

March 23, 2022

Mark Popple
Pioneer Aggregates, Inc.
220 S. River Street
Plains, PA 18705

Re: Pioneer Aggregates, Inc.
Permit No. 101713
Fell Township, Lackawanna County

Dear Mr. Popple:

On January 19, 2022, the Pennsylvania Department of Environmental Protection (“DEP” or “Department”) received Pioneer Aggregate Inc.’s (“Pioneer”) response to DEP’s Final Completion Report Review Letter, dated September 28, 2021. Pioneer asserts that the Final Report provided evidence that the demonstration project achieved its objectives and was operated in a manner protective of public health and the environment. However, technical issues associated with the Final Report were identified by the Department in its September 28, 2021, completion report review letter, which significantly impact whether the activities performed during the demonstration project can be considered for authorization under a Statewide General Permit. These technical issues were not sufficiently addressed by Pioneer to determine that the activities can be performed in a manner that is protective of public health and the environment. Pioneer has not demonstrated that its demonstration project was successful, and therefore, DEP disagrees with the conclusions set forth in Pioneer’s completion report dated February 22, 2021. As more fully described in the September 28, 2021, completion report review letter, DEP has determined that your demonstration project was unsuccessful for the following reasons:

Leachate Data Evaluation and Applicable Standards

In the Department’s September 28, 2021, completion report review letter, DEP stated that the comparison of leachate sampling and analysis results to any Medium Specific Concentrations (MSC) other than the residential used aquifer MSCs in PADEP Statewide Health Standards, Groundwater Tables 1 and 2, is not appropriate. Pioneer maintains that the demonstration project never sought to meet the residential used aquifer MSCs, as the site is a nonresidential site, and Pioneer asserts that the aquifer located below the waste placement area is not used due to the historical use of the site for underground and surface mining, which created expansive flooded mine workings that enter the local mine pool. Pioneer also states that the flooded workings and local mine pool are not viable sources of drinking water, all residences above the local mine pool are supplied with public water, and there are no residences within 1,500 feet of the project area. As a prerequisite matter, Pioneer is prohibited from discharging pollutants into the groundwater, regardless of whether the groundwater has already been polluted from flow through the mine workings. In accordance with 25 Pa. Code § 250.303(b) (relating to aquifer

determination; current use and currently planned use of aquifer groundwater), “all groundwater in aquifers is presumed to be used or currently planned for use, unless determined otherwise by the Department under this section.”

While the aquifer may not be currently in use as a private or public water source, the aquifer has the potential to be used as such in the future and as such, the utilization of any standard other than the residential used aquifer MSCs would be inappropriate. Further, Fell Township, in which the Pioneer site and aquifer are located, does not have any ordinances in effect prohibiting the use of groundwater from wells or springs for drinking water or agricultural purposes, or that require all water users to connect to the community water supply system. Although the site is not in a residential area, there are residences located within the aquifer. Therefore, the Department disagrees with the assertion that the nonresidential, non-use aquifer MSCs are applicable, and maintains that the residential, used aquifer MSCs are the appropriate standards for which comparison to leachate results should be performed.

Through comparison to the residential used aquifer MSCs, all 19 of Pioneer’s leachate samples contained parameters that exceeded the residential and nonresidential used aquifer MSCs. In addition to the detected exceedances, there were many parameters analyzed using a method detection limit (“MDL”) or quantitation limit (“QL”) that exceeded the residential and nonresidential used aquifer MSCs. In the hundreds of instances where the MDL or QL for a parameter in a leachate sample exceeds the residential used aquifer MSC, the Department cannot make the determination that the parameters were not present in concentrations that exceeded a residential used aquifer MSC. There are many parameters that also exceed their nonuse aquifer MSCs. When presented with this significant technical issue, Pioneer maintained that the nonresidential nonuse aquifer MSCs were met but did not explain how the elevated MDLs/QLs are appropriate for determining whether the applicable residential used aquifer MSCs were satisfied. Pioneer also considers each parameter for each of the 19 leachate samples as an individual data point to say that out of 2,302 individual parameter tests, the nonresidential nonuse aquifer MSCs were met 99.9% of the time; however, in its calculations, Pioneer considered the sample results for parameters analyzed using an MDL or QL above the MSC to have met the MSC. Even when evaluating the 19 leachate samples using the nonresidential nonuse aquifer MSCs, due to the high MDLs/QLs, none of the leachate samples can be said to have met the MSCs.

Stormwater and Leachate Generation

A. Impact of Background Groundwater Quality on Leachate

In the September 28, 2021, completion report review letter, the Department referenced language in the Final Report that insinuated that constituent levels found in leachate are likely associated with background water quality on the site. The Department also identified apparent differences between groundwater sample results and leachate sampling results, citing exceedances of secondary MSCs for manganese and iron in groundwater compared to

the presence of several organic parameters, metals, and other inorganic contaminants (some of which exceeded residential used aquifer MSCs) in the leachate, and requested that Pioneer provide an explanation as to how the cited differences support its claim that constituents in the leachate could be attributed to background concentrations present in the groundwater since the same constituents were not even detected in the groundwater. In response, Pioneer's January 19, 2022, letter states:

ARM's Final Report did not contain the conclusion that "similar concentrations of constituents were found in groundwater as leachate, so the levels found in the leachate are likely associated with background water quality at the site." In preparation of the reports generated in the second, third, fourth quarters of 2020, ARM did review groundwater data collected in association with the Noncoal Surface Mining Permit and submitted to the Pottsville District Mining Office. Collection of this data began in 2013. Lead, Aluminum, Iron, Nickel, and Manganese were detected in groundwater samples, as well as the stormwater samples collected, and it was noted that the presence of these constituents may be related to background environmental conditions.

However, page 25 of Pioneer's Final Completion Report contains the language:

*Although not required under Permit No. 101713, Pioneer has conducted groundwater monitoring at the site using existing wells associated with the active, permitted coal and noncoal mining operations. The well samples have been tested for the same set of parameters as the leachate testing and has been conducted for at least 6 months in order to establish background and as a comparison to the leachate testing results. **Similar concentrations of constituents have been detected in each and the ARM Professional Geologists have concluded that the constituents in the leachate are likely associated with the background groundwater quality on the site.** [Emphasis added]*

As previously explained, the Department maintains that the residential used aquifer MSCs are the appropriate MSCs for leachate data comparison. In addition, there appears to be a contradiction between Pages 25 and 2,631 of the Final Completion Report where constituents in leachate are attributed to background groundwater quality on the site (on Page 25) but then, for inorganic constituents, said to be above what is considered background for the site (on Page 2631). On page 2,631 of Pioneer's Final Completion Report, the conclusory language includes the following:

"The organic constituents present in the leachate are not likely to cause an adverse impact to the surrounding environment. A majority of the organic constituents were either not detected at concentrations above the laboratory

detection limit or were detected at concentrations below the applicable non-residential used aquifer MSC. The majority of the organic constituents observed above the groundwater MSC were not related to the presence of C&D fines. All of the organic constituents were detected at concentrations well below the non-residential non-use aquifer MSCs.

The leachate results for the metals constituents have been consistent with the data presented in the application for the Demonstration Permit. The metals constituents present in the leachate were observed at relatively low concentrations. It is standard practice to analyze groundwater samples for dissolved metals. When comparing the dissolved metals to the non-residential used aquifer MSCs, Boron was detected once above the MSC, Arsenic was detected four (4) times above the MSC, and Nickel as detected three (3) times above the MSC. Nickel has been below the MSC since August 2020. All dissolved metals have been well below the applicable non-residential non-use aquifer MSCs.

Inorganic constituents were present in the leachate at concentrations above what would be considered background for the site.”

Therefore, the submitted data and information in Pioneer’s Final Completion Report, along with the facility’s permitted design, does not support the conclusion that the leachate was impacted by the site’s background water quality since different constituents are shown in the data for groundwater versus leachate.

B. Impact of Stormwater on Leachate

Further, Pioneer states that stormwater generated at the site is diverted around the waste placement area and discharged to a sump at the base of the waste placement area that backs up into the leachate vault and asserts that stormwater collected in the sump located at the base of the waste placement area appears to interfere with the leachate collected in the leachate vault.

While the Department agrees that the stormwater diversion channel was partially used to divert stormwater around the waste placement area from stormwater run-on, this design was primarily intended to collect stormwater sheet-flow runoff from the waste placement area. The stormwater sampling was intended to monitor the quality of stormwater sheet-flow from the waste placement area into the stormwater diversion channel, where it combined with some stormwater from outside the placement area during precipitation events. On page 24 of Pioneer’s Final Completion Report, the language pertinent to stormwater monitoring conveys that the stormwater discharges from the waste placement area:

Under Permit Condition No. 51 Pioneer was also required to perform monthly

Stormwater monitoring of the controlled stormwater discharging from the 2.5-acre placement area in conjunction with precipitation events for total dissolved metals from the Form 14 parameter list plus several additional metals. Overall, stormwater within the permit area of the Noncoal Mining permit Area is managed according to the stormwater management and control plans under Noncoal Mining Permit No. 35030301.

As part of the DEP approved design, a crushed stone base swale was constructed in the placement area to capture all stormwater discharging from the 2.5-acre area with a designated monitoring point. During the 20-month term of the permit Pioneer conducted a total of 18 stormwater sampling events. As with the leachate testing, Pioneer voluntarily engaged PA registered Professional Geologists from ARM to evaluate the results and prepare a Trend Analysis on a quarterly basis for submittal to DEP. The Final Report on Stormwater Monitoring is contained in this report (See Section VII: Final Leachate & stormwater Monitoring Results and Analysis).

In addition, Pioneer has not provided any information to demonstrate how the stormwater “interferes” with the leachate collected in the leachate vault, but does state in the January 19, 2022, letter “Due to the apparent intrusion of stormwater with the leachate collection vault, the constituents in the “leachate” do not appear to be representative of the water percolating through the fill material.” While the stormwater entering the leachate vault would likely serve to increase the volume of leachate and dilute the concentrations of detected constituents and thereby, interfering with a collection of a sample of unadulterated leachate, it’s unclear how the stormwater would interfere with the *collection* of leachate in the vault. Pioneer has not provided any information to show that the liquid in the leachate vault is not leachate that has percolated through the waste placement area. If the leachate in the vault was stormwater that backed up into the vault, there should not be a significant difference in the chemical characterization of leachate versus stormwater. Based upon the leachate data, the leachate contains constituents that were not detected in the stormwater and contains constituents at higher concentrations than was observed in the stormwater. The Department believes that, for the constituents observed in both the stormwater and leachate samples, the presence of those constituents in the stormwater can be attributed to the stormwater contacting the waste placement area.

C. Impact of Background Groundwater Quality on Stormwater

Pioneer also states that the presence of constituents in the stormwater suggests that the constituents are also in the surrounding environment. The Department does not agree with Pioneer’s assertions that the presence of constituents detected in stormwater samples can be attributed to the surrounding environment because the stormwater sampling point includes stormwater that contacted the waste placement area. The constituents detected in the stormwater samples were also found in the construction and demolition (C&D) fines, which

would indicate the constituents in the stormwater likely originated from the waste placement area.

Suitability as Mine Reclamation Material

The Department's September 18, 2021, completion report review letter cited the Department's Bureau of Mining Programs Reclamation of Fill Policy (Document No. 563-2000-301) and the constituent levels that must be met in order for material to qualify for mine reclamation material. Pioneer provided the following response:

“As far as the material meeting the mine reclamation fill concentrations, this was never a goal of the project. Pioneer Aggregates’ original demonstration Permit #101713 did not follow the mine reclamation fill policy concentrations and this is the reason for the Waste Department’s involvement in conjunction with the Mining Department.”

The Department agrees that meeting the reclamation fill concentration limits was not an expressed goal of the project; however, as stated in the introduction of Pioneer's August 16, 2016, Demonstration Permit Application, Pioneer stated that it intended to “demonstrate the suitability of Re-Crete for mine reclamation and ultimately for use in a variety of construction and other projects.” Because the intended outcome of the demonstration was to show that the waste material is suitable for use as a mine reclamation material, it is implicit that the material meets mine reclamation standards. Given that the Department's Mining Program is the Program that is responsible for oversight of mine reclamation activities in the Commonwealth, the Bureau of Waste Management seeks input from the Mining Program in all evaluations of proposals involving the use of waste materials in mine reclamation. The Mining Program has advised the Bureau of Waste Management that the material would not be permitted to be used for mine reclamation, which is significant. The Department's Mining Program stated that Pioneer's waste material would not be allowed for placement above or below groundwater in conjunction with a mining permit approve for mine reclamation fill. This determination was based on the varying amounts of constituents (dirt, dust, crushed rock, stone, and brick) in the C&D fines, and exceedances of the mine reclamation fill concentration limits for lead that are observed in 17 of Pioneer's leachate samples, and exceedances for mercury that are observed in two of Pioneer's leachate samples. Therefore, the Bureau of Waste Management cannot authorize the utilization of this waste material for mine reclamation.

Conclusions

Although there were additional deficiencies and inadequacies identified in the Department's September 18, 2021, completion report review letter, the unresolved issues presented and discussed in this letter are of such importance in determining whether the demonstration project was successful, that in the absence of adequate and appropriate responses by Pioneer, the remaining issues are rendered unnecessary for further discussion at this time. As explained

above, utilization of any MSCs other than the residential used aquifer MSCs for comparison to leachate data is not appropriate. The leachate results, which show exceedances of residential used aquifer MSCs, and which were analyzed using laboratory MDLs/QLs above the residential used aquifer MSCs for many parameters, indicate the potential for groundwater degradation as the term is defined in 25 Pa Code § 271.1 (relating to definitions). This is consistent with the Environmental Hearing Board's ("Board") decision in *Citizen Advocates United to Safeguard the Environment, Inc. v. DEP*, 2007 EHB 632. ("*C.A.U.S.E.*"). In the Board's adjudication they state that:

CAUSE has, however, raised meritorious concerns regarding the groundwater monitoring plan for the Site as the Project goes forward. Special Condition 14 of the General Permit prohibits the discharge of any waste to waters of the Commonwealth. (DEP Ex. 15.) This condition is consistent with the regulatory requirement that the General Permit must include provisions for the protection of groundwater.

25 Pa. Code § 287.631(a)(4)(iii). Of course, both the Clean Streams Law and the Solid Waste Management Act prohibit unpermitted discharges to the waters of the Commonwealth, which include groundwater. 35 P.S. § 691.401 and 35 P.S. § 6018.610; *Concerned Citizens of the Yough v. DER*, 639 A.2d 1265, 1268, 1270 n.4 (Pa. Cmwlth. 1994); *Gordon v. DEP*, EHB Docket No. 2005-323-R, slip op. at 8 (Adjudication, April 26, 2007); *Brandywine Recyclers, Inc. v. DER*, 1993 EHB 625, 639-40. The COA only releases HCP from liability for past discharges; it does not authorize any new contamination.

2007 EHB 632, 689-690. In addition to analyzing the specific language of the General Permit to determine that discharges to groundwater were inappropriate, the Board also opined on the concept of beneficial use and determined that "a critical prerequisite to the beneficial use is that it will not result in any unpermitted surface water or ground water pollution. *Id.* at 690.

The potential for groundwater degradation due to the quality of the leachate generated during the project; the precedent set forth in the *C.A.U.S.E.* matter; the Department's Mining Program's determination that the material would not be authorized for use as a mine reclamation material; and the Department's determination that the Pioneer Demonstration Project was unsuccessful, all lead to the Department's determination that the proposed use of the waste material for mine reclamation cannot be considered for authorization under a Statewide General Permit.

Mr. Mark Popple

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March 23, 2022

Sincerely,

Roger Bellas

Roger Bellas, Environmental Program Manager
Bureau of Waste Management
Northeast Regional Office

Chris Solloway

Chris Solloway, Environmental Program Manager
Division of Municipal and Residual Waste
Bureau of Waste Management
Central Office

cc: Fell Township Board of Supervisors