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April 27, 2020

Paula Wilson
DEQ State Office
1410 N. Hilton Street
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Submitted via e-mail to: paula.wilson@deq.idaho.gov

Re: Design and Construction of Phosphogypsum Stacks: Docket No. 58-0119-2001 Negotiated Rulemaking

Dear Ms. Wilson:

Thank you for considering our comments on the Docket No. 58-0119-2001 Negotiated Rulemaking. Since 1973, the Idaho Conservation League has had a long history of involvement with phosphate mining in southeastern Idaho. As Idaho's largest state-based conservation organization we represent over 30,000 supporters who have a deep personal interest in ensuring that our state's water quality is protected.

ICL appreciates the initiation of the rulemaking process and supports the development of this rule, which should provide regulatory certainty surrounding the design and construction of phosphogypsum stacks. Given the well-documented environmental issues associated with phosphogypsum stacks in Florida, we believe it is prudent to establish this rule in Idaho to hopefully minimize and prevent similar issues here.

ICL attended the initial rulemaking session on April 16, 2020. During that rulemaking session, there was an extended discussion initiated by representatives from Simplot regarding Section 140.06.c of the proposed rule. This section of the rule reads as follows:

Lined ponds that are part of the phosphogypsum stack system shall be seepage tested prior to use by an Idaho licensed professional engineer, an Idaho licensed professional geologist, or by individuals under the direct supervision of the engineer or geologist. The design and construction plan shall include a schedule for submittal of a procedure identifying site specific testing methods, equipment, and quality control processes for Department review and approval. The schedule will also identify submittal and review of a report presenting seepage test results.

Simplot representatives commented during rulemaking session that this portion of the rule should be removed, citing that there is already language in the rule concerning liner design and quality control.

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Simplot also cited the limited number of technical consultants that have the necessary expertise to conduct seepage testing at these large, complex facilities.

We would like to provide comment that the seepage test requirement not be removed from the proposed rule. We strongly support the retention of these safeguards. Given that DEQ must use the best available peer-reviewed science when crafting a new rule like this (per Idaho Statute 39-107D), we are not aware of any science that would justify the removal of the proposed rule’s seepage testing requirement for lined ponds at phosphogypsum stacks. In order for companies, DEQ, and the public to know if and how much liners are leaking, there needs to be a requirement to seepage test the ponds. Liner design requirements are very important as well, but those requirements are not sufficient on their own to protect water quality at these sites. As Simplot representatives conveyed during the last rulemaking session, all liners eventually leak.

We acknowledge that the seepage test requirements detailed within IDAPA 58.01.16.493 (“Wastewater Rules”) specifically do not apply to industrial lagoons or mining tailings ponds. In the initial rulemaking session, Simplot cited the discussions in 2007 that led to this exemption back when the Section 493 of the wastewater rules was developed. However, we want to emphasize that the seepage testing exemption of industrial lagoons and mining tailings ponds in the wastewater rules does not at all preclude DEQ from including seepage testing requirements in the proposed rule. This rule would apply specifically to phosphogypsum stacks while 58.01.16.493 specific applies to municipal wastewater treatment facilities, so those rules do not have overlapping constraints or authorities.

It is also worth noting that the lined ponds in a phosphogypsum stack system do not contain garden variety municipal wastewater. The wastewater generated from phosphogypsum processing is acidic and contains small amounts of radionuclides, such as radium-226, generated from processing phosphate ore¹. Radium can leach from gypsum stacks into subsurface aquifers, where it can be absorbed by plants, consumed by livestock and wildlife, and work its way through the food chain to humans. Radium from phosphogypsum stacks has a 1,600-year half-life, so any unintentional release would likely remain a public health risk for generations to come. Various heavy metals are also typically present in phosphogypsum wastewater. This begs the question: if municipal wastewater ponds (which typically do not contain radionuclides or heavy metals) are required to have seepage testing per 58.01.16.493.02, then why should phosphogypsum ponds not have the same, or more stringent, requirements?

All liners eventually leak, and leakage can be particularly problematic for phosphogypsum stack systems. For example, in October 2019 at Mosaic’s phosphogypsum stacks in Bartow, Florida, officials discovered seeping water from the stacks during a routine site inspection². Water was flowing at a rate of 80 to 100 gallons per minute, but it still took the company three months to find the cause of the seepage after

¹ Sandhu, D., Singh, A., Duranceau, S.J. *et al.* Fate and transport of radioactive gypsum stack water entering the Floridan aquifer due to a sinkhole collapse. *Sci Rep* **8**, 11439 (2018). <https://doi.org/10.1038/s41598-018-29541-0>

² “Polluted water is seeping at Mosaic site.” *Tampa Bay Times*. November 19, 2019. <https://www.tampabay.com/news/environment/2019/11/19/polluted-water-is-seeping-at-mosaic-site/>.

discovering the problem due to the complex architecture of these stacks. Ultimately, the seepage was traced to a lined pond below the current gypsum stack - the liner had failed due to pressure induced by high water levels in the collection pond.

The Bartow, FL incident is just one of many examples that illustrate why we cannot rely on the integrity of the liners themselves to properly function for long periods of time without a comprehensive oversight program (of which seepage testing is an important component). If anything, DEQ should be looking to strengthen this portion of the rule to ensure that water quality is not impacted by seeping wastewater from stacks. For reference, the rules for municipal wastewater ponds (IDAPA 58.01.16.493) include several provisions beyond just a requirement to seepage test the ponds prior to use. We recommend that similar components be added to Section 140.06.c of this proposed rule for phosphogypsum stacks, including:

- A maximum allowable seepage rate (see 58.01.16.493.03)
- A specified frequency of subsequent seepage tests (at least every 10 years)
- Specific requirements for ponds leaking above the allowable rate (see 58.01.16.493.04)

A standalone initial seepage testing requirement without those additional components leaves too much ambiguity with regards to oversight and compliance on this matter. We recommend incorporating a decision tree with triggers outlining steps for retesting and remediation and timelines for accomplishing these goals, should such actions be necessary. Findings from inspections should be made public. Including such provisions would increase certainty for the public, agencies, and companies in terms of how these facilities will be managed and how water quality and public health will be protected. We reiterate that from a water quality perspective, there is no scientific justification for not having a seepage test requirement at these ponds.

We thank you for the opportunity to submit comments on the proposed rule. We look forward to continuing to work with the Department of Environmental Quality on this rulemaking and others in the future. Please feel free to contact us if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Josh Johnson', with a stylized, flowing script.

Josh Johnson, Central Idaho Conservation Associate
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