ILLINOIS POLLUTION CONTROL BOARD
November 15, 2007

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO SOLID	)	R07-8
WASTE LANDFILL RULES, 35 ILL. ADM.	)	(Rulemaking - Land)
CODE 810 and 811	)	

Adopted Rule. Final Notice.

OPINION AND ORDER OF THE BOARD (by A.S. Moore):

Today the Board adopts the proposed rule for final notice under the Illinois Administrative Procedure Act (5 ILCS 100/1-1 *et seq*. (2006)). *See generally* 415 ILCS 5/27, 28 (2006).

The adopted rules amend the Board's solid waste disposal regulations and standards for new solid waste landfills. *See* 35 Ill. Adm. Code 810, 811. On July 27, 2006, the Illinois Chapter of the National Solid Wastes Management Association (NSWMA) initiated this rulemaking by filing with the Board a proposal having the support and concurrence of the Illinois Environmental Protection Agency (Agency). The proposal intended primarily to update the Board's regulations in order to reflect practical experience gained through the implementation of those rules and the expanded technical and scientific knowledge achieved since the Board first adopted these standards in 1990. *See* Development, Operating, and Reporting Requirements for Non-Hazardous Waste Landfills, R 88-7 (Aug. 17, 1990).

On July 12, 2007, the Board adopted its first-notice opinion and order in this proceeding. *See* 31 Ill. Reg. 11107, 11112 (Aug. 3, 2007); *see also* 31 Ill. Reg. 13373 (Sept. 21, 2007) (notice of correction). The proposal adopted here is substantively unchanged from that adopted in the Board's October 4, 2007 second-notice opinion and order.

In this opinion, the Board first provides the procedural history of this rulemaking. The opinion then summarizes the adopted rules before addressing their technical feasibility and economic reasonableness. The Board's order then sets forth the adopted amendments for final-notice publication in the *Illinois Register*.

PROCEDURAL HISTORY

On July 27, 2006, NSWMA submitted a "Proposal to Amend Certain Pollution Control Board Regulations Related to Solid Waste Management Facilities" (Prop.). In an order dated August 17, 2006, the Board accepted the proposal for hearing but directed NSWMA to address two identified information deficiencies in writing before any scheduled hearing.

In a letter dated November 21, 2006, the Board requested that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study of this

rulemaking proposal. *See* 415 ILCS 5/27(b) (2006). On December 8, 2006, the Board received a response from DCEO stating that, based upon its review of the request and in light of its continued financial constraints, DCEO had determined not to conduct a study of the economic impact of the proposal.

On January 16, 2007, NSWMA filed the pre-filed testimony of Thomas A. Hilbert (Hilbert Test.) and the pre-filed testimony of Terry R. Johnson (Johnson Test.). Also on January 16, 2007, NSWMA filed supplemental information in response to the Board's August 17, 2006 order and its first *errata* sheet (Errata 1). On January 26, 2007, NSWMA filed its second *errata* sheet (Errata 2). The first hearing in this proceeding took place in Chicago on January 29, 2007 (Tr.1). Four exhibits (Exh. 1-4) were admitted into the record at the first hearing.

On February 14, 2007, the Agency filed the pre-filed testimony of Gwenyth Thompson (Thompson Test.) and the pre-filed testimony of Christian J. Liebman (Liebman Test.). On February 15, 2007, NSWMA filed the pre-filed testimony of Thomas A. Hilbert regarding the economic impact of the proposed amendments (Hilbert Test. 2). On the same date, NSWMA also filed its third *errata* sheet (Errata 3). The second hearing in this proceeding took place in Springfield on February 28, 2007 (Tr.2). Four exhibits (Exh. 5-8) were admitted into the record at the second hearing.

On March 21, 2007, NSWMA filed a comment made jointly with the Agency (PC 1). On March 23, 2007, the Board received a public comment filed by Kathy Andria on behalf of the American Bottom Conservancy and the Illinois Sierra Club (PC 2). Also on March 23, 2007, the Board received a public comment filed by Joyce Blumenshine on behalf of the Heart of Illinois Group of the Sierra Club (PC 3).

On July 12, 2007, the Board adopted its first-notice opinion and order in this proceeding. *See* 31 Ill. Reg. 11107, 11112 (Aug. 3, 2007); *see also* 31 Ill. Reg. 13373 (Sept. 21, 2007) (notice of correction).

On August 7, 2007, the Board received a public comment from William R. Schubert, Director of Disposal Operations for Waste Management (PC 4). On August 20, 2007, the Board received public comments from Chris Peters, General Manager of Veolia Environmental Services' Orchard Hills Landfill (PC 5); Todd Watermolen, Vice President of Engineering and Compliance, and Anndelee J. Gregg, Project Hydrogeologist, of Veolia Environmental Services (PC 6); and James Lewis, General Manager of Veolia Environmental Services' Zion Landfill (PC 7). On August 29, 2007, the Board received a public comment from Ron Sendmeyer, General Manager of Veolia Environmental Services' Sumner Landfill (PC 8). On September 6, 2007, the Board received a public comment from the Agency (PC 9).

In an order dated October 4, 2007, the Board adopted proposed rules for second-notice review by the Joint Committee on Administrative Rules (JCAR). At a meeting on November 13, 2007, JCAR issued its certificate of no objection to the proposed rules.

SUMMARY AND DISCUSSION OF ADOPTED RULES

Substantive Amendments

This opinion and order adopts substantive changes to the Board's nonhazardous solid waste landfill rules. Those adopted changes pertain to issues including leachate monitoring, hydrogeologic site investigation, groundwater monitoring systems, and groundwater quality standards. The Board below briefly addresses each of the substantive changes adopted for final notice.

Leachate Monitoring (Proposed Amendments 4 through 9)

The Board adopts several amendments to the leachate monitoring requirements applicable to chemical and putrescible waste landfills under Section 811.309. In his testimony, Christian Liebman of the Agency stated that "[l]eachate monitoring can help determine the degree to which a landfill poses a threat to the groundwater by ascertaining what types of contaminants are leaching out of the wastes that have been disposed in the landfill and in what concentrations." Liebman Test. at 1. The adopted amendments address leachate monitoring parameters, monitoring locations, and monitoring frequency.

Leachate Monitoring Parameters (Sections 811.309(g)(1), (g)(2)(G) and (g)(3)(D)). The adopted rules require monitoring leachate from units that dispose of putrescible or chemical wastes for 202 constituents likely to be found in that leachate. Prop. at 4. This adopted rule replaces the current provision that requires leachate monitoring parameters to be chosen on the basis of a performance standard specified under Section 811.319(a)(2)(B).

Liebman testified that it has been the Agency's practice since it began permitting landfills under Parts 810-814 in the early 1990s to require monitoring of leachate for all parameters for which groundwater must be monitored and in addition for all other parameters that may be found in the leachate. Liebman Test. at 2; *see* 35 Ill. Adm. Code 810-814. Liebman stated that, while the Agency has required this monitoring by permit, the proposal would codify this practice in the Board's rules. Liebman Test. at 2; Tr.1 at 28, 35, 36. The adopted rule adds a list of 202 constituents for which leachate samples must be tested. Prop. at 3.

NSWMA stated that the Agency derived the list "from its 'Attachment 1' to Appendix C 'Instructions for the Groundwater Protection Evaluation for Putrescible and Chemical Waste Landfills' of the Illinois EPA's LPC-PA2 and LPC-PA19 'Instructions for a Significant Modification Demonstrating Compliance with 35 Ill. Adm. Code Subtitle G, Part 814, Subpart C.'" Prop. at 4. Mr. Terry Johnson of Waste Management testified that, on the basis of monitoring leachate in Illinois and similar lists from other states, the list of constituents is "comprehensive." Tr.1 at 26. The list reflects a review of literature dating from the early 1990s and is broad enough to include constituents that may be found in municipal solid waste, industrial waste, and chemical waste landfills. *Id*. at 29-30, 35. Ms. Gwenyth Thompson of the Agency testified that the list is also based on federal groundwater monitoring requirements for municipal solid waste landfills. *Id*. at 32, citing 40 C.F.R. 141.40, 40 C.F.R. 258, Appendix 1.

The Board adopts changes to Sections 811.309(g)(2)(G) and (g)(3)(D) that replace the performance standard with the requirement to monitor for the list of 202 constituents. While

Section 811.309(g)(2)(G) addresses leachate from units accepting putrescible waste, Section 811.309(g)(3)(D) pertains to leachate from only chemical waste units. The Board also adopts the list of 202 leachate constituents in Appendix C to Part 811.

In addition, NSWMA states that, at the suggestion of the Agency and with its concurrence, it proposed to allow the Agency "to require by permit *less* leachate sampling than might otherwise be required in the regulations as long as compliance with other regulatory provisions is ensured." Prop. at 3 (emphasis in original). NSWMA notes that existing rules provide the Agency authority to require additional testing as necessary to ensure compliance with Board rules. *Id*., *see* 35 Ill. Adm. Code 811.309(g)(1). NSWMA states that "[t]his amendment is designed merely to allow the Illinois EPA flexibility to accommodate individual site conditions." Prop. at 3. In his testimony, Liebman stated that some landfills on a case-by-case basis may be able to demonstrate that leachate sampling and testing may not be necessary or appropriate at their specific site. Tr.1 at 37. In those cases, he testified, "we thought we should have the ability to eliminate those unnecessary parameters." *Id*.

The Board finds that these changes to the leachate monitoring requirements provide more specificity to the rules and codify the Agency's permitting practice under the existing performance standard. The Board also finds the list of 202 constituents developed by the Agency to be representative of the constituents likely to be found in chemical and putrescible waste landfill leachate. The Board adopts the proposed changes to Section 811.309(g), and the list of constituents at Section 811.Appendix C for final notice.

Leachate Monitoring Locations (35 Ill. Adm. Code 811.309(g)(4)). In his testimony, Christian Liebman of the Agency stated that, "[w]ithin a landfill, leachate quality can vary from one area to another." Liebman Test. at 2. Liebman attributed this variation to causes such as differences in the age of wastes, differences in types of waste disposed, and differences in the volume of water percolating through the waste. *Id*. at 2-3. Liebman further testified that, if a leachate monitoring program cannot detect this variability, it "may underestimate the strength of the leachate from some areas of the landfill. Also, in some cases, constituents contained in the leachate produced in one area of the landfill may not be detected at all due to dilution by leachate from other areas." *Id*. at 3.

The Board adds a new subsection at Section 811.309(g)(4), which requires a minimum number of leachate monitoring locations. Prop. at 4. Specifically, that subsection requires "a minimum number of four leachate monitoring locations and at least one for every 25 acres within a landfill unit's waste boundary unless the operator demonstrates, through the permitting process, that fewer leachate monitoring locations are needed." *Id*. Liebman stated that this proposal will ensure either that the landfill can detect leachate variability or that its operator has satisfactorily demonstrated that circumstances at the site require fewer monitoring locations. Liebman Test. at 3; *see also* Prop. at 4-5.

The Board finds that requiring the establishment of a leachate monitoring network with at least four locations will help in characterizing the leachate produced by a landfill unit by giving consideration to variation in leachate quality. Furthermore, the Board believes that this language

allows the Agency flexibility to approve an alternate monitoring network. Accordingly, the Board adopts the proposed changes for final notice.

Frequency of Leachate Monitoring (35 Ill. Adm. Code 811.309(g)(5)). The Board's regulations now require quarterly leachate monitoring at least for the first two years of operation, followed by semi-annual monitoring. Prop. at 5; 35 Ill. Adm. Code 811.309(g)(1). The adopted rules add a new subsection requiring semi-annual leachate monitoring. Prop. at 5. The adopted rules also require sampling from each monitoring location at least once every two years. Liebman Test. at 4.

NSWMA argued that the two years of quarterly monitoring occur at "an early stage in landfill development and yielded data not necessarily representative of long-term conditions in the landfill." Prop. at 5; *see* Tr. at 52, 59. NSWMA further argued that the proposed "[d]ata collection on a semi-annual basis is sufficient to characterize leachate quality levels." Prop. at 5. Liebman concurs that "[t]he proposed frequency is sufficient to adequately characterize leachate." Liebman Test. at 4. Liebman also testified that the proposal would treat landfills with varying numbers of monitoring points more equally. "For example, under the current regulations, a landfill with four leachate monitoring points must perform four times as much leachate sampling as a landfill with one point. Under the proposed amendments, two such landfills would do the same amount of leachate sampling." *Id*. Mr. Eric Ballenger of Allied Waste testified that the proposal would not change the frequency of the separate required groundwater monitoring, which relies on perimeter wells to determine whether there has been a release from the landfill. Tr.1 at 51. Elaborating on this point, Mr. Tom Hilbert of William Charles Waste Companies testified that leachate monitoring evaluates what is contained within a contained landfill system "and not what is potentially in the environment." *Id*. at 58.

In his testimony, Hilbert also addressed the economic impact of this amendment. Hilbert testified that, for each facility, "[t]he current estimated annual cost for leachate monitoring is $7,200." Hilbert Test. 2 at 3; Tr.2 at 11. If adopted, the amendment would decrease leachate monitoring costs by $4,700 for each of the 51 active municipal solid waste landfills in the state and by approximately $240,000 industry-wide. Tr.2 at 12. Hilbert notes that his analysis does not address the economic impact of the amendment either upon the Agency or local regulatory authorities. Hilbert Test. 2 at 1.

The Board finds that a semi-annual leachate sampling frequency from the beginning of waste operation at a landfill unit is adequate for characterizing the leachate. The Board agrees with the proponent and the Agency that the initial quarterly monitoring frequency may not be representative of long-term landfill conditions. Further, the Board finds that requiring leachate monitoring at more than one location accounts for any variability in leachate quality. In light of this, the Board adopts the proposed changes to the leachate sampling frequency at Section 811.309(g)(5) for final notice.

Update References to Groundwater Standard (Proposed Amendment 10) (35 Ill. Adm. Code 811.315(e)(1)(G)(i))

The Board has proposed "to replace the reference to 'public or food processing water supply standard at 35 Ill. Adm. Code 302' with a reference to the groundwater standards found at 35 Ill. Adm. Code 620." Prop. at 5-6. NSWMA claimed that the original landfill rules included this reference to the public or food processing water supply standards. *Id*. at 6; *see* Development, Operating, and Reporting Requirements for Non-Hazardous Waste Landfills, R 88-7, slip op. at 54 (Aug. 17, 1990). NSWMA argued that, with the subsequent adoption of groundwater standards (*see* Groundwater Quality Standards (35 Ill. Adm. Code 620), R 89-14(B) (Nov. 7, 1991)), the public or food processing water supply standards appear no longer to apply to groundwater. Prop. at 6, citing 35 Ill. Adm. Code 620.130 (exemption); *see also* Thompson Test. at 2. NSWMA further argued that "groundwater at landfills is now regulated under a more inclusive list of constituents found in the [Part] 620 regulations." Prop. at 6; *see* 35 Ill. Adm. Code 620.Subpart D.

Elaborating on this issue, Ms. Thompson testified that this proposed amendment incorporates a list of parameters from 35 Ill. Adm. Code 620, "not the *standards* associated with those parameters." Thompson Test. at 1-2 (emphasis in original). Ms. Thompson further testified that "[l]andfills subject to 35 Ill. Adm. Code 811 *have their own standards*." *Id*. at 2 (emphasis in original). Ms. Thompson stated that the Agency has not and will not apply the public or food processing water supply standards to landfills and that the Agency does not apply groundwater quality standards to landfills. *Id*.

Ms. Thompson compared the parameters listed in the public or food processing water supply standards at 35 Ill. Adm. Code 302 with the parameters listed in the groundwater standards at 35 Ill. Adm. Code 620. Ms. Thompson testified that "there are 11 more inorganic parameters and standards in [Part] 620 than there are in [Part] 302. In addition, there are 40 more organic parameters and standards in [Part] 620 than there are in [Part] 302." Thompson Test. at 2. On the basis of this comparison, Ms. Thompson stated that, "by virtue of having more parameters, [Part] 620 is more comprehensive for these rules than [Part] 302." *Id*.

Ms. Thompson also compared the standards for the 22 parameters that are listed at both Part 302 and Part 620. For 13 of those parameters, the standards in Part 620 were either as conservative or more protective than the standards in Part 302. Thompson Test. at 2. With regard to remaining nine parameters, Ms. Thompson restated her previous testimony that the Class I groundwater standards "have been developed specifically to protect human health and the environment in potable water supplies." *Id*.; *see* 35 Ill Adm. Code 620.410. However, Ms. Thompson stated that these standards are moot with regard to these adopted rules because they would only use the list of parameters in Part 620 and not the water quality standards provided there. Thompson Test. at 2-3.

Ms. Thompson testified that landfills regulated under 35 Ill. Adm. Code Part 811 are subject to the Applicable Groundwater Quality Standard (AGQS). Thompson Test. at 3. Ms. Thompson defined the AGQS as the ambient concentration determined by a statistical analysis of the existing groundwater quality. She further stated that the AGQS applies "at the edge of the zone of attenuation or compliance boundary (100 feet from the edge of the waste or the property boundary, if closer)." *Id.* Ms. Thompson clarified that, if natural background concentrations are

lower that those allowed by any standard, then the landfill must meet the lower concentration. *Id*.

Ms .Thompson elaborated that, "within the zone of attenuation (the area between the waste and the 100-foot compliance boundary), Class IV groundwater applies." Thompson Test. at 3, citing 35 Ill. Adm. Code 620.240(a) (referring to Parts 811 and 814). The Class IV groundwater quality standards allow for Maximum Allowable Predicted Concentrations (MAPC), which operators are required to develop "using a contaminant transport model as an early warning mechanism." Thompson Test. at 3. Ms. Thompson testified that "MAPCs apply at wells located midway between the waste boundary and compliance boundary. If an MAPC is exceeded 50 feet from the waste boundary, the AGQS may potentially be exceeded at the compliance boundary." *Id.* at 3-4. This exceedence would then trigger an assessment designed to prevent an exceedence of the AGQS at the compliance boundary. *Id*. at 4. Ms. Thompson further testified that, "outside the landfill zone of attenuation, the applicable groundwater quality standard is the standard as defined by 35 Ill. Adm. Code 620." *Id*.

The Board replaces the reference to 'public or food processing water supply standard at 35 Ill. Adm. Code 302' with a reference to the groundwater standards found at 35 Ill. Adm. Code 620 at Section 811.315(e)(1)(G)(i) for final notice. The Board notes that this adopted rule replaces the list of constituents under public or food processing water supply standards with a more comprehensive list of constituents under the Board's groundwater standards. The Board believes that it is appropriate to use the constituents from groundwater standards, since the list of constituents in Section 811.315(e)(1)(G) is intended to characterize the groundwater under a landfill unit.

Groundwater Monitoring System (Proposed Amendments 12 and 16) (35 Ill. Adm. Code 811.318(e)(6), (e)(7)

The Board adopts changes to the groundwater monitoring system requirements concerning the measurement of well depth. Specifically, the Board deletes the requirement with regard to measuring the depth of wells at Section 811.318(e)(6)(B) and replaces it with a new subsection (e)(7). Prop. at 6. This new subsection requires an operator to measure the depth of groundwater monitoring wells that do not contain dedicated pumps on an annual basis. Prop. at 7. The new subsection also requires that, at groundwater monitoring wells containing dedicated pumps, the operator must measure the depth of the well every five years or when the pump is serviced. *Id.*

Mr. Johnson stated that "the purpose of this well-depth measurement was to measure whether or not there's been siltation occurring at the monitoring wells." Tr.1 at 68. Johnson further testified that monitoring procedures used when the Board adopted the original regulations often used a bailer, which introduced turbidity into the well. *Id*. Johnson further testified that these procedures risked cross-contamination. *Id*. at 66-69. NSWMA argued that dedicated pumps have since become the industry standard. Prop. at 7. Johnson testified that these dedicated sampling pumps are made of Teflon and are certified to be free of organics and other contaminants. Tr.1 at 68-89. Johnson further stated that these pumps are enclosed within a steel or PVC well. *Id*. at 70. NSWMA argued that "a significant amount of scientific literature has

commented on the superior qualities of dedicated pumps used in groundwater wells." *Id*. Johnson stated, however, that regularly removing these dedicated pumps for well depth measurements negates these qualities. *See* Johnson Test. at 7.

In his testimony, Hilbert addressed the economic impact of this amendment. Hilbert testified that, for wells with dedicated pumps, eliminating the requirement to measure well depth at each sampling event will reduce the labor involved in collecting samples at each well. Hilbert Test.2 at 4. Hilbert stated, however, that "[i]t is not a tangible cost that can be easily quantified." *Id*. Hilbert further stated that it also difficult to measure the benefit of the reduced risk of cross-contamination in dedicated pumps. *Id*. Although Hilbert acknowledged that dedicated pumps are more expensive to install and maintain, NSWMA believes that this amendment provides " a modest positive economic effect by reducing the frequency of total well depth measurements." *Id*.

The Board adopts revisions to measurement of well depth in order to reflect the advancement of sampling technology since the adoption of the landfill regulations. As noted by NSWMA, the use of dedicated pumps has become the industry standard. The Board agrees that requiring the pumps to be removed to measure the well depth at every sampling event negates their intended purpose. The Board adopts the proposed amendments to Section 811.318(e)(6) and (e)(7) for final notice.

Groundwater Monitoring (Proposed Amendments 18-20, 22-28)

The Board adopts several changes to the groundwater monitoring requirements. These adopted changes are addressed by proposed amendments 18-20 and 22-28, which are discussed below.

Criteria for Monitoring Constituents (35 Ill. Adm. Code 811.319(a)(2)(A)(ii)). The Board deletes the reference to a list of constituents for which the Board has adopted a public or food processing water supply standard or a groundwater standard at subsection (a)(2)(A)(ii) and replaces it with a minimum list of 14 specific indicator constituents. Prop. at 8. NSWMA stated that the constituents on the proposed list effectively indicate a release of leachate because they "tend to be mobile, and/or exist at better concentration contrast between leachate and background groundwater, which make them effective and reliable detection monitoring parameters." Prop. at 8; *see also* Johnson Test. at 9.

NSWMA stated that, although current Agency practice now requires monitoring for dissolved iron and manganese, the proposed list does not require that those two constituents be sampled and monitored. Prop. at 8. Mr. Johnson stated that NSWMA proposed to remove these constituents from the quarterly sampling list because they occur naturally in groundwater both upgradient and downgradient from landfills, "even at facilities that have not yet begun to accept waste." Tr.1 at 77. Mr. Johnson further stated that dissolved iron and manganese are therefore "not very effective detection monitoring parameters" and that the proposal lists more effective and more conservative parameters. *Id*. at 77, 79.

The Board removes from the detection monitoring program a number of total metals now monitored on an annual basis. Prop. at 8; *see* Johnson Test. at 9. Mr. Johnson stated that these samples of these metal compounds are not filtered to remove sediments. Tr.1 at 80. Consequently, Mr. Johnson stated that "these sediments often compromise the sample results as the suspended sediments often contain metals, which bias the results." Johnson Test. at 9. NSWMA claimed that, because these metals are not mobile in groundwater, occur naturally in the suspended sediment of a sample, or are present in leachate at concentrations insufficient to contrast with groundwater, they are not effective for monitoring mobility or indicating groundwater problems. Prop. at 8; Johnson Test. at 9.

Ms. Thompson emphasized that, although the proposal deletes total metal monitoring from detection monitoring, the proposal retains it for assessment monitoring. Thompson Test. at 4. Ms. Thompson testified that, although federal regulations require total metal monitoring for detection monitoring, those regulations allow a state to propose an alternative monitoring list and to demonstrate to USEPA that it is an adequate substitute. *Id.*, citing 40 C.F.R. 258.Appendix I. The Agency sought and received USEPA's approval for removing a number of parameters from Illinois' detection monitoring program. Thompson Test. at 4, 7-13.

Ms. Thompson further testified that the Agency requires new landfills to develop background concentrations for a number of parameters, including most of those on the assessment monitoring list. Thompson Test. at 4. Ms. Thompson emphasized that those background concentrations "are available for comparison, should assessment monitoring be required in the future." *Id*. Ms. Thompson further noted that Board regulations require establishing a background concentration at locations unaffected by the landfill "for any parameter that is detected in groundwater during assessment monitoring." *Id*. at 4-5, citing 35 Ill. Adm. Code 811.319(b)(5)(C).

In his testimony, Mr. Hilbert addressed the economic impact of this amendment. He noted that the it does not require quarterly monitoring of two parameters, total organic carbon and phenols, for which testing is more expensive. Tr.2 at 13. Mr. Hilbert estimated that the amendment would result in annual cost savings of $2,800 per facility and $143,000 industry-wide. *Id*. at 13-14.

NSWMA explained the rationale for the 50% threshold in its proposed new subsection (iv). Mr. William Schubert of Waste Management stated that NSWMA and the Agency, after examining landfills with various percentages of non–municipal solid waste, judged that the leachate characteristics of landfills would not substantially change unless more than 50% of their waste volume is non-municipal solid waste. Tr.1 at 72-73.

The Board finds that changes to provisions for choosing monitoring constituents at Section 811.319(a)(2)(A) reflect the Agency's permitting practice and add clarity to the rules by including a specific list of indicator constituents. The Board agrees that including the monitoring of certain metals in the assessment monitoring is appropriate given that the metals are not very mobile in groundwater and are naturally occurring. The Board adopts the proposed changes for final notice.

Organic Constituents Monitoring (35 Ill. Adm. Code 811.319(a)(3)(A)(i)). The Board adopts three changes to the requirements for organic chemicals monitoring. First, the Board adds a specific list of organic chemicals for which groundwater must be monitored. Prop. at 8-9. The list of constituents adopted at Section 811.319(a)(3)(A)(i) is derived from federal regulations and includes volatile organic compounds (VOCs), phenols, and oil and grease. *Id*. at 9, citing 40 C.F.R. 141.40, 40 C.F.R. 258.Appendix I. In his testimony, Mr. Johnson referred to an exhaustive multi-year study of leachate data from Illinois landfills, which "confirmed that VOCs and phenols comprise the vast majority of the mass of organic compounds in leachate." Johnson Test. at 10. The list eliminates specific less mobile, semi-volatile, pesticide/herbicides and PCBs. Prop. at 9. However, NSWMA argued that "elimination of these parameters from this list would not significantly reduce the degree of environmental protection in that nearly all detections of the listed organic compounds are represented on the proposed list." *Id*. Furthermore, Mr. Johnson testified that "the organics that are eliminated from this list are included in the assessment monitoring program." Johnson Test. at 10.

Second, the Board revises an existing cross-reference in Section 811.319(a)(3)(C) to Section 811.319(a)(1)(A) to refer instead to Section 811.319(a)(3)(A), which requires groundwater monitoring for specified organic parameters. Prop. at 9. The Board notes that both NSWMA and the Agency "believe that this revision merely corrects a typographical error and makes the intent of the regulations clear." *Id*.

Third, the Board increases the frequency of monitoring for the specified organic parameters from annual to semi-annual for municipal solid waste landfill units. Prop. at 9. NSWMA states that "[t]his increase in sampling frequency serves to enhance the collection of relevant data." *Id*. In his testimony, Mr. Hilbert addressed the economic impact of this amendment. He first notes that the list of constituents does eliminate monitoring for certain organic constituents and for the total value of specific inorganic constituents. Hilbert Test. 2 at 6. Mr. Hilbert then estimates that the amendment would reduce costs by $10,000 for each facility and by $510,000 industry-wide. *Id*. at 6-7.

Again, the Board finds that including a list of organic constituents adds specificity to the rules and places emphasis on contaminants found in nonhazardous landfill leachate. Further, the increase in monitoring frequency for municipal solid waste landfill make the board rules consistent with the federal requirements under 40 C.F.R. Part 258. The Board adopts the proposed changes to organic chemicals monitoring for final notice.

Confirmation Monitoring (35 Ill. Adm. Code 811.319(a)(4)(A)(i)). The Board adopts several changes to the provisions for confirming monitored increases. First, the Board amends subsection (a)(4)(A)(i), which required implementation of confirmation procedures when any monitored constituent shows a progressive increase over four consecutive monitoring events. 35 Ill. Adm. Code 811.319(a)(4)(A)(i). The adopted rules provide that confirmation monitoring is required only when monitoring for any inorganic constituent increases over eight consecutive monitoring events. Prop. at 9-10. This rule intends to "provide greater assurance based upon statistical reliability that any identified progressive increases are due to actual contamination rather than chance." *Id*. at 10. NSWMA argued that the current language of the regulation results in frequent false positive results. *Id*. In his testimony, Mr. Johnson stated that the

probability of a false positive under the current regulations is "just about 100 percent[,] near certainty." Tr.1 at 102; *see generally* Exh. 4 (Statistical Guidelines for Use of Consecutive Increases in Groundwater Monitoring Programs). NSWMA argued that its proposal "reduce[s] the chance of false positives to approximately 5%, which is consistent with current US EPA guidance and best practices." Prop. at 10; *see* Tr.1 at 99, 101.

In his testimony, Mr. Hilbert addressed the economic impact of this amendment. He stated that reducing the number of false positive monitoring results "will reduce the amount of confirmation sample events and the potential for unnecessarily triggering an assessment monitoring requirement." Hilbert Test. 2 at 7. Mr. Hilbert stated that, although the amendment will reduce assessment monitoring, "[t]he actual economic effect of this specific change is difficult to quantify." *Id*.

Next, the Board amends the time allowed for verifying an observed increase in the concentration of a constituent under Section 811.319(a)(4)(B)(i) from 45 days of the initial "observation" to 90 days of the initial "sampling event.". 35 Ill. Adm. Code 811.319(a)(4)(B)(i). NSWMA argued that "[t]his 45 day window in which to sample and verify an increase is difficult to satisfy while following all the requisite data quality assurance and quality control procedures consistent with US EPA guidance." Prop. at 10. In his testimony, Mr. Johnson stated that verification may require two weeks to sample monitoring wells, followed by three weeks to perform analytical work on those samples, followed by additional time to review and validate those analyses, followed by a ten-day period for data quality review. Tr.1 at 105. Mr. Johnson also testified that, if the data quality review raises any issues, then additional time is required for correction or re-submission of the results. *Id*.

NSWMA stated that the Agency concurs with its proposal to allow 90 days to verify observed increases in the concentration of constituents. Prop. at 10. In addition to allowing the operator adequate time for sampling, analysis, and quality control, NSWMA argued that a 90-day period "also allows verification sampling to potentially be conducted during the next routine quarterly sampling event, thus maximizing an operator's efficiency." *Id*. Mr. Schubert provided two reasons for the 90-day period, as opposed to a shorter duration. First, he stated that laboratory review and data quality review typically cannot be performed within 45 days. *Id*. at 110. Second, he stated that operators generally monitor groundwater with low permeability that does not travel a significant distance in a 45-day period. *Id*. at 110-11. He suggested that successive samples effectively test the same water, compromising the independence of the data and masking any changes over time. *Id*.

The Board also amends language regarding the point at which that 90-day verification period begins. The subsection required verification sampling with 45 days of "the initial observation." 35 Ill. Adm. Code 811.319(a)(4)(B)(i). NSWMA stated that amending the start of the verification process to the "'initial sampling event' is designed merely to clarify the starting point." Prop. at 10.

In his testimony, Mr. Hilbert addressed the economic impact of this amendment. He stated that "[t]he actual economic effect of the proposed change will vary significantly from site to site and is not directly quantifiable." Hilbert Test. 2 at 8. As a basis for a rough estimate,

however, he stated that "[a] typical facility may be required to perform verification sampling on at least one parameter in 50% of the wells for every quarterly sampling event." *Id*. Based on assumed costs of this sampling, he estimated that the amendment would result in annual savings of $10,000 for each facility and annual savings of $510,000 industry-wide. *Id*.

In addition to the changes above, the Board amends the confirmation procedures pertaining to actions to be undertaken by an operator upon confirmation of an increase. NSWMA stated that, if there is a confirmed increase in the concentration of a constituent, "[c]urrent practice is for an operator to submit a letter to the Illinois EPA discussing the confirmed increase and the operator's determination as to the source of the increase." Prop. at 10; Tr.2 at 26; *see* 35 Ill. Adm. Code 811.319(a)(4)(B)(iii). The operator files this notification with the Agency "within ten days of the determination." 35 Ill. Adm. Code 811.319(a)(4)(B)(iii). In his testimony, Mr. Hilbert stated that this language doesn't "require the Agency to review that explanation and actually agree with it." Tr.1 at 113; *see* 35 Ill. Adm. Code 811.319(a)(4)(B)(iii). The Board adopts three amendments to this subsection.

The Board requires that any notification of a confirmed increase in the concentration of a constituent under Section 811.319(a)(4)(B)(iii) "must demonstrate a source other than the facility" to the Agency within 180 days of the original sampling event. PC 1 at 2. For permitted facilities, the adopted rule requires the notification to be filed for review as a significant permit modification. NSWMA stated that the proposed 180-day period provides time for re-sampling and "allows the operator sufficient time to adequately investigate the increase." Prop. at 10-11; Tr.2 at 27-28. The American Bottom Conservancy and Illinois Sierra Club agreed that this alternate source demonstration "be submitted to the Agency in all cases so that the public is informed that there is contamination and can evaluate and comment on the report and the probable source." PC 2 at 1.

NSWMA stated that the amendment requiring operators of permitted facilities to file notification of confirmed increase as a significant permit modification provides the Agency "with an appropriate procedural mechanism to review, comment, and ultimately approve (or disapprove) the submittal[,] thereby ensuring a quality review and administrative finality." Prop. at 11, Tr.2 at 27-29. Mr. Hilbert characterized the review of a proposed significant permit modification as "a much more rigorous process." Tr.1 at 114. Mr. Hilbert suggested that this process would prevent repeated notifications that are not reviewed by the Agency and that may simply attribute confirmed increases to causes other than those related to the landfill. *Id*.

In a new subsection 811.319(a)(4)(B)(iv), the Board also requires that, if the landfill operator cannot demonstrate that the confirmed increase is attributable to an alternate source, then the operator is required to perform assessment monitoring. *Id*.; *see* 35 Ill. Adm. Code 811.319(b). In a new subsection 811.319(a)(4)(B)(v), the Board also requires that, if the Agency denies the operator's alternative source demonstration, then the operator within 30 days must begin sampling for specified constituents and "submit an assessment monitoring plan as a significant permit modification, both within 30 days of the dated notification of Agency denial." PC 1 at 3, citing 35 Ill. Adm. Code 813.105 (denial), 35 Ill. Adm. Code 811.319(b)(5) (assessment monitoring constituents). The new subsection specifically requires that "[t]he operator must sample the well or wells that exhibited the confirmed increase." PC 1 at 3.

The Board notes that extension of the deadline for verification of any monitored increase, and the determination of the source of any confirmed increase provide sufficient time for an operator to implement the confirmation procedures. The Board agrees that additional time would be required for obtaining representative samples and for laboratory and data quality reviews. The Board finds that the record supports the proposed changes to the confirmation procedures under Section 811.319(a)(4) and adopts the proposed changes for final notice.

Assessment Monitoring Plan (35 Ill. Adm. Code 811.319(b)(2)). The Board adopt four changes to the assessment monitoring provisions. The first change pertains to filing the assessment monitoring plan under Section 811.319(b)(2), which has provided that "[t]he operator of the facility for which assessment monitoring is required shall file the plans for an assessment monitoring program with the Agency." 35 Ill. Adm. Code 811.319(b)(2). Facilities permitted by the Agency must file those plans as a significant permit modification. *Id.* The regulations also set deadlines for the implementation of assessment monitoring plans. *Id.*

The Board amends this subsection to provide that an operator required to submit a plan for assessment monitoring must do so within 180 days of the original sampling event. Prop. at 11. NSWMA noted that the regulations do not now provide a deadline for submitting an assessment monitoring plan. *Id.*

Second, with regard to implementation, the rule previously provided only that "the assessment monitoring program must be implemented within 90 days of the monitored increase confirmation at unpermitted facilities and within 90 days of Illinois EPA approval of the significant permit modification at permitted facilities." Prop. at 11. The Board requires implementation within 180 days of the original sampling event for unpermitted facilities and within 45 days of Agency approval of the program for permitted facilities. *Id*. By tying implementation at unpermitted facilities to the original sampling event, the amendment establishes a more definite deadline for implementation of assessment monitoring plans. *Id*.; Tr.1 at 120-21. The adopted rule also establishes a faster 45-day implementation time for permitted facilities. *Id*.

Third, the Board adopts minor clarifications to monitoring of additional constituents at subsection 811.319(b)(5)(A). Prop. at 11. First, it amends a cross-reference to refer to subsection (b)(1) instead of (b)(1)(A). *Id*. This amendment "simply corrects a typographical error and broadens the reference to include (b)(1)(A), (B), and (C)." *Id*. Second, the adopted rule replaces the word "shall" with "must." *Id*. Third, the adopted rule adds a reference to constituents listed at 35 Ill. Adm. Code 620.410 in order to provide additional constituents that must be monitored to assess groundwater contamination. *Id*.; *see* 35 Ill. Adm. Code 620.410. This subsection has required monitoring for constituents listed at 40 C.F.R. 258.Appendix II, which is incorporated by reference at 35 Ill. Adm. Code 810.104. NSWMA claimed that "[t]hese additional constituents serve to increase environmental protection." Prop. at 11.

Finally, the Board amends subsection 811.319(b)(5)(D) by requiring that any constituents on the expanded assessment monitoring list "that are detected in the initial sampling must be monitored for on a semi-annual basis." Prop. at 12. The Board also requires "that the expanded

monitoring list be monitored on an annual basis." *Id*. In his testimony, Mr. Johnson stated that these requirements are "the same as the US EPA's standards for assessment monitoring." Tr.1 at 136. Mr. Johnson also argued that "[t]he degree of environmental protection is increased in light of the expanded mandatory list of constituents to be monitored for, while focusing on those constituents of concern that have been identified." Johnson Test. at 14-15.

In his testimony, Mr. Hilbert addressed the economic impact of this amendment. He stated that, although it may provide some economic benefit, "it is not easily quantifiable since the actual list of constituents to be monitored will vary from facility to facility. Therefore no quantifiable economic impact of the proposed change is identified." Hilbert Test. 2 at 8.

The Board finds that the record supports changes to the assessment monitoring provisions under Section 811.319(b). By specifying deadlines for submission and implementation of the assessment monitoring plan, the adopted rules remove any ambiguity in terms of proceeding from detection monitoring to assessment monitoring. Additionally, the inclusion of constituents listed in 35 Ill. Adm. Code 620.410 makes the Board rules consistent with the federal regulations at 40 C.F.R. Part 258. The Board adopts the proposed changes for final notice.

Groundwater Quality Standards (Proposed Amendment 33-37 and 42-49) (35 Ill. Adm. Code 811.320)

The Board adopts a number of changes to the groundwater quality standard provisions under Section 811.320. These changes include NSWMA's Proposed Amendments 33-37 and 42-49. The adopted rules replace references to public water supply standards with groundwater standards, clarify the establishment of background concentrations, and update statistical analysis procedures. The Board's changes are discussed below.

References to Groundwater Standards. The Board replaces the reference to public or food processing water supply standard at 35 Ill. Adm. Code 302 with a reference to the groundwater standards found at 35 Ill. Adm. Code 620 at Sections 811.320(a)(3)(B), (b)(2), and (b)(4). Prop. at 13. NSWMA claimed that the original landfill rules included this reference to the public or food processing water supply standards. *Id*.; *see* Development, Operating, and Reporting Requirements for Non-Hazardous Waste Landfills, R 88-7, slip op. at 54 (Aug. 17, 1990). NSWMA argued that, with the subsequent adoption of groundwater standards (*see* Groundwater Quality Standards (35 Ill. Adm. Code 620), R 89-14(B) (Nov. 7, 1991)), the public or food processing water supply standards appear no longer to apply to groundwater. Prop. at 13, citing 35 Ill. Adm. Code 620.130 (exemption); *see also* Thompson Test. at 2. NSWMA further argued that "groundwater at landfills is now regulated under a more inclusive list of constituents found in the [Part] 620 regulations." Prop. at 13; *see* 35 Ill. Adm. Code 620.Subpart D. NSWMA noted that "[t]his proposed amendment mirrors the proposed amendment at [35 Ill. Adm. Code] 811.315(e)(1)(G)(i), discussed in proposed amendment 10 above. Prop. at 13.

Establishment of Groundwater Background Concentration (35 Ill. Adm. Code 811.320(d)(1)). The Board divides the existing subsection 811.320(d)(1) regarding establishment of background concentrations into 3 separate subsections. Prop. at 14. In addition to the organizational changes, the adopted rules make three substantive changes to the provisions

for establishing background concentrations. First, the adopted rules at Section 811.320(d)(1) allow the Agency to review more than one year's worth of quarterly sampling data. *Id*. NSWMA argued that "[a]llowing, but not requiring, more than one year of quarterly sampling is justified by the simple principle that more data provide an improved statistical basis for comparisons." *Id*. NSWMA and the Agency indicated that the Agency could by permit require additional sampling. *See* Tr.1 at 146-47. Generally, NSWMA argued that "[t]he more accurate data generated by the additional data will, in the long run, reduce the frequency of both false positive and false negative results." Prop. at 14.

Second, also at Section 811.320(d)(1), the adopted rules allow the Agency "to consider non-consecutive data as long as only one quarterly sampling is absent and that the remaining data are nevertheless representative of consecutive data" in terms of any seasonal or temporal variation. Prop. at 14; *see* Tr.1 at 145. NSWMA argued that both of "these proposed amendments reflect current US EPA guidance as well as current literature and industry practice." Prop. at 14. NSWMA further argues that that they "are designed to allow more appropriate and accurate characterization of site background conditions." *Id*.

In his testimony, Mr. Hilbert addressed the economic impact of this amendment. He stated that "[t]he proposed language of this section as well as the proposed changes in other sections of this rulemaking are designed to reduce unnecessary assessment monitoring triggered by an excessively high false positive rate during statistical review of groundwater monitoring data." Hilbert Test. 2 at 10. Mr. Hilbert further stated that, because actual assessment costs depend on what actually requires the development of an assessment monitoring plan, his analysis simply estimates the cost of preparing the plan and does not reflect variable costs such as installation of additional wells. *Id*. Because he anticipated that the amendments will reduce the number of assessments by 50%, Mr. Hilbert projected that costs will decrease by $25,000 at each facility and by $1,275,000 industry-wide. *Id*.

The third amendment to Section 811.320(d)(2) pertains to adjustment of background concentrations. NSWMA states that "[t]he existing rule provides that adjustments to background concentrations can be made if changes in the background concentrations are 'statistically significant.'" Prop. at 14; *see* 35 Ill. Adm. Code 811.320(d)(1). The Board adds language clarifying that the changes must also "be due either to a natural temporal or spatial variability or otherwise due to an off-site source not associated with the landfill or landfill activities." Prop. at 14.

The Board also provides that these adjustments be made no more often than every two years during the facility's operation and that they are subject to the Agency's approval as a significant modification. Prop. at 14; Tr.1 at 154. Mr. Schubert stated that this element of the proposal results from discussions and compromise between NSWMA and the Agency. Tr.1 at 152. Mr. Schubert stated that the proposal does not allow these adjustments more frequently in order to avoid the risk of placing a heavy administrative burden upon the Agency. Tr.1 at 152-53.

In addition, the amendment also provides that, with the Agency's approval to do so, facilities may use non-consecutive data to seek adjustment to background concentrations. Prop.

at 14. Finally, the Board also prohibits any adjustment to a background concentration until two years after the effective date of this amendment, unless that adjustment is specifically required by the Agency. *Id*.

In his testimony, Mr. Hilbert addressed the economic impact of this amendment. He stated that a number of proposed amendments intend "to reduce unnecessary assessment monitoring triggered by an excessively high false positive rate during statistical review of groundwater monitoring data. Hilbert Test. 2 at 10. Mr. Hilbert further stated that, because actual assessment costs vary as a result of the findings that trigger the development of an assessment monitoring plan, his analysis simply estimates the cost of preparing the plan and does not reflect variable costs. *Id*. Because he anticipated that the proposed amendments will reduce the number of assessments by 50%, Mr. Hilbert projected that costs will decrease by $25,000 at each facility and by $1,275,000 industry-wide. *Id*.

The Board finds that the proposed changes to the provisions for establishing background concentrations clarify the existing rules by requiring consecutive quarterly data and also providing flexibility to the Agency to consider non-consecutive data under specified circumstances. Further, the Board agrees that adjustments to background concentrations should be limited only to circumstances in which changes are due to natural temporal or spatial variability or an off-site source not associated with the landfill activities. Finally, the Board notes that the organizational changes make the rules easier to read. Accordingly, the Board adopts the proposed changes for final notice.

Statistical Analysis of Groundwater Monitoring Data (35 Ill. Adm. Code 811.320(e)(1). Current Board rules provide that "[s]tatistical tests shall be used to analyze groundwater monitoring data." 35 Ill. Adm. Code 811.320(e)(1). The Board deletes existing references to specific "normal theory statistical tests" and "nonparametric statistical tests" at Sections 811.320(e)(4) and (e)(5). Prop. at 15; *see* 35 Ill. Adm. Code 811.320 (e)(4), (e)(5). The Board also deletes a cross-reference to specific statistical tests in Sections 811.320(e)(1), (e)(3), (e)(3)(A), (B), and (C). Subsections 811.320(e)(1), (e)(3), and (e)(3)(C) refer instead to "an alternative procedure in accordance with [amended] subsection (e)(4)." NSWMA stated that the proposal intends "to eliminate references to inappropriate tests while allowing the use of more appropriate tests consistent with US EPA guidance and practice." Prop. at 15; *see* Tr.1 at 156, 160-61. NSWMA claimed that this proposal would allow facilities to focus on the statistical test that performs best in revealing potential problems. Tr.1 at 158-59. NSWMA claimed that this proposed amendment will have no substantive effect on the regulatory scheme or on human health and the environment. Prop. at 15-16.

Next, the Board amends Subsection 811.320(e)(3) to make the practical quantification limit (PQL) the appropriate level of detection when reporting monitoring data. Prop. at 16. NSWMA stated that the PQL is "the lowest limit at which the analytical result can be quantified." *Id*. NSWMA stated that USEPA recognizes the PQL as more appropriate than the method detection limit (MDL) to which this subsection has referred. *Id*.; *see* 35 Ill. Adm. Code 811.320(e)(3). The Board also adopts language providing that any established PQL may not in any case exceed any level established by the Board as a groundwater quality standard under the Illinois Groundwater Protection Act. Prop. at 16; *see* 415 ILCS 55/1 *et seq*. (2006). The Board

also replaces a reference to MDL with a reference to PQL at Section 811.320(e)(3)(A). Prop. at 16.

Regarding the analysis of data below the level of detection at Section 811.320(e)(3)(B), the Board deletes a reference to 'data transformations' in order to conform with the proposed changes to the level of detection. Prop. at 16. Further, the Board notes that changes to this subsection allow the use of Aitchison's adjustment in addition to the existing provision allowing the use of Cohen's adjustment in analyzing groundwater data. *Id*.; *see* 35 Ill. Adm. Code 811.320(e)(3)(B). Mr. Schubert stated that, for non-normal data, Aitchison's adjustment provides an alterative method of calculating the standard deviations for use in standard equations. Tr.1 at 163. Ms. Thompson elaborated that it is used as a statistical adjustment allowing normal distribution of data sets when non-detects are between 15% and 50%. *Id*. at 163-64; Thompson Test. at 5. NSWMA characterized Aitcheson's adjustment as "widely accepted" and "standard." Prop. at 16.

As discussed above, the Board deletes much of existing section 811.320(e)(4) which identifies specific normal theory statistical tests. Prop. at 17. NSWMA argued that revised subsection (e)(3) adequately identifies appropriate statistical procedures without requiring inappropriate methods. *See id*. Further, the Board deletes references to specific nonparametric statistical tests at subsection (e)(5), which includes the Mann Whitney U test and the Kruskal Wallis test. 35 Ill. Adm. Code 811.320(e)(5). NSWMA claimed that this element of the proposal "is designed simply to clarify that the use of non-specified statistical tests may be allowed by the Illinois EPA where appropriate." Prop. at 17. The Board also notes that it renumbers this subsection as (e)(4). *Id*.

Finally, the Board incorporates the use of tests meeting the requirements of 35 Ill. Adm. Code 724.197(i) into proposed subsection (e)(4). Prop. at 18.

The Board finds that the record supports these changes to the statistical analysis provisions. The Board notes that, while the proposed changes discontinue the use of certain inappropriate statistical tests for analyzing groundwater data, the rules still require an operator to use only those tests that meet the requirements of 35 Ill. Adm. Code 724.197(i). The Board's hazardous waste regulations at Section 724.197(i) set forth detailed performance standards for statistical tests used for analyzing groundwater monitoring data. The Board also agrees that the reference to MDL must be replaced with PQL to be consistent with the federal solid waste landfill rules. Accordingly, the Board adopts the proposed amendments for final notice.

Non-Substantive Amendments

In its pre-filed testimony, NSWMA characterized seventeen of its proposed amendments to the Board's solid waste rules as "not substantive" and as making merely "typographical changes or numbering changes." Johnson Test. at 3. Following the numbering of proposed amendments established by NSWMA in its original proposal, the Board below briefly addresses each of those seventeen amendments.

Proposed Amendment 1: Incorporation by Reference (35 Ill. Adm. Code 810.104(a)(1))

NSWMA stated that it agreed with an Agency request to include in the Board's rules "an incorporation by reference of federal regulation 40 C.F.R. 258.Appendix I (2006)." Prop. at 2-3. MSWMA further stated that subsequent amendments refer to this federal authority. *Id* at 3. At the first hearing, NSWMA indicated that it still regarded this proposal as non-substantive (Tr.1 at 11, 16), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 2: Incorporation by Reference (35 Ill. Adm. Code 810.104(a)(1))

NSWMA stated that it agrees with an Agency request "to update the incorporation by reference of 40 C.F.R. 258.Appendix II (1997)" (Prop. at 3) in order to reflect the current 2006 version of that federal authority. NSWMA stated that, "[w]hile some modification has been made between the 1997 and current (2006) version of Appendix II, no substantive changes have been made." *Id*. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 16), and no participant disputed that characterization. *See id*.

In its first-notice opinion, the Board noted that its regulations incorporate by reference "Appendix II to 40 C.F.R. 258 (2005), as corrected at 70 Fed. Reg. 44150 (August 1, 2005) (List of Hazardous and Organic Constituents)." 35 Ill. Adm. Code 810.104(a)(1). Also in that opinion, the Board stated that, because the participants clearly intended to update this incorporation by reference with the 2006 material, it would strike the reference to the 2005 material and adopt the amendment as proposed by NSWMA. Although the Board invited comment as to what, if any, further amendment the participants might propose, no public comment addressed this issue. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 3: Incorporation by Reference (35 Ill. Adm. Code 810.104(a)(6))

NSWMA stated that it agrees with an Agency request to amend this subsection "solely to update the incorporation by reference of 'Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846' to include Updates II, IIA, IIB, III, IIIA, and IIIB which have been adopted up through June, 2005." Prop. at 3. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 16-17), and no participant disputed that characterization. *See id*. at 17.

In its first-notice opinion, the Board noted that its regulations incorporate by reference this material and seven specific dated updates. 35 Ill. Adm. Code 810.104(a)(6). The Board's first-notice order did not amend this subsection (a)(6), but the Board invited public comment as to what, if any, amendment the participants might offer. No comment addressed this issue. Accordingly, the Board's order below adopts no amendment to this subsection.

Proposed Amendment 11: Hydrogeologic Site Investigations (35 Ill. Adm. Code 811.315(e)(1)(G)(ii))

In its first-notice opinion, the Board noted that this subsection includes a cross-reference to a definition at Section 811.319(a)(4) of the Board's rules. *See* 35 Ill. Adm. Code 811.315(e)(1)(G)(ii). NSWMA stated that, with the Agency's concurrence, it "proposes to add '(A)' to the cited reference simply to provide a more precise reference." Prop. at 6. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 66-67), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 13: Design, Construction, and Operation of Groundwater Monitoring Systems (35 Ill. Adm. Code 811.318(e)(6)(C))

NSWMA stated that, with the Agency's concurrence, it proposed only to renumber this subsection in order to account for substantive changes in its preceding parts and to restore a proper sequence. Prop. at 6. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 67-68), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 14: Design, Construction, and Operation of Groundwater Monitoring Systems (35 Ill. Adm. Code 811.318(e)(6)(D))

NSWMA stated that, with the Agency's concurrence, it proposed only to renumber this subsection in order to account for substantive changes in its preceding parts and to restore a proper sequence. Prop. at 6. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 67-68), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 15: Design, Construction, and Operation of Groundwater Monitoring Systems (35 Ill. Adm. Code 811.318(e)(6)(E))

NSWMA stated that, with the Agency's concurrence, it proposed only to renumber this subsection in order to account for substantive changes in its preceding parts and to restore a proper sequence. Prop. at 7. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 67-68), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 17: Design, Construction, and Operation of Groundwater Monitoring Systems (35 Ill. Adm. Code 811.318(e)(7))

NSWMA stated that, with the Agency's concurrence, it proposed only to renumber this subsection in order to account for substantive changes in its preceding parts and to restore a proper sequence. Prop. at 7. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 67-68), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 21: Groundwater Monitoring Programs (35 Ill. Adm. Code 811.319(a)(3)(B))

NSWMA stated that, with the concurrence of the Agency, it proposed to revise a cross-reference to Section 811.319(a)(1)(A) to refer to Section 811.319(a)(3), which requires monitoring of organic parameters. Prop. at 9. NSWMA stated that both it and the Agency "believe that this revision merely corrects a typographical error and makes the intent of the regulations clear." *Id*. NSWMA further stated that "[t]here is no substantive change to the regulations by this proposed amendment." *Id*. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 92-93), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 29: Groundwater Monitoring Programs (35 Ill. Adm. Code 811.319(b)(5)(E))

NSWMA stated that, with the concurrence of the Agency, it proposed to amend this subsection by adding to the list of constituents to be monitored during an assessment program those constituents listed at 35 Ill. Adm. Code 620.410. Prop. at 12. NSWMA stated that the proposed change conforms this subsection to previous proposed amendments and does not make any substantive change to the regulations. *Id*. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 139-40), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 30: Groundwater Monitoring Programs (35 Ill. Adm. Code 811.319(b)(5)(G))

NSWMA stated that, with the concurrence of the Agency, it proposed to amend this subsection by adding to the list of constituents to be monitored during an assessment program those constituents listed at 35 Ill. Adm. Code 620.410. Prop. at 12. NSWMA stated that the proposed change conforms this subsection to previous proposed amendments and does not make any substantive change to the regulations. *Id*. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 139-40), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 31: Groundwater Monitoring Programs (35 Ill. Adm. Code 811.319(d)(1)(A))

NSWMA stated that, with the concurrence of the Agency, it proposed only to correct a capitalization error in this subsection. Prop. at 12. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 139-40), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 32: Groundwater Monitoring Programs (35 Ill. Adm. Code 811.319(d)(3)(A))

NSWMA stated that, with the concurrence of the Agency, it proposes only to correct a typographical error by adding the omitted word "assessment" in order to conform this subsection to related provisions." Prop. at 13. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 139-40), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 38: Groundwater Quality Standards (35 Ill. Adm. Code 811.320(d)(3))

NSWMA stated that, with the concurrence of the Agency, it proposed only to renumber existing language within this subsection in order to reflect additions proposed in its preceding parts and to maintain a proper sequence. Prop. at 15. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 155), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 39: Groundwater Quality Standards (35 Ill. Adm. Code 811.320(d)(4))

NSWMA stated that, with the concurrence of the Agency, it proposed only to renumber existing language within this subsection in order to reflect additions proposed in its preceding parts and to maintain a proper sequence. Prop. at 15. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 155), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 40: Groundwater Quality Standards (35 Ill. Adm. Code 811.320(d)(5))

NSWMA stated that, with the concurrence of the Agency, it proposed only to renumber existing language within this subsection in order to reflect additions proposed in its preceding parts and to maintain a proper sequence. Prop. at 15. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 155), and no participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

Proposed Amendment 41: Groundwater Quality Standards (35 Ill. Adm. Code 811.320(d)(6))

NSWMA stated that, with the concurrence of the Agency, it proposed only to renumber existing language within this subsection in order to reflect additions proposed in its preceding parts and to maintain a proper sequence. Prop. at 15. At the first hearing, NSWMA did not change its characterization of this proposal as non-substantive (*see* Tr.1 at 155), and no

participant disputed that characterization. *See id*. Accordingly, the Board adopts the amendment for final notice.

TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS

The Board received no testimony or comments regarding the DCEO's decision not to perform an economic impact study on this rulemaking. *See* Tr.2 at 38. In his testimony, Mr. Hilbert on behalf of NSWMA estimated that the adopted rules would result in annual cost savings of $52,500 for each facility subject to the rules and annual cost savings of $2,678,000 industry-wide. Hilbert Test. 2 at 12; Tr.2 at 15-16 (clarification).

As it did in its second-notice opinion and order, the Board finds the amendments technically feasible and economically reasonable. The Board also finds that the exemptions will not negatively affect the environment.

CONCLUSION

The Board proposes for final notice amendments to the solid waste landfill regulations in Parts 810 and 811 (35 Ill. Adm. Code 810, 811). These amendments are substantively unchanged from those proposed in the Board's second-notice opinion and order dated October 4, 2007. The Board adopts these amendments as final rules in order to make the regulations more closely reflect practical experience implementing the current landfill rules and expanded technical and scientific knowledge achieved since the Board first adopted these standards in 1990.

ORDER

The Board directs the Clerk to cause the filing of the following rules with the Secretary of State for publication as adopted rules in the *Illinois Register*. Additions to Parts 810 and 811 are underlined, and deletions appear stricken.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 810
SOLID WASTE DISPOSAL: GENERAL PROVISIONS

Section

AUTHORITY: Implementing Sections 7.2, 21, 21.1, 22, 22.17, and 22.40 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 21, 21.1, 22, 22.17, 22.40, and 27].

SOURCE: Adopted in R88-7 at 14 Ill. Reg. 15838, effective September 18, 1990; amended in R93-10 at 18 Ill. Reg. 1268, effective January 13, 1994; amended in R90-26 at 18 Ill. Reg. 12457, effective August 1, 1994; amended in R95-9 at 19 Ill. Reg. 14427, effective September 29, 1995; amended in R96-1 at 20 Ill. Reg. 11985, effective August 15, 1996; amended in R97-20 at 21 Ill. Reg. 15825, effective November 25, 1997; amended in R04-5/R04-15 at 28 Ill. Reg. 9090, effective June 18, 2004; amended in R05-1 at 29 Ill. Reg. 5028, effective March 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 4130, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1425, effective December 20, 2006; amended in R07-8 at 31 Ill. Reg. _____, effective _____.

Section 810.104 Incorporations by Reference

a) The Board incorporates the following material by reference:

1) Code of Federal Regulations:

40 CFR 3.2, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005) (How Does This Part Provide for Electronic Reporting?), referenced in Section 810.105.

40 CFR 3.3, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005) (What Definitions Are Applicable to This Part?), referenced in Section 810.105.

40 CFR 3.10, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005) (What Are the Requirements for Electronic Reporting to EPA?), referenced in Section 810.105.

40 CFR 3.2000, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005) (What Are the Requirements Authorized State, Tribe, and Local Programs' Reporting Systems Must Meet?), referenced in Section 810.105.

40 CFR 141.40 (2005) (Monitoring Requirements for Unregulated Contaminants).

~~Appendix II to 40 CFR 258 (2005), as corrected at 70 Fed. Reg. 44150 (August 1, 2005) (List of Hazardous and Organic Constituents).~~

40 CFR 258.Appendix I (2006).

40 CFR 258.Appendix II (2006).

2) American Institute of Certified Public Accountants, 1211 Avenue of the Americas, New York NY 10036:

Auditing Standards--Current Text, August 1, 1990 Edition.

3) ASTM. American Society for Testing and Materials, 1976 Race Street, Philadelphia PA 19103 215-299-5585:

Method D2234-76, "Test Method for Collection of Gross Samples of Coal," approved 1976.

Method D3987-85, "Standard Test Method for Shake Extraction of Solid Waste with Water," approved 1985.

4) GASB. Government Accounting Standards Board, 401 Merritt 7, P.O. Box 5116, Norwalk CT 06856-5116:

Statement 18.

5) U.S. Army Corps of Engineers, Publication Department, 2803 52nd Ave., Hyattville, Maryland 20781, 301-394-0081:

Engineering Manual 1110-2-1906 Appendix VII, Falling-Head Permeability Cylinder (1986).

6) U.S. Government Printing Office, Washington, D.C. 20402, Ph: 202-783-3238:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA publication number EPA-530/SW-846 (Third Edition, 1986; Revision 6, January 2005), as amended by Update I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), IIIA (April 1998), and IIIB (November 2004) (document number 955-001-00000-1).

b) This incorporation includes no later amendments or editions.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 811
STANDARDS FOR NEW SOLID WASTE LANDFILLS

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Section

SUBPART B: INERT WASTE LANDFILLS

Section

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811.APPENDIX B Section-by-Section correlation between the Standards of the RCRA Subtitle D MSWLF regulations and the Board's nonhazardous waste landfill regulations.

811.APPENDIX C List of Leachate Monitoring Parameters

AUTHORITY: Implementing Sections 7.2, 21, 21.1, 22, 22.17, and 22.40 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 21, 21.1, 22, 22.17, 22.40, and 27].

SOURCE: Adopted in R88-7 at 14 Ill. Reg. 15861, effective September 18, 1990; amended in R92-19 at 17 Ill. Reg. 12413, effective July 19, 1993; amended in R93-10 at 18 Ill. Reg. 1308, effective January 13, 1994; expedited correction at 18 Ill. Reg. 7504, effective July 19, 1993; amended in R90-26 at 18 Ill. Reg. 12481, effective August 1, 1994; amended in R95-13 at 19 Ill. Reg. 12257, effective August 15, 1995; amended in R96-1 at 20 Ill. Reg. 12000, effective August 15, 1996; amended in R97-20 at 21 Ill. Reg.15831, effective November 25, 1997; amended in R98-9 at 22 Ill. Reg.11491, effective June 23, 1998; amended in R99-1 at 23 Ill. Reg. 2794, effective February 17, 1999; amended in R98-29 at 23 Ill. Reg.6880, effective July 1, 1999; amended in R04-5/R04-15 at 28 Ill. Reg. 9107, effective June 18, 2004; amended in R05-1 at 29 Ill. Reg. 5044, effective March 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 4136, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1435, effective December 20, 2006; amended in R07-8 at 31 Ill. Reg. _____, effective _____.

SUBPART C: PUTRESCIBLE AND CHEMICAL WASTE LANDFILLS

Section 811.309 Leachate Treatment and Disposal Systems

a) Leachate shall be allowed to flow freely from the drainage and collection system. The operator is responsible for the operation of a leachate management system designed to handle all leachate as it drains from the collection system. The leachate management system shall consist of any combination of storage, treatment, pretreatment, and disposal options designed and constructed in compliance with the requirements of this Section.

b) The leachate management system shall consist of any combination of multiple treatment and storage structures, to allow the management and disposal of leachate during routine maintenance and repairs.

c) Standards for Onsite Treatment and Pretreatment

1) All onsite treatment or pretreatment systems shall be considered part of the facility.

2) The onsite treatment or pretreatment system shall be designed in accordance with the expected characteristics of the leachate. The design may include modifications to the system necessary to accommodate changing leachate characteristics.

3) The onsite treatment or pretreatment system shall be designed to function for the entire design period.

4) All of the facility's unit operations, tanks, ponds, lagoons and basins shall be designed and constructed with liners or containment structures to control seepage to groundwater.

5) All treated effluent discharged to waters of the State shall meet the requirements of 35 Ill. Adm. Code 309.

6) The treatment system shall be operated by an operator certified under the requirements of 35 Ill. Adm. Code 312.

d) Standards for Leachate Storage Systems

1) Except as otherwise provided in subsection (d)(6) of this Section, the leachate storage facility must be able to store a minimum of at least five days' worth of accumulated leachate at the maximum generation rate used in designing the leachate drainage system in accordance with Section

811.307. The minimum storage capacity may be built up over time and in stages, so long as the capacity for five consecutive days of accumulated leachate is available at any time during the design period of the facility.

2) All leachate storage tanks shall be equipped with secondary containment systems equivalent to the protection provided by a clay liner 0.61 meter (2 feet thick) having a permeability no greater than 10^{-7} centimeters per second.

3) Leachate storage systems shall be fabricated from material compatible with the leachate expected to be generated and resistant to temperature extremes.

4) The leachate storage system shall not cause or contribute to a malodor.

5) The leachate drainage and collection system shall not be used for the purpose of storing leachate.

6) A facility may have less than five days' worth of storage capacity for accumulated leachate as required by subsection (d)(1) of this Section, if the owner or operator of the facility demonstrates that multiple treatment, storage and disposal options in the facility's approved leachate management system developed in accordance with subsection (b) of this Section will achieve equivalent performance. Such options shall consist of not less than one day's worth of storage capacity for accumulated leachate plus at least two alternative means of managing accumulated leachate through treatment or disposal, or both treatment and disposal, each of which means is capable of treating or disposing of all leachate generated at the maximum generation rate on a daily basis.

e) Standards for Discharge to an Offsite Treatment Works

1) Leachate may be discharged to an offsite treatment works that meets the following requirements:

A) All discharges of effluent from the treatment works shall meet the requirements of 35 Ill. Adm. Code 309.

B) The treatment systems shall be operated by an operator certified under the requirements of 35 Ill. Adm. Code 312.

C) No more than 50 percent of the average daily influent flow can be attributable to leachate from the solid waste disposal facility. Otherwise, the treatment works shall be considered a part of the solid waste disposal facility.

2) The operator is responsible for securing permission from the offsite treatment works for authority to discharge to the treatment works.

3) All discharges to a treatment works shall meet the requirements of 35 Ill. Adm. Code 310.

4) Pumps, meters, valves and monitoring stations that control and monitor the flow of leachate from the unit and which are under the control of the operator shall be considered part of the facility and shall be accessible to the operator at all times.

5) Leachate shall be allowed to flow into the sewage system at all times; however, if access to the treatment works is restricted or anticipated to be restricted for longer than five days, then an alternative leachate management system shall be constructed in accordance with subsection (c).

6) Where leachate is not directly discharged into a ~~sewerage~~ sewage system, the operator shall provide storage capacity sufficient to transfer all leachate to an offsite treatment works. The storage system shall meet the requirements of subsection (d).

f) Standards for Leachate Recycling Systems

1) Leachate recycling systems may be utilized only at permitted waste disposal units that meet the following requirements:

A) The unit must have a liner designed, constructed and maintained to meet the minimum standards of Section 811.306.

B) The unit must have a leachate collection system in place and operating in accordance with Section 811.307.

C) A gas management system, equipped with a mechanical device such as a compressor to withdraw gas, must be implemented to control odors and prevent migration of methane in accordance with Section 811.311.

D) The topography must be such that any accidental leachate runoff can be controlled by ditches, berms or other equivalent control means.

2) Leachate shall not be recycled during precipitation events or in volumes large enough to cause runoff or surface seeps.

3) The amount of leachate added to the unit shall not exceed the ability of the waste and cover soils to transmit leachate flow downward. All other leachate shall be considered excess leachate, and a leachate management system capable of disposing of all excess leachate must be available.

4) The leachate storage and distribution system shall be designed to avoid exposure of leachate to air unless aeration or functionally equivalent devices are utilized.

5) The distribution system shall be designed to allow leachate to be evenly distributed beneath the surface over the recycle area.

6) Daily and intermediate cover shall be permeable to the extent necessary to prevent the accumulation of water and formation of perched watertables and gas buildup; alternatively cover shall be removed prior to additional waste placement.

7) Daily and intermediate cover shall slope away from the perimeter of the site to minimize surface discharges.

g) Leachate Monitoring

1) Representative samples of leachate shall be collected from each established leachate monitoring location ~~and tested~~ in accordance with subsection (g)(5) and tested for the parameters referenced in subsections (g)(2)(G) and (g)(3)(D) ~~at a frequency of once per quarter until such time as samples have been obtained and tested for at least eight quarters. If for any reason insufficient leachate is obtained to yield a sample for testing during a given quarterly monitoring attempt, such attempt shall not count toward the eight quarters' leachate monitoring requirement. Thereafter, the frequency of testing shall be changed to semi-annual for any monitored constituent while the leachate management system is in operation. However, the~~. The Agency may, by permit condition, require additional, or allow less, leachate sampling and testing as necessary to ensure compliance with this Section and Sections 811.312, 811.317, and 811.319.

2) Discharges of leachate from units that dispose of putrescible wastes shall be tested for the following constituents prior to treatment or pretreatment:

A) Five day biochemical oxygen demand (BOD5);

B) Chemical oxygen demand;

C) Total Suspended Solids;

D) Total Iron;

E) pH;

F) Any other constituents listed in the operator's National Pollution Discharge Elimination System (NPDES) discharge permit, pursuant to 35 Ill. Adm. Code 304, or required by a publicly owned treatment works, pursuant to 35 Ill. Adm. Code 310; and

G) All ~~of the indicator constituents chosen in accordance with Section 811.319(a)(2)(B) and used by the operator for groundwater monitoring~~ the monitoring parameters listed in Section 811.Appendix C, unless an alternate monitoring list has been approved by the Agency.

3) Discharges of leachate from units which dispose only chemical wastes shall be monitored for constituents determined by the characteristics of the chemical waste to be disposed of in the unit. They shall include, as a minimum:

A) pH;

B) Total Dissolved Solids;

C) Any other constituents listed in the operator's NPDES discharge permit, pursuant to 35 Ill. Adm. Code 304, or required by a publicly owned treatment works, pursuant to 35 Ill. Adm. Code 310; and

D) All ~~of the indicator constituents chosen in accordance with Section 811.319(a)(2)(B) and used by the operator for groundwater monitoring~~ the monitoring parameters listed in Section 811.Appendix C, unless an alternate monitoring list has been approved by the Agency.

4) A network of leachate monitoring locations shall be established, capable of characterizing the leachate produced by the unit. Unless an alternate network has been approved by the Agency, the network of leachate monitoring locations shall include:

A) At least four leachate monitoring locations; and

B) At least one leachate monitoring location for every 25 acres within the unit's waste boundaries.

5) Leachate monitoring shall be performed at least once every six months and each established leachate monitoring location shall be monitored at least once every two years.

h) Time of Operation of the Leachate Management System

1) The operator shall collect and dispose of leachate for a minimum of five years after closure and thereafter until treatment is no longer necessary.

2) Treatment is no longer necessary if the leachate constituents do not exceed the wastewater effluent standards in 35 Ill. Adm. Code 304.124, 304.125, 304.126 and do not contain a BOD_5 concentration greater than 30 mg/L for six consecutive months.

3) Leachate collection at a MSWLF unit shall be continued for a minimum period of 30 years after closure, except as otherwise provided by subsections (h)(4) and (h)(5)~~, below~~.

4) The Agency may reduce the leachate collection period at a MSWLF unit upon a demonstration by the owner or operator that the reduced period is sufficient to protect human health and environment.

5) The owner or operator of a MSWLF unit shall petition the Board for an adjusted standard in accordance with Section 811.303, if the owner or operator seeks a reduction of the postclosure care monitoring period for all of the following requirements:

i) Inspection and maintenance (Section 811.111);

ii) Leachate collection (Section 811.309);

iii) Gas monitoring (Section 811.130); and

iv) Groundwater monitoring (Section 811.319).

BOARD NOTE: Subsection (h) is derived from 40 CFR 258.61 (1992).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 811.315 Hydrogeologic Site Investigations

a) Purpose

The operator shall conduct a hydrogeologic investigation to develop hydrogeologic information for the following uses:

1) Provide information to perform a groundwater impact assessment; and

2) Provide information to establish a groundwater monitoring system.

b) General Requirements

1) The investigation shall be conducted in a minimum of three phases prior to submission of any application to the Agency for a permit to develop and operate a landfill facility.

2) The study area shall consist of the entire area occupied by the facility and any adjacent related areas, if necessary for the purposes of the hydrogeological investigation set forth in subsection (a).

3) All borings shall be sampled continuously at all recognizable points of geologic variation, except that where continuous sampling is impossible or where non-continuous sampling can provide equivalent information, samples shall be obtained at intervals no greater than 1.52 meters (five feet) in homogeneous strata.

c) Minimum Requirements ~~For~~ for a Phase I Investigation

1) The operator shall conduct a Phase I Investigation to develop the following information:

A) Climatic aspects of the study area;

B) The regional and study area geologic setting, including a description of the geomorphology and stratigraphy of the area;

C) The regional groundwater regime including water table depths and aquifer characteristics; and

D) Information for the purpose of designing a Phase II Hydrogeologic Investigation.

2) Specific Requirements

A) The regional hydrogeologic setting of the unit shall be established by using material available from all possible sources, including, but not limited to, the Illinois Scientific Surveys, the Agency, other State and Federal organizations, water well drilling logs, and previous investigations.

B) A minimum of one continuously sampled boring shall be drilled on the site, as close as feasible to the geographic center, to determine if the available regional hydrogeologic setting information is accurate and to characterize the site-specific hydrogeology to the extent specified by this phase of the investigation. The boring shall extend at least 15.2 meters (50 feet) below the bottom of the uppermost aquifer or through the full depth of the confining layer below the uppermost aquifer, or to bedrock, if the bedrock is below the upper most aquifer, whichever elevation is higher. The locations of any additional borings, required under this subsection, may be chosen by the investigator, but shall be sampled continuously.

d) Minimum Requirements ~~For A~~ for a Phase II Investigation

1) Information to be developed

Using the information developed in the Phase I survey, a Phase II study shall be conducted to collect the site-specific information listed below as needed to augment data collected during the Phase I investigation and to prepare for the Phase III investigation:

A) Structural characteristics and distribution of underlying strata including bedrock;

B) Chemical and physical properties including, but not limited to, lithology, mineralogy, and hydraulic ~~characterisitics~~ characteristics of underlying strata including those below the uppermost aquifer;

C) Soil ~~characterisitics~~ characteristics, including soil types, distribution, geochemical and geophysical characteristics;

D) The hydraulic conductivities of the uppermost aquifer and all strata above it;

E) The vertical extent of the uppermost aquifer;

F) The direction and rate of groundwater flow.

2) Specific Requirements

A) One boring shall be located as close as feasible to the topographical high point, and another shall be located as close as feasible to the topographical low point of the study area.

B) At least one boring shall be at or near each corner of the site. Where the property is irregularly shaped the borings shall be located near the boundary in a pattern and spacing necessary to obtain data over the entire study area.

C) Additional borings may be located at intermediate points at locations and spacings necessary to establish the continuity of the stratigraphic units.

D) Piezometers and groundwater monitoring wells shall be established to determine the direction and flow characteristics of the groundwater in all strata and extending down to the bottom of the uppermost aquifer. Groundwater samples taken from such monitoring wells shall be used to develop preliminary information needed for establishing background concentrations in accordance with subsection (e)(1)(G).

E) Other methods may be utilized to confirm or accumulate additional information. Such methods may be used only as a supplement to, not in lieu of, site-specific boring information. Other methods include, but are not limited to, geophysical well logs, geophysical surveys, aerial photography, age dating, and test pits.

e) Minimum Standards ~~For A~~ for a Phase III Investigation

1) Using the information developed during the Phase I and Phase II Investigations, the operator shall conduct a Phase III Investigation. This investigation shall be conducted to collect or augment the site-specific information needed to carry out the following:

A) Verification and ~~reconcilation~~ reconciliation of the information collected in the Phase I and II investigations;

B) Characterization of potential pathways for contaminant migration;

C) Correlation of stratigraphic units between borings;

D) Continuity of petrographic features including, but not limited to, sorting, grain size distribution, cementation and hydraulic conductivity;

E) Identification of zones of potentially high hydraulic conductivity;

F) Identification of the confining layer, if present;

G) Concentrations of chemical constituents present in the groundwater below the unit, down to the bottom of the uppermost aquifer, using a broad range of chemical analysis and detection procedures such as, gas chromatographic and mass spectrometric scanning. However, additional measurements and procedures shall be carried out to establish background concentrations, in accordance with Section 811.320(d), for:

i) Any constituent for which there is a ~~public or food processing water supply~~ standard at 35 Ill. Adm. Code ~~302~~620 established by the Board and which is expected to appear in the leachate; and

ii) Any other constituent for which there is no Board-established standard, but which is expected to appear in the leachate at concentrations above PQL, as defined in Section 811.319(a)(4)(A) for that constituent;

H) Characterization of the seasonal and temporal, naturally and ~~artifically~~ artificially induced, variations in groundwater quality and groundwater flow; and

I) Identification of unusual or unpredicted geologic features, including: fault zones, fracture traces, facies changes, solution channels, buried stream deposits, cross cutting structures and other geologic features that may affect the ability of the operator to monitor the groundwater or predict the impact of the disposal facility on groundwater.

2) In addition to the specific requirements applicable to ~~phase~~ Phase I and II investigations, the operator shall collect information needed to meet the minimum standards of a ~~phase~~ Phase III investigation by using methods that may include, but not limited to excavation of test pits, additional borings located at intermediate points between boreholes placed during ~~phase~~ Phase I and II investigations, placement of piezometers and monitoring wells, and institution of procedures for sampling and analysis.

f) The operator may conduct the hydrogeologic investigation in any number of alternative ways provided that the necessary information is collected in a systematic sequence consisting of at least three phases that is equal to or superior to the investigation procedures of this Section.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 811.318 Design, Construction, and Operation of Groundwater Monitoring Systems

a) All potential sources of discharges to groundwater within the facility, including, but not limited to, all waste disposal units and the leachate management system, shall be identified and studied through a network of monitoring wells operated during the active life of the unit and for the time after closure specified in accordance with Section 811.319. Monitoring wells designed and constructed as part of the monitoring network shall be maintained along with records that include, but are not limited to, exact well location, well size, type of well, the design and construction practice used in its installation and well and screen depths.

b) Standards for the Location of Monitoring Points

1) A network of monitoring points shall be established at sufficient locations downgradient with respect to groundwater flow and not excluding the downward direction, to detect any discharge of contaminants from any part of a potential source of discharge.

2) Monitoring wells shall be located in stratigraphic horizons that could serve as contaminant migration pathways.

3) Monitoring wells shall be established as close to the potential source of discharge as possible without interfering with the waste disposal operations, and within half the distance from the edge of the potential source of discharge to the edge of the zone of attenuation downgradient, with respect to groundwater flow, from the source.

4) The network of monitoring points of several potential sources of discharge within a single facility may be combined into a single monitoring network, provided that discharges from any part of all potential sources can be detected.

5) A minimum of at least one monitoring well shall be established at the edge of the zone of attenuation and shall be located downgradient with respect to groundwater flow and not excluding the downward direction, from the unit. Such well or wells shall be used to monitor any statistically significant increase in the concentration of any constituent, in accordance with Section 811.320(e) and shall be used for determining compliance with an applicable groundwater quality standard of Section 811.320. An observed statistically significant increase above the applicable groundwater quality standards of Section 811.320 in a well located at or beyond the compliance boundary shall constitute a violation.

c) Maximum Allowable Predicted Concentrations
The operator shall use the same calculation methods, data, and assumptions as used in the groundwater impact assessment to predict the concentration over time and space of all constituents chosen to be monitored in accordance with Section 811.319 at all monitoring points. The predicted values shall be used to establish the maximum allowable predicted concentrations (MAPC) at each monitoring point. The MAPCs calculated in this subsection shall be applicable within the zone of attenuation.

d) Standards for Monitoring Well Design and Construction

1) All monitoring wells shall be cased in a manner that maintains the integrity of the bore hole. The casing material shall be inert so as not to affect the water sample. Casing requiring solvent-cement type couplings shall not be used.

2) Wells shall be screened to allow sampling only at the desired interval. Annular space between the borehole wall and well screen section shall be packed with gravel sized to avoid clogging by the material in the zone being monitored. The slot size of the screen shall be designed to minimize clogging. Screens shall be fabricated from material expected to be inert with respect to the constituents of the groundwater to be sampled.

3) Annular space above the well screen section shall be sealed with a relatively impermeable, expandable material such as a cement/bentonite grout, which does not react with or in any way affect the sample, in order to prevent contamination of samples and groundwater and avoid interconnections. The seal shall extend to the highest known seasonal groundwater level.

4) The annular space shall be back-filled with expanding cement grout from an elevation below the frost line and mounded above the surface and sloped away from the casing so as to divert surface water away.

5) The annular space between the upper and lower seals and in the unsaturated zone may be back-filled with uncontaminated cuttings.

6) All wells shall be covered with vented caps and equipped with devices to protect against tampering and damage.

7) All wells shall be developed to allow free entry of water, minimize turbidity of the sample, and minimize clogging.

8) The transmissivity of the zone surrounding all well screens shall be established by field testing techniques.

9) Other sampling methods and well construction techniques may be utilized if they provide equal or superior performance to the requirements of this subsection.

e) Standards for Sample Collection and Analysis

1) The groundwater monitoring program shall include consistent sampling and analysis procedures to assure that monitoring results can be relied upon to provide data representative of groundwater quality in the zone being monitored.

2) The operator shall utilize procedures and techniques to insure that collected samples are representative of the zone being monitored and that prevent cross contamination of samples from other monitoring wells or from other samples. At least 95 percent of a collected sample shall consist of groundwater from the zone being monitored.

3) The operator shall establish a quality assurance program that provides quantitative detection limits and the degree of error for analysis of each chemical constituent.

4) The operator shall establish a sample preservation and shipment procedure that maintains the reliability of the sample collected for analysis.

5) The operator shall institute a chain of custody procedure to prevent tampering and contamination of the collected samples prior to completion of analysis.

6) At a minimum, the operator shall sample the following parameters at all wells at the time of sample collection and immediately before filtering and preserving samples for shipment:

A) The elevation of the water table;

~~B) The depth of the well below ground;~~

~~C~~B) pH;

~~D~~C) The temperature of the sample; and

~~E~~D) Specific Conductance.

7) The operator must measure the depth of the well below ground on an annual basis, at wells that do not contain dedicated pumps. The operator must measure the depth of the well below ground every 5 years, or whenever the pump is pulled, in wells with dedicated pumps.

~~7~~8) In addition to the requirements of subsections (e)(1) through (e)(6), the following requirements shall apply to MSWLF units:

A) Each time groundwater is sampled, an owner or operator of a MSWLF unit shall:

i) Measure the groundwater elevations in each well immediately prior to purging; and

ii) Determine the rate and direction of ground-water flow.

B) An owner or operator shall measure groundwater elevations in wells which monitor the same waste management area within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

BOARD NOTE: Subsection (e)(7) is derived from 40 CFR 258.53(d) (1992).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 811.319 Groundwater Monitoring Programs

a) Detection Monitoring Program

Any use of the term maximum allowable predicted concentration in this Section is a reference to Section 811.318(c). The operator shall implement a detection monitoring program in accordance with the following requirements:

1) Monitoring Schedule and Frequency

A) The monitoring period shall begin as soon as waste is placed into the unit of a new landfill or within one year of the effective date of this Part for an existing landfill. Monitoring shall continue for a minimum period of fifteen years after closure, or in the case of MSWLF units, a minimum period of 30 years after closure, except as otherwise provided by subsection (a)(1)(C) of this Section. The operator shall sample all monitoring points for all potential sources of contamination on a quarterly basis except as specified in subsection (a)(3), for a period of five years from the date of issuance of the initial permit for significant modification under 35 Ill. Adm. Code 814.104 or a permit for a new unit pursuant to 35 Ill. Adm. Code 813.104. After the initial five-year period, the sampling frequency for each monitoring point shall be reduced to a semi-annual basis, provided the operator has submitted the

certification described in 35 Ill. Adm. Code 813.304(b). Alternatively, after the initial five-year period, the Agency shall allow sampling on a semi-annual basis where the operator demonstrates that monitoring effectiveness has not been compromised, that sufficient quarterly data has been collected to characterize groundwater, and that leachate from the monitored unit does not constitute a threat to groundwater. For the purposes of this Section, the source shall be considered a threat to groundwater if the results of the monitoring indicate either that the concentrations of any of the constituents monitored within the zone of attenuation is above the maximum allowable predicted concentration for that constituent or, for existing landfills, subject to 35 Ill. Adm. Code 814, Subpart D, that the concentration of any constituent has exceeded the applicable standard at the compliance boundary as defined in 35 Ill. Adm. Code 814.402(b)(3).

B) Beginning fifteen years after closure of the unit, or five years after all other potential sources of discharge no longer constitute a threat to groundwater, as defined in subsection (a)(1)(A), the monitoring frequency may change on a well by well basis to an annual schedule if either of the following conditions exist. However, monitoring shall return to a quarterly schedule at any well where a statistically significant increase is determined to have occurred in accordance with Section 811.320(e), in the concentration of any constituent with respect to the previous sample.

i) All constituents monitored within the zone of attenuation have returned to a concentration less than or equal to ten percent of the maximum allowable predicted concentration; or

ii) All constituents monitored within the zone of attenuation are less than or equal to their maximum allowable predicted concentration for eight consecutive quarters.

C) Monitoring shall be continued for a minimum period of: ~~thirty~~ 30 years after closure at MSWLF units, except as otherwise provided by subsections (a)(1)(D) and (a)(1)(E)~~, below~~; five years after closure at landfills, other than MSWLF units, which are used exclusively for disposing waste generated at the site; or ~~fifteen~~ 15 years after closure at all other landfills regulated under this Part. Monitoring, beyond the minimum period, may be discontinued under the following conditions:

i) No statistically significant increase is detected in the concentration of any constituent above that measured and

recorded during the immediately preceding scheduled sampling for three consecutive years, after changing to an annual monitoring frequency; or

ii) Immediately after contaminated leachate is no longer generated by the unit.

D) The Agency may reduce the groundwater monitoring period at a MSWLF unit upon a demonstration by the owner or operator that the reduced period is sufficient to protect human health and environment.

E) An owner or operator of a MSWLF unit shall petition the Board for an adjusted standard in accordance with Section 811.303, if the owner or operator seeks a reduction of the postclosure care monitoring period for all of the following requirements:

i) Inspection and maintenance (Section 811.111);

ii) Leachate collection (Section 811.309);

iii) Gas monitoring (Section 811.310); and

iv) Groundwater monitoring (Section 811.319).

BOARD NOTE: Changes to subsections (a)(1)(A) and (a)(1)(C), and subsections (a)(1)(D) and (a)(1)(E) are derived from 40 CFR 258.61 (1992).

2) Criteria for Choosing Constituents to be Monitored

A) The operator shall monitor each well for constituents that will provide a means for detecting groundwater contamination. Constituents shall be chosen for monitoring if they meet the following requirements:

i) The constituent appears in, or is expected to be in, the leachate; and

ii) Is contained within the following list of constituents:

Ammonia – Nitrogen (dissolved)
Arsenic (dissolved)
Boron (dissolved)
Cadmium (dissolved)
Chloride (dissolved)
Chromium (dissolved)

Cyanide (total)
Lead (dissolved)
Magnesium (dissolved)
Mercury (dissolved)
Nitrate (dissolved)
Sulfate (dissolved)
Total Dissolved Solids (TDS)
Zinc (dissolved)

~~ii) The Board has established for the constituent a public or food processing water supply standard, at 35 Ill. Adm. Code 302, the Board has established a groundwater quality standard under the Illinois Groundwater Protection Act [415 ILCS 55], or the constituent may otherwise cause or contribute to groundwater contamination.~~

iii) This is the minimum list for MSWLFs.

iv) Any facility accepting more than 50% by volume non-municipal waste must determine additional indicator parameters based upon leachate characteristic and waste content.

B) One or more indicator constituents, representative of the transport processes of constituents in the leachate, may be chosen for monitoring in place of the constituents it represents. The use of such indicator constituents must be included in an Agency approved permit.

3) Organic Chemicals Monitoring

The operator shall monitor each existing well that is being used as a part of the monitoring well network at the facility within one year of the effective date of this Part, and monitor each new well within the three months of its establishment. The monitoring required by this subsection (a)(3) shall be for a broad range of organic chemical contaminants in accordance with the procedures described below:

A) The analysis shall be at least as comprehensive and sensitive as the tests for~~;i) The~~ the 51 organic chemicals in drinking water described at 40 CFR 141.40 (1988) and 40 CFR 258.Appendix I (2006), incorporated by reference at 35 Ill. Adm. Code 810.104~~;~~ and:

~~ii) Any other organic chemical for which a groundwater quality standard or criterion has been adopted pursuant to~~

~~Section 14.4 of the Act or Section 8 of the Illinois Groundwater Protection Act.~~

Acetone
Acrylonitrile
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform; Tribromomethane
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform; Trichloromethane
o-Chlorotoluene
p-Chlorotoluene
Dibromochloromethane
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dicloroethylene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
1,3-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
Hexachlorobutadiene
2-Hexanone; Methyl butyl ketone
Isopropylbenzene
p-Isopropyltoluene
Methyl bromide; Bromomethane
Methyl chloride; Chloromethane

Methylene bromide; Dibromomethane
Dichloromethane
Methyl ethyl ketone
Methyl iodide; Iodomethane
4-Methyl-2-pentanone
Naphthalene
Oil and Grease (hexane soluble)
n-Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Tetrahydrofuran
Toluene
Total Phenolics
1,2,3-Trichlorobenzene
1,2,4-Trichlorbenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl acetate
Vinyl chloride
Xylenes

B) At least once every two years, the operator shall monitor each well in accordance with subsection (a)(~~1~~3)(A).

C) The operator of a MSWLF unit shall monitor each well in accordance with subsection (a)(~~1~~3)(A) on ~~an~~ a semi-annual basis.

BOARD NOTE: Subsection (a)(3)(C) is derived from 40 CFR 258.54(b) (1992).

4) Confirmation of Monitored Increase

A) The confirmation procedures of this subsection shall be used only if the concentrations of the constituents monitored can be measured at or above the practical quantitation limit (PQL). The PQL is defined as the lowest concentration that can be reliably measured within specified limits of precision and accuracy, under routine laboratory operating conditions. The operator shall institute the confirmation procedures of subsection (a)(4)(B) after

notifying the Agency in writing, within ten days, of observed increases:

i) The concentration of any inorganic constituent monitored in accordance with ~~subsection~~ subsections (a)(1) and (a)(2) shows a progressive increase over ~~four~~ eight consecutive monitoring events;

ii) The concentration of any constituent exceeds the maximum allowable predicted concentration at an established monitoring point within the zone of attenuation;

iii) The concentration of any constituent monitored in accordance with subsection (a)(3) exceeds the preceding measured concentration at any established monitoring point; and

iv) The concentration of any constituent monitored at or beyond the zone of attenuation exceeds the applicable groundwater quality standards of Section 811.320.

B) The confirmation procedures shall include the following:

i) The operator shall verify any observed increase by taking additional samples within ~~45~~ 90 days ~~of~~ after the initial ~~observation~~ sampling event and ensure that the samples and sampling protocol used will detect any statistically significant increase in the concentration of the suspect constituent in accordance with Section 811.320(e), so as to confirm the observed increase. The operator shall notify the Agency of any confirmed increase before the end of the next business day following the confirmation.

ii) The operator shall determine the source of any confirmed increase, which may include, but shall not be limited to, natural phenomena, sampling or analysis errors, or an offsite source.

iii) The operator shall notify the Agency in writing of any confirmed increase ~~and~~. The notification must demonstrate a source other than the facility ~~state the source of the confirmed increase~~ and provide the rationale used in such a determination ~~within ten days of the determination~~. The notification must be submitted to the Agency no later than 180 days after the original sampling event. If the facility is permitted by the Agency, the notification must be filed for

review as a significant permit modification pursuant to 35 Ill. Adm. Code 813.Subpart B.

iv) If an alternative source demonstration described in subsections (a)(4)(B)(ii) and (iii) of this Section cannot be made, assessment monitoring is required in accordance with subsection (b) of this Section.

v) If an alternative source demonstration, submitted to the Agency as an application, is denied pursuant to 35 Ill. Adm. Code 813.105, the operator must commence sampling for the constituents listed in subsection (b)(5) of this Section, and submit an assessment monitoring plan as a significant permit modification, both within 30 days after the dated notification of Agency denial. The operator must sample the well or wells that exhibited the confirmed increase.

b) Assessment Monitoring

The operator shall begin an assessment monitoring program in order to confirm that the solid waste disposal facility is the source of the contamination and to provide information needed to carry out a groundwater impact assessment in accordance with subsection (c). The assessment monitoring program shall be conducted in accordance with the following requirements:

1) The assessment monitoring shall be conducted in accordance with this subsection to collect information to assess the nature and extent of groundwater contamination. The owner or operator of a MSWLF unit shall comply with the additional requirements prescribed in subsection (b)(5). The assessment monitoring shall consist of monitoring of additional constituents that might indicate the source and extent of contamination. In addition, assessment monitoring may include any other investigative techniques that will assist in determining the source, nature and extent of the contamination, which may consist of, but need not be limited to:

A) More frequent sampling of the wells in which the observation occurred;

B) More frequent sampling of any surrounding wells; and

C) The placement of additional monitoring wells to determine the source and extent of the contamination.

2) ~~The~~ Except as provided for in subsections (a)(4)(B)(iii) and (v) of this Section, the operator of the facility for which assessment monitoring is required shall file the plans for an assessment monitoring program with the Agency. If the facility is permitted by the Agency, then the plans shall be filed for review as a significant permit modification pursuant to 35 Ill. Adm. Code 813.Subpart B within 180 days after the original sampling event. The assessment monitoring program shall be implemented within ~~90~~ 180 days ~~of~~ after ~~confirmation of any monitored increase~~ the original sampling event in accordance with subsection (a)(4) or, in the case of permitted facilities, within ~~90~~ 45 days ~~of~~ after Agency approval.

3) If the analysis of the assessment monitoring data shows that the concentration of one or more constituents, monitored at or beyond the zone of attenuation is above the applicable groundwater quality standards of Section 811.320 and is attributable to the solid waste disposal facility, then the operator shall determine the nature and extent of the groundwater contamination including an assessment of the potential impact on the groundwater should waste continue to be accepted at the facility and shall implement the remedial action in accordance with subsection (d).

4) If the analysis of the assessment monitoring data shows that the concentration of one or more constituents is attributable to the solid waste disposal facility and exceeds the maximum allowable predicted concentration within the zone of attenuation, then the operator shall conduct a groundwater impact assessment in accordance with the requirements of subsection (c).

5) In addition to the requirements of subsection (b)(1), to collect information to assess the nature and extent of groundwater contamination, the following requirements are applicable to MSWLF units:

A) The monitoring of additional constituents pursuant to subsection (b)(l)~~(A) shall~~ must include, at a minimum (except as otherwise provided in subsection (b)(5)(E) of this Section), the constituents listed in 40 CFR 258.Appendix II, incorporated by reference at 35 Ill. Adm. Code 810.104~~.~~ and constituents from 35 Ill. Adm. Code 620.410.

BOARD NOTE: Subsection (b)(5)(A) is derived from 40 CFR 258.55(b) (1992).

B) Within 14 days ~~of~~ after obtaining the results of sampling required under subsection (b)(5)(A), the owner or operator shall:

i) Place a notice in the operating record identifying the constituents that have been detected; and

ii) Notify the Agency that such a notice has been placed in the operating record.

BOARD NOTE: Subsection (b)(5)(B) is derived from 40 CFR 258.55(d)(l) (1992).

C) The owner or operator shall establish background concentrations for any constituents detected pursuant to subsection (b)(5)(A) in accordance with Section 811.320(e).

BOARD NOTE: Subsection (b)(5)(C) is derived from 40 CFR 258.55(d)(3) (1992).

D) Within 90 days ~~of~~ after the initial monitoring in accordance with subsection (b)(5)(A), the owner or operator ~~shall~~ must monitor for the detected constituents listed in 40 CFR 258.Appendix II and 35 Ill. Adm. Code 620.410 on a semiannual basis during the assessment monitoring. The operator must monitor all the constituents listed in 40 CFR 258.Appendix II and 35 Ill. Adm. Code 620.410 on an annual basis during assessment monitoring.

BOARD NOTE: Subsection (b)(5)(D) is derived from 40 CFR 258.55(d)(2) (1992).

E) The owner or operator may request the Agency to delete any of the 40 CFR 258.Appendix II and 35 Ill. Adm. Code 620.410 constituents by demonstrating to the Agency that the deleted constituents are not reasonably expected to be in or derived from the waste contained in the leachate.

BOARD NOTE: Subsection (b)(5)(E) is derived from 40 CFR 258.55(b) (1992).

F) Within 14 days ~~of~~ after finding an exceedance above the applicable groundwater quality standards in accordance with subsection (b)(3), the owner or operator shall:

i) Place a notice in the operating record that identifies the constituents monitored under subsection (b)(1)(D) that have exceeded the groundwater quality standard;

ii) Notify the Agency and the appropriate officials of the local municipality or county within whose boundaries the site is located that such a notice has been placed in the operating record; and

iii) Notify all persons who own land or reside on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site.

BOARD NOTE: Subsection (b)(5)(F) is derived from 40 CFR 258.55(g)(1)(i) through (iii) (1992).

G) If the concentrations of all 40 CFR 258.Appendix II and 35 Ill. Adm. Code 620.410 constituents are shown to be at or below background values, using the statistical procedures in Section 811.320(e), for two consecutive sampling events, the owner or operator shall notify the Agency of this finding and may stop monitoring the 40 CFR 258.Appendix II and 35 Ill. Adm. Code 620.410 constituents.

BOARD NOTE: Subsection (b)(5)(G) is derived from 40 CFR 258.55(e) (1992).

c) Assessment of Potential Groundwater Impact. An operator required to conduct a groundwater impact assessment in accordance with subsection (b)(4) shall assess the potential impacts outside the zone of attenuation that may result from confirmed increases above the maximum allowable predicted concentration within the zone of attenuation, attributable to the facility, in order to determine if there is need for remedial action. In addition to the requirements of Section 811.317, the following shall apply:

1) The operator shall utilize any new information developed since the initial assessment and information from the detection and assessment monitoring programs and such information may be used for the recalibration of the GCT model; and

2) The operator shall submit the groundwater impact assessment and any proposed remedial action plans determined necessary pursuant to subsection (d) to the Agency within 180 days ~~of~~ after the start of the assessment monitoring program.

d) Remedial Action. The owner or operator of a MSWLF unit shall conduct corrective action in accordance with Sections 811.324, 811.325, and 811.326. The owner or operator of a landfill facility, other than a MSWLF unit, shall conduct remedial action in accordance with this subsection.

1) The operator shall submit plans for the remedial action to the Agency. Such plans and all supporting information including data collected during the assessment monitoring shall be submitted within 90 days ~~of~~ after determination of either of the following:

A) ~~the~~The groundwater impact assessment, performed in accordance with subsection (c), indicates that remedial action is needed; or

B) Any confirmed increase above the applicable groundwater quality standards of Section 811.320 is determined to be attributable to the solid waste disposal facility in accordance with subsection (b).

2) If the facility has been issued a permit by the Agency, then the operator shall submit this information as an application for significant modification to the permit;

3) The operator shall implement the plan for remedial action program within 90 days ~~of~~ after the following:

A) Completion of the groundwater impact assessment that requires remedial action;

B) Establishing that a violation of an applicable groundwater quality standard of Section 811.320 is attributable to the solid waste disposal facility in accordance with subsection (b)(3); or

C) Agency approval of the remedial action plan, where the facility has been permitted by the Agency.

4) The remedial action program shall consist of one or a combination of one of more of the following solutions:

A) Retrofit additional groundwater protective measures within the unit;

B) Construct an additional hydraulic barrier, such as a cutoff wall or slurry wall system

C) Pump and treat the contaminated groundwater; or

D) Any other equivalent technique which will prevent further contamination of groundwater.

5) Termination of the Remedial Action Program

A) The remedial action program shall continue in accordance with the plan until monitoring shows that the concentrations of all monitored constituents are below the maximum allowable predicted concentration within the zone of attenuation, below the applicable groundwater quality standards of Section 811.320 at or

beyond the zone of attenuation, over a period of four consecutive quarters no longer exist.

B) The operator shall submit to the Agency all information collected under subsection (d)(5)(A). If the facility is permitted then the operator shall submit this information as a significant modification of the permit.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 811.320 Groundwater Quality Standards

a) Applicable Groundwater Quality Standards

1) Groundwater quality shall be maintained at each constituent's background concentration, at or beyond the zone of attenuation. The applicable groundwater quality standard established for any constituent shall be:

A) The background concentration; or

B) The Board established standard adjusted by the Board in accordance with the justification procedure of subsection (b).

2) Any statistically significant increase above an applicable groundwater quality standard established pursuant to subsection (a)(1) that is attributable to the facility and which occurs at or beyond the zone of attenuation within 100 years after closure of the last unit accepting waste within such a facility shall constitute a violation.

3) For the purposes of this Part:

A) "Background concentration" means that concentration of a constituent that is established as the background in accordance with subsection (d); and

B) "Board established standard" is the concentration of a constituent adopted by the Board as a ~~standard for public and food processing water supplies under 35 Ill. Adm. Code 302 or as a~~ groundwater quality standard adopted by the Board pursuant to Section 14.4 of the Act or Section 8 of the Illinois Groundwater Protection Act~~, whichever is lower~~.

b) Justification for Adjusted Groundwater Quality Standards

1) An operator may petition the Board for an adjusted groundwater quality standard in accordance with the procedures specified in Section 28.1 of the Act and 35 Ill. Adm. Code ~~106.410 through 106.416~~104.400.Subpart D.

2) For groundwater which contains naturally occurring constituents which meet the applicable requirements of 35 Ill. Adm. Code ~~302.301, 302.304, and 302.305,~~620.410, 620.420, 620.430, or 620.440 the Board will specify adjusted groundwater quality standards no greater than those of 35 Ill. Adm. Code ~~302.301, 302.304, and 302.305,~~620.410, 620.420, 620.430 or 620.440, respectively, upon a demonstration by the operator that:

   A) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for such water;

   B) The change in standards is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social disbenefits such as loss of jobs or closing of landfills, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards~~.~~ ; and

   C) All technically feasible and economically reasonable methods are being used to prevent the degradation of the groundwater quality.

3) Notwithstanding subsection (b)(2), in no case shall the Board specify adjusted groundwater quality standards for a MSWLF unit greater than the following levels ~~set forth below~~:

Chemical	Concentration (mg/l
Arsenic	0.05
Barium	1.0
Benzene	0.005
Cadmium	0.01
Carbon tetrachloride	0.005
Chromium (hexavalent)	0.05
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride	4
Lindane	0.004
Lead	0.05
Mercury	0.002

Methoxychlor	0.1
Nitrate	10
Selenium	0.01
Silver	0.05
Toxaphene	0.005
l,l,l-Trichloromethane	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl Chloride	0.002

4) For groundwater which contains naturally occurring constituents which do not meet the standards of 35 Ill. Adm. Code ~~302.301, 302.304, and 302.305,~~620.410, 620.420, 620.430 or 620.440, the Board will specify adjusted groundwater quality standards, upon a demonstration by the operator that:

A) The groundwater does not presently serve as a source of drinking water;

B) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for such waters;

C) The change in standards is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social disbenefits such as loss of jobs or closing of landfills, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards; and

D) The groundwater cannot presently, and will not in the future, serve as a source of drinking water because:

i) It is impossible to remove water in usable quantities;

ii) The groundwater is situated at a depth or location such that recovery of water for drinking purposes is not technologically feasible or economically reasonable;

iii) The groundwater is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption;

iv) The total dissolved solids content of the groundwater is more than 3,000 mg/l and that water will not be used to serve a public water supply system; or

v) The total dissolved solids content of the groundwater exceeds 10,000 mg/l.

c) Determination of the Zone of Attenuation

1) The zone of attenuation, within which concentrations of constituents in leachate discharged from the unit may exceed the applicable groundwater quality standard of this Section, is a volume bounded by a vertical plane at the property boundary or 100 feet from the edge of the unit, whichever is less, extending from the ground surface to the bottom of the uppermost aquifer and excluding the volume occupied by the waste.

2) Zones of attenuation shall not extend to the annual high water mark of navigable surface waters.

3) Overlapping zones of attenuation from units within a single facility may be combined into a single zone for the purposes of establishing a monitoring network.

d) Establishment of Background Concentrations

1) The initial monitoring to determine background concentrations shall commence during the hydrogeological assessment required by Section 811.315. The background concentrations for those parameters identified in Sections 811.315(e)(1)(G) and 811.319(a)(2) and (a)(3) shall be established based on consecutive quarterly sampling of wells for a minimum of one year, monitored in accordance with the requirements of subsections (d)(2), (d)(3) and (d)(4)~~, which may be adjusted during the operation of a facility~~. Non-consecutive data may be considered by the Agency, if only one data point from a quarterly event is missing, and it can be demonstrated that the remaining data set is representative of consecutive data in terms of any seasonal or temporal variation. Statistical tests and procedures shall be employed, in accordance with subsection (e), depending on the number, type and frequency of samples collected from the wells, to establish the background concentrations.

2) Adjustments to the background concentrations shall be made ~~only~~ if changes in the concentrations of constituents observed in ~~upgradient~~background wells over time are determined, in accordance with subsection (e), to be statistically significant~~.~~, and due to natural temporal or spatial variability or due to an off-site source not associated with the landfill or the landfill activities. Such adjustments may be conducted no

more frequently than once every two years during the operation of a facility and modified subject to approval by the Agency. Non-consecutive data may be used for an adjustment upon Agency approval. Adjustments to the background concentration shall not be initiated prior to 2 years after November 27, 2007 unless required by the Agency.

3) Background concentrations determined in accordance with this subsection shall be used for the purposes of establishing groundwater quality standards, in accordance with subsection (a). The operator shall prepare a list of the background concentrations established in accordance with this subsection. The operator shall maintain such a list at the facility, shall submit a copy of the list to the Agency for establishing standards in accordance with subsection (a), and shall provide updates to the list within ten days of any change to the list.

~~2~~4) A network of monitoring wells shall be established upgradient from the unit, with respect to groundwater flow, in accordance with the following standards, in order to determine the background concentrations of constituents in the groundwater:

A) The wells shall be located at such a distance that discharges of contaminants from the unit will not be detectable;

B) The wells shall be sampled at the same frequency as other monitoring points to provide continuous background concentration data, throughout the monitoring period; and

C) The wells shall be located at several depths to provide data on the spatial variability.

~~3~~5) A determination of background concentrations may include the sampling of wells that are not hydraulically upgradient of the waste unit where:

A) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient of the waste; and

B) Sampling at other wells will provide an indication of background concentrations that is representative of that which would have been provided by upgradient wells.

~~4~~6) If background concentrations cannot be determined on site, then alternative background concentrations may be determined from actual monitoring data from the aquifer of concern, which includes, but is not limited to, data from another landfill site that overlies the same aquifer.

e) Statistical Analysis of Groundwater Monitoring Data

1) Statistical tests shall be used to analyze groundwater monitoring data. One or more of the normal theory statistical tests ~~listed in subsection (e)(4)~~ shall be chosen first for analyzing the data set or transformations of the data set. Where such normal theory tests are demonstrated to be inappropriate, tests listed in subsection (e)(~~5) or a test in accordance with subsection (e)(6~~4) shall be used. ~~Any statistical test chosen from subsections (e)(4) or (e)(5), the~~The level of significance (Type I error level) shall be no less than 0.01, for individual well comparisons, and no less than 0.05, for multiple well comparisons. The statistical analysis shall include, but not be limited to, the accounting of data below the detection limit of the analytical method used, the establishment of background concentrations and the determination of whether statistically significant changes have occurred in:

A) The concentration of any chemical constituent with respect to the background concentration or maximum allowable predicted concentration; and

B) The established background concentration of any chemical constituents over time.

2) The statistical test or tests used shall be based upon the sampling and collection protocol of Sections 811.318 and 811.319.

3) Monitored data that are below the level of detection shall be reported as not detected (ND). The level of detection for each constituent shall be the ~~minimum~~practical quantitation limit (PQL), and shall be the lowest concentration ~~of that constituent which can be measured and reported with 99 percent confidence that the true value is greater than zero, which is defined as the method detection limit (MDL)~~ that is protective of human health and the environment, and can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions. In no case, shall the PQL be established above the level that the Board has established for a groundwater quality standard under the Illinois Groundwater Protection Act [415 ILCS 55]. The following procedures shall be used to analyze such data, unless an alternative procedure in accordance with subsection (e)(~~6~~4), is shown to be applicable:

A) Where the percentage of nondetects in the data base used is less than 15 percent, the operator shall replace NDs with the ~~MDL~~PQL divided by two, then proceed with the use of one or more of the Normal Theory statistical tests ~~listed in subsection (e)(4)~~;

B) Where the percentage of nondetects in the data base ~~or data transformations~~ used is between 15 and 50 percent, and the data are normally distributed, the operator shall use Cohen's or Aitchison's adjustment to the sample mean and standard deviation, followed by ~~one or more of the tests listed in subsection (e)(4)(C). However, where data are not normally distributed, the operator shall use an applicable nonparametric test from subsection (e)(5);~~ an applicable statistical procedure;

C) Where the percentage of nondetects in the database used is above 50 percent, then the owner or operator shall use ~~the test of proportions listed in~~ an alternative procedure in accordance with subsection (e)(4).

4) ~~Normal theory statistical tests:~~

~~A) Student t-test including, but not limited to, Cochran's Approximation to the Behren-Fisher (CABF) t-test and Averaged Replicate (AR) t-test.~~

~~B) Parametric analysis of variance (ANOVA) followed by one or more of the multiple comparison procedures including, but not limited to, Fisher's Least Significant Difference (LSD), Student Mewman-Kuel procedure, Duncan's New Multiple Range Test and Tukey's W procedure.~~

~~C) Control Charts, Prediction Intervals and Tolerance Intervals, for which the type I error levels shall be specified by the Agency in accordance with the requirements of 35 Ill. Adm. Code 724.197(i).~~

~~5~~) Nonparametric statistical tests ~~shall include: Mann-Whitney U-test, Kruskal-Wallis test, a nonparametric analysis of variance (ANOVA) for multiple comparisons or the Wilcoxon Rank Sum test.~~

~~6) Any~~ or any other statistical test ~~based on the distribution of the sampling data may be used,~~ if it is demonstrated to meet the requirements of 35 Ill. Adm. Code 724.197(i).

BOARD NOTE: Subsection (b)(3) is derived from 40 CFR 258.40 Table 1. (1992).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Appendix C List of Leachate Monitoring Parameters

pH
Elevation Leachate Surface
Bottom of Well Elevation
Leachate Level from Measuring Point
Arsenic (total)
Barium (total)
Cadmiun (total) mg/l
Iron (total)
Ammonia Nitrogen – N
Bacteria (Fecal Coliform)
Biochemical Oxygen Demand (BOD_5)
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethylene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-Chloropropane
1,2-Dichloroethane
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichloropropane
1,3-Dichloropropene
1,4-Dichloro-2-Butene
1-Propanol
2,2-Dichloropropane
2,4,5-tp (Silvex)
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dichlorophenoxyacetic Acid (2,4-D)
2,4-Dimethylphenol
2,4-Dinitrotoluene
2,4-Dinitrophenol
2,6-Dinitrotoluene
2-Chloroethyl Vinyl Ether
2-Chloronaphthalene
2-Chlorophenol
2-Hexanone
2-Propanol (Isopropyl Alcohol)
3,3-Dichlorobenzidine

4,4-DDD
4,4-DDE
4,4-DDT
4,6-Dinitro-o-Cresol
4-Bromophenyl Phenyl Ether
4-Chlorophenyl Phenyl Ether
4-Methyl-2-Pentanone
4-Nitrophenol
Acenaphthene
Acetone
Alachlor
Aldicarb
Aldrin
Alpha – BHC
Aluminum
Anthracene
Antimony
Atrazine
Benzene
Benzo (a) Anthracene
Benzo (a) Pyrene
Benzo (b) Fluoranthene
Benzo (ghi) Perylene
Benzo (k) Fluoranthene
Beryllium (total)
Beta – BHC
Bicarbonate
Bis (2-Chloro-1-Methylethyl) Ether
Bis (2-Chloroethoxy) Methane
Bis (2-Chloroethyl) Ether
Bis (2-Ethylhexyl) Ether
Bis (2-Ethylhexyl) Phthalate
Bis(Chloromethyl) Ether
Boron
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Butanol
Butyl Benzyl Phthalate
Calcium mg/l
Carbofuran
Carbon Disulfide
Carbon Tetrachloride
Chemical Oxygen Demand (COD)

Chlordane
Chloride mg/l
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Chromium (hexavalent)
Chromium (total)
Chrysene
Cis-1,2-Dichloroethylene
Cobalt (total)
Copper (total)
Cyanide
DDT
Delta – BHC
Di-N-Butyl Phthalate
Di-N-Octyl Phthalate
Dibenzo (a,h) Anthracene
Dibromochloromethane
Dibromomethane
Dichlorodifluormethane
Dieldrin
Diethyl Phthalate
Dimethyl Phthalate
Endosulfan I
Endosulfan II
Endosulfan Sulfate
Endrin
Endrin Aldehyde
Ethyl Acetate
Ethylbenzene
Ethylene Dibromide (EDB)
Fluoranthene
Fluorene
Fluoride
Heptachlor Epoxide
Heptachlor
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Ideno (1,2,3-cd) Pyrene
Iodomethane
Isopropylbenzene
Lead (total)
Lindane

Magnesium (total)
Manganese (total)
Mercury (total)
Methoxychlor
Methyl Chloride
Methyl Ethyl Ketone
Methylene Bromide
Methylene Chloride
Naphthalene
Nickel (total)
Nitrate-Nitrogen
Nitrobenzine
Oil. Hexane Soluble (or Equivalent)
Parathion
Pentachlorophenol
Phenanthrene
Phenols
Phosphorous
Polychlorinated Biphenyls
Potassium
Pyrene
Selenium
Silver (total)
Specific Conductance
Sodium
Styrene
Sulfate
Temperature of Leachate Sample (ºF)
Tert-Butylbenzene
Tetrachlorodibenzo-p-Dixoins
Tetrachloroethylene
Tetrahydrofuran
Thallium
Tin
Toluene
Total Organic Carbon (TOC)
Total Dissolved Solids (TDS) mg/l
Total Suspended Solids (TSS) mg/l
Toxaphene
Trans-1,2-Dichloroethylene
Trans-1,3-Dichlorpropene
Trichloroethylene
Trichlorofluoromethane
Vinyl Acetate
Vinyl Chloride
Xylene

Zinc (total)
m-Dichlorobenzene
m-Xylene
n-Butylbenzene
n-Nitrosodimethylamine
n-Nitrosodiphenylamine
n-Nitrosodipropylamine
n-Propylbenzene
o-Chlorotoluene
o-Dichlorobenzene
o-Nitrophenol
o-Xylene
p-Chlorotoluene
p-Cresol
p-Dichlorobenzene
p-Isopropyltoluene
p-Nitrophenol
p-Xylene
sec-Butylbenzene

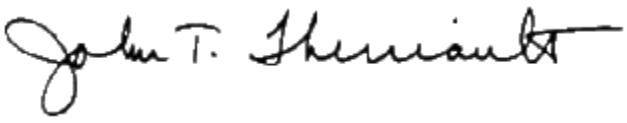
Note: All parameters shall be determined from unfiltered samples.

(Source: Added at 31 Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/29, 41(a) (2006); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on November 15, 2007, by a vote of 4-0.



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John T. Therriault, Assistant Clerk
Illinois Pollution Control Board