



## **WATERSTONE ENVIRONMENTAL, INC.**

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February 3, 2016

Los Angeles Unified School District  
Office of Environmental Health and Safety  
333 South Beaudry Street, 21st Floor  
Los Angeles, California 90017-5156

### **Re: Air Testing Results for Darby Avenue Elementary School in Northridge, California**

Waterstone Environmental, Inc. (Waterstone) is pleased to submit this letter report detailing the results of air sample collection conducted on January 27, 2016 and January 28, 2016 at the Darby Avenue Elementary School located at 10818 Darby Avenue, Northridge, California. The air sampling summarized in this letter report was conducted to determine if the slightly elevated benzene concentration of 1.1 ppbv detected on January 20, 2016 was a persistent issue. As detailed below, all subsequent sample results are well below published environmental regulatory limits for benzene as well as for all other constituents sampled and no additional actions are recommended.

#### ***Sample Collection and Analysis***

Sample collection consisted of three 8-hour samples collected in summa canisters on January 27, 2016 and three 8-hour samples collected in summa canisters on January 28, 2016. The summa canisters were placed in the breathing zone and allowed to sit undisturbed for a period of 8 hours on each day of sample collection. On both sampling days, one summa canister was placed in the library, one summa canister was placed in the main school office and one summa canister was placed in Room 9.

The samples collected on each day were delivered to Air Technology Laboratories, Inc., a laboratory accredited by the National Environmental Laboratory Accreditation Program (NELAP). Samples were submitted for analysis of BTEX by EPA Method TO-15. The complete laboratory reports with analysis results are attached.

#### ***Analytical Results***

The sample IDs created to refer to Darby Avenue Elementary School are designated with a "DA" in the sample ID. The analytical results for Darby Avenue Elementary School presented in the attached laboratory reports are summarized as follows:

- The maximum concentration of benzene detected was 0.38 ppbv, which is below the environmental screening limits for benzene of 8 ppbv used by OEHHA for a 1-hour acute exposure and below the 8-hour and chronic REL of 0.92 ppbv.



- The maximum concentration of toluene detected was 0.36 ppbv and below the environmental screening limits for toluene of 9,640 ppbv used by OEHH for a 1-hour acute exposure.
- The maximum concentration of ethylbenzene detected was 1.7 ppbv and below the environmental screening limits for ethylbenzene of 450 ppbv used by OEHH for a chronic (lifetime) exposure.
- The maximum concentration of xylene (sum of p-xylene, m-xylene and o-xylene) detected was 1.54 ppbv and below the environmental screening limits for xylene of 4,970 ppbv used by OEHH for a 1-hour acute exposure.

Analyte	Maximum On-site Detection (ppbv)	Environmental Regulatory Limit (ppbv)	Environmental Regulatory Limit Description
Benzene	0.38	8 0.92	OEHH Acute REL (27 ug/m <sup>3</sup> )* 8-hour and chronic OEHH RELs (3 ug/m <sup>3</sup> )*
Toluene	0.74	9,640 80	OEHH Acute REL (37,000 ug/m <sup>3</sup> )* OEHH Chronic REL (300 ug/m <sup>3</sup> )*
Ethylbenzene	0.40	450	OEHH Chronic REL (2,000 ug/m <sup>3</sup> )*
Xylenes	1.54	4,970 160	OEHH Acute REL (22,000 ug/m <sup>3</sup> )* OEHH Chronic REL (700 ug/m <sup>3</sup> )*

\* OEHH RELs listed in micrograms per cubic meter (ug/m<sup>3</sup>) have been converted to ppbv using the molecular weight of each specific chemical. <http://oehha.ca.gov/air/allrels.html>

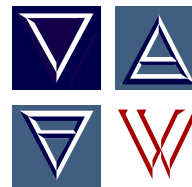
The regulatory limits tabulated above are Reference Exposure Levels (RELs) developed and published by California's Office of Environmental Health Hazards (OEHH). OEHH is one of six agencies under the umbrella of the California Environmental Protection Agency (Cal/EPA). OEHH's overall mission is to protect and enhance public health and the environment by scientific evaluation of risks posed by hazardous substances.

OEHH evaluates health effects of chemicals found in indoor air, including developing Reference Exposure Levels for use with indoor air exposure scenarios. OEHH participates in a number of inter-Agency activities designed to evaluate indoor air quality health issues and to move California toward safer indoor air quality. OEHH provides health-related assistance to health officers.

### ***Conclusions and Recommendations***

As shown in the table above, the maximum on-site detections are well below the published environmental regulatory limits for all analytes.

As detailed in the letter report summarizing air sampling results for samples collected at the Darby Avenue Elementary School campus on January 20, 2016, one sample resulted in a benzene concentration of 1.1 ppbv. Although this concentration is below the environmental



screening limits for benzene of 8 ppbv used by OEHHA for a 1-hour acute exposure, the detected concentration was slightly above the 8-hour and chronic REL of 0.92 ppbv. Although the chronic REL is designed to address continuous exposures for up to a lifetime (<http://oehha.ca.gov/air/allrels.html>), and is not a limit that a one-time detection should be compared to, in an abundance of caution, additional sampling was conducted to verify that the one slightly elevated detection of benzene was not a persistent issue.

There are two important points that must be considered when comparing a detected concentration to the corresponding OEHHA REL. First, because uncertainty factors are incorporated into each REL limit for the purpose of addressing scientific data gaps and uncertainties in the calculation of the REL, a detected concentration of a chemical that is found to exceed an OEHHA REL does not automatically indicate that an adverse health impact has occurred or will occur ([http://oehha.ca.gov/air/hot\\_spots/2008/NoncancerTSD\\_final.pdf](http://oehha.ca.gov/air/hot_spots/2008/NoncancerTSD_final.pdf)). Second, OEHHA has defined a “lifetime” as 70 years ([http://www.oehha.ca.gov/air/hot\\_spots/pdf/2012tsd/Chapter1\\_2012.pdf](http://www.oehha.ca.gov/air/hot_spots/pdf/2012tsd/Chapter1_2012.pdf)).

Two air sample results from January 19, 2016, one of the two air sample results from January 20, 2016, three air sample results from January 27, 2016, and three air sample results from January 28, 2016 were all found to be below published environmental regulatory limits for benzene indicating that the one slightly elevated benzene concentration detected on January 20, 2016 was a limited occurrence and is not a persistent issue warranting any further action.

Sample collection and air monitoring at the Darby Avenue Elementary School campus will resume on the regularly scheduled cycle with the next two day air monitoring and air sampling event scheduled to occur on February 12, 2016 and February 16, 2016.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Elizabeth Gonzalez', is written over the typed name.

Elizabeth Gonzalez, P.E.  
Principal Engineer  
**Waterstone Environmental, Inc.**

A handwritten signature in blue ink, appearing to read 'Grace Rinck', is written over the typed name.

Grace Rinck, CIH  
Principal Industrial Hygienist  
**Aurora Industrial Hygiene**

Attachments

