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LEAD BASED PAINT SURVEY REPORT

BACHELOR'S ENLISTED QUARTERS (ID: Building 149)

NASA-AMES

Moffett Field, CA 94035

PREPARED FOR

NASA AMES PAI CORPORATION
NASA Ames Research Center
Moffett Field, CA 94035-1000

PREPARED BY

Benchmark Environmental Engineering
August 6, 2001
Project Number: E01-448w-L-SU

Prepared By:

A handwritten signature in black ink, appearing to read "Richard E. MacFarlane", written over a horizontal line.

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14946

BUILDING INSPECTIONS

ENVIRONMENTAL ENGINEERING

SPECIALIZED TRAINING

CONTRACT MANAGEMENT

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EXECUTIVE SUMMARY

Benchmark Environmental Engineering was retained by PAI Corporation, to conduct a lead-based paint survey at Building 149, Bachelor's Enlisted Quarters located at Moffett Field, California.

In order to determine if lead based paint was present, eight (8) paint chip samples were collected and 185 assays were taken using an X-RAY FLUORESCENCE (XRF) instrument. The results indicated that the following building components were above the EPA and DHS level of 1.0 mg/ cm² or 5000 PPM.

Lead-based Paint was identified on the following building components:

Exterior: Windows Jambs, Sills, Casings; Door Casings; Stair Handrails; Fire Exit; Overhang; Concrete Cap.

Interior: Recreation Room Window; Storage Room Walls; Hallway Bathroom Walls; Hallway Windows, Window Jambs, Fire Exit, Door Casing, Stair Handrail; Common Area Wall, Steel Post, Common Wall; Transformer Room Door.

INTRODUCTION

Benchmark Environmental Engineering was retained by Mr. Kris McGlothlin, to conduct a lead-based paint survey at NASA Ames-PAI Corporation, Moffett Field, California.

Authorization to perform this survey was received via signed agreement to BENCHMARK from Mr. Kris McGlothlin, on or about May 1, 2001, as referenced by BENCHMARK'S proposal E01-448.

BACKGROUND

Building 149 is a two-story 16,013 square foot structure with basement. Built in 1953, it is constructed of concrete over a concrete foundation with a flat composition roof. The concrete exterior is tan.

WARRANTY

Benchmark Environmental Engineering warrants that the findings contained herein have been prepared with the level of care and skill exercised by experienced and knowledgeable environmental consultants who are appropriately licensed or otherwise trained to perform lead-related construction risk assessments and inspections pursuant to the scope of work required on this Project.

The survey included inspection of accessible materials. BENCHMARK did not inspect or sample inaccessible areas such as behind walls or within ductwork, and did not dismantle any part of the structure to survey inaccessible areas. For the purpose of this warranty, inaccessible is defined as areas of the building that could not be tested (sampled) without destruction of the structure or a portion of the structure. Inaccessible materials that are not visible to Benchmark's inspectors are assumed to be lead containing.

Authorization to perform this survey was received by BENCHMARK from Mr. Kris McGlothlin, of The PAI Corporation, on May 1, 2001, as referenced by Benchmark's Proposal E01-488.

The survey was conducted on August 6, 2001. A comprehensive site survey was performed based on the building plan. All building components identified in the specifications that may contain lead-based paint/coating were targeted for testing. (Exterior and interior walls, exterior and interior windows, doors and numerous associated components).

Sampling protocol for identification of lead-based paint was in accordance with The U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, Chapter 7. All suspect lead-coated surfaces were identified by building, wall, and building component, as such each component had a unique identification number.

The report establishes lead concentrations in painted surfaces as a general guidance tool for the purpose of conducting demolition activities for Building 149.

A total of 185 XRF assays and eight (8) paint chip samples were collected within this building.

SCOPE OF SERVICES

Benchmark recognized the scope of work for the NASA Ames-PAI Corporation, to be composed of a Lead Based Paint Inspection for the Bachelor's Enlisted Quarters (ID: Building 149). The survey consisted of testing for lead-base paint in general accordance with the U.S Department of Housing and Urban Development (HUD) guidelines for the evaluation and control of Lead-Based Paint Hazards in Housing, Chapter 7.

The following building components were inspected when applicable:

- Exterior Areas:

Walls	Windows
Windowsills	Stair Handrails
Doors	Door Molding
Downspouts	Window Screen
Building Trim	Skylight
Balusters	Stair Handrail
Stair Risers	Support Pillar

- Interior Areas:

Walls	Windows
Windowsills	Stair Treads
Balusters	Doors
Door Molding	Stair Stringer
Ceilings	Ceiling Molding
Skylight	Floors
Ceiling Molding	Grates
Baseboards	Support Beams
Electrical Box	Book Shelf
Chair Rail	Wainscot

Paint chip samples were collected from eight (8) building components to provide conclusions that would be in compliance with DOSH 8 CCR 1532.1.

METHODOLOGY

GENERAL REFERENCES

Inspection, sampling, and assessment procedures were performed in general accordance with the guidelines published by The Department of Housing and Urban Development's (HUD) 1995 Guidelines, Chapter 7. The survey consisted of three major activities: visual inspection, sampling, and analysis. Although these activities are listed separately, they are integrated tasks.

VISUAL INSPECTION

An inspector that is a Department of Health Services Certified Lead Inspector/Risk Assessor performed the inspection. An initial building walkthrough was conducted to determine the presence of suspect materials that were accessible or exposed.

SAMPLING PROCEDURES

Following the walkthrough, the inspector selected samples areas of exposed or accessible materials identified as suspect LBP. EPA and HUD guidelines were used to determine the sampling protocol. Sampling locations were chosen to be representative of the homogeneous material.

X-RAY FLUORESCENCE (XRF) ANALYSIS

XRF instruments measure lead in paint by directing high energy X-rays and gamma rays into the paint, causing the lead atoms in the paint to emit X-rays which are detected by the instrument and converted to a measurement of the amount of lead in the paint. The EPA approved technology allows for measurement of X-rays without scraping or samples preparation to characterize substrate or matrix effects. The Spectrum Analyzer, Metals Analysis Probe (MAP 4) is combined with a microprocessor system that enables field-testing with a high degree of quality control and speed. Sample locations, descriptions, conditions, and measurement results are automatically recorded by the instrument and easily downloaded to a PC or laptop.

QUALITY CONTROL PROGRAM

Benchmark Environmental Engineering utilizes only DHS approved inspectors, which are certified to use radioactive instruments. The MAP 4 Spectrum Analyzer has on-board calibration routines, which continuously operate, and self-correct to minimize sampling error. This is known as substrate correcting software.

PAINT CHIP SAMPLE COLLECTION

A total of eight (8) paint chip samples were collected in accordance with the HUD Evaluation and Control of Lead-Based Paint Hazards in Housing, Paint Chip Sampling. A two-inch by two-inch area was measured and delineated. The paint chip sample was collected with the use of a sharp stainless steel paint scraper. Paint was scraped directly off the substrate. The goal is remove all layers of paint equally, but none of the substrate. Paint chip samples collected in this fashion are reported in PPM or % by weight .

LEAD

Laboratory analysis was performed by Schneider Laboratories, Inc. Their AIHA Accredited Laboratory Identification Number is AIHA/ELLAP #100527, and CA ELAP #2078. Samples are analyzed by Flame Atomic Absorption in accordance with EPA's "Standard Operating Procedures for Lead in Paint by Hotplate or Microwave based Acid digestions and Atomic Absorption or Inductively Coupled Plasma Emission Spectrometry" (1991), EPA/600/8-91/213, NTIS Document No. PB92-114172. Samples are prepared by hotplate digestion with nitric acid and hydrogen peroxide, and analyzed by Flame AA.

LABORATORY QUALITY CONTROL PROGRAM

Schneider Laboratories, Inc. maintains an in-house quality control program. This program involves blind reanalysis of ten percent of all samples, precision and accuracy controls, and use of standard bulk reference materials.

FINDINGS AND OBSERVATIONS

LEAD

A total of 185 assays were taken. The results indicated that 37 assays contained lead above the EPA and DHS level of 1.0 mg/cm² or greater. The components, which contain lead-based paint, are:

Exterior: Windows Jambs, Sills, Casings; Door Casings; Stair Handrails; Fire Exit; Overhang; Concrete Cap.

Interior: Recreation Room Window; Storage Room Walls; Hallway Bathroom Walls; Hallway Windows, Window Jambs, Fire Exit, Door Casing, Stair Handrail; Common Area Wall, Steel Post, Common Wall; Transformer Room Door.

Cal/OSHA's Lead in Construction Standard, Title 8, CCR section 1532.1, is primarily concerned with worker protection when disturbing any detectable level of lead in paint or surface coatings.

Assays with results **less than** 1.0 mg/cm² and paint chip samples with results less than 5000 ppm may create hazardous conditions if subjected to poor and/or prohibited work practices. Refer to Work Activities on the following page.

OSHA LEAD REGULATION SUMMARY

The Federal Occupational Safety and Health Administration (OSHA) has enacted an interim lead standard, which was adopted by Cal/OSHA as 8 CCR 1532.1. The purpose of both standards is to protect construction workers from exposure to lead. OSHA is primarily concerned with activities that disturb lead-containing material. Lead was used in most paints until the mid 1950's and was banned in amounts in excess of 0.06% by weight in 1978 for most non-industrial paints by the Consumer Product Safety Commission (CPSC).

The new standard requires contractors and employers who perform activities that would disturb lead, must monitor their employees to determine whether they are being exposed in excess of the Action Level (AL) of 30 micrograms per cubic meter of air (ug/m³) over an eight-hour time weighted average (TWA) or the Permissible Exposure Limit (PEL) of 50 ug/m³ TWA. Monitoring is performed by personal exposure air sampling.

Even when concentrations are below the AL, an employer must provide employees with High Efficiency Particulate Air (HEPA) filtered vacuums, wetting agents and hand-washing facilities. If the exposure exceeds the AL or the PEL, other procedures such as containing the area, decontamination facilities and medical monitoring are required.

OSHA has identified several activities that pose varying levels of potential lead exposure to laborers disturbing lead-containing paint. Estimated exposure levels of lead are founded on the activity itself, rather than the concentrations of lead present in paint. Therefore, as an example, paints that contain 0.5% versus 15% of lead by weight or 0.8 mg/cm² versus 3.5 mg/cm² of lead in paint could present the same levels of potential exposure to workers depending on the activities that cause the disturbance and the administrative and engineering controls that are followed.

The following is a summary of work activities that disturb paint, the expected exposures and the respiratory protection requirements as outlined in the OSHA standards:

Class I Activities:

Class I activities include: Manual demolition, manual scraping, manual sanding, heat gun application, general cleanup, power tool cleaning with dust collection systems and spray painting activities.

Potential Exposure: 50 ug/m³ to 500 ug/m³
Minimum Respiratory Protection: Half mask air purifying respirator equipped with HEPA filters having a protection factor of 10.

Class II Activities:

Class II activities include: Using lead-containing mortars, lead burning, lead riveting, rivet busting, power tool cleaning without dust collection systems, cleanup of dry expendable abrasives and abrasive blasting.

Potential Exposure: 500 ug/m³ to 2,500 ug/m³
Minimum Respiratory Protection: Full face powered air-purifying respirators equipped with HEPA filters having a protection Factor of 100.

Class III Activities:

Class II activities include: Abrasive blasting, welding, cutting and torch burning on steel structures.

Potential Exposure: Greater than 2,500 ug/m³.
Minimum Respiratory Protection: Full face supplied - air respirator operated in pressure demand mode or - the positive pressure mode.

DOSH 8 CCR 1532.1 requires that an initial exposure assessment be performed if workers will be performing any of the trigger tasks found in 1532.1. It should be noted that the California Department of Health Services (DHS) has issued emergency work procedures for lead paint materials that in the absence of any other procedures are recommendations.

The following recommendations are general site specific work practice specifications.

- You must use "containment" when you sand, scrape, or disturb any detectable level of lead in paint or surface coatings.
- Containment is required for abatement and/or any activity that or disturb any detectable level of lead in paint or surface coatings.
- You must be DHS-certified (workers, supervisors, monitors, and inspectors) if you are conducting abatement.
- You must follow an abatement plan.
- A DHS -certified supervisor, monitor, and/or project designer must design an abatement project.
- A clearance inspection by dust wipe sampling is required for abatement.

RESULTS OF THE PAINT CHIP SAMPLES COLLECTED

Paint Chip Samples NASA Ames-PAI Corporation August 6, 2001

Sample Number	Component	Location	PPM	% By Weight
01-4584-1	Wall 1	Recreation Room Wall	510	0.051
01-4585-2	Wall 2	Duty Officer Office Window	3290	0.329
01-4586-3	Wall 4	1 st Floor Laundry Room Wall	1840	0.184
01-4587-4	Window Sill	1 st Floor, Room 103	1170	0.117
01-4588-5	Wall 3	Fire Door	2480	0.248
01-4589-6	Wall 4	Exterior Wall by Double Door	1700	0.170
01-4590-7	Wall 4	Exterior Double Door	460	0.046
01-4591-8	Wall 1	Fire Door – Frame	32850	3.285

LEAD WASTE DISPOSAL

The visual determination indicated that all building components that tested positive were in intact to poor condition (minor cracking to flaking and peeling). As such, these components need to be considered a lead hazard if flaking paint is not stabilized. All small debris (paint chips, rags, filters, and components smaller than 2"x2") that may be generated during the paint stabilization process (paint preparation) should be considered Class I, lead hazardous waste. The debris generated from paint stabilization of LBP building components should be segregated from all other dust and debris. Building components, which tested positive, should be stabilized by a DHS-accredited Contractor.

Power washing may be conducted on the building. Run off water must be collected and analyzed by an accredited laboratory to meet the criteria established by the Clean Water Act, Resource Conservation and Recovery Act (RCRA 1972). Lead levels must not exceed 5mg/L.

CODES AND REGULATIONS - LEAD-BASED PAINT

Federal and state regulations, which govern lead-based, paint work or hauling and disposal of lead-based paint waste materials include but are not limited to the following:

FEDERAL

Housing and Urban Development (HUD) 1995 Guidelines For The Evaluation and Control of Lead-Based Paint in Housing

OSHA

Lead In Construction
29 CFR 1926.62

NESHAP

Emissions Standards
40 CFR 50.12

Lead-Based Paint Poisoning Prevention Act (LBPPPA), 1970.

Title 10 - Residential LBP Hazard Reduction Act, 1992, (amendment for LBPPPA, 1970)

Resource Conservation Recovery Act (RCRA)

STATE

Cal/OSHA

Lead In Construction
Title 8 CCR 1532.1

APPENDIX A
XRF - DATA RESULTS TABLE

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
149	0002		Negative	18126	Rec room	1	Fire exit	0.206	
149	0002		Negative	18127	Rec room	1	Wall	-0.027	
149	0002		Negative	18128	Rec room	1	Chair rail	-0.076	
149	0002		Negative	18129	Rec room	1	Common wall	-0.419	510
149	0002		Negative	18130	Rec room	2	Wainscott	-0.092	
149	0002		Negative	18131	Rec room	4	Wall	-0.346	
149	0002		Negative	18132	Rec room	4	Window Sill	0.374	
149	0002		XRF Positive	18133	Rec room	4	Window	1.875	
149	0002		Negative	18134	Rec room	1	Open I beam	-0.114	
149	0002		Negative	18135	T.V room	1	Wall	0.52	
149	0002		Negative	18136	Common Area	2	Kick panels	0.152	
149	0002		Negative	18137	T.V room	2	Window	0.498	
149	0002		Negative	18138	T.V room	2	Heat. Insulation	0.257	
149	0002		Negative	18139	T.V room	3	Door	0.198	
149	0002		Negative	18140	T.V room	3	Door casing	-0.251	
149	0002		Negative	18141	T.V room	3	Common wall	0.175	
149	0002		Negative	18142	T.V room	4	Wainscott	-1.526	
149	0002		Negative	18143	T.V room	4	Wainscott	-0.482	
149	0002		Negative	18144	T.V room	2	Window	-0.65	
149	0002		Negative	18145	T.V room	2	Window	0.454	
149	0002		Negative	18146	Main entry	1	Common wall	0.481	
149	0002		Negative	18147	Main entry	1	Door casing	0.328	
149	0002		Negative	18148	Main entry	2	Double exit drs	-0.151	
149	0002		Negative	18149	Main entry	2	Door casing	0.195	
149	0002		Negative	18150	Main entry	3	Duty off window	-0.31	
149	0002		Negative	18151	Main entry	3	Door	0.015	
149	0002		Negative	18152	Main entry	3	Window	0.213	
149	0002		Inconclusive	18153	D/O area	3	Window	0.956	
149	0002		Negative	18154	D/O area	2	Window Sill	0.36	3290
149	0002		Negative	18155	Main entry	3	Double exit drs	0.049	
149	0002		Negative	18156	Main entry	3	Door casing	0.043	
149	0002		Negative	18157	Hallway	1	Wall	0.592	
149	0002		XRF Positive	18158	Storage rm	1	Wall	2.965	
149	0002		XRF Positive	18159	Storage rm	1	Wall	3.314	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
149	0002		XRF Positive	18160	Storage rm	3	Wall	1.777	
149	0002		Negative	18161	Storage rm	2	Hallway	0.032	
149	0002		Negative	18162	Laundry Room	1	Wall	0.635	
149	0002		Negative	18163	Laundry Room	1	Window Sill	0.152	
149	0002		Negative	18164	Laundry Room	4	Window	0.244	
149	0002		Negative	18165	Laundry Room	2	Door	-0.515	
149	0002		Negative	18166	Laundry Room	2	Door casing	-0.156	
149	0002		Negative	18167	Laundry Room	4	Heat. Insulatio	0.014	
149	0002		XRF Positive	18168	Hallway Head	1	Wall	3.523	
149	0002		XRF Positive	18169	Hallway Head	2	Wall	2.861	
149	0002		XRF Positive	18170	Hallway Head	4	Wall	1.276	
149	0002		XRF Positive	18171	Hallway Head	3	Tile wall	17.012	
149	0002		Negative	18172	Hallway Head	1	Hallway	0.334	
149	0002		Negative	18173	Hallway Head	3	Stall door	-0.833	
149	0002		Negative	18174	Hallway Head	4	Door	-0.2	
149	0002		Negative	18175	Hallway Head	4	Door casing	0.391	
149	0002		XRF Positive	18176	Common Area	1	Window	2.066	
149	0002		Negative	18178	Hallway	2	Wall	-0.296	
149	0002		Negative	18179	Hallway	2	Door	-1.264	
149	0002		Negative	18180	Hallway	2	Door	0.349	
149	0002		Negative	18181	Hallway	2	Door casing	-0.005	
149	0002		XRF Positive	18182	Common Area	4	Window Jamb	2.997	
149	0002		XRF Positive	18183	Hallway	2	Window Jamb	1.371	
149	0002		XRF Positive	18184	Hallway	3	Fire exit	1.525	
149	0002		XRF Positive	18185	Hallway	3	Door casing	2.401	
149	Base.		Negative	18187	Hallway	1	Wall	-1.188	
149	Base.		Negative	18188	Hallway	1	Wall	-0.223	
149	Base.		XRF Positive	18189	Hallway	1	Stair Handrail	3.791	
149	Base.		Negative	18190	Hallway	1	Door	0.02	
149	Base.		Negative	18191	Hallway	1	Door casing	0.507	
149	Base.		Negative	18192	Transformer rm	1	Door	-0.507	
149	Base.		Negative	18193	Transformer rm	1	Wall	0.584	
149	Base.		Negative	18194	Bag room	1	Wall	-1.276	
149	Base.		Negative	18195	Bag room	1	Wall	0.541	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
149	Base.		Negative	18196	Bag room	1	Door	-0.077	
149	Base.		Negative	18197	Bag room	1	Door casing	0.074	
149	Base.		Negative	18198	Bag room	1	Drain pipe 6"	-0.02	
149	Base.		Negative	18199	Storage	1	Wall	0.091	
149	Base.		Negative	18200	Storage	1	Hallway	-0.91	
149	Base.		Negative	18201	Storage	1	Hallway	0.499	
149	0003		Negative	18127	Common Area	1	Fire exit	0.373	
149	0003		Negative	18129	Common Area	1	Wall	0.79	
149	0003		Negative	18130	Common Area	1	Chair rail	0.518	
149	0003		Negative	18131	Common Area	2	Common wall	0.368	
149	0003		Negative	18132	Common Area	2	Wainscott	-0.776	
149	0003		Negative	18133	Common Area	2	Wainscott	0.73	
149	0003		Negative	18134	Common Area	3	Door casing	0.222	
149	0003		Inconclusive	18135	Common Area	4	Wall	0.969	
149	0003		Negative	18136	Common Area	4	Window Sill	0.612	
149	0003		Negative	18137	Common Area	4	Window	0.524	
149	0003		Negative	18138	Common Area	4	Window	0.429	
149	0003		Negative	18139	Common Area	4	Heat. Insulation	0.375	
149	0003		Negative	18140	Common Area	1	Hallway	-0.069	
149	0003		XRF Positive	18141	Common Area	2	Wall	1.676	
149	0003		Negative	18142	Common Area	2	Window	0.593	
149	0003		Inconclusive	18143	Common Area	2	Kick panels	1.062	
149	0003		Inconclusive	18144	Common Area	2	Kick panels	1.083	
149	0003		XRF Positive	18145	Common Area	2	Steel post	11.58	
149	0003		Inconclusive	18146	Common Area	4	Window Jamb	1.039	
149	0003		XRF Positive	18147	Common Area	3	Common wall	1.601	
149	0002		Negative	18148	Hallway	4	Double exit drs	-0.151	
149	0002		Negative	18149	Hallway	4	Door casing	0.865	
149	0002		Negative	18150	Hallway	3	Duty off windo	0.418	
149	0002		Negative	18151	Hallway	3	Duty off windo	0.846	
149	0002		Negative	18152	Hallway	3	Duty off windo	0.603	
149	0002		Negative	18153	Hallway	1	Chair rail	0.888	
149	0002		Negative	18154	Hallway	1	Chair rail	0.838	
149	0002		XRF Positive	18155	Hallway	4	Window	2.258	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
149	Base.		Negative	18156	Transformer rm	1	Common wall	0.613	
149	Base.		Inconclusive	18157	Transformer rm	2	Common wall	1.06	
149	Base.		Negative	18158	Transformer rm	4	Wall	0.659	
149	Base.		XRF Positive	18159	Transformer rm	1	Door	2.429	
149	Base.		Negative	18160	Transformer rm	1	Door casing	0.645	
149	0002		XRF Positive	18161	Hallway	2	Door casing	2.085	
149	0002		Negative	18162	Hallway	2	Door	0.021	
149	0002		Negative	18163	Hallway	2	Door casing	0.658	
149	0002		Negative	18164	Hallway	2	Common wall	0.608	
149	0002		Negative	18165	Hallway	2	Elec panel	0.357	
149	0002		Negative	18166	Hallway	4	Comon wall	-0.462	
149	0002		Negative	18167	Hallway	2	Double exit drs	0.018	
149	0002		Negative	18168	Hallway	3	Double exit drs	0.224	
149	0002		Inconclusive	18169	Hallway	4	Door	1.068	
149	0002		Negative	18170	Hallway	4	Door casing	0.665	
149	0002		Negative	18171	Hallway	1	Hallway	0.52	
149	0002		Negative	18172	Hallway	2	Wainscott	-0.166	
149	0002		Negative	18173	Hallway	2	Comon wall	0.14	
149	0002		Negative	18174	Hallway	4	Wainscott	-0.208	
149	0002		Negative	18175	Common Area	2	Common wall	0.175	
149	0002		Inconclusive	18176	Common Area	4	Wall	0.904	
149	0002		Negative	18177	Common Area	4	Window Sill	0.51	
149	0002		Negative	18178	Common Area	4	Window	-1.09	
149	0002		Negative	18179	Common Area	4	Window	0.563	
149	0002		Negative	18180	Common Area	2	Wall	-0.748	
149	0002		Inconclusive	18181	Common Area	2	Wall	0.978	
149	0002		Negative	18182	Common Area	2	Window	-0.742	
149	0002		Negative	18183	Common Area	2	Window	0.609	
149	0002		Inconclusive	18184	Hallway	3	Wall	0.986	
149	0002		Negative	18185	Hallway	3	Window Jamb	0.164	
149	0002		Negative	18186	Hallway	3	Door casing	0.575	
149	0002		Negative	18187	Hallway	2	Window	0.332	
149	0002		Negative	18188	Hallway	1	Common wall	0.282	
149	0003		Negative	18189	Hallway Head	1	Wall	0.22	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
149	0003		Negative	18190	Hallway Head	2	Wall	-1.647	
149	0003		Negative	18191	Hallway Head	2	Wall	-0.075	
149	0003		XRF Positive	18192	Hallway Head	3	Tile wall	14.214	
149	0003		Negative	18193	Hallway Head	3	Wall	0.37	
149	0003		Negative	18194	Hallway Head	2	Window	0.433	
149	0003		Negative	18195	Hallway Head	1	Hallway	-0.423	
149	0003		Negative	18196	Hallway Head	1	Hallway	0.391	
149	0003		Negative	18197	Hallway Head	2	Window Sill	0.641	
149	0003		Negative	18198	Hallway Head	3	Stall door	-0.096	
149	0003		XRF Positive	18199	Hallway Head	3	Drain pipe	2.622	
149	0003		Negative	18200	Hallway Head	4	Door	-0.303	
149	0003		Negative	18201	Hallway Head	4	Door casing	0.059	
149	0002		XRF Positive	18206	Exterior	1	Stair Handrail	5.917	
149	0002		Negative	18207	Exterior	1	Stair Tread	0.583	
149	0002		Negative	18208	Exterior	1	Wall	0.754	
149	0002		XRF Positive	18209	Exterior	1	Fire exit	1.357	
149	0002		XRF Positive	18210	Exterior	1	Door casing	3.071	32850
149	0002		XRF Positive	18211	Exterior	2	Window Jamb	2.715	
149	0002		XRF Positive	18212	Exterior	2	Window Sill	2.07	
149	0002		XRF Positive	18213	Exterior	2	Window casing	1.744	
149	0002		Negative	18214	Exterior	2	Kick panels	0.452	
149	0002		Negative	18215	Exterior	2	Overhang	-0.1	
149	0002		Negative	18216	Exterior	2	Fascias	0.309	
149	0002		Negative	18217	Exterior	2	Double exit drs	0.201	
149	0002		XRF Positive	18218	Exterior	2	Door casing	2.98	
149	0002		XRF Positive	18219	Exterior	2	Door casing	2.835	
149	0002		XRF Positive	18220	Exterior	2	Base handrail	5.43	
149	0002		XRF Positive	18221	Exterior	2	Lg window	1.321	
149	0002		Negative	18223	Exterior	2	2nd Floor Sill	-1.473	
149	0002		XRF Positive	18223	Common Area	2	Steel post	11.58	
149	0002		Negative	18224	Exterior	2	2nd floor Sill	0.054	
149	0002		XRF Positive	18225	Exterior	3	Stair Handrail	4.045	
149	0002		Inconclusive	18227	Exterior	3	Wall	1.152	
149	0002		Negative	18228	Exterior	3	Overhang	0.342	

Bldg.	Floor	Room	Result	Shot Sequence	Location	Wall	Description	XRF Result	AA Analysis in PPM
149	0002		XRF Positive	18229	Exterior	4	Window Jamb	1.346	
149	0002		Negative	18231	Exterior	4	Double exit dfs	-0.056	460
149	0002		XRF Positive	18232	Exterior	4	Door casing	4.279	
149	0002		Negative	18233	Exterior	4	Overhang	0.474	
149	0002		Negative	18234	Exterior	4	Fascias	0.474	
149	0002		Unknown	18235	Exterior	2	Gutter	0	
149	0002		Inconclusive	18236	Exterior	2	Gutter	0.916	
149	0003		Negative	18239	Stairway	2	Window Jamb	0.229	
149	0003		Negative	18240	Stairway	2	Window Sill	0.386	
149	0003		Negative	18241	Stairway	2	Stair Handrail	-0.44	
149	0003		Negative	18242	Stairway	2	Stair Tread	0.649	
149	0003		Negative	18243	Stairway	2	Door	-0.524	
149	0003		Negative	18244	Stairway	2	Door casing	0.227	
149	0003		XRF Positive	18245	Stairway	2	Concrete cap	1.299	
149	0003		Negative	18246	Hallway	1	Wall	0.406	
149	0002	Laundry Rm.	Negative	Paint Chip		4	Wall	0.184	1840
149	0002	Room 103	Negative	Paint Chip			Window Sill	0.117	1170
149	0002		Negative	Paint Chip	Exterior	3	Fire Door	0.248	2480
149	0002		Negative	Paint Chip	Exterior	4	Double Door	0.17	1700

APPENDIX B
CERTIFICATION(S)

Richard E. MacFarlane
Interim Certificate

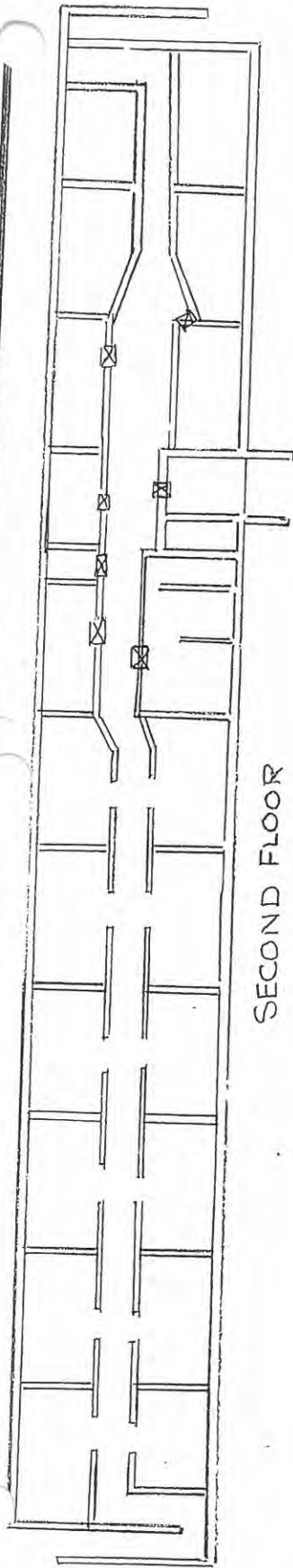
Richard E. MacFarlane

Inspector/Assessor
F-2241 (Exp. 11/03/01)

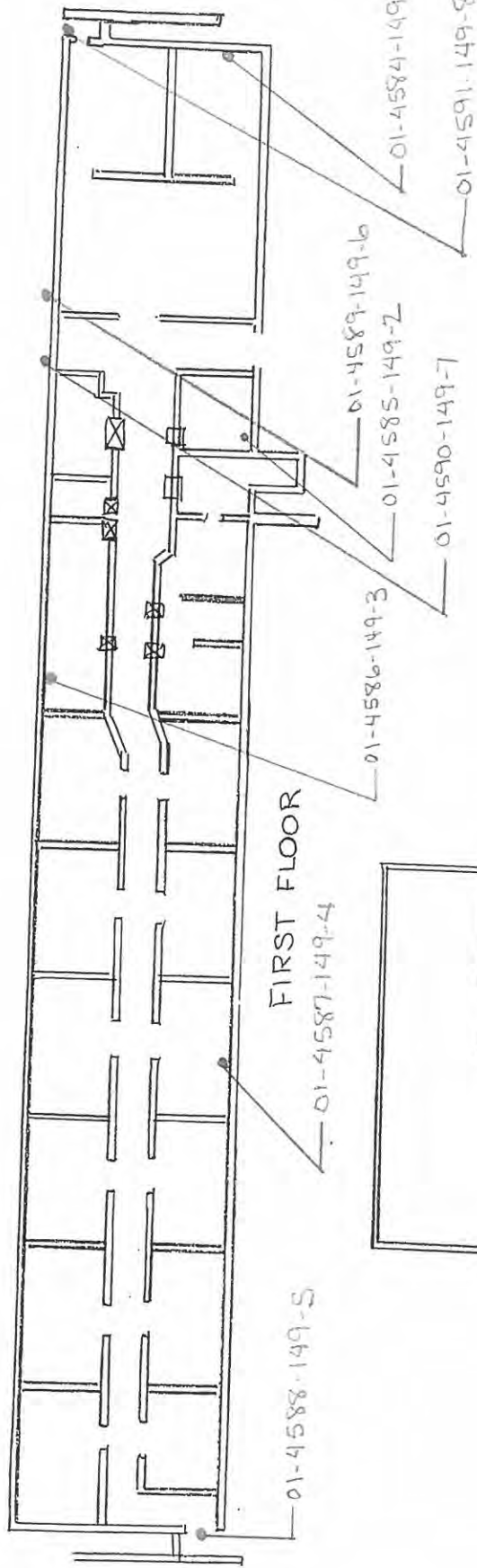


APPENDIX C

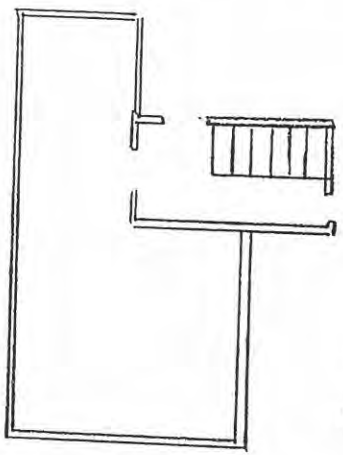
SITE MAP



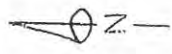
SECOND FLOOR



FIRST FLOOR



BASEMENT



APPROX. SCALE IN FEET



Property Inspections - Environmental Engineering
 Specialized Training - Contract Management
 3732 - A Charter Park Drive
 San Jose, CA 951366
 Phone: (408) 448-7594 - Fax: (408) 448-3849

PROJECT NAME:
 BUILDING 149
 NASA - AMES
 PARCELS 5

DRAFT PERSON: WLB
 DATE: 12/10
 PROJECT NO.: E01-448-AL-SU
 DWG. No.: Z

APPENDIX D
LABORATORY RESULTS

SCHNEIDER LABORATORIES

INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928

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AIHA/ELLAP 100527, NVLAP 1150, NYELAP 11413, CAELAP 2078, NC 593, SC 93003

LABORATORY ANALYSIS REPORT

Lead Analysis by EPA 3050B/7420 Method

ACCOUNT #: 2541-01-52
CLIENT: Benchmark
ADDRESS: 3732 Charter Park Drive
San Jose, CA 95136

DATE COLLECTED: 8/6/2001
DATE RECEIVED: 8/14/2001
DATE ANALYZED: 8/14/2001
DATE REPORTED: 8/14/2001


PO NO.:
PROJECT NAME: NASA AAMES
PROJECT NO: E01-448
JOB LOCATION: Bldg 149 BAQ

SAMPLE TYPE: PAINT

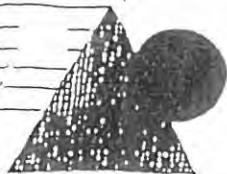
SLI Sample No.	Client Sample No.	Sample Description	Sample Wt (mg)	Dilution Factor	Total Lead (µg)*	Lead Conc (% by wt)	Lead Conc (PPM)
2016259	01-4584-149-01	Rec Rm Wall WI1	423	1	216.2	0.051	510
2016260	01-4585-149-02	D/O Office Win WI2	598	10	1,965.5	0.329	3290
2016261	01-4586-149-03	1stFirLaundryRmWWI4	566	2	1,044.1	0.184	1840
2016262	01-4587-149-04	1stFirRm103WinSill	415	1	486.8	0.117	1170
2016263	01-4588-149-05	Fire Dr WI 3	522	2	1,295.1	0.248	2480
2016264	01-4589-149-06	ExtWallWI4ByDbIDrWI4	486	1	828.0	0.170	1700
2016265	01-4590-149-07	Ext Dbl Dr WI4	378	1	173.0	0.046	460
2016266	01-4591-149-08	Fire Dr Frame WI1	479	100	15,733.2	3.285	32850
	QC - 18999	10.0 ppm Calibration Std			996.6	99.7%	
	QC - 18999	200 µg spike			200.5	100.2%	
	QC - 18999	5.0 ppm Calibration Std			514.2	102.8%	
	QC - 18999	Blank			< 20.0		
	QC - 18999	NIST 2710 Standard			565.2	102.2%	

ANALYST: AMY J. COLOSIMO

Total no. of pages in report = /

REVIEWED BY  Matthew D. Asbury, Dept. Head

Minimum Reporting Limit: 20 µg Total Lead. For work involving HUD, child-occupied building and other residential sites, the Federal Lead Standard is 0.5% lead by weight [5000 ppm]. The requirements of the OSHA Lead in Construction Standard, 29 CFR 1926.62, are invoked if any lead is present in the sample; there is no minimum concentration. *For true values, assume two (2) significant figures. All testing is performed in strict accordance with Schneider Laboratories, Inc. protocol.



BENCHMARK

2541-01-52

Sample Location Worksheet
Chain Of Custody

3680 Charter Park Dr Suite E San Jose, CA 95136
(408) 448-7594 (408) 448-3849 (fax)

Project Number: EOI-448 Date: 8/6/01 Technician: R. Mac FACIANO
Project Location: NASA GAMES Bldg # 149 BAQ
Client Name: KRIS Company: PAI

Project Type <input type="checkbox"/> Asbestos <input checked="" type="checkbox"/> Lead-based Paint <input type="checkbox"/> Lead Risk Assessment <input type="checkbox"/> Lead (water) <input type="checkbox"/> Mold/Fungus/Bacteria <input type="checkbox"/> Indoor Air Quality <input type="checkbox"/> Other: _____	Type Of Analysis <input type="checkbox"/> PLM/Bulk (EPA 600) <input checked="" type="checkbox"/> EPA SW846-7420, FLAA <input type="checkbox"/> Dust Wipes, <input checked="" type="checkbox"/> Paint Chips <input type="checkbox"/> Air, Soil <input type="checkbox"/> SM313B, GFAA, Water <input type="checkbox"/> TEM/Bulk (Chatfield) <input type="checkbox"/> Other: <u>P/C</u>	Turnaround Time <input type="checkbox"/> Same Day 3 Hr 6 Hr <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 5 Day <input type="checkbox"/> Other: _____ TTP = Test Till Positive
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Homogenous Material Group	Material / Component	Sample Number	Location Of Samples	Analysis Specification
<u>P/C</u>	<u>All Samples ARE 2" x 2"</u>			<u>PPM</u>
		<u>01-4584 - 149-01</u>	<u>REC. Room WALL WALL # 1</u>	
		<u>01-4585 - 149-02</u>	<u>D/O OFFICE WINDOW WALL # 2</u>	
		<u>01-4586 - 149-03</u>	<u>1st FLOOR LAUNDRY Rm WALL - WALL # 4</u>	
		<u>01-4587 - 149-04</u>	<u>1st FLOOR Rm 103 WINDOW sill</u>	
		<u>01-4588 - 149-05</u>	<u>FIRE DOOR WALL # 3</u>	
		<u>01-4589 - 149-06</u>	<u>EXTERIOR WALL - WALL # 4 By double door</u>	
		<u>01-4590 - 149-07</u>	<u>EXTERIOR DOUBLE DOOR WALL # 4</u>	
		<u>01-4591 - 149-08</u>	<u>FILE DOOR - FRAME WALL # 1</u>	
<u>NOTE: Sensivity must be AT 25 <</u>				

Relinquished By: <u>PP. MARTEO</u>	Received By: <u>A. M... OPS 1202209 22 1013 7564</u>	Date/Time Received: <u>8/14/01 940</u>
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