



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

STATE OF NEVADA
Department of Conservation & Natural Resources
Brian Sandoval, Governor
Leo M. Drozdoff, P.E., Director
David Emme, Administrator

April 28, 2016

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Herman Kishner Trust
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Las Vegas, NV 89109

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Maryland Square Shopping Center, LLC
c/o Thomas E. Vandenburg
Dongell Lawrence Finney LLP
707 Wilshire Blvd, 45th Floor
Los Angeles, CA 90017

Neil Beller
7408 West Sahara
Las Vegas, Nevada 89117

Subject: First Quarter 2016 Groundwater Monitoring and Sampling Report

Facility: Al Phillips the Cleaner (former)
3661 S. Maryland Parkway
Las Vegas, Nevada
Facility ID: **H-000086**

Dear Messrs. Kishner, Swickard, Levy and Beller:

The Nevada Division of Environmental Protection (NDEP) has reviewed the *First Quarter 2016 Groundwater Monitoring and Sampling Letter Report* prepared by ATC Group Services LLC (ATC) on behalf of the Herman Kishner Trust (Trust) and Maryland Square Shopping Center, LLC (MSSC LLC), dated April 18, 2016 and received via e-mail on April 22, 2016.

Overview

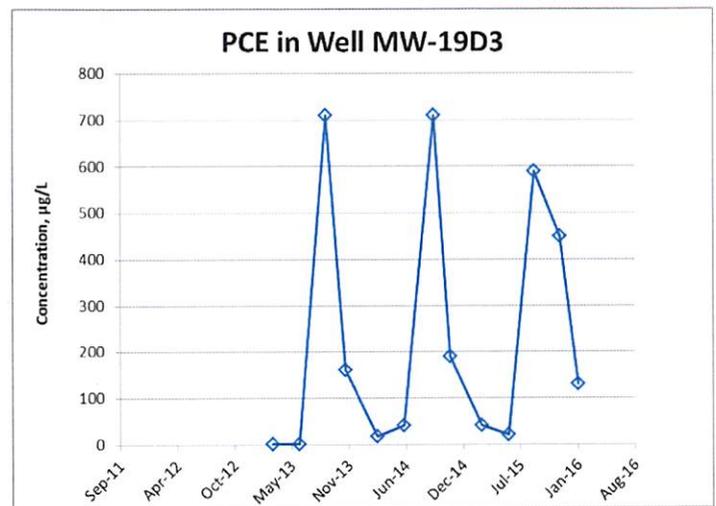
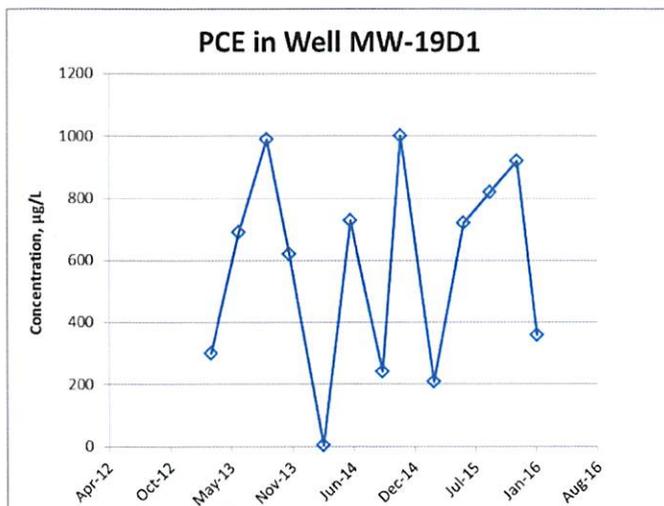
According to the subject report, a total of 59 of the 59 site monitoring wells (each depth counted separately for nested and multi-depth wells) were sampled in the first quarter of 2016. Tetrachloroethylene (PCE) was detected in 52 of these 59 wells, and the concentration of PCE exceeded the action level of 5 micrograms per liter ($\mu\text{g/L}$) in 42 of the 59 wells sampled (see Table 3-1 in the subject report).

Vertical gradients were assessed for the nested/clustered wells at the site (see results in Table 2-1 of the subject report). The following well pairs showed a **downward** vertical gradient: MW-1/MW-9, located in source area; MW-19D1/MW-19D2, located in the eastern parking lot of the mall; MW-20D1/MW-20D2 in the eastern parking lot of the mall; and MW-40-CMT-30/MW-40-CMT-60. Direction of the vertical gradient can be important in affecting contaminant migration.

The subject report does a good job of discussing the large variation in PCE concentrations observed quarter-to-quarter in the MW-19D well series, stating that:

“...a large increase in PCE concentration occurred in MW-19D3 with a corresponding decrease in MW-19D1. The primary concern from the Third Quarter 2014 sampling event was the substantial increase in PCE concentration noted at MW-19D3, which was previously thought to have stabilized. When the initial spike happened in Third Quarter 2013, it was assumed that the nearby injection of large volumes of potassium permanganate had displaced the existing PCE contamination in the area and caused the PCE plume to travel deeper where it was not formerly thought to exist.” (See pages 13 and 14 of report).

Successive quarters of samples collected from well **MW-19D3** demonstrated that concentrations of PCE in **MW-19D3** have shown a “spike” during the third quarter of the year, for a third year in a row, as shown below. Fluctuating concentrations seen in **MW-19D1** are less regular, but just as extreme. It is unclear how such vertical variability may affect design of the remediation system.

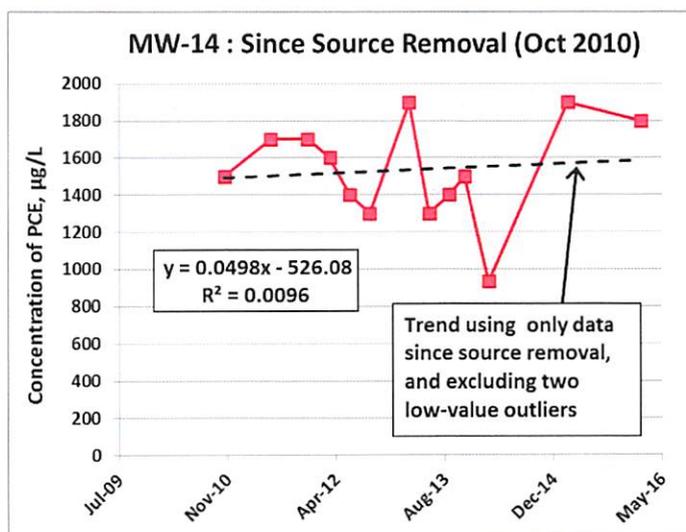
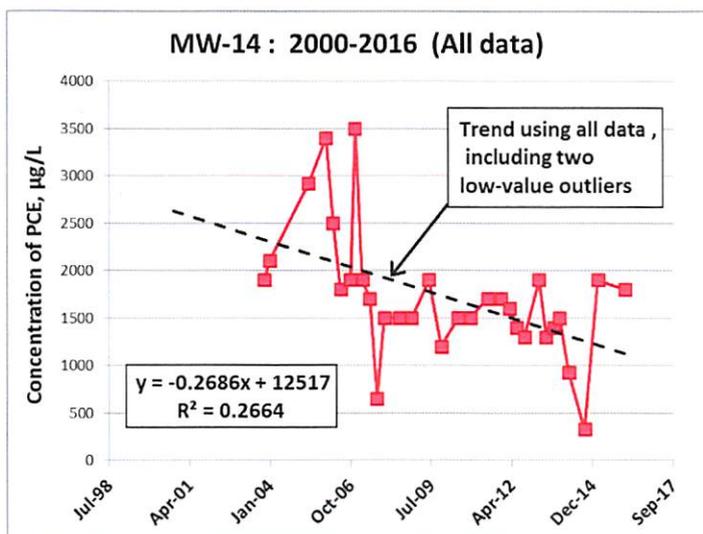


NDEP Comments

The NDEP notes that Appendix C provides the input and output from trend testing. The test output shows that all data from each well are used in calculating the trends; this may be somewhat misleading. Using MW-14 as an example, the first sample from this well was collected in **September 2003** and contained **1,900 µg/L** PCE. The sample collected in **February 2016** contained **1,800 µg/L** PCE. Simplistically considering only these two data points, it would not seem that there has been a significant decrease in concentration over time.

A more-complete assessment of concentrations over time reveals that PCE levels in MW-14 have fluctuated from 1,200 to 3,400 µg/L (if two low-value outliers are excluded: 650 µg/L in September 2007 and 330 µg/L in September 2014). The trend test provided in Appendix C shows that both low-value outliers were included in the analysis and all data since the first sample were used (see left-hand graph below).

It may be more appropriate to evaluate trends since the source-area soils were removed (October 2010) and to exclude the two low-value outliers. When this is done, the data show no trend (albeit, the figures below show results from parametric regression analysis rather than the Mann-Kendall test, but the lack of a decreasing trend in the right-hand graph is clear, nonetheless.)



It may be worthwhile to evaluate graphs of the data for each well to select an appropriate time period of data and evaluate the effect of excluding outliers (both high-end and low-end) on the outcome of the trend tests. Doing so may provide a better assessment of PCE plume behavior.

NDEP Requirements

The report recommends that monitoring and sampling of the site monitoring wells continue in accordance with the NDEP-approved 2014 schedule for 2015, with the exception that metals testing be reduced to only MW-19I, MW-40 CMT-55, and MW-40 CMT-60. The NDEP concurs with these recommendations, and notes that the next quarterly report is due by **July 29, 2016**.

If you have any questions or require additional information regarding this letter, contact me by telephone at (775) 687-9496 or e-mail at msiders@ndep.nv.gov

Sincerely,

Mary A. Siders, Ph.D.
Bureau of Corrective Actions

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