

Limited Indoor Air Quality Investigation

Performed at

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426

Performed on November 25, 2013

Submitted To

Terry Cleveland
Director of Risk Management and Environmental Health
Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426

HSA Project Number 140058LA

Report Date

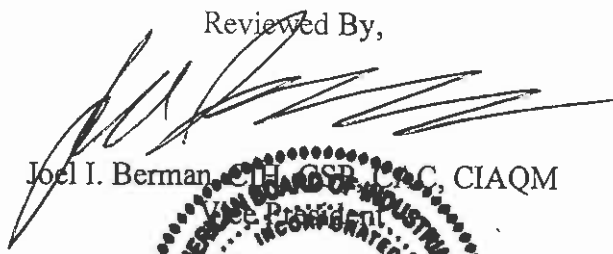
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Prepared By,



Lucas H. Wallin
Industrial Hygienist

Reviewed By,



Joel I. Berman, C.H., CSP, C.C. CIAQM
President



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1.0 INTRODUCTION

- 1.1 On November 25, 2013, Health Science Associates (HSA) performed a limited Industrial Hygiene Indoor Air Quality (IAQ) survey at Antelope Valley College, 3041 West Avenue K Lancaster, CA. Sampling and evaluation was performed by Lucas H. Wallin, Industrial Hygienist, assisted by Kurt Seubert, Industrial Hygiene technician. Task set-up, report review and Project Management were performed by Joel Berman, CIH, CSP, Certified Indoor Air Quality Manager (CIAQM), Vice President.
- 1.2 The scope of this IAQ investigation was to perform air monitoring for carbon dioxide (CO₂), carbon monoxide (CO), culturable and total fungal spores, temperature, relative humidity, particle characterization. This scope of work was created and implemented to address unknown airborne contaminants and/or irritations in various locations on both floors of the Student Services (SSV) building and two locations, office 211 and an adjacent location within the Business Education (BE) building.
- 1.3 Additionally, a ceiling plenum space inspection was conducted in various locations within the SSV building. The purpose of this inspection was to identify potential leaks, breaches in HVAC duct work, rodent/animal feces, and other debris build-up.
- 1.4 The monitoring results were then evaluated and compared with levels regulated by Cal/OSHA, and recommended guidelines published by The American Conference of Governmental Industrial Hygienists (ACGIH), The Environmental Protection Agency (EPA) and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE).

2.0 SITE ASSESSMENTS

- 2.1 In order to evaluate if fungal growth and/or elevated levels of fungal spores remained in the subject areas of the building, HSA collected culturable and total fungal spore air samples. Sampling locations were selected by an on-site representative prior to the start of this survey.
- 2.2 Air samples were collected for total and culturable fungal spores and direct reading measurements for particulate characterization CO₂, CO, temperature (in degrees Fahrenheit, °F), and relative humidity (in percent %).
- 2.3 At the time of this survey, office 192 in SSV served as a storage room which housed boxes, furniture, and file cabinets (photo number 4). Also, consistent heavy foot traffic was observed during air sampling at all locations on the first floor of the SSV building.

- 2.4 Rain water appeared to pool on the roofs of the SSV building (photo number 15).
- 2.5 During the second round of air sampling, HSA was not able to enter classroom 236 in the SSV building as a class was in progress. Therefore, air sampling occurred in the hallway directly outside the classroom (photo number 10).
- 2.6 Ceiling plenum inspection
 - 2.6.1 HSA inspected the ceiling plenum spaces above offices 180 to 197 and 163 in the SSV building.
 - 2.6.2 Fireproofing was located only over offices under the West sloped roof (offices 191 to 194). Minor fireproofing debris on top of ceiling tiles was observed over SSV offices 191, 192, and 193.
 - 2.6.3 Residual debris surrounding a supply vent in SSV office 192 was observed (photo number 16).
 - 2.6.4 Sporadic rodent droppings were present over SSV offices 190, 191, and 192 (photo number 17).
 - 2.6.5 HVAC duct work appeared to be intact over all offices, except the duct to a register over SSV office area 190 near the West exit (photo number 18).
 - 2.6.6 Over SSV office 192, minor water intrusion and damage to fireproofing was observed where the sloped-roof and original building meet (photo number 19).
 - 2.6.7 No debris, rodent droppings, or breaches in the HVAC duct work were observed over SSV office 163.
- 2.7 During the ceiling inspection, an on-site representative identified a previous suspected mold growth issue in office 191 which impacted the lower two (2) feet of drywall surrounding the window. The remediation encompassed the drywall on the south side of the window (around a support column) and did not include the partition shared by office 192. As discussed in more depth in section 7.3, there was no observed fungal growth when the drywall at this locations was removed. Therefore, no actual fungal remediation was required/took place.

3.0 SAMPLING METHODS

3.1 Total Spore Air Sampling

- 3.1.1 The total spore air samples were collected using Zefon Analytical Accessories Air-O-Cell cassettes. The samples were collected using a wall

outlet powered air sampling pump set at 15 liters per minute (lpm) for five minutes. The flow rate was set using a pre-calibrated rotometer.

3.1.2 The total spore air samples were analyzed microscopically at 400 magnification using the protocol published by Zefon Analytical Accessories for use with the Air-O-Cell air sampling cassettes. This methodology allows for the identification and quantification of spores by genera (in most cases). All spores were counted, whether or not they were culturable (viable). The air sample results were reported as spores per cubic meter of air (s/m³).

3.2 Culturable Air Samples

3.2.1 The culturable spore air samples were collected using an Anderson[®] (Model Number AND N6) Single Stage Microbial Sampler loaded with nutrient agar media. The nutrient agar media was provided by LA Testing in individual 100 X 15 millimeter plates. Air flow through the Anderson[®] sampler was calibrated to 28.3 lpm using a pre-calibrated field rotameter for three minutes. To avoid contamination, the interior and exterior of the sampler were swab cleaned with isopropyl alcohol between sampling rounds.

3.2.2 Since no one culture medium will provide the proper conditions for all fungal spores to germinate, for this evaluation two types of general-use-nutrient agar media were utilized to identify the types of airborne culturable fungi. The two types of nutrient media were malt extract agar (MEA) and dichloran glycerol (DG-18) agar. Of these two agars, MEA will promote growth of spores which require high water activity and DG-18 will promote fungal growth of spores which grow in low water activity areas. Additionally, DG-18 has fungal inhibitors to inhibit the growth of rapid fungal growers. Prior to use, the sealed plates were refrigerated.

3.2.3 Culturable spore air samples are designed to identify the presence of living (viable) spores. Culturability is determined in the laboratory by providing the “captured” spores with nutrient growth media and the proper temperature and humidity (within an incubator) to induce the spores to germinate and produce colonies. The colonies are then counted and sample results are expressed as colony forming units per cubic meter of air (CFU/m³). In order to speciate some genera, sub-culturing is required.

3.2.4 Total and culturable spore counts provide different biological information. An analysis of total spore samples evaluates and classifies identified spores by direct examination to genera only. An analysis of culturable samples evaluates and classifies the live colonies that have been incubated in a laboratory.

3.3 Laboratory

3.3.1 After collection in the field the samples were transferred following chain-of-custody procedures to LA Testing's Garden Grove, California.

3.3.2 The laboratory accreditations maintained by LA Testing's Garden Grove, California laboratory are listed below.

3.3.2.1 American Industrial Hygiene Association (AIHA);

3.3.2.2 National Voluntary Laboratory Accreditation Program;

3.3.2.3 California Department of Health Services, Environmental Laboratory Accreditation Program (ELAP);

3.3.2.4 AIHA's Environmental Lead Laboratory Accreditation Program (ELLAP); and

3.3.2.5 AIHA's Environmental Microbiology Laboratory Accreditation Program (EMLAP).

3.3.3 The laboratory report(s) and sampling data/chain-of-custody sheets are provided in Appendix I - Laboratory Report(s).

3.4 Direct Reading Instrumentation

3.4.1 TSI IAQ-Calc and TSI DusTrak direct reading instruments were used and calibrated pursuant to the manufacture's requirements. These devices were placed in area locations to represent general area environmental exposures.

3.4.2 Instrument calibration(s) are provided in Appendix B - Instrument(s).

4.0 FUNGI AND FUNGAL GROWTH

4.1 Fungi are non-photosynthesising, ubiquitous (i.e. exist in all places), heterotrophic (i.e. they need to ingest nutrients), saprophytic (they eat dead material) organisms. They are either single celled (yeasts) or multicellular organisms that require specific environmental conditions to grow into the vegetative state from a fungal spore. The fungal spore, which is merely a seed is ubiquitous in nature. The larger spores can be over than 20 microns, while the tiny spores are only 4-5 microns, the perfect size for penetrating

into the recesses of the lungs¹. HEPA filters, which are 99.97 percent efficient at filtering all particles at a cut size of 0.3 micrometers in diameter are proper choice for filtering fungal spores.

- 4.2 The fungal vegetative state includes the growth of certain structures, called reproductive structures. The reproductive structures of fungal growth include conidia, hyphae, and mycelium. These structures, represent, for lack of better terms, flower, stem, stalk, root, etc. The spores (i.e. seeds) grow on the conidia and, like seeds, are dispersed to spread the fungal species to new habitats. Therefore, there is a difference between the presence of fungal growth and finding culturable surface or airborne fungal spores.
- 4.3 Fungal growth on a surface indicates that the specific environmental conditions were met and that culturable (i.e. live) fungal spores were at the location. The collection of bulk, surface, and or settled dust samples, providing them with a nutrient media, and allowing the spores to culture (grow into the vegetative state) does not confirm that fungal growth occurred at the sampled location. It merely indicates that viable or culturable (i.e. live) fungal spores were at the location. The presence of the structures of reproduction are the only true indicator that fungal growth occurred.
- 4.4 Air and surface samples can be collected for either total fungal spores (all spores, alive or dead) or culturable fungal spores (live spores). Total fungal spore air samples are collected typically using one of the many slit impaction samples currently available. The spores are collected onto a sticky surface through the slit. Total spore surface samples are typically collected using transparent tape, which is applied to the desired surface and then applied to a clear glass slide. The sampled surface is then analyzed microscopically to determine the quantity of fungal spores, identified in most cases to genus. The spores are not cultured, therefore, it is unknown whether they are culturable or dead. Culturable fungi air sampling is performed using a variety of devices to draw air across a container of nutrient media. The spores impact onto the media, where they are supplied nutrients and allowed to grow into the vegetative state. Dead fungal spores will not germinate; therefore, they are not counted as part of this analysis. Once the spores have been provided conditions to germinate (i.e. time, temperature, etc.) they are microscopically analyzed and identified, in many cases to species.

¹<http://www.sciencedaily.com/releases/2011/06/110616193616.htm>

4.5 The collection of culturable and total fungal samples provides the trained professional different pieces of information related to the sampled environment. The interpretation of the information is the only method available to determine the conditions of the sampled environment. Air sampling is generally considered by the profession as a determiner of presumptive evidence of fungal contamination. Since air sampling cannot identify the presence of fungal growth on surfaces and since there are many sources of fungal spores (i.e. dust, dirt, etc.), air sampling can provide both false positive and false negative results associated with fungal growth. Therefore, surface or bulk sampling is necessary to identify actual fungal growth on surfaces. However, during HSA's investigation of the site, nothing resembling fungal growth was identified, therefore, no surface or bulk sampling was performed.

4.6 The specific environmental conditions for fungal growth to occur are as follows. All of these conditions must be met prior to the germination of the fungal spore into the vegetative state.

4.6.1 There must be nutrients for the fungal spores to eat. Fungal spores like cellulose, dirt, or any other dead organic material that they can digest.

In our environment there are plentiful amounts of dead organic material for fungi to eat.

4.6.2 There must be culturable fungal spores at the location.

This condition is easily met since fungal spores are ubiquitous.

4.6.3 Fungal spores require oxygen.

Oxygen is plentiful in our atmosphere.

4.6.4 Fungal spores prefer dark places in which to grow, similar to the shadowy places where mushrooms grow.

Wall cavities and unventilated spaces are primary places where fungal growth occurs.

4.6.5 Fungal spores require water or high levels of relative humidity (i.e. 65 to 70 percent) to grow into the vegetative state.

In some southeastern or Gulf of Mexico states, there is enough natural ambient relative humidity to cause fungal spores to grow into the vegetate state. However, the normal ambient relative humidity levels in the Southern California environment are generally not high enough to cause fungal spores to grow into the vegetative state. Therefore, water or humidity must be provided from a source other than nature.

- 4.7 Moisture and/or water intrusion into a building is the only environmental factor that is under the control of humans. All other factors are consistently present in our normal environment.
- 4.8 As discussed, fungal growth only occurs when there is sufficient moisture in the environment and moisture can have many origins. These include, but are not limited to, leaks, pipe bursts, sewage back-up events, floods, and elevated relative humidity. In addition, fungal growth is heaviest at the source of water intrusion and decreases with distance away from the origin.
- 4.9 An example of this is a crack in the exterior wall of a building adjacent to a sprinkler. Sprinkler water then routinely enters the building through the crack and saturates the porous, cellulose based wallboard in the building. Fungal growth then occurs on the wall cavity side of the board and can extend into the building with fungal growth beginning to occur in the space between the board and the base coving. In this instance the fungal growth would be heaviest on the cavity side of the wallboard and lighter on the room side.
- 4.10 Conversely, if the moisture source is elevated relative humidity from within the building, the concentration of fungal growth will be heaviest on the room side of the material and may be non-existent in the cavity of the material. In this instance, fungal growth can occur on non-cellulose based materials such as plasters (which are primarily mineral based), windows (i.e. glass panes), fabrics (natural and synthetic), metal (i.e. aluminum window frames), etc., where there is no other food source other than the natural dust deposited on these surfaces.
- 4.11 Specific fungal genera/species are known to produce toxins. These genera/species include, but may not be limited to *Stachybotrys chartarum* (atra), *Aspergillus versicolor*, *Aspergillus flavus*, *Aspergillus fumigatus*, and *Fusarium sp.*. Recently, there has been significant attention spent by

the media on the potential human health effects of these toxins. While there is significant evidence to confirm that exposure to significant amounts of toxins, primarily via ingestion or airborne exposure related to specific industrial occupations (i.e. agriculture, animal handling, etc.) can produce toxicosis and disease, recent articles have identified that exposure to indoor air concentrations of spores will not produce such effect in humans. The Morbidity and Mortality Weekly Report², a publication of the Centers for Disease Control, states . . . “pulmonary hemorrhage/hemosiderosis in infants in Cleveland and household water damage or exposure to *S. chartarum* are not substantiated adequately by the scientific evidence produced in the CDC investigation (2-4). Serious shortcomings in the collection, analysis, and reporting of data resulted in inflated measures of association and restricted interpretation of the reports. The associations should be considered not proven; the etiology of AIPH is unresolved”. In short, the CDC now states that they have no substantive evidence to conclude that *S. chartarum* caused the Cleveland baby case.

- 4.12 In addition, Page and Trout³ have concluded that while there exists anecdotal evidence between fungal growth, mycotoxin production by fungi, and suspected health effects, . . . “there is inadequate evidence to support the conclusion that exposures to mycotoxins in the indoor (nonindustrial) environment is causally related to symptoms or illness among building occupants.”
- 4.13 An Evidence-Based Statement issued on October 27, 2002 by the American College of Occupational and Environmental Medicine (ACOEM) states “Some molds that propagate indoors may, under some conditions, produce mycotoxins that can adversely affect living cells and organisms by a variety of mechanisms. Adverse effects of molds and mycotoxins have been recognized for centuries following ingestion of contaminated foods. Occupational diseases are also recognized in association with inhalation exposure to fungi, bacteria, and other organic matter, usually in industrial or agricultural settings. Molds growing indoors are believed by some to cause building-related symptoms. Despite voluminous literature on the subject, the causal association remains weak and unproven, particularly with respect

²Morbidity and Mortality Weekly Report, March 10, 2000 / 49(09);180-4, <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4909a3.htm>.

³The Role of Stachybotrys Mycotoxins in Building-Related Illness, E. Page and D. Trout, AIHAJ, 62:644-648 (2001).

to causation by mycotoxins. One mold in particular, *Stachybotrys chartarum*, is blamed for a diverse array of maladies when it is found indoors. Despite its well-known ability to produce mycotoxins under appropriate growth conditions, years of intensive study have failed to establish exposure to *S. chartarum* in home, school, or office environments as a cause of adverse human health effects. Levels of exposure in the indoor environment, dose-response data in animals, and dose-rate considerations suggest that delivery by the inhalation route of a toxic dose of mycotoxins in the indoor environment is highly unlikely at best, even for the hypothetically most vulnerable sub-populations.”⁴

- 4.14 In their Evidence-based Statement the ACOEM concurs with the concept that when fungal growth is identified in indoor environments, the source of the moisture that caused the fungal growth to occur should be identified and corrected and that the colonized building materials should be removed.

5.0 HEALTH RISKS

There are four primary health risks associated with fungal exposures. They are allergic reactions, irritation, toxicosis, and pathogens (i.e. cause disease). Each of these is discussed in the following sections.

5.1 Pathogens

5.1.1 Many fungi are potential pathogens; however, they are considered to be opportunistic diseases that only affect those with an extremely weakened immune system (i.e. AIDS, TB, or transplant patients). They can also affect the very young or very old, whose immune systems are either building or declining, depending upon the time of life. Examples of opportunistic fungal diseases include thrush (caused by *Candidus albicans*) and aspergillosis (cased by several species of the genera *Aspergillus* sp., especially *A. fumigatus*).

5.1.2 The average healthy person has no reason to be concerned related to potential fungal diseases. Even with our aging population, fungal diseases are still very rare, unless you suffer from AIDS.

⁴Adverse Health Effects Associated with Molds in the Indoor air, Bryan D. Hardin, et. al., American College of Occupational and Environmental Medicine, Evidence-based Statement, October 27, 2002, <http://www.acoem.org/guidelines/article.asp?ID=52>.

5.2 Toxicosis

- 5.2.1 Toxicosis is defined as the build-up of toxins in the body. Based on the peer reviewed literature, there is no direct evidence that links low level exposure to fungal spores with toxic health risks. There is only a casual linkage of mold presence and health effects (i.e. I have health effects and my house has mold) without confirmation of route of exposure. Additionally, we are all familiar with fungal toxins. They are known as penicillin, cipro, and other commercially available antibiotics.
- 5.2.2 Toxicosis has been diagnosed in persons with extremely high fungal airborne exposure levels, such as in the occupational agricultural industry where workers may enter a grain silo and are potentially exposed to millions of spores per cubic meter of air, rather than thousands. Toxicosis can also occur by ingestion, eating or drinking contaminated food supplies. However, again, large quantities must be ingested to cause toxicosis.
- 5.2.3 The genesis of the current fear associated with exposure to “toxic mold” is related to the Cleveland Baby case. During the period of the early to mid 1990s there were two incidents where up to 21 babies who were diagnosed with pulmonary hemorrhage/hemosiderosis (i.e. bleeding lung disease). In the original case (1993-1994) 10 cases were identified and in the second case (1995-1996) 11 more cases were diagnosed in a small geographical suburb area of Cleveland. In total, three deaths occurred, one in the original case and two in the second.
- 5.2.4 Investigations originally led to identifying the causative agent to be toxins created by the fungi *Stachybotrys chartarum*. However, follow-up review of the data by internal and external committees have determined that the case has not been proven (published in March 2000). The change in the diagnosis was related to a variety of issues, which included that there was improper sample collection (i.e. pounding on the HVAC ductwork and furniture in the case houses and not in the control houses) and that the statistical review of the data was skewed.
- 5.2.5 Therefore, the literature and current research only supports that extremely high exposures to *Stachybotrys chartarum* spores, whether

via air or ingestion, are of concern. *Stachybotrys chartarum* spores were not identified to be present in the current survey for IRWD.

5.3 Irritation

Like humans, fungi produce volatile organic compounds (VOCs) when they are actively growing and digesting organic matter. Unlike humans, fungi do not have the social sensitivity to not release these compounds in the presence of others (i.e. flatulence). These odors produce the smell that we humans associate with mildew produce the reaction of “it smells”. These VOCs have an extremely low odor threshold and are not generally considered to be a health risk. In addition, there is generally no known long term health risks associated with these odors.

5.4 Allergic Reactions

- 5.4.1 The percentage of population that is allergic to fungal spores is estimated to be between 10 to 20 percent. It is difficult to predict who is going to be allergic since allergies are based on the biological and genetic make-up of each person and each person reacts differently or not at all.
- 5.4.2 The allergic reaction is the immune reaction gone awry where the system treats a non-pathogen as a pathogen. The response is generally to open mast cells that release histamines, which are intended to cause inflammation to keep the pathogen in a small area of the body. This is why we take an anti-histamine to counteract these effects.
- 5.4.3 The allergic reaction can be as simple as a runny nose or as severe as hypersensitivity pneumonitis (an extreme flu-like disease) or anaphylactic shock (i.e. as from bee stings). Both hypersensitivity pneumonitis and anaphylactic shock are very rare forms of the allergic reactions, which can cause severe disease and death. Fortunately, their occurrence remains extremely rare in our society.
- 5.4.4 Additionally, simply because there is an allergic reaction in a space with mold growth present, that does not implicate the mold as the causative agent. The number of agents, or antigens, which can cause an allergic response in our environment are innumerable.

6.0 STANDARDS AND GUIDELINES

6.1 IAQ - The following two standards were considered for this investigation.

6.1.1 ASHRAE Standard 62.1-2010, "Ventilation for Acceptable Indoor Air Quality"⁵

6.1.2 ASHRAE Standard 55-2010, "Thermal Environmental Conditions for Human Occupancy."⁶

6.1.3 The following table represents the common IAQ parameters that were evaluated. Levels that exceed the trigger concentrations indicate to take note and investigate further; generally requiring additional evaluation.

Test	Typical Indoor Concentration	Trigger Concentration
Bioaerosols	Varies	2-3 Times Greater than Other Spaces or Outdoors
Carbon Dioxide	400-1000 ppm	800 ppm 700 ppm +Background
Carbon Monoxide	1-3 ppm	>5 ppm
Moisture	Varies	40- 60 %
Particles (Dust)	<50 µg/m ³ (total)	>50 µg/m ³
Ref. - IAQ and HVAC Workbook, 4th Edition, Revised and Updated 2001, D. Jeff Burton, CIH, PE, CSP, ISBN 1-883992-16-8, Contaminant Concentration Checklist, p. A-27		

Table: Indoor Air Quality Typical and Trigger Levels

6.1.4 ASHRAE Standard 55-2010, Thermal Environmental Conditions for Human Occupancy defines indoor thermal environmental factors and personal factors (clothing and activity) that are acceptable to the majority of occupants within an office space. The standard does not take into account air quality (odor and chemicals) that may also affect comfort in the space. The factors that describe these conditions include: Metabolic rate, clothing, air and radiant temperatures; air speed; and relative humidity.

6.1.5 The following ranges of temperatures are for 80% occupant acceptability: Warm weather: 74-83; Cool weather: 67-79 (dressed appropriately). Humidity levels vary with temperature and range from 80% to <10%.

⁵American Society of Heating, Refrigerating, and Air-Conditioning Engineers, "Ventilation for Acceptable Indoor Air Quality", ASHRAE 62.1-2010, Atlanta, GA, *American Society of Heating, Refrigerating, and Air-Conditioning Engineers*, 2010.

⁶American Society of Heating, Refrigerating, and Air-Conditioning Engineers, "Thermal Environmental Conditions for Human Occupancy", ASHRAE 55-2010, Atlanta, GA, *American Society of Heating, Refrigerating, and Air-Conditioning Engineers*, 2010.

- 6.1.6 ASHRAE Standard 62.1-2010, "Ventilation for Acceptable Indoor Air Quality", This standard applies to all indoor or enclosed spaces that people may occupy. The standard considers chemical, physical, and biological contaminants that can affect air quality. Thermal comfort requirements are not included in this standard.
- 6.2 Standards and guidelines are often used as a reference point to assess safety. For airborne contaminants, concentrations measured are compared with federal or state regulatory standards and/or professionally recommended values. For occupational exposures, reference values are published by the American Conference of Governmental Industrial Hygienists (ACGIH) and regulatory standards are set by both federal and state Occupational Safety and Health Administrations, OSHA and Cal/OSHA.
- 6.3 Both regulatory standards and ACGIH guidelines are designed to protect workers from exposure to unhealthful concentrations of airborne substances. However, the levels established by these bodies may not necessarily eliminate all effects for all people, e.g., mild irritations, response to odors, unique sensitivity.
- 6.4 There are no specific federal or state regulations or standards for mold (fungi); however, there are several generalized guidelines. For instance, the "The New York Guidelines", Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health and Mental Hygiene, November 2008; EPA's Mold Remediation in Schools and Commercial Buildings, EPA, 402-K-01-001, March 2001; or AIHA's Recognition, Evaluation, and Control of Indoor Mold, AIHA, 2008.
- 6.5 Regulatory or Professional Organizations for Bioaerosol Exposure
- 6.5.1 Based on health hazard evaluations conducted by the National Institute of Occupational Safety and Health (NIOSH), Morey, et. al.⁷ it was suggested in 1984 that a "level of viable microorganisms in excess of 1×10^3 CFUs/m³ indicates that the indoor environment may be in need of investigation and improvement".

⁷ Morey, P. R., Hodgson, M. J., Sorenson, W. G., Kullman, G. H., Rhodes, W. W., and G. S. Visvesvara. 1984. Environmental studies in moldy office buildings: biological agents, sources and preventive measures. *Ann Am. Conf. Gov, Ind, Hyg.* 10:21-35

6.5.2 In 1986 the ACGIH Committee on Bioaerosols⁸ proposed that "total counts exceeding 10,000 CFUS/m³ indicate a need to proceed to remedial actions." However, the 1989 ACGIH Guidelines for the Assessment of Bioaerosols in the Indoor Environment⁹ now recommend the use of rank-order comparisons of indoor and outdoor air sample populations, rather than specifying threshold concentrations that require remediation. The ACGIH and others also recommend that if air samples are collected, the scope of work should include multiple rounds of indoor and outdoor air samples to attempt to identify the natural variation of spore concentrations in both the indoor and outdoor air.

6.6 Current Standard of Practice for Bioaerosols

6.6.1 In lieu of promulgated regulatory or recommended guidelines, and as a result of the rapidly expanding knowledge concerning collection methods, professional Industrial Hygiene practitioners have begun to define and apply the following general approaches in assessing bioaerosols in the indoor environment.

6.6.2 To credibly conclude that there is or is not a fungal problem within a building, an investigator must carefully evaluate the fungal content of the outdoor environment surrounding the building. Fungal concentrations outdoors may range from 1,000-100,000 CFUS/m³ and influence indoor conditions via infiltration and mechanical intake of outdoor air¹⁰. As a general rule, indoor fungal problems are usually indicated when a significant difference is demonstrated between indoor and outdoor airborne spore concentrations or types of spore genera or species.

6.6.3 It has been established that airborne spore concentrations collected and analyzed according to standard "viable" techniques, underestimate the total

⁸ Morey, P. R., Otten, J., Burge, H. A., Chatigny, M., Feeley, J., LaForce, F. M., and K. Peterson. 1986. Airborne viable microorganisms in office environments: sampling protocol and analytical procedures (Draft Report). *Appl. Ind. Hyg.* 1:R19-R23

⁹ Burge, H. A., Kreiss, K., Morey, P. R., Otten, J., Peterson, K., Chatigny, M., and J. Freeley. 1987. Guidelines for assessment and sampling of saprophytic bioaerosols in the indoor environment. *Appl. Ind. Hyg.* 2 (5):R10-R16

¹⁰ American Conference of Governmental Industrial Hygienists. 1989. Guidelines for the assessment of bioaerosols in the indoor environment, American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio.

number of spores that are potentially present. Burge, et al.¹¹, demonstrated that as spore levels rose, culture plate data progressively underestimated prevailing concentrations with recoveries falling below 5% at airborne levels above 500 spores/m³. Collection and analysis of total airborne spores (in addition to viable spores) is now considered essential in evaluating potential fungal magnification.

7.0 SURVEY DATA, RESULTS, AND RECOMMENDATIONS

7.1 Inspection and Testing

7.1.1 The air sampling scope of work performed by HSA is listed below:

7.1.1.1 Total and culturable spore air samples;

7.1.1.2 Direct reading IAQ measurements (IAQ-Calc and DusTrak);

7.1.2 The locations where air samples were collected inside and outside of the subject buildings is identified below:

7.1.2.1 Location A, Outside between SSV and BE;

7.1.2.2 Location B, Outside south of SSV;

7.1.2.3 Location C, Outside northeast of BE;

7.1.2.4 Location 1, SSV office 192;

7.1.2.5 Location 2, SSV office 188;

7.1.2.6 Location 3, outside SSV office 117;

7.1.2.7 Location 4, SSV office 101;

7.1.2.8 Location 5, southwest corner hallway SSV floor 1;

7.1.2.9 Location 6, SSV classroom 236

7.1.2.10 Location 7, hallway outside SSV office 221;

7.1.2.11 Location 8, hallway outside SSV room 204;

7.1.2.12 Location 9, BE office 211; and

7.1.2.13 Location 10, hallway outside BE office 209.

7.1.3 The total and culturable spore air samples were performed to determine the total spore load at the sampled locations within the buildings. These results were compared to the outdoor samples concurrently collected. These results are reported on Tables I - VI. The results indicate that the indoor results were below, and that the spore distributions were similar to, the outside sample results. Therefore, there was no indication of an

¹¹ Burge, H. A., Boise J. R., Rutherford, J. A., and W. R. Solomon 1977. Comparative recoveries of airborne fungus spores by viable and non-viable modes of volumetric collection. *Mycopathologia* 61: 27-33.

elevated fungal spore load at all indoor sampled locations as compared to the outdoor sampled locations.

7.1.4 IAQ-Calc meter readings for carbon dioxide, carbon monoxide, temperature, and relative humidity were also within normally accepted ranges. These results are reported on Table VII.

7.1.5 DusTrak readings for fine particulates at all indoor locations were either below or marginally close to levels exhibited outside. These results are reported in Table VIII.

7.1.6 The following items are included: APPENDIX A - Laboratory Reports; APPENDIX B - Instrument(s); and APPENDIX C - Photographs.

7.2 Ceiling plenum space

7.2.1 Based on the inspections of the ceiling plenum space over SSV offices 180 - 197, HSA recommends further clean up of these areas. It was indicated to HSA that the ceiling plenum space was cleaned by an outside contractor, however, the areas surrounding all supply and return vents should be re-cleaned as debris and rodent droppings were observed during HSA's site visit of November 25, 2013. Also, to counteract a persisting rodent issue it is recommended that periodic surveillance of the plenum space be implemented to avert the potential of an increased infestation.

7.2.2 HSA observed water intrusion over SSV office 192 where the sloped roof and original building "egg-crate" decking meet. HSA recommends that this be addressed and all breaches in the roof be inspected and sealed.

7.2.3 Subsequent to HSA's site visit, it was reported that an AVC crew inspected this area of the building and traced by the water stain to what appeared to be its origin, and re-sealed that area.

7.3 SSV offices 191 and 192

7.3.1 Originally, HSA also recommended that the partition between SSV office 191 and 192 be investigated for potential mold growth. It was apparent that water intrusion was due to insufficient weather sealing around the window in SSV office 191. If mold is present, it is prudent that the impacted drywall be remediated and follow up air sampling be conducted in the subject office and surrounding areas. Also, HSA recommends either re-sealing or replacement of the windows of offices 191 to 194 (areas under the west sloped roof).

7.3.2 Subsequent to our site visit, HSA was informed that shortly after the site visit by the Cal/OSHA Inspector on September 18, 2013, a two-person work crew was assigned to repair and paint water-damaged areas of the SSV Building. They began in the area of the offices 191 and 192. An AVC representative met with both of them and their Supervisor after HSA's site visit to specifically review the scope of work that they performed. It was reported that they removed the water damaged portion of the drywall (located in SSV-191) on both sides of the window (i.e. the column and the common wall between 191 and 192) and saw rusting of the metal studs in the wall but no obvious signs of mold. They reported replacing the water damaged portion of drywall that they had cut out with new drywall and patching the resulting seams and re-painting the entire office area. It was also reported to HSA that the Supervisor of the work crew has already been soliciting bids from window companies for re-sealing or replacement of the windows of offices 191 to 194. Therefore, no further action is deemed necessary at this time.

7.4 SSV roof

7.4.1 During air sampling, HSA observed significant pooling of rain water on the roof areas. HSA recommends inspection of the roof for potential breaches in the roof protective membrane and check the drains and gutters for excess debris build-up.

7.5 This report was prepared for use by Antelope Valley Community College in evaluating the subject suite. The information contained within this report is as factual as possible and the opinions related herein are based on HSA's experience in similar investigations. No warranty, therefore, is made to any persons other than Antelope Valley Community College regarding the conclusions or recommendations included within this report. HSA will not release copies to a third party without prior written consent of Antelope Valley Community College.

Table I - Air Sampling Results for Total Fungal Spores AM (Air-O-Cell)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc A Outside- Between SSV & BE	Loc B Outside-S. of SSV	Loc C Outside-NE of BE	Loc 1 SSV, Office 192	Loc 2 SSV, Office 188	Loc 3 SSV, Hallway Outside Office 117	Loc 4 SSV, Office 101
Media	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Units	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)
Sample Number	A-19778457-1	B-19778427-1	C-19778549-1	1-19778434-1	2-19779272-1	3-19778554-1	4-19778766-1
Time (Min.)	5	5	5	5	5	5	5
Volume (L)	75	75	75	75	75	75	75
Alternaria	-	40	-	1*	-	-	40
Ascospores	100	40	80	-	-	-	10*
Aspergillus/Penicillium	890	300	680	200	200	40	200
Basidiospores	1400	630	300	40	-	40	-
Bipolaris++	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-
Cladosporium	800	300	420	-	40	40	40
Curvularia	-	10*	-	40	-	-	-
Epicoccum	-	40	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-
Myxomycetes++	80	300	80	-	80	40	40
Rust	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	10*
Unidentifiable Spores	-	80	-	10*	10*	40	10*
Zygomycetes	-	-	-	-	-	-	-
Beltrania	-	-	-	-	-	-	-
Nigrospora	40	-	-	-	-	-	-
Oidium	-	-	40	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-
Stemphylium	-	-	-	-	-	-	-
Total Fungi	3310	1740	1600	340	330	200	350
Hyphal Fragment	300	400	300	100	200	40	300
Insect Fragment	-	40	-	-	-	-	-
Pollen	10*	-	-	10*	40	-	40

Abbreviations: NA = Not Applicable; Spore/m³ = Spores per Cubic Meter of Air; Min.=Minutes; L=Liters; * = Denotes particles found at 300x

Table I (Cont'd) - Air Sampling Results for Total Fungal Spores AM (Air-O-Cell)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc 5 SSV, SW corner Hallway	Loc 6 SSV, Classroom 236	Loc 7 SSV, Hallway outside office 221	Loc 8 SSV, Hallway outside Classroom 204	Loc 9 BE, Office 211	Loc 10 BE, NE Hallway outside office 209
Media	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Units	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)
Sample Number	5-19778691-1	6-19778598-1	7-19779253-1	8-18954560-1	9-19778591-1	10-18954567-1
Time (Min.)	5	5	5	5	5	5
Volume (L)	75	75	75	75	75	75
Alternaria	-	-	-	40	-	10*
Ascospores	-	-	-	-	-	-
Aspergillus/Penicillium	80	200	100	80	80	100
Basidiospores	40	-	-	80	-	40
Bipolaris++	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	-	40	40	40	-	80
Curvularia	40	-	-	-	-	10*
Epicoccum	-	-	-	10*	-	-
Fusarium	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	10*	-	40	40	10*
Rust	-	-	-	10*	-	-
Torula	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-
Unidentifiable Spores	-	10*	-	80	40	40
Zygomycetes	-	-	-	-	-	-
Beltrania	-	-	-	-	-	-
Oidium	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-
Stemphylium	-	-	-	-	-	-
Total Fungi	160	260	140	380	16	290
Hyphal Fragment	40	100	80	40	200	200
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	80	10*	80

Abbreviations: NA = Not Applicable; Spore/m³ = Spores per Cubic Meter of Air; Min.=Minutes; L=Liters; * = Denotes particles found at 300x

Table II - Air Sampling Results for Total Fungal Spores PM (Air-O-Cell)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc A Outside- Between SSV & BE	Loc B Outside-S. of SSV	Loc C Outside-NE of BE	Loc 1 SSV, Office 192	Loc 2 SSV, Office 188	Loc 3 SSV, Hallway Outside Office 117	Loc 4 SSV, Office 101
Media	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Units	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)
Sample Number	A-18954701 -2	B-18954556- 2	C-19778624 -2	1-19778794- 2	2-19779242- 2	3-19778458- 2	4-19778595- 2
Time (Min.)	5	5	5	5	5	5	5
Volume (L)	75	75	75	75	75	75	75
Alternaria	-	-	-	40	-	40	-
Ascospores	10*	40	-	-	-	-	10*
Aspergillus/Penicillium	200	80	300	40	100	100	200
Basidiospores	300	200	300	-	40	-	10*
Bipolaris++	10*	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	10*	-
Cladosporium	-	300	300	40	-	-	-
Curvularia	-	-	-	-	-	-	-
Epicoccum	-	40	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-
Myxomycetes++	-	80	40	40	40	40	80
Rust	-	-	-	-	-	10*	-
Torula	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-
Unidentifiable Spores	40	-	40	40	40	-	-
Zygomycetes	-	-	-	-	-	-	-
Beltrania	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	10*	-	-
Stemphylium	-	-	-	-	-	-	-
Total Fungi	860	740	980	200	230	240	300
Hyphal Fragment	200	40	200	40	80	80	40
Insect Fragment	-	-	-	-	-	-	-
Pollen	-	-	40	-	40	-	-

Abbreviations: NA = Not Applicable; Spore/m³ = Spores per Cubic Meter of Air; Min.=Minutes; L=Liters; * = Denotes particles found at 300x; ** =

Table II (Cont'd) - Air Sampling Results for Total Fungal Spores PM (Air-O-Cell)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc 5 SSV, SW corner Hallway	Loc 6 SSV, Hallway outside Classroom 236**	Loc 7 SSV, Hallway outside office 221	Loc 8 SSV, Hallway outside Classroom 204	Loc 9 BE, Office 211	Loc 10 BE, NE Hallway outside office 209	Field Blank
Media	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Units	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)	(Spore/m ³)
Sample Number	5-19778563-2	6-19778557-2	7-18954553-2	8-19778702-2	9-19779204-2	10-19777405-2	19778452- Blank
Time (Min.)	5	5	5	5	5	5	-
Volume (L)	75	75	75	75	75	75	-
Alternaria	10*	-	-	40	-	-	-
Ascospores	-	-	-	-	-	-	-
Aspergillus/Penicillium	40	200	100	40	40	-	-
Basidiospores	40	-	-	40	-	-	-
Bipolaris++	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-
Cladosporium	-	80	40	40	-	40	-
Curvularia	-	10*	-	-	-	-	-
Epicoecum	-	10*	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-
Myxomycetes++	-	100	10*	40	40	-	-
Rust	-	10*	-	-	10*	-	-
Torula	-	-	-	-	-	-	-
Ulocladium	-	-	-	10*	-	-	-
Unidentifiable Spores	-	40	40	40	-	10*	-
Zygomycetes	-	-	-	-	-	-	-
Beltrania	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-
Spegazzinia	-	-	-	-	-	-	-
Trichocladium	-	40	-	-	-	-	-
Total Fungi	90	490	190	250	90	50	No Trace
Hyphal Fragment	40	300	100	40	200	200	-
Insect Fragment	-	-	40	-	-	-	-
Pollen	-	40	10*	-	-	40	-

Abbreviations: NA = Not Applicable; Spore/m³ = Spores per Cubic Meter of Air; Min.=Minutes; L=Liters; * = Denotes particles found at 300x; ** = Class in session during second round of air sampling.

Table III - Air Sampling Results for Culturable Fungal Spores AM (MEA)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc A Outside- Between SSV & BE	Loc B Outside-S. of SSV	Loc C Outside-NE of BE	Loc 1 SSV, Office 192	Loc 2 SSV, Office 188	Loc 3 SSV, Hallway Outside Office 117	Loc 4 SSV, Office 101
Media	MEA	MEA	MEA	MEA	MEA	MEA	MEA
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	A-M-1	B-M-1	C-M-1	1-M-1	2-M-1	3-M-1	4-M-1
Time (Min.)	3	3	3	3	3	3	3
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9	84.9
Acremonium sp.	24	-	-	-	-	-	-
Alternaria sp.	-	-	12	-	-	-	12
Aspergillus fumigatus	-	-	-	-	-	-	-
Aspergillus niger	-	12	-	-	-	-	-
Aspergillus versicolor	-	-	-	-	-	-	-
Aerobasidium sp.	-	-	-	12	-	-	-
Botrytis sp.	-	-	-	-	-	-	-
Cladosporium cladosporioides	84	84	96	24	12	12	72
Cladosporium spongiosum	-	36	-	-	-	-	-
Emericella quadrilineata	-	-	-	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-	-
Myxomycetes sp.	12	-	-	-	-	-	-
Penicillium chrysogenum	-	-	-	-	-	-	-
Penicillium decumbens	-	-	-	-	-	-	-
Penicillium glabrum	-	-	-	-	-	-	-
Penicillium melinii	-	-	36	12	-	-	-
Penicillium verrucosum	-	-	-	-	-	-	-
Penicillium viridicatum	-	-	-	-	-	-	-
Penicillium paxilli	-	-	-	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-	-
Sterile(white)	-	-	-	-	-	-	-
Sterile(dark)	-	12	-	-	12	-	-
Syncephalastrum sp.	-	-	-	-	-	-	-
Ulocladium sp.	-	-	-	-	-	-	-
Unknown sp.	-	-	-	-	-	-	-
Yeast	-	12	-	-	-	24	12
Total	120	156	144	48	24	36	96

Abbreviation: CFU/m³=Colony Forming Units per Cubic Meter of Air

Table III (Cont'd) - Air Sampling Results for Culturable Fungal Spores AM (MEA)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc 5 SSV, SW corner Hallway	Loc 6 SSV, Classroom 236	Loc 7 SSV, Hallway outside office 221	Loc 8 SSV, Hallway outside Classroom 204	Loc 9 BE, Office 211	Loc 10 BE, NE Hallway outside office 209
Media	MEA	MEA	MEA	MEA	MEA	MEA
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	5-M-1	6-M-1	7-M-1	8-M-1	9-M-1	10-M-1
Time (Min.)	3	3	3	3	3	3
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9
Acremonium sp.	-	-	-	-	-	-
Alternaria sp.	12	-	-	-	-	12
Aspergillus fumigatus	-	-	-	-	12	-
Aspergillus niger	-	-	-	-	-	-
Aspergillus sydowii	12	-	-	-	-	-
Aerobasidium sp.	-	-	-	-	-	-
Botrytis sp.	-	-	-	-	-	-
Cladosporium cladosporioides	12	24	24	36	24	48
Cladosporium spongiosum	-	-	-	24	-	-
Emericella quadrilineata	-	-	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-
Myxomycetes sp.	-	-	-	-	-	-
Penicillium chrysogenum	-	-	-	-	-	-
Penicillium decumbens	-	-	-	-	-	-
Penicillium janthinellum	-	-	-	24	-	12
Penicillium melinii	-	-	-	-	-	-
Penicillium verrucosum	-	-	-	-	-	-
Penicillium viridicatum	-	-	-	-	-	-
Penicillium paxilli	-	-	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-
Sterile(white)	-	-	-	-	12	-
Sterile(dark)	-	-	-	-	-	-
Trichoderma deliquescens	-	-	-	-	-	12
Ulocladium sp.	-	-	-	-	-	-
Unknown sp.	-	-	-	-	-	-
Yeast	-	-	-	12	-	-
Total	36	24	24	96	48	84

Abbreviation: CFU/m³=Colony Forming Units per Cubic Meter of Air.

Table IV - Air Sampling Results for Culturable Fungal Spores PM (MEA)

Antelope Valley College
 3041 West Avenue K
 Lancaster, CA 93536-5426
 November 25, 2013

Description/Locations	Loc A Outside- Btwn SSV & BE	Loc B Outside-S. of SSV	Loc C Outside-NE of BE	Loc 1 SSV, Office 192	Loc 2 SSV, Office 188	Loc 3 SSV, Hallway Outside Office 117	Loc 4 SSV, Office 101
Media	MEA	MEA	MEA	MEA	MEA	MEA	MEA
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	A-M-2	B-M-2	C-M-2	1-M-2	2-M-2	3-M-2	4-M-2
Time (Min.)	3	3	3	3	3	3	3
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9	84.9
Alternaria sp.	-	-	-	-	-	-	-
Aspergillus fumigatus	12	36	-	-	-	-	-
Aspergillus niger	12	-	12	-	-	-	-
Aspergillus versicolor	-	-	-	-	-	-	-
Botrytis sp.	-	-	-	-	-	-	-
Cladosporium cladosporioides	144	144	540	36	12	24	24
Cladosporium spongiosum	-	-	-	-	12	-	-
Gonatobotryum sp.	-	-	12	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-	-
Paecilomyces sp.	12	-	-	-	-	-	-
Penicillium chrysogenum	24	-	-	-	-	-	-
Penicillium commune	-	-	-	-	-	-	-
Penicillium decumbens	-	-	-	-	-	-	-
Penicillium janthinellum	-	12	-	12	-	-	-
Penicillium miczynskii	-	-	-	-	-	12	-
Penicillium oxalicum	-	-	12	-	-	-	-
Penicillium viridicatum	-	-	-	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-	-
Sterile(white)	-	12	-	12	-	-	-
Sterile(dark)	-	-	-	-	-	-	-
Syncephalastrum sp.	-	-	-	-	-	-	-
Ulocladium sp.	-	-	-	-	-	12	12
Unknown sp.	-	-	-	-	-	-	-
Yeast	-	-	-	12	12	-	12
Total	204	204	576	72	36	48	48

Abbreviation: CFU/m³=Colony Forming Units per Cubic Meter of Air

Table IV (Cont'd) - Air Sampling Results for Culturable Fungal Spores PM (MEA)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc 5 SSV, SW corner Hallway	Loc 6 SSV, Hallway outside Classroom 236*	Loc 7 SSV, Hallway outside office 221	Loc 8 SSV, Hallway outside Classroom 204	Loc 9 BE, Office 211	Loc 10 BE, NE Hallway outside office 209	Field Blank
Media	MEA	MEA	MEA	MEA	MEA	MEA	MEA
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	5-M-2	6-M-2	7-M-2	8-M-2	9-M-2	10-M-2	M-Blank
Time (Min.)	3	3	3	3	3	3	-
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9	-
Acremonium sp.	-	-	-	-	-	-	-
Alternaria sp.	-	12	-	-	-	12	-
Aspergillus fumigatus	-	12	-	-	-	-	-
Aspergillus niger	-	-	-	-	-	-	-
Aspergillus sydowii	-	-	12	-	-	-	-
Aerobasidium sp.	-	-	-	-	-	-	-
Bipolaris sp.	12	-	-	-	-	-	-
Cladosporium cladosporioides	-	36	12	48	60	-	-
Cladosporium spongiosum	-	12	-	-	-	-	-
Curvularia sp.	-	-	-	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-	-
Myxomycetes sp.	-	-	-	-	-	-	-
Penicillium janthinellum	-	-	-	-	-	-	-
Penicillium melinii	-	-	-	-	-	-	-
Penicillium verrucosum	-	-	-	-	-	-	-
Penicillium viridicatum	-	-	-	-	-	-	-
Penicillium paxilli	-	-	-	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-	-
Sterile(white)	-	-	12	-	-	12	-
Sterile(dark)	-	-	-	-	-	-	-
Trichoderma deliquescens	-	-	-	-	-	-	-
Ulocladium sp.	-	-	-	-	-	-	-
Unknown sp.	-	-	-	-	12	-	-
Yeast	-	12	-	-	12	12	-
Total	12	84	36	48	84	36	None Detected

Abbreviation: CFU/m³=Colony Forming Units per Cubic Meter of Air; * = Class in session during second round of air sampling.

Table V - Air Sampling Results for Culturable Fungal Spores AM (DG-18)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc A Outside- Btrwn SSV & BE	Loc B Outside-S. of SSV	Loc C Outside-NE of BE	Loc 1 SSV, Office 192	Loc 2 SSV, Office 188	Loc 3 SSV, Hallway Outside Office 117	Loc 4 SSV, Office 101
Media	DG-18	DG-18	DG-18	DG-18	DG-18	DG-18	DG-18
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	A-D-1	B-D-1	C-D-1	1-D-1	2-D-1	3-D-1	4-D-1
Time (Min.)	3	3	3	3	3	3	3
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9	84.9
Alternaria sp.	12	-	-	-	-	-	12
Aspergillus fumigatus	-	-	-	-	-	-	-
Aspergillus niger	-	-	-	12	-	-	-
Aspergillus versicolor	-	-	-	-	-	-	-
Botrytis sp.	-	-	-	-	-	-	-
Cladosporium cladosporioides	96	96	84	12	12	24	12
Cladosporium spongiosum	-	12	24	-	-	-	-
Emericella quadrilineata	-	-	-	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-	-
Penicillium chrysogenum	-	-	-	-	-	-	-
Penicillium commune	-	-	-	-	-	-	-
Penicillium janthinellum	-	-	-	-	12	-	-
Penicillium lividum	-	12	-	-	-	-	-
Penicillium melinii	-	-	12	-	12	-	-
Penicillium oxalicum	-	-	-	-	-	-	12
Penicillium viridicatum	-	-	-	-	-	-	-
Penicillium paxilli	-	-	-	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-	-
Sterile(white)	24	12	24	24	-	12	-
Sterile(dark)	-	-	-	-	-	-	-
Syncephalastrum sp.	-	-	-	-	-	-	-
Ulocladium sp.	-	-	-	-	-	-	-
Unknown sp.	-	-	-	-	-	-	-
Yeast	12	-	-	12	12	12	-
Total	144	132	144	60	48	48	36
Abbreviation: CFU/m ³ =Colony Forming Units per Cubic Meter of Air							

Table V (Cont'd)- Air Sampling Results for Culturable Fungal Spores AM (DG-18)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc 5 SSV, SW corner Hallway	Loc 6 SSV, Classroom 236	Loc 7 SSV, Hallway outside office 221	Loc 8 SSV, Hallway outside Classroom 204	Loc 9 BE, Office 211	Loc 10 BE, NE Hallway outside office 209
Media	DG-18	DG-18	DG-18	DG-18	DG-18	DG-18
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	5-D-1	6-D-1	7-D-1	8-D-1	9-D-1	10-D-1
Time (Min.)	3	3	3	3	3	3
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9
Alternaria sp.	-	-	-	-	-	-
Aspergillus fumigatus	-	-	-	-	-	-
Aspergillus niger	-	-	-	-	-	-
Aspergillus versicolor	-	-	-	-	-	-
Botrytis sp.	-	-	-	-	-	-
Cladosporium cladosporioides	-	12	12	12	36	24
Cladosporium spongiosum	-	-	-	24	-	-
Emericella quadrilineata	-	-	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-
Paecilomyces sp.	-	-	12	-	-	-
Penicillium commune	-	-	-	-	-	-
Penicillium janthinellum	24	-	12	12	12	12
Penicillium lividum	-	-	12	-	-	-
Penicillium melinii	-	-	-	-	-	-
Penicillium oxalicum	-	-	-	-	-	-
Penicillium viridicatum	-	-	-	-	-	-
Penicillium paxilli	-	-	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-
Sterile(white)	-	-	-	-	-	-
Sterile(dark)	-	-	-	-	-	12
Syncephalastrum sp.	-	-	-	-	-	-
Ulocladium sp.	-	-	-	-	-	-
Unknown sp.	-	-	-	-	-	-
Yeast	12	-	-	12	-	12
Total	36	12	48	60	48	60

Abbreviation: CFU/m³=Colony Forming Units per Cubic Meter of Air.

Table VI - Air Sampling Results for Culturable Fungal Spores PM (DG-18)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc A Outside- Brwn SSV & BE	Loc B Outside-S. of SSV	Loc C Outside- NE of BE	Loc 1 SSV, Office 192	Loc 2 SSV, Office 188	Loc 3 SSV, Hallway Outside Office 117	Loc 4 SSV, Office 101
Media	DG-18	DG-18	DG-18	DG-18	DG-18	DG-18	DG-18
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	A-D-2	B-D-2	C-D-2	1-D-2	2-D-2	3-D-2	4-D-2
Time (Min.)	3	3	3	3	3	3	3
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9	84.9
Alternaria sp.	-	-	-	-	-	-	-
Aspergillus candidus	12	-	-	-	-	-	-
Aspergillus flavus	-	-	-	-	12	-	-
Aspergillus niger	-	12	-	-	12	-	-
Botrytis sp.	-	-	-	-	-	-	-
Cladosporium cladosporioides	72	96	96	-	24	24	36
Cladosporium sphaerospermum	-	-	-	-	-	-	-
Emericella quadrilineata	-	-	-	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-	-
Paecilomyces sp.	12	-	-	-	-	-	-
Penicillium chrysogenum	12	-	-	-	-	-	-
Penicillium decumbens	-	-	-	-	-	-	-
Penicillium janthinellum	-	24	-	-	-	-	12
Penicillium miczynskii	-	12	-	-	-	12	-
Penicillium verrucosum	-	-	-	-	-	-	-
Penicillium viridicatum	-	-	-	-	-	-	-
Penicillium oxalicum	-	-	480	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-	-
Sterile(white)	-	12	-	12	-	-	12
Sterile(dark)	-	-	-	-	-	-	-
Syncephalastrum sp.	-	-	-	-	-	-	-
Ulocladium sp.	-	-	-	-	-	12	-
Unknown sp.	-	-	-	-	-	-	-
Yeast	12	12	-	12	-	-	-
Total	120	168	576	24	48	48	60

Abbreviation: CFU/m³=Colony Forming Units per Cubic Meter of Air.

Table VI (Cont'd) - Air Sampling Results for Culturable Fungal Spores PM (DG-18)

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Description/Locations	Loc 5 SSV, SW corner Hallway	Loc 6 SSV, Hallway outside Classroom 236*	Loc 7 SSV, Hallway outside office 221	Loc 8 SSV, Hallway outside Classroom 204	Loc 9 BE, Office 211	Loc 10 BE, NE Hallway outside office 209	Field Blank
Media	DG-18	DG-18	DG-18	DG-18	DG-18	DG-18	DG-18
Units	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³	CFU/m ³
Sample Number	5-D-2	6-D-2	7-D-2	8-D-2	9-D-2	10-D-2	D-Blank
Time (Min.)	3	3	3	3	3	3	3
Volume (L)	84.9	84.9	84.9	84.9	84.9	84.9	84.9
Alternaria sp.	-	-	-	-	12	-	-
Aspergillus fumigatus	-	-	-	-	-	-	-
Aspergillus niger	-	-	-	12	-	-	-
Aspergillus versicolor	-	-	-	-	-	-	-
Botrytis sp.	-	-	-	-	-	-	-
Cladosporium cladosporioides	36	-	-	12	24	12	-
Cladosporium sphaerospermum	-	-	-	-	-	-	-
Emericella quadrilineata	-	-	-	-	-	-	-
Epicoccum sp.	-	-	-	-	-	-	-
Penicillium chrysogenum	-	-	-	-	-	-	-
Penicillium commune	-	-	-	-	-	-	-
Penicillium decumbens	-	-	-	-	-	-	-
Penicillium janthinellum	-	-	-	-	12	-	-
Penicillium variabile	-	-	-	-	-	-	-
Penicillium verrucosum	-	-	-	-	-	-	-
Penicillium viridicatum	-	-	-	-	-	-	-
Penicillium paxilli	-	-	-	-	-	-	-
Rhizopus sp.	-	-	-	-	-	-	-
Sterile(white)	-	-	-	-	-	-	-
Sterile(dark)	-	-	-	-	-	-	-
Syncephalastrum sp.	-	-	-	-	-	-	-
Ulocladium sp.	-	-	-	-	-	-	-
Unknown sp.	-	-	-	-	-	-	-
Yeast	-	-	-	-	-	12	-
Total	36	ND	ND	24	48	24	ND

Abbreviation: CFU/m³=Colony Forming Units per Cubic Meter of Air; * = Class in session during second round of air sampling; ND = none detected

Table VII - Air Sampling Results for Carbon Dioxide, Carbon Monoxide, Temp. and RH

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Sample Collection Site	Loc A Outside-Btwn SSV & BE	Loc B Outside-S. of SSV	Loc C Outside-NE of BE	Loc 1 SSV, Office 192	Loc 2 SSV, Office 188	Loc 3 SSV, Halfway Outside Office 117	Normal Range (ASHRAE)
Instrument	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	
Serial Number	55070243	55070243	55070243	55070243	55070243	55070243	
Time	1015	1110	1125	1034	1152	1205	
Carbon Dioxide (ppm)	387	442	418	70.3	1368	1012	<Bkg + 700ppm
Carbon Monoxide (ppm)	None Detected	None Detected	None Detected	None Detected	None Detected	None Detected	< 5ppm
Temperature, (°F)	49.5	66.3	63.4	70.5	77.2	73.9	68-79 °F
Relative Humidity (%)	62.4	29.1	35.7	33.4	34.7	31.9	30-70%
Abbreviation: ppm = parts per million by volume ; °F=Degrees Fahrenheit; %=Percent							

Table VII (Cont'd) - Air Sampling Results for Carbon Dioxide, Carbon Monoxide, Temp. and RH

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Sample Collection Site	Loc 4 SSV, Office 101	Loc 5 SSV, SW corner Hallway	Loc 6 SSV, Classroom 236 AM/Hallway, outside Classroom 236 PM*	Loc 7 SSV, Hallway, outside offices 224	Loc 8 SSV, Classroom 204	Loc 9 BE, Office 211	Normal Range (ASHRAE)
Instrument	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	IAQ-Calc Meter	
Serial Number	55070243	55070243	55070243	55070243	55070243	55070243	
Time	1219	1232	1245	1301	1316	1334	
Carbon Dioxide (ppm)	1276	834	755	957	1010	854	<Bkg + 700ppm
Carbon Monoxide (ppm)	None Detected	None Detected	None Detected	None Detected	None Detected	None Detected	< 5ppm
Temperature, (°F)	73.9	72.1	72.3	72.5	74.7	74.1	68-79 °F
Relative Humidity (%)	31.9	30.0	31.7	34.3	74.8	33.6	30-70%

Abbreviation: ppm = parts per million by volume; °F=Degrees Fahrenheit; %=Percent; * = Class in session during second round of air sampling.

Table VII (Cont'd) - Air Sampling Results for Carbon Dioxide, Carbon Monoxide, Temp. and RH

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Sample Collection Site	Loc 10 BE, NE Hallway outside office 209	Background Outside, F. Of SSV, (Full shift averages)	Normal Range (ASHRAE)
Instrumtn	LAQ Calc Meter	LAQ Calc Meter	
Serial Number	55070243	55070242	
Time	1349	1637	
Carbon Dioxide (ppm)	709	887	<Bkg + 700ppm
Carbon Monoxide (ppm)	None Detected	None Detected	< 5ppm
Temperature, (°F)	73.6	74.5	68-79 °F
Relative Humidity (%)	33.6	30.2	30-70%

Abbreviation: ppm = parts per million by volume; °F=Degrees Fahrenheit; %=Percent

Table VIII - Air Sampling Results for Fine Particulates

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Sample Collection Site	Loc A Outside-Btw'n SSV & BE		Loc B Outside-S. of SSV		Loc C Outside-NE of BE		Loc 1 SSV, Office 192		Loc 2 SSV, Office 188		Loc 3 SSV, Hallway Outside Office 117	
	TSI DustTrak		TSI DustTrak		TSI DustTrak		TSI DustTrak		TSI DustTrak		TSI DustTrak	
Time	1020	1710	1103	1737	1125	1724	1034	1451	1152	1504	1205	1518
Average (mg/m ³)	0.456	0.470	0.502	0.454	0.481	0.458	0.453	0.456	0.556	0.476	0.472	0.476
Minimum (mg/m ³)	0.402	0.456	0.501	0.448	0.475	0.451	0.427	0.439	0.498	0.445	0.451	0.451
Maximum (mg/m ³)	0.611	0.501	0.504	0.464	0.493	0.468	0.548	0.506	0.658	0.521	0.506	0.513

Abbreviation: ppm = parts per million by volume; °F=Degrees Fahrenheit; %=Percent

Table VIII (Cont'd) - Air Sampling Results for Fine Particulates

Antelope Valley College
3041 West Avenue K
Lancaster, CA 93536-5426
November 25, 2013

Sample Collection Site	Loc 4 SSV, Office 101		Loc 5 SSV, SW Hallway		Loc 6 SSV, Hallway outside Classroom 236		Loc 7 SSV, Hallway outside office 221		Loc 8 SSV, Classroom 204 AM/Hallway outside Classroom 204A*		Loc 9 BE, Office 211		Loc 10 BE, NE Hallway outside office 209	
	TSI	DustTrak	TSI	DustTrak	TSI	DustTrak	TSI	DustTrak	TSI	DustTrak	TSI	DustTrak	TSI	DustTrak
Time	1225	1530	1232	1542	1237	1655	1303	1556	1317	1609	1335	1628	1349	1637
Average (mg/m ³)	0.679	0.576	0.456	0.454	0.465	0.584	0.496	0.488	0.515	0.476	0.499	0.512	0.504	0.490
Minimum (mg/m ³)	0.576	0.574	0.446	0.443	0.440	0.501	0.445	0.463	0.481	0.449	0.452	0.451	0.470	0.444
Maximum (mg/m ³)	0.975	0.773	0.520	0.972	0.520	0.731	0.696	0.525	0.559	0.532	0.690	0.593	0.546	0.586

Abbreviation: ppm = parts per million by volume; *F=Degrees Fahrenheit; %=Percent; * = Class in session during second round of air sampling.

APPENDIX A - Laboratory Report(s)



LA Testing

11652 Knott Street Unit F5 Garden Grove, CA 92841
 Phone/Fax: (714) 828-4999 / (714) 828-4944
<http://www.LATesting.com> / gardengrovelab@latesting.com

Order ID: 331318108
 Customer ID: 32HEAL56
 Customer PO:
 Project ID:

Attn: Lucas Wallin/Kurt Seubert
 Health Science Associates
 10771 Noel Street
 Los Alamitos, CA 90720

Phone: (714) 220-3922
Fax:
Collected: 11/25/2013
Received: 11/26/2013
Analyzed: 12/03/2013

Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0001			331318108-0002			331318108-0003		
Client Sample ID:	A-19778457-1			B-19778427-1			C-19778549-1		
Volume (L):	75			75			75		
Sample Location:	OS Between Bldg SSV & BE			OS S of Bldg SSV			OS NE of Bldg BE		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Asperisporium	-	-	-	-	-	-	-	-	-
Alternaria	-	-	-	1	40	2.3	-	-	-
Ascospores	3	100	0.3	1	40	2.3	2	60	5
Aspergillus/Penicillium	21	890	26.9	8	300	17.2	16	680	42.5
Basidiospores	34	1400	42.6	15	630	36.2	8	300	18.8
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	19	800	24.2	7	300	17.2	10	420	26.3
Curvularia	-	-	-	1*	10*	0.6	-	-	-
Epicoccum	-	-	-	1	40	2.3	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	2	80	2.4	1	300	17.2	6	80	5
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	2	80	2.4	-	-	-
Nigrospora	1	40	1.2	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	1	40	2.5
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	80	3310	100	42	1740	100	39	1600	100
Hyphal Fragment	7	300	9.1	9	400	23	6	300	18.8
Insect Fragment	-	-	-	1	40	2.3	-	-	-
Pollen	1*	10*	0.3	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Cecil Strait
 Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. *** Denotes partides found at 300X. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by LA Testing. Results have not been adjusted for field or laboratory blank unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by LA Testing Garden Grove, CA AIIHA-LAP, LLC EMLAP 101650

Initial report from: 12/03/2013 10:11:56

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com



LA Testing

11652 Knott Street Unit F5 Garden Grove, CA 92841
 Phone/Fax: (714) 828-4999 / (714) 828-4944
<http://www.LATesting.com> / gardengrovelab@latesting.com

Order ID: 331318108
 Customer ID: 32HEAL56
 Customer PO:
 Project ID:

Attn: Lucas Wallin/Kurt Seubert
 Health Science Associates
 10771 Noel Street
 Los Alamitos, CA 90720

Phone: (714) 220-3922
Fax:
Collected: 11/25/2013
Received: 11/26/2013
Analyzed: 12/03/2013

Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0004			331318108-0005			331318108-0006		
Client Sample ID:	1-19778434-1			2-19779272-1			3-19778554-1		
Volume (L):	75			75			75		
Sample Location:	Bldg SSV Office 192 Ctr of Office			Bldg SSV Office 188 Ctr of Office			Bldg SSV OS Office 117 on Hall		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Aspensporium	-	-	-	-	-	-	-	-	-
Alternaria	1*	10*	2.9	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	5	200	58.8	5	200	60.6	1	40	20
Basidiospores	1	40	11.8	-	-	-	1	40	20
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	40	12.1	1	40	20
Curvularia	1	40	11.8	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	11.8	1	40	12.1	1	40	20
Pilomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	1*	10*	2.9	1*	10*	3.0	1	40	20
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	12	340	100	9	330	100	5	200	100
Hyphal Fragment	3	100	29.4	5	200	60.6	1	40	20
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1*	10*	2.9	1	40	12.1	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	3	-	-	3	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	3	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Cecil Strait

Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

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Samples analyzed by LA Testing Garden Grove, CA/IIHA-LAP, LLC EMLAP 101850

Initial report from: 12/03/2013 10:11:56

For information on the fungi listed in this report please visit the Resources section at www.emsl.com



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Order ID: 331318108
 Customer ID: 32HEAL56
 Customer PO:
 Project ID:

Attn: Lucas Wallin/Kurt Seubert
 Health Science Associates
 10771 Noel Street
 Los Alamitos, CA 90720

Phone: (714) 220-3922
Fax:
Collected: 11/25/2013
Received: 11/26/2013
Analyzed: 12/03/2013

Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0007			331318108-0008			331318108-0009		
Client Sample ID:	4-19778766-1			5-19778691-1			6-19778698-1		
Volume (L):	75			75			75		
Sample Location:	Bldg SSV Office 101 Ctr of Office			Bldg SSV SW Corner Hallway			Bldg SSV Rm 236		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Asperisporium	-	-	-	-	-	-	-	-	-
Alternaria	1	40	11.4	-	-	-	-	-	-
Ascospores	1*	10*	2.9	-	-	-	-	-	-
Aspergillus/Penicillium	4	200	57.1	2	80	50	5	200	76.9
Basidiospores	-	-	-	1	40	25	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	11.4	-	-	-	1	40	15.4
Curvularia	-	-	-	1	40	25	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	11.4	-	-	-	1*	10*	3.9
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	1*	10*	2.9	-	-	-	-	-	-
Unidentifiable Spores	1*	10*	2.9	-	-	-	1*	10*	3.9
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	10	350	100	4	160	100	8	260	100
Hyphal Fragment	8	300	85.7	1	40	25	3	100	38.5
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	40	11.4	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	3	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Cecil Strait
 Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

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Samples analyzed by LA Testing Garden Grove, CA/HA-LAP, LLC EMLAP 101650

Initial report from: 12/03/2013 10:11:56

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Fax:
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Analyzed: 12/03/2013

Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0010			331318108-0011			331318108-0012		
Client Sample ID:	7-19779253-1			8-18954560-1			9-19778591-1		
Volume (L):	75			75			75		
Sample Location:	Bldg SSV OS in Hall at Office 221			Bldg SSV Hall at Rm 204			Bldg BE Office 211		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Asperisporium	-	-	-	-	-	-	-	-	-
Alternaria	-	-	-	1	40	10.5	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	3	100	71.4	2	80	21.1	2	80	50
Basidiospores	-	-	-	2	80	21.1	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	28.6	1	40	10.5	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	1*	10*	2.6	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	10.5	1	40	25
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	1*	10*	2.6	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	2	80	21.1	1	40	25
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	4	140	100	11	380	100	7	160	100
Hyphal Fragment	2	80	57.1	1	40	10.5	4	200	125
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	2	80	21.1	1*	10*	6.3
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	3	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Cecil Strait

Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

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Samples analyzed by LA Testing Garden Grove, CA/IIHA-LAP, LLC EMLAP 101850

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 Analyzed: 12/03/2013

Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0013			331318108-0014			331318108-0015		
Client Sample ID:	10-18954567-1			1-19778794-2			2-19779242-2		
Volume (L):	75			75			75		
Sample Location:	Bldg BE NE Hallway at Office 209			Bldg SSV Office 182 Ctr of Office			Bldg SSV Office 188		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Asperisporium	-	-	-	-	-	-	-	-	-
Alternaria	1*	10*	3.5	1	40	20	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	3	100	34.5	1	40	20	3	100	43.5
Basidiospores	1	40	13.8	-	-	-	1	40	17.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2	80	27.6	1	40	20	-	-	-
Curvularia	1*	10*	3.5	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1*	10*	3.5	1	40	20	1	40	17.4
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	1*	10*	4.3
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	1	40	13.8	1	40	20	1	40	17.4
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	50	290	100	50	200	100	5	230	100
Hyphal Fragment	5	200	69	1	40	20	2	80	34.8
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	2	80	27.6	-	-	-	1	40	17.4
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	3	-	-	3	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Cecil Strait

Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

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Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0016			331318108-0017			331318108-0018		
Client Sample ID:	3-19778458-2			4-19778595-2			5-19778563-2		
Volume (L):	75			75			75		
Sample Location:	Bldg SSV OS of Office 117 on Hall			Bldg SSV Office 101 Ctr of Office			Bldg SSV SW Corner Hallway		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Asperisporium	-	-	-	-	-	-	-	-	-
Alternaria	1	40	20	-	-	-	1*	10*	11.1
Ascospores	-	-	-	1*	10*	3.3	-	-	-
Aspergillus/Penicillium	3	100	50	4	200	66.7	1	40	44.4
Basidiospores	-	-	-	1*	10*	3.3	1	40	44.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	1*	10*	5	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	40	20	1*	80	26.7	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	1*	10*	5	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	7	200	100	6	300	100	3	90	100
Hyphal Fragment	2	80	40	1	40	13.3	1	40	44.4
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	3	-	-	3	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	3	-	-	2	-

Bipolaris++ = *Bipolaris/Drechlera/Exserohilum*
 Myxomycetes++ = *Myxomycetes/Periconia/Smut*

Cecil Strait
 Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

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Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0019			331318108-0020			331318108-0021		
Client Sample ID:	6-19778557-2			7-18854553-2			8-19778702-2		
Volume (L):	75			75			75		
Sample Location:	Bldg SSV Hall at Rm 236			Bldg SSV at Office 221			Bldg SSV Hall at Rm 204		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Asperisporium	-	-	-	-	-	-	-	-	-
Alternaria	-	-	-	-	-	-	1	40	16
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	5	200	40.8	3	100	52.6	1	40	16
Basidiospores	-	-	-	-	-	-	1	40	16
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2	80	16.3	1	40	21.1	1	40	16
Curvularia	1*	10*	2	-	-	-	-	-	-
Epicoccum	1*	10*	2	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	3	100	20.4	1*	10*	5.3	1	40	16
Pilomyces	-	-	-	-	-	-	-	-	-
Rust	1*	10*	2	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	1*	10*	4
Unidentifiable Spores	1	40	8.2	1	40	21.1	1	40	16
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	1	40	8.2	-	-	-	-	-	-
Total Fungi	15	490	100	6	190	100	7	250	100
Hypal Fragment	8	300	61.2	3	100	52.6	1	40	16
Insect Fragment	-	-	-	1	40	21.1	-	-	-
Pollen	1	40	8.2	1*	10*	5.3	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	3	-	-	2	-	-	2	-

Bipolaris++ = *Bipolaris/Drechlera/Exserohilum*
 Myxomycetes++ = *Myxomycetes/Periconia/Smut*

Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

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Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0022			331318108-0023			331318108-0024		
Client Sample ID:	9-19779204-2			10-19777405-2			A-18954701-2		
Volume (L):	75			75			75		
Sample Location:	Bldg BE Office 211			Bldg BE NE Hallway at Office 209			OS Between Bldg SSV & BE		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Asperisporium	-	-	-	-	-	-	-	-	-
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	1*	10*	1.2
Aspergillus/Penicillium	1	40	44.4	-	-	-	5	200	23.3
Basidiospores	-	-	-	-	-	-	8	300	34.9
Bipolaris++	-	-	-	-	-	-	1*	10*	1.2
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	40	80	6	300	34.9
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	44.4	-	-	-	-	-	-
Pilthomyces	-	-	-	-	-	-	-	-	-
Rust	1*	10*	11.1	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	1*	40	20	1	40	4.7
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	2	90	100	2	50	100	22	860	100
Hyphal Fragment	4	200	222	5	200	400	5	200	23.3
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1	40	80	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	3	-	-	3	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Cecil Strait

Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. *** Denotes particles found at 300X. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by LA Testing. Results have not been adjusted for field or laboratory blank unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by LA Testing Garden Grove, CA AIHA-LAP, LLC EMLAP 101650

Initial report from: 12/03/2013 10:11:56

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com



LA Testing

11652 Knott Street Unit F5 Garden Grove, CA 92841
 Phone/Fax: (714) 828-4999 / (714) 828-4944
<http://www.LATesting.com> / gardengrovelab@latesting.com

Order ID: 331318108
 Customer ID: 32HEAL56
 Customer PO:
 Project ID:

Attn: Lucas Wallin/Kurt Seubert
 Health Science Associates
 10771 Noel Street
 Los Alamitos, CA 90720

Phone: (714) 220-3922
Fax:
Collected: 11/25/2013
Received: 11/26/2013
Analyzed: 12/03/2013

Proj: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods EMSL 05-TP-003, ASTM D7391)

Lab Sample Number:	331318108-0025			331318108-0026			331318108-0027		
Client Sample ID:	C-19778624-2			B-18954556-2			19778452-Blank		
Volume (L):	75			75			0		
Sample Location:	OS NE of Bldg BE			OS S of Bldg SSV			Field Blank		
Spore Types	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total	Raw Count	Count/m ³	% of Total
Aspergillum	-	-	-	-	-	-	-	-	-
Alternaria	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	1	40	5.4	-	-	-
Aspergillus/Penicillium	6	300	30.6	2	80	10.8	-	-	-
Basidiospores	8	300	30.6	4	200	27	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	7	300	30.6	7	300	40.5	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	1	40	5.4	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	4.1	1	80	10.8	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	1	40	4.1	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Trichocladium	-	-	-	-	-	-	-	-	-
Total Fungi	23	980	100	17	740	100	-	No Trace	-
Hyphal Fragment	5	200	20.4	1	40	5.4	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	40	4.1	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	0	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	0*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	-	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	-	-
Background (1-5)	-	2	-	-	2	-	-	-	-

Bipolaris++ = Bipolaris/Drechslera/Exserohilum
 Myxomycetes++ = Myxomycetes/Periconia/Smut

Cecil Strait
 Cecil Strait, Micro Laboratory Manager
 or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. *** Denotes particles found at 300X. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by LA Testing. Results have not been adjusted for field or laboratory blank unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by LA Testing Garden Grove, CA AIHA-LAP, LLC EMLAP 101650

Initial report from: 12/03/2013 10:11:56

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com

10771 Noel Street, Los Alamitos, CA 90720 - office 714-220-3922; fax 714-220-2081

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College

HSA Project No: 1400581A
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 25, 2013
 Rotameter: *Star Brooks* Serial No: HSA 001006

X IAQ Investigation OSHA Compliance Abatement/Clearance Routine Inspection

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
A-M-1	Plate or Air-O-Cell	M006 or M001	28.3	10:05	10:08	3	84.9	OUTSIDE 10771 NOEL ST + BE, LOCATED A
A-D-1	Plate or Air-O-Cell	M006 or M001	28.3	10:11	10:13	3	84.9	
A-1978457-1	Plate or Air-O-Cell	M006 or M001	15	10:05	10:10	5	75	
B-M-1	Plate or Air-O-Cell	M006 or M001	28.3	10:52	10:55	3	84.9	OUTSIDE SOUTH OF BUNK SSV, LOCATED B
B-D-1	Plate or Air-O-Cell	M006 or M001	28.3	10:57	11:00	3	84.9	
B-19778427-1	Plate or Air-O-Cell	M006 or M001	15	10:53	10:58	5	75	
C-M-1	Plate or Air-O-Cell	M006 or M001	28.3	11:25	11:28	3	84.9	OUTSIDE N/E OF BUNK BE, LOCATED C
C-D-1	Plate or Air-O-Cell	M006 or M001	28.3	11:30	11:33	3	84.9	
C-19778549-1	Plate or Air-O-Cell	M006 or M001	15	11:25	11:30	5	75	
F-M-1	Plate or Air-O-Cell	M006 or M001	28.3	10:34	10:37	3	84.9	BUNK SSV, OFFICE 192
F-D-1	Plate or Air-O-Cell	M006 or M001	28.3	10:39	10:42	3	84.9	CENTRAL OFFICE, LOCATED 1
F-19778434-1	Plate or Air-O-Cell	M006 or M001	15	10:34	10:39	5	75	

Special Instructions to Lab:

Relinquished by: *[Signature]* Date: 11/26/13 Time: 10:55 Received by: *[Signature]* Date: 11/26/13 Time: 11:50

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College

HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 25, 2013
 Rotameter: Brooks
 Serial No: HSA 001006

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks	Abatement/Clearance	
									<input type="checkbox"/> OSHA Compliance	<input type="checkbox"/> Routine Inspection
2-M-1	Plate or Air-O-Cell	M006 or M001	28.3	11:45	11:48	3	84.9	Sub. SSV, OFFICE 188, CENTER OF OFFICES, LOCATED 2	<input type="checkbox"/>	<input type="checkbox"/>
2-D-1			28.3	11:50	11:53	3	84.9			
2-19779272-1			15	11:47	11:52	5	75			
3-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:05	12:08	3	84.9	Sub. SSV, OFFICE 117 EN HALL LOCATED 3	<input type="checkbox"/>	<input type="checkbox"/>
3-D-1			28.3	12:10	12:13	3	84.9			
3-19778584-1			15	12:05	12:10	5	75			
4-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:19	12:22	3	84.9	Sub. SSV, OFFICE 101, CENTER OF OFFICES, LOCATED 4,	<input type="checkbox"/>	<input type="checkbox"/>
4-D-1			28.3	12:24	12:27	3	84.9			
4-19778766-1			15	12:20	12:25	5	75			
5-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:32	12:35	3	84.9	Sub. SSV, SOUTH WEST CORNER HALLWAY LOCATED 5,	<input type="checkbox"/>	<input type="checkbox"/>
5-D-1			28.3	12:36	12:39	3	84.9			
5-19778691-1			15	12:34	12:39	5	75			

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/26/13 Time: 10:55 Received by: [Signature] Date: 11/26/13 Time: 11:00

Relinquished by: [Signature] Date: [] Time: [] Received by: [Signature] Date: [] Time: []

Relinquished by: [Signature] Date: [] Time: [] Received by: [Signature] Date: [] Time: []

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Pg: 3 of 7

Health Science Associates


10771 Noel Street, Los Alamitos, CA 90720 - office 714-220-3922; fax 714-220-2081

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Bermann
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College
 HSA Project No: 140058LA
 Ind. Hyg: Lucas Wallin/Kurt Seubert
 Date: November 15, 2013
 Rolameter: Beckles
 Serial No: HSA 001006
 Abatement/Clearance
 Routine Inspection

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
6-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:45	12:48	3	84.9	DUBSON, Room 236, Location 6
6-D-1	Plate or Air-O-Cell	M006 or M001	28.3	12:49	12:52	3	84.9	
6-19778598-1	Plate or Air-O-Cell	M006 or M001	15	12:45	12:50	5	75	
7-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:00	13:03	3	84.9	3018 SSV, at ^{SHALL} OFFICE 221, LOCATION 7
7-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:05	13:08	3	84.9	
7-19779253-1	Plate or Air-O-Cell	M006 or M001	15	13:00	13:05	5	75	
8-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:15	13:18	3	84.9	DUBSON, HALL AT Rm 20411
8-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:18	13:21	3	84.9	LOCATION 8
8-18954560-1	Plate or Air-O-Cell	M006 or M001	15	13:15	13:20	5	75	
9-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:33	13:36	3	84.9	BULL BE, OFFICE 211 , 211
9-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:37	13:40	3	84.9	LOCATION 9
9-19778591-1	Plate or Air-O-Cell	M006 or M001	15	13:33	13:38	5	75	

Special Instructions to Lab:

Relinquished by:  Date: 11/20/13 Time: 10:55 Received by: AC Date: 11/26/13 Time: 11:00

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

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Pg: 4 of 7

Health Science Associates

10771 Noel Street, Los Alamitos, CA 90720 - office 714-220-3922; fax 714-220-2081

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College

HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 26, 2013
 Rotameter: Breaks
 Serial No: HSA 001006

IAQ Investigation OSHA Compliance Abatement/Clearance Routine Inspection

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
10-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:47	13:50	3	84.9	SUBJECT N/E HALLWAY AT OFFICE 209. LOCATION 10
10-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:57	13:59	3	84.9	
10-19954567-1	Plate or Air-O-Cell	M006 or M001	15	13:47	13:52	5	75	
1-M-2	Plate or Air-O-Cell	M006 or M001	28.3	14:49	14:52	3	84.9	SUBJ SERV. OFFICE 192, CENT. OF OFFICE
1-D-2	Plate or Air-O-Cell	M006 or M001	28.3	14:53	14:56	3	84.9	LOCATED 1 SECOND FLOOR
1-19778799-2	Plate or Air-O-Cell	M006 or M001	15	14:49	14:54	5	75	
2-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:03	15:06	3	84.9	SUBJ SERV. OFFICE 188, LOCATION 2.
2-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:07	15:10	3	84.9	(2ND FLOOR)
2-17779242-2	Plate or Air-O-Cell	M006 or M001	15	15:03	15:08	5	75	
3-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:16	15:19	3	84.9	SUBJ SERV. COURSE/2 OF OFFICE 117 2ND FLOOR
3-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:21	15:24	3	84.9	LOCATED 3, 2ND FLOOR
3-19778158-2	Plate or Air-O-Cell	M006 or M001	15	15:16	15:21	5	75	

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/26/13 Time: 10:55 Received by: AC Date: 11/26/13 Time: 11:00

Relinquished by: [Signature] Date: [] Time: [] Received by: [] Date: [] Time: []

Relinquished by: [Signature] Date: [] Time: [] Received by: [] Date: [] Time: []

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Health Science Associates

10771 Noel Street, Los Alamitos, CA 90720 - office 714-220-3922; fax 714-220-2081

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College

HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 18, 2013
 Rotameter: Brooks
 Serial No: HSA 001906

IAQ Investigation OSHA Compliance Abatement/Clearance Routine Inspection

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
4-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:29	15:32	3	84.9	304 SSV, OFFICE 101, CENTER OFFICES, LOCATION 4, 2ND FLOOR
4-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:33	15:36	3	84.9	
4-1977855-2	Plate or Air-O-Cell	M006 or M001	15	15:29	15:34	5	75	
5-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:41	15:44	3	84.9	3046 SSV, SOUTH WEST CORNER HALLWAY
5-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:44	15:47	3	84.9	LOCATION 5, 2ND FLOOR
5-19778563-2	Plate or Air-O-Cell	M006 or M001	15	15:41	15:46	5	75	HALLWAY
6-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:54	16:57	7	84.9	3046 SSV, ROOM 236, LOCATION 6
6-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:54	17:02	3	84.9	2ND FLOOR
6-19778557-2	Plate or Air-O-Cell	M006 or M001	15	16:54	16:59	5	75	
7-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:55	15:58	3	84.9	3046 SSV, OFFICE 224 LOCATION 7
7-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:00	16:03	3	84.9	
7-19778553-2	Plate or Air-O-Cell	M006 or M001	15	15:55	16:00	5	75	2ND FLOOR

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/26/13 Time: 1055 Received by: AC Date: 11/26/13 Time: 11:00

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

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Pg: 6 of 7

10771 Noel Street, Los Alamitos, CA 90720 - office 714-220-3922; fax 714-220-2081

Health Science Associates

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College
 HSA Project No: 140058LA
 Ind. Hyg: Lucas Wallin/Kurt Seubert
 Date: November 20, 2013
 Rotameter: Brooks
 Serial No: HSA 001006

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
8-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:08	16:17	3	84.9	300 SSU, HALL AT RM 204
8-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:12	16:15	3	84.9	LOCATED 8, 2ND FLOOR.
8-19778702-2	Plate or Air-O-Cell	M006 or M001	15	16:08	16:13	5	75	
9-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:26	16:29	3	84.9	006/3E. OFFICE 211, LOCATED 9, 2ND FLOOR
9-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:31	16:34	3	84.9	
9-19779204-2	Plate or Air-O-Cell	M006 or M001	15	16:28	16:31	3	75	
10-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:36	16:39	3	84.9	006/3E, N/E HALLWAY AT OFFICE 209
10-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:43	16:46	3	84.9	LOCATED 10, 2ND FLOOR
10-19777405-2	Plate or Air-O-Cell	M006 or M001	15	16:36	16:41	5	75	
A-M-2	Plate or Air-O-Cell	M006 or M001	28.3	17:09	17:12	3	84.9	OFFICE, 1ST FLOOR SUB SSV + 135,
A-D-2	Plate or Air-O-Cell	M006 or M001	28.3	17:13	17:16	3	84.9	LOCATED A, 2ND FLOOR
A-19854701-2	Plate or Air-O-Cell	M006 or M001	15	17:09	17:14	5	75	

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/20/13 Time: 10:55 Received by: AC Date: 11/20/13 Time: 11:00

Relinquished by: [Signature] Date: [] Time: [] Received by: [] Date: [] Time: []

Relinquished by: [Signature] Date: [] Time: [] Received by: [] Date: [] Time: []

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College

HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 25, 2013
 Rotameter: *800017*

Serial No: *HSA Antelope*

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Abatement/Clearance	
								<input type="checkbox"/> OSHA Compliance	<input type="checkbox"/> Routine Inspection
<i>C-M-2</i>	Plate or Air-O-Cell	M006 or M001	<i>28.3</i>	<i>17:21</i>	<i>17:24</i>	<i>3</i>	<i>84.9</i>	Location/Description/Remarks <i>WESTSIDE, N/2 of GOLF DR, LUGAN C, 2ND ROW</i>	
<i>C-O-2</i>	Plate or Air-O-Cell	M006 or M001	<i>28.3</i>	<i>17:25</i>	<i>17:28</i>	<i>3</i>	<i>84.9</i>		
<i>C-19778624-2</i>	Plate or Air-O-Cell	M006 or M001	<i>15</i>	<i>17:20</i>	<i>17:25</i>	<i>5</i>	<i>75</i>		
<i>B-M-2</i>	Plate or Air-O-Cell	M006 or M001	<i>28.3</i>	<i>17:37</i>	<i>17:40</i>	<i>3</i>	<i>84.9</i>	Location/Description/Remarks <i>WESTSIDE SOUTH OF 2ND SSV,</i>	
<i>B-D-2</i>	Plate or Air-O-Cell	M006 or M001	<i>28.3</i>	<i>17:41</i>	<i>17:44</i>	<i>3</i>	<i>84.9</i>	<i>LUGAN C, 2ND ROW</i>	
<i>B-18954558-2</i>	Plate or Air-O-Cell	M006 or M001	<i>15</i>	<i>17:36</i>	<i>17:41</i>	<i>5</i>	<i>75</i>		
<i>M-Blank</i>	Plate or Air-O-Cell	M006 or M001		<i>blank</i>				Field Blank	
<i>D-Blank</i>	Plate or Air-O-Cell	M006 or M001							
<i>15778452-Blank</i>	Plate or Air-O-Cell	M006 or M001							

Special Instructions to Lab:

Relinquished by: *[Signature]* Date: *11/26/13* Time: *10:55* Received by: *AC* Date: *11/26/13* Time: *11:00*

Relinquished by: *[Signature]* Date: *11/26/13* Time: *10:55* Received by: *AC* Date: *11/26/13* Time: *11:00*

Relinquished by: *[Signature]* Date: *11/26/13* Time: *10:55* Received by: *AC* Date: *11/26/13* Time: *11:00*

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LA Testing

11652 Knott Street Unit F5, Garden Grove, CA 92841

Phone/Fax: (714) 828-4999 / (714) 828-4944

<http://www.LATesting.com>

gardengrovelab@latesting.com

LA Testing Order: 331318103

CustomerID: 32HEAL56

CustomerPO:

ProjectID:

Attn: **Lucas Wallin/Kurt Seubert**
Health Science Associates
10771 Noel Street
Los Alamitos, CA 90720

Phone: (714) 220-3922
Fax:
Received: 11/26/13 11:00 AM
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Project: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m³)	Fungal Identification	Colony Count	CFU/m³
A-M-1	OS, Between Bldg SSV & BE	84.9	MEA	25	12	<i>Acremonium sp.</i>	2	24
331318103-0001						<i>Cladosporium cladosporioides</i>	7	84
Background						<i>Myxomycetes sp.</i>	1	12
						Total	10	120
A-D-1	OS, Between Bldg SSV & BE	84.9	DG18	25	12	<i>Alternaria sp.</i>	1	12
331318103-0002						<i>Cladosporium cladosporioides</i>	8	96
Background						<i>Sterile(white)</i>	2	24
						<i>Yeast</i>	1	12
						Total	12	144
B-M-1	OS, S of Bldg SSV	84.9	MEA	25	12	<i>Aspergillus niger</i>	1	12
331318103-0003						<i>Cladosporium cladosporioides</i>	7	84
Background						<i>Cladosporium spongiosum</i>	3	36
						<i>Sterile(dark)</i>	1	12
						<i>Yeast</i>	1	12
						Total	13	156
B-D-1	OS, S of Bldg SSV	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	8	96
331318103-0004						<i>Cladosporium spongiosum</i>	1	12
Background						<i>Penicillium lividum</i>	1	12
						<i>Sterile(white)</i>	1	12
						Total	11	132
C-M-1	OS NE of Bldg BE	84.9	MEA	25	12	<i>Alternaria sp.</i>	1	12
331318103-0005						<i>Cladosporium cladosporioides</i>	8	96
Background						<i>Penicillium melinii</i>	3	36
						Total	12	144

Analyst(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
or other approved signatory

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Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m³)	Fungal Identification	Colony Count	CFU/m³
C-D-1 331318103-0006 Background	OS NE of Bldg BE	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	7	84
						<i>Cladosporium spongiosum</i>	2	24
						<i>Penicillium melinii</i>	1	12
						Sterile(white)	2	24
						Total	12	144
I-M-1 331318103-0007	Bldg SSV Office 192 Ctr of Office	84.9	MEA	25	12	<i>Aureobasidium sp.</i>	1	12
						<i>Cladosporium cladosporioides</i>	2	24
						<i>Penicillium melinii</i>	1	12
						Total	4	48
I-D-1 331318103-0008	Bldg SSV Office 192 Ctr of Office	84.9	DG18	25	12	<i>Aspergillus niger</i>	1	12
						<i>Cladosporium cladosporioides</i>	1	12
						Sterile(white)	2	24
						Yeast	1	12
						Total	5	60
2-M-1 331318103-0009	Bldg SSV Office 188 Ctr of Office	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	1	12
						Sterile(dark)	1	12
						Total	2	24
2-D-1 331318103-0010	Bldg SSV Office 188 Ctr of Office	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	1	12
						<i>Penicillium janthinellum</i>	1	12
						<i>Penicillium melinii</i>	1	12
						Yeast	1	12
						Total	4	48

Analyst(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
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Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
3-M-1	Bldg SSV OS Office 117 on Hall	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	1	12
331318103-0011						Yeast	2	24
Background						Total	3	36
3-D-1	Bldg SSV OS Office 117 on Hall	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	2	24
331318103-0012						<i>Sterile(white)</i>	1	12
Background						Yeast	1	12
						Total	4	48
4-M-1	Bldg SSV Office 101 Ctr of Office	84.9	MEA	25	12	<i>Alternaria sp.</i>	1	12
331318103-0013						<i>Cladosporium cladosporioides</i>	6	72
						Yeast	1	12
						Total	8	96
4-D-1	Bldg SSV Office 101 Ctr of Office	84.9	DG18	25	12	<i>Alternaria sp.</i>	1	12
331318103-0014						<i>Cladosporium cladosporioides</i>	1	12
						<i>Penicillium oxalicum</i>	1	12
						Total	3	36
5-M-1	Bldg SSV SW Corner Hallway	84.9	MEA	25	12	<i>Alternaria sp.</i>	1	12
331318103-0015						<i>Aspergillus sydowii</i>	1	12
						<i>Cladosporium cladosporioides</i>	1	12
						Total	3	36
5-D-1	Bldg SSV SW Corner Hallway	84.9	DG18	25	12	<i>Penicillium janthinellum</i>	2	24
331318103-0016						Yeast	1	12
						Total	3	36

Analyst(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
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Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
6-M-1 331318103-0017	Bldg SSV Rm 236	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i> Total	2 2	24 24
6-D-1 331318103-0018	Bldg SSV Rm 236	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i> Total	1 1	12 12
7-M-1 331318103-0019 Background	Bldg OS in Hall at Office 221	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i> Total	2 2	24 24
7-D-1 331318103-0020 Background	Bldg OS in Hall at Office 221	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i> <i>Paecilomyces sp.</i> <i>Penicillium janthinellum</i> <i>Penicillium lividum</i> Total	1 1 1 1 4	12 12 12 12 48
8-M-1 331318103-0021	Bldg SSV Hall at Rm 204	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i> <i>Cladosporium spongiosum</i> <i>Penicillium janthinellum</i> Yeast Total	3 2 2 1 8	36 24 24 12 96
8-D-1 331318103-0022	Bldg SSV Hall at Rm 204	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i> <i>Cladosporium spongiosum</i> <i>Penicillium janthinellum</i> Yeast Total	1 2 1 1 5	12 24 12 12 60

Analyst(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
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Project: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
9-M-1 331318103-0023	Bldg BE Office 211	84.9	MEA	25	12	<i>Aspergillus fumigatus</i>	1	12
						<i>Cladosporium cladosporioides</i>	2	24
						Sterile(white)	1	12
						Total	4	48
9-D-1 331318103-0024	Bldg BE Office 211	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	3	36
						<i>Penicillium janthinellum</i>	1	12
						Total	4	48
10-M-1 331318103-0025	Bldg BE NE Hallway at Office 209	84.9	MEA	25	12	<i>Alternaria sp.</i>	1	12
						<i>Cladosporium cladosporioides</i>	4	48
						<i>Penicillium janthinellum</i>	1	12
						<i>Trichoderma deliquescens</i>	1	12
						Total	7	84
10-D-1 331318103-0026	Bldg BE NE Hallway at Office 209	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	2	24
						<i>Penicillium janthinellum</i>	1	12
						Sterile(dark)	1	12
						Yeast	1	12
						Total	5	60
1-M-2 331318103-0027	Bldg SSV Office 192 Ctr of Office	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	3	36
						<i>Penicillium janthinellum</i>	1	12
						Sterile(white)	1	12
						Yeast	1	12
						Total	6	72
1-D-2 331318103-0028	Bldg SSV Office 192 Ctr of Office	84.9	DG18	25	12	Sterile(white)	1	12
						Yeast	1	12
						Total	2	24

Analyst(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
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Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
2-M-2 331318103-0029	Bldg SSV Office 188	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	1	12
						<i>Cladosporium spongiosum</i>	1	12
						Yeast	1	12
						Total	3	36
2-D-2 331318103-0030	Bldg SSV Office 188	84.9	DG18	25	12	<i>Aspergillus flavus</i>	1	12
						<i>Aspergillus niger</i>	1	12
						<i>Cladosporium cladosporioides</i>	2	24
						Total	4	48
3-M-2 331318103-0031 Background	Bldg SSV OS of Office 117 on Hall	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	2	24
						<i>Penicillium miczynskii</i>	1	12
						<i>Ulocladium sp.</i>	1	12
						Total	4	48
3-D-2 331318103-0032 Background	Bldg SSV OS of Office 117 on Hall	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	1	12
						Total	1	12
4-M-2 331318103-0033	Bldg SSV Office 101 Ctr of Office	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	2	24
						<i>Ulocladium sp.</i>	1	12
						Yeast	1	12
						Total	4	48
4-D-2 331318103-0034	Bldg SSV Office 101 Ctr of Office	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	3	36
						<i>Penicillium janthinellum</i>	1	12
						Sterile(white)	1	12
						Total	5	60

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Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
5-M-2 331318103-0035	Bldg SSV SW Corner Hallway	84.9	MEA	25	12	<i>Bipolaris sp.</i> Total	1 1	12 12
5-D-2 331318103-0036	Bldg SSV SW Corner Hallway	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i> Total	3 3	36 36
6-M-2 331318103-0037	Bldg SSV Hall at Rm 236	84.9	MEA	25	12	<i>Alternaria sp.</i> <i>Aspergillus fumigatus</i> <i>Cladosporium cladosporioides</i> <i>Curvularia sp.</i> <i>Yeast</i> Total	1 1 3 1 1 7	12 12 36 12 12 84
6-D-2 331318103-0038	Bldg SSV Hall at Rm 236	84.9	DG18	25	12	None Detected		
7-M-2 331318103-0039	Bldg SSV at Office 221	84.9	MEA	25	12	<i>Aspergillus sydowii</i> <i>Cladosporium cladosporioides</i> <i>Sterile(white)</i> Total	1 1 1 3	12 12 12 36
7-D-2 331318103-0040	Bldg SSV at Office 221	84.9	DG18	25	12	None Detected		

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Received: 11/26/13 11:00 AM

Analysis Date: 12/10/2013

Collected: 11/25/2013

Project: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
8-M-2 331318103-0041	Bldg SSV at Rm 204	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	4	48
						Total	4	48
8-D-2 331318103-0042	Bldg SSV at Rm 204	84.9	DG18	25	12	<i>Aspergillus niger</i>	1	12
						<i>Cladosporium cladosporioides</i>	1	12
						Total	2	24
9-M-2 331318103-0043	Bldg BE Office 211	84.9	MEA	25	12	<i>Cladosporium cladosporioides</i>	5	60
						<i>Unknown sp.</i>	1	12
						<i>Yeast</i>	1	12
						Total	7	84
9-D-2 331318103-0044	Bldg BE Office 211	84.9	DG18	25	12	<i>Alternaria sp.</i>	1	12
						<i>Cladosporium cladosporioides</i>	2	24
						<i>Penicillium janthinellum</i>	1	12
						Total	4	48
10-M-2 331318103-0045	Bldg BE NE Hallway at Office 209	84.9	MEA	25	12	<i>Alternaria sp.</i>	1	12
						<i>Sterile(white)</i>	1	12
						<i>Yeast</i>	1	12
						Total	3	36
10-D-2 331318103-0046	Bldg BE NE Hallway at Office 209	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	1	12
						<i>Yeast</i>	1	12
						Total	2	24

Analyst(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
or other approved signatory

Samples were received in good condition unless otherwise noted on this report. LA Testing maintains liability limited to cost of analysis. Interpretation of the data contained in this report is the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. Results have not been adjusted for field or laboratory blank unless otherwise noted. Positive Hole correction is not performed on the data. Samples analyzed by LA Testing Garden Grove, CA AIHA-LAP, LLC—EMLAP Accredited #101650

Initial report from 12/11/2013 08:10:03

Test Report ViableFungi-7.26.0 Printed: 12/11/2013 8:10:03 AM

For information on the fungi listed in this report please visit the Resources section at www.emsl.com

**LA Testing**

11652 Knott Street Unit F5, Garden Grove, CA 92641

Phone/Fax: (714) 828-4999 / (714) 828-4944

<http://www.LATesting.com>gardengrovelab@latesting.com

LA Testing Order: 331318103

CustomerID: 32HEAL56

CustomerPO:

ProjectID:

Attn: **Lucas Wallin/Kurt Seubert**
Health Science Associates
10771 Noel Street
Los Alamitos, CA 90720

Phone: (714) 220-3922
 Fax:
 Received: 11/26/13 11:00 AM
 Analysis Date: 12/10/2013
 Collected: 11/25/2013

Project: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
A-M-2	OS Between Bldg SSV & BE	84.9	MEA	25	12	<i>Aspergillus fumigatus</i>	1	12
331318103-0047						<i>Aspergillus niger</i>	1	12
Background						<i>Cladosporium cladosporioides</i>	12	144
						<i>Paecilomyces sp.</i>	1	12
						<i>Penicillium chrysogenum</i>	2	24
						Total	17	204
A-D-2	OS Between Bldg SSV & BE	84.9	DG18	25	12	<i>Aspergillus candidus</i>	1	12
331318103-0048						<i>Cladosporium cladosporioides</i>	6	72
Background						<i>Paecilomyces sp.</i>	1	12
						<i>Penicillium chrysogenum</i>	1	12
						Yeast	1	12
						Total	10	120
C-M-2	OS NE of Bldg BE	84.9	MEA	25	12	<i>Aspergillus niger</i>	1	12
331318103-0049						<i>Cladosporium cladosporioides</i>	45	540
Background						<i>Gonatotryum sp.</i>	1	12
						<i>Penicillium oxalicum</i>	1	12
						Total	48	576
C-D-2	OS NE of Bldg BE	84.9	DG18	25	12	<i>Cladosporium cladosporioides</i>	8	96
331318103-0050						<i>Penicillium oxalicum</i>	40	480
Background						Total	48	576
B-M-2	OS S of Bldg SSV	84.9	MEA	25	12	<i>Aspergillus fumigatus</i>	3	36
331318103-0051						<i>Cladosporium cladosporioides</i>	12	144
Background						<i>Penicillium janthinellum</i>	1	12
						<i>Sterile(white)</i>	1	12
						Total	17	204

Analys(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
or other approved signatory

Samples were received in good condition unless otherwise noted on this report. LA Testing maintains liability limited to cost of analysis. Interpretation of the data contained in this report is the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. Results have not been adjusted for field or laboratory blank unless otherwise noted. Positive Hole correction is not performed on the data.

Samples analyzed by LA Testing Garden Grove, CA AIHA-LAP, LLC-EMLAP Accredited #101650

Initial report from 12/11/2013 08:10:03

Test Report ViableFungi-7.26.0 Printed: 12/11/2013 8:10:03 AM

For information on the fungi listed in this report please visit the Resources section at www.emsl.com



LA Testing

11852 Knott Street Unit F5, Garden Grove, CA 92841

Phone/Fax: (714) 828-4999 / (714) 828-4944

<http://www.LATesting.com>

gardengrovelab@latesting.com

LA Testing Order: 331318103

CustomerID: 32HEAL56

CustomerPO:

ProjectID:

Attn: **Lucas Wallin/Kurt Seubert**
Health Science Associates
10771 Noel Street
Los Alamitos, CA 90720

Phone: (714) 220-3922
Fax:
Received: 11/26/13 11:00 AM
Analysis Date: 12/10/2013
Collected: 11/25/2013

Project: 140058LA / 3041 West Avenue K, Lancaster, CA

Test Report: Viable Fungi Identification and Enumeration from Impactors (Including Speciation of Penicillium, Aspergillus, Cladosporium and Stachybotrys (EMSL Method M005))

Sample Description	Location	Volume (L)	Media	Incubation Temp (C)	Sensitivity (CFU/m ³)	Fungal Identification	Colony Count	CFU/m ³
B-D-2 331318103-0052 Background	OS S of Bldg SSV	84.9	DG18	25	12	<i>Aspergillus niger</i> <i>Cladosporium cladosporioides</i> <i>Penicillium janthinellum</i> <i>Penicillium miczynskii</i> <i>Sterile(white)</i> <i>Yeast</i> Total	1 8 2 1 1 1 14	12 96 24 12 12 12 168
M-Blank 331318103-0053 Blank	Field Blanks	0	MEA	25		None Detected		
D-Blank 331318103-0054 Blank	Field Blanks	0	DG18	25		None Detected		

Analyst(s)

Cecil Strait (53)

Cecil Strait, Micro Laboratory Manager
or other approved signatory

Samples were received in good condition unless otherwise noted on this report. LA Testing maintains liability limited to cost of analysis. Interpretation of the data contained in this report is the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. Results have not been adjusted for field or laboratory blank unless otherwise noted. Positive Hole correction is not performed on the data.
Samples analyzed by LA Testing Garden Grove, CA AIHA-LAP, LLC--EMLAP Accredited #101650

Initial report from 12/11/2013 08:10:03

Test Report ViableFungi-7.26.0 Printed: 12/11/2013 8:10:03 AM

THIS IS THE LAST PAGE OF THE REPORT.

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College
 HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 12, 2013
 Rotameter: *25*
 Serial No: HSA 001006
 Abatement/Clearance
 OSHA Compliance
 Routine Inspection

Sample No	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
A-M-1	Plate or Air-O-Cell	M006 or M001	28.3	10:05	10:08	3	84.9	OUTSIDE BETWEEN OURS SSV + BE, LOCATED A
A-D-1	Plate or Air-O-Cell	M006 or M001	28.3	10:11	10:13	3	84.9	
A1978457	Plate or Air-O-Cell	M006 or M001	15	10:05	10:10	5	75	
B-M-1	Plate or Air-O-Cell	M006 or M001	28.3	10:52	10:55	3	84.9	OUTSIDE SOUTH OF OURS SSV, LOCATED B
B-D-1	Plate or Air-O-Cell	M006 or M001	28.3	10:57	11:00	3	84.9	
B197784271	Plate or Air-O-Cell	M006 or M001	15	10:53	10:58	5	75	
C-M-1	Plate or Air-O-Cell	M006 or M001	28.3	11:25	11:28	3	84.9	OUTSIDE N/E OF OURS BE, LOCATED C
C-D-1	Plate or Air-O-Cell	M006 or M001	28.3	11:30	11:33	3	84.9	
C197785491	Plate or Air-O-Cell	M006 or M001	15	11:25	11:30	5	75	
F-M-1	Plate or Air-O-Cell	M006 or M001	28.3	10:34	10:37	3	84.9	OUR SSV, OFFICE 192
F-D-1	Plate or Air-O-Cell	M006 or M001	28.3	10:39	10:42	3	84.9	CENTER OF OFFICE, LOCATED 1
F19784341	Plate or Air-O-Cell	M006 or M001	15	10:34	10:39	5	75	

Special Instructions to Lab:

Relinquished by: *[Signature]* Date: 11/26/13 Time: 10:55
 Received by: *[Signature]* Date: 11/26/13 Time: 11:50
 Relinquished by: *[Signature]* Date: *[Blank]* Time: *[Blank]*
 Received by: *[Signature]* Date: *[Blank]* Time: *[Blank]*
 Relinquished by: *[Signature]* Date: *[Blank]* Time: *[Blank]*
 Received by: *[Signature]* Date: *[Blank]* Time: *[Blank]*

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10771 Noel Street, Los Alamitos, CA 90720 - office 714-220-3922; fax 714-220-2081

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel L. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College
 HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 26, 2013
 Rotameter: Brooks
 Serial No: HSA 001006
 Routine Inspection

Sample No.	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (ipm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
2-M-1	Plate or Air-O-Cell	M006 or M001	28.3	11:45	11:48	3	84.9	Sub. SSV, OFFICE 188, CENTER OF OFFICES, LOCATED 2
2-V-1			28.3	11:50	11:53	3	84.9	
2-19779272-1			15	11:47	11:52	5	75	
3-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:05	12:08	3	84.9	Sub. SSV, OUTSIDE OFFICE 117 ON HALL LOCATED 3
3-V-1			28.3	12:10	12:13	3	84.9	
3-19778584-1			15	12:05	12:10	5	75	
4-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:19	12:22	3	84.9	Sub SSV, OFFICE 101, CENTER OF OFFICES, LOCATED 4,
4-V-1			28.3	12:24	12:27	3	84.9	
4-19778766-1			15	12:20	12:25	5	75	
5-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:32	12:35	3	84.9	Sub SSV, SOUTH WEST CORNER HALLWAY LOCATED 5,
5-V-1			28.3	12:36	12:39	3	84.9	
5-19778691-1			15	12:34	12:39	5	75	

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/26/13 Time: 10:55 Received by: [Signature] Date: 11/26/13 Time: 11:00

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Health Science Associates

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seibert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College
 HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seibert
 Date: November 18, 2013
 Rotameter: 80065 Serial No: KSA 001006

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
6-M-1	Plate or Air-O-Cell	M006 or M001	28.3	12:45	12:48	3	84.9	BUSSEY, Room 236, Location 6
6-D-1	Plate or Air-O-Cell	M006 or M001	28.3	12:49	12:52	3	84.9	
6-19778598-1	Plate or Air-O-Cell	M006 or M001	15	12:45	12:50	5	75	
7-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:00	13:03	3	84.9	BUSSEY, HALL AT Rm 20411
7-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:05	13:08	3	84.9	
7-19779253-1	Plate or Air-O-Cell	M006 or M001	15	13:00	13:05	5	75	
8-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:15	13:18	3	84.9	
8-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:18	13:21	3	84.9	
8-18954960-1	Plate or Air-O-Cell	M006 or M001	15	13:15	13:20	5	75	
9-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:33	13:36	3	84.9	
9-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:37	13:40	3	84.9	
9-1977859-1	Plate or Air-O-Cell	M006 or M001	15	13:33	13:38	5	75	

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/20/13 Time: 1055 Received by: FC Date: 11/26/13 Time: 11:00

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Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

10771 Noel Street, Los Alamitos, CA 90720 - office 714-220-3922; fax 714-220-2081

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College

HSA Project No: 140058LA
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 25, 2013
 Rotameter: Brooks
 Serial No: HSA 0010066

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (ppm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
10-M-1	Plate or Air-O-Cell	M006 or M001	28.3	13:47	13:50	3	84.9	Sub off N/E hallway at office 209. LOCATED 10
10-D-1	Plate or Air-O-Cell	M006 or M001	28.3	13:51	13:54	3	84.9	
10-180545671	Plate or Air-O-Cell	M006 or M001	15	13:47	13:52	5	75	
1-M-2	Plate or Air-O-Cell	M006 or M001	28.3	14:49	14:52	3	84.9	Burb SSU, office 192, center of office
1-D-2	Plate or Air-O-Cell	M006 or M001	28.3	14:53	14:56	3	84.9	LOCATED 1 SEWB/BURND
1-19778799-2	Plate or Air-O-Cell	M006 or M001	15	14:49	14:54	5	75	
2-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:03	15:06	3	84.9	Burb SSU, office 188, LOCATED 2.
2-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:07	15:10	3	84.9	(2ND BURND)
2-19779242-2	Plate or Air-O-Cell	M006 or M001	15	15:03	15:08	5	75	
3-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:16	15:19	3	84.9	Burb SSU, outside of office 117 SEWB/BURND
3-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:21	15:24	3	84.9	LOCATED 3, 2ND BURND
3-19778458-2	Plate or Air-O-Cell	M006 or M001	15	15:16	15:21	5	75	

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/26/13 Time: 1055
 Received by: AC Date: 11/26/13 Time: 11:00

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 Received by: [] Date: [] Time: []

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Health Science Associates

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

TAT
M001 - 5 days
M006 - Normal

Report to: Lucas Wallin/Kurt Seubert
HSA Project No: 140058LA

Project Mgr: Joel I. Berman
Ind. Hyg. Lucas Wallin/Kurt Seubert

Proj. Location: 3041 West Avenue K, Lancaster, CA
Date: November 26, 2013

Client Reference: Antelope Valley College
Rotameter: Brooks Serial No: HSA 901906

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (ipm)	Start Time	Stop Time	Total Mins	Total Vol (L)	Location/Description/Remarks
4-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:29	15:32	3	84.9	3046 SSV, OFFICE 107, CENTER OFFICE, LOCATION 4, 2ND FLOOR
4-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:33	15:36	3	84.9	
4-1977855-2	Plate or Air-O-Cell	M006 or M001	15	15:29	15:34	5	75	
5-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:41	15:44	3	84.9	3046 SSV, SOUTH WEST CORNER HALLWAY LOCATION 5, 2ND FLOOR
5-D-2	Plate or Air-O-Cell	M006 or M001	28.3	15:44	15:47	3	84.9	
5-1977853-2	Plate or Air-O-Cell	M006 or M001	15	15:41	15:46	5	75	HALLWAY
6-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:54	16:57	7	84.9	3046 SSV, ROOM 236, LOCATION 6 2ND FLOOR
6-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:54	17:02	3	84.9	
6-1977855-2	Plate or Air-O-Cell	M006 or M001	15	16:54	16:59	5	75	
7-M-2	Plate or Air-O-Cell	M006 or M001	28.3	15:55	15:58	3	84.9	3046 SSV, OFFICE 224 LOCATION 7 2ND FLOOR
7-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:00	16:03	3	84.9	
7-1977853-2	Plate or Air-O-Cell	M006 or M001	15	15:55	16:00	5	75	

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/26/13 Time: 10:55
 Received by: [Signature] Date: 11/26/13 Time: 11:00

Relinquished by: [Signature] Date: [] Time: []
 Received by: [Signature] Date: [] Time: []

Relinquished by: [Signature] Date: [] Time: []
 Received by: [Signature] Date: [] Time: []

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AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

TAT
M001 - 5 days
M006 - Normal

Report to: Lucas Wallin/Kurt Seubert
Project Mgr: Joel I. Berman
Proj. Location: 3041 West Avenue K, Lancaster, CA
Client Reference: Antelope Valley College

HSA Project No: 140058LA
Ind. Hyg. Lucas Wallin/Kurt Seubert
Date: November 18, 2013
Rotameter: Brooks
Serial No: NSA DP1906

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
8-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:08	16:17	3	84.9	Sub 521, HAN AT 14M 204
8-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:12	16:15	3	84.9	Location 8, 2nd Round
8-19778702-2	Plate or Air-O-Cell	M006 or M001	15	16:08	16:13	5	75	
9-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:26	16:29	3	84.9	Sub BE, 1778 Z11, Location 9, 2nd Round
9-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:31	16:34	3	84.9	
9-19779284-2	Plate or Air-O-Cell	M006 or M001	15	16:26	16:31	5	75	
10-M-2	Plate or Air-O-Cell	M006 or M001	28.3	16:36	16:39	3	84.9	Sub BE, N/E Highway AT OFFICE 209
10-D-2	Plate or Air-O-Cell	M006 or M001	28.3	16:43	16:46	3	84.9	Location 10, 2nd Round
10-19779405-2	Plate or Air-O-Cell	M006 or M001	15	16:36	16:41	5	75	
A-M-2	Plate or Air-O-Cell	M006 or M001	28.3	17:09	17:12	3	84.9	Sub BE, 1st round SUB 55V + 153,
A-D-2	Plate or Air-O-Cell	M006 or M001	28.3	17:13	17:16	3	84.9	Location A, 2nd Round
A-18959701-2	Plate or Air-O-Cell	M006 or M001	15	17:09	17:14	5	75	

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/20/13 Time: 1055 Received by: AC Date: 11/26/13 Time: 11:00

Relinquished by: [Signature] Date: [] Time: [] Received by: [] Date: [] Time: []

Relinquished by: [Signature] Date: [] Time: [] Received by: [] Date: [] Time: []

Q:\VINDY\G\Antelope Valley College\Air 2014\140058LA-IAQ1140058LA-fung-air.wpd

AIR SAMPLE DATA SHEET (email results to: labresults@healthscience.com)

Report to: Lucas Wallin/Kurt Seubert
 Project Mgr: Joel I. Berman
 Proj. Location: 3041 West Avenue K, Lancaster, CA
 Client Reference: Antelope Valley College

HSA Project No: 1400581A
 Ind. Hyg. Lucas Wallin/Kurt Seubert
 Date: November 13, 2013
 Rotameter: Blank Serial No: HSA 011000

Sample No:	Sample Type (filter, tube, etc)	Analysis Method	Flow Rate (lpm)	Start Time	Stop Time	Total Mins	Total Vol. (L)	Location/Description/Remarks
C-M-2	Plate or Air-O-Cell	M006 or M001	28.3	17:21	17:24	3	84.9	WESTSIDE, N/E of GUN DE, LOCATED C, 2ND ROWING
C-D-2	Plate or Air-O-Cell	M006 or M001	28.3	17:25	17:28	3	84.9	
C-19778624-2	Plate or Air-O-Cell	M006 or M001	15	17:20	17:25	5	75	
B-M-2	Plate or Air-O-Cell	M006 or M001	28.3	17:37	17:40	3	84.9	WESTSIDE, SOUTH of 2ND SSV,
B-D-2	Plate or Air-O-Cell	M006 or M001	28.3	17:41	17:44	3	84.9	LOCATED IN 2ND ROWING
B-18954556-2	Plate or Air-O-Cell	M006 or M001	15	17:36	17:41	5	75	Field Blank
M-Blank	Plate or Air-O-Cell	M006 or M001						
D-Blank	Plate or Air-O-Cell	M006 or M001						
18778452-Blank	Plate or Air-O-Cell	M006 or M001						

Special Instructions to Lab:

Relinquished by: [Signature] Date: 11/26/13 Time: 1055 Received by: AC Date: 11/26/13 Time: 11:00

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

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APPENDIX B - Instrument(s)



001439

CERTIFICATE OF CALIBRATION

Customer Name:	HEALTH SCIENCES	Calibration Date:	10-08-2013
PO Number:		Calibration Due:	10-08-2014
Instrument Manufacturer:	TSI	Calibration Fluid:	70F
Instrument Description:	IAQ MONITOR	Standard(s) Used:	A5 DUE 2-2014
Model Number:	8762	NIST Traceability Per:	1219670781, 1222859163
Serial Number:	55070242	Ambient Conditions:	763 mmHGA 46% RH 72F
Rated Uncertainty:	SEE TABLE **	Procedure Number:	NAVAIR-17-20MH-20
Uncertainty Given:	+/- .61% RD. ;K=2	Certificate/File Number:	420263.2013

AS REC./AS LEFT WITHIN SPECS.
REFERENCE CONDITIONS ARE: 760mmHGA 70F.

INDICATED UUT	ACTUAL DM.STD.	INDICATED INDICATED	ACTUAL ACTUAL
CO2 PPM +/- 3% RD.	CO2 PPM	CO PPM +/- 3% RD.	CO PPM
0 TO 5000 PPM 496	0 TO 5000 PPM 500	0 TO 500 PPM 49	0 TO 500 PPM 50
TEMPERATURE °F +/-1.0°F	TEMPERATURE °F	HUMIDITY % RH +/- 3% RH	HUMIDITY % RH
32 TO 140 70.8	32 TO 140 71.0	5 TO 95% 48.8	5 TO 95% 49.1

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) used and the unit under test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed per the shown procedure number, in accordance with ISO 10012:2003, ISO 17025:2005, ANSI/NCSL-Z-540.3, and/or MIL-STD-45662A. Test methods: API2530-92 & ASME MFC-3M-1989.

Dick Munns Company • 10572 Calle Lee #138 • Los Alamitos, CA 90720
Phone (714) 827-1215 • Fax (714) 827-0823

This Calibration Certificate shall not be reproduced except, in full, without approval by DICK MUNN'S COMPANY. The data shown applies only to the instrument being calibrated and under the stated conditions of calibration.

Date:

Approved By:

Calibration Technician:

10-8-2013

JA



CERTIFICATE OF CALIBRATION

Customer Name:	HEALTH SCIENCES	Calibration Date:	10-08-2013
PO Number:		Calibration Due:	10-08-2014
Instrument Manufacturer:	TSI	Calibration Fluid:	70F
Instrument Description:	IAQ MONITOR	Standard(s) Used:	A5 DUE 2-2014
Model Number:	8762	NIST Traceability Per:	1219670781, 1222859163
Serial Number:	55070243	Ambient Conditions:	762 mmHGA 49% RH 71F
Rated Uncertainty:	SEE TABLE **	Procedure Number:	NAVAIR-17-20MH-20
Uncertainty Given:	+/- .61% RD. ;K=2	Certificate/File Number:	420262.2013

AS REC./AS LEFT WITHIN SPECS.
 REFERENCE CONDITIONS ARE: 760mmHGA 70F.

INDICATED UUT	ACTUAL DM.STD.	INDICATED INDICATED	ACTUAL ACTUAL
CO2 PPM +/- 3% RD.	CO2 PPM	CO PPM +/- 3% RD.	CO PPM
0 TO 5000 PPM 505	0 TO 5000 PPM 500	0 TO 500 PPM 49	0 TO 500 PPM 50
TEMPERATURE °F +/-1.0°F	TEMPERATURE °F	HUMIDITY % RH +/- 3% RH	HUMIDITY % RH
32 TO 140 71.1	32 TO 140 71.3	5 TO 95% 49.0	5 TO 95% 49.3

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) used and the unit under test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed per the shown procedure number, in accordance with ISO 10012:2003, ISO 17025:2005, ANSI/NCSL-Z-540.3, and/or MIL-STD-45662A. Test methods: API2530-92 & ASME MFC-3M-1989.

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Date:	Approved By:	Calibration Technician:	
10-8-2013		SA	Page 1 of 1

MODEL: 8762

SERIAL: 55070242

TESTID	TEMP	DEWPOINT	UNITS	HUMIDITY	UNITS	CO2	UNITS	CO	UNITS	TIME	DATE	
4	58.8	33.3	°F	38.1	%RH		421	ppmCO2	0	ppmCO	10:33:04	11/25/2013
4	58.1	33.9	°F	40.1	%RH		387	ppmCO2	0	ppmCO	10:34:04	11/25/2013
4	57.3	37.4	°F	47.3	%RH		393	ppmCO2	-0.2	ppmCO	10:35:05	11/25/2013
4	53.5	37.1	°F	53.8	%RH		392	ppmCO2	0	ppmCO	10:36:05	11/25/2013
4	53.7	39.3	°F	58.1	%RH		387	ppmCO2	0	ppmCO	10:37:05	11/25/2013
4	57.7	42.2	°F	56.3	%RH		377	ppmCO2	0	ppmCO	10:38:05	11/25/2013
4	62.3	44.1	°F	51	%RH		372	ppmCO2	0	ppmCO	10:39:05	11/25/2013
4	62.4	41.3	°F	46	%RH		373	ppmCO2	0	ppmCO	10:40:06	11/25/2013
4	62.5	40	°F	43.4	%RH		383	ppmCO2	-0.1	ppmCO	10:41:06	11/25/2013
4	63.9	40.6	°F	42.5	%RH		387	ppmCO2	0	ppmCO	10:42:06	11/25/2013
4	62.7	38.9	°F	41.5	%RH		393	ppmCO2	0	ppmCO	10:43:06	11/25/2013
4	63.2	40.6	°F	43.2	%RH		387	ppmCO2	0	ppmCO	10:44:06	11/25/2013
4	62.9	39	°F	41.3	%RH		394	ppmCO2	0	ppmCO	10:45:07	11/25/2013
4	62.2	39	°F	42	%RH		393	ppmCO2	0	ppmCO	10:46:07	11/25/2013
4	60.3	37.5	°F	42.7	%RH		398	ppmCO2	0	ppmCO	10:47:07	11/25/2013
4	62.4	38.7	°F	41.4	%RH		400	ppmCO2	0	ppmCO	10:48:07	11/25/2013
4	62.7	38.3	°F	40.4	%RH		404	ppmCO2	-0.1	ppmCO	10:49:07	11/25/2013
4	62.4	38.6	°F	41.2	%RH		406	ppmCO2	0	ppmCO	10:50:08	11/25/2013
4	63.5	40.5	°F	42.9	%RH		405	ppmCO2	-0.2	ppmCO	10:51:08	11/25/2013
4	59.5	38.4	°F	45.4	%RH		408	ppmCO2	-0.1	ppmCO	10:52:08	11/25/2013
4	58.2	40.1	°F	51.1	%RH		410	ppmCO2	0	ppmCO	10:53:08	11/25/2013
4	58.8	41.4	°F	52.4	%RH		399	ppmCO2	0	ppmCO	10:54:08	11/25/2013
4	59.6	42.1	°F	52	%RH		388	ppmCO2	0	ppmCO	10:55:09	11/25/2013
4	56.3	39.2	°F	52.9	%RH		391	ppmCO2	0	ppmCO	10:56:09	11/25/2013
4	63.3	43.7	°F	48.8	%RH		388	ppmCO2	0	ppmCO	10:57:09	11/25/2013
4	55.3	37.2	°F	50.1	%RH		391	ppmCO2	0	ppmCO	10:58:09	11/25/2013
4	60.8	43.3	°F	52.9	%RH		393	ppmCO2	0	ppmCO	10:59:09	11/25/2013
4	62.6	41.9	°F	45.9	%RH		392	ppmCO2	0	ppmCO	11:00:10	11/25/2013
4	56.5	37.6	°F	49.2	%RH		393	ppmCO2	0	ppmCO	11:01:10	11/25/2013
4	58.8	40.8	°F	51.3	%RH		394	ppmCO2	0	ppmCO	11:02:10	11/25/2013
4	57.9	37.6	°F	46.4	%RH		391	ppmCO2	0	ppmCO	11:03:10	11/25/2013

4	53.8	36.4 °F	51.7 %RH	395 ppmCO2	0 ppmCO	11:04:10	11/25/2013
4	57.1	40.6 °F	54.6 %RH	394 ppmCO2	0 ppmCO	11:05:11	11/25/2013
4	65.8	46.1 °F	48.8 %RH	389 ppmCO2	0 ppmCO	11:06:11	11/25/2013
4	66.9	43.2 °F	42.1 %RH	400 ppmCO2	0 ppmCO	11:07:11	11/25/2013
4	67	42.2 °F	40.4 %RH	402 ppmCO2	0 ppmCO	11:08:11	11/25/2013
4	69.7	44.2 °F	39.8 %RH	399 ppmCO2	0 ppmCO	11:09:11	11/25/2013
4	67.9	41.7 °F	38.3 %RH	398 ppmCO2	0 ppmCO	11:10:12	11/25/2013
4	67.9	41.1 °F	37.7 %RH	404 ppmCO2	-0.1 ppmCO	11:11:12	11/25/2013
4	65.2	40.3 °F	39.8 %RH	407 ppmCO2	0 ppmCO	11:12:12	11/25/2013
4	60.6	36.7 °F	40.8 %RH	406 ppmCO2	0 ppmCO	11:13:12	11/25/2013
4	63.2	41.9 °F	46 %RH	409 ppmCO2	0 ppmCO	11:14:12	11/25/2013
4	67	43 °F	41.8 %RH	405 ppmCO2	0 ppmCO	11:15:12	11/25/2013
4	67.8	42.3 °F	39.6 %RH	405 ppmCO2	-0.1 ppmCO	11:16:13	11/25/2013
4	68.7	42.7 °F	38.9 %RH	406 ppmCO2	-0.1 ppmCO	11:17:13	11/25/2013
4	68	42 °F	38.5 %RH	406 ppmCO2	-0.2 ppmCO	11:18:13	11/25/2013
4	65.9	40.8 °F	40.2 %RH	407 ppmCO2	0 ppmCO	11:19:13	11/25/2013
4	68	42.7 °F	39.6 %RH	403 ppmCO2	0 ppmCO	11:20:13	11/25/2013
4	66.7	41.1 °F	39.2 %RH	401 ppmCO2	0 ppmCO	11:21:14	11/25/2013
4	67.8	41.2 °F	37.8 %RH	402 ppmCO2	0 ppmCO	11:22:14	11/25/2013
4	64.8	37.2 °F	35.5 %RH	402 ppmCO2	0 ppmCO	11:23:14	11/25/2013
4	56.5	35.5 °F	45.6 %RH	412 ppmCO2	0 ppmCO	11:24:14	11/25/2013
4	56.6	38.8 °F	51.6 %RH	409 ppmCO2	0 ppmCO	11:25:14	11/25/2013
4	63.8	44.1 °F	48.4 %RH	392 ppmCO2	0 ppmCO	11:26:15	11/25/2013
4	58.5	37.3 °F	44.8 %RH	392 ppmCO2	0 ppmCO	11:27:15	11/25/2013
4	57.9	38 °F	47.3 %RH	392 ppmCO2	0 ppmCO	11:28:15	11/25/2013
4	58.5	39.5 °F	49.9 %RH	398 ppmCO2	0 ppmCO	11:29:15	11/25/2013
4	66.9	45.3 °F	45.7 %RH	384 ppmCO2	-0.1 ppmCO	11:30:15	11/25/2013
4	66.9	42.3 °F	40.6 %RH	387 ppmCO2	0 ppmCO	11:31:16	11/25/2013
4	67.3	40.6 °F	37.4 %RH	389 ppmCO2	0 ppmCO	11:32:16	11/25/2013
4	65	36.6 °F	34.8 %RH	392 ppmCO2	0 ppmCO	11:33:16	11/25/2013
4	66.2	37.9 °F	35 %RH	397 ppmCO2	0 ppmCO	11:34:16	11/25/2013
4	66.5	38.9 °F	36.5 %RH	399 ppmCO2	0 ppmCO	11:35:16	11/25/2013
4	65.2	38.3 °F	36.8 %RH	401 ppmCO2	0 ppmCO	11:36:17	11/25/2013
4	59.4	34.6 °F	39.5 %RH	405 ppmCO2	0 ppmCO	11:37:17	11/25/2013

4	56.3	37.8 °F	50 %RH	413 ppmCO2	0 ppmCO	11:38:17	11/25/2013
4	56.3	38.8 °F	51.8 %RH	405 ppmCO2	0 ppmCO	11:39:17	11/25/2013
4	58.5	40.4 °F	51.2 %RH	396 ppmCO2	0 ppmCO	11:40:17	11/25/2013
4	64.8	42.9 °F	45.1 %RH	387 ppmCO2	0 ppmCO	11:41:18	11/25/2013
4	68.8	43.4 °F	40 %RH	389 ppmCO2	-0.1 ppmCO	11:42:18	11/25/2013
4	68.3	41.3 °F	37.3 %RH	394 ppmCO2	-0.1 ppmCO	11:43:18	11/25/2013
4	64.8	37.1 °F	35.5 %RH	398 ppmCO2	0 ppmCO	11:44:18	11/25/2013
4	67.9	40 °F	36.5 %RH	407 ppmCO2	0 ppmCO	11:45:18	11/25/2013
4	71.6	43.6 °F	36.4 %RH	409 ppmCO2	0 ppmCO	11:46:19	11/25/2013
4	71.6	41.4 °F	33.4 %RH	406 ppmCO2	0 ppmCO	11:47:19	11/25/2013
4	66.1	34.8 °F	30.9 %RH	412 ppmCO2	0 ppmCO	11:48:19	11/25/2013
4	61.7	31.8 °F	32.2 %RH	414 ppmCO2	0 ppmCO	11:49:19	11/25/2013
4	59.9	34 °F	38 %RH	415 ppmCO2	0 ppmCO	11:50:19	11/25/2013
4	61.8	38.1 °F	41.2 %RH	413 ppmCO2	0 ppmCO	11:51:19	11/25/2013
4	62.3	40 °F	44.1 %RH	412 ppmCO2	0 ppmCO	11:52:20	11/25/2013
4	64.5	39.3 °F	39.2 %RH	410 ppmCO2	0 ppmCO	11:53:20	11/25/2013
4	56.8	32 °F	38.3 %RH	407 ppmCO2	0 ppmCO	11:54:20	11/25/2013
4	61.5	36.9 °F	40.2 %RH	402 ppmCO2	0 ppmCO	11:55:20	11/25/2013
4	64.7	38.3 °F	37.5 %RH	400 ppmCO2	-0.1 ppmCO	11:56:20	11/25/2013
4	64.8	37.2 °F	35.9 %RH	401 ppmCO2	0 ppmCO	11:57:21	11/25/2013
4	65.5	37.6 °F	35.6 %RH	404 ppmCO2	0 ppmCO	11:58:21	11/25/2013
4	62.7	37.2 °F	38.6 %RH	411 ppmCO2	0 ppmCO	11:59:21	11/25/2013
4	62.7	36.8 °F	37.6 %RH	413 ppmCO2	0 ppmCO	12:00:21	11/25/2013
4	61.3	34.2 °F	36.3 %RH	416 ppmCO2	0 ppmCO	12:01:21	11/25/2013
4	65.2	37.7 °F	35.9 %RH	408 ppmCO2	0 ppmCO	12:02:22	11/25/2013
4	64.8	36.6 °F	35.2 %RH	415 ppmCO2	0 ppmCO	12:03:22	11/25/2013
4	60.3	33 °F	35.5 %RH	414 ppmCO2	0 ppmCO	12:04:22	11/25/2013
4	62.6	35.3 °F	36.1 %RH	413 ppmCO2	0 ppmCO	12:05:22	11/25/2013
4	61.1	33.6 °F	35.5 %RH	406 ppmCO2	0 ppmCO	12:06:22	11/25/2013
4	62.7	35.7 °F	36.4 %RH	409 ppmCO2	-0.2 ppmCO	12:07:23	11/25/2013
4	63.8	39.5 °F	40.9 %RH	410 ppmCO2	0 ppmCO	12:08:23	11/25/2013
4	66.9	40.6 °F	38.2 %RH	405 ppmCO2	-0.4 ppmCO	12:09:23	11/25/2013
4	66.8	39.9 °F	37.1 %RH	405 ppmCO2	0 ppmCO	12:10:23	11/25/2013
4	68.7	39.8 °F	34.7 %RH	407 ppmCO2	-0.1 ppmCO	12:11:23	11/25/2013

4	65.3	38.1 °F	36.6 %RH	416 ppmCO2	0 ppmCO	12:12:24	11/25/2013
4	63.1	35.3 °F	35 %RH	410 ppmCO2	0 ppmCO	12:13:24	11/25/2013
4	65.8	35.9 °F	33.2 %RH	407 ppmCO2	0 ppmCO	12:14:24	11/25/2013
4	65.8	35.3 °F	32.1 %RH	410 ppmCO2	0 ppmCO	12:15:24	11/25/2013
4	67.2	35.8 °F	31.2 %RH	407 ppmCO2	0 ppmCO	12:16:24	11/25/2013
4	71.3	37.9 °F	29.7 %RH	404 ppmCO2	-0.5 ppmCO	12:17:25	11/25/2013
4	69.8	37.4 °F	30.6 %RH	410 ppmCO2	-0.2 ppmCO	12:18:25	11/25/2013
4	66.1	34.8 °F	31 %RH	416 ppmCO2	0 ppmCO	12:19:25	11/25/2013
4	66.3	34.1 °F	30 %RH	417 ppmCO2	0 ppmCO	12:20:25	11/25/2013
4	65.2	34.7 °F	32.1 %RH	416 ppmCO2	0 ppmCO	12:21:25	11/25/2013
4	62.8	32.4 °F	31.6 %RH	418 ppmCO2	0 ppmCO	12:22:26	11/25/2013
4	65.4	34.5 °F	31.7 %RH	419 ppmCO2	-0.1 ppmCO	12:23:26	11/25/2013
4	64.6	34.4 °F	32.5 %RH	418 ppmCO2	0 ppmCO	12:24:26	11/25/2013
4	65.3	35.3 °F	32.7 %RH	416 ppmCO2	0 ppmCO	12:25:26	11/25/2013
4	64.8	34.3 °F	32 %RH	411 ppmCO2	-0.2 ppmCO	12:26:26	11/25/2013
4	65.6	35.2 °F	32.3 %RH	409 ppmCO2	-0.1 ppmCO	12:27:26	11/25/2013
4	65.6	35.7 °F	33 %RH	410 ppmCO2	0 ppmCO	12:28:27	11/25/2013
4	70.4	37 °F	29.5 %RH	409 ppmCO2	-0.6 ppmCO	12:29:27	11/25/2013
4	69	35.4 °F	28.7 %RH	408 ppmCO2	-0.3 ppmCO	12:30:27	11/25/2013
4	70.8	35.8 °F	27.8 %RH	412 ppmCO2	-0.4 ppmCO	12:31:27	11/25/2013
4	70.5	35.7 °F	27.8 %RH	417 ppmCO2	-0.3 ppmCO	12:32:27	11/25/2013
4	66	35.4 °F	32.1 %RH	419 ppmCO2	-0.1 ppmCO	12:33:28	11/25/2013
4	68.6	37.7 °F	32.2 %RH	418 ppmCO2	-0.3 ppmCO	12:34:28	11/25/2013
4	70.2	38.1 °F	31 %RH	414 ppmCO2	-0.4 ppmCO	12:35:28	11/25/2013
4	72	37.6 °F	28.3 %RH	415 ppmCO2	-0.6 ppmCO	12:36:28	11/25/2013
4	70.8	36.5 °F	28.5 %RH	425 ppmCO2	-0.4 ppmCO	12:37:28	11/25/2013
4	69.1	35.7 °F	29.2 %RH	419 ppmCO2	-0.3 ppmCO	12:38:29	11/25/2013
4	66.4	35.3 °F	31.5 %RH	421 ppmCO2	-0.3 ppmCO	12:39:29	11/25/2013
4	65.9	37.7 °F	35.5 %RH	419 ppmCO2	-0.4 ppmCO	12:40:29	11/25/2013
4	67.4	39.4 °F	35.8 %RH	417 ppmCO2	-0.1 ppmCO	12:41:29	11/25/2013
4	66.4	38.9 °F	36 %RH	413 ppmCO2	-0.1 ppmCO	12:42:29	11/25/2013
4	67.1	39.9 °F	37.2 %RH	406 ppmCO2	0 ppmCO	12:43:30	11/25/2013
4	69.8	39.7 °F	33.4 %RH	402 ppmCO2	0 ppmCO	12:44:30	11/25/2013
4	74.2	42 °F	31.3 %RH	403 ppmCO2	-0.3 ppmCO	12:45:30	11/25/2013

4	69.1	37 °F	30.8 %RH	411 ppmCO2	-0.2 ppmCO	12:46:30	11/25/2013
4	67.5	35.8 °F	30.8 %RH	415 ppmCO2	0 ppmCO	12:47:30	11/25/2013
4	66.9	33.3 °F	28.6 %RH	416 ppmCO2	0 ppmCO	12:48:31	11/25/2013
4	67.8	34.9 °F	29.4 %RH	418 ppmCO2	-0.3 ppmCO	12:49:31	11/25/2013
4	65.6	31.4 °F	27.6 %RH	415 ppmCO2	0 ppmCO	12:50:31	11/25/2013
4	63.1	29.5 °F	27.4 %RH	417 ppmCO2	0 ppmCO	12:51:31	11/25/2013
4	61.4	28.7 °F	28.4 %RH	419 ppmCO2	0 ppmCO	12:52:31	11/25/2013
4	65.9	32.4 °F	28.7 %RH	412 ppmCO2	-0.2 ppmCO	12:53:32	11/25/2013
4	66.9	33.6 °F	28.6 %RH	408 ppmCO2	-0.1 ppmCO	12:54:32	11/25/2013
4	66.3	31.8 °F	27.3 %RH	410 ppmCO2	0 ppmCO	12:55:32	11/25/2013
4	64.4	29.4 °F	26.3 %RH	414 ppmCO2	0 ppmCO	12:56:32	11/25/2013
4	66.4	32.9 °F	28.6 %RH	417 ppmCO2	0 ppmCO	12:57:32	11/25/2013
4	62.1	29 °F	27.9 %RH	419 ppmCO2	0 ppmCO	12:58:33	11/25/2013
4	64	30.6 °F	28 %RH	415 ppmCO2	0 ppmCO	12:59:33	11/25/2013
4	64.3	29.7 °F	27 %RH	415 ppmCO2	0 ppmCO	13:00:33	11/25/2013
4	67.2	32.9 °F	28 %RH	415 ppmCO2	0 ppmCO	13:01:33	11/25/2013
4	70.5	34.8 °F	26.9 %RH	412 ppmCO2	-0.4 ppmCO	13:02:33	11/25/2013
4	69.7	33.8 °F	26.5 %RH	413 ppmCO2	-0.4 ppmCO	13:03:33	11/25/2013
4	72.1	35.3 °F	25.7 %RH	416 ppmCO2	-0.5 ppmCO	13:04:34	11/25/2013
4	74.2	34.3 °F	23.4 %RH	420 ppmCO2	-0.5 ppmCO	13:05:34	11/25/2013
4	71	29.6 °F	20.9 %RH	427 ppmCO2	-0.3 ppmCO	13:06:34	11/25/2013
4	67.2	26.9 °F	21.1 %RH	440 ppmCO2	0 ppmCO	13:07:34	11/25/2013
4	71.3	29.5 °F	20.8 %RH	430 ppmCO2	-0.1 ppmCO	13:08:34	11/25/2013
4	65.8	26.7 °F	22.2 %RH	438 ppmCO2	-0.1 ppmCO	13:09:35	11/25/2013
4	65.5	29.6 °F	25.6 %RH	437 ppmCO2	0 ppmCO	13:10:35	11/25/2013
4	66	31.3 °F	27.2 %RH	431 ppmCO2	0 ppmCO	13:11:35	11/25/2013
4	64.7	30.3 °F	27 %RH	425 ppmCO2	-0.1 ppmCO	13:12:35	11/25/2013
4	64.1	29.7 °F	26.8 %RH	416 ppmCO2	-0.5 ppmCO	13:13:35	11/25/2013
4	64.8	29.3 °F	26 %RH	416 ppmCO2	-0.6 ppmCO	13:14:36	11/25/2013
4	66	29.3 °F	24.7 %RH	417 ppmCO2	-0.2 ppmCO	13:15:36	11/25/2013
4	69	31.3 °F	24.5 %RH	414 ppmCO2	-0.7 ppmCO	13:16:36	11/25/2013
4	68.7	29.7 °F	22.9 %RH	411 ppmCO2	-0.8 ppmCO	13:17:36	11/25/2013
4	70.1	30.2 °F	22.2 %RH	416 ppmCO2	-0.4 ppmCO	13:18:36	11/25/2013
4	69.9	28.8 °F	21.2 %RH	419 ppmCO2	0 ppmCO	13:19:37	11/25/2013

4	68.7	29 °F	22.2 %RH	419 ppmCO2	-0.2 ppmCO	13:20:37	11/25/2013
4	70.1	27.6 °F	19.7 %RH	424 ppmCO2	-0.8 ppmCO	13:21:37	11/25/2013
4	70.8	27.9 °F	19.8 %RH	427 ppmCO2	-0.6 ppmCO	13:22:37	11/25/2013
4	72.8	29.9 °F	20.2 %RH	427 ppmCO2	0 ppmCO	13:23:37	11/25/2013
4	69	28.4 °F	21.6 %RH	430 ppmCO2	0 ppmCO	13:24:38	11/25/2013
4	70.9	31.8 °F	23.5 %RH	425 ppmCO2	-0.4 ppmCO	13:25:38	11/25/2013
4	73.9	30.8 °F	20.2 %RH	429 ppmCO2	-1 ppmCO	13:26:38	11/25/2013
4	75	30.6 °F	19.3 %RH	432 ppmCO2	-0.4 ppmCO	13:27:38	11/25/2013
4	78.1	32.5 °F	19.1 %RH	434 ppmCO2	-0.2 ppmCO	13:28:38	11/25/2013
4	79.5	33.5 °F	18.9 %RH	439 ppmCO2	-0.4 ppmCO	13:29:39	11/25/2013
4	71.9	29.9 °F	20.7 %RH	444 ppmCO2	-0.3 ppmCO	13:30:39	11/25/2013
4	70.8	34.2 °F	26.1 %RH	446 ppmCO2	0 ppmCO	13:31:39	11/25/2013
4	78.2	36.8 °F	22.4 %RH	441 ppmCO2	-0.3 ppmCO	13:32:39	11/25/2013
4	77.3	34.1 °F	20.6 %RH	438 ppmCO2	-0.3 ppmCO	13:33:39	11/25/2013
4	71.4	30.2 °F	21.3 %RH	441 ppmCO2	0 ppmCO	13:34:40	11/25/2013
4	70.6	33 °F	25 %RH	447 ppmCO2	0 ppmCO	13:35:40	11/25/2013
4	67.7	30.9 °F	24.9 %RH	445 ppmCO2	0 ppmCO	13:36:40	11/25/2013
4	68.6	32.7 °F	26.3 %RH	442 ppmCO2	0 ppmCO	13:37:40	11/25/2013
4	70.5	34.7 °F	27 %RH	438 ppmCO2	-0.1 ppmCO	13:38:40	11/25/2013
4	78.5	38.3 °F	23.6 %RH	433 ppmCO2	-1.1 ppmCO	13:39:41	11/25/2013
4	78.1	34.3 °F	20.3 %RH	435 ppmCO2	-0.6 ppmCO	13:40:41	11/25/2013
4	77.5	31.7 °F	18.6 %RH	440 ppmCO2	-0.1 ppmCO	13:41:41	11/25/2013
4	77.6	31.8 °F	18.8 %RH	443 ppmCO2	-0.2 ppmCO	13:42:41	11/25/2013
4	75.4	30.2 °F	18.8 %RH	447 ppmCO2	-0.3 ppmCO	13:43:41	11/25/2013
4	75.9	35 °F	22.7 %RH	452 ppmCO2	-0.3 ppmCO	13:44:41	11/25/2013
4	72.8	33.9 °F	24 %RH	455 ppmCO2	-0.6 ppmCO	13:45:42	11/25/2013
4	72.7	36.5 °F	26.6 %RH	450 ppmCO2	-0.3 ppmCO	13:46:42	11/25/2013
4	73.4	36.7 °F	26.4 %RH	440 ppmCO2	-0.9 ppmCO	13:47:42	11/25/2013
4	71.4	33.1 °F	24.3 %RH	436 ppmCO2	-0.5 ppmCO	13:48:42	11/25/2013
4	69.9	33.9 °F	26.6 %RH	431 ppmCO2	-0.5 ppmCO	13:49:42	11/25/2013
4	71.2	35.4 °F	26.8 %RH	430 ppmCO2	-0.8 ppmCO	13:50:43	11/25/2013
4	70.3	34.7 °F	26.9 %RH	429 ppmCO2	-0.2 ppmCO	13:51:43	11/25/2013
4	74.2	36.8 °F	25.7 %RH	412 ppmCO2	-1 ppmCO	13:52:43	11/25/2013
4	73.1	33.9 °F	23.8 %RH	415 ppmCO2	-0.7 ppmCO	13:53:43	11/25/2013

4	70.1	32.8 °F	25.1 %RH	420 ppmCO2	-0.6 ppmCO	13:54:43	11/25/2013
4	67.9	34 °F	28.5 %RH	415 ppmCO2	0 ppmCO	13:55:44	11/25/2013
4	72.8	35.2 °F	25.3 %RH	410 ppmCO2	-0.5 ppmCO	13:56:44	11/25/2013
4	76.9	35.9 °F	22.8 %RH	413 ppmCO2	-0.3 ppmCO	13:57:44	11/25/2013
4	76.6	34.5 °F	21.3 %RH	428 ppmCO2	-1.1 ppmCO	13:58:44	11/25/2013
4	68.1	31.6 °F	25.7 %RH	438 ppmCO2	0 ppmCO	13:59:44	11/25/2013
4	66	33.1 °F	29.3 %RH	423 ppmCO2	0 ppmCO	14:00:45	11/25/2013
4	68.6	32.3 °F	25.9 %RH	414 ppmCO2	-0.1 ppmCO	14:01:45	11/25/2013
4	70.1	33.2 °F	25.5 %RH	418 ppmCO2	-0.6 ppmCO	14:02:45	11/25/2013
4	71.3	34.5 °F	25.7 %RH	419 ppmCO2	-0.7 ppmCO	14:03:45	11/25/2013
4	70.2	32.5 °F	24.8 %RH	422 ppmCO2	-0.7 ppmCO	14:04:45	11/25/2013
4	69.7	33.3 °F	26 %RH	418 ppmCO2	-0.8 ppmCO	14:05:46	11/25/2013
4	69.7	33.2 °F	25.9 %RH	414 ppmCO2	-0.4 ppmCO	14:06:46	11/25/2013
4	70.2	33.3 °F	25.5 %RH	411 ppmCO2	-0.6 ppmCO	14:07:46	11/25/2013
4	68.6	32.5 °F	26.2 %RH	406 ppmCO2	-0.1 ppmCO	14:08:46	11/25/2013
4	69.6	33.6 °F	26.4 %RH	410 ppmCO2	0 ppmCO	14:09:46	11/25/2013
4	68.6	33.1 °F	26.8 %RH	417 ppmCO2	-0.9 ppmCO	14:10:47	11/25/2013
4	68.2	35.8 °F	30.4 %RH	416 ppmCO2	-0.1 ppmCO	14:11:47	11/25/2013
4	68.4	36.4 °F	30.8 %RH	415 ppmCO2	-0.6 ppmCO	14:12:47	11/25/2013
4	68.6	36.1 °F	30.3 %RH	407 ppmCO2	-0.5 ppmCO	14:13:47	11/25/2013
4	70.3	37.4 °F	30 %RH	404 ppmCO2	-0.7 ppmCO	14:14:47	11/25/2013
4	68.9	35.9 °F	29.7 %RH	405 ppmCO2	-0.5 ppmCO	14:15:47	11/25/2013
4	66	35.3 °F	31.9 %RH	403 ppmCO2	-0.2 ppmCO	14:16:48	11/25/2013
4	67.7	37.6 °F	32.9 %RH	408 ppmCO2	-0.2 ppmCO	14:17:48	11/25/2013
4	68.5	37.4 °F	32 %RH	407 ppmCO2	-0.1 ppmCO	14:18:48	11/25/2013
4	71	37.3 °F	29.2 %RH	404 ppmCO2	-0.7 ppmCO	14:19:48	11/25/2013
4	70.6	35.5 °F	27.5 %RH	408 ppmCO2	-0.7 ppmCO	14:20:48	11/25/2013
4	68.5	35.5 °F	29.5 %RH	414 ppmCO2	-0.4 ppmCO	14:21:49	11/25/2013
4	70.9	37.4 °F	29.5 %RH	409 ppmCO2	-0.2 ppmCO	14:22:49	11/25/2013
4	71.5	36.2 °F	27.5 %RH	408 ppmCO2	-1.2 ppmCO	14:23:49	11/25/2013
4	68.4	34.8 °F	28.8 %RH	424 ppmCO2	-0.5 ppmCO	14:24:49	11/25/2013
4	68.8	35.8 °F	29.6 %RH	411 ppmCO2	-0.4 ppmCO	14:25:49	11/25/2013
4	69.5	35.8 °F	28.9 %RH	404 ppmCO2	-0.3 ppmCO	14:26:50	11/25/2013
4	69.9	36.1 °F	29.1 %RH	398 ppmCO2	-0.7 ppmCO	14:27:50	11/25/2013

4	73.4	37.7 °F	27.2 %RH	401 ppmCO2	-1.2 ppmCO	14:28:50	11/25/2013
4	70.6	35.3 °F	27.2 %RH	409 ppmCO2	-0.7 ppmCO	14:29:50	11/25/2013
4	68.6	35.4 °F	29.5 %RH	416 ppmCO2	-0.2 ppmCO	14:30:50	11/25/2013
4	67.1	35.5 °F	30.9 %RH	414 ppmCO2	-0.2 ppmCO	14:31:51	11/25/2013
4	67.2	37 °F	32.9 %RH	408 ppmCO2	0 ppmCO	14:32:51	11/25/2013
4	72.2	39 °F	29.7 %RH	406 ppmCO2	-0.5 ppmCO	14:33:51	11/25/2013
4	71.4	36.6 °F	28.1 %RH	408 ppmCO2	-0.1 ppmCO	14:34:51	11/25/2013
4	72.5	35.9 °F	26.3 %RH	406 ppmCO2	-0.6 ppmCO	14:35:51	11/25/2013
4	72.3	37 °F	27.6 %RH	416 ppmCO2	-0.4 ppmCO	14:36:52	11/25/2013
4	69.8	35.1 °F	27.7 %RH	418 ppmCO2	-0.5 ppmCO	14:37:52	11/25/2013
4	68.3	35.1 °F	29.4 %RH	421 ppmCO2	-0.3 ppmCO	14:38:52	11/25/2013
4	67.5	36.4 °F	31.8 %RH	410 ppmCO2	-0.1 ppmCO	14:39:52	11/25/2013
4	68.3	36.6 °F	31.1 %RH	410 ppmCO2	-0.4 ppmCO	14:40:52	11/25/2013
4	68.1	35.7 °F	30.1 %RH	412 ppmCO2	-0.2 ppmCO	14:41:53	11/25/2013
4	65.4	35.1 °F	32.4 %RH	405 ppmCO2	0 ppmCO	14:42:53	11/25/2013
4	68.2	36.9 °F	31.8 %RH	404 ppmCO2	-0.5 ppmCO	14:43:53	11/25/2013
4	70.5	36.2 °F	28.3 %RH	406 ppmCO2	-0.3 ppmCO	14:44:53	11/25/2013
4	72.3	35.4 °F	26 %RH	404 ppmCO2	-0.1 ppmCO	14:45:53	11/25/2013
4	70.6	32.2 °F	23.9 %RH	404 ppmCO2	-0.3 ppmCO	14:46:54	11/25/2013
4	71.6	35.1 °F	26.3 %RH	423 ppmCO2	-0.4 ppmCO	14:47:54	11/25/2013
4	69.2	34.5 °F	27.9 %RH	423 ppmCO2	-0.4 ppmCO	14:48:54	11/25/2013
4	70	37.4 °F	30.4 %RH	424 ppmCO2	-0.2 ppmCO	14:49:54	11/25/2013
4	69.5	35.6 °F	28.7 %RH	420 ppmCO2	-0.3 ppmCO	14:50:54	11/25/2013
4	69.7	36 °F	28.9 %RH	420 ppmCO2	-0.8 ppmCO	14:51:54	11/25/2013
4	67.6	35.7 °F	30.8 %RH	419 ppmCO2	0 ppmCO	14:52:55	11/25/2013
4	69.1	35.9 °F	29.3 %RH	418 ppmCO2	-0.5 ppmCO	14:53:55	11/25/2013
4	68	35 °F	29.5 %RH	409 ppmCO2	0 ppmCO	14:54:55	11/25/2013
4	69.1	35.1 °F	28.6 %RH	413 ppmCO2	-0.3 ppmCO	14:55:55	11/25/2013
4	67.5	34.9 °F	29.9 %RH	414 ppmCO2	-0.2 ppmCO	14:56:55	11/25/2013
4	67	35.9 °F	31.7 %RH	416 ppmCO2	-0.3 ppmCO	14:57:56	11/25/2013
4	67.7	35.4 °F	30.2 %RH	415 ppmCO2	-0.5 ppmCO	14:58:56	11/25/2013
4	67.9	36.5 °F	31.5 %RH	409 ppmCO2	-0.3 ppmCO	14:59:56	11/25/2013
4	69.2	37.5 °F	31.1 %RH	402 ppmCO2	-0.5 ppmCO	15:00:56	11/25/2013
4	69.9	36.3 °F	29.1 %RH	401 ppmCO2	-0.4 ppmCO	15:01:56	11/25/2013

4	71.1	36 °F	27.6 %RH	404 ppmCO2	-0.4 ppmCO	15:02:57	11/25/2013
4	69.9	35.6 °F	28.3 %RH	406 ppmCO2	-0.3 ppmCO	15:03:57	11/25/2013
4	70.2	35.4 °F	27.7 %RH	410 ppmCO2	-0.7 ppmCO	15:04:57	11/25/2013
4	68	35.3 °F	29.9 %RH	414 ppmCO2	-0.4 ppmCO	15:05:57	11/25/2013
4	68.1	36.8 °F	31.6 %RH	414 ppmCO2	-0.3 ppmCO	15:06:57	11/25/2013
4	66.9	36.4 °F	32.4 %RH	410 ppmCO2	-0.1 ppmCO	15:07:58	11/25/2013
4	69.1	38.6 °F	32.9 %RH	404 ppmCO2	-0.6 ppmCO	15:08:58	11/25/2013
4	67.6	37.2 °F	32.7 %RH	406 ppmCO2	-0.3 ppmCO	15:09:58	11/25/2013
4	69.3	37.6 °F	31.3 %RH	398 ppmCO2	-0.4 ppmCO	15:10:58	11/25/2013
4	69.8	36.8 °F	29.8 %RH	397 ppmCO2	-0.5 ppmCO	15:11:58	11/25/2013
4	69.3	37 °F	30.5 %RH	399 ppmCO2	-0.3 ppmCO	15:12:59	11/25/2013
4	68.9	35.5 °F	29.2 %RH	400 ppmCO2	-0.7 ppmCO	15:13:59	11/25/2013
4	68.9	36.7 °F	30.7 %RH	403 ppmCO2	-0.3 ppmCO	15:14:59	11/25/2013
4	70.1	37.1 °F	29.8 %RH	403 ppmCO2	-0.7 ppmCO	15:15:59	11/25/2013
4	70.4	36.8 °F	29.1 %RH	407 ppmCO2	-0.7 ppmCO	15:16:59	11/25/2013
4	67.8	35.4 °F	30.2 %RH	412 ppmCO2	-0.3 ppmCO	15:18:00	11/25/2013
4	65.7	34.6 °F	31.5 %RH	403 ppmCO2	-0.1 ppmCO	15:19:00	11/25/2013
4	67.8	37.3 °F	32.7 %RH	399 ppmCO2	-0.7 ppmCO	15:20:00	11/25/2013
4	68.3	36 °F	30.3 %RH	397 ppmCO2	-0.7 ppmCO	15:21:00	11/25/2013
4	69.7	36.3 °F	29.4 %RH	389 ppmCO2	-0.8 ppmCO	15:22:00	11/25/2013
4	69	36 °F	29.6 %RH	390 ppmCO2	-0.3 ppmCO	15:23:01	11/25/2013
4	69.5	35.9 °F	28.9 %RH	389 ppmCO2	-0.5 ppmCO	15:24:01	11/25/2013
4	71.2	36.1 °F	27.6 %RH	390 ppmCO2	-0.6 ppmCO	15:25:01	11/25/2013
4	70.4	36.3 °F	28.6 %RH	403 ppmCO2	-0.7 ppmCO	15:26:01	11/25/2013
4	67.6	34.6 °F	29.4 %RH	400 ppmCO2	-0.1 ppmCO	15:27:01	11/25/2013
4	66.3	35.7 °F	32.1 %RH	396 ppmCO2	0 ppmCO	15:28:02	11/25/2013
4	66.9	35.2 °F	30.9 %RH	394 ppmCO2	0 ppmCO	15:29:02	11/25/2013
4	67.3	34.5 °F	29.5 %RH	392 ppmCO2	-0.1 ppmCO	15:30:02	11/25/2013
4	67.4	34 °F	29 %RH	404 ppmCO2	-0.4 ppmCO	15:31:02	11/25/2013
4	67	35 °F	30.5 %RH	411 ppmCO2	-0.7 ppmCO	15:32:02	11/25/2013
4	68.1	37 °F	31.9 %RH	408 ppmCO2	-0.5 ppmCO	15:33:02	11/25/2013
4	66.9	36.1 °F	31.9 %RH	406 ppmCO2	-0.4 ppmCO	15:34:03	11/25/2013
4	68.3	37.7 °F	32.6 %RH	398 ppmCO2	-0.5 ppmCO	15:35:03	11/25/2013
4	68.7	36.6 °F	30.6 %RH	398 ppmCO2	-0.4 ppmCO	15:36:03	11/25/2013

4	66.4	35.6 °F	31.9 %RH	391 ppmCO2	0 ppmCO	15:37:03	11/25/2013
4	67.5	35.9 °F	31.1 %RH	392 ppmCO2	-0.1 ppmCO	15:38:03	11/25/2013
4	69.7	35.9 °F	28.8 %RH	393 ppmCO2	-0.2 ppmCO	15:39:04	11/25/2013
4	70.4	35.5 °F	27.5 %RH	397 ppmCO2	-0.1 ppmCO	15:40:04	11/25/2013
4	68.3	34.2 °F	28.3 %RH	402 ppmCO2	-0.4 ppmCO	15:41:04	11/25/2013
4	67.9	35 °F	29.5 %RH	408 ppmCO2	-0.6 ppmCO	15:42:04	11/25/2013
4	66.5	35.9 °F	32.3 %RH	413 ppmCO2	-0.3 ppmCO	15:43:04	11/25/2013
4	65.6	36.8 °F	34.3 %RH	409 ppmCO2	-0.1 ppmCO	15:44:05	11/25/2013
4	66.5	37.8 °F	34.8 %RH	403 ppmCO2	-0.3 ppmCO	15:45:05	11/25/2013
4	68	37.9 °F	33.1 %RH	392 ppmCO2	-0.6 ppmCO	15:46:05	11/25/2013
4	68.1	37 °F	31.8 %RH	389 ppmCO2	-0.4 ppmCO	15:47:05	11/25/2013
4	68.5	37.6 °F	32 %RH	393 ppmCO2	0 ppmCO	15:48:05	11/25/2013
4	67.7	34.4 °F	29.3 %RH	387 ppmCO2	-0.1 ppmCO	15:49:06	11/25/2013
4	68.9	35 °F	28.6 %RH	389 ppmCO2	-1 ppmCO	15:50:06	11/25/2013
4	67.7	36.4 °F	31.6 %RH	398 ppmCO2	-0.6 ppmCO	15:51:06	11/25/2013
4	69.1	36.8 °F	30.4 %RH	399 ppmCO2	-0.3 ppmCO	15:52:06	11/25/2013
4	69.6	36 °F	29 %RH	395 ppmCO2	-0.4 ppmCO	15:53:06	11/25/2013
4	69.5	36.2 °F	29.4 %RH	394 ppmCO2	-0.5 ppmCO	15:54:07	11/25/2013
4	67.6	35.3 °F	30.2 %RH	394 ppmCO2	-0.4 ppmCO	15:55:07	11/25/2013
4	65.6	35.4 °F	32.5 %RH	398 ppmCO2	-0.1 ppmCO	15:56:07	11/25/2013
4	66	36.2 °F	33.3 %RH	405 ppmCO2	-0.1 ppmCO	15:57:07	11/25/2013
4	66	36.1 °F	32.9 %RH	399 ppmCO2	-0.1 ppmCO	15:58:07	11/25/2013
4	66.2	37.1 °F	34 %RH	401 ppmCO2	-0.1 ppmCO	15:59:08	11/25/2013
4	67.2	37.7 °F	33.8 %RH	408 ppmCO2	-0.4 ppmCO	16:00:08	11/25/2013
4	65.2	36.6 °F	34.7 %RH	404 ppmCO2	-0.1 ppmCO	16:01:08	11/25/2013
4	66.7	38.1 °F	34.8 %RH	398 ppmCO2	-0.1 ppmCO	16:02:08	11/25/2013
4	66.9	37.4 °F	33.7 %RH	390 ppmCO2	-0.4 ppmCO	16:03:08	11/25/2013
4	68.5	38.1 °F	32.6 %RH	385 ppmCO2	-0.4 ppmCO	16:04:08	11/25/2013
4	67.8	36.9 °F	32.2 %RH	386 ppmCO2	-0.4 ppmCO	16:05:09	11/25/2013
4	67.9	37.7 °F	32.8 %RH	385 ppmCO2	-0.3 ppmCO	16:06:09	11/25/2013
4	69.3	37.6 °F	31.3 %RH	389 ppmCO2	-0.5 ppmCO	16:07:09	11/25/2013
4	68.4	36 °F	30.2 %RH	393 ppmCO2	-0.6 ppmCO	16:08:09	11/25/2013
4	67.3	37.2 °F	33.1 %RH	395 ppmCO2	-0.2 ppmCO	16:09:09	11/25/2013
4	67.1	37.6 °F	33.8 %RH	391 ppmCO2	-0.2 ppmCO	16:10:10	11/25/2013

4	68.4	38 °F	32.7 %RH	392 ppmCO2	-0.4 ppmCO	16:11:10	11/25/2013
4	69.6	37.8 °F	31 %RH	392 ppmCO2	-0.2 ppmCO	16:12:10	11/25/2013
4	67.9	35.6 °F	30.4 %RH	399 ppmCO2	-0.6 ppmCO	16:13:10	11/25/2013
4	68.2	37 °F	31.7 %RH	395 ppmCO2	-0.4 ppmCO	16:14:10	11/25/2013
4	68.9	37.8 °F	31.9 %RH	391 ppmCO2	-0.4 ppmCO	16:15:11	11/25/2013
4	68.9	36.2 °F	29.9 %RH	394 ppmCO2	-0.4 ppmCO	16:16:11	11/25/2013
4	68.5	35 °F	28.9 %RH	397 ppmCO2	-0.7 ppmCO	16:17:11	11/25/2013
4	67.8	35.3 °F	30.1 %RH	401 ppmCO2	-0.3 ppmCO	16:18:11	11/25/2013
4	67.4	36.5 °F	31.9 %RH	400 ppmCO2	-0.4 ppmCO	16:19:11	11/25/2013
4	67	35.9 °F	31.7 %RH	399 ppmCO2	-0.4 ppmCO	16:20:12	11/25/2013
4	66.4	36.1 °F	32.5 %RH	397 ppmCO2	0 ppmCO	16:21:12	11/25/2013
4	65.8	34.9 °F	31.7 %RH	401 ppmCO2	-0.1 ppmCO	16:22:12	11/25/2013
4	65.6	35.8 °F	33.1 %RH	400 ppmCO2	-0.2 ppmCO	16:23:12	11/25/2013
4	66	36.4 °F	33.6 %RH	397 ppmCO2	-0.4 ppmCO	16:24:12	11/25/2013
4	66.3	37.2 °F	34 %RH	413 ppmCO2	0.2 ppmCO	16:25:13	11/25/2013
4	65.9	37 °F	34.4 %RH	402 ppmCO2	-0.1 ppmCO	16:26:13	11/25/2013
4	64.8	35.6 °F	33.8 %RH	399 ppmCO2	-0.2 ppmCO	16:27:13	11/25/2013
4	66.3	37.3 °F	34.3 %RH	398 ppmCO2	-0.5 ppmCO	16:28:13	11/25/2013
4	66	37.6 °F	35 %RH	403 ppmCO2	-0.1 ppmCO	16:29:13	11/25/2013
4	65	37.9 °F	36.8 %RH	397 ppmCO2	-0.1 ppmCO	16:30:14	11/25/2013
4	65.8	37.9 °F	35.6 %RH	396 ppmCO2	-0.2 ppmCO	16:31:14	11/25/2013
4	65.2	37.7 °F	36.1 %RH	396 ppmCO2	-0.3 ppmCO	16:32:14	11/25/2013
4	64.1	37.7 °F	37.6 %RH	387 ppmCO2	0 ppmCO	16:33:14	11/25/2013
4	64.7	38 °F	37.2 %RH	390 ppmCO2	-0.2 ppmCO	16:34:14	11/25/2013
4	65.2	38.9 °F	37.9 %RH	386 ppmCO2	-0.4 ppmCO	16:35:15	11/25/2013
4	65	38.4 °F	37.3 %RH	381 ppmCO2	0 ppmCO	16:36:15	11/25/2013
4	64.8	37.6 °F	36.5 %RH	382 ppmCO2	-0.1 ppmCO	16:37:15	11/25/2013
4	64.3	37.5 °F	37 %RH	381 ppmCO2	0 ppmCO	16:38:15	11/25/2013
4	63.3	37.2 °F	37.8 %RH	383 ppmCO2	0 ppmCO	16:39:15	11/25/2013
4	63.3	37.9 °F	39.1 %RH	384 ppmCO2	0.1 ppmCO	16:40:15	11/25/2013
4	63.3	37.9 °F	39 %RH	374 ppmCO2	0 ppmCO	16:41:16	11/25/2013
4	63	37.8 °F	39.1 %RH	374 ppmCO2	0 ppmCO	16:42:16	11/25/2013
4	62.9	37.8 °F	39.3 %RH	373 ppmCO2	-0.1 ppmCO	16:43:16	11/25/2013
4	62.9	37.8 °F	39.2 %RH	373 ppmCO2	0 ppmCO	16:44:16	11/25/2013

4	62.9	37.4 °F	38.8 %RH	369 ppmCO2	0 ppmCO	16:45:16	11/25/2013
4	63.1	37.2 °F	38.1 %RH	364 ppmCO2	-0.1 ppmCO	16:46:17	11/25/2013
4	62.7	37.3 °F	38.8 %RH	365 ppmCO2	-0.1 ppmCO	16:47:17	11/25/2013
4	62.5	37.3 °F	39.2 %RH	359 ppmCO2	-0.1 ppmCO	16:48:17	11/25/2013
4	61.5	37.4 °F	40.7 %RH	364 ppmCO2	0 ppmCO	16:49:17	11/25/2013
4	62.1	38.3 °F	41.2 %RH	367 ppmCO2	0 ppmCO	16:50:17	11/25/2013
4	61.9	37.5 °F	40.4 %RH	364 ppmCO2	0 ppmCO	16:51:18	11/25/2013
4	61	37.2 °F	41.2 %RH	365 ppmCO2	0 ppmCO	16:52:18	11/25/2013
4	60.4	37.8 °F	42.9 %RH	367 ppmCO2	0 ppmCO	16:53:18	11/25/2013
4	60.1	37.8 °F	43.4 %RH	362 ppmCO2	0 ppmCO	16:54:18	11/25/2013
4	59.6	38.1 °F	44.8 %RH	359 ppmCO2	0 ppmCO	16:55:18	11/25/2013
4	59.5	38.4 °F	45.5 %RH	357 ppmCO2	0 ppmCO	16:56:19	11/25/2013
4	59.2	38.4 °F	45.8 %RH	354 ppmCO2	0 ppmCO	16:57:19	11/25/2013
4	59	38.4 °F	46.3 %RH	355 ppmCO2	0 ppmCO	16:58:19	11/25/2013
4	58.9	38.5 °F	46.8 %RH	358 ppmCO2	0 ppmCO	16:59:19	11/25/2013
4	58.6	38.5 °F	47.1 %RH	356 ppmCO2	0 ppmCO	17:00:19	11/25/2013
4	58.4	38.1 °F	46.6 %RH	350 ppmCO2	0 ppmCO	17:01:20	11/25/2013
4	58.2	38.1 °F	47 %RH	348 ppmCO2	0 ppmCO	17:02:20	11/25/2013
4	58.4	38.2 °F	46.9 %RH	349 ppmCO2	0 ppmCO	17:03:20	11/25/2013
4	58.1	38.1 °F	47.1 %RH	346 ppmCO2	0 ppmCO	17:04:20	11/25/2013
4	58.1	38.1 °F	47.1 %RH	342 ppmCO2	0 ppmCO	17:05:20	11/25/2013
4	58.1	38.3 °F	47.5 %RH	342 ppmCO2	0 ppmCO	17:06:21	11/25/2013
4	57.9	38 °F	47.5 %RH	342 ppmCO2	0 ppmCO	17:07:21	11/25/2013
4	57.6	38 °F	47.9 %RH	340 ppmCO2	0 ppmCO	17:08:21	11/25/2013
4	58	38.5 °F	48.2 %RH	345 ppmCO2	0 ppmCO	17:09:21	11/25/2013
4	57.6	38.1 °F	48 %RH	340 ppmCO2	0 ppmCO	17:10:21	11/25/2013
4	57.5	38.1 °F	48.2 %RH	336 ppmCO2	0 ppmCO	17:11:22	11/25/2013
4	57.5	38.3 °F	48.7 %RH	336 ppmCO2	0 ppmCO	17:12:22	11/25/2013
4	57.6	38.4 °F	48.6 %RH	338 ppmCO2	0 ppmCO	17:13:22	11/25/2013
4	57.9	38.6 °F	48.5 %RH	337 ppmCO2	0 ppmCO	17:14:22	11/25/2013
4	57.6	38.4 °F	48.6 %RH	340 ppmCO2	0 ppmCO	17:15:22	11/25/2013
4	57.5	38.4 °F	48.8 %RH	335 ppmCO2	0 ppmCO	17:16:22	11/25/2013
4	57.4	38.4 °F	49 %RH	336 ppmCO2	0 ppmCO	17:17:23	11/25/2013
4	57.4	38.5 °F	49.2 %RH	343 ppmCO2	0 ppmCO	17:18:23	11/25/2013

4	57.6	38.6 °F	49 %RH	348 ppmCO2	0 ppmCO	17:19:23	11/25/2013
4	57.5	38.5 °F	48.9 %RH	336 ppmCO2	0 ppmCO	17:20:23	11/25/2013
4	57.7	38.6 °F	48.8 %RH	336 ppmCO2	0 ppmCO	17:21:23	11/25/2013
4	57.4	38.4 °F	49.1 %RH	338 ppmCO2	0 ppmCO	17:22:24	11/25/2013
4	57.2	38.3 °F	49.3 %RH	337 ppmCO2	0 ppmCO	17:23:24	11/25/2013
4	57.1	38.5 °F	49.7 %RH	340 ppmCO2	0 ppmCO	17:24:24	11/25/2013
4	57	38.6 °F	50.1 %RH	347 ppmCO2	0 ppmCO	17:25:24	11/25/2013
4	57	38.5 °F	49.8 %RH	340 ppmCO2	0 ppmCO	17:26:24	11/25/2013
4	56.7	38.4 °F	50.2 %RH	339 ppmCO2	0 ppmCO	17:27:25	11/25/2013
4	56.6	38.4 °F	50.5 %RH	340 ppmCO2	0 ppmCO	17:28:25	11/25/2013
4	56.3	38.3 °F	50.8 %RH	335 ppmCO2	0 ppmCO	17:29:25	11/25/2013
4	56.1	38.5 °F	51.6 %RH	337 ppmCO2	0 ppmCO	17:30:25	11/25/2013
4	55.8	38.8 °F	52.7 %RH	339 ppmCO2	0 ppmCO	17:31:25	11/25/2013
4	54.9	38.6 °F	54.1 %RH	341 ppmCO2	0 ppmCO	17:32:26	11/25/2013
4	54.8	38.6 °F	54.2 %RH	338 ppmCO2	0 ppmCO	17:33:26	11/25/2013
4	56	39.7 °F	54.2 %RH	339 ppmCO2	0 ppmCO	17:34:26	11/25/2013
4	55	39 °F	54.7 %RH	341 ppmCO2	0 ppmCO	17:35:26	11/25/2013
4	54.9	39.4 °F	55.8 %RH	341 ppmCO2	0 ppmCO	17:36:26	11/25/2013
4	54.2	39.1 °F	56.5 %RH	340 ppmCO2	0 ppmCO	17:37:27	11/25/2013
4	54	39.1 °F	56.9 %RH	340 ppmCO2	0 ppmCO	17:38:27	11/25/2013
4	53.6	39 °F	57.6 %RH	338 ppmCO2	0 ppmCO	17:39:27	11/25/2013
4	53.5	39.1 °F	58.1 %RH	338 ppmCO2	0 ppmCO	17:40:27	11/25/2013
4	54	39.1 °F	57 %RH	334 ppmCO2	0 ppmCO	17:41:27	11/25/2013
4	54.4	39.1 °F	56.2 %RH	330 ppmCO2	0 ppmCO	17:42:28	11/25/2013
4	55.1	39.2 °F	55.1 %RH	329 ppmCO2	0 ppmCO	17:43:28	11/25/2013
4	55.3	39.2 °F	54.3 %RH	329 ppmCO2	0 ppmCO	17:44:28	11/25/2013
4	55.4	39.1 °F	54.1 %RH	333 ppmCO2	0 ppmCO	17:45:28	11/25/2013
4	55.4	39 °F	53.8 %RH	338 ppmCO2	0 ppmCO	17:46:28	11/25/2013
4	55.2	39 °F	54.2 %RH	348 ppmCO2	0 ppmCO	17:47:29	11/25/2013
4	55.1	38.9 °F	54.4 %RH	344 ppmCO2	0 ppmCO	17:48:29	11/25/2013
4	55	39 °F	54.6 %RH	337 ppmCO2	0 ppmCO	17:49:29	11/25/2013
4	55.1	39 °F	54.5 %RH	334 ppmCO2	0 ppmCO	17:50:29	11/25/2013
4	55.2	39 °F	54.2 %RH	332 ppmCO2	0 ppmCO	17:51:29	11/25/2013
4	54.9	38.8 °F	54.4 %RH	332 ppmCO2	0 ppmCO	17:52:29	11/25/2013

4	54.5	38.6 °F	54.9 %RH	332 ppmCO2	0 ppmCO	17:53:30	11/25/2013
4	53.9	38.5 °F	55.9 %RH	334 ppmCO2	0 ppmCO	17:54:30	11/25/2013
4	53.9	38.9 °F	56.7 %RH	336 ppmCO2	0 ppmCO	17:55:30	11/25/2013
4	53.7	39.1 °F	57.5 %RH	335 ppmCO2	0 ppmCO	17:56:30	11/25/2013
4	54.6	39.8 °F	57.2 %RH	335 ppmCO2	0 ppmCO	17:57:30	11/25/2013
4	55.9	40.7 °F	56.5 %RH	336 ppmCO2	0 ppmCO	17:58:31	11/25/2013
4	55.9	40.2 °F	55.6 %RH	336 ppmCO2	0 ppmCO	17:59:31	11/25/2013
4	55.7	39.7 °F	54.8 %RH	336 ppmCO2	0 ppmCO	18:00:31	11/25/2013
4	55.7	39.5 °F	54.4 %RH	336 ppmCO2	0 ppmCO	18:01:31	11/25/2013
4	55.6	39.4 °F	54.4 %RH	334 ppmCO2	0 ppmCO	18:02:31	11/25/2013
4	55.3	39.5 °F	55.2 %RH	339 ppmCO2	0 ppmCO	18:03:32	11/25/2013
4	54.4	39 °F	55.7 %RH	341 ppmCO2	0 ppmCO	18:04:32	11/25/2013
4	54.6	39.2 °F	55.8 %RH	343 ppmCO2	0 ppmCO	18:05:32	11/25/2013
4	54.9	39.1 °F	55.3 %RH	340 ppmCO2	0 ppmCO	18:06:32	11/25/2013
4	55.4	39.6 °F	55.1 %RH	339 ppmCO2	0 ppmCO	18:07:32	11/25/2013
4	55.7	39.9 °F	55.3 %RH	347 ppmCO2	0 ppmCO	18:08:33	11/25/2013
4	55.2	39.4 °F	55.2 %RH	346 ppmCO2	0 ppmCO	18:09:33	11/25/2013
4	54.7	39.2 °F	55.7 %RH	341 ppmCO2	0 ppmCO	18:10:33	11/25/2013
4	53.6	38.6 °F	56.8 %RH	344 ppmCO2	0 ppmCO	18:11:33	11/25/2013
4	52.5	38.3 °F	58.4 %RH	346 ppmCO2	0 ppmCO	18:12:33	11/25/2013
4	53	38.8 °F	58.4 %RH	341 ppmCO2	0 ppmCO	18:13:34	11/25/2013
4	52.6	38.8 °F	59.2 %RH	339 ppmCO2	0 ppmCO	18:14:34	11/25/2013
4	52.6	38.8 °F	59.2 %RH	339 ppmCO2	0 ppmCO	18:15:34	11/25/2013
4	52.5	38.6 °F	58.9 %RH	337 ppmCO2	0 ppmCO	18:16:34	11/25/2013
4	52.4	38.6 °F	59.3 %RH	335 ppmCO2	0 ppmCO	18:17:34	11/25/2013
4	52.9	38.9 °F	58.9 %RH	334 ppmCO2	0 ppmCO	18:18:35	11/25/2013
4	53.2	38.8 °F	57.9 %RH	333 ppmCO2	0 ppmCO	18:19:35	11/25/2013
4	52.7	38.7 °F	58.7 %RH	335 ppmCO2	0 ppmCO	18:20:35	11/25/2013
4	52.3	38.5 °F	59.2 %RH	335 ppmCO2	0 ppmCO	18:21:35	11/25/2013
4	52.7	38.8 °F	58.9 %RH	337 ppmCO2	0 ppmCO	18:22:35	11/25/2013
4	52.9	38.8 °F	58.6 %RH	339 ppmCO2	0 ppmCO	18:23:36	11/25/2013
4	52.5	38.5 °F	58.7 %RH	341 ppmCO2	0 ppmCO	18:24:36	11/25/2013
4	52.8	39.2 °F	59.6 %RH	360 ppmCO2	0 ppmCO	18:25:36	11/25/2013
4	52.6	39.3 °F	60.4 %RH	358 ppmCO2	0 ppmCO	18:26:36	11/25/2013

4	51.7	38.6 °F	60.8 %RH	350 ppmCO2	0 ppmCO	18:27:36	11/25/2013
4	51.6	38.6 °F	60.9 %RH	342 ppmCO2	0 ppmCO	18:28:36	11/25/2013
4	51.9	38.9 °F	61.2 %RH	341 ppmCO2	0 ppmCO	18:29:37	11/25/2013
4	52.1	39.5 °F	62.1 %RH	357 ppmCO2	0 ppmCO	18:30:37	11/25/2013
4	53	40.5 °F	62.4 %RH	368 ppmCO2	0 ppmCO	18:31:37	11/25/2013
4	52.7	39.8 °F	61.3 %RH	360 ppmCO2	0 ppmCO	18:32:37	11/25/2013
4	52.2	39.6 °F	62 %RH	358 ppmCO2	0 ppmCO	18:33:37	11/25/2013
4	51.4	39.1 °F	62.5 %RH	355 ppmCO2	0 ppmCO	18:34:38	11/25/2013
4	51.5	39.4 °F	63.3 %RH	355 ppmCO2	0 ppmCO	18:35:38	11/25/2013
4	51.4	39.5 °F	63.7 %RH	355 ppmCO2	0 ppmCO	18:36:38	11/25/2013
4	52.5	40.5 °F	63.5 %RH	362 ppmCO2	0 ppmCO	18:37:38	11/25/2013
4	52.4	40 °F	62.6 %RH	361 ppmCO2	0 ppmCO	18:38:38	11/25/2013
4	52.5	40 °F	62.2 %RH	361 ppmCO2	0 ppmCO	18:39:39	11/25/2013
4	51.5	39.3 °F	62.9 %RH	359 ppmCO2	0 ppmCO	18:40:39	11/25/2013
4	51.7	39.6 °F	63.4 %RH	357 ppmCO2	0 ppmCO	18:41:39	11/25/2013
4	53.3	40.8 °F	62.6 %RH	355 ppmCO2	0 ppmCO	18:42:39	11/25/2013
4	54.7	41.6 °F	61.4 %RH	358 ppmCO2	0 ppmCO	18:43:39	11/25/2013
4	54.4	40.7 °F	59.5 %RH	354 ppmCO2	0 ppmCO	18:44:40	11/25/2013
4	53.6	40 °F	59.9 %RH	351 ppmCO2	0 ppmCO	18:45:40	11/25/2013
4	53.8	40.1 °F	59.6 %RH	351 ppmCO2	0 ppmCO	18:46:40	11/25/2013
4	53.4	39.7 °F	59.6 %RH	351 ppmCO2	0 ppmCO	18:47:40	11/25/2013
4	53	39.4 °F	59.8 %RH	352 ppmCO2	0 ppmCO	18:48:40	11/25/2013
4	51.4	38.5 °F	61.2 %RH	351 ppmCO2	0 ppmCO	18:49:41	11/25/2013
4	50.7	38.5 °F	62.8 %RH	352 ppmCO2	0 ppmCO	18:50:41	11/25/2013
4	50.1	38.3 °F	63.9 %RH	354 ppmCO2	0 ppmCO	18:51:41	11/25/2013
4	49.9	38.6 °F	65.1 %RH	351 ppmCO2	0 ppmCO	18:52:41	11/25/2013
4	49.7	38.4 °F	65 %RH	348 ppmCO2	0 ppmCO	18:53:41	11/25/2013
4	49.8	38.4 °F	64.6 %RH	344 ppmCO2	0 ppmCO	18:54:42	11/25/2013
4	50.4	38.8 °F	64.3 %RH	347 ppmCO2	0 ppmCO	18:55:42	11/25/2013
4	49.8	38.7 °F	65.6 %RH	348 ppmCO2	0 ppmCO	18:56:42	11/25/2013
4	50.3	39.2 °F	65.5 %RH	345 ppmCO2	0 ppmCO	18:57:42	11/25/2013
4	49.6	38.6 °F	65.7 %RH	344 ppmCO2	0 ppmCO	18:58:42	11/25/2013
4	49.7	39 °F	66.4 %RH	343 ppmCO2	0 ppmCO	18:59:43	11/25/2013
4	50.2	39.3 °F	66.1 %RH	343 ppmCO2	0 ppmCO	19:00:43	11/25/2013

4	50.6	39.5 °F	65.6 %RH	342 ppmCO2	0 ppmCO	19:01:43	11/25/2013
4	51.6	40 °F	64.3 %RH	341 ppmCO2	0 ppmCO	19:02:43	11/25/2013
4	52.6	40.6 °F	63.6 %RH	341 ppmCO2	0 ppmCO	19:03:43	11/25/2013
4	52.9	40.6 °F	63 %RH	344 ppmCO2	0 ppmCO	19:04:43	11/25/2013
4	53.5	41.3 °F	63.3 %RH	349 ppmCO2	0 ppmCO	19:05:44	11/25/2013
4	52.2	40.2 °F	63.3 %RH	358 ppmCO2	0 ppmCO	19:06:44	11/25/2013
4	51.5	39.6 °F	63.6 %RH	350 ppmCO2	0 ppmCO	19:07:44	11/25/2013
4	50.9	39.4 °F	64.4 %RH	347 ppmCO2	0 ppmCO	19:08:44	11/25/2013
4	50.4	39.4 °F	65.8 %RH	350 ppmCO2	0 ppmCO	19:09:44	11/25/2013
4	50.5	39.7 °F	66.4 %RH	348 ppmCO2	0 ppmCO	19:10:45	11/25/2013
4	50.6	39.8 °F	66.2 %RH	346 ppmCO2	0 ppmCO	19:11:45	11/25/2013
4	50.5	39.7 °F	66.1 %RH	346 ppmCO2	0 ppmCO	19:12:45	11/25/2013
4	50	39.3 °F	66.4 %RH	347 ppmCO2	0 ppmCO	19:13:45	11/25/2013
4	49.1	38.9 °F	67.7 %RH	347 ppmCO2	0 ppmCO	19:14:45	11/25/2013
4	48.6	38.7 °F	68.6 %RH	347 ppmCO2	0 ppmCO	19:15:46	11/25/2013
4	50.5	40.6 °F	68.8 %RH	348 ppmCO2	0 ppmCO	19:16:46	11/25/2013
4	50.6	40.5 °F	68.3 %RH	370 ppmCO2	0 ppmCO	19:17:46	11/25/2013
4	51.1	40.7 °F	67.2 %RH	358 ppmCO2	0 ppmCO	19:18:46	11/25/2013
4	51	40.1 °F	66.2 %RH	360 ppmCO2	0 ppmCO	19:19:46	11/25/2013
4	50.5	39.8 °F	66.6 %RH	353 ppmCO2	0 ppmCO	19:20:47	11/25/2013
4	50.5	39.9 °F	66.7 %RH	358 ppmCO2	0 ppmCO	19:21:47	11/25/2013
4	50.5	39.9 °F	66.7 %RH	357 ppmCO2	0 ppmCO	19:22:47	11/25/2013
4	50.3	39.7 °F	66.8 %RH	357 ppmCO2	0 ppmCO	19:23:47	11/25/2013
4	50.3	39.9 °F	67.5 %RH	360 ppmCO2	0 ppmCO	19:24:47	11/25/2013
4	51.2	40.6 °F	66.9 %RH	357 ppmCO2	0 ppmCO	19:25:48	11/25/2013
4	51.6	40.5 °F	65.6 %RH	356 ppmCO2	0 ppmCO	19:26:48	11/25/2013
4	51.5	40.4 °F	65.8 %RH	357 ppmCO2	0 ppmCO	19:27:48	11/25/2013
4	51.7	40.7 °F	65.9 %RH	358 ppmCO2	0 ppmCO	19:28:48	11/25/2013
4	51.7	40.8 °F	66.2 %RH	358 ppmCO2	0 ppmCO	19:29:48	11/25/2013
4	51.5	40.7 °F	66.6 %RH	359 ppmCO2	0 ppmCO	19:30:49	11/25/2013
4	51.3	40.6 °F	66.6 %RH	366 ppmCO2	0 ppmCO	19:31:49	11/25/2013
4	51.1	40.4 °F	66.6 %RH	365 ppmCO2	0 ppmCO	19:32:49	11/25/2013
4	50.7	40 °F	66.5 %RH	362 ppmCO2	0 ppmCO	19:33:49	11/25/2013
4	49.4	39.1 °F	67.4 %RH	369 ppmCO2	0 ppmCO	19:34:49	11/25/2013

4	48.9	39.1 °F	68.6 %RH	382 ppmCO2	0 ppmCO	19:35:49	11/25/2013
4	48.7	39.2 °F	69.9 %RH	378 ppmCO2	0 ppmCO	19:36:50	11/25/2013
4	49.6	40.3 °F	70.2 %RH	375 ppmCO2	0 ppmCO	19:37:50	11/25/2013
4	50	40.6 °F	70.1 %RH	382 ppmCO2	0 ppmCO	19:38:50	11/25/2013
4	50.8	40.9 °F	68.7 %RH	380 ppmCO2	0 ppmCO	19:39:50	11/25/2013
4	50.7	40.3 °F	67.2 %RH	385 ppmCO2	0 ppmCO	19:40:50	11/25/2013
4	49.8	39.5 °F	67.7 %RH	375 ppmCO2	0 ppmCO	19:41:51	11/25/2013
4	49.6	39.6 °F	68.6 %RH	363 ppmCO2	0 ppmCO	19:42:51	11/25/2013

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TESTID	COUNT	MINIMUM	MAXIMUM	AVERAGE	UNITS	BARO PRESS
4	549	48.2	81.9	62.8	°F	
4	549	17.7	70.4	40.8	%RH	
4	549	22.6	46.9	37.2	Dewpt°F	
4	549	293	529	388	ppmCO2	29.92 in.Hg
4	549	-2.2	0	-0.2	ppmCO	29.92 in.Hg

APPENDIX C - Photographs

**Indoor Air Quality Survey at Antelope Valley College
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No. 1 - Location A – Between BE and SSV buildings



No. 2 - Location B – South of SSV



No. 3 - Location C – East of BE



No. 4 - Location 1 – SSV office 192



No. 5 - Location 2 – SSV office 188



No. 6 - Location 3 – Outside SSV office 117

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No. 7 - Location 4 – SSV office 101



No. 8 – Location 5 – SSV southwest corner hallway



**No. 9 - Location 6 – SSV classroom 236
(AM sample)**



**No. 10 - Location 6 – outside SSV classroom 236
(PM sample)**



No. 11 - Location 7 – outside SSV office 221



**No. 12 – Location 8 – hallway outside SSV
classroom 204**

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No. 13 - Location 9 – BE office 211



**No. 14 - Location 10 – hallway outside BE office
209**



No. 15 – SSV roof with pooled rain water



**No. 16 – SSV office 192 plenum, debris
surrounding supply vent**



No. 17 – SSV office 192 plenum, rodent droppings



**No. 18 – SSV office area 190 plenum, breach in
HVAC duct**

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**No. 19 – SSV office 192 plenum, water intrusion
at sloped roof and original building decking**