

ILLINOIS POLLUTION CONTROL BOARD
August 4, 1988

WASTE MANAGEMENT OF ILLINOIS,)
INC., a Delaware corporation,)
)
Petitioner,)
)
v) PCB 88-39
)
MCHENRY COUNTY BOARD,)
)
Respondent.)

DONALD J. MORAN (PEDERSON AND HOUP, P.C.) APPEARED ON BEHALF OF PETITIONER;

DAVID R. AKEMANN APPEARED ON BEHALF OF RESPONDENT;

HOWARD A. LEARNER AND ROBERT L. JONES, JR. APPEARED ON BEHALF OF AMICUS CURIAE MCHENRY COUNTY DEFENDERS; AND

THOMAS F. BAKER, STATE'S ATTORNEY AND PAUL R. RYSKE, ASSISTANT STATE'S ATTORNEY, APPEARED ON BEHALF OF AMICUS CURIAE PEOPLE OF MCHENRY COUNTY.

OPINION AND ORDER OF THE BOARD (by J. Anderson):

PROCEDURAL HISTORY

This action is an appeal filed February 25, 1987 pursuant to Section 40.1 of the Environmental Protection Act (Act), Ill. Rev. Stat. ch. 111 1/2, par. 1040.1.1 Waste Management of Illinois, Inc. (WMII) contests the February 24, 1988 decision of the McHenry County Board (County) denying site location suitability approval for a regional pollution control facility proposed by WMII.

The bases for the denial were WMII's failure to satisfy the requirements of criteria 2 and 3 of Section 39.2(a) of the Act. This case involves WMII's second application, filed August 31, 1987 (1987 application) to the County for approval pursuant to Section 39.2 of the Act (also known as SB172) of the same proposed facility, a landfill proposed to accept non-hazardous waste. The proposed site is an irregularly shaped 118 acre tract of land located in Seneca Township, some 65 acres of which would be actively used for landfilling. The site is bounded to the north by Route 176, to the west by McCue Road, and to the south by Pleasant Valley Road. The Kishwaukee River flows to the south and west of the site; the southwesternmost corner of the site is

within about 300 feet of the river, and the northwesternmost corner is within about 1000 feet of the river.

The prior application (1986 application) was denied by the County on the same grounds given for the denial in this case: that WMII had failed to satisfy criteria 2 and 3 of Section 39.2(a) i.e. that "the facility is so designed, located and proposed to be operated that the public health, safety and welfare will be protected" and that "the facility is located as to minimize incompatibility with the character of the surrounding area and to minimize the effect on the value of the surrounding property". Upon review of the 1986 application, in Waste Management v. McHenry County Board, PCB 86-109, December 5, 1986, this Board affirmed the County decision as to criterion 2, and reversed the County decision as to criterion 3. Subsequent review of this Board's and the County's decisions was made by the Appellate Court for the Second District under the case name Waste Management of Illinois, Inc. v. Pollution Control Board, 160 Ill. App. 3d 434, 513 N.E.2d 592 (2nd Dist. 1987) (hereinafter WMII v. PCB). The court sustained this Board's and the County's findings that criterion 2 had not been satisfied, but did not address the merits on the issues raised concerning criterion 3.

As will be discussed in more detail later, in its 1987 application and presentation to the County, WMII focussed its attention on responding to the objections raised concerning the 1986 application. The 1987 application remained unchanged as to criterion 3, but incorporated 1) supplemental geologic and hydrogeologic data to improve characterization of the site, and 2) some changes and additions to the design of the site.

In deliberating the merits of the 1987 application, the County took quasi-judicial/administrative notice of the entire record in PCB 86-109, which consists of 3,990 pages of hearing transcript, 131 exhibits, and numerous written comments from the public. Additionally, 12 days of hearings were held concerning the 1987 application by hearing officers before the Regional Pollution Control Facility (RPCF) Committee of the County Board. These hearings, which commenced on November 30, 1987 and ended with an oral public comment session on January 9, 1988, generated 2,284 pages of transcript, over 50 exhibits, and 50 written comments. Major participants at the County's hearings included the McHenry County State's Attorney, acting on behalf of the People of McHenry County (People), the Concerned Citizens of McHenry County (Citizens), and the McHenry County Defenders

(Defenders). Following the close of the County's record,* the RPCF Committee prepared a document containing proposed findings and order, which the County adopted by ordinance on a vote of 21-0, with 1 member abstaining and 1 member absent. The ordinance does not detail the facts or reasons upon which the County based its decision that criteria 2 and 3 had not been satisfied. (RA 23).

As aforementioned, WMII filed its appeal of the County's decision with this Board on February 27, 1988. On March 11, 1988, the Defenders filed a petition seeking to cross-appeal the County's decision that criterion 1 had been satisfied, i.e. "that the facility is necessary to accommodate the waste needs of the area intended to be served". The Board dismissed the cross-appeal by Order of March 24, 1988, based on the decision of the Second District Appellate Court in McHenry County Landfill v. IPCB, 154 Ill. App. 3d 89, 506 N.E. 2d 372 (2nd Dist. 1987), which held that Section 40.1 of the Act does not allow for cross-appeals by objectors. In the same Order, however, the Board gave the Defenders leave to file an amicus curiae brief solely with respect to criteria 2 and 3. (By Order of April 7, 1988, the Board granted similar leave to the People.) On April 6, 1988, the Defenders moved the Board to certify its March 24 Order dismissing the cross-appeal for immediate interlocutory appeal pursuant to Supreme Court Rule (SCR) 308(a). This motion was denied by Order of April 21, 1988, based upon the findings that the tests articulated in SCR 308(a) had not been met.

The Board conducted a public hearing concerning WMII's appeal on April 22, 1988; no evidence or argument was presented. Pursuant to schedule, WMII filed an opening brief May 13, 1988, the County, the People and the Defenders each filed briefs on May 20, 1988, and WMII filed a reply brief on June 3, 1988.

FUNDAMENTAL FAIRNESS

The Board notes that the County, in its resolution, found that all jurisdictional requirements had been met. Further, it

* References to the various documents contained in the record on appeal in this case will be made as follows. The 1986 County hearing transcripts will be designated as "Tr. I", and the 1987 transcripts as "Tr. II". No reference will be made to exhibits concerning the 1986 application I. References to exhibits presented will be to the person offering the exhibit and its number, e.g. "H.O. Ex. _____", "App. Ex. _____". No reference will be made to the transcript of this Board's hearing. Finally, some documents which are not otherwise numbered will be referred to by the numbers designated by the County in its March 14, 1988 Certificate of Record On Appeal as "RA _____".

affirmed all rulings of its hearing officers concerning various procedural and evidentiary matters. No challenge of these rulings has been brought to the Board.

WMII does however, assert that:

the [County's] decision was rendered as the result of a fundamentally unfair decision-making process. Despite the adoption of the recommendation of the Respondent's own expert witnesses, and the inclusion of design and operational features that would arguably make this facility the safest of its kind in the State of Illinois, the Respondent simply stated, without explanation, that criterion 2 was not met.

Additionally, in finding that criterion 3 was not met, Respondent deliberately ignored both this Board's and the Appellate Court's decisions reversing Respondent on criterion 3, which decisions have collateral estoppel effect. Clearer evidence of Respondent's predisposition to deny the 1987 Siting Request, regardless of the evidence presented, is difficult to imagine. (WMII Brief of 5-13-88, pp. 6-7)

The Board will defer consideration of the collateral estoppel argument for the moment, as it is most logically discussed in the context of the facts which were presented in the application, which will be discussed following consideration of criterion 2.

As to the argument concerning the content of the County's Ordinance, the People correctly point out in their brief (p. 17), that the Second District Appellate Court, in one of the earliest filed and recorded SB172 appeal cases, determined that:

nothing in the statute would require a thorough-going exposition of the County Board's mental processes. Rather, the County Board need only indicate which of the criteria, in its view, have or have not been met, and this will be sufficient if the record supports these conclusions so that an adequate review of the County Board's decision may be made. E & E Hauling, Inc. v. IPCB, 116 Ill. App. 3d 586, 451 N.E. 2d 555, _____ (2nd Dist. 1983), aff'd. in part, 107 Ill. 2d 32, 481 N.E. 2d 664 (1985).

(This holding was noted by the Board in its Opinion in PCB 86-109, pp. 10 & 11, rejecting the same argument about lack of articulated reasons.)

WMII has cited no evidence in the record which overcomes the presumption, noted by the Supreme Court in its review of the E & E Hauling case, that public officials are presumed to act without bias.

Finally, the People also correctly note that WMII has failed to cite any authority in support of its bias/unfairness contention as required by SCR 314 (e)(7), and has therefore waived the argument. WMII v. PCB, 160 Ill. App. 3d 434, 443, 513 N.E. 2d 592, 598 (2nd Dist. 1987).

The Board accordingly finds that the County's decision-making processes in this matter were not fundamentally unfair; the Board will therefore proceed to consider the merits.

STANDARD OF REVIEW AND SCOPE OF THIS OPINION

The Board sees little point in recapitulating the testimony presented in the 1986 application proceedings concerning criteria 2 and 3; this testimony is digested at length in the Board's Opinion in PCB 86-109. In the interests of administrative economy, the Board hereby incorporates into this Opinion by reference as if fully set forth pages 12 through 23 of the PCB 86-109 Opinion. This Opinion will focus on the new information and argument presented concerning these criteria in the 1987 application proceedings.

Although the Board's standard of review in SB172 cases is discussed on page 12 of the PCB 86-109 Opinion, it is useful to reiterate the principles which must guide the Board in reviewing these cases:

A verdict is ... against the manifest weight of the evidence where it is palpably erroneous, wholly unwarranted, clearly the result of passion or prejudice, or appears to be arbitrary, unreasonable, and not based upon the evidence. A verdict cannot be set aside merely because the jury [County Board] could have drawn different inferences and conclusions from conflicting testimony or because a reviewing court [IPCB] would have reached a different conclusion .. When considering whether a verdict was contrary to the manifest weight of the evidence, a reviewing court [IPCB] must view the evidence in the light most favorable to the appellee.

Steinberg v. Petra, 139 Ill. App. 3d 503, 508
(1986). (citations omitted)

Consequently, if after reviewing the record, this Board finds that the County Board could have reasonably reached its conclusion, the County Board's decision must be affirmed. That a different conclusion might also be reasonable is insufficient; the opposite conclusion must be evident. (See Willowbrook Motel v. IPCB, 135 Ill. App. 3d 343, 481 N.E.2d 1032 (1st Dist. 1985)).

The Board finds it necessary to note the restrictions which this deferential evidentiary standard place on the Board's judgment in these cases in light of the discussion at hearing about the Board's decision in PCB 86-109. One of WMII's witnesses noted that his task was to attempt to provide data "to answer the apparent questions that existed in the minds of Pollution Control Board Members...[and] to satisfy [Board Member's] reservations". (Tr. I 611). The Board's decisions in these cases should not necessarily be construed as indicative of the opinion the Board would render if reviewing records in these cases as the trier of fact: it is not the role of the Board to utilize its technical expertise to determine what result a local government should have reached; rather, the Board is required to determine what result a local government reasonably could have reached based on the evidence before it.

1987 ADDITIONS TO AND CHANGES IN THE 1986 APPLICATION

Site Characterization

The record concerning the 1986 application contained considerable dispute concerning the sufficiency of WMII's investigation of subsurface conditions at the site. It does not however, appear to be disputed that the generalized soil profile of the site indicates that a 1.0 to 3.8 feet layer of topsoil is underlain by layers of saturated sand, silt and silty clay with a yellow to brown color known as the Gilberts Till, belonging to the Malden Member of the Wedron Formation. The Gilberts Till is underlain at a depth of 5 to 17 feet by a layer of pinkish to reddish-gray silty clay-clayey silt. This is the Marengo Till of the Tiskilwa Member of the Wedron Formation; this has been commonly referred to in these proceedings as the Tiskilwa Till. The Tiskilwa Till, which is on the order of 40 to 50 feet thick, is underlain by a basal outwash, a layer of saturated silty sand to well graded sand and gravel varying between 8 and 27 feet thick. This zone is saturated. The outwash layer is underlain by older Illinoian Till believed to be the Esmond Till, which is underlain by bedrock at elevations 737 to 731, and argillaceous (clayey) dolomite belonging to the Maquoketa Formation.

Free groundwater has been observed in sand layers in the Gilberts Till, the basal outwash layer, and within the Illinoian

Till. The basal outwash layer appears to be hydraulically connected to saturated outwash filling Kishwaukee River branch valleys to the north, south and west of the site. Additional aquifers exist below the bedrock. (H.O. Ex. 2, Vol. 1, pp. V1-1 - V1-10).

In the 1986 hearings, various objectors expressed concerns about the sufficiency of data concerning the permeability and homogeneity of the Tiskilwa Till. (e.g. Tr. I at 1939, 2341, 3406-07). Concerns were also expressed about the lack of borings within the footprint of the landfill (i.e. the area to be occupied by the fill) (e.g. Tr. I 1838-39, 3232, 3454), and the fact that the direction of groundwater flow had not been sufficiently demonstrated. (e.g. Tr. I 2413-16).

The results of additional geological and groundwater data collected by Patrick Engineering were presented in the 1987 application and were discussed at hearing by Mr. Daniel Dietzler. Additional work at the site included:

1. Making eleven continuously sampled borings within the landfill footprint to at least 30 feet below the planned refuse depth. Tr. I at 617. The exploration program was submitted to and reviewed by GAS, the consultants to the County, prior to start-up. GAS sent a representative to the file to observe sampling operations. Tr. II at 618.

2. Field hydraulic conductivity tests were performed as recommended by Dr. Pratap Singh, a witness for the County in 1986. Tr. II at 622.

3. Electrical resistivity surveying was performed, also as recommended by Dr. Singh. Citizens Ex 9.

4. Additional piezometers were constructed and monitored to measure the potentiometric level, and to check or refute the direction of groundwater flow in the underlying basal sand aquifer that was previously reported. Tr. II at 627-31.

Design and Operations

As to design, in 1986 Dr. Singh, Mr. Gerald De Mers and Mr. Robert Layer, who all appeared on behalf of the County, made various design recommendations. The 1987 application incorporates design changes responsive to some, but not all of these recommendations. As opposed to the in situ liner of 30 feet of undisturbed Tiskilwa Till proposed in 1986, the 1987 application proposes a 60 mil high density polyethylene (HDPE) liner in addition to a 3 foot recompacted liner recommended in 1986, which will be underlain by undisturbed Tiskilwa Till. Also as recommended in 1986, the 1987 design proposes to increase the slope of the landfill bottom from 1% to 2%, to decrease the

spacing between leachate collection pipes to 150 feet, and to provide a gas collection system. The amount of final cover has been increased to consist of at least 3 feet of clay and 3 feet of random soil, or in the alternative, a 40 mil HDPE cover if needed. Post closure care estimates have been increased to reflect a 20 year post-closure care monitoring period.

WMII has not, however, changed the basic inward gradient design of the landfill, or changed its plans to insure that a maximum leachate level of one foot over the bottom liner is continuously maintained as recommended in 1986 by Mr. De Mers. It has not revised its stormwater management program as recommended by Mr. Layer in 1986.

Minimization of Impact On Surrounding Property

The 1987 application contained no changes from the 1986 application as it related to setbacks, screening, berming, etc.

THE WITNESSES PRESENTED

Prior to discussing each criteria, a listing of the witnesses presented by the major participants concerning criteria 2 & 3, and a brief summary of their qualifications, and a very brief overview of their testimony will be presented. Testimony will be discussed in more detail as relevant to discussion of contested issues. This listing does not include witnesses who solely addressed other criteria, and lists witnesses roughly by order of appearance.

WMII Witnesses

J. Christopher Lannert re Criteria 2 & 3 (Tr. II 256-352).

Professional landscape architect and land planner for 17 years. President, Lannert Group, which firm has worked on roughly eight Illinois landfill projects.

Mr Lannert's conclusion concerning the 1987 application was the same as that he presented in 1986, which is that the site satisfies both criteria. (See Opinion, PCB 86-109, p. 14, 19-20; Tr. II 264-267; H.O. Ex. 2).

John Rohr re Criterion 2 (Tr. II 358-518).

Civil engineer. Since 1985, Manager of Environmental Engineering for WMII; 1982-1985 Manager of Design Engineering for Waste Management, Inc. (See App. Ex. 9 for educational experience and professional associations.)

Mr. Rohr prepared the operations plan contained in WMII's 1987 application, which, he noted contained only minor revisions

to the 1986. His general opinion was that the facility and the plan satisfied criterion 2 based on "the pertinent features ... particularly those that relate to the receipt of waste -- the control of waste receipts, the security of the site, the provisions made for the control of odor, for litter, dust control, for the quality control procedures that are going into both the materials and construction of the site, control features for methane and for leachate and leachate removal, for the application of cover and vegetation, for the groundwater monitoring program, and the closure and postclosure plan." (Tr. II 363; H.O. Ex. 2, Vol.1).

Thomas M. Collins re Criteria 3 (Tr. II 521-589).

Real estate appraiser, broker, and consultant since 1954.

Mr. Collins' conclusion concerning the 1987 application was the same as that he presented in 1986, which is that criterion 3 has been met based on his experience with other landfill sites, evaluation of sales, review of proposed screening and use planning, traffic reports and review of the site and surrounding properties. (See Opinion, PCB 86-109, pp. 20-21, Tr. II, p. 531, H.O. Ex. 1, Vol. 1).

Daniel P. Dietzler, P. E. re Criterion 2 (Tr. II 603-852, 2058-2150).

Civil engineer. Founder in 1979 and President of Patrick Engineering, Inc., an engineering consulting firm which handles projects that require the control of surface and groundwater predominantly. (See App. Exh. 13 for educational experience, professional associations and publications.)

As he was in 1986, Mr. Dietzler was WMII's principal witness concerning the site characterization work done and design features included in the 1987 application prepared by Patrick Engineering. In addition to direct testimony, he presented rebuttal testimony addressing various matters of concern to the objectors throughout the course of hearing. (See App. Ex. 24).

Overall, Mr. Dietzler's conclusions as to site characterization are that the few sand seams located in the Tiskilwa Till are discontinuous and that the Tiskilwa is free of secondary features such as cracks. The Tiskilwa is a clayey soil and permeability and plasticity tests indicate that the soil is a workable one which will allow for construction of stable sides and bottom walls.

As to site design and operations,, he concludes that the HDPE liner is a reliable material based on manufacturer's representations. He does not believe that the leachate system will clog. Groundwater monitoring wells will be installed in

sufficient number and location to satisfy IEPA permit conditions. Finally, Mr. Dietzler believes that WMII plans to allow for controlled leachate buildup up to within four feet of the potentiometric level are sound, because the volume generated can be minimized, the reliability of the pumping system would be improved, and the leachate treatment process would be more effective.

States Attorney's/People's Witnesses

Dr. Nolan B. Aughenbaugh re Criteria 2 (Tr. II 877-989).

Professor of Geological Engineering, Department of Geology and Geological Engineering in the School of Engineering at the University of Mississippi; registered P. E. in Indiana. Since 1959, has taught in general areas of geologic or geotechnic engineering. (See SA Ex. 1 for educational experience, professional associations and publications.)

Dr. Aughenbaugh, whose work has been concentrated in glacial geology and glaciology, concluded that the proposed site is not "excellent", as Mr. Dietzler believes, but "marginal". He further disagrees with Mr. Dietzler's conclusions about the permeability and plasticity of the Tiskilwa Till, and is unsure about whether the aquifer in the Gilberts Till is interconnected with that in the basal outwash layer. While he is "unimpressed by the geology" of the site, he is "impressed" with the design, but notes that "a design is only as good as it's implemented", and suggests that a high degree of construction quality assurance would be necessary. (Tr. II 957-961).

Herbert F. Harrison re Criterion 3 (Tr. II 990-1045).

Real estate appraiser for 40 years and land use consultant for 30 years. Has experience with about eight landfill applications. (See SA Ex. 5 for educational experience and professional associations.)

Mr. Harrison's conclusion about the 1987 application as to criterion 3 was the same as that he presented in 1986, that the criterion has not been satisfied. Generally, Mr. Harrison believes that many more properties will be depreciated than Mr. Collins does, and questions the efficacy of WMII's proposed screening and berming. (See Opinion, PCB 86-109, 20-21).

Gerald De Mers re Criteria 2 and 3 (Tr. II 1673-1754).

Environmental Engineer, Graef Anhalt Schloemer and Associates (GAS) (consulting engineers) for 9 years; registered P. E. in Wisconsin. Project experience in the area of solid and hazardous waste engineering including preparation of solid waste management plans for three counties and work on various aspects

of 12 landfill sites. (See SA Ex. 6 for educational experience and professional associations.)

At the 1986 hearings, Mr. De Mers criticized several features of the site's then-design. While agreeing that the 1987 design was generally appropriate for the site, he continues to have some concerns about items which include the proposed side wall liner slope, placement of a synthetic liner within a groundwater table, ability to properly maintain the leachate collection system to prevent clogging, the proposed leachate plan to allow leachate to accumulate to a depth of greater than 1 foot above the liner prior to withdrawal, lack of specificity about proposed depth of monitoring wells, and that in some portions of the landfill an inward gradient may not be consistently maintained.

Robert W. Layer re Criteria 2 (Tr. II 1756-1778).

Staff engineer, McHenry County Department of Planning.

Re-adopting the testimony he gave in 1986 (Tr. I 2706-2767, Opinion, PCB 86-109, p. 16), in 1987 Mr. Layer again criticized WMII's proposed plan for stormwater detention to control stormwater runoff, which plan had not changed since 1986. Mr. Layer continues to disagree with the methodology used by WMII in making its calculations, and questions an assumption made concerning flow velocities.

Dr. Pratap Singh re Criteria 2 (Tr. II 1858-1989).

Manager, Environmental Focus Group, A.T. Kearney Management Consulting; civil engineer, registered P. E. in Wisconsin. Has reviewed siting, closure and post-closure design for over 50 solid and hazardous waste management facilities. (See SA Ex. 9 for educational experience, professional associations and publications.)

Dr. Singh prepared an environmental assessment report as to the proposed facility. (Tr. II 1865-1866; RA 15(1); SA Ex. 10). This report concentrated on four points: site suitability, design features, waste characteristics and facility operations and management. (Tr. II 1867).

Each of these points was "graded", based on considerations of environmental risk and ability to manage that risk, as "acceptable", "marginal", "unacceptable", and "unacceptable" and "unmanageable". Waste characteristics were deemed "acceptable", design features and facility operations as "marginal", and site suitability as "unacceptable". More specifically, among other things, Dr. Singh criticized WMII's failure to perform a pumping test to determine whether sand lenses were continuous, as well as

the failure to provide for leachate withdrawal as he and Mr. De Mers had recommended in 1986.

While overall Dr. Singh would rank the site as being "marginally acceptable", this ranking would depend on a high level of construction quality assurance to guarantee that the design features are properly implemented and a continuing high level of operations and management practices.

Defenders' and Citizens' Joint Witness

Dr. Kirk W. Brown re Criterion 2 (Tr. II 1222-1335).

Professor of Soil Science, Texas A&M University. President, K. W. Brown and Associates, environmental consultant firm particularly in the areas of assessing waste disposal options and drafting government waste handling regulations. Has performed research in the area of waste disposal for USEPA for the past 15 years. (See Citizens Ex. 3 for educational experience, professional associations and publications.)

Dr. Brown does not believe that criterion 2 will be satisfied for a variety of reasons. He disagrees with Mr. Dietzler concerning the permeability and plasticity of the soils, and has concerns about the continuity of sand seams. As to the design features, he has reservations about the integrity of and ability to properly install synthetic liners, recompacted liners, and landfill caps. These reservations prompt further ones about the quantity of leachate which could be generated, and WMII's plans to discontinue leachate removal (which could result in establishment of an outward gradient and contaminant transport). He is also concerned about groundwater monitoring plans.

Citizens Witnesses

Bruce G. Mack re Criterion 2 (Tr. II 1335-1443).

Staff hydrogeologist, Baxter and Woodman, Inc. (Environmental Engineers). 3 years experience with landfill design and test borings; several years of well drilling experience. (See Citizens Ex. 4 for educational experience, professional associations and publications.)

The main thrust of Mr. Mack's testimony is that WMII did not adequately or completely describe the geology beneath the site. Mr. Mack challenged the characterization of the till, the surficial aquifer, and direction of groundwater flow, and expressed concern about the sand seams.

Darryll Bauer, P. E. re Criterion 2 (Tr. II 1449-1514).

Manager, Solid Waste Management Division, Baxter and Woodman, Inc. 24 years of engineering experience, including service with the Illinois Sanitary Water Board, the IEPA, and the City of St. Charles. (See Citizens Ex. 5 for educational experience, professional associations and publications.)

Mr. Bauer's testimony was based on review of what he characterized as the "engineering plans". (H.O. Ex. 2, Vol. 6). Based on his review concerning various areas, including leachate collection system's cleanout and leachate removal pumps, plans for leachate disposal, setback zones, composition and stockpiling of cover material and stormwater detention basins. Mr. Bauer's overall conclusion was that there was "insufficient information to make and render a judgment that this is a sound operation. Details are missing". (Tr. II 1474).

Linda L. Lehman re Criterion 2 (Tr. II 1449-1666).

Consulting hydrologist with 12 years experience, including experience with waste disposal sites. Ph.D candidate. hydrogeology, University of Minnesota. (See Citizens Ex. 6 for additional experience and qualifications.)

Based on her review of portions of the application (H.O. Ex. 2, Vols. 1,6), Ms. Lehman concluded that criterion 2 had not been satisfied because "no technically-based site selection processes [were] evident in the Application. The regular siting guidance, [a 1969 McHenry County document entitled Guidance For Planning] had been largely ignored. There is a high water table. There is complex and uncertain hydrogeology. There are water supply aquifers surrounding and beneath the site. Maintenance of the inward design is going to be highly uncertain, because it doesn't state how that is going to be maintained. [The] type of design requires unrealistic maintenance and equipment lifetimes.

...

The operation plans were rather noncommittal on this leachate pump out and monitoring of the levels of the leachate. (Tr. II 1548).

Dr. George D. Brunton re Criterion 2 (Tr. II 2014-2057).

Professor and Chairman of Geology and Geological Engineering, University of Mississippi. 30 years experience as research geologist. (See Citizens Ex. 8 for educational experience, professional associations and publications.)

Dr. Brunton's testimony related solely to the electrical resistivity tests done by WMII. As to criterion 2, Dr. Brunton stated that he could form no opinion. The reason for this is that at the southern end of the resistivity survey, between

Stations 4,5,6 and 7 major resistivity changes indicate that presence of gross anomalies, (perhaps a sand or gravel layer), which had not been explained and should probably be investigated further. (Tr. II 2030-3132, 39,40).

Others

Finally, called as a witness on his own behalf, appeared:

Dr. Louis E. Marchi re Criterion 2 (Tr. II 2151-2165).

This testimony offered criticisms to Mr. Dietzler's rebuttal testimony and exhibit (App. Ex. 24), particularly as it relates to interaction of leachate with the proposed HDPE liner.

Public Comments (Tr. II 2169-2284).

The public comment session was conducted with a three minute per person limit to make a statement which was not subject to cross-examination. Thirty-nine persons spoke to voice various criticisms of WMII and its application.

CRITERION 2

As is always the case in SB172 appeals, the Board's task in reviewing the record is complicated by the fact that the County is not required to articulate the "findings of fact" upon which it rests its "conclusions of law". The result is that the Board is arguably required to discuss every conflict in testimony in these voluminous cases to determine which were the issues of importance to the decisionmaker. With a record this size, it is virtually impossible for the Board to do so, and it is clearly pointless to do so. In each of the areas of site characterization, site design, and site operations there are sufficient conflicts in testimony on so many points that, viewing the evidence in the light most favorable to the County, the Board must find that the County's decision on criterion 2 is not against the manifest weight of the evidence. The Board must further find that the County could properly hold that WMII failed to demonstrate that the proposed facility would be "designed, located, and proposed to be operated that the public health, safety and welfare will be protected". The following is an illustrative, but not exhaustive, listing of the evidentiary conflicts here presented.

The new borings, when read in conjunction with all of the previously available data, led Mr. Dietzler to conclude that the Tiskilwa Till is a homogenous mixture of silt, sand and clay which acts as a clay soil in terms of hydraulic conductivity. The 11 new continuously sampled borings amount to over 1,348 lineal feet of soil samples. The average rate of recovery of the samples was greater than 98%. No cobbles were encountered and

there was no observed pattern of sample loss or poor rate of recovery. Sand particles were observed in every sample.

However, out of 11 borings, sand seams or lenses were encountered in only 5 borings. In only 2 of these was the sand within 20 feet of the proposed bottom. In 1 boring, B-30, at a depth of 5 feet below the proposed bottom, a 7 inch thick sand lens was encountered. (Tr. II 619-20). Mr. Dietzler calculates that less than 1% of the soil in the borings consisted of sand lenses. Moreover in the zone within 20 feet of the proposed bottom of the landfill 0.013% of the soil was sand, (App. Ex. 24, p. 1 and Fig. 2). It is Mr. Dietzler's opinion that the few, randomly encountered sand seams pose no danger to the site, given the fact that all materials above the liner will be removed, and that a recompacted clay side seal at least 10 feet wide and a three foot thick bottom seal will be constructed and overlain by a synthetic liner. (Id., p. 2) It is Mr. Dietzler's further opinion that these sand lenses are not continuous across the site. (Tr. II 621).

The County could, however, have placed greater weight on opinions by others that WMII's investigation did not go far enough in various respects, or that results were flawed. The first opinion, offered by Dr. Singh, is that in the absence of a pumping test it could not be determined that the sand seams were not continuous. (Tr. II 1871-1874, 1904-1906). The second opinion is that offered by Dr. Brunton that the electrical resistivity tests showed gross anomalies at about elevation 820 which should have been further investigated. (Tr. II 2039-2040; RA 16(9)(10), Citizens Ex. 9,10). The third, shared by Dr. Aughenbaugh, Dr. Brown, Mr. Mack, and Ms. Lehman, was that the permeability test methods and results obtained by WMII were faulty. (Tr. II 938-939, 1240, 1361-1363, 1540-1542). Although WMII has offered argument and explanation which could serve to challenge these opinions, (e.g. Pet. Reply Brief 6-7, 19-20, 11-12), the County could have discounted them based on the evidence.

In a fourth area, that of soil plasticity tests, Mr. Dietzler admitted to a lack of confidence in one particular test result run at his own lab (Tr. II 2103, 2131-2139). This result had served as the basis for a concern expressed by Dr. Singh about potential problems with construction of the bottom or side walls of the landfill (Tr. II 1876-1882, 1925-1929, 1982-1984, RA 15(1), SA Ex. 10 (ex. 6)). Based on Mr. Dietzler's admission that this piece of data was faulty, the County could have given greater weight to the testimony of Dr. Singh and others, e.g. Dr. Aughenbaugh (Tr. II 907-913, 938), who expressed concern about the plasticity of soils on the site.

As to landfill design flaws, the County could have rested its decision on the fact that the application had not addressed the storm detention issues raised by either Mr. Layer in 1986 and

1987 or by Mr. Bauer in 1987. (Tr. II 1756-1778, 1446-1470). Similarly, the County could have given more weight to the witnesses concerned by WMII's plans for controlled leachate buildup, e.g. Dr. Singh, Mr. De Mers (Tr. II 1975, 1985-1987, 1682-1686), than to Mr. Dietzler's explanation as to why this was desirable. (App. Ex. 24, pp. 11-13).

Additionally, the County could have found that both the design and the operations plan were too devoid of detail to allow it to find that WMII had carried its burden of proof. As to the operating plan, Mr. Rohr testified on cross-examination that corporate policies for the handling of such things as safety issues, hot loads and waste identification were not fully articulated or included in the application. (Tr. II 389-90, 402, 434). As to design and construction of the liner, Dr. Singh testified that "what is lacking is the details of how construction -- quality controls and quality assurance will be achieved during construction. That has not been described, and this general statement has been made that the Applicant has a lot of experience in this area and Applicant knows how to handle that". In response to a question, he went on to agree that "[s]o basically the Applicant is saying, 'Trust me in that area'". (Tr. II 1922).

Mr. De Mers specifically noted the same concern concerning placement of synthetic liners (Tr. II 1677), while Dr. Aughenbaugh expressed concerns about construction quality assurance generally. (Tr. II 959-961). As earlier outlined, the entirety of Mr. Bauer's testimony relates to various details he considers to be unclear or missing from the engineering plans in various areas. (Tr. II 2449-2474).

In summary, the Board finds that the County could have denied this application for any, all, or none of the reasons listed above; WMII has, however, failed to persuade the Board that the County's decision on criterion 2 as a whole is "palpably erroneous, wholly unwarranted, clearly the result of passion or prejudice, or ... arbitrary, unreasonable, and not based upon the evidence". Steinberg v. Petra, supra, 139 Ill. App. 3d at 508. The County's decision denying site location suitability relative to Criterion 2 is accordingly affirmed.

CRITERION 3

Given the Board's finding concerning Criterion 2, the Board need not reach the issues relative to criterion 3 and declines to do so. See Waste Management of Illinois, Inc. v. Lake County, PCB 85-75, December 17, 1987, pp. 36-37.

This Opinion constitutes the Board's finding of facts and conclusions of law in this matter.


ORDER

The February 24, 1988 decision of the Mc Henry County Board denying site location suitability approval to Waste Management of Illinois, Inc. is hereby affirmed.

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985 ch. 111 1/2 par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 4th day of August, 1988, by a vote of 7-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

ILLINOIS POLLUTION CONTROL BOARD
December 5, 1986

WASTE MANAGEMENT OF ILLINOIS, INC.,)
 a Delaware Corporation)
)
 Petitioner,)
)
 v.)
)
 McHENRY COUNTY BOARD,)
)
 Respondent,)
)
 and)
)
 McHENRY COUNTY CONCERNED CITIZENS)
 AND McHENRY COUNTY DEFENDERS,)
)
 Cross-Petitioners,)
)
 v.)
)
 McHENRY COUNTY BOARD and WASTE)
 MANAGEMENT OF ILLINOIS, INC., a)
 Delaware Corporation,)
)
 Cross-Respondents.)

PCB 86-109

MESSRS. DANIEL F. CURRAN, OF HOLMSTROM & GREEN, AND DONALD MORAN, OF PEDERSON & HOUPY, APPEARED ON BEHALF OF THE PETITIONER.

MR. MICHAEL F. KUKLA OF COWLIN, UNGVARSKY, KUKLA & CURRAN, APPEARED ON BEHALF OF THE CROSS-PETITIONERS.

MESSRS. PAUL R. RYSKE, DAVID R. AKEMANN, AND WILLIAM F. BARRETT APPEARED ON BEHALF OF THE RESPONDENT.

OPINION OF THE BOARD (by J. Marlin):

This matter comes before the Board on a July 25, 1986 Petition for Hearing to Contest Decision of McHenry County Board by Waste Management of Illinois, Inc. (Waste Management) and on an August 11, 1986 Petition for Cross Appeal of Issues Decided by the McHenry County Board by McHenry County Concerned Citizens and the McHenry County Defenders (Cross-Petitioners). This appeal and cross-appeal results from the July 25, 1986 decision of the McHenry County Board (County Board) pursuant to Section 39.2(a) of the Environmental Protection Act (Act), denying approval of site location suitability for a sanitary landfill proposed by Waste Management. The County Board reached its decision after 20 days of hearings on the matter. At the hearings, Waste Management, McHenry County Concerned Citizens, and the McHenry County Defenders each presented witnesses. In addition, an

In its Findings and Order, the County Board stated that Waste Management had met its burden of proof as to criteria 1, 4, 5 and 6, and had not met its burden of proof as to criteria 2 and 3. The Board finds these reasons to be sufficient according to E & E Hauling, Inc.

Manifest Weight Standard

The Board may reverse a County Board decision, if after applying the manifest weight standard the Board finds that the County Board decision was in error. E & E Hauling, Inc. v. Pollution Control Board, 116 Ill. App. 3d 586, 608 71 Ill. Dec. 587, 451 N.E.2d 555 (2d Dist. 1983). The Illinois Appellate Court has recently stated:

"A verdict is said to be against the manifest weight of the evidence where it is palpably erroneous, wholly unwarranted (citations omitted), is clearly the result of passion or prejudice (citations omitted), or appears to be arbitrary, unreasonable, and not based upon the evidence (citations omitted). A verdict cannot be set aside merely because the jury [in this case, the County Board] could have drawn different inferences and conclusions from conflicting testimony or because reviewing court [in this case, the Board] would have reached a different conclusion if it had been the trier of fact. (citations omitted). When considering whether a verdict was contrary to the manifest weight of the evidences, a reviewing court must view the evidence in the light most favorable to the appellee (citations omitted). Steinberg v. Petra, 139 Ill. App. 3d 503, 508 (1986).

Consequently, if, after reviewing the record, the Board finds that the County Board could have reasonably arrived at its conclusions, then the County Board's findings must be affirmed. Waste Management contends that the County Board's decisions regarding Criteria 2 and 3 are against the manifest weight of the evidence and, therefore, should be reversed.

Criterion 2

Waste Management's first witness was Daniel P. Dietzler. Dietzler is a professional engineer registered in Illinois. He is also the President of Patrick Engineering, which designed Waste Management's proposed landfill (Petitioner's Brief, p. 13, 14). At the hearing, Dietzler testified that he believed the proposed landfill satisfied criterion 2. He specifically cited the Tiskilwa Till layer, which would be used as a natural liner for the landfill, as an important factor for this conclusion. (R. 354) Dietzler stated that he believed that the Tiskilwa Till was well suited as a liner for a landfill (R. 271, 279-80).

Laboratory permeability tests showed that the Till had a hydraulic conductivity on the order of 2×10^{-8} cm/sec. (R. 273). Also, four test pits, excavated in the Tiskilwa Till by Patrick Engineering did not show any secondary features, such as cracks, that would increase the Till's permeability. (R. 655). Dietzler testified that the Tiskilwa Till was composed predominately of silts and clay particles, although it also contained sand and some gravel. (R. 270). He claimed that the Till layer would be at least 30 feet thick below the lowest point of the excavated landfill. (R. 288).

Secondly, Dietzler stated that the presence of a basal sand layer aquifer, which lies just below the Tiskilwa Till, was another asset of the proposed site. Dietzler reasoned that the basal sand layer could be monitored to check the integrity of the Tiskilwa Till. That is, to determine whether the Till was allowing leachate to leak into the layers below. (R. 355).

Next, Dietzler credited the inward gradient design as an important aspect leading to his conclusion that the proposed landfill satisfied criterion 2. (R. 355). Because the inward gradient design would cause water to migrate into the site, leachate would be prevented from migrating out of the site. (R. 285).

Dietzler claims that the leachate collection system is another positive aspect of the proposal. The system consists of perforated plastic pipes laid in a 12 inch gravel bed at the base of the landfill. Dietzler stated that such a system has not been used in any other Illinois landfill. (R. 356). He also testified that approximately 7,800 gallons of leachate would be removed from the site each day. (R. 622).

Finally, Dietzler cited the four foot thick final cover as an important aspect of the design. He noted that the Illinois Environmental Protection Agency only requires a two foot thick final cover. (R. 356).

Waste Management's second witness, Dan L. Nelson also stated that he believed the proposed landfill fulfilled Criterion 2. Nelson works for Waste Management as the district engineer who would be responsible for the landfill's construction, compliance with state laws and regulations, and the monitoring of the site (Petitioner's Brief, p. 18). Nelson stated that Waste Management would do routine methane gas monitoring using probes. (R. 766). Also, he believed that the proposed ground water monitoring was adequate to meet Criterion 2. (R. 765). This proposed monitoring program would include quarterly sampling of water from surficial soils, basal sand layer, and the bedrock. These samples would be tested for various contaminants. (R. 822, 823). Nelson also stated that there would be 800 feet between each of the three ground water monitoring wells. (R. 990).

Nelson stated that Waste Management would attempt to maintain the leachate level at least two feet below the ground water level (R. 1009). He also testified that during the operation of the landfill, the leachate level would be monitored on a weekly basis (R. 833). However, during the post closure period, the leachate level would be only monitored on a quarterly basis. (R. 834). Nelson also said that in order to maintain the inward gradient, leachate removal would be needed "on a continuous basis" after the closure of the landfill. (R. 850).

Waste Mangement's last witness to testify regarding Criterion 2 was J. Christopher Lannert. Lannert is a landscape architect. In summary, he stated that Criterion 2 was met for four reasons. First, the site does not have any limiting characteristics which would prevent a landfill from operating there. Secondly, the parcel is large enough to operate as a landfill. It's also situated well in terms of roadway access. Finally, Lannert stated that the proposed landfill was compatible with the surrounding area (R. 1054-55).

The Cross-Petitioners as well as the County of McHenry put on witnesses during the hearing who stated that the proposed landfill did not satisfy Criterion 2. David Anderson, who has a Master's Degree in soil physics and soil science, testified on behalf of the McHenry County Defenders. (Cross-Petitioner's Reply Brief, p. 29). Anderson, who works for a firm specializing in hazardous waste disposal, stated that Criterion 2 was not met because the landfill was designed as a "below the zone of saturation" landfill. (R. 1552). He claimed that the rate of leachate generation, estimated by Waste Management, was unrealistically low. He stated that the landfill could generate 78,000 gallons of leachate a day. (R. 1536). Anderson was troubled by the situation of "perpetual generation of leachate and a dependency [in order to maintain an inward gradient] on a system [leachate collection] that definitely is not going to last forever." (R. 1540). Anderson recommended that the landfill be moved out of the ground water zone and that synthetic liners be utilized. (R. 1556, 1554).

The second witness for the McHenry County Defenders was Greg Lindsey. Lindsey is an environmental planner specializing in solid waste management and recycling. He is also a member of the Northeastern Illinois Planning Commission Solid Waste Technical Advisory Committee. (Cross-Petitioner's Brief, p. 30). Lindsey testified that the proposed landfill does not meet Criterion 2, because it is inconsistent with McHenry County policies and its proposed post-closure plan is insufficient. Lindsey said that McHenry County Board has adopted 10 policies concerning Basic Operating Standards regarding landfills. (R. 2512). According to Lindsey, Waste Management's plan doesn't adequately address all of the Operating Standards. (R. 2521). The Board notes that Section 39.2 in its totality controls the County Board's decision. In addition, Lindsey testified that even a ten year post-closure care period, would be insufficient. Also, he was

concerned that the post closure fund, as proposed by Waste Management, would be inadequate to provide sufficient post-closure care. (R. 2526).

McHenry County Concerned Citizens called George Noble as their first witness. Noble is a registered professional engineer. He works as an environmental consultant. For the last 20 years, he has worked in the area of solid waste management and disposal, which included the designing of landfills. (Cross-Petitioner's Reply Brief, p. 21). Noble testified that the landfill did not meet Criterion 2. (R. 1869). Noble stated that "an inward gradient landfill presupposes that there will always be leachate." (R. 1848). He was concerned that inaccurate leachate level readings may result from the combination of three conditions of the proposed landfill. Due to biochemical reactions of the leachate, Noble believed that the leachate pipes might clog and that the gravel, in the gravel bed containing the pipes, might cement together. Also, he felt that locating all of the leachate monitoring wells on one side of the landfill, created the potential for inaccurate readings. (R. 1894, 1852). Under such circumstances, an outward gradient condition could exist without ever being detected. Noble also believed that Waste Management never fully addressed whether the surrounding ground water level would be continually monitored. (R. 1860).

Noble testified that the Tiskilwa Till should have been checked for secondary features via a "test cell" procedure. (R. 1874). He also stated that if he had designed an inward gradient landfill, he would have wanted a 10 foot layer of recompacted clay not just a natural, in situ, clay liner. He believed that a recompacted layer would give the engineer more control over the liner's permeability. (R. 1956, 1898). Noble was also troubled by the fact that Waste Management never conducted any field permeability tests on the Tiskilwa Till, which he believed to be a routine procedure. He stated that the permeability results from field tests are sometimes two to three orders of magnitude greater than the permeability results from lab tests. (R. 1840). Field permeability tests allow the testing of the material in an undisturbed condition. (R. 1885). If sand and gravel is present, a field permeability test may show this by a higher permeability value than with a lab test result. (R. 1981). Noble felt that there was an insufficient amount of data regarding permeability of the Till (R. 1939). Specifically, he concluded that no lab permeability tests were even performed on any sample taken from the part of the Tiskilwa Till that would be located directly below the proposed excavated bottom of the landfill. (R. 1844). Noble also stated that he was concerned over the lack of a complete methane gas collection system. (R. 1870).

Dr. Musa Qutub was the second witness who testified for McHenry County Concerned Citizens that Criterion 2 was not met. Dr. Qutub has a Ph.D in geology, specializing in water resources. He is a hydrologist and professor at Northeastern

Illinois University. (Cross-Petitioner's Reply Brief, p. 22). Qutub testified that the proposed site failed the criterion because the Tiskilwa Till is not homogeneous. Also, Qutub contended that the actual flow of the ground water is not in the direction that Waste Management claimed it to be. He criticized Waste Management's assumption that the static ground water level could be controlled. In addition, he believed that the proposed leachate collection system is inadequate. (R. 2144). Qutub stated that Waste Management's portrayal of the geology under the site in Applicant's Exhibit # 16 is inaccurate. (R. 2118). He claims that the Tiskilwa Till is not a homogeneous layer of clay, but, it is rather a mixture of clay, sand, gravel and cobbles. These constituents other than clay give it a higher porosity and permeability. (R; 2111, 2374). He also believes field permeability tests should have been taken. (R. 2126).

Qutub also questioned the methods of Waste Management in determining the direction of ground water flow. (R. 2102). Qutub stated that the results of his study showed that the ground water flowed from west to east. (R. 2100). He claims this is consistent with a U.S. Geological Survey finding that the flow in the area is from northwest to southeast. He pointed out that Waste Management claimed the ground water flows from east to west. (R. 2372). Qutub testified that an inward gradient would not be attained because the static water level could not be maintained in the landfill since the surrounding area is made up of sand and gravel. Also, he stated that natural phenomenon (such as earthquakes), rainfall, and pumpage will change the static levels. He concluded that he has never seen a sanitary landfill where the static water level was maintained (R. 2224-2225).

McHenry County Concerned Citizens last witness was Michael Robinson. Robinson is a licensed geotechnical engineer. (R. 2376). Robinson studied Waste Management's boring data and determined that there was a correlation between areas of the geologic strata which produced low or no recovery in the boring sampler. These correlated areas of unknown composition were labeled as "phantom strata". They are located within the boundaries, as defined by Waste Management, of the Tiskilwa Till. According to Robinson, one such phantom stratum ranges from 2 1/2 feet to 4 1/2 feet thick between elevation 830 and 820. He claims that another lies just below elevation 820. (R. 2391).

The County of McHenry put on Robert Layer as a witness. He is a staff engineer for the county. (R. 2707). He found that with regard to storm-water management, the proposed landfill does not meet Criterion 2. (R. 2740). Layer claimed that water runoff from the final land form would be 2.3 times greater than it is now (R. 2718). He concludes that such a runoff would be highly erosive. (R. 2721).

Jerome Chudzik was another witness for the County of McHenry who testified regarding Criterion 2. Chudzik is a registered

professional engineer. (R. 3025). He suggested that the proposed landfills would meet Criterion 2. (R. 3080). However, he believed that his particular recommendations were important and should be adopted. (R. 3092). He recommended items such as surface water monitoring (R. 3049), additional ground water monitoring wells to decrease the gap between wells (R., p. 3051), and a methane detection system (R. 3046).

Another County of McHenry witness, Gerald DeMers, also testified that the proposed landfill would meet Criterion 2. However, like Chudzik, DeMers stated that Waste Management should adopt his recommendations. (R. 3276). DeMers, a registered professional engineer, recommended that the leachate should not be allowed to accumulate. Waste Management's plan allows it to accumulate to a depth of 12 feet inside the landfill. He claims that the removal of leachate as it is generated reduces the chance of not maintaining an inward gradient. (R. 3181). Also, to avoid excess leachate while the landfill is operating, he recommended that the landfill should be excavated and filled from the higher elevations first while working downward. This is the opposite of the way Waste Management has proposed filling the landfill. (R. 3185).

The last County of McHenry witness was Dr. Pratap Singh. Dr. Singh has a Ph.D. in soil and water engineering (Cross-Petitioner's Reply Brief, p. 24). He testified that the proposed landfill would not meet Criterion 2. (R. 3483). His firm conducted additional borings on the sites which seemed to confirm the phantom stratum theory. (R. 3524). After reviewing this data and Waste Management's boring data, Singh stated that "4 to 5 feet below the invert of the landfill there is a possibility that cobbles and boulders, plus sand seams, are there throughout...the entire base of the landfill." (R. 3407). He stated field permeability tests should have been conducted, because they are more representative of true permeability. (R. 3410). Singh also recommended that Waste Management recompact the clay liner, thereby removing the cobble layers. (R. 3436). He stated that electrical resistivity or electromagnetic survey should be taken of the site to better investigate its geology. (R. 3438). Singh stated that the present amount of data, gathered by Waste Management, is insufficient with regard to understanding the geology and hydrology of the site. (R. 3416). To better facilitate leachate removal, he recommended that the spacing between the leachate collection pipes be decreased to 150 to 200 feet. Waste Management's plan calls for 600 feet between pipes. Also, he suggested that the slope of the bottom of the landfill be 2 percent rather than 1 percent. (R. 3440).

Although the testimony concerning Criterion 2 addressed a wide variety of issues, after reviewing the record, it is apparent that conflicting evidence was presented to the County Board on major aspects of the landfill proposal. Waste Management contends that the inward gradient design of the landfill will prevent leachate from leaking out of the

landfill. However, Waste Management's own witnesses have admitted that the landfill would require continual pumping of leachate, after closure, in order to maintain this inward gradient. According to witnesses for the Cross-Petitioners, this constant need to monitor and pump leachate is a major detriment to the landfill's design. Also, a witness for the Cross-Petitioners estimated that the landfill could generate 78,000 gallons of leachate per day. This is a great contrast to Waste Management's estimate of one-tenth that amount. The amount of leachate generated obviously has a great impact upon the maintenance of an inward gradient which is dependent upon the constant removal of leachate. Witnesses for the Cross-Petitioners and County of McHenry testified that the leachate collection system was inadequate. It was claimed that the proposed placement of the monitoring wells and collection pipes could lead to inaccurate leachate level readings. Consequently, an outward gradient could go undetected.

It was also suggested by Waste Management's opponents that the proposed distance between the leachate collection pipes should be substantially reduced. The proposed slope of the bottom of the landfill was also criticized by witnesses for the Cross-Petitioners and County of McHenry as being only half of what is needed for efficient leachate collection. Witnesses for Waste Management stated that the leachate in the landfill would be allowed to accumulate to a depth of about 12 feet. However, witnesses for the County of McHenry and the Cross-Petitioners agreed that the leachate should not be allowed to accumulate in order to reduce the chances of accidentally creating an outward gradient.

In addition, evidence was presented by the Cross-Petitioners that the groundwater flow was in the direction opposite of what Waste Management claimed it to be. The methodology of Waste Management's hydrologic study was severely criticized by one of the Cross-Petitioner's witnesses. It was also stated by this witness that an inward gradient design was unworkable because it relied on the questionable assumption that static water levels could be maintained.

In its design, Waste Management utilizes 30 feet of Tiskilwa Till as an in situ liner. Waste Management claims that lab tests on the permeability of Tiskilwa Till indicate that it has a sufficiently low permeability. Witnesses for the Cross-Petitioners and County of McHenry stated that field permeability tests should have been conducted. Specifically, they claimed that the permeability indicated from lab tests could be several orders of magnitude less than the level of permeability that actually exists on the site. It was also pointed out that Waste Management did not perform even lab permeability tests on samples taken from the area of the Till that would actually function as the liner.

Waste Management's witnesses also claimed that the Tiskilwa Till is a fairly homogeneous formation that is composed predominately of silty clay. However, other witnesses countered that the Till is not homogeneous, and it likely contained layers of sand, gravel, and cobbles. The phantom strata interpretation of boring logs presented by witnesses for the Cross-Petitioners and the County of McHenry, conflicts directly with the geologic interpretation of Waste Management. These phantom layers are claimed to be located just below the proposed excavated bottom of the landfill. It is suggested that the "phantom strata" are composed of cobbles and boulders. If layers of cobbles and boulders are present in the Till, as it was claimed, then the overall permeability of the Till would be much greater than what Waste Management has concluded. Witnesses for the Cross-Petitioners and County of McHenry also criticized Waste Management's methodology in evaluating the geology of the site. Specifically, opposing witnesses contended that Waste Management had not gathered enough boring data of the area within the proposed landfill footprint and the area surrounding the site.

The above summary of the various positions of the witnesses touches only upon certain issues regarding Criterion 2. There are literally thousands of pages of testimony addressing this particular criterion. Pursuant to the manifest weight standard, the Board must consider the evidence in the light most favorable to the County Board's position that Waste Management's proposal did not meet this criterion. Credible testimony was presented which questioned the wisdom of Waste Management's application. This is particularly true regarding ground water dynamics, sub-surface geology and the ability of the design to function properly over time.

After reviewing the massive record, it becomes apparent that the County Board could have reasonably concluded that Waste Management's proposal did not satisfy Criterion 2. Therefore, applying the manifest weight standard, the Board affirms the County Board's finding regarding Criterion 2. The Board notes that it has in no way made a determination as to the general suitability of inward gradient landfills.

Criterion 3

Waste Management's first witness with regard to this criterion was J. Christopher Lannert. Lannert has been a landscape architect and urban planner for the past sixteen years. (Petitioner's Brief, p. 19). He testified that the landfill was "designed [The Board notes that the statutory language of this Criterion is "located" not "designed".] to minimize incompatibility with the surrounding area." He specifically cited several factors for the basis of his opinion. First, he believed that the end use plan was compatible with the surrounding area. (R. 1086). However, he also acknowledged that the surrounding area does not have a sufficient population now, or even in the year 2005, to support the proposed recreational use

after the landfill closes. (R. 1188). Secondly, Lannert stated that the screening berms, planting, and setbacks would "protect our neighbors." He also felt that the landscaping around the entrance to the proposed landfill was adequate to shield the truck traffic from view. Next, he stated that the surrounding topography and woodlands were consistent with the landfill and helped to minimize its impact. Finally, he stated that the intermediate screening berms, which would be utilized during the actual filling of the landfill, would serve to reduce the impact of the landfill's operations on the surrounding area. (R. 1086, 1087). Lannert testified that the landfill in its final form would end up being the highest point in the Township (R. 1136). He stated that the highest point of the final form would be 75 feet higher than the existing high point on the site. (R. 1074). The permanent screening bern, which would be erected on the eastern boundary of the site, would only be 25 feet high. (R. 1144). He stated that the residences east of the site would screen the view of the landfill from each other. (R. 1084).

According to Lannert, the site is bounded by open farmland to the north and to the south. West of the site is a large tree nursery. (R. 1068). He stated that single lot residences are located in a wooded area east of the site. (R. 1070).

Lannert testified that the site is presently zoned A-1, for agriculture. He noted that a landfill could be permitted as a conditional use in such a zoning classification. (R. 1218). However, he also stated that McHenry County classifies this site "as prime farmland" due to its soil composition. (R. 1048). Lannert testified that the McHenry County Comprehensive Land Use Plan also shows the site in an agricultural district. In the plan, just east of the site is an agricultural-rural transitional zone. (R. 1049). Lannert stated that the site contains 15 recorded lots. He claimed that the existence of these potential residences take the site out of a "pure agricultural classification." That is, he believed the site has turned from an agricultural to a more residential type use. (R. 1193). He stated that if residences were built on the site, they would be "an extension of this [east of the site] residential community." (R. 1192). Lannert stated that the presence of these recorded lots makes the site inconsistent with the pure agricultural classification of Comprehensive Land Use Plan. Therefore, Lannert concluded that the site is really located in a "flexible area" of classification. (R. 1050). However, Lannert also asserted that a landfill would be better classified as an agricultural rather than residential use. (R. 1181).

Waste Management's other witness concerning this Criterion was Thomas Collins. Collins has been a real estate appraiser and consultant for 32 years. (Petitioner's Brief, p. 30). He testified that the landfill would not be incompatible to the surrounding area. (R. 1263). He also classified a landfill as being an agricultural or residential type of use rather than an industrial or commercial use. (R. 1338). In his report on the

site, he had stated that the immediate area around the site had no discernable trend. However, Collins testified at the hearing that the trend in the area is toward residential development. (R. 1298, 1318). However, he did state that the Emery Woods subdivision, which is located east of the site, is only 60 percent developed even though the development is 15 to 20 years old. (R. 1255).

Collins also testified that the end use plan of the landfill would not cause any depreciation or change in the area's development trend. (R. 1263). He claimed that the landfill, even during its operation, would not deter the residential growth east of the site (R. 1271). He testified that residential development has continued near several Illinois landfills. The Veugler landfill near Crystal Lake in McHenry County was used to illustrate this point. He stated that construction of homes near that landfill had continued and expanded (R. 1267-1270). He also testified that the proposed screening and berming would have a positive effect on the neighborhood and were significant when considering the effect on property values (R. 1262). Collins testified that only one piece of property in the area will lessen in value due to the landfill. According to Collins, this property, located just off the southwest corner of the landfill's boundary, would lessen in value no matter what type of screening is used. (R. 1273). However, he claimed that other properties in the area would not diminish in value if the landfill was sited. (R. 1269). Collins never addressed farmland values because he felt that farms were not the highest and best use of the land. (R. 1360).

Herbert Harrison was the first County of McHenry witness who testified regarding Criterion 3. He stated that the proposed landfill did not minimize incompatibility and the impact on property values. (R. 2850). He attacked Waste Management's report regarding this Criterion as having "no substance." That is, he believed an insufficient amount of information had been gathered by Waste Management. (R. 2845, 2846).

Harrison testified that there were 11 homes within a quarter of a mile of the landfill and 14 homes within a half a mile. (R. 2880). He also was concerned that if odors were emitted from the landfill, they would be blown by the wind to the subdivisions east of the site. (R. 2812). Harrison, though, suggested that if the final form of the landfill was limited to the existing contours, instead of 80 to 90 feet above them, the impact of the landfill on the properties east of the site would be minimized. (R. 2946). Harrison stated that the obvious trend in the building of single family residences was from Route 47 westward toward the site. (R. 2849). He concluded that if residences were built on the site, they would merely be "a continuation of the slow but steady trend that has occurred there over the past 20 years." (R. 2845). Harrison also acknowledged that the population of Seneca Township has been projected to grow by less than 1,000 people from 1980 to the year 2005. (R. 2899).

Harrison pointed out that Waste Management's report by Collins did not appraise any values of property east of the site. Harrison claimed that this was not done, because Collins believed the technology of the landfill was such that it would not adversely impact on those properties. According to Harrison, that was a wrong assumption. (R. 2816). Harrison also stated that a multiple regression analysis of area property values should have been run by Waste Management to accurately investigate the landfill's impact. (R. 2826). Harrison noted that Waste Management also did not investigate the potential loss of value to the properties east of the site, due to the fact that the high final elevation of the landfill would block the late evening sun. (R. 2836).

The other County of McHenry witness who addressed Criterion 3 was Steve Aradas. Aradas is the Director of the McHenry County Department of Planning. (Cross-Petitioner's Reply Brief, p. 32). He testified that the site is not located to minimize incompatibility. (R. 2971). Aradas stated that the only way to minimize incompatibility was to locate the landfill in an industrial area. He particularly emphasized incompatibility due to the fact that the landfill final form will extend 80 to 90 feet above the existing contours. He discounted the use of berms as having minimizing effect. (R. 2979). Aradas also claimed the proposed recreational end use would be an anomaly in the agricultural type of area surrounding the site. (R. 2968).

He testified that within a 1 1/2 mile radius of the site were 94 single lot residences and 24 farmsteads. (R. 2961). He stated that the predominant land use east of this site was residential. (R. 2965). He claimed that the trend along Route 176 is toward residential use. Consequently, according to Aradas, residential development would be more compatible than a landfill. (R. 2972).

However, because the site is considered "prime farmland," Aradas testified that the highest and best use for the site would be farming. (R. 2977, 2978). He stated that the County's zoning and Comprehensive Land Use Plan objectives are to protect productive farmland from development. (R. 2463, 2967).

In summary, Waste Management presented testimony which stated that the landfill's design would minimize incompatibility with the surrounding area. Waste Management contended that the presence of berms and landscapes would minimize the impact on the landfill's neighbors. Also, witnesses for Waste Management stated that a landfill site would not be inconsistent with the County Plan or detrimental to the residential development of the area. In addition, Waste Management claims that only one piece of property would suffer a loss in value due to the landfill.

The County of McHenry presented witnesses who testified in opposition to Waste Management's position. One witness stated that since the site is considered "prime farmland," it should be

preserved as an agricultural use. It was claimed that such a use would serve the objectives of the County Plan and the areas zoning. The development trend of the area was stated to be residential. It was concluded by the County of McHenry witnesses that a residential use of the site would be more compatible with the surrounding area than a landfill use. These witnesses also claimed that the berms and landscaping would not minimize incompatibility, especially since the final landfill form would be 80 feet higher than the existing contours of the site. Waste Management's study concerning had values was also criticized as being insufficient and inaccurate.

With regard to this Criterion "an applicant must demonstrate more than minimal efforts to reduce the landfill's incompatibility." Waste Management of Illinois, Inc. v. Illinois Pollution Control Board, 123 Ill. App. 3d 1075, 1090, 79 Ill. Dec. 415, 463 N.E.2d 969, 980 (2d Dist. 1984). However, the Second District, following E & E Hauling, Inc. v. Pollution Control Board, 116 Ill. App. 3d 586, 71 Ill. Dec. 587, 451 N.E.2d 555 (2d Dist. 1983) also stated that "an applicant must demonstrate it has done or will do what is reasonably feasible to minimize incompatibility." Waste Management of Illinois, Inc., 123 Ill. App. 3d at 1090, 463 N.E.2d at 980. The Board assumes that the same conditions apply to the requirement to "minimize the effect on the value of surrounding property." It is apparent from the record that the applicant has studied the surrounding area. The site is mostly bordered by agricultural land with scattered residences, particularly to the east. A landfill could reasonably be located in such an area. Waste Management's proposal reflects more than a token effort to minimize incompatibility. Waste Management presented an extensive plan for setbacks, berms, and landscaping. Their proposal seems to include that which would be considered "reasonably feasible to minimize incompatibility." Therefore, viewing this record in light of the above case law, the Board finds that the County Board's decision with regards to this criterion was against the manifest weight of the evidence. The Board hereby reverses the County Board's finding that Criterion 3 was not met.

CROSS APPEAL

Sufficiency of Application

The Cross-Petitioners contend that the County Board should have dismissed Waste Management's application, because it did not contain all the information which is required by the Articles of Rules and Procedures of the Regional Pollution Control Facility Committee (Hearing Officer's Exhibit #6). Specifically, the Cross-Petitioner's claim that the application did not contain "all land uses within a one-mile radius of the site" (Article IV, Section 1(A)(8)(g)), "property values of the surrounding properties" (Article IV, Section 1(D)(5)(b)(4)(c)(1)), and the "financial condition of Waste Management of Illinois, Inc."

This Opinion constitutes the Board's findings of fact and conclusions of law in this matter.

IT IS SO ORDERED.

B. Forcade, R. Flemal, and J.T. Meyer concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion was adopted on the 5th day of December, 1986, by a vote of 6-0.

Dorothy M. Gunn, Clerk
Dorothy M. Gunn, Clerk
Illinois Pollution Control Board