
BIOMAX ENVIRONMENTAL

Environmental Consulting and Industrial Hygiene Services

November 16th, 2015

Mr. Ben Wells
Environmental Resources Group, Inc.
1038 Redwood Hwy., Suite 1
Mill Valley, CA 94941

Data Review and Summary Letter
Indoor Air Quality Sampling – VOC via TO15
Project Site: Daycare Facility
■ Ina Street
Fairbanks, Alaska

Dear Mr. Wells,

At the request of Environmental Resources Group, Inc. (ERG), BioMax Environmental, Inc. (BioMax) has prepared this summary letter providing a professional opinion regarding our review and interpretation of the investigative indoor air quality sampling activities and findings associated with the collection and analysis of the airborne Volatile Organic Compounds (VOCs) noted. Such samples were collected from within and surrounding the existing daycare center facility located at ■ Ina Street in the city of Fairbanks Alaska on October 24th, 2015 during a period of representative occupancy and daily activities.

This data review and interpretation was performed by Mr. Michael A. Polkabila, CIH, REA Senior Certified Industrial Hygienist of BioMax Environmental, Inc. Mr. Polkabila has been certified in the Comprehensive Practice of Industrial Hygiene by the ABIH and currently maintains the right to the designation "Certified Industrial Hygienist" (CIH) under certification number CP7104. Mr. Polkabila has also previously been certified by the California Environmental Protection Agency (Cal/EPA) as a Class I Registered Environmental Assessor (REA) under certification number 05011.

As part of this review, BioMax was provided with the following reports, correspondences and information as follows:

- Field Observations Summary – ■ Ina Street sent via email on 11/11/15 created by Dustin Stahl, ERG Field Technician.
- Chain of Custody (COC) Record Analytical Sciences, Petaluma CA prepared by Dustin Stahl, ERG Field Technician on 10/26/15
- Analytical Findings of TO15 analysis of samples Analytical Sciences, Petaluma CA. Lab Report No. 5102701 dated October 28, 2015

- Alaska Department of Environmental Conservation (ADEC) guidance target levels for contaminants of concern received via email on 11/2/15.
- Fact Sheet – Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program. TCE dated January 8, 2014

Analytical samples were collected in 6 liter Summa canister sampling devices utilizing sample regulators during representative periods noted on COC as follows:

1. 8 hour sample regulator used within first floor infant area (during occupant use period)
2. 24 hour sample regulator used for the collection of air sample within basement
3. 8 hour sample regulator used to collect ambient outside sample

Collected Summa canister samples were transported to Analytical Sciences of Petaluma, California via Federal Express priority mail under standard Chain of Custody documentation. Analytical detection methods of the collected samples followed National Institute of Occupational Safety and Health (NIOSH) Analytical Method TO15.

Analytical findings associated with the collected samples indicated the detection of a limited number of Volatile Organic Compounds (VOCs) as noted in original analytical report (see attached). As requested by our client and indicated within our scope of work, our specific sampling activities focused on the primary Contaminants of Concern (COCs) associated with the Bentley Mall site. Such COCs primarily include recognized Chlorinated solvent related compounds (and known environmental break-down products) associated with dry-cleaning operations and solvent contaminants include the following:

- 1) Tetrachloroethylene (aka. Perchloroethylene, PCE or “Perc”)
- 2) Trichloroethylene (TCE)
- 3) Isomers of Dichloroethylene (DCE) including 1,1-DCE, cis-1,2-DCE, and trans-1,2-DCE isomers

The following table summarizes the levels of detected VOC identified via the prescribed TO15 analytical methods. Identified contaminants of concern have been highlighted with associated published ADEC target guidance levels (provided by Mr. James Fish of ADEC) included for comparative reference:

- For simplicity, all chemicals analyzed by NIOSH Method TO15 are listed in the table
- Findings of Contaminants of Concern are provided in “Yellow” highlight
- Contaminants detected above current ADEC Target levels are highlighted in “Green”
- “ND” represents Non Detect for Chemical Contaminants of Concern

Table 1. Summary of detected Volatile Organic Compounds (VOCs)

Detected Compound	Infant Area First Floor (ug/m3)	Daycare Basement Area (ug/m3)	Ambient Outside Area (ug/m3)	Noted Regulatory Limits and/or Target Level Guidelines (ug/m3)
Dichlorodifluoromethane (Freon 12)				
Chloromethane (Methyl chloride)				
Vinyl Chloride				
Chloroethane (CE)				
Trichlorofluoromethane (Freon 11)				
1,1-Dichloroethene	ND	ND	ND	210 (ADEC)
Trichlorotrifluoroethane (Freon 113)				
Methylene Chloride				
trans-1,2-Dichloroethene	ND	ND	ND	63 (ADEC)
1,1-Dichloroethane (1,1-DCA)				
cis-1,2-Dichloroethene (1,2-DCE)	ND	ND	ND	7.3 (ADEC)
Chloroform				
1,1,1-Trichloroethane				
1,2-Dichloroethane (EDC)		1.3		0.94 (ADEC)
Carbon Tetrachloride				
Benzene	5.2	4.5	4.9	3.1 (ADEC)
Trichloroethylene (TCE)	ND	ND	ND	2.1 (ADEC)
Cis-1,3-dichloropropene				
trans-1,3-dichloropropene				
Toluene	25	15	21	5,210 (ADEC)
1,1,2-trichloroethane				
Tetrachloroethene (PCE)	3.5	2.6	ND	42 (ADEC)
Chlorobenzene				
Ethylbenzene	3.6	2.0	2.3	9.7 (ADEC)
m,p-Xylene	12	10	10	100 (ADEC)
o-Xylene	4.5			100 (ADEC)
1,1,2,2-Tetrachloroethane				
1,2,4-trichlorobenzene				
1,3-Dichlorobenzene				
1,4-Dichlorobenzene				
1,2-Dichlorobenzene				
Methyl tert-butyl Ether (MTBE)				

“Blank Areas” indicate that the compound were not detected over the analytical lower limit of detection

“ND” indicated Non Detect for Chemical Contaminants of Concern

ADEC - Alaska Department of Environmental Conservation Target Guidance Level (Residential Indoor Air)

Summary of Significant Indoor Air Findings:

As indicated in the Data Summary presented above in Table 1, all primary indoor air Contaminants of Concern associated with the chlorinated dri-cleaner related solvents PCE, TCE, and DCE (isomers) were below the analytical lower limit of detection (non detect – “ND”) and/or at levels lower than the current Alaska Department of Environmental Conservation target screening levels for indoor air as provided for comparison. The recognized petroleum lead “scavenger” contaminant 2,2-Dichloroethane (EDC) was measured within the indoor air of the daycare basement at a level of 1.3 ug/m3. This indoor air level represents a measured concentration which exceeds the current ADEC target level for indoor air of 0.94 ug/m3. It is understood that this compound (EDC) is not typically associated with dry-cleaning operations.

The indoor air sample results and findings presented in this letter summary were reviewed and summarized by Michael A. Polkabila, CIH, REA, of BioMax Environmental, Inc. As such, Table 1 has been created for the purposes of documentation of current air sampling findings within the daycare facility and to facilitate the relative comparative analysis of such data and levels identified to applicable regulatory target guidance levels (where available). Hence, it is recommended that further airborne sampling be considered (for future verification purposes) and specifically conducted during dissimilar climactic conditions such as during cold winter periods and conditions. Such future verification sampling will allow for an improved data representation of ongoing and future indoor air quality parameters present within areas of primary concern such as the noted daycare facility.

BioMax believes that the professional opinions noted herein are consistent with current site information provided for our review at this time, as well as with general prudent industrial hygiene hazard recognition and assessment practices. Please note that all regulatory guidance and target levels listed in this report are based on a current review of such informational sources and are, as such, subject to change. If you have any questions regarding the opinions and/or information provided within this letter summary, please feel free to contact me directly at our offices at (510) 724-3100.

Sincerely,



Michael A. Polkabila, CIH, REA
Senior Certified Industrial Hygienist, Principal
BioMax Environmental, Inc.



LIMITATIONS:

Please note that the professional opinions presented in this letter report are intended for the sole use of our client and their designated beneficiaries. No other party should rely on the information contained herein without the prior written consent of BioMax Environmental, Inc. and such parties. The professional opinions provided herein are based on BioMax's review of information and data findings provided for our review as well as with our current understanding of the data and current land uses noted. Such opinions are also dependent on the technical accuracy and completeness of the information provided for our review including the known site conditions/hazards present within the project area at the time the reports were generated and these services performed. Hence, BioMax's opinions are limited to the information provided as well as the completeness and accuracy of such information as provided by third party professionals. Our review of the information is also limited to the current and historical site information provided to BioMax at the time this evaluation was performed. Compliance with any regulatory guidance and site restrictions does not, in any way, warrant the day-to-day health and safety of site visitors, workers, or occupants nor regulatory compliance status during the performance of current or foreseeable site activities. Hence, the professional opinions expressed here are subject to revision in the event that new or previously undiscovered data and/or information are obtained, gathered, and/or uncovered.

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These services were performed by BioMax in accordance with generally accepted professional industrial hygiene principals, practices, and standards of care. Under the existing Industrial Hygiene Definition and Registration Act, all reports, opinions or official documents prepared by a Certified Industrial Hygienist (CIH) constitutes an expression of professional opinion regarding those facts or findings which are subject of a certification and does not constitute a warranty or guarantee, either expressed or implied.