



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

July 28, 2011

VIA E-MAIL and U.S. MAIL

Mr. Farsad Fotouhi
Corporate Vice President
Environmental Engineering
Pall Life Sciences, Inc.
600 South Wagner Road
Ann Arbor, Michigan 48103-9019

Mr. Michael L. Caldwell
Zausmer, Kaufman,
August & Caldwell, P.C.
31700 Middlebelt Road,
Suite 150
Farmington Hills, Michigan 48334-2301

Dear Sirs:

SUBJECT: Gelman Sciences, Inc. Remedial Action
Little Lake Area System Groundwater Monitoring Plan, April 29, 2011

The Department of Environmental Quality (DEQ) received the above referenced Little Lake Area System Groundwater Monitoring Plan (LLAMP) from Pall Life Sciences, Inc. (PLS) on April 29, 2011, as required by the Third Amendment to Consent Judgment (CJ). On June 29, 2011, PLS agreed to a one month extension, until July 27, 2011, for the DEQ's response to the LLAMP. Staff of the DEQ has reviewed the LLAMP and provides the following conditional approval.

The compliance well network, to be defined by the DEQ-approved compliance monitoring wells (CMW), is intended to monitor the objective of the CJ to "prevent expansion of the horizontal extent of any groundwater contamination located in this area." Groundwater contamination is defined in the CJ as 1,4-dioxane in groundwater at a concentration in excess of 85 parts per billion (plume).

Four of the five CMWs proposed by PLS (MW-61s, MW-61d and the two former water supply wells at 4601 Park) would effectively allow the plume, as depicted on Figure 1 of the LLAMP, to migrate over 700 feet before such migration would be considered expansion. In most circumstances, the DEQ would consider such migration to be expansion and could not approve these proposed CMWs as meeting the objective of the CJ. But for the reasons discussed below, DEQ will consider use of such monitoring wells as CMWs in this situation.

The LLAMP does not discuss the lack of monitoring wells on the Sunward Cohousing (Sunward) property immediately west of the Ann Arbor Cleaning Supply (A2CS) property, where PLS depicts most of the plume to be located. The lack of monitoring wells on this property is the primary reason for the distance between PLS's proposed CMWs and the plume as depicted. PLS has previously acknowledged that the full extent of the Little Lake Area plume west of the A2CS property can only be estimated due to its inability to obtain access to install monitoring wells on the wooded portion of the Sunward property, in the direction of the flow of groundwater.

The DEQ understands that the Sunward property owners have refused to allow PLS access for installation of monitoring wells. It is also DEQ's understanding that the Sunward property is served by the municipal water supply and there is no known use of the groundwater beneath the property for any purpose.

Unless PLS is able to obtain access to install monitoring wells on the Sunward property to conclusively determine the nature and extent of the plume, the DEQ will presume that the entire Sunward property is contaminated. Therefore, for purposes of monitoring the presumed plume, DEQ will allow use of MW-61s, MW-61d and the two former water supply wells at 4601 Park as CMWs, subject to the comments below regarding the 4601 Park wells.

Required Revisions to LLAMP:

An additional CMW is needed to the southeast of the plume to allow for the establishment of a complete boundary for non-expansion. The ideal location for this would likely be at BHMW-92, where a boring was installed, but no monitoring well was installed. The DEQ is willing to rely on MW-51 as a CMW for this purpose. The proposed frequency of annual monitoring for MW-51 is adequate.

There is no top of casing (TOC) elevation shown in the PLS database for the two former water supply wells at 4601 Park (4" and 6"). There is a ground elevation for the 4" well, which is not appropriate for calculating the potentiometric surface. PLS has been collecting static water levels from these two wells for many years, but without the TOC elevation, these wells cannot be used to determine the water table elevation. Because there are no other monitoring wells in this immediate area from which to determine the potentiometric surface, TOC elevations must be obtained for both of these wells.

The following additional revisions are required to the monitoring schedule in Table 1 of the LLAMP:

1. MW-51, MW-61s, MW-61d, 4601 Park 4 inch, 4601 Park 6 inch: the "Purpose for Sampling" must be changed from "GM" to "CM".
2. MW-53s, MW-53d and MW-93: the "Revised Groundwater Sampling Frequency" must be changed from "A" (annually) or "S" (semi-annually) to "Q" (quarterly).
3. A2 Cleaning Supply: the "Revised Groundwater Sampling Frequency" must remain at "M" (monthly), regardless of the frequency of batch purging (this is a clarification, not a change; the frequency codes in Table 1 included "M*=Monthly while operating, otherwise randomly sampled," which would only be relevant for the A2 Cleaning Supply extraction well).

The monitoring schedule will be reviewed annually, and revised as necessary. The DEQ reserves the right to request additional monitoring and investigation if the data indicates that the plume is expanding.

Conclusion:

The DEQ approves the LLAMP subject to the revisions discussed above, and based on the assumption that the groundwater beneath the Sunward property is contaminated with 1,4-dioxane above the generic residential criterion. As with the DEQ's May 25, 2011 conditional approval of the Western Area Groundwater Monitoring Plan, the DEQ-approved CMWs for the Little Lake Area establish points along a continuous boundary outside of which the plume is not allowed to expand.

Unless monitoring wells are installed on the Sunward Property in the future to accurately determine the nature and extent of the plume, it is likely that land or resource use restrictions to legally restrict the use of groundwater will be required for the Sunward property before the DEQ can approve termination of active remediation, as provided in the CJ.

To be clear, in a letter dated May 31, 2011, the DEQ approved a temporary decrease in the batch purging rate from the extraction well on the A2CS property. The DEQ will be evaluating the data during and after this temporary decrease in batch purging to determine if a reduced extraction rate is adequate to prevent expansion of the plume. Please be advised that PLS is and will be required to prevent expansion of the plume regardless of the DEQ's approval of this or any other extraction rate.

Should you require further information, please contact me at 517-780-7937, kolons@michigan.gov, or the DEQ Jackson District Office, 301 East Louis Glick Highway, Jackson, Michigan 49201.

Sincerely,

Sybil Kolon
Environmental Quality Analyst
Gelman Sciences Project Coordinator
Remediation Division

cc: Ms. Celeste Gill, Department of Attorney General
Mr. Mitchell Adelman, DEQ/Gelman File
Mr. James Cogger, DEQ