



INTEROFFICE MEMO

July 17, 2019

To: Bob Ostendorf Jr., DSW-SWDO

From: Allison Reed, DDAGW-SWDO through John McGinnis, DDAGW-SWDO

Re: Enon Sand & Gravel, LLC
Internal Technical Review
Ground Water
Clark County
11J00141

Subject: *Workplan for Hydrogeologic Investigation, Culbertson Fen, Enon Sand and Gravel, revised June 13, 2019*, associated with NPDES permit application 11J00141

Introduction

The Division of Surface Water (DSW) requested that the Division of Drinking and Ground Waters (DDAGW) review the revised document entitled, *Workplan for Hydrogeologic Investigation, Culbertson Fen, Enon Sand and Gravel*, dated June 13, 2019, submitted by Eagon and Associates on behalf of Enon Sand and Gravel. The work plan was submitted in response to Ohio EPA's supplemental information request letter dated May 17, 2019. The letter was in response to NPDES permit application 11J00141 related to a proposed mining site at 4100 Fairfield Pike, Mad River Township, Clark County. DDAGW previously provided IOMs to DSW on May 21, 2018, November 2, 2018 and May 15, 2019 that discussed concerns with the mining activities and ensuring protection of the four identified wetlands and a tributary to Mud Run. DSW's specific request is to review the revised work plan to determine if the proposed revisions fulfill Ohio EPA's requests in the May 17 letter. The request was received on June 27, 2019.

Comments

1. Ohio EPA requested that additional boring locations be added to better define lithology, provide a wider distribution of monitoring points to determine a more representative ground water flow direction and provide more certainty regarding lithology, ground water flow and ground water/surface water interactions near the Vanderglas fen. Enon Sand and Gravel proposed to add one additional boring to the east of 19-4. Ohio EPA does not

believe the proposed borings have a wide enough distribution to provide enough detailed information about ground water flow, ground water/surface water interactions and lithology in the Phase I area and the fens.

Ohio EPA requests at least two borings be added east of the Vanderglas fen and two borings be added east of the line of proposed borings on the Phase I property.

2. Ohio EPA requested that Enon Sand and Gravel clarify whether an aquifer test will be conducted in the bedrock to help determine whether there is a hydraulic interconnection between the shallow unconsolidated and the deeper bedrock aquifer.

Ohio EPA requests that an aquifer test be completed in the proposed bedrock well near location 19-1.

3. Ohio EPA requested that other residential wells surrounding the Culbertson well should be surveyed to help develop a more accurate flow map for the bedrock aquifer. Enon Sand and Gravel revised the work plan to include surveying additional residences along Garrison Road. This is acceptable to Ohio EPA.
4. Ohio EPA requested that baseflow for the proposed receiving stream (unnamed tributary of Mud Run) be determined. This should include installing stream gauges to monitor flows in Mud Run and the unnamed tributary. Ohio EPA also requested that piezometers be installed along the unnamed tributary to help determine gaining/losing conditions and provide additional information about ground water flow. This information is necessary to help Ohio EPA determine whether there will be impacts to Mud Run or the unnamed tributary.

Ohio EPA requests that baseflow be determined and at least two piezometers be installed along the unnamed tributary.

5. Because of a drainage swale/intermittent stream that crosses the Phase I area and drains to the Vanderglas fen, Ohio EPA requested that Enon Sand and Gravel investigate surface water/ground water interactions in the Phase 1 area which may contribute ground water to the fens. Enon Sand and Gravel agreed to install an additional boring (19-5) where the drainage swale crosses Garrison Road.

Ohio EPA agrees that 19-5 is ideally located to provide additional information regarding ground water flow and surface water/ground water interactions. However, as noted in comment 1, Ohio EPA believes that the two borings east of the Vanderglas fen and the two additional borings in the Phase I area are also necessary for gathering information regarding ground water flow and surface water/ground water interactions in this area.

6. Ohio EPA requested that Enon Sand and Gravel clarify the investigation timeline and whether it would assess seasonal variations. Enon Sand and Gravel provided a schedule with completion of investigation activities and report submittal by December 2019. This is acceptable to Ohio EPA. However, based on results from the proposed investigation, Ohio EPA **may** ask for additional monitoring from proposed well locations to better assess seasonal variability (i.e., monitoring in Spring 2020).

If you have any questions, please call Allison Reed at 937-285-6447.

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