



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
JACKSON DISTRICT OFFICE



STEVEN E. CHESTER
DIRECTOR

May 19, 2004

Mr. Farsad Fotouhi
Environmental Manager
Pall Life Sciences, Inc.
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Ann Arbor, MI 48103-9019

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Building
Detroit, MI 48226-3535

Mr. Michael L. Caldwell
Fink, Zausmer & Kaufman
31700 Middlebelt Road,
Suite 150
Farmington Hills, MI 48334

Dear Sirs:

SUBJECT: Gelman Sciences, Inc. Remedial Action
Evergreen System Capture Zone Analysis

We have completed our review of the Capture Zone Analysis (CZA), originally submitted on August 21, 2002. The August 2002 CZA used the numerical groundwater model developed for Pall Life Sciences (PLS), using an extraction rate of 30 gallons per minute (gpm) from AE-1. The previous CZA used an extraction rate of 28 gpm, which the Department of Environmental Quality (DEQ) accepted as the minimum extraction rate. We requested the CZA be run using a 28 gpm extraction rate, or less. In addition, we requested clarification regarding one of the assumptions used in the groundwater model. On November 18, 2002, PLS submitted a revised CZA using a 25 gpm extraction rate for AE-1. We were not able to complete our review of that submittal until we received PLS's revised groundwater model on June 19, 2003. Additional changes since that time have also increased the time needed to complete our review, as we have informed you previously.

PLS has had problems operating AE-1 at the minimum extraction rate of 28 gpm, and at times has operated AE-2 in an effort to ensure capture of the contamination. Previous modeling had shown that extraction from both AE-1 and AE-2, under certain pumping ratios, could capture the contamination, in spite of the fact that there have only been low concentrations of 1,4-dioxane detected in AE-2. In addition, the inability of AE-1 to reliably meet the proposed 25 gpm minimum extraction rate since January 27, 2004 has recently resulted in PLS taking AE-1 out of service and taking steps to replace it. Based on information supplied by Mr. Fotouhi about the planned installation of AE-3, it appears that the November 2002 CZA would also apply to the replacement extraction well. Mr. Fotouhi has informed us that AE-3 will be installed this week. This extraction well should be put into service as soon as possible to reduce the potential for the migration of contamination that would require additional response actions.

It is our understanding that PLS has established an annual extraction well rehabilitation schedule. Based on previous problems maintaining the extraction rate from AE-1, we recommend that you consider establishing a more frequent rehabilitation schedule for AE-3.

The attached Interoffice Communications from Mr. Richard Mandle, dated February 18, 2004 (sent to you previously), and Mr. Leonard Lipinski, dated April 14, 2004, relate to the operation of AE-1, which is no longer in service. As indicated by Mr. Mandle and Mr. Lipinski, it appears that the operation of AE-1 at 25 gpm is adequate to capture the contamination in this area, in combination with extraction from LB-1 and LB-2. If PLS plans to use both AE-2 and AE-3 to capture the contamination, a revised CZA may be required.

Mr. Farsad Fotouhi
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We are concerned that there is not adequate monitoring to verify that the entire Evergreen System plume of contamination is being captured, as predicted by the groundwater model. As indicated by Mr. Lipinski, an additional monitoring well cluster should be installed northeast of AE-1. Please inform us of your schedule for installation of the requested monitoring wells by June 4, 2004.

As indicated by Mr. Lipinski, additional investigation may be needed to determine how extraction from the Evergreen area is affecting the contamination in the Unit E₁ aquifer. We would like to discuss this with you in the near future.

In a related matter, in March we made a request, by electronic mail, regarding production of potentiometric surface maps for the Unit E₁ and Unit D₂ aquifers. Previous potentiometric maps for these aquifer units have been drawn as if there is no relationship between them. During our review of water level data, we noted some inconsistencies in how this data is represented. Since the Unit E₁ and Unit D₂ aquifers are lateral extensions of each other, we would like future potentiometric maps of these units to be consistent with the static water level data from both units. The maps submitted with the most recent quarterly report did not incorporate this request. Mr. Fotouhi has since pointed out that the data were not collected at the same time, and he did not agree that these maps were inconsistent in their depiction of groundwater flow. We would like to discuss this matter with you at our next meeting to clarify our concerns.

In order to better understand the relationship between these areas, it is necessary that the static water level data for all monitoring wells in the Unit E₁ and Unit D₂ aquifers be collected at the same time (within about a one week period). This data must be collected during the next round of quarterly sampling, or not later than July 2004.

Please contact me if you have questions or would like to discuss these matters in more detail.

Sincerely,

Sybil Kolon
Environmental Quality Analyst
Gelman Sciences Project Coordinator
Remediation and Redevelopment Division
517-780-7937

SK/KJ

Attachments

cc: Ms. Mary Ann Bartlett, Pall Corp.
Mr. Robert Reichel, Department of Attorney General
Mr. Mitchell Adelman, DEQ/Gelman File
Mr. Leonard Lipinski, DEQ