



A-Tech Consulting, Inc.

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LIMITED INDOOR AIR QUALITY ASSESSMENT

La Rosa Elementary School
9301 La Rosa Drive, Building C, Room 13

City of Temple City
County of Los Angeles
State of California

Project Number: Atch-191923

September 12, 2019

PREPARED FOR:

Temple City Unified School District c/o TELACU

PRIVILEGED & CONFIDENTIAL

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Cover

INDOOR AIR QUALITY

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Atch-191923
Limited Indoor Air Quality Assessment
9301 La Rosa Drive
Temple City, California 91780

September 12, 2019

Temple City Unified School District c/o TELACU
9700 Las Tunas Drive
Temple City, California 91780

Attn: Mr. Tim Spencer

Re: La Rosa Elementary School
9301 La Rosa Drive, Building C, Room 13
Temple City, California 91780

Pursuant to your request, A-Tech Consulting, Inc. (A-Tech) has completed a Limited Indoor Air Quality Assessment in Building C, Room 13 of La Rosa Elementary School located at 9301 La Rosa Drive, in Temple City, California. The following report summarizes the findings of this inspection.

1.0 BACKGROUND

On September 9, 2019, David Kang, Certified Industrial Hygienist (CIH), and Preston Kelly with A-Tech Consulting, Inc. conducted a Limited Indoor Air Quality (IAQ) Assessment in Building C, Room 13 at La Rosa Elementary School. This assessment was done due to parents' concern that dust from the construction activities in Building B was contaminating the air in both indoor and outdoor spaces of Building C. Room 13 in Building C is one of the classrooms closest to the construction activities, which is why it was chosen to be representative of the other nearby classroom environments.

At the time of the assessment, the areas were inspected, and samples were collected to assess inside temperature, relative humidity as indicators of comfort, carbon dioxide levels as indicator of air flow, particle concentration as indicator of efficient HVAC filtration and respirable dust both inside and outside of Building C to determine the IAQ impact in Room 13. This IAQ assessment was conducted in accordance with the scope of services authorized by Mr. Tim Spencer of Temple City Unified School District c/o TELACU.

A-Tech conducted a visual inspection of the area. No dust was being generated at the time of this inspection.

2.0 BUILDING HISTORY/FACILITY DESCRIPTION

Building C of La Rosa Elementary School is a one-story concrete masonry building made up of four classrooms. Building C is near Building B where construction activities are taking place. Building B renovations include creating a new layout, demolishing some walls and adding doors and door frames in order to provide a teacher's lounge, additional classrooms and bathrooms. The Heating Ventilation and Air Conditioning (HVAC) system is a rooftop package unit.

3.0 SAMPLING METHODOLOGY

As a precautionary measure, measurements of relative humidity, temperature, carbon dioxide (CO₂), particle concentration and nuisance dust were conducted at the subject site to ensure that levels are safe for occupancy. Measurements were made at stationary locations at approximate breathing zone height. The results are expected to represent building occupant exposure potentials for those persons occupying or passing through the areas monitored. In addition, measurements outdoors were taken upwind of the building or by HVAC outdoor air intakes for comparison.

3.1 Carbon Dioxide (CO₂) Levels, Air Temperature and Relative Humidity

Carbon dioxide (CO₂) levels, air temperature and relative humidity were recorded using an EXTECH Instrument CO₂ Meter, Model CO250. Measurement range for CO₂ is 0 – 5000ppm, Temperature is -14 to 140 deg F and Humidity 0.0 – 99.9%. Calibration was performed on August 7, 2019 and required no field pre/post calibration. The results can be found on the attached tables. Carbon dioxide levels are reported in ppm, air temperature in degrees Fahrenheit and relative humidity in percentages.

3.2 Particle Concentration

Particle concentration levels were collected using a CEM Particle Counter, Model DT-9881. Results are expressed in Ultra Fine Particles per Liter (UFP/L). Calibration was performed on August 7, 2019.

3.3 Respirable Particulates

The three (3) area air samples were collected on a 3-piece pre-weighed 37mm 5.0 µm polyvinyl chloride (PVC) filters preceded by a SKC aluminum cyclone. Air was drawn by BD XII low volume pump air sampling pumps at a flow rate of 2.50 liters/minute (4 micron 50% cut point). The samples were analyzed by gravimetric weighted measurement in accordance with the NIOSH Method 0600.

The air samples were submitted using chain-of-custody procedures to Aerobiology Laboratory Associates, Inc. of Huntington Beach, California for analysis. This data is presented in mg/m³ of air.

4.0 ANALYTICAL RESULTS AND DISCUSSION

The substances sampled are common air contaminants of concern in nonindustrial environments. Currently, there are no regulations pertaining to indoor air quality. However, the limits recommended by ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers), EPA NAAQS (National Ambient Air Quality Standard), Cal OSHA (California Occupation Safety and Health Administration), CA (California Ambient Air Quality Standard, and LEED (US Green Building Council LEED certification IAQ preoccupancy limits for new construction) are used for the evaluations of IAQ concerns. Keep in mind, concentrations that are under the exposure limits does not ensure freedom from sensory irritation or from all adverse health effects for all occupants.

4.1 Air Flow and Carbon Dioxide (CO₂) Levels:

The National Institute for Occupational Safety and Health (NIOSH) has determined that some 52% of indoor air quality complaints are related to inadequate ventilation. Building Heating, Ventilation and Air Conditioning systems (HVAC) systems need to function properly in order to control temperature, humidity, odor, and general air quality. Carbon dioxide levels are an indicator on whether adequate outside air is entering the building because building occupants produce carbon dioxide, water vapor, particulates, biological aerosols, and other contaminants during metabolic activities. CO₂ concentrations increase as a result of human occupancy and the lower the amount of outside air entering the room, the higher the CO₂ levels indoors.

Carbon Dioxide Measurements:

<u>Sample Location</u>	<u>Indoor CO₂ Range (ppm)</u>	<u>Outside CO₂ Range (ppm)</u>	<u>CO₂ Differential (Inside-Outside)</u>
Room 13	805	492	313
	Recommended Guideline / Standard*		< 700 ppm* above outdoor CO ₂ levels
	Meets Standard		YES

*ASHRAE 62.1 2016 (Ventilation for Acceptable Indoor Air Quality)

Indoor carbon dioxide (CO₂) levels did not exceed outdoor concentration by more than 700 ppm. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE) Standard 62.1-2016: Ventilation for Acceptable Indoor Air Quality recommends that indoor CO₂ concentrations no greater than 700 parts per million (ppm) above outdoor CO₂ concentrations will satisfy a substantial majority (about 80%) of occupants (assuming outdoor supply rate of 15 cfm/person).

4.2 Air Temperature and Relative Humidity

Temperature and Humidity Measurements:

<u>Sample Locations</u>	<u>Temperature (°F)</u>	<u>Relative Humidity (%)</u>
Room 13	75.3	75.7
Exterior	88.6	59.6
Recommended Guideline Standard*	73 -79	20 - 65

* General guidelines based on ASHRAE Standard 55 assume typical conditions for types of clothing, air movement, radiant heat and other complex factors.

Based on the experience of A-Tech Consulting, Inc., the air temperatures perceived as comfortable by most persons in office environments and recommended by ASHRAE (Standard 55) for occupant comfort, range between 68.0°-75°F (winter) and 73.0°-79.0°F (summer). The air temperature recorded in the surveyed area **was within** the ASHRAE recommended comfort ranges.

The relative humidity levels **were above** the 20-60 percent relative humidity level ranges recommended by ASHRAE for occupant comfort. Note that A-Tech Consulting, Inc. recommends that the relative humidity in buildings not exceed 50 percent in order to limit the potential for fungal growth.

4.5 Airborne Particle Concentration

An aerosol particle counter was used to determine the air quality by counting and sizing the number of particles in the air. Ultrafine Particles (particles less than 1 um) are the result of combustion or chemical reactions; which can help indicate the presence of a substance or its source but it does not identify the substance specifically. Though there is no standard for airborne ultra-fine particles, it is expected to find lower amounts of particles indoors versus outdoors, due to the Heating Ventilation and Air Conditioning (HVAC) filtering mechanism.

Airborne Particle Concentration Measurements:

<u>Sample Locations</u>	<u>Particle Concentrations (UEP/L)</u>
Room 13	59,223
Exterior	118,126

Measurements indicate that particle concentrations **were lower** than outside levels in all locations indicating an adequate HVAC filtering system.

4.6 Respirable Dust

Respirable Dust Measurements:

<u>Sample Locations</u>	<u>Time (Minutes)</u>	<u>Concentration 8 hr. TWA* mg/m³</u>
Room 13	123	BDL

<u>Sample Locations</u>	<u>Time (Minutes)</u>	<u>Concentration 8 hr. TWA* mg/m³</u>
Exterior	124	BDL

*The 8hr TWA was calculated assuming the non-sampled period has the same exposure level as the sampled period. BDL = Below Detection Limit.

Exposure Limits:

	<u>PEL (CCR Title 8, Section 5155) (mg/m³)</u>	<u>TLV (ACGIH-2015) (mg/m³)</u>
Respirable Dust	5	3

Notes:

PEL, Permissible Exposure Limit (reference: *Cal/OSHA, CCR Title 8, section 5155, Table AC-1*) or TLV, Threshold Limit Value (American Conference of Government Industrial Hygienists, ACGIH) is defined as the Time-Weighted-Average (TWA) concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect. PELs are OSHA enforceable by regulation while ACGIH TLVs are “best practices” consensus guidelines. TWA is the Time-Weighted-Average exposure calculated for the entire sampling period. mg/m³ represents milligrams of contaminant per cubic meter of air.

Area air sample results for respirable particulate dust in the areas surveyed showed an 8-hour TWA (time weighted average) below the detection limit. This data, which is expected to represent employee exposure potentials to dust of varying types, including man-made and natural mineral fibers, cellulosic (paper or wood composition), gypsum, and other fibrous dusts common in the environment, are well below the current Cal/OSHA Permissible Exposure Limit of 5 mg/m³ and the more stringent American Conference of Governmental Industrial Hygiene (ACGIH) Threshold Limit Value of 3 mg/m³.

5.0 CONCLUSIONS

Based on this survey, it is A-Tech Consulting, Inc.’s professional opinion at the time of the assessment that there is area for improvement in air quality due to the following:

- Relative humidity levels measured in Building C, Room 13 were above the 20-60 percent relative humidity level ranges recommended by ASHRAE for occupant comfort

All other parameters sampled for indoor air quality were within acceptable limits including respirable dust, both inside and outside of Building C, Room 13.

6.0 RECOMMENDATIONS

Recommendations are submitted below that can improve air quality of Building C, Room 13:

<u>Area Description (Location)</u>	<u>Remediation/Decontamination Recommendations</u>
Building C, Room 13	<p>Make adjustments to room humidity level controls. Following is the recommended range by American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE) Standard 62.1-2016 for occupant comfort</p> <ul style="list-style-type: none"> • Humidity control in the range of 20%-60%

7.0 LIMITATIONS

Keep in mind, the conclusions presented in this report are professional opinions based solely upon visual observations at the site and direct reading measurements, for the timeframe tested. They are intended exclusively for the purpose outlined herein, and for the site location and project indicated.

This report is intended for the sole use of Temple City Unified School District c/o TELACU. The use or re-use of this document or the findings, conclusion or recommendations presented herein, by any other party or parties, is at the sole risk of said user.

Recognizing that even the most comprehensive inspection may fail to detect IAQ concerns at a particular site, this study was not intended to identify all potential IAQ pollutants present in the building or at the site for such reasons as (1) the possible existence of buried, covered and inaccessible areas and features; and (2) the limited number of samples collected.

No guarantee is expressed or implied that all IAQ concerns have been identified. A-Tech Consulting, Inc. assumes no responsibility for the identification of suspect and potential IAQ pollutants, which are concealed and/or inaccessible (i.e. under carpet, locked rooms, etc.).

Services performed by A-Tech Consulting, Inc. were conducted in a manner consistent with that of the care and skill ordinarily and currently exercised by members of the same profession that even the most comprehensive Scope of Services might fail to detect environmental liabilities on a particular site. Therefore, A-Tech Consulting, Inc. cannot act as insurers and cannot "certify" that a site is free of IAQ pollutant concentrations.

No expressed or implied representation or warranty is included or intended in our reports, except that our services were performed, within the limits prescribed by the scope of services, with the customary thoroughness and competence of our profession.

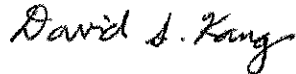
Information and opinions presented herein apply to the existing and reasonable foreseeable site conditions at the time of our investigation. They cannot necessarily apply to site changes of which this office is unaware and has not had the opportunity to review.

Changes in the conditions of this property may occur with time due to natural processes or works of man on the subject property or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

A-Tech Consulting, Inc. trusts that the information presented herein provides the data you require. Should you have any questions or comments, please contact A-Tech Consulting, Inc.

Respectfully submitted,

A-TECH CONSULTING, INC.



David Kang, MPH, CIH, LEED





A-Tech Consulting, Inc.

Direct Read Carbon Dioxide Air Monitoring Record

Client Name: Temple City Unified School District c/o TELACU

A-Tech Project Number: 191923

Location: La Rosa Elementary School, 9301 La Rosa Drive, Building C, Room 13

<u>Sample Number</u>	<u>Sample Location</u>	<u>Date Added</u>	<u>Time</u>	<u>Temperature (°F)</u>	<u>Relative Humidity (%)</u>	<u>Analytical Result</u>
191923-CO2-0001	Room 13	09/09/2019	11:51 AM	75.3	75.7	805 PPM
191923-CO2-0002	Exterior	09/09/2019	11:55 AM	88.6	59.6	492 PPM



A-Tech Consulting, Inc.

Particle Concentration Measurements (CEM Particle Counter DT-9881)

Client Name: Temple City Unified School District c/o TELACU

A-Tech Project Number: 191923

Location: La Rosa Elementary School, 9301 La Rosa Drive, Building C, Room 13

Sample Number	Sample Location	Date Sampled	Concentration PM 0.3 um	Concentration PM 0.5 um	Concentration PM 1.0 um	Concentration PM 2.5um	Concentration PM 5.0 um	Concentration PM 10um	Total Ultrafine Particles (UF/P/L)
191923-PC-0001	Room 13	09/09/2019	40,176	14,982	3,258	548	149	110	59,223
191923-PC-0002	Exterior	09/09/2019	71,426	35,005	9,113	1,913	427	242	118,126



A-Tech Consulting, Inc.

NIOSH Respirable Particulates

Client Name: Temple City Unified School District c/o TBLACU

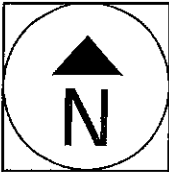
A-Tech Project Number: 191923

Location: La Rosa Elementary School, 9301 La Rosa Drive, Building C, Room 13

Sample Number	Sample Location	Sample Description	Date Sampled	Time On	Time Off	Minutes	Flow Rate / lpm	Volume (Liters)	Regulatory Limit mg/m ³	Concentration mg/m ³
191923-P-0001	Room 13	Background	09/09/2019	11:03 AM	01:06 PM	123	2.50	307.5	Cal/OSHA – 5 mg/m ³	<0.03 mg/m ³
191923-P-0002	Exterior	Ambient	09/09/2019	11:04 AM	01:08 PM	124	2.50	310	Cal/OSHA – 5 mg/m ³	<0.03 mg/m ³
191923-P-0003	Field Blank	Blank	09/09/2019	-	-	-	-	-	N/A	-

LEGEND:

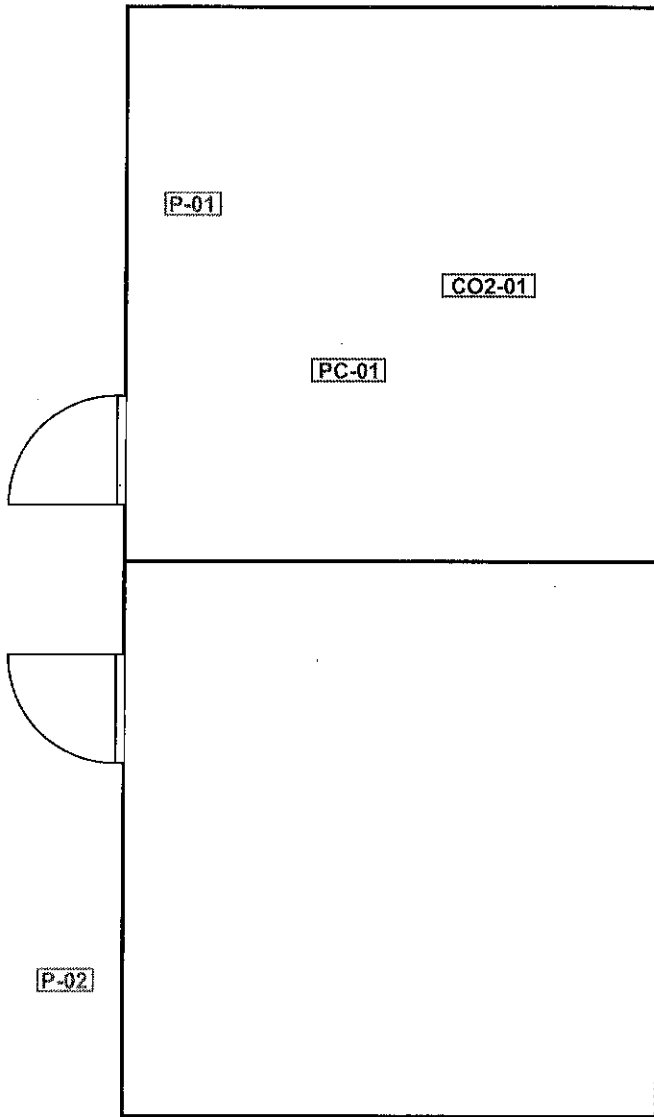
N/A: Not Applicable



Not to Scale



A-Tech Consulting, Inc.



Building C, Room 13

Site Drawing - Indoor Air Quality - Page 1 of 1

La Rosa Elementary School
9301 La Rosa Drive, Building C, Room 13
Temple City, California 91780

LEGEND:
 CO2= Direct Read Carbon Dioxide Sample Locations
 P = Respirable Particulate Sample Locations
 PC = Particle Concentration Sample Locations

Project #: Atch-191923

Temple City Unified School
District c/o TELACU

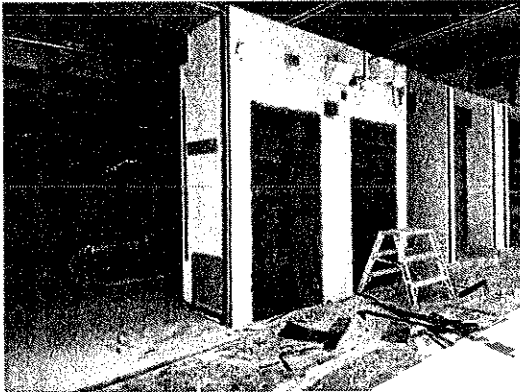


Digital Photographs – Indoor Air Quality

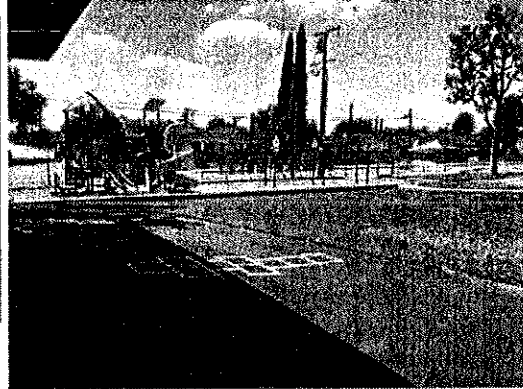
Client: Temple City Unified School District c/o TELACU

Project #Atch-191923

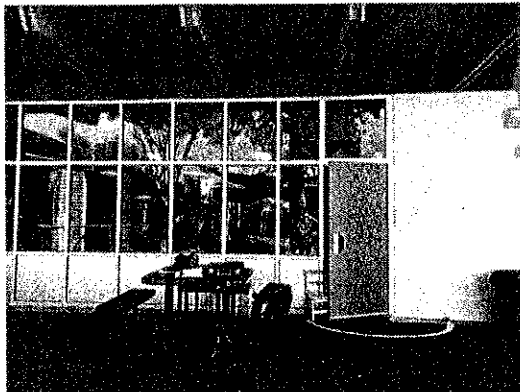
La Rosa Elementary School
9301 La Rosa Drive, Building C, Room 13
Temple City, California 91780



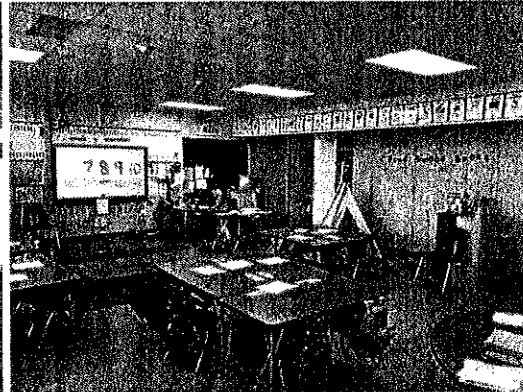
View of Construction Activity in Building B



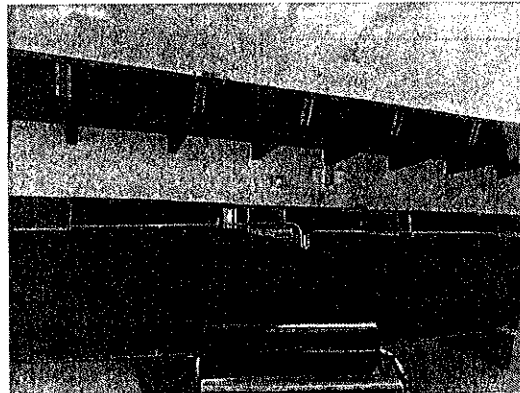
View of Playground Area Between Building B and C



View of Exterior of Building C, Room 13



View of Building C, Room 13



View of Building B



View of Front of School



15061 Springdale St
Suite 111
Huntington Beach, CA 92649
(714)895-8401

A-Tech Consulting, Inc.
1748 W. Katella Avenue, Suite 112
Orange, CA
Attn: Robert Williams
Client Project Name: 191923 La Rosa Elementary School

Certificate of Analysis

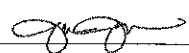
Date Collected: 9/9/2019
Date Received: 9/9/2019
Date Analyzed: 9/11/2019
Date Reported: 9/11/2019
Project ID: 19040495

Test Requested: **3005.1, Respirable Dust Analysis in Air Samples**
Method: **NIOSH 0600: Particulates Not Otherwise Regulated, Respirable**

Client ID	Lab ID	Sample Date	Location	Volume (L)	Sample Weight (mg)	Result mg/m ³	LOD mg/m ³	Final Result (mg/m ³)	Notes
P-01	19040495-001	9/9/2019	P-01	307.5	0.02	<0.03	0.03	<0.03	
P-02	19040495-002	9/9/2019	P-02	310	0.01	<0.03	0.03	<0.03	
P-03	19040495-003	9/9/2019	P-03	N/A	<0.01				Blank

Maximum Concentration Level: OSHA: 5 mg/m³ ACGIH: 3 mg/m³ LOD: Limit of Detection
The laboratory is not responsible for data reported in values of mg/m³ because this data is dependent on the volume reported by non-laboratory personnel. Results have been blank corrected as needed.
The above report may not be reproduced, except in full, without written permission by Aerobiology Laboratory Associates, Inc.


Technical Manager


QA Manager



Company: A-Tech Consulting, Inc.
Address: 1748 W. Katella Avenue, Suite 112
City: Orange
State: CA Zip Code: 92867

Phone Number: (714) 434-6360
Fax Number: (714) 221-6360
Attn: Robert Williams
Results: Email to labs@atechinc.net

Project Name & Number: 191923 La Rosa Elementary School

ASBESTOS table with columns: 3 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

PLM-BULK

Table for PLM-BULK with rows: EPA 600/R-93/116, EPA Point Count -400, EPA Point Count-1000

TEM-MICRO VAC

Table for TEM-MICRO VAC with rows: Qualitative (Pos/Neg), Quantitative ASTM

PCM-AIR

Table for PCM-AIR with rows: NIOSH 7400 (A) Issue 2: August 1994, OSHA w/TWA

PARTICULATES

Table for PARTICULATES with rows: NIOSH 0500 (3005), NIOSH 0600 (3005.1)

LEAD table with columns: 3 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

Table for LEAD with rows: Chips EPA 3050/7420, Wipes NIOSH 7082, Soil EPA 3050/7420, Air NIOSH 7082, TLC (Ceramic Tile)

OTHER SAMPLES table with columns: 3 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

Volume
P-01 = 307.5
P-02 = 310
P-03 = Blank

Client Sample Number: P-01 - P-03 Total: (3)

Relinquished: Preston Kelly Date: 9/9/19 Time:
Received: FM Date: 9/9/19 Time: 3:48 pm

Fed Ex Yes ___ Date Sent ___ No ___ Laboratory:
Notes:

DICK MUNN'S COMPANY

Precision Instrument Calibration

Los Alamitos, CA 90720

CERTIFICATE OF CALIBRATION

CUSTOMER: A-TECH CONSULTING
PO NUMBER:
INST. MANUFACTURER: CEM
INST. DESCRIPTION: PARTICLE COUNTER
MODEL NUMBER: DT-9881
SERIAL NUMBER: 160914354
RATED UNCERTAINTY: +/- 10% RD.
UNCERTAINTY GIVEN: +/- 1.75% RD...; K=2
NOTES: AS RECEIVED / AS LEFT WITHIN SPECS.

CALIBRATION DATE: 08/07/2019
CALIBRATION DUE: 08/07/2020
PROCEDURE: NAVAIR-17-20MG-02:ISO21501-4
CALIBRATION FLUID: AIR @ 70F
STANDARD(S) USED: SEE TABLE
NIST TRACE #'S: 1360579018,1400832461,1360578887
AMBIENT CONDITIONS: 764 mmHGA, 47% RH, 76F
CERTIFICATE FILE #: 489210.2019

ACTUAL DM.STD. MICRON	UUT INDICATED COUNT	DM.STD. ACTUAL COUNT
0.3	39390	40773
0.5	8993	9367
1.0	1168	1227
2.5	191	198
5.0	40	42
10.0	22	23

UUT INDICATED % RH	DM.STD. ACTUAL % RH
46.7	47.1

UUT INDICATED °F	DM.STD. ACTUAL °F
76.1	76.3

UUT INDICATED PPM HCHO	DM.STD. ACTUAL PPM HCHO
0.0	0.0
4.9	5.0

STANDARDS USED

A108 BIOS 0-30 LPM; +/- .4% RD. TRACE # 1360579018	DUE	09/01/19
BALANCE A150 0-200.000 GRAMS +/- .001% F.S. TRACE# 1400832461	DUE	06/01/20
A510 SIEVE SET 0.1 TO 10 MICRON TRACE # 1360578887	DUE	01/12/20

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 • 11133 Winners Circle • Los Alamitos, CA 90720
 Phone (714) 827-1215

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:

8-7-2019

Page 1 of 1

CERTIFICATE OF CALIBRATION

Customer Name:	A-TECH CONSULTING	Calibration Date:	08-07-2019
PO Number:		Calibration Due:	08-07-2020
Instrument Manufacturer:	EXTECH	Calibration Fluid:	GN2, CO2
Instrument Description:	CO2 MONITOR	Standard(s) Used:	A1-A3 DUE 2-2020
Model Number:	CO250	NIST Traceability Per:	1390386562, 1329407628
Serial Number:	9819232; ID# 00206	Ambient Conditions:	764 mmHGA 47% RH 76F
Rated Uncertainty:	+/- 5% RD; +/- .5°F	Procedure Number:	NAVAIR-17-20SY-22
Uncertainty Given:	+/- .92% RD; K=2	Certificate/File Number:	486712.2019

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

INDICATED UUT	ACTUAL DM.STD.
PPM CO2	PPM CO2
495	500
1985	2000
4970	5000
°F	°F
76.1	76.4
90.1	90.5

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 • 11133 Winners Circle • Los Alamitos, CA 90720
 Phone (714) 827-1215

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

Date:

Approved By:

Calibration Technician:

8-7-2019

CERTIFICATE OF CALIBRATION

Customer Name:	A-TECH CONSULTING	Calibration Date:	08-07-2019
PO Number:		Calibration Due:	08-07-2020
Instrument Manufacturer:	RAE	Calibration Fluid:	GAS MIX
Instrument Description:	GAS MONITOR	Standard(s) Used:	A1-A3 DUE 2-2020
Model Number:	PGM50-4P (QRAE)	NIST Traceability Per:	1390386562, 1329407628
Serial Number:	270-419390; ID# 00388	Ambient Conditions:	764 mmHGA 47% RH, 76F
Rated Uncertainty:	+/- 5% RD.	Procedure Number:	NAVAIR-17-20MG-02
Uncertainty Given:	+/- .71% RD.; K=2	Certificate/File Number:	491761

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

INDICATED	ACTUAL
LEL %	LEL %
0 TO 100 50	0 TO 100 50.0
CO PPM	CO PPM
0 TO 500 25	0 TO 500 25.0
H2S PPM	H2S PPM
0 TO 100 25	0 TO 100 25.0
O2 %	O2 %
0 TO 30% 20.9	0 TO 30% 20.90

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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 Phone (714) 827-1215

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:

8-7-2019

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