



# STATE OF NEVADA

Department of Conservation & Natural Resources  
DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor

Leo M. Drozdoff, P.E., Director

Colleen Cripps, Ph.D., Administrator

February 3, 2011

Irwin Kishner  
Herman Kishner Trust  
294 Convention Center Drive  
Las Vegas, NV 89109

Maryland Square Shopping Center, LLC  
c/o Tim Swickard  
Dongell Lawrence Finney LLP  
770 L St., Suite 950  
Sacramento, CA 95814

**Subject: 4th Quarter 2010, Groundwater Monitoring Report, Maryland Square Shopping Center**  
**Facility: Al Phillips the Cleaner (former)**  
3661 S. Maryland Parkway  
Las Vegas, Nevada  
Facility ID: **H-000086**

Dear Mr. Swickard and Mr. Kishner:

The Nevada Division of Environmental Protection (NDEP) has reviewed the ***Groundwater Monitoring Report for 4th Quarter 2010***, prepared by Tetra Tech EM, Inc. (Tetra Tech) on behalf of the Herman Kishner Trust and Maryland Square Shopping Center, LLC, and received electronically by the NDEP on January 21, 2011.

The NDEP also received, via e-mail on January 31, 2011, a document filed with the Court (#632-1, Exhibit A). To this, the NDEP has a point of correction: In the bulleted list at the bottom of page 2 of Exhibit A, the text indicates that the NDEP has required certain documents, including a document containing responses to NDEP comments on the draft Corrective Action Plan (CAP) for Groundwater. (See page 3, where a bullet lists "*Response to NDEP comments regarding the draft groundwater CAP (due February 28, 2011)*" as one of the documents required by the NDEP.) Please note that the NDEP comment letter of January 11, 2011 specifically stated that, because the NDEP was rejecting the draft CAP for Groundwater (document dated October 12, 2010), "*no formal response to these draft comments is requested. Rather, the NDEP requests that you review the draft comments to help guide the rewriting of the next draft CAP for Groundwater.*"

The document due on February 28, 2011 is not a response to comments; the document due on February 28, 2011 is a completely revised, new draft CAP for Groundwater. This document must be of acceptable quality to the NDEP. Please note that the Community Relations Plan and the Work Plan for Mitigation of Indoor Air and Well Water are also due to the NDEP on February 28, 2011, per the schedule in the Permanent Injunction.

## NDEP Overview

The groundwater monitoring report for the 4<sup>th</sup> Quarter, 2010, provides a background summary for the site (Section 1.2), a summary of the sampling and analysis (Section 2), and a brief discussion of results for the 4<sup>th</sup> Quarter investigation (Section 3).



Several factors not taken into account in Section 3 include (1) application of a large volume of irrigation water at the golf course, especially during the summer months, and the effect of this irrigation on water levels in the shallow groundwater (which shows a pronounced seasonal periodicity in water levels measured in wells near the golf course); and (2) the variability in concentrations of tetrachloroethylene (PCE) reported for each well from quarter to quarter, as well as in duplicate samples (15.4% relative percent difference [RPD] for the sample pair collected from well MW-19 on November 2, 2010), which suggests significant vertical variation in concentrations of the dissolved-phase PCE. Such vertical variability is not unexpected, especially considering the heterogeneity of the geologic deposits. Please consider and discuss these in the next quarterly groundwater monitoring report (i.e., Groundwater Monitoring Report for the First Quarter, 2011, due April 29, 2011).

### **NDEP Requirements**

1. As requested in the NDEP comment letters on the 2<sup>nd</sup> and 3<sup>rd</sup> Quarter, 2010 Groundwater Monitoring Reports (see NDEP letters dated September 10, 2010 and January 6, 2011), **please sample well MW-11 annually, during the 4<sup>th</sup> quarter of each year.**
2. The location of the golf course irrigation well is incorrectly depicted on Figure 3 at a location north of the pond. The irrigation well is located just west of a small shed on the south side of the pond.
3. Please continue to provide electronic copies (pdf file) of all reports submitted to the NDEP, so that the NDEP can post these on the Maryland Square website: <http://www.ndep.nv.gov/pce/foia.htm>. (Submittal of a "print-to-pdf" file is appreciated, because this generates a smaller file than does a scanned pdf file.)
4. Unless a schedule modification is agreed to by the NDEP, please provide future quarterly reports on the following schedule:
  - a. Groundwater Monitoring Report for the First Quarter, 2011 – **April 29, 2011**
  - b. Groundwater Monitoring Report for the Second Quarter, 2011 – **July 29, 2011**
  - c. Groundwater Monitoring Report for the Third Quarter, 2011 – **October 28, 2011**
  - d. Groundwater Monitoring Report for the Fourth Quarter, 2011 - **January 30, 2012**

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](mailto:msiders@ndep.nv.gov).

Sincerely,



Mary A. Siders, Ph.D.  
Bureau of Corrective Actions  
Nevada Division of Environmental Protection  
Fax (775) 687-8335

Enclosure (1)

Maryland Square Shopping Center, LLC  
c/o Mr. Tim Swickard  
Irwin Kishner  
H-000086  
February 3, 2011  
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## ATTACHMENT 1

1. The transmittal letter sent with the 4<sup>th</sup> Quarter 2010 Groundwater Monitoring Report stated *“In response to correspondence issued from the NDEP BCA dated January 6, 2011, the groundwater elevation at monitoring well location MW-21 was not reported due to inaccessibility. Furthermore, the 4th Quarter Groundwater Monitoring Report includes some 4th quarter monitoring results summarized in conjunction with associated 3rd quarter monitoring results to establish a relative reference during review. Correlations or observations that might be apparent based on comparison of quarterly data are omitted to allow NDEP to derive and establish subsequent data interpretations in the Administrative Record.”*

The NDEP notes that (1) quarter-to-quarter variability in contaminant concentrations and water levels can be misleading, which is why the NDEP requests statistical trend testing at sites where long-term monitoring is conducted; (2) accurate analysis of the data is encouraged; however, unsupported speculations are typically not something that should be included in a report submitted to the NDEP; and (3) the NDEP always has the ability to perform analysis of data for any site at any time, and will do so, in particular, when this type of analysis is lacking in a report, as was the case for the 3<sup>rd</sup> and 4<sup>th</sup> Quarter, 2010 Groundwater Monitoring Reports. Section 3.0 of the 3<sup>rd</sup> Quarter 2010 Groundwater Monitoring Report stated that:

*“Although only a limited population of data were obtained for 3rd Quarter groundwater analysis, surmising a correlation between groundwater elevations and PCE concentrations may be justified. In particular, third quarter groundwater data seem to indicate a discernible relationship between solute concentration and groundwater elevation. Increased groundwater elevations (i.e., more groundwater available in the water column) may dilute the solute (PCE), while at locations where groundwater elevations decreased (i.e., less groundwater available in the water column), concentrations of solute (PCE) predominantly increased.*

*Although this relationship is reasonably supported by third quarter monitoring data, this observed correlation should not be considered conclusive due to the limited population of data currently available to assess. The validity of this correlation or perhaps others will be further examined during the comprehensive, 4th Quarter groundwater monitoring effort.”*

A simple analysis of the extensive data available for the site would have clearly shown that the above “surmised correlation” was not supported by the data. To state further that the surmised correlation is “reasonably supported” by the data does not lend confidence as to the review of the data.

As shown the table below, the speculation in the 3<sup>rd</sup> Quarter Report and in Table 3 of the 4<sup>th</sup> Quarter Report of an inverse relationship between water level and PCE concentrations is not supported by a simple regression analysis of the data. Also, given the variability in PCE concentrations from quarter to quarter, as well as RPDs of as much as 15.4% for duplicate samples, attempting to correlate PCE concentrations with slight fluctuations in water level would not seem to be a productive speculation to pursue.

Correlations between PCE Concentrations and Water Levels; Data through December 2010

Well	Positive or Inverse?	R <sup>2</sup>
MW-1	Positive	0.57
MW-2	Positive	0.65
MW-3	None	0.09
MW-4	Inverse	0.51
MW-5	Inverse	0.53
MW-6	Inverse	0.14
MW-7	None	0.11
MW-8	Positive	0.38
MW-9	Positive	0.24
MW-10	None	0.002
MW-11	Nondetections	
MW-12	None	0.03
MW-13	Positive	0.42
MW-14	Positive	0.49
MW-15	None	0.11
MW-16	Nondetections	
MW-17	None	0.12
MW-18	None, due to outlier?	0.07
MW-19	Positive	0.13
MW-20	Positive	0.30
MW-21	Positive	0.30
MW-22	Mostly Nondetections	
MW-23	Positive	0.39
MW-24	Positive	0.39
MW-25	Positive	0.24
MW-26	Positive	0.18
MW-27	None	0.004
MW-28	Positive	0.28
MW-29	None	0.05
MW-30	None	0.05
MW-31	Positive	0.33
MW-32	None	0.03
MW-33	None	0.03

Where R<sup>2</sup> is the “coefficient of determination” from simple linear regression analysis.

2. **Section 2.1** of the 4<sup>th</sup> Quarter Report states that “*The quarterly monitoring schedule was also re-iterated to Tetra Tech by the NDEP in February 2010.*” and “*Currently the groundwater monitoring network consists of 33 monitoring wells of which one (MW-11) is to be discontinued from the program*” and “*Fourth Quarter – MW-1 through MW-33. (MW-4 and MW-11 discontinued from analytical program).*”

Please note that since February 2010, the NDEP has twice requested that **MW-11** be sampled during the 4<sup>th</sup> quarter of each year (see the NDEP’s comment letters dated **September 10, 2010** and **January 6, 2011**). The current letter represents the NDEP’s third request to sample well MW-11 annually. A groundwater sample collected from MW-11 on February 17, 2010 had a benzene concentration of 12 µg/L (action level = 5 µg/L); no other constituent concentrations exceeded action levels and no floating fuel was found. Note that PCE and other solvents have never been detected in well MW-11.

Table below was included in the NDEP's comment letter dated **September 10, 2010**:

Annual	MW-3, MW-7, MW-8, MW-10, <b>MW-11</b> , MW-12, MW-15, MW-16, MW-21, MW-22, MW-24
Semi-annual	MW-1, MW-2, MW-5, MW-6, MW-9, MW-13, MW-14, MW-17, MW-28, MW-29
Quarterly	MW-18, MW-19, MW-20, MW-23, MW-25, MW-26, MW-27, MW-30; MW-31; MW-32, MW-33

3. **Section 2.4** provides a summary table of analytical results for PCE, TCE, and 1,2-DCE (Table 2), but does not mention the duplicate samples collected for MW-19 and MW-26. Nor does Table 3, comparing the 3<sup>rd</sup> quarter and 4<sup>th</sup> quarter data include any mention of these duplicate samples, which had %RPDs of 11.3% and 15.4%, by way of comparison with the quarterly differences posted in the following table.

Well	3rd Qtr	4th Qtr	%RPD
MW-18	1300	1200	2.0%
MW-19	420	840	16.7%
MW-20	340	890	22.4%
MW-21			
MW-22			
MW-23	1100	970	3.1%
MW-24			
MW-25	760	550	8.0%
MW-26	450	750	12.5%
MW-27	420	480	3.3%
MW-28			
MW-29			
MW-30	62	54	3.4%
MW-31	30	27	2.6%
MW-32	660	740	2.9%

4. The first two paragraphs of **Section 3** discuss changes in water level elevation, noting that water levels measured in wells west of Boulevard Mall generally showed a slight increase (average = 0.084 foot increase) and that water levels measured in wells east of Boulevard Mall generally showed decreases (average = 0.478 foot decrease), with the largest decrease (-1.31 feet) seen in well MW-30. However, the obvious factor of the golf course irrigation and its effect on the shallow groundwater is not mentioned in the discussion of water levels, in this or any of the quarterly reports.
5. The NDEP notes from the laboratory data sheets in **Appendix B** that duplicate samples were collected from wells MW-19 and MW-26; however, these are not discussed in the body of report. The sampling sheets and analytical reports show that the initial and duplicate samples were collected at the same time. The sample pair from MW-19 yielded 840 and 980 µg/L PCE (15.4% RPD), yet only the result of 840 µg/L is in the summary table and on Figure 3 Likewise, data from the sample pair from MW-26 are 750 and 840 µg/L (11.3% RPD), yet only the 750 is reported in tables and on Figure 3.

The fairly large differences in PCE concentrations for two samples collected essentially simultaneously from a single well suggests that there is significant vertical stratification of the dissolved-phase PCE in groundwater. This is not an uncommon situation, and is one of the reasons the NDEP will require vertical delineation prior to design and installation of the groundwater remedy.

6. The first page of **Appendix D** states that duplicate results were averaged. Does this refer to the duplicate analyses for MW-19 and MW-26 as noted above?

7. The summary table at the beginning of **Appendix D** contains incorrect information for some wells, in regard to the number of samples and the number of detections per well.