesting denial of the permit for the well.

John Richter, President of the Friends of the Jordan River, objects to the proposal. “The Michigan State University professors we are working with on another project have identified the Alba area as a primary source of groundwater for the Jordan River. Any contamination of the ground water from this injection well would ultimately harm the Jordan River,” stated Richter.

According to Dr. Warren Wood of the MSU Geological Sciences Department, "There must be hundreds or thousands of oil and gas wells in the area, any one of which might leak brine into the ground water if injection of fluids increases the hydrostatic pressure in the injection formation beyond the hydrostatic pressure in the overlying formations.”

Alba community members have stated concerns about the risks associated with transporting the leachate and impacts to the local infrastructure. The Friends of the Jordan River Watershed are requesting Beeland Group and CMS Energy to consider alternatives to the injection well.
END

2386 Sumatran Way #50
Clearwater, FL 33763

July 27, 2007

Ray Vugrinovich, MDEQ
vugrinov@michigan.gov
Constitution Hall
525 W. Allegan St.
1-South
P.O. Box 30256
Lansing, MI 48909-7756

RE: Mineral Well Permit Application for Beeland Disposal Well No. 1 (January 5, 2007)

Dear Dr. Vugrinovich:

With regard to Beeland's Application, I am concerned about its inaccuracies, poor technical content, and numerous omissions of information required by law as stated in Michigan's DEQ form, "Permit Application Instructions for Disposal, Storage, or Brine Production Wells." As examples of my concerns, I have included below some comments on the Application (organized under eleven topics).

I am also attaching a separate e-mail document of comments I previously submitted in writing to the EPA regarding the Beeland well. Those comments are additional to those of today.

Beeland has failed to properly evaluate the probable impact of its proposed well as required by the application process. It should be assumed that Beeland would be just as careless and non-compliant in its construction and operation of the proposed well. The permit should be denied.

Very truly yours,

Patricia Patterson, Ph.D. Geophysics

EXAMPLE COMMENTS ON APPLICATION

EXISTING FRACTURES AND FAULTS

In its required discussion of existing fractures and faults, Beeland (p.40) states: "There is no evidence of significant faulting in the immediate vicinity of the Proposed . . . Well . . . ." Beeland references a 1992 document for that conclusion, the Hydrogeologic Atlas of Michigan. Beeland further states: "Additionally, Ryder (1996) constructed a structure contour map on the Traverse in Antrim county. This map showed there to be no mappable faults transecting the Traverse at the proposed well location." Beeland also states: "Transmissive fractures are not known to be present in this shale [the Bell Shale]" (p.39). Whereas computational capabilities to analyze large databases have increased tremendously in recent years, Beeland's required maps of the Dundee and Traverse, provided as Figures 16 to 19 of its Application, date from 1974 and 1980 documents.

According to a recent study funded by the Department of Energy, the proposed Beeland well appears to lie between what may be two major fault lines running across Antrim County NW to SE. (J. R. Wood & W. B. Harrison, "Advanced Characterization of Fractured Reservoirs in Carbonate Rocks: The Michigan Basin," Final Report for DOE Award No. DE-AC26-98BC15100, Sept. 2002). Based on their detailed (using 10 foot contour intervals) and comprehensive analysis of existing data from 55,000+ wells, the authors concluded that the Michigan Basin is extensively faulted and fractured, with major hydrocarbon accumulation occurring in small anticlines on the upthrown side of the faults. Their study demonstrates that faulting is more pervasive than previously believed in the location and productivity of oil and gas fields. It indicates that faults extend to higher stratigraphic levels than previously interpreted. They believe fractures occur preferentially in black shales because of their low Poisson's ratio and probable high fluid pressure owing to gas generation.

Thus much faulting is likely present in gas-rich Antrim County, and fractures are more likely to be present in the Bell Shale than previously thought. Beeland claims the Bell Shale, overlying the Dundee Limestone, will be the arrestment interval, preventing migration of its injected fluid upward. Beeland's Application fails to address the results and conclusions of the 2002 study or to reference it. Beeland's latest document referenced is the 1996 atlas.

SURVEY REPORT

The Survey Record (form EQP 7200-2) requires a separate plat or plot plan that locates, identifies, and shows distances to: Surface waters and other environmentally sensitive areas . . ., Floodplains . . ., Wetlands. . ., Natural rivers . . ., Threatened or endangered species, . . . within 1,320 feet of the proposed well, and various man-made objects and water wells type within specified distances from the staked well location. The Survey Record and plat are not at the end of Section A.4 as stated in the Application (p.5) but in Attachment A toward the end of the Application.

The Plot Plan attached to the Survey Report:
• Spans at most 800 feet north, south, east, or west from the well stake, whereas reportable items may lie 2000, 1320, or 600 feet from the staked well location.
• Fails to include a graphic of the map's scale.
• Fails to show objects in proportion to their relative distances that are noted on the map. For example, if the road is 495 feet from the stake, then the Existing Gas Well is around 852 feet from the stake, not 975 feet, as noted.
• Fails to show all the woods that based on its attached photos appear to lie within 1320 feet of the staked well location.
• Fails to show structures alluded to in other parts of the Application as lying within the specified areas.

Beeland seems to base its "survey" on available data rather than actual survey. Beeland states, "Available information indicates that there may be a single fresh water well (No 99-524) within the specified 600 feet radius" (water wells also indicated on form EQP 7500-3), but those wells are not shown on the plot plan, as required. Beeland states, "Available data show there to be two structures and two roads (one public, one private) within the radius" (also indicated on form EQP 7500-3), but these man-made features are not shown on the plot plan, as required. Beeland states, "Location maps showing the general location of groundwater wells are provided in Figures 4 and 6," but Figure 6 shows no groundwater wells, and Figure 4 states as its source two internet addresses. Beeland states, "Based on available data, no public water supply wells of any type have been identified within 2,000 feet of the proposed well location" (p.7). Beeland concludes that "no known hazardous waste treatment storage or disposal facilities are present within the AOR based on available state of Michigan permit information" (p.59). An actual survey, including interviewing residential neighbors, should have looked for and identified the locations of these things so they could be shown on the plot plan, as required if they exist.

Beeland identifies the bald eagle, the Eastern Massasauga rattlesnake, and Pitcher's thistle as threatened or candidate threatened species that "may be present in Antrim County." Beeland fails to show any of these on its plat plan, as required if present. Beeland claims instead: "Field verification by the property owner [i.e., Beeland] has not identified the presence of these within the specified radius of 1,320 feet" (pp.6-7). Beeland fails to define or describe what constituted its "field verification." The photos included with the Application seem to show much woodland that could harbor those species.

BEELAND'S ANALYSES OF WELL'S IMPACT ON USDW

For calculation of Pc, critical pressure (pp. 23-24) to raise brine from top of injection interval to base of the underground source of drinking water (USDW), Beeland's assumed model for analysis is a very simple one-dimensional hydrostatic model. It does not consider dynamic effects, such as resulting from pressure gradients at the drinking water aquifer boundary. And Beeline assumes single values for parameters whose values are unknown, rather than assuming probable ranges for those values. Beeland fails to give units, specific gravity is reported as density, and symbols used are mixed up (gamma for y).

Beeland refers to its use of 900 feet to depth of base of USDW as "conservatively assigned." The closest well (permit #41955) for which Beeland has attached data [in Attachment C], however, found the base of the glacial drift or USDW to occur at 907 foot depth. That well was drilled about 0.4 miles from the proposed Beeland site.

Two important unknowns in Beeland's model calculation are the specific gravity of the injection-zone fluid (Beeland assumes this is brine) and the pre-injection pressure at the base of the Dundee. If the injection zone contains gas, the specific gravity could be lower than Beeland's assumed 1.05. If the specific gravity were assumed to be 1.0, then, using Beeland's other assumed values, the critical pressure, Pc, would be around 92 psi, rather than 119 psi. Small changes in Beeland's assumed constant fluid gradient of 0.35 psi/ft can also result in significant change in Pc. For example if 0.36 is used instead of 0.35, then, using Beeland's other assumed values, Pc would be 97 psi. With both of these small changes in assumed values, Pc would be 70 psi, rather than 119 psi, and based on its simple model, the likelihood of Beeland's exceeding the lower critical pressure would be greater. So Beeland's

computed (p. 24) critical pressure of 119 psi for contamination of the drinking-water aquifer represents a very, very rough guess.

Beeland then attempts to show that 20 years of Bay Harbor contaminant injection into the Dundee reservoir at rate of 200 gallons/minute will not exceed the critical pressure of 119 psi , even in the reservoir at distance within 5 feet of the well. For that analysis, at the bottom of p. 24 Beeland gives a "cookbook" formula for pressure rise, dP, without identifying it or its source, some of the parameters in the formula, or any of the assumptions made in its derivation and necessary for its correct application. Beeland uses the dP formula assumedly to compute the increase in pressure at the base of the Dundee at 5 feet from the point of well penetration after 20 years of injection of 200 gallons/minute of Bay Harbor waste. Beeland computes this value to be 115 psi. Because that is less than its previously computed critical pressure of 119 psi, Beeland concludes the well has no cone of influence.

The parameters that Beeland plugs into the formula (p. 25) seem to be at best very rough guesses, including:

Thickness, h = 100 feet [assumedly of the Dundee injection zone]
Formation volume factor, B = 1.015 feet [not defined or otherwise explained]
Porosity = 0.10 [unknown and pulled out of air]
Permeability, k = 1 Darcy [unknown and estimated as quite high]
Viscosity = 1.05 centipoise @ 72 deg. F [unknown, as well as temperature, with which viscosity varies greatly]
Total compressibility, Ct = 8 x 10-6 psi -1 [unknown]
?, s = ? [unidentified parameter in formula, and we are not told what value Beeland assumes for it]

Beeland gives no justification, explanation, or references for the parameter values it has assumed other than they "have been assigned based on site-specific information" (p. 24). Beeland did state, however, on page 22: "Information used in the following calculations has been estimated from logs and available neighboring well information summarized in this document." I was unable to find any such information in or summarized in this document. One wonders why Beeland has not referenced any information or test data from the existing injection well that this well is to replace. Could it be that Beeland or CMS has not been doing the required testing for that well?

Some data provided in the Application relates to the Dundee's porosity and is from well (permit 46244 in Section 1 of same township/range) that stated for the Dundee Limestone (at 2110 to 2174 foot depth) limestone, "microcrystalline to extremely fine, dense to poor porosity," (at 2174 to 2222 foot depth) dolomite, "extremely fine to microcrystalline, good to fair porosity"; (at 2222 to 2315 foot depth) dolomite and limestone, "microcrystalline to extremely fine, good to poor porosity." Another well that could be relevant (permit 27750 in Section 26 of same township/range) drilled through the Dundee, but of its detailed 7 page Formation Record, the page covering Dundee depth 2300 to 2780 is completely omitted from Beeland's Application. Beeland plans to drill to depth 2450 feet (form EQP 7200-1).

The formula (bottom p. 24) must assume, among other simplifications:
• All of the parameters remain constant for 20 years of injection.
• Beeland's injection fluid does not alter or interact with whatever it comes into contact with.
• Permeability in the Dundee Limestone is homogeneous and horizontally isotropic and quite high at 1 Darcy. Hence there are no preferred horizontal directions of fluid migration.
• Beeland injects into an unbounded reservoir without any interaction with the fluid dynamics of the more than 100 wells lying within 2 miles of it, including three wells (one only 0.4 miles away) that have been injecting salt-water and other substances into the Dundee Limestone at least intermittently since around 1989, 1989, and 1992.

Beeland then concludes: "Due to the relatively high permeability and relatively low original pressure of the Dundee Limestone injection formation at this site [both roughly guessed], there exists no potential for contamination of USDW resources due to improperly completed or abandoned wells within the statutory minimum 2 mile radius area of review" (p. 25). Beeland fails to provide "3. A plat which shows the location and total depth of the proposed well, shows each abandoned, producing, or dry hole within the area of influence, and each operator of a mineral or oil and gas well within the area of influence," as required by law per the permit application instructions. (Beeland's Figures 4 and 6 do not show this required information.)

Beeland is also required to but does not provide: "5. Plugging records of all abandoned wells and casing, sealing, and completion records of all other wells and artificial penetrations within the area of influence of the proposed well location and a map identifying all such artificial penetrations. An application shall also submit a plan reflecting the steps or modifications believed necessary to prevent proposed injected waste products from migrating up, into, or through inadequately plugged, sealed, or completed wells." Rather than providing the required well information and

plan, Beeland concludes "a corrective action plan is not required for any of the artificial penetrations within the proposed Beeland well AOR because, based on calculations, there is no cone-of-influence and there are no artificial penetrations to the injection zone within the area of review that have the potential for allowing injection activities to have an impact on the USDW" (p. 31).

The formula Beeland gives at the bottom of page 24 (used to conclude "there is no cone-of-influence") is in fact a transient solution to a partial differential equation for radial flow from a well into a reservoir. Within the framework of other simplifying assumptions, it is valid only until boundaries affect the data. It is used for falloff testing and cannot be applied correctly to model the effects of 20 years of fluid injection. See EPA document, "The Nuts and Bolts of Falloff Testing," 2003.

Beeland is required to provide information to characterize the proposed injection zone (p.47), including:
D. Effective porosity of the injection zone including the method of determination.
E. Vertical and horizontal permeability of the injection zone and the method used to determine permeability. Horizontal and vertical variations in permeability expected within the area of influence.
F. The occurrence and extent of natural fractures and/or solution features within the area of influence.

Beeland does not provide the required information. Relative to the above it states:
"The effective porosity of the Dundee is estimated as approximately 10% but will be determined through well log calculations after the well is installed. Horizontal permeability of the injection interval is estimated as approximately 1 Darcy, and vertical permeability is unknown. The occurrence and extent of fracturing specific to the Disposal well location will be assessed through drilling and wireline logging of the hole" (pp. 47-48).

Similar information is required for the proposed confining zone with addition of grain mineralogy and matrix cementing. Again Beeland does not provide the required information but states relative thereto: "The confining zone includes all rock units from the Antrim to the top of the Dundee . . . . Lithologic characteristics of these units are described in section B.7, above. Effective porosities of each zone are estimated as between 2 and 20%. The vertical and horizontal permeability of the confining zone is estimated as being substantially less than 0.1 md. Formations included as part of the confining zone are expected to be laterally continuous . . . and are not expected to exhibit extreme variations in effective permeability within the area of influence. The occurrence and extent of natural fractures and/or solution features within the area of influence will be assessed through wireline logging during drilling. . . . (p. 49)"

Impact of injection (p. 25): Beeland's spreading model with assumption of 10% effective porosity over 100 ft. thick reservoir is not substantiated and is likely high so underestimates spreading impact. The model also incorrectly assumes Beeland's well is an isolated source that spreads by diffusion and incompressible mass conservation, ignoring pressure effects from other sources and sinks, directional variations, chemical interactions, fingering, etc.

OTHER WELLS WITHIN 2 MILES THAT DRILLED INTO OR THROUGH DUNDEE LIMESTONE

Beeland states (p.30) that only four of 109 wells within 2 mile radius actually penetrated into the Bell Shale or Dundee Limestone. Three of these are active Class II brine disposal wells (41955, 42680, and 46244), and one was plugged in 1969 as a dry hole (27750). And "due to the small pressure rise associated with projected injection activities and the corresponding limited cone-of-influence, it is noted that none of the wells within the regulatory minimum two-mile AOR could have the potential for causing any endangerment to USDW . . . ." Significantly, Beeland does not even provide a plat showing the location of these four wells (listed in Table 4) relative to its proposed well.

Beeland was required to include a map showing the locations, depths, and operators of all well within 2 miles of the proposed well. It instead lists some 109 wells in tables and includes as Figure 6 a printout (apparently from MDEQ's online database) that covers a much larger area and has scale so small that the wells cannot easily be located and their depths and operators are not given, as required. The four most significant Dundee wells are not designated on that map, and I was unable to locate one of the four (#46244).

SURFACE WATERS AND SUBSURFACE AQUIFERS

The Application requires: "6. A map showing the vertical and areal extent of surface waters and subsurface aquifers containing water with less than 10,000-ppm total dissolved solids. A summary of the present and potential future use of the waters must accompany the map."

For the subsurface aquifer, Beeland does not include a map showing the vertical extent of the subsurface aquifer.

To show its horizontal extent, Beeland attaches a USGS undated map (Figure 14), (presumedly from the 1992 Michigan Groundwater Atlas). The map spans four states, and its scale is such that details around the proposed well site are not clear. It does appear to show, however, that over Michigan and near the proposed well site, there are areas where glacial deposits are thin or missing, which sites might be better than Beeland's proposed site for a contaminant injection well.

Beeland's required use summary (two sentences long) is not responsive to the Application requirement but states: "In Michigan, the Glacial Till and/or unconsolidated material is a source of fresh water for domestic, industrial, and agricultural purposes (Olcott, 1992). Based on available data, this unit is anticipated to be the lowermost USDW. This will be confirmed during installation of the proposed well" (p. 36). How Beeland intends to confirm during installation of its well that the Glacial Till is the lowermost USDW would be of interest.

DRILLING THROUGH SALT

In the required "Environmental Impact Assessment for Mineral Wells and Surface Facilities" form (EQP 7500-3), Beeland reports the well will not be drilled into or through bedded salt deposits. Beeland states no evidence supporting that conclusion. Beeland plans to drill to approx. 2450 feet, into the top of the Detroit River Group Dundee Limestone. Information from nearby wells indicates a not insignificant chance Beeland will drill through salt. A well (permit 41955) in adjacent Section 23 drilled for purpose of salt-water injection into the Dundee Limestone drilled through scattered beds of anhydrite (abundant in the cap rock of salt domes) at depth of 2385 to 2411 feet. Beeland has omitted very important information from Shell Oil's nearby well (27750) in Section 26. It omits page 4 of Shell's sample description covering the 2300 to 2780 foot depth, where the Dundee began at 2172 and continued at least to 2300. At 2798, Shell hit salt, but what did it hit from (omitted) 2300 to 2780 feet, the very region most relevant to Beeland? And nearby well 42680 hit scattered anhydrite beds within the Dundee (2061 to 2141 feet) and hit salt at depth 2472 feet. (Beeland has included the data on these wells at the end of the Application.)

Form EQP 7500-3 requires Beeland to describe its plans for handling and disposing of drill cuttings and to provide other information, if the well is drilled through bedded salt deposits. Beeland does not describe such a plan and provide that information, even though there is a significant probability it will drill through salt.

POSSIBLE RADIOACTIVE CONTENTS OF WASTE TO BE INJECTED

Potassium and sulfate appear to be the contaminants in highest concentration in the injectate (pp. 44-45). Does this include significant amounts of radioactive potassium?

SOME PROBLEMS WITH FORM EQP 7200-4, "INJECTION WELL DATA"

No. 10. Fracture pressure of confining formation is given as "1720 at base" without units. Showing of calculation is required but not provided in a meaningful manner [no units stated].

No. 11. Fracture pressure of injection formation "1720 at base" without units. This is clearly incorrect as equal to that of confining formation. Showing of calculation is required but not provided in a meaningful manner [no units stated]

No. 12. Specific conductance of representative sample of injection fluid is given as "TBD." Beeland has been operating another injection well for disposal of the injection fluids. If Beeland has complied with laws/regulations for periodic testing of that well, then the specific conductance should have been determined already, not TBD.

No. 9. Maximum bottom hole injection pressure is given as "1221" without units. Showing of calculations is required but not provided in a meaningful manner.

PIT FLUIDS & DRILLING FLUIDS

In the "Environmental Impact Assessment for Mineral Wells and Surface Facilities" form (EPQ 7500-3), Beeland answers "yes" to "Will any pit fluid be disposed by a licensed liquid waste hauler?" But Beeland's Waste Analysis Plan, dated October 6, 2006 (attached to the Application), states that "fluids generated at the disposal well facility operation itself" will also be injected into the well" (section 1.B). Form 7500-3 requires Beeland to describe disposal plans for pit fluids, which Beeland does not do.

"Fresh water will be used as drilling fluid, trucked to the site using local oilfield suppliers or a pre-existing water well

already located on the property for water during drilling and testing of well" (p 15). But the Survey Record Plat fails to identify specifically the pre-existing water well on the property that might be used.

TRUCK TRAFFIC

In the "Environmental Impact Assessment for Mineral Wells and Surface Facilities" form (EPQ 7500-3), Beeland reports that anticipated frequency of truck traffic entering the site, less than 20 trucks per day, will not appreciably increase traffic in the area. How does Beeland reach that conclusion without any analysis of existing traffic in the area? Furthermore, twenty trucks/day for 20 years (p. 2) is 292,000 truck trips past my niece's home on Alba Highway, including on icy roads. And additional trucks will be required during drilling and testing operations for supply of drilling fluid and disposal of pit fluid.

LAND USE

In the "Environmental Impact Assessment for Mineral Wells and Surface Facilities" form (EPQ 7500-3), Beeland reports that present land use is "woodlands and crop/agricultural areas" but previously reported on page 6 that the area "is used for agricultural and residential purposes."

* * *

William J. L. Bates, Mail Code: WU-16J
Environmental Scientist
US EPA, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590
RE: Beeland Injection Well Permit # MI-009-11-0001

Dear Mr. Bates,
You were quoted as saying that comments concerning disposal of the Cement Kill Dust waste at Bay Harbor in non hazardous waste injection wells at Alba needed to be of a technical basis in order to sway us."
It is understandable that fuzzy science, emotion and self interest are detrimental to making sound scientific decisions which protect the people of the state and the environment of the state. However, the series of decisions based on politics, cronyism, self-interest, bad science and the breaking of public health guidelines to serve development compromised the health and safety of the people living at Bay Harbor, all those living in the Jordan River Watershed and compromises the strength of laws put in place to protect all the people and the environment of Michigan.
1. **Prior Knowledge:** In 1988, the Michigan Department of Natural Resources (MDNR), what is now the Department of Environmental Quality (DEQ), received complaints about pollution entering Little Traverse Bay from the base of two cement CKD piles located on the Dundee Cement Company site. The MDNR Surface Water Quality Division conducted testing and found that kiln dust solids and seeps indicated that both CKD pile samples and the associated seeps showed detectable concentrations of arsenic, chromium, copper, lead, nickel, selenium, and zinc. In addition, the lead and nickel concentrations in the west seep and the copper and lead concentrations in the east seep exceeded Michigan's Water Quality Standards. Included in the conclusions of the MDNR report is a finding that the source of **elevated metals, total dissolved solids, alkalinity and pH in the west seep was most likely due to influence by the cement kiln dust deposits.**
2. Bad Science: While the heavy metals in the seepage were never directly linked to the cement kiln dust, the same metals identified in the leachate were also identified within the cement kiln dust. However, DNR analysis of the cement kiln dust indicated that it was not capable of releasing heavy metals at concentrations of concern. As a result, on June 15, 1989, the **MDNR granted a designation of inertness** for the cement kiln dust located on the property. This meant that CKD could be disposed of in a shale quarry to become a golf course and was not perceived to be able to pose a threat to the environment or public health. A provision was included that stated the designation would become immediately void if "additional information demonstrates the designated material is not inert" or "causing environmental contamination."
3. **Bad Science:** On June 20, 1989, a chemical assessment of kiln dust solids and seeps at the defunct Dundee Cement Company site was conducted. The investigation included two CKD piles: one located east and the other west of the cement manufacturing facility. The data from the monitoring indicated that both CKD pile samples and the associated seeps showed detectable concentrations of arsenic, chromium, copper, lead, nickel, selenium, and zinc. In addition, the lead and nickel concentrations in the west seep and the copper and lead concentrations in the east seep exceeded Michigan's Water Quality Standards. Included in the conclusions of the MDNR report is a

finding that **the source of elevated metals, total dissolved solids, alkalinity and pH in the west seep was most likely due to influence by the cement kiln dust deposits**.

4. **Backroom Politics and Cronyism:** On July 11, 1994, a **Covenant Not to Sue** was negotiated and signed between Bay Harbor company, CMS, Boyne USA, and the State of Michigan (John Engler) and its Department of Natural Resources. Pursuant to applicable Michigan statutes, Covenants Not to Sue were and are issued by the State to encourage developers to rehabilitate properties that are considered blighted and might otherwise not be developed. CMS had loaned money to the developers who planned to create Three Fires Point. The Three Fires Point developers used the money to purchase the 300-acre site on which the cement plant was located. After the Three Fires Point developers defaulted on the loan, CMS purchased this central 300 acres at a Sheriff's sale. In 1993, Bay Harbor Company teamed up with CMS Land Company, a subsidiary of CMS Energy, to develop the site. The remaining parcels to the east and west were purchased from Holnam (previously named Dundee) by Bay Harbor Company in June 1994.

5. **Dishonest Characterization of Hazardous Waste or Linguistic Detoxification:** While the CKD leachate has the characteristics of “Hazardous Waste” it does not have to be disposed of as “Hazardous Waste”. A Hazardous Waste injection site must meet standards much higher (and more costly) than those for a non-hazardous well. The Beeland Group, a subsidiary of CMS, plans to construct and use a Non-Hazardous Infection Well in Alba. This is because CKD has been exempted from Hazardous Waste designation for the State of Michigan. (299.9204 (2) (j) of Part 111, Hazardous Management of NREA, PA 451 of 1994. CKD is also excluded from federal hazardous waste regulations under Subtitle C of the RCRA. This is linguistic detoxification. If it’s toxic, it acts and reacts as a toxin.

Governor Engler, the State of Michigan legislators and the DNR and DEQ have not served the public well. The Brownfield laws, sold to the public as good for the state, have lined the pockets of developers and skewed environmental laws and made the good people of the DNR and DEQ serve their interests and compromised the standards of environmental protection and the health and safety of the people of the state. David Johnson is a wealthy man who trumpets his environmentally sensitive developments. His company Victor is building “environmentally friendly” developments around the world.

Care of the environment must come first. Michigan’s greatest treasure is water, its clean steams, rivers, wetlands and the abundant life the watersheds sustain. The shortsighted priorities, opportunistic decisions and refusal to honestly and scientifically assess the real costs to environment and people which gave us the Bay Harbor debacle, threaten all life on Earth today. If the CKD could be deposited to make a golf course, it can be removed and disposed of correctly. We need a long term responsible solution, not a short term, “economical” fix. The people of Alba, and all the Creatures in the Jordan River Watershed, should not have to bear the wear and worry, and diminishment of their Watershed because of Back Room Politics, Cronyism, Bad Science and Dishonest Characterization of hazardous waste.

Thank you.
Jo Anne Bier Beemon
Environmentalist