



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

POTTSVILLE DISTRICT OFFICE

October 22, 2015

Geryville Materials, Inc.
P.O. Box 193
Eagleville, PA 19408-0193

VIA EMAIL

Re: Technical Deficiencies
Geryville Materials Quarry
Application No. 39140301
Lower Milford Township, Lehigh County

Ladies and Gentlemen:

The Department has reviewed your application and has determined that the following significant deficiencies exist:

1. Inconsistencies exist regarding land use information between Section G (page 1-4) of Module 1, the General Information Form (GIF) and the Land Use Information sent to local entities such as Lower Milford Township and the Lehigh Valley Planning Commission. Please provide correct information to all parties. (77.104 & 77.126)
2. Page 5 of 7 of the GIF states that the disturbed area is 414.4 acres. Please revise to match the acreage proposed in the noncoal surface mining application. (77.104 & 77.126)
3. Item 1 of the Project Information section indicates that the Applicant has informed the surrounding community and addressed their concerns prior to submitting the Surface Mining Permit (SMP) application to the Department. The concerns of the surrounding communities have not been addressed prior to the SMP application being submitted to the Department. Please correct. (77.104 & 77.126)
4. The Act 67 & 68 notice to Lower Milford Township and the Lehigh Valley Planning Commission state that that a discharge to the Macoby Creek watershed is proposed. The NPDES permit application does not list a discharge to Macoby Creek. Please provide the correct information to Lower Milford Township and the Lehigh Valley Planning Commission. (77.104 & 77.126)
5. Regarding Module 2, NPDES application:
 - a. Page 1 lists unnamed tributary to Macoby Creek as receiving a discharge. Please revise to match the noncoal surface mining application. (77.104 & 77.126)

- b. Please provide a detailed schedule for inspection and clean out level for sedimentation ponds. (77.458)
 - c. Please conduct at least one round of background sampling of monitoring points that will contribute groundwater to the infiltration system for the parameters on the attached fact sheet to characterize the groundwater proposed for infiltration. (77.403 & 77.405)
 - d. Please conduct at least one round of background sampling of surface water monitoring points upstream and downstream of the infiltration system for the parameters on the attached fact sheet to characterize the receiving streams that are proposed to receive infiltration. (77.403, 77.406 & 92a.21)
 - e. For monitoring locations which may have been affected by agricultural practices, please conduct at least one round of background groundwater and surface water sampling for pesticide parameters and agricultural parameters (77.403, 77.405, 77.406 & 92a.21)
 - f. The average and maximum daily discharge volumes in Section C do not match with those in Section D. Please revise as appropriate. (77.104 & 77.126)
 - g. A complete, detailed Preparedness, Prevention and Contingency (PPC) Plan is required. (77.104)
 - h. Please provide a thorough analysis of possible thermal impacts to the wetlands from the infiltrated water. (77.104, 77.403, 77.406, 77.457 & 102.4)
 - i. Benzene, oil and grease parameters are required if an asphalt plant is to be located on site. Background sampling should be performed at locations that will show any effect on the receiving stream or groundwater system. (77.104, 77.457, 92a.21 & 92a.61)
 - j. Testing for chromium is required if a cement or lime plant is to be located on site. Background sampling should be performed at locations that will show any effect on the receiving stream or groundwater system. (77.104, 77.457, 92a.21 & 92a.61)
6. The Applicant is proposing to affect an area within 300 feet of an occupied dwelling on parcel no. 9. Please submit a signed waiver for such activities. (77.504)
 7. Parcels 1, 3 and 26 are not part of the mining permit area. Please remove the Consents of Landowners for these parcels and update Module 5.1 (77.104 & 77.126)

8. Please explain why the groundwater contours were hand drawn (Figure 2) on the 2014 Groundwater Pumping Evaluation (GPE). (77.403 & 77.405)
9. Please provide a map showing updated groundwater elevation contours at a large scale (e.g. 1" = 400') using all the current wells used to characterize the site, with static water elevations. The data in Figure 2 provided in the 2014 GPE is nine years old. (77.405 & 77.410)
10. Throughout the application it is stated that wetlands receive flow from overburden (Section 4.1 of 2014 GPE, and Section 2.2.2 of the 2006 GPE). The proposed quarry footprint eliminates portions of drainage areas to the wetlands. Please explain, in detail, how the hydrology to the wetlands will be maintained during all seasons and weather conditions and at all phases of site activity. This includes post-mining when, presumably, no pumping to level spreaders and infiltration trenches will occur. (77.457, 77.521, 77.462, 77.593, 105.14, & 105.18a)
11. Post-mining water levels shown in cross-sections O-O', P-P', Q-Q', and R-R' are projected to be lower than current groundwater levels. Additionally projected post-mining water levels shown in cross-sections Q-Q', R-R' and S-S' are below the bottom of the unnamed tributaries which flow through the wetlands. Removing the drainage area to the wetlands would appear to threaten wetland hydrology, given that projected post-mining groundwater levels are below the bottom of the wetlands. Please explain how wetland hydrology will be maintained post-mining. (77.457, 77.521, 77.462, 77.593, 105.14, & 105.18a)
12. How were the post-mining water levels determined? Tying in with existing groundwater elevations seems unlikely due to the proposed alteration of the topography of the site. (77.403 & 77.406, 77.457)
13. In what wells are the semi-confined aquifer conditions manifested? (77.403 & 77.406)
14. Please explain, in detail, how the overburden can form a semi-confining layer, restricting recharge to underlying bedrock (section 3.2 of the 2014 GPE) and also be capable of infiltrating large volumes of water (up to 150 inches per hour, section 7 of the 2014 GPE). (77.403, 77.404, 77.405, 77.406 & 77.457)
15. Page 7-3 of the 2014 GPE references Table 7-4, which appears to be missing. (77.104 & 77.126)
16. The information presented in section 7.4 of the 2014 GPE does not appear to match the information presented in Table 7-3. Please clarify. (77.104 & 77.126)
17. Bedding is measured in diabase on the Exhibit 7 Geologic Map along Kings Highway. Bedding is not common in diabase. Please elaborate. (77.403 & 77.404)

18. Please provide geologic logs for wells PM-8 to PM-13. (77.403 & 77.404)
19. Regarding surface water flow in sub-watershed H1475:
 - a. Data from the 2014 GPE indicates that there is perennial flow between SW-13 and SW-22. Please call out the approximate location of perennial flow on a map. Will the proposed mining alter this location? (77.403, 77.406, 77.457, 105.13 & 105.18a)
 - b. The 2014 GPE states that the watercourse in Wetland M is intermittent. Approximately where does the transition from perennial to intermittent occur in the watercourse in Wetland M and Wetland L? Will the proposed mining Alter this location? (77.403, 77.406, 77.457, 105.13 & 105.18a)
20. There is a small channel discharging water from Wetland N that flows parallel to SW-16. Therefore it appears that not all of the water discharging from Wetland N is measured at SW-16. During periods of no flow at SW-16, was water present in the adjacent channel? The volume of water discharging from Wetland N is required to characterize the site's hydrology and evaluate possible impacts from surface mining. (77.403, 77.406, 77.457 & 105.13)
21. Please provide geological cross-sections that delineate the soil, weathered bedrock and bedrock contacts. Please also include current and projected final groundwater elevations on the cross-sections. (77.403, 77.404, 77.405, 77.410 & 102.8)
22. Please provide a top-of-bedrock structure contour map. (77.403, 77.404, 77.405 & 77.410)
23. Please provide more information regarding the dry readings for well MW-2. Groundwater elevations in nearby wells did not drop significantly during dry readings at MW-2. (77.403 & 77.405)
24. Please provide 12 months of monitoring data from wetland transects WTH-1, WTH-2, WTF-1, WTF-2, WTM-1, WTN-1, WTD-1. Monitoring parameters should include, at a minimum those in listed Module 8.1a-d. (77.403 & 77.406)
25. Please provide subsurface logs created during the installation of the wetland piezometers. (77.403, 77.404 & 77.406)
26. Private water supply information for parcel nos. 9, 12, 43, and 51 appears to be missing. Please provide the data if it is available. (77.104, 77.403, 77.405 & 77.407)
27. Have water or soil samples from the Henry Fretz Dump been collected? Has the groundwater or surface water downgradient of the dump been analyzed? (77.403, 77.405 & 77.406)

28. Based on the data provided, the depths of most of the private wells in the projected Zone of Influence (ZOI) are less than 150' deep. Much of the 2014 GPE discusses how little water is available below the 75 to 125 feet below the ground surface (BGS) range. Section 3.3 of the 2014 GPE states that the majority of water produced by fractures (87%) occurs at depths above 125 feet BGS and fractures below 125 feet BGS produced 0.25 and 2 gallons per minute (GPM). More information is needed to ensure that adequate water supplies will be available for wells in the projected ZOI. (77.407 & 77.532)
29. Please provide a plan to review the potential impacts from the proposed mining to surrounding private water supplies. If possible, private water supplies should be replaced prior to being contaminated, interrupted or diminished by mining activities. (77.533)
30. Please provide all logs from the borings listed on Table 7.1 of the 2014 GPE. Please call their locations out on Exhibit 6.2 as well. (77.403, 77.404 & 77.410)
31. The wetland acreages listed on page 2-4 of the 2014 GPE do not match with the acreages shown on Figure 1-B of the 2014 GPE. They also do not match with the acreages listed in the Wetland Functions and Values Report (WFVR) by Water's Edge Hydrology, Inc. Please verify and report the actual wetland acreages. A new wetland survey may be necessary. (77.104, 77.126, 77.403, 105.13 & 105.21)
32. Wetland D and Wetland H in the WFVR are listed as discharging shallow groundwater. This function is not listed in the 2014 GPE. Complete characterization of the nearby wetlands is required to fully understand the proposed quarry's impact to the prevailing hydrologic balance. Please provide a complete assessment of the wetlands in the accompanying GPE. (77.104, 77.126, 77.403, 105.13 & 105.21)
33. Wetland K, Wetland M and Wetland N are listed in the WFVR as having the ability or potential to trap sediment. This function is not list in the 2014 GPE. Complete characterization of the nearby wetlands is required to fully understand the proposed quarry's impact to the prevailing hydrologic balance. Please provide a complete assessment of the wetlands in the accompanying GPE. (77.104, 77.126, 77.403, 105.13, & 105.21)
34. The mapped wetlands in Figure 6 of the WFVR do not match those shown on Exhibit 6.2 of the application. Please explain the discrepancy. (77.104, 77.126, 77.403, 77.457, 105.13 & 105.21)
35. No dedicated monitoring wells in the permit area, or in the projected ZOI, are listed in the hydrographs included as part of Module 8. More hydrologic data in the projected ZOI is required. (77.405)

36. Please call out infiltration system names on all maps. (77.104 & 77.410)
37. Please provide hydrographs for all wells at the proposed site. Please include precipitation data with the hydrographs. (77.403 & 77.405)
38. Please provide a map with the following information called out: topography; wetlands; geology; all monitoring points, wells and transects; infiltration trenches; the proposed surface mining permit boundary; the mineral rights area; the limit of mining; the projected ZOI; infiltration areas; infiltration test locations; discharge locations and all drill hole locations. If practical, please show at 300 scale. (77.410 & 105.13)
39. Appendix C of the Pennsylvania Department of Environmental Protection's Stormwater Best Management Practices (BMP) Manual recommends that underlying soils have infiltration rates of 0.1 to 10.0 inches per hour. According to the stormwater BMP manual, soils with infiltration rates greater than 6.0 inches per hours may require an additional soil buffer. The geometric mean of the reported infiltration rate at the Geryville site is 18.0 inches per hour. Are engineered soils required to provide proper infiltration? (77.457, 77.458, 102.4 & 102.8)
40. Please provide the saturation data collected during the infiltration testing. Please plot it as intake rate (inches/hour) versus elapsed time. (77.403, 77.404 & 102.8)
41. Please provide details of the infiltration tests. For example, were the soils presoaked as recommended in the Stormwater BMP Manual? What were the weather conditions prior to testing? Please provide soil logs. (77.403 & 102.8)
42. Please explain why a smaller than recommended (Appendix C Pennsylvania Stormwater BMP Manual) infiltrometer was used to characterize the site's infiltration capacity. (77.403 & 102.8)
43. Approximately what volume of water was infiltrated during the infiltration testing? (77.403 & 102.8)
44. Should infiltration result in recirculation back to the quarry pit, can the proposed infiltration trenches still maintain adequate recharge to the wetlands? (77.457 & 77.521)
45. How will infiltration to the quarry pit be detected? (77.457 & 77.532)
46. Please provide a thorough analysis of the infiltration system's ability to attenuate all of the expected pollutants affiliated with the quarry's operation. This includes, at a minimum, total suspended solids, calcium chloride, total dissolved solids and hydrocarbons. Additional background sampling for these parameters appears to be necessary. (77.457, 77.458, 102.4 & 102.8)

47. Please explain, in detail, how infiltration to the wetlands will be monitored. On what basis would infiltration rates and locations be adjusted? What data will be used to evaluate success or failure of each infiltration area? How frequently will such an evaluation occur? (77.457, 77.532 & 105.18a)
48. Please describe, in detail, the schedule for periodic and routine maintenance of the infiltration systems in Module 8.2b. (77.457 & 77.532)
49. SW-20 is proposed as a permanent monitoring point but no recent background data is provided in the application. Please provide background data, including the parameters found in Module 8.1(a through e). Sampling for chlorides and any expected pollutants is also required. (77.406, 77.457 & 77.532)
50. What will be the source of water to Wetland I during mining operations? Wetland I is in the groundwater drawdown area (both with and without infiltration), water is present in Wetland I during low-flow periods, and is listed in the 2014 GPE as a source of groundwater discharge. (77.403, 77.457 & 105.18a)
51. Wetland I is hydrologically connected to wetlands outside of the expected ZOI, if a flow diminution occurs to Wetland I, what impacts will occur in the wetlands downgradient? (77.403, 77.457 & 105.14)
52. Groundwater appears to discharge to the watercourse feeding into Wetland L. Will mining diminish the flow of groundwater to Wetland L? (77.403, 77.457 & 105.18a)
53. Section 5-2 of the 2014 GPE indicates that primary porosity was incorporated in the modeled bedrock to conservatively overestimate pumping impacts. Was primary porosity applied in the infiltration simulations? (77.403, 77.457 & 77.532)
54. Does a groundwater model which is conservative with respect to the site's groundwater pumping drawdown overestimate the site's infiltration capabilities? (77.403, 77.532 & 102.8)
55. Very few infiltration tests exist within the quarry footprint. How well characterized are the infiltration properties of the overburden within the quarry footprint? This information appears to be necessary to understand the impact of removing the run-off area of the watershed providing hydrology to the wetlands. (77.403, 77.457, 102.8 & 105.18a)
56. Please explain why the groundwater model does not predict drawdown within the Limit of Mining in the western part of the proposed pit. (77.403 & 77.532)
57. Will the proposed quarry pit intercept regional baseflow? If so, approximately what volume is expected? (77.403 & 77.405)

58. During periods of drought, what volume of water would be available from the proposed quarry pit to infiltrate to the wetlands? How does this volume compare to the volume of the pre-mining conditions? (77.457)
59. Were infiltration tests performed as part of any of the previous hydrogeologic investigations? If so, please provide the results and analysis. (77.403)
60. Please perform shallow aquifer testing to determine the contribution of the bedrock aquifer to Wetlands I, H, F, M, N and L. Temperature alone may not be sufficient to determine the quantity of the bedrock aquifer's contribution to the wetlands (77.403, 77.405, 77.406 & 105.18a)
61. Regarding the groundwater model:
- a. Section 7 of the 2014 GPE states that 15 feet is an average thickness for overburden at the GM-2 site. Please explain why no overburden layer was built into the groundwater model. How would the results from the groundwater model change if the overburden were used as Layer 1? (77.403, 77.457 & 77.532)
 - b. Does the infiltration simulation allow for recirculation back to the quarry pit? Based on the text in section 7.3 of the 2014 GPE, that does not appear to be the case. If recirculation was not allowed in the model, please explain why. (77.403, 77.457, 77.532, 105.18a)
 - c. Please explain why groundwater mounding and breakout were not allowed in the model. (77.403, 77.457, 77.532, 102.8 & 105.18a)
 - d. Based on the information in the permit application, the model layers do not appear to reflect the site conditions. Please explain how a 125-foot thick layer of bedrock represents the hydrologic properties of soil and weathered bedrock. (77.403, 77.457 & 77.532)
 - e. Please explain how model cell sizes of 75 x 75 x 125 feet (and larger) around the wetlands and infiltration areas provide sufficient detail to determine the effects of mining on the site's prevailing hydrologic balance. (77.403, 77.457, 77.532 & 105.18a)
 - f. Please provide cross-sectional views of the model through the infiltration trenches, wetlands and mining area. The sections should show the model grid size and the relationship of the quarry pit, the infiltration trenches and the wetlands. (77.403, 77.457, 77.532 & 105.18a)
 - g. Please provide a mass balance summary of all water inflows and outflows in the model. (77.403, 77.457, 77.532 & 105.18a)

- h. Why was a steady-state simulation used for infiltration Area D? (77.403 , 77.457, 77.532 & 105.18a)
 - i. Were infiltration simulations that allowed drainage to the quarry pit modeled? If so, what were the results? (77.403 , 77.457, 77.532 & 105.18a)
 - j. Were infiltration simulations that allowed groundwater mounding and breakout modeled? If so what were the results? (77.403 , 77.457, 77.532 & 105.18a)
62. Please call out previously mined areas or uncheck item "i" on Module 9. (77.104)
63. The operational sequence maps (Exhibits 10.1K to 10.1Q) call out the incorrect limit of mining and surface mining permit boundaries. Please update with correct information. (77.104 & 77.452)
64. The operational sequencing maps require a professional engineer's seal. (77.410)
65. Mining sequence figures do not show erosion and sedimentation controls below infiltration areas. (77.458 & 77.525)
66. Construction sequence 10.1Q lists NPDES points as 003 and 004. Please revise for consistency. (77.104)
67. Please address the concerns detailed in PPL Electric Utilities' correspondence dated January 26, 2010 regarding the applicant's request for encroachment within PPL's right-of-way. The proposed construction sequence conflicts with PPL requirements. (77.104 & 77.126)
68. What are the proposed elevations of the level spreaders? (77.452 & 77.457)
69. Please explain why Module 14.1(g) is not applicable. (77.403, 77.406 & 105.18a)
70. Please conduct another Pennsylvania Natural Diversity Index (PNDI) environmental review since the Northern Long-eared Bat was listed as a threatened species since the original PNDI search was conducted. (77.126)
71. Please add the scale bar and north arrow which appear to be missing on Exhibits 18A and 18B. (77.410)
72. The three possible reclamation plans create three different post-mining hydrologic scenarios. Each requires a hydrologic analysis to determine how the hydrology will be restored post-mining. Please complete these analyses for each proposed possible reclamation plan. (77.126, 77.457 & 77.462)

73. Selling overburden as described in Modules 10.1 and 21.2 is not authorized if reclamation with mine reclamation fill is proposed as an option. (77.457, 77.462 & 77.511)
74. The Department has a policy of not authorizing mine reclamation fill placement on new mining permits. Please explain why mine reclamation fill is being proposed as part of a new permit. (77.126, 77.457 & 77.462)
75. The proposed screening berm in Module 17.3 appears to conflict with PPL's right-of-way requirements. (77.104 & 77.126)
76. Please provide additional information regarding noise control at the site. Will the proposed screening berm be sufficient to reduce noise from the mining operation? (77.104, 77.126, 105.16, and PA. CONST. art. I, §27)
77. Please explain the zoning and land use approval status of proposed mining site. (77.104, 77.126 and PA. CONST. art. I, §27)
78. Please complete an *Anti-Degradation Supplement for Mining Permits (form 5600-PM-BMP0007)* and a *Social or Economic Justification (SEJ) and Water Use Demonstration (form 5600-PM-BMP0028)*. (77.104, 77.126, 93.4a and 93.4c)
79. The bond increment requires an authorized signature. (77.107)
80. Please call out the location of the horizontal drilling on the Bonding Map. (77.202, 77.454 & 77.456)
81. Please provide the basis for the cost of horizontal drilling. (77.202 & 77.456)
82. The support area on the bond calculation sheet and the area shown on the Bonding Map do not match. Please revise as appropriate. (77.104, 77.126 & 77.202)
83. Please call out the overburden storage areas on the Bonding Map. (77.202 & 77.454)
84. Was a traffic study completed for this site? If so, please provide it. (77.104, 77.126, 105.16, and PA. CONST. art. I, §27)
85. What effect will noise from the trucks entering and leaving the proposed site have on the natural, scenic, historic or aesthetic values of the environment? Please elaborate on ways to mitigate this effect. (77.104, 77.126, 105.16, and PA. CONST. art. I, §27)
86. Please address the attached comments from Jeff Rai, P.E. of the Pennsylvania Department of Transportation.
87. Please address the attached comments from Michael Duke, Blasting Inspector.

88. Please address the attached comments (E&S notes) from Joseph Blyler, P.E.
89. Please address the attached public comments received by the Department regarding this application. (77.104, 77.126 and PA. CONST. art. I, §27)
90. Please provide final correspondence for the U.S. Army Corps of Engineers. (77.104 & 77.126)
91. Any additional comments received from the Pennsylvania Fish and Boat Commission will be sent under a different cover.
92. Any additional comments received from the Delaware River Basin Commission will be sent under a different cover.
93. Please address the attached comments from the Pennsylvania Historic and Museum Commission.
94. Please address the attached comments from the PADEP's Northeast Regional Office (NERO).
95. Please address the attached comments from Jeffery Painter, P.G. of the Pennsylvania Game Commission.

Should you have any questions regarding the identified deficiencies, please contact me to discuss your concerns or to schedule a meeting. If you believe the stated deficiencies are not significant, you have the option of declining and asking the Department to make a decision based on the information you have already made available. Please keep in mind that if you ignore this request or fail to respond to all of the deficiencies listed above, your application may be denied. Within 30 days of receipt of this letter, please notify the Department with the expected amount time you anticipate needing to address the deficiencies listed above.

Sincerely,



Michael Kutney, P.G.
Licensed Professional Geologist
Pottsville District Office

Enclosures – as described

cc (via email): Nathan A. Houtz
Gary Latsha, SMCIS
Christian Kuba, SMCI
Michael Duke, Blasting Inspector
Consultant, EarthRes Group, Inc.
Tickler: November 23, 2015
File
MS1-Gery (10-15)

MK:dp