

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	AS 2021-001
Petition of Midwest Generation)	
for an Adjusted Standard from 845.740(a))	
and Finding of Inapplicability of Part 845)	(Adjusted Standard)
(Joliet 29 Station))	

To: See attached service list.

NOTICE OF ELECTRONIC FILING

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board a RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, a copy of which is herewith served upon you.

Respectfully submitted,

Dated: February 4, 2022

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THIS FILING IS SUBMITTED ELECTRONICALLY

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RECOMMENDATION OF THE
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency (“Illinois EPA” or “Agency”), by one of its attorneys, hereby files its Recommendation concerning the retention of existing liners in Pond 2 at Midwest Generation LLC’s Joliet 29 Station in Joliet, Will County, Illinois, pursuant to Section 28.1 of the Illinois Environmental Protection Act (“Act”). 415 ILCS 5/28.1, 35 Ill. Adm. Code § 104.416. For the reasons stated below, Illinois EPA recommends that the Illinois Pollution Control Board (“Board”) DENY Petitioner’s request for an adjusted standard from 35 Ill. Adm. Code § 845.740(a). In support of its Recommendation, Illinois EPA states as follows:

I. INTRODUCTION

1. On April 15, 2021, the Board adopted new regulations providing standards for disposal of CCR in surface impoundments at 35 Ill. Adm. Code 845 (“Part 845”). *See* Board Docket R2020-019. The Part 845 rules became effective on April 21, 2021. 45 Ill. Reg. 5884 (May 7, 2021).
2. On May 11, 2021, Midwest Generation, LLC (“MWG”) filed a petition for an adjusted standard from 35 Ill. Adm. Code §845.740(a) and a finding of inapplicability of Part 845 for certain impoundments located at its Joliet 29 Station (“Petition”), in which it requests a hearing on its petition.

3. The Petition concerns three surface impoundments, which Petitioner designates as Pond 1, Pond 2, and Pond 3.
4. Specifically, Petitioner is seeking the following adjusted standards from the requirements contained in Part 845:
 - a. Pond 2: MWG seeks an adjusted standard to allow the decontamination and retention of the existing liner rather than the liner's removal as required for closure by removal in Section 845.740(a).
 - b. Pond 1 and Pond 3: MWG asserts that Pond 1 and Pond 3 do not satisfy the regulatory definition of a coal combustion residuals ("CCR") surface impoundment and seeks an adjusted standard finding that Part 845 of the Board's regulations is inapplicable.
5. Illinois EPA must make a recommendation to the Board as to the disposition of the Petition within 45 days after the filing of the petition or at least 30 days before a hearing, unless otherwise ordered by the hearing officer or Board. 35 Ill. Adm. Code §104.416. Pursuant to Motions for Extension of Time, the Board ordered that the Agency file its Recommendation by August 22, 2021.
6. On August 22, 2021, Illinois EPA filed with the Board its Recommendation as to Petitioner's request for a finding of inapplicability of Part 845 to Pond 1 and Pond 3. Pursuant to Motions for Extension of Time, the Board has ordered the Agency file its Recommendation addressing Petitioner's request for an adjusted standard from Section 845.740(a) by February 4, 2022.
7. This Recommendation addresses MWG's petition for adjusted standard from Section 845.740(a) for Pond 2.

II. NOTICE AND ACCEPTANCE

8. A petitioner must “submit to the Board proof that, within 14 days after filing of the petition, it has published notice of the filing of the petition by advertisement in a newspaper of general circulation in the area likely to be affected by the petitioner’s activity that is the subject of the adjusted standard proceeding.” 415 ILCS 5/28.1; 35 Ill. Adm. Code § 104.408(a).

9. On June 2, 2021, MWG filed with the Board a certification of publication and a copy of the notice published on May 17, 2021, pursuant to 35 Ill. Adm. Code §§ 104.408(a), (b).

10. On June 3, 2021, the Board accepted MWG’s petition for adjusted standard.

III. RECOMMENDATION REQUIREMENTS AND ANALYSIS OF REQUEST FOR ADJUSTED STANDARD

11. Illinois EPA’s Recommendation must set forth the rationale for the Agency’s position and may present any information which the Agency believes is relevant to the Board’s consideration of the proposed adjusted standard. 35 Ill. Adm. Code § 104.416(a). At a minimum, the Agency must address and respond to the petition with respect to each issue raised by the requirements of Section 104.406(a) through (j). 35 Ill. Adm. Code § 104.416(b).

12. Illinois EPA hereby provides its analysis of MWG’s request for an adjusted standard from Section 845.740(a) for Pond 2 at MWG’s Joliet 29 Station in Joliet, Will County, Illinois:

a. **Standard from which the Adjusted Standard is Sought.**

Petitioner must include “[a] statement describing the standard from which an adjusted standard is sought. This must include the Illinois Administrative Code citation to the regulation of general applicability imposing the standard as well as the effective date of that regulation[.]” 35 Ill. Adm. Code § 104.406(a). MWG requests an adjusted standard from 35 Ill. Adm. Code § 845.740(a), which became effective on April 21, 2021, along with the rest of Part 845.

- b. **Whether the regulation of general applicability was promulgated to implement, in whole or in part, the requirements of the CWA, Safe Drinking Water Act, Comprehensive Environmental Response, Compensation and Liability Act, CAA, or the State programs concerning RCRA, UIC, or NPDES.**

Petitioner must include “[a] statement that indicates whether the regulation of general applicability was promulgated to implement, in whole or in part, the requirements of the CWA (33 USC 1251 et seq.), Safe Drinking Water Act (42 USC 300(f) et seq.), Comprehensive Environmental Response, Compensation and Liability Act (42 USC 9601 et seq.), CAA (42 USC 7401 et seq.), or the State programs concerning RCRA, UIC, or NPDES (see 415 ILCS 5/28.1)[.]” 35 Ill. Adm. Code § 104.406(b). Illinois EPA does not take issue with Petitioner’s comments on this topic. *See* Pet. at 16.

- c. **The level of justification as well as other information or requirements necessary for an adjusted standard.**

Petitioner must include “[t]he level of justification as well as other information or requirements necessary for an adjusted standard as specified by the regulation of general applicability or a statement that the regulation of general applicability does not specify a level of justification or other requirements (see 415 ILCS 5/28.1 and Section 104.426 of this Part)[.]” 35 Ill. Adm. Code § 104.406(c). Illinois EPA agrees with Petitioner that since Part 845 does not specify a level of justification for an adjusted standard, the applicable level of justification are the factors identified in Section 28.1(c) of the Act, 415 ILCS 5/28.1(c) (2020). The Recommendation will address these factors in Paragraph 12(h) below.

- d. **The nature of the petitioner’s activity that is the subject of the proposed adjusted standard.**

Petitioner must include “[a] description of the nature of the petitioner's activity that is the subject of the proposed adjusted standard. The description must include the location of, and area affected by, the petitioner's activity. This description must also include the number of persons

employed by the petitioner's facility at issue, age of that facility, relevant pollution control equipment already in use, and the qualitative and quantitative description of the nature of emissions, discharges or releases currently generated by the petitioner's activity[.]” 35 Ill. Adm. Code § 104.406(d).

Petitioner states that all the CCR surface impoundments at the Joliet 29 Station were “built in 1978 with a poz-o-pac liner.” Pet at. 6. MWG relined Pond 2 in 2008. According to Petitioner, from bottom to top, the Pond 2 liner system constructed in 2008 consists of: “the original poz-o-pac, a geotextile cushion, the HDPE liner, a geotextile cushion, a 12-inch thick sand cushion layer, and a six-inch limestone warning layer.” *Id.* at 8, Pet. Ex. 10.

Illinois EPA has reviewed Pond 2’s construction permit record, History of Construction, geotechnical data, aerial photographs, groundwater data, and other available documents. The Agency has not been able to locate a permit for the initial construction of Pond 2, but a review of aerial photographs confirms that the current location of Pond 2 was not present until it was initially constructed in 1978/1979. Ex. A and Ex. B. Upon review of the available materials, Illinois EPA maintains that (1) the “poz-o-pac” as placed and retained by MWG is a CCR material and potential source of groundwater contamination, and (2) Petitioner knowingly used CCR material, including coal ash (or “black silty gravel”) as structural fill or foundational backfill in the 2008 construction of Pond 2’s current HDPE liner system without meeting the Act’s coal combustion byproduct (“CCB”) requirements for beneficial reuse and, as such, it remains a coal combustion waste (“CCW”) and a potential source of groundwater contamination. 415 ILCS 5/3.135.

i. MWG’s poz-o-pac is CCR material.

According to the Federal Highway Administration (“FHWA”), pozzolan-stabilized base (“PSB”), or a poz-o-pac material/basic lime-fly ash-aggregate formulation, have been used to

provide stabilized base and subbase mixtures since the 1950's. Ex. C.¹ The History of Construction provides the following documented facts about MWG's poz-o-pac formulation during Pond 2's original 1978/1979 construction:

- The poz-o-pac consisted of 3% hydrated lime, 20% fly ash, and 77% boiler slag aggregate with density of 136.9 lbs. per cubic foot.
- The poz-o-pac was sealed with a bituminous seal coat. Curing of the bituminous seal coat was specified to include one week.

Ex. D, attach. 3, app. A-2.² CCR is defined as "fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity...." 415 ILCS 5/3.142; 35 Ill. Adm. Code § 845.120.³ MWG's poz-o-pac formulation is primarily (97%) comprised of fly ash⁴ and bottom ash and is therefore a CCR material. *See* Ex. D, attach. 3 and Ex. A.

ii. MWG retained Pond 2's poz-o-pac during the 2008 construction of the HDPE liner.

Illinois EPA issued state construction Permit 2007-EB-4091 on July 20, 2007. Pet. Ex. 13. This permit authorized the replacement of the poz-o-pac liners at Pond 1 and Pond 2 with a 60-mil high density polyethylene ("HDPE") geomembrane and a twelve-inch sand and limestone screenings warning layer. Ex. B. Appendix A-3 of the History of Construction for Pond 2 indicates ramp material from within the original CCR surface impoundment constructed in 1978/1979 was

¹Coal Fly Ash User Guideline for Stabilized Base from "User Guidelines for Waste and Byproduct Materials in Pavement Construction," FHWA Publication No. FHWA-RD-97-148, can be found at <https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/97148/020.cfm>, last modified March 8, 2016. Illinois EPA has printed this portion of the publication from the FHWA website and provided it as Exhibit C.

² Drawing No. 5079C5019, Sheet 2 of 3, Rev. 2

³ "Coal combustion waste" (or CCW) is similarly defined as "fly ash, bottom ash, slag or flue gas or fluid bed boiler desulfurization by-products generated as a result of the combustion of . . . coal, or . . . coal in combination with [other material].415 ILCS 5/3.140.

⁴ Fly ash is often used as a component of stabilized base and subbase materials. Both bituminous (pozzolanic) or subbituminous or lignite (self-cementing) fly ashes can be used, but the Agency cannot find any statement of what kind of fly ash was used in MWG's poz-o-pac formulation. Ex. C at 1 and Ex. A.

placed under the HDPE liner as it lies along and under the ramp designed for access into the CCR surface impoundment. Ex. D, Attach. 3. Appendix A-3 also shows that the poz-o-pac was to be removed. *Id.* However, according to a December 2, 2021 MWG Letter to Illinois EPA, and its attachments, the ramp material was not excavated and the ramp and original poz-o-pac were retained during the 2008 construction.⁵ Ex. D at 2.

Due to the poz-o-pac's nature and use conditions, it has likely been compromised by way of cracking or otherwise breaking down, resulting in material becoming unconsolidated or pulverized in certain areas. PSB is known to crack substantially over time and was likely compromised due to wear and tear during its original use, or during the construction and use currently with a HDPE liner installed. Ex. C at 8-9 and Ex. A.; *see also See Sierra Club, et. al v. Midwest Gen., LLC*, PCB No. 13-15, Interim Opinion and Order of the Board (June 20, 2019) ("Interim Board Order") at 26. The FHWA publication points out that crack control of PSBs is a continuing issue and that driving vehicles, addition of hydration, and freeze thaw activity over the PSB will cause cracks and breakdown of the PSB mixture. Ex. C at 8-9. The evidence of likely breakdown is the presence of the fine to coarse grained fill material used to smooth out the poz-o-pac creating flat, smooth subgrade on the bottom of the impoundment below the liner. Ex. A citing Ex. G, attach. 11. In *Sierra Club*, "after a careful review of the facts,"⁶ the Board found that "both poz-o-pac and HDPE liners at Joliet 29 can and do crack or become damaged on occasions." Interim Board Order at 26. Unconsolidated or pulverized poz-o-pac material at Joliet 29 may leach because it is CCR material that is unlikely to have been rendered inert. Ex. A. Leaching occurs

⁵ Since documents are not clear and sometimes appear to conflict, Illinois EPA is not confident regarding the quantity of poz-o-pac or other CCR materials left in place and/or reutilized during the 2008 construction. However, data provided by MWG suggests that the poz-o-pac was left in place on the bottom of Pond 2 but removed on the side slopes, along with up to three feet of material, and replaced and graded with onsite materials. Ex. A.

⁶ Relevant facts included the investigation conducted by MWG's consultant, NRT, which rated the condition of the poz-o-pac liners as "poor" with "high potential for contamination" in 2005 and 2006. Interim Board Order at 25.

from the surface area of a material containing heavy metals. The more surface area exposures that occur because of cracking, the greater the leaching potential of the material. *Id.*

iii. The “black silty gravel” utilized as structural fill or foundational backfill is CCR.

The Joliet 29 History of Construction provides details on the engineering properties and construction plans for Pond 2. Ex. D, attach. 3. The engineering properties summarized show Pond 2’s foundation is comprised of sand/gravel with a unit weight of 125 pounds per cubic foot (“pcf”). Ex. D, attach. 3, tbl. 2 at 3. The embankment properties are brown clay with a unit weight of 115 pcf and black silty gravel with a unit weight of 125 pcf. Ex. D, attach. 3, tbl. 3 at 5. According to the FHWA, dark gray to black soils represent organic material. Ex. F at 4-10. Organic materials do not make good structural base materials because of the potential for settlement. Ex. A. Additionally, gravels are typically derived from local sources which do not include black rock. Local quarried rock is Silurian Dolomite and Devonian Dolomite, which is typically white, tan or light gray in color. The Agency is not aware of any quarries or borrow sources within a reasonable distance to support economically shipping black inorganic source material from a natural source. Therefore, the black silty gravel is likely fly ash mixed with some crushed poz-o-pac or locally sourced limestone or dolomite gravel, or some combination of the two. Ex. A.

According to the 2005 Geotechnical Summary Letter, boring logs for Joliet 29 had some “minor amounts of ash/slag” at “some locations in the upper foot of material.” Ex. E at 5. In response to Illinois EPA’s inquiry into Pond 2’s embankment construction, MWG provided a letter dated December 9, 2021 from its contractor, Sargent and Lundy. Ex. G. The letter acknowledges the presence of brown clay and black silty gravel material in multiple borings but does not provide any local source of geotechnically suitable black material that is not CCR. Ex. G at 3-4. The letter simply states that Pond 2’s embankments “consist of a brown clay, black/gray silt and clay, and

brown/tan sand and gravel materials” and that these materials are a “combination of earthen materials obtained from on-site or off-site borrow sources.” Neither the letter nor any other available documents provide any evidence of testing for organic content. Ex. A.

Attached to the December 9, 2021 letter is a picture of the 2008 construction shows the subgrade prepared and the geotextile and geomembrane being placed. Ex. G, attach. 11. The side slope of the impoundment subgrade is compacted black to dark brown silty gravel and the bottom is poz-o-pac smoothed over with fine to coarse grained material—potentially the aforementioned black silty gravel or unconsolidated poz-o-pac. Ex. G, attach. 11 and Ex. A. The black silty gravel, described in the History of Construction and shown in the picture of the construction of Pond 2’s HDPE liner, likely contains fly ash and/or bottom ash to which MWG has not provided evidence to the contrary. Ex. A citing Ex. D, attach. 3 at 5 and Ex. G.

For the reasons provided above, Illinois EPA maintains that the poz-o-pac and black silty gravel material are CCR or CCR combined with other materials and are therefore a potential source of contamination in the groundwater.

- iv. MWG utilized CCR material that does not meet the definition of CCB as structural fill or foundational backfill during the 2008 construction of the HDPE liner.

CCW is defined as “any fly ash, bottom ash, slag, or flue gas or fluid bed boiler desulfurization by-products generated as a result of the combustion of...coal...” Under the Act, CCW is considered CCB and not waste if it meets the beneficial use requirements of Section 3.135. 415 ILCS 5/3.135. To be used beneficially for structural fill, foundation backfill, antiskid material, soil stabilization, pavement, or mine subsidence, CCW (A) cannot be mixed with hazardous waste prior to use and (B) must be tested utilizing test method ASTM D3987-85 and cannot exceed Class

1 groundwater quality standards (“GWQS”). 415 ILCS 5/3.135(a-5)(A), (B).⁷ It also must be “in an engineered application or combined with cement, sand, or water to produce a controlled strength fill material and covered with 12 inches of soil unless infiltration is prevented by the material itself or other cover material.” 415 ILCS 5/3.135(a)(8).⁸ Under Part 845, “beneficial use of CCR” means CCR that meets the definition of “coal combustion by-product” in Section 3.135 of the Act⁹ and the definition of “beneficial use of CCR” in 40 CFR § 257.53,¹⁰ incorporated by reference in Section 845.150. 35 Ill. Adm. Code § 845.120.

Available documents indicate that, as part of Pond 2’s HDPE liner construction in 2008, MWG removed between one to three feet of the black silty gravel material and/or poz-o-pac along the internal side slopes of the embankment and then reused the black silty gravel material to rebuild the side slopes of the embankments. *See* Ex. D, attach. 3, app. A-3, sheet no. C020;¹¹ Ex. G, attach. 11; and Ex. A. For the CCR materials to meet the definition of CCB for beneficial reuse, MWG would have had to, at a minimum, test the material utilizing test method ASTM D3987-85, or the “shake test.” Based on the 2005 Geotechnical Report and History of Construction, MWG had knowledge of the nature of the CCR material being reused prior to construction and knowingly

⁷ In 2002, Public Act 92-0574 replaced former Section 3.94 of the Act with Section 3.135. The requirements of Section 3.135(a-5) are the same now as they were at the time of the 2008 construction.

⁸ This requirement in Section 3.135(a)(8) is the same now as it was at the time of the 2008 construction. However, Section 3.135(a)(8) of the Act now also requires CCB to be designed and constructed “according to ASTM standard E2277-03” or “Illinois Department of Transportation specifications,” which was not required at the time of the 2008 construction. 415 ILCS 5/3.135 (2020); *see* Public Act 97-510 (Aug. 23, 2011).

⁹ Section 3.135 has also included varying notification requirements since 2002. Bureau of Land and Bureau of Water staff have completed a review of Agency records and were unable to locate any notifications made pursuant to Section 3.135 regarding the beneficial use or reuse of CCR materials at the Joliet 29 Station. Ex. A, B and H.

¹⁰ Under Part 257, “[b]eneficial use of CCR means the CCR meet all of the following conditions . . . (3) The use of CCR must meet relevant product specifications, regulatory standards or design standards when available....”.

¹¹ Attachment 6 to Exhibit G removes the topographic contours from the Pond 2 embankments that are shown in Appendix A-3 (Sheet C020) of the History of Construction, which illustrate the change in shape and grade during the construction. The geometry of the bottom of Pond 2 and the top of the embankment side slope did not change between the two documents. Ex. A.

reutilized the CCR materials for geotechnical applications, seemingly without testing for environmental suitability. *See* Ex. D, attach. 3, app. A-2 and A-3; Ex. E, attach. 4; and Ex. A.

Review of available documents does not indicate any shake test has been performed. Ex. A. None of the contractor notes on the drawings in the History of Construction (Ex. D, attach. 3) or the Construction Documentation Transmittal for Pond 1 and Pond 2 (Pet. Ex. 15) provide any evidence of any testing of subgrade materials for metals contamination. The documents focus on geotechnical and construction related quality control and do not account for or provide any details related to testing per ASTM D3987-85, which is a requirement of the Act for beneficial use of CCR that pertains to the environmental suitability of construction materials.¹² Ex. A. Without compliance with the CCB beneficial use requirements, the CCR materials utilized as structural fill or foundational backfill beneath the HDPE liner of Pond 2 remain “coal combustion waste” pursuant to the Act. *See, e.g., Sierra Club*, Interim Board Order at 89.

Petitioner asserts that Pond 2 and its HDPE liner can be fully decontaminated from CCR material without removal of the liner and its subsoils as required by Section 845.740(a). Illinois EPA’s review of available information as provided above indicates that retention of the liner would necessarily include retention of CCR material as part of the CCR surface impoundment’s containment structure components and contaminated subsoils. Without demonstration that the CCR material qualifies as CCB or has otherwise been tested for its leaching potential and environmental suitability, it remains a potential source of contamination and should be subject to the decontamination requirements of a closure by removal action. 35 Ill. Adm Code § 845.740(a), (e). For this reason, *inter alia*, Illinois EPA recommends that the Board deny Petitioner’s request

¹² In *Sierra Club*, the Board found that CCR utilized as fill at four of MWG’s facilities, including Joliet 29, had not been tested for compliance with the CCB beneficial use requirements and had not been demonstrated as compliant with IDOT specifications or ASTM standards as required by the Act. Interim Board Order at 89.

for adjusted standard from Section 845.740(a). Illinois EPA will address Petitioner's representations surrounding the available groundwater data and potential releases from Pond 2 in Paragraph 12(f) below.

e. Efforts that would be necessary if the petitioner was to comply with the regulation of general applicability.

Petitioner must include “[a] description of the efforts that would be necessary if the petitioner was to comply with the regulation of general applicability. All compliance alternatives, with the corresponding costs for each alternative, must be discussed. The discussion of costs must include the overall capital costs as well as the annualized capital and operating costs[.]” 35 Ill. Adm. Code §104.406(e).

Petitioner seeks adjusted standard from Section 845.740(a), which provides:

Closure by Removal of CCR. An owner or operator may elect to close a CCR surface impoundment by removing all CCR and decontaminating all areas affected by releases of CCR from the CCR surface impoundment. CCR removal and decontamination of the CCR Surface impoundment are complete when all CCR and CCR residues, containment system components such as the impoundment liner and contaminated subsoils, and CCR surface impoundment structures and ancillary equipment have been removed. Closure by removal must be completed before the completion of a groundwater corrective action under Subpart F.

To comply with the regulation of general applicability governing closure by removal, Petitioner would need to not only remove the HDPE liner, but also containment system components, including but not limited to contaminated subsoils. Following the completion of CCR removal and decontamination of the CCR surface impoundment under Section 845.740(a), Petitioner would need to submit to the Agency a completion of CCR removal and decontamination report and a certification from a qualified professional engineer that CCR removal and decontamination of the CCR surface impoundment has been completed, both of which are subject to Agency approval. 35 Ill. Adm. Code §§ 845.740(e) and 845.760(f).

Petitioner states that requiring compliance with the closure by removal requirements, including excavation of the HDPE liner, the poz-o-pac beneath, and “approximately six inches of soil below the liner” will cost \$1,117,291. Additionally, replacement of the HDPE liner will cost approximately \$160,772. Pet. at 16-17. Petitioner’s estimate of removing “six inches of soil below the liner” is based on the assumption that only CCR released from inside the basin during the demolition and removal of the liner will be a source of contaminated subsoils, but does not account for further measures that will likely need to be taken to get the certification of decontamination under Section 845.740(e).

Petitioner’s discussion of costs does not address the existence of CCR materials underneath the liner relevant to a closure by removal action under Part 845, or measures to remove or close with a final cover pursuant to Part 845 so as to include CCR material underlying the liner or in the embankments. Furthermore, Petitioner does not provide evidence that one or more of the embankments or the foundational backfill surrounding and underlying Pond 2 are not leaching metals into the groundwater. Illinois EPA maintains that a closure by removal action must require removal of all contaminated subsoils, and a final cover system would have to encapsulate the CCR materials placed under the liner or in the embankments of Pond 2, neither of which are accounted for in Petitioner’s discussion of costs.

f. Proposed Adjusted Standard and efforts necessary to achieve the Proposed Standard.

Petitioner must include “[a] narrative description of the proposed adjusted standard as well as proposed language for a Board order that would impose the standard. Efforts necessary to achieve this proposed standard and the corresponding costs must also be presented[.]” 35 Ill. Adm. Code § 104.406(f). Petitioner proposes the following language for its requested adjusted standard:

“MWG may close by removing and decontaminating all areas affected by releases from Pond 2 at the Joliet 29 Station. CCR removal and decontamination of the Pond 2 is complete when the CCR in Pond 2 and any areas affected by releases from the CCR surface impoundment have been removed. MWG must conduct visual inspection and analytical testing to demonstrate that the geomembrane liner in Pond 2 is not contaminated with CCR constituents. MWG must submit the results to Illinois EPA.”

Pet at 19. Petitioner equates its proposed adjusted standard language to the language Illinois EPA originally proposed to the Board for closure by removal. *Id.* In support, Petitioner provides statements from its expert witness, Mr. Neilson, and the Board’s opinion in the R20-19 regarding liner reuse for retrofit of a CCR surface impoundment. *Id.* However, Petitioner uses its expert’s statements and the Board’s opinion out of context while not fully considering the differences between the closure by removal standard initially proposed by the Agency and the closure by removal standard ultimately adopted by the Board in Section 845.740.

Proposed Section 845.740(a) required the following:

Closure by removal of CCR. An owner or operator may elect to close a CCR surface impoundment by removing and decontaminating all areas affected by releases from the CCR surface impoundment. CCR removal and decontamination of the CCR surface impoundment are complete when the CCR in the surface impoundment and any areas affected by releases from the CCR surface impoundment have been removed.

Petitioner emphasizes removal of CCR and decontaminating the liner but does not address “...all areas affected by releases from the CCR surface impoundment.” Contaminated groundwater is one such area where decontamination would have to be completed before closure is considered complete under Section 845.740(a) as originally proposed, current 40 CFR § 257.102(c), and as Petitioner has proposed its adjusted standard. 40 CFR § 257.102(c) makes it clear that closure is not complete unless the GWPS for Appendix IV constituents has been achieved. However, Part 257 does not assess fees for CCR surface impoundments. Therefore, delaying completion of closure until groundwater corrective actions are complete under Part 257 does not have the

economic disadvantage created by the fee system of Section 22.59(j) of the Act. 415 ILCS 5.22.58(j). To incentivize closure by removal yet remain as comprehensive and protective as Part 257, in its final comments, the Agency proposed, and the Board adopted, a closure by removal performance standard that separates a thorough and complete removal of the CCR surface impoundment's containment components and contaminated subsoils from the groundwater corrective action process that is required whenever the GWPS have been exceeded.

As adopted, Section 845.740(a) explicitly requires removal of the complete liner system, including the geomembrane and any structures or containment components, such as the poz-o-pac and other reused CCR materials for fill revealed by the Agency's geotechnical evaluation of Pond 2. Petitioner quotes the Board's statement in its Second Notice Order and Opinion that there is "no reason for requiring removal of these liners if they can be used as a supplement to the liner system required by this Part." Pet. at 21, citing R20-19 Feb 4, 2021 Board Order at 99. However, the Board's Opinion on the topic of liner decontamination and re-use during retrofit only discusses the decontamination of a synthetic liner, and does not address the additional requirement in Section 845.770(a)(1) to remove contaminated soils and sediments or the situation in which CCR has been used as structural and foundational fill of a CCR surface impoundment that is being closed.

Further, even if CCR is used as part of the structure of a CCR surface impoundment in a manner that qualifies it as CCB, retrofit occurs where a composite liner compliant with Part 845 is going to be installed over the top of the existing system. The installation of the composite liner creates a barrier over the existing synthetic liner and prevents any material underneath the pre-existing liner from being exposed to the contents of an impoundment.¹³ Ex. A. A new composite

¹³ Even if the CCR material used as structural fill or foundational backfill passes the "shake test" by demonstrating that the leaching potential of the material will not exceed Section 620.410, it is possible that the material could still cause exceedances of Section 845.600 GWPS for several parameters. Ex. A.

liner installed during a retrofit of Pond 2 that retained the HDPE liner system would isolate the surface water within the impoundment from the CCR materials used to construct the impoundment and the groundwater. Ex. A.

The composite liner installed during retrofit also prevents infiltration through damage or perforations in the existing liner from stress due to placement over a soil containing gravel. HDPE liners that overlie soils with gravel are likely to sustain perforations due to overburden stress. Ex. I and Ex. A. While a geotextile cushion was installed beneath the HDPE liner, there are other factors that may cause damage to the liner. In addition to overburden stress, liners installed in impoundments that are exposed to sunlight and weather conditions suffer degradation that buried HDPE liners do not. The exposure to the elements can also deteriorate and/or cause wear and tear on the liner that would not otherwise occur Ex. J¹⁴ and Ex. A. According to MWG's inspection records for Joliet 29 Pond 2, the HDPE liner is exposed to the elements, as Pond 2 remains with zero to four feet of water in it. Ex. K at 4 and Ex. L.

Water from inside the impoundment that leaks through a damaged HDPE liner (whether it is operated as a CCR surface impoundment or another wastewater system), as well as stormwater from outside the liner, traverses through the CCR materials placed underneath the liner and in the embankments of Pond 2. The nature of the black silty gravel and broken poz-o-pac that has been reported to be left in place at Pond 2 has a higher hydraulic conductivity than the clay materials surrounding it. Ex. A. Thus, the CCR materials have primary or secondary permeability or

¹⁴ "How Long Will My Liner Last? What is the Remaining Service Life of my HDPE Geomembrane?" by Ian D. Peggs, P.E, P.Eng., Ph.D. (October, 2008), is an Industrial Fabrics Association International (IFAI) Publication in Geosynthetics Magazine, and can be found at <https://geosyntheticsmagazine.com/2008/10/01/how-long-will-my-liner-last/#>. Illinois EPA has printed the publication from the FHWA website and provided it as Exhibit J for ease of reference.

hydraulic conductivities that constitute a primary flow path over the lower hydraulic conductivity clay. Ex. A.

Mr. Neilson recommends that visual inspections and wipe samples be performed to ensure decontamination is complete. Pet. at 20. While these tests may confirm that a synthetic liner is decontaminated, they don't necessarily ensure that the first requirement of Section 845.770(a)(4) for reuse of a synthetic liner during retrofit is met, which is that the synthetic liner is competent. Competence means the seals between sheets of the liner have not parted or otherwise become separated, the liner has not been damaged by the gravel underlying or overlying the liner, and exposure to the elements has not broken down the liner or the seals. *See* Ex. I, J and A. Visual inspections do not provide adequate verification of competence where the synthetic liner is the only barrier between the water within the impoundment and contaminated subsoils and groundwater. Ex. A. The liner must first be proven to be competent in accordance with Section 845.770(a)(4) before qualifying as a liner that may be proven sufficiently decontaminated for retrofit pursuant to that same Section.

The issue with keeping the liner in place and providing an adjusted standard for removal of contaminated subsoils is not only the extent to which a liner may leak, but also stormwater infiltrating through the embankments containing potential contaminants that can be leached and/or washed by gravity flow into the groundwater below. When compared to Section 620.410 groundwater quality standards ("GWQS") and Section 845.600 groundwater protection standards ("GWPS"), chloride sample results consistently exceed at downgradient and "upgradient" wells during the same quarterly sampling events in which rainfall has occurred or is occurring during sampling. Pet. Ex. 18, tbl. 4. Illinois EPA and MWG agreed in 2012 that the exceedances of Section 620.410 GWQS were likely due to road salts. Ex. M at 4. However, these exceedances

signify that storm water infiltration and recharge is occurring through the immediate vicinity of Pond 2, including the embankments. In other words, chlorides, which are presumably present in road salts applied on US Highway 6 and thus in the top-soils on the north side of the impoundment and extending into the US Highway Right-Of-Way storm water drainage system, are exhibiting that recharge is occurring at the site through the surface into the immediate groundwater through a material with a high hydraulic conductivity providing a rapid infiltration rate on the order of less than a week.¹⁵ Storm water recharge through the shallow subsurface materials within the embankments and the permeability exhibited by the chloride transport demonstrate the potential for leaching of metals from the CCR materials placed under the liner at Pond 2. Ex A.

Petitioner states that “groundwater monitoring has not demonstrated that Pond 2 is a source of contamination to the groundwater.” Pet at 9, citing Pet. Ex. 18. Cobalt is cited as a metal of primary interest in the USEPA Framework for Metals Risk Assessment and is recognized as possibly posing a toxic hazard to human health and ecosystems. Ex. N at 1-3. Illinois EPA has reviewed groundwater monitoring data available on Petitioner’s Part 845 publicly available website. Ex. A. Currently, Section 845.600 contains the USEPA health-based value of 0.006 mg/L to evaluate groundwater contamination. *See* 40 CFR § 257, App. IV and 80 Fed. Reg. 36435, 36444 (July 30, 2018). Available groundwater monitoring results for cobalt indicate what would be exceedances of Section 845.600 GWPS for eight of the thirteen values reported in MWG’s 2021 Q3 Data Summary Posting.¹⁶ Ex. O, tbl 1. Additionally, MW-3 and MW-5 have each had cobalt detections.¹⁷ Ex. O, tbl 1. Illinois EPA does not have knowledge of any evidence presented by

¹⁵ *See* pp. 25-26 below for further discussion.

¹⁶ Reporting of samples collected since Part 845 became effective (May 2021 and August 2021) are not representative of the aquifer because there are data quality issues associated with dissolved or field filtered samples and sampling methods used. *See* Ex. A.

¹⁷ MW-3 had cobalt detections in May and August 2021. MW-5 had cobalt detections in October 2015 and February 2016. Because Exhibit O seems to include field filtered sample collection methods, the detections and potentially

Petitioner (such as a reactive transport model) showing that cobalt will resolve from the groundwater prior to corrective action being required under Part 845. The adjusted standard, as proposed by Petitioner, cannot be met until all areas affected by releases (which includes groundwater) have been decontaminated.

g. Impact of the petitioner's activity on the environment if petitioner were to comply with the regulation of general applicability as compared to the impact on the environment if the petitioner were to comply with the proposed adjusted standard.

Petitioner must include “[t]he quantitative and qualitative description of the impact of the petitioner's activity on the environment if the petitioner were to comply with the regulation of general applicability as compared to the quantitative and qualitative impact on the environment if the petitioner were to comply only with the proposed adjusted standard. To the extent applicable, cross-media impacts must be discussed. Also, the petitioner must compare the qualitative and quantitative nature of emissions, discharges or releases that would be expected from compliance with the regulation of general applicability as opposed to that which would be expected from compliance with the proposed adjusted standard[.]” 35 Ill. Adm. Code § 104.406(g).

If Petitioner complies with Section 845.740(a), as promulgated, it will have to remove not only the liner, but also other containment system components, such as contaminated subsoils, to attain a certification of decontamination. Additionally, Petitioner would have to obtain Agency approval of its closure report certifying to completion of CCR and decontamination. 35 Ill. Adm. Code §§ 845.740(e) and 845.760(e), (f). If the Board grants the requested adjusted standard, Petitioner can not only avoid removing the HDPE liner but also any contaminated subsoils or subgrade materials. If the liner and subsoils are not removed as part of Pond 2's closure as a CCR surface impoundment, then the materials will remain indefinitely, since future closure of Pond 2

some of the non-detections could have been greater if the total metals sample collection methods had been followed.
Ex. A.

as a wastewater basin under Part 309 will not require certification of decontamination from a qualified professional engineer.

Petitioner maintains that reuse of the HDPE liner is “more environmentally beneficial than disposal of a plastic liner and its underlying soil, to be replaced with a virtually identical liner.” Pet. at 23. However, Petitioner does not discuss the cross-media impacts that the materials used as CCR fill within the embankments or as structural fill or foundational backfill at Pond 2 may have on the environment. Furthermore, Petitioner does not discuss or provide evidence that the fill material used under the bottom of Pond 2 and in the embankments has been tested for its environmental suitability.

Illinois EPA reviewed the total metals results collected around Pond 2 from 2015 through 2021. When groundwater analytical results for MW-4 are compared to Section 845.600, there are exceedances in eight out of thirteen¹⁸ quarters for cobalt. Ex. O, tbl 1. Samples collected on May 18, 2021 and August 30, 2021, after Part 845 became effective, seem to be field filtered, which is not in accordance with Section 845.640(i). Ex. A. Cobalt analytical results exceed what are now Section 845.600 GWPS at MW-04 as recently as October 22, 2020. Ex. O, tbl 1.

Illinois EPA agreed in 2012 that the presence of chloride at Joliet 29 was likely due to road salts infiltrating and migrating through the soil. Ex. M at 4. Joliet 29 Pond 2 groundwater consistently has chloride exceedances at the “upgradient” well, MW-10. However, given the topography of Pond 2’s embankments and US Highway 6 and its associated storm water drainage, the chloride is likely moving from the road salts into the top soil of the Pond 2 embankment and the US Highway 6 storm water drainage ditch during the winter months and then infiltrating to the

¹⁸ Cobalt results for May 2021 and August 2021 cannot be evaluated due to data quality issues associated with dissolved or field filtered samples.

groundwater beneath and to the north of Pond 2 directly during the springtime thaw of ice and snow and subsequent rain events. *See* pp. 22-23 above.

Illinois EPA inspected historic precipitation records¹⁹ around the April 24, 2018 sampling event and the May 7, 2019 sampling event. In April 2018, there were rainfall events on the 14th (0.70-inches), 15th (0.74-inches), and 16th (0.35-inches) and less than 0.1-inch between April 17th and 24th recorded. Ex. A. Groundwater was sampled on April 24, 2018. Groundwater analytical results for chloride on April 24, 2018 ranged between 220 mg/L in MW-3 and 300 mg/L in MW-5. The upgradient well, MW-10, chloride groundwater analytical value is 260 mg/L. Ex. O, tbl. 1. Additionally, in May 2019, there were rainfall events on May 1st (2.04-inches), May 3rd (0.45-inches), and May 7th (0.35-inches). Groundwater was sampled on May 6 and 7, 2019. Groundwater analytical results for chloride on May 6 and 7, 2019 ranged between 280 mg/L in MW-3 and 500 mg/L in MW-5. The upgradient well, MW-10, chloride groundwater analytical value is 410 mg/L. *Id.*

In Paragraph 12(f), Illinois EPA summarized the pathways for stormwater infiltration to the groundwater at Pond 2 and hydraulic conductivities/permeabilities of the embankment materials, which provide a preferential flow path through CCR material and not the clay. Illinois EPA maintains that the stormwater recharge to the groundwater at Pond 2 requires additional investigation of leaching potential through shake tests using ASTM D 3987-85 and groundwater sampling of total metals pursuant to Subpart F.

¹⁹ <https://www.usclimatedata.com/climate/joliet/illinois/united-states/usil0592>, last accessed on November 30, 2021. Historic precipitation values for Joliet, Illinois in April 2018 and May 2019 were viewed and summarized above.

h. Justification of the proposed adjusted Standard.

Petitioner must include “[a] statement that explains how the petitioner seeks to justify, under the applicable level of justification, the proposed adjusted standard[.]” 35 Ill. Adm. Code §104.406(h). Illinois EPA agrees with Petitioner that, because Part 845 does not specify a level of justification for an adjusted standard, the applicable level of justification are the factors identified in Section 28.1(c) of the Act, 415 ILCS 5/28.1(c) (2020), as set forth below:

“If a regulation of general applicability does not specify a level of justification required of a petitioner to qualify for an adjusted standard, the Board may grant individual adjusted standards whenever the Board determines, upon adequate proof by petitioner, that:

- (1) factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner;
- (2) the existence of those factors justifies an adjusted standard;
- (3) the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
- (4) the adjusted standard is consistent with any applicable federal law.”

Illinois EPA maintains the following regarding Pond 2 and the aforementioned factors:

- (1) The factors relating to Pond 2 have not been proven substantially and significantly different from the factors relied upon by the Board in adopting the Part 845 closure requirements applicable to Pond 2. The fact that CCR material (CCW) exists beneath the existing HDPE liner as part of the structure of the CCR surface impoundment

without demonstration of its environmental suitability provides even more support for requiring Petitioner to utilize Part 845 closure methods as adopted.

- (2) Petitioner states that its proposed adjusted standard is justified because of the lack of environmental benefit in requiring removal of the HDPE liner in compliance with Section 845.740(a). Pet at. 23. Illinois EPA maintains that Petitioner's proposed adjusted standard is not justified because MWG performed construction and placed CCR materials as the structural and foundation backfill underlying the HDPE liner without first screening the materials for environmental suitability. The placement of CCR materials below the liner render the ability to leave the liner in place incongruent with a number of geotechnical and environmental factors, as summarized in Sections III(d) and III(f) above.
- (3) As explained in Section III(g) above, the requested adjusted standard will result in environmental or health effects substantially more adverse than the effects addressed by the Board in adopting Part 845 closure requirements.
- (4) As further explained in Section III(i) below, the requested adjusted standard is not consistent with or as protective as the federal CCR Rule (Part 257).

i. Reasons the Board may grant the proposed adjusted standard consistent with federal law.

Petitioner must include “[a] statement with supporting reasons that the Board may grant the proposed adjusted standard consistent with federal law. The petitioner must also inform the Board of all procedural requirements applicable to the Board's decision on the petition that are imposed by federal law and not required by this Subpart. Relevant regulatory and statutory authorities must be cited[.]” 35 Ill. Adm. Code § 104.406(i). Petitioner proposes the following language for its requested adjusted standard:

“MWG may close by removing and decontaminating all areas affected by releases from Pond 2 at the Joliet 29 Station. CCR removal and decontamination of the Pond 2 is complete when the CCR in Pond 2 and any areas affected by releases from the CCR surface impoundment have been removed. MWG must conduct visual inspection and analytical testing to demonstrate that the geomembrane liner in Pond 2 is not contaminated with CCR constituents. MWG must submit the results to Illinois EPA.”

Petitioner alleges that its proposed adjusted standard is consistent with federal law, stating that the applicable federal CCR rule and the USEPA’s Part B proposal both allow for decontamination of a liner and do not require removal. Pet. at 24, 25. Illinois EPA maintains that Petitioner misrepresents the federal closure by removal requirements and that the proposed adjusted standard is not consistent with federal law.

First, the requested adjusted standard is not consistent with Part 257’s closure by removal requirements, which explicitly require compliance with GWPS to complete closure by removal, as follows:

“An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to 257.95(h) for constituents listed in Appendix IV to this part.”(Emphasis added).

Part 257 currently treats closure by removal and all associated corrective action as a single process, with closure not being considered complete until all corrective action, including groundwater remediation, has been completed. 40 CFR § 257.102(c). Second, Mr. Nielson’s expert opinion testimony is correct that the federal rule does not explicitly require removal of decontaminated liners for a closure by removal action. Pet. Ex. 3 at 2-3, citing 40 CFR § 257.102(c). However, the 2015 Preamble indicates that USEPA intended for all CCR waste and the liner to be removed. In fact, “once a facility has removed waste and the liner, the presumption

is that the source of contamination has been removed as well.” 85 Fed. Reg. at 12469. Furthermore, USEPA explains in the 2015 Preamble that part of attaining this performance standard is documentation that “any contaminants left in the subsoils (i.e. contaminated groundwater left in soils below the former landfill or impoundment) will not impact any environmental media including groundwater, surface water, or the atmosphere in excess of Agency-recommended limits or factors.... Once the facility has removed all the assessment monitoring constituents listed in Appendix IV down to background levels or MCLs, the groundwater is considered to be ‘clean’ and closure is complete.” 80 Fed. Reg 21302, 21412 (Apr. 17, 2015).

In March 2020, USEPA proposed to divide closure by removal and corrective action requirements into two separate processes as part of a proposed rule known as “Part B.” See proposed § 257.102(c). 85 Fed. Reg. 12456, 12477 (Mar. 3, 2020). USEPA cited new information posted to facility CCR websites, including the number of CCRSIs that are not lined with any type of composite liner system (such as Pond 2), as evidence that groundwater corrective action would be more complex than previously understood and should therefore be separated from the closure by removal process. 85 Fed. Reg. at 12469.²⁰ Proposed 40 CFR § 257.102(c) provides that closure by removal activities include “removing and decontaminating all CCR and CCR residues, containment system components such as the unit liner, contaminated subsoils, contaminated groundwater, and CCR unit structures and ancillary equipment.” 85 Fed. Reg. at 12469, 12477. According to USEPA, for a complete demonstration that all CCR has been removed from the unit, “any containment system components such as a bottom liner, contaminated subsoils, and unit

²⁰ “Available information indicates more than 70 percent of all CCR surface impoundments subject to the CCR regulations currently have neither type of composite liner system. Given the number of unlined CCR units, many of which have already reported exceedances of the groundwater protection standards, it is now evident that many CCR units have released CCR constituents into the surrounding soils and groundwater. This means that the closure activity is simply not a matter of removing CCR from the unit, but instead will likely require significant undertaking to remediate impacted soil and groundwater in order to achieve the current CCR removal and decontamination standards.”

structures and equipment . . . would have to be removed prior to closure of the unit.” If an owner or operator does not demonstrate compliance with GWPS, an owner or operator could qualify to separate corrective action from closure if it has initiated corrective action, such that all components of the remedy are in place and operating as intended. See proposed 40 CFR 257.102(c)(2); 85 Fed. Reg. at 12469, 12477.

While the Part B proposal appears to require more than the current iteration of Part 257, USEPA states that Part B is not proposing any substantive change to Part 257 closure by removal requirements, but rather it is solely “proposing to present the current closure standard in a slightly revised format” for purposes of accommodating separation of groundwater corrective action from the rest of the requirements. 85 Fed. Reg. at 12469. USEPA’s proposal to clarify the closure by removal requirements just reiterated its intention that the 2015 and current iteration of 40 CFR 257.102(c) requirements already include removal of unit liners and all contaminated CCR subsoils. Illinois EPA proposed, and the Board adopted, the requirements in USEPA’s Part B proposal, so that a CCRSI can receive a certification of closure by removal well before groundwater exceedances are resolved. Pet. Ex. 7, citing 85 Fed. Reg. 12456 (Mar. 3, 2020).

Illinois EPA maintains that Part 845 is as protective as current Part 257, in part because: (1) Part 845 incorporates USEPA’s proposed Part B revisions that explicitly require certification of removal of CCRSI components, including containment components such as liners and contaminated subsoils; (2) the reuse of a competent liner to supplement a composite liner allowed by subsection 845.770(a)(4) requires the owner or operator to provide analytical data for Agency review that will demonstrate that there are no contaminants left behind. This requirement supports the requirement in Section 745.770(a)(1) to remove all contaminated soils and sediments and precludes the reuse of a liner if CCR (or CCW), which does not meet the definition of CCB under

Section 3.135 and is therefore not considered “beneficial use of CCR” under Section 845.120, has been used as a structural component of a CCR surface impoundment; and (3) compliance with GWPS must still be demonstrated for three consecutive years prior to terminating groundwater corrective action and groundwater monitoring. Allowing Petitioner to certify as closed and decontaminated without removal of all the CCRSI components and contaminated subsoils, and before a consistent demonstration of compliance with GWPS exceedances has been made, would not be as protective as Part 257.

As explained above, Illinois EPA disputes Petitioner’s interpretation of 40 CFR § 257.102(c)’s closure by removal requirements, which USEPA has made clear includes removal of the CCR surface impoundment’s liner, contaminated subsoils and remediation of all GWPS exceedances. Even if Petitioner’s interpretation of Part 257 allowing decontamination of the HDPE liner was accurate, its request to retain CCR material beneath the HDPE liner without demonstrating compliance with the GWPS would still be in contravention of the federal closure by removal requirements.

IV. RECOMMENDATION

WHEREFORE, for the above and foregoing reasons, Illinois EPA recommends that the Board DENY Petitioner’s request for an adjusted standard from 35 Ill. Adm. Code § 845.740(a).

If the Board grants Petitioner’s requested adjusted standard over Illinois EPA’s objection, the Agency recommends that the Board only do so conditionally for a one-year period, during which Petitioner must conduct the ASTM D 3987-85 shake tests to evaluate the leaching potential of the CCR (CCW) materials underlying the HDPE liner within Pond 2’s containment structures. Petitioner must collect a minimum of two samples in each of the four embankments at Pond 2 and three samples from the bottom of Pond 2 where the poz-o-pac was retained and utilized under the

HDPE liner. The shake test samples in the embankments must be collected in a black silty gravel material no deeper than 515 feet above mean sea level (“AMSL”) (or one foot below the bottom elevation of the liner at Pond 2). The shake test samples of the PSB material from the bottom of Pond 2 must be crushed prior to conducting the shake test.

The shake test results must be compared to both 620.410 GWQS (which is required to be environmentally suitable as CCB) and 845.600 (which identifies GWPS that specifically apply to CCR surface impoundments) and accompanied by the chain of custody and laboratory reports. Minimum reporting limits must be at or below the GWQS or GWPS. For constituents with standards in both Section 620.410 and Section 845.600, the minimum reporting limits for all laboratory analyses conducted by Petitioner must be at or below the GWPS in Section 845.600.

If Petitioner’s shake test results demonstrate that the leaching potential of the CCR materials underlying the HDPE liner does not exceed the lowest standard specified in either Section 620.410 and Section 845.600:²¹

- a. Within the one-year interim adjusted standard period, MWG must conduct integrity testing of the seams and the HDPE liner where it may be perforated or damaged to determine the competency of the liner. The liner competency must be certified by a licensed professional engineer, which must include certification that (1) the seams are intact and sealed, and (2) that the liner is not perforated from previous use of gravel overlying or underlying the HDPE since installation in 2008 or otherwise damaged.
- b. If the liner is found to not be certifiably competent, then the Board should only allow MWG to retain the HDPE liner through a permanent adjusted

²¹ There are metals constituents in 620.410 that are required to demonstrate environmental suitability of CCB under Section 3.135, for which there are no GWPS in Section 845.600 (e.g., manganese and iron).

standard if it installs a new composite liner meeting the design criteria of Section 845.400 overlying the old liner, where the old liner will be considered part of the foundation of the new liner for purposes of Section 845.450(a)(1).

If Petitioner cannot demonstrate that the leaching potential of the CCR materials underlying the HDPE liner does not exceed the lowest of Section 620.410 and Section 845.600 at or below Section 845.600 GWPS, then Pond 2 must be closed pursuant to Part 845 without an adjusted standard.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

Respondent,

Dated: February 4, 2022

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THIS FILING IS SUBMITTED ELECTRONICALLY

CERTIFICATE OF SERVICE

I, the undersigned, on affirmation certify the following:

That I have served the attached **RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY** with supporting documents by e-mail upon Kristen L. Gale at the e-mail address of kg@nijmanfranzetti.com, upon Susan Franzetti at the e-mail address of sf@nijmanfranzetti.com, upon Molly Snittjer at the e-mail address of ms@nijmanfranzetti.com, upon Brad Halloran at the e-mail address of Brad.Halloran@illinois.gov, and upon Don Brown at the e-mail address of Don.Brown@illinois.gov.

That my e-mail address is Christine.Zeivel@Illinois.gov.

That the number of pages in the e-mail transmission is Two Thousand Fifty-Seven (2057).

That the e-mail transmission took place before 4:30 p.m. on the date of February 4, 2022.

/s/ Christine Zeivel
February 4, 2022

Exhibit List

Exhibit A – Affidavit of Lauren Martin.

Exhibit B – Affidavit of Derek Rompot.

Exhibit C – Federal Highway Administration, “Coal Fly Ash User Guideline for Stabilized Base,” *User Guidelines for Waste and Byproduct Materials in Pavement Construction*, Publication No. FHWA-RD-97-148, available at <https://www.fhwa.dot.gov/publications/research/infrastructure/pavements/97148/020.cfm> (last modified March 8, 2016).

Exhibit D – Sargent & Lundy Letter to Illinois EPA re: 2008 Reconstruction of Access Ramp for Pond 2 at Joliet 29 Generating Station, with attachments, dated December 2, 2021.

Exhibit E – KPRG & Associates, Inc. Letter Report re: Geotechnical Analysis of Soil Surrounding Basins/Ponds, dated October 13, 2005.

Exhibit F – Federal Highway Administration, “Soils and Foundations Reference Manual – Volume 1,” Publication No. FHWA-NHI-06-088 (December 2006).

Exhibit G – Sargent & Lundy Letter to Illinois EPA re: Construction Chronology of Pond 2 at Joliet 29 Generating Station, with attachments, dated January 18, 2022.

Exhibit H – Affidavit of Thomas Hubbard.

Exhibit I – Patrick J. Fox et al., Technical Paper, *Geomembrane Damage Due to Static and Cyclic Shearing Over Compacted Gravelly Sand*, 18 *Geosynthetics Int'l.* 272 (2011).

Exhibit J – Ian D. Peggs, *How Long Will My Liner Last? What is the Remaining Service Life of my HDPE Geomembrane?*, *Geosynthetics Mag.* (October 1, 2008) available at <https://geosyntheticsmagazine.com/2008/10/01/how-long-will-my-liner-last/#>.

Exhibit K – MWG Weekly Inspection Report for Joliet 29 Station, October 13, 2021.

Exhibit L – MWG Annual Inspection Report for Joliet 29 Station, October 13, 2021.

Exhibit M – Nijman Franzetti, LLP letter to Illinois EPA, dated August 31, 2012.

Exhibit N – USEPA Framework for Metals Risk Assessment, March 2007.

Exhibit O – Part 845 MWG Joliet #29 Generating Station Q3 2021 Data Summary Posting.