INDOOR AIR SAMPLING REPORT

McKinley Elementary School
2401 Santa Monica Boulevard
Santa Monica, California 90404

Prepared for:

Santa Monica-Malibu Unified School District
2828 4th Street
Santa Monica, California 90405

Project Number: SMSD-23-11646
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PROFESSIONAL CERTIFICATION

We appreciate the opportunity to provide our services to you. If you have any questions, please contact us at (562) 544-3910.

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1. EXECUTIVE SUMMARY

Alta Environmental LP, an NV5 Company (NV5) has prepared this Indoor Air Sampling Report for the McKinley Elementary School, located at 2401 Santa Monica Boulevard in Santa Monica, California (herein identified as the "Site"). The assessment was completed for the Santa Monica-Malibu Unified School District (SMMUSD) in accordance with NV5 proposal number SMSD-23-11646 dated July 7, 2023.

Previous environmental assessments conducted in the parking lot portion of Site, adjacent to Chelsea Avenue, identified the presence of several volatile organic compounds (VOCs) in soil vapor at concentrations that exceeded California published health-risk screening levels[1]. The VOCs identified above risk screening levels included solvents (tetrachloroethylene [PCE] and trichloroethylene [TCE]) and petroleum related constituents (benzene, ethylbenzene, and naphthalene),

As a proactive measure, air quality sampling was conducted throughout the entire Site to assess the indoor air quality of the existing campus structures with respect to potential vapor intrusion from VOC impacted soil vapor.

During this assessment, concentrations of multiple VOCs were detected in air samples collected at both interior and exterior locations throughout the campus. However, only concentrations of chloroform (six interior air samples), benzene (all interior and exterior air samples), 1,2-dichloroethane (one interior air sample), 1,2-dibromoethane (three interior air samples), ethylbenzene (one interior air sample), and naphthalene (all interior and exterior air samples) exceeded respective regulatory screening levels.

Concentrations of chloroform, benzene, 1,2-dichloroethane, ethylbenzene, and naphthalene were detected in all indoor and all outdoor air samples. Therefore, it is likely that the concentrations detected in interior air samples can be primarily attributed to regional air quality issues rather than vapor intrusion from the soil vapor beneath the Site. Concentrations of PCE and TCE were also detected in all indoor and outdoor air samples; however, none of the detected concentrations exceeded their respective health risk screening levels.

Statistical analysis of the air sampling data indicated there is no significant difference between the indoor and outdoor air quality. These results indicate that vapor intrusion is either not occurring at the Site or, if occurring, it is occurring at a very slow rate and at a rate that does not negatively affect the indoor air quality.

Based on the results of the air sampling, it was concluded that there is no significant difference between the indoor air quality and outdoor air quality at the Site, and that indoor air quality at the Site is acceptable for continued operation as a school. Nevertheless, in the preschool building, nearest to the off-site dry cleaner facility, in abundance of caution, adjustments have been made to the ventilation system to reduce the potential for vapor intrusion exposure.

Additionally, The Santa Monica Malibu Unified School District has engaged with the Santa Monica Fire Department (SMFD) and the California Department of Toxic Substance Controls (DTSC) to review the sampling reports, pursue the source of the VOC impacts, and to provide guidance moving forward.

[1] Screening levels provide conservative standards against which chemicals detected in soil vapor and indoor air can be compared to determine preliminary exposure risk and the need for closer evaluation.

2. BACKGROUND

2.1 Site Location and Description

McKinley Elementary School is an approximately 6.50-acre rectangular shaped elementary school property located at 2401 Santa Monica Boulevard in the City of Santa Monica (Figure 1), with approximately 450 students, serving transitional kindergarten through fifth grades. The current campus has four educational buildings and 11 portable buildings, as well as play yards and sports fields, parking lots, programmed and unprogrammed open space. Vehicular access is from Chelsea Avenue, with student drop-off/pick-up occurring on-site. The school campus is bounded by Santa Monica Boulevard and commercial uses to the southeast, Arizona Avenue and multi-family residential uses to the northwest, and mixed multi-family and commercial uses to the northeast across Chelsea Avenue and to the southwest across 23rd Court (Figure 2). A dry cleaner facility is located off-site across Chelsea Avenue adjacent to the eastern corner of the campus.

2.2 Previous Investigations

Previous environmental investigations conducted at the Site are listed below.

Phase I Environmental Site Assessment Report – McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, California. Prepared for the Santa Monica-Malibu Unified School District. Prepared by NV5. April 19, 2022.

For this assessment, the boundaries of the Site were defined as a portion of the paved parking lot and playground area along Chelsea Avenue. According to historical resources reviewed during the Phase I, the larger school campus in which the Site is located was first developed for use as a school around 1925. Multiple other classroom structures were subsequently constructed throughout the campus, but the Site has historically only been developed with playground areas and paved parking lots.

This assessment identified the following evidence of recognized environmental conditions (RECs) in connection with the Site.

- *Regulatory database records and historical records indicate that a drycleaner has operated at the northeast adjoining property located at 2441 Santa Monica Boulevard from at least 1991 to present day. Records indicate that dry-cleaning equipment that utilized perchloroethylene (PCE, a chlorinated solvent) was used at this facility. While evidence of violations, leaks, spills, or releases were not identified, based on the proximity of this facility to the Site and the inherent environmental risk associated with dry-cleaning facilities, these listings are considered to represent a REC.*
- *Based on the age of historical and current structures on the Site, arsenic, lead-based paint, asbestos, pesticides, and polychlorinated biphenyls (PCBs) in caulking may have been historically used at the Site. As a result, there is a potential for these compounds to be present in the shallow soils onsite.*

NV5 recommended conducting a limited Phase II ESA to determine if dry-cleaning operations on the northeastern adjoining property had negatively impacted the Site. Additionally, NV5 recommended a limited Phase II subsurface investigation be conducted in areas of proposed soil disturbance to evaluate shallow soil conditions with respect to lead, arsenic, PCBs, and pesticides.

Environmental Site Investigation Report – McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, California. Prepared for the Santa Monica-Malibu Unified School District. Prepared by NV5. April 27, 2023.

This assessment included the collection and analysis of soil samples from twelve locations for lead, arsenic, PCBs, and pesticides and the collection of soil vapor samples from three soil vapor probe locations on the eastern portion of the Site (which for this assessment was defined as a portion of the paved parking lot and playground area along Chelsea Avenue).

The results of the laboratory analysis identified trace concentrations of PCBs and pesticides in samples collected at two locations; however, all detected concentrations were well below applicable health risk screening levels. Lead was detected in all collected soil samples; however, none of the detected concentrations exceeded the residential risk screening level for lead in soil. Arsenic was detected at four locations at concentrations that exceeded the State of California Department of Toxic Substances Control (DTSC) upper-bound arsenic screening level for Southern California soils of 12 milligrams per kilogram (mg/kg). Based on these findings, NV5 recommended that additional step-out sampling be conducted to determine the extent of arsenic impacted soils above health risk screening levels and that once delineated, the impacted soil should be excavated and removed from the Site for disposal. NV5 conducted additional step-out soil sampling on July 25 and 26, 2023 to delineate the extent of arsenic impacted soils at the Site. A report detailing the additional step-out investigation findings will be submitted under separate cover once all laboratory data is received.

Concentrations of multiple VOCs in excess of risk screening levels were identified in soil vapor samples collected from both the 5-foot and 15-foot depth probes at all three soil vapor sample locations (SV1 through SV3). Concentrations of PCE tended to increase with depth and proximity to the existing adjoining upgradient dry-cleaner property. Conversely, concentrations of petroleum hydrocarbon (benzene, toluene, ethylbenzene, etc.) related constituents decreased with depth and proximity to the adjoining dry-cleaner.

Historical resources indicated that the original structures at the campus were constructed in the 1920's on vacant land that was reported to have been used for the cultivation of beans. No historical or current uses of chlorinated solvents or petroleum products at the McKinley school campus were identified during the Phase I ESA, thereby indicating the source of the VOC impacts to be from an unknown off-site source. As the off-site source(s) and extent of soil vapor impacts are currently unknown, NV5 recommended that additional soil vapor assessment be conducted at the Site to further evaluate the potential risk of vapor intrusion to proposed structures and to assess if mitigation measures would be warranted.

Soil Vapor Investigation Report – McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, California. Prepared for the Santa Monica-Malibu Unified School District. Prepared by NV5. July 19, 2023.

This assessment was conducted in the parking lot portion of the campus along Chelsea Avenue. During the assessment, soil and soil vapor samples were collected from ten locations throughout the parking lot and analyzed for VOCs to further assess the VOC impacted soil vapor identified during the April 2023 investigation.

Laboratory analysis of the collected soil samples identified low concentrations of several VOCs (2-Butanone, acetone, benzene, tert-Butyl Alcohol [TBA], and PCE). However, all detected concentrations of VOCs in soil were below the established health screening levels.

Concentrations of multiple VOCs were detected in soil vapor samples collected throughout the Site. However, only the concentrations of benzene, ethylbenzene, naphthalene, and PCE at 5 feet bgs and PCE, TCE, and naphthalene at 15 feet bgs exceeded the applicable compound specific health screening levels.

A Vapor Intrusion Risk Evaluation (VIRE) using the collected soil vapor data was conducted by a board-certified Toxicologist. The results of the VIRE indicated that the calculated potential non-carcinogenic and carcinogenic health risks associated with the reported VOC concentrations in soil vapor beneath the investigation area exceeded acceptable regulatory limits. Design and installation of a vapor intrusion mitigation system (VIMS) along with adequate ventilation was recommended for future structures built at the Site to mitigate the findings of the VIRE.

The results of the laboratory analysis of the soil and soil vapor samples collected during this assessment did not indicate evidence of an on-site release of VOCs. Concentrations of VOCs in soil vapor, specifically PCE, tend to generally decrease from east to west across the Site and appear to originate from an off-site unknown source. No evidence for the past use of chlorinated solvents (PCE and TCE) or petroleum hydrocarbons (benzene, ethylbenzene, and naphthalene) at the school was identified during the previous Phase I ESA (NV5, 2022). However, the Phase I did identify the presence of nearby off-site dry cleaning and automotive repair businesses along Santa Monica Boulevard.

The results of this and prior assessments were subsequently communicated to the Santa Monica Fire Department and the Department of Toxic Substances Control (DTSC) in order to initiate an off-site investigation to determine the source of the VOC impacts.

As the off-site source and extent of the impacted soil vapor is unknown, a preliminary indoor air quality evaluation was recommended along with further assessment of the entire McKinley campus to determine the magnitude and extent of VOC impacts. The results of the preliminary air quality evaluation are presented in the following sections of this report.

3. INDOOR AIR SAMPLING

Sampling was completed in accordance with the DTSC's Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (2011) and Final Draft Supplemental Guidance: Screening and Evaluating Vapor Intrusion (2023).

3.1 Pre-Sampling Activities

3.1.1 Health and Safety Plan

Prior to conducting field work for the project, NV5 prepared a site-specific Health and Safety Plan (HASP) that was implemented per California Occupational Safety and Health Administration (OSHA) California Code of Regulations (CCR) Title 8, Section 5192 requirements. The HASP presented an overview of the scope of work and discussions of potential job hazards that could be encountered during the investigation. All field personnel were required to review and sign the HASP before beginning any fieldwork.

Daily tailgate meetings were held with NV5 personnel and subcontractors at the beginning of each day during the investigation. The plan of the day, potential safety hazards, and site-specific safety procedures were discussed during the tailgate meetings.

All NV5 personnel conducting field work onsite have received the OSHA Hazardous Waste Operations training in accordance with 29 CFR 1910.120 and CCR Title 8, Section 5192. The investigation work was completed with no reportable injuries or illnesses.

3.1.2 Pre-Sampling Building Screening

On July 6, 2023 the Site structures were screened for potential VOC sources utilizing an organic vapor photoionization detector (PID). A DTSC Building Survey Form was completed for each of the Site buildings (Appendix A). Potential VOC sources near air sampling locations were documented (i.e., upwind chemical uses on-site or from neighboring facilities, such as fuel tanks, combustion sources, chemical storage areas, etc.).

Since materials (cleaning products, paints, glues, hand sanitizers, etc.) stored at the Site that contain VOCs can bias the results of the sampling, NV5 requested that any VOC containing materials (where identified) be removed from the buildings. District staff removed the identified materials from rooms where samples would be collected at least 72 hours prior to commencement of the indoor air sampling to limit potential bias.

Additionally, to ensure collection of representative sampling data during this assessment, building HVAC Systems were kept on and operational at settings that would be typically used during building occupancy. Doors and windows were also kept closed and remained closed during sampling.

3.2 Sample Collection and Analysis

Indoor and outdoor (ambient) air samples were conducted at the Site on July 13, 2023. Air sampling activities were performed by properly trained NV5 staff under the supervision of Eric Fraske, a State of California registered Professional Engineer (PE). Sampling was conducted between the hours of 7 AM and 3PM to be representative of conditions during normal daily occupancy.

3.2.1 Sample Collection

The indoor and outdoor air sampling included the collection of 20 primary indoor air samples and four exterior air samples. The locations of each sample are depicted in Figures 3 through 7. All interior air samples were collected approximately three to five feet off the ground and the outdoor samples were collected approximately six feet off the ground at each location. Additionally, one duplicate interior air sample was collected for quality assurance and quality control (QA/QC) purposes.

All samples were collected in six-liter Summa canisters equipped with a dedicated vacuum gauge and an 8-hour flow regulator. All Summa canisters, flow regulators, and pressure gauges were batch certified as clean to the laboratory's method reporting limit prior to use. Field sampling logs and photographs are presented in Appendix B.

3.2.2 Sample Analysis

Following completion of sampling, the canisters were closed and transported under chain-of-custody protocols to Air Technology Laboratories, Inc. (a State of California Certified Environmental Laboratory) in City of Industry, California for analysis.

All samples were analyzed for VOCs by United States Environmental Protection Agency (EPA) Method TO-15 SIM. Laboratory analytical reports and chain-of-custody documentation for the air samples are presented in Appendix C.

4. INVESTIGATION RESULTS

4.1 Laboratory Analytical Results

A tabulated summary of the VOCs detected in the air samples is presented on Table 1.

Laboratory results where analyte concentrations were not detected above the laboratory method detection limit (MDL) are identified as "ND" along with the corresponding MDL. Analytical concentrations detected above the MDL, but below the laboratory reporting limit (RL) are considered estimated values and are reported with a "J-flag" identifier (J).

The analytical results were compared to appropriate regulatory agency published screening levels developed for residential land use scenarios. Concentrations of VOCs in air were compared to the EPA Region 9 Regional Screening Levels (RSLs) for residential land use (EPA, November 2022) and to the DTSC Human Health Risk Assessment (HHRA) Note Number 3, DTSC-modified Screening Levels (DTSC-SLs) for residential land use (DTSC, May 2022), where applicable.

4.1.1 VOCs in Air

- Concentrations of multiple VOCs were identified in indoor and outdoor air samples. The detected VOCs included:
    - Dichlorodifluoromethane (12): 1.6 to 2.1 micrograms per cubic meter ($\mu g/m^3$)
    - Chloromethane: 0.89 to 1.3 $\mu g/m^3$
    - Vinyl Chloride: 0.0072J to 0.0075J $\mu g/m^3$
    - Chloroethane: 0.035 to 0.13 $\mu g/m^3$
    - Trichlorofluoromethane (11): 0.78 to 1.1 $\mu g/m^3$
    - 1,1,2-Cl 1,2,2-F ethane (113): 0.36 to 0.45 $\mu g/m^3$
    - 1,1-Dichloroethene: 0.0025J to 0.0046J $\mu g/m^3$
    - Methylene Chloride: 0.028 to 0.042 $\mu g/m^3$
    - t-1,2-Dichloroethene: 0.0029J $\mu g/m^3$ to 0.0081J $\mu g/m^3$
    - c-1,2-Dichloroethene: 0.0039J $\mu g/m^3$
    - Chloroform: 0.095 to 0.21 $\mu g/m^3$
    - 1,1,1-Trichloroethane: 0.0065J to 0.48 $\mu g/m^3$
    - Carbon Tetrachloride: 0.44 to 0.47 $\mu g/m^3$
    - Benzene: 0.23 to 1.2 $\mu g/m^3$
    - 1,2-Dichloroethane: 0.044 to 0.29 $\mu g/m^3$
    - Trichloroethene (TCE): 0.023J to 0.17 $\mu g/m^3$

  - 1,2-Dichloropropane: 0.01J to 0.062 µg/m^3
  - Bromodichloromethane: 0.0073J to 0.1 µg/m^3
  - Toluene: 0.28 to 3 µg/m^3
  - t-1,3-Dichloropropene: 0.0059J to 0.077 µg/m^3
  - Tetrachloroethene (PCE): 0.016J to 0.15 µg/m^3
  - 1,2-Dibromoethane: 0.0020J to 0.016J µg/m^3
  - Ethylbenzene: 0.12 to 2.0 µg/m^3
  - p,&m-Xylene: 0.39 to 7.7 µg/m^3
  - o-Xylene: 0.016 to 1.9 µg/m^3
  - Styrene: 0.041J to 0.48 µg/m^3
  - Naphthalene: 0.09 to 1.1 µg/m^3

- Only concentrations of chloroform (six interior air samples), benzene (all interior and exterior air samples), 1,2-dichloroethane (one interior air sample), 1,2-dibromoethane (three interior air samples), ethylbenzene (one interior air sample), and naphthalene (all interior and exterior air samples) exceeded respective regulatory screening levels.
- Chloroform was detected in all outdoor air samples (0.1 to 0.11 µg/m^3) and all indoor air samples (0.095 to 0.21 µg/m^3). Detected concentrations of chloroform (0.14 to 0.21 µg/m^3) above the RSL (0.12 µg/m^3) were identified at six interior locations. The highest concentration was detected in sample IA17, collected in the Building C STEM Lab. There is no DTSC-SL established for chloroform.
- Benzene was detected in all outdoor air samples (0.26 to 0.34 µg/m^3) and all indoor air samples (0.23 to 1.2 µg/m^3). All concentrations of benzene exceeded its DTSC-SL (0.097 µg/m^3). Only the concentrations of benzene (0.56 and 1.2 µg/m^3) detected in sample IA6 (Portable Classroom Building B2) and IA14 (Building C room 102) exceeded the RSL (0.36 µg/m^3).
- 1,2-dichloroethane was detected in all outdoor air samples (0.049 to 0.051 µg/m^3) and all indoor air samples (0.044 to 0.29 µg/m^3). Only the concentration of 1,2-dichloroethane (0.29 µg/m^3) detected in sample IA6 (Portable Classroom Building B2) exceeded the RSL (0.11 µg/m^3). There is no DTSC-SL established for 1,2-dichloroethane.
- 1,2-dibromoethane was not detected in any outdoor air sample and was detected in 8 of the 21 indoor air samples (0.0020J to 0.016J µg/m^3). Only the concentrations of 1,2-dichloroethane (0.0048J, 0.016J, and 0.0050J µg/m^3) detected in samples IA4 (Modular Building Room B10), IA6 (Portable Classroom Building B2), and IA10 (collected in the Building C Room 107) exceeded the RSL and DTSC-SL (0.0047 µg/m^3).
- Ethylbenzene was detected in all outdoor air samples (0.12 to 0.19 µg/m^3) and all indoor air samples (0.12 to 2.0 µg/m^3). Only the concentration of ethylbenzene (2.0 µg/m^3) detected in sample IA17 (Building C STEM Lab) exceeded the RSL (1.1 µg/m^3). There is no DTSC-SL established for ethylbenzene.

- Naphthalene was detected in all outdoor air samples (0.09 to 1.1 µg/m^3) and all indoor air samples (0.12 to 0.53 µg/m^3). All concentrations of naphthalene exceeded its RSL (0.083 µg/m^3). There is no DTSC-SL established for naphthalene.

The previous soil vapor investigation identified five VOCs that were detected above regulatory risk screening levels. These five compounds (PCE, TCE, ethylbenzene, benzene, and naphthalene) were considered "risk drivers" and were used as indicator chemicals to assess the potential vapor intrusion into onsite buildings. While concentrations of ethylene, benzene, and naphthalene were detected above indoor air risk screening levels, no concentrations of PCE or TCE were detected in any of the indoor or outdoor samples at concentrations that exceeded their respective RSL or DSTC-SL.

- PCE was detected in all outdoor air samples (0.016J to 0.019J µg/m^3) and all indoor air samples (0.017J to 0.15 µg/m^3). The highest concentration (0.15 µg/m^3) was detected in samples IA3 and IA3 DUP(collected in Building D Room 71). The RSL for PCE is 11 µg/m^3 and the DTSC-SL is 0.46 µg/m^3.
- TCE was detected in all outdoor air samples (0.07 to 0.098 µg/m^3) and all indoor air samples (0.023J to 0.17 µg/m^3). The highest concentration (0.17 µg/m^3) was detected in IA11 (collected in Building B Room 207). The RSL for TCE is 0.48 µg/m^3. There is no DTSC-SL for TCE; however, the DTSC has established an Accelerated Response Action Level for TCE in residential air of 2.0 µg/m^3.

4.1.2 QA/QC

- The samples were received by the laboratory in good condition and properly preserved. Laboratory analysis was conducted within the applicable laboratory method holding times.
- The concentrations of VOCs in the duplicate air sample (IA3 DUP) were similar to concentrations of VOCs detected in the corresponding primary sample (IA3).

5. INDOOR AIR QUALITY ASSESSMENT

NV5 engaged a board-certified toxicologist (Enviro-Tox) to conduct an Indoor Air Quality Assessment (IAQA) to assess if the VOCs detected in indoor air could be the result of vapor intrusion or if the VOCs can be attributed to other "background" sources (on-site chemical use or exterior regional air quality issues).

5.1 IAQA Methodology

The primary objective of the IAQA was to determine whether subsurface VOCs were entering the indoor environment. According to the new Cal-EPA (2023) vapor intrusion guidance, indoor air sampling results should be interpreted considering Multiple Lines of Evidence (MLE). At a minimum, the vapor intrusion investigation should consider the following four MLE related to soil vapor and indoor air analytical results:

1. Selection of Chemicals of Potential Concern
2. Comparison of Constituent Ratios
3. Attenuation Factor Comparison
4. Comparison of Indoor and Outdoor Air Quality Results

The process followed by Enviro-Tox is presented in the IAQA (Appendix D).

5.2 IAQA Results

All chemicals detected in soil vapor, indoor air and outdoor air are known to be widely used as fuel components and solvents in many consumer and domestic products. Thus, it is possible that these chemicals were released to indoor air from the use of consumer products, fuels, lubricants, sealers, solvents and cleaning articles, and/or construction materials.

The objective of the indoor air sampling was to determine if vapor intrusion is occurring at the school site. According to Cal-EPA (2023) guidance, if vapor intrusion is occurring, (1) soil vapor and indoor air data would have similar characteristics indicating a link between soil vapor and indoor air; (2) soil vapor VOC chemical composition, make up and distribution would be similar to the composition, make up and distribution of VOCs detected in indoor air; and (3) subsurface-derived VOCs would be found in indoor air at concentrations higher than outdoor air concentrations.

As further detailed in the IAQA, comparison of soil vapor data (IAQA Table 1) to indoor air data (IAQA Table 2) shows that the make up, composition and distribution of VOCs in soil gas is different from that of indoor air, indicating that at the time of the sampling, there was no link between VOCs in soil vapor and those found in indoor air.

In an effort to determine if there is a significant difference in the indoor and outdoor VOC concentrations, Enviro-Tox conducted a statistical comparison of indoor and outdoor VOC concentrations. According to the statistical analyses, there is no significant difference between the indoor and outdoor air quality data for the five “risk drivers.” These results indicate that vapor intrusion is either not occurring at the Site or, if occurring, it is occurring at a very slow rate and at a rate that does not negatively affect the indoor air quality.

Enviro-Tox stated that based on their evaluation it can be concluded that VOCs detected in indoor air at the school site likely originated from “background” sources such as consumer products, construction materials and outdoor air. It can also be concluded that, while some VOCs detected in soil gas may also contribute to VOCs detected in indoor air, the contribution from soil gas is likely minimal and insignificant when compared to the contribution made by “background” sources.

6. CONCLUSIONS AND RECOMMENDATIONS

This investigation was conducted for the purpose of assessing the indoor air quality at the McKinley Elementary School with respect to VOCs previously identified in soil vapor at the campus. The following are NV5’s conclusions for this investigation based on the reported laboratory results and the IAQA findings.

- Concentrations of multiple VOCs were detected in air samples collected at both interior and exterior locations throughout the campus. However, only concentrations of chloroform (six interior air samples), benzene (all interior and exterior air samples), 1,2-dichloroethane (one interior air sample), 1,2-dibromoethane (three interior air samples), ethylbenzene (one interior air sample), and naphthalene (all interior and exterior air samples) exceeded respective regulatory screening levels. While concentrations of PCE and TCE were detected in all indoor and outdoor air samples, none of the detected concentrations exceeded their respective health risk screening levels.

- Concentrations of chloroform, benzene, 1,2-dichloroethane, ethylbenzene, and naphthalene were detected in all indoor and all outdoor air samples. Therefore, it is likely that the concentrations detected in interior air samples can be primarily attributed to regional air quality issues.
- 1,2-dibromoethane was not detected in any exterior air samples and in only 8 of the 21 collected indoor air samples. Furthermore, 1,2-dibromoethane was not detected in any of the soil vapor samples collected at the Site during the 2023 Soil Vapor Investigation (NV5, 2023). 1,2-dibromoethane has historically been used as a pesticide and fumigant. Based on the lack of detection of this compound in exterior air and soil vapor samples, and its limited detection throughout the campus, it appears likely that the presence of this compound in indoor air may be the result of off-gassing from a consumer product versus subsurface vapor intrusion.
- The results of the IAQA indicated that according to the statistical analyses, there is no significant difference between the indoor and outdoor air quality data. These results indicate that vapor intrusion is either not occurring at the Site or, if occurring, it is occurring at a very slow rate and at a rate that does not negatively affect the indoor air quality. Based on the IAQA findings, it can be concluded that VOCs detected in indoor air at the Site likely originated from "background" sources such as consumer products, construction materials and outdoor air. It can also be concluded that, while some VOCs detected in soil vapor may also contribute to VOCs detected in indoor air, the contribution from soil vapor is likely minimal and insignificant when compared to the contribution made by "background" sources.

It should be noted that air sampling data is temporal in nature and will fluctuate based on such factors as ventilation, temperature, barometric pressure, and other external factors. Therefore, the results presented in this assessment are representative only of conditions on the day of sampling. It is recommended that the indoor air sampling be repeated on a regular basis until the soil vapor impact beneath the Site has been defined and remediated by the responsible party to concentrations below established regulatory screening limits. To account for seasonal fluctuations, the next sampling event should be conducted in the late fall or winter. NV5 and the District are currently working with the DTSC to conduct further assessment of the entire school property.

While the potential impact of subsurface vapors to the indoor air at the Site was considered negligible, the potential for vapor intrusion remains until impacted soil vapors beneath the Site are successfully remediated by the responsible party. It was noted that concentrations of PCE detected in indoor air samples from Building D, which is located closest to the adjoining dry-cleaner and the previously detected soil vapor impact, were approximately one order of magnitude greater than concentrations detected in indoor air samples collected throughout the rest of the campus. While the detected concentrations of PCE were all below residential indoor air screening levels, the elevated concentrations may represent evidence of a complete vapor intrusion pathway. As a proactive mitigation measure, it is recommended that the HVAC systems in all buildings at the Site be evaluated and operated/modified to ensure that buildings are maintained under positive air pressure. Other mitigation efforts will be recommended and implemented as necessary as a preventative measure to reduce the potential for vapor intrusion into the school buildings.

7. WARRANTY

7.1 Warranty

NV5 warrants that the findings and conclusions reported herein were conducted in general accordance with standard industry practices. The conclusions presented in the report are based solely on the services described herein and not on scientific tasks or procedures beyond the scope of agreed upon services.

This investigation report has been developed to provide the client with information regarding apparent indications of recognized environmental conditions relating to the Site. It is necessarily limited to the conditions observed and to the information available at the time of the work. The assessment and conclusions presented herein were based upon the subjective evaluation of limited data and may not represent all conditions at the subject site as they reflect the information gathered from specific locations. NV5 warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted environmental investigation methodology and only for the site described in this report. The findings set forth in this report are strictly limited to the date of the evaluation.

The scope of the soil vapor investigation was developed specifically to meet the client's stated objectives and the data that was developed may not be suitable for use to satisfy other objectives. Any limitations on the data to meet the client's stated objectives are described in the report.

Due to the limited nature of the work, there is a possibility that there may exist conditions which could not be identified within the scope of the assessment, or which were not apparent at the time of report preparation. It is also possible that the testing methods employed at the time of the report may later be superseded by other methods. The description, type, and composition of what are commonly referred to as "hazardous materials or conditions" can also change over time. NV5 does not accept responsibility for changes in the state of the art, nor for changes in the scope of various lists of hazardous materials or conditions. NV5 believes that the findings and conclusions provided in this report are reasonable. However, no other warranties are implied or expressed.

Analytical results contained in this report are limited to the corresponding sampling location, depth, sampled material, selected range of analyses and laboratory reporting limits. Additional chemical constituents not searched for during the current study may be present in soil, soil vapor and/or groundwater at the site.

The location and concentration of contaminants can vary over time due to seasonal water table fluctuations, past disposal practices, the passage of time and other factors.

7.2 Use by Third Parties

This report was prepared pursuant to the contract NV5 has with the Santa Monica-Malibu Unified School District. That contractual relationship included an exchange of information about the subject site that was unique and between NV5 and its client and serves as the basis upon which this report was prepared. Because of the importance of the communication between NV5 and its client, reliance, or any use of this report by anyone other than the Santa Monica-Malibu Unified School District, for whom it was prepared, is prohibited and therefore not foreseeable to NV5.

Reliance on or use of the information contained herein by any such third party without explicit authorization in the report does not make said third party a third-party beneficiary to NV5's contract with the Santa

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8. REFERENCES

8.1 References

Phase I Environmental Site Assessment Report – McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, California. Prepared for the Santa Monica-Malibu Unified School District. Prepared by NV5. April 19, 2022.

Environmental Site Investigation Report – McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, California. Prepared for the Santa Monica-Malibu Unified School District. Prepared by NV5. April 27, 2023.

Soil Vapor Investigation Report – McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, California. Prepared for the Santa Monica-Malibu Unified School District. Prepared by NV5. July 19, 2023.

Department of Toxic Substance Control California Environmental Protection Agency – Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). October 2011.

Department of Toxic Substance Control Human and Ecological Risk Office - Human Health Risk Assessment Note Number 5, Health-based Indoor Air Screening Criteria for Trichloroethylene (TCE). August 2014.

Department of Toxic Substance Control Human and Ecological Risk Office - Human Health Risk Assessment Note Number 3, DTSC-modified Screening Levels. Revised May 2022.

Department of Toxic Substances Control and California State Water Resources Control Board - Supplemental Guidance: Screening and Evaluating Vapor Intrusion – Final Draft. February 2023.

United States Environmental Protection Agency Region IX Regional Screening Level (RSLs) Summary Table. November 2022.

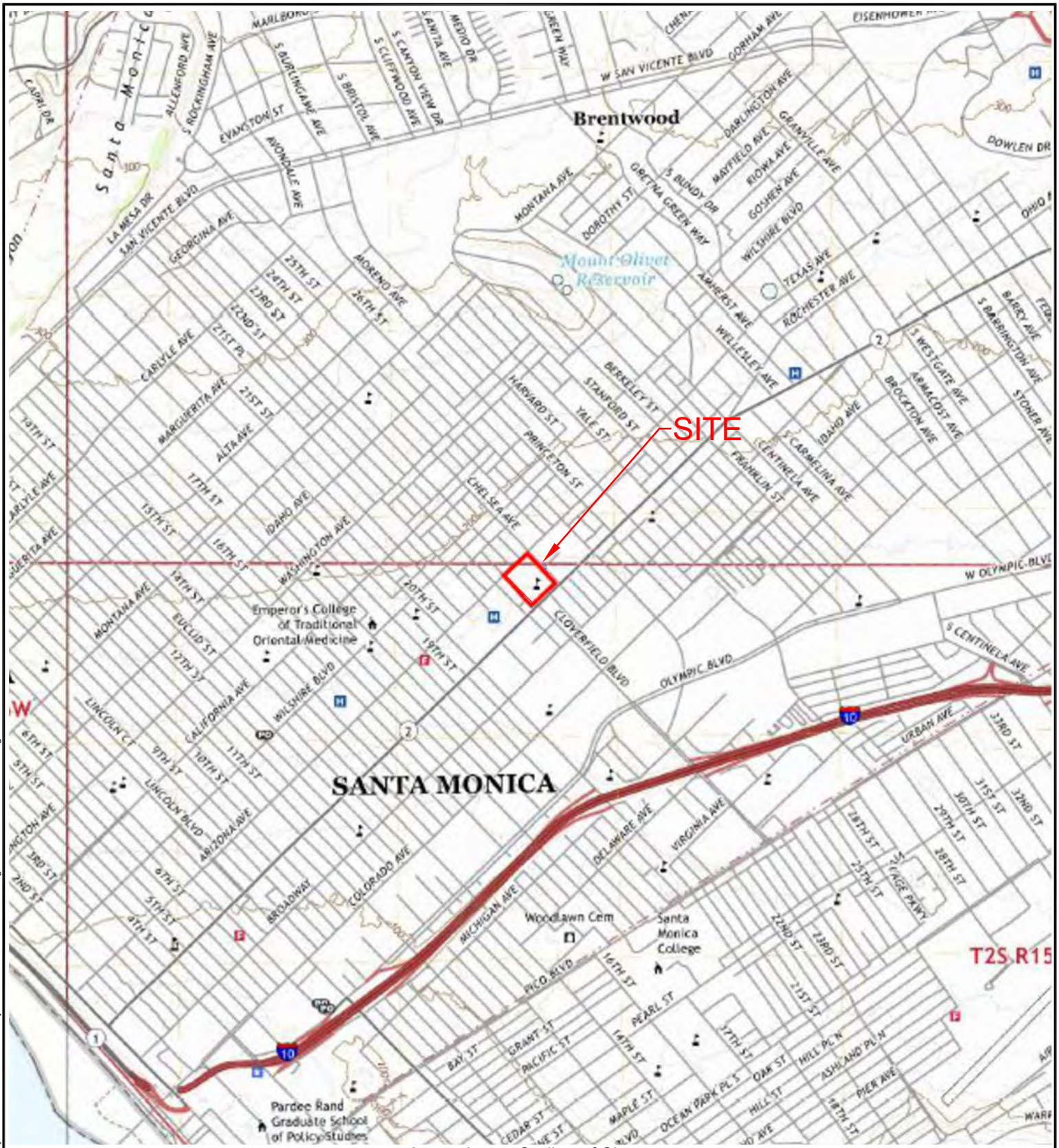
TABLES

Table 1: Air Sampling Laboratory Analysis Summary
McKinley Elementary School
2401 Santa Monica Boulevard, Santa Monica, California

Analyte	CAS Number	Sample Date	Sample ID		OA1	OA2	OA3	OA4	IA1	IA2	IA3	IA3 DUP	IA4	IA5	IA6	IA7	IA8	IA9	IA10	IA11	IA12	IA13	IA14	IA15	IA16	IA17	IA18	IA19	IA20
			Sample Location		Chelsea Parking Lot	Main Playground	South-Western Lawn	South-Eastern Playground	Building D Room 71D	Building D Room 70	Building D Room 71	Building D Room 71	Modular Building Room B10	Portable Classroom Building B7	Portable Classroom Building B2	Building A Cafeteria	Building B Basement	Building B Room 109	Building B Room 107	Building B Room 207	Building C Admin Office	Building C Library	Building C Room 102	Building C Room 105	Building C Auditorium	Building C STEM Lab	Building C Basement	Building C Room 202	Building C Boys Bathroom
			Screening Level																										
			RSL	DTSC-SL																									
Dichlorodifluoromethane (12)	75-71-8	7/13/2023	100	NE	2	1.6	2.1	2	2.1	2.1	2.1	2.1	2	1.9	1.9	2	2	2	2	2	2	1.9	2	2	2	2	2	2	2
Chloromethane	74-87-3	7/13/2023	94	NE	1	0.89	1.1	1.1	1.1	1.3	1.2	1.1	1.2	1.1	1.1	1.1	1	1.2	1.1	1.1	1.1	1	1	1.1	1.1	1.1	1	1.2	1.1
Vinyl Chloride	75-01-4	7/13/2023	0.17	0.0095	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	0.0072J	0.0075J	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)
Chloroethane	75-00-3	7/13/2023	4200	NE	0.035	0.052	0.085	0.088	0.11	0.13	0.11	0.099	0.05	0.048	0.088	0.065	0.041	0.052	0.042	0.043	0.1	0.067	0.052	0.074	0.063	0.068	0.059	0.078	ND (<0.0080)
Trichlorofluoromethane (11)	75-69-4	7/13/2023	NL	1300	1	0.78	1.1	1	1	1.1	1.1	1	0.99	0.96	0.96	0.98	1	0.98	1	0.99	0.99	0.97	0.99	1	1	1	1	0.98	1
1,1,2-Cl 1,2,2-F ethane (113)	76-13-1	7/13/2023	5200	NE	0.44	0.36	0.45	0.43	0.43	0.45	0.45	0.44	0.44	0.43	0.43	0.43	0.44	0.44	0.45	0.44	0.44	0.43	0.43	0.44	0.44	0.44	0.44	0.43	0.44
1,1-Dichloroethene	75-35-4	7/13/2023	210	73	0.0030J	ND (<0.0025)	ND (<0.0025)	0.0031J	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	0.0025J	0.0029J	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	0.0046J	0.0032J	0.0029J	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)
Methylene Chloride	75-09-2	7/13/2023	100	1	0.29	0.31	0.32	0.3	0.32	0.31	0.31	0.31	0.42	0.3	0.29	0.29	0.28	0.34	0.36	0.35	0.32	0.28	0.33	0.31	0.28	0.3	0.29	0.31	0.28
t-1,2-Dichloroethene	156-60-5	7/13/2023	42	83	0.0039J	ND (<0.0029)	0.0040J	0.0038J	0.0038J	ND (<0.0029)	0.0041J	ND (<0.0029)	0.0039J	0.0029J	0.0081J	ND (<0.0029)	0.0037J	ND (<0.0029)	0.0045J	0.0031J	ND (<0.0029)	0.0036J	0.0056J	0.0041J	0.0047J	ND (<0.0029)	ND (<0.0029)	0.0029J	ND (<0.0029)
1,1-Dichloroethane	75-34-3	7/13/2023	1.8	1.8	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)
c-1,2-Dichloroethene	156-59-2	7/13/2023	42	8.3	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	0.0039J	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)
Chloroform	67-66-3	7/13/2023	0.12	NE	0.11	0.1	0.11	0.1	0.12	0.1	0.11	0.12	0.1	0.18	0.12	0.11	0.11	0.18	0.17	0.11	0.12	0.11	0.15	0.14	0.1	0.21	0.12	0.11	0.095
1,1,1-Trichloroethane	71-55-6	7/13/2023	5200	1000	0.0065J	0.0074J	0.0076J	0.0088J	0.0085J	0.0089J	0.0079J	0.0072J	0.0069J	0.0070J	0.0093J	0.0074J	0.0085J	0.076	0.48	0.21	0.025J	0.0075J	0.064	0.067	0.022J	0.015J	0.0075J	0.057	0.0066J
Carbon Tetrachloride	56-23-5	7/13/2023	0.47	0.47	0.45	0.44	0.46	0.45	0.45	0.47	0.46	0.46	0.45	0.44	0.44	0.44	0.46	0.45	0.45	0.45	0.45	0.44	0.44	0.45	0.45	0.44	0.45	0.45	0.45
Benzene	71-43-2	7/13/2023	0.36	0.097	0.26	0.32	0.34	0.33	0.29	0.3	0.32	0.31	0.23	0.28	0.56	0.29	0.27	0.27	0.29	0.32	0.29	0.3	1.2	0.33	0.29	0.29	0.28	0.31	0.26
1,2-Dichloroethane	107-06-2	7/13/2023	0.11	NE	0.05	0.049	0.049	0.051	0.097	0.067	0.073	0.073	0.048	0.055	0.29	0.049	0.076	0.066	0.054	0.05	0.078	0.047	0.067	0.064	0.046	0.063	0.065	0.055	0.044
Trichloroethene	79-01-6	7/13/2023	0.48	2*	0.07	0.091	0.098	0.079	0.067	0.066	0.09	0.087	0.03	0.085	0.041	0.084	0.075	0.023J	0.043	0.17	0.078	0.059	0.071	0.09	0.069	0.059	0.048	0.095	0.047
1,2-Dichloropropane	78-87-5	7/13/2023	0.76	NE	0.016J	0.010J	0.013J	0.011J	0.021J	0.011J	0.013J	0.017J	0.014J	0.014J	0.062	0.011J	0.014J	0.020J	0.019J	0.014J	0.016J	ND (<0.0098)	0.018J	0.038J	0.015J	0.021J	0.013J	0.012J	ND (<0.0098)
Bromodichloromethane	75-27-4	7/13/2023	0.076	0.076	ND (<0.0071)	ND (<0.0071)	ND (<0.0071)	ND (<0.0071)	0.012J	0.011J	ND (<0.0071)	0.0093J	0.0094J	0.1	0.013J	0.014J	0.0073J	0.0080J	ND (<0.0071)	0.0081J	ND (<0.0071)	0.0094J	0.015J	ND (<0.0071)	0.011J	ND (<0.0071)	0.011J	0.023J	0.0099J
Toluene	108-88-3	7/13/2023	5200	310	0.52	0.28	0.68	0.66	1	0.99	1	0.99	0.69	0.74	1.6	0.59	0.6	2.1	1.8	0.94	0.86	0.7	3	0.91	0.6	0.87	1.5	0.79	0.5
t-1,3-Dichloropropene	10061-02-6	7/13/2023	0.7	NE	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	0.0077J	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	0.019J	0.0059J	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	0.077	ND (<0.0059)
1,1,2-Trichloroethane	79-00-5	7/13/2023	0.18	NE	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)
Tetrachloroethene	127-18-4	7/13/2023	11	0.46	0.017J	0.016J	0.016J	0.019J	0.12	0.1	0.15	0.15	0.018J	0.024J	0.031J	0.018J	0.019J	0.022J	0.020J	0.023J	0.028J	0.055J	0.035J	0.034J	0.017J	0.019J	0.018J	0.021J	0.028J
1,2-Dibromoethane	106-93-4	7/13/2023	0.0047	0.0047	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	0.0030J	0.0045J	ND (<0.0017)	ND (<0.0017)	0.0048J	0.0023J	0.016J	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	0.0050J	ND (<0.0017)	0.0046J	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	0.0020J	ND (<0.0017)	ND (<0.0017)
Ethylbenzene	100-41-4	7/13/2023	1.1	NE	0.12	0.19	0.15	0.14	0.2	0.19	0.19	0.2	0.23	0.3	0.25	0.17	0.16	0.26	0.32	0.19	0.21	0.14	0.35	0.33	0.14	2	0.24	0.21	0.12
p,&m-Xylene	--	7/13/2023	100	NE	0.4	0.71	0.49	0.46	0.63	0.62	0.65	0.64	0.76	0.6	0.6	0.57	0.53	0.78	1	0.62	0.55	0.44	1.1	1	0.44	7.7	0.83	0.58	0.39
o-Xylene	95-47-6	7/13/2023	100	NE	0.16	0.24	0.18	0.18	0.3	0.28	0.3	0.3	0.28	0.22	0.25	0.21	0.23	0.31	0.38	0.22	0.21	0.16	0.38	0.37	0.16	1.9	0.26	0.25	0.16
Styrene	100-42-5	7/13/2023	1000	940	0.048J	0.054J	0.041J	0.16	0.18	0.18	0.24	0.16	0.17	0.38	0.48	0.066J	0.23	0.37	0.3	0.16	0.16	0.2	0.26	0.16	0.098	0.44	0.21	0.31	0.054J
1,1,2,2-Tetrachloroethane	79-34-5	7/13/2023	0.048	0.048	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)
Naphthalene	91-20-3	7/13/2023	0.083	NE	0.14	0.09	0.14	1.1	0.33	0.36	0.36	0.35	0.15	0.23	0.39	0.27	0.19	0.53	0.37	0.24	0.17	0.24	0.28	0.21	0.24	0.2	0.16	0.22	0.12

Notes:
All concentrations are reported in micrograms per cubic meter (µg/m3)
Concentrations highlighted in yellow exceeded a regulatory screening level
RSL: United States Environmental Protection Agency Region IX - Regional Screening Level for Residential Air (May 2023)
DTSC-SL: California Department of Toxic Substances Control Modified Screening Levels for Residential Air (June 2020 - Revised May 2022)
NE: Not Established
ND: Not detected above reported laboratory method detection limit (ND < MDL)
J: Reported concentration is below laboratory reporting limit but below the laboratory method detection limit
* DTSC-SL for TCE is the residential Accelerated Response Action Level for Residential Land use as described in the DTSC Hero Note 5 (August 2014)

FIGURES



Approximate Outline of Site

FIGURE 1: Site Location Map

CLIENT: Santa Monica-Malibu Unified School District	SITE LOCATION: 2401 Santa Monica Boulevard, Santa Monica, California 90404
PROJECT #: SMSD-23-11646	

NV5 ALTA ENVIRONMENTAL

3777 Long Beach Blvd., Annex Bldg.
Long Beach, CA 90807
(562) 495-5777 www.altaenviron.com

DRAWN: ED	APPROVED: EF	NORTH
SCALE: None	DATE: 7/10/2023	

W:\Clients N-S\Santa Monica-Malibu USD (SMSD)\McKinley ES\SMSD-23-11335 McKinley Site Assessment\Photos - Drawings\AutoCAD\SMSD-23-11335.dwg

Residential
1301 Chelsea Avenue

Residential
1311 Chelsea Avenue

Residential
1319 Chelsea Avenue

Residential
1321 Chelsea Avenue

Residential
1325 Chelsea Avenue

Residential
1335 Chelsea Avenue

Residential
1343 Chelsea Avenue

Residential
2415 Arizona Avenue

Residential
2411 Arizona Avenue

Residential
2317 Arizona Avenue

Residential
2303 Arizona Avenue

Residential
2304-2308 Chelsea Avenue

Residential
1305 23rd Street

Residential
1311 23rd Street

Residential
1319 23rd Street

Residential
1323 23rd Street

Residential
1327 23rd Street

Residential
1331 23rd Street

Residential
1335 23rd Street

Residential
1337 23rd Street

Residential
1341 23rd Street

Apartments
2301 Santa Monica

Beauty Supply Store
2307 Santa Monica
Mail Center
2309 Santa Monica
Thai Vegan
2311 Santa Monica

Arizona Avenue

Chelsea Avenue

23rd Court

Santa Monica Boulevard

1.06 Acres

Cleaners and Big Waves Laundry
2439-2441 Santa Monica Blvd.

McKinley Elementary School
2401 Santa Monica Boulevard

Santa Monica VW
2440 Santa Monica

UCLA Parkside
2428 Santa Monica

Parkside Medical Center
2336 Santa Monica

Wishing Well Medical Supply
2312 Santa Monica

LEGEND:

Approximate Site Boundary

Approximate Extents of Earthwork

APPX. SCALE:
1" = 150'
0 150' 1"

NORTH

FIGURE 2: Site Vicinity Map

CLIENT: Santa Monica
Malibu Unified School District

DRAWN: AHL | APPROVED: EF

SCALE: NTS | DATE: JULY 2023

SITE LOCATION:
McKinley Elementary School
2401 Santa Monica Boulevard
Santa Monica, California 90404

PROJECT #: SMSD-23-11646

NV5
ALTA ENVIRONMENTAL
3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807
P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com

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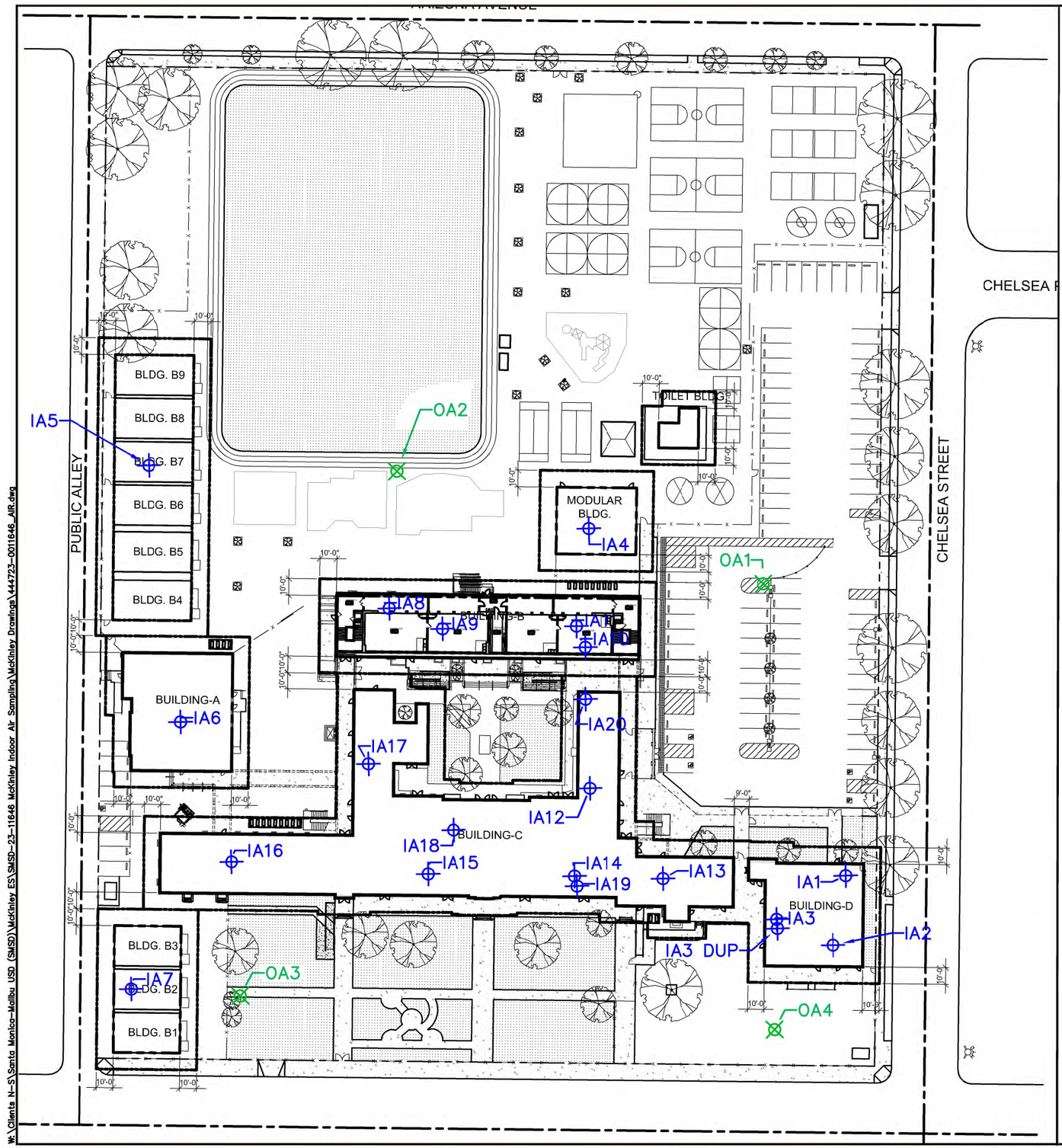

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LEGEND:

IA20 — Indoor Air Sample

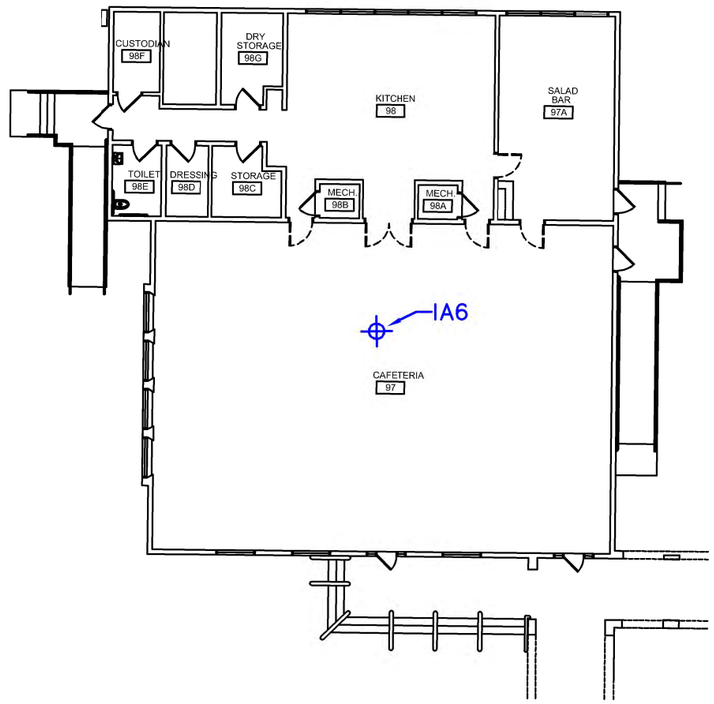
OA4 — Outdoor Air Sample

APPX. SCALE:
1" = 70'
0 — 70' — 1"

FIGURE 3: General Air Sample Locations

CLIENT: Santa Monica Malibu Unified School District	DRAWN: RB	APPROVED: EF
	NOT TO SCALE	DATE JULY 2023
SITE LOCATION: McKinley Elementary School 2401 Santa Monica Boulevard Santa Monica, California 90404		
PROJECT #: SMSD-23-11646		

NV5
ALTA ENVIRONMENTAL
3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807
P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com



Building A Floor Plan

NOT TO SCALE
Approx. 1"=20'

LEGEND:

IA20 Indoor Air Sample

0A4 Outdoor Air Sample

KEY PLAN

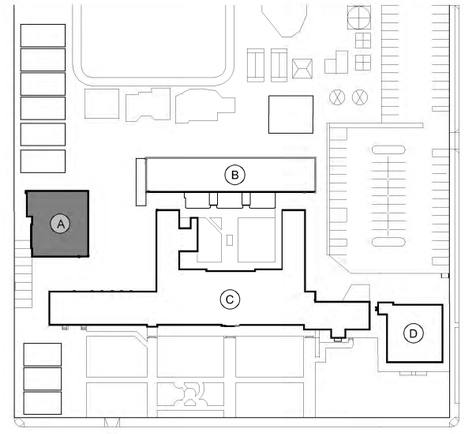
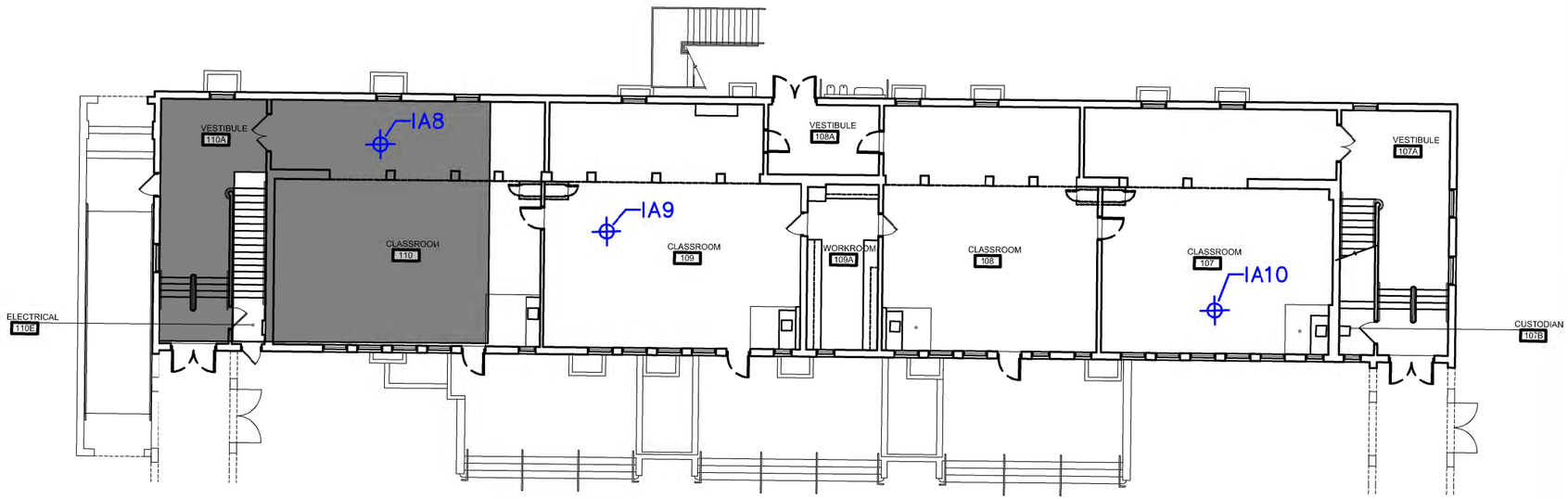


FIGURE 4: Building A Sample Location

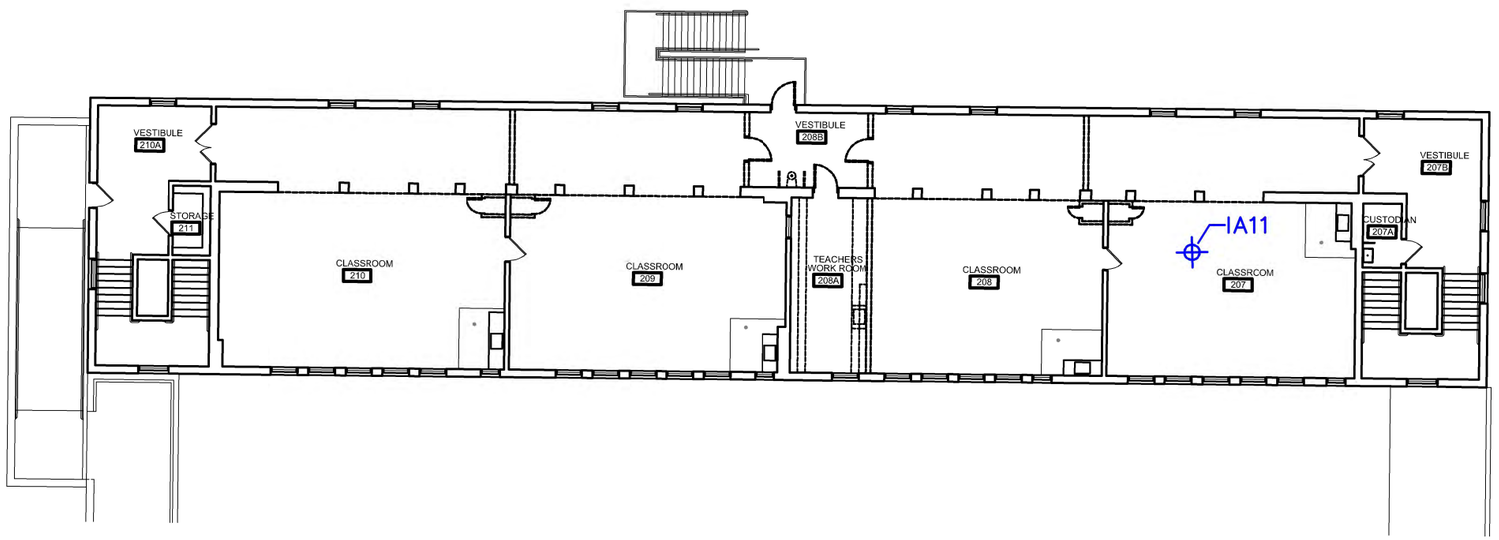
CLIENT: Santa Monica Malibu Unified School District	DRAWN: RB	APPROVED: EF
	NOT TO SCALE	DATE JULY 2023
SITE LOCATION: McKinley Elementary School 2401 Santa Monica Boulevard Santa Monica, California 90404	NV5 ALTA ENVIRONMENTAL	
PROJECT #: SMSD-23-11646	3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807 P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com	

W:\Clients N-S\Santa Monica-Malibu USD (SMSD)\McKinley ES\SMSD-23-11646 McKinley Indoor Air Sampling\McKinley Drawings\444723--0011646_AIR.dwg



BULDING B FIRST FLOOR

NOT TO SCALE
Approx. 1"=20'



BULDING B SECOND FLOOR

NOT TO SCALE
Approx. 1"=20'

LEGEND:

IA20 Indoor Air Sample

Approximate Basement Location

KEY PLAN

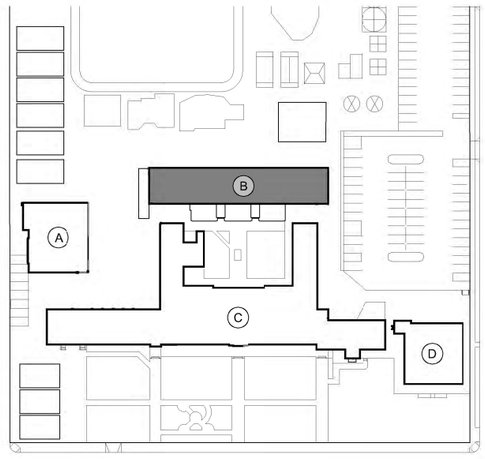
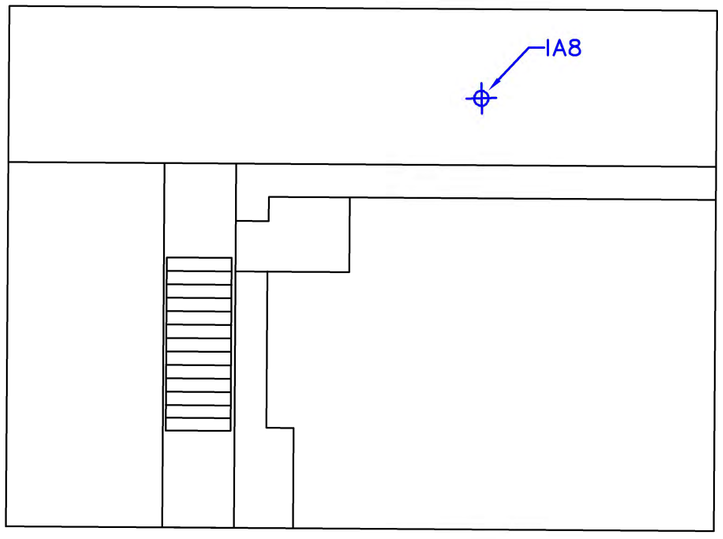


FIGURE 5: Building B Sample Locations

CLIENT: Santa Monica Malibu Unified School District	DRAWN: RB	APPROVED: EF
	NOT TO SCALE	DATE JULY 2023
SITE LOCATION: McKinley Elementary School 2401 Santa Monica Boulevard Santa Monica, California 90404	NV5 ALTA ENVIRONMENTAL 3777 Long Beach Blvd. Annex Bldg. Lorg Beach CA 90807 P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com	
PROJECT #: SMSD-23-11646		

W:\Clients N-S\Santa Monica-Malibu USD (SMSD)\McKinley ES\SMSD-23-11646 McKinley Indoor Air Sampling\McKinley Drawings\444723-0011646_AIR.dwg



BASEMENT B

NOT TO SCALE
Approx. 1"=20'

LEGEND:

IA20
Indoor Air Sample

KEY PLAN

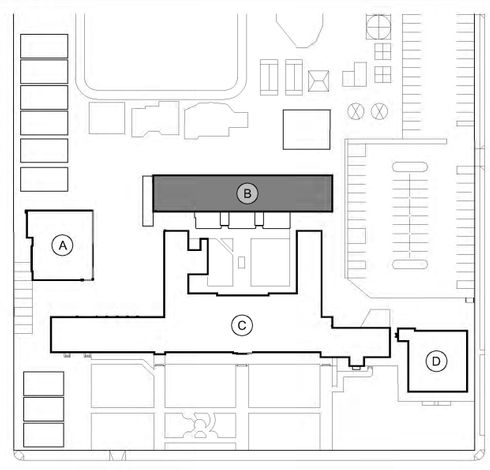
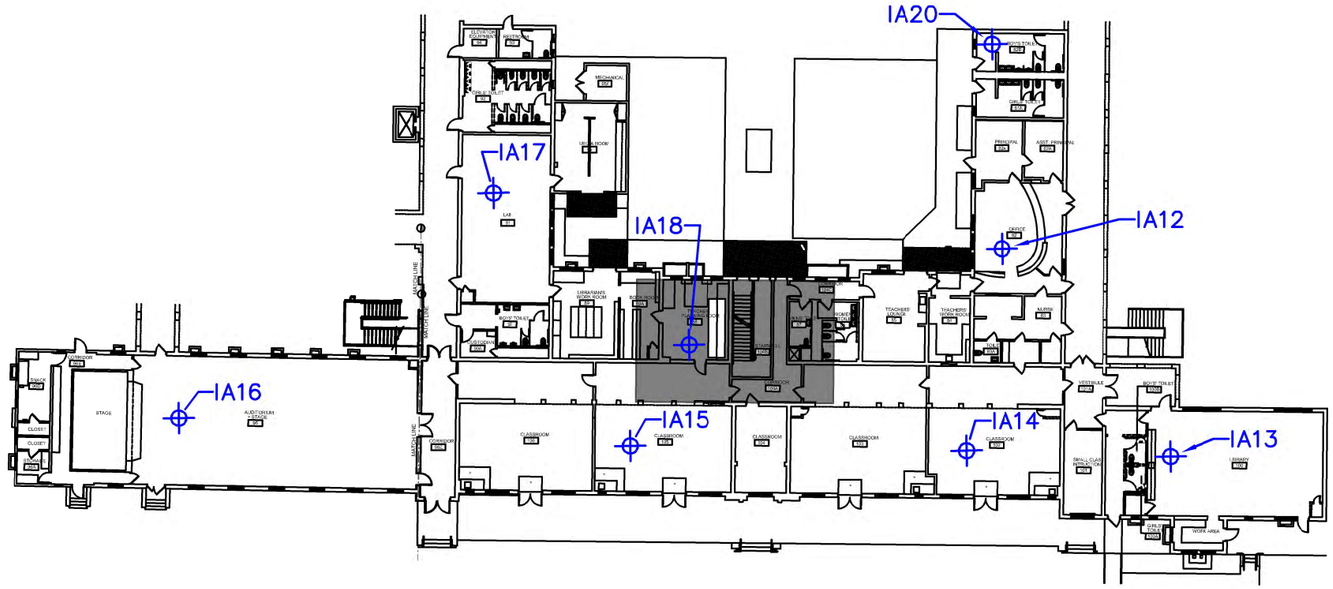


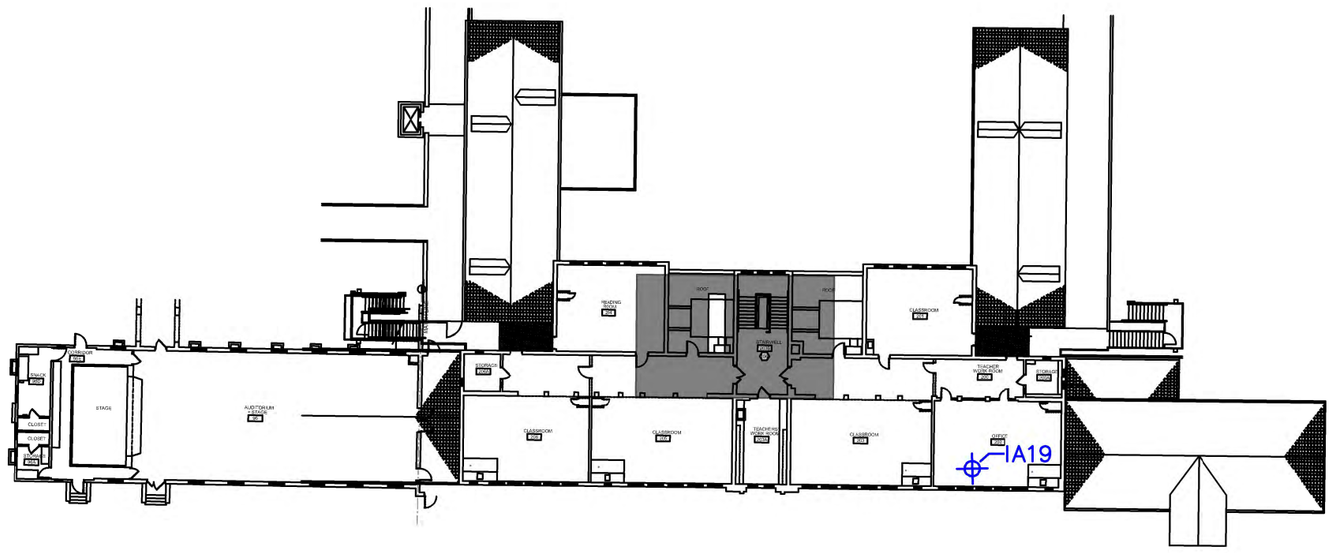
FIGURE 5A: Building B Basement Locations

CLIENT: Santa Monica Malibu Unified School District	DRAWN: RB	APPROVED: EF
	NOT TO SCALE	DATE JULY 2023
SITE LOCATION: McKinley Elementary School 2401 Santa Monica Boulevard Santa Monica, California 90404	NV5 ALTA ENVIRONMENTAL 3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807 P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com	
PROJECT #: SMSD-23-11646		

W:\Clients N-S\Santa Monica-Malibu USD (SMSD)\McKinley ES\SMSD-23-11646 McKinley Indoor Air Sampling\McKinley Drawings\444723-0011646_AIR.dwg



BULDING C FIRST FLOOR



BULDING C SECOND FLOOR

LEGEND:

IA20 — Indoor Air Sample

Approximate Basement Location

KEY PLAN

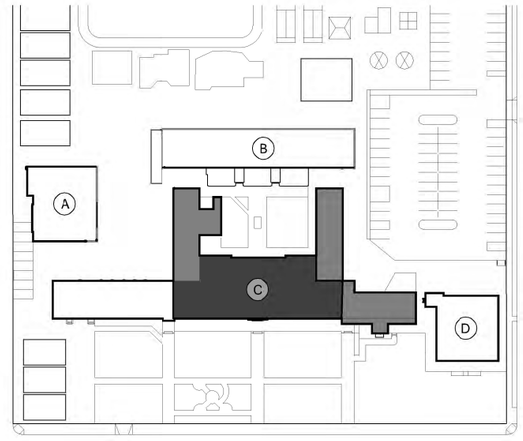
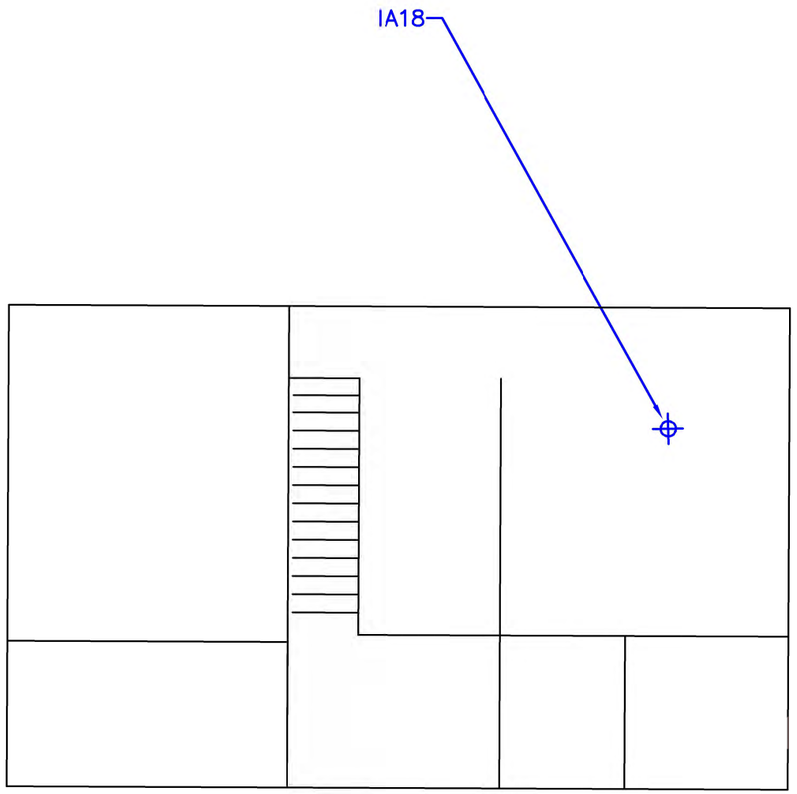


FIGURE 6: Building C Sample Locations

CLIENT: Santa Monica Malibu Unified School District	DRAWN: RB	APPROVED: EF
	NOT TO SCALE	DATE JULY 2023
SITE LOCATION: McKinley Elementary School 2401 Santa Monica Boulevard Santa Monica, California 90404		
PROJECT #: SMSD-23-11646		

ALTA ENVIRONMENTAL
3777 Long Beach Blvd. Annex Bldg. Lorg Beach CA 90807
P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com

W:\Clients N-S\Santa Monica-Malibu USD (SMSD)\McKinley ES\SMSD-23-11646 McKinley Indoor Air Sampling\McKinley Drawings\444723-0011646_AIR.dwg



BASEMENT C

NOT TO SCALE
Approx. 1"=10'

LEGEND:

IA20
Indoor Air Sample

KEY PLAN

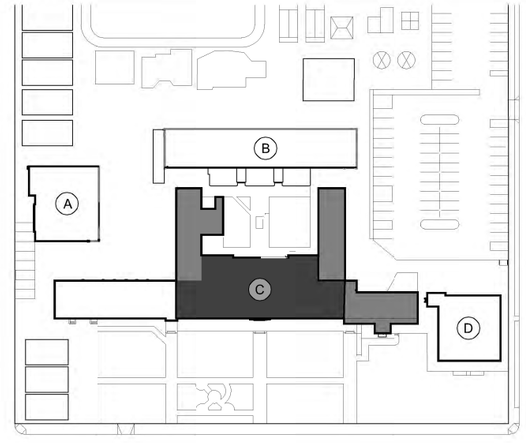
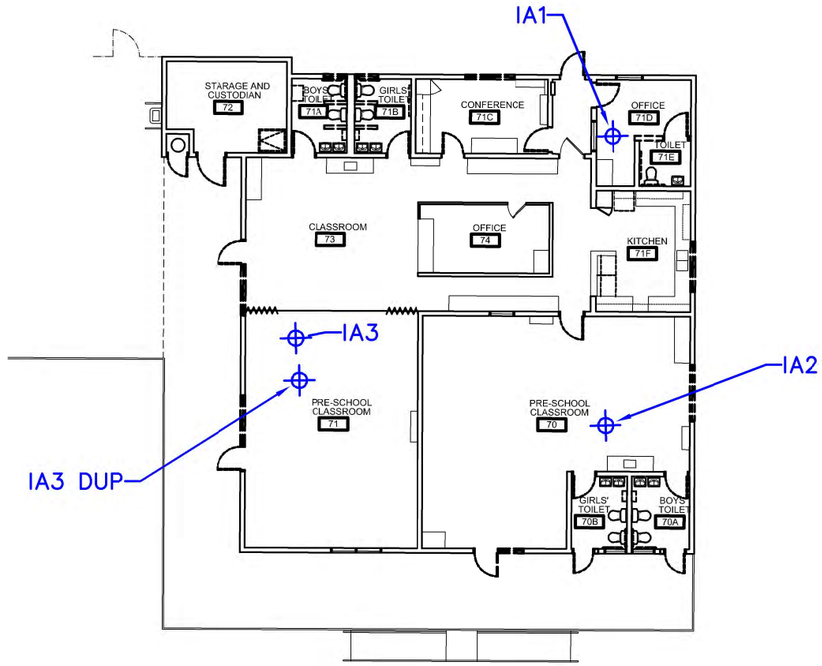


FIGURE 6A: Building C Basement Location

CLIENT: Santa Monica Malibu Unified School District	DRAWN: RB	APPROVED: EF
	NOT TO SCALE	DATE JULY 2023
SITE LOCATION: McKinley Elementary School 2401 Santa Monica Boulevard Santa Monica, California 90404	NV5 ALTA ENVIRONMENTAL 3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807 P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com	
PROJECT #: SMSD-23-11646		

W:\Clients N-S\Santa Monica-Malibu USD (SMSD)\McKinley ES\SMSD-23-11646 McKinley Indoor Air Sampling\McKinley Drawings\444723-0011646_AIR.dwg



BULDING D

NOT TO SCALE
Approx. 1"=20'

LEGEND:

IA20 Indoor Air Sample

KEY PLAN

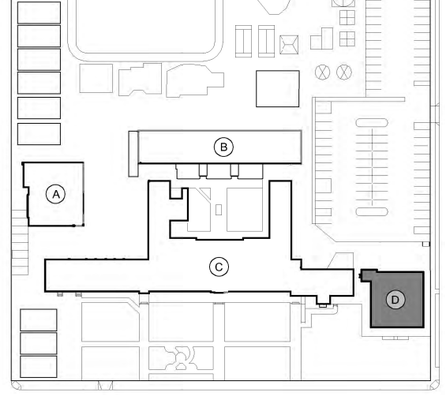


FIGURE 7: Building D Sample Locations

CLIENT: Santa Monica Malibu Unified School District	DRAWN: RB	APPROVED: EF
	NOT TO SCALE	DATE JULY 2023
SITE LOCATION: McKinley Elementary School 2401 Santa Monica Boulevard Santa Monica, California 90404	NV5 ALTA ENVIRONMENTAL 3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807 P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com	
PROJECT #: SMSD-23-11646		

W:\Clients N-S\Santa Monica-Malibu USD (SMSD)\McKinley ES\SMSD-23-11646 McKinley Indoor Air Sampling\McKinley Drawings\444723-0011646_AIR.dwg

APPENDIX A

Building Screening Forms

Indoor Air Source Screen Form

This form should be used while conducting field screening (Step 3B.3, Supplemental Vapor Intrusion Guidance). An Indoor Source Screen Survey of indoor air will help identify potential sources of vapor forming chemicals (VFCs) and/or potential subsurface vapor entry points. Common screening tools, such as, Photoionization Detector (PID), Gas Chromatography-Photoionization Detector (GC-PID), Gas Chromatography-Mass Spectrometry (GC-MS), or Gas Chromatography-Electron Capture Detector (GC-ECD), should be used to detect the presence of VFCs in the air.

Use this form to document the room/area and location where the measurement was recorded during the Indoor Air Source Screen Survey, the field instrument type used, and the instrument reading and units. If a consumer product is identified and surrounding air tested, the location and the volatile ingredients of the product should be noted. (If the item(s) may be contributing VFCs to the indoor air, the items should be removed in advance of indoor air sampling.) This survey should be used to support the development of a conceptual understanding of how vapor intrusion may be occurring at the building and used in selecting sample locations for evaluating spatial distribution of VFCs in indoor air.

Site Information	Input
Building Address or Building ID:	2401 Santa Monica Blvd, Santa Monica, California
Site/Facility Name:	McKinley Elementary School
Screening Event Date:	6-Jul-23
Screening Event Time:	8AM to 11AM
Event Weather Conditions:	Clear, 65-68 F, Light Winds (3 mph) from Southwest
Name of Person(s) Sampling:	Eric Fraske and Ruta Bandziulis
Company Conducting Sampling:	NV5
Field Instrument Type[1]:	PID - ppbRAE 3000_V22
Instrument Calibration Date:	7/5/2023
Analyte Name:	Isobutylene 10 PPM

1 - Photoionization Detector (PID), Gas Chromatography-Photoionization Detector (GC-PID), Gas Chromatography-Mass Spectrometry (GC-MS), Gas Chromatography-Electron Capture Detector (GC-ECD), etc.

Indoor Air Source Screen Form

Sample Room/Area	Sample Location	Sample ID	Instrument Reading	Units	Volatile Ingredients in Consumer Products Identified Near Sample
- 82 OFFICE	-		0.028	PPM	Hand sanitizer
- C83 NURSE	-		0.035		HAND SANITIZER (HS)
- C83A CLOSET	-		0.352		HAND SANITIZER, ANTISEPTIC
- C83B	-		0.079		HAND SOAP, AERO DISINFECT DEODOR,
- C83C RR	-		0.062		(HS), 7317 DISINFECTANT
- C82A ASST. PRIN.	-		0.065		(HS)
- C82A PRINCIPLE	-		0.075		~~(HS)~~
- C102	- NORTH		0.083		(HS)
- C102	-		0.088		(HS) SANITIZER SPRAY
- C102	- SINK CABINET		0.076		
- C101A	-		0.198		
- C101	- ~~BR~~		0.120		Hand soap
- ~~C100~~ BR Hall	-		0.184		NEW HALL
- C100 [LIBRARY]	- ~~EAST~~		0.177		
- " "	- WEST		0.183		NEW CARPET, FURNITURE
- C100B	- BOYS RR		0.174		RAISED FOUNDATION
- C100A	- GIRLS RR		0.168		RAISED FOUNATION
- OFFICE 100	-		0.146		RECIRCULATING VENT
- C103	- MAIN		0.144		WASHABLE PAINT,
- " "	- SINK		0.172		(HS) disinfectant
- " "	- NORTH		0.161		
- C85 T. LOUNGE	-		0.152		(HS) CLOROX WIPES
- " "	- SINK		0.153		
- C84	-		0.146		(HS) OFFICE SUPPLY
- C86	-		0.156		Hand soap (HS)
- C87	-		0.157		
- " "	- ~~TRAP~~ FLOOR DRAIN		0.159		Roof vent
- C104C	-		0.108		
- C104A	-		0.168		
- C104 storage	-		0.314		Paint, rubber cement, Shaw, 4.
- C105	-		0.199		

Comments:

Indoor Air Source Screen Form

Sample Room/Area	Sample Location	Sample ID	Instrument Reading	Units	Volatile Ingredients in Consumer Products Identified Near Sample
- A97	- MAIN		Ø.197		
- A98	- kitch		Ø.201		
- A98A	- Mech		Ø.209		
- A97A	- Salad		Ø.255		(HS)
- A98B	- Mech		Ø.233		
- A98C	-		Ø.480		
- A98G	- NO ACCESS				
- A98D	-		Ø.255		
- A98E	-		Ø.236		
- A98F	-		Ø.241		(HS) spray cleaner
- MOP	-		Ø.239		mop cleaner [930] [245]
-	-				
-	-				
-	-				
-	-				
-	-				
-	-				
-	-				
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-	-				
-	-				
-	-				

Comments: A → SLAB ON GRADE

Indoor Air Source Screen Form

Sample Room/Area	Sample Location	Sample ID	Instrument Reading	Units	Volatile Ingredients in Consumer Products Identified Near Sample
- B SPRINKLER RM	- EAST		Ø.2ØØ		carpet cleaner
-	- SINK		Ø.2Ø4		
- B1Ø7A	-		Ø.279		
- B1Ø7	- NORTH		Ø.239		
- B1Ø7	- MAIN		Ø.247		[243]
- B1Ø7	- SINK		Ø.242		
- B1Ø8	- MAIN		Ø.248		
- "	- SINK		Ø.245		[243] (HS) CLOROX
- "	- NORTH		Ø.247		
- B109A	- SINK		Ø.271		Kitchen cleaner [262]
- " "	-		Ø.27Ø		
- B 109	- MAIN		Ø.278		clorox, disinfect [HS]
- "	- SINK		Ø.284		
- "	- NORTH		Ø.283		
- B108A	-		Ø.257		
- B11Ø	- MAIN		Ø.275		
- "	- SINK		Ø.271		[243] (HS)
- "	- NORTH		Ø.273		
- B110A	-		Ø.251		
- BBasement	-		Ø.222		
- BB111	-		Ø.197		
- BB111	- Crawl		Ø.2ØØ		
- BB112	- PTA		Ø.23Ø		(HS)
- BB11Ø	-		Ø.2Ø5		
- B210A	-		Ø.227		
- B211	-		Ø.331		
- BHall	- ~~South~~ West		Ø.22Ø		
- B21Ø	-		Ø.2Ø4		Smells sweet (HS)
- B209	-		Ø.198		(HS)
- "	- SINK		Ø.197		(HS)
- B208	-		Ø.195		(HS)

Comments: B208 SINK Ø.198

Raised Foundation

Main Ceiling (11.5 ft)

North Ceiling (8.Ø ft)

Indoor Air Source Screen Form

Sample Room/Area	Sample Location	Sample ID	Instrument Reading	Units	Volatile Ingredients in Consumer Products Identified Near Sample
- B207	- MAIN		Ø.204		
- "	- SINK		Ø.209		(HS) [243]
- BHALL	- EAST		Ø.198		
- B207B	-		Ø.199		
- B207A	-		Ø.200		SOAP (HS)
- "	- SINK		Ø.200		
- B10	- Modular BLDG		Ø.205		(HS)
- "	- SINK		Ø.205		
- B11	-		Ø.174		(HS)
- "	- SINK		Ø.170		
- PLAYGROUND RR	- BOYS		Ø.168		
- "	- GIRLS		Ø.174		
-	- DRAIN GIRLS		Ø.170		
- B9	-		Ø.326		(HS) PAINT
- " "	- SINK		Ø.350		Bleach
- "	- Paint STORAGE		0.358		
- B8	- MAIN		Ø.335		(HS)
- " "	- SINK		Ø.351		Tempura paint [730]
- B7	- MAIN		Ø.299		(HS)
- "	- SINK		Ø.333		clorox wipes, bleach 243
- "	- Bathroom		Ø.321		soap
- B6	- MAIN		Ø.313		(HS) soap [743] [243]
- "	- SINK		Ø.344		crayons, smells sweet
- B5	- MAIN		Ø.314		(HS)
- "	- SINK		Ø.327		Dish soap [743]
- B4	- MAIN		Ø.308		(HS)
-	- SINK	NOT ACCESSIBLE			[243]
- B3	- MAIN		Ø.227		
-	- SINK		Ø.255		(HS) [730] [743]
- B2	- MAIN		Ø.276		[764] [243]
-	- SINK		Ø.282		

Comments: BUNGALOWS ON WESTSIDE RAISED FOUND
Bungalows near B → SLAB ON GRADE

AMBIENT 12:25 Ø.190 near Bungalows & A BLDG

B2	Bathroom	0.278
B1	MAIN	0.304 (HS)
	SINK	0.311 SOAP (HS)

Shed 0.181

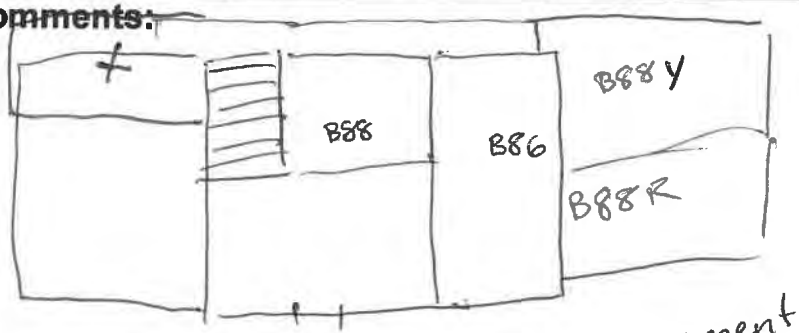
AMBIENT SW CORNER – 12:49pm 0.180
FLAMMABLE UNIT → PROPANE CANS 0.160
AMBIENT SE CORNER → 1255 EXTERIOR D → 0.145

NE CORNER: 12:58
0.134
Breezy W ←

Indoor Air Source Screen Form

Sample Room/Area	Sample Location	Sample ID	Instrument Reading	Units	Volatile Ingredients in Consumer Products Identified Near Sample
-CBasement	- MAIN	0.185			
- C B88	-	0161			incinerator
-	- Crawl	0.157			
- CB86	-	0.156			Server
- CB8B X	-	0-168			
- CB88 Y	-	0.155			
- CB88 Y	- SUMP	0.145			
- CB88 R	-	0.150			
- CB89	-	0.182			
- C203B	-	0.194			
- C203A WORK ROOM	-	0.246			(HS) SPLIT VENT
- C203	- MAIN	0.183			cleaning [243]
- C203	- SINK	0.196			Disinfectant wipes
- C203A	- SINK	0.243			[243]
- Hallway	- EAST	0.201			
- C202	-	0.177			
- C202	- SINK	0.170			[243]
- C200A	-	0.191			
- C201	-	0.184			(HS)
- C201	- SINK	0.189			[243]
- Hallway	- WEST	0.197			
- C205	-	0.182			[243] LYSOL
- C205	- SINK	0.200			
- C204	-	0.183			(HS) PURPLE
- C206	-	0.181			
- C206	- SINK	0.179			Newish Carpet (2yr)
- C206A	-	0.197			
- ELEVATOR	- NO ACCESS				
-	-				
-	-				
-	-				

Comments:



Basement not to scale

(Poly) Bags of Lyme

Indoor Air Source Screen Form

Sample Room/Area	Sample Location	Sample ID	Instrument Reading	Units	Volatile Ingredients in Consumer Products Identified Near Sample
- C105	- SINK		0.204		cleaning supply, HS
- C105	- NORTH		0.191		
- C88 PLAN ROOM	-		0.224		(HS) simple green, purple
- C106	- NORTH		0.208		
- C106	- MAIN		0.194		
- C106	- SINK		0.192		
- C96Z	- CORRIDOR		0.198		(HS)
- AUDITORIUM C96	-		0.192		(HS)
- Stage	-		0.192		
- C96E	- NORTH		0.187		
- C96E	- SOUTH		0.181		
- C96D	- ROOM		0.184		
- C96D	- SINK		0.196		
- C96D	- CLOSET		0.185		
- C96A	-		0.250		
- " "	-		0.247		Clorox WIPES
- C90	- RR		0.187		
- C90	- FLOOR VENT		0.151		
- C90A	- closet		0.265		CLEANING, DESCALER, BASEBOARD DE SCUFF
- C91 (Science)	-		0.223		NEW CEILING, FLOOR, CASEWORK, etc
- C89	-		0.260		with the Boeing adhesi
- C91	- SINK		0.263		
- C91	- SINK		0.257		
- C91	- FRESHAIR intake		0.274		
- C92	-		0.205		
- C92	- FLOOR DRAIN		0.212		(HS)
- C94	-		0.170		Hydraulic oil
- C93	-		0.213		Hand sanitizer
- C95	-		0.174		
- C82B	-		0.166		
- C81A	-		0.166		

Comments: COURTYARD STORM DRAIN 0.141
AMBIENT COURTYAR 0.160 @ 10:49 AM

Indoor Air Source Screen Form

Sample Room/Area	Sample Location	Sample ID	Instrument Reading	Units	Volatile Ingredients in Consumer Products Identified Near Sample
- D70	-		0.280		(HS)
- D70	- SINK		0.350		Tempura Paint
- D70B	-		0.222		Hand soap
- D70A	-		0.209		
- D71F	-		0.350		(HS) Deterogent, Gas stove
- D71F	- SINK		0.297		
- D71F	- WASHING MACHINE		0.241		
- D71D	-		0.254		
- D71E	- Restroom		0.258		Soap, COSMETICS Hairspray
- D71C	-		0.275		(HS)
- Hallway	- North		0.229		
- D71B	-		0.287		Soap, (HS)
- D71A	-		0.286		
- D71A	- FLOOR DRAIN		0.360		
- D73	-		0.344		
- D73	- SINK		0.298		
- D71	-		0.293		
- D74	-		0.279		
- D72	-		0.222		
- D72	- SINK		0.124		
- D72B	- Gas Water heater		0.181		
-	-				
-	-				
-	-				
-	-				
-	-				
-	-				
-	-				
-	-				
-	-				

Comments: EXTERIOR D - 11:20AM 0.162 ppm

Building Survey Form

Type in or select answers from drop-down lists in the righthand column. Upload answers to GeoTracker database for criteria marked with an asterisks (*). See Table 1 in the *Guidance on Uploading Vapor Intrusion Information into GeoTracker* (Attachment 4 of Supplemental Vapor Intrusion Guidance) for a description of Building Design Type input choices.

Person Conducting Survey	Input
Name:	Eric Fraske
Company:	NV5
Phone Number:	562-544-3910
Email:	eric.fraske@nv5.com
Building Contact Information	**Input**
Name:	Matt Smith
Contact Title:	Manager
Phone Number:	424-581-5428
Email:	msmith@smmusd.org
Building Occupant Interviewed?	Yes
Building Information	**Input**
Date of Building Survey (dd/mm/yy):	07/06/2013
*Building Name:	McKinley Building A - Cafeteria
*Building Address (Street, City):	2401 Santa Monica Blvd, Santa Monica, CA
Coordinates for Center of Building (Latitude, Longitude; decimal degrees to 0.00000):	34.03194; 118.477325
*Building Location Onsite/Offsite with respect to Site/Facility:	Onsite
*Year Built (yyyy; approximate if unsure):	1951
*Building Occupants:	ensitive Use (e.g., Child Care or Medical Facilit
Building Dimensions	**Input**
*Building Footprint Area (within enclosed space; square feet [ft^2]):	4600
Building Dimensions (at grade; feet by feet):	65 x 70
*Ceiling Height of Ground Floor (feet, [ft]):	14
*Number of Floors (excluding the basement):	1
Building Design	**Input**
*Building Design Type:	School
Has the design been modified?	No
*Foundation Type:	Slab-on-Grade
*Building Vapor Intrusion Mitigation System:	None
*Heating, Ventilation, & Air Conditioning (HVAC) System:	Heating & Cooling

Building Survey Form

HVAC System has an Air Intake?	Yes
Type of Energy Used in Building?	Electricity
Energy Primarily Used For?	Other
Number of Units for Multi-Unit Buildings:	0
Number of Rooms (average per unit for multi-unit buildings):	9
Number of Exterior Doors:	5
Number of Elevators:	0
Number of Active Exhaust Fans (e.g., kitchen/bathroom):	2
Chimney or Other Vertical Draft Source?	No
Building Slab	**Input**
Slab Thickness (inches; approximate if unsure):	6
Largest Slab Penetration > 1 Foot Diameter:	None
Soil Type (USCS) 0 to 3 Feet Below Building:	Unknown
Evidence of Moisture Intrusion from Below Slab?	No
Diferential Pressure Measurement Points?	Unknown
Building Windows and Doors	**Input**
Number of Windows and Exterior Doors:	21
Weather Sealed Windows and Exterior Doors?	Some Sealed
Average Area of Window Open to Outside Air (ft^2):	5
Ventilation (e.g., windows, doors, garage doors) Under Typical Use Conditions	Minimal Open Windows or Doors
Building Crawl Space	**Input**
Crawl Space Height (ft):	NA
Number Crawl Space Vents:	NA
Average Area per Crawl Space Vent (Feet2):	NA
Evidence of moisture intrusion into Crawl Space from Soil?	N/A
Building Basement	**Input**
Basement Height (Feet):	NA
Basement Footprint Area (ft^2):	NA
Basement Wall Area Below Ground Surface (ft^2):	NA
Exposed Basement above grade?	N/A
Vents or Windows above-grade in exposed basement?	N/A
Unfinished Basement?	N/A
Evidence of moisture intrusion into Basement from Soil?	No

Building Survey Form

Factors Potentially Influencing Indoor Air Quality	Input
Is there an attached garage?	No
Is there smoking in the building?	No
Is there new carpet or furniture?	No
Have clothes or drapes been recently dry cleaned?	No
Has painting or staining been done with the last six months?	No
Has the building been recently remodeled?	No
Has the building ever had a fire?	Unknown
Is there a hobby or craft area in the building?	No
Are scented products (e.g. air fresheners, scented candles) regularly used inside?	No
Is there a chemical storage area at the building (e.g., solvent cleaners?	Yes
Is there a fuel oil tank on the property?	No
Is there a septic tank on the property?	No
Has the building been fumigated or sprayed for pests recently?	Unknown
Historically the building was primarily used for?	Other
Do current building occupants use solvents at another location (e.g., work, hobby)?	None

Meteorological Conditions	Input
Weather:	Clear
Outdoor Temperature - High (°F):	68
Outdoor Temperature - Low (°F):	64
Indoor Temperature (°F):	68
Barometric Pressure Reading (mmHg):	1.16
Wind Direction:	SW
Average Wind Speed (mph):	3
HVAC Setting for Current Season:	Cooling

Other Comments
Building A - Cafeteria

Building Survey Form

Type in or select answers from drop-down lists in the righthand column. Upload answers to GeoTracker database for criteria marked with an asterisks (*). See Table 1 in the *Guidance on Uploading Vapor Intrusion Information into GeoTracker* (Attachment 4 of Supplemental Vapor Intrusion Guidance) for a description of Building Design Type input choices.

Person Conducting Survey	Input
Name:	Eric Fraske
Company:	NV5
Phone Number:	562-544-3910
Email:	eric.fraske@nv5.com
Building Contact Information	**Input**
Name:	Matt Smith
Contact Title:	Manager
Phone Number:	424-581-5428
Email:	msmith@smmusd.org
Building Occupant Interviewed?	Yes
Building Information	**Input**
Date of Building Survey (dd/mm/yy):	07/06/2013
*Building Name:	McKinley Building B
*Building Address (Street, City):	2401 Santa Monica Blvd, Santa Monica, CA
Coordinates for Center of Building (Latitude, Longitude; decimal degrees to 0.00000):	34.032133; 118.477275
*Building Location Onsite/Offsite with respect to Site/Facility:	Onsite
*Year Built (yyyy; approximate if unsure):	1925
*Building Occupants:	ensitive Use (e.g., Child Care or Medical Facilit
Building Dimensions	**Input**
*Building Footprint Area (within enclosed space; square feet [ft^2]):	14000
Building Dimensions (at grade; feet by feet):	180 x 36
*Ceiling Height of Ground Floor (feet, [ft]):	14
*Number of Floors (excluding the basement):	2
Building Design	**Input**
*Building Design Type:	School
Has the design been modified?	No
*Foundation Type:	Partial Basement
*Building Vapor Intrusion Mitigation System:	None
*Heating, Ventilation, & Air Conditioning (HVAC) System:	Heating & Cooling

Building Survey Form

HVAC System has an Air Intake?	Yes
Type of Energy Used in Building?	Electricity
Energy Primarily Used For?	Other
Number of Units for Multi-Unit Buildings:	0
Number of Rooms (average per unit for multi-unit buildings):	10
Number of Exterior Doors:	14
Number of Elevators:	0
Number of Active Exhaust Fans (e.g., kitchen/bathroom):	0
Chimney or Other Vertical Draft Source?	No
Building Slab	**Input**
Slab Thickness (inches; approximate if unsure):	6
Largest Slab Penetration > 1 Foot Diameter:	None
Soil Type (USCS) 0 to 3 Feet Below Building:	Unknown
Evidence of Moisture Intrusion from Below Slab?	No
Diferential Pressure Measurement Points?	Unknown
Building Windows and Doors	**Input**
Number of Windows and Exterior Doors:	88
Weather Sealed Windows and Exterior Doors?	Some Sealed
Average Area of Window Open to Outside Air (ft^2):	2
Ventilation (e.g., windows, doors, garage doors) Under Typical Use Conditions	Minimal Open Windows or Doors
Building Crawl Space	**Input**
Crawl Space Height (ft):	3
Number Crawl Space Vents:	14
Average Area per Crawl Space Vent (Feet2):	3
Evidence of moisture intrusion into Crawl Space from Soil?	No
Building Basement	**Input**
Basement Height (Feet):	8
Basement Footprint Area (ft^2):	1500
Basement Wall Area Below Ground Surface (ft^2):	1200
Exposed Basement above grade?	Yes
Vents or Windows above-grade in exposed basement?	Yes
Unfinished Basement?	No
Evidence of moisture intrusion into Basement from Soil?	No

Building Survey Form

Factors Potentially Influencing Indoor Air Quality	Input
Is there an attached garage?	No
Is there smoking in the building?	No
Is there new carpet or furniture?	No
Have clothes or drapes been recently dry cleaned?	No
Has painting or staining been done with the last six months?	No
Has the building been recently remodeled?	No
Has the building ever had a fire?	Unknown
Is there a hobby or craft area in the building?	Yes
Are scented products (e.g. air fresheners, scented candles) regularly used inside?	No
Is there a chemical storage area at the building (e.g., solvent cleaners?	Yes
Is there a fuel oil tank on the property?	No
Is there a septic tank on the property?	No
Has the building been fumigated or sprayed for pests recently?	Unknown
Historically the building was primarily used for?	Other
Do current building occupants use solvents at another location (e.g., work, hobby)?	Painting/Finishing

Meteorological Conditions	Input
Weather:	Clear
Outdoor Temperature - High (°F):	68
Outdoor Temperature - Low (°F):	64
Indoor Temperature (°F):	68
Barometric Pressure Reading (mmHg):	1.16
Wind Direction:	SW
Average Wind Speed (mph):	3
HVAC Setting for Current Season:	Cooling

Other Comments
Building B - Classrooms

Building Survey Form

Type in or select answers from drop-down lists in the righthand column. Upload answers to GeoTracker database for criteria marked with an asterisks (*). See Table 1 in the *Guidance on Uploading Vapor Intrusion Information into GeoTracker* (Attachment 4 of Supplemental Vapor Intrusion Guidance) for a description of Building Design Type input choices.

Person Conducting Survey	Input
Name:	Eric Fraske
Company:	NV5
Phone Number:	562-544-3910
Email:	eric.fraske@nv5.com
Building Contact Information	**Input**
Name:	Matt Smith
Contact Title:	Manager
Phone Number:	424-581-5428
Email:	msmith@smmusd.org
Building Occupant Interviewed?	Yes
Building Information	**Input**
Date of Building Survey (dd/mm/yy):	07/06/2013
*Building Name:	McKinley Building C
*Building Address (Street, City):	2401 Santa Monica Blvd, Santa Monica, CA
Coordinates for Center of Building (Latitude, Longitude; decimal degrees to 0.00000):	34.032133; 118.477275
*Building Location Onsite/Offsite with respect to Site/Facility:	Onsite
*Year Built (yyyy; approximate if unsure):	1925
*Building Occupants:	ensitive Use (e.g., Child Care or Medical Facilit
Building Dimensions	**Input**
*Building Footprint Area (within enclosed space; square feet [ft^2]):	25000
Building Dimensions (at grade; feet by feet):	340 x 40
*Ceiling Height of Ground Floor (feet, [ft]):	14
*Number of Floors (excluding the basement):	2
Building Design	**Input**
*Building Design Type:	School
Has the design been modified?	No
*Foundation Type:	Partial Basement
*Building Vapor Intrusion Mitigation System:	None
*Heating, Ventilation, & Air Conditioning (HVAC) System:	Heating & Cooling

Building Survey Form

HVAC System has an Air Intake?	Yes
Type of Energy Used in Building?	Electricity
Energy Primarily Used For?	Other
Number of Units for Multi-Unit Buildings:	0
Number of Rooms (average per unit for multi-unit buildings):	42
Number of Exterior Doors:	47
Number of Elevators:	1
Number of Active Exhaust Fans (e.g., kitchen/bathroom):	0
Chimney or Other Vertical Draft Source?	Yes
Building Slab	**Input**
Slab Thickness (inches; approximate if unsure):	6
Largest Slab Penetration > 1 Foot Diameter:	None
Soil Type (USCS) 0 to 3 Feet Below Building:	Unknown
Evidence of Moisture Intrusion from Below Slab?	No
Diferential Pressure Measurement Points?	Unknown
Building Windows and Doors	**Input**
Number of Windows and Exterior Doors:	152
Weather Sealed Windows and Exterior Doors?	Some Sealed
Average Area of Window Open to Outside Air (ft^2):	2
Ventilation (e.g., windows, doors, garage doors) Under Typical Use Conditions	Minimal Open Windows or Doors
Building Crawl Space	**Input**
Crawl Space Height (ft):	3
Number Crawl Space Vents:	22
Average Area per Crawl Space Vent (Feet2):	3
Evidence of moisture intrusion into Crawl Space from Soil?	No
Building Basement	**Input**
Basement Height (Feet):	8
Basement Footprint Area (ft^2):	1500
Basement Wall Area Below Ground Surface (ft^2):	1200
Exposed Basement above grade?	Yes
Vents or Windows above-grade in exposed basement?	Yes
Unfinished Basement?	Yes
Evidence of moisture intrusion into Basement from Soil?	No

Building Survey Form

Factors Potentially Influencing Indoor Air Quality	Input
Is there an attached garage?	No
Is there smoking in the building?	No
Is there new carpet or furniture?	Yes
Have clothes or drapes been recently dry cleaned?	No
Has painting or staining been done with the last six months?	Yes
Has the building been recently remodeled?	Yes
Has the building ever had a fire?	Unknown
Is there a hobby or craft area in the building?	Yes
Are scented products (e.g. air fresheners, scented candles) regularly used inside?	No
Is there a chemical storage area at the building (e.g., solvent cleaners?	Yes
Is there a fuel oil tank on the property?	No
Is there a septic tank on the property?	No
Has the building been fumigated or sprayed for pests recently?	Unknown
Historically the building was primarily used for?	Other
Do current building occupants use solvents at another location (e.g., work, hobby)?	Painting/Finishing

Meteorological Conditions	Input
Weather:	Clear
Outdoor Temperature - High (°F):	68
Outdoor Temperature - Low (°F):	64
Indoor Temperature (°F):	68
Barometric Pressure Reading (mmHg):	1.16
Wind Direction:	SW
Average Wind Speed (mph):	3
HVAC Setting for Current Season:	Cooling

Other Comments
Building C - Classrooms, Offices, Auditorium, and Library

Building Survey Form

Type in or select answers from drop-down lists in the righthand column. Upload answers to GeoTracker database for criteria marked with an asterisks (*). See Table 1 in the *Guidance on Uploading Vapor Intrusion Information into GeoTracker* (Attachment 4 of Supplemental Vapor Intrusion Guidance) for a description of Building Design Type input choices.

Person Conducting Survey	Input
Name:	Eric Fraske
Company:	NV5
Phone Number:	562-544-3910
Email:	eric.fraske@nv5.com
Building Contact Information	**Input**
Name:	Matt Smith
Contact Title:	Manager
Phone Number:	424-581-5428
Email:	msmith@smmusd.org
Building Occupant Interviewed?	Yes
Building Information	**Input**
Date of Building Survey (dd/mm/yy):	07/06/2013
*Building Name:	McKinley Building D - Pre-School
*Building Address (Street, City):	2401 Santa Monica Blvd, Santa Monica, CA
Coordinates for Center of Building (Latitude, Longitude; decimal degrees to 0.00000):	34.032161; 118.476419
*Building Location Onsite/Offsite with respect to Site/Facility:	Onsite
*Year Built (yyyy; approximate if unsure):	1977
*Building Occupants:	ensitive Use (e.g., Child Care or Medical Facilit
Building Dimensions	**Input**
*Building Footprint Area (within enclosed space; square feet [ft^2]):	5000
Building Dimensions (at grade; feet by feet):	70 x 75
*Ceiling Height of Ground Floor (feet, [ft]):	13
*Number of Floors (excluding the basement):	1
Building Design	**Input**
*Building Design Type:	School
Has the design been modified?	No
*Foundation Type:	Slab-on-Grade
*Building Vapor Intrusion Mitigation System:	None
*Heating, Ventilation, & Air Conditioning (HVAC) System:	Heating & Cooling

Building Survey Form

HVAC System has an Air Intake?	Yes
Type of Energy Used in Building?	Electricity
Energy Primarily Used For?	Other
Number of Units for Multi-Unit Buildings:	0
Number of Rooms (average per unit for multi-unit buildings):	10
Number of Exterior Doors:	8
Number of Elevators:	0
Number of Active Exhaust Fans (e.g., kitchen/bathroom):	2
Chimney or Other Vertical Draft Source?	No
Building Slab	**Input**
Slab Thickness (inches; approximate if unsure):	6
Largest Slab Penetration > 1 Foot Diameter:	None
Soil Type (USCS) 0 to 3 Feet Below Building:	Unknown
Evidence of Moisture Intrusion from Below Slab?	No
Diferential Pressure Measurement Points?	Unknown
Building Windows and Doors	**Input**
Number of Windows and Exterior Doors:	21
Weather Sealed Windows and Exterior Doors?	Some Sealed
Average Area of Window Open to Outside Air (ft^2):	0
Ventilation (e.g., windows, doors, garage doors) Under Typical Use Conditions	All Windows and Doors Closed
Building Crawl Space	**Input**
Crawl Space Height (ft):	NA
Number Crawl Space Vents:	NA
Average Area per Crawl Space Vent (Feet2):	NA
Evidence of moisture intrusion into Crawl Space from Soil?	N/A
Building Basement	**Input**
Basement Height (Feet):	NA
Basement Footprint Area (ft^2):	NA
Basement Wall Area Below Ground Surface (ft^2):	NA
Exposed Basement above grade?	N/A
Vents or Windows above-grade in exposed basement?	N/A
Unfinished Basement?	N/A
Evidence of moisture intrusion into Basement from Soil?	No

Building Survey Form

Factors Potentially Influencing Indoor Air Quality	Input
Is there an attached garage?	No
Is there smoking in the building?	No
Is there new carpet or furniture?	No
Have clothes or drapes been recently dry cleaned?	No
Has painting or staining been done with the last six months?	No
Has the building been recently remodeled?	No
Has the building ever had a fire?	Unknown
Is there a hobby or craft area in the building?	Yes
Are scented products (e.g. air fresheners, scented candles) regularly used inside?	No
Is there a chemical storage area at the building (e.g., solvent cleaners?	Yes
Is there a fuel oil tank on the property?	No
Is there a septic tank on the property?	No
Has the building been fumigated or sprayed for pests recently?	Unknown
Historically the building was primarily used for?	Other
Do current building occupants use solvents at another location (e.g., work, hobby)?	Painting/Finishing

Meteorological Conditions	Input
Weather:	Clear
Outdoor Temperature - High (°F):	68
Outdoor Temperature - Low (°F):	64
Indoor Temperature (°F):	68
Barometric Pressure Reading (mmHg):	1.16
Wind Direction:	SW
Average Wind Speed (mph):	3
HVAC Setting for Current Season:	Cooling

Other Comments
Building D - Preschool

Building Survey Form

Type in or select answers from drop-down lists in the righthand column. Upload answers to GeoTracker database for criteria marked with an asterisks (*). See Table 1 in the *Guidance on Uploading Vapor Intrusion Information into GeoTracker* (Attachment 4 of Supplemental Vapor Intrusion Guidance) for a description of Building Design Type input choices.

Person Conducting Survey	Input
Name:	Eric Fraske
Company:	NV5
Phone Number:	562-544-3910
Email:	eric.fraske@nv5.com
Building Contact Information	**Input**
Name:	Matt Smith
Contact Title:	Manager
Phone Number:	424-581-5428
Email:	msmith@smmusd.org
Building Occupant Interviewed?	Yes
Building Information	**Input**
Date of Building Survey (dd/mm/yy):	07/06/2013
*Building Name:	Portable Classroom Building B7
*Building Address (Street, City):	2401 Santa Monica Blvd, Santa Monica, CA
Coordinates for Center of Building (Latitude, Longitude; decimal degrees to 0.00000):	34.031872; 118.477914
*Building Location Onsite/Offsite with respect to Site/Facility:	Onsite
*Year Built (yyyy; approximate if unsure):	2005
*Building Occupants:	ensitive Use (e.g., Child Care or Medical Facilit
Building Dimensions	**Input**
*Building Footprint Area (within enclosed space; square feet [ft^2]):	1000
Building Dimensions (at grade; feet by feet):	44 x 22
*Ceiling Height of Ground Floor (feet, [ft]):	9
*Number of Floors (excluding the basement):	1
Building Design	**Input**
*Building Design Type:	School
Has the design been modified?	No
*Foundation Type:	Crawl Space
*Building Vapor Intrusion Mitigation System:	None
*Heating, Ventilation, & Air Conditioning (HVAC) System:	Heating & Cooling

Building Survey Form

HVAC System has an Air Intake?	Yes
Type of Energy Used in Building?	Electricity
Energy Primarily Used For?	Other
Number of Units for Multi-Unit Buildings:	0
Number of Rooms (average per unit for multi-unit buildings):	1
Number of Exterior Doors:	1
Number of Elevators:	0
Number of Active Exhaust Fans (e.g., kitchen/bathroom):	1
Chimney or Other Vertical Draft Source?	No
Building Slab	**Input**
Slab Thickness (inches; approximate if unsure):	6
Largest Slab Penetration > 1 Foot Diameter:	None
Soil Type (USCS) 0 to 3 Feet Below Building:	Unknown
Evidence of Moisture Intrusion from Below Slab?	No
Diferential Pressure Measurement Points?	Unknown
Building Windows and Doors	**Input**
Number of Windows and Exterior Doors:	5
Weather Sealed Windows and Exterior Doors?	Some Sealed
Average Area of Window Open to Outside Air (ft^2):	8
Ventilation (e.g., windows, doors, garage doors) Under Typical Use Conditions	Minimal Open Windows or Doors
Building Crawl Space	**Input**
Crawl Space Height (ft):	1
Number Crawl Space Vents:	18
Average Area per Crawl Space Vent (Feet2):	0.5
Evidence of moisture intrusion into Crawl Space from Soil?	N/A
Building Basement	**Input**
Basement Height (Feet):	NA
Basement Footprint Area (ft^2):	NA
Basement Wall Area Below Ground Surface (ft^2):	NA
Exposed Basement above grade?	N/A
Vents or Windows above-grade in exposed basement?	N/A
Unfinished Basement?	N/A
Evidence of moisture intrusion into Basement from Soil?	No

Building Survey Form

Factors Potentially Influencing Indoor Air Quality	Input
Is there an attached garage?	No
Is there smoking in the building?	No
Is there new carpet or furniture?	No
Have clothes or drapes been recently dry cleaned?	No
Has painting or staining been done with the last six months?	No
Has the building been recently remodeled?	No
Has the building ever had a fire?	Unknown
Is there a hobby or craft area in the building?	Yes
Are scented products (e.g. air fresheners, scented candles) regularly used inside?	No
Is there a chemical storage area at the building (e.g., solvent cleaners?	Yes
Is there a fuel oil tank on the property?	No
Is there a septic tank on the property?	No
Has the building been fumigated or sprayed for pests recently?	Unknown
Historically the building was primarily used for?	Other
Do current building occupants use solvents at another location (e.g., work, hobby)?	Painting/Finishing

Meteorological Conditions	Input
Weather:	Clear
Outdoor Temperature - High (°F):	68
Outdoor Temperature - Low (°F):	64
Indoor Temperature (°F):	68
Barometric Pressure Reading (mmHg):	1.16
Wind Direction:	SW
Average Wind Speed (mph):	3
HVAC Setting for Current Season:	Cooling

Other Comments
Portable Classroom Building B7 - Portable Classroom on Raised Foundation

Building Survey Form

Type in or select answers from drop-down lists in the righthand column. Upload answers to GeoTracker database for criteria marked with an asterisks (*). See Table 1 in the *Guidance on Uploading Vapor Intrusion Information into GeoTracker* (Attachment 4 of Supplemental Vapor Intrusion Guidance) for a description of Building Design Type input choices.

Person Conducting Survey	Input
Name:	Eric Fraske
Company:	NV5
Phone Number:	562-544-3910
Email:	eric.fraske@nv5.com
Building Contact Information	**Input**
Name:	Matt Smith
Contact Title:	Manager
Phone Number:	424-581-5428
Email:	msmith@smmusd.org
Building Occupant Interviewed?	Yes
Building Information	**Input**
Date of Building Survey (dd/mm/yy):	07/06/2013
*Building Name:	Modular Building B10
*Building Address (Street, City):	2401 Santa Monica Blvd, Santa Monica, CA
Coordinates for Center of Building (Latitude, Longitude; decimal degrees to 0.00000):	34.032375; 118.477233
*Building Location Onsite/Offsite with respect to Site/Facility:	Onsite
*Year Built (yyyy; approximate if unsure):	2002
*Building Occupants:	ensitive Use (e.g., Child Care or Medical Facilit
Building Dimensions	**Input**
*Building Footprint Area (within enclosed space; square feet [ft^2]):	2500
Building Dimensions (at grade; feet by feet):	50 x 50
*Ceiling Height of Ground Floor (feet, [ft]):	9
*Number of Floors (excluding the basement):	1
Building Design	**Input**
*Building Design Type:	School
Has the design been modified?	No
*Foundation Type:	Slab-on-Grade
*Building Vapor Intrusion Mitigation System:	None
*Heating, Ventilation, & Air Conditioning (HVAC) System:	Heating & Cooling

Building Survey Form

HVAC System has an Air Intake?	Yes
Type of Energy Used in Building?	Electricity
Energy Primarily Used For?	Other
Number of Units for Multi-Unit Buildings:	0
Number of Rooms (average per unit for multi-unit buildings):	2
Number of Exterior Doors:	2
Number of Elevators:	0
Number of Active Exhaust Fans (e.g., kitchen/bathroom):	2
Chimney or Other Vertical Draft Source?	No
Building Slab	**Input**
Slab Thickness (inches; approximate if unsure):	6
Largest Slab Penetration > 1 Foot Diameter:	None
Soil Type (USCS) 0 to 3 Feet Below Building:	Unknown
Evidence of Moisture Intrusion from Below Slab?	No
Diferential Pressure Measurement Points?	Unknown
Building Windows and Doors	**Input**
Number of Windows and Exterior Doors:	6
Weather Sealed Windows and Exterior Doors?	Some Sealed
Average Area of Window Open to Outside Air (ft^2):	8
Ventilation (e.g., windows, doors, garage doors) Under Typical Use Conditions	Most Windows and/or Doors Open
Building Crawl Space	**Input**
Crawl Space Height (ft):	1
Number Crawl Space Vents:	1
Average Area per Crawl Space Vent (Feet2):	4
Evidence of moisture intrusion into Crawl Space from Soil?	No
Building Basement	**Input**
Basement Height (Feet):	NA
Basement Footprint Area (ft^2):	NA
Basement Wall Area Below Ground Surface (ft^2):	NA
Exposed Basement above grade?	N/A
Vents or Windows above-grade in exposed basement?	N/A
Unfinished Basement?	N/A
Evidence of moisture intrusion into Basement from Soil?	No

Building Survey Form

Factors Potentially Influencing Indoor Air Quality	Input
Is there an attached garage?	No
Is there smoking in the building?	No
Is there new carpet or furniture?	No
Have clothes or drapes been recently dry cleaned?	No
Has painting or staining been done with the last six months?	No
Has the building been recently remodeled?	No
Has the building ever had a fire?	Unknown
Is there a hobby or craft area in the building?	Yes
Are scented products (e.g. air fresheners, scented candles) regularly used inside?	No
Is there a chemical storage area at the building (e.g., solvent cleaners?	Yes
Is there a fuel oil tank on the property?	No
Is there a septic tank on the property?	No
Has the building been fumigated or sprayed for pests recently?	Unknown
Historically the building was primarily used for?	Other
Do current building occupants use solvents at another location (e.g., work, hobby)?	Painting/Finishing

Meteorological Conditions	Input
Weather:	Clear
Outdoor Temperature - High (°F):	68
Outdoor Temperature - Low (°F):	64
Indoor Temperature (°F):	68
Barometric Pressure Reading (mmHg):	1.16
Wind Direction:	SW
Average Wind Speed (mph):	3
HVAC Setting for Current Season:	Cooling

Other Comments
Modular Building - Classroom B10

APPENDIX B

Air Sampling Field Logs and Photographs

NV5
ALTA ENVIRONMENTAL

Summa Canister Sampling Log		Date: 7/13/23	Page: ___1___ of ___5____
Summa Canister Size: 6 Liter		Project Name:	McKinley ES Indoor Air Sampling
NV5 Employees:	EF, NS, RB	Project Number:	SMSD-23-11646
Laboratory: Air Technology Laboratories		Client:	Santa Monica Malibu Unified School District
Total Samples Submitted:	25	Site Address:	2401 Santa Monica Blvd, Santa Monica, CA
Total Duplicates:	1		

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
OA1		N4788		2017		-30"Hg		7:36		Faculty Parking Lot
Time:	9:38	11:45	1:31	3:15						Notes
Vacuum:	-24	-17	-12	-7						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
OA2		2418		2007		-28"Hg		7:43		North Playground
Time:	9:43	11:47	1:34	3:20						Notes
Vacuum:	-22	-15	-10	-4						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
OA3		N4791		2138		-30"Hg		7:50		Southwest Lawn
Time:	9:54	11:51	1:39	3:24						Notes
Vacuum:	-23	-16	-10	-4						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
OA4		3101		2102		-30"Hg		7:55		Southeast Playground
Time:	9:57	11:53	1:40	3:27						Notes
Vacuum:	-25	-20	-16	-11						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA1		N4134		2077		-30"Hg		8:04		Building D Room 71D
Time:	10:04	11:55	1:43	3:51						Notes
Vacuum:	-24	-17	-14	-5						

NV5
ALTA ENVIRONMENTAL

Summa Canister Sampling Log		Date: 7/13/23	Page: 2 of 5
Summa Canister Size: 6 Liter		Project Name:	McKinley ES Indoor Air Sampling
NV5 Employees:	EF, NS, RB	Project Number:	SMSD-23-11646
Laboratory: Air Technology Laboratories		Client:	Santa Monica Malibu Unified School District
Total Samples Submitted:	25	Site Address:	2401 Santa Monica Blvd, Santa Monica, CA
Total Duplicates:	1		

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA2		1460		2011		-30"Hg		8:04		Building D Room 70
Time:	10:02	11:54	1:42	3:47						Notes
Vacuum:	-25	-18	-13	-6						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA3		3100		2056		-30"Hg		8:05		Building D Room 71
Time:	9:58	11:54	1:41	3:11						Notes
Vacuum:	-22	-15	-9	-5						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA3 DUP		N4755		2049		-29"Hg		8:05		Building D Room 71
Time:	9:58	11:54	1:41	3:11						Notes
Vacuum:	-23	-18	-12	-8						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA4		1340		2131		-30"Hg		8:15		Modular Building B10
Time:	9:40	1:46	1:32	3:34						Notes
Vacuum:	-25	-17	-12	-5						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA5		N4752		2086		-30"Hg		8:17		Portable Classroom B7
Time:	9:44	1:47	1:34	3:37						Notes
Vacuum:	-26	-19	-13	-6						

NV5
ALTA ENVIRONMENTAL

Summa Canister Sampling Log		Date: 7/13/23	Page: ___3___ of ___5____
Summa Canister Size: 6 Liter		Project Name:	McKinley ES Indoor Air Sampling
NV5 Employees:	EF, NS, RB	Project Number:	SMSD-23-11646
Laboratory: Air Technology Laboratories		Client:	Santa Monica Malibu Unified School District
Total Samples Submitted:	25	Site Address:	2401 Santa Monica Blvd, Santa Monica, CA
Total Duplicates:	1		

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA6		N4754		2122		-30"Hg		8:21		Portable Classroom B2
Time:	9:50	11:50	1:37	3:42						Notes
Vacuum:	-25	-19	-13	-6						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA7		5478		2108		-30"Hg		8:20		Cafeteria
Time:	9:46	11:50	1:35	3:41						Notes
Vacuum:	-25	-18	-12	-6						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA8		3143		2129		-30"Hg		8:28		Building B Basement
Time:	10:22	12:02	1:48	3:53						Notes
Vacuum:	-25	-18	-8	-5						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA9		1472		2033		-30"Hg		8:30		Building B Room 109
Time:	10:23	12:03	1:49	3:54						Notes
Vacuum:	-25	-20	-15	-10						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA10		5413		2116		-30"Hg		8:31		Building B Room 107
Time:	10:25	12:03	1:49	3:55						Notes
Vacuum:	-24	-18	-12	-5						

NV5
ALTA ENVIRONMENTAL

Summa Canister Sampling Log		Date: 7/13/23	Page: ___4___ of ___5____
Summa Canister Size: 6 Liter		Project Name:	McKinley ES Indoor Air Sampling
NV5 Employees:	EF, NS, RB	Project Number:	SMSD-23-11646
Laboratory: Air Technology Laboratories		Client:	Santa Monica Malibu Unified School District
Total Samples Submitted:	25	Site Address:	2401 Santa Monica Blvd, Santa Monica, CA
Total Duplicates:	1		

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA11		1430		2109		-30"Hg		8:33		Building B Room 207
Time:	10:27	12:05	1:51	3:57						Notes
Vacuum:	-25	-20	-15	-8						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA12		1444		2115		-30"Hg		8:38		Administration Office
Time:	9:36	11:33	1:28	4:07						Notes
Vacuum:	-28	-21	-14	-6						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA13		5472		2135		-30"Hg		8:42		Library
Time:	10:05	12:06	1:44	4:02						Notes
Vacuum:	-25	-15	-13	-5						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA14		3641		2040		-18"Hg		8:43		Building C Room 102
Time:	10:06	11:20	11:55	12:09	12:29	12:50				Notes
Vacuum:	-13	-9	-8	-7	-6	-5				

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA15		3740		2126		-29"Hg		8:45		Building C Room 105
Time:	10:08	11:56	1:45	2:33						Notes
Vacuum:	-23	-15	-8	-5						

NV5
ALTA ENVIRONMENTAL

Summa Canister Sampling Log		Date: 7/13/23	Page: ___5___ of ___5____
Summa Canister Size: 6 Liter		Project Name:	McKinley ES Indoor Air Sampling
NV5 Employees:	EF, NS, RB	Project Number:	SMSD-23-11646
Laboratory: Air Technology Laboratories		Client:	Santa Monica Malibu Unified School District
Total Samples Submitted:	25	Site Address:	2401 Santa Monica Blvd, Santa Monica, CA
Total Duplicates:	1		

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA16		5432		2036		-30"Hg		8:47		Auditorium
Time:	10:10	11:58	1:45	4:03						Notes
Vacuum:	-27	-19	-15	-8						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA17		3547		2035		-29"Hg		8:48		STEM Lab
Time:	10:12	11:59	1:46	4:05						Notes
Vacuum:	-25	-20	-15	-9						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA18		N4132		1940		-30"Hg		8:52		Building C Basement
Time:	10:15	12:00	1:55	4:12						Notes
Vacuum:	-25	-19	-12	-5						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA19		3681		2103		-29"Hg		8:54		Building C Room 202
Time:	10:16	12:09	1:56	4:14						Notes
Vacuum:	-26	-20	-15	-7						

Sample ID		Canister ID		Flow Control ID		Initial Vacuum		Initial Time		Sample Location
IA20		3621		2058		-30"Hg		9:01		Boys Restroom
Time:	10:19	12:01	1:54	4:09						Notes
Vacuum:	-28	-22	-15	-8						Building C NE Wing

Photo 1: Outdoor Air Sample Location OA1 – Parking Lot

Photo 2: Outdoor Air Sample Location OA2 – Northwestern Playground

Photo 3: Outdoor Air Sample Location OA3 – Southwestern Lawn Area

Photo 4: Outdoor Air Sample Location OA4 – Southeastern Playground

Photo 5: Indoor Air Sample Location IA1 – Building D Room 71

Photo 6: Indoor Air Sample Location IA2 – Building D Room 70

Photo 7: Indoor Air Sample Location IA3/IA3DUP – Building D Room 71

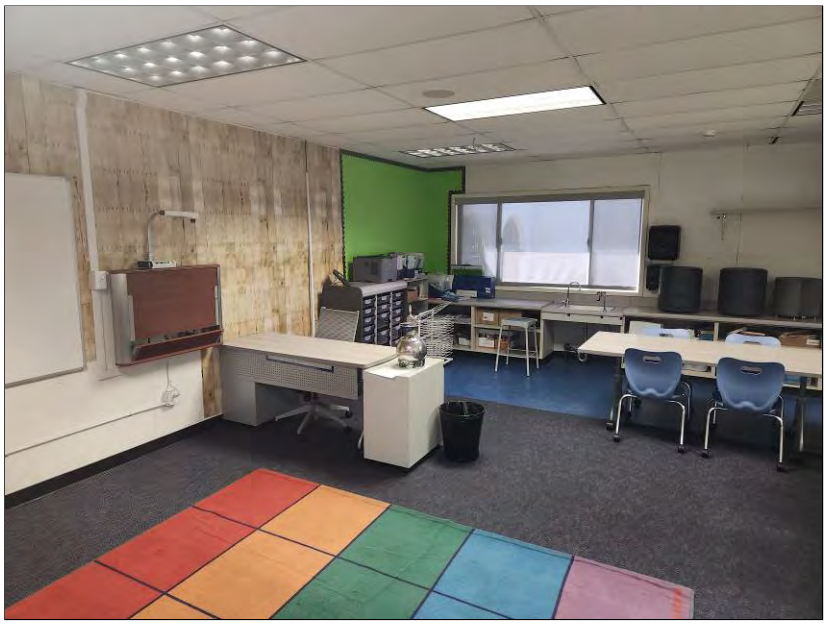


Photo 8: Indoor Air Sample Location IA4 – Modular Building Room B10

Photo 9: Indoor Air Sample Location IA5 – Portable Classroom Room B7

Photo 10: Indoor Air Sample Location IA6 – Portable Classroom Room B2

Photo 11: Indoor Air Sample Location IA7 – Building A/Cafeteria

Photo 12: Indoor Air Sample Location IA8 – Building B Basement

Photo 13: Indoor Air Sample Location IA9 – Building B Room 109

Photo 14: Indoor Air Sample Location IA10 – Building B Room 107

Photo 15: Indoor Air Sample Location IA11 – Building B Room 207

Photo 16: Indoor Air Sample Location IA12 – Administration Office

Photo 17: Indoor Air Sample Location IA13 - Library

Photo 18: Indoor Air Sample Location IA14 – Building C Room 102

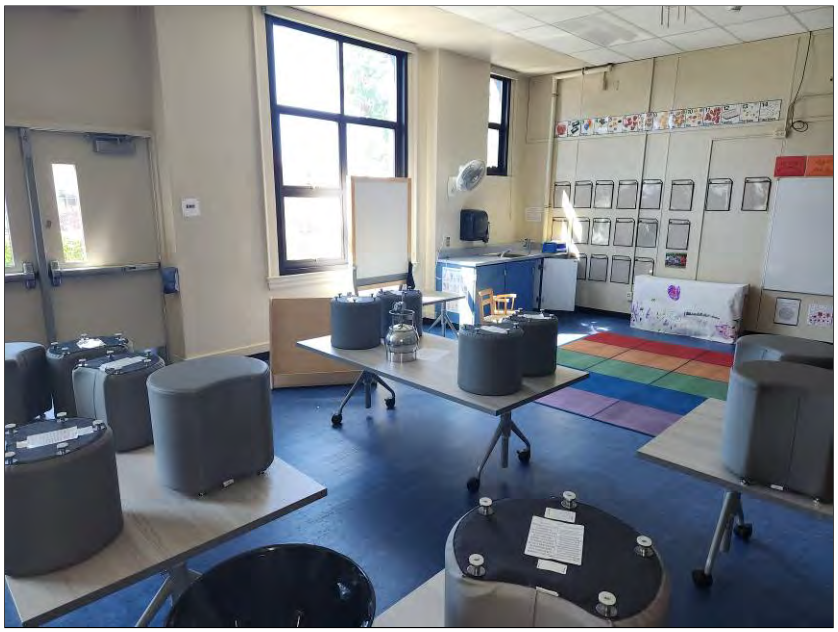


Photo 19: Indoor Air Sample Location IA15 – Building C Room 105

Photo 20: Indoor Air Sample Location IA16 - Auditorium

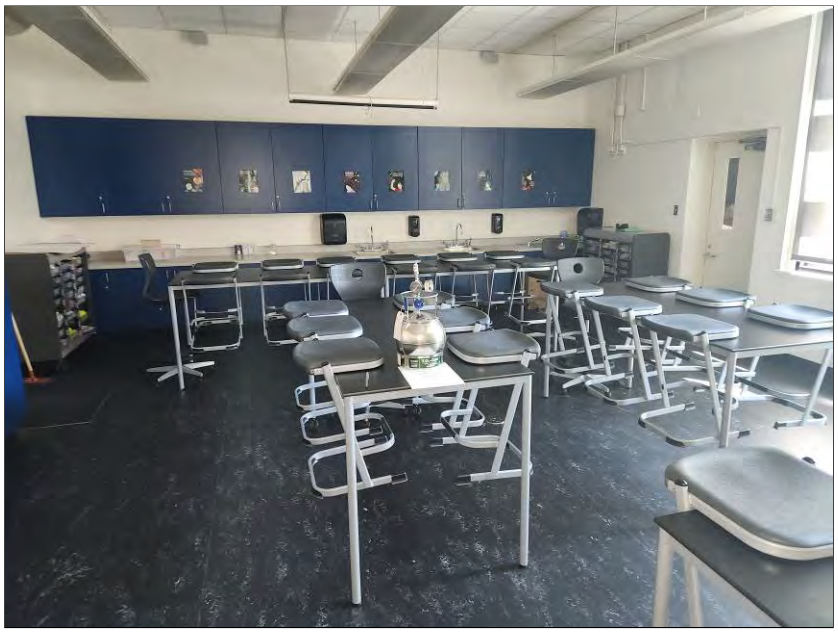


Photo 21: Indoor Air Sample Location IA17 – Computer Lab

Photo 22: Indoor Air Sample Location IA18 – Building C Basement

Photo 23: Indoor Air Sample Location IA19 – Building C Room 202

Photo 24: Indoor Air Sample Location IA20 – Building C Boys Bathroom

APPENDIX C

Laboratory Analytical Results

Air TECHNOLOGY Laboratories, Inc.

July 20, 2023

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, ASTM D1946, RSK-175
TX Cert T104704450-14-6
EPA Methods TO14A, TO15
UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

NV5
ATTN: Eric Fraske
3777 Long Beach Blvd., Annex Building
Long Beach, CA 90807

LABORATORY TEST RESULTS

Project Reference: McKinley Elementary School
Project Number: SMSD-23-11646
Lab Number: P071401-01/25

Enclosed are results for sample(s) received 7/14/23 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Modifications to EPA Method TO15 SIM – Naphthalene required quadratic regression calibration.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Eric Fraske on 7/19/23.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME
Standard ☐ 48 hours ☐
Same Day ☐ 72 hours ■
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES
EDD ■
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 1 OF 3

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	SMSD-23-11646
Project Name:	McKinley Elementary School
Report To:	Eric Fraske
Company:	NV5
Street:	3777 Long Beach Blvd, Annex Building
City/State/Zip:	Long Beach, CA 90807
Phone& Fax:	562-544-3910
e-mail:	eric.fraske@nv5.com

BILLING
P.O. No.: SMSD-23-11646
Bill to: NV5
3777 Long Beach Blvd, Annex
Long Beach, CA 90807

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME PM	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	VOCs by TO15 SIM + Napthalene					
P071401-01	OA1	7/13/2023	3:15	1 Can	Air	None	X					
-02	OA2	7/13/2023	3:20	1 Can	Air	None	X					
-03	OA3	7/13/2023	3:24	1 Can	Air	None	X					
-04	OA4	7/13/2023	3:27	1 Can	Air	None	X					
-05	IA1	7/13/2023	3:51	1 Can	Air	None	X					
-06	IA2	7/13/2023	3:47	1 Can	Air	None	X					
-07	IA3	7/13/2023	3:11	1 Can	Air	None	X					
-08	IA3DUP	7/13/2023	3:11	1 Can	Air	None	X					
-09	IA4	7/13/2023	3:34	1 Can	Air	None	X					
-10	IA5	7/13/2023	3:37	1 Can	Air	None	X					

AUTHORIZATION TO PERFORM WORK: ERIC FRASKE	COMPANY: NV5	DATE/TIME: 7/13/23	
SAMPLED BY: ERIC FRASKE, RUTA BANDZIULIS, NOAH STEVENS	COMPANY: NV5	DATE/TIME: 7/13/23 4:14PM	
RELINQUISHED BY: Noah Stevens	DATE/TIME: 18:45 07/13/23	RECEIVED BY:	DATE/TIME: 7/13/23 18:45
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME
Standard ☐ 48 hours ☐
Same Day ☐ 72 hours ■
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES
EDD ■
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 2 OF 3

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	SMSD-23-11646
Project Name:	McKinley Elementary School
Report To:	Eric Fraske
Company:	NV5
Street:	3777 Long Beach Blvd, Annex Building
City/State/Zip:	Long Beach, CA 90807
Phone& Fax:	562-544-3910
e-mail:	eric.fraske@nv5.com

BILLING
P.O. No.: SMSD-23-11646
Bill to: NV5
3777 Long Beach Blvd, Annex
Long Beach, CA 90807

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	VOCs by TO15 SIM + Napthalene					
P071401-11	IA6	7/13/2023	3:42	1 Can	Air	None	X					
-12	IA7	7/13/2023	3:41	1 Can	Air	None	X					
-13	IA8	7/13/2023	3:53	1 Can	Air	None	X					
-14	IA9	7/13/2023	3:54	1 Can	Air	None	X					
-15	IA10	7/13/2023	3:55	1 Can	Air	None	X					
-16	IA11	7/13/2023	3:57	1 Can	Air	None	X					
-17	IA12	7/13/2023	4:07	1 Can	Air	None	X					
-18	IA13	7/13/2023	4:02	1 Can	Air	None	X					
-19	IA14	7/13/2023	12:50	1 Can	Air	None	X					
-20	IA15	7/13/2023	2:33	1 Can	Air	None	X					

AUTHORIZATION TO PERFORM WORK: ERIC FRASKE	COMPANY:	DATE/TIME: 7/13/23	
SAMPLED BY: ERIC FRASKE, RUTA BANDZIULIS	COMPANY: NV5 NOAH STEVENS	DATE/TIME: 7/13/23 4:14 PM	
RELINQUISHED BY: Noah Stevens	DATE/TIME: 18:45 07/13/23	RECEIVED BY:	DATE/TIME: 7/13/23 18:45
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 3 OF 3
Standard ☐	48 hours ☐			EDD ■		Condition upon receipt:
Same Day ☐	72 hours ■			EDF ☐		Sealed Yes ☐ No ☐
24 hours ☐	96 hours ☐			Level 3 ☐		Intact Yes ☐ No ☐
Other:				Level 4 ☐		Chilled _____ deg C

		BILLING	
Project No.:	SMSD-23-11646	P.O. No.:	SMSD-23-11646
Project Name:	McKinley Elementary School	Bill to:	NV5
Report To:	Eric Fraske		3777 Long Beach Blvd, Annex
Company:	NV5		Long Beach, CA 90807
Street:	3777 Long Beach Blvd, Annex Building		
City/State/Zip:	Long Beach, CA 90807		
Phone& Fax:	562-544-3910		
e-mail:	eric.fraske@nv5.com		

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: VOCs by TO15 SIM + Napthalene
P071401-21	IA16	7/13/2023	4:03 PM	1 Can	Air	None	X
-22	IA17	7/13/2023	4:05	1 Can	Air	None	X
-23	IA18	7/13/2023	4:12	1 Can	Air	None	X
-24	IA19	7/13/2023	4:14	1 Can	Air	None	X
-25	IA20	7/13/2023	4:09	1 Can	Air	None	X

AUTHORIZATION TO PERFORM WORK: ERIC FRASICE	COMPANY: NV5	DATE/TIME: 7/13/23	
SAMPLED BY: ERIC FRASICE, KUTA BANDZIULIS, NOAH STEVENS	COMPANY: NV5	DATE/TIME: 7/13/23 4:14PM	
RELINQUISHED BY: Noah Stevens	DATE/TIME: 18:45 7/13/23	RECEIVED BY:	DATE/TIME: 7/13/23 18:45
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	P071401-01			P071401-02			P071401-03			P071401-04		
Client Sample I.D.:	OA1			OA2			OA3			OA4		
Date/Time Sampled:	7/13/23 15:15			7/13/23 15:20			7/13/23 15:24			7/13/23 15:27		
Date/Time Analyzed:	7/17/23 13:27			7/17/23 14:08			7/17/23 14:48			7/17/23 16:40		
QC Batch No.:	230717MS2A1			230717MS2A1			230717MS2A1			230717MS2A1		
Analyst Initials:	VM			VM			VM			VM		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3
Dichlorodifluoromethane (12)	2.0	0.049	0.00070	1.6	0.049	0.00070	2.1	0.049	0.00070	2.0	0.049	0.00070
Chloromethane	1.0	0.021	0.0055	0.89	0.021	0.0055	1.1	0.021	0.0055	1.1	0.021	0.0055
Vinyl Chloride	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060	0.0072 J	0.013	0.0060
Chloroethane	0.035	0.026	0.0080	0.052	0.026	0.0080	0.085	0.026	0.0080	0.088	0.026	0.0080
Trichlorofluoromethane (11)	1.0	0.056	0.0013	0.78	0.056	0.0013	1.1	0.056	0.0013	1.0	0.056	0.0013
1,1,2-Cl 1,2,2-F ethane (113)	0.44	0.077	0.0023	0.36	0.077	0.0023	0.45	0.077	0.0023	0.43	0.077	0.0023
1,1-Dichloroethene	0.0030 J	0.020	0.0025	ND	0.020	0.0025	ND	0.020	0.0025	0.0031 J	0.020	0.0025
Methylene Chloride	0.29	0.035	0.0059	0.31	0.035	0.0059	0.32	0.035	0.0059	0.30	0.035	0.0059
t-1,2-Dichloroethene	0.0039 J	0.040	0.0029	ND	0.040	0.0029	0.0040 J	0.040	0.0029	0.0038 J	0.040	0.0029
1,1-Dichloroethane	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076
c-1,2-Dichloroethene	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033
Chloroform	0.11	0.049	0.0024	0.10	0.049	0.0024	0.11	0.049	0.0024	0.10	0.049	0.0024
1,1,1-Trichloroethane	0.0065 J	0.055	0.0064	0.0074 J	0.055	0.0064	0.0076 J	0.055	0.0064	0.0088 J	0.055	0.0064
Carbon Tetrachloride	0.45	0.063	0.0018	0.44	0.063	0.0018	0.46	0.063	0.0018	0.45	0.063	0.0018
Benzene	0.26	0.16	0.016	0.32	0.16	0.016	0.34	0.16	0.016	0.33	0.16	0.016
1,2-Dichloroethane	0.050	0.040	0.0033	0.049	0.040	0.0033	0.049	0.040	0.0033	0.051	0.040	0.0033
Trichloroethene	0.070	0.027	0.0030	0.091	0.027	0.0030	0.098	0.027	0.0030	0.079	0.027	0.0030
1,2-Dichloropropane	0.016 J	0.046	0.0098	0.010 J	0.046	0.0098	0.013 J	0.046	0.0098	0.011 J	0.046	0.0098
Bromodichloromethane	ND	0.067	0.0071	ND	0.067	0.0071	ND	0.067	0.0071	ND	0.067	0.0071
Toluene	0.52	0.075	0.014	0.28	0.075	0.014	0.68	0.075	0.014	0.66	0.075	0.014
t-1,3-Dichloropropene	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059	0.0077 J	0.045	0.0059
1,1,2-Trichloroethane	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022
Tetrachloroethene	0.017 J	0.068	0.0036	0.016 J	0.068	0.0036	0.016 J	0.068	0.0036	0.019 J	0.068	0.0036
1,2-Dibromoethane	ND	0.077	0.0017	ND	0.077	0.0017	ND	0.077	0.0017	ND	0.077	0.0017
Ethylbenzene	0.12	0.087	0.013	0.19	0.087	0.013	0.15	0.087	0.013	0.14	0.087	0.013
p,&m-Xylene	0.40	0.17	0.020	0.71	0.17	0.020	0.49	0.17	0.020	0.46	0.17	0.020
o-Xylene	0.16	0.087	0.021	0.24	0.087	0.021	0.18	0.087	0.021	0.18	0.087	0.021
Styrene	0.048 J	0.085	0.021	0.054 J	0.085	0.021	0.041 J	0.085	0.021	0.16	0.085	0.021
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061
Naphthalene	0.14	0.052	0.010	0.090	0.052	0.010	0.14	0.052	0.010	1.1	0.052	0.010

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	P071401-05			P071401-06			P071401-07			P071401-08		
Client Sample I.D.:	IA1			IA2			IA3			IA3 DUP		
Date/Time Sampled:	7/13/23 15:51			7/13/23 15:47			7/13/23 15:11			7/13/23 15:11		
Date/Time Analyzed:	7/17/23 17:21			7/17/23 18:00			7/17/23 18:40			7/17/23 19:20		
QC Batch No.:	230717MS2A1			230717MS2A1			230717MS2A1			230717MS2A1		
Analyst Initials:	VM			VM			VM			VM		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3
Dichlorodifluoromethane (12)	2.1	0.049	0.00070	2.1	0.049	0.00070	2.1	0.049	0.00070	2.1	0.049	0.00070
Chloromethane	1.1	0.021	0.0055	1.3	0.021	0.0055	1.2	0.021	0.0055	1.1	0.021	0.0055
Vinyl Chloride	0.0075 J	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060
Chloroethane	0.11	0.026	0.0080	0.13	0.026	0.0080	0.11	0.026	0.0080	0.099	0.026	0.0080
Trichlorofluoromethane (11)	1.0	0.056	0.0013	1.1	0.056	0.0013	1.1	0.056	0.0013	1.0	0.056	0.0013
1,1,2-Cl 1,2,2-F ethane (113)	0.43	0.077	0.0023	0.45	0.077	0.0023	0.45	0.077	0.0023	0.44	0.077	0.0023
1,1-Dichloroethene	ND	0.020	0.0025	ND	0.020	0.0025	ND	0.020	0.0025	ND	0.020	0.0025
Methylene Chloride	0.32	0.035	0.0059	0.31	0.035	0.0059	0.31	0.035	0.0059	0.31	0.035	0.0059
t-1,2-Dichloroethene	0.0038 J	0.040	0.0029	ND	0.040	0.0029	0.0041 J	0.040	0.0029	ND	0.040	0.0029
1,1-Dichloroethane	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076
c-1,2-Dichloroethene	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033
Chloroform	0.12	0.049	0.0024	0.10	0.049	0.0024	0.11	0.049	0.0024	0.12	0.049	0.0024
1,1,1-Trichloroethane	0.0085 J	0.055	0.0064	0.0089 J	0.055	0.0064	0.0079 J	0.055	0.0064	0.0072 J	0.055	0.0064
Carbon Tetrachloride	0.45	0.063	0.0018	0.47	0.063	0.0018	0.46	0.063	0.0018	0.46	0.063	0.0018
Benzene	0.29	0.16	0.016	0.30	0.16	0.016	0.32	0.16	0.016	0.31	0.16	0.016
1,2-Dichloroethane	0.097	0.040	0.0033	0.067	0.040	0.0033	0.073	0.040	0.0033	0.073	0.040	0.0033
Trichloroethene	0.067	0.027	0.0030	0.066	0.027	0.0030	0.090	0.027	0.0030	0.087	0.027	0.0030
1,2-Dichloropropane	0.021 J	0.046	0.0098	0.011 J	0.046	0.0098	0.013 J	0.046	0.0098	0.017 J	0.046	0.0098
Bromodichloromethane	0.012 J	0.067	0.0071	0.011 J	0.067	0.0071	ND	0.067	0.0071	0.0093 J	0.067	0.0071
Toluene	1.0	0.075	0.014	0.99	0.075	0.014	1.0	0.075	0.014	0.99	0.075	0.014
t-1,3-Dichloropropene	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059
1,1,2-Trichloroethane	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022
Tetrachloroethene	0.12	0.068	0.0036	0.100	0.068	0.0036	0.15	0.068	0.0036	0.15	0.068	0.0036
1,2-Dibromoethane	0.0030 J	0.077	0.0017	0.0045 J	0.077	0.0017	ND	0.077	0.0017	ND	0.077	0.0017
Ethylbenzene	0.20	0.087	0.013	0.19	0.087	0.013	0.19	0.087	0.013	0.20	0.087	0.013
p.&m-Xylene	0.63	0.17	0.020	0.62	0.17	0.020	0.65	0.17	0.020	0.64	0.17	0.020
o-Xylene	0.30	0.087	0.021	0.28	0.087	0.021	0.30	0.087	0.021	0.30	0.087	0.021
Styrene	0.18	0.085	0.021	0.18	0.085	0.021	0.24	0.085	0.021	0.16	0.085	0.021
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061
Naphthalene	0.33	0.052	0.010	0.36	0.052	0.010	0.36	0.052	0.010	0.35	0.052	0.010

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	P071401-09			P071401-10			P071401-11			P071401-12		
Client Sample I.D.:	IA4			IA5			IA6			IA7		
Date/Time Sampled:	7/13/23 15:34			7/13/23 15:37			7/13/23 15:42			7/13/23 15:41		
Date/Time Analyzed:	7/17/23 20:00			7/17/23 20:40			7/17/23 21:19			7/17/23 22:02		
QC Batch No.:	230717MS2A1			230717MS2A1			230717MS2A1			230717MS2A1		
Analyst Initials:	VM			VM			VM			VM		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3
Dichlorodifluoromethane (12)	2.0	0.049	0.00070	1.9	0.049	0.00070	1.9	0.049	0.00070	2.0	0.049	0.00070
Chloromethane	1.2	0.021	0.0055	1.1	0.021	0.0055	1.1	0.021	0.0055	1.1	0.021	0.0055
Vinyl Chloride	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060
Chloroethane	0.050	0.026	0.0080	0.048	0.026	0.0080	0.088	0.026	0.0080	0.065	0.026	0.0080
Trichlorofluoromethane (11)	0.99	0.056	0.0013	0.96	0.056	0.0013	0.96	0.056	0.0013	0.98	0.056	0.0013
1,1,2-Cl 1,2,2-F ethane (113)	0.44	0.077	0.0023	0.43	0.077	0.0023	0.43	0.077	0.0023	0.43	0.077	0.0023
1,1-Dichloroethene	ND	0.020	0.0025	0.0025 J	0.020	0.0025	0.0029 J	0.020	0.0025	ND	0.020	0.0025
Methylene Chloride	0.42	0.035	0.0059	0.30	0.035	0.0059	0.29	0.035	0.0059	0.29	0.035	0.0059
t-1,2-Dichloroethene	0.0039 J	0.040	0.0029	0.0029 J	0.040	0.0029	0.0081 J	0.040	0.0029	ND	0.040	0.0029
1,1-Dichloroethane	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076
c-1,2-Dichloroethene	ND	0.040	0.0033	ND	0.040	0.0033	0.0039 J	0.040	0.0033	ND	0.040	0.0033
Chloroform	0.10	0.049	0.0024	0.18	0.049	0.0024	0.12	0.049	0.0024	0.11	0.049	0.0024
1,1,1-Trichloroethane	0.0069 J	0.055	0.0064	0.0070 J	0.055	0.0064	0.0093 J	0.055	0.0064	0.0074 J	0.055	0.0064
Carbon Tetrachloride	0.45	0.063	0.0018	0.44	0.063	0.0018	0.44	0.063	0.0018	0.44	0.063	0.0018
Benzene	0.23	0.16	0.016	0.28	0.16	0.016	0.56	0.16	0.016	0.29	0.16	0.016
1,2-Dichloroethane	0.048	0.040	0.0033	0.055	0.040	0.0033	0.29	0.040	0.0033	0.049	0.040	0.0033
Trichloroethene	0.030	0.027	0.0030	0.085	0.027	0.0030	0.041	0.027	0.0030	0.084	0.027	0.0030
1,2-Dichloropropane	0.014 J	0.046	0.0098	0.014 J	0.046	0.0098	0.062	0.046	0.0098	0.011 J	0.046	0.0098
Bromodichloromethane	0.0094 J	0.067	0.0071	0.10	0.067	0.0071	0.013 J	0.067	0.0071	0.014 J	0.067	0.0071
Toluene	0.69	0.075	0.014	0.74	0.075	0.014	1.6	0.075	0.014	0.59	0.075	0.014
t-1,3-Dichloropropene	ND	0.045	0.0059	ND	0.045	0.0059	0.019 J	0.045	0.0059	0.0059 J	0.045	0.0059
1,1,2-Trichloroethane	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022
Tetrachloroethene	0.018 J	0.068	0.0036	0.024 J	0.068	0.0036	0.031 J	0.068	0.0036	0.018 J	0.068	0.0036
1,2-Dibromoethane	0.0048 J	0.077	0.0017	0.0023 J	0.077	0.0017	0.016 J	0.077	0.0017	ND	0.077	0.0017
Ethylbenzene	0.23	0.087	0.013	0.30	0.087	0.013	0.25	0.087	0.013	0.17	0.087	0.013
p,&m-Xylene	0.76	0.17	0.020	0.60	0.17	0.020	0.60	0.17	0.020	0.57	0.17	0.020
o-Xylene	0.28	0.087	0.021	0.22	0.087	0.021	0.25	0.087	0.021	0.21	0.087	0.021
Styrene	0.17	0.085	0.021	0.38	0.085	0.021	0.48	0.085	0.021	0.066 J	0.085	0.021
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061
Naphthalene	0.15	0.052	0.010	0.23	0.052	0.010	0.39	0.052	0.010	0.27	0.052	0.010

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	P071401-13			P071401-14			P071401-15			P071401-16		
Client Sample I.D.:	IA8			IA9			IA10			IA11		
Date/Time Sampled:	7/13/23 15:53			7/13/23 15:54			7/13/23 15:55			7/13/23 15:57		
Date/Time Analyzed:	7/17/23 22:43			7/17/23 23:24			7/18/23 0:03			7/18/23 0:46		
QC Batch No.:	230717MS2A1			230717MS2A1			230717MS2A1			230717MS2A1		
Analyst Initials:	VM			VM			VM			VM		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3
Dichlorodifluoromethane (12)	2.0	0.049	0.00070	2.0	0.049	0.00070	2.0	0.049	0.00070	2.0	0.049	0.00070
Chloromethane	1.00	0.021	0.0055	1.2	0.021	0.0055	1.1	0.021	0.0055	1.1	0.021	0.0055
Vinyl Chloride	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060
Chloroethane	0.041	0.026	0.0080	0.052	0.026	0.0080	0.042	0.026	0.0080	0.043	0.026	0.0080
Trichlorofluoromethane (11)	1.0	0.056	0.0013	0.98	0.056	0.0013	1.00	0.056	0.0013	0.99	0.056	0.0013
1,1,2-Cl 1,2,2-F ethane (113)	0.44	0.077	0.0023	0.44	0.077	0.0023	0.45	0.077	0.0023	0.44	0.077	0.0023
1,1-Dichloroethene	ND	0.020	0.0025	ND	0.020	0.0025	0.0046 J	0.020	0.0025	0.0032 J	0.020	0.0025
Methylene Chloride	0.28	0.035	0.0059	0.34	0.035	0.0059	0.36	0.035	0.0059	0.35	0.035	0.0059
t-1,2-Dichloroethene	0.0037 J	0.040	0.0029	ND	0.040	0.0029	0.0045 J	0.040	0.0029	0.0031 J	0.040	0.0029
1,1-Dichloroethane	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076
c-1,2-Dichloroethene	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033
Chloroform	0.11	0.049	0.0024	0.18	0.049	0.0024	0.17	0.049	0.0024	0.11	0.049	0.0024
1,1,1-Trichloroethane	0.0085 J	0.055	0.0064	0.076	0.055	0.0064	0.48	0.055	0.0064	0.21	0.055	0.0064
Carbon Tetrachloride	0.46	0.063	0.0018	0.45	0.063	0.0018	0.45	0.063	0.0018	0.45	0.063	0.0018
Benzene	0.27	0.16	0.016	0.27	0.16	0.016	0.29	0.16	0.016	0.32	0.16	0.016
1,2-Dichloroethane	0.076	0.040	0.0033	0.066	0.040	0.0033	0.054	0.040	0.0033	0.050	0.040	0.0033
Trichloroethene	0.075	0.027	0.0030	0.023 J	0.027	0.0030	0.043	0.027	0.0030	0.17	0.027	0.0030
1,2-Dichloropropane	0.014 J	0.046	0.0098	0.020 J	0.046	0.0098	0.019 J	0.046	0.0098	0.014 J	0.046	0.0098
Bromodichloromethane	0.0073 J	0.067	0.0071	0.0080 J	0.067	0.0071	ND	0.067	0.0071	0.0081 J	0.067	0.0071
Toluene	0.60	0.075	0.014	2.1	0.075	0.014	1.8	0.075	0.014	0.94	0.075	0.014
t-1,3-Dichloropropene	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059
1,1,2-Trichloroethane	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022
Tetrachloroethene	0.019 J	0.068	0.0036	0.022 J	0.068	0.0036	0.020 J	0.068	0.0036	0.023 J	0.068	0.0036
1,2-Dibromoethane	ND	0.077	0.0017	ND	0.077	0.0017	0.0050 J	0.077	0.0017	ND	0.077	0.0017
Ethylbenzene	0.16	0.087	0.013	0.26	0.087	0.013	0.32	0.087	0.013	0.19	0.087	0.013
p,&m-Xylene	0.53	0.17	0.020	0.78	0.17	0.020	1.0	0.17	0.020	0.62	0.17	0.020
o-Xylene	0.23	0.087	0.021	0.31	0.087	0.021	0.38	0.087	0.021	0.22	0.087	0.021
Styrene	0.23	0.085	0.021	0.37	0.085	0.021	0.30	0.085	0.021	0.16	0.085	0.021
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061
Naphthalene	0.19	0.052	0.010	0.53	0.052	0.010	0.37	0.052	0.010	0.24	0.052	0.010

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Annika Stuhlsatz
Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	P071401-17			P071401-18			P071401-19			P071401-20		
Client Sample I.D.:	IA12			IA13			IA14			IA15		
Date/Time Sampled:	7/13/23 16:07			7/13/23 16:02			7/13/23 12:50			7/13/23 14:33		
Date/Time Analyzed:	7/18/23 1:26			7/18/23 2:08			7/18/23 2:50			7/18/23 3:29		
QC Batch No.:	230717MS2A1			230717MS2A1			230717MS2A1			230717MS2A1		
Analyst Initials:	VM			VM			VM			VM		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3
Dichlorodifluoromethane (12)	2.0	0.049	0.00070	1.9	0.049	0.00070	2.0	0.049	0.00070	2.0	0.049	0.00070
Chloromethane	1.1	0.021	0.0055	1.0	0.021	0.0055	1.0	0.021	0.0055	1.1	0.021	0.0055
Vinyl Chloride	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060
Chloroethane	0.10	0.026	0.0080	0.067	0.026	0.0080	0.052	0.026	0.0080	0.074	0.026	0.0080
Trichlorofluoromethane (11)	0.99	0.056	0.0013	0.97	0.056	0.0013	0.99	0.056	0.0013	1.0	0.056	0.0013
1,1,2-Cl 1,2,2-F ethane (113)	0.44	0.077	0.0023	0.43	0.077	0.0023	0.43	0.077	0.0023	0.44	0.077	0.0023
1,1-Dichloroethene	0.0029 J	0.020	0.0025	ND	0.020	0.0025	ND	0.020	0.0025	ND	0.020	0.0025
Methylene Chloride	0.32	0.035	0.0059	0.28	0.035	0.0059	0.33	0.035	0.0059	0.31	0.035	0.0059
t-1,2-Dichloroethene	ND	0.040	0.0029	0.0036 J	0.040	0.0029	0.0056 J	0.040	0.0029	0.0041 J	0.040	0.0029
1,1-Dichloroethane	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076
c-1,2-Dichloroethene	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033
Chloroform	0.12	0.049	0.0024	0.11	0.049	0.0024	0.15	0.049	0.0024	0.14	0.049	0.0024
1,1,1-Trichloroethane	0.025 J	0.055	0.0064	0.0075 J	0.055	0.0064	0.064	0.055	0.0064	0.067	0.055	0.0064
Carbon Tetrachloride	0.45	0.063	0.0018	0.44	0.063	0.0018	0.44	0.063	0.0018	0.45	0.063	0.0018
Benzene	0.29	0.16	0.016	0.30	0.16	0.016	1.2	0.16	0.016	0.33	0.16	0.016
1,2-Dichloroethane	0.078	0.040	0.0033	0.047	0.040	0.0033	0.067	0.040	0.0033	0.064	0.040	0.0033
Trichloroethene	0.078	0.027	0.0030	0.059	0.027	0.0030	0.071	0.027	0.0030	0.090	0.027	0.0030
1,2-Dichloropropane	0.016 J	0.046	0.0098	ND	0.046	0.0098	0.018 J	0.046	0.0098	0.038 J	0.046	0.0098
Bromodichloromethane	ND	0.067	0.0071	0.0094 J	0.067	0.0071	0.015 J	0.067	0.0071	ND	0.067	0.0071
Toluene	0.86	0.075	0.014	0.70	0.075	0.014	3.0	0.075	0.014	0.91	0.075	0.014
t-1,3-Dichloropropene	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059
1,1,2-Trichloroethane	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022
Tetrachloroethene	0.028 J	0.068	0.0036	0.055 J	0.068	0.0036	0.035 J	0.068	0.0036	0.034 J	0.068	0.0036
1,2-Dibromoethane	0.0046 J	0.077	0.0017	ND	0.077	0.0017	ND	0.077	0.0017	ND	0.077	0.0017
Ethylbenzene	0.21	0.087	0.013	0.14	0.087	0.013	0.35	0.087	0.013	0.33	0.087	0.013
p.&m-Xylene	0.55	0.17	0.020	0.44	0.17	0.020	1.1	0.17	0.020	1.0	0.17	0.020
o-Xylene	0.21	0.087	0.021	0.16	0.087	0.021	0.38	0.087	0.021	0.37	0.087	0.021
Styrene	0.16	0.085	0.021	0.20	0.085	0.021	0.26	0.085	0.021	0.16	0.085	0.021
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061
Naphthalene	0.17	0.052	0.010	0.24	0.052	0.010	0.28	0.052	0.010	0.21	0.052	0.010

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Annika Sotelo
Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	P071401-21			P071401-22			P071401-23			P071401-24		
Client Sample I.D.:	IA16			IA17			IA18			IA19		
Date/Time Sampled:	7/13/23 16:03			7/13/23 16:05			7/13/23 16:12			7/13/23 16:14		
Date/Time Analyzed:	7/18/23 16:17			7/18/23 16:58			7/18/23 17:50			7/18/23 18:31		
QC Batch No.:	230718MS2A1			230718MS2A1			230718MS2A1			230718MS2A1		
Analyst Initials:	VM			VM			VM			VM		
Dilution Factor:	1.0			1.0			1.0			1.0		
ANALYTE	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3	Result ug/m3	RL ug/m3	MDL ug/m3
Dichlorodifluoromethane (12)	2.0	0.049	0.00070	2.0	0.049	0.00070	2.0	0.049	0.00070	2.0	0.049	0.00070
Chloromethane	1.1	0.021	0.0055	1.1	0.021	0.0055	1.0	0.021	0.0055	1.2	0.021	0.0055
Vinyl Chloride	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060	ND	0.013	0.0060
Chloroethane	0.063	0.026	0.0080	0.068	0.026	0.0080	0.059	0.026	0.0080	0.078	0.026	0.0080
Trichlorofluoromethane (11)	1.00	0.056	0.0013	1.0	0.056	0.0013	1.0	0.056	0.0013	0.98	0.056	0.0013
1,1,2-Cl 1,2,2-F ethane (113)	0.44	0.077	0.0023	0.44	0.077	0.0023	0.44	0.077	0.0023	0.43	0.077	0.0023
1,1-Dichloroethene	ND	0.020	0.0025	ND	0.020	0.0025	ND	0.020	0.0025	ND	0.020	0.0025
Methylene Chloride	0.28	0.035	0.0059	0.30	0.035	0.0059	0.29	0.035	0.0059	0.31	0.035	0.0059
t-1,2-Dichloroethene	0.0047 J	0.040	0.0029	ND	0.040	0.0029	ND	0.040	0.0029	0.0029 J	0.040	0.0029
1,1-Dichloroethane	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076	ND	0.040	0.0076
c-1,2-Dichloroethene	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033	ND	0.040	0.0033
Chloroform	0.10	0.049	0.0024	0.21	0.049	0.0024	0.12	0.049	0.0024	0.11	0.049	0.0024
1,1,1-Trichloroethane	0.022 J	0.055	0.0064	0.015 J	0.055	0.0064	0.0075 J	0.055	0.0064	0.057	0.055	0.0064
Carbon Tetrachloride	0.45	0.063	0.0018	0.44	0.063	0.0018	0.45	0.063	0.0018	0.45	0.063	0.0018
Benzene	0.29	0.16	0.016	0.29	0.16	0.016	0.28	0.16	0.016	0.31	0.16	0.016
1,2-Dichloroethane	0.046	0.040	0.0033	0.063	0.040	0.0033	0.065	0.040	0.0033	0.055	0.040	0.0033
Trichloroethene	0.069	0.027	0.0030	0.059	0.027	0.0030	0.048	0.027	0.0030	0.095	0.027	0.0030
1,2-Dichloropropane	0.015 J	0.046	0.0098	0.021 J	0.046	0.0098	0.013 J	0.046	0.0098	0.012 J	0.046	0.0098
Bromodichloromethane	0.011 J	0.067	0.0071	ND	0.067	0.0071	0.011 J	0.067	0.0071	0.023 J	0.067	0.0071
Toluene	0.60	0.075	0.014	0.87	0.075	0.014	1.5	0.075	0.014	0.79	0.075	0.014
t-1,3-Dichloropropene	ND	0.045	0.0059	ND	0.045	0.0059	ND	0.045	0.0059	0.077	0.045	0.0059
1,1,2-Trichloroethane	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022	ND	0.055	0.0022
Tetrachloroethene	0.017 J	0.068	0.0036	0.019 J	0.068	0.0036	0.018 J	0.068	0.0036	0.021 J	0.068	0.0036
1,2-Dibromoethane	ND	0.077	0.0017	ND	0.077	0.0017	0.0020 J	0.077	0.0017	ND	0.077	0.0017
Ethylbenzene	0.14	0.087	0.013	2.0	0.087	0.013	0.24	0.087	0.013	0.21	0.087	0.013
p,&m-Xylene	0.44	0.17	0.020	7.7	0.17	0.020	0.83	0.17	0.020	0.58	0.17	0.020
o-Xylene	0.16	0.087	0.021	1.9	0.087	0.021	0.26	0.087	0.021	0.25	0.087	0.021
Styrene	0.098	0.085	0.021	0.44	0.085	0.021	0.21	0.085	0.021	0.31	0.085	0.021
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061	ND	0.069	0.0061
Naphthalene	0.24	0.052	0.010	0.20	0.052	0.010	0.16	0.052	0.010	0.22	0.052	0.010

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Annika Sotto-Santiago
Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	P071401-25
Client Sample I.D.:	IA20
Date/Time Sampled:	7/13/23 16:09
Date/Time Analyzed:	7/18/23 19:11
QC Batch No.:	230718MS2A1
Analyst Initials:	VM
Dilution Factor:	1.0

ANALYTE	Result ug/m3	RL ug/m3	MDL ug/m3
Dichlorodifluoromethane (12)	2.0	0.049	0.00070
Chloromethane	1.1	0.021	0.0055
Vinyl Chloride	ND	0.013	0.0060
Chloroethane	ND	0.026	0.0080
Trichlorofluoromethane (11)	1.0	0.056	0.0013
1,1,2-Cl 1,2,2-F ethane (113)	0.44	0.077	0.0023
1,1-Dichloroethene	ND	0.020	0.0025
Methylene Chloride	0.28	0.035	0.0059
t-1,2-Dichloroethene	ND	0.040	0.0029
1,1-Dichloroethane	ND	0.040	0.0076
c-1,2-Dichloroethene	ND	0.040	0.0033
Chloroform	0.095	0.049	0.0024
1,1,1-Trichloroethane	0.0066 J	0.055	0.0064
Carbon Tetrachloride	0.45	0.063	0.0018
Benzene	0.26	0.16	0.016
1,2-Dichloroethane	0.044	0.040	0.0033
Trichloroethene	0.047	0.027	0.0030
1,2-Dichloropropane	ND	0.046	0.0098
Bromodichloromethane	0.0099 J	0.067	0.0071
Toluene	0.50	0.075	0.014
t-1,3-Dichloropropene	ND	0.045	0.0059
1,1,2-Trichloroethane	ND	0.055	0.0022
Tetrachloroethene	0.028 J	0.068	0.0036
1,2-Dibromoethane	ND	0.077	0.0017
Ethylbenzene	0.12	0.087	0.013
p,&m-Xylene	0.39	0.17	0.020
o-Xylene	0.16	0.087	0.021
Styrene	0.054 J	0.085	0.021
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061
Naphthalene	0.12	0.052	0.010

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Annika Sottosanto
Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

Client: NV5
Attn: Eric Fraske
Project Name: McKinley Elementary School
Project No.: SMSD-23-11646
Date Received: 07/13/23
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM

Lab No.:	METHOD BLANK			METHOD BLANK								
Client Sample I.D.:	--			--								
Date/Time Sampled:	--			--								
Date/Time Analyzed:	7/17/23 12:45			7/18/23 11:39								
QC Batch No.:	230717MS2A1			230718MS2A1								
Analyst Initials:	VM			VM								
Dilution Factor:	1.0			1.0								
ANALYTE	**Result ug/m3**	**RL ug/m3**	**MDL ug/m3**	**Result ug/m3**	**RL ug/m3**	**MDL ug/m3**						
Dichlorodifluoromethane (12)	0.0079 J	0.049	0.00070	0.0077 J	0.049	0.00070						
Chloromethane	0.016 J	0.021	0.0055	0.017 J	0.021	0.0055						
Vinyl Chloride	ND	0.013	0.0060	ND	0.013	0.0060						
Chloroethane	ND	0.026	0.0080	ND	0.026	0.0080						
Trichlorofluoromethane (11)	0.0047 J	0.056	0.0013	0.0045 J	0.056	0.0013						
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.077	0.0023	ND	0.077	0.0023						
1,1-Dichloroethene	ND	0.020	0.0025	ND	0.020	0.0025						
Methylene Chloride	0.018 J	0.035	0.0059	0.016 J	0.035	0.0059						
t-1,2-Dichloroethene	ND	0.040	0.0029	ND	0.040	0.0029						
1,1-Dichloroethane	ND	0.040	0.0076	ND	0.040	0.0076						
c-1,2-Dichloroethene	ND	0.040	0.0033	ND	0.040	0.0033						
Chloroform	ND	0.049	0.0024	ND	0.049	0.0024						
1,1,1-Trichloroethane	ND	0.055	0.0064	ND	0.055	0.0064						
Carbon Tetrachloride	ND	0.063	0.0018	ND	0.063	0.0018						
Benzene	0.028 J	0.16	0.016	0.029 J	0.16	0.016						
1,2-Dichloroethane	ND	0.040	0.0033	ND	0.040	0.0033						
Trichloroethene	ND	0.027	0.0030	ND	0.027	0.0030						
1,2-Dichloropropane	ND	0.046	0.0098	ND	0.046	0.0098						
Bromodichloromethane	ND	0.067	0.0071	ND	0.067	0.0071						
Toluene	0.014 J	0.075	0.014	0.014 J	0.075	0.014						
t-1,3-Dichloropropene	ND	0.045	0.0059	ND	0.045	0.0059						
1,1,2-Trichloroethane	ND	0.055	0.0022	ND	0.055	0.0022						
Tetrachloroethene	ND	0.068	0.0036	ND	0.068	0.0036						
1,2-Dibromoethane	ND	0.077	0.0017	ND	0.077	0.0017						
Ethylbenzene	ND	0.087	0.013	ND	0.087	0.013						
p,&m-Xylene	ND	0.17	0.020	ND	0.17	0.020						
o-Xylene	ND	0.087	0.021	ND	0.087	0.021						
Styrene	ND	0.085	0.021	ND	0.085	0.021						
1,1,2,2-Tetrachloroethane	ND	0.069	0.0061	ND	0.069	0.0061						
Naphthalene	0.011 J	0.052	0.010	0.012 J	0.052	0.010						

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Annika Sotelo-Singh
Operations Manager

Date 07-19-23

The cover letter is an integral part of this analytical report

QC Batch No: 230717MS2A1
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK				LCS		LCSD					
Date/Time Analyzed:	7/17/23 12:45				7/17/23 10:51		7/17/23 11:28					
Analyst Initials:	VM				VM		VM					
Dilution Factor:	1.0				1.0		1.0					
ANALYTE	**Result ug/m3**	**RL ug/m3**	**MDL ug/m3**	**SPIKE AMT. ug/m3**	**Result ug/m3**	**% Rec.**	**Result ug/m3**	**% Rec.**	**RPD**	**Low %Rec**	**High %Rec**	**Max. RPD**
Vinyl Chloride	ND	0.013	0.0021	1.28	1.39	109	1.41	110	1.2	70	130	30
1,1-Dichloroethene	ND	0.020	0.0024	1.98	1.92	97	1.91	96	0.7	70	130	30
1,1,1-Trichloroethane	ND	0.055	0.0053	2.73	3.07	112	3.05	112	0.6	70	130	30
Benzene	0.028 J	0.16	0.0083	1.60	1.44	90	1.44	90	0.3	70	130	30
Trichloroethene	ND	0.054	0.0026	2.69	2.59	97	2.54	94	2.3	70	130	30
Tetrachloroethene	ND	0.068	0.013	3.39	3.01	89	3.03	89	0.8	70	130	30

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Annika Sotto-Shay Date: 07-19-23

The cover letter is an integral part of this analytical report

QC Batch No: 230718MS2A1
Matrix: Air
Reporting Units: ug/m3

EPA Method TO15 SIM
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK				LCS		LCSD					
Date/Time Analyzed:	7/18/23 11:39				7/18/23 5:15		7/18/23 5:51					
Analyst Initials:	VM				VM		VM					
Dilution Factor:	1.0				1.0		1.0					
ANALYTE	**Result ug/m3**	**RL ug/m3**	**MDL ug/m3**	**SPIKE AMT. ug/m3**	**Result ug/m3**	**% Rec.**	**Result ug/m3**	**% Rec.**	**RPD**	**Low %Rec**	**High %Rec**	**Max. RPD**
Vinyl Chloride	ND	0.013	0.0021	1.28	1.34	105	1.34	105	0.3	70	130	30
1,1-Dichloroethene	ND	0.020	0.0024	1.98	1.89	95	1.91	96	1.3	70	130	30
1,1,1-Trichloroethane	ND	0.055	0.0053	2.73	2.88	106	2.92	107	1.3	70	130	30
Benzene	0.029 J	0.16	0.0083	1.60	1.43	90	1.45	91	1.1	70	130	30
Trichloroethene	ND	0.054	0.0026	2.69	2.56	95	2.56	95	0.2	70	130	30
Tetrachloroethene	ND	0.068	0.013	3.39	3.07	90	3.10	91	1.0	70	130	30

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL

Reviewed/Approved By: Annika Sotto-Shay Date: 07-19-23

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

APPENDIX D

Indoor Air Quality Assessment

Technical Memorandum

ENVIRO-TOX services, inc.

Date: August 3, 2023

To: Mr. Eric Fraske
Senior Engineer III
NV5
3777 Long Beach Boulevard, Annex Building
Long Beach, California 90807

Subject: ***Indoor Air Quality Assessment***
McKinley Elementary School
Santa Monica, California

At the request of NV5, Enviro-Tox Services Inc. (Enviro-Tox) conducted an Indoor Air Quality Assessment for the McKinley Elementary School located at 2401 Santa Monica Boulevard in Santa Monica, California (the Site).

Background

An environmental investigation conducted at the Site by NV5 (2023) revealed the presence of volatile organic compounds (VOCs) in soil gas under the school site. The most likely source of the VOCs identified in soil gas appears to be an unknown off-site source located to the northeast of the Site. The soil gas analytical data collected by NV5 (2023) are summarized in Table 1.

Following the discovery of VOCs in soil gas, Enviro-Tox (2023) conducted a Vapor Intrusion Risk Evaluation (VIRE) for the Site. Vapor intrusion occurs when VOCs from contaminated soil gas migrate upwards toward the ground surface and into overlying buildings through gaps and cracks in foundation slabs. The objective of the VIRE was to assess whether the presence of VOCs detected in soil gas under the Site could pose a potential health risk or hazard to onsite receptors. Screening-level emission estimation methods were used to predict potential indoor and outdoor air chemical concentrations that may result from the flux of chemical vapors potentially released from soil gas sources detected under the Site. The estimated flux and indoor or outdoor air concentrations were then used to evaluate potential health risks that may result from exposures that could occur at the Site. Results of the VIRE indicated that the concentrations of benzene, ethylbenzene, naphthalene, tetrachloroethene (PCE), and trichloroethene (TCE) exceeded screening risk levels considered acceptable by federal and/or state regulatory agencies and therefore could pose a health risk to onsite receptors if, in fact, vapor intrusion is occurring at the Site.

In an effort to assess whether VOCs could be impacting indoor air, the Santa Monica Unified School District (SMUSD) requested the collection and analysis of indoor and outdoor air samples. In response to SMUSD's request, NV5 collected indoor and outdoor air samples at the Site on July 13, 2023. Indoor and outdoor air quality analytical results are presented in Table 2.

It is not surprising to find VOCs in indoor and outdoor air in urban environments (Cal-EPA, 2023). Indoor air contamination resulting from consumer products, chemical usage, building materials, and outdoor sources are commonly referred to as "background" when assessing the potential for intrusion

of subsurface contaminant vapors into the indoor air of overlying buildings. Any indoor air sample collected for site-specific assessment of subsurface vapor intrusion is likely to detect chemicals from these other sources. In many cases, the compounds detected in indoor air may be the same as those present in soil gas that may enter the building through subsurface vapor intrusion. The presence of indoor and outdoor sources of VOCs can often make it challenging to assess the contribution of vapor intrusion to indoor air concentrations because it is often difficult to distinguish background from subsurface contaminant contributions.

The primary objective of this indoor air quality assessment is to determine whether subsurface VOCs are entering the indoor environment. According to the new Cal-EPA (2023) vapor intrusion guidance, indoor air sampling results should be interpreted considering multiple Lines of Evidence (LOEs). At a minimum, the vapor intrusion investigation should consider the following four LOEs related to soil gas and indoor air analytical results:

1. Selection of Chemicals of Potential Concern
2. Comparison of Constituent Ratios
3. Attenuation Factor Comparison
4. Comparison of Indoor and Outdoor Air Quality Results

The sections below describe the process followed to evaluate whether vapor intrusion is occurring at the Site, by assessing VOCs that could be attributed to indoor sources (such as vapor intrusion) from those attributed to "background" sources.

Vapor Intrusion Evaluation Using Multiple Lines of Evidence

Selection of Chemicals of Potential Concern

The Cal-EPA (2023) guidance specifically states that only the VOCs detected in soil gas should be considered to be chemicals of potential concern (COPCs) when evaluating vapor intrusion. The "risk drivers" identified in soil gas at the Site include benzene, ethylbenzene, naphthalene, PCE and TCE (Enviro-Tox, 2023). Following Cal-EPA (2023) guidance, only the five "risk drivers" are used as indicator chemicals to assess the potential vapor intrusion into onsite buildings.

Comparison of Constituent Ratios

Evaluating the ratio between concentrations of different chemicals in soil gas and indoor air may help to confirm that indoor air impacts are due to vapor intrusion. The relative ratios of VOC concentrations for many indoor and outdoor sources will be distinct from subsurface-derived VOC ratios. If the ratios of constituents in the indoor air are similar to the ratios observed in soil gas, it can be concluded that the two are linked and that confounding sources are not likely present (Cal-EPA, 2023).

The soil gas concentrations for the five "risk drivers" detected in soil gas are summarized in Table 3. The indoor air concentrations for the chlorinated "risk drivers" are presented in Table 4. The indoor air concentrations for the petroleum-derived "risk drivers" are presented in Table 5. For the chlorinated "risk drivers," PCE made up 100% of the chlorinated VOCs detected in soil gas (Table 3). However, in indoor air, PCE is only 35% of the PCE and TCE combination (Table 4). For petroleum-

derived "risk drivers," on average, the relative composition in soil gas was 62% ethylbenzene, 22% benzene, and 16% naphthalene (Table 3). However, in indoor air, the relative composition of the three VOCs was essentially distributed evenly, with 30% for each (Table 5). Since the data indicate that the chemical ratios observed in soil gas and indoor air are different, it can be concluded that there is likely no link between VOCs in soil gas and those found in indoor air.

Attenuation Factor Comparison

Vapor intrusion typically is driven by advection (Cal-EPA, 2023). Therefore, VOCs move at approximately the same rate from beneath the building into indoor air. Under these conditions, chemical-specific attenuation factors derived from indoor air and subsurface sampling data should be similar among the soil gas VOCs. If a chemical has a much larger attenuation factor than the other VOCs, it may indicate the presence of "background" sources of contamination.

Attenuation factors are estimated using the following equation:

$$AF = \frac{C_{indoor}}{C_{soil\ gas}}$$

Where:

AF	=	Attenuation factor (unitless)
C_{indoor}	=	Indoor air concentration (micrograms per cubic meter [ug/m^3])
$C_{soil\ gas}$	=	Soil gas concentration (ug/m^3)

The chemical-specific attenuation factors estimated for the Site are presented in Table 6. The estimated AFs range from 0.25 for ethylbenzene to 0.000098 for TCE (Table 6). Since the data indicate that the chemical-specific AFs are not similar for the "risk drivers," it can be concluded that there is likely no link between VOCs in soil gas and those found in indoor air.

Comparison of Indoor and Outdoor Air Quality Results

Outdoor air sampling results are used to evaluate whether detections in indoor air samples could be the result of VOCs present in ambient air. In general, vapor intrusion is not identified as the likely source of a chemical in indoor air unless indoor air VOC concentrations are greater than those found in outdoor ambient air samples (Cal-EPA, 2023).

The comparison of Indoor and Outdoor Air Quality Results was conducted using the Wilcoxon-Mann-Whitney statistical test (WMW; Singh and Maichele, 2015). The WMW test is a nonparametric test used for determining whether a difference exists between the Site and the background population distributions. The WMW test is used to assess whether or not measurements from one population consistently tend to be larger (or smaller) than those from the other population based upon the assumption that the dispersion of the two distributions are roughly the same. This test determines which distribution is higher by comparing the relative ranks of the two data sets when the data from both sources are sorted into a single list. It is assumed that any difference between the background and Site concentration distributions is due to a shift in location (mean, median) of the Site concentrations to higher values (due to the presence of contamination in addition to the background).

The WMW test was conducted using the ProUCL 5.00.02 software (Singh and Maichele, 2015). The methodologies employed follow United States Environmental Protection Agency (USEPA) and Cal-EPA risk assessment guidance.

The null (H0) and alternate hypothesis (HA) test results were presented as follows:

H0: the mean chemical concentration for the Site is less than or equal to the mean concentration in the background population.

HA: the mean chemical concentration for the Site is greater than the mean concentration in the background population.

Copies of ProUCL printouts for all chemicals tested are included in Attachment A.

Based on the results of the WMW test, a chemical having an indoor air concentration statistically higher ($p < 0.05$) than its outdoor concentration was considered to be due to a chemical release into the building's interior. All VOCs detected in indoor air were found to be at concentrations equal to or lower (i.e., not statistically significantly different) than the concentration of the same chemical reported for outdoor air (Attachment A).

Results and Conclusions

The chemicals detected in soil gas, indoor air, and outdoor air at the Site are known to be widely used as fuel components and solvents in many consumer and domestic products. Thus, it is possible that these chemicals were released to indoor air from the use of consumer products, fuels, lubricants, sealers, solvents and cleaning articles, and/or construction materials.

The objective of the indoor air sampling was to determine if vapor intrusion is occurring at the school site. According to Cal-EPA (2023) guidance, if vapor intrusion is occurring, we would expect that (1) the relative ratios of VOC concentrations in soil gas and indoor air would be similar, indicating a link between soil gas and indoor air; (2) chemical-specific attenuation factors derived from indoor air and subsurface sampling data would be similar, and (3) subsurface-derived VOCs would be found in indoor air at concentrations higher than outdoor air concentrations.

Comparison of the ratios of VOC concentrations in soil gas to indoor air shows that the relative ratios of "risk driver" chemicals in soil gas are different from those of indoor air. Therefore, there is no evidence of a link between VOCs in soil gas and those found in indoor air.

The chemical-specific attenuation factors estimated for "risk driver" chemicals at the Site range from 0.25 for ethylbenzene to 0.000098 for TCE (Table 6). Since the data indicate that the chemical-specific AFs are not similar, there is no evidence of a link between VOCs in soil gas and those found in indoor air.

In an effort to determine if there is a significant difference in the indoor and outdoor VOC concentrations, Enviro-Tox conducted a statistical comparison of indoor and outdoor VOC concentrations. According to the statistical analyses, there is no significant difference between the indoor and outdoor air quality data for the five "risk drivers." These results indicate that vapor

intrusion is either not occurring at the school site or, if occurring, it is occurring at a very slow rate and at a rate that does not affect the indoor air quality.

Based on this evaluation it can be concluded that VOCs detected in indoor air at the school site likely originated from "background" sources such as consumer products, construction materials and outdoor air. It can also be concluded that, while some VOCs detected in soil gas may also contribute to VOCs detected in indoor air, the contribution from soil gas is likely minimal and insignificant when compared to the contribution made by "background" sources.

Limitations

The conclusions and recommendations presented in this report are professional opinions based solely upon the data described in this report. They are intended exclusively for the purpose outlined herein and the property's location and project indicated. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of users other than NV5. Any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

Given that the scope of services for this investigation was limited, and that conditions may vary between the points explored, it is possible that currently unrecognized subsurface contamination might be present at the subject property. Should site use or conditions change, the information and conclusions in this report may no longer apply. Opinions relating to environmental and public health conditions are based on limited data and actual conditions may vary from those encountered at the times and locations where data were obtained. No express or implied representation or warranty is included or intended in this report except that the work was performed within the limits prescribed by the Client with the customary thoroughness and competence of professionals working in the same area on similar projects.

References

California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC). 2023. Supplemental Guidance: Screening and Evaluating Vapor Intrusion. Final Draft. February.

Enviro-Tox Services, Inc. 2023. Vapor Intrusion Risk Evaluation, McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, California. July 10.

NV5. 2023. Soil Vapor Investigation Report – McKinley Elementary School, 2401 Santa Monica Boulevard, Santa Monica, CA 90404.

Singh, A. and R. Maichle. 2015. "ProUCL Version 5.1, User Guide. Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations" Prepared for U.S. Environmental Protection Agency, Office of Research and Development. EPA/600/R-07/041.

Attachments

Table 1. Soil Vapor Sample Laboratory Analysis Summary

Table 2. Indoor Air and Outdoor Air Sampling Laboratory Analysis Summary

Table 3. Chemical Composition Ratios for "Risk Drivers" Detected in Soil Gas

Table 4. Chemical Composition Ratios for Chlorinated "Risk Drivers" Detected in Indoor Air

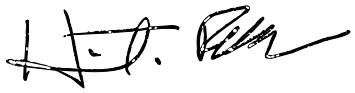
Table 5. Chemical Composition Ratios for Petroleum-Derived "Risk Drivers" Detected in Indoor Air

Table 6. Chemical-Specific Attenuation Factors for "Risk Drivers"

Attachment A – ProUCL Printout

This memorandum was prepared by:

Enviro-Tox Services, Inc.



Heriberto Robles, Ph. D., D.A.B.T.
Principal Toxicologist

TABLES

Table 1

Soil Vapor Sample Laboratory Analysis Summary

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Sample ID	Sample Depth (Feet Below Ground Surface)	Sample Date	VOCS EPA Method 8260 Results in ug/m^3																	
			1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	4-Isopropyltoluene	Benzene	Ethylbenzene	Freon 12	Isopropyl benzene	m,p-Xylene	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	Tetrachloroethene	Toluene	Trichloroethene
SV4-5V	5	6/10/2023	226	96	232	25	111	ND (<12)	27	461	ND (<8)	ND (<5)	ND (<4)	66	103	ND (<4)	ND (<6)	489	290	ND (<8)
SV4-15V	15	6/10/2023	ND (<6)	ND (<6)	ND (<5)	ND (<3)	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	701	ND (<5)	ND (<8)
SV5-5V	5	6/10/2023	24	22	397	13	38	16J	ND (<7)	78	ND (<8)	8J	ND (<4)	ND (<5)	38	9J	ND (<6)	84	102	ND (<8)
SV5-15V	15	6/10/2023	ND (<6)	ND (<6)	ND (<5)	ND (<3)	7J	16	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	7J	ND (<4)	ND (<6)	291	ND (<5)	ND (<8)
SV6-5V	5	6/10/2023	12	10	231	ND (<3)	16	16	ND (<7)	32	ND (<8)	ND (<5)	8J	ND (<5)	16	7J	ND (<6)	167	24	ND (<8)
SV6-15V	15	6/10/2023	ND (<6)	ND (<6)	ND (<5)	ND (<3)	7J	ND (<21)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	7J	ND (<4)	ND (<6)	394	ND (<5)	ND (<8)
SV7-5V	5	6/10/2023	12	9	63	ND (<3)	12	16	ND (<7)	24	ND (<8)	ND (<5)	ND (<4)	ND (<5)	12	6J	ND (<6)	1,100	13	ND (<8)
SV7-5V REP	5	6/10/2023	12	10	69	ND (<3)	13	17	ND (<7)	26	ND (<8)	ND (<5)	ND (<4)	ND (<5)	13	7J	ND (<6)	1,530	15	ND (<8)
SV7-15V	15	6/10/2023	ND (<6)	ND (<6)	8	ND (<3)	7J	17	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	7J	ND (<4)	ND (<6)	2,360	ND (<5)	ND (<8)
SV8-5V	5	6/10/2023	ND (<6)	ND (<6)	2,480	13	9	ND (<12)	ND (<7)	35	ND (<8)	ND (<5)	ND (<4)	ND (<5)	10	ND (<4)	8J	467	261	ND (<8)
SV8-15V	15	6/10/2023	ND (<6)	ND (<6)	29	ND (<3)	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	2,470	ND (<5)	ND (<8)
SV8-15V REP	15	6/11/2023	ND (<6)	ND (<6)	17	ND (<3)	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	2,180	ND (<5)	ND (<8)
SV9-5V	5	6/10/2023	ND (<6)	ND (<6)	239	5J	14	17	ND (<7)	30	ND (<8)	ND (<5)	ND (<4)	ND (<5)	14	7J	ND (<6)	55	66	ND (<8)
SV9-15V	15	6/10/2023	8J	ND (<6)	21	ND (<3)	8J	16J	ND (<7)	14J	ND (<8)	7J	7J	ND (<5)	8J	7J	ND (<6)	254	24	ND (<8)
SV10-5V	5	6/10/2023	ND (<6)	ND (<6)	395	5J	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	68	198	ND (<8)
SV10-15V	15	6/10/2023	ND (<6)	ND (<6)	88	ND (<3)	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	646	16	ND (<8)
SV11-5V	5	6/10/2023	ND (<6)	ND (<6)	366	6J	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	54	231	ND (<8)
SV11-15V	15	6/10/2023	ND (<6)	ND (<6)	ND (<5)	ND (<3)	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	14J	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	926	11	31
SV12-5V	5	6/10/2023	ND (<6)	ND (<6)	15	ND (<3)	ND (<6)	ND (<12)	ND (<7)	16J	12J	14J	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	ND (<8)	93	ND (<8)
SV12-15V	15	6/10/2023	ND (<6)	ND (<6)	29	ND (<3)	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	82	14	98
SV13-5V	5	6/10/2023	15	ND (<6)	301	14	49	ND (<12)	ND (<7)	201	ND (<8)	ND (<5)	ND (<4)	ND (<5)	69	ND (<4)	ND (<6)	222	153	ND (<8)
SV13-15V	15	6/10/2023	ND (<6)	ND (<6)	ND (<5)	ND (<3)	ND (<6)	ND (<12)	ND (<7)	ND (<11)	ND (<8)	ND (<5)	ND (<4)	ND (<5)	ND (<5)	ND (<4)	ND (<6)	2,600	10	ND (<8)

NOTES:

µg/m^3 = micrograms per cubic meter

ND (<MDL) = Not detected at or above the listed laboratory method detection limit (MDL)

REP = Replicate Sample

J = Concentration is below laboratory reporting limit (RL) but above MDL

Table 2

Indoor Air and Outdoor Air Sampling Laboratory Analysis Summary

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Analyte	CAS Number	OA1	OA2	OA3	OA4	IA1	IA2	IA3	IA3 DUP	IA4	IA5	IA6	IA7	IA8	IA9	IA10
		Chelsea Parking Lot	Main Playground	Southwestern Lawn	Southeastern Playground	Building D Room 71D	Building D Room 70	Building D Room 71	Building D Room 71	Modular Building Room B10	Portable Classroom Building B7	Portable Classroom Building B2	Building A Cafeteria	Building B Basement	Building B Room 109	Building B Room 107
Dichlorodifluoromethane (12)	75-71-8	2	1.6	2.1	2	2.1	2.1	2.1	2.1	2	1.9	1.9	2	2	2	2
Chloromethane	74-87-3	1	0.89	1.1	1.1	1.1	1.3	1.2	1.1	1.2	1.1	1.1	1.1	1	1.2	1.1
Vinyl Chloride	75-01-4	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	0.0072J	0.0075J	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)
Chloroethane	75-00-3	0.035	0.052	0.085	0.088	0.11	0.13	0.11	0.099	0.05	0.048	0.088	0.065	0.041	0.052	0.042
Trichlorofluoromethane (11)	75-69-4	1	0.78	1.1	1	1	1.1	1.1	1	0.99	0.96	0.96	0.98	1	0.98	1
1,1,2-Cl 1,2,2-F ethane (113)	76-13-1	0.44	0.36	0.45	0.43	0.43	0.45	0.45	0.44	0.44	0.43	0.43	0.43	0.44	0.44	0.45
1,1-Dichloroethene	75-35-4	0.0030J	ND (<0.0025)	ND (<0.0025)	0.0031J	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	0.0025J	0.0029J	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	0.0046J
Methylene Chloride	75-09-2	0.29	0.31	0.32	0.3	0.32	0.31	0.31	0.31	0.42	0.3	0.29	0.29	0.28	0.34	0.36
t-1,2-Dichloroethene	156-60-5	0.0039J	ND (<0.0029)	0.0040J	0.0038J	0.0038J	ND (<0.0029)	0.0041J	ND (<0.0029)	0.0039J	0.0029J	0.0081J	ND (<0.0029)	0.0037J	ND (<0.0029)	0.0045J
1,1-Dichloroethane	75-34-3	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)
c-1,2-Dichloroethene	156-59-2	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	0.0039J	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)
Chloroform	67-66-3	0.11	0.1	0.11	0.1	0.12	0.1	0.11	0.12	0.1	0.18	0.12	0.11	0.11	0.18	0.17
1,1,1-Trichloroethane	71-55-6	0.0065J	0.0074J	0.0076J	0.0088J	0.0085J	0.0089J	0.0079J	0.0072J	0.0069J	0.0070J	0.0093J	0.0074J	0.0085J	0.076	0.48
Carbon Tetrachloride	56-23-5	0.45	0.44	0.46	0.45	0.45	0.47	0.46	0.46	0.45	0.44	0.44	0.44	0.46	0.45	0.45
Benzene	71-43-2	0.26	0.32	0.34	0.33	0.29	0.3	0.32	0.31	0.23	0.28	0.56	0.29	0.27	0.27	0.29
1,2-Dichloroethane	107-06-2	0.05	0.049	0.049	0.051	0.097	0.067	0.073	0.073	0.048	0.055	0.29	0.049	0.076	0.066	0.054
Trichloroethene	79-01-6	0.07	0.091	0.098	0.079	0.067	0.066	0.09	0.087	0.03	0.085	0.041	0.084	0.075	0.023J	0.043
1,2-Dichloropropane	78-87-5	0.016J	0.010J	0.013J	0.011J	0.021J	0.011J	0.013J	0.017J	0.014J	0.014J	0.062	0.011J	0.014J	0.020J	0.019J
Bromodichloromethane	75-27-4	ND (<0.0071)	ND (<0.0071)	ND (<0.0071)	ND (<0.0071)	0.012J	0.011J	ND (<0.0071)	0.0093J	0.0094J	0.1	0.013J	0.014J	0.0073J	0.0080J	ND (<0.0071)
Toluene	108-88-3	0.52	0.28	0.68	0.66	1	0.99	1	0.99	0.69	0.74	1.6	0.59	0.6	2.1	1.8
t-1,3-Dichloropropene	10061-02-6	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	0.0077J	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	0.019J	0.0059J	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)
1,1,2-Trichloroethane	79-00-5	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)
Tetrachloroethene	127-18-4	0.017J	0.016J	0.016J	0.019J	0.12	0.1	0.15	0.15	0.018J	0.024J	0.031J	0.018J	0.019J	0.022J	0.020J
1,2-Dibromoethane	106-93-4	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	0.0030J	0.0045J	ND (<0.0017)	ND (<0.0017)	0.0048J	0.0023J	0.016J	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	0.0050J
Ethylbenzene	100-41-4	0.12	0.19	0.15	0.14	0.2	0.19	0.19	0.2	0.23	0.3	0.25	0.17	0.16	0.26	0.32
p,&m-Xylene	--	0.4	0.71	0.49	0.46	0.63	0.62	0.65	0.64	0.76	0.6	0.6	0.57	0.53	0.78	1
o-Xylene	95-47-6	0.16	0.24	0.18	0.18	0.3	0.28	0.3	0.3	0.28	0.22	0.25	0.21	0.23	0.31	0.38
Styrene	100-42-5	0.048J	0.054J	0.041J	0.16	0.18	0.18	0.24	0.16	0.17	0.38	0.48	0.066J	0.23	0.37	0.3
1,1,2,2-Tetrachloroethane	79-34-5	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)
Naphthalene	91-20-3	0.14	0.09	0.14	1.1	0.33	0.36	0.36	0.35	0.15	0.23	0.39	0.27	0.19	0.53	0.37

Notes:

All concentrations are reported in micrograms per cubic meter ($\mu g/m^3$)

ND: Not detected above reported laboratory method detection limit (ND < MDL)

J: Reported concentration is below laboratory reporting limit but above the laboratory method detection limit

Table 2

Indoor Air and Outdoor Air Sampling Laboratory Analysis Summary

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Analyte	CAS Number	IA11	IA12	IA13	IA14	IA15	IA16	IA17	IA18	IA19	IA20
		Building B Room 207	Building C Admin Office	Building C Library	Building C Room 102	Building C Room 105	Building C Auditorium	Building C STEM Lab	Building C Basement	Building C Room 202	Building C Boys Bathroom
Dichlorodifluoromethane (12)	75-71-8	2	2	1.9	2	2	2	2	2	2	2
Chloromethane	74-87-3	1.1	1.1	1	1	1.1	1.1	1.1	1	1.2	1.1
Vinyl Chloride	75-01-4	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)	ND (<0.0060)
Chloroethane	75-00-3	0.043	0.1	0.067	0.052	0.074	0.063	0.068	0.059	0.078	ND (<0.0080)
Trichlorofluoromethane (11)	75-69-4	0.99	0.99	0.97	0.99	1	1	1	1	0.98	1
1,1,2-Cl 1,2,2-F ethane (113)	76-13-1	0.44	0.44	0.43	0.43	0.44	0.44	0.44	0.44	0.43	0.44
1,1-Dichloroethene	75-35-4	0.0032J	0.0029J	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)	ND (<0.0025)
Methylene Chloride	75-09-2	0.35	0.32	0.28	0.33	0.31	0.28	0.3	0.29	0.31	0.28
t-1,2-Dichloroethene	156-60-5	0.0031J	ND (<0.0029)	0.0036J	0.0056J	0.0041J	0.0047J	ND (<0.0029)	ND (<0.0029)	0.0029J	ND (<0.0029)
1,1-Dichloroethane	75-34-3	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)	ND (<0.0076)
c-1,2-Dichloroethene	156-59-2	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)	ND (<0.0033)
Chloroform	67-66-3	0.11	0.12	0.11	0.15	0.14	0.1	0.21	0.12	0.11	0.095
1,1,1-Trichloroethane	71-55-6	0.21	0.025J	0.0075J	0.064	0.067	0.022J	0.015J	0.0075J	0.057	0.0066J
Carbon Tetrachloride	56-23-5	0.45	0.45	0.44	0.44	0.45	0.45	0.44	0.45	0.45	0.45
Benzene	71-43-2	0.32	0.29	0.3	1.2	0.33	0.29	0.29	0.28	0.31	0.26
1,2-Dichloroethane	107-06-2	0.05	0.078	0.047	0.067	0.064	0.046	0.063	0.065	0.055	0.044
Trichloroethene	79-01-6	0.17	0.078	0.059	0.071	0.09	0.069	0.059	0.048	0.095	0.047
1,2-Dichloropropane	78-87-5	0.014J	0.016J	ND (<0.0098)	0.018J	0.038J	0.015J	0.021J	0.013J	0.012J	ND (<0.0098)
Bromodichloromethane	75-27-4	0.0081J	ND (<0.0071)	0.0094J	0.015J	ND (<0.0071)	0.011J	ND (<0.0071)	0.011J	0.023J	0.0099J
Toluene	108-88-3	0.94	0.86	0.7	3	0.91	0.6	0.87	1.5	0.79	0.5
t-1,3-Dichloropropene	10061-02-6	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	ND (<0.0059)	0.077	ND (<0.0059)
1,1,2-Trichloroethane	79-00-5	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)	ND (<0.0022)
Tetrachloroethene	127-18-4	0.023J	0.028J	0.055J	0.035J	0.034J	0.017J	0.019J	0.018J	0.021J	0.028J
1,2-Dibromoethane	106-93-4	ND (<0.0017)	0.0046J	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	ND (<0.0017)	0.0020J	ND (<0.0017)	ND (<0.0017)
Ethylbenzene	100-41-4	0.19	0.21	0.14	0.35	0.33	0.14	2	0.24	0.21	0.12
p,&m-Xylene	--	0.62	0.55	0.44	1.1	1	0.44	7.7	0.83	0.58	0.39
o-Xylene	95-47-6	0.22	0.21	0.16	0.38	0.37	0.16	1.9	0.26	0.25	0.16
Styrene	100-42-5	0.16	0.16	0.2	0.26	0.16	0.098	0.44	0.21	0.31	0.054J
1,1,2,2-Tetrachloroethane	79-34-5	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)	ND (<0.0061)
Naphthalene	91-20-3	0.24	0.17	0.24	0.28	0.21	0.24	0.2	0.16	0.22	0.12

Notes:

All concentrations are reported in micrograms per cubic meter ($\mu g/m^3$)

ND: Not detected above reported laboratory method detection limit (ND < MDL)

J: Reported concentration is below laboratory reporting limit but above the laboratory method detection limit

Table 3

Chemical Composition Ratios for "Risk Drivers" Detected in Soil Gas

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Sample ID	Sample Depth (Feet Below Ground Surface)	Chlorinated "Risk Drivers"		Petroleum-Derived "Risk Drivers"		
		Tetrachloroethene	Trichloroethene	Benzene	Ethylbenzene	Naphthalene
SV4-5V	5	489	ND (<8)	25	111	0
SV5-5V	5	84	ND (<8)	13	38	8
SV6-5V	5	167	ND (<8)	0.0	16	0
SV7-5V	5	1,100	ND (<8)	0.0	12	0
SV7-5V REP	5	1,530	ND (<8)	0.0	13	0
SV8-5V	5	467	ND (<8)	13	9	0
SV9-5V	5	55	ND (<8)	5.0	14	0
SV10-5V	5	68	ND (<8)	5.0	0.0	0
SV11-5V	5	54	ND (<8)	6.0	0.0	0
SV12-5V	5	ND (<8)	ND (<8)	0	0	14
SV13-5V	5	222	ND (<8)	14	49	0
SV4-15V	15	701	ND (<8)	0.0	0.0	0
SV5-15V	15	291	ND (<8)	0.0	7.0	0
SV6-15V	15	394	ND (<8)	0.0	7.0	0
SV7-15V	15	2,360	ND (<8)	0.0	7.0	0
SV8-15V	15	2,470	ND (<8)	0.0	0.0	0
SV8-15V REP	15	2,180	ND (<8)	0.0	0.0	0
SV9-15V	15	254	ND (<8)	0.0	8.0	7
SV10-15V	15	646	ND (<8)	0.0	0.0	0
SV11-15V	15	926	31	0	0	14
SV12-15V	15	82	98	0	0	0
SV13-15V	15	2,600	ND (<8)	0	0	0

Notes:

All concentrations are reported in micrograms per cubic meter ($\mu g/m^3$)

ND (<MDL) = Not detected at or above the listed laboratory method detection limit (MDL)

REP = Replicate Sample

Table 4

Chemical Composition Ratios for Chlorinated "Risk Drivers" Detected in Indoor Air

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Analyte	IA1	IA2	IA3	IA3 DUP	IA4	IA5	IA6	IA7	IA8	IA9	IA10	IA11	IA12	IA13	IA14	IA15	IA16
	Building D Room 71D	Building D Room 70	Building D Room 71	Building D Room 71	Modular Building Room B10	Portable Classroom Building B7	Portable Classroom Building B2	Building A Cafeteria	Building B Basement	Building B Room 109	Building B Room 107	Building B Room 207	Building C Admin Office	Building C Library	Building C Room 102	Building C Room 105	Building C Auditorium
Chlorinated VOCs																	
Trichloroethene	0.067	0.066	0.09	0.087	0.03	0.085	0.041	0.084	0.075	0.023	0.043	0.17	0.078	0.059	0.071	0.09	0.069
Tetrachloroethene	0.12	0.1	0.15	0.15	0.018	0.024	0.031	0.018	0.019	0.022	0.02	0.023	0.028	0.055	0.035	0.034	0.017
Total	0.187	0.166	0.24	0.237	0.048	0.109	0.072	0.102	0.094	0.045	0.063	0.193	0.106	0.114	0.106	0.124	0.086
Ratios (% of total)																	
Trichloroethene	35.83	39.76	37.50	36.71	62.50	77.98	56.94	82.35	79.79	51.11	68.25	88.08	73.58	51.75	66.98	72.58	80.23
Tetrachloroethene	64.17	60.24	62.50	63.29	37.50	22.02	43.06	17.65	20.21	48.89	31.75	11.92	26.42	48.25	33.02	27.42	19.77
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Notes:

All concentrations are reported in micrograms per cubic meter ($\mu g/m^3$)

Table 4

Chemical Composition Ratios for Chlorinated "Risk Drivers" Detected in Indoor Air

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Analyte	IA17 Building C STEM Lab	IA18 Building C Basement	IA19 Building C Room 202	IA20 Building C Boys Bathroom
Chlorinated VOCs				
Trichloroethene	0.059	0.048	0.095	0.047
Tetrachloroethene	0.019	0.018	0.021	0.028
Total	0.078	0.066	0.116	0.075
Ratios (% of total)				
Trichloroethene	75.64	72.73	81.90	62.67
Tetrachloroethene	24.36	27.27	18.10	37.33
Total	100.00	100.00	100.00	100.00

Notes:

All concentrations are reported in micrograms per cubic meter ($\mu g/m^3$)

Table 5

Chemical Composition Ratios for Petroleum-Derived "Risk Drivers" Detected in Indoor Air

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Analyte	IA1	IA2	IA3	IA3 DUP	IA4	IA5	IA6	IA7	IA8	IA9	IA10	IA11	IA12	IA13	IA14	IA15
	Building D Room 71D	Building D Room 70	Building D Room 71	Building D Room 71	Modular Building Room B10	Portable Classroom Building B7	Portable Classroom Building B2	Building A Cafeteria	Building B Basement	Building B Room 109	Building B Room 107	Building B Room 207	Building C Admin Office	Building C Library	Building C Room 102	Building C Room 105
Petroleum-Derived VOCs																
Benzene	0.29	0.3	0.32	0.31	0.23	0.28	0.56	0.29	0.27	0.27	0.29	0.32	0.29	0.3	1.2	0.33
Ethylbenzene	0.2	0.19	0.19	0.2	0.23	0.3	0.25	0.17	0.16	0.26	0.32	0.19	0.21	0.14	0.35	0.33
Naphthalene	0.33	0.36	0.36	0.35	0.15	0.23	0.39	0.27	0.19	0.53	0.37	0.24	0.17	0.24	0.28	0.21
Total	0.82	0.85	0.87	0.86	0.61	0.81	1.2	0.73	0.62	1.06	0.98	0.75	0.67	0.68	1.83	0.87
Ratios (% of Total)																
Benzene	35.37	35.29	36.78	36.05	37.70	34.57	46.67	39.73	43.55	25.47	29.59	42.67	43.28	44.12	65.57	37.93
Ethylbenzene	24.39	22.35	21.84	23.26	37.70	37.04	20.83	23.29	25.81	24.53	32.65	25.33	31.34	20.59	19.13	37.93
Naphthalene	40.24	42.35	41.38	40.70	24.59	28.40	32.50	36.99	30.65	50.00	37.76	32.00	25.37	35.29	15.30	24.14
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Notes:

All concentrations are reported in micrograms per cubic meter (µg/m^3)

Table 5

Chemical Composition Ratios for Petroleum-Derived "Risk Drivers" Detected in Indoor Air

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

Analyte	IA16	IA17	IA18	IA19	IA20
	Building C Auditorium	Building C STEM Lab	Building C Basement	Building C Room 202	Building C Boys Bathroom
Petroleum-Derived VOCs					
Benzene	0.29	0.29	0.28	0.31	0.26
Ethylbenzene	0.14	2	0.24	0.21	0.12
Naphthalene	0.24	0.2	0.16	0.22	0.12
Total	0.67	2.49	0.68	0.74	0.5
Ratios (% of Total)					
Benzene	43.28	11.65	41.18	41.89	52.00
Ethylbenzene	20.90	80.32	35.29	28.38	24.00
Naphthalene	35.82	8.03	23.53	29.73	24.00
Total	100.00	100.00	100.00	100.00	100.00

Notes:

All concentrations are reported in micrograms per cubic meter (µg/m^3)

Table 6

Chemical-Specific Attenuation Factors for "Risk Drivers"

McKinley Elementary School

2401 Santa Monica Boulevard, Santa Monica, California

"Risk Driver" Volatile Organic Compounds	Maximum Soil Gas Concentration Detected at a Depth of 5 Feet Below Ground Surface (ug/m^3)	Maximum Soil Gas Concentration Detected at a Depth of 15 Feet Below Ground Surface (ug/m^3)	Maximum Detected Indoor Air Concentration (ug/m^3)	Attenuation factor for VOCs Detected at a Depth of 5 Feet Below Ground Surface (Unitless)	Attenuation factor for VOCs Detected at a Depth of 15 Feet Below Ground Surface (Unitless)
Benzene	25	0	1.2	4.8E-02	NC
Ethylbenzene	111	8	2	1.8E-02	2.5E-01
Naphthalene	14	14	0.53	3.8E-02	3.8E-02
Tetrachloroethene	1530	2600	0.15	9.8E-05	5.8E-05
Trichloroethene	0	98	0.17	NC	1.7E-03

Notes:

ug/m^3 = Micrograms per cubic meter

NC = Not calculated

ATTACHMENT A

ProUCL Printout

Building A, Modular and Portable Air Sampling Results
McKinley Elementary School
2401 Santa Monica Boulevard, Santa Monica, California

Analyte	CAS Number	OA1 Chelsea Parking Lot	OA2 Main Playground	OA3 Southwestern Lawn	OA4 Southeastern Playground	IA4 Modular Building Room B10	IA5 Portable Classroom Building B7	IA6 Portable Classroom Building B2	IA7 Building A Cafeteria
Chlorinated VOCs									
Tetrachloroethene	127-18-4	1.7E-02	1.6E-02	1.6E-02	1.9E-02	1.8E-02	2.4E-02	3.1E-02	1.8E-02
Trichloroethene	79-01-6	7.0E-02	9.1E-02	9.8E-02	7.9E-02	3.0E-02	8.5E-02	4.1E-02	8.4E-02
Petroleum-Derived VOCs									
Benzene	71-43-2	2.6E-01	3.2E-01	3.4E-01	3.3E-01	2.3E-01	2.8E-01	5.6E-01	2.9E-01
Ethylbenzene	100-41-4	1.2E-01	1.9E-01	1.5E-01	1.4E-01	2.3E-01	3.0E-01	2.5E-01	1.7E-01
Naphthalene	91-20-3	1.4E-01	9.0E-02	1.4E-01	1.1E+00	1.5E-01	2.3E-01	3.9E-01	2.7E-01

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:33:04 PM
From File	McKinley I-O Risk Driver Stats.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-PCE

Sample 2 Data: Bld. C-PCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	3	3
Minimum	0.016	0.1
Maximum	0.019	0.15
Mean	0.017	0.13
Median	0.0165	0.135
SD	0.00141	0.0245
SE of Mean	7.0711E-4	0.0122

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	10
WMW U-Stat	0
Mean (U)	8
SD(U) - Adj ties	3.443
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-2.483
Approximate P-Value	0.993

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:34:38 PM
From File	McKinley I-O Risk Driver Stats.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-TCE

Sample 2 Data: Bld. C-TCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	4
Minimum	0.07	0.066
Maximum	0.098	0.09
Mean	0.0845	0.0775
Median	0.085	0.077
SD	0.0124	0.0128
SE of Mean	0.00622	0.00638

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	22
WMW U-Stat	12
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	1.01
Approximate P-Value	0.156

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:35:20 PM
From File	McKinley I-O Risk Driver Stats.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Benzene

Sample 2 Data: Bld. C-Benzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	4
Minimum	0.26	0.29
Maximum	0.34	0.32
Mean	0.313	0.305
Median	0.325	0.305
SD	0.0359	0.0129
SE of Mean	0.018	0.00645

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	21.5
WMW U-Stat	11.5
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	0.871
Approximate P-Value	0.192

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:35:57 PM
From File	McKinley I-O Risk Driver Stats.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Ethylbenzene

Sample 2 Data: Bld. C-Ethylbenzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	2
Minimum	0.12	0.19
Maximum	0.19	0.2
Mean	0.15	0.195
Median	0.145	0.195
SD	0.0294	0.00577
SE of Mean	0.0147	0.00289

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	11
WMW U-Stat	1
Mean (U)	8
SD(U) - Adj ties	3.443
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-2.233
Approximate P-Value	0.987

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:36:33 PM
From File	McKinley I-O Risk Driver Stats.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Naphthalene

Sample 2 Data: Bld. C-Naphthalene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	3	3
Minimum	0.09	0.33
Maximum	1.1	0.36
Mean	0.368	0.35
Median	0.14	0.355
SD	0.489	0.0141
SE of Mean	0.244	0.00707

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	14
WMW U-Stat	4
Mean (U)	8
SD(U) - Adj ties	3.443
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-1.315
Approximate P-Value	0.906

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Building B Air Sampling Results
McKinley Elementary School
2401 Santa Monica Boulevard, Santa Monica, California

Analyte	CAS Number	OA1 Chelsea Parking Lot	OA2 Main Playground	OA3 Southwestern Lawn	OA4 Southeastern Playground	IA8 Building B Basement	IA9 Building B Room 109	IA10 Building B Room 107	IA11 Building B Room 207
Chlorinated VOCs									
Tetrachloroethene	127-18-4	1.7E-02	1.6E-02	1.6E-02	1.9E-02	1.9E-02	2.2E-02	2.0E-02	2.3E-02
Trichloroethene	79-01-6	7.0E-02	9.1E-02	9.8E-02	7.9E-02	7.5E-02	2.3E-02	4.3E-02	1.7E-01
Petroleum-Derived VOCs									
Benzene	71-43-2	2.6E-01	3.2E-01	3.4E-01	3.3E-01	2.7E-01	2.7E-01	2.9E-01	3.2E-01
Ethylbenzene	100-41-4	1.2E-01	1.9E-01	1.5E-01	1.4E-01	1.6E-01	2.6E-01	3.2E-01	1.9E-01
Naphthalene	91-20-3	1.4E-01	9.0E-02	1.4E-01	1.1E+00	1.9E-01	5.3E-01	3.7E-01	2.4E-01

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:42:37 PM
From File	McKinley I-O Risk Driver Stats_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-PCE

Sample 2 Data: Bld. B-PCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	3	4
Minimum	0.016	0.019
Maximum	0.019	0.023
Mean	0.017	0.021
Median	0.0165	0.021
SD	0.00141	0.00183
SE of Mean	7.0711E-4	9.1287E-4

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	10.5
WMW U-Stat	0.5
Mean (U)	8
SD(U) - Adj ties	3.443
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-2.337
Approximate P-Value	0.99

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:43:20 PM
From File	McKinley I-O Risk Driver Stats_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-TCE

Sample 2 Data: Bld. B-TCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	4
Minimum	0.07	0.023
Maximum	0.098	0.17
Mean	0.0845	0.0778
Median	0.085	0.059
SD	0.0124	0.0651
SE of Mean	0.00622	0.0326

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	21
WMW U-Stat	11
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	0.722
Approximate P-Value	0.235

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:43:58 PM
From File	McKinley I-O Risk Driver Stats_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Benzene

Sample 2 Data: Bld. B-Benzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	3
Minimum	0.26	0.27
Maximum	0.34	0.32
Mean	0.313	0.288
Median	0.325	0.28
SD	0.0359	0.0236
SE of Mean	0.018	0.0118

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	21.5
WMW U-Stat	11.5
Mean (U)	8
SD(U) - Adj ties	3.443
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	0.877
Approximate P-Value	0.19

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:45:02 PM
From File	McKinley I-O Risk Driver Stats_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Ethylbenzene

Sample 2 Data: Bld. B-Ethylbenzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	4
Minimum	0.12	0.16
Maximum	0.19	0.32
Mean	0.15	0.233
Median	0.145	0.225
SD	0.0294	0.0718
SE of Mean	0.0147	0.0359

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	11.5
WMW U-Stat	1.5
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-2.033
Approximate P-Value	0.979

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:45:46 PM
From File	McKinley I-O Risk Driver Stats_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Naphthalene

Sample 2 Data: Bld. B-Naphthalene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	3	4
Minimum	0.09	0.19
Maximum	1.1	0.53
Mean	0.368	0.333
Median	0.14	0.305
SD	0.489	0.152
SE of Mean	0.244	0.076

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	14
WMW U-Stat	4
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-1.307
Approximate P-Value	0.904

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Building C Air Sampling Results
McKinley Elementary School
2401 Santa Monica Boulevard, Santa Monica, California

Analyte	CAS Number	OA1 Chelsea Parking Lot	OA2 Main Playground	OA3 Southwestern Lawn	OA4 Southeastern Playground	IA12 Building C Admin Office	IA13 Building C Library	IA14 Building C Room 102	IA15 Building C Room 105	IA16 Building C Auditorium	IA17 Building C STEM Lab	IA18 Building C Basement	IA19 Building C Room 202	IA20 Building C Boys Bathroom
Chlorinated VOCs														
Tetrachloroethene	127-18-4	1.7E-02	1.6E-02	1.6E-02	1.9E-02	2.8E-02	5.5E-02	3.5E-02	3.4E-02	1.7E-02	1.9E-02	1.8E-02	2.1E-02	2.8E-02
Trichloroethene	79-01-6	7.0E-02	9.1E-02	9.8E-02	7.9E-02	7.8E-02	5.9E-02	7.1E-02	9.0E-02	6.9E-02	5.9E-02	4.8E-02	9.5E-02	4.7E-02
Petroleum-Derived VOCs														
Benzene	71-43-2	2.6E-01	3.2E-01	3.4E-01	3.3E-01	2.9E-01	3.0E-01	1.2E+00	3.3E-01	2.9E-01	2.9E-01	2.8E-01	3.1E-01	2.6E-01
Ethylbenzene	100-41-4	1.2E-01	1.9E-01	1.5E-01	1.4E-01	2.1E-01	1.4E-01	3.5E-01	3.3E-01	1.4E-01	2.0E+00	2.4E-01	2.1E-01	1.2E-01
Naphthalene	91-20-3	1.4E-01	9.0E-02	1.4E-01	1.1E+00	1.7E-01	2.4E-01	2.8E-01	2.1E-01	2.4E-01	2.0E-01	1.6E-01	2.2E-01	1.2E-01

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:46:48 PM
From File	McKinley I-O Risk Driver Stats_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-PCE

Sample 2 Data: Bld. C-PCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	9
Number of Distinct Observations	3	8
Minimum	0.016	0.017
Maximum	0.019	0.055
Mean	0.017	0.0283
Median	0.0165	0.028
SD	0.00141	0.0121
SE of Mean	7.0711E-4	0.00402

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	13
WMW U-Stat	3
Mean (U)	18
SD(U) - Adj ties	6.454
WMW U-Stat Critical Value (0.05)	29
Standardized WMW U-Stat	-2.405
Approximate P-Value	0.992

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:47:30 PM
From File	McKinley I-O Risk Driver Stats_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-TCE

Sample 2 Data: Bld. C-TCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	9
Number of Distinct Observations	4	8
Minimum	0.07	0.047
Maximum	0.098	0.095
Mean	0.0845	0.0684
Median	0.085	0.069
SD	0.0124	0.017
SE of Mean	0.00622	0.00568

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	39
WMW U-Stat	29
Mean (U)	18
SD(U) - Adj ties	6.481
WMW U-Stat Critical Value (0.05)	29
Standardized WMW U-Stat	1.622
Approximate P-Value	0.0524

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:48:34 PM
From File	McKinley I-O Risk Driver Stats_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Benzene

Sample 2 Data: Bld. C-Benzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	9
Number of Distinct Observations	4	7
Minimum	0.26	0.26
Maximum	0.34	1.2
Mean	0.313	0.394
Median	0.325	0.29
SD	0.0359	0.303
SE of Mean	0.018	0.101

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	33
WMW U-Stat	23
Mean (U)	18
SD(U) - Adj ties	6.436
WMW U-Stat Critical Value (0.05)	29
Standardized WMW U-Stat	0.7
Approximate P-Value	0.242

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:49:13 PM
From File	McKinley I-O Risk Driver Stats_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Ethylbenzene

Sample 2 Data: Bld. C-Ethylbenzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	9
Number of Distinct Observations	4	7
Minimum	0.12	0.12
Maximum	0.19	2
Mean	0.15	0.416
Median	0.145	0.21
SD	0.0294	0.6
SE of Mean	0.0147	0.2

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	18.5
WMW U-Stat	8.5
Mean (U)	18
SD(U) - Adj ties	6.436
WMW U-Stat Critical Value (0.05)	29
Standardized WMW U-Stat	-1.556
Approximate P-Value	0.94

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:49:49 PM
From File	McKinley I-O Risk Driver Stats_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Naphthalene

Sample 2 Data: Bld. C-Naphthalene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	9
Number of Distinct Observations	3	8
Minimum	0.09	0.12
Maximum	1.1	0.28
Mean	0.368	0.204
Median	0.14	0.21
SD	0.489	0.0485
SE of Mean	0.244	0.0162

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	21
WMW U-Stat	11
Mean (U)	18
SD(U) - Adj ties	6.472
WMW U-Stat Critical Value (0.05)	29
Standardized WMW U-Stat	-1.16
Approximate P-Value	0.877

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Building D Air Sampling Results
McKinley Elementary School
2401 Santa Monica Boulevard, Santa Monica, California

Analyte	CAS Number	OA1 Chelsea Parking Lot	OA2 Main Playground	OA3 Southwestern Lawn	OA4 Southeastern Playground	IA1 Building D Room 71D	IA2 Building D Room 70	IA3 Building D Room 71	IA3 DUP Building D Room 71
Chlorinated VOCs									
Tetrachloroethene	127-18-4	1.7E-02	1.6E-02	1.6E-02	1.9E-02	1.2E-01	1.0E-01	1.5E-01	1.5E-01
Trichloroethene	79-01-6	7.0E-02	9.1E-02	9.8E-02	7.9E-02	6.7E-02	6.6E-02	9.0E-02	8.7E-02
Petroleum-Derived VOCs									
Benzene	71-43-2	2.6E-01	3.2E-01	3.4E-01	3.3E-01	2.9E-01	3.0E-01	3.2E-01	3.1E-01
Ethylbenzene	100-41-4	1.2E-01	1.9E-01	1.5E-01	1.4E-01	2.0E-01	1.9E-01	1.9E-01	2.0E-01
Naphthalene	91-20-3	1.4E-01	9.0E-02	1.4E-01	1.1E+00	3.3E-01	3.6E-01	3.6E-01	3.5E-01

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:37:18 PM
From File	McKinley I-O Risk Driver Stats_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-PCE

Sample 2 Data: Bld. A-PCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	3	3
Minimum	0.016	0.018
Maximum	0.019	0.031
Mean	0.017	0.0228
Median	0.0165	0.021
SD	0.00141	0.00618
SE of Mean	7.0711E-4	0.00309

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	12
WMW U-Stat	2
Mean (U)	8
SD(U) - Adj ties	3.443
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-1.899
Approximate P-Value	0.971

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:39:00 PM
From File	McKinley I-O Risk Driver Stats_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-TCE

Sample 2 Data: Bld. A-TCE

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	4
Minimum	0.07	0.03
Maximum	0.098	0.085
Mean	0.0845	0.06
Median	0.085	0.0625
SD	0.0124	0.0286
SE of Mean	0.00622	0.0143

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	22
WMW U-Stat	12
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	1.01
Approximate P-Value	0.156

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:39:56 PM
From File	McKinley I-O Risk Driver Stats_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Benzene

Sample 2 Data: Bld. A-Benzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	4
Minimum	0.26	0.23
Maximum	0.34	0.56
Mean	0.313	0.34
Median	0.325	0.285
SD	0.0359	0.149
SE of Mean	0.018	0.0745

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	20
WMW U-Stat	10
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	0.433
Approximate P-Value	0.333

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:40:32 PM
From File	McKinley I-O Risk Driver Stats_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Ethylbenzene

Sample 2 Data: Bld. A-Ethylbenzene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	4	4
Minimum	0.12	0.17
Maximum	0.19	0.3
Mean	0.15	0.238
Median	0.145	0.24
SD	0.0294	0.0538
SE of Mean	0.0147	0.0269

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	11
WMW U-Stat	1
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-2.165
Approximate P-Value	0.985

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2

Wilcoxon-Mann-Whitney Sample 1 vs Sample 2 Comparison Test for Uncensor Full Data Sets without NDs

User Selected Options	
Date/Time of Computation	ProUCL 5.2 7/24/2023 2:41:08 PM
From File	McKinley I-O Risk Driver Stats_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Substantial Difference	0.000
Selected Null Hypothesis	Sample 1 Mean/Median <= Sample 2 Mean/Median (Form 1)
Alternative Hypothesis	Sample 1 Mean/Median > Sample 2 Mean/Median

Sample 1 Data: OA-Naphthalene

Sample 2 Data: Bld. A-Naphthalene

Raw Statistics

	Sample 1	Sample 2
Number of Valid Observations	4	4
Number of Distinct Observations	3	4
Minimum	0.09	0.15
Maximum	1.1	0.39
Mean	0.368	0.26
Median	0.14	0.25
SD	0.489	0.1
SE of Mean	0.244	0.05

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Sample 1 <= Mean/Median of Sample 2

Sample 1 Rank Sum W-Stat	14
WMW U-Stat	4
Mean (U)	8
SD(U) - Adj ties	3.464
WMW U-Stat Critical Value (0.05)	14
Standardized WMW U-Stat	-1.307
Approximate P-Value	0.904

Conclusion with Alpha = 0.05

Do Not Reject H0, Conclude Sample 1 <= Sample 2