INDOOR AIR QUALITY ASSESSMENT

Muir Elementary School

2526 6th Street
Santa Monica, CA 90405

Prepared for:

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

SMSD-21-10226
October 18, 2021

October 18, 2021

Mr. Carey Upton Santa Monica-Malibu Unified School District.
2828 West 4th Street
Santa Monica, CA 90405

Subject: Ambient Air Sampling Report
SMASH/Muir Elementary School
2526 6th Street
Santa Monica, CA 90405

Alta Project: SMSD-21-10226

Dear Mr. Upton:

Alta Environmental/NV5 is pleased to present this ambient air sampling report for the abovementioned Site. Please refer to the report for our findings and conclusions.

If you have any questions, please call me at (562) 495-5777.

For and on behalf of Alta Environmental/NV5,

James Byers
Senior Consultant/Project Manager

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Vice President – Vice President

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LIST OF ACRONYMS

APN	Assessor's Parcel Number
DTSC	Department of Toxic Substances Control
HASP	Health and Safety Plan
HERO	Human and Ecological Risk Office
$\mu g/m^3$	micrograms per cubic meter
OSHA	Occupational Safety and Health Administration
Cal/OSHA	California Occupational Safety and Health Administration
QA	quality assurance
QC	quality control
RSL	Regional Screening Level
SL	Screening Level
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

EXECUTIVE SUMMARY

Alta Environmental/NV5 (Alta/NV5) was contracted by The Santa Monica Malibu Unified School District (Client) to perform an Indoor Air Quality Assessment at SMASH/Muir Elementary School (the 'Site"). The assessment was performed in response to occupants concerns regarding indoor air quality at the Site. Exceptions or deletions from the contracted scope of work are described in Section 2.4 of this report.

The Site consists of multiple slab-on grade buildings located on the north side of Ocean Park Boulevard between Fifth Street and Sixth Street. The address associated with the Site is 2526 Sixth Street, Santa Monica, CA 90405.

The Client has requested that Microbial, Indoor Air Quality and Environmental Parameter testing be conducted in Buildings 100, 200, 400, 500, 600 (the "work areas") to assess the buildings regarding the following testing parameters:

- Indoor airborne mold spore levels
- Indoor temperature and relative humidity
- Airborne dust
- Formaldehyde
- Carbon monoxide
- Carbon dioxide
- Oxygen
- Volatile Organic Compounds (VOCs).

The scope of services for this assessment consisted of the following:

- Total airborne fungal spore sampling (with duplicate samples) in Rooms 555, 560, and 615.
- Additional representative total airborne fungal spore sampling in the remainder of the work areas, along with exterior sampling for statistical comparison.
- Tape lift sampling of suspect fungal growth, as needed in the work areas
- Carbon dioxide, carbon monoxide, oxygen, formaldehyde and airborne dust sampling via handheld, direct read, or logging instrumentation throughout the work areas
- VOCs utilizing summa canisters in the library and Rooms 555, 560, and 615 as well as representative VOC sampling throughout the remaining work areas utilizing a hand-held instrument.

FINDINGS AND CONCLUSIONS

Total airborne mold spore sampling

- Samples were collected in randomly selected areas as well as specified locations. Sampling was conducted on two days. Results of the initial sampling conducted on Thursday, September 9, 2021, indicated concentrations of Penicillium/Aspergillus spores in Rooms 605, 660, and 665 were greater than the outside reference sample. It should be noted that a wicker mat placed beneath a plant exhibited visible mold growth. It was further noted that gardening activities, including composting, are conducted outside this building (west side and that windows were open on this side of the building. These activities, and the

open windows may have contributed to the higher Penicillium/Aspergillus spore concentrations and may further lead to indoor air quality issues. Based on a review of the sample results collected inside the buildings as well as the outdoor reference samples, it was determined that additional sampling would be required. Additional sampling was conducted on September 11, 2021. Results of these samples did not appear to indicate a significant difference between the indoor air samples as compared to the outside reference samples.

- Mold spore sampling was conducted with the air handling devices in each room in operation, as it is our understanding that the units are constantly operated during occupancy.

Visual Observations and Service Tape Lift Samples

- Room 665 – Confirmed mold growth was observed to be present on a wicker mat located under a plant
- Room 555 – A small section of potential mold growth (< 1 sq ft) was observed to be present on the laminated beam at the peak of the ceiling.
    - Two air filters (not the large HEPA unit) were observed to be present in the room. The tall tower type was observed to have significant dust build-up on the intake filters and on the supply side of the unit.
- Building 600 – Several sources of potential mold growth located on the exterior of the building which may adversely affect indoor air quality
    - North-west of the building – composting drums and garden boxes were observed. Composting and mulching activities area a possible sources of mold spores which can affect air quality. – Windows were observed to be open on this elevation of the building.
    - Dust accumulation was observed in many rooms throughout the building.
    - Signs of insect presence and activity were noted in many areas
    - Certain areas of the building received significant daylight which increased solar loading and temperatures when compared with other areas.
    - Certain areas of the building envelope were not properly sealed, which may allow for moisture intrusion, as well as insect and rodent access.

Direct Reading Instrument Results

- Date for the following parameters was collected using direct read instruments
    - Temperature
    - Relative Humidity
    - Airborne Dust
    - Volatile organic compounds (VOCs)
    - Formaldehyde
- Upon reviewing the data, the results appear to be within normal parameters and do not appear to be abnormal. Formaldehyde readings on the 2nd floor of the 200 building were greater than expected, but were below EPA levels documented as potentially causing adverse health effects. It should be noted that the meter used for this sampling has a resolution of 0.01 parts per million (ppm) with an accuracy range of 10 percent at 2 ppm.

Volatile Organic Compounds (VOCs)

VOC sampling was conducted at two separate times. The first set of samples were collected on September 11, 2021. The results of those samples were reported as none-detected. Based on those results, additional sampling was conducted on October 6, 2021. Samples were collected in Rooms 555, 560, 615, the library and an outside (ambient) reference location. Additionally, two side-by-side samples were collected and sent to another laboratory for analysis. Results of the second sampling, and the split samples indicated the presence, in low concentrations of VOCs. The table below provides the tabulated results and a comparison to occupational exposure levels.

Sample No	**Date of Analysis**	**Location**	**Compounds Detected**	**Result- micrograms per cubic meter ($\mu g/m^3$)**	**Cal/OSHA Permissible Exposure Limit (PEL)*****	**NIOSH Recommended Exposure Limit (REL)*****
Ambient-J	10-6-2021**	Ambient Air-	Acetone	10.4	1,200,000	590,000
			Acrolein	1.49	250	250
			Benzene	0.66	3,190	0.1ppm
			Carbon Tetrachloride	0.80	12,600	12,600
			Chloroform	0.37	978,000	978,000
			Cyclohexane	0.39	105,000	105,000
			Ethylbenzene	0.21	22,000	435,000
			(Trichloromethane)	1.09	5,600,000	5,600,000
			FREON-12 (dichlorofluoromethane)	2.33	42,000	40,000
			FREON-113 (1,1,2-trichlor-1,2,2-trifluoroethane)	0.51	7,600,000	7,600,000
			n-Hexane	6.88	180,000	180,000
			Isopropanol	6.16	980,000	980,000
			4-Isopropyltoluene	0.11	Not established	Not established
			Methylene Chloride	0.75	87,000	1,800,000
			n-Pentane	1.78	1,800,000	?
			Propylene	1.85	?	215,000
			Styrene	0.13	215,000	375,000
			Toluene	1.39	37,000	125,000
			1,2,4-Trimethylbenzene	0.63	125,000	435,000
			m+p-Xylene	0.62	435,000	435,000
			o-Xylene	0.25	435,000	
555-	10-6-2021**	Rm. 555	Acetone	11.9	1,200,000	590,000
			Acrolein	2.0	250	250
			Benzene	0.51	3190	0.1ppm
			Carbon Tetrachloride	0.75	12,600	12,600

Sample No	Date of Analysis	Location	Compounds Detected	Result-micrograms per cubic meter ($\mu g/m^3$)	Cal/OSHA Permissible Exposure Limit (PEL)***	NIOSH Recommended Exposure Limit (REL)***
			Chloroform	0.37	978,000	978,000
			Carbon disulfide	0.12	3,000	3,000
			Cyclohexane	0.30	105,000	105,000
			Ethylbenzene	0.18	22,000	435,000
			FREON-11 (Trichloromethane)	0.96	5,600,000	5,600,000
			FREON-12 (dichlorofluoromethane)	2.11	42,000	42,000
			FREON-113 (1,1,2-trichlor-1,2,2-trifluoroethane)	0.44	7,600,000	7,600,000
			n-Hexane	4.793	180,000	180,000
			2-Hexanone	1.43	235,000	4,000
			Isopropanol	4.47	980,000	980,000
			4-Isopropyltoluene	0.11	Not	Not established
			Methylene Chloride	0.68	established	1,800,000
			n-Pentane	1.22	1,800,000	?
			Propylene	1.45	?	375,000
			Toluene	1.11	37,000	125,000
			1,2,4-Trimethylbenzene	0.61	125,000	435,000
			m+p-Xylene	0.50	435,000	435,000
			o-Xylene	0.20	435,000	

*American Environmental Testing Laboratory, Burbank, California

**Jones Environmental, Santa Fe Springs, California

***Converted from milligrams to micrograms

- N/A-not applicable

Slightly elevated concentrations of acrolein (2.0 $\mu g/m^3$) were detected within Room 555 as compared to the outside reference sample (1.49 $\mu g/m^3$). Although well below the published occupational exposure limits shown above (Cal/OSHA PEL), the result was above its corresponding DTSC screening level of 0.021 $\mu g/m^3$. It should also be noted that the ambient sample also exceeded this level.

Acrolein is primarily used to make other chemicals and may also be found in some livestock feed. Acrolein is itself a pesticide and is added to irrigation canals and the water supplies of some industrial plants to control underwater plant, algae, and slime growth.

Small amounts of acrolein can be formed and can enter the air when organic matter such as trees and other plants (including tobacco) are burned and when fuels such as gasoline and oil are burned. Acrolein is also formed in building fires at concentrations that can be deadly for occupants.

1 INTRODUCTION

On behalf of the Santa Monica-Malibu Unified School District, NV5 conducted ambient air sampling at the at SMASH/Muir Elementary School located at 2526 6th Street in Santa Monica, CA. This report documents the objectives for performing the work, the scope of work and sampling rationale, field and laboratory methodologies, an evaluation of data with respect to the environmental conditions assessed, and conclusions.

1.1 OBJECTIVES

The purpose of performing the ambient air sampling was to acquire and evaluate information sufficient to achieve the objectives outlined below, which were developed through consultation between Alta/NV5, our client (Santa Monica-Malibu Unified School District.

- The objective for this assessment was to document the environmental paraments shown below in Buildings 100, 200, 400, 500, 600 for the following:
    - Indoor airborne mold spore levels
    - Indoor temperature and relative humidity
    - Airborne dust
    - Formaldehyde
    - Carbon monoxide (CO)
    - Carbon dioxide (CO_2)
    - Oxygen (O_2)
    - Volatile Organic Compounds (VOCs).

The scope of work outlined in Section 3 was developed specifically to satisfy the objectives outlined above.

2 BACKGROUND

2.1 PROJECT HISTORY

A significant construction effort was commenced during the summer of 2021, and as of the time of this assessment, construction was in progress throughout the Site. When teachers and students re-occupied buildings in early September, some staff reported concerns related to the indoor air quality at some locations at the Site which prompted this assessment.

2.2 SITE DESCRIPTION AND FEATURES

The Site consists of multiple slab-on grade buildings located on the north side of Ocean Park Boulevard between Fifth Street and Sixth Street. The address associated with the Site is 2526 Sixth Street, Santa Monica, CA 90405

3 SAMPLING METHODOLOGY

The sampling activities and methodology described below were intended to satisfy the data needs to meet the client's objectives for the microbial, indoor air quality and environmental parameter testing, which is described in Section 1 of this report.

3.1 TOTAL AIRBORNE MOLD SPORE SAMPLES

Total airborne mold spores were collected using a Gast hi-volume sampling pump operating at 15 liters of air per minute. A 10-minute air sample was collected with a resulting sample volume of 150 liters. Samples were collected using Air-O-Cell cassettes that contain glass coated with a sticky medium so that impacted particles (including spores) will adhere to the surface. The analysis identifies molds to the genus level. Some mold spores such as *Aspergillus* or *Penicillium* cannot be distinguished using this analytical method. Sample analysis was conducted by Aerobiology a laboratory accredited by the American Industrial Hygiene Association located in Huntington Beach, California. Sampling was conducted with air handling equipment in normal operation.

3.2 TAPE LIFT SOURCE SAMPLES

Tape source samples were collected from the suspect material. A direct microscopic examination was made by Aerobiology, an accredited laboratory located in Huntington Beach, California.

This analytical method provides a semi-quantitative result. Descriptive terms for semi-quantitative tape-lift results are as follows (from Environmental Microbiology Laboratory publication: *Discussion of the Mold Growth Rating Scale Utilized in Direct Microscopic Examination).*

3.3 ENVIRONMENTAL PARAMETER TESTING

The following parameters were recorded on hand-held logging instrumentation: CO, CO_2, O_2, formaldehyde, temperature, relative humidity (Rh), and VOCs. Data from this monitoring can be found in Appendix B.

3.4 VOC SUMMA CANISTER SAMPLING

Sampling for VOCs was conducted in the follow areas at the site: Exterior (ambient) locations, Rooms 555, 560, 616, and Building 200/Library.

Four interior locations were selected throughout the Site sampling via six-liter Summa Canisters, each equipped with a dedicated vacuum gauge and an 8-hour fixed-flow controller. Prior to deployment, the analytical laboratory cleaned and individually certified each of the canisters and flow controllers. Each Summa Canister located within the Site was set at an elevation of approximately four feet above the floor, where they remained untouched during the sampling period.

An exterior ambient air sample was collected from a location proximate to where interior samples were collected at an elevation of four feet above ground surface. All Summa Canisters were closed, and the air sampling event ended prior to the vacuum gauges reaching zero. Upon completion of the ambient air sampling, all Summa Canisters were transported along with proper Chain of Custody documentation to American Environmental Testing Laboratory located in Burbank, CA. Samples were analyzed for VOCs by EPA Method TO-15and methane by EPA Method 8015m. Locations of the indoor samples and exterior ambient air samples are presented on Figure 2.

3.5 QA/QC SAMPLES

Quality assurance and control samples (duplicate samples) were collected from the exterior and Room 555 and analyzed as part of this assessment. Samples were sent to Jones Environmental, Inc. in Santa Fe Springs, CA for analysis.

3.6 REGULATORY SCREENING LEVELS

VOC concentrations in ambient air were compared to the values published on *Table 1 DTSC Recommended Screening Levels for Ambient Air* HHRA Note 3 dated June 2020, supplemented by the US EPA RSLs updated May 2021.

3.7 CAL/OSHA PERMISSIBLE EXPOSURE LIMITS AND NIOSH RECOMMEDNED EXPOSURE LIMITS

This information is provided for comparison purposes and relates to occupational exposure to chemicals in the workplace.

3.8 DATA VALIDATION - VOCS

Alta/NV5 collected a duplicate sample for exterior ambient air (Ambient-J) and indoor ambient air (555-J) during the sampling event at the same location as primary samples Ambient-A and 555-A. These samples were collected to validate the field and laboratory procedures and to ensure that the collected data are representative of the site conditions. The concentrations of the duplicate samples were elevated when compared to the concentrations identified in the primary sample.

4 SUMMARY OF ANALYTICAL RESULTS

4.1 AIRBORNE MOLD SPORE SAMPLE RESULTS

Total mold spore samples were collected within the following rooms as well as multiple outside (ambient) reference samples: 100, 105, 200, 205, 225, 258, 400, 410, 460, 480,500, 505, 560, 555, 605, 660, and 665.

Samples were collected in random areas as well as specified locations. Sampling was conducted on two days. Results of the initial sampling conducted on Thursday, September 9, 2021, indicated concentrations of Penicillium/Aspergillus spores in Room 605, 665, and 660 greater than the outside reference sample. It should be noted that a wicker mat placed beneath a plant in Room 665 exhibited visible mold growth. It was further noted that gardening activities, including composting, are conducted outside this building (west side and that windows were open on this side of the building. The aforementioned conditioned coupled with the open windows may have contributed to the higher Penicillium/Aspergillus spore concentrations and may further compromise the air quality in these rooms.

Based on a review of the sample results collected inside the buildings as well as the outdoor reference samples, it was determined that additional sampling was prudent. Additional sampling was conducted on September 11, 2021. Results of these samples did not indicate a significant difference between the indoor air samples as compared to the outside reference samples.

Mold spore sampling was conducted with the air handling devices in each room in operation, as it is our understanding that the units are operated during occupancy.

4.2 MOLD TAPE LIFT SAMPLE RESULTS

Sample TL-01 was collected of suspect mold growth west of the cabinets in Room 665 on a wicker mat located beneath a potted plant. The results indicated the presence of mold growth structures and were reported as follows:

- Few Aspergillus spores, conidiophores, hyphae seen
- Numerous Scopulariopsis spores, conidiophores, hyphae seen. *Scopulariopsis* is a filamentous fungus that inhabits soil, plant material, feathers, and insects.

Remaining samples CB-01 TO CB-06 contained minor to background levels of mold spores and related structures.

4.3 ENVIRONMENTAL PARAMETER RESULTS

Upon reviewing the data, the results are within acceptable parameters and do not appear to be abnormal. Formaldehyde readings on the 2nd floor of the 200 building were greater than expected but were below EPA levels documented as potentially causing adverse health effects.

4.4 VOCS

The following VOCs were detected:

Sample No	Date of Analysis	Location	Compounds Detected	Result- micrograms per cubic meter $\mu g/m^3$	Cal/OSHA Permissible Exposure Limit (PEL)***	NIOSH Recommended Exposure Limit (REL)***
AA-1	9-28-2021*	Ambient air-	No positive results reported	N/A	N/A	N/A
IA-555	9-28-2021*	Rm. 555	No positive results reported	N/A	N/A	N/A
IA-560	9-28-2021*	Rm. 560	No positive results reported	N/A	N/A	N/A
IA-615	9-28-2021*	Rm. 615	No positive results reported	N/A	N/A	N/A
IA-Library	9-28-2021*	Library	No positive results reported	N/A	N/A	N/A
Ambient-A	10-5-2021*	Ambient air-	Acetone Dichlorodiflouromethane	9.13 2.53	1,200,000 4,950,000	590,000 4,950,000
Library	10-5-2021*	Library	No positive results reported	N/A	N/A	N/A
560	10-5-2021*	Rm. 560	Carbon disulfide	2.82	3,000	3,000
615	10-5-2021*	Rm. 615	No positive results reported	N/A	N/A	N/A
555-A	10-5-2021*	Bldg. 500, Rm. 555-A	Carbon disulfide	3.20	3,000	3,000
Ambient-J	10-6-2021**	Ambient Air-	Acetone Acrolein Benzene Carbon Tetrachloride Chloroform Cyclohexane Ethylbenzene FREON-11 (Trichloromethane) FREON-12 (dichlorofluoromethane) FREON-113 (1,1,2-	10.4 1.49 0.66 0.80 0.37 0.39 0.21 1.09 2.33 0.51	1,200,000 250 1ppm 12,600 9,780 105,000 22,000 5,600,000 42,000 7,600,000	590,000 250 0.1ppm 12,600 9,780 105,000 435,000 5,600,000 40,000 7,600,000

Sample No	Date of Analysis	Location	Compounds Detected	Result- micrograms per cubic meter $\mu g/m^3$	Cal/OSHA Permissible Exposure Limit (PEL)***	NIOSH Recommended Exposure Limit (REL)***
			trichlor-1,2,2-trifluoroethane)			
			n-Hexane	6.88	180,000	180,000
			Isopropanol	6.16	980,000	980,000
			4-Isopropyltoluene	0.11	NE	NE
			Methylene Chloride	0.75	8,700	9,780
			n-Pentane	1.78	1,800,000	1,800,000
			Propylene	1.85	Asphyxiant	Asphyxiant
			Styrene	0.13	215,000	215,000
			Toluene	1.39	37,000	375,000
			1,2,4-Trimethylbenzene	0.63	125,000	125,000
			m+p-Xylene	0.62	435,000	4,340
			o-Xylene	0.25	435,000	435,000
555-J	10-6-2021**	Bldg. 500, Rm. 555	Acetone	11.9	1,200,000	590,000
			Acrolein	2.0	250	250
			Benzene	0.51	1ppm	0.1ppm
			Carbon Tetrachloride	0.75	12,600	12,600
			Chloroform	0.37	9,780	9,780
			Carbon disulfide	0.12	3,000	3,000
			Cyclohexane	0.30	105,000	105,000
			Ethylbenzene	0.18	22,000	435,000
			FREON-11 (Trichloromethane)	0.96	5,600,000	5,600,000
			FREON-12 (dichlorofluoromethane)	2.11	42,000	42,000
			FREON-113 (1,1,2-trichlor-1,2,2-trifluoroethane)	0.44	7,600,000	7,600,000
			n-Hexane	4.793	180,000	180,000
			2-Hexanone	1.43	235,000	4,000
			Isopropanol	4.47	980,000	980,000
			4-Isopropyltoluene	0.11	NE	NE
			Methylene Chloride	0.68	8,700	8,700
			n-Pentane	1.22	1,800,000	1,800,000
			Propylene	1.45	Asphyxiant	Asphyxiant
			Toluene	1.11	37,000	375,000
			1,2,4-Trimethylbenzene	0.61	125,000	125,000
			m+p-Xylene	0.50	435,000	435,000

Sample No	Date of Analysis	Location	Compounds Detected	Result- micrograms per cubic meter μg/m³	Cal/OSHA Permissible Exposure Limit (PEL)***	NIOSH Recommended Exposure Limit (REL)***
			o-Xylene	0.20	435,000	435,000

*American Environmental Testing Laboratory, Burbank, California

**Jones Environmental, Santa Fe Springs, California

***Converted from milligrams to micrograms

NE-not established

The results of the laboratory analysis of the collected ambient air samples are presented on the above table and summarized below. All VOCs detected in the indoor samples collected were also found in the exterior ambient air sample. The concentrations found in the indoor samples were less than the amount of the concentrations found in the exterior sample except for the following compound(s):

- Acetone was detected in sample 555-J at a concentration of 11.9 μg/m³. However, the residential screening limit (RSL) is 32,000 μg/m³.

- Carbon Disulfide was detected in sample 560 at a concentration of 2.82 μg/m³, in sample 555-A at 3.20 μg/m³ and in sample 555-J at a concentration of 0.12 μg/m³. The RSL is 730 μg/m³.

  Carbon disulfide is used in many industries. It's used to make rubber, viscose rayon, cellophane, and carbon tetrachloride.

- Acrolein was detected in concentrations of 1.49 μg/m³ in sample Ambient -J (exterior) and 2.00 μg/m³ in sample 555-J. The RSL 0.021 μg/m³. Airborne concentrations acrolein in the ambient sample collected from the exterior of the building and the sample collected in Room 555 exceed the RSL.

  Small amounts of acrolein can be formed and can enter the air when organic matter such as trees and other plants (including tobacco) are burned and when fuels such as gasoline and oil are burned. The presence of this item in the samples collected is most likely the byproduct of combustion, whether from organic matter or possibly gasoline combustion. Acrolein is primarily used to make other chemicals and may also be found in some livestock feed. Acrolein is itself a pesticide and is added to irrigation canals and the water supplies of some industrial plants to control underwater plant, algae, and slime growth.

5 FINDINGS AND CONCLUSIONS

Alta/NV5 has performed an indoor air quality assessment in general conformance with the scope and limitations of Alta/NV5's scope of work, as agreed upon with the Client. Based on of the data generated by this investigation, the following findings and conclusions have been developed:

The presence of concentrations of acrolein above the RSL may be related conditions in the ambient environment such as smoke from brush fires, structure fires or other sources of combustion including automobile exhaust. Cigarette smoke is a known source of acrolein as well as oils (including cooking oils) when heated to high temperatures. A review of potential sources within the building (if any) may be helpful. Follow-up air sampling may be useful to document conditions at another point in time. According to the EPA "average concentrations of

acrolein measured in the ambient air in the U.S. ranged from non-detect to 2.05 micrograms per cubic meter in 2006-2009. The range of concentrations for individual 24-hour measurements may be appreciably higher." (USEPA)

A review of air samples collected on September 9, 2021 (the initial air sampling) indicated elevated (above outdoor concentrations) of Penicillium/Aspergillus spores in Rooms 605, 660, and 665. This result prompted Alta/NV5 to conduct additional sir sampling on September 11, 2021. The results of the second air sample collection did not indicate a significant difference between indoor airborne fungal spore sample types and concentrations and the outside reference sample. The proximity of gardening and composting activities combined with open windows and window adjacent to these locations may contribute to elevated fungal spore concentrations that may affect individuals with allergies or other sensitivities.

Minimal visible mold growth was confirmed through laboratory analysis. The assumed mold growth found at the ceiling of Room 555 should be removed and the source of the moisture in this area be determined and repaired.

Wicker mat in Room 665 with fungal growth should be removed and discarded.

The District should review it's insect control program and modify where applicable, as insect presence and activity was observed during the site inspection(s).

Air filter machines should be regularly cleaned accordance to manufacturer recommendations to ensure proper operation.

Dust accumulation was observed in many areas during the inspection(s). A detailed cleaning of the interior spaces should be completed.

Cleaning sprays were observed in many of the classrooms, which appeared to be consistent throughout the Site. It was also observed that soaps and cleaners varied between classrooms. We assume the consistent materials have been provided by the District and that teachers and staff are providing their own materials as well. We recommend that a review of materials brought in by teachers and staff are consistent with the District's SOP.

It was noted that certain areas receive significant daylight which increased solar loading and increased temperatures within the buildings (Room 670). Installation of shades in this area and similar locations should be considered.

Openings were observed around the building 600 envelope that were not sealed. All open areas should be properly sealed to avoid moisture intrusion as well as to prevent insect and rodent access.

Formaldehyde readings on the 2nd floor of the 200 building were greater than expected but were below EPA levels documented as potentially causing adverse health effects. It was noted that the air handling equipment in this area was not in operation during our assessment; increased ventilation will likely aid in decreasing higher concentrations of formaldehyde. Different furniture was noted in this building as compared to the others; the District should review furniture choices in this area of building 200 to confirm it is of low formaldehyde construction.

6 ASSUMPTIONS AND LIMITATIONS

This report was prepared exclusively for use by Santa Monica-Malibu Unified School District and may not be relied upon by any other person or entity without Alta/NV5's express written permission. The information, conclusions and recommendations described in this report apply to conditions existing at certain locations when services were performed and are intended only for the specific purposes, locations, time frames and project parameters indicated. Alta/NV5 cannot be responsible for the impact of any changes in environmental standards, practices, or regulations after performance of services.

In performing our professional services, we have applied present engineering and scientific judgment and used a level of effort consistent with the current standard of practice for similar types of studies.

As applicable, Alta/NV5 has relied in good faith upon representations and information furnished by individuals with respect to operations and existing property conditions, to the extent that they have not been contradicted by data obtained from other sources. Accordingly, Alta/NV5 accepts no responsibility for any deficiencies, omissions, misrepresentations, or fraudulent acts of persons interviewed.

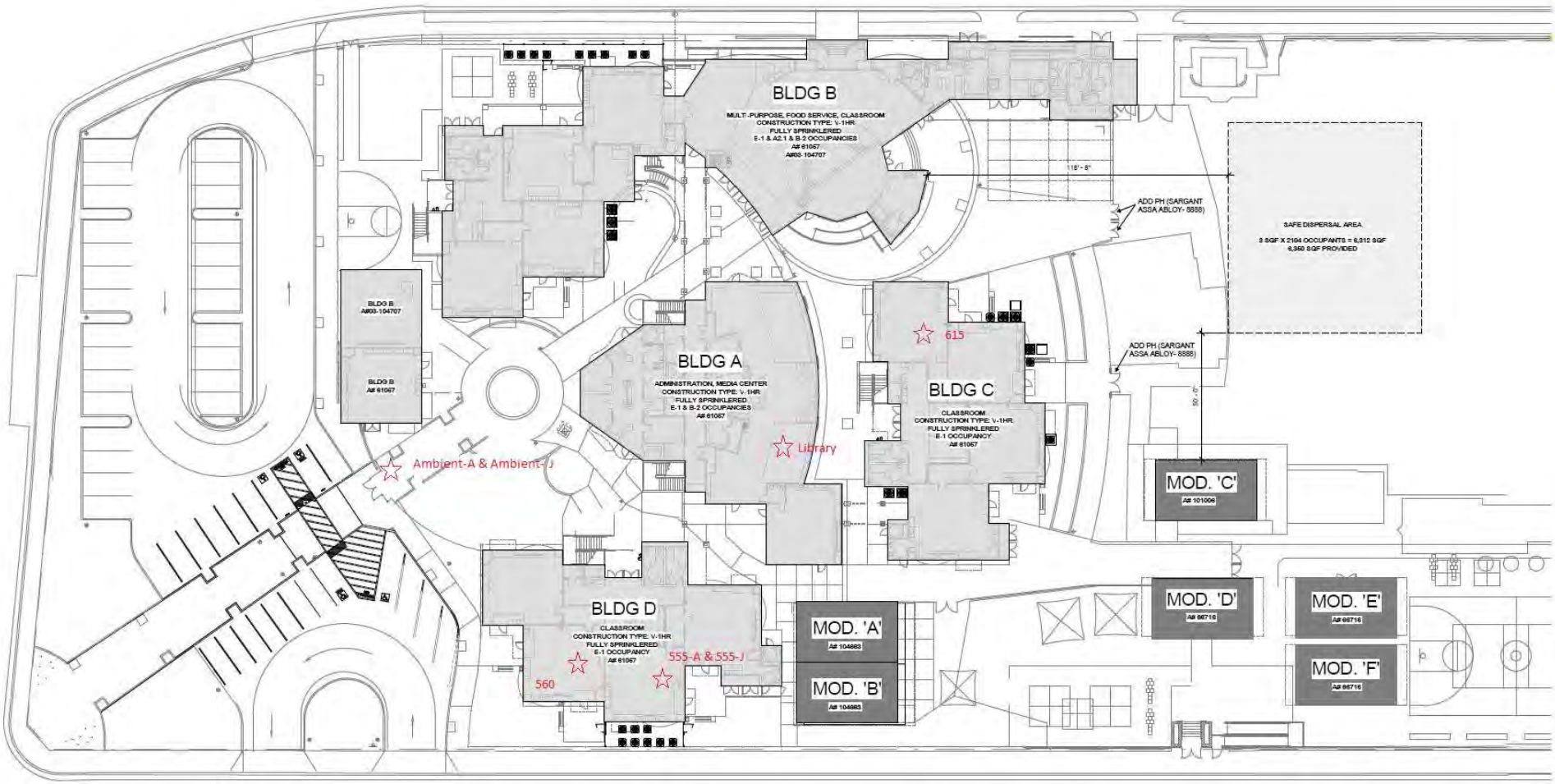
This report is issued with the understanding that the client, the property owner, or its representative is responsible for ensuring that the information, conclusions, and recommendations contained herein are brought to the attention of the appropriate regulatory agencies, as required.

7 DISCLAIMER

Alta/NV5's investigation and the conclusions and recommendations generated as a result reflect a subjective evaluation of limited data and thus may not be representative of all conditions present at the site. This investigation was limited to the accessible areas of the work area described. Alta/NV5 will not guarantee that all areas of potential mold contamination were identified during this limited investigation, or that other contaminants are not present, and that additional sampling may be required to identify such areas and/or contaminants.

Limitations are inherent in the sampling and inspections that Alta/NV5 completed, and as such, it is agreed that to the extent permitted by law, the Client is required to defend, indemnify and hold Alta/NV5 harmless for any, and all claims arising out of or otherwise connected with Alta/NV5's performance pursuant to this contract.

FIGURES


BLDG B
MULTI-PURPOSE, FOOD SERVICE, CLASSROOM
CONSTRUCTION TYPE: V-1HR
FULLY SPRINKLERED
E-1 & A2.1 & B-2 OCCUPANCIES
A# 61067
A#03-104707
BLDG B
A#03-104707
BLDG B
A# 61067
BLDG A
ADMINISTRATION, MEDIA CENTER
CONSTRUCTION TYPE: V-1HR
FULLY SPRINKLERED
E-1 & B-2 OCCUPANCIES
A# 61067
BLDG C
CLASSROOM
CONSTRUCTION TYPE: V-1HR
FULLY SPRINKLERED
E-1 OCCUPANCY
A# 61067
BLDG D
CLASSROOM
CONSTRUCTION TYPE: V-1HR
FULLY SPRINKLERED
E-1 OCCUPANCY
A# 61067
ADD PH (SARGANT ASSA ABLOY- 8888)
ADD PH (SARGANT ASSA ABLOY- 8888)
SAFE DISPERSAL AREA
3 SQF X 2104 OCCUPANTS = 6,312 SQF
6,360 SQF PROVIDED
615
Library
Ambient-A & Ambient-J
555-A & 555-J
560
MOD. 'A'
A# 104883
MOD. 'B'
A# 104883
MOD. 'C'
A# 101006
MOD. 'D'
A# 86716
MOD. 'E'
A# 86716
MOD. 'F'
A# 86716

TABLE

Summary Detection Table for VOCs

Sample No	Date of Analysis	Location	Compounds Detected	Result-micrograms per cubic meter (µg/m^3)	Cal/OSHA Permissible Exposure Limit (PEL)***	NIOSH Recommended Exposure Limit (REL)***	RSLs**** (µg/m3)
AA-1	9-28-2021*	Ambient air-	No positive results reported	N/A	N/A	N/A	N/A
IA-555	9-28-2021*	Rm. 555	No positive results reported	N/A	N/A	N/A	N/A
IA-560	9-28-2021*	Rm. 560	No positive results reported	N/A	N/A	N/A	N/A
IA-615	9-28-2021*	Rm. 615	No positive results reported	N/A	N/A	N/A	N/A
IA-Library	9-28-2021*	Library	No positive results reported	N/A	N/A	N/A	N/A
Ambient-A	10-5-2021*	Ambient air-	Acetone	9.13	1,200,000	590,000	32,000
			Dichlorodiflouromethane	2.53	4,950,000	4,950,000	100
Library	10-5-2021*	Library	No positive results reported	N/A	N/A	N/A	N/A
560	10-5-2021*	Rm. 560	Carbon disulfide	2.82	3,000	3,000	730
615	10-5-2021*	Rm. 615	No positive results reported	N/A	N/A	N/A	N/A
555-A	10-5-2021*	Bldg. 500, Rm. 555-A	Carbon disulfide	3.2	3,000	3,000	730
Ambient-J	10-6-2021**	Ambient Air-	Acetone	10.4	1,200,000	590,000	32,000
			Acrolein	***1.49***	250	250	0.021
			Benzene	***0.66***	1ppm	0.1ppm	0.36
			Carbon Tetrachloride	***0.8***	12,600	12,600	0.47
			Chloroform	***0.37***	9,780	9,780	0.12
			Cyclohexane	0.39	105,000	105,000	6300
			Ethylbenzene	0.21	22,000	435,000	1.1
			FREON-11 (Trichlorofluoromethane)	1.09	5,600,000	5,600,000	NE
			FREON-12 (dichlorodifluoromethane)	2.33	42,000	40,000	5,200
			FREON-113 (1,1,2-trichlor-1,2,2-trifluoroethane)	0.51	7,600,000	7,600,000	5200
			n-Hexane	6.88	180,000	180,000	730
			Isopropanol	6.16	980,000	980,000	210
			4-Isopropyltoluene	***0.11***	Not established		
			Methylene Chloride	0.75	8,700	No REL	100
			n-Pentane	1.78	1,800,000	1,800,000	1000
			Propylene	1.85	Not established		
			Styrene	0.13	215,000	215,000	1000
			Toluene	1.39	37,000	375,000	5200
			1,2,4-Trimethylbenzene	0.63	125,000	125,000	63
			m+p-Xylene	0.62	435,000	435,000	100
			o-Xylene	0.25	435,000	435,000	100

*American Environmental Testing Laboratory, Burbank, California

**Jones Environmental, Santa Fe Springs, California

***Converted from milligrams to micrograms

**** Residential Screening Levels

Summary Detection Table for VOCs

Sample No	Date of Analysis	Location	Compounds Detected	Result-micrograms per cubic meter ($\mu g/m^3$)	Cal/OSHA Permissible Exposure Limit (PEL)***	NIOSH Recommended Exposure Limit (REL)***	RSLs**** (µg/m3)
555-J	10-6-2021**	Bldg. 500, Rm. 555	Acetone	11.9	1,200,000	590,000	32000
			Acrolein	***2***	250	250	0.021
			Benzene	***0.51***	1ppm	0.1ppm	0.36
			Carbon Tetrachloride	***0.75***	12,600	12,600	0.47
			Chloroform	***0.37***	9,780	9,780	0.12
			Carbon disulfide	0.12	3,000	3,000	730
			Cyclohexane	0.3	105,000	105,000	6300
			Ethylbenzene	0.18	22,000	435,000	1.1
			FREON-11 (Trichloromethane)	0.96	5,600,000	5,600,000	NE
			FREON-12 (dichlorofluoromethane)	2.11	42,000	42,000	5,200
			FREON-113 (1,1,2-trichlor-1,2,2-trifluoroethane)	0.44	7,600,000	7,600,000	5200
			n-Hexane	4.793	180,000	180,000	730
			2-Hexanone	1.43	235,000	4,000	31
			Isopropanol	4.47	980,000	980,000	210
			4-Isopropyltoluene	***0.11***	Not established		3,100
			Methylene Chloride	0.68	87,000	No REL	100
			n-Pentane	1.22	1,800,000	1,800,000	1000
			Propylene	1.45	Asphyxiant	Asphyxiant	3100
			Toluene	1.11	37,000	375,000	5200
			1,2,4-Trimethylbenzene	0.61	125,000	125,000	63
			m+p-Xylene	0.5	435,000	435,000	100
			o-Xylene	0.2	435,000	435,000	100

*American Environmental Testing Laboratory, Burbank, California
**Jones Environmental, Santa Fe Springs, California
***Converted from milligrams to micrograms
**** Residential Screening Levels

Building	Room	Time	VOC (PPM)	Particulate (mg/ft^3)	Temp (˚ F)	RH (%)	CO (PPM)	CO^2 (PPM)	O_2 (%)	Formaldehyde ($PPM/mg/m^3$)
100	Outside - Before	1012	0.0	0.025	92.8	40.3	0.0	200	20.9	0.01/0.012
	100	1015	0.0	0.019	87.0	40.1	0.0	200	20.9	0.01/0.012
	105	1019	0.0	0.016	81.5	47.4	0.0	200	20.9	0.02/0.025
	107	1033	0.0	0.011	77.7	54.2	0.0	200	20.9	0.01/0.012
	120	1028	0.1	0.014	79.5	59.1	0.0	200	20.9	0.04/0.049
	Outside - After	1107	0.1	0.022	92.3	40.7	0.0	200	20.9	0.0/0.0
200	Outside									
	200	1100	0.1	0.014	83.1	46.8	0.0	200	20.9	0.02/0.025
	205	1039	0.0	0.006	79.3	79.1	0.0	200	20.9	0.01/0.012
	252	1351	0.4	0.024	80.6	54.1	0.0	400	20.9	0.05/0.061
	254	1355	0.3	0.021	80.4	53.7	0.0	400	20.9	0.04/0.049
	256	1348	0.5	0.013	81.5	54.7	0.0	400	20.9	0.06/0.074
	258	1343	0.6	0.009	80.7	58.3	0.0	400	20.9	0.10/0.123
	Outside - After	1400	0.2	0.021	75.7	55.4	0.0	200	20.9	0.01/0.012
400	Outside - Before	1111	0.1	0.014	81.1	45.5	0.0	200	20.9	0.01/0.012
	400	1147	0.1	0.028	73.0	64.4	0.0	200	20.9	0.01/0.012
	402	1143	0.0	0.016	73.7	62.3	0.0	200	20.9	0.0/0.0
	405	1139	0.1	0.017	75.3	59.7	0.0	200	20.9	0.02/0.25
	410	1119	0.1	0.019	77.5	52.9	0.0	200	20.9	0.01/0.012
	415	1125	0.1	0.015	76.2	56.8	0.0	200	20.9	0.01/0.012
	425	1130	0.1	0.009	75.3	58.8	0.0	200	20.9	0.01/0.012
	440	1134	0.1	0.006	75.5	59.5	0.0	200	20.9	0.01/0.012
	455	1154	0.1	0.002	74.6	64.2	0.0	200	20.9	0.01/0.012
	460	1150	0.1	0.004	74.8	61.5	0.0	300	20.9	0.02/0.025
	480	1204	0.1	0.007	76.2	61.1	0.0	300	20.9	0.02/0.025
	490	1208	0.1	0.021	77.0	60.3	0.0	300	20.9	0.01/0.012
	Outside - After	1238	0.1	0.017	86.1	43.3	0.0	200	20.9	0.01/0.012
500	Outside - Before	1240	0.1	0.026	87.3	43.3	0.0	200	20.9	0.02/0.025
	500	1321	0.1	0.000	75.5	57.9	0.0	300	20.9	0.01/0.012
	505	1311	0.1	0.001	78.0	53.2	0.0	200	20.9	0.02/0.025
	510	1313	0.2	0.001	76.8	67.9	0.0	200	20.9	0.02/0.025
	515	1316	0.2	0.000	76.6	56.1	0.0	200	20.9	0.02/0.025
	520	1306	0.1	0.000	80.2	47.7	0.0	200	20.9	0.02/0.025
	555	1338	0.2	0.001	79.1	56.0	0.0	200	20.9	0.01/0.012
	560	1333	0.2	0.000	80.6	55.7	0.0	200	20.9	0.01/0.12
	565	1326	0.1	0.002	80.9	55.6	0.0	200	20.9	0.00/0.00
	570	1331	0.2	0.002	79.7	56.0	0.0	200	20.9	0.01/0.012
	Outside - After	1345	0.1	0.026	87.3	43.3	0.0	200	20.9	0.02/0.025
600	Outside - Before	1404	0.2	0.024	77.3	55.8	0.0	200	20.9	0.00/0.00
	600	1435	0.3	0.008	78.0	57.5	0.0	200	20.9	0.04/0.049
	605	1426	0.0	0.003	77.9	60.0	0.0	200	20.9	0.01/0.012
	615	1430	0.3	0.023	77.7	56.3	0.0	200	20.9	0.00/0.00
	620	1424	0.3	0.015	81.1	53.5	0.0	200	20.9	0.02/0.025
	655	1409	0.2	0.003	77.5	56.6	0.0	200	20.9	0.01/0.012
	660	1415	0.2	0.001	77.1	56.6	0.0	200	20.9	0.00/0.00
	665	1420	0.2	0.002	78.9	56.8	0.0	200	20.9	0.02/0.025
	670	1416	0.0	0.008	77.7	62.2	0.0	200	20.9	0.02/0.025
	Outside - After	1442	0.3	0.026	98.7	41.3	0.0	200	20.9	0.01/0.012

APPENDIX A – LABORATORY DATA AND CHAIN OF CUSTODY DOCUMENTATION

Aerobiology Laboratory Associates, Incorporated
A Pace Analytical® Laboratory

Certificate of Analysis
AIHA-LAP EMLAP# 218951

15061 Springdale St
Suite 111
Huntington Beach, CA 92649
7148958401

Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected:	9/9/2021
Date Received:	9/10/2021
Date Analyzed:	9/10/2021
Date Reported:	9/11/2021
Project ID:	21039783

1054 Spore Trap Analysis SOP 3.8: 24hr TAT

Client Sample #	0909-1				0909-1 Dup			
Sample Location	Outside Bldg 500, 100, 200				Outside Bldg 500, 100, 200			
Sample Volume (L)	150				150			
Lab Sample #	21039783-001				21039783-002			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	1	7	<1	-	5	33	3	-
ascospores	3	20	1	-	4	27	2	-
basidiospores	9	60	4	-	13	87	8	-
Botrytis	1	7	<1	-	-	-	-	-
Cladosporium	185	1,233	84	-	122	813	74	-
Epicoccum	1	7	<1	-	-	-	-	-
Ganoderma	1	7	<1	-	1	7	<1	-
hyphal elements	2	13	<1	-	7	47	4	-
Penicillium/Aspergillus group	15	100	7	-	7	47	4	-
Smuts,Periconia,Myxomycetes	1	7	<1	-	4	27	2	-
Stachybotrys	-	-	-	-	1	7	<1	-
Unknown	2	13	<1	-	-	-	-	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	221	1,473	~100%	-	164	1,093	~100%	-

Client Sample #	0909-2				0909-2 Dup			
Sample Location	Rm 615				Rm 615			
Sample Volume (L)	150				150			
Lab Sample #	21039783-003				21039783-004			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	1	7	1	-	1	7	<1	-
ascospores	3	20	4	-	2	13	2	-
basidiospores	5	33	7	-	8	53	8	-
Chaetomium	-	-	-	-	1	7	<1	-
Cladosporium	51	340	69	-	68	453	65	-
hyphal elements	3	20	4	-	10	67	10	-
Penicillium/Aspergillus group	3	20	4	-	6	40	6	-
Smuts,Periconia,Myxomycetes	7	47	9	-	8	53	8	-
Unknown	1	7	1	-	1	7	<1	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	74	493	~100%	-	105	700	~100%	-

Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #	0909-3				0909-3 Dup			
Sample Location	Rm 605				Rm 605			
Sample Volume (L)	150				150			
Lab Sample #	21039783-005				21039783-006			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	1	7	<1	-	-	-	-	-
ascospores	1	7	<1	-	6	40	4	-
basidiospores	8	53	8	-	10	67	6	-
Cladosporium	64	427	64	-	68	453	44	-
Ganoderma	2	13	2	-	-	-	-	-
hyphal elements	12	80	12	-	12	80	8	-
Oidium	-	-	-	-	1	0	<1	-
Penicillium/Aspergillus group	2	13	2	-	52	347	34	-
Smuts,Periconia,Myxomycetes	7	47	7	-	6	40	4	-
Unknown	3	20	3	-	1	7	<1	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	100	667	~100%	-	156	1,033	~100%	-

Client Sample #	0909-4				0909-4 Dup			
Sample Location	Rm 665				Rm 665			
Sample Volume (L)	150				150			
Lab Sample #	21039783-007				21039783-008			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	4	27	3	-	-	-	-	-
basidiospores	15	100	11	-	12	80	7	-
Botrytis	1	7	<1	-	-	-	-	-
Chaetomium	1	7	<1	-	2	13	1	-
Cladosporium	67	447	50	-	75	500	45	-
hyphal elements	5	33	4	-	12	80	7	-
Penicillium/Aspergillus group	37	247	28	-	60	400	36	-
Rusts	1	7	<1	-	-	-	-	-
Smuts,Periconia,Myxomycetes	1	7	<1	-	6	40	4	-
Stemphylium-like	-	-	-	-	1	7	<1	-
Trichocladium	1	7	<1	-	-	-	-	-
Unknown	1	7	<1	-	-	-	-	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	134	893	~100%	-	168	1,120	~100%	-

Aerobiology Laboratory Associates, Incorporated
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Certificate of Analysis
AIHA-LAP EMLAP# 218951

15061 Springdale St
Suite 111
Huntington Beach, CA 92649
7148958401

Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #	0909-5				0909-5 Dup			
Sample Location	Rm 660				Rm 660			
Sample Volume (L)	150				150			
Lab Sample #	21039783-009				21039783-010			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	1	7	<1	-	-	-	-	-
ascospores	1	7	<1	-	1	7	<1	-
basidiospores	10	67	7	-	9	60	5	-
Cladosporium	102	680	71	-	113	753	60	-
Epicoccum	-	-	-	-	1	7	<1	-
Ganoderma	-	-	-	-	1	7	<1	-
hyphal elements	7	47	5	-	10	67	5	-
Penicillium/Aspergillus group	19	127	13	-	33	220	17	-
Smuts,Periconia,Myxomycetes	2	13	1	-	18	120	10	-
Torula	-	-	-	-	1	7	<1	-
Ulocladium	1	7	<1	-	-	-	-	-
Unknown	1	7	<1	-	2	13	1	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	144	960	~100%	-	189	1,260	~100%	-

Client Sample #	0909-6				0909-6 Dup			
Sample Location	Rm 205				Rm 205			
Sample Volume (L)	150				150			
Lab Sample #	21039783-011				21039783-012			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	1	7	5	-	-	-	-	-
basidiospores	2	13	10	-	2	13	7	-
Cladosporium	11	73	52	-	19	127	63	-
Epicoccum	-	-	-	-	1	7	3	-
hyphal elements	3	20	14	-	5	33	17	-
Penicillium/Aspergillus group	1	7	5	-	3	20	10	-
Smuts,Periconia,Myxomycetes	3	20	14	-	-	-	-	-
	Debris Rating **3**				Debris Rating **2**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	21	140	~100%	-	30	200	~100%	-

Aerobiology Laboratory Associates, Incorporated
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Certificate of Analysis
AIHA-LAP EMLAP# 218951

15061 Springdale St
Suite 111
Huntington Beach, CA 92649
7148958401

Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #	0909-7				0909-7 Dup			
Sample Location	Rm 200				Rm 200			
Sample Volume (L)	150				150			
Lab Sample #	21039783-013				21039783-014			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	-	-	-	-	1	7	1	-
ascospores	2	13	2	-	-	-	-	-
basidiospores	5	33	4	-	3	20	3	-
Cladosporium	86	573	68	-	60	400	67	-
hyphal elements	10	67	8	-	9	60	10	-
Penicillium/Aspergillus group	15	100	12	-	13	87	14	-
Smuts,Periconia,Myxomycetes	7	47	6	-	4	27	4	-
Unknown	1	7	<1	-	-	-	-	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	126	840	~100%	-	90	600	~100%	-

Client Sample #	0909-8				0909-8 Dup			
Sample Location	Rm 252				Rm 252			
Sample Volume (L)	150				150			
Lab Sample #	21039783-015				21039783-016			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	2	13	22	-	-	-	-	-
basidiospores	4	27	44	-	1	7	7	-
Cladosporium	2	13	22	-	10	67	67	-
hyphal elements	1	7	11	-	-	-	-	-
Smuts,Periconia,Myxomycetes	-	-	-	-	2	13	13	-
Unknown	-	-	-	-	2	13	13	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	9	60	~100%	-	15	100	~100%	-

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Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #	0909-9				0909-9 Dup			
Sample Location	Rm 258				Rm 258			
Sample Volume (L)	150				150			
Lab Sample #	21039783-017				21039783-018			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	1	7	2	-	-	-	-	-
basidiospores	4	27	8	-	7	47	6	-
Cladosporium	32	213	60	-	81	540	75	-
Diplocladiella	-	-	-	-	1	7	<1	-
Ganoderma	-	-	-	-	1	7	<1	-
hyphal elements	6	40	11	-	8	53	7	-
Penicillium/Aspergillus group	5	33	9	-	7	47	6	-
Smuts,Periconia,Myxomycetes	5	33	9	-	2	13	2	-
Trichocladium	-	-	-	-	1	7	<1	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	53	353	~100%	-	108	720	~100%	-

Client Sample #	0909-10				0909-10 Dup			
Sample Location	Rm 500				Rm 500			
Sample Volume (L)	150				150			
Lab Sample #	21039783-019				21039783-020			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	1	7	10	-	1	7	4	-
basidiospores	1	7	10	-	-	-	-	-
Cladosporium	2	13	20	-	14	93	50	-
hyphal elements	2	13	20	-	6	40	21	-
Penicillium/Aspergillus group	4	27	40	-	3	20	11	-
Smuts,Periconia,Myxomycetes	-	-	-	-	3	20	11	-
Unknown	-	-	-	-	1	7	4	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	10	67	~100%	-	28	187	~100%	-

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Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #	0909-11				0909-11 Dup			
Sample Location	Rm 505				Rm 505			
Sample Volume (L)	150				150			
Lab Sample #	21039783-021				21039783-022			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
basidiospores	1	7	9	-	3	20	20	-
Cladosporium	4	27	36	-	5	33	33	-
hyphal elements	1	7	9	-	4	27	27	-
Penicillium/Aspergillus group	5	33	45	-	-	-	-	-
Smuts,Periconia,Myxomycetes	-	-	-	-	3	20	20	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	11	73	~100%	-	15	100	~100%	-

Client Sample #	0909-13				0909-13 Dup			
Sample Location	Rm 560				Rm 560			
Sample Volume (L)	150				150			
Lab Sample #	21039783-023				21039783-024			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
basidiospores	1	7	9	-	1	7	11	-
Cladosporium	4	27	36	-	3	20	33	-
hyphal elements	1	7	9	-	1	7	11	-
Penicillium/Aspergillus group	5	33	45	-	4	27	44	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	11	73	~100%	-	9	60	~100%	-

Client Sample #	0909-14				0909-14 Dup			
Sample Location	Rm 400				Rm 400			
Sample Volume (L)	150				150			
Lab Sample #	21039783-025				21039783-026			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	1	7	8	-	2	13	15	-
basidiospores	1	7	8	-	2	13	15	-
Cladosporium	4	27	33	-	3	20	23	-
hyphal elements	2	13	17	-	1	7	8	-
Penicillium/Aspergillus group	4	27	33	-	5	33	38	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	12	80	~100%	-	13	87	~100%	-

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Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #	0909-15				0909-15 Dup			
Sample Location	Rm 410				Rm 410			
Sample Volume (L)	150				150			
Lab Sample #	21039783-027				21039783-028			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	-	-	-	-	1	7	14	-
basidiospores	1	7	11	-	1	7	14	-
Cladosporium	3	20	33	-	2	13	29	-
hyphal elements	2	13	22	-	1	7	14	-
Penicillium/Aspergillus group	1	7	11	-	1	7	14	-
Smuts,Periconia,Myxomycetes	2	13	22	-	1	7	14	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	9	60	~100%	-	7	47	~100%	-

Client Sample #	0909-16				0909-16 Dup			
Sample Location	Rm 480				Rm 480			
Sample Volume (L)	150				150			
Lab Sample #	21039783-029				21039783-030			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	1	7	17	-	-	-	-	-
ascospores	1	7	17	-	2	13	25	-
basidiospores	1	7	17	-	2	13	25	-
Cladosporium	-	-	-	-	3	20	38	-
hyphal elements	1	7	17	-	1	7	13	-
Penicillium/Aspergillus group	2	13	33	-	-	-	-	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	6	40	~100%	-	8	53	~100%	-

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Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
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Project ID: 21039783

Client Sample #	0909-17				0909-17 Dup			
Sample Location	Rm 460				Rm 460			
Sample Volume (L)	150				150			
Lab Sample #	21039783-031				21039783-032			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
basidiospores	-	-	-	-	1	7	10	-
Cladosporium	1	7	13	-	4	27	40	-
hyphal elements	1	7	13	-	1	7	10	-
Penicillium/Aspergillus group	-	-	-	-	3	20	30	-
Smuts,Periconia,Myxomycetes	6	40	75	-	1	7	10	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	8	53	~100%	-	10	67	~100%	-

Client Sample #	0909-18				0909-18 Dup			
Sample Location	Rm 100				Rm 100			
Sample Volume (L)	150				150			
Lab Sample #	21039783-033				21039783-034			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
basidiospores	-	-	-	-	1	7	8	-
Cladosporium	5	33	56	-	6	40	50	-
hyphal elements	1	7	11	-	1	7	8	-
Penicillium/Aspergillus group	3	20	33	-	4	27	33	-
	Debris Rating **2**				Debris Rating **2**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	9	60	~100%	-	12	80	~100%	-

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Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
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Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #	0909-19				0909-19 Dup			
Sample Location	Rm 105				Rm 105			
Sample Volume (L)	150				150			
Lab Sample #	21039783-035				21039783-036			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	-	-	-	-	1	7	8	-
ascospores	-	-	-	-	1	7	8	-
basidiospores	-	-	-	-	1	7	8	-
Cladosporium	3	20	38	-	4	27	33	-
hyphal elements	1	7	13	-	1	7	8	-
Penicillium/Aspergillus group	3	20	38	-	3	20	25	-
Smuts,Periconia,Myxomycetes	1	7	13	-	1	7	8	-
	Debris Rating **2**				Debris Rating **2**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	8	53	~100%	-	12	80	~100%	-

Client Sample #: CB-1
Lab Sample #: 21039783-037
Sample Location: SW of Rm 615, Window Sill

Test: 1051 Surface - Qualitative Direct Microscopic Exam SOP 3.7

Results:	Observation
Occasional Botrytis-like spores seen	1-5 per cover slip
Occasional Cladosporium spores seen	1-5 per cover slip
Occasional hyphal elements parts seen	1-5 per cover slip

Debris Rating: 1

Client Sample #: CB-2
Lab Sample #: 21039783-038
Sample Location: SE Cabinet of Rm 615

Test: 1051 Surface - Qualitative Direct Microscopic Exam SOP 3.7

Results:	Observation
Occasional Alternaria spores seen	1-5 per cover slip
Few Cladosporium spores seen	5 per cover slip
Occasional Cladosporium conidiophores seen	1-5 per cover slip
Occasional Cladosporium hyphal elements seen	1-5 per cover slip
Occasional Ganoderma spores seen	1-5 per cover slip
Occasional Penicillium/Aspergillus group spores seen	1-5 per cover slip
Occasional Pithomyces spores seen	1-5 per cover slip
Few Smuts,Periconia,Myxomycetes spores seen	5 per cover slip
Occasional ascospores spores seen	1-5 per cover slip
Occasional hyphal elements parts seen	1-5 per cover slip

Debris Rating: 2

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Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #: CB-3
Lab Sample #: 21039783-039
Sample Location: North HVAC Closet Wall (N) of Rm 615

Test: 1051 Surface - Qualitative Direct Microscopic Exam SOP 3.7

Results:	Observation
Few Alternaria spores seen	5 per cover slip
Occasional Chaetomium spores seen	1-5 per cover slip
Few Cladosporium spores seen	5 per cover slip
Few Drechslera/Bipolaris group spores seen	5 per cover slip
Occasional Epicoccum spores seen	1-5 per cover slip
Occasional Penicillium/Aspergillus group spores seen	1-5 per cover slip
Occasional Pithomyces spores seen	1-5 per cover slip
Occasional Rusts spores seen	1-5 per cover slip
Few Smuts,Periconia,Myxomycetes spores seen	5 per cover slip
Few ascospores spores seen	5 per cover slip
Occasional basidiospores spores seen	1-5 per cover slip
Few hyphal elements parts seen	5 per cover slip

Debris Rating: 3

Client Sample #: CB-4
Lab Sample #: 21039783-040
Sample Location: West Window Sill of Rm 560

Test: 1051 Surface - Qualitative Direct Microscopic Exam SOP 3.7

Results:	Observation
Few Alternaria spores seen	5 per cover slip
Few Cladosporium spores seen	5 per cover slip
Occasional Penicillium/Aspergillus group spores seen	1-5 per cover slip
Few Smuts,Periconia,Myxomycetes spores seen	5 per cover slip
Occasional Stemphylium spores seen	1-5 per cover slip
Occasional ascospores spores seen	1-5 per cover slip
Few hyphal elements parts seen	5 per cover slip

Debris Rating: 3

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Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Client Sample #: CB-5
Lab Sample #: 21039783-041
Sample Location: East Wall of Rm 560

Test: 1051 Surface - Qualitative Direct Microscopic Exam SOP 3.7

Results:	Observation
Occasional Alternaria spores seen	1-5 per cover slip
Few Cladosporium spores seen	5 per cover slip
Occasional Curvularia spores seen	1-5 per cover slip
Occasional Drechslera/Bipolaris group spores seen	1-5 per cover slip
Occasional Epicoccum spores seen	1-5 per cover slip
Occasional Pithomyces spores seen	1-5 per cover slip
Occasional Rusts spores seen	1-5 per cover slip
Few Smuts,Periconia,Myxomycetes spores seen	5 per cover slip
Occasional ascospores spores seen	1-5 per cover slip
Occasional basidiospores spores seen	1-5 per cover slip
Few hyphal elements parts seen	5 per cover slip

Debris Rating: 3

Client Sample #: CB-6
Lab Sample #: 21039783-042
Sample Location: North Cabinets of Rm 560

Test: 1051 Surface - Qualitative Direct Microscopic Exam SOP 3.7

Results:	Observation
Few Alternaria spores seen	5 per cover slip
Few Cladosporium spores seen	5 per cover slip
Occasional Cladosporium hyphal elements seen	1-5 per cover slip
Occasional Curvularia spores seen	1-5 per cover slip
Few Drechslera/Bipolaris group spores seen	5 per cover slip
Occasional Epicoccum spores seen	1-5 per cover slip
Occasional Ganoderma spores seen	1-5 per cover slip
Occasional Pestalotiopsis group spores seen	1-5 per cover slip
Occasional Pithomyces spores seen	1-5 per cover slip
Few Smuts,Periconia,Myxomycetes spores seen	5 per cover slip
Occasional Ulocladium spores seen	1-5 per cover slip
Occasional ascospores spores seen	1-5 per cover slip
Occasional basidiospores spores seen	1-5 per cover slip
Few hyphal elements parts seen	5 per cover slip

Debris Rating: 3

Alta Environmental, an NV5 Inc.	Date Collected:	9/9/2021
3777 Long Beach Blvd., Annex Bldg	Date Received:	9/10/2021
Long Beach CA, 90807	Date Analyzed:	9/10/2021
Attn: David Schack	Date Reported:	9/11/2021
Project: **SMASH**	Project ID:	21039783
Condition of Sample(s) Upon Receipt: Acceptable		Page 12 of 13

Signature Page

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1. The results in this report are related to this project and these samples only.
2. Results in this report are intended for the Aerobiology Laboratory Associates, Inc. client listed above and cannot be discussed with anyone outside of that given company without written authorization.
3. Minimum Reporting Limits (MRL) for BULKS, DUSTS, SWABS, and WATER samples are a calculation based on 1 raw count, the sample size and the dilution plate on which organism was counted. Results are a compilation of counts taken from multiple dilutions and multiple medias.
4. Raw count is the total number of colonies identified on a given sample, without any calculations performed based on air volume, surface area, water volume, or weight.
5. Total count is a calculated value based on the type of sample submitted, the raw count, and the calculation related to the volume, weight or surface area.

Suzanne Blevins
Laboratory Director

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Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/9/2021
Date Received: 9/10/2021
Date Analyzed: 9/10/2021
Date Reported: 9/11/2021
Project ID: 21039783

Footnotes and Additional Report Information

Debris Rating Table

1	Minimal (<5%) particulate present	Reported values are minimally affected by particulate load.
2	5% to 25% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
3	26% to 75% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
4	75% to 90% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
5	Greater than 90% of the trace occluded with particulate	Quantification not possible due to large negative bias. A new sample should be collected at a shorter time interval or other measures taken to reduce particulate load.

1. Penicillium/Aspergillus group spores are characterized by their small size, round to ovoid shape, being unicellular, and usually colorless to lightly pigmented. There are numerous genera of fungi whose spore morphology is similar to that of the Penicillium/Aspergillus type. Two common examples would be Paecilomyces and Acremonium. Although the majority of spores placed in this group are Penicillium, Aspergillus, or a combination of both. Keep in mind that these are not the only two possibilities.

2. Ascospores are sexually produced fungal spores formed within an ascus. An ascus is a sac-like structure designed to discharge the ascospores into the environment, e.g. Ascobolus.

3. Basidiospores are typically blown indoors from outdoors and rarely have an indoor source. However, in certain situations a high basidiospore count indoors may be indicative of a wood decay problem or wet soil.

4. The colorless group contains colorless spores which were unidentifiable to a specific genus. Examples of this group include Acremonium, Aphanocladium, Beauveria, Chrysosporium, Engyodontium microconidia, yeast, some arthrospores, as well as many others.

5. Hyphae are the vegetative mode of fungi. Hyphal elements are fragments of individual Hyphae. They can break apart and become airborne much like spores and are potentially allergenic. A mass of hyphal elements is termed the mycelium. Hyphae in high concentration may be indicative of colonization.

6. Dash (-) in this report, under raw count column means 'not detected (ND)'; otherwise 'not applicable' (NA).

7. The positive-hole correction factor is a statistical tool which calculates a probable count from the raw count, taking into consideration that multiple particles can impact on the same hole; for this reason the sum of the calculated counts may be less than the positive hole corrected total.

8. Due to rounding totals may not equal 100%.

9. Analytical Sensitivity for each spores is different for Non-viable sample when the spores are read at different percentage. Analytical Sensitivity is calculated as spr/m ^{3} divided by raw count. spr/m ^{3} = raw counts x (100/ % read) x (1000/Sample volume). If Analytical Sensitivity is 13 spr/m ^{3} at 100% read, Analytical Sensitivity at 50% read would be 27 spr/m ^{3}, which is 2 times higher. Analytical Sensitivity provided on the report is based on an assumed 100% of the trace being analyzed.

10. Minimum Reporting Limits (MRL) for BULKS, DUSTS, SWABS, and WATER samples are a calculation based on the sample size and the dilution plate on which the organism was counted. Results are a compilation of counts taken from multiple dilutions and multiple medias. This means that every genus of fungi or bacteria recovered can be counted on the plate on which it is best represented.

11. If the final quantitative result is corrected for contamination based on the blank, the blank correction is stated in the sample comments section of the report.

12. The results in this report are related to this project and these samples only.

13. For samples with an air volume of < 100L, the number of significant figures in the result should be considered (2) two. For samples with air volumes between 100-999L, the number of significant figures in the result should considered (3) three. For example, a sample with a result of 55,443 spr/m^3 from a 75L sample using significant figures should be considered 55,000. The same result of 55,443 from a 150L sample using significant figures should be considered 55,400 spr/m ^{3}.

14. If the In/Out ratio is greater than 100 times it is indicated >100/1, rather than showing the real value.

Terminology Used in Direct Exam Reporting

Conidiophores are a type of modified hyphae from which spores are born. When seen on a surface sample in moderate to numerous concentrations they may be indicative of fungal growth.

Suzanne Blevins
Laboratory Director

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Lab Use: 21039783

ELITE — AZ, CA, CO, FL, GA, IL, VA, NJ

NVLAP — AZ, CA, CO, VA

VA - 102977 AZ - 210229 CA - 218951 CO - 192683 NJ - 102747 GA - 163063 FL - 228303 IL - 232279

Aerobiology Client	Alta Env.				
Field Contact	Jim Byers	Collected By/Date: Carbany B 9/9/21		Relinquished By/Date:	9:50 AM
Reporting Address		Relinquished By/Date:		Received By/Date: CO 9/10/21 - ~~9:30 AM~~ CO	
Billing Address	3777 Long Beach Blvd Long Beach, CA 90807	Sampler Type	Andersen ___ SAS ___	SampleAire ___ AeroTrap ___	Other ___ BioCulture ___
Phone/Fax		PO#/Job#:			
Reporting Email (s)	Jim.Byers@NUS.com	Project Name: SMASH			
Routine ☐	24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐	Notes: 3hr turnaround			
SAMPLING LOCATION ZIP CODE		CC Info: Carbany.Bercerril@NUS.com			

	Sample No.	Test Code	Sample Location	Total Volume/Area
1	0900 - 1 - 1 Dup	1054	Outside Bldg 500, 100, 200	150
2	- 2 - 2 Dup		RM 615	
3	- 3 - 3 Dup		RM 605	
4	- 4 - 4 Dup		RM 665	
5	- 5 - 5 Dup		RM 660	
6	- 6 - 6 Dup		RM 205	
7	- 7 - 7 Dup		RM 200	
8	- 8 - 8 Dup		RM 252	
9	- 9 - 9 Dup		RM 258	
10	- 10 - 10 Dup		RM 500	
11	- 11 - 11 Dup		RM 505	
12	- 12 - 12 Dup		RM 560	
13	- 13 - 13 Dup			CB
14	- 14 - 14 Dup		RM 400	
15	- 15 - 15 Dup		RM 410	

(1054)	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- **Bulk**	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

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Lab Use:

ELITE — AZ, CA, CO, FL, GA, IL, VA, NJ

NVLAP — AZ, CA, CO, VA

VA - 102977 AZ - 210229
CA - 218951 CO - 192683
NJ - 102747 GA - 163063
FL - 228303 IL - 232279

Aerobiology Client	ALTA Env		
Field Contact		Collected By/Date:	Relinquished By/Date:
Reporting Address		Relinquished By/Date:	Received By/Date:
Billing Address		Sampler Type: Andersen ___ SAS ___	SampleAire ___ AeroTrap ___ Other ___ BioCulture ___
Phone/Fax		PO#/Job#:	
Reporting Email (s)		Project Name: SMASH	
Routine ☐ 24 Hour ☐ Same Day ☐ 4 Hour ☐ 2 Hour ☐		Notes: 3hr TAT	
SAMPLING LOCATION ZIP CODE		CC Info:	

	Sample No.	Test Code	Sample Location	Total Volume/Area
~~16~~ 1	0909 -16	1054	RM 480	150
	-16 Dup			
~~17~~ 2	-17		RM 460	
	-17 Dup			
~~18~~ 3	-18		RM 100	
	-18 Dup			
~~19~~ 4	-19		RM 105	
	-19 Dup			
~~20~~ 5	CB -1	1051	SW of RM 615, window sill	N/A
~~21~~ 6	-2		SE cabinet of RM 615	
~~22~~ 7	-3		North HVAC closet wall (N) of RM 615	
~~23~~ 8	-4		West window sill of RM 560	
~~24~~ 9	-5		East wall of RM 560	
~~25~~ 10	-6		North cabinets of RM 560	
11				
12				
13				
14				
15				

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
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1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
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1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

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Certificate of Analysis
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15061 Springdale St
Suite 111
Huntington Beach, CA 92649
7148958401

Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/11/2021
Date Received: 9/11/2021
Date Analyzed: 9/11/2021
Date Reported: 9/11/2021
Project ID: 21039915

1054 Spore Trap Analysis SOP 3.8: Same Day TAT

Client Sample #	0911- 1				0911- 1 Dup			
Sample Location	2nd Floor Hall Between 500's and 200's Bldg				2nd Floor Hall Between 500's and 200's Bldg			
Sample Volume (L)	150				150			
Lab Sample #	21039915-001				21039915-002			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	-	-	-	-	1	7	<1	-
ascospores	13	87	7	-	9	60	6	-
basidiospores	17	113	9	-	18	120	12	-
Chaetomium	1	7	<1	-	1	7	<1	-
Cladosporium	64	427	35	-	79	527	51	-
Drechslera/Bipolaris group	1	7	<1	-	1	7	<1	-
hyphal elements	6	40	3	-	7	47	5	-
Penicillium/Aspergillus group	65	433	36	-	30	200	19	-
Smuts,Periconia,Myxomycetes	16	107	9	-	8	53	5	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	183	1,220	~100%	-	154	1,027	~100%	-

Client Sample #	0911- 2				0911- 2 Dup			
Sample Location	SE of Rm 555				SE of Rm 555			
Sample Volume (L)	150				150			
Lab Sample #	21039915-003				21039915-004			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	1	7	6	-	1	7	11	-
basidiospores	-	-	-	-	1	7	11	-
Cladosporium	3	20	19	-	1	7	11	-
hyphal elements	5	33	31	-	2	13	22	-
Penicillium/Aspergillus group	5	33	31	-	2	13	22	-
Smuts,Periconia,Myxomycetes	2	13	12	-	2	13	22	-
	Debris Rating **2**				Debris Rating **2**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	16	107	~100%	-	9	60	~100%	-

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Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/11/2021
Date Received: 9/11/2021
Date Analyzed: 9/11/2021
Date Reported: 9/11/2021
Project ID: 21039915

Client Sample #	0911- 3				0911- 3 Dup			
Sample Location	South Center of Rm 665				South Center of Rm 665			
Sample Volume (L)	150				150			
Lab Sample #	21039915-005				21039915-006			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	3	20	6	-	2	13	5	-
basidiospores	5	33	10	-	1	7	3	-
Cladosporium	14	93	27	-	10	67	27	-
hyphal elements	7	47	13	-	4	27	11	-
Penicillium/Aspergillus group	5	33	10	-	3	20	8	-
Smuts,Periconia,Myxomycetes	18	120	35	-	16	107	43	-
Stemphylium	-	-	-	-	1	7	3	-
	Debris Rating **4**				Debris Rating **4**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	52	347	~100%	-	37	247	~100%	-

Client Sample #	0911- 4				0911- 4 Dup			
Sample Location	Rm 605				Rm 605			
Sample Volume (L)	150				150			
Lab Sample #	21039915-007				21039915-008			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
ascospores	2	13	5	-	1	7	5	-
basidiospores	1	7	3	-	2	13	11	-
Cladosporium	10	67	27	-	6	40	32	-
hyphal elements	4	27	11	-	1	7	5	-
Penicillium/Aspergillus group	3	20	8	-	4	27	21	-
Smuts,Periconia,Myxomycetes	16	107	43	-	5	33	26	-
Stemphylium	1	7	3	-	-	-	-	-
	Debris Rating **3**				Debris Rating **2**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	37	247	~100%	-	19	127	~100%	-

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Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/11/2021
Date Received: 9/11/2021
Date Analyzed: 9/11/2021
Date Reported: 9/11/2021
Project ID: 21039915

Client Sample #	0911- 5				0911- 5 Dup			
Sample Location	Rm 660				Rm 660			
Sample Volume (L)	150				150			
Lab Sample #	21039915-009				21039915-010			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
basidiospores	1	7	14	-	1	7	8	-
Cladosporium	1	7	14	-	7	47	58	-
hyphal elements	3	20	43	-	1	7	8	-
Penicillium/Aspergillus group	1	7	14	-	1	7	8	-
Smuts,Periconia,Myxomycetes	1	7	14	-	2	13	17	-
	Debris Rating **3**				Debris Rating **3**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	7	47	~100%	-	12	80	~100%	-

Client Sample #	0911- 6				0911- 6 Dup			
Sample Location	Outside Rm 610				Outside Rm 610			
Sample Volume (L)	150				150			
Lab Sample #	21039915-011				21039915-012			
Spore Identification	RawCt	spr/m^3	%Ttl	I/O	RawCt	spr/m^3	%Ttl	I/O
Alternaria	1	7	<1	-	1	7	<1	-
ascospores	5	33	2	-	6	40	2	-
basidiospores	10	67	4	-	10	67	3	-
Chaetomium	-	-	-	-	1	7	<1	-
Cladosporium	173	1,153	76	-	146	973	37	-
Drechslera/Bipolaris group	-	-	-	-	1	7	<1	-
Ganoderma	2	13	<1	-	3	20	<1	-
hyphal elements	11	73	5	-	8	53	2	-
Penicillium/Aspergillus group	3	20	1	-	198	1,320	50	-
Peronospora	3	20	1	-	3	20	<1	-
Rusts	1	7	<1	-	1	7	<1	-
Smuts,Periconia,Myxomycetes	18	120	8	-	20	133	5	-
	Debris Rating **4**				Debris Rating **8**			
Analytical Sensitivity	Analytical Sensitivity: **7** spr/m^3				Analytical Sensitivity: **7** spr/m^3			
Comments								
Total *See Footnotes	227	1,513	~100%	-	398	2,653	~100%	-

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7148958401

Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 9/11/2021
Date Received: 9/11/2021
Date Analyzed: 9/11/2021
Date Reported: 9/11/2021
Project ID: 21039915

Client Sample #: TL - 1
Lab Sample #: 21039915-007
Sample Location: Rm 665 West Cabinets of Class Rm

Test: 1051 Surface - Qualitative Direct Microscopic Exam SOP 3.7: 48hr TAT

Results:	Observation
Few Aspergillus spores seen	5 per cover slip
Few Aspergillus conidiophores seen	5 per cover slip
Few Aspergillus hyphae seen	5 per cover slip
Occasional Cladosporium spores seen	1-5 per cover slip
Occasional Drechslera/Bipolaris group spores seen	1-5 per cover slip
Numerous Scopulariopsis spores seen	3-4 per field (minimum)
Numerous Scopulariopsis conidiophores seen	3-4 per field (minimum)
Numerous Scopulariopsis hyphae seen	3-4 per field (minimum)

Debris Rating: 1

Alta Environmental, an NV5 Inc.	Date Collected:	9/11/2021
3777 Long Beach Blvd., Annex Bldg	Date Received:	9/11/2021
Long Beach CA, 90807	Date Analyzed:	9/11/2021
Attn: David Schack	Date Reported:	9/11/2021
Project: **SMASH**	Project ID:	21039915
Condition of Sample(s) Upon Receipt: Acceptable		Page 5 of 6

Signature Page

Aerobiology Laboratory Associates, Inc. shall be responsible for all the information provided in the report, except when information is provided by the customer. Data provided by a customer can affect the validity of results and shall be clearly identified. Results apply to the samples as received. Aerobiology Laboratory Associates, Inc. is not responsible for the sampling activity, such as air and water volume, area and mass unit. The report shall not be reproduced except in full without the approval of the laboratory to ensure that parts of a report are not taken out of context. Data interpretation of this report will be the client responsibility based on their sampling.

1. The results in this report are related to this project and these samples only.
2. Results in this report are intended for the Aerobiology Laboratory Associates, Inc. client listed above and cannot be discussed with anyone outside of that given company without written authorization.
3. Minimum Reporting Limits (MRL) for BULKS, DUSTS, SWABS, and WATER samples are a calculation based on 1 raw count, the sample size and the dilution plate on which organism was counted. Results are a compilation of counts taken from multiple dilutions and multiple medias.
4. Raw count is the total number of colonies identified on a given sample, without any calculations performed based on air volume, surface area, water volume, or weight.
5. Total count is a calculated value based on the type of sample submitted, the raw count, and the calculation related to the volume, weight or surface area.

Suzanne Blevins
Laboratory Director

Aerobiology Laboratory Associates, Incorporated
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Alta Environmental, an NV5 Inc.
3777 Long Beach Blvd., Annex Bldg
Long Beach CA, 90807
Attn: David Schack
Project: **SMASH**
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected:	9/11/2021
Date Received:	9/11/2021
Date Analyzed:	9/11/2021
Date Reported:	9/11/2021
Project ID:	21039915
	Page 6 of 6

Footnotes and Additional Report Information

Debris Rating Table

1	Minimal (<5%) particulate present	Reported values are minimally affected by particulate load.
2	5% to 25% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
3	26% to 75% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
4	75% to 90% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
	Greater than 90% of the trace occluded with particulate	Quantification not possible due to large negative bias. A new sample should be collected at a shorter time interval or other measures taken to reduce particulate load.

1. Penicillium/Aspergillus group spores are characterized by their small size, round to ovoid shape, being unicellular, and usually colorless to lightly pigmented. There are numerous genera of fungi whose spore morphology is similar to that of the Penicillium/Aspergillus type. Two common examples would be Paecilomyces and Acremonium. Although the majority of spores placed in this group are Penicillium, Aspergillus, or a combination of both. Keep in mind that these are not the only two possibilities.

2. Ascospores are sexually produced fungal spores formed within an ascus. An ascus is a sac-like structure designed to discharge the ascospores into the environment, e.g. Ascobolus.

3. Basidiospores are typically blown indoors from outdoors and rarely have an indoor source. However, in certain situations a high basidiospore count indoors may be indicative of a wood decay problem or wet soil.

4. The colorless group contains colorless spores which were unidentifiable to a specific genus. Examples of this group include Acremonium, Aphanocladium, Beauveria, Chrysosporium, Engyodontium microconidia, yeast, some arthrospores, as well as many others.

5. Hyphae are the vegetative mode of fungi. Hyphal elements are fragments of individual Hyphae. They can break apart and become airborne much like spores and are potentially allergenic. A mass of hyphal elements is termed the mycelium. Hyphae in high concentration may be indicative of colonization.

6. Dash (-) in this report, under raw count column means 'not detected (ND)'; otherwise 'not applicable' (NA).

7. The positive-hole correction factor is a statistical tool which calculates a probable count from the raw count, taking into consideration that multiple particles can impact on the same hole; for this reason the sum of the calculated counts may be less than the positive hole corrected total.

8. Due to rounding totals may not equal 100%.

9. Analytical Sensitivity for each spores is different for Non-viable sample when the spores are read at different percentage. Analytical Sensitivity is calculated as spr/m ^{3} divided by raw count. spr/m ^{3} = raw counts x (100/ % read) x (1000/Sample volume). If Analytical Sensitivity is 13 spr/m ^{3} at 100% read, Analytical Sensitivity at 50% read would be 27 spr/m ^{3}, which is 2 times higher. Analytical Sensitivity provided on the report is based on an assumed 100% of the trace being analyzed.

10. Minimum Reporting Limits (MRL) for BULKS, DUSTS, SWABS, and WATER samples are a calculation based on the sample size and the dilution plate on which the organism was counted. Results are a compilation of counts taken from multiple dilutions and multiple medias. This means that every genus of fungi or bacteria recovered can be counted on the plate on which it is best represented.

11. If the final quantitative result is corrected for contamination based on the blank, the blank correction is stated in the sample comments section of the report.

12. The results in this report are related to this project and these samples only.

13. For samples with an air volume of < 100L, the number of significant figures in the result should be considered (2) two. For samples with air volumes between 100-999L, the number of significant figures in the result should considered (3) three. For example, a sample with a result of 55,443 spr/m ^{3} from a 75L sample using significant figures should be considered 55,000. The same result of 55,443 from a 150L sample using significant figures should be considered 55,400 spr/m ^{3}.

14. If the In/Out ratio is greater than 100 times it is indicated >100/1, rather than showing the real value.

Terminology Used in Direct Exam Reporting

Conidiophores are a type of modified hyphae from which spores are born. When seen on a surface sample in moderate to numerous concentrations they may be indicative of fungal growth.

Suzanne Blevins
Laboratory Director

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Lab Use: 21039915

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NVLAP — AZ, CA, CO, VA

VA - 102977 AZ - 210229
CA - 218951 CO - 192683
NJ - 102747 GA - 163063
FL - 228303 IL - 232279

Aerobiology Client	Alta						
Field Contact	David Schenck			Collected By/Date: Carbany/B 9-11-21		Relinquished By/Date:	
Reporting Address				Relinquished By/Date: 9/14/21		Received By/Date: AM 9/14/21 11:20am	
Billing Address	3777 Long Beach Blvd Long Beach CA 90807			Sampler Type	Andersen ___ SAS ___	SampleAire ___ AeroTrap ___	Other ___ BioCulture ___
Phone/Fax				PO#/Job#:			
Reporting Email (s)				Project Name: SMASH			
Routine ☐	24 Hour ☐	Same Day ☐	4 Hour ☐	2 Hour ☐	Notes: (3hr TAT) * Read Duplicates of Samples 0911-2 & 3		
SAMPLING LOCATION ZIP CODE					CC Info: Carbany, Becerril		

	Sample No.	Test Code	Sample Location	Total Volume/Area
1	0911 -1 Dup -1	1054	2nd Floor Hall Between 500's & 200's Bldg	150
2	-2 -2 Dup	↓	SE of RM 555	↓
3	-3 -3 Dup	↓	South Center of RM 665	↓
4			~~RM665 West Cabinets~~	
5	TL-1	1051	RM665 West Cabinets of Class RM	
6				
7	0911 -4 Dup -4	1054	RM 605	150
8	-5 -5 Dup	↓	RM 660	↓
9	-6 -6 Dup	↓	Outside RM 610	↓
10				
11				
12				
13				
14				
15				

(1054)	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
(1051)	Direct, Qualitative- **Swab/Tape**	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- **Bulk**	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	SWAB - Sewage Screen (E. coli/Entero/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	WATER - Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
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1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Alta Environmental/ NV5	**Report date:**	10/6/2021
Client Address:	3777 Long Beach Blvd Long Beach, CA	**Jones Ref. No.:** **Client Ref. No.:**	ST-18338 444721-0010226.00
Attn:	David Schack	**Date Sampled:**	10/1/2021
		Date Received:	10/4/2021
Project:	Smash/Muir	**Date Analyzed:**	10/6/2021
Project Address:	2526 6th St Santa Monica, CA 90405	**Physical State:**	Air

ANALYSES REQUESTED

1. EPA TO-15 – Volatile Organics by GC/MS

Analytical – Air samples were analyzed using EPA Method TO-15. Instrument Continuing Calibration Verification (CCV) and Instrument Blanks were analyzed every 24 hours as prescribed by the method. In addition, a Continuing Calibration Verification Duplicate (CCVD) was analyzed with each batch of Soil Gas samples.

Approval:

Annalise O'Toole
Mobile Lab Manager

JONES ENVIRONMENTAL, INC.
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11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL LABORATORY RESULTS

Client:	Alta Environmental/ NV5	**Report date:**	10/6/2021
Client Address:	3777 Long Beach Blvd Long Beach, CA	**Jones Ref. No.:** **Client Ref. No.:**	ST-18338 444721-0010226.00
Attn:	David Schack	**Date Sampled:**	10/1/2021
		Date Received:	10/4/2021
Project:	Smash/Muir	**Date Analyzed:**	10/6/2021
Project Address:	2526 6th St Santa Monica, CA 90405	**Physical State:**	Air

EPA TO-15 – Volatile Organics by GC/MS

Sample ID:	**Ambient - J**	**555 - J**		
Jones ID:	**ST-183301-02**	**ST-18338-02**	**Reporting Limit**	**Units**
Analytes:				
Acetone	**10.4***	**11.9***	0.50	µg/m^3
Acrolein	**1.49**	**2.00**	0.10	µg/m^3
Benzene	**0.66**	**0.51**	0.10	µg/m^3
Bromodichloromethane	ND	ND	0.10	µg/m^3
Bromoform	ND	ND	0.10	µg/m^3
1,3-Butadiene	ND	ND	0.10	µg/m^3
2-Butanone (MEK)	ND	ND	0.50	µg/m^3
n-Butylbenzene	ND	ND	0.10	µg/m^3
sec-Butylbenzene	ND	ND	0.10	µg/m^3
tert-Butylbenzene	ND	ND	0.10	µg/m^3
Carbon tetrachloride	**0.80**	**0.75**	0.10	µg/m^3
Chlorobenzene	ND	ND	0.10	µg/m^3
Chloroform	**0.37**	**0.37**	0.10	µg/m^3
Carbon Disulfide	ND	**0.12**	0.10	µg/m^3
Cyclohexane	**0.39**	**0.30**	0.10	µg/m^3
Dibromochloromethane	ND	ND	0.10	µg/m^3
1,2-Dibromoethane (EDB)	ND	ND	0.50	µg/m^3
1,4-Dioxane	ND	ND	0.10	µg/m^3
1,2- Dichlorobenzene	ND	ND	0.10	µg/m^3
1,3-Dichlorobenzene	ND	ND	0.10	µg/m^3
1,4-Dichlorobenzene	ND	ND	0.10	µg/m^3
1,1-Dichloroethane	ND	ND	0.10	µg/m^3
1,2-Dichloroethane	ND	ND	0.10	µg/m^3
1,1-Dichloroethene	ND	ND	0.10	µg/m^3
cis-1,2-Dichloroethene	ND	ND	0.10	µg/m^3
trans-1,2-Dichloroethene	ND	ND	0.10	µg/m^3

JONES ENVIRONMENTAL LABORATORY RESULTS

EPA TO-15 – Volatile Organics by GC/MS

Sample ID:	**Ambient - J**	**555 - J**		
Jones ID:	**ST-183301-02**	**ST-18338-02**	**Reporting Limit**	**Units**
Analytes:				
Ethyl Acetate	ND	ND	0.50	µg/m^3
Ethylbenzene	**0.21**	**0.18**	0.10	µg/m^3
Freon 11	**1.09**	**0.96**	0.10	µg/m^3
Freon 12	**2.33**	**2.11**	0.10	µg/m^3
Freon 113	**0.51**	**0.44**	0.10	µg/m^3
Freon 114	ND	ND	0.10	µg/m^3
n-Heptane	ND	ND	1.00	µg/m^3
n-Hexane	**6.88**	**4.79**	1.00	µg/m^3
2-Hexanone (MBK)	ND	**1.43**	0.50	µg/m^3
Isopropanol	**6.16**	**4.47**	0.50	µg/m^3
Isopropylbenzene	ND	ND	0.10	µg/m^3
4-Isopropyltoluene	**0.11**	**0.11**	0.10	µg/m^3
4-Methyl-2-pentanone (MIBK)	ND	ND	0.50	µg/m^3
Methylene chloride	**0.75**	**0.68**	0.10	µg/m^3
Methylmethacrylate	ND	ND	0.50	µg/m^3
Naphthalene	ND	ND	0.50	µg/m^3
n-Pentane	**1.78**	**1.22**	1.00	µg/m^3
n-Propylbenzene	ND	ND	0.10	µg/m^3
Propylene	**1.85**	**1.45**	0.20	µg/m^3
Styrene	**0.13**	ND	0.10	µg/m^3
1,1,1,2-Tetrachloroethane	ND	ND	0.10	µg/m^3
1,1,2,2-Tetrachloroethane	ND	ND	0.10	µg/m^3
Tetrachloroethene	ND	ND	0.10	µg/m^3
Toluene	**1.39**	**1.11**	0.10	µg/m^3
Tetrahydrofuran	ND	ND	0.10	µg/m^3
1,1,1-Trichloroethane	ND	ND	0.10	µg/m^3
1,1,2-Trichloroethane	ND	ND	0.10	µg/m^3
Trichloroethene	ND	ND	0.10	µg/m^3
1,2,4-Trimethylbenzene	**0.63**	**0.61**	0.10	µg/m^3
1,3,5-Trimethylbenzene	ND	ND	0.10	µg/m^3
Vinyl Chloride	ND	ND	0.10	µg/m^3
Vinyl Acetate	ND	ND	0.20	µg/m^3
m+p-Xylene	**0.62**	**0.50**	0.10	µg/m^3
o-Xylene	**0.25**	**0.20**	0.10	µg/m^3
MTBE	ND	ND	0.10	µg/m^3
Ethyl-tert-butylether	ND	ND	0.10	µg/m^3
Di-isopropylether	ND	ND	0.10	µg/m^3
tert-amylmethylether	ND	ND	0.10	µg/m^3
Dilution Factor	1/40*	1/40*		
Surrogate Recoveries:			**QC Limits**	
4-Bromofluorobenzene	97%	99%	60 - 140	
Batch ID:	TO1-100621-01	TO1-100621-01		

* = Dilutions for these compound(s); first number for all others

ND = Value below reporting limit

JONES ENVIRONMENTAL, INC.
714-449-9937
562-646-1611
11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Alta Environmental/ NV5	**Report date:**	10/6/2021
Client Address:	3777 Long Beach Blvd Long Beach, CA	**Jones Ref. No.:** **Client Ref. No.:**	ST-18338 444721-0010226.00
Attn:	David Schack	**Date Sampled:**	10/1/2021
		Date Received:	10/4/2021
Project:	Smash/Muir	**Date Analyzed:**	10/6/2021
Project Address:	2526 6th St Santa Monica, CA 90405	**Physical State:**	Air

EPA TO-15 – Volatile Organics by GC/MS

Sample ID:	**METHOD BLANK**		
Jones ID:	**100621-TO1MB1**	**Reporting Limit**	**Units**
Analytes:			
Acetone	ND	0.50	µg/m^3
Acrolein	ND	0.10	µg/m^3
Benzene	ND	0.10	µg/m^3
Bromodichloromethane	ND	0.10	µg/m^3
Bromoform	ND	0.10	µg/m^3
1,3-Butadiene	ND	0.10	µg/m^3
2-Butanone (MEK)	ND	0.50	µg/m^3
n-Butylbenzene	ND	0.10	µg/m^3
sec-Butylbenzene	ND	0.10	µg/m^3
tert-Butylbenzene	ND	0.10	µg/m^3
Carbon tetrachloride	ND	0.10	µg/m^3
Chlorobenzene	ND	0.10	µg/m^3
Chloroform	ND	0.10	µg/m^3
Carbon Disulfide	ND	0.10	µg/m^3
Cyclohexane	ND	0.10	µg/m^3
Dibromochloromethane	ND	0.10	µg/m^3
1,2-Dibromoethane (EDB)	ND	0.50	µg/m^3
1,4-Dioxane	ND	0.10	µg/m^3
1,2- Dichlorobenzene	ND	0.10	µg/m^3
1,3-Dichlorobenzene	ND	0.10	µg/m^3
1,4-Dichlorobenzene	ND	0.10	µg/m^3
1,1-Dichloroethane	ND	0.10	µg/m^3
1,2-Dichloroethane	ND	0.10	µg/m^3
1,1-Dichloroethene	ND	0.10	µg/m^3
cis-1,2-Dichloroethene	ND	0.10	µg/m^3
trans-1,2-Dichloroethene	ND	0.10	µg/m^3

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

EPA TO-15 – Volatile Organics by GC/MS

Sample ID:	**METHOD BLANK**		
Jones ID:	**100621-TO1MB1**	**Reporting Limit**	**Units**
Analytes:			
Ethyl Acetate	ND	0.50	µg/m^3
Ethylbenzene	ND	0.10	µg/m^3
Freon 11	ND	0.10	µg/m^3
Freon 12	ND	0.10	µg/m^3
Freon 113	ND	0.10	µg/m^3
Freon 114	ND	0.10	µg/m^3
n-Heptane	ND	1.00	µg/m^3
n-Hexane	ND	1.00	µg/m^3
2-Hexanone (MBK)	ND	0.50	µg/m^3
Isopropanol	ND	0.50	µg/m^3
Isopropylbenzene	ND	0.10	µg/m^3
4-Isopropyltoluene	ND	0.10	µg/m^3
4-Methyl-2-pentanone (MIBK)	ND	0.50	µg/m^3
Methylene chloride	ND	0.10	µg/m^3
Methylmethacrylate	ND	0.50	µg/m^3
Naphthalene	ND	0.50	µg/m^3
n-Propylbenzene	ND	1.00	µg/m^3
Propylene	ND	0.10	µg/m^3
Styrene	ND	0.20	µg/m^3
1,1,1,2-Tetrachloroethane	ND	0.10	µg/m^3
1,1,2,2-Tetrachloroethane	ND	0.10	µg/m^3
Tetrachloroethene	ND	0.10	µg/m^3
Toluene	ND	0.10	µg/m^3
Tetrahydrofuran	ND	0.10	µg/m^3
1,1,1-Trichloroethane	ND	0.10	µg/m^3
1,1,2-Trichloroethane	ND	0.10	µg/m^3
Trichloroethene	ND	0.10	µg/m^3
1,2,4-Trimethylbenzene	ND	0.10	µg/m^3
1,3,5-Trimethylbenzene	ND	0.10	µg/m^3
Vinyl Chloride	ND	0.10	µg/m^3
Vinyl Acetate	ND	0.20	µg/m^3
m+p-Xylene	ND	0.20	µg/m^3
o-Xylene	ND	0.10	µg/m^3
MTBE	ND	0.10	µg/m^3
Ethyl-tert-butylether	ND	0.10	µg/m^3
Di-isopropylether	ND	0.10	µg/m^3
tert-amylmethylether	ND	0.10	µg/m^3
Dilution Factor	1		
Surrogate Recoveries:		**QC Limits**	
4-Bromofluorobenzene	99%	60 - 140	
Batch ID:	TO1-100621-01		

ND = Value below reporting limit

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11007 FOREST PLACE
SANTA FE SPRINGS, CA 9067(
WWW.JONESENV.COM

JONES ENVIRONMENTAL QUALITY CONTROL INFORMATION

Client:	Alta Environmental/ NV5	**Report date:**	10/6/2021
Client Address:	3777 Long Beach Blvd Long Beach, CA	**Jones Ref. No.:** **Client Ref. No.:**	ST-18338 444721-0010226.00
Attn:	David Schack	**Date Sampled:** **Date Received:**	10/1/2021 10/4/2021
Project:	Smash/Muir	**Date Analyzed:**	10/6/2021
Project Address:	2526 6th St Santa Monica, CA 90405	**Physical State:**	Air

EPA TO-15 – Volatile Organics by GC/MS

Batch ID: TO1-100621-01

Jones ID: **100621-TO1CCV1** **100621-TO1CCVD1**

Parameter	CCV Recovery (%)	CCVD Recovery (%)	RPD	Acceptability Range (%)
Vinyl chloride	102%	102%	0.0%	70 - 130
1,1-Dichloroethene	110%	112%	1.8%	70 - 130
Cis-1,2-Dichloroethene	110%	104%	5.6%	70 - 130
1,1,1-Trichloroethane	102%	92%	10.3%	70 - 130
Benzene	104%	98%	5.9%	70 - 130
Trichloroethene	108%	112%	3.6%	70 - 130
Toluene	92%	94%	2.2%	70 - 130
Tetrachloroethene	98%	88%	10.8%	70 - 130
Chlorobenzene	100%	104%	3.9%	70 - 130
Ethylbenzene	94%	94%	0.0%	70 - 130
1,2,4 Trimethylbenzene	84%	90%	6.9%	70 - 130
Surrogate Recovery:				
4-Bromofluorobenzene	93%	98%		60 - 140

CCV = Continuing Calibration Verification
CCVD = Continuing Calibration Verification Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 20%

JONES ENVIRONMENTAL, INC.
11007 Forest Pl.
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Air Chain-of-Custody Record

Lab Use Only
Jones Project # ST-18338
Page 1 of 1

Client: Alta Environmental/NVS
Client Address: 3777 Long Beach Blvd, Long Beach, CA
Project Name: SMASH/MUIR
Project Address: 2526 6th St, Santa Monica, CA 90405
Report To: David.Schack@NVS.com
Email/Phone:
Sampler: Eric Dunham

Date: 10/01/2021
Client Project # 444721-0010226.00

Purge Rate: _____ cc/min
Shut In Test: Y / N

Turn Around Requested
- ☐ Immediate Attention - 200%
- ☐ Rush 24 Hours - 100%
- ☐ Rush 48 Hours - 50%
- ☐ Rush 72 Hours - 25%
- ☐ Rush 96 Hours - 10%
- ☒ Normal - No Surcharge

Summa Canister Size
- ☐ 1L ☒ 6L

Tracer
- ☐ n-pentane
- ☐ n-hexane
- ☐ n-heptane
- ☐ Helium
- ☐ 1,1-DFA
- ☐ _____

Report Options
EDD ____
EDF* - 10% Surcharge____
*Global ID _____

Gasoline Range Organics
- ☐ Yes ☒ No

Units Requested
☒ ug/m3 ☐ ug/L ☐ ppmV

Sample ID	Date Collected	Purge Number	Purge Volume	Laboratory Sample ID	Canister ID	Cannister Start Pressure	Cannister End Pressure	Flow Rate (cc/min)	Sampling Start Time	Sampling End Time	Analysis Requested: TO-15	8260B	Magnehelic Reading (in/H_2O)	Number of Containers
Ambient-J	10/01/21			ST-18338-01	7435	~~30.5~~ 29			1546		X			
555-J	10/01/21			ST-18338-02	B2663	28.0			1542		X			

Relinquished By (Signature): ER	Date: 10/01/2021	Recieved By (Signature): JHWAthm	Date: 10/4
Company: NVS	Time: 2240	Company: JEL	Time: 1015
Relinquished By (Signature): JHWAthm	Date: 10/4	Recieved By Laboratory (Signature): VPDmith	Date: 10/4
Company: JEL	Time: 1055	Company: Jones	Time: 1055

The delivery of samples and the signature on this Chain of Custody form constitutes authorization to perform the analyses specificied above under the Terms and Conditions set forth

APPENDIX B – DIRECT READ INSTRUMENTATION DATA

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
11397 Slater Ave.
Fountain Valley, CA 92708
Toll-free: 888-620-7463

Pine Environmental Services, Inc.

Instrument ID 20089
Description MiniRAE 3000_FIRMWARE 2.22A
Calibrated 9/8/2021 5:20:55PM

Manufacturer Rae Systems
Model Number MiniRAE 3000
Serial Number/ Lot Number 592-908078
Location California
Department

State Certified
Status Pass
Temp °C 28.9
Humidity % 52

Calibration Specifications

Group # 1
Group Name VOC
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.0

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.0 / 100.0	PPM	100.0	PPM	100.0	100.0	0.00%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
CA ISO 100PPM (LOT# CAP-248-100-	CA ISO 100PPM	Liquid Technology	GP11015	CAP-248-100-11		2/13/2022

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Andrew Bettencourt

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
3130 Rogerdale Rd., Suite 120
Houston, TX 77042 US
Phone: (713) 331-3924

Pine Environmental Services, Inc.

Instrument ID 20357
Description PPM Technology Formaldemeter htv-M
Calibrated 9/7/2021 5:26:53PM

Manufacturer PPM Technology Ltd
Model Number htV-M
Serial Number/ Lot Number F8884
Location Texas
Department

State Certified
Status Pass
Temp °C 21
Humidity % 41

Calibration Specifications

Group # 1
Group Name Formaldehyde Test Standard
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
23.50 / 23.50	°C	2.59	PPM	2.60	2.59	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Ethan Moeller

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

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Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
11397 Slater Ave.
Fountain Valley, CA 92708
Toll-free: 888-620-7463

Pine Environmental Services, Inc.

Instrument ID 47595
Description PDR-1000AN
Calibrated 8/26/2021 11:30:32AM

Manufacturer Thermo
Model Number PDR-1000AN
Serial Number/ Lot Number 6793
Location California
Department

State Certified
Status Pass
Temp °C 24
Humidity % 55

Calibration Specifications

Group # 1
Group Name Functional Test
Test Performed: Yes **As Found Result: Pass** **As Left Result: Pass**

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Next Cal Date / Last Cal Date/ Expiration Date Opened Date

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Eduardo Turcios

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Advanced Labs, Inc.

Pine Environmental Services, Inc

Instrument ID 47595
Description Thermo PDR-1000AN
Calibrated 2/24/2021

Manufacturer Thermo
Model Number PDR-1000AN
Serial Number 6793
Location New Jersey
Temp 74

Classification
Status pass
Frequency 2 Years
Department Lab
Humidity 20

Calibration Specifications

Group # 1
Group Name Calibration
Test Performed: Yes **As Found Result: Fail** **As Left Result: Pass**

Test Instruments Used During the Calibration

Test Instrument ID	Description	Manufacturer	Serial Number	(As Of Cal Entry Date) Last Cal Date	Next Cal Date
DR-4 MASTER D780	Thermo DataRAM-4000 Master	Thermo	D780	3/6/2020	3/6/2021

Notes about this calibration

Calibration Ratio = 0.984351

Average PDR Concentration = 1.3943 mg/m3

Average Master Concentration = 1.1447 mg/m3

PDR Background Concentration = 0.164 mg/m3

Calibration Result Calibration Successful
Who Calibrated Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services LLC
11397 Slater Ave.
Fountain Valley, CA 92708
Toll-free: 888-620-7463

Pine Environmental Services, Inc.

Instrument ID 20089
Description MiniRAE 3000_FIRMWARE 2.22A
Calibrated 9/8/2021 5:20:55PM

Manufacturer Rae Systems
Model Number MiniRAE 3000
Serial Number/ Lot Number 592-908078
Location California
Department

State Certified
Status Pass
Temp °C 28.9
Humidity % 52

Calibration Specifications

Group # 1
Group Name VOC
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.0

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.0 / 100.0	PPM	100.0	PPM	100.0	100.0	0.00%	Pass

Test Instruments Used During the Calibration (As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
CA ISO 100PPM (LOT# CAP-248-100-	CA ISO 100PPM	Liquid Technology	GP11015	CAP-248-100-11		2/13/2022

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Andrew Bettencourt

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment
Please call 800-301-9663 for Technical Assistance