



WATERSTONE ENVIRONMENTAL, INC.

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February 18, 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 Ernest Lawrence Middle School in Chatsworth, California

Waterstone Environmental, Inc. (Waterstone) is pleased to submit this letter report detailing the results of recent air testing and sample collection at the Ernest Lawrence Middle School located at 10100 Variel Avenue, Chatsworth, California.

Waterstone collected air samples and conducted real time air monitoring using various handheld monitors. This report summarizes the results of air sample analysis for samples collected on February 11, 2016.

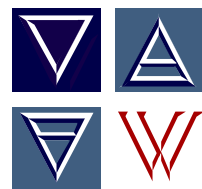
Sample Collection and Analysis

Sample collection consisted of both grab samples (approximately 2 minute sample filling period) in tedlar bags as well as 8-hour samples collected in summa canisters in Room #37. The summa canisters were placed in the breathing zone and allowed to sit undisturbed for a period of 8 hours.

Two tedlar bag samples and one summa canister sample were delivered to Quantum Analytical Services Inc., a laboratory certified by the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). Both samples were submitted for analysis of sulfur compounds by SCAQMD Method 307-91, and hydrocarbon speciation by modified EPA 18. The complete laboratory report with analysis results is attached.

Two tedlar bag samples and one summa canister sample 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 report with analysis results is attached.

Real time air monitoring was conducted in indoor and outdoor spaces using a Jerome J631X for hydrogen sulfide detection; dräger tubes for benzene, toluene, ethylbenzene, xylenes, and mercaptans; a multi RAE monitor to measure percent lower explosive limit (%LEL) as an indicator of the potential presence of methane; and an ultra RAE monitor used to measure volatile organic compounds (VOCs) as an indicator of the potential presence of benzene as well as for taking benzene specific reading using a benzene sensor tube.



Analytical Results

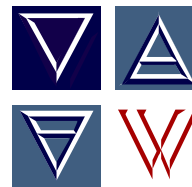
The sample IDs created to refer to Ernest Lawrence Middle School are designated with a “EL” in the sample ID. The analytical results for Ernest Lawrence Middle School presented in the attached laboratory reports are summarized as follows:

- No sulfur compounds were detected at concentrations above laboratory detection limits.
- Methane was detected at a maximum concentration of 3,510 parts per billion by volume (ppbv) in a grab sample and a maximum concentration of 3,410 ppbv in an 8-hour sample. Both of these concentration are below the environmental screening limits for methane of 500,000 ppbv used by the Department of Toxic Substances Control (DTSC) and 1,000,000 ppbv used by the National Institute for Occupational Safety (NIOSH). Additionally, methane was not detected at a concentration that requires a fire contingency plan (8,800,000 ppbv) as required by the Los Angeles County Building Code. However, methane was detected at a concentration higher than 3,000 ppbv which is the South Coast Air Quality Management District/California Air Resources Board (SCAQMD/CARB) criteria for 12-hour or 24-hour averages. This methane criterion was set primarily to make sure that the SS-25 well has not resumed leaking and is not a level related to an adverse health affect.
- The maximum concentration of benzene detected in a grab sample was 1.0 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 SCAQMD/CARB criteria of 2 ppbv for a grab sample or an hourly average. The maximum concentration of benzene detected in an 8-hour sample was 0.38 ppbv which is below the the 8-hour and chronic REL of 0.9 ppbv and the SCAQMD/CARB criteria of 1 ppbv for a 12 to 24-hour average. It should also be noted that on the previous sampling day (February 10, 2016), the maximum concentration of benzene was only 0.57 ppvb.
- The maximum concentration of toluene detected was 14 ppbv and below the environmental screening limit for toluene of 9,640 ppbv used by OEHHA for a 1-hour acute exposure.
- Ethylbenzene was not detected above the laboratory detection limit of 0.20 ppbv which is below the environmental screening limit for ethylbenzene of 450 ppbv used by OEHHA for a chronic (lifetime) exposure.
- The maximum concentration of xylene (sum of p-xylene, m-xylene and o-xylene) detected was 4.0 ppbv and below the environmental screening limit for xylene of 4,970 ppbv used by OEHHA for a 1-hour acute exposure.



| Analyte | Maximum On-site Detection (ppbv) | Environmental Guidance Level (ppbv) | Environmental Guidance Levels Description |
|---|----------------------------------|--|---|
| Sulfide Compounds | None (grab or 8-hour) | 30 (Hydrogen Sulfide) 7 (Hydrogen Sulfide) 10 (Hydrogen Sulfide) | California Ambient Air – 1 hour and OEHHA Acute REL (42 ug/m ³)* OEHHA Chronic REL (10 ug/m ³)* SCAQMD/CARB Criteria (grab, hourly average, and 12 or 24-hour average) |
| Mercaptans | None (grab or 8-hour) | 5 | SCAQMD/CARB Criteria (grab, hourly average, and 12 or 24-hour average) |
| Methane | 3,510 (grab) 3,410 (8-hour) | 500,000 1,000,000 5,000 4,000 3,000 | DTSC Site-Specific Screening Level (for ambient indoor and outdoor air). http://www.hawaiiidoh.org/references/CalEPA%202005b.pdf NIOSH maximum recommended safe methane concentration for workers during an 8-hour period. http://www.cdc.gov/niosh/ipcsneng/neng0291.html SCAQMD/CARB Criteria (grab) SCAQMD/CARB Criteria (hourly average) SCAQMD/CARB Criteria (12 or 24-hour average) |
| Ethane, Ethylene | None (grab or 8-hour) | 1,000,000 2,000,000 | NIOSH maximum recommended safe ethane concentration for workers during an 8-hour period. http://www.cdc.gov/niosh/ipcsneng/neng0266.html NIOSH maximum recommended safe ethylene concentration for workers during an 8-hour period. http://www.cdc.gov/niosh/ipcsneng/neng0475.html |
| Other Hydrocarbon Speciations by EPA 18 | None (grab or 8-hour) | 1,950 (Hexane) | OEHHA Chronic REL (7,000 ug/m ³)* |
| Benzene | 1.0 (grab) 0.38 (8-hour) | 8 0.92 2 1 | OEHHA Acute REL (27 ug/m ³)* 8-hour and chronic OEHHA RELs (3 ug/m ³)* SCAQMD/CARB Criteria (grab and hourly average) SCAQMD/CARB Criteria (12 or 24-hour average) |
| Toluene | 14 (grab) 1.2 (8-hour) | 9,640 80 | OEHHA Acute REL (37,000 ug/m ³)* OEHHA Chronic REL (300 ug/m ³)* |
| Ethylbenzene | None (grab or 8-hour) | 450 | OEHHA Chronic REL (2,000 ug/m ³)* |
| Xylenes | 4.0 (grab) 1.5 (8-hour) | 4,970 160 | OEHHA Acute REL (22,000 ug/m ³)* OEHHA Chronic REL (700 ug/m ³)* |

* OEHHA RELs listed in micrograms per cubic meter (ug/m³) have been converted to ppbv using the molecular weight of each specific chemical. <http://oehha.ca.gov/air/allrels.html>



Real Time Monitoring Results

The real time monitoring logs are attached. In-field air monitoring results are summarized as follows:

- Methane (as indicated by %LEL), VOCs, benzene, toluene, ethylbenzene, and xylenes were not detected during field monitoring.
- Hydrogen sulfide was detected at a maximum concentration of 0.008 ppmv, well below the OEHHHA acute REL of 0.03 ppmv.

The majority of the regulatory limits we are comparing against are Reference Exposure Levels (RELs) developed and published by California's Office of Environmental Health Hazards (OEHHHA). OEHHHA is one of six agencies under the umbrella of the California Environmental Protection Agency (Cal/EPA). OEHHHA's overall mission is to protect and enhance public health and the environment by scientific evaluation of risks posed by hazardous substances. SCAQMD/CARB Criteria approved by OEHHHA have also been used for comparison.

OEHHHA evaluates health effects of chemicals found in indoor air, including developing Reference Exposure Levels for use with indoor air exposure scenarios. OEHHHA 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. OEHHHA provides health-related assistance to health officers.

Conclusions and Recommendations

Methane was compared to the DTSC Site-Specific Screening Level for ambient indoor and outdoor air, the NIOSH maximum recommended safe methane concentration for workers during an 8-hour period, and the SCAQMD/CARB criteria for 12-hour or 24-hour averages and found to be detected only at acceptable concentrations. Although the SCAQMD/CARB criterion for a grab sample was exceeded, this criterion was set primarily to make sure that the SS-25 well has not resumed leaking and is not a level related to an adverse health affect.

As shown in the table above, the maximum on-site detections are well below the published environmental regulatory limits based on the exposure time specified in the regulatory limit.

Sincerely,

Elizabeth Gonzalez, P.E.
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Waterstone Environmental, Inc.

Grace Rinck, CIH
Principal Industrial Hygienist
Aurora Industrial Hygiene

Attachments

