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November 6, 2026

Kim Schultz
Executive Director
Joint Committee on Administrative Rules
700 Stratton Office Building
Springfield, IL 62706

Re: Second Notice for 35 Ill. Adm. Code 620; Board Docket No. R22-18(A)

Dear Ms. Schultz:

Please find enclosed the Second Notice for Proposed Amendments to the above Part.

Sincerely,

Don A. Brown
Clerk of the Board

Enclosures

SECOND NOTICE

1) Agency Name: Pollution Control Board

2) Title and Administrative Code Citation: Groundwater Quality, 35 Ill. Adm. Code 620

3) Date and Citation of Illinois Register: July 17, 2026, 50 Ill. Reg. 9650

4) Text and Location of any Changes from First Notice: See Attachment A.

5) Response to Codification Recommendations: No changes were requested by the Secretary of State.

6) Incorporations by Reference: None

7) Final Regulatory Flexibility Analysis:

A) Summary of Issues Raised by Small Business: Land and Lakes Company (Land and Lakes) identified both itself and its affiliated company, Stony Island Reclamation Co., as privately owned, for-profit businesses with less than ten employees. According to Land and Lakes, both companies own Part 811 landfills that no longer accept waste or have operating revenue. Land and Lakes raised the issues that Part 807 landfills do not have the funds to cover the cost of PFAS groundwater monitoring and corrective action, regulatory relief options are too costly and uncertain for Part 807 landfills, monitoring costs for PFAS are different than or other constituents and will cost more, and compliance cost estimates for Part 807 landfills are not economically reasonable.

B) Description of Actions and Alternatives Proposed by Small Business during First Notice: Land and Lakes requested that the Board exempt Part 807 landfills from the Part 620 PFAS standards. Land and Lakes also argued that the Board should describe the guidelines and procedures for adjusted standard petition for landfills and contended that the Illinois Environmental Protection Agency should conduct outreach with stakeholders to evaluate necessary changes to Part 807.

8) Compliance with Section 5-30 of the APA and 1 Ill. Adm. Code 220.285: The Board complied with the applicable requirements by publishing the proposed rulemaking in the *Illinois Register*, posting the proposal and other rulemaking materials on the Board's website (https://pcb.illinois.gov/), providing opportunities for public comment and participation at public hearings, and considering the potential impacts of the proposed rules on small businesses, not-for-profit corporations, and small municipalities.

On August 31, 2026, the Department of Commerce and Economic Opportunity's Office of Small Business Regulatory Flexibility copied the Board on its response to JCAR's request for a small business impact analysis of the rulemaking proposal. That response

states, “The amendments may introduce substantial ongoing monitoring and compliance expenses for small businesses that own or operate solid waste landfills, particularly closed landfills with limited or no revenue generation. These costs could be further elevated if PFAS contamination requiring corrective action is discovered.”

9) Evaluation of All First Notice Comments

A) List of Commenters: Illinois Environmental Protection Agency (IEPA), Illinois Department of Commerce and Economic Opportunity (DCEO), Land and Lakes Company (Land and Lakes), Full Circle Future, National Waste & Recycling Association (NWRA), Joint Committee on Administrative Rules (JCAR)

B) Issues Raised and Board Analysis:

Issues raised: 1) Part 807 landfills do not have the funds to cover the cost of PFAS groundwater monitoring and corrective action; 2) regulatory relief options are too costly and uncertain for Part 807 landfills; 3) monitoring costs for PFAS are different than other constituents and will cost more; 4) whether compliance cost estimates for Part 807 landfills are economically reasonable; and 5) the Board should include PFAS in detection monitoring for Part 811 landfills.

PC 1 (Land and Lakes): Land and Lakes argued that compliance with the Part 620 PFAS standards is not economically reasonable and that Part 807 landfills do not have the funds to cover the cost of PFAS groundwater monitoring and corrective action. Land and Lakes also contends that regulatory relief options are too uncertain and costly to pursue.

PC 2 (IEPA): IEPA argued that exempting landfills from the PFAS provisions of Part 620 undermines Illinois’s statutory policy of protecting human health and the environment. Groundwater monitoring for PFAS is important to detect PFAS contamination before it spreads and remediation costs increase and to prevent unnecessary exposure to the adverse health effects of PFAS. IEPA also pointed out that many landfills are located above or next to sensitive aquifers, including the Mahomet Aquifer. Additionally, IEPA argued that compliance with Part 620’s PFAS standards is both technically feasible and economically reasonable.

PC 3 (email correspondence between DCEO and IEPA): DCEO asked IEPA for a list of Part 811 and Part 814 landfills and IEPA responded that the information was in the pre-filed testimony of Land and Lakes and NWRA in the R22-18(A) docket.

PC 4 (email correspondence between DCEO and IEPA): DCEO asked IEPA for a list of Part 811 and Part 814 landfills and IEPA responded by attaching the list of Illinois landfills permitted under Part 813.

PC 5 (Land and Lakes): Land and Lakes raised the issues that Part 807 landfills do not have the funds to cover the cost of PFAS groundwater monitoring and corrective action, regulatory relief options are too costly and uncertain for Part 807 landfills, monitoring costs for PFAS are different than other constituents and will cost more, and compliance cost estimates for Part 807 landfills are not economically reasonable.

PC 6 (Full Circle Future): Full Circle Future argued that the Board should include PFAS in detection monitoring because of the ubiquitous nature of PFAS in landfills and the threat of leakage of PFAS into groundwater. Full Circle Future cited IEPA's answers to the Board's questions which found that 71 landfills are located within one mile of a public water supply well. Full Circle Future also conducted an analysis of the potential for landfills to contaminate public water supplies.

Board analysis:

Part 807 landfills do not have the funds to cover the costs of PFAS monitoring and corrective action.

Part 807 landfills are already subject to the new PFAS standards as they were not included in the exemptions in the underlying rulemaking, R22-18. The Board also reiterates that regulatory relief exists for all landfills subject to the Part 620 groundwater standards.

The Board understands that Part 807 landfills were closed almost 35 years ago under closure requirements of that Part under 35 Ill. Adm. Code 814, Subpart E. While adding monitoring of PFAS and any potential PFAS corrective action would place an additional economic burden on these facilities, the Board expects the Agency to ensure compliance with Part 620 groundwater standards, including PFAS, by utilizing existing enforcement tools or voluntary measures. The Agency previously stated that it intends to propose rules specific to landfills to address monitoring of PFAS, and the Board directs the Agency to do so in an expedited manner.

Regulatory relief options are too costly and uncertain for Part 807 landfills.

Any landfill can request an adjusted standard, site-specific rule, or, if the landfill is in corrective action, can request that IEPA establish a groundwater monitoring zone. While the Board recognizes that regulatory relief provisions specific to landfills would be helpful, the record does not include specific language for the Board to consider for second notice. In this regard, the Board welcomes IEPA to include landfill specific relief requirements when it proposes changes to the landfill rules under Part 807, 811, and 814. Until then, the regulated entities may avail themselves of the existing relief mechanisms under the Act and the Board rules.

Monitoring costs for PFAS are different than other constituents and will cost more.

The per-sample PFAS analytical cost is between $300 and $375 (excluding compilation and reporting cost). *See* First Notice at 16-17. This cost is within the range ($42.70 to $402.50) of analytical costs for other common groups of volatile and semi-volatile organic compounds albeit toward the higher end. 8/25/25 IEPA Resp at 8. Therefore, the PFAS monitoring costs for detection and assessment monitoring or establishment of background that flow from the analytical cost should not be very different from that of other constituents added to Part 620 in previous rulemakings.

Whether compliance cost estimates for Part 807 landfills are economically reasonable.

Harm to Human Health and the Environment: PFAS are commonly called "forever chemicals" as they do not easily degrade and are bio-accumulative, meaning they can concentrate in tissues of living organisms, including humans. Establishing groundwater quality standards for the six PFAS at issue here is important to the protection of human health and the environment. In the underlying rulemaking, the Board set standards for PFOA, PFOS, PFNA, PFBS, PFHxS, and HFPO-DA (also known as GenX). Four of these, PFBS, PFHxS, PFOS and PFOA, have been detected in the finished water of public water supplies across Illinois. Second Notice at 4. At second notice, the Board found:

> GenX has been detected in groundwater during sampling conducted under the statewide PFAS sampling initiative. All six PFAS chemicals at issue in this rulemaking have been detected in the State's public water supplies that rely on community water supply wells to serve large populations. In addition, thousands of Illinoisans depend on groundwater from private potable wells, which usually do not have access to treatment technologies. Further, the proposed PFAS standards are based on USEPA's drinking water maximum contaminant levels (MCLs) or health-based water concentrations (HBWC) intended to protect human health from adverse effects of exposure from PFAS. These adverse health effects include effects on the liver (e.g., liver cell death), growth and development (e.g., low birth weight), hormone levels, kidney, the immune system (reduced response to vaccines), lipid levels (e.g., high cholesterol), the nervous system, and reproduction, as well as increased risk of certain types of cancer. Additionally, USEPA found that PFAS exposure has disproportionate health effects on children, including developmental effects to fetuses during pregnancy or to breast-fed infants, cardiovascular effects, immune effects, endocrine effects,

and reproductive effects. R22-18 Second Notice at 4 (internal citations omitted).

Cost Impact on Part 807 landfills: The Board disagrees with Land and Lakes that Part 807 landfills must be exempted from Part 620 PFAS standards when it comes to monitoring PFAS. Groundwater monitoring is a preventative measure for the early detection of any release of contaminants from a landfill so that appropriate remedial steps can be taken to protect underlying groundwater. IEPA asserts that the inclusion of PFAS constituents in groundwater monitoring programs at landfills is critical for identifying potential contamination and ensuring appropriate corrective actions are timely taken at these landfills. 7/25/25 IEPA Resp. at 2. IEPA maintains that potential impact of "any PFAS constituents released from Illinois landfills, as these will remain unknown without the requirements for sampling and analysis of these constituents and would therefore undermine the State's policy and commitment to safeguarding public health and environmental integrity." *Id.* The Board agrees that if PFAS are excluded from Part 807 landfills' groundwater monitoring programs, then there will be no way to know if groundwater is being contaminated by any release of PFAS from the landfills. Therefore, the Board considers the cost imposed on Part 807 landfills due to inclusion of PFAS in their detection and assessment monitoring programs to be consistent with other constituents added to the landfill rules during previous updates of Part 620 standards. Considering this, the Board finds the costs of including PFAS in groundwater monitoring programs at Part 807 landfills to be economically reasonable.

The Board notes that while leachate/groundwater treatment costs for all affected landfills are in the range of $113 to $581 million, they are projected over the operating life of the landfills (5 to 169 years) plus 30 years of post-closure care for Part 811 and 814 landfills. Ballenger at 35, Tables 16 and 17. Further, as noted by IEPA, the annual estimated tipping fee revenue for active Part 811 and 814 landfills is over $1.3 billion, which provides a perspective on the annual remediation costs in terms of revenue for protecting the State's groundwater. 8/12/25 IEPA Resp. at 11. Additionally, as noted by Hunsberger, treatment technologies for PFAS contaminated groundwater are still emerging and have not been applied on a large scale. *Id.* at 14. So, as more technologies become commercially available, the Board expects treatment costs to decrease. Another factor to be considered is that many landfills with PFAS contamination may already be in corrective action phase for other constituents, so the burden of corrective action costs other than treatment may not be significant. 7/25/25 IEPA Resp. at 7.

Regarding Part 807 landfills, the bulk of non-treatment related costs is accounted by a new final cover, the need for which may have to be evaluated on a site-specific basis. Also, the Board recognizes that Part 807 landfills are mostly publicly owned and have no revenue coming in as all of them are in post-closure care. Also, many of the Part 807 landfills, which are owned by municipalities, are

exempt from financial assurance requirements for corrective action. The Board notes that these landfills were closed almost 35 years ago under closure requirements of old landfill rules under Part 807, but most of them are continuing post-closure care due to groundwater issues. While adding potential PFAS corrective action costs would place additional burden on these facilities, the Board expects the Agency to ensure compliance with Part 620 groundwater standards, including PFAS, by utilizing existing enforcement tools or voluntary measures. In this regard, IEPA states "that even for closed landfills with limited data, the protection of groundwater remains a statutory mandate and will continue to be addressed within the constraints of available resources and authorities." 1/30/26 IEPA Resp. at 8.

Finally, the corrective action cost estimates are based on broad assumptions which may not be applicable at all landfills depending on site-specific conditions. In this regard, the Board agrees with IEPA, NWRA, and Land and Lakes that corrective action costs are very site-specific considering the various factors listed by IEPA, as well as NWRA and Land and Lakes, that may affect the corrective action costs at affected landfills. Therefore, while the Board generally finds the corrective action cost estimates for Part 807, 811, and 814 landfills to be reasonable, the Board reiterates that site-specific relief mechanisms like a GMZ, site-specific rules, and adjusted standards are available for landfill owners to seek relief based on site-specific conditions or factors for implementing corrective action or adjusting the groundwater standards.

Board Findings: In balancing economic reasonableness, technical feasibility, and the threat of harm to human health and the environment, the Board finds that the additional cost of monitoring PFAS at Part 807, 811, and 814 landfills under their groundwater monitoring programs to be economically reasonable when weighed against the many adverse health effects of PFAS in groundwater. Further, the Board finds that any potential corrective action costs stemming from the results of PFAS monitoring at landfills are also reasonable, especially since many of the affected landfills are within proximity of potable water wells. Further, the cost estimates are spread over the life of the landfills, including post-closure care that can range from 35 to 205 years.

However, the Board recognizes that corrective action costs may vary depending on site-specific conditions because the cost estimates are based on broad assumptions. The Board is also aware of challenges facing Part 807 landfills in complying with groundwater standards due to lack of revenue and financial assurance. Therefore, the Board reiterates that site-specific relief mechanisms like a GMZ, site-specific rules, and adjusted standards are available for landfill owners to seek relief based on site-specific conditions or factors for implementing corrective action or adjusting the groundwater standards.

The Board finds that the threat to human health and the environment far outweighs the costs imposed on Part 811 and 814 landfills by eliminating the

PFAS standards exemptions under Part 620 for Part 811 and 814 landfills; and Part 807 landfills by applying PFAS standards already in place. Thus, the Board finds the proposed changes for first notice are economically reasonable.

The Board should include PFAS in detection monitoring for Part 811 landfills.

At second notice, the Board directs IEPA to propose rules specific to landfills to address the groundwater monitoring of PFAS, which could include proposed rules for detection monitoring for Part 811 landfills.

C) Change in the Rule: See Attachment A.

D) Public Hearing Requests: No public hearing requests were received. However, the Board held a public hearing on September 16, 2025.

10) Justification and Rationale:

A) Changes in Statutory Language: None.

B) Changes in Board Policy, Procedures, or Structure: None.

C) Citations to Federal Laws, Rules, or Regulations, or Funding Requirements: None.

D) Court Decisions: None.

E) Other Reasons: On March 20, 2025, the Board adopted amendments to its groundwater quality standards under 35 Ill. Adm. Code 620. These amendments included new groundwater quality standards for six poly- and perfluoroalkyl substances (PFAS) based on the United States Environmental Protection Agency's (USEPA) drinking water maximum contaminant levels and health-based water concentrations. The amendments also included exemptions from PFAS standards for landfills regulated under 35 Ill. Adm. Code 811 and 814. The Board opened this sub-docket on January 23, 2025 in response to the Joint Committee of Administrative Rules' (JCAR) recommendation that the Board substantively consider the technical feasibility and economic reasonableness of the groundwater quality standards and whether the amendments would have an adverse economic impact "particularly on landfills" regulated under 35 Ill. Adm. Code 811 and 814. 48 Ill. Reg. 4608.

After reviewing the record, which includes economic testimony from representatives of the affected landfills and extensive information on landfills regulated under Parts 807, 811, and 814 from the Illinois Environmental Protection Agency, the Board proposes to strike the exemptions for Part 811 and 814 landfills at 35 Ill. Adm. Code 620.410(f) and 620.420(e) and declines to add an exemption for Part 807 landfills.

11) Name of Agency Representative:

Richard R. McGill, Jr.
Illinois Pollution Control Board
60 E Van Buren St, Suite 630
Chicago, Illinois 60605
richard.mcgill@illinois.gov

ATTACHMENT A

SECOND NOTICE CHANGES

AGENCY: Groundwater Quality (35 Ill. Adm. Code 620; 50 Ill. Reg. 9650)

1. None

State Mandates Act Questionnaire

Agency: Pollution Control Board

Part/Title: Groundwater Quality (35 Ill. Adm. Code 620)

Illinois Register Citation: 50 Ill. Reg. 9650, July 17, 2026

1. Does this rulemaking affect any of the following:

X	Municipality		Other Unit of Local Govt.
	County		School District
	Township		Community College Dist.

2. Does this rule require any of the above entities to establish, expand or modify its activities in such a way as to necessitate additional expenditures from local revenues?

Yes No X Number of units affected N/A

If yes, please estimate the amount of additional expenditures necessitated by this rulemaking per unit of government: $ N/A

Note: If the dollar amount, or total number of units affected is unknown, please outline and attach to this form an explanation of the steps taken by the agency to determine the approximate expense of the rulemaking, and the number of units affected.

If no, please explain why the rule does not necessitate such additional expenditures.

The Board proposes to strike the exemptions for Part 811 and 814 landfills at 35 Ill. Adm. Code 620.410(f) and 620.420(e) and declines to add an exemption for Part 807 landfills. Part 620 sets groundwater quality standards, it does not impose any affirmative obligation to perform groundwater monitoring or corrective action in response to an exceedance of a Part 620 standard. The Board did not intend to establish, expand, or modify substantive requirements that would affect entities listed above or their expenditures from local revenues. Some Part 807 landfills are owned by municipalities, but are exempt from financial assurance requirements for corrective action.

3. Were any alternatives that do not necessitate additional expenditures considered?

Yes No X

If yes, please list these alternatives and explain why they were rejected.

4. What are the policy objectives of the rulemaking? (Please be specific)

On March 20, 2025, the Board adopted amendments to its groundwater quality standards under 35 Ill. Adm. Code 620. These amendments included new groundwater quality standards for six poly- and perfluoroalkyl substances (PFAS) based on the United States

Environmental Protection Agency's (USEPA) drinking water maximum contaminant levels and health-based water concentrations. The amendments also included exemptions from PFAS standards for landfills regulated under 35 Ill. Adm. Code 811 and 814. The Board opened this sub-docket on January 23, 2025 in response to the Joint Committee of Administrative Rules' (JCAR) recommendation that the Board substantively consider the technical feasibility and economic reasonableness of the groundwater quality standards and whether the amendments would have an adverse economic impact "particularly on landfills" regulated under 35 Ill. Adm. Code 811 and 814. 48 Ill. Reg. 4608.

After reviewing the record, which includes economic testimony from representatives of the affected landfills and extensive information on landfills regulated under Parts 807, 811, and 814 from the Illinois Environmental Protection Agency, the Board proposes to strike the exemptions for Part 811 and 814 landfills at 35 Ill. Adm. Code 620.410(f) and 620.420(e) and declines to add an exemption for Part 807 landfills.

5. Please explain why the policy objectives of this rule cannot be achieved in the absence of the rule or through a rule that does not create a State Mandate.

As discussed in No. 2 above, the rules do not create or enlarge a State Mandate. As noted in No. 4 above, the Board previously exempted Part 811 and Part 814 landfills from the Part 620 PFAS standards and opened this sub-docket to consider the technical feasibility and economic reasonableness of the Part 620 PFAS standards on these landfills. The Board did a thorough evaluation of the economic information and testimony provided by the affected landfills and found the monitoring and compliance costs of the Part 620 PFAS standards to be reasonable. Accordingly, the Board must adopt the rules striking the exemptions in order to protect human health and the environment. Moreover, the Board is not aware of a non-regulatory or voluntary approach that would achieve the policy objectives of this rulemaking.

AGENCY ANALYSIS OF ECONOMIC AND BUDGETARY EFFECTS OF PROPOSED RULEMAKING

Agency: Pollution Control Board

Part/Title: 35 Ill. Adm. Code 620: Groundwater Quality

Illinois Register Citation: July 17, 2026, 50 Ill. Reg. 9650

1. Anticipated effect on State expenditures and revenues.

   (a) Current cost to the agency for this program/activity.

   Unknown, as the Board does not break its costs down by case type or program.

   (b) If this rulemaking will result in an increase or decrease in cost, specify the fiscal year in which this change will first occur and the dollar amount of the effect.

   No such increase or decrease expected.

   (c) Indicate the funding source, including Fund and appropriation lines, for this program/activity.

   The Board's funding source for handling all its case types is the General Appropriations Act (P.A. 104-464, H.B. 111 S.A. 3). The Board does not have specific appropriation lines for specific case types or programs. Our appropriated funds cover the salary and benefits (personnel-related expenses) for Board staff. Our appropriations come from the following funds: Fund 0072 (Underground Storage Tank), Fund 0091 (Clean Air Act Permit), Fund 0294 (Used Tire Management Fund), Fund 0944 (Environmental Protection & Inspection), and Fund 0277 (Pollution Control Board). Fund 0277 maintains the payments from the Board's filing fees. Salaries and benefits are not paid from this fund; only some non-personnel operation expenses. Most non-personnel operation expenses are paid from a non-appropriated account, Fune 0207, which receives an annual allocation from the Environmental Protection Trust Fund. The Budget Implementation Act (P.A. 104-466, H.B. 2949 S.A. 3) sets the Board's filing fees and provides for an annual filing fee adjustment.

   (d) If an increase or decrease in the costs of another State agency is anticipated, specify the fiscal year in which this change will first occur and the estimated dollar amount of the effect.

   No such increase or decrease is expected.

   (e) Will this rulemaking have any effect on State revenues or expenditures not already indicated above? Specify effects and amounts.

No such effect expected.

2. Economic effect on persons affected by the rulemaking.

(a) Indicate the economic effect and specify the persons affected:

The NWRA and Land and Lakes have argued to the Board in their filings and through witness testimony that significant costs will be associated with remediating sites contaminated with PFAS. In looking at those costs, the Board has separated out monitoring costs from corrective action costs.

NWRA.

Monitoring Costs: NWRA's witness Mr. Ballenger estimated that the additional incremental cost for Part 811 and 814 landfills to comply with PFAS groundwater and leachate monitoring for the remaining life of the sites to be $32,629,125 for Part 814 Subpart D sites and $22,613,625 for Part 811 and Part 814 Subpart C sites. Ballenger Test. at 20.

Mr. Ballenger also addressed potential assessment monitoring costs, including: 1) "[e]valuation of the detections of the PFAS constituents within the background wells," including "additional sampling of groundwater, surface water, and soils, and may include installation and sampling of additional monitoring wells"; 2) "[e]valuation of potential cross-contamination from old well construction and pumps," including the replacement of wells and/or pumps; 3) "[e]valuation of the rate and extent of PFAS constituents detected above the Part 620 standards," including additional well installations, related sampling, multiple drilling programs to adequately identify the extent of concentrations above the applicable standards depending upon the geometry of the site, property, and hydrogeologic characteristics; 4) "[c]onducting the Corrective Action Measures Assessment ("CAMA"), holding public meetings, designing and permitting of potential corrective action pursuant to 35 Ill. Adm. Code Section 811.324"; 5) "[r]evision of the contaminant transport model to accommodate either the CAMA, or revision of the model due to a failure at the time of a permit renewal application where PFAS constituents into the Groundwater Impact Assessment (GIA)"; 6) "[d]esign, permitting, and installation of contingent remediation programs resulting from contaminant transport model failures due to the extremely low limits of the PFAS constituents"; and 7) "[d]esign modification for new areas based on the GIA results." Ballenger Test. at 26-27.

Mr. Ballenger estimated that these additional costs will be $2,616,750 for Part 814 Subpart D landfills and $818,000 for Part 811 and Part 814 Subpart C sites. Ballenger Test. at 28. He notes that these costs are based on data provided by NWRA member landfills and "does not include additional assessment monitoring for Appendix II parameters, revisions to the groundwater impact assessment, or other site investigations that may be required to complete the assessment." *Id.* To

estimate these costs, Mr. Ballenger also assumed that: 1) "an extra two samples will be required in a year for each groundwater and leachate monitoring location to establish background concentrations"; 2) "background concentrations for PFAS parameters can be established for approximately $10,000 in an assessment report contained in a permit application"; and 3) "one permit application is assumed during operation and post-closure care period." *Id.* Mr. Ballenger details the amount and frequency of monitoring for each landfill in Tables 13-15. *Id.* at 28-33.

Corrective Action Costs: Mr. Ballenger estimated the cost of PFAS-related corrective action only for Part 814 Subpart D units because Part 811 and Part 814 Subpart C facilities are Subtitle D compliant, i.e., "designed and constructed with composite liner and leachate management systems." Ballenger Test. at 34. He noted that there have been no confirmed leachate leaks from landfills with RCRA Subtitle D compliant liner systems, which include Part 811 and Part 814, Subpart C landfills. *Id.* at 7. For landfill operational data, he relied on data provided by NWRA-member landfills as well as IEPA's Landfill Capacity Report for 2023. *Id.* The cost estimates are for projected life of the facility unless closed and includes "30 years of post-closure care unless an alternative minimum post-closure care period is required." *Id.*

For estimating remedial costs, Mr. Ballenger relied on a study done for the Minnesota Pollution Control Agency entitled "Evaluation of Current Alternatives and Estimated Cost Curves for PFAS removal and Destruction from Municipal Wastewater, Biosolids, Landfill Leachate, and Compost Contact Water" as well as data from "an internal case study prepared by Republic Services in July 2025." Ballenger Test. at 34. The Minnesota study identified feasible treatment options for several waste streams, including landfill leachate, by examining over 50 PFAS separation and destruction technologies "for their ability to remove and destroy select PFAS to below current analytical reporting limits." Minn. Study at 1.

For landfill leachate, the Minnesota study evaluated the costs for two feasible alternative treatment options: GAC with high temperature incineration and foam fractionation with high temperature incineration of foamate. Mr. Ballenger stated that "the estimates for the remediation of the PFAS-contaminated groundwater were variable." Ballenger Test. at 35. The estimates "ranged significantly from a low- to high-construction cost depending upon the selected treatment." *Id*. Mr. Ballenger also stated that the "two top options evaluated were granular activated carbon with high temperature incineration and a foam fractionation with high temperature incineration resulting in a total range of $112 [million] MM up to $558MM." *Id*. According to Mr. Ballenger, the "case study provided by Republic Services indicates capital costs for the project of $3.893MM but indicated some initial design and construction issues with first-time construction may be mitigated in future construction, reducing the cost potential by $1.2MM." *Id.* Mr. Ballenger included details of the estimate for each NWRA-member landfill in Tables 17-19. *Id.* at 36-44.

Land and Lakes.

Monitoring Costs: The sampling and analysis cost is the same for Part 807, 811, and 814 landfills. IEPA maintained that the cost for the analysis of PFAS samples would be $300 per event per well. 7/25/25 IEPA Resp. at 6. However, both Ballenger and Hunsberger estimated slightly higher PFAS analytical cost per sample of $375 plus an estimated cost of $45 per well for sampling, compilation, and reporting, which totals to $420 per event per well. Ballenger Test. at 20, Hunsberger Test. at 11. In addition, for PFAS sampling, Hunsberger noted that the landfills' monitoring well networks must be evaluated to ensure cross-contamination from Teflon tape, gaskets, tubing, or pumps are not impacting the results. Hunsberger Test. at 12. However, he did not provide a cost estimate for such evaluation.

To estimate the PFAS monitoring cost for Part 807 landfills, Mr. Hunsberger assumed that IEPA would include Part 620 PFAS constituents in the annual list of parameters to be monitored (commonly referred to as the G2 list of parameters) to the supplemental permits of all Part 807 units at some point. Hunsberger Test. at 10. In this regard, IEPA states that "Part 807 landfills analyze samples for all Part 620 parameters annually as part of detection monitoring; therefore, they will analyze for PFAS on an annual basis along with all other Part 620 parameters." 8/12/25 IEPA Resp. at 4.

Mr. Hunsberger calculated the total incremental costs of PFAS monitoring by multiplying PFAS sampling cost per well by the number of wells and the expected number of years until release from post-closure care. Hunsberger Test. at 11. He determined the potential incremental cost of routine annual PFAS monitoring at a "typical" 50-acre Part 807 landfill with 15 monitoring wells to be $6,300 per year. Hunsberger Test., Attach. A, Table 1. However, Mr. Hunsberger notes that the likelihood of Part 807 landfills going into assessment monitoring is high due to the pervasiveness of PFAS in the environment. *Id.* at 11.

IEPA noted that Part 807 landfills are required to analyze samples for all Part 620 parameters, including PFAS, annually as a part of monitoring. However, if PFAS are detected above the Part 620 standards downgradient of a Part 807 landfill, the unit is required to enter assessment monitoring to confirm that the solid waste disposal facility is the source of the contamination. 8/12/25 IEPA Resp. at 4. Mr. Hunsberger notes that assessment monitoring includes: establishing background concentrations, installing additional wells and geo probes, increasing sampling frequency, preparing an extent of contamination investigation, and preparing a supplemental permit application. Hunsberger Test. at 11-12, Attach. A, Table 1.

Mr. Hunsberger estimated the cost of implementing assessment monitoring program, including establishing background at a "typical" Part 807 landfill, to be

$161,460. Hunsberger Test., Attach. A, Table 1. This estimate includes background sampling costs ($3,360) for two wells, the engineering cost for the permit application ($5,000), verification cost of background data ($15,000), assessment monitoring program permit ($7,500), assessment of extent investigation ($72,100), analysis of Geoprobe samples from 8 borings ($3,000), installation of four compliance monitoring wells ($48,000), and reporting/permitting ($7,500). *Id.*

Additionally, if the unit is required to sample quarterly, Mr. Hunsberger provided an estimate for the sampling of four compliance boundary wells, four GMZ (groundwater management zone) wells, and four impacted detection wells, at a total annual cost of $28,320. *Id*.

Corrective Action Costs: Mr. Hunsberger stated, "given the extremely low detection limits for PFAS, the chances are that many Part 807 landfills will enter corrective action." Hunsberger Test. at 13. He noted that the "remedial (corrective) action for PFAS constituents will be similar to most other contaminants and will likely involve source control, including cap, leachate extraction, treatment and disposal, and/or hydraulic gradient control and removal of the impacted groundwater through groundwater extraction that may or may not include barrier walls." *Id.* However, removal of such PFAS-containing liquids (groundwater or leachate) may be complicated by the lack of treatment facilities willing to accept such liquids. Even if publicly-owned and/or private water treatment facilities decide to accept the PFAS-containing liquids for treatment, the treatment and disposal costs are currently unknown. *Id.*

For source control, Mr. Hunsberger reported that a landfill will likely have to re-do its final cover. Part 807 landfills are required to have a final cover that is a compacted layer of not less than two feet of suitable material placed over the entire surface of the landfill. *See* 35 Ill. Adm. Code 807.305. Mr. Hunsberger estimated the cost per acre of installing a new geocomposite cover system with a geotextile to be $151,000. For a 50-acre landfill, that would be a total cost of $7,550,000.

For leachate extraction, which consists of a collection and pumping system to remove leachate from the landfill to prevent it from migrating to underlying groundwater, Mr. Hunsberger estimated a new system to cost $285,000. For a groundwater extraction system, which involves pumping contaminated groundwater, he estimated a cost of $130,600. Installing barrier walls is estimated to cost $844,388. Once leachate and groundwater are extracted, they will have to be transported for treatment at a Publicly Owned Treatment Works (POTW). The annual operation and maintenance cost of leachate and groundwater extraction systems, transportation of leachate and groundwater to a POTW, and treatment at POTW add to an annual cost of $514,000. Hunsberger Test., Attach. A, Table 2.

In the very unlikely circumstance where a POTW refuses to accept PFAS-containing liquids for treatment, Mr. Hunsberger provided an estimated cost for a landfill to construct an on-site treatment facility. He estimated that it would cost $1 million to $5 million and would have $100,000 to $500,000 of annual operation costs.

Looking at Part 807 landfills, Mr. Hunsberger noted that they currently do not generate revenue from waste disposal. "Given the extremely low groundwater quality standards for the PFAS constituents, the potential for these sites to exit post-closure is unlikely without substantial investment in PFAS remediation." Hunsberger Test. at 9. He argues that remediation costs without matching revenue streams could lead to owners of Part 807 landfills abandoning their facilities. *Id*.

Board Findings.

Monitoring Costs: Considering the above, the Board disagrees with NWRA and Land and Lakes that Part 807, 811, and 814 landfills must be exempted from Part 620 PFAS standards when it comes to monitoring PFAS. Groundwater monitoring is a preventative measure for the early detection of any release of contaminants from a landfill so that appropriate remedial steps can be taken to protect underlying groundwater. IEPA asserts that the inclusion of PFAS constituents in groundwater monitoring programs at landfills is critical for identifying potential contamination and ensuring appropriate corrective actions are timely taken at these landfills. 7/25/25 IEPA Resp. at 2. IEPA maintains that potential impact of "any PFAS constituents released from Illinois landfills, as these will remain unknown without the requirements for sampling and analysis of these constituents and would therefore undermine the State's policy and commitment to safeguarding public health and environmental integrity." *Id.* The Board agrees that if PFAS are excluded from Part 807, 811, or 814 landfills' groundwater monitoring programs, then we will never know if groundwater is being contaminated by any release of PFAS from the landfills. Therefore, the Board considers the cost imposed on Part 807, 811, and 814 landfills due to inclusion of PFAS in their detection and assessment monitoring programs to be consistent with other constituents added to the landfill rules during previous updates of Part 620 standards. Considering this, the Board finds the costs of including PFAS in groundwater monitoring programs at Part 807, 811, and 814 landfills to be economically reasonable.

Corrective Action Costs: The Board notes that while leachate/groundwater treatment costs for all affected landfills are in the range of $113 to $581 million, they are projected over the operating life of the landfills (5 to 169 years) plus 30 years of post-closure care for Part 811 and 814 landfills. Ballenger at 35, Tables 16 and 17. Further, as noted by IEPA, the annual estimated tipping fee revenue for active Part 811 and 814 landfills is over $1.3 billion, which provides a perspective on the annual remediation costs in terms of revenue for protecting the

State's groundwater. 8/12/25 IEPA Resp. at 11. Additionally, as noted by Hunsberger, treatment technologies for PFAS contaminated groundwater are still emerging and have not been applied on a large scale. *Id.* at 14. So, as more technologies become commercially available, the Board expects treatment costs to decrease. Another factor to be considered is that many landfills with PFAS contamination may already be in corrective action phase for other constituents, so the burden of corrective action costs other than treatment may not be significant. 7/25/25 IEPA Resp. at 7.

Regarding Part 807 landfills, the bulk of non-treatment related costs is accounted by a new final cover, the need for which may have to be evaluated on a site-specific basis. Also, the Board recognizes that Part 807 landfills are mostly publicly owned and have no revenue coming in as all of them are in post-closure care. Also, many of the Part 807 landfills, which are owned by municipalities, are exempt from financial assurance requirements for corrective action. The Board notes that these landfills were closed almost 35 years ago under closure requirements of old landfill rules under Part 807, but most of them are continuing post-closure care due to groundwater issues. While adding potential PFAS corrective action costs would place additional burden on these facilities, the Board expects the Agency to ensure compliance with Part 620 groundwater standards, including PFAS, by utilizing existing enforcement tools or voluntary measures. In this regard, IEPA states "that even for closed landfills with limited data, the protection of groundwater remains a statutory mandate and will continue to be addressed within the constraints of available resources and authorities." 1/30/26 IEPA Resp. at 8.

Finally, the corrective action cost estimates are based on broad assumptions which may not be applicable at all landfills depending on site-specific conditions. In this regard, the Board agrees with IEPA, NWRA, and Land and Lakes that corrective action costs are very site-specific considering the various factors listed by IEPA, as well as NWRA and Land and Lakes, that may affect the corrective action costs at affected landfills. Therefore, while the Board generally finds the corrective action cost estimates for Part 807, 811, and 814 landfills to be reasonable, the Board reiterates that site-specific relief mechanisms like a GMZ, site-specific rules, and adjusted standards are available for landfill owners to seek relief based on site-specific conditions or factors for implementing corrective action or adjusting the groundwater standards.

(b) If an economic effect is predicted, please briefly describe how the effect will occur.

As discussed in No. 2(a) above, Part 807, 811, and 814 landfills are expected to incur cost for groundwater monitoring for PFAS. If PFAS are detected during groundwater monitoring, these landfills are expected to incur cost for corrective action.

(c) Will the rulemaking have an indirect effect that may result in increased administrative costs? Will there be any change in requirements such as filing, documentation, reporting or completion of forms? Compare to current requirements.

No increased administrative costs are anticipated.