Former American Beryllium Company Decontamination and Abatement of Beryllium Impacted Materials Final Report

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Section 1
Introduction

On behalf of Lockheed Martin Corporation (Lockheed Martin), Tetra Tech, Inc. has prepared the following report documenting the abatement of beryllium-impacted materials and building surfaces at Lockheed Martin's former American Beryllium Company (ABC) facility in Tallevast, Florida. Beryllium residues detected in various building materials within Buildings 1, 2, 3, 4, and 5 of the ABC facility were abated (by removal or decontamination) in order to reduce potential airborne beryllium hazards that may occur during future occupancy of the facility. The abatement program was coordinated with Law Environmental, Inc., on behalf of Waters, Telsey, and Puma, Inc. (WTP), for concurrence that the property was considered suitable for occupancy. The primary objectives of the abatement program were as follows:

1. Remove and dispose of beryllium-impacted ceiling materials (tiles, grid, insulation), HVAC ductwork, air handlers, and carpets in accordance with appropriate federal and state disposal criteria;
2. Decontaminate interior building surfaces in order to reduce beryllium surface wipe concentrations to below 25 $\mu g/ft^2$;
3. Ensure that no airborne concentrations within the buildings exceed OSHA's 0.002 mg/m^3 Permissible Exposure Limit (PEL) following abatement.

This report summarizes the abatement activities in December 1999 through February 2000 and presents the surface wipe and air sample data collected following abatement. Clearance sampling data indicate that beryllium abatement objectives have been attained.

In addition to beryllium abatement, this report also documents the removal of chromium impacted plating ductwork in Building 5. Following decontamination and removal of the ductwork, the plating shop building surfaces were decontaminated. Building surfaces were then sampled and analyzed for total chromium. No regulatory surface wipe criteria are available for for chromium.

This abatement report has been organized into the following sections:

- Section 2 - Site Background, presenting background information on facility conditions, baseline beryllium analytical data, interim beryllium abatement sampling results, and facility-wide beryllium assessment sampling results;

- Section 3 - Evaluation of Published Regulatory Standards, reviewing available regulatory standards and establishing appropriate beryllium and chromium standards to be used during the decontamination and abatement project;

- Section 4 – Beryllium Abatement Program, presenting the approach used to identify materials requiring abatement; evaluate the extent of abatement; decontaminate and abate beryllium-impacted materials; and, perform final clearance sampling to verify that cleanup goals have been attained;

- Section 5 – Conclusions, presenting conclusions derived from the abatement program;

- Section 6 - References, presenting a list of previous reports referenced in this final report.

Copies of the surface wipe and air clearance sampling laboratory data and chain-of-custody records are presented in Appendix A.

Section 2
Site Background

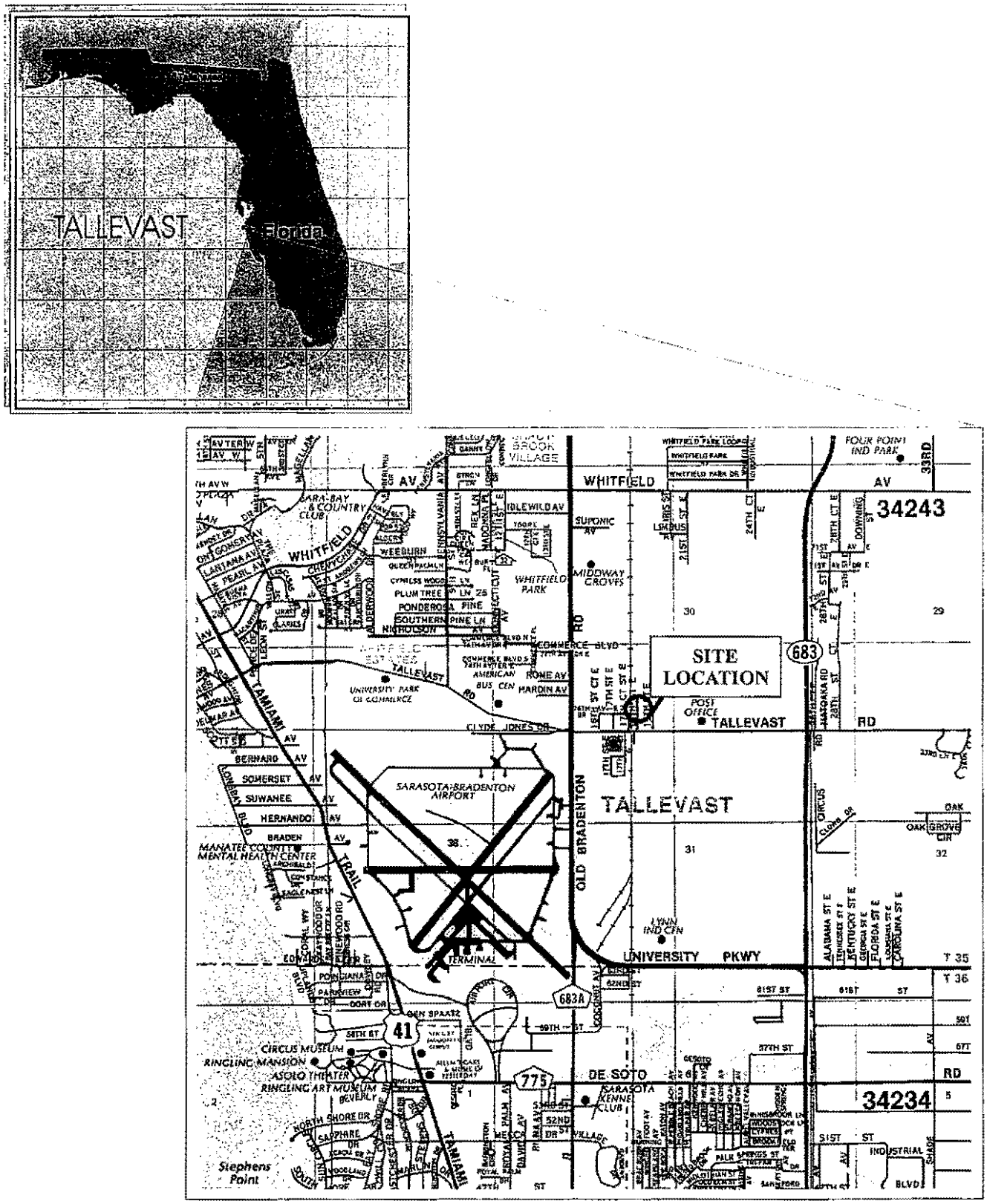
This section provides site information, including a description of the location, past operations of the facility, and a summary of data collected at the facility prior to the final beryllium abatement activities.

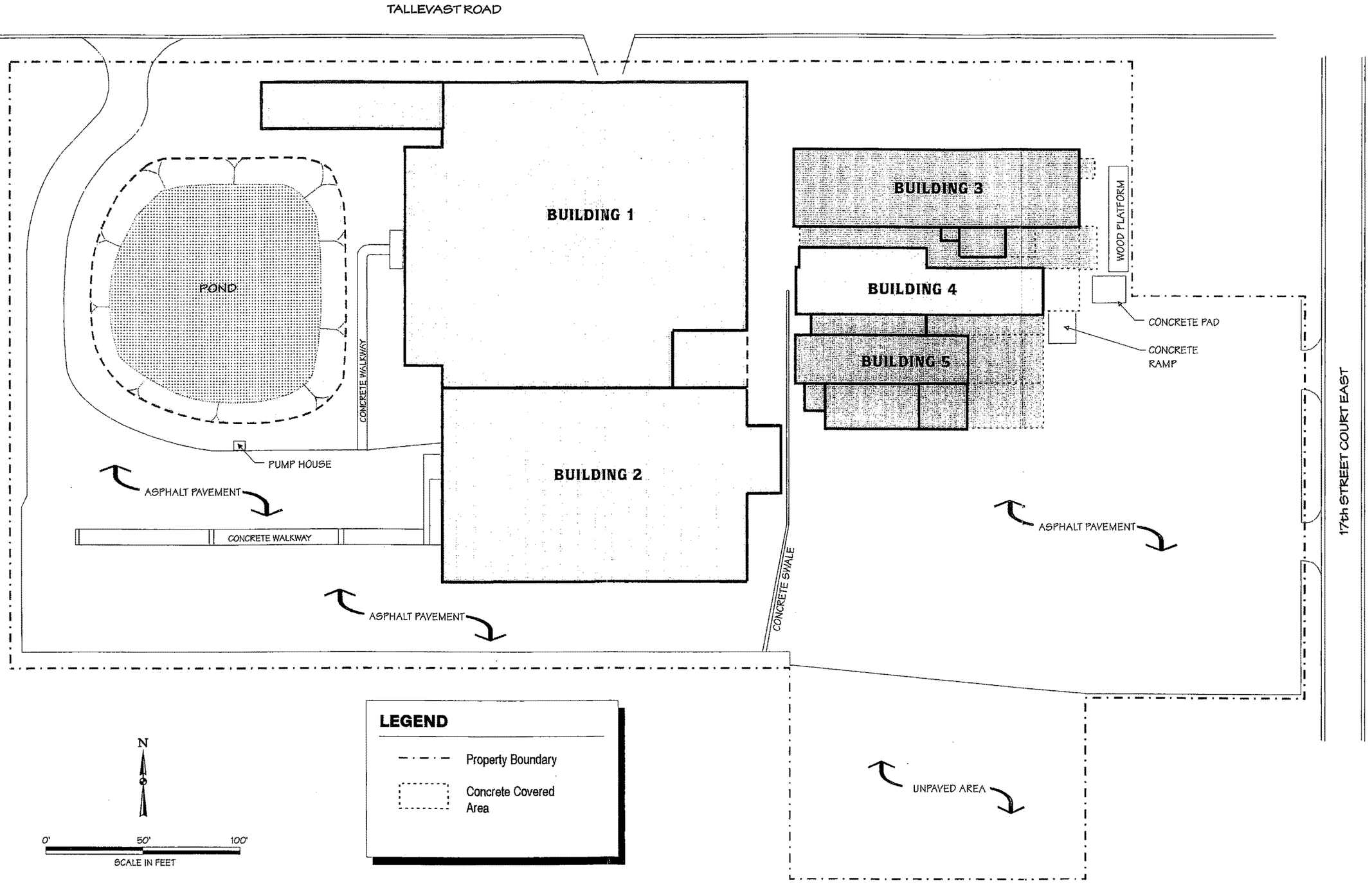
2.1 FACILITY DESCRIPTION

The former ABC facility is located at 1600 Tallevast Road in Tallevast, Manatee County, Florida - *See Figure 2-1.* The property consists of 5.167 acres of land including approximately 66,335 square feet of buildings and covered areas. The former ABC facility was used primarily as an ultra-precision machine parts manufacturing plant. The facility operations consisted of a machining and fabricating plant where metals including beryllium were milled, lathed, and drilled into various components. Operations at the former ABC facility were discontinued on September 27, 1997. The property is currently in the process of being converted to a non-beryllium use facility.

The facility consists of five main buildings, the largest of which is Building 1, followed in decreasing order of size by Buildings 2, 3, 5 and 4. Buildings 1, 2, and 3 were used for machining and inspection; Building 4 was used for wood working and material storage; and Building 5 was used for plating and anodizing, wastewater treatment, and material storage. Figure 2-2 presents an overview of the former ABC facility. Current floor plans for the major building areas are provided in Section 4.

FIGURE 2-1
SITE LOCATION MAP




TALLEVAST ROAD
POND
BUILDING 1
BUILDING 2
BUILDING 3
BUILDING 4
BUILDING 5
WOOD PLATFORM
CONCRETE PAD
CONCRETE RAMP
CONCRETE WALKWAY
PUMP HOUSE
ASPHALT PAVEMENT
CONCRETE WALKWAY
ASPHALT PAVEMENT
CONCRETE SWALE
ASPHALT PAVEMENT
17th STREET COURT EAST
UNPAVED AREA
N
0'
50'
100'
SCALE IN FEET
LEGEND
Property Boundary
Concrete Covered Area

2.2 SUMMARY OF DATA COLLECTED PRIOR TO FINAL ABATEMENT

Data collected prior to the final beryllium abatement activities at the former ABC facility include (1) baseline assessments of the Buildings 1, 2, and 3 beryllium machining areas. (2) interim abatement activities at the Buildings 1, 2 and 3 beryllium machining areas, and (3) the facility-wide beryllium assessment.

2.2.1 Baseline Assessments of Buildings 1, 2, and 3 Beryllium Machining Areas

In November 1996, Tetra Tech collected 28 wipe samples from various beryllium-machining areas to evaluate the potential presence and concentration of beryllium residues within the facility. Wipe samples were collected from residues on doors, walls, floors and other surfaces located in Buildings 1, 2 and 3. Beryllium was detected in all 28 samples at a maximum concentration of 871 $\mu g/ft^2$. Wipe sampling was not performed in Buildings 4 and 5.

Over a 4-day period from December 2 to 5, 1996, a total of 68 air samples were collected at the ABC facility to determine if beryllium was present in the breathing zone. The air samples were analyzed in accordance with National Institute of Occupational Safety and Health (NIOSH) Method 7300. Beryllium was not detected in any of the 68 samples collected from the site.

During a Facility Assessment conducted in June 1997, Tetra Tech collected 78 additional wipe samples from various equipment and features associated with the former beryllium machining operations. Wipe samples were collected from various ceiling materials (including ceiling tiles, grid, insulation), PVC pipe vacuum collection systems, and exhaust stacks in Buildings 1, 2, and 3. Additional wipe samples were collected from various floor drains and sumps located in Buildings 4 and 5 (only buildings with sumps and floor drains present). Beryllium was detected in all 78 wipe samples ranging from 4.1 to 120,000 $\mu g/ft^2$.

2.2.2 Interim Abatement and Decontamination of Buildings 1, 2, and 3 Beryllium Machining Areas

In September and October 1999, Tetra Tech conducted abatement of identified beryllium-impacted building materials within the Buildings 1, 2, and 3 machine shop areas to a self-determined cleanup level of 46.5 $\mu g/ft^2$. Three mechanical rooms in Building 1 were included in the abatement. In addition, six sumps and floor drains within Buildings 4 and 5 that reported beryllium above 46.5 $\mu g/ft^2$ were also flushed and decontaminated. Abatement actions consisted of the following:

- Removal of all ceiling materials, including drop ceiling tiles, grid, and insulation. HVAC ductwork was not removed;
- Removal of beryllium dust vacuum piping and exhaust stacks;
- Decontamination of all interior surfaces, including walls, floors, and exterior ceiling materials (light fixtures, HVAC ductwork). Interior HVAC ductwork was not decontaminated;
- Decontamination of six floor drains and sumps within Buildings 4 and 5.

Bulk materials were packaged (single bagged in six-millimeter thick polyethylene) and stored in a storage bin in preparation for disposal. Disposal was conducted in accordance with applicable federal regulations stated in 40 CFR Part 261 and state regulations provided in the Florida Administrative Code (FAC). In accordance with CFR and FAC waste classification criteria, the beryllium impacted materials and wastewater was not defined as a hazardous waste – *see Section 3*. Beryllium-impacted materials were transported and disposed of at the Manatee County landfill.

Interior building surfaces were decontaminated using pressure wash or wipe down methods. Decontamination water was transported as a non-hazardous waste to Clark Environmental's permitted treatment and recycling facility located in Mulberry, Florida.

Abatement was conducted in these areas until beryllium concentrations were reduced to below a surface wipe limit of 46.5 $\mu g/ft^2$. A summary description of the building areas, the method of

abatement (decontamination or removal), and the beryllium concentration ranges reported in the surface wipe samples is presented in Table 2-1.

Table 2-1

Summary of Interim Beryllium Abatement Program

Building Feature	Location	Abatement Action	Final Surface Wipe Concentration Range ($\mu g/ft^2$)
Ceiling Tile, Grid and Fiberglass	Building 1 Building 2 Building 3	Removal	Not Applicable
Other Ceiling Materials (light fixtures, exterior ductwork, etc.)	Building 1 Building 2 Building 3	Decontamination	 ND – 20.0 ND – 2.45
Exhaust Stacks / Piping	Building 1 Building 2 Building 3	Removal	Not Applicable
Walls	Building 1 Building 2 Building 3	Decontamination	ND – 40.4 ND – 32.8 ND – 1.01
Floors	Building 1 Building 2 Building 3	Decontamination	ND – 46.4 ND – 36.4 ND – 15.5
Building 5 Floor Drains	Floor Drain No.2 Floor Drain No.3 Floor Drain No.4	Decontamination	44.8 22.5 7.92
Building 5 Sumps	Sump No. 1 Sump. No.3 Sump No. 5	Decontamination	12.3 4.99 16.1

Air samples were collected from the abatement areas following the interim decontamination and surface wipe sampling. A total of five air samples were collected from Buildings 1, 2 and 3 (two samples from each building). Beryllium was not detected in any of the air samples.

2.2.3 Facility-Wide Beryllium Assessment

From September through November 1999, additional beryllium assessment was conducted in other areas of the former ABC facility where no data had previously been collected. Areas and building materials that were sampled for beryllium included the air conditioning system (supply and return ductwork and air handlers), office areas, mechanical rooms, Buildings 4 and 5, and the former Lancy treatment system and waste storage yards. A summary of the areas that were assessed and the beryllium concentration range in the materials is presented in Table 2-2.

Table 2-2

Summary of Facility-Wide Beryllium Assessment

Building	Area	Material	Number of Samples	Surface Wipe Concentration Range ($\mu g/ft^2$)
#1	Mechanical Room #1	A/C air handlers	3	302 – 828
#2	Mechanical Room #2	A/C air handlers	2	3.35 – 93.5
#1	Mechanical Room #3	A/C air handlers	2	83 – 1510
#1	Mechanical Room #4	A/C air handlers	2	133 – 3130
#3	Mechanical Room #5	A/C air handlers	3	8.3 – 4070
#3	Mechanical Room #6	A/C air handlers	2	57.4 – 929
#1	Machine Shops	Interior A/C ductwork	11	100 – 9110
#2	Machine Shops	Interior A/C ductwork	9	2.08 – 31.8
#3	Machine Shops	Interior A/C ductwork	4	4.32 – 16.8
#1 and #2	Office Areas	Walls	12	ND – 2.33
#1 and #2	Office Areas	Floors	6	19.5 – 952
#1 and #2	Office Areas	Ceiling materials	12	ND – 42.7
#1 and #2	Office Areas	Interior Ductwork	12	ND – 105
#2	Mechanical Room #2	Floors	3	56.2 – 139
#2	Mechanical Room #2	Walls	3	4.11 – 15.3
#2	Mechanical Room #2	Ceiling Materials	3	67.5 – 186
#2	Oil Storage / Transformer Room	Floors	3	877 – 1440
#2	Oil Storage / Transformer Room	Walls	3	19.2 – 358
#2	Oil Storage / Transformer Room	Ceiling Materials	3	2.57 – 12.4
#2	Loading Dock Office	Walls, floors, ceiling materials, HVAC ducts + vents	6	34.3 – 526
#1	Locker Room	Floors	3	18.4 – 581
#1	Locker Room	Walls	3	13.2 – 55.9
#1	Locker Room	Ceiling Materials	3	87.7 – 653
#1	Locker Room	HVAC ducts + vents	2	70.2 – 76.5
#3	Office Areas	Floors	3	6.34 – 115
#3	Office Areas	Walls	3	ND – 16.1
#3	Office Areas	Ceiling Materials	4	3.38 – 24.7
#3	Office Areas	HVAC ducts + vents	4	10.9 – 265
#3	Former Be Vacuum system, east side of building	Walls, floors, and ceiling materials	6	6.3 – 16000
#3	Oil / Coolant Storage Room	Floor	2	237 – 621
#3	Filter Press Shed / Cleaning Area	Walls, floors, ceiling materials	6	57.8 – 1360
#4	Process Rooms / Warehouse	Floors	4	321 –2100
#4	Process Rooms / Warehouse	Walls	5	ND –1870
#4	Process Rooms / Warehouse	Ceiling materials	2	28.2 – 66.3
#4	Process Rooms / Warehouse	HVAC ducts + vents	30	8.54 – 9.92
#5	Plating / Anodizing Rooms	Floors	4	6.50 – 263
#5	Plating / Anodizing Rooms	Walls	4	1.83 – 54.7
#5	Plating / Anodizing Rooms	Ceiling materials	3	22.1 – 110
#5	Plating / Anodizing Rooms	HVAC ducts + vents	4	44.5 – 115
#5	Former Lancy Treatment System, and hazardous waste areas	Walls, floors, ceiling materials, plating ducts	9	8.87 – 213
#5	Former chemical storage area	Floor	2	59.2 – 466

As presented in Section 3, the prospective purchaser of the property recommended using 25 $\mu g/ft^2$ as a site-specific surface cleaning standard for the ABC facility. For this reason, additional decontamination and abatement actions were conducted at the former ABC facility. The final decontamination and abatement activities are summarized in Sections 4 and 5.

Section 3

Evaluation of Published Regulatory Standards

3.1 SURFACE WIPE STANDARDS

No specific regulatory standards for beryllium in surface wipe samples have been published by federal, state or municipal regulatory agencies. The initial surface wipe limit of 46.5 $\mu g/ft^2$ recommended by Lockheed Martin was based on the range of surface wipe limits recommended or adopted at various DOE facilities (Tetra Tech, 1996). However, the environmental engineering consultant for the prospective purchaser (Law Environmental, Inc.) recommended using a a surface wipe cleaning standard of 25 $\mu g/ft^2$ for the ABC facility. At Lockheed Martin's request, a beryllium limit of 25 $\mu g/ft^2$ was established to identify areas for abatement.

No regulatory surface wipe criteria are available for chromium residues on building surfaces. Therefore, no cleanup standards were established for the ABC facility.

3.2 OSHA STANDARDS FOR WORKER PROTECTION

The Occupational Safety and Health Administration (OSHA) has published a permissible exposure limits (PEL) for beryllium as an airborne contaminant for worker protection. The OSHA mandated exposure limits are shown in Table 3-1.

Table 3-1

Exposure Limits for Beryllium

Compound	PEL 8-hour TWA	Ceiling Concentration	IDLH
Beryllium	0.002 mg/m^3	0.005 mg/m^3	4 mg/m^3

Source: Federal OSHA 29 CFR.1910.1000, Air Contaminants
National Institute for Occupational Safety and Health (NIOSH)
Notes: PEL - Permissible Exposure Limit
TWA - Time Weighted Average
IDLH - Immediately Dangerous to Life or Health

3.3 WASTE CLASSIFICATION AND DISPOSAL STANDARDS

A review of applicable federal regulations in 40 CFR Part 261 and the Florida Administrative Code (FAC) was conducted to determine the appropriate classification and disposal criteria for beryllium wastes generated during the decontamination and abatement program. Three types of wastes were generated: (1) bulk solid materials that contained beryllium residues (i.e., ceiling tiles, insulation, etc.); (2) bulk solid materials that contained chromium residues (i.e., Building 5 plating ductwork); and (3) wastewater from decontamination of building surfaces.

3.3.1 Beryllium Impacted Materials

In accordance with CFR and FAC waste classification criteria, beryllium residues on bulk materials do not meet the definition of a characteristic or listed hazardous waste. Beryllium residues are not corrosive, reactive, ignitable, or toxic. In addition, since the waste was generated during machining operations and is not commercial chemical beryllium powder, a P015 listing in 40 CFR Part 261.33(e) is not applicable.

3.3.2 Chromium Impacted Materials

In accordance with CFR and FAC waste classification criteria, chromium residues on the bulk materials do not meet the definition of a characteristic or listed hazardous waste. The chromium residues were not derived from any waste processes listed in the federal or state hazardous waste regulations. Chromium residues do not meet the definition of corrosive, reactive, or ignitable wastes. To determine toxicity, samples were collected from the materials and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP). The residues did not exceed the TCLP, indicating the materials are not hazardous by the toxicity characteristic - *see Section 4.2.7.*

3.3.3 Decontamination Wastewater

Wastewater generated from decontamination of the building materials are non-hazardous based on the classification criteria described in Sections 3.3.1 and 3.3.2.

Section 4
Beryllium Abatement Program

The following section describes the technical approach, scope of work and field methodology followed to complete the decontamination and abatement of beryllium impacted materials at the ABC facility. The abatement program was implemented from December 1999 through February 2000. Abatement activities were performed in accordance with Tetra Tech's Decontamination and Abatement of Beryllium Impacted Materials Work Plan, Former American Beryllium Company, dated November 30, 1999.

4.1 PROJECT APPROACH

In order to facilitate property transfer, a surface wipe limit of 25 $\mu g/ft^2$ was selected as a guideline for abatement to reduce the potential for airborne beryllium hazards at the former ABC facility. As described in Section 2.2, beryllium concentrations were detected above 25 $\mu g/ft^2$ in building materials throughout the facility. The abatement approach was to first remove beryllium-impacted materials that could not easily be decontaminated (ceiling materials, air handlers, HVAC ductwork, and carpets). Approximately 60 linear feet of ductwork associated with former plating and anodizing lines in Building 5 were also removed. Following removal of the materials, all accessible interior building surfaces (floors, walls, light fixtures, etc.) were subsequently decontaminated to below the beryllium cleanup level of 25 $\mu g/ft^2$. A summary of the abatement activities performed at the ABC facility is described in Table 4-1.

Table 4-1

Beryllium Impacted Areas and Final Abatement Actions[a]

Building Feature	Location	Abatement Action
Ceiling tiles, grid, fiberglass	Buildings 1, 2, 3 office areas, and Buildings 4 and 5	Removed
Other ceiling materials (light fixtures, etc.)	Buildings 1, 2, 3, 4, and 5	Decontaminated
HVAC ductwork	Buildings 1, 2, 3, 4, and 5	Removed
Air handlers[b]	Buildings 1, 2, 3, 4, and 5	Removed
Beryllium vacuum piping	Building 4	Removed
Carpeting	Buildings 1, 2, and 3 (primarily office areas)	Removed
Walls, floors and other interior surfaces (includes floors below carpeted areas)	Buildings 1, 2, 3, 4, and 5	Decontaminated
Former Be vacuum system	Building 3, east side of building	Decontaminated
Filter press shed	Building 3	Decontaminated
Former Lancy Treatment System and hazardous waste / chemical storage area	Building 5	Decontaminated
Plating ductwork	Building 5	Removed
Sumps / Floor drains	Buildings 3 and 5	Decontaminated

a – Abatement activities focused on beryllium. However, decontamination activities in the Building #5 plating areas were also intended to remove chromium residues.
b - Roof units were not removed.

Following abatement activities, clearance sampling was performed to document that the beryllium abatement objectives had been attained. Both surface wipe and air clearance samples were collected and compared to site-specific clearance criteria.

4.2 FIELD METHODOLOGY

A description of each major task associated with the abatement program is presented in the following subsections:

4.2.1 Work Area Preparation and Isolation

Prior to disturbance of impacted materials, a work enclosure and decontamination facility was installed at each work area. The enclosure consisted of a single layer of polyethylene on all walls and floors designated for decontamination and abatement. A negative air chamber containing a HEPA filter system was installed within each work area to prevent particulate migration to areas outside the enclosure. This system remained in operation until final clearance samples were collected to document that no airborne beryllium hazards were present.

A decontamination facility was located at the egress point of the work area. All personnel and equipment within the work area were decontaminated prior to egress. A waste load out area was constructed for the decontamination and load out of beryllium waste packages prior to disposal.

4.2.2 Removal and Decontamination of Beryllium Impacted Materials

All beryllium impacted ceiling tiles (includes grid and insulation), vacuum piping, HVAC ductwork, air handlers, and carpets were removed from the former ABC facility. Ductwork from the Building 5 plating area was also removed. Prior to and during bulk removal, the materials were misted with an encapsulant to prevent airborne dust emissions. The materials were packaged (single bagged in six-millimeter thick polyethylene) and stored in a storage bin in preparation for disposal.

Following removal of bulk materials, the interior surface areas (walls, floors, ceiling materials, sumps and floor drains) were decontaminated using pressure wash and wipe down methods. All surface areas were decontaminated to the beryllium action level of 25 $\mu g/ft^2$. Decontamination

water was collected and stored in a storage tank pending disposal. The tank was also used to store decontamination water generated from PPE cleaning.

4.2.3 Perimeter Air Monitoring during Abatement

During abatement and decontamination activities, perimeter air samples were collected to ensure and document that no fugitive beryllium emissions were released outside the containment area. The samples were collected using personal air sampling pumps that flowed at 3 liters per minute. Two perimeter air samples were collected during each work day; one sample was collected at the entrance to the work enclosure area; and one sample was collected at the HEPA filter exhaust. All perimeter air samples were analyzed for beryllium using either NIOSH Method 7300 or USEPA Method 6010A.

4.2.4 Clearance Wipe Sampling

Following decontamination of the building surfaces, clearance wipe samples were collected to ensure that the action level of 25 $\mu g/ft^2$ had been attained. When a swipe sample exceeded the 25 $\mu g/ft^2$ cleanup level, the surrounding area out to the nearest clean sampling point was re-cleaned. The area was then resampled to confirm that cleanup standards were attained.

Representative samples were collected from each area and material type that was decontaminated. Sample frequencies and locations in the major buildings (Buildings 1, 2, 3, 4, and 5) were determined using the following general methodology for each material type. For walls and floors, 8 samples were collected per 100 ft. x 100-ft. area (total 10,000-ft^2 area). For ceiling light fixtures, samples were collected at a rate of 8 per 100 fixtures (8% of the total fixtures counted at the facility). Samples were also collected from miscellaneous areas with different material types. Samples were collected throughout the buildings to provide adequate geographic coverage for each material type. Figures 4-1 through 4-12 present the surface wipe sampling locations. A summary of the clearance sampling counts for each building is provided below:

Building 1 clearance samples

1. Floor samples – Building 1 contains approximately 18,000 ft^2 of floors in the former machining areas, and 4,500 ft^2 in the former office areas. Based on the estimated square footage, 14 clearance samples were collected from the former machining areas and 5 were collected from the former office areas – *see Figure 4-1.*

2. Wall samples - Building 1 contains approximately 13,685 ft^2 of walls in the former machining areas, and 16,500 ft^2 in the former office areas. Based on the estimated square footage, 14 clearance samples were collected from the former machining areas and 10 were collected from the former office areas – *see Figure 4-2.*

3. Ceiling light fixture samples – Building 1 contains approximately 268 light fixtures. Based on the estimated light fixture count, 18 clearance samples were collected from Building 1 (9 from the former machining areas and 9 from the former office areas) - *see Figure 4-3.*

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 1 include Mechanical Room #1, Mechanical Room #3, Mechanical Room #4, the locker room, and the oil storage area. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - *see Figures 4-1 through 4-3.*

Building 2 clearance samples

1. Floor samples – Building 2 contains approximately 11,000 ft^2 of floors in the former machining areas, and 5,250 ft^2 in the former office and engineering areas. Based on the estimated square footage, 9 clearance samples were collected from the former machining areas and 5 were collected from the former office and engineering areas – *see Figure 4-4.*

2. Wall samples - Building 2 contains approximately 19,950 ft^2 of walls in the former machining areas, and 8,200 ft^2 in the former office and engineering areas. Based on the

estimated square footage, 17 clearance samples were collected from the former machining areas and 7 were collected from the former office and engineering areas – *see Figure 4-5*.

3. Ceiling light fixture samples – Building 2 contains approximately 158 light fixtures in the former machining areas, and 107 light fixtures in the former office and engineering areas. Based on the estimated light fixture count, 12 clearance samples were collected from the former machining areas and 9 were collected from the former office and engineering areas *see Figure 4-6*.

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 2 include Mechanical Room #2 and the former loading dock office. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - s*ee Figures 4-4 through 4-6*.

Building 3 clearance samples

1. Floor samples – Building 3 contains approximately 6,000 ft^2 of floors in the former machining and office areas. Based on the estimated square footage, 5 clearance samples were collected from the machining and office areas. A wipe sample was also collected from a floor drain and a sump in the building – *see Figure 4-7*.

2. Wall samples - Building 3 contains approximately 9,645 ft^2 of walls in the former machining and office areas. Based on the estimated square footage, 8 clearance samples were collected from the machining and office areas – *see Figure 4-8*.

3. Ceiling light fixture samples – Building 3 contains approximately 89 light fixtures in the former machining and office areas. Based on the estimated light fixture count, 8 clearance samples were collected from the former machining and office areas - *see Figure 4-9*.

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 3 include Mechanical Room #5 (also referred to as oil/coolant storage room), a former

filter press shed, and a former beryllium vacuum system shed. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - s*ee Figures 4-7 through 4-9.*

Buildings 4 and 5 clearance samples

1. Floor samples – Buildings 4 and 5 contains approximately 8,085 ft^2 of floors in the former laboratory and process areas. Based on the estimated square footage, 7 clearance samples were collected from the former laboratory and process areas. A wipe sample was also collected from a floor drain in Building 5 – *see Figure 4-10.*
2. Wall samples - Buildings 4 and 5 contain approximately 8,305 ft^2 of walls in the former laboratory and process areas. Based on the estimated square footage, 7 clearance samples were collected from the machining and office areas – *see Figure 4-11.*
3. Ceiling light fixture samples – Buildings 4 and 5 contain approximately 100 light fixtures in the former laboratory and process areas. Based on the estimated light fixture count, 8 clearance samples were collected from the former laboratory and process areas - *see Figure 4-12.*
4. Samples from miscellaneous areas – Additional rooms and areas sampled in Buildings 4 and 5 include the former treatment system and chemical storage area located east of the building. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from this area - s*ee Figures 4-10 through 4-12.*

The clearance swipe samples were collected using laboratory supplied wipe media templates. A 12-inch by 12-inch area was first outlined on the sampled surface. The samples were then collected by applying an "S" shaped motion once with its entire surface and then again in the opposite direction with a half-folded surface. Each wipe sample was then folded once more and placed in separate vial containers. Disposable surgical gloves were used to prevent cross

contamination of the samples. The samples were analyzed for beryllium using EPA Method 6010A. The chromium samples were analyzed using EPA Method 6010A.

4.2.5 Clearance Air Sampling

Clearance air samples were collected from each building to ensure that no airborne beryllium hazards exist following decontamination. The samples were collected using personal air sampling pumps that flowed at approximately 3 liters per minute. The samples were collected at positions ranging from 4 to 6 feet above ground surface to simulate the breathing zone of future facility occupants. The following number of clearance samples were collected from each building:

Table 4-2

Summary of Air Clearance Samples

Building Number	Number of Air Samples
1	6
2	6
3	2
4	2
5	2

Sampling pumps were calibrated before and after the sampling events. The air samples were analyzed for beryllium using NIOSH Method 7300 or USEPA Method 6010A. Air clearance sample locations are shown on Figures 4-13 through 4-16.

4.2.6 Disposal of Beryllium Impacted Materials

The beryllium impacted bulk materials and wastewater were disposed of in accordance with applicable CFR and FAC waste classification criteria. As outlined in Section 3.3, the beryllium residues on the bulk materials do not meet the definition of a characteristic or listed hazardous waste and were therefore not disposed of as a hazardous waste. The bulk materials were transported to the Manatee County landfill.

As outlined in Section 3.3, the decontamination water was also determined to be non-hazardous. The decontamination water was therefore transported as a non-hazardous waste to Clark Environmental's permitted treatment and recycling facility located in Mulberry, Florida.

4.2.7 Removal and Disposal of Chromium Impacted Plating Ductwork

Approximately 60 linear feet of ductwork associated with former plating and anodizing lines in Building 5 and the former treatment storage area were removed. Prior to disposal, the ductwork was cut into sections and then decontaminated to remove visible residues and stains. To determine if the materials were a hazardous waste, a bulk sample was collected from the ductwork and analyzed for chromium using the TCLP method. The sample reported a concentration of 2.5 mg/L of chromium, which is below the chromium toxicity criterion of 5 mg/L. The bulk materials were subsequently transported as a non-hazardous waste to the Manatee County landfill.

Following removal of the ductwork from Building 5 and the former treatment storage area, the interior surfaces (walls, floors, ceilings) were decontaminated in accordance with the methods prescribed in Section 4.2.2. Surface wipe samples were collected from the building surfaces to document post-decontamination chromium concentrations. No wipe sample criteria were identified for chromium.

4.3 SUMMARY OF ANALYTICAL DATA

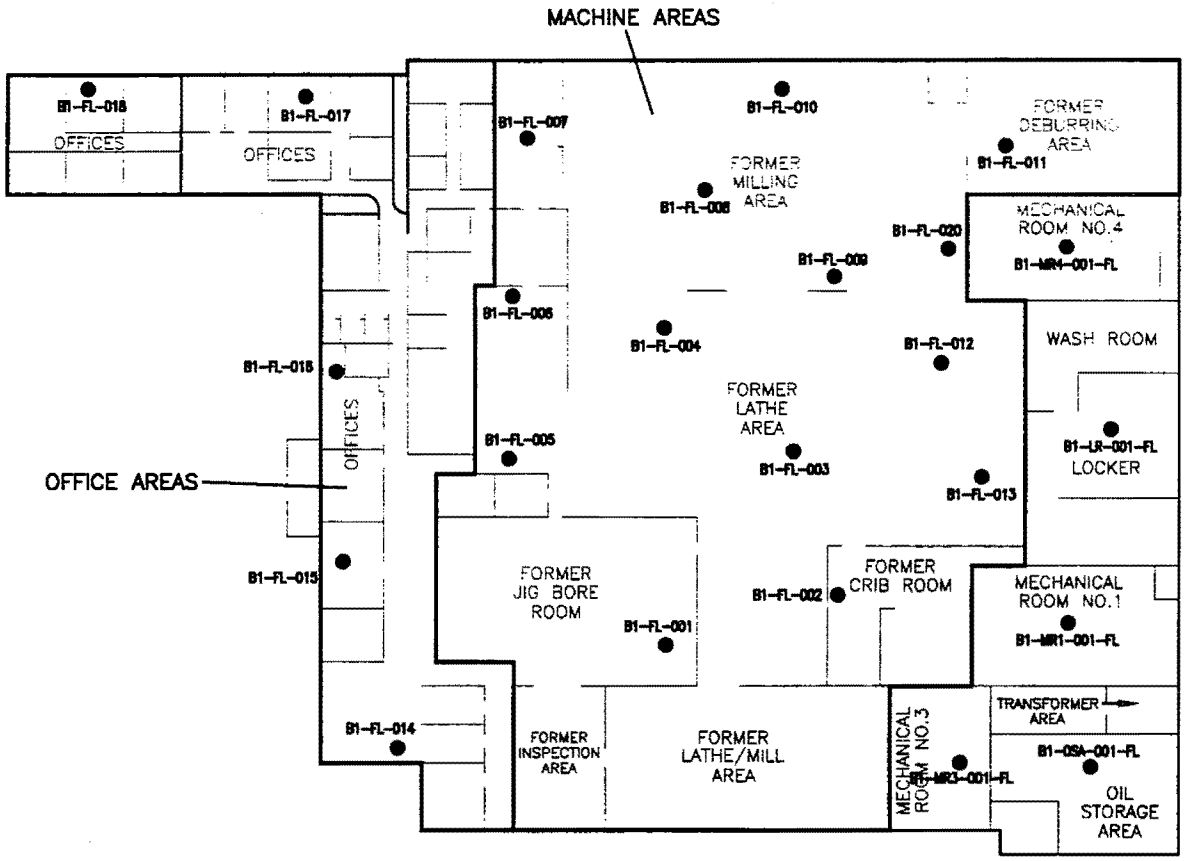
4.3.1 Surface Wipe Sampling Data

Surface wipe samples were collected during and after abatement to document that the site-specific beryllium cleanup standard of 25μg/ft^2 was attained. All final clearance samples show that the surface cleaning standards have been attained. Copies of the laboratory data reports are presented in Appendix A. A summary of the final beryllium clearance data is presented in Table 4-3 on pages 4-27 to 4-29. A summary of the chromium surface wipe data is presented in Table 4-4 on page 4-30.

4.3.2 Air Clearance Sampling Data

Air clearance samples were collected after abatement to document that airborne beryllium concentrations within the buildings did not exceed OSHA's 0.002 mg/m^3 PEL. All air clearance samples did not report concentrations above the detection limit of 0.00005 mg/m^3. Copies of the laboratory data reports are presented in Appendix A. A summary of the final clearance data is presented in Table 4-4 on page 4-29.

FIGURE 4-1
BUILDING 1 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



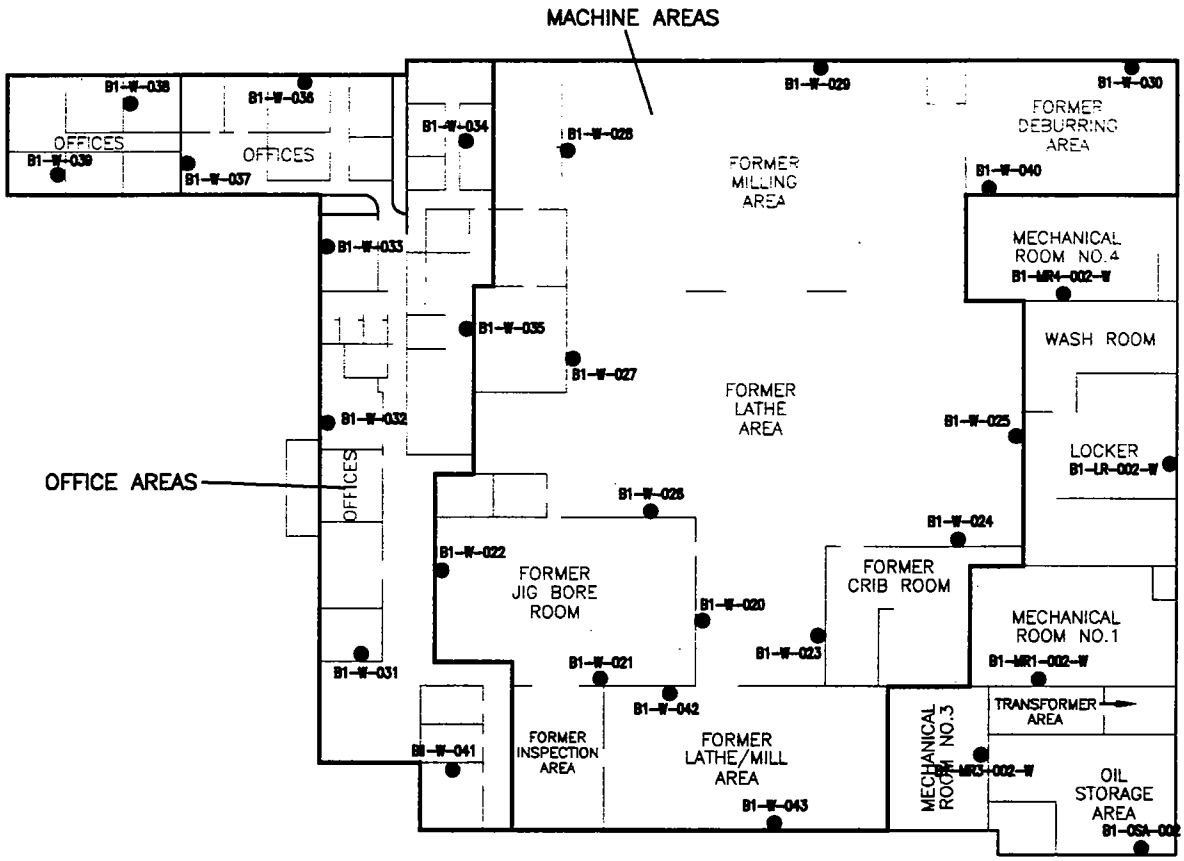
LEGEND

● B1-FL-001 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-2
BUILDING 1 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



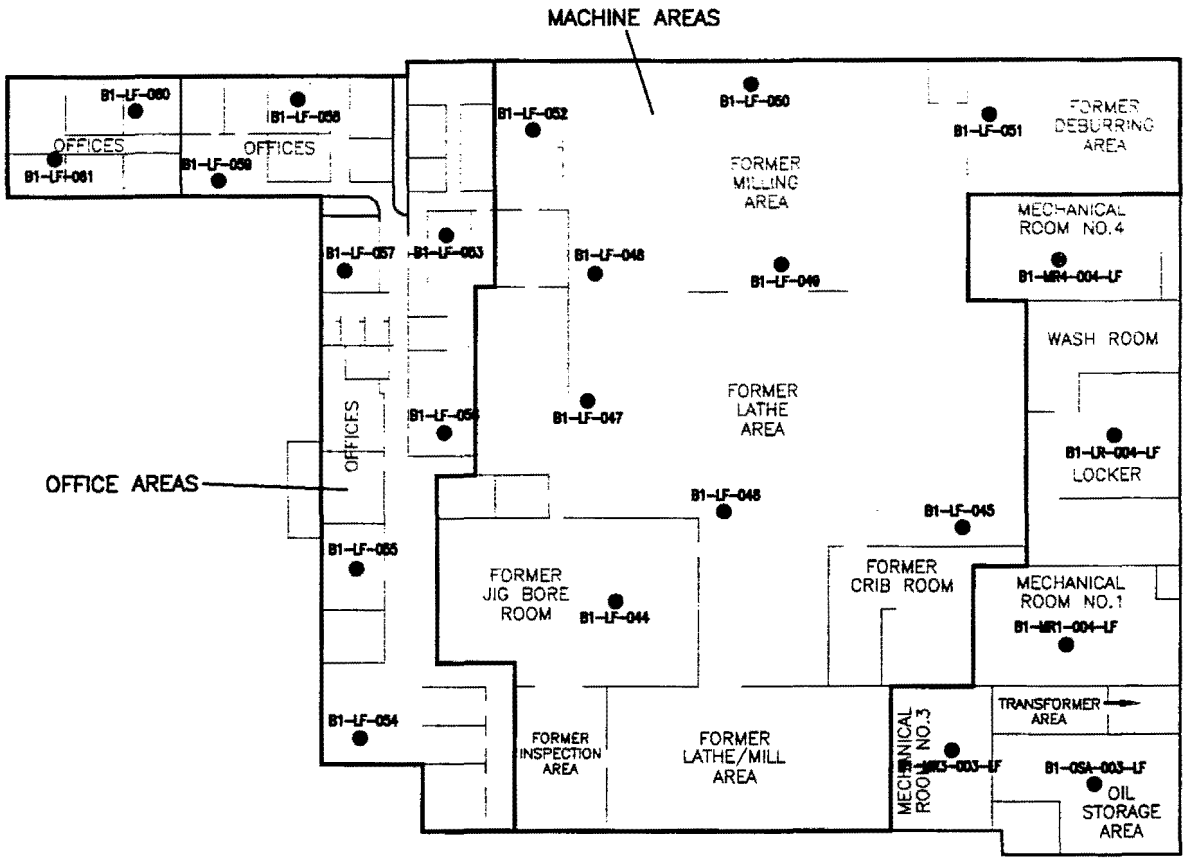
LEGEND

● B1-W-021 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-3
BUILDING 1 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



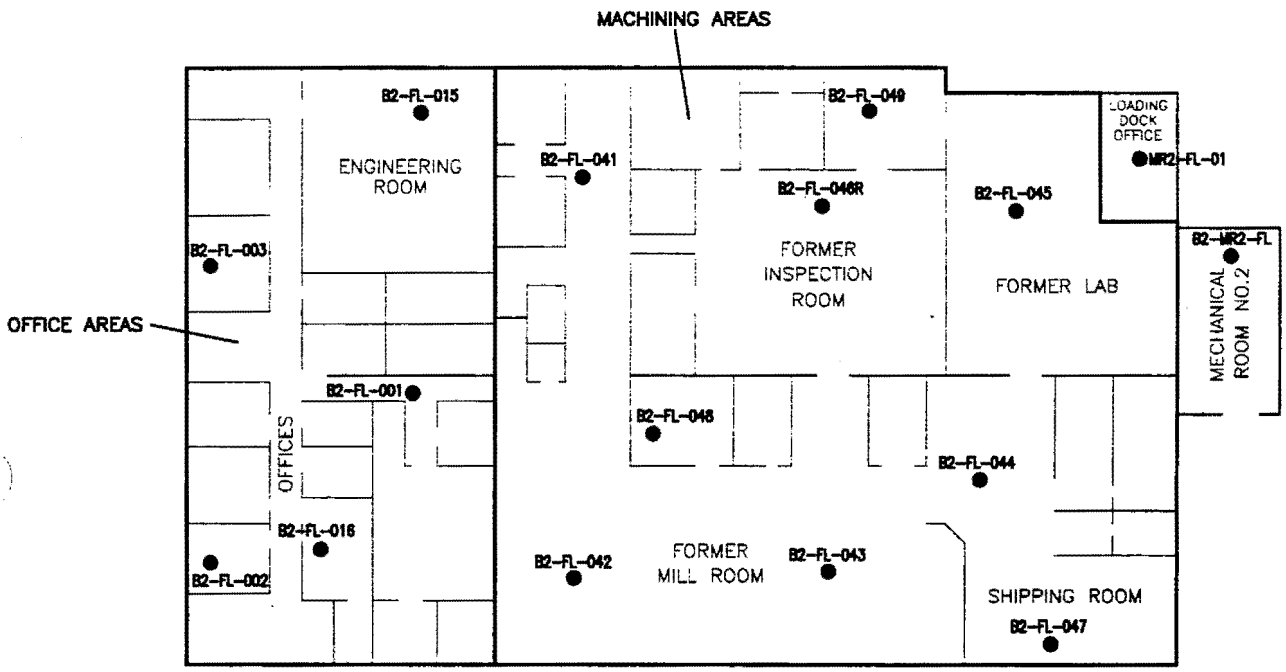
LEGEND

● B1-LF-044 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-4
BUILDING 2 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



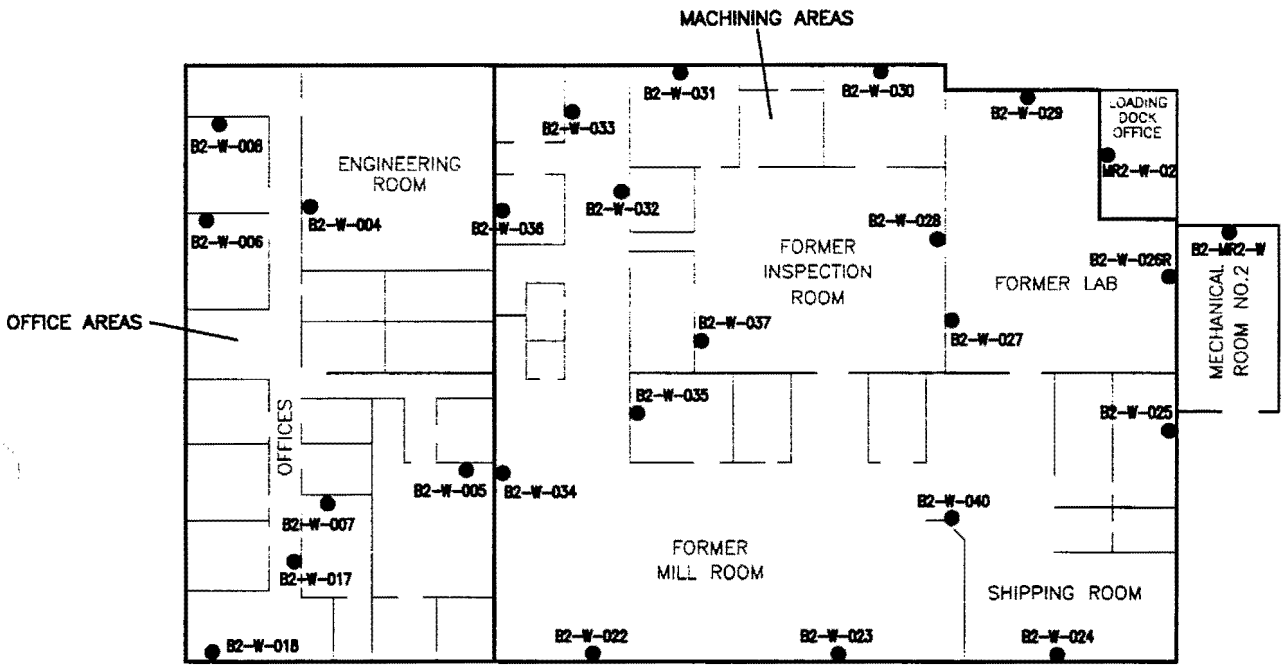
LEGEND

● B2-FL-042 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-5
BUILDING 1 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



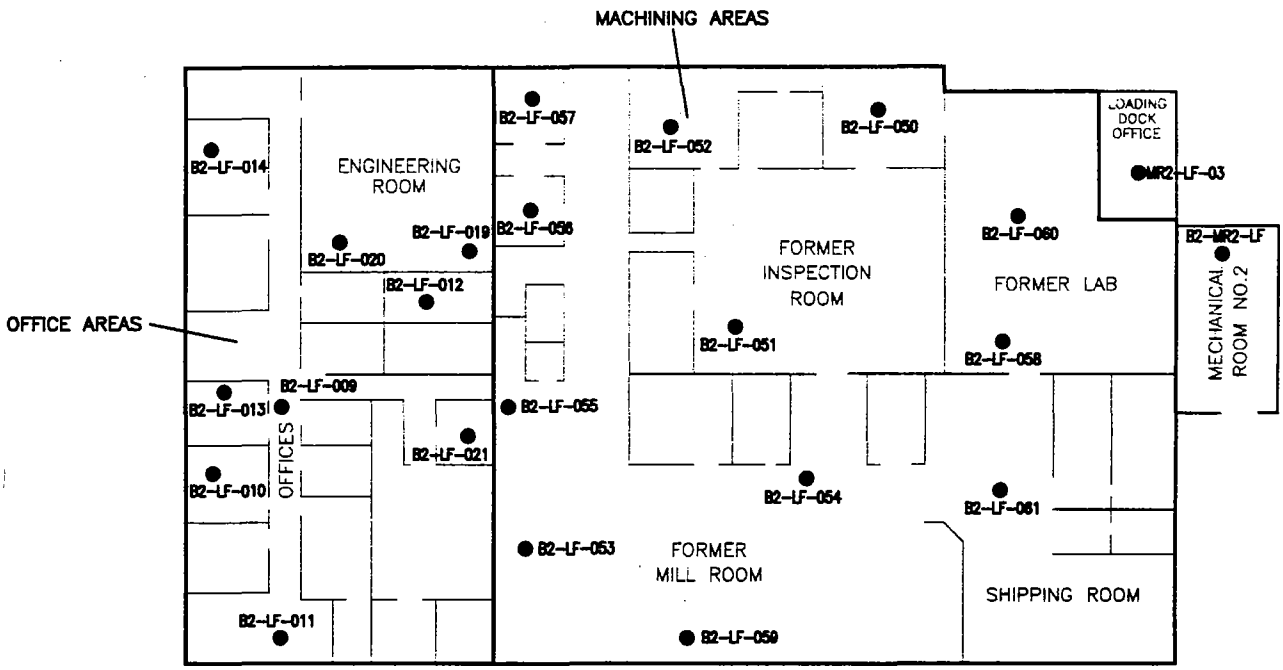
LEGEND

● B2-W-022 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-6
BUILDING 2 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



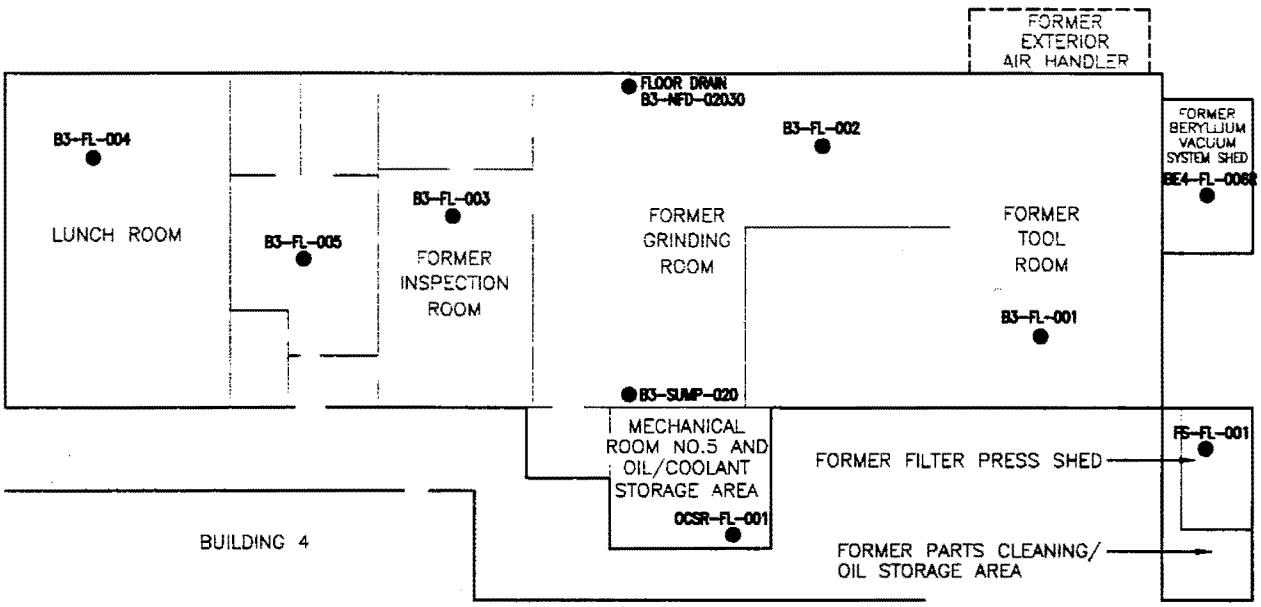
LEGEND

● B2-LF-051 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-7
BUILDING 3 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



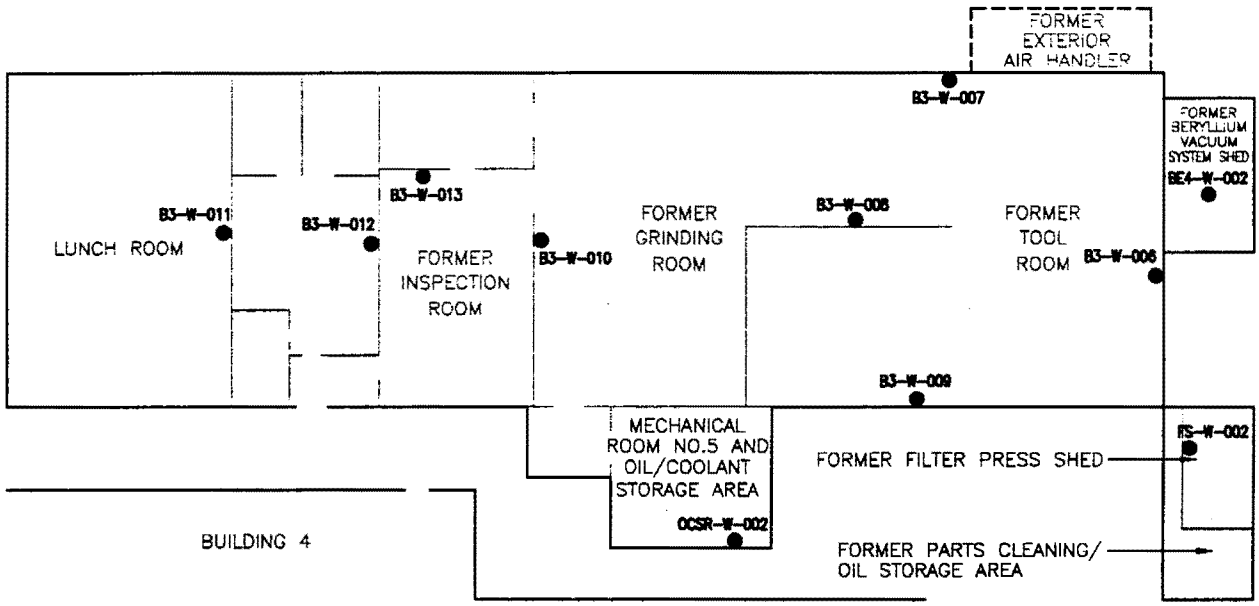
LEGEND

● B3-FL-001 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-8
BUILDING 3 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



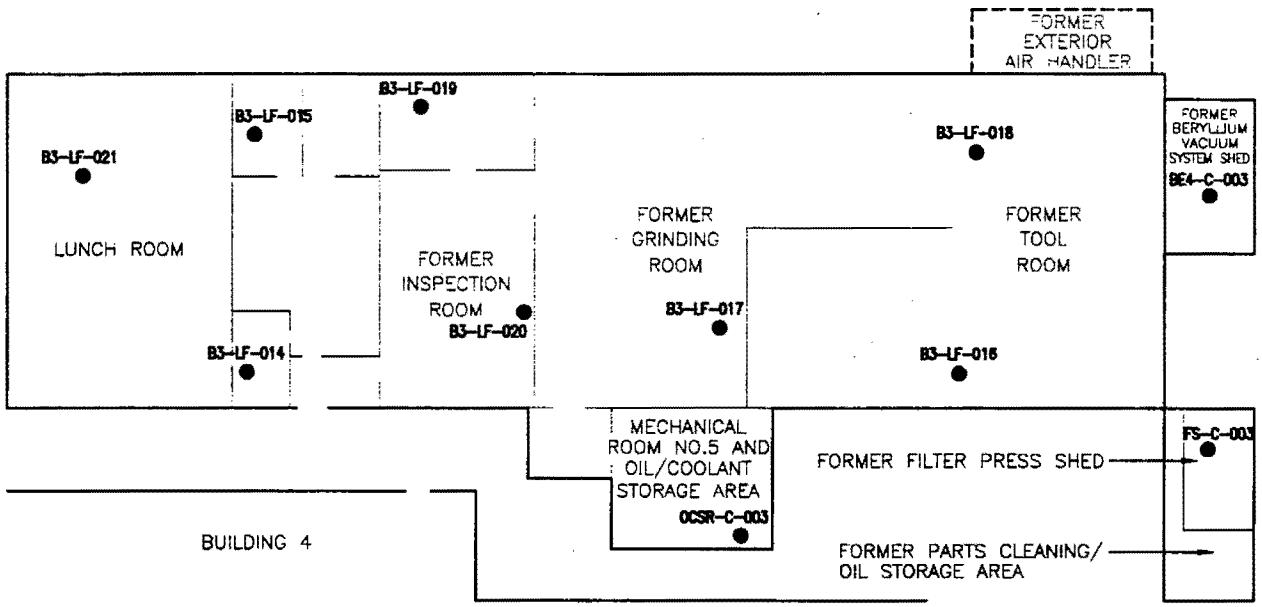
LEGEND

● B3-W-006 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-9
BUILDING 3 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



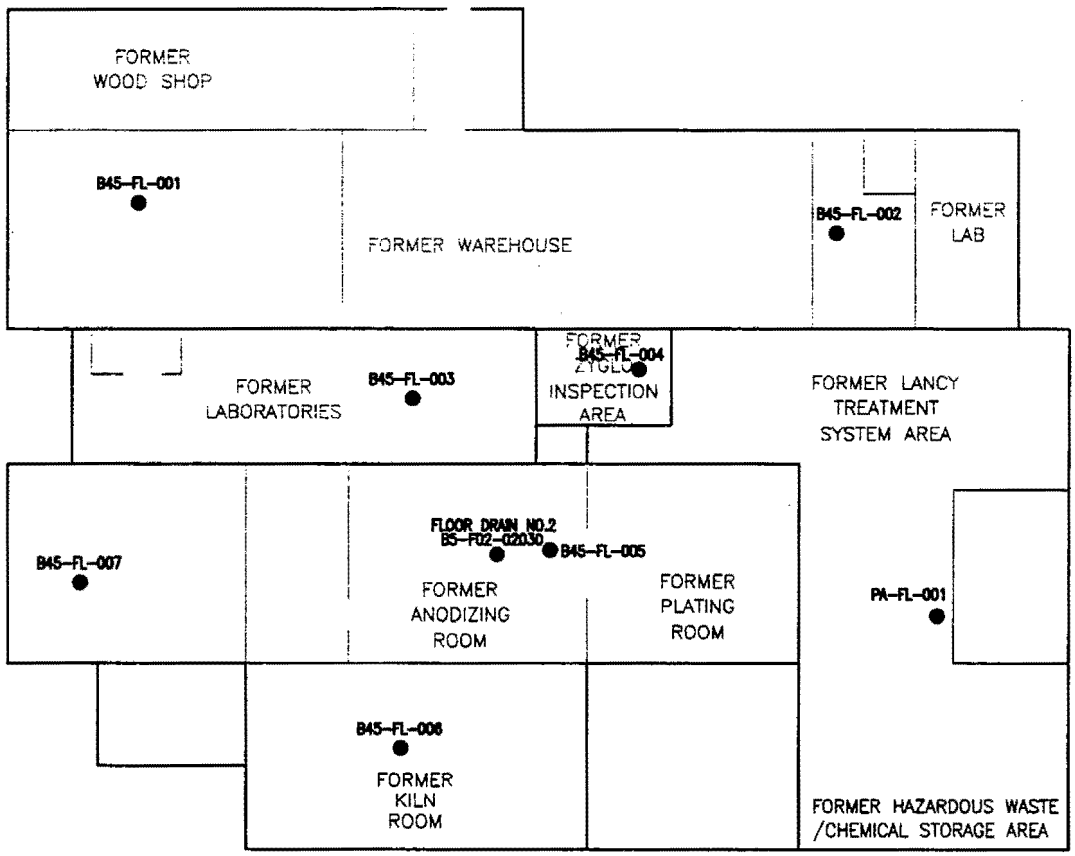
LEGEND

● B3-LF-014 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-10
BUILDING 4 & 5 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



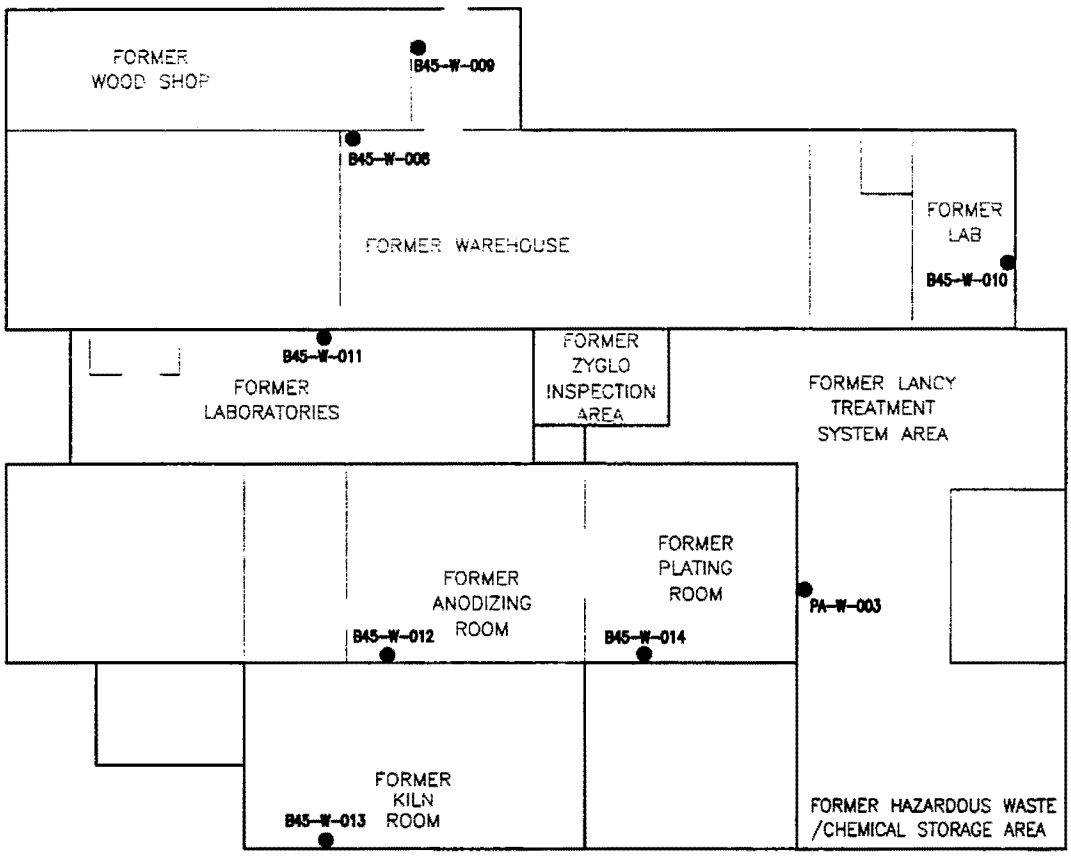
LEGEND

● B45-FL-001 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-11
BUILDING 4 & 5 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



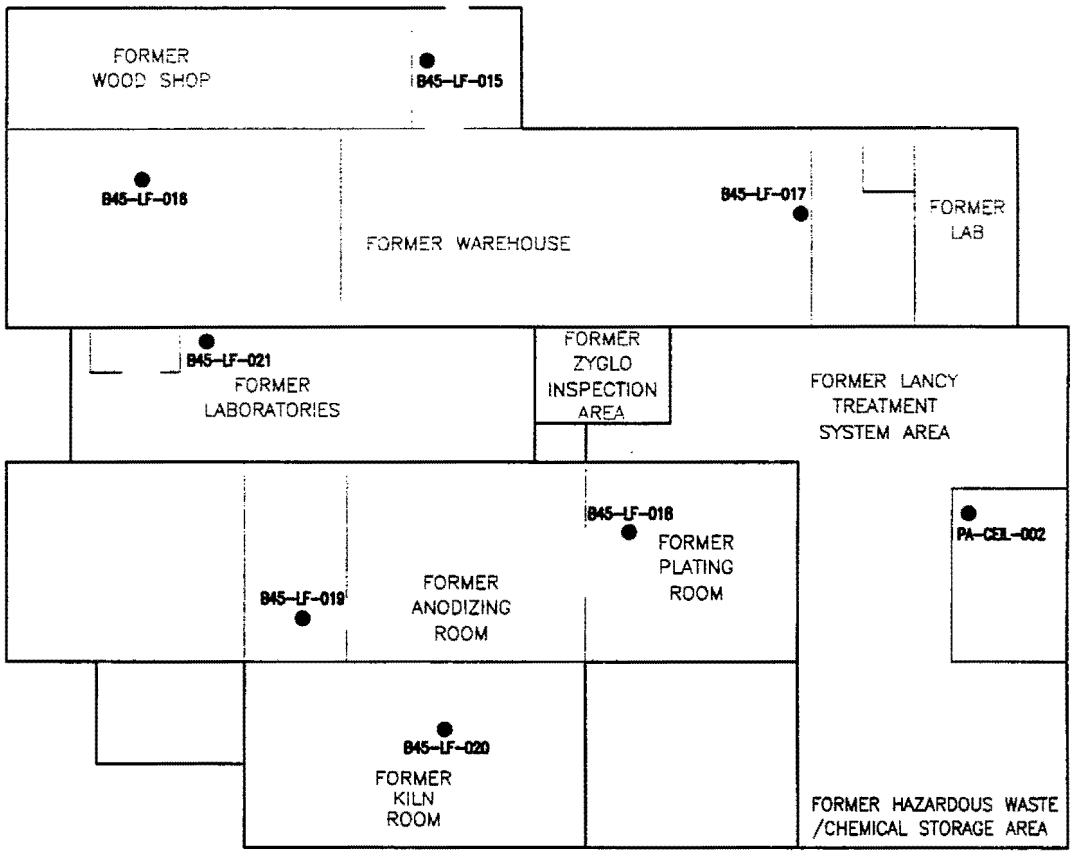
LEGEND

● B45-W-008 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-12
BUILDING 4 & 5 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



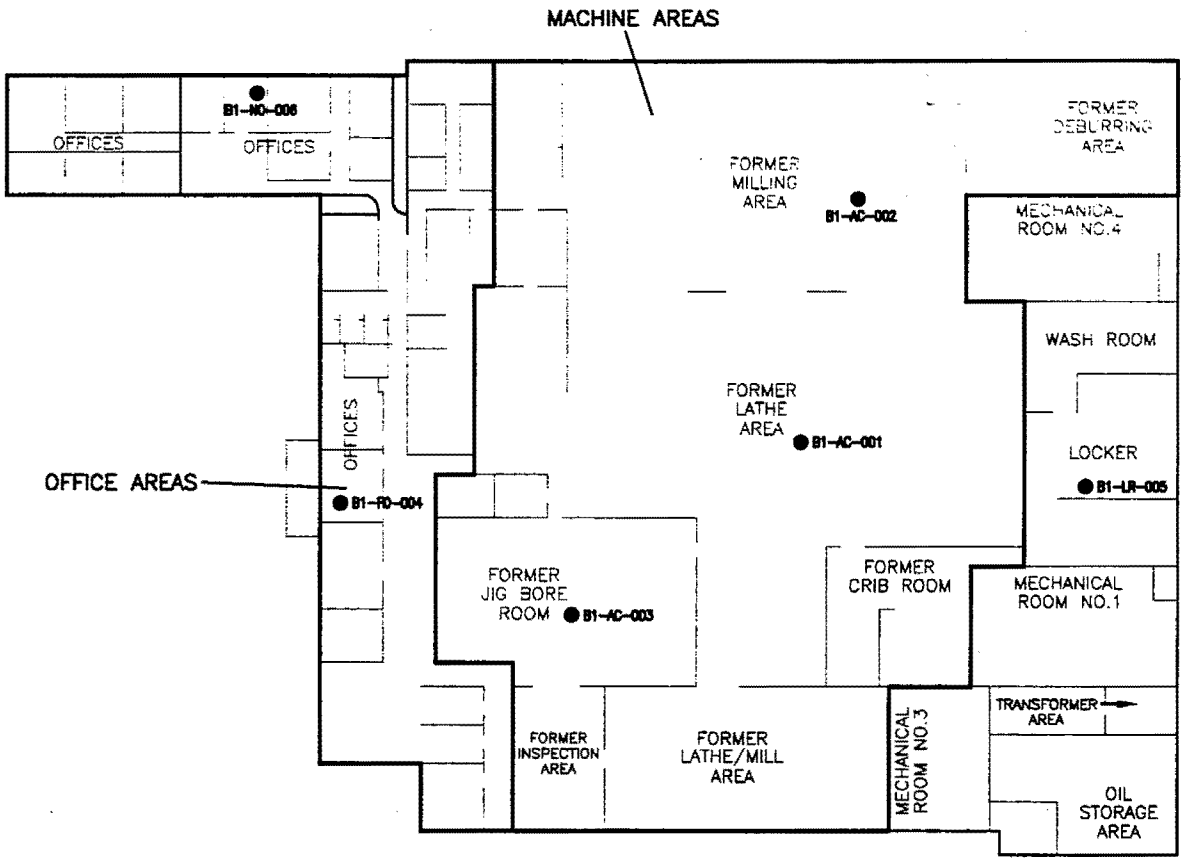
LEGEND

● B45-LF-015 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-13
BUILDING 1
AIR CLEARANCE SAMPLE LOCATIONS



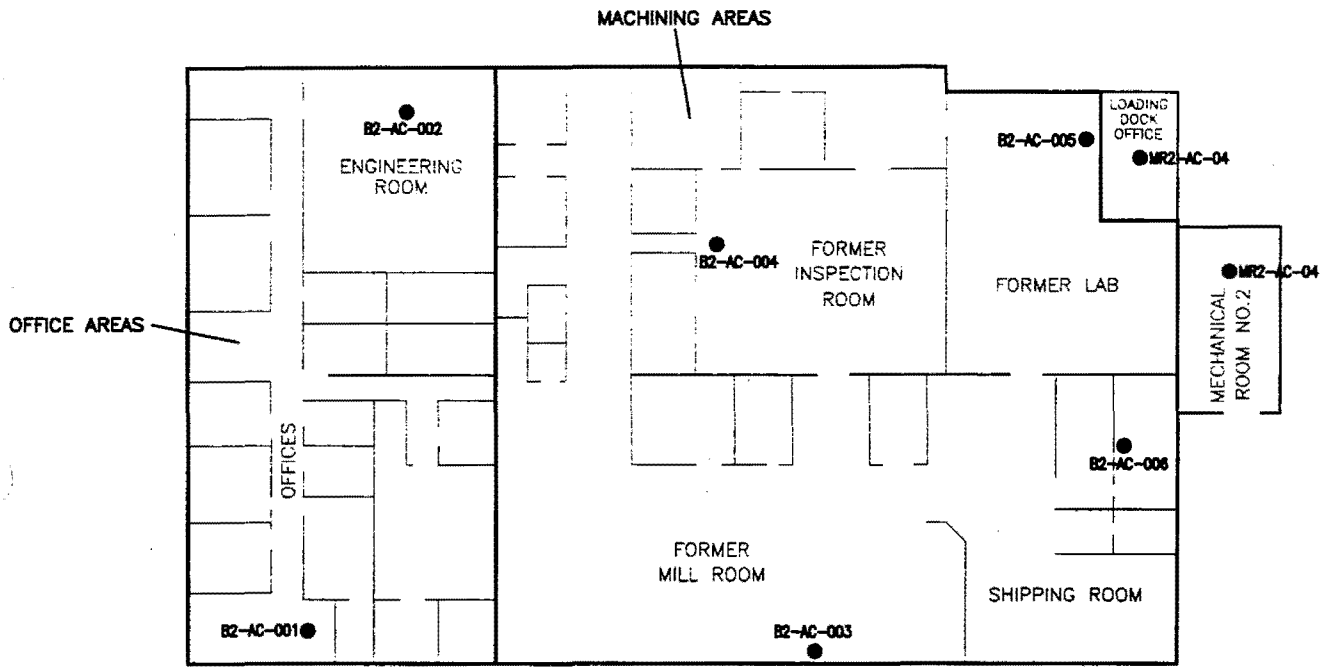
LEGEND

● B1-NO-006 AIR CLEARANCE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-14
BUILDING 2
AIR CLEARANCE SAMPLE LOCATIONS



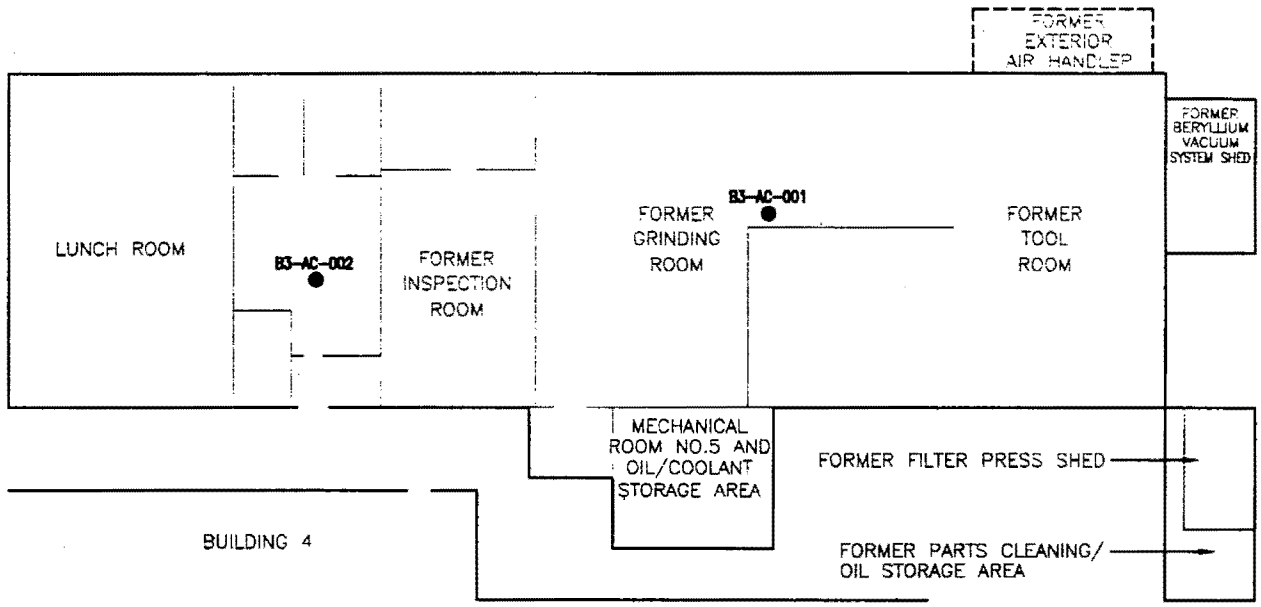
LEGEND

● B2-AC-001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-15
BUILDING 3
AIR CLEARANCE SAMPLE LOCATIONS



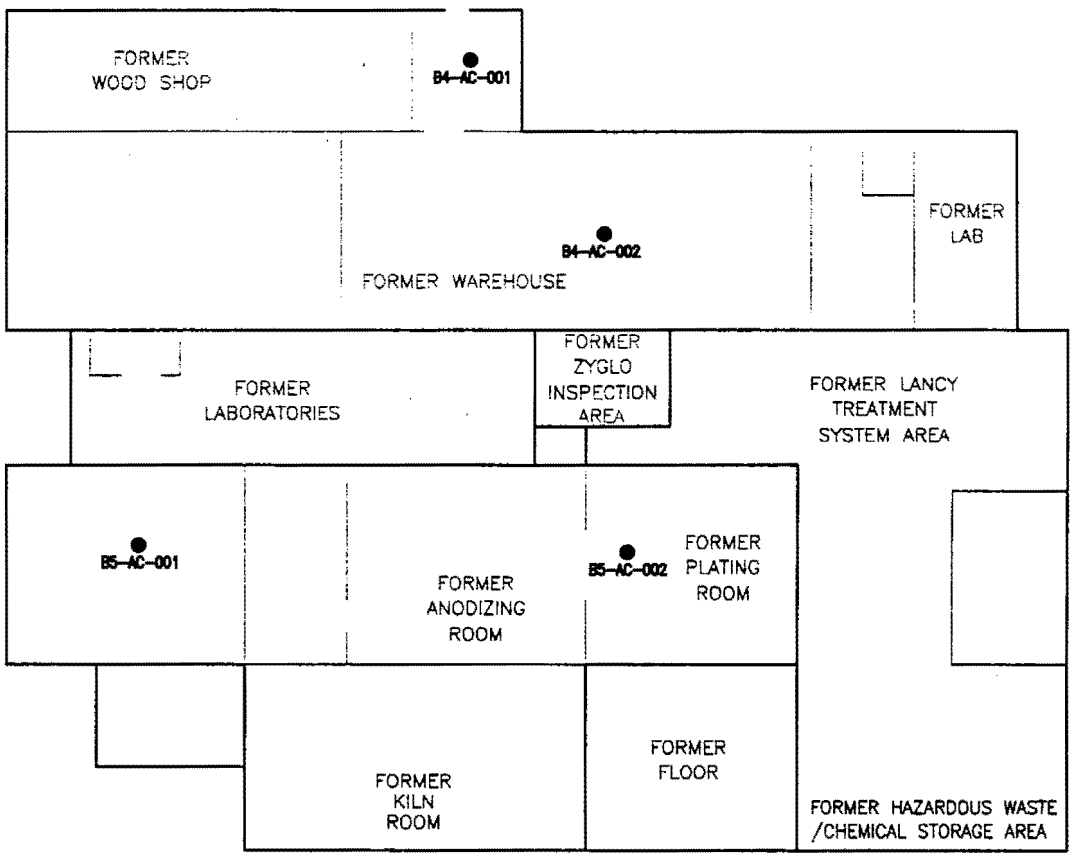
LEGEND

● B3–AC–001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-16
BUILDING 4 & 5
AIR CLEARANCE SAMPLE LOCATIONS



LEGEND

● B4-AC-001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

Table 4-3
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range (µg/ft²)
Ceiling Tiles, grid, and fiberglass	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
HVAC ductwork	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Air handlers	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Former beryllium vacuum system shed and beryllium vacuum piping	Building #3 (tub from shed) Building 4 (vacuum piping)	Removal	Not Applicable	Not Applicable
Carpeting	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Floors	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 5 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - 0.14 – 5.3 - 0.5 – 3.6 - 21.24 - 5.35 - 17.64 - 18.76 - 0.19
	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - 0.34 – 13.28 - ND – 5.13 - 0.38 - 1.85
	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5 - Floor drain - Sump	Decontamination	Building #3 - 5 samples - 1 sample - 1 sample - 1 sample - 1 sample - 1 sample	Building #3 - 0.09 – 4.5 - 0.06 - ND - 1.24 - 1.18 - 1.03
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area - Floor drain #2	Decontamination	Buildings #4 and #5 - 7 samples - 1 sample - 1 sample	Buildings #4 and #5 - 0.85 - 6 - ND - 1.03

Table 4-3 (continued)
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range ($\mu g/ft^2$)
Walls	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 9 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - ND – 16.08 - 0.05 – 3.1 - 4.35 - 4.39 - 1.36 - 1.4 - 0.20
	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - ND – 0.86 - 0.07 – 0.53 - 0.57 - 0.42
	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5	Decontamination	Building #3 - 8 samples - 1 sample - 1 sample - 1 sample	Building #3 - ND – 1.76 - 4.7 - ND - 5.25
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area	Decontamination	Buildings #4 and #5 - 7 samples - 1 sample	Buildings #4 and #5 - 0.09 – 4.38 - 0.23
Light fixtures and other ceiling materials	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 9 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - 0.05 – 8.0 - 0.05 – 3.35 - 13.08 - 5.92 - 13.72 - 6.2 - 0.10

Table 4-3 (continued)
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range (µg/ft²)
Light fixtures and other ceiling materials	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - ND – 0.86 - 0.07 – 0.53 - 0.57 - 0.42
Light fixtures and other ceiling materials (Continued)	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5	Decontamination	Building #3 - 8 samples - 1 sample - 1 sample - 1 sample	Building #3 - 0.23 – 9.0 - 1.44 - 0.19 - 0.12
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area	Decontamination	Buildings #4 and #5 - 8 samples - 1 sample	Buildings #4 and #5 - 0.81 – 6.6 - 1.71

ND – Not Detected.

Table 4-4
Summary of Beryllium Air Clearance Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Sample Type	Location	No. of Samples	Beryllium Air Concentration Range (mg/m³)
Air Filter Media	Building #1	6	All samples reported < 0.00005
Air Filter Media	Building #2	6	All samples reported < 0.00005
Air Filter Media	Building #3	2	All samples reported < 0.00005
Air Filter Media	Buildings #4 and #5	4	All samples reported < 0.00005

Table 4-5
Summary of Plating Ductwork Abatement Actions and Chromium Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Chromium Surface Wipe Concentration Range ($\mu g/ft^2$)
Plating ductwork	Building #5	Decontamination and Removal	Not Applicable	Not Applicable
Floors	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 5 samples - 1 sample	Building #5 - 3.32 – 64.15 - ND
Walls	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 4 samples - 1 sample	Building #5 - 0.16 – 3.27 - 0.3
Light fixtures and other ceiling materials	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 5 samples - 1 sample	Building #5 - 1.41 – 33.83 - 13.33

Section 5
Conclusions

Beryllium-impacted ceiling materials (tiles, grid, insulation), HVAC ductwork, air handlers, carpets, and Building 5 plating ductwork were removed and disposed of in accordance with appropriate federal and state disposal criteria. Clearance swipe samples collected after final decontamination and abatement activities were all less than the surface swipe criteria of 25 $\mu g/ft^2$. Air clearance samples reported that airborne beryllium concentrations were below OSHA's 0.002 mg/m^3 PEL. Based on the results of the abatement program, all beryllium abatement objectives were achieved. With concurrence from Law Environmental, Inc., no further action is required, and all buildings are considered suitable for occupancy.

Section 6
References

1. Department of Energy, Chronic Beryllium Disease Prevention Program; Proposed Rule. Federal Register, December 3, 1998.

2. Tetra Tech, Inc Recommendations for Surface Wipe Concentration Limits for Beryllium - American Beryllium Facility, December 19, 1996.

3. Tetra Tech, Inc., Air and Wipe Sampling at Lockheed Martin's Former American Beryllium Company, January 1997.

4. Tetra Tech Inc., Final Phase 1 Environmental Assessment, Former American Beryllium Company, 1600 Tallevast Road, Tallevast, Florida, February 7, 1997.

5. Tetra Tech, Inc., Facility Assessment - Former American Beryllium Company, July 28, 1997.

6. Tetra Tech Inc., Work Plan, Decontamination and Abatement of Beryllium Impacted Materials, Former American Beryllium Company, 1600 Tallevast Road, Tallevast, Florida, November 30, 1999.

7. Tetra Tech Inc., Final Work Plan, Decontamination and Abatement of Beryllium Impacted Materials, Former American Beryllium Company, 1600 Tallevast Road, Tallevast, Florida, August 19, 1999.

8. U.S. Environmental Protection Agency, Code of Federal Regulations, Protection of Environment, 40 CFR Part 261,July1997

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 **Fax:** 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-FILTERS
Air Filter Analysis

RECEIVED DATE: 03-JAN-00
PO#:

PBS&J Login Number: 0001-133

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-133-01	B1/PER01/122999		12/29/99	16:10:00
0001-133-02	B1/PER02/122999		12/29/99	16:20:00
0001-133-03	B1/PER01/123099		12/30/99	15:30:00
0001-133-04	B1/PER01/123099		12/30/99	15:35:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:13 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-133-1	B1/PER01/122999	01/03/00		12/29/99 16:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/13/00	01/13/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-133-2	B1/PER02/122999	01/03/00		12/29/99 16:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/13/00	01/13/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-133-3	B1/PER01/123099	01/03/00		12/30/99 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/13/00	01/13/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-133-4	B1/PER01/123099	01/03/00		12/30/99 15:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/13/00	01/13/00	DM
beryllium	.00005	U	mg/filter		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

0001-133

DOCUMENT _____

PROJECT NAME: Lockheed Beryllium Abatement | PROJECT NO.

SAMPLERS: *(signature)*

TI Contact: Phil Skorge

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Air Swipe	NUMBER OF CONTAINERS	ANALYSIS: 7300	REMARKS
-1 BI/Per01/122999	1610	12 29 99						✓	1	✓	
-2 BI/Per02/122999	1620	12 29 99						✓	1	✓	
-3 BI/Per01/123099	1530	12 30 99						✓	1	✓	
-4 BI/Per01/123099	1535	123099						✓	1	✓	

RELINQUISHED BY *(signature)*	DATE/TIME 12 31 99 1000	TOTAL NUMBER OF CONTAINERS 4	RECEIVED FOR LAB BY *(Signature)* / DATE/TIME
RECEIVED BY *(signature)* M. Yogamand 09:45	DATE/TIME 01/02/2000	RELINQUISHED BY *(signature)* Fed Ex 8850175 8224	DATE/TIME 01/02/2000 9:45 / CONDITION OF CONTENTS / TEMPERATURE UPON RECEIPT
RELINQUISHED BY *(signature)*	DATE/TIME	RECEIVED BY *(signature)*	DATE/TIME / REMARKS
RECEIVED BY *(signature)*	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.

Distribution: C[illegible]l - Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 **Fax:** 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-FILTERS
Air Filter Analysis

RECEIVED DATE: 17-JAN-00
PO#:

PBS&J Login Number: 0001-543

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-543-01	ENT-PER-011100		01/11/00	16:30:00
0001-543-02	EXT-PER-011100		01/11/00	16:35:00
0001-543-03	ENT-PER-011200		01/12/00	16:45:00
0001-543-04	EXT-PER-011200		01/12/00	16:44:00
0001-543-05	ENT-PER-011300		01/13/00	16:05:00
0001-543-06	EXT-PER-011300		01/13/00	16:00:00

Thank you for using PBS&J Analytical Services

T. French
PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:03 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-543-1	ENT-PER-011100	01/17/00		01/11/00 16:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-543-2	EXT-PER-011100	01/17/00		01/11/00 16:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-543-3	ENT-PER-011200	01/17/00		01/12/00 16:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-543-4	EXT-PER-011200	01/17/00		01/12/00 16:44:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-543-5	ENT-PER-011300	01/17/00		01/13/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/m3		.00005			

RESULTS BY SAMPLE

Reported: February 08, 2000 02:03 PM

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-543-6	EXT-PER-011300	01/17/00		01/13/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/m3		.00005			

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Redmond, Washington 98052
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FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED
PROJECT NO.: TC-1839-02
SAMPLERS: (signature) [signature]
Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Air Sparge	NUMBER OF CONTAINERS	ANALYSIS: 7300 Be	REMARKS
ENT/PER/011100	1630	011100						X	1	✓	ENTRANCE 0001-543
EXT/PER/011100	1635	011100						X	1	✓	EXIT. (EXHAUST NEPA)
ENT/PER/011200	1645	011200						X	1	✓	
EXT/PER/011200	1644	011200						X	1	✓	
ENT/PER/011300	1605	11/3/00						X	1	✓	
EXT/PER/011300	1600	11/3/00						X	1	✓	

RELINQUISHED BY (signature) [signature]	DATE/TIME 1-14-00	TOTAL NUMBER OF CONTAINERS 6		RECEIVED FOR LAB BY (Signature) Danielle Spehar	DATE/TIME 1-17-00 10:30
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS STANDARD T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX	AIRBILL NO.		

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-FILTERS
Air Filter Analysis

RECEIVED DATE: 31-JAN-00
PO#:

PBS&J Login Number: 0001-750

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-750-01	ENT-PER-012600		01/26/00	17:00:00
0001-750-02	EXT-PER-012600		01/26/00	17:05:00
0001-750-03	ENT-PER-012700		01/26/00	16:00:00
0001-750-04	EXT-PER-012700		01/26/00	16:05:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:08 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-750-1	ENT-PER-012600	01/31/00		01/26/00 17:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/31/00	01/31/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-750-2	EXT-PER-012600	01/31/00		01/26/00 17:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/31/00	01/31/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-750-3	ENT-PER-012700	01/31/00		01/26/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/31/00	01/31/00	DM
beryllium	.00005		mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-750-4	EXT-PER-012700	01/31/00		01/26/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/31/00	01/31/00	DM
beryllium	.00005	U	mg/filter		.00005			

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(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED | PROJECT NO.: TC-1839-02

SAMPLERS: *(signature)*

Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Air Sparge	NUMBER OF CONTAINERS	ANALYSIS: 7200	REMARKS
ENT-PER-012600	1700	1-26-00						✓	1	✓	0001-750-1
EXT-PER-012600	1705	1-26-00						✓	1	✓	-2
ENT-PER-012700	1600	1-27-00						✓	1	✓	-3
ENT-PER-012700	1605	1-27-00						✓	1	✓	-4
~~ENT-PER-012800~~	~~1600~~	~~1-28-00~~						~~✓~~	~~1~~	~~✓~~	
~~EXT-PER-012800~~	~~1605~~	~~1-28-00~~						~~✓~~	~~1~~	~~✓~~	

RELINQUISHED BY *(signature)*	DATE/TIME 1/28/00 1405	TOTAL NUMBER OF CONTAINERS 4		RECEIVED FOR LAB BY *(Signature)*	DATE/TIME 1/31/00 0940 ~~0845~~
RECEIVED BY *(signature)*	DATE/TIME	RELINQUISHED BY *(signature)*	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY *(signature)*	DATE/TIME	RECEIVED BY *(signature)*	DATE/TIME	REMARKS KEPT IN A COOL DRY PLACE.	
RECEIVED BY *(signature)*	DATE/TIME	METHOD OF SHIPMENT FED EX	AIRBILL NO.		

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
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February 11, 2000 15:01

CERTIFICATE OF ANALYSIS

SAMPLE SUMMARY

WORKORDER:
0002001

SENT TO:
TETRA TECH, INC.
600 UNIVERSITY STREET
SUITE 800
SEATTLE, WA 98101
PHIL SKORGE
206-587-4648 FAX 624-3679

ANALYZED BY:
PBS&J Analytical Services
6635 East Colonial Drive
Orlando, Florida 32807

Phone: (407) 277-4443
Fax: (407)382-8794

PROJECT:
PBS&J CONTACT: FRENCH
RECEIVED DATE: 01/06/00
REPORTED DATE: 02/11/00

WORK DESCRIPTION: ABC FACILITY
TAKEN BY:
TRANSPORTED:
SAMPLE TYPES:
PO#:

State of Florida Certifications: E83011-Environmental, 83170-Drinking Water and Radiochemistry CompQAP 860044G. State of North Carolina Certification: 547

SAMPLE DESCRIPTION	LAB ID	COLLECTED DATE/TIME
B1-LR-001-F	01	01/04/00 16:42:00
B1-LR-002-W	02	01/04/00 16:45:00
B1-LR-003-LF	03	01/04/00 16:47:00
B1-MR1-001-F	04	01/04/00 16:50:00
B1-MR1-002-W	05	01/04/00 16:52:00
B1-MR1-003-LF	06	01/04/00 16:55:00
B1-041-LF	07	01/04/00 17:05:00
B1-042-LF	08	01/04/00 17:07:00
B1-043-LF	09	01/04/00 14:10:00
B1/OSA/C01/F	10	01/04/00
B1/OSA/C02/W	11	01/04/00
B1/OSA/003/LF	12	01/04/00

Tom French/Vanessa May
Project Manager

Thank you for using PBS&J Analytical Services

CERTIFICATE OF ANALYSIS
RESULTS BY SAMPLE

SENT TO: *TETRA TECH, INC.*
600 UNIVERSITY STREET
SUITE 800
SEATTLE, WA 98101
PHIL SKORGE
206-587-4648 FAX 624-3679

ANALYZED BY: PBS&J Analytical Services
6635 East Colonial Drive
Orlando, FL 32807

Phone: (407) 277-4443
Fax: (407) 382-8794

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

Sample ID: B1-LR-001-F Lab ID: **0002001-01** Collected: 01/04/00 16:42:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.019	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-LR-002-W Lab ID: **0002001-02** Collected: 01/04/00 16:45:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.0014	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-LR-003-LF Lab ID: **0002001-03** Collected: 01/04/00 16:47:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.12	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-MR1-001-F Lab ID: **0002001-04** Collected: 01/04/00 16:50:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.021	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-MR1-002-W Lab ID: **0002001-05** Collected: 01/04/00 16:52:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.004	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-MR1-003-LF Lab ID: **0002001-06** Collected: 01/04/00 16:55:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.32	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-041-LF Lab ID: **0002001-07** Collected: 01/04/00 17:05:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.0017	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-042-LF Lab ID: **0002001-08** Collected: 01/04/00 17:07:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.0003	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1-043-LF Lab ID: **0002001-09** Collected: 01/04/00 14:10:00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.0003	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1/OSA/C01/F Lab ID: **0002001-10** Collected: 01/04/00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.00018	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1/OSA/C02/W Lab ID: **0002001-11** Collected: 01/04/00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.00019	mg/ft^2	NIOSH 7300		01/06/00	dm

Sample ID: B1/OSA/003/LF Lab ID: **0002001-12** Collected: 01/04/00

TEST	RESULT	UNITS	METHOD	EXTRACTED	ANALYZED	BY
BERYLLIUM IN SWIPE	0.00009	mg/ft^2	NIOSH 7300		01/06/00	dm

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CHAIN OF CUSTODY

→ ABC Facility, Sarasota, FL

0001-545 DOCUMENT

PROJECT NAME: LOCKHEED MARTIN | PROJECT NO: TC-1839-02

SAMPLERS: (signature)

TT Contact: PHIL SKOGGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment		SWPE	NUMBER OF CONTAINERS	ANALYSIS: 6010A (Beryllium)	REMARKS
B1-021-W	1550	01-04-00							✓	1	✓	Building 1, Well Sample
B1-022-W	1552								✓	1	✓	
B1-023-W	1555								✓	1	✓	
B1-024-W	1557								✓	1	✓	
B1-025-W	1600								✓	1	✓	
B1-026-W	1602								✓	1	✓	
B1-027-W	1605								✓	1	✓	
B1-028-W	1607								✓	1	✓	
B1-029-W	1610								✓	1	✓	
B1-030-W	1612								✓	1	✓	
B1-031-W	1615								✓	1	✓	
B1-032-W	1617								✓	1	✓	
B1-033-W	1620								✓	1	✓	
B1-034-W	1622								✓	1	✓	
B1-035-W	1625								✓	1	✓	
B1-036-W	1627								✓	1	✓	
B1-037-W	1630								✓	1	✓	
B1-038-W	1632								✓	1	✓	
B1-039-W	1635								✓	1	✓	
B1-040-W	1640	↓							✓	1	✓	↓ ✓

RELINQUISHED BY (signature)	DATE/TIME 1/4/00 1900	TOTAL NUMBER OF CONTAINERS 68	RECEIVED FOR LAB BY (Signature) Danielle Spear	DATE/TIME 1500 10:00	
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS: Didn't receive B1-022-W B1-030-W B1-025-W	reference samples rec'd 1-6-00 see COC 9372
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

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Samples B1-022-W, B1-025-W, B1-030.

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FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0001-545

PROJECT NAME: LOCKHEED MARTIN, ABC Facility, Sarasota, FL
PROJECT NO.:
SAMPLERS: (signature)
TI Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment		Swipe	NUMBER OF CONTAINERS	ANALYSIS: 6010 x (Beryllium)	REMARKS
BI-LR-001-F	1642	1/4/00							✓	1	✓	Bldg 1, Locker Room, Floor Swipe
BI-LR-002-W	1645								✓	1	✓	Bldg 1, Locker Room, Wall Swipe
BI-LR-003-LF	1647								✓	1	✓	Bldg 1, Locker Room, Light Fixture
BI-MR1-001-F	1650								✓	1	✓	Mech. Room #1, Floor
BI-MR1-002-W	1652								✓	1	✓	Mech. Room #1, Wall
BI-MR1-003-LF	1655								✓	1	✓	Mech. Room #1, Light Fixture
BI-MR4-001-F	1657								✓	1	✓	Mech. Room #4, Floor
BI-MR4-002-W	1700								✓	1	✓	Mech. Room #4, Wall
BI-MR4-003-LF	1702								✓	1	✓	Mech. Room #4 Light Fixture
BI-041-LF	1705								✓	1	✓	Bldg 1, Light Fixture
BI-042-LF	1707								✓	1	✓	
BI-043-LF	1710								✓	1	✓	
BI-044-LF	1712								✓	1	✓	
BI-045-LF	1715								✓	1	✓	
BI-046-LF	1717								✓	1	✓	
BI-048-LF	1720								✓	1	✓	
BI-049-LF	1722								✓	1	✓	
BI-050-LF	1725								✓	1	✓	
BI-051-LF	1727								✓	1	✓	
BI-052-LF	1730	✓							✓	1	✓	

RELINQUISHED BY (signature)	DATE/TIME 1/4/00 1900	TOTAL NUMBER OF CONTAINERS 68		RECEIVED FOR LAB BY (Signature) Danielle Spehar	DATE/TIME 1-5-00 10:00
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS rec'd BI-047-LF	BI-MR1-003-LF
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.	didn't rec: BI-LR-003-LF, BI-LR-001-F, BI-LR-002-W, BI-MR1-001-F, BI-MR1-002-W	BI-041-LF, BI-042-LF, BI-043-LF

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referenced samples rec'd 1-5-00
See COC 9377

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Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0001-545

PROJECT NAME: Lockheed Martin ABC Field, Sumas, WA
PROJECT NO.
SAMPLERS: (signature)
TI Contact: Phil Skroch

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment		Sludge	NUMBER OF CONTAINERS	ANALYSIS: 6010A (Pb only)	REMARKS
BI-053-LF	1332	1/4/00							✓	1	✓	Bldg 1, Light Fixture
BI-054-LF	1335	"							✓	1	✓	"
BI-055-LF	1340	"							✓	1	✓	"
BI-056-LF	1342	"							✓	1	✓	"
BI-057-LF	1345	"							✓	1	✓	"
BI-058-LF	1348	"							✓	1	✓	"
BI-059-LF	1350	"							✓	1	✓	"
BI-060-LF	1352	1/4/00							✓	1	✓	"
FB-1-1400	1400	1/4/00							✓	1	✓	Field Blank
BI-03A-001-F	1805	"							✓	1	✓	Oil Storage Area
BI-03A-002-W	1810	"							✓	1	✓	"
BI-03A-003-LF	1815	1/4/00							✓	1	✓	"

RELINQUISHED BY (signature)	DATE/TIME 1/4/00 1700	TOTAL NUMBER OF CONTAINERS 18		RECEIVED FOR LAB BY (Signature) Danielle Sehar	DATE/TIME 1500 1000
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS Ok	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS From this pg only rec'd / Re Ferrous Supply received 1/11/00	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.	BI-053-LF & FB-1-1400 only	

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 15, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle,, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-WIPES
Area Wipe Samples

RECEIVED DATE: 04-FEB-00
PO#:

PBS&J Login Number: 0002-238

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0002-238-01	B5-FD2-020300		02/03/00	16:00:00
0002-238-02	B3-NFD-020300		02/03/00	16:20:00
0002-238-03	B3-SUMP-020300		02/03/00	16:30:00
0002-238-04	TRIP BLANK		02/03/00	16:35:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 15, 2000 11:28 AM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-238-1	B5-FD2-020300	02/04/00		02/03/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/04/00	02/04/00	DM
beryllium	.00103		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-238-2	B3-NFD-020300	02/04/00		02/03/00 16:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/04/00	02/04/00	DM
beryllium	.00119		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-238-3	B3-SUMP-020300	02/04/00		02/03/00 16:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/04/00	02/04/00	DM
beryllium	.00079		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-238-4	TRIP BLANK	02/04/00		02/03/00 16:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/04/00	02/04/00	DM
beryllium	.00038		mg/ft^2		.00005			

RA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

0002-238

PROJECT NAME: LOCKHEED | PROJECT NO.: TC-1839-02

SAMPLERS: (signature) [signature]

Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	WIPE	NUMBER OF CONTAINERS	ANALYSIS: 6010A	REMARKS
B5-FD2-020300	1600	2-3-00						✓	1	-1	BLDG.5, FLOOR DRAIN #2
B3-NFD-020300	1620	2-3-00						✓	1	-2	BLDG3, NORTH FLOOR DRAIN
B3-SUMP-020300	1630	2-3-00						✓	1	-3	BLDG3, SOUTH SUMP
TRIP BLANK	1635	2-3-00						✓	1	-4	TRIP BLANK

RELINQUISHED BY (signature) [signature]	DATE/TIME 1630 2-3-00	TOTAL NUMBER OF CONTAINERS	4	RECEIVED FOR LAB BY (Signature) T. Cosby	DATE/TIME 2/4/00 1045
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR TAT	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX # 818029647750	AIRBILL NO.		

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15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0002-372

PROJECT NAME: LOCKHEED | PROJECT NO.: TC-1839-02

SAMPLERS: (signature) DOUG

Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Wipes	NUMBER OF CONTAINERS	ANALYSIS: 6610A	REMARKS
BE4-FC-006R	1240	2/9/00						✓	1	✓ -1	BE SHED BLDG 3 RESAMPLE
FS/C/003	1255	2/9/00						✓	1	✓ -2	FILTER SHED - CEILING MAT
FS/FL/001	1300	2/9/00						✓	1	✓ -3	FILTER SHED - FLOOR
FS/W/002	1305	2/9/00						✓	1	✓ -4	" " WALL
TRIP BLANK		2/9/00						✓	1	✓ -5	
										-6	

RELINQUISHED BY (signature): DOUG	DATE/TIME: 2/9/00 1630	TOTAL NUMBER OF CONTAINERS: 5		RECEIVED FOR LAB BY (Signature): T. Cushing	DATE/TIME: 2/10/00 0935
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS: RUSH 24 HR TAT SEND RESULTS TO PHIL SKORGE FAX# 206-624-3679	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

Distribution: Orig. Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 16, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle,, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-WIPES
Area Wipe Samples

RECEIVED DATE: 10-FEB-00
PO#:

PBS&J Login Number: 0002-372

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0002-372-01	BE4-FL-006R		02/09/00	12:40:00
0002-372-02	FS/C/003		02/09/00	12:55:00
0002-372-03	FS/FL/001		02/09/00	13:00:00
0002-372-04	FS/W/002		02/09/00	13:05:00
0002-372-05	TRIP BLANK		02/09/00	00:00:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 16, 2000 11:49 AM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-372-1	BE4-FL-006R	02/10/00		02/09/00 12:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/10/00	02/10/00	DM
beryllium	.00006		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-372-2	FS/C/003	02/10/00		02/09/00 12:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/10/00	02/10/00	DM
beryllium	.00019		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-372-3	FS/FL/001	02/10/00		02/09/00 13:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/10/00	02/10/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-372-4	FS/W/002	02/10/00		02/09/00 13:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/10/00	02/10/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-372-5	TRIP BLANK	02/10/00		02/09/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/10/00	02/10/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 23, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-FILTERS
Air Filter Analysis

RECEIVED DATE: 03-FEB-00
PO#:

PBS&J Login Number: 0002-216

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0002-216-01	BE4-FL-001R		02/02/00	15:00:00
0002-216-02	TRIP BLANK		02/02/00	15:05:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 23, 2000 02:14 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-216-1	BE4-FL-001R	02/03/00		02/02/00 15:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/03/00	02/04/00	DM
beryllium	.105		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-216-2	TRIP BLANK	02/03/00		02/02/00 15:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/03/00	02/04/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

0002-216

DOCUMENT _____

PROJECT NAME: LOCKHEED | PROJECT NO.: FC-1839-02

SAMPLERS: (signature) Paul Hall

Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Swipe	NUMBER OF CONTAINERS	ANALYSIS: 6010A Swipe W7300									REMARKS
BE4-FL-001R	1500	2-2-00						✓	1	✓							-1		RESAMPLE #4 B& SHED. FLOOR. ORIGINAL SAMPLE AT 37555 mg/WIPE
TRIP BLANK	1505	2-2-00						✓	1	✓							-2		

RELINQUISHED BY (signature) Paul Hall	DATE/TIME 2-2-00/1705	TOTAL NUMBER OF CONTAINERS 2		RECEIVED FOR LAB BY (Signature) T Crosby	DATE/TIME 2/3/00 1015
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR TAT	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX # 818029642 77	AIRBILL NO. —		

Distribution: Origin... Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 23, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-FILTERS
Air Filter Analysis

RECEIVED DATE: 02-FEB-00
PO#:

PBS&J Login Number: 0002-149

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0002-149-01	B3-AC-001		02/01/00	17:00:00
0002-149-02	B3-AC-002		02/01/00	17:05:00
0002-149-03	B4-AC-001		02/01/00	17:15:00
0002-149-04	B4-AC-002		02/01/00	17:20:00
0002-149-05	B5-AC-001		02/01/00	17:25:00
0002-149-06	B5-AC-002		02/01/00	17:30:00
0002-149-07	B45-W-012		02/01/00	17:35:00
0002-149-08	B3-W-013		02/01/00	17:40:00
0002-149-09	TRIP BLANK		02/01/00	00:00:00

Thank you for using PBS&J Analytical Services

T. French

RESULTS BY SAMPLE

Reported: February 23, 2000 01:34 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-149-1	B3-AC-001	02/02/00		02/01/00 17:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-149-2	B3-AC-002	02/02/00		02/01/00 17:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-149-3	B4-AC-001	02/02/00		02/01/00 17:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-149-4	B4-AC-002	02/02/00		02/01/00 17:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-149-5	B5-AC-001	02/02/00		02/01/00 17:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		02/02/00	02/02/00	D.
beryllium	.00005	U	mg/filter		.00005			

RESULTS BY SAMPLE

Reported: February 23, 2000 01:34 PM

PBS&J Sample No. 0002-149-6 **Client ID** B5-AC-002 **Date Received** 02/02/00 **Site** **Date & Time Collected** 02/01/00 17:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00005	U	mg/filter		.00005			

PBS&J Sample No. 0002-149-7 **Client ID** B45-W-012 **Date Received** 02/02/00 **Site** **Date & Time Collected** 02/01/00 17:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00009		mg/ft^2		.00005			

PBS&J Sample No. 0002-149-8 **Client ID** B3-W-013 **Date Received** 02/02/00 **Site** **Date & Time Collected** 02/01/00 17:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00176		mg/ft^2		.00005			

PBS&J Sample No. 0002-149-9 **Client ID** TRIP BLANK **Date Received** 02/02/00 **Site** **Date & Time Collected** 02/01/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED | PROJECT NO.: TC-1839-02

SAMPLERS: (signature) [signature]

Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Swipe	NUMBER OF CONTAINERS	ANALYSIS: 7300 M	6010 A	REMARKS
B3-AC-001	1700	2-1-00	✓					✓	1	✓		0002-149-1
B3-AC-002	1705	2-1-00	✓					✓	1	✓		-2
~~B3-AC-~~	~~1910~~	~~2-1-00~~	✓					✓	-	-		~~-3~~
B4-AC-001	1715	2-1-00	✓					✓	1	✓		-3
B4-AC-002	1720	2-1-00	✓					✓	1	✓		-4
B5-AC-001	1725	2-1-00	✓					✓	1	✓		-5
B5-AC-002	1730	2-1-00	✓					✓	1	✓		-6
B45-W-012	1735	2-1-00						✓	1		✓	-7
B3-W-013	1740	2-1-00						✓	1		✓	-8
TRIP BLANK	—	2-1-00						✓	1		✓	-9
									9			

RELINQUISHED BY (signature): [signature]	DATE/TIME: 2-1-00 1745	TOTAL NUMBER OF CONTAINERS: 9		RECEIVED FOR LAB BY (Signature): T. Cushing	DATE/TIME: 2/2/00 1020
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS: RUSH TAT 24 HR	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT: FEDEX	AIRBILL NO.: 818029642793	first six samples are air samples, changed COC as per DM	

Distribution: Original - Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: March 01, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED

PBS&J Login Number: 0002-374

RECEIVED DATE: 10-FEB-00
PO#:

PBSJ Sample No.	Client Sample ID	Collection date/time
0002-374-01	CHROM-DUCT 020900	02/09/00 09:00:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: March 01, 2000 09:46 AM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite
Seattle, WA 98101
()- *FAX -*

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-374-1	CHROM-DUCT 020900	02/10/00		02/09/00 09:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Determination of TCLP Chlorinated Pesticides				EPA 8081A		02/15/00	02/16/00	WJ
gamma-BHC	1	U	ug/l					
chlordane(technical)	1	U	ug/l					
endrin	5	U	ug/l					
heptachlor	1	U	ug/l					
methoxychlor	15	U	ug/l					
heptachlor epoxide	1	U	ug/l					
toxaphene	100	U	ug/l					
Surrogate Recoveries				EPA 8081A		02/15/00	02/16/00	WJ
tetrachloro-m-xylene	77		%					
Decachlorobiphenyl	75		%					
Mercury in Waters				EPA 245.1/7470		02/21/00	02/22/00	DMS
mercury	.002	U	mg/l		.002			
Metals in TCLP Leachates by ICAP				EPA 6010		02/22/00	02/23/00	DM
arsenic	5	U	mg/l					
barium	10	U	mg/l					
cadmium	5	U	mg/l					
chromium	2.395		mg/l					
lead	1.5	U	mg/l					
selenium	2	U	mg/l					
silver	1	U	mg/l					
Determination of Chlorinated Herbicides in				EPA 8151		02/15/00	02/17/00	R

RESULTS BY SAMPLE

Reported: March 01, 2000 09:46 AM

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-374-1	CHROM-DUCT 020900	02/10/00		02/09/00 09:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
TCLP Leachates								
2,4-D	.01	U	mg/l					
2,4,5-TP	.01	U	mg/l					
Surrogate Recovery				EPA 8151		02/15/00	02/17/00	RP
2,4-dichlorophenylacetic acid	62		%					

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0002-374

PROJECT NAME: LOCKHEED
PROJECT NO: TC-1839-02
SAMPLERS: (signature) Paul Hall
Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Bulk	NUMBER OF CONTAINERS	ANALYSIS: TCLP ? Full	REMARKS
CHrom-Dist-02 0900	0900	02-09-00						✓	1	✓	1

RELINQUISHED BY (signature) Paul Hall	DATE/TIME 2/9/00 1000	TOTAL NUMBER OF CONTAINERS 1		RECEIVED FOR LAB BY (Signature) Cushay	DATE/TIME 2/10/00 0935
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

Distribution: Original - Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: March 09, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: ABC FACILITY

PBS&J Login Number: 0001-558

RECEIVED DATE: 21-JAN-00
PO#:

PBSJ Sample No.	Client Sample ID	Collection date/time	
0001-558-01	PA/FL/001	01/18/00	15:00:00
0001-558-02	PA/CEIL/002	01/18/00	15:05:00
0001-558-03	PA/W/003	01/18/00	15:10:00
0001-558-04	B2/W/026R	01/18/00	15:20:00
0001-558-05	B2/FL/046R	01/18/00	15:30:00
0001-558-06	DUCT	01/18/00	15:40:00
0001-558-07	TB	01/18/00	00:00:00

Thank you for using PBS&J Analytical Services

T.French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: March 09, 2000 04:18 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.
600 University Street, Suite 800
Seattle, WA 98101
(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T.French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-1	PA/FL/001	01/21/00		01/18/00 15:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.00005	U	mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-2	PA/CEIL/002	01/21/00		01/18/00 15:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.0017		mg/ft^2		.00005			
chromium	.013		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-3	PA/W/003	01/21/00		01/18/00 16:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.0002		mg/ft^2		.00005			
chromium	.0003		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-4	B2/W/026R	01/21/00		01/18/00 16:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.00005	U	mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. **Client ID**

RESULTS BY SAMPLE

Reported: March 09, 2000 04:18 PM

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-5	B2/FL/046R	01/21/00		01/18/00 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.0018		mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-6	DUCT	01/21/00		01/18/00 15:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.013		mg/ft^2		.00005			
chromium	.13		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
01-558-7	TB	01/21/00		01/18/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.00005	U	mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: March 24, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle,, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-WIPES
Area Wipe Samples

PBS&J Login Number: 0002-134

RECEIVED DATE: 01-FEB-00
PO#:

PBSJ Sample No.	Client Sample ID	Collection date/time	
0002-134-01	B3-FL-001	01/31/00	13:00:00
0002-134-02	B3-FL-002	01/31/00	13:05:00
0002-134-03	B3-FL-003	01/31/00	13:10:00
0002-134-04	B3-FL-004	01/31/00	13:15:00
0002-134-05	B3-FL-005	01/31/00	13:20:00
0002-134-06	B3-W-006	01/31/00	13:25:00
0002-134-07	B3-W-007	01/31/00	13:30:00
0002-134-08	B3-W-008	01/31/00	13:35:00
0002-134-09	B3-W-009	01/31/00	13:40:00
0002-134-10	B3-W-010	01/31/00	13:45:00
0002-134-11	B3-W-011	01/31/00	13:50:00
0002-134-12	B3-W-012	01/31/00	13:55:00
0002-134-13	B3-LF-014	01/31/00	14:05:00
0002-134-14	B3-LF-015	01/31/00	14:10:00
0002-134-15	B3-LF-016	01/31/00	14:15:00

Certificate of Analysis

REPORTED DATE: March 24, 2000

PBSJ Sample No.	Client Sample ID	Collection date/time	
0002-134-16	B3-LF-017	01/31/00	14:20:00
0002-134-17	B3-LF-018	01/31/00	14:25:00
0002-134-18	B3-LF-019	01/31/00	14:30:00
0002-134-19	B3-LF-020	01/31/00	14:35:00
0002-134-20	B3-LF-021	01/31/00	14:40:00
0002-134-21	B45-FL-001	01/31/00	14:45:00
0002-134-22	B45-FL-002	01/31/00	14:50:00
0002-134-23	B45-FL-003	01/31/00	14:55:00
0002-134-24	B45-FL-004	01/31/00	15:00:00
0002-134-25	B45-FL-005	01/31/00	15:05:00
0002-134-26	B45-FL-006	01/31/00	15:10:00
0002-134-27	B45-FL-007	01/31/00	15:15:00
0002-134-28	B45-W-008	01/31/00	15:20:00
0002-134-29	B45-W-009	01/31/00	15:25:00
0002-134-30	B45-W-010	01/31/00	15:30:00
0002-134-31	B45-W-011	01/31/00	15:35:00
0002-134-32	B45-W-013	01/31/00	15:45:00
0002-134-33	B45-W-014	01/31/00	15:50:00
0002-134-34	B45-LF-015	01/31/00	15:55:00
0002-134-35	B45-LF-016	01/31/00	16:00:00
0002-134-36	B45-LF-017	01/31/00	16:05:00
0002-134-37	B45-LF-018	01/31/00	16:10:00

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: March 24, 2000

PBSJ Sample No.	Client Sample ID	Collection date/time	
0002-134-38	B45-LF-019	01/31/00	16:15:00
0002-134-39	B45-LF-020	01/31/00	16:20:00
0002-134-40	B45-LF-021	01/31/00	16:25:00
0002-134-41	OCSR-FL-001	01/31/00	16:30:00
0002-134-42	OCSR-W-002	01/31/00	16:35:00
0002-134-43	OCSR-C-003	01/31/00	16:40:00
0002-134-44	BE4-FL-001	01/31/00	16:45:00
0002-134-45	BE4-W-002	01/31/00	16:50:00
0002-134-46	BE4-C-003	01/31/00	16:55:00
0002-134-47	TRIP BLANK	01/31/00	17:00:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

Chemtest Laboratory
6635 East Colonial Drive • Orlando, Florida 32807-5273 • Telephone: 407.277.4443 • Fax: 407.382.8794 • www.pbsj.com

RESULTS BY SAMPLE

Reported: March 24, 2000 07:18 AM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle,, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-1	B3-FL-001	02/01/00		01/31/00 13:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000632		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-2	B3-FL-002	02/01/00		01/31/00 13:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000516		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-3	B3-FL-003	02/01/00		01/31/00 13:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000285		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-4	B3-FL-004	02/01/00		01/31/00 13:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000091		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-5	B3-FL-005	02/01/00		01/31/00 13:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00452		mg/ft^2		.00005			

RESULTS BY SAMPLE

Reported: March 24, 2000 07:18 AM

PBS&J Sample No. 0002-134-6 **Client ID** B3-W-006 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.0015		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-7 **Client ID** B3-W-007 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00009		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-8 **Client ID** B3-W-008 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00009		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-9 **Client ID** B3-W-009 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000603		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-10 **Client ID** B3-W-010 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000645		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-11 **Client ID** B3-W-011 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0002-134-12 **Client ID** B3-W-012 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

PBS&J Sample No. 0002-134-12 **Client ID** B3-W-012 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 13:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00008		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-13 **Client ID** B3-LF-014 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00154		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-14 **Client ID** B3-LF-015 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00146		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-15 **Client ID** B3-LF-016 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00099		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-16 **Client ID** B3-LF-017 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00909		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-17 **Client ID** B3-LF-018 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000535		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-18 **Client ID** B3-LF-019 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analy

RESULTS BY SAMPLE

PBS&J Sample No. 0002-134-18 **Client ID** B3-LF-019 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.0018		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-19 **Client ID** B3-LF-020 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00457		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-20 **Client ID** B3-LF-021 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000227		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-21 **Client ID** B45-FL-001 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000849		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-22 **Client ID** B45-FL-002 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.004		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-23 **Client ID** B45-FL-003 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 14:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00394		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-24 **Client ID** B45-FL-004 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 15:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

Reported: March 24, 2000 07:18 AM

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-24	B45-FL-004	02/01/00		01/31/00 15:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00114		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-25	B45-FL-005	02/01/00		01/31/00 15:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.006		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-26	B45-FL-006	02/01/00		01/31/00 15:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00358		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-27	B45-FL-007	02/01/00		01/31/00 15:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.0012		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-28	B45-W-008	02/01/00		01/31/00 15:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00438		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-29	B45-W-009	02/01/00		01/31/00 15:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00216		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0002-134-30	B45-W-010	02/01/00		01/31/00 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Anal

RESULTS BY SAMPLE

PBS&J Sample No. 0002-134-30 **Client ID** B45-W-010 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000689		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-31 **Client ID** B45-W-011 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 15:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000395		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-32 **Client ID** B45-W-013 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 15:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.0025		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-33 **Client ID** B45-W-014 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 15:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000096		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-34 **Client ID** B45-LF-015 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 15:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.0031		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-35 **Client ID** B45-LF-016 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00158		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-36 **Client ID** B45-LF-017 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

PBS&J Sample No. 0002-134-36 **Client ID** B45-LF-017 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000805		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-37 **Client ID** B45-LF-018 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00109		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-38 **Client ID** B45-LF-019 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00563		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-39 **Client ID** B45-LF-020 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000824		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-40 **Client ID** B45-LF-021 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00263		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-41 **Client ID** OCSR-FL-001 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00124		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-42 **Client ID** OCSR-W-002 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Ana

RESULTS BY SAMPLE

Reported: March 24, 2000 07:18 AM

PBS&J Sample No. 0002-134-42 **Client ID** OCSR-W-002 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00529		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-43 **Client ID** OCSR-C-003 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.000119		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-44 **Client ID** BE4-FL-001 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.376		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-45 **Client ID** BE4-W-002 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00144		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-46 **Client ID** BE4-C-003 **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 16:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.0047		mg/ft^2		.00005			

PBS&J Sample No. 0002-134-47 **Client ID** TRIP BLANK **Date Received** 02/01/00 **Site** **Date & Time Collected** 01/31/00 17:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED | PROJECT NO.: TC-1839-02

SAMPLERS: (signature) Paul Hall

Tt Contact: PAUL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Swipe	NUMBER OF CONTAINERS	ANALYSIS: GC/MS 1	REMARKS
B3-FL-001	1300	1-31-00						✓	1	✓	0002-134-1
B3-FL-002	1305	↓						✓	1	✓	BLDG 3 FLOOR -2
B3-FL-003	1310							✓	1	✓	-3
B3-FL-004	1315							✓	1	✓	-4
B3-FL-005	1320							✓	1	✓	-5
B3-W-006	1325							✓	1	✓	-6
B3-W-007	1330							✓	1	✓	BLDG 3 WALLS -7
B3-W-008	1335							✓	1	✓	-8
B3-W-009	1340							✓	1	✓	-9
B3-W-010	1345							✓	1	✓	-10
B3-W-011	1350							✓	1	✓	-11
B3-W-012	1355							✓	1	✓	-12
* B3-W-013	1400							✓	1	✓	~~-13~~ X
B3-LF-014	1405							✓	1	✓	BLDG #3 -14
B3-LF-015	1410							✓	1	✓	LIGHT FIXTURES -15
B3-LF-016	1415							✓	1	✓	-16
B3-LF-017	1420							✓	1	✓	-17
B3-LF-018	1425							✓	1	✓	-18
B3-LF-019	1430							✓	1	✓	-19
B3-LF-020	1435	↓						✓	1	✓	~~-20~~ 19

RELINQUISHED BY (signature)	DATE/TIME	TOTAL NUMBER OF CONTAINERS: 20		RECEIVED FOR LAB BY (Signature): T. Cushing	DATE/TIME: 9/1/00 1030
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS: RUSH - 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT: FED EX	AIRBILL NO.	* not rec'd	

Distribution: Orig. Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

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15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED
PROJECT NO.: TC-1839-02
SAMPLERS: (signature)
TI Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Solid	NUMBER OF CONTAINERS	REMARKS
B3-LF-021	1440	1-31-00						✓	1	BLDG III LIGHT FIX. 20
B45-FL-001	1445							✓	1	BLDGS. 4 & 5 21
B45-FL-002	1450							✓	1	22
B45-FL-003	1455							✓	1	FLOOR 23
B45-FL-004	1501							✓	1	24
B45-FL-005	1505							✓	1	25
B45-FL-006	1510							✓	1	26
B45-FL-007	1515							✓	1	27
B45-W-008	1520							✓	1	28
B45-W-009	1525							✓	1	BLDG 4 & 5 29
B45-W-010	1530							✓	1	WALLS 30
B45-W-011	1535							✓	1	31
* B45-W-012	1540							✓	1	*
B45-W-013	1545							✓	1	32
B45-W-014	1550							✓	1	33
B45-LF-015	1555							✓	1	BLDG 4 & 5 34
B45-LF-016	1600							✓	1	35
B45-LF-017	1605							✓	1	LIGHT FIXTURES 36
B45-LF-018	1610							✓	1	37
B45-LF-019	1615							✓	1	38

0002-134

RELINQUISHED BY (signature)	DATE/TIME 1/31/00 1240	TOTAL NUMBER OF CONTAINERS 20		RECEIVED FOR LAB BY (Signature) T. Mostyn	DATE/TIME 2/1/00 1050
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR TAT	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

Distribution: Original - Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED
PROJECT NO.: TC-1839-02
SAMPLERS: (signature) Paul Hall
TI Contact: PHIL STORGE.

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Solid	NUMBER OF CONTAINERS	ANALYSIS: GOLD	REMARKS
B45-LF-020	1620	1-31-00							1	✓	BLDG 45 LIGHT FIXTURE -40
B45-LF-021	1625	↓							1	✓	
OCSR-FL-001	1630								1	✓	OIL COOLANT STORAGE 41
OCSR-W-002	1635								1	✓	ROOM. BLDG 3 -42
OCSR-C-003	1640								1	✓	-43
B24-FL-001	1645								1	✓	B2 VAC SYSTEM -44
B24-W-002	1650								1	✓	REWIND BLDG 3 -45
B24-C-003	1655								1	✓	-46
TRIP BLANK	1700	↓							1	✓	-47

0002-134-39

RELINQUISHED BY (signature)	DATE/TIME 1/31/00	TOTAL NUMBER OF CONTAINERS 09		RECEIVED FOR LAB BY (Signature) T. Cushing	DATE/TIME 2/1/00 1050
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 Hr T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.	49 SAMPLES TOTAL	

Distribution: Origi... b Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: March 24, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED

SARASOTA

PBS&J Login Number: 0003-572

RECEIVED DATE: 23-MAR-00
PO#:

PBSJ Sample No.	Client Sample ID	Collection date/time	
0003-572-01	B45-FL-003	01/31/00	00:00:00
0003-572-02	B45-FL-004	01/31/00	00:00:00
0003-572-03	B45-FL-005	01/31/00	00:00:00
0003-572-04	B45-FL-006	01/31/00	00:00:00
0003-572-05	B45-FL-007	01/31/00	00:00:00
0003-572-06	B45-W-011	01/31/00	00:00:00
0003-572-07	B45-W-012	02/01/00	17:35:00
0003-572-08	B45-W-013	01/31/00	00:00:00
0003-572-09	B45-W-014	01/31/00	00:00:00
0003-572-10	B45-IF-018	01/31/00	00:00:00
0003-572-11	B45-IF-019	01/31/00	00:00:00
0003-572-12	B45-IF-020	01/31/00	00:00:00
0003-572-13	B45-IF-021	01/31/00	00:00:00
0003-572-14	B45-IF-022	01/31/00	00:00:00
0003-572-15	B5-FD2-02030	02/03/00	16:00:00

PBS&J Analytical Services

Chemical Testing
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Field Services

Certificate of Analysis

REPORTED DATE: March 24, 2000

Thank you for using PBS&J Analytical Services

T. Ffench

PBS&J Project Manager

Chemtest Laboratory
6635 East Colonial Drive • Orlando, Florida 32807-5273 • Telephone: 407.277.4443 • Fax: 407.382.8794 • www.pbsj.com

RESULTS BY SAMPLE

Reported: March 24, 2000 07:19 AM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-1	B45-FL-003	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.011		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-2	B45-FL-004	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0033		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-3	B45-FL-005	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.064		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-4	B45-FL-006	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.011		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-5	B45-FL-007	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.013		mg/ft^2		.00005			

RESULTS BY SAMPLE

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-6	B45-W-011	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0015		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-7	B45-W-012	03/23/00	SARASOTA	02/01/00 17:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/02/00	02/02/00	DM
chromium	.00016		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-8	B45-W-013	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0033		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-9	B45-W-014	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0016		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-10	B45-IF-018	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0014		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-11	B45-IF-019	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0307		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-12	B45-IF-020	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analy

RESULTS BY SAMPLE

Reported: March 24, 2000 07:19 AM

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-12	B45-IF-020	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0097		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-13	B45-IF-021	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.034		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-14	B45-IF-022	03/23/00	SARASOTA	01/31/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/01/00	02/01/00	DM
chromium	.0061		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0003-572-15	B5-FD2-02030	03/23/00	SARASOTA	02/03/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		02/04/00	02/04/00	DM
chromium	.0036		mg/ft^2		.00005			

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: ABC FACILITY

RECEIVED DATE: 05-JAN-00
PO#:

PBS&J Login Number: 0001-545

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-545-01	B1-001-FL		01/04/00	15:00:00
0001-545-02	B1-002-FL		01/04/00	15:02:00
0001-545-03	B1-003-FL		01/04/00	15:05:00
0001-545-04	B1-004-FL		01/04/00	15:07:00
0001-545-05	B1-005-FL		01/04/00	15:10:00
0001-545-06	B1-006-FL		01/04/00	15:12:00
0001-545-07	B1-007-FL		01/04/00	15:15:00
0001-545-08	B1-008-FL		01/04/00	15:17:00
0001-545-09	B1-009-FL		01/04/00	15:20:00
0001-545-10	B1-010-FL		01/04/00	15:22:00
0001-545-11	B1-011-FL		01/04/00	15:25:00
0001-545-12	B1-012-FL		01/04/00	15:27:00
0001-545-13	B1-013-FL		01/04/00	15:30:00
0001-545-14	B1-014-FL		01/04/00	15:32:00

Certificate of Analysis

REPORTED DATE: February 08, 2000

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-545-15	B1-015-FL		01/04/00	15:35:00
0001-545-16	B1-016-FL		01/04/00	15:37:00
0001-545-17	B1-017-FL		01/04/00	15:40:00
0001-545-18	B1-018-FL		01/04/00	15:45:00
0001-545-19	B1-019-W		01/04/00	00:00:00
0001-545-20	B1-020-W		01/04/00	15:47:00
0001-545-21	B1-021-W		01/04/00	15:50:00
0001-545-22	B1-023-W		01/04/00	15:55:00
0001-545-23	B1-024-W		01/04/00	15:57:00
0001-545-24	B1-026-W		01/04/00	16:02:00
0001-545-25	B1-027-W		01/04/00	16:05:00
0001-545-26	B1-028-W		01/04/00	16:07:00
0001-545-27	B1-029-W		01/04/00	16:10:00
0001-545-28	B1-031-W		01/04/00	16:15:00
0001-545-29	B1-032-W		01/04/00	16:17:00
0001-545-30	B1-033-W		01/04/00	16:20:00
0001-545-31	B1-034-W		01/04/00	16:22:00
0001-545-32	B1-035-W		01/04/00	16:25:00
0001-545-33	B1-036-W		01/04/00	16:27:00
0001-545-34	B1-037-W		01/04/00	16:30:00
0001-545-35	B1-038-W		01/04/00	16:32:00
0001-545-36	B1-039-W		01/04/00	16:35:00

PBS&J Analytical Services

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REPORTED DATE: February 08, 2000

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-545-37	B1-040-W		01/04/00	16:40:00
0001-545-38	B1-MR4-001-F		01/04/00	16:57:00
0001-545-39	B1-MR4-002-W		01/04/00	17:00:00
0001-545-40	B1-MR4-003-LF		01/04/00	17:02:00
0001-545-41	B1-044-LF		01/04/00	17:12:00
0001-545-42	B1-045-LF		01/04/00	17:15:00
0001-545-43	B1-046-LF		01/04/00	17:17:00
0001-545-44	B1-048-LF		01/04/00	17:20:00
0001-545-45	B1-049-LF		01/04/00	17:22:00
0001-545-46	B1-050-LF		01/04/00	17:25:00
0001-545-47	B1-051-LF		01/04/00	17:27:00
0001-545-48	B1-052-LF		01/04/00	17:30:00
0001-545-49	B1-053-LF		01/04/00	17:32:00
0001-545-50	FB-1/4/00		01/04/00	18:00:00
0001-545-51	B1-047-W		01/04/00	00:00:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

Chemtest Laboratory
6635 East Colonial Drive • Orlando, Florida 32807-5273 • Telephone: 407.277.4443 • Fax: 407.382.8794 • www.pbsj.com

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T.French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-545-1	B1-001-FL	01/05/00		01/04/00 15:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0001		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-545-2	B1-002-FL	01/05/00		01/04/00 15:02:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.001		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-545-3	B1-003-FL	01/05/00		01/04/00 15:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0004		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-545-4	B1-004-FL	01/05/00		01/04/00 15:07:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0012		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-545-5	B1-005-FL	01/05/00		01/04/00 15:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0002		mg/ft^2		.00005			

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-6 **Client ID** B1-006-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:12:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00098		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-7 **Client ID** B1-007-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00049		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-8 **Client ID** B1-008-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:17:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00024		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-9 **Client ID** B1-009-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0034		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-10 **Client ID** B1-010-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:22:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00088		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-11 **Client ID** B1-011-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.002		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-12 **Client ID** B1-012-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:27:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-12 | **Client ID** B1-012-FL | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 15:27:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0053		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-13 | **Client ID** B1-013-FL | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0036		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-14 | **Client ID** B1-014-FL | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 15:32:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0017		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-15 | **Client ID** B1-015-FL | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 15:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0021		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-16 | **Client ID** B1-016-FL | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 15:37:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0009		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-17 | **Client ID** B1-017-FL | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 15:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0005		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-18 | **Client ID** B1-018-FL | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 15:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Ana

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-18 **Client ID** B1-018-FL **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00039		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-19 **Client ID** B1-019-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.001		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-20 **Client ID** B1-020-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:47:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0002		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-21 **Client ID** B1-021-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0003		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-22 **Client ID** B1-023-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.01		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-23 **Client ID** B1-024-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 15:57:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.016		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-24 **Client ID** B1-026-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:02:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-24 | **Client ID** B1-026-W | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 16:02:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0002		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-25 | **Client ID** B1-027-W | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.003		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-26 | **Client ID** B1-028-W | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 16:07:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00155		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-27 | **Client ID** B1-029-W | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 16:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.009		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-28 | **Client ID** B1-031-W | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 16:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0002		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-29 | **Client ID** B1-032-W | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 16:17:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0002		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-30 | **Client ID** B1-033-W | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 16:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Ana

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-30 **Client ID** B1-033-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00016		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-31 **Client ID** B1-034-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:22:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0002		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-32 **Client ID** B1-035-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0031		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-33 **Client ID** B1-036-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:27:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00009		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-34 **Client ID** B1-037-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00009		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-35 **Client ID** B1-038-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:32:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00008		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-36 **Client ID** B1-039-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-36 **Client ID** B1-039-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-545-37 **Client ID** B1-040-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0006		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-38 **Client ID** B1-MR4-001-F **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 16:57:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.018		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-39 **Client ID** B1-MR4-002-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 17:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0014		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-40 **Client ID** B1-MR4-003-LF **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 17:02:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.061		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-41 **Client ID** B1-044-LF **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 17:12:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0019		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-42 **Client ID** B1-045-LF **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 17:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Anal

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-42 | **Client ID** B1-045-LF | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 17:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.008		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-43 | **Client ID** B1-046-LF | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 17:17:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.001		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-44 | **Client ID** B1-048-LF | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 17:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0018		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-45 | **Client ID** B1-049-LF | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 17:22:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0013		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-46 | **Client ID** B1-050-LF | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 17:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0025		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-47 | **Client ID** B1-051-LF | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 17:27:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0032		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-48 | **Client ID** B1-052-LF | **Date Received** 01/05/00 | **Site** | **Date & Time Collected** 01/04/00 17:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

Reported: February 08, 2000 02:00 PM

PBS&J Sample No. 0001-545-48 **Client ID** B1-052-LF **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 17:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00061		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-49 **Client ID** B1-053-LF **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 17:32:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00096		mg/ft^2		.00005			

PBS&J Sample No. 0001-545-50 **Client ID** FB-1/4/00 **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 18:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-545-51 **Client ID** B1-047-W **Date Received** 01/05/00 **Site** **Date & Time Collected** 01/04/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/06/00	01/06/00	DM
beryllium	.0019		mg/ft^2		.00005			

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15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0001-545

NOC Facility, Sarasota, FL

PROJECT NAME: LOCKHEED MARTIN ^ | PROJECT NO.: TC-1839-02

SAMPLERS: (signature) P. HALVERSON / PHIL SKORGE

Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Solid	NUMBER OF CONTAINERS	ANALYSIS: GOLDA (Beryllium)	REMARKS
B1-001-FL	1500	01-04-00						✓	1	✓	Building 1, Floor Sample
B1-002-FL	1502							✓	1	✓	
B1-003-FL	1505							✓	1	✓	
B1-004-FL	1507							✓	1	✓	
B1-005-FL	1510							✓	1	✓	
B1-006-FL	1512							✓	1	✓	
B1-007-FL	1515							✓	1	✓	
B1-008-FL	1517							✓	1	✓	
B1-009-FL	1520							✓	1	✓	
B1-010-FL	1522							✓	1	✓	
B1-011-FL	1525							✓	1	✓	
B1-012-FL	1527							✓	1	✓	
B1-013-FL	1530							✓	1	✓	
B1-014-FL	1532							✓	1	✓	
B1-015-FL	1535							✓	1	✓	
B1-016-FL	1537							✓	1	✓	
B1-017-FL	1540							✓	1	✓	
B1-018-FL	1545							✓	1	✓	✓ ✓
B1-019-W								✓	1	✓	
B1-020-W	1547							✓	1	✓	Building 1, Wall Sample

01-51

RELINQUISHED BY (signature)	DATE/TIME 1/4.00 (See	TOTAL NUMBER OF CONTAINERS	68	RECEIVED FOR LAB BY (Signature) Janelle Spencer	DATE/TIME 1-5-00 10:00
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS rec'd B1-019-W	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

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5400 NE 90th, Suite 100
Redmond, Washington 98052
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FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0001-545

→ ABC Facility, Sarasota, FL

PROJECT NAME: LOCKHEED MARTIN
PROJECT NO: TC-1839-02
SAMPLERS: (signature) [signature]
Ft Contact: HAL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment		SWIPE	NUMBER OF CONTAINERS	ANALYSIS: 6010A (Beryllium)	REMARKS
B1-021-W	1550	01-04-00							✓	1	✓	Building 1, Wall Swipe
B1-022-W	1552								✓	1	✓	
B1-023-W	1555								✓	1	✓	
B1-024-W	1557								✓	1	✓	
B1-025-W	1600								✓	1	✓	
B1-026-W	1602								✓	1	✓	
B1-027-W	1605								✓	1	✓	
B1-028-W	1607								✓	1	✓	
B1-029-W	1610								✓	1	✓	
B1-030-W	1612								✓	1	✓	
B1-031-W	1615								✓	1	✓	
B1-032-W	1617								✓	1	✓	
B1-033-W	1620								✓	1	✓	
B1-034-W	1622								✓	1	✓	
B1-035-W	1625								✓	1	✓	
B1-036-W	1627								✓	1	✓	
B1-037-W	1630								✓	1	✓	
B1-038-W	1632								✓	1	✓	
B1-039-W	1635								✓	1	✓	
B1-040-W	1640								✓	1	✓	

RELINQUISHED BY (signature) [signature]	DATE/TIME 1-4-00 1500	TOTAL NUMBER OF CONTAINERS 68		RECEIVED FOR LAB BY (Signature) Danielle Spear	DATE/TIME 1-5-00 10:00
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS: Didn't receive B1-022-W B1-030-W B1-025-W	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

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(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0001-545

PROJECT NAME: LOCKHEED MARTIN, ABC Facility, Sarasota, FL
PROJECT NO.:
SAMPLERS: (signature)
Tt Contact: PHIL SCARCE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment		Swipe	NUMBER OF CONTAINERS	ANALYSIS: 6010A (Beryllium)	REMARKS
B1-LR-001-F	1642	1/4/00							✓	1	✓	Bldg 1, Locker Room, Floor Swipe
B1-LR-002-W	1645								✓	1	✓	Bldg 1, Locker Room, Wall Swipe
B1-LR-003-LF	1647								✓	1	✓	Bldg 1, Locker Room, Light Fixture
B1-MR1-001-F	1650								✓	1	✓	Mech Room #1, Floor
B1-MR1-002-W	1652								✓	1	✓	Mech Room #1, Wall
B1-MR1-003-LF	1655								✓	1	✓	Mech Room #1, Light Fixture
B1-MR4-001-F	1657								✓	1	✓	Mech Room #4, Floor
B1-MR4-002-W	1700								✓	1	✓	Mech Room #4, Wall
B1-MR4-003-LF	1702								✓	1	✓	Mech Room #4, Light Fixture
B1-041-LF	1705								✓	1	✓	Bldg 1, Light Fixture
B1-042-LF	1707								✓	1	✓	
B1-043-LF	1710								✓	1	✓	
B1-044-LF	1712								✓	1	✓	
B1-045-LF	1715								✓	1	✓	
B1-046-LF	1717								✓	1	✓	
B1-048-LF	1720								✓	1	✓	
B1-049-LF	1722								✓	1	✓	
B1-050-LF	1725								✓	1	✓	
B1-051-LF	1727								✓	1	✓	
B1-052-LF	1730	✓							✓	1	✓	

RELINQUISHED BY (signature)	DATE/TIME 1/4/00 1900	TOTAL NUMBER OF CONTAINERS	68	RECEIVED FOR LAB BY (Signature) Danielle Sgehar	DATE/TIME 1-5-00 10:00
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS rec'd B1-047-LW; didn't rec: B1-LR-003-LF, B1-LR-001-F, B1-LR-002-W, B1-MR1-001-F, B1-MR1-002-W, B1-MR1-003-LF, B1-041-LF, B1-042-LF, B1-043-LF	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

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TETRA TECH, INC.
5400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0001-545

PROJECT NAME: LOCKHEED MARTIN ABC Facility, Sunrise, FL
PROJECT NO.:
SAMPLERS: (signature)
Tt Contact: PHIL SKOCZEK

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment		Swipe	NUMBER OF CONTAINERS	ANALYSIS: 6010/A (Be only)	REMARKS
BI-053-LF	1736	1/4/00							✓	1	✓	Bldg 1, Light Fixture
BI-054-LF	1735	"							✓	1	✓	
BI-055-LF	1740								✓	1	✓	
BI-056-LF	1742								✓	1	✓	
BI-057-LF	1745								✓	1	✓	
BI-058-LF	1741								✓	1	✓	
BI-059-LF	1750	↓							✓	1	✓	
BI-060-LF	1752	1/4/00							✓	1	✓	
~~FB~~ FB-1/4/00	1500	1/4/00							✓	1	✓	Field Blank

RELINQUISHED BY (signature)	DATE/TIME 1/4/00 1500	TOTAL NUMBER OF CONTAINERS 8		RECEIVED FOR LAB BY (Signature) Danielle Spehar	DATE/TIME 1500 10:00
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS From this pg only rec'd BI-053-LF & FB-1-4-00	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

Distribution: Original - Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: ABC FACILITY

RECEIVED DATE: 11-JAN-00
PO#:

PBS&J Login Number: 0001-540

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-540-01	BI-054-LF		01/08/00	13:00:00
0001-540-02	BI-055-LF		01/08/00	13:05:00
0001-540-03	BI-056-LF		01/08/00	13:10:00
0001-540-04	BI-057-LF		01/08/00	13:15:00
0001-540-05	BI-058-LF		01/08/00	13:20:00
0001-540-06	BI-059-LF		01/08/00	13:25:00
0001-540-07	BI-060-LF		01/08/00	13:30:00
0001-540-08	BI-061-LF		01/08/00	13:35:00
0001-540-09	BI-LR-004-LF		01/08/00	13:45:00
0001-540-10	BI-MR1-004-LF		01/08/00	13:50:00
0001-540-11	BI-MR4-004-LF		01/08/00	13:55:00

Thank you for using PBS&J Analytical Services

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

T. French

PBS&J Project Manager

Chemtest Laboratory
6635 East Colonial Drive • Orlando, Florida 32807-5273 • Telephone: 407.277.4443 • Fax: 407.382.8794 • www.pbsj.com

RESULTS BY SAMPLE

Reported: February 08, 2000 02:02 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T.French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-540-1	BI-054-LF	01/11/00		01/08/00 13:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00335		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-540-2	BI-055-LF	01/11/00		01/08/00 13:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00037		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-540-3	BI-056-LF	01/11/00		01/08/00 13:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-540-4	BI-057-LF	01/11/00		01/08/00 13:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-540-5	BI-058-LF	01/11/00		01/08/00 13:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00049		mg/ft^2		.00005			

RESULTS BY SAMPLE

Reported: February 08, 2000 02:02 PM

PBS&J Sample No. 0001-540-6 | **Client ID** BI-059-LF | **Date Received** 01/11/00 | **Site** | **Date & Time Collected** 01/08/00 13:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00007		mg/ft^2		.00005			

PBS&J Sample No. 0001-540-7 | **Client ID** BI-060-LF | **Date Received** 01/11/00 | **Site** | **Date & Time Collected** 01/08/00 13:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005		mg/ft^2		.00005			

PBS&J Sample No. 0001-540-8 | **Client ID** BI-061-LF | **Date Received** 01/11/00 | **Site** | **Date & Time Collected** 01/08/00 13:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00012		mg/ft^2		.00005			

PBS&J Sample No. 0001-540-9 | **Client ID** BI-LR-004-LF | **Date Received** 01/11/00 | **Site** | **Date & Time Collected** 01/08/00 13:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.0062		mg/ft^2		.00005			

PBS&J Sample No. 0001-540-10 | **Client ID** BI-MRI-004-LF | **Date Received** 01/11/00 | **Site** | **Date & Time Collected** 01/08/00 13:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.0131		mg/ft^2		.00005			

PBS&J Sample No. 0001-540-11 | **Client ID** BI-MR4-004-LF | **Date Received** 01/11/00 | **Site** | **Date & Time Collected** 01/08/00 13:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.0137		mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED MARTIN - ABC Facility, Sarasota, FL
PROJECT NO.: TC-1839-02
SAMPLERS: (signature)
Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Swipe	NUMBER OF CONTAINERS	ANALYSIS: 6010A (Beryllium)	REMARKS: 0001-540
B1-054-LF	1300	1/8/00						X	1	X	Bldg 1, offices, Floor Sample
B1-055-LF	1305							X	1	X	
B1-056-LF	1310							X	1	X	
B1-057-LF	1315							X	1	X	
B1-058-LF	1320							X	1	X	
B1-059-LF	1325							X	1	X	
B1-060-LF	1330							X	1	X	
B1-061-LF	1335							X	1	X	
B1-LR-004-LF	1345							X	1	X	Locker Room, Light Fixture, Reclean
B1-MR1-004-LF	1350							X	1	X	Mech. Room #1, Light Fixture reclean
B1-MR4-004-LF	1355	1/8/00						X	1	X	Mech Room # 4, Light fixture reclean

RELINQUISHED BY (signature)	DATE/TIME 1/8/00	TOTAL NUMBER OF CONTAINERS	11	RECEIVED FOR LAB BY (Signature) Danielle Spehar	DATE/TIME 1-11-00 11:00
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: ABC FACILITY

RECEIVED DATE: 21-JAN-00
PO#:

PBS&J Login Number: 0001-557

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-557-01	B2-FL-001		01/13/00	12:25:00
0001-557-02	B2-FL-002		01/13/00	12:30:00
0001-557-03	B2-FL-003		01/13/00	12:35:00
0001-557-04	B2-W-004		01/13/00	12:40:00
0001-557-05	B2-W-005		01/13/00	12:45:00
0001-557-06	B2-W-006		01/13/00	12:50:00
0001-557-07	B2-W-007		01/13/00	12:55:00
0001-557-08	B2-W-008		01/13/00	13:00:00
0001-557-09	B2-LF-009		01/13/00	13:05:00
0001-557-10	B2-LF-010		01/13/00	13:10:00
0001-557-11	B2-LF-011		01/13/00	13:15:00
0001-557-12	B2-LF-012		01/13/00	13:20:00
0001-557-13	B2-LF-013		01/13/00	13:25:00
0001-557-14	B2-LF-014		01/13/00	13:30:00

PBS&J Analytical Services

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REPORTED DATE: February 08, 2000

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-557-15	B2-FL-015		01/13/00	13:35:00
0001-557-16	B2-FL-016		01/13/00	13:40:00
0001-557-17	B2-W-017		01/13/00	13:45:00
0001-557-18	B2-W-018		01/13/00	13:50:00
0001-557-19	B2-LF-019		01/13/00	13:55:00
0001-557-20	B2-LF-020		01/13/00	14:00:00
0001-557-21	B2/TB		01/13/00	00:00:00
0001-557-22	B2-LF-021		01/13/00	00:00:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:03 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T.French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-557-1	B2-FL-001	01/21/00		01/13/00 12:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00038		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-557-2	B2-FL-002	01/21/00		01/13/00 12:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-557-3	B2-FL-003	01/21/00		01/13/00 12:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00026		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-557-4	B2-W-004	01/21/00		01/13/00 12:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00007		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-557-5	B2-W-005	01/21/00		01/13/00 12:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

RESULTS BY SAMPLE

Reported: February 08, 2000 02:03 PM

PBS&J Sample No. 0001-557-6 | **Client ID** B2-W-006 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/13/00 12:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-557-7 | **Client ID** B2-W-007 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/13/00 12:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-557-8 | **Client ID** B2-W-008 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/13/00 13:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-557-9 | **Client ID** B2-LF-009 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/13/00 13:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.0005		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-10 | **Client ID** B2-LF-010 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/13/00 13:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00008		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-11 | **Client ID** B2-LF-011 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/13/00 13:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00007		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-12 | **Client ID** B2-LF-012 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/13/00 13:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Anal

RESULTS BY SAMPLE

Reported: February 08, 2000 02:03 PM

PBS&J Sample No. 0001-557-12 **Client ID** B2-LF-012 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00026		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-13 **Client ID** B2-LF-013 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00012		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-14 **Client ID** B2-LF-014 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00053		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-15 **Client ID** B2-FL-015 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.0051		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-16 **Client ID** B2-FL-016 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00007		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-17 **Client ID** B2-W-017 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00009		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-18 **Client ID** B2-W-018 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

Reported: February 08, 2000 02:03 PM

PBS&J Sample No. 0001-557-18 **Client ID** B2-W-018 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.0001		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-19 **Client ID** B2-LF-019 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 13:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00033		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-20 **Client ID** B2-LF-020 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 14:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.0002		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-21 **Client ID** B2/TB **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00007		mg/ft^2		.00005			

PBS&J Sample No. 0001-557-22 **Client ID** B2-LF-021 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/13/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/14/00	01/14/00	DM
beryllium	.00034		mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

0001-557 PAGE 1 OF 2

PROJECT NAME: LOCKHEED
PROJECT NO.: TC-1839-02
SAMPLERS: (Signature)
Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Swipe	NUMBER OF CONTAINERS	ANALYSIS: 6010A (Be)	REMARKS
B2-LF-019	1355	1-13-00						✓	1	✓	BLDG 2 LIGHT FIX
B2-LF 020	1400	1-13-00						✓	1	✓	BLDG 2- LIGHT FIX
B2/TB		1-13-00						✓	1	✓	TRIP BLANK
B2-LF-021											
										22 TOTAL	

RELINQUISHED BY (signature)	DATE/TIME 1/13/00 1600	TOTAL NUMBER OF CONTAINERS 22 TOTAL		RECEIVED FOR LAB BY (Signature) Danielle Spehar	DATE/TIME 1-14-00 10:30
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

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CHAIN OF CUSTODY

DOCUMENT 0001-557

PROJECT NAME: LOCKHEED
PROJECT NO: TC-1839-02
SAMPLERS: (signature)
Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	SWIPE	NUMBER OF CONTAINERS	ANALYSIS: 6010A (Be)	REMARKS
B2-FL-001	1225	1-18-00						✓	1		BLDG 2 - FLOOR
B2-FL-002	1230							✓	1		" "
B2-FL-003	1235							✓	1		" "
B2-W-004	1240							✓	1		BLDG 2 WALL
B2-W-005	1245							✓	1		"
B2-W-006	1250							✓	1		"
B2-W-007	1255							✓	1		"
B2-W-008	1300							✓	1		"
B2-LF-009	1305							✓	1		BLDG 2 LIGHT FIXTURE
B2-LF-010	1310							✓	1		"
B2-LF-011	1315							✓	1		"
B2-LF-012	1320							✓	1		"
B2-LF-013	1325							✓	1		"
B2-LF-014	1330							✓	1		"
B2-FL-015	1335							✓	1		BLDG 2 FLOOR
B2-FL-016	1340							✓	1		BLDG 2 FLOOR
B2-W-017	1345							✓	1		BLDG 2 WALL
B2-W-018	1350							✓	1		BLDG 2 WALL

RELINQUISHED BY (signature)	DATE/TIME 1/13/00 1600	TOTAL NUMBER OF CONTAINERS 18+		RECEIVED FOR LAB BY (Signature) PAGE 2	DATE/TIME 1-14-00 10:30
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX		AIRBILL NO. 852892 4704	

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: ABC FACILITY

RECEIVED DATE: 21-JAN-00
PO#:

PBS&J Login Number: 0001-558

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-558-01	PA/FL/001		01/18/00	15:00:00
0001-558-02	PA/CEIL/002		01/18/00	15:05:00
0001-558-03	PA/W/003		01/18/00	15:10:00
0001-558-04	B2/W/026R		01/18/00	15:20:00
0001-558-05	B2/FL/046R		01/18/00	15:30:00
0001-558-06	DUCT		01/18/00	15:40:00
0001-558-07	TB		01/18/00	00:00:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:04 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T.French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No. 0001-558-1 **Client ID** PA/FL/001 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/18/00 15:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.00005	U	mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-558-2 **Client ID** PA/CEIL/002 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/18/00 15:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.0017		mg/ft^2		.00005			
chromium	.013		mg/ft^2		.00005			

PBS&J Sample No. 0001-558-3 **Client ID** PA/W/003 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/18/00 15:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.0002		mg/ft^2		.00005			
chromium	.0003		mg/ft^2		.00005			

PBS&J Sample No. 0001-558-4 **Client ID** B2/W/026R **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/18/00 15:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.00005	U	mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. **Client ID**

RESULTS BY SAMPLE

Reported: February 08, 2000 02:04 PM

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-5	B2/FL/046R	01/21/00		01/18/00 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.0018		mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-6	DUCT	01/21/00		01/18/00 15:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.013		mg/ft^2		.00005			
chromium	.13		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-558-7	TB	01/21/00		01/18/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/19/00	01/19/00	DM
beryllium	.00005	U	mg/ft^2		.00005			
chromium	.00005	U	mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
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(206) 883-1912
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CHAIN OF CUSTODY

DOCUMENT 001-558

PROJECT NAME LOCKHEED

PROJECT NO. TC-1839-02

SAMPLERS: (signature)

Tt Contact: PHIL STORCE 206-537-4648

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Swipe	NUMBER OF CONTAINERS	ANALYSIS: GROSS CHROMIUM										REMARKS
PA/FL/001	1500	1-18-00						✓	1	✓										PLATING AREA FLOOR
PA/CEIL/002	1505	↓						✓	1	✓										PLATING AREA CEILING
PA/W/003	1510							✓	1	✓										PLATING AREA WALL
B2/W/020R	1520							✓	1	✓										BLDG 2 RESAMPLE
B2/FL/046R	1530							✓	1	✓										BLDG 2 RESAMPLE
DUCT	1540							✓	1		✓									PLATING DUCTWORK
T.B	—							✓	1	✓										TRIP BLANK

01-07

RELINQUISHED BY (signature)	DATE/TIME 1/18/00 17:00	TOTAL NUMBER OF CONTAINERS	7	RECEIVED FOR LAB BY (Signature)	DATE/TIME 1-19-00 10:30
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS 24 HR TAT	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX.	AIRBILL NO.		

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: ABC FACILITY

RECEIVED DATE: 21-JAN-00
PO#:

PBS&J Login Number: 0001-560

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-560-01	B2-FL-041		01/14/00	12:05:00
0001-560-02	B2-FL-042		01/14/00	12:10:00
0001-560-03	B2-FL-043		01/14/00	12:15:00
0001-560-04	B2-FL-044		01/14/00	12:20:00
0001-560-05	B2-FL-045		01/14/00	12:25:00
0001-560-06	B2-FL-046		01/14/00	12:30:00
0001-560-07	B2-FL-047		01/14/00	12:35:00
0001-560-08	B2-FL-048		01/14/00	12:40:00
0001-560-09	B2-FL-049		01/14/00	12:45:00
0001-560-10	MR2-FL-01		01/14/00	12:50:00
0001-560-11	MR2-W-02		01/14/00	12:55:00
0001-560-12	MR2-LF-03		01/14/00	13:00:00
0001-560-13	MR3-FL-01		01/14/00	13:05:00
0001-560-14	MR3-W-02		01/14/00	13:10:00

Certificate of Analysis

REPORTED DATE: February 08, 2000

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-560-15	MR3-LF-03		01/14/00	13:15:00
0001-560-16	B2-LF-050		01/14/00	13:20:00
0001-560-17	B2-LF-051		01/14/00	13:25:00
0001-560-18	B2-LF-052		01/14/00	13:30:00
0001-560-19	B2-LF-053		01/14/00	13:35:00
0001-560-20	B2-W-022		01/14/00	10:30:00
0001-560-21	B2-W-023		01/14/00	10:35:00
0001-560-22	B2-W-024		01/14/00	10:40:00
0001-560-23	B2-W-025		01/14/00	10:45:00
0001-560-24	B2-W-026		01/14/00	10:50:00
0001-560-25	B2-W-027		01/14/00	10:55:00
0001-560-26	B2-W-028		01/14/00	11:00:00
0001-560-27	B2-W-029		01/14/00	11:05:00
0001-560-28	B2-W-030		01/14/00	11:10:00
0001-560-29	B2-W-031		01/14/00	11:15:00
0001-560-30	B2-W-032		01/14/00	11:20:00
0001-560-31	B2-W-033		01/14/00	11:25:00
0001-560-32	B2-W-034		01/14/00	11:30:00
0001-560-33	B2-W-035		01/14/00	11:35:00
0001-560-34	B2-W-036		01/14/00	11:40:00
0001-560-35	B2-W-037		01/14/00	11:45:00
0001-560-36	B2-W-040		01/14/00	12:00:00

Certificate of Analysis

REPORTED DATE: February 08, 2000

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-560-37	B2-LF-054		01/14/00	13:40:00
0001-560-38	B2-LF-055		01/14/00	13:45:00
0001-560-39	B2-LF-056		01/14/00	13:50:00
0001-560-40	B2-LF-057		01/14/00	13:55:00
0001-560-41	B2-LF-058		01/14/00	14:00:00
0001-560-42	B2-LF-060		01/14/00	14:05:00
0001-560-43	B2-LF-061		01/14/00	14:10:00
0001-560-44	B2-LF-059		01/14/00	14:15:00
0001-560-45	TB		01/14/00	14:28:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:05 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T.French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-560-1	B2-FL-041	01/21/00		01/14/00 12:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0016		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-560-2	B2-FL-042	01/21/00		01/14/00 12:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00066		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-560-3	B2-FL-043	01/21/00		01/14/00 12:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00043		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-560-4	B2-FL-044	01/21/00		01/14/00 12:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0012		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-560-5	B2-FL-045	01/21/00		01/14/00 12:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00045		mg/ft^2		.00005			

RESULTS BY SAMPLE

Reported: February 08, 2000 02:05 PM

PBS&J Sample No. 0001-560-6 **Client ID** B2-FL-046 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.029		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-7 **Client ID** B2-FL-047 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.013		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-8 **Client ID** B2-FL-048 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00034		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-9 **Client ID** B2-FL-049 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0014		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-10 **Client ID** MR2-FL-01 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00038		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-11 **Client ID** MR2-W-02 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.000068		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-12 **Client ID** MR2-LF-03 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

Reported: February 08, 2000 02:05 PM

PBS&J Sample No. 0001-560-12 **Client ID** MR2-LF-03 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00057		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-13 **Client ID** MR3-FL-01 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0053		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-14 **Client ID** MR3-W-02 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0044		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-15 **Client ID** MR3-LF-03 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0059		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-16 **Client ID** B2-LF-050 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-560-17 **Client ID** B2-LF-051 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-560-18 **Client ID** B2-LF-052 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Anal

RESULTS BY SAMPLE

Reported: February 08, 2000 02:05 PM

PBS&J Sample No. 0001-560-18 **Client ID** B2-LF-052 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0001		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-19 **Client ID** B2-LF-053 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00036		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-20 **Client ID** B2-W-022 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 10:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0045		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-21 **Client ID** B2-W-023 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 10:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0023		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-22 **Client ID** B2-W-024 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 10:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0014		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-23 **Client ID** B2-W-025 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 10:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.001		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-24 **Client ID** B2-W-026 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 10:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

PBS&J Sample No. 0001-560-24 **Client ID** B2-W-026 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 10:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.05		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-25 **Client ID** B2-W-027 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 10:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0004		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-26 **Client ID** B2-W-028 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00029		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-27 **Client ID** B2-W-029 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00075		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-28 **Client ID** B2-W-030 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00023		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-29 **Client ID** B2-W-031 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
etals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
ryllium	.00028		mg/ft^2		.00005			

J Sample No. 0-30 **Client ID** B2-W-032 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:20:00

neter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Ana

RESULTS BY SAMPLE

PBS&J Sample No. 0001-560-30 **Client ID** B2-W-032 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00026		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-31 **Client ID** B2-W-033 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:25:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00021		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-32 **Client ID** B2-W-034 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.000084		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-33 **Client ID** B2-W-035 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00038		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-34 **Client ID** B2-W-036 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0015		mg/ft^2		.00005			

'BS&J Sample No.)01-560-35 **Client ID** B2-W-037 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 11:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
etals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
ryllium	.00014		mg/ft^2		.00005			

I Sample No.)0-36 **Client ID** B2-W-040 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:00:00

ieter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst

RESULTS BY SAMPLE

PBS&J Sample No. 0001-560-36 **Client ID** B2-W-040 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 12:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00012		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-37 **Client ID** B2-LF-054 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.000086		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-38 **Client ID** B2-LF-055 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:45:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00085		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-39 **Client ID** B2-LF-056 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:50:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

PBS&J Sample No. 0001-560-40 **Client ID** B2-LF-057 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 13:55:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

BS&J Sample No. 01-560-41 **Client ID** B2-LF-058 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 14:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
etals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
ryllium	.00047		mg/ft^2		.00005			

Sample No. 0-42 **Client ID** B2-LF-060 **Date Received** 01/21/00 **Site** **Date & Time Collected** 01/14/00 14:05:00

eter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Ana

RESULTS BY SAMPLE

Reported: February 08, 2000 02:05 PM

PBS&J Sample No. 0001-560-42 | **Client ID** B2-LF-060 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/14/00 14:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.0001		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-43 | **Client ID** B2-LF-061 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/14/00 14:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00037		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-44 | **Client ID** B2-LF-059 | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/14/00 14:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00077		mg/ft^2		.00005			

PBS&J Sample No. 0001-560-45 | **Client ID** TB | **Date Received** 01/21/00 | **Site** | **Date & Time Collected** 01/14/00 14:28:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/17/00	01/17/00	DM
beryllium	.00005	U	mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED — PROJECT NO.: TC1839-02

SAMPLERS: (signature) [signature]

Tt Contact: PAUL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Suite	NUMBER OF CONTAINERS	ANALYSIS: 6010A	0001-560 01-45	REMARKS
B2-FL-041	1205	1-14-00							1			
B2-FL-042	1210								1			
B2-FL-043	1215								1			
B2-FL-044	1220								1			
B2-FL-045	1225								1			
B2-FL-046	1230								1			
B2-FL-047	1235								1			
B2-FL-048	1240								1			
B2-FL-049	1245								1			
MR2-FL-01	1250								1			
~~MR2-FL~~	~~1255~~								1			
MR2-W-02	1255								1			
MR2-LF-03	1300								1			
MR3-FL-01	1305								1			
MR3-W-02	1310								1			
MR3-LF-03	1315								1			
B2-LF-050	1320								1			
B2-LF-051	1325								1			
B2-LF-052	1330								1			
B2-LF-053	1335								1			

RELINQUISHED BY (signature) [signature]	DATE/TIME 1-14-00	TOTAL NUMBER OF CONTAINERS 20		RECEIVED FOR LAB BY (Signature) Danelle Spehar	DATE/TIME 1-17-00 10:30
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FEDEX	AIRBILL NO.	46 TOTAL SAMPLES	

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FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME LOCKHEED | PROJECT NO. TC-1839-02

SAMPLERS: (signature)

Tt Contact: THL SORGE

0001-560

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Solid	NUMBER OF CONTAINERS	ANALYSIS: 6010A	REMARKS
B2-W-022	1030	1-14-00						✓	1		
B2-W-023	1035							✓	1		
B2-W-024	1040							✓	1		
B2-W-025	1045							✓	1		
B2-W-026	1050							✓	1		
B2-W-027	1055							✓	1		
B2-W-028	1100							✓	1		
B2-W-029	1105							✓	1		
B2-W-030	1110							✓	1		
B2-W-031	1115							✓	1		
B2-W-032	1120							✓	1		
B2-W-033	1125							✓	1		
B2-W-034	1130							✓	1		
B2-W-035	1135							✓	1		
B2-W-036	1140							✓	1		
B2-W-037	1145							✓	1		
~~B2-W-038~~	1150							—	—		
~~B2-W-039~~	1155							—	—		
B2-W-040	1200							✓	1		
								✓	1		

RELINQUISHED BY (signature)	DATE/TIME 1/14/00 15	TOTAL NUMBER OF CONTAINERS 17		RECEIVED FOR LAB BY (Signature) Danielle Spehar	DATE/TIME 1-17-00 10:30
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FEDEX	AIRBILL NO.		

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(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED
PROJECT NO: TC-1839-02
SAMPLERS: (signature) [signature]
Tt Contact: PHIL SKORGE

0001-560

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	SVIAE	NUMBER OF CONTAINERS	ANALYSIS: 6010A	REMARKS
B2-LF-054	1340	1-14-00						✓	1	✓	
B2-LF-055	1345	↓						✓	1	✓	
B2-LF-056	1350							✓	1	✓	
B2-LF-057	1355							✓	1	✓	
B2-LF-058	1400							✓	1	✓	
B2-LF-060	1405							✓	1	✓	
B2-LF-~~0600~~	1410							✓	1	✓	
B2-LF-059	1415							✓	1	✓	
T.B	1420							✓	1	✓	TRIP BLANK

RELINQUISHED BY (signature) [signature]	DATE/TIME 1-14-00 1500	TOTAL NUMBER OF CONTAINERS 8		RECEIVED FOR LAB BY (Signature) Danielle Spencer	DATE/TIME 1-17-00 10:30
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX	AIRBILL NO.		

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: ABC FACILITY

RECEIVED DATE: 21-JAN-00
PO#:

PBS&J Login Number: 0001-561

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-561-01	B2-MR2-LF		01/19/00	16:00:00
0001-561-02	B2-MR2-W		01/19/00	16:05:00
0001-561-03	B2-MR2-FL		01/19/00	16:10:00
0001-561-04	TRIP BLANK		01/19/00	00:00:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:05 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T.French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-561-1	B2-MR2-LF	01/21/00		01/19/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/21/00	01/21/00	DMS
beryllium	.00042		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-561-2	B2-MR2-W	01/21/00		01/19/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/21/00	01/21/00	DMS
beryllium	.00053		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-561-3	B2-MR2-FL	01/21/00		01/19/00 16:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/21/00	01/21/00	DMS
beryllium	.0019		mg/ft^2		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-561-4	TRIP BLANK	01/21/00		01/19/00 00:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Swipe by ICAP				NIOSH 7300		01/21/00	01/21/00	DMS
beryllium	.00005	U	mg/ft^2		.00005			

TETRA TECH, INC.
15400 NE 90th, Suite 100
Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT 0258

0001-561 01-04

PROJECT NAME: LOCKHEED
PROJECT NO.: TC-1839-02
SAMPLERS: (signature) [signature]
Tt Contact: PHIL SKORGE 206-587 4648

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Suite	NUMBER OF CONTAINERS	ANALYSIS: GRO/BTEX (RV)	REMARKS
B2-MR2-LF	1600	1-19-00						✓	1	✓	BLDG 2, MECH ROOM, LIGHT FIX
B2-MR2-W	1605	1-19-00						✓	1	✓	" " WALL
B2-MR2-FL	1610	1-19-00						✓	1	✓	" " FLOOR
TRIP BLANK	—	1-19-00						✓	1	✓	TRIP BLANK

RELINQUISHED BY (signature) [signature]	DATE/TIME 1-19-00 1200	TOTAL NUMBER OF CONTAINERS 4		RECEIVED FOR LAB BY (Signature) [signature]	DATE/TIME 1/21/00 1045
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS RUSH 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX.	AIRBILL NO.		

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PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 03, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-FILTERS
Air Filter Analysis

RECEIVED DATE: 11-JAN-00
PO#:

PBS&J Login Number: 0001-542

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-542-01	BI-AC-1		01/08/00	18:00:00
0001-542-02	BI-AC-2		01/08/00	18:10:00
0001-542-03	BI-AC-3		01/08/00	18:20:00
0001-542-04	BI-FO-4		01/10/00	16:00:00
0001-542-05	BI-LR-5		01/10/00	16:05:00
0001-542-06	BI-NO-6		01/10/00	16:10:00

Thank you for using PBS&J Analytical Services

T. French

PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 03, 2000 04:08 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-542-1	BI-AC-1	01/11/00		01/08/00 18:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-542-2	BI-AC-2	01/11/00		01/08/00 18:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-542-3	BI-AC-3	01/11/00		01/08/00 18:20:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-542-4	BI-FO-4	01/11/00		01/10/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-542-5	BI-LR-5	01/11/00		01/10/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005	U	mg/m3		.00005			

RESULTS BY SAMPLE

Reported: February 03, 2000 04:08 PM

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-542-6	BI-NO-6	01/11/00		01/10/00 16:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/11/00	01/11/00	DM
beryllium	.00005	U	mg/m3		.00005			

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Redmond, Washington 98052
(206) 883-1912
FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT _____

PROJECT NAME: LOCKHEED SARASOTA - BERYLLIUM ABATEMENT
PROJECT NO.: TC-1839-C.2
SAMPLERS: (signature)
Tt Contact: PHIL SKOGE (206) 587-4648

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Air Filter	NUMBER OF CONTAINERS	ANALYSIS: NIOSH 7300 (Beryllium)	REMARKS
B1-AC-1	~~1800~~ 1300	1/8/00						X	1	X	24-hour T.A.T. See sample Labels for air flow rate + duration -1 -2 -3
B1-AC-2	1810	↓						X	1	X	
B1-AC-3	1820	↓						X	1	X	
B1-FO-4	1600	1-10-~~00~~						X	1	X	FRONT OFFICE - B-1 -4
B1-LR-5	1605	1-10-00						X	1	X	LOCKER ROOM -5
B1-NO-6	1610	1-10-00						X	1	X	NORTH OFFICE - BLDG. 1. -6

0001-542

RELINQUISHED BY (signature)	DATE/TIME 1-10-00 1620	TOTAL NUMBER OF CONTAINERS	3	RECEIVED FOR LAB BY (Signature)	DATE/TIME 1-11-00 1100
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.		

Distribution: Original - Lab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

PBS&J Analytical Services

Chemical Testing
Environmental Toxicology
Field Services

Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle,, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-WIPES
Area Wipe Samples

RECEIVED DATE: 26-JAN-00
PO#:

PBS&J Login Number: 0001-644

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
0001-644-01	B2-AC-01		01/24/00	16:00:00
0001-644-02	B2-AC-02		01/24/00	16:05:00
0001-644-03	B2-AC-03		01/24/00	16:10:00
0001-644-04	B2-AC-04		01/24/00	16:15:00
0001-644-05	B2-AC-05		01/25/00	15:30:00
0001-644-06	B2-AC-06		01/25/00	15:35:00
0001-644-07	ENT-PER-B3		01/21/00	16:00:00
0001-644-08	EXT-PER-B3		01/21/00	16:05:00
0001-644-09	ENT-PER-B3		01/25/00	16:00:00
0001-644-10	EXT-PER-B3		01/25/00	16:05:00

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REPORTED DATE: February 08, 2000

T. French

PBS&J Project Manager

Chemtest Laboratory
6635 East Colonial Drive • Orlando, Florida 32807-5273 • Telephone: 407.277.4443 • Fax: 407.382.8794 • www.pbsj.com

RESULTS BY SAMPLE

Reported: February 08, 2000 02:06 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-644-1	B2-AC-01	01/26/00		01/24/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-644-2	B2-AC-02	01/26/00		01/24/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-644-3	B2-AC-03	01/26/00		01/24/00 16:10:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-644-4	B2-AC-04	01/26/00		01/24/00 16:15:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No.	Client ID	Date Received	Site	Date & Time Collected
0001-644-5	B2-AC-05	01/26/00		01/25/00 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

RESULTS BY SAMPLE

Reported: February 08, 2000 02:06 PM

PBS&J Sample No. 0001-644-6 **Client ID** B2-AC-06 **Date Received** 01/26/00 **Site** **Date & Time Collected** 01/25/00 15:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No. 0001-644-7 **Client ID** ENT-PER-B3 **Date Received** 01/26/00 **Site** **Date & Time Collected** 01/21/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No. 0001-644-8 **Client ID** EXT-PER-B3 **Date Received** 01/26/00 **Site** **Date & Time Collected** 01/21/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No. 0001-644-9 **Client ID** ENT-PER-B3 **Date Received** 01/26/00 **Site** **Date & Time Collected** 01/25/00 16:00:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No. 0001-644-10 **Client ID** EXT-PER-B3 **Date Received** 01/26/00 **Site** **Date & Time Collected** 01/25/00 16:05:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air by ICAP				NIOSH 7300		01/26/00	01/26/00	DM
beryllium	.00005	U	mg/m3		.00005			

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DOCUMENT 0001-644 01-10

PROJECT NAME: LOCKHEED | PROJECT NO.: TC-1839-02

SAMPLERS: (signature) [signature]

Tt Contact: PHIL SKORGE

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Air Sparge	NUMBER OF CONTAINERS	ANALYSIS: 7320 (BE)	REMARKS: BLDG 2 - SOUTH FRONT OFFICE
B2-AC-01	1600	1/24/00						✓	1	✓	~~BLDG2 - FORMER MACH. RM AREA~~
B2-AC-02	1605	1/24/00						✓	1	✓	BLDG II ENG. ROOM
B2-AC-03	1610	1/24/00						✓	1	✓	BLDG II FORMER MILL RM
B2-AC-04	1615	1/24/00						✓	1	✓	BLDG II FORMER INSPECT. RM
B2-AC-05	1530	1/25/00						✓	1	✓	BLDG II FORMER LAB
B2-AC-06	1535	1/25/00						✓	1	✓	BLDG II SHIPPING AREA
INT-PER-B3	1600	1/21/00						✓	1	✓	BLDG III ENTRANCE
EXT-PER-B3	1605	1/21/00						✓	1	✓	BLDG III ~~ENTRANCE~~ EXIT
ENT PER-B3	1600	1/25/00						✓	1	✓	BLDG III ENTRANCE
EXT. PER-B3	1605	1/25/00						✓	1	✓	BLDG III EXIT

RELINQUISHED BY (signature) [signature]	DATE/TIME 1/25/00 1700	TOTAL NUMBER OF CONTAINERS 10		RECEIVED FOR LAB BY (Signature) [signature]	DATE/TIME 1/26/00 1015
RECEIVED BY (signature)	DATE/TIME	RELINQUISHED BY (signature)	DATE/TIME	CONDITION OF CONTENTS	TEMPERATURE UPON RECEIPT
RELINQUISHED BY (signature)	DATE/TIME	RECEIVED BY (signature)	DATE/TIME	REMARKS 24 HR T.A.T.	
RECEIVED BY (signature)	DATE/TIME	METHOD OF SHIPMENT FED EX	AIRBILL NO.		

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PBS&J Analytical Services

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Certificate of Analysis

REPORTED DATE: February 08, 2000

To: Phil Skorge
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101
Phone: (206)587-4648 Fax: 624-3679

Your Project: LOCKHEED BERYLLIUM ABATEMENT-FILTERS
Air Filter Analysis

RECEIVED DATE: 23-DEC-99
PO#:

PBS&J Login Number: S912-493

PBSJ Sample No.	Client Sample ID	Locator	Collection date/time	
S912-493-01	B1/PERO1/122199		12/21/99	18:30:00
S912-493-02	B1/PERO2/122199		12/21/99	18:35:00
S912-493-03	B1/PERO1/122299		12/22/99	15:30:00
S912-493-04	B1/PERO2/122299		12/22/99	15:40:00

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T. French
PBS&J Project Manager

RESULTS BY SAMPLE

Reported: February 08, 2000 02:46 PM

SENT TO: *Phil Skorge*
Tetra Tech, Inc.

600 University Street, Suite 800
Seattle, WA 98101

(206)587-4648 FAX 624-3679

PBS&J Project Manager: *T. French*

This is to certify that the following samples were analyzed using good laboratory practices to show the following results:

PBS&J Sample No. S912-493-1 **Client ID** B1/PERO1/122199 **Date Received** 12/23/99 **Site** **Date & Time Collected** 12/21/99 18:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air By NIOSH Method 7300 (ICAP)				NIOSH 7300		12/28/99	12/28/99	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No. S912-493-2 **Client ID** B1/PERO2/122199 **Date Received** 12/23/99 **Site** **Date & Time Collected** 12/21/99 18:35:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air By NIOSH Method 7300 (ICAP)				NIOSH 7300		12/28/99	12/28/99	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No. S912-493-3 **Client ID** B1/PERO1/122299 **Date Received** 12/23/99 **Site** **Date & Time Collected** 12/22/99 15:30:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air By NIOSH Method 7300 (ICAP)				NIOSH 7300		12/28/99	12/28/99	DM
beryllium	.00005	U	mg/m3		.00005			

PBS&J Sample No. S912-493-4 **Client ID** B1/PERO2/122299 **Date Received** 12/23/99 **Site** **Date & Time Collected** 12/22/99 15:40:00

Parameter	Results	Qual	Units	Method	MDL	Prepdate	Analyzed	Analyst
Metals in Air By NIOSH Method 7300 (ICAP)				NIOSH 7300		12/28/99	12/28/99	DM
beryllium	.00005	U	mg/m3		.00005			

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FAX (206) 881-6997

CHAIN OF CUSTODY

DOCUMENT S912-493

PROJECT NAME: LOCKHEED BERYLLIUM ABATMENT
PROJECT NO.:
SAMPLERS: *(signature)* Debra Ayers
Tt Contact: Phil Skorge

SAMPLE ID	TIME	DATE	MEDIA: Air	Surface Water	Ground Water	Soil	Sediment	Stack Air	NUMBER OF CONTAINERS	ANALYSIS: 7300	REMARKS
B1/PER01/122199	1830	122199						✓	1	✓	ENTRANCE BLDG #1-01
B1/PER02/122199	1835	122199						✓	1	✓	EXHAUST BLDG #1-02
B1/PER01/122299	1530	122299						✓	1	✓	ENTRANCE BLDG #1-03
B1/PER02/122299	1540	122299						✓	1	✓	EXHAUST BLDG #1-04

RELINQUISHED BY *(signature)*	DATE/TIME 122299 1630	TOTAL NUMBER OF CONTAINERS: 4	RECEIVED FOR LAB BY *(Signature)* / DATE/TIME
RECEIVED BY *(signature)* M. Yvonne 10:40	DATE/TIME 12/23/99	RELINQUISHED BY *(signature)* 11:40 Fed Ex 815286824631	DATE/TIME 12/23/99 — CONDITION OF CONTENTS / TEMPERATURE UPON RECEIPT
RELINQUISHED BY *(signature)*	DATE/TIME	RECEIVED BY *(signature)*	DATE/TIME — REMARKS
RECEIVED BY *(signature)*	DATE/TIME	METHOD OF SHIPMENT	AIRBILL NO.

Distribution: Or. ..ab Copy Yellow copy - Final Tetra Tech Copy Pink Copy - Field File Copy

Former American Beryllium Company Decontamination and Abatement of Beryllium Impacted Materials Final Report

Prepared for:

Lockheed Martin Corporation
Burbank, California

Prepared by:

Tetra Tech, Inc.
Pasadena, California

Cathy Burks for
Dan Batrack
Program Manager

Phil Skorge
Project Manager

Bu Farnal for
Nisha Bansal
Technical Reviewer

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Section 1
Introduction

On behalf of Lockheed Martin Corporation (Lockheed Martin), Tetra Tech, Inc. has prepared the following report documenting the abatement of beryllium-impacted materials and building surfaces at Lockheed Martin's former American Beryllium Company (ABC) facility in Tallevast, Florida. Beryllium residues detected in various building materials within Buildings 1, 2, 3, 4, and 5 of the ABC facility were abated (by removal or decontamination) in order to reduce potential airborne beryllium hazards that may occur during future occupancy of the facility. The abatement program was coordinated with Law Environmental, Inc., on behalf of Waters, Telsey, and Puma, Inc. (WTP), for concurrence that the property was considered suitable for occupancy. The primary objectives of the abatement program were as follows:

1. Remove and dispose of beryllium-impacted ceiling materials (tiles, grid, insulation), HVAC ductwork, air handlers, and carpets in accordance with appropriate federal and state disposal criteria;
2. Decontaminate interior building surfaces in order to reduce beryllium surface wipe concentrations to below 25 $\mu g/ft^2$;
3. Ensure that no airborne concentrations within the buildings exceed OSHA's 0.002 mg/m^3 Permissible Exposure Limit (PEL) following abatement.

This report summarizes the abatement activities in December 1999 through February 2000 and presents the surface wipe and air sample data collected following abatement. Clearance sampling data indicate that beryllium abatement objectives have been attained.

In addition to beryllium abatement, this report also documents the removal of chromium impacted plating ductwork in Building 5. Following decontamination and removal of the ductwork, the plating shop building surfaces were decontaminated. Building surfaces were then sampled and analyzed for total chromium. No regulatory surface wipe criteria are available for for chromium.

This abatement report has been organized into the following sections:

- Section 2 - Site Background, presenting background information on facility conditions, baseline beryllium analytical data, interim beryllium abatement sampling results, and facility-wide beryllium assessment sampling results;

- Section 3 - Evaluation of Published Regulatory Standards, reviewing available regulatory standards and establishing appropriate beryllium and chromium standards to be used during the decontamination and abatement project;

- Section 4 – Beryllium Abatement Program, presenting the approach used to identify materials requiring abatement; evaluate the extent of abatement; decontaminate and abate beryllium-impacted materials; and, perform final clearance sampling to verify that cleanup goals have been attained;

- Section 5 – Conclusions, presenting conclusions derived from the abatement program;

- Section 6 - References, presenting a list of previous reports referenced in this final report.

Copies of the surface wipe and air clearance sampling laboratory data and chain-of-custody records are presented in Appendix A.

Section 2
Site Background

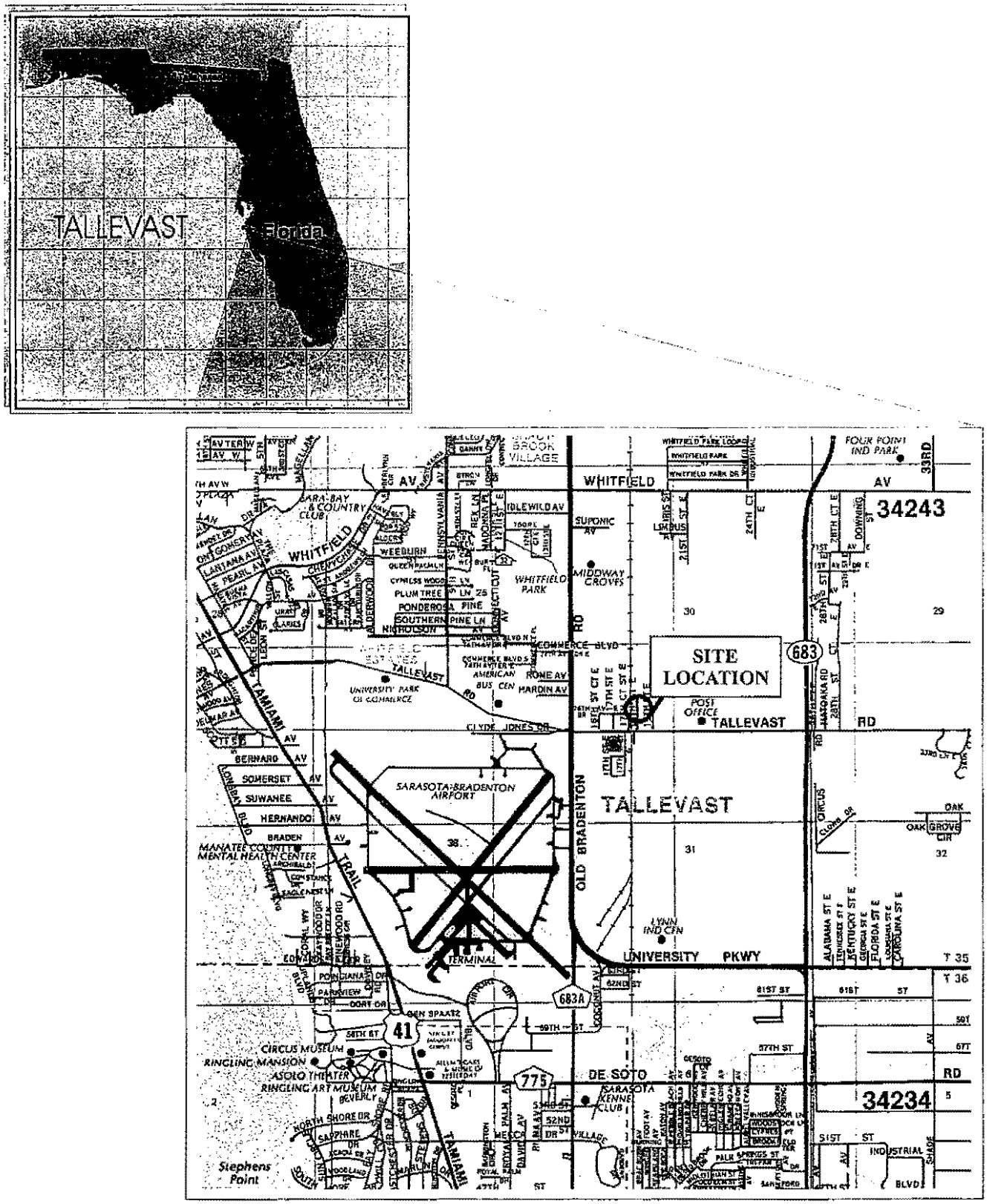
This section provides site information, including a description of the location, past operations of the facility, and a summary of data collected at the facility prior to the final beryllium abatement activities.

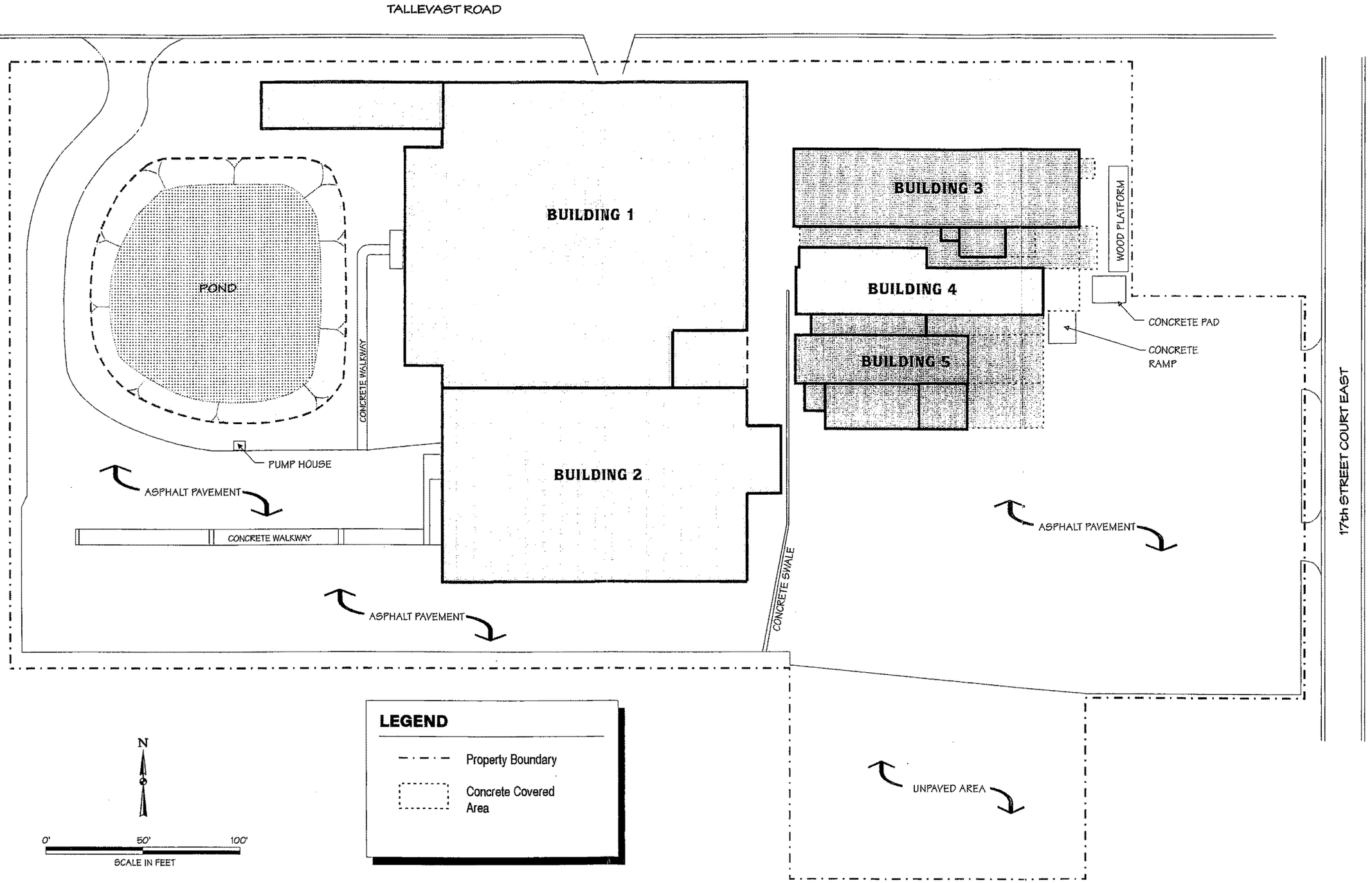
2.1 FACILITY DESCRIPTION

The former ABC facility is located at 1600 Tallevast Road in Tallevast, Manatee County, Florida - *See Figure 2-1.* The property consists of 5.167 acres of land including approximately 66,335 square feet of buildings and covered areas. The former ABC facility was used primarily as an ultra-precision machine parts manufacturing plant. The facility operations consisted of a machining and fabricating plant where metals including beryllium were milled, lathed, and drilled into various components. Operations at the former ABC facility were discontinued on September 27, 1997. The property is currently in the process of being converted to a non-beryllium use facility.

The facility consists of five main buildings, the largest of which is Building 1, followed in decreasing order of size by Buildings 2, 3, 5 and 4. Buildings 1, 2, and 3 were used for machining and inspection; Building 4 was used for wood working and material storage; and Building 5 was used for plating and anodizing, wastewater treatment, and material storage. Figure 2-2 presents an overview of the former ABC facility. Current floor plans for the major building areas are provided in Section 4.

FIGURE 2-1
SITE LOCATION MAP




TALLEVAST ROAD
POND
BUILDING 1
BUILDING 2
BUILDING 3
BUILDING 4
BUILDING 5
WOOD PLATFORM
CONCRETE PAD
CONCRETE RAMP
CONCRETE WALKWAY
PUMP HOUSE
ASPHALT PAVEMENT
CONCRETE WALKWAY
ASPHALT PAVEMENT
CONCRETE SWALE
ASPHALT PAVEMENT
17th STREET COURT EAST
UNPAVED AREA
N
0'
50'
100'
SCALE IN FEET
LEGEND
Property Boundary
Concrete Covered Area

2.2 SUMMARY OF DATA COLLECTED PRIOR TO FINAL ABATEMENT

Data collected prior to the final beryllium abatement activities at the former ABC facility include (1) baseline assessments of the Buildings 1, 2, and 3 beryllium machining areas. (2) interim abatement activities at the Buildings 1, 2 and 3 beryllium machining areas, and (3) the facility-wide beryllium assessment.

2.2.1 Baseline Assessments of Buildings 1, 2, and 3 Beryllium Machining Areas

In November 1996, Tetra Tech collected 28 wipe samples from various beryllium-machining areas to evaluate the potential presence and concentration of beryllium residues within the facility. Wipe samples were collected from residues on doors, walls, floors and other surfaces located in Buildings 1, 2 and 3. Beryllium was detected in all 28 samples at a maximum concentration of 871 $\mu g/ft^2$. Wipe sampling was not performed in Buildings 4 and 5.

Over a 4-day period from December 2 to 5, 1996, a total of 68 air samples were collected at the ABC facility to determine if beryllium was present in the breathing zone. The air samples were analyzed in accordance with National Institute of Occupational Safety and Health (NIOSH) Method 7300. Beryllium was not detected in any of the 68 samples collected from the site.

During a Facility Assessment conducted in June 1997, Tetra Tech collected 78 additional wipe samples from various equipment and features associated with the former beryllium machining operations. Wipe samples were collected from various ceiling materials (including ceiling tiles, grid, insulation), PVC pipe vacuum collection systems, and exhaust stacks in Buildings 1, 2, and 3. Additional wipe samples were collected from various floor drains and sumps located in Buildings 4 and 5 (only buildings with sumps and floor drains present). Beryllium was detected in all 78 wipe samples ranging from 4.1 to 120,000 $\mu g/ft^2$.

2.2.2 Interim Abatement and Decontamination of Buildings 1, 2, and 3 Beryllium Machining Areas

In September and October 1999, Tetra Tech conducted abatement of identified beryllium-impacted building materials within the Buildings 1, 2, and 3 machine shop areas to a self-determined cleanup level of 46.5 $\mu g/ft^2$. Three mechanical rooms in Building 1 were included in the abatement. In addition, six sumps and floor drains within Buildings 4 and 5 that reported beryllium above 46.5 $\mu g/ft^2$ were also flushed and decontaminated. Abatement actions consisted of the following:

- Removal of all ceiling materials, including drop ceiling tiles, grid, and insulation. HVAC ductwork was not removed;
- Removal of beryllium dust vacuum piping and exhaust stacks;
- Decontamination of all interior surfaces, including walls, floors, and exterior ceiling materials (light fixtures, HVAC ductwork). Interior HVAC ductwork was not decontaminated;
- Decontamination of six floor drains and sumps within Buildings 4 and 5.

Bulk materials were packaged (single bagged in six-millimeter thick polyethylene) and stored in a storage bin in preparation for disposal. Disposal was conducted in accordance with applicable federal regulations stated in 40 CFR Part 261 and state regulations provided in the Florida Administrative Code (FAC). In accordance with CFR and FAC waste classification criteria, the beryllium impacted materials and wastewater was not defined as a hazardous waste – *see Section 3*. Beryllium-impacted materials were transported and disposed of at the Manatee County landfill.

Interior building surfaces were decontaminated using pressure wash or wipe down methods. Decontamination water was transported as a non-hazardous waste to Clark Environmental's permitted treatment and recycling facility located in Mulberry, Florida.

Abatement was conducted in these areas until beryllium concentrations were reduced to below a surface wipe limit of 46.5 $\mu g/ft^2$. A summary description of the building areas, the method of

abatement (decontamination or removal), and the beryllium concentration ranges reported in the surface wipe samples is presented in Table 2-1.

Table 2-1

Summary of Interim Beryllium Abatement Program

Building Feature	Location	Abatement Action	Final Surface Wipe Concentration Range ($\mu g/ft^2$)
Ceiling Tile, Grid and Fiberglass	Building 1 Building 2 Building 3	Removal	Not Applicable
Other Ceiling Materials (light fixtures, exterior ductwork, etc.)	Building 1 Building 2 Building 3	Decontamination	 ND – 20.0 ND – 2.45
Exhaust Stacks / Piping	Building 1 Building 2 Building 3	Removal	Not Applicable
Walls	Building 1 Building 2 Building 3	Decontamination	ND – 40.4 ND – 32.8 ND – 1.01
Floors	Building 1 Building 2 Building 3	Decontamination	ND – 46.4 ND – 36.4 ND – 15.5
Building 5 Floor Drains	Floor Drain No.2 Floor Drain No.3 Floor Drain No.4	Decontamination	44.8 22.5 7.92
Building 5 Sumps	Sump No. 1 Sump. No.3 Sump No. 5	Decontamination	12.3 4.99 16.1

Air samples were collected from the abatement areas following the interim decontamination and surface wipe sampling. A total of five air samples were collected from Buildings 1, 2 and 3 (two samples from each building). Beryllium was not detected in any of the air samples.

2.2.3 Facility-Wide Beryllium Assessment

From September through November 1999, additional beryllium assessment was conducted in other areas of the former ABC facility where no data had previously been collected. Areas and building materials that were sampled for beryllium included the air conditioning system (supply and return ductwork and air handlers), office areas, mechanical rooms, Buildings 4 and 5, and the former Lancy treatment system and waste storage yards. A summary of the areas that were assessed and the beryllium concentration range in the materials is presented in Table 2-2.

Table 2-2

Summary of Facility-Wide Beryllium Assessment

Building	Area	Material	Number of Samples	Surface Wipe Concentration Range ($\mu g/ft^2$)
#1	Mechanical Room #1	A/C air handlers	3	302 – 828
#2	Mechanical Room #2	A/C air handlers	2	3.35 – 93.5
#1	Mechanical Room #3	A/C air handlers	2	83 – 1510
#1	Mechanical Room #4	A/C air handlers	2	133 – 3130
#3	Mechanical Room #5	A/C air handlers	3	8.3 – 4070
#3	Mechanical Room #6	A/C air handlers	2	57.4 – 929
#1	Machine Shops	Interior A/C ductwork	11	100 – 9110
#2	Machine Shops	Interior A/C ductwork	9	2.08 – 31.8
#3	Machine Shops	Interior A/C ductwork	4	4.32 – 16.8
#1 and #2	Office Areas	Walls	12	ND – 2.33
#1 and #2	Office Areas	Floors	6	19.5 – 952
#1 and #2	Office Areas	Ceiling materials	12	ND – 42.7
#1 and #2	Office Areas	Interior Ductwork	12	ND – 105
#2	Mechanical Room #2	Floors	3	56.2 – 139
#2	Mechanical Room #2	Walls	3	4.11 – 15.3
#2	Mechanical Room #2	Ceiling Materials	3	67.5 – 186
#2	Oil Storage / Transformer Room	Floors	3	877 – 1440
#2	Oil Storage / Transformer Room	Walls	3	19.2 – 358
#2	Oil Storage / Transformer Room	Ceiling Materials	3	2.57 – 12.4
#2	Loading Dock Office	Walls, floors, ceiling materials, HVAC ducts + vents	6	34.3 – 526
#1	Locker Room	Floors	3	18.4 – 581
#1	Locker Room	Walls	3	13.2 – 55.9
#1	Locker Room	Ceiling Materials	3	87.7 – 653
#1	Locker Room	HVAC ducts + vents	2	70.2 – 76.5
#3	Office Areas	Floors	3	6.34 – 115
#3	Office Areas	Walls	3	ND – 16.1
#3	Office Areas	Ceiling Materials	4	3.38 – 24.7
#3	Office Areas	HVAC ducts + vents	4	10.9 – 265
#3	Former Be Vacuum system, east side of building	Walls, floors, and ceiling materials	6	6.3 – 16000
#3	Oil / Coolant Storage Room	Floor	2	237 – 621
#3	Filter Press Shed / Cleaning Area	Walls, floors, ceiling materials	6	57.8 – 1360
#4	Process Rooms / Warehouse	Floors	4	321 –2100
#4	Process Rooms / Warehouse	Walls	5	ND –1870
#4	Process Rooms / Warehouse	Ceiling materials	2	28.2 – 66.3
#4	Process Rooms / Warehouse	HVAC ducts + vents	30	8.54 – 9.92
#5	Plating / Anodizing Rooms	Floors	4	6.50 – 263
#5	Plating / Anodizing Rooms	Walls	4	1.83 – 54.7
#5	Plating / Anodizing Rooms	Ceiling materials	3	22.1 – 110
#5	Plating / Anodizing Rooms	HVAC ducts + vents	4	44.5 – 115
#5	Former Lancy Treatment System, and hazardous waste areas	Walls, floors, ceiling materials, plating ducts	9	8.87 – 213
#5	Former chemical storage area	Floor	2	59.2 – 466

As presented in Section 3, the prospective purchaser of the property recommended using 25 $\mu g/ft^2$ as a site-specific surface cleaning standard for the ABC facility. For this reason, additional decontamination and abatement actions were conducted at the former ABC facility. The final decontamination and abatement activities are summarized in Sections 4 and 5.

Section 3

Evaluation of Published Regulatory Standards

3.1 SURFACE WIPE STANDARDS

No specific regulatory standards for beryllium in surface wipe samples have been published by federal, state or municipal regulatory agencies. The initial surface wipe limit of 46.5 $\mu g/ft^2$ recommended by Lockheed Martin was based on the range of surface wipe limits recommended or adopted at various DOE facilities (Tetra Tech, 1996). However, the environmental engineering consultant for the prospective purchaser (Law Environmental, Inc.) recommended using a a surface wipe cleaning standard of 25 $\mu g/ft^2$ for the ABC facility. At Lockheed Martin's request, a beryllium limit of 25 $\mu g/ft^2$ was established to identify areas for abatement.

No regulatory surface wipe criteria are available for chromium residues on building surfaces. Therefore, no cleanup standards were established for the ABC facility.

3.2 OSHA STANDARDS FOR WORKER PROTECTION

The Occupational Safety and Health Administration (OSHA) has published a permissible exposure limits (PEL) for beryllium as an airborne contaminant for worker protection. The OSHA mandated exposure limits are shown in Table 3-1.

Table 3-1

Exposure Limits for Beryllium

Compound	PEL 8-hour TWA	Ceiling Concentration	IDLH
Beryllium	0.002 mg/m^3	0.005 mg/m^3	4 mg/m^3

Source: Federal OSHA 29 CFR.1910.1000, Air Contaminants
National Institute for Occupational Safety and Health (NIOSH)
Notes: PEL - Permissible Exposure Limit
TWA - Time Weighted Average
IDLH - Immediately Dangerous to Life or Health

3.3 WASTE CLASSIFICATION AND DISPOSAL STANDARDS

A review of applicable federal regulations in 40 CFR Part 261 and the Florida Administrative Code (FAC) was conducted to determine the appropriate classification and disposal criteria for beryllium wastes generated during the decontamination and abatement program. Three types of wastes were generated: (1) bulk solid materials that contained beryllium residues (i.e., ceiling tiles, insulation, etc.); (2) bulk solid materials that contained chromium residues (i.e., Building 5 plating ductwork); and (3) wastewater from decontamination of building surfaces.

3.3.1 Beryllium Impacted Materials

In accordance with CFR and FAC waste classification criteria, beryllium residues on bulk materials do not meet the definition of a characteristic or listed hazardous waste. Beryllium residues are not corrosive, reactive, ignitable, or toxic. In addition, since the waste was generated during machining operations and is not commercial chemical beryllium powder, a P015 listing in 40 CFR Part 261.33(e) is not applicable.

3.3.2 Chromium Impacted Materials

In accordance with CFR and FAC waste classification criteria, chromium residues on the bulk materials do not meet the definition of a characteristic or listed hazardous waste. The chromium residues were not derived from any waste processes listed in the federal or state hazardous waste regulations. Chromium residues do not meet the definition of corrosive, reactive, or ignitable wastes. To determine toxicity, samples were collected from the materials and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP). The residues did not exceed the TCLP, indicating the materials are not hazardous by the toxicity characteristic - *see Section 4.2.7.*

3.3.3 Decontamination Wastewater

Wastewater generated from decontamination of the building materials are non-hazardous based on the classification criteria described in Sections 3.3.1 and 3.3.2.

Section 4
Beryllium Abatement Program

The following section describes the technical approach, scope of work and field methodology followed to complete the decontamination and abatement of beryllium impacted materials at the ABC facility. The abatement program was implemented from December 1999 through February 2000. Abatement activities were performed in accordance with Tetra Tech's Decontamination and Abatement of Beryllium Impacted Materials Work Plan, Former American Beryllium Company, dated November 30, 1999.

4.1 PROJECT APPROACH

In order to facilitate property transfer, a surface wipe limit of 25 $\mu g/ft^2$ was selected as a guideline for abatement to reduce the potential for airborne beryllium hazards at the former ABC facility. As described in Section 2.2, beryllium concentrations were detected above 25 $\mu g/ft^2$ in building materials throughout the facility. The abatement approach was to first remove beryllium-impacted materials that could not easily be decontaminated (ceiling materials, air handlers, HVAC ductwork, and carpets). Approximately 60 linear feet of ductwork associated with former plating and anodizing lines in Building 5 were also removed. Following removal of the materials, all accessible interior building surfaces (floors, walls, light fixtures, etc.) were subsequently decontaminated to below the beryllium cleanup level of 25 $\mu g/ft^2$. A summary of the abatement activities performed at the ABC facility is described in Table 4-1.

Table 4-1

Beryllium Impacted Areas and Final Abatement Actions[a]

Building Feature	Location	Abatement Action
Ceiling tiles, grid, fiberglass	Buildings 1, 2, 3 office areas, and Buildings 4 and 5	Removed
Other ceiling materials (light fixtures, etc.)	Buildings 1, 2, 3, 4, and 5	Decontaminated
HVAC ductwork	Buildings 1, 2, 3, 4, and 5	Removed
Air handlers[b]	Buildings 1, 2, 3, 4, and 5	Removed
Beryllium vacuum piping	Building 4	Removed
Carpeting	Buildings 1, 2, and 3 (primarily office areas)	Removed
Walls, floors and other interior surfaces (includes floors below carpeted areas)	Buildings 1, 2, 3, 4, and 5	Decontaminated
Former Be vacuum system	Building 3, east side of building	Decontaminated
Filter press shed	Building 3	Decontaminated
Former Lancy Treatment System and hazardous waste / chemical storage area	Building 5	Decontaminated
Plating ductwork	Building 5	Removed
Sumps / Floor drains	Buildings 3 and 5	Decontaminated

a – Abatement activities focused on beryllium. However, decontamination activities in the Building #5 plating areas were also intended to remove chromium residues.
b - Roof units were not removed.

Following abatement activities, clearance sampling was performed to document that the beryllium abatement objectives had been attained. Both surface wipe and air clearance samples were collected and compared to site-specific clearance criteria.

4.2 FIELD METHODOLOGY

A description of each major task associated with the abatement program is presented in the following subsections:

4.2.1 Work Area Preparation and Isolation

Prior to disturbance of impacted materials, a work enclosure and decontamination facility was installed at each work area. The enclosure consisted of a single layer of polyethylene on all walls and floors designated for decontamination and abatement. A negative air chamber containing a HEPA filter system was installed within each work area to prevent particulate migration to areas outside the enclosure. This system remained in operation until final clearance samples were collected to document that no airborne beryllium hazards were present.

A decontamination facility was located at the egress point of the work area. All personnel and equipment within the work area were decontaminated prior to egress. A waste load out area was constructed for the decontamination and load out of beryllium waste packages prior to disposal.

4.2.2 Removal and Decontamination of Beryllium Impacted Materials

All beryllium impacted ceiling tiles (includes grid and insulation), vacuum piping, HVAC ductwork, air handlers, and carpets were removed from the former ABC facility. Ductwork from the Building 5 plating area was also removed. Prior to and during bulk removal, the materials were misted with an encapsulant to prevent airborne dust emissions. The materials were packaged (single bagged in six-millimeter thick polyethylene) and stored in a storage bin in preparation for disposal.

Following removal of bulk materials, the interior surface areas (walls, floors, ceiling materials, sumps and floor drains) were decontaminated using pressure wash and wipe down methods. All surface areas were decontaminated to the beryllium action level of 25 $\mu g/ft^2$. Decontamination

water was collected and stored in a storage tank pending disposal. The tank was also used to store decontamination water generated from PPE cleaning.

4.2.3 Perimeter Air Monitoring during Abatement

During abatement and decontamination activities, perimeter air samples were collected to ensure and document that no fugitive beryllium emissions were released outside the containment area. The samples were collected using personal air sampling pumps that flowed at 3 liters per minute. Two perimeter air samples were collected during each work day; one sample was collected at the entrance to the work enclosure area; and one sample was collected at the HEPA filter exhaust. All perimeter air samples were analyzed for beryllium using either NIOSH Method 7300 or USEPA Method 6010A.

4.2.4 Clearance Wipe Sampling

Following decontamination of the building surfaces, clearance wipe samples were collected to ensure that the action level of 25 $\mu g/ft^2$ had been attained. When a swipe sample exceeded the 25 $\mu g/ft^2$ cleanup level, the surrounding area out to the nearest clean sampling point was re-cleaned. The area was then resampled to confirm that cleanup standards were attained.

Representative samples were collected from each area and material type that was decontaminated. Sample frequencies and locations in the major buildings (Buildings 1, 2, 3, 4, and 5) were determined using the following general methodology for each material type. For walls and floors, 8 samples were collected per 100 ft. x 100-ft. area (total 10,000-ft^2 area). For ceiling light fixtures, samples were collected at a rate of 8 per 100 fixtures (8% of the total fixtures counted at the facility). Samples were also collected from miscellaneous areas with different material types. Samples were collected throughout the buildings to provide adequate geographic coverage for each material type. Figures 4-1 through 4-12 present the surface wipe sampling locations. A summary of the clearance sampling counts for each building is provided below:

Building 1 clearance samples

1. Floor samples – Building 1 contains approximately 18,000 ft^2 of floors in the former machining areas, and 4,500 ft^2 in the former office areas. Based on the estimated square footage, 14 clearance samples were collected from the former machining areas and 5 were collected from the former office areas – *see Figure 4-1.*

2. Wall samples - Building 1 contains approximately 13,685 ft^2 of walls in the former machining areas, and 16,500 ft^2 in the former office areas. Based on the estimated square footage, 14 clearance samples were collected from the former machining areas and 10 were collected from the former office areas – *see Figure 4-2.*

3. Ceiling light fixture samples – Building 1 contains approximately 268 light fixtures. Based on the estimated light fixture count, 18 clearance samples were collected from Building 1 (9 from the former machining areas and 9 from the former office areas) - *see Figure 4-3.*

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 1 include Mechanical Room #1, Mechanical Room #3, Mechanical Room #4, the locker room, and the oil storage area. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - *see Figures 4-1 through 4-3.*

Building 2 clearance samples

1. Floor samples – Building 2 contains approximately 11,000 ft^2 of floors in the former machining areas, and 5,250 ft^2 in the former office and engineering areas. Based on the estimated square footage, 9 clearance samples were collected from the former machining areas and 5 were collected from the former office and engineering areas – *see Figure 4-4.*

2. Wall samples - Building 2 contains approximately 19,950 ft^2 of walls in the former machining areas, and 8,200 ft^2 in the former office and engineering areas. Based on the

estimated square footage, 17 clearance samples were collected from the former machining areas and 7 were collected from the former office and engineering areas – *see Figure 4-5*.

3. Ceiling light fixture samples – Building 2 contains approximately 158 light fixtures in the former machining areas, and 107 light fixtures in the former office and engineering areas. Based on the estimated light fixture count, 12 clearance samples were collected from the former machining areas and 9 were collected from the former office and engineering areas *see Figure 4-6*.

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 2 include Mechanical Room #2 and the former loading dock office. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - s*ee Figures 4-4 through 4-6*.

Building 3 clearance samples

1. Floor samples – Building 3 contains approximately 6,000 ft^2 of floors in the former machining and office areas. Based on the estimated square footage, 5 clearance samples were collected from the machining and office areas. A wipe sample was also collected from a floor drain and a sump in the building – *see Figure 4-7*.

2. Wall samples - Building 3 contains approximately 9,645 ft^2 of walls in the former machining and office areas. Based on the estimated square footage, 8 clearance samples were collected from the machining and office areas – *see Figure 4-8*.

3. Ceiling light fixture samples – Building 3 contains approximately 89 light fixtures in the former machining and office areas. Based on the estimated light fixture count, 8 clearance samples were collected from the former machining and office areas - *see Figure 4-9*.

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 3 include Mechanical Room #5 (also referred to as oil/coolant storage room), a former

filter press shed, and a former beryllium vacuum system shed. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - s*ee Figures 4-7 through 4-9.*

Buildings 4 and 5 clearance samples

1. Floor samples – Buildings 4 and 5 contains approximately 8,085 ft^2 of floors in the former laboratory and process areas. Based on the estimated square footage, 7 clearance samples were collected from the former laboratory and process areas. A wipe sample was also collected from a floor drain in Building 5 – *see Figure 4-10.*
2. Wall samples - Buildings 4 and 5 contain approximately 8,305 ft^2 of walls in the former laboratory and process areas. Based on the estimated square footage, 7 clearance samples were collected from the machining and office areas – *see Figure 4-11.*
3. Ceiling light fixture samples – Buildings 4 and 5 contain approximately 100 light fixtures in the former laboratory and process areas. Based on the estimated light fixture count, 8 clearance samples were collected from the former laboratory and process areas - *see Figure 4-12.*
4. Samples from miscellaneous areas – Additional rooms and areas sampled in Buildings 4 and 5 include the former treatment system and chemical storage area located east of the building. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from this area - s*ee Figures 4-10 through 4-12.*

The clearance swipe samples were collected using laboratory supplied wipe media templates. A 12-inch by 12-inch area was first outlined on the sampled surface. The samples were then collected by applying an "S" shaped motion once with its entire surface and then again in the opposite direction with a half-folded surface. Each wipe sample was then folded once more and placed in separate vial containers. Disposable surgical gloves were used to prevent cross

contamination of the samples. The samples were analyzed for beryllium using EPA Method 6010A. The chromium samples were analyzed using EPA Method 6010A.

4.2.5 Clearance Air Sampling

Clearance air samples were collected from each building to ensure that no airborne beryllium hazards exist following decontamination. The samples were collected using personal air sampling pumps that flowed at approximately 3 liters per minute. The samples were collected at positions ranging from 4 to 6 feet above ground surface to simulate the breathing zone of future facility occupants. The following number of clearance samples were collected from each building:

Table 4-2

Summary of Air Clearance Samples

Building Number	Number of Air Samples
1	6
2	6
3	2
4	2
5	2

Sampling pumps were calibrated before and after the sampling events. The air samples were analyzed for beryllium using NIOSH Method 7300 or USEPA Method 6010A. Air clearance sample locations are shown on Figures 4-13 through 4-16.

4.2.6 Disposal of Beryllium Impacted Materials

The beryllium impacted bulk materials and wastewater were disposed of in accordance with applicable CFR and FAC waste classification criteria. As outlined in Section 3.3, the beryllium residues on the bulk materials do not meet the definition of a characteristic or listed hazardous waste and were therefore not disposed of as a hazardous waste. The bulk materials were transported to the Manatee County landfill.

As outlined in Section 3.3, the decontamination water was also determined to be non-hazardous. The decontamination water was therefore transported as a non-hazardous waste to Clark Environmental's permitted treatment and recycling facility located in Mulberry, Florida.

4.2.7 Removal and Disposal of Chromium Impacted Plating Ductwork

Approximately 60 linear feet of ductwork associated with former plating and anodizing lines in Building 5 and the former treatment storage area were removed. Prior to disposal, the ductwork was cut into sections and then decontaminated to remove visible residues and stains. To determine if the materials were a hazardous waste, a bulk sample was collected from the ductwork and analyzed for chromium using the TCLP method. The sample reported a concentration of 2.5 mg/L of chromium, which is below the chromium toxicity criterion of 5 mg/L. The bulk materials were subsequently transported as a non-hazardous waste to the Manatee County landfill.

Following removal of the ductwork from Building 5 and the former treatment storage area, the interior surfaces (walls, floors, ceilings) were decontaminated in accordance with the methods prescribed in Section 4.2.2. Surface wipe samples were collected from the building surfaces to document post-decontamination chromium concentrations. No wipe sample criteria were identified for chromium.

4.3 SUMMARY OF ANALYTICAL DATA

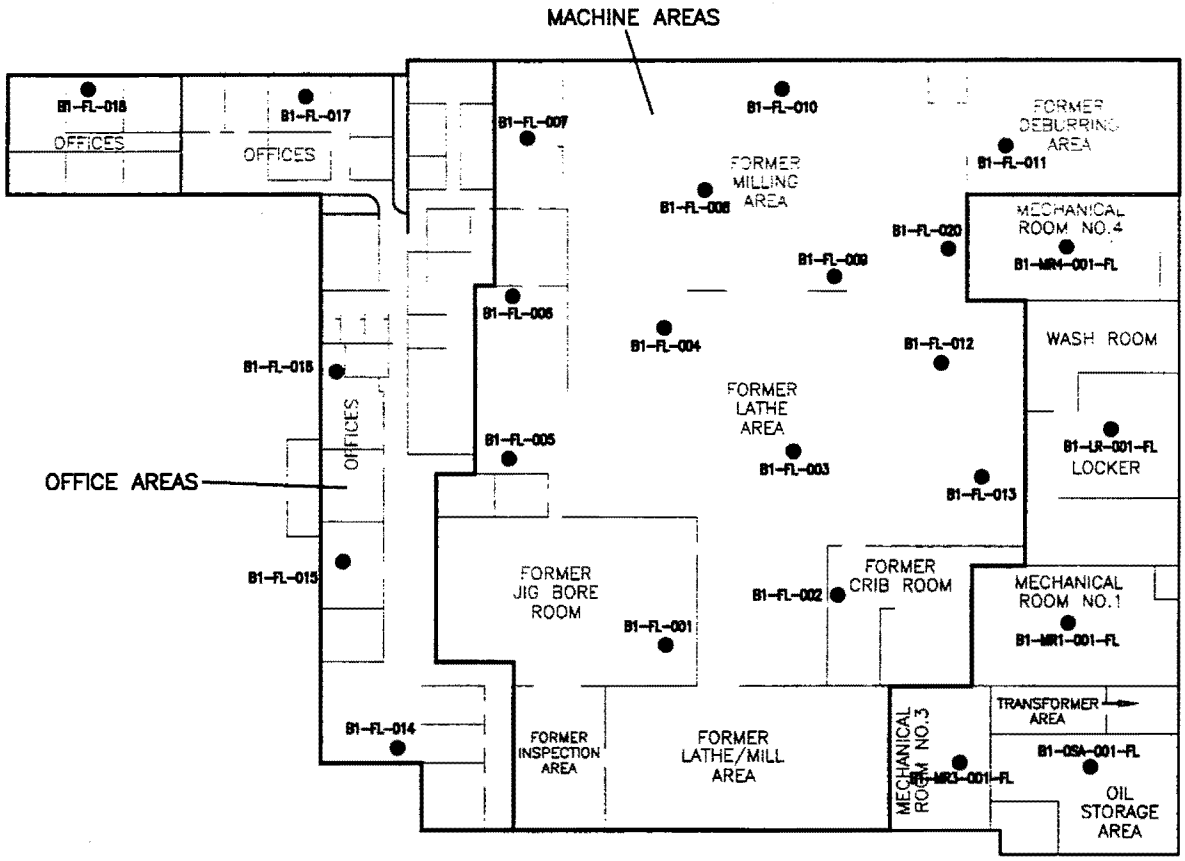
4.3.1 Surface Wipe Sampling Data

Surface wipe samples were collected during and after abatement to document that the site-specific beryllium cleanup standard of 25μg/ft^2 was attained. All final clearance samples show that the surface cleaning standards have been attained. Copies of the laboratory data reports are presented in Appendix A. A summary of the final beryllium clearance data is presented in Table 4-3 on pages 4-27 to 4-29. A summary of the chromium surface wipe data is presented in Table 4-4 on page 4-30.

4.3.2 Air Clearance Sampling Data

Air clearance samples were collected after abatement to document that airborne beryllium concentrations within the buildings did not exceed OSHA's 0.002 mg/m^3 PEL. All air clearance samples did not report concentrations above the detection limit of 0.00005 mg/m^3. Copies of the laboratory data reports are presented in Appendix A. A summary of the final clearance data is presented in Table 4-4 on page 4-29.

FIGURE 4-1
BUILDING 1 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



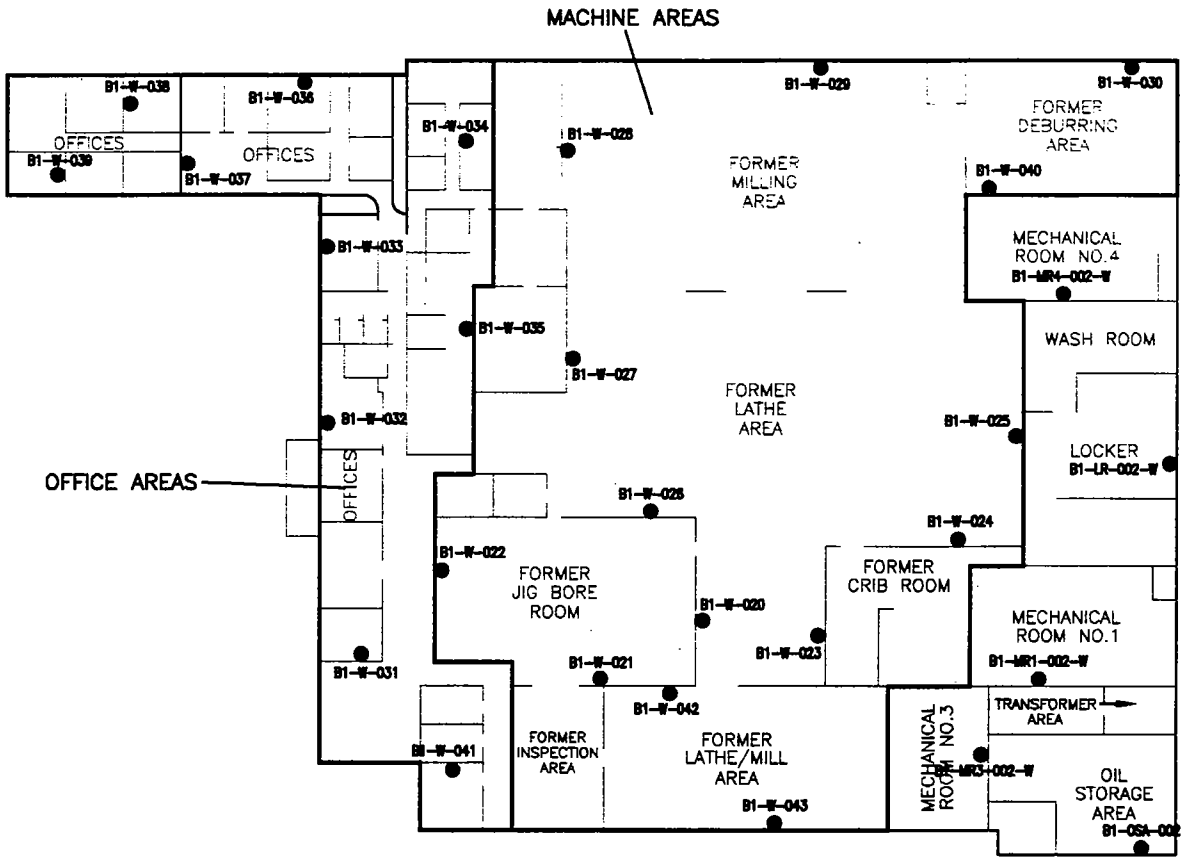
LEGEND

● B1-FL-001 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-2
BUILDING 1 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



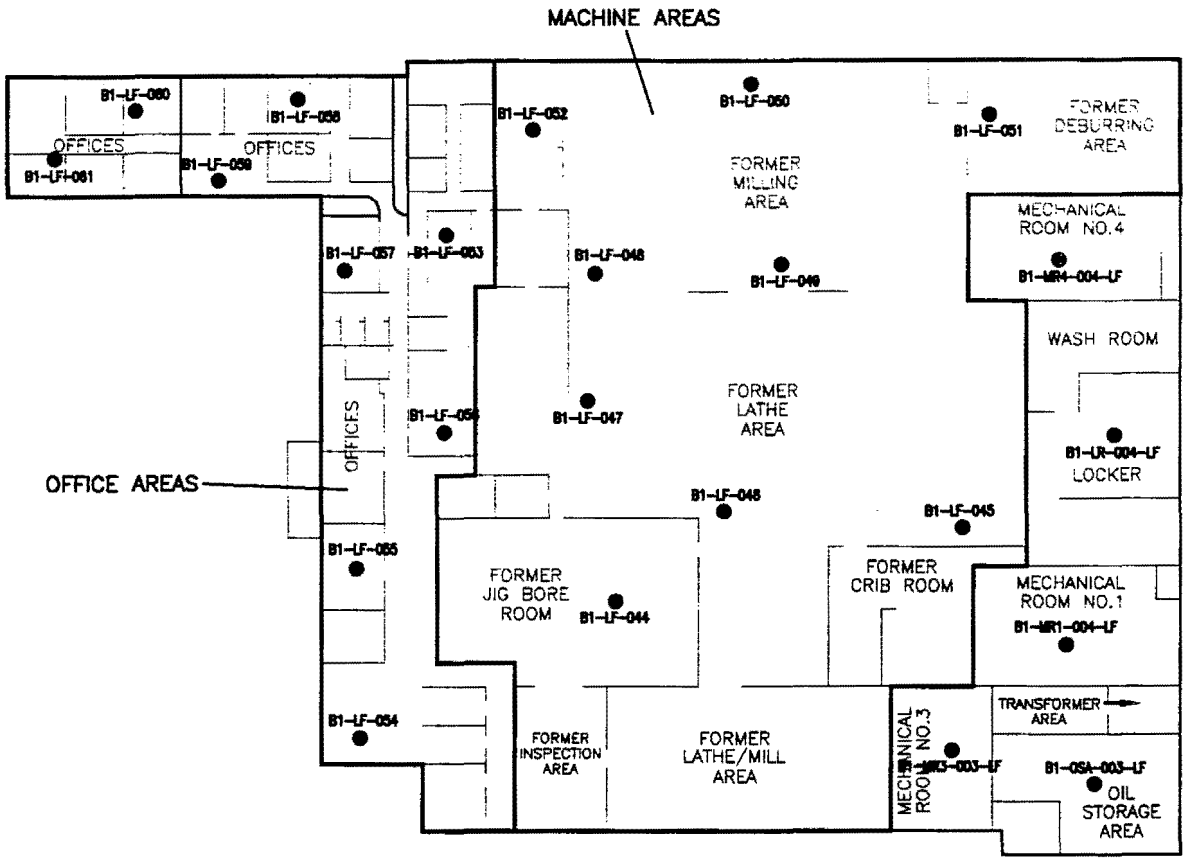
LEGEND

● B1-W-021 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-3
BUILDING 1 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



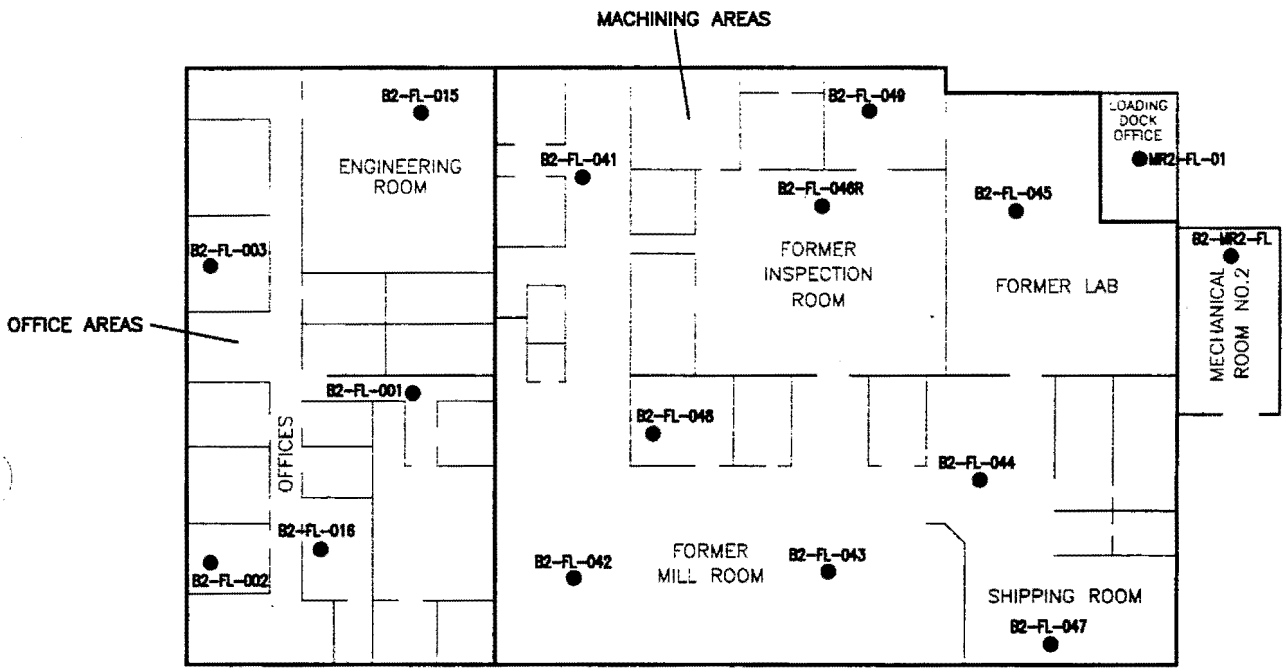
LEGEND

● B1-LF-044 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-4
BUILDING 2 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



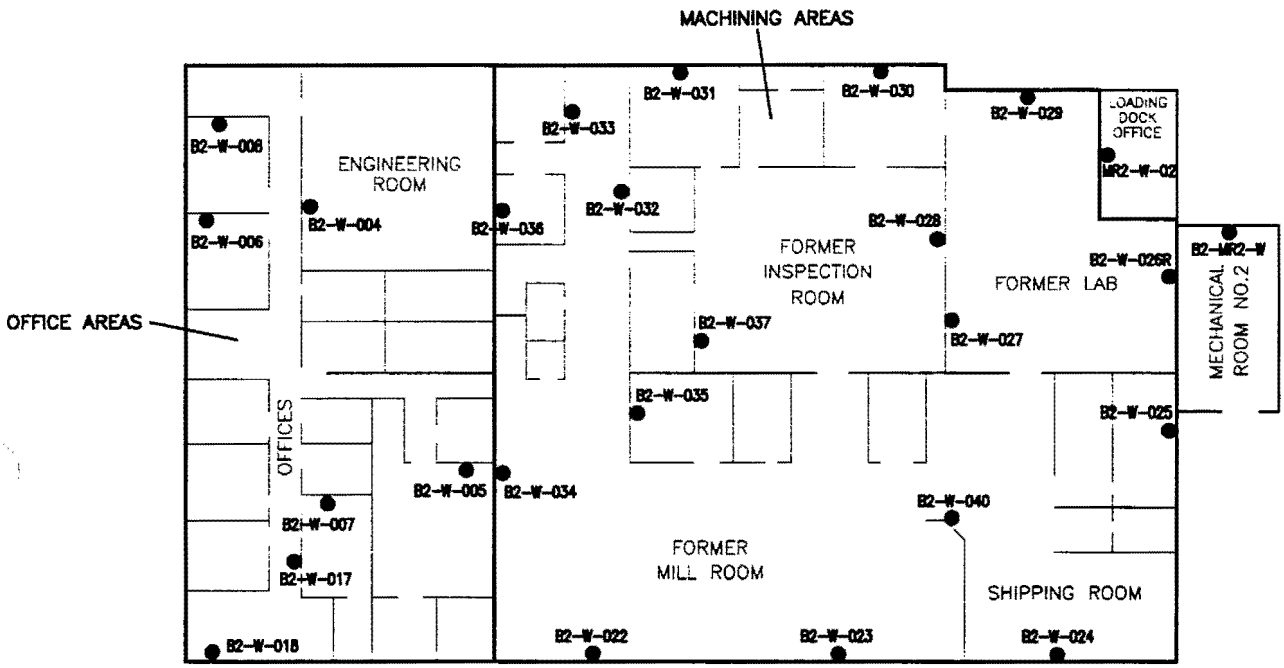
LEGEND

● B2-FL-042 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-5
BUILDING 1 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



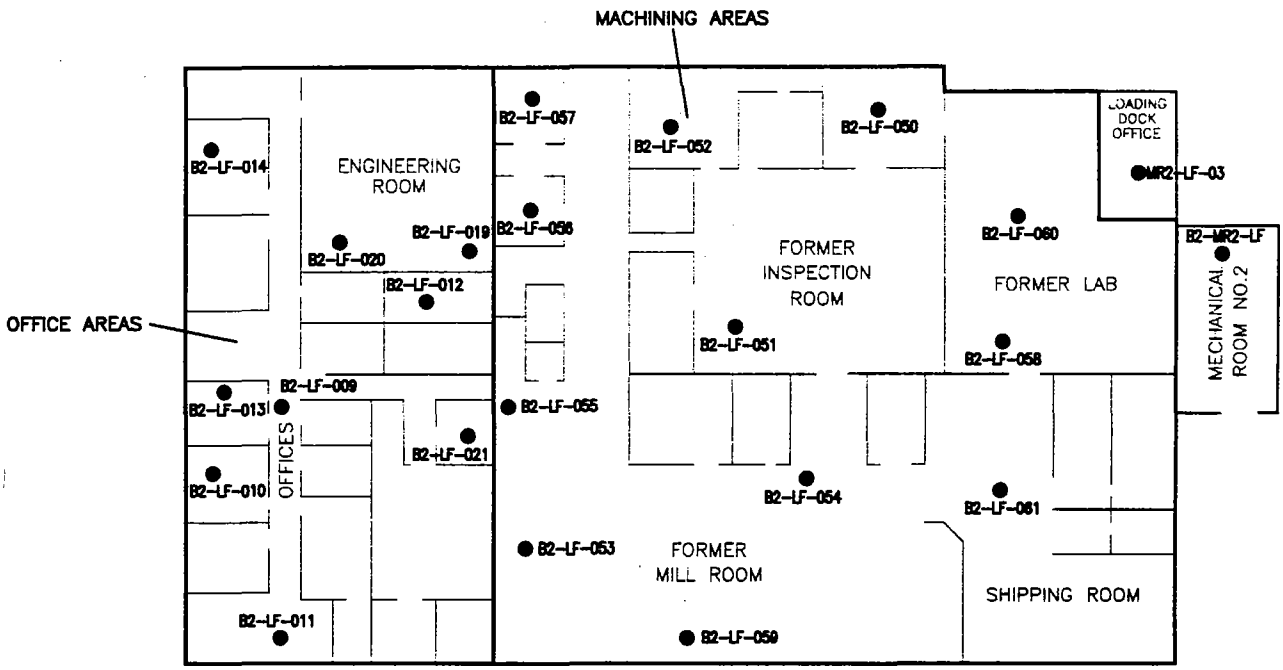
LEGEND

● B2-W-022 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-6
BUILDING 2 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



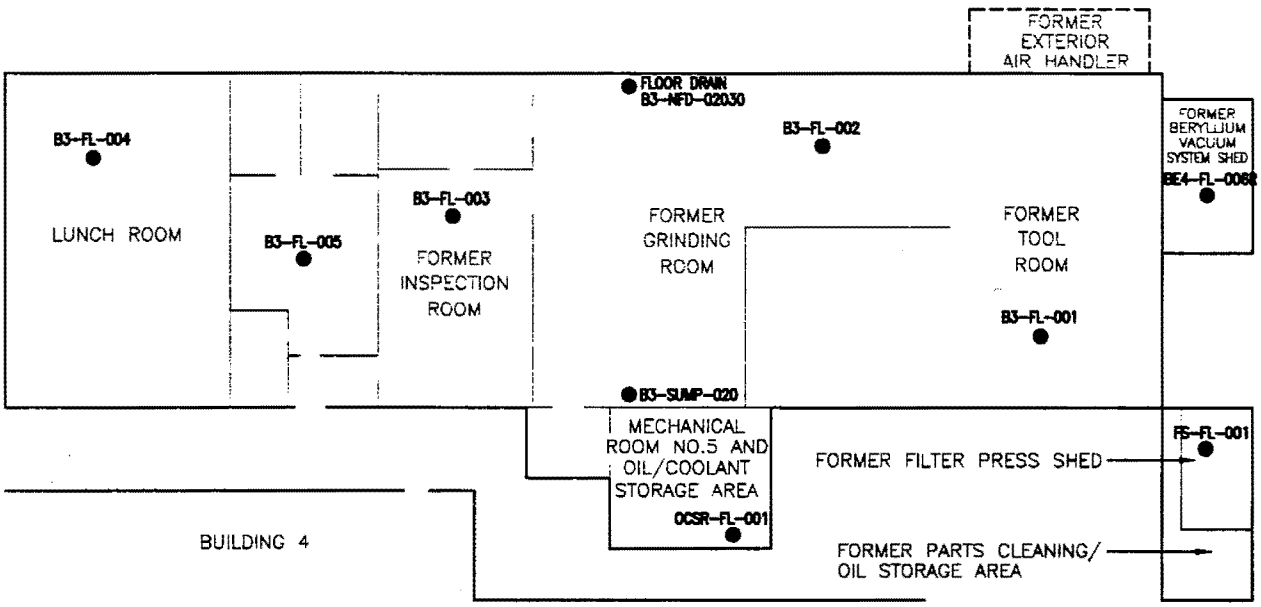
LEGEND

● B2-LF-051 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-7
BUILDING 3 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



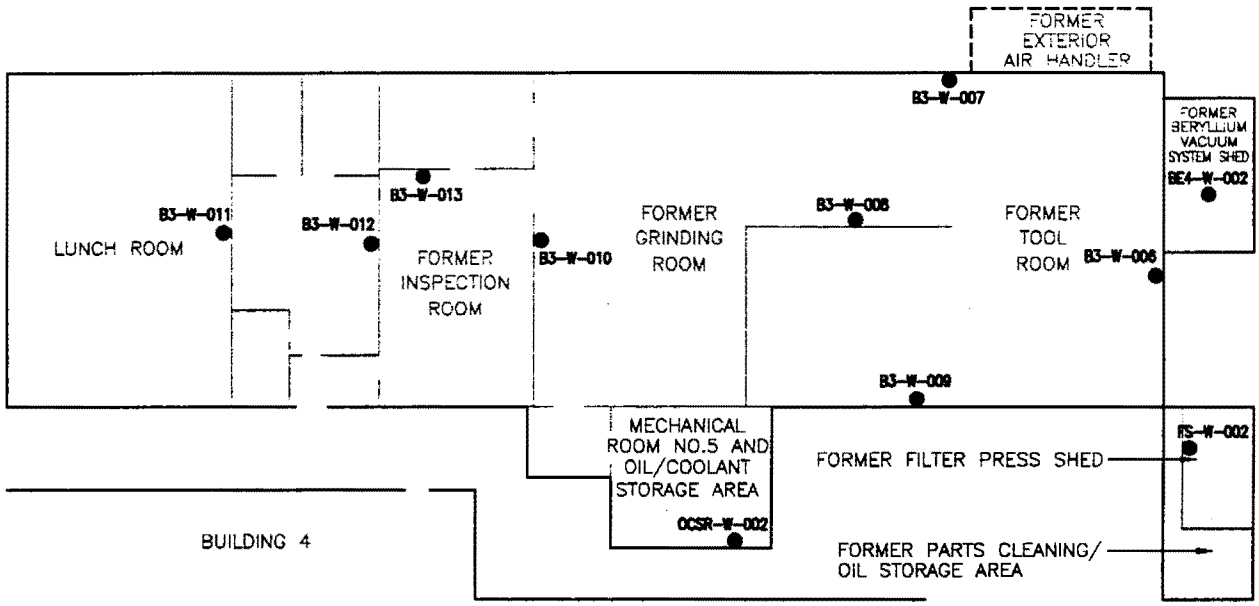
LEGEND

● B3-FL-001 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-8
BUILDING 3 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



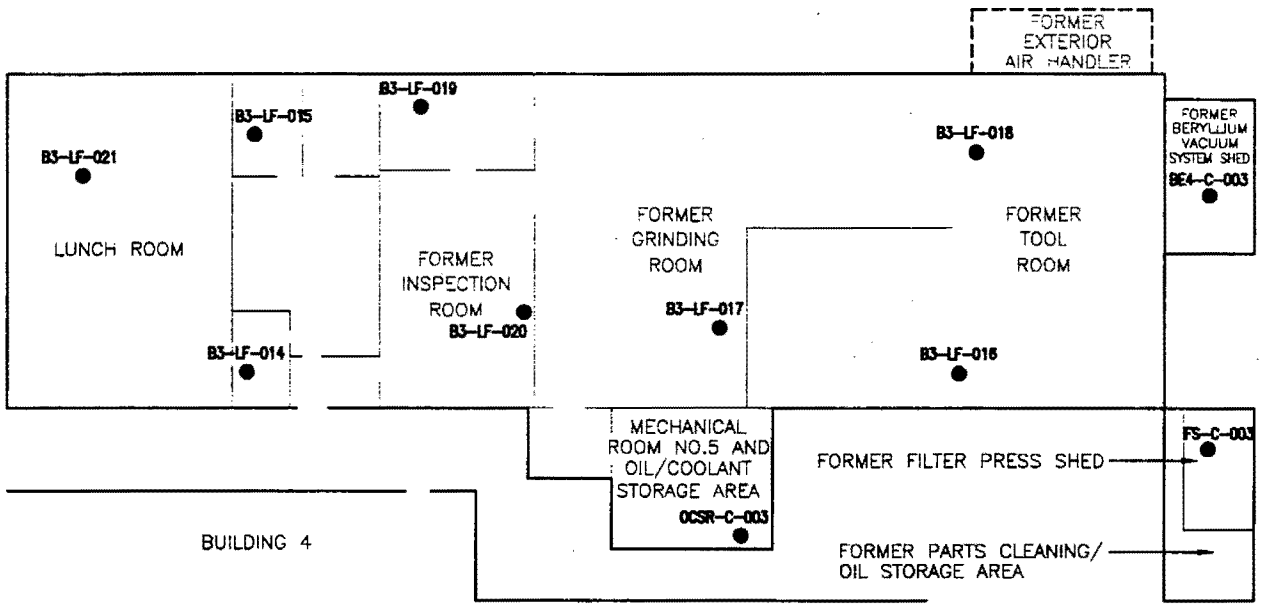
LEGEND

● B3-W-006 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-9
BUILDING 3 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



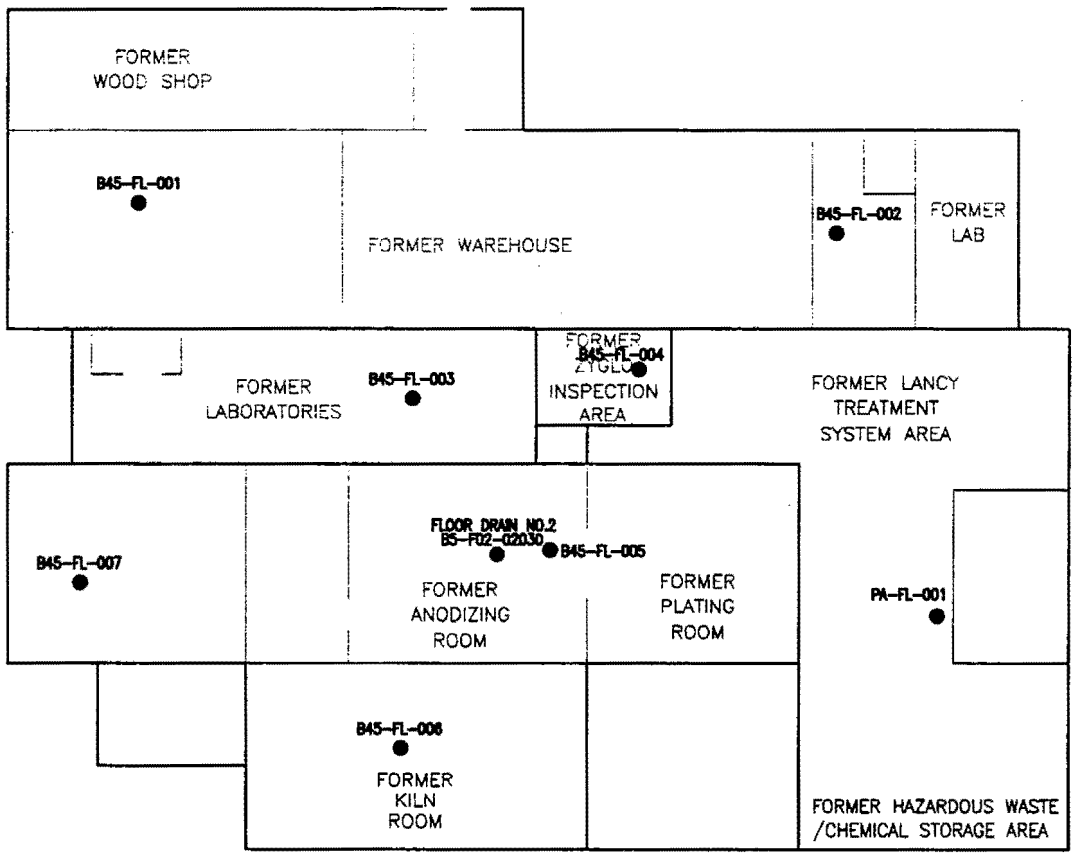
LEGEND

● B3-LF-014 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-10
BUILDING 4 & 5 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



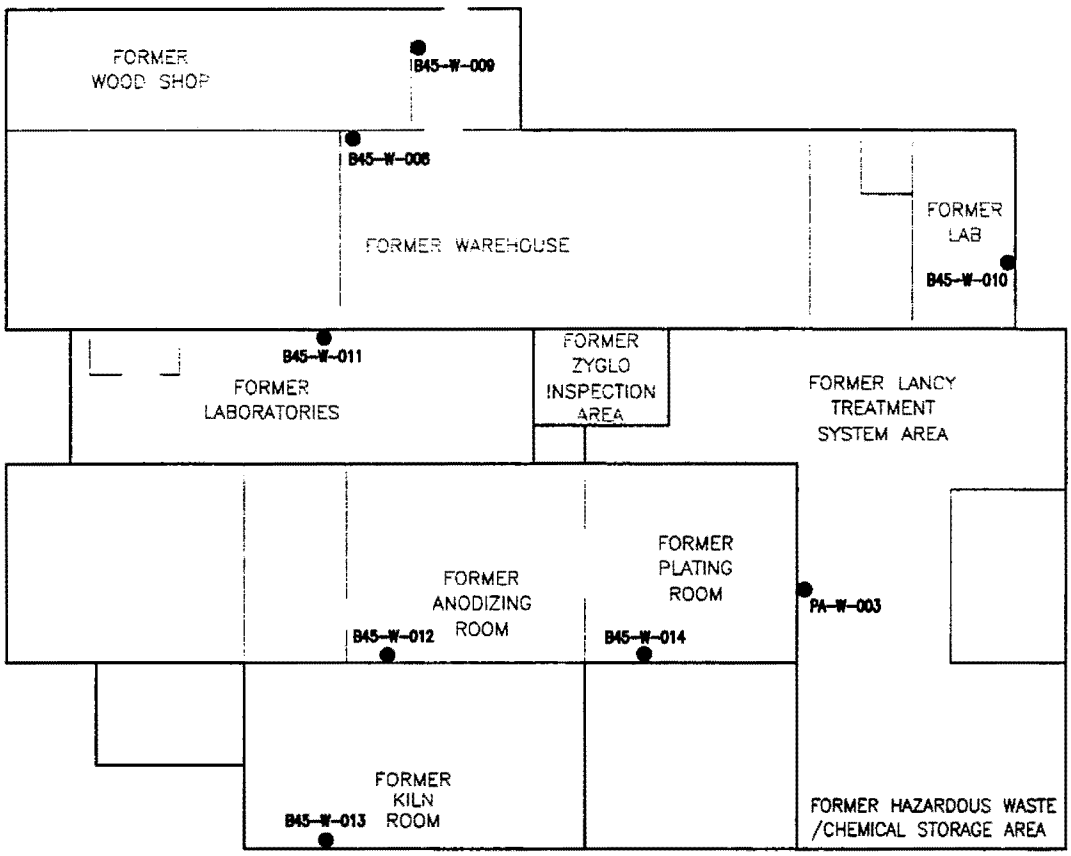
LEGEND

● B45-FL-001 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-11
BUILDING 4 & 5 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



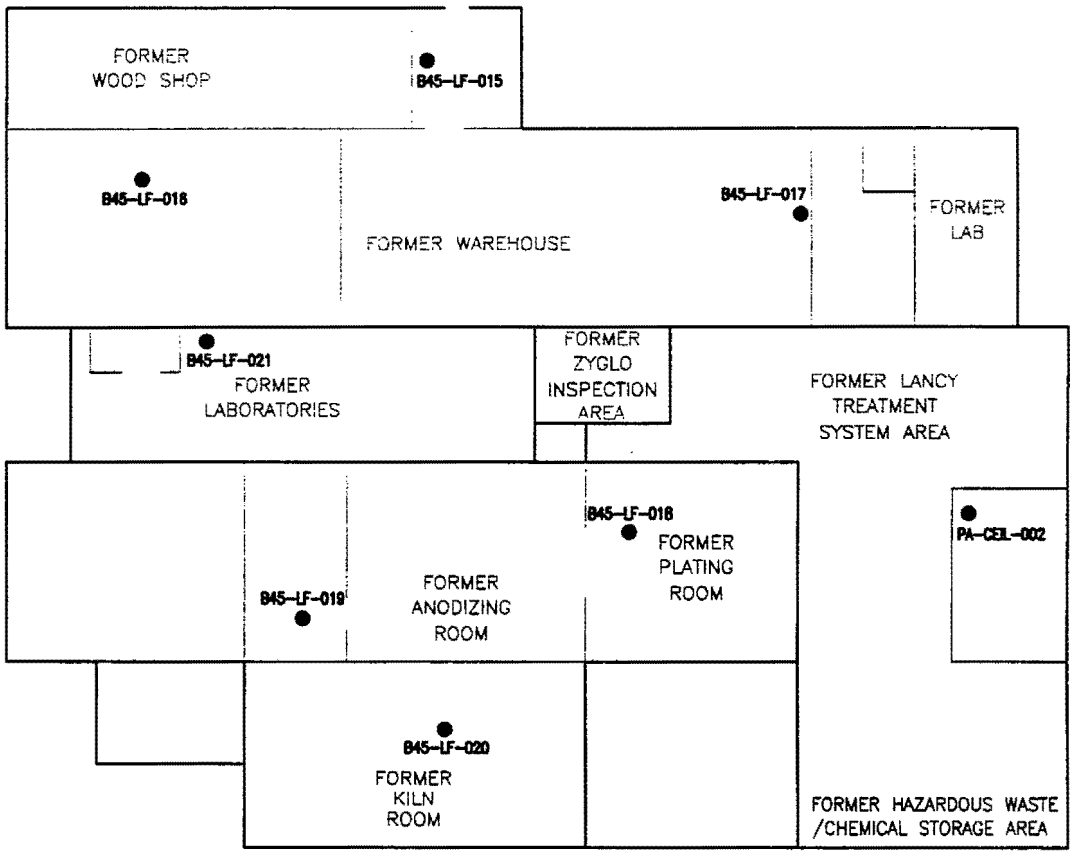
LEGEND

● B45-W-008 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-12
BUILDING 4 & 5 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



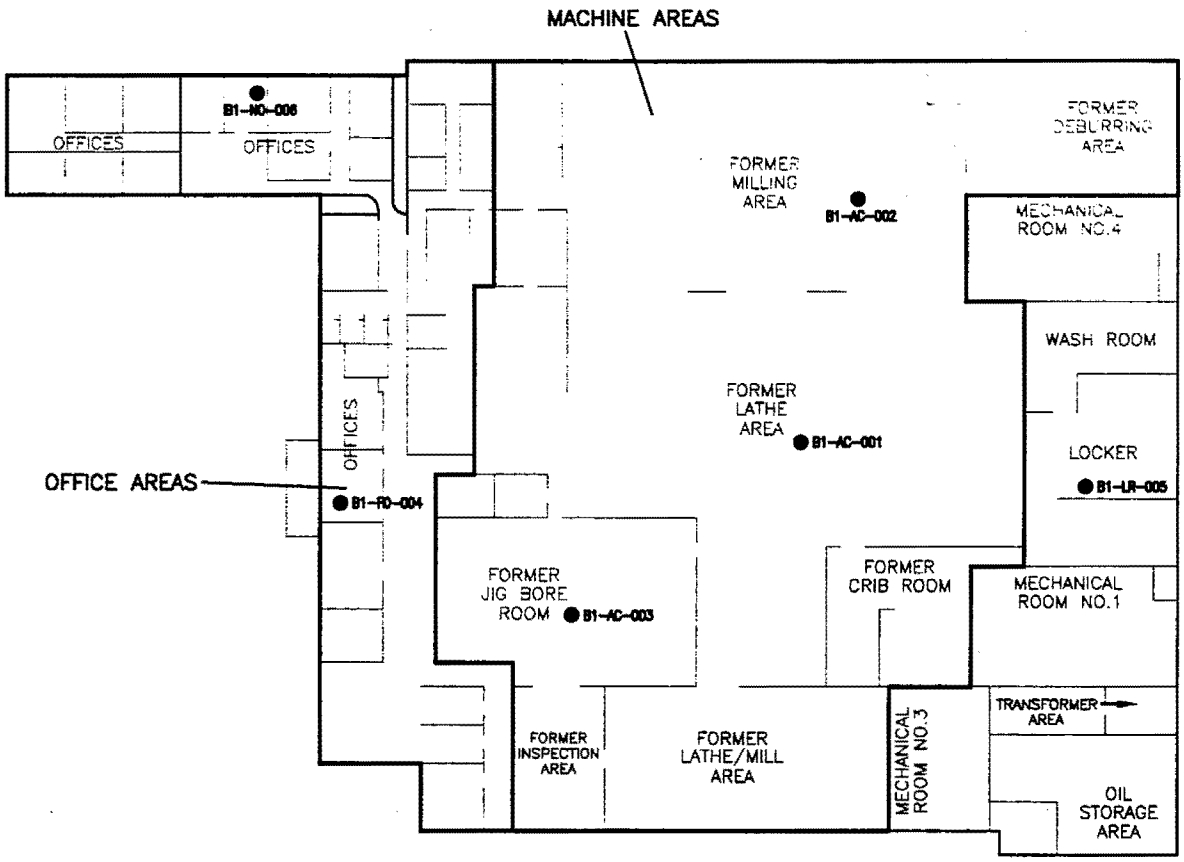
LEGEND

● B45-LF-015 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-13
BUILDING 1
AIR CLEARANCE SAMPLE LOCATIONS



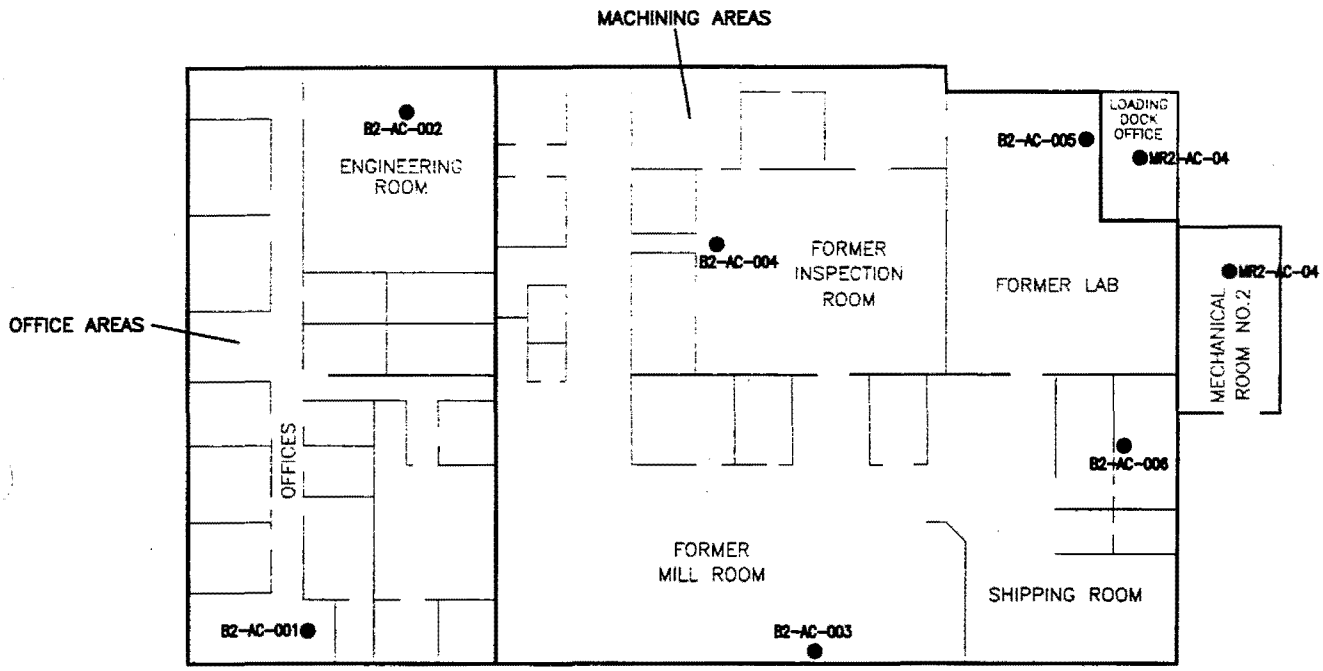
LEGEND

● B1-NO-006 AIR CLEARANCE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-14
BUILDING 2
AIR CLEARANCE SAMPLE LOCATIONS



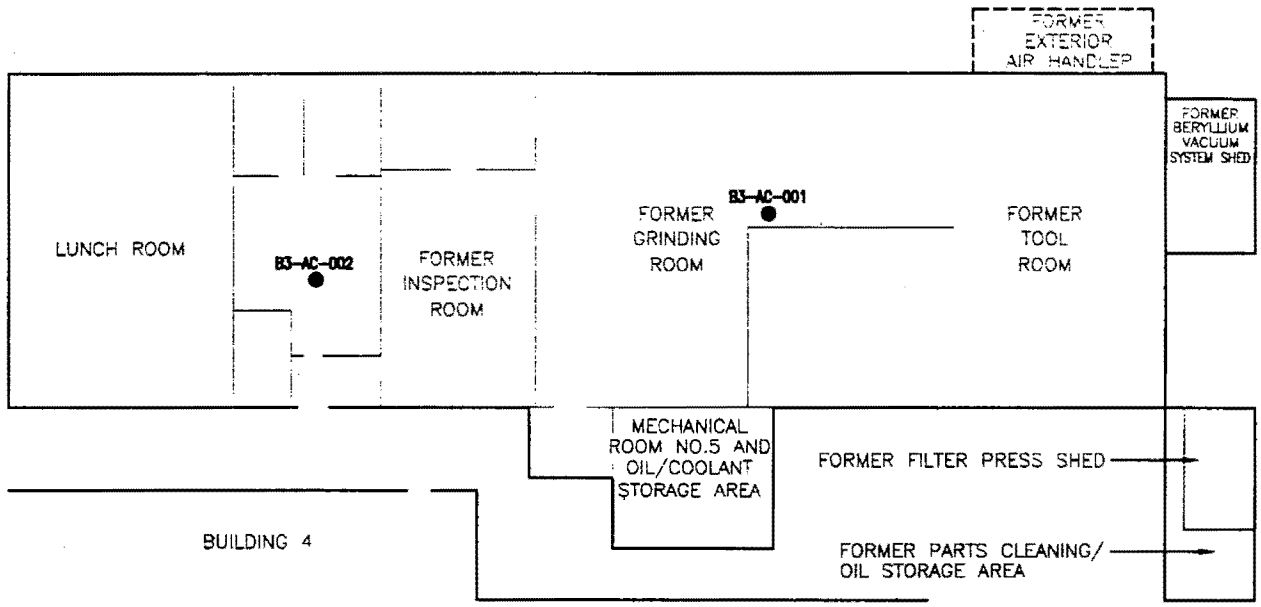
LEGEND

● B2-AC-001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-15
BUILDING 3
AIR CLEARANCE SAMPLE LOCATIONS



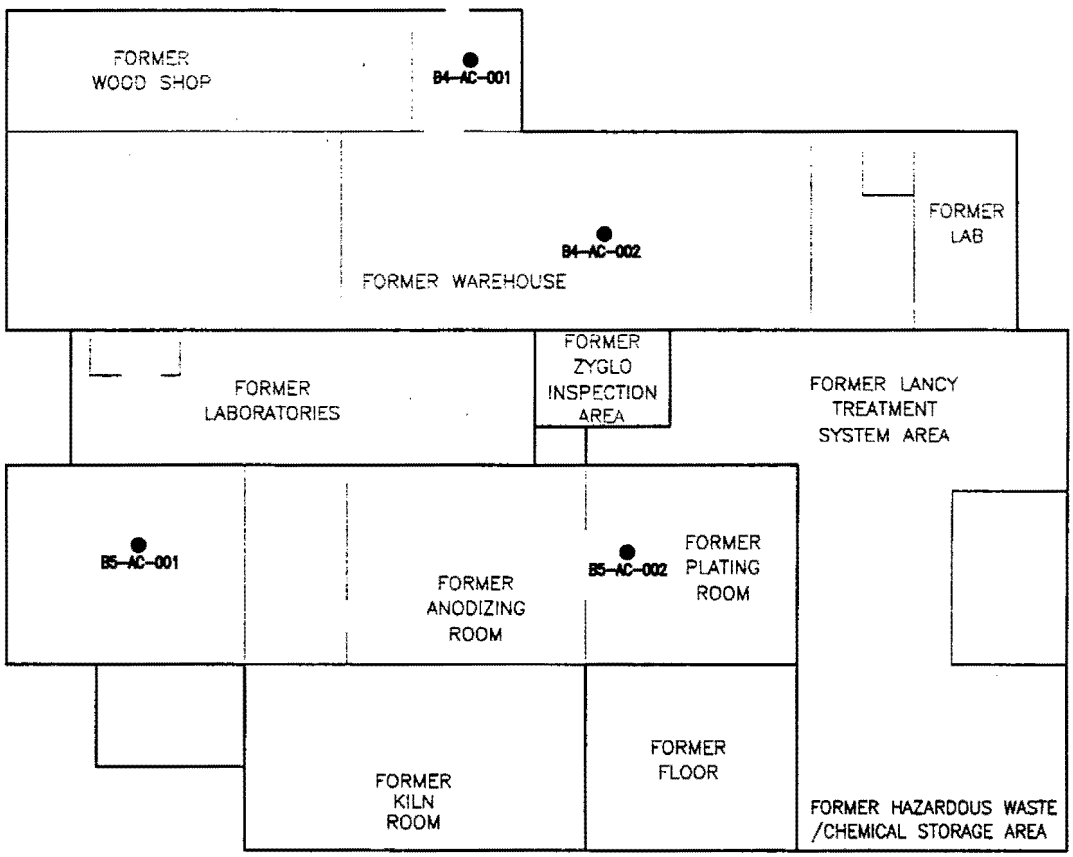
LEGEND

● B3–AC–001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-16
BUILDING 4 & 5
AIR CLEARANCE SAMPLE LOCATIONS



LEGEND

● B4-AC-001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

Table 4-3
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range (µg/ft²)
Ceiling Tiles, grid, and fiberglass	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
HVAC ductwork	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Air handlers	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Former beryllium vacuum system shed and beryllium vacuum piping	Building #3 (tub from shed) Building 4 (vacuum piping)	Removal	Not Applicable	Not Applicable
Carpeting	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Floors	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 5 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - 0.14 – 5.3 - 0.5 – 3.6 - 21.24 - 5.35 - 17.64 - 18.76 - 0.19
	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - 0.34 – 13.28 - ND – 5.13 - 0.38 - 1.85
	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5 - Floor drain - Sump	Decontamination	Building #3 - 5 samples - 1 sample - 1 sample - 1 sample - 1 sample - 1 sample	Building #3 - 0.09 – 4.5 - 0.06 - ND - 1.24 - 1.18 - 1.03
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area - Floor drain #2	Decontamination	Buildings #4 and #5 - 7 samples - 1 sample - 1 sample	Buildings #4 and #5 - 0.85 - 6 - ND - 1.03

Table 4-3 (continued)
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range ($\mu g/ft^2$)
Walls	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 9 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - ND – 16.08 - 0.05 – 3.1 - 4.35 - 4.39 - 1.36 - 1.4 - 0.20
	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - ND – 0.86 - 0.07 – 0.53 - 0.57 - 0.42
	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5	Decontamination	Building #3 - 8 samples - 1 sample - 1 sample - 1 sample	Building #3 - ND – 1.76 - 4.7 - ND - 5.25
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area	Decontamination	Buildings #4 and #5 - 7 samples - 1 sample	Buildings #4 and #5 - 0.09 – 4.38 - 0.23
Light fixtures and other ceiling materials	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 9 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - 0.05 – 8.0 - 0.05 – 3.35 - 13.08 - 5.92 - 13.72 - 6.2 - 0.10

Table 4-3 (continued)
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range (µg/ft²)
Light fixtures and other ceiling materials	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - ND – 0.86 - 0.07 – 0.53 - 0.57 - 0.42
Light fixtures and other ceiling materials (Continued)	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5	Decontamination	Building #3 - 8 samples - 1 sample - 1 sample - 1 sample	Building #3 - 0.23 – 9.0 - 1.44 - 0.19 - 0.12
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area	Decontamination	Buildings #4 and #5 - 8 samples - 1 sample	Buildings #4 and #5 - 0.81 – 6.6 - 1.71

ND – Not Detected.

Table 4-4
Summary of Beryllium Air Clearance Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Sample Type	Location	No. of Samples	Beryllium Air Concentration Range (mg/m³)
Air Filter Media	Building #1	6	All samples reported < 0.00005
Air Filter Media	Building #2	6	All samples reported < 0.00005
Air Filter Media	Building #3	2	All samples reported < 0.00005
Air Filter Media	Buildings #4 and #5	4	All samples reported < 0.00005

Table 4-5
Summary of Plating Ductwork Abatement Actions and Chromium Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Chromium Surface Wipe Concentration Range ($\mu g/ft^2$)
Plating ductwork	Building #5	Decontamination and Removal	Not Applicable	Not Applicable
Floors	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 5 samples - 1 sample	Building #5 - 3.32 – 64.15 - ND
Walls	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 4 samples - 1 sample	Building #5 - 0.16 – 3.27 - 0.3
Light fixtures and other ceiling materials	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 5 samples - 1 sample	Building #5 - 1.41 – 33.83 - 13.33

Section 5
Conclusions

Beryllium-impacted ceiling materials (tiles, grid, insulation), HVAC ductwork, air handlers, carpets, and Building 5 plating ductwork were removed and disposed of in accordance with appropriate federal and state disposal criteria. Clearance swipe samples collected after final decontamination and abatement activities were all less than the surface swipe criteria of 25 $\mu g/ft^2$. Air clearance samples reported that airborne beryllium concentrations were below OSHA's 0.002 mg/m^3 PEL. Based on the results of the abatement program, all beryllium abatement objectives were achieved. With concurrence from Law Environmental, Inc., no further action is required, and all buildings are considered suitable for occupancy.

Section 4
Beryllium Abatement Program

The following section describes the technical approach, scope of work and field methodology followed to complete the decontamination and abatement of beryllium impacted materials at the ABC facility. The abatement program was implemented from December 1999 through February 2000. Abatement activities were performed in accordance with Tetra Tech's Decontamination and Abatement of Beryllium Impacted Materials Work Plan, Former American Beryllium Company, dated November 30, 1999.

4.1 PROJECT APPROACH

In order to facilitate property transfer, a surface wipe limit of 25 $\mu g/ft^2$ was selected as a guideline for abatement to reduce the potential for airborne beryllium hazards at the former ABC facility. As described in Section 2.2, beryllium concentrations were detected above 25 $\mu g/ft^2$ in building materials throughout the facility. The abatement approach was to first remove beryllium-impacted materials that could not easily be decontaminated (ceiling materials, air handlers, HVAC ductwork, and carpets). Approximately 60 linear feet of ductwork associated with former plating and anodizing lines in Building 5 were also removed. Following removal of the materials, all accessible interior building surfaces (floors, walls, light fixtures, etc.) were subsequently decontaminated to below the beryllium cleanup level of 25 $\mu g/ft^2$. A summary of the abatement activities performed at the ABC facility is described in Table 4-1.

Table 4-1

Beryllium Impacted Areas and Final Abatement Actions[a]

Building Feature	Location	Abatement Action
Ceiling tiles, grid, fiberglass	Buildings 1, 2, 3 office areas, and Buildings 4 and 5	Removed
Other ceiling materials (light fixtures, etc.)	Buildings 1, 2, 3, 4, and 5	Decontaminated
HVAC ductwork	Buildings 1, 2, 3, 4, and 5	Removed
Air handlers[b]	Buildings 1, 2, 3, 4, and 5	Removed
Beryllium vacuum piping	Building 4	Removed
Carpeting	Buildings 1, 2, and 3 (primarily office areas)	Removed
Walls, floors and other interior surfaces (includes floors below carpeted areas)	Buildings 1, 2, 3, 4, and 5	Decontaminated
Former Be vacuum system	Building 3, east side of building	Decontaminated
Filter press shed	Building 3	Decontaminated
Former Lancy Treatment System and hazardous waste / chemical storage area	Building 5	Decontaminated
Plating ductwork	Building 5	Removed
Sumps / Floor drains	Buildings 3 and 5	Decontaminated

a – Abatement activities focused on beryllium. However, decontamination activities in the Building #5 plating areas were also intended to remove chromium residues.
b - Roof units were not removed.

Following abatement activities, clearance sampling was performed to document that the beryllium abatement objectives had been attained. Both surface wipe and air clearance samples were collected and compared to site-specific clearance criteria.

4.2 FIELD METHODOLOGY

A description of each major task associated with the abatement program is presented in the following subsections:

4.2.1 Work Area Preparation and Isolation

Prior to disturbance of impacted materials, a work enclosure and decontamination facility was installed at each work area. The enclosure consisted of a single layer of polyethylene on all walls and floors designated for decontamination and abatement. A negative air chamber containing a HEPA filter system was installed within each work area to prevent particulate migration to areas outside the enclosure. This system remained in operation until final clearance samples were collected to document that no airborne beryllium hazards were present.

A decontamination facility was located at the egress point of the work area. All personnel and equipment within the work area were decontaminated prior to egress. A waste load out area was constructed for the decontamination and load out of beryllium waste packages prior to disposal.

4.2.2 Removal and Decontamination of Beryllium Impacted Materials

All beryllium impacted ceiling tiles (includes grid and insulation), vacuum piping, HVAC ductwork, air handlers, and carpets were removed from the former ABC facility. Ductwork from the Building 5 plating area was also removed. Prior to and during bulk removal, the materials were misted with an encapsulant to prevent airborne dust emissions. The materials were packaged (single bagged in six-millimeter thick polyethylene) and stored in a storage bin in preparation for disposal.

Following removal of bulk materials, the interior surface areas (walls, floors, ceiling materials, sumps and floor drains) were decontaminated using pressure wash and wipe down methods. All surface areas were decontaminated to the beryllium action level of 25 $\mu g/ft^2$. Decontamination

water was collected and stored in a storage tank pending disposal. The tank was also used to store decontamination water generated from PPE cleaning.

4.2.3 Perimeter Air Monitoring during Abatement

During abatement and decontamination activities, perimeter air samples were collected to ensure and document that no fugitive beryllium emissions were released outside the containment area. The samples were collected using personal air sampling pumps that flowed at 3 liters per minute. Two perimeter air samples were collected during each work day; one sample was collected at the entrance to the work enclosure area; and one sample was collected at the HEPA filter exhaust. All perimeter air samples were analyzed for beryllium using either NIOSH Method 7300 or USEPA Method 6010A.

4.2.4 Clearance Wipe Sampling

Following decontamination of the building surfaces, clearance wipe samples were collected to ensure that the action level of 25 $\mu g/ft^2$ had been attained. When a swipe sample exceeded the 25 $\mu g/ft^2$ cleanup level, the surrounding area out to the nearest clean sampling point was re-cleaned. The area was then resampled to confirm that cleanup standards were attained.

Representative samples were collected from each area and material type that was decontaminated. Sample frequencies and locations in the major buildings (Buildings 1, 2, 3, 4, and 5) were determined using the following general methodology for each material type. For walls and floors, 8 samples were collected per 100 ft. x 100-ft. area (total 10,000-ft^2 area). For ceiling light fixtures, samples were collected at a rate of 8 per 100 fixtures (8% of the total fixtures counted at the facility). Samples were also collected from miscellaneous areas with different material types. Samples were collected throughout the buildings to provide adequate geographic coverage for each material type. Figures 4-1 through 4-12 present the surface wipe sampling locations. A summary of the clearance sampling counts for each building is provided below:

Building 1 clearance samples

1. Floor samples – Building 1 contains approximately 18,000 ft^2 of floors in the former machining areas, and 4,500 ft^2 in the former office areas. Based on the estimated square footage, 14 clearance samples were collected from the former machining areas and 5 were collected from the former office areas – *see Figure 4-1.*

2. Wall samples - Building 1 contains approximately 13,685 ft^2 of walls in the former machining areas, and 16,500 ft^2 in the former office areas. Based on the estimated square footage, 14 clearance samples were collected from the former machining areas and 10 were collected from the former office areas – *see Figure 4-2.*

3. Ceiling light fixture samples – Building 1 contains approximately 268 light fixtures. Based on the estimated light fixture count, 18 clearance samples were collected from Building 1 (9 from the former machining areas and 9 from the former office areas) - *see Figure 4-3.*

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 1 include Mechanical Room #1, Mechanical Room #3, Mechanical Room #4, the locker room, and the oil storage area. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - *see Figures 4-1 through 4-3.*

Building 2 clearance samples

1. Floor samples – Building 2 contains approximately 11,000 ft^2 of floors in the former machining areas, and 5,250 ft^2 in the former office and engineering areas. Based on the estimated square footage, 9 clearance samples were collected from the former machining areas and 5 were collected from the former office and engineering areas – *see Figure 4-4.*

2. Wall samples - Building 2 contains approximately 19,950 ft^2 of walls in the former machining areas, and 8,200 ft^2 in the former office and engineering areas. Based on the

estimated square footage, 17 clearance samples were collected from the former machining areas and 7 were collected from the former office and engineering areas – *see Figure 4-5*.

3. Ceiling light fixture samples – Building 2 contains approximately 158 light fixtures in the former machining areas, and 107 light fixtures in the former office and engineering areas. Based on the estimated light fixture count, 12 clearance samples were collected from the former machining areas and 9 were collected from the former office and engineering areas *see Figure 4-6*.

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 2 include Mechanical Room #2 and the former loading dock office. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - s*ee Figures 4-4 through 4-6*.

Building 3 clearance samples

1. Floor samples – Building 3 contains approximately 6,000 ft^2 of floors in the former machining and office areas. Based on the estimated square footage, 5 clearance samples were collected from the machining and office areas. A wipe sample was also collected from a floor drain and a sump in the building – *see Figure 4-7*.

2. Wall samples - Building 3 contains approximately 9,645 ft^2 of walls in the former machining and office areas. Based on the estimated square footage, 8 clearance samples were collected from the machining and office areas – *see Figure 4-8*.

3. Ceiling light fixture samples – Building 3 contains approximately 89 light fixtures in the former machining and office areas. Based on the estimated light fixture count, 8 clearance samples were collected from the former machining and office areas - *see Figure 4-9*.

4. Samples from miscellaneous areas – Additional rooms and areas sampled in Building 3 include Mechanical Room #5 (also referred to as oil/coolant storage room), a former

filter press shed, and a former beryllium vacuum system shed. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from each of these rooms - s*ee Figures 4-7 through 4-9.*

Buildings 4 and 5 clearance samples

1. Floor samples – Buildings 4 and 5 contains approximately 8,085 ft^2 of floors in the former laboratory and process areas. Based on the estimated square footage, 7 clearance samples were collected from the former laboratory and process areas. A wipe sample was also collected from a floor drain in Building 5 – *see Figure 4-10.*
2. Wall samples - Buildings 4 and 5 contain approximately 8,305 ft^2 of walls in the former laboratory and process areas. Based on the estimated square footage, 7 clearance samples were collected from the machining and office areas – *see Figure 4-11.*
3. Ceiling light fixture samples – Buildings 4 and 5 contain approximately 100 light fixtures in the former laboratory and process areas. Based on the estimated light fixture count, 8 clearance samples were collected from the former laboratory and process areas - *see Figure 4-12.*
4. Samples from miscellaneous areas – Additional rooms and areas sampled in Buildings 4 and 5 include the former treatment system and chemical storage area located east of the building. Three samples (1 floor, 1 wall, and 1 light fixture) were collected from this area - s*ee Figures 4-10 through 4-12.*

The clearance swipe samples were collected using laboratory supplied wipe media templates. A 12-inch by 12-inch area was first outlined on the sampled surface. The samples were then collected by applying an "S" shaped motion once with its entire surface and then again in the opposite direction with a half-folded surface. Each wipe sample was then folded once more and placed in separate vial containers. Disposable surgical gloves were used to prevent cross

contamination of the samples. The samples were analyzed for beryllium using EPA Method 6010A. The chromium samples were analyzed using EPA Method 6010A.

4.2.5 Clearance Air Sampling

Clearance air samples were collected from each building to ensure that no airborne beryllium hazards exist following decontamination. The samples were collected using personal air sampling pumps that flowed at approximately 3 liters per minute. The samples were collected at positions ranging from 4 to 6 feet above ground surface to simulate the breathing zone of future facility occupants. The following number of clearance samples were collected from each building:

Table 4-2

Summary of Air Clearance Samples

Building Number	Number of Air Samples
1	6
2	6
3	2
4	2
5	2

Sampling pumps were calibrated before and after the sampling events. The air samples were analyzed for beryllium using NIOSH Method 7300 or USEPA Method 6010A. Air clearance sample locations are shown on Figures 4-13 through 4-16.

4.2.6 Disposal of Beryllium Impacted Materials

The beryllium impacted bulk materials and wastewater were disposed of in accordance with applicable CFR and FAC waste classification criteria. As outlined in Section 3.3, the beryllium residues on the bulk materials do not meet the definition of a characteristic or listed hazardous waste and were therefore not disposed of as a hazardous waste. The bulk materials were transported to the Manatee County landfill.

As outlined in Section 3.3, the decontamination water was also determined to be non-hazardous. The decontamination water was therefore transported as a non-hazardous waste to Clark Environmental's permitted treatment and recycling facility located in Mulberry, Florida.

4.2.7 Removal and Disposal of Chromium Impacted Plating Ductwork

Approximately 60 linear feet of ductwork associated with former plating and anodizing lines in Building 5 and the former treatment storage area were removed. Prior to disposal, the ductwork was cut into sections and then decontaminated to remove visible residues and stains. To determine if the materials were a hazardous waste, a bulk sample was collected from the ductwork and analyzed for chromium using the TCLP method. The sample reported a concentration of 2.5 mg/L of chromium, which is below the chromium toxicity criterion of 5 mg/L. The bulk materials were subsequently transported as a non-hazardous waste to the Manatee County landfill.

Following removal of the ductwork from Building 5 and the former treatment storage area, the interior surfaces (walls, floors, ceilings) were decontaminated in accordance with the methods prescribed in Section 4.2.2. Surface wipe samples were collected from the building surfaces to document post-decontamination chromium concentrations. No wipe sample criteria were identified for chromium.

4.3 SUMMARY OF ANALYTICAL DATA

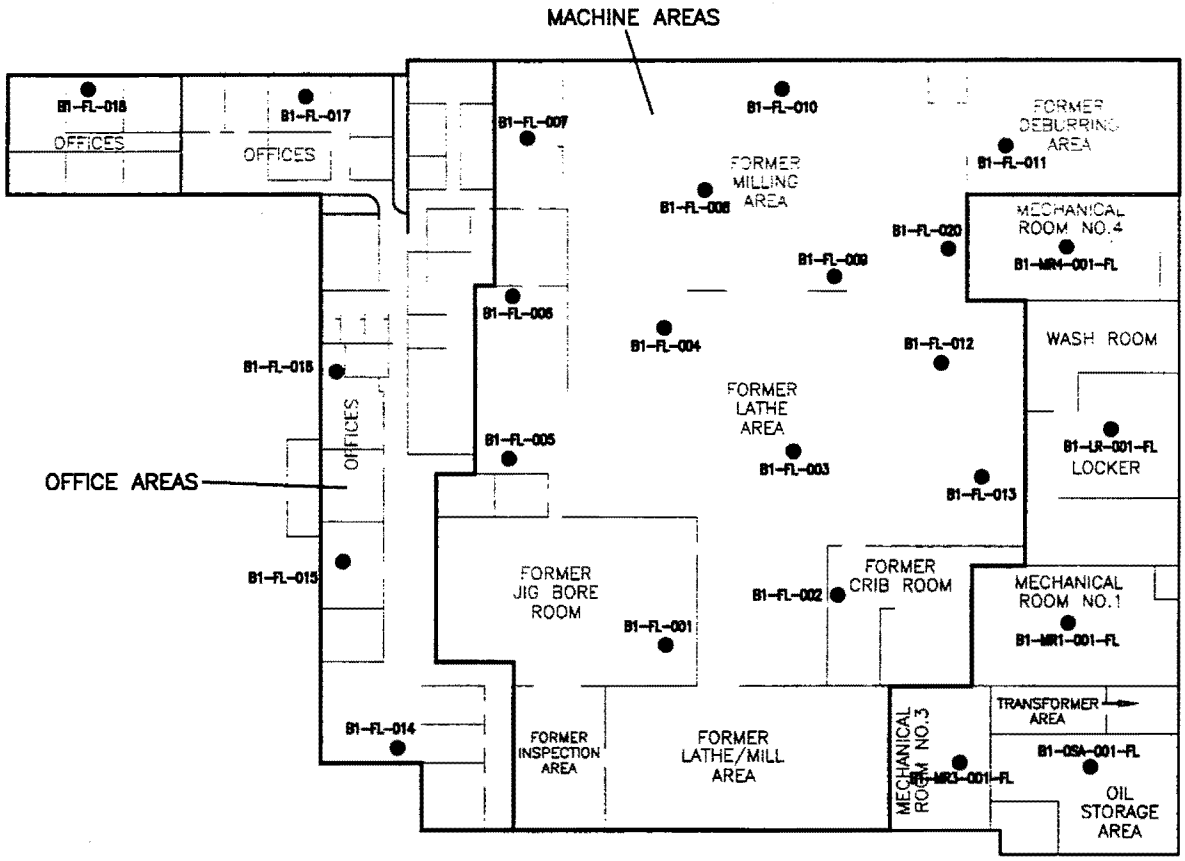
4.3.1 Surface Wipe Sampling Data

Surface wipe samples were collected during and after abatement to document that the site-specific beryllium cleanup standard of 25μg/ft^2 was attained. All final clearance samples show that the surface cleaning standards have been attained. Copies of the laboratory data reports are presented in Appendix A. A summary of the final beryllium clearance data is presented in Table 4-3 on pages 4-27 to 4-29. A summary of the chromium surface wipe data is presented in Table 4-4 on page 4-30.

4.3.2 Air Clearance Sampling Data

Air clearance samples were collected after abatement to document that airborne beryllium concentrations within the buildings did not exceed OSHA's 0.002 mg/m^3 PEL. All air clearance samples did not report concentrations above the detection limit of 0.00005 mg/m^3. Copies of the laboratory data reports are presented in Appendix A. A summary of the final clearance data is presented in Table 4-4 on page 4-29.

FIGURE 4-1
BUILDING 1 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



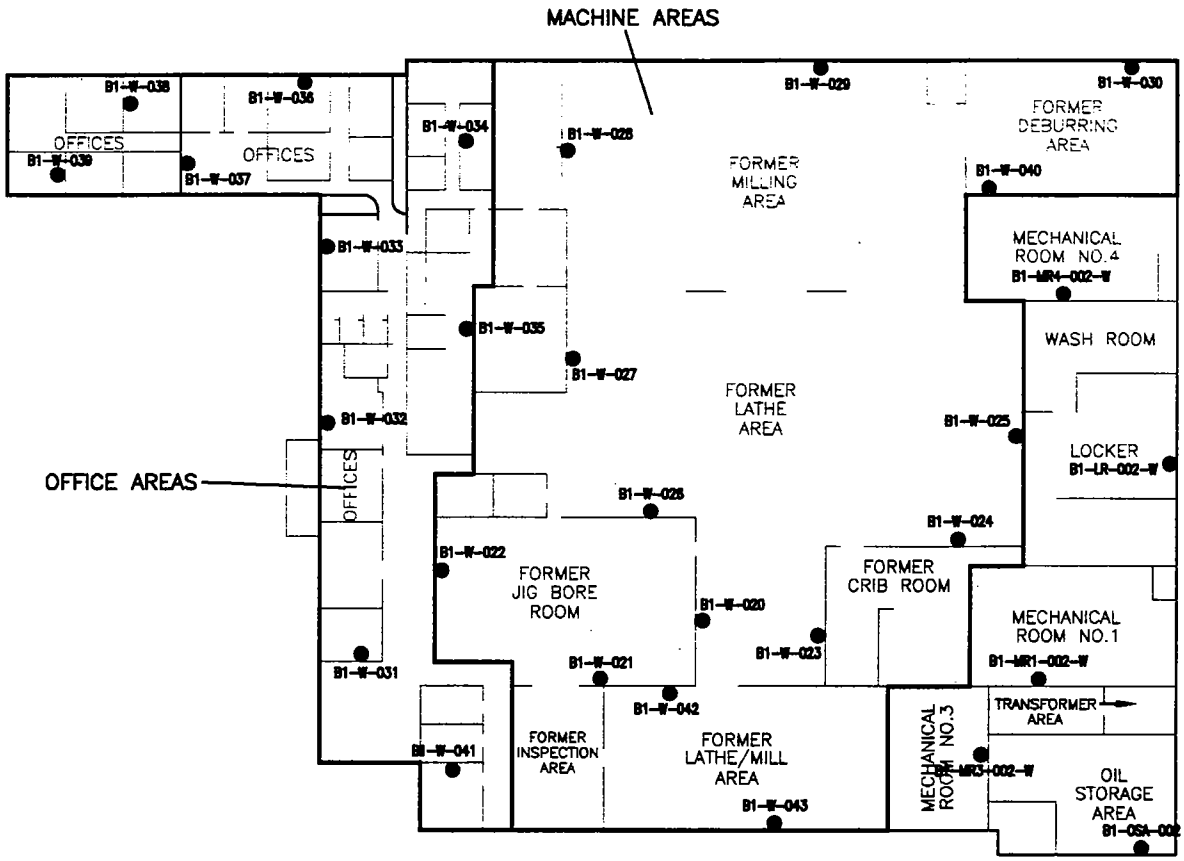
LEGEND

● B1-FL-001 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-2
BUILDING 1 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



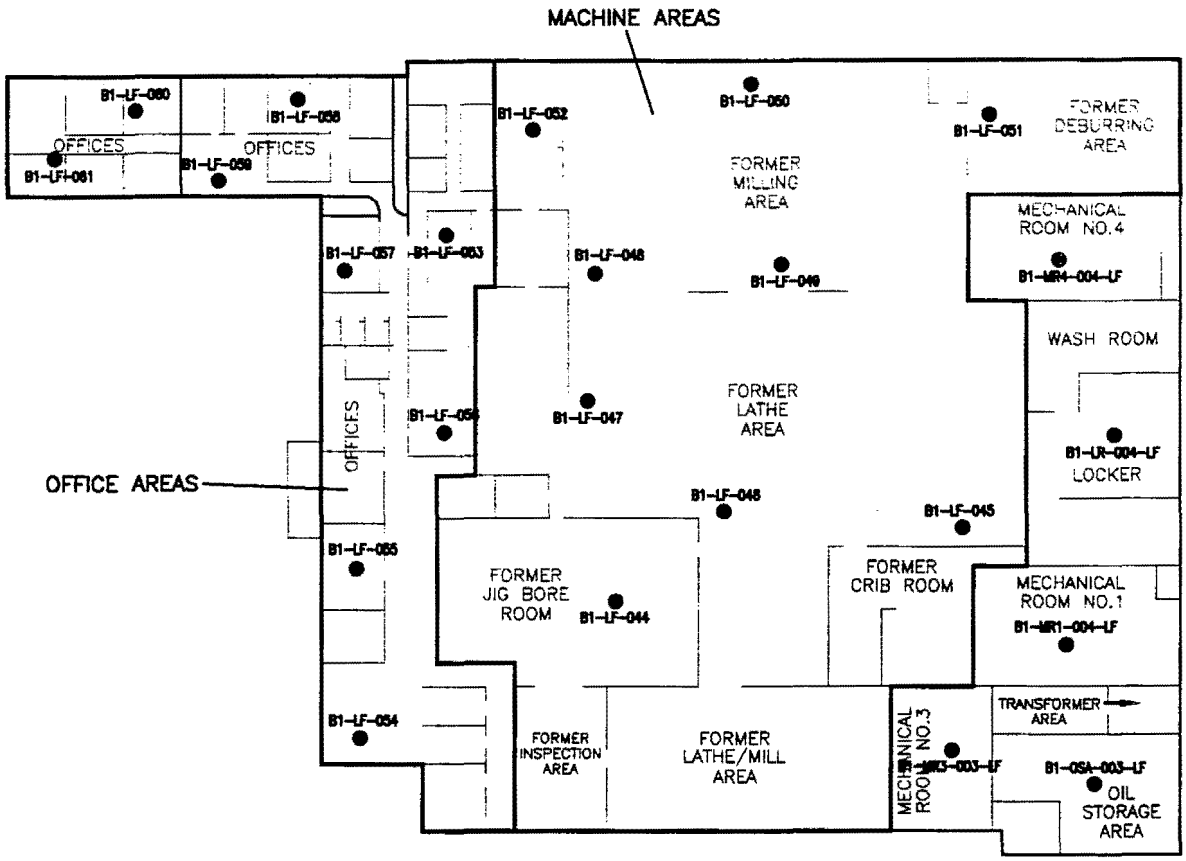
LEGEND

● B1-W-021 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-3
BUILDING 1 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



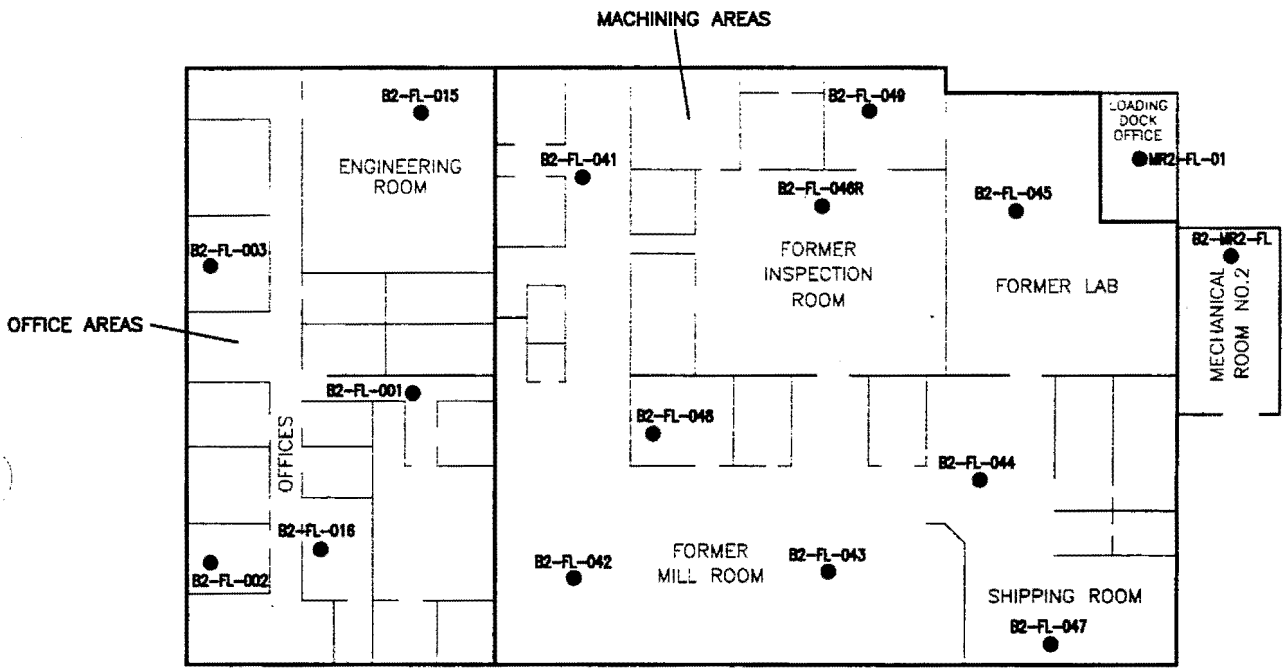
LEGEND

● B1-LF-044 SWIPE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-4
BUILDING 2 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



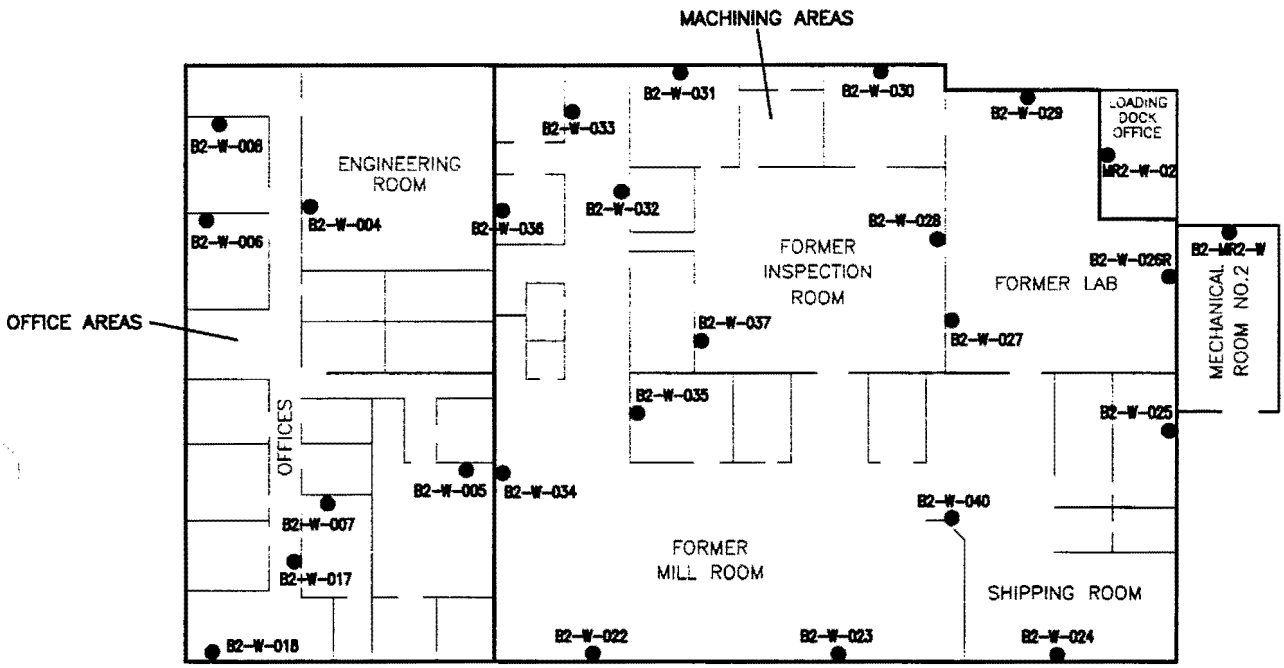
LEGEND

● B2-FL-042 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-5
BUILDING 1 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



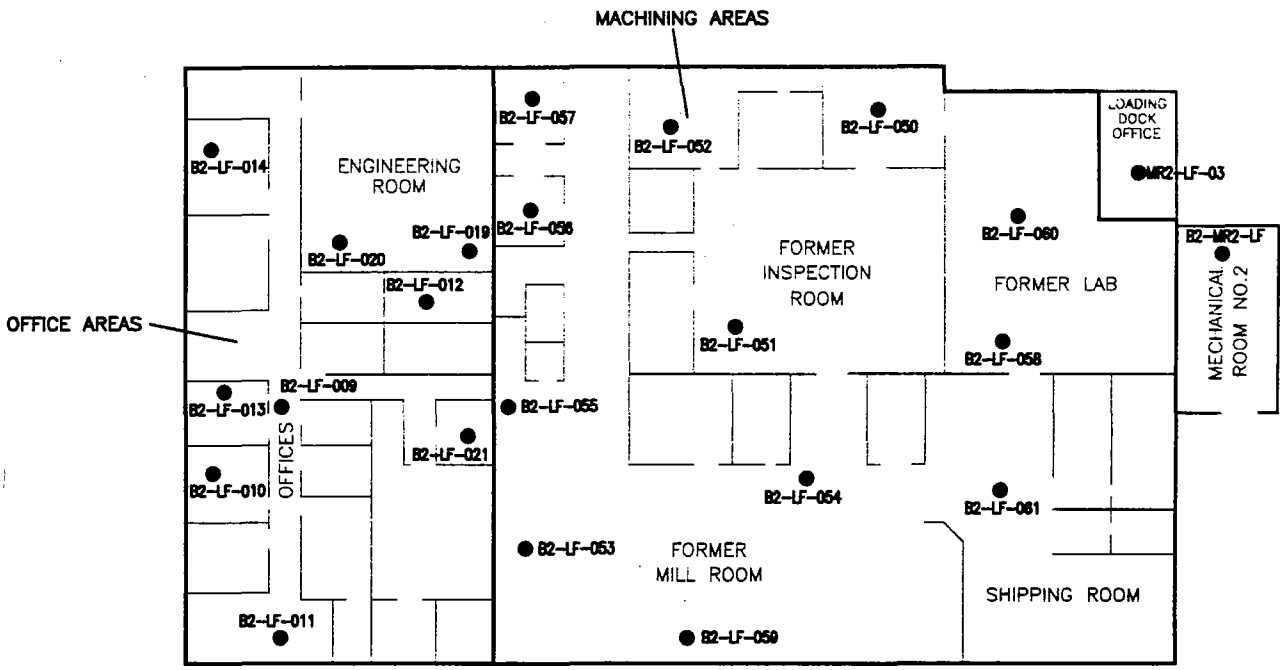
LEGEND

● B2-W-022 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-6
BUILDING 2 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



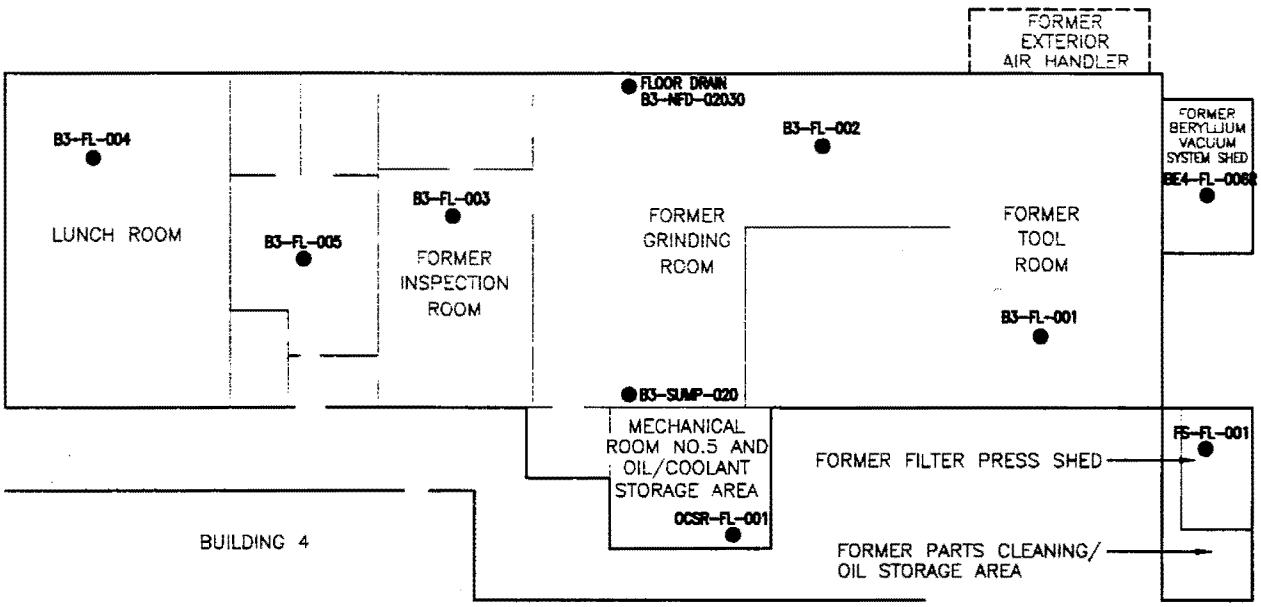
LEGEND

● B2-LF-051 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-7
BUILDING 3 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



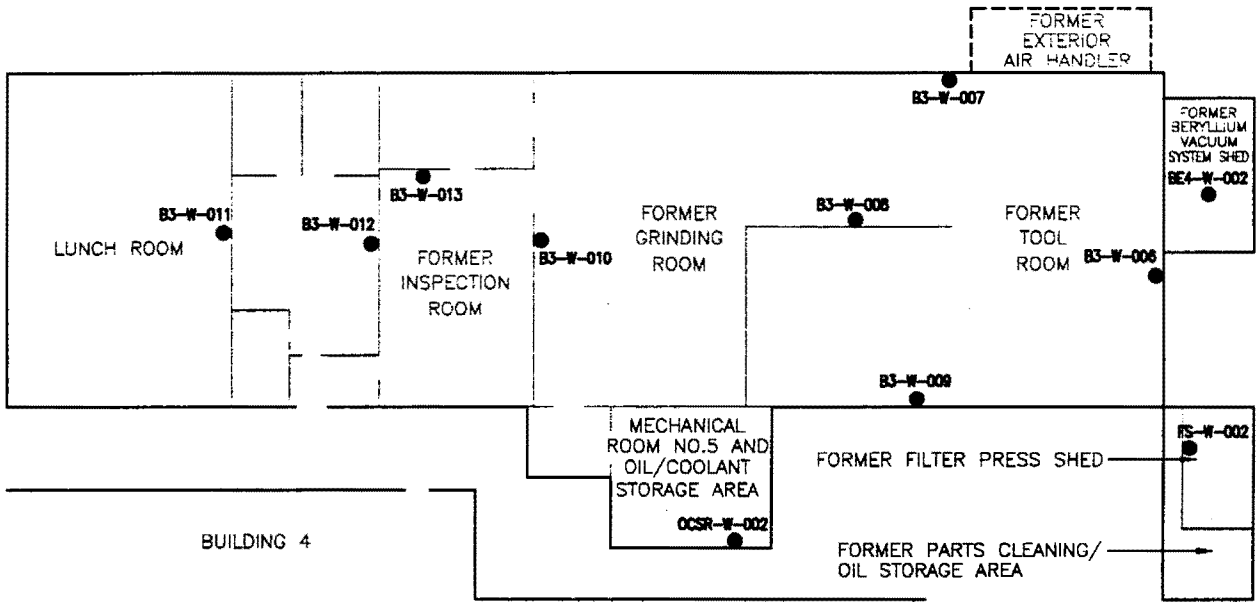
LEGEND

● B3-FL-001 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-8
BUILDING 3 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



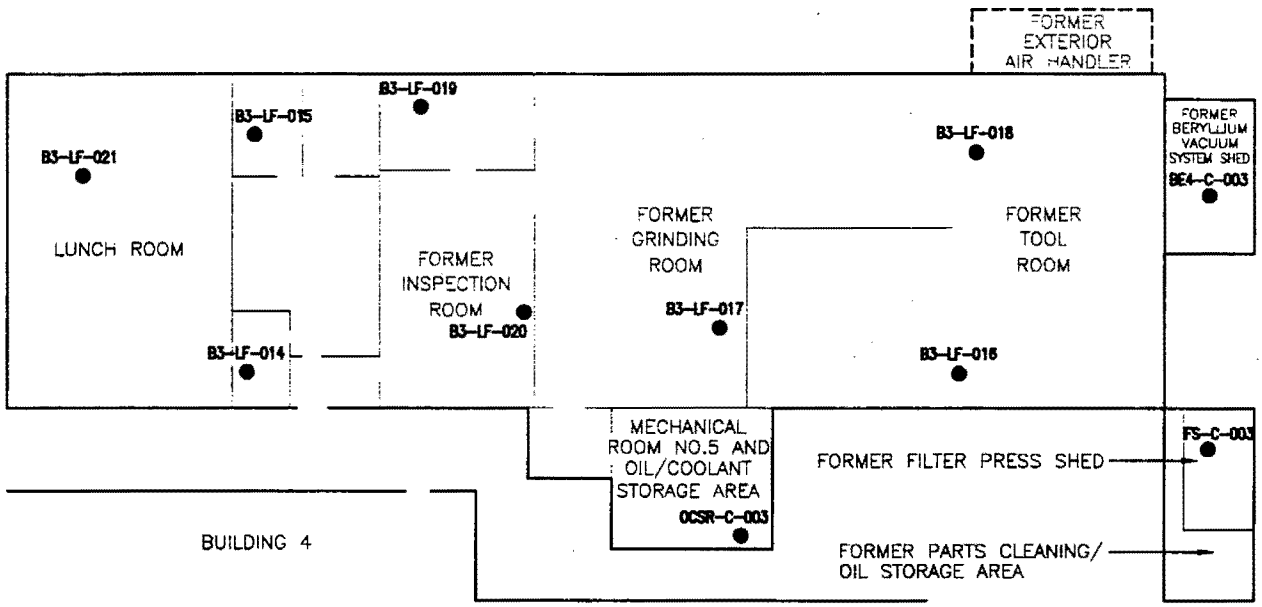
LEGEND

● B3-W-006 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-9
BUILDING 3 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



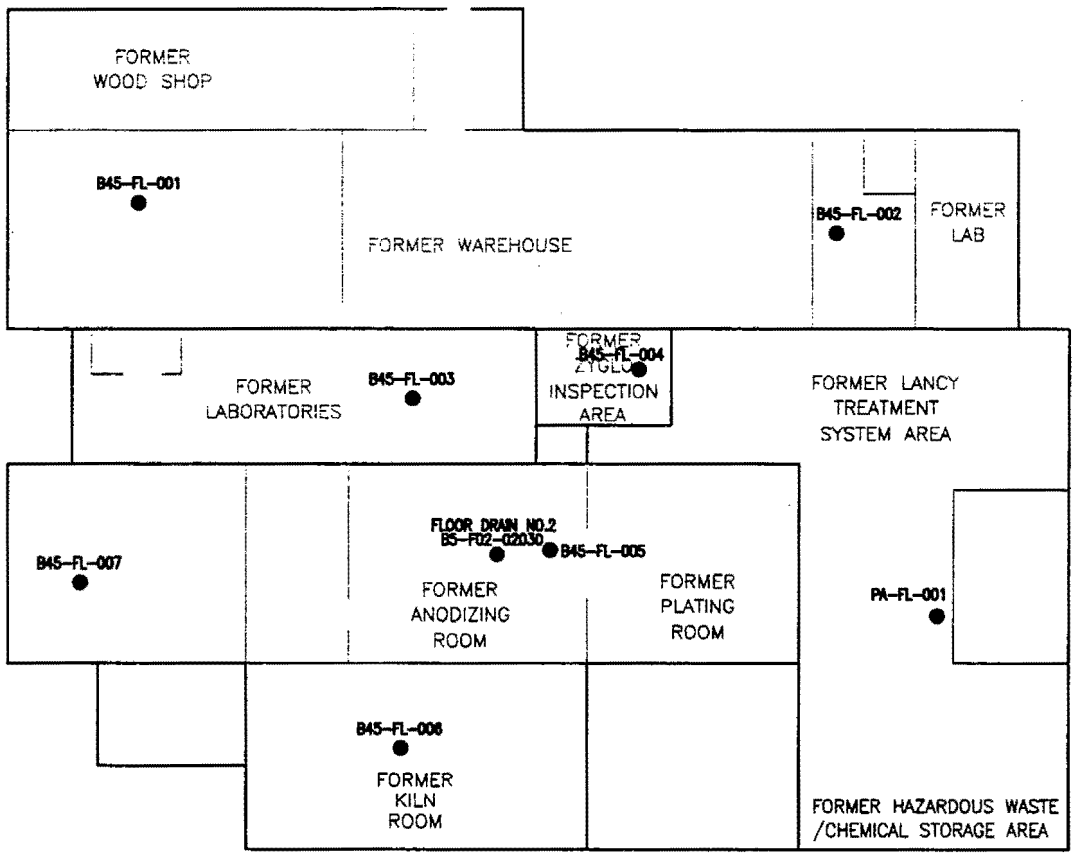
LEGEND

● B3-LF-014 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-10
BUILDING 4 & 5 FLOORS
CLEARANCE WIPE SAMPLE LOCATIONS



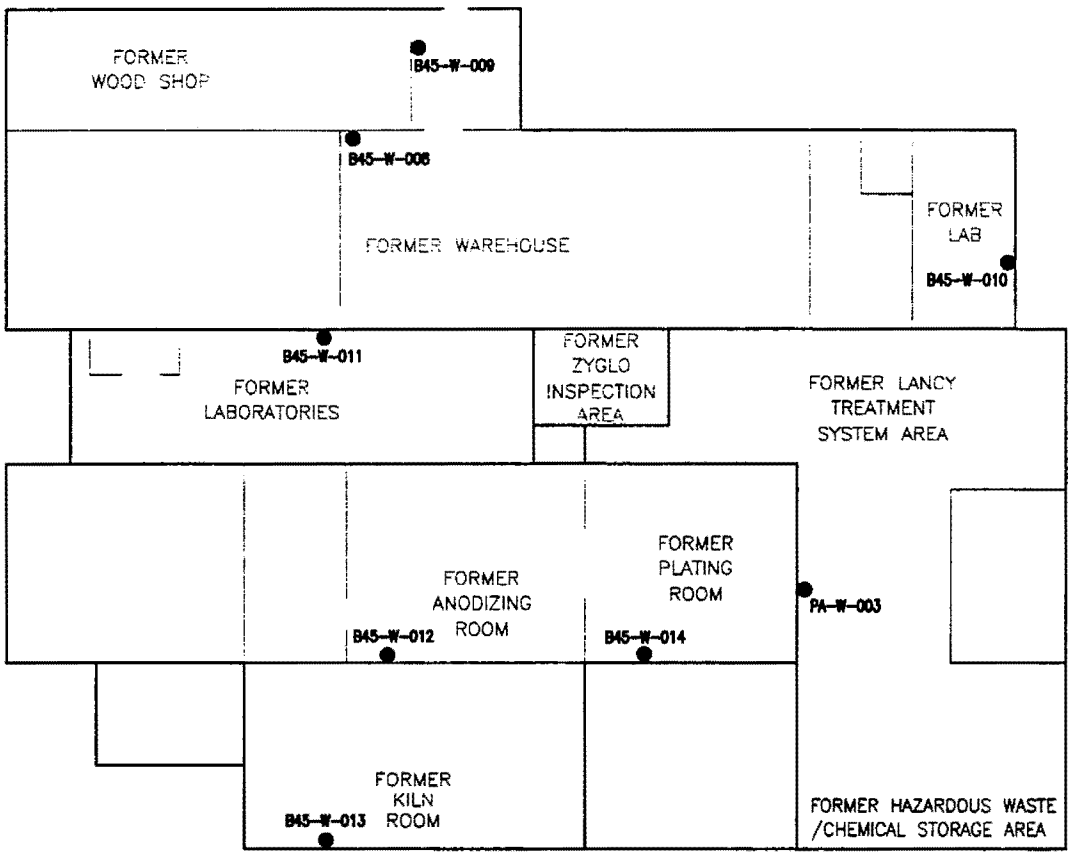
LEGEND

● B45-FL-001 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-11
BUILDING 4 & 5 WALLS
CLEARANCE WIPE SAMPLE LOCATIONS



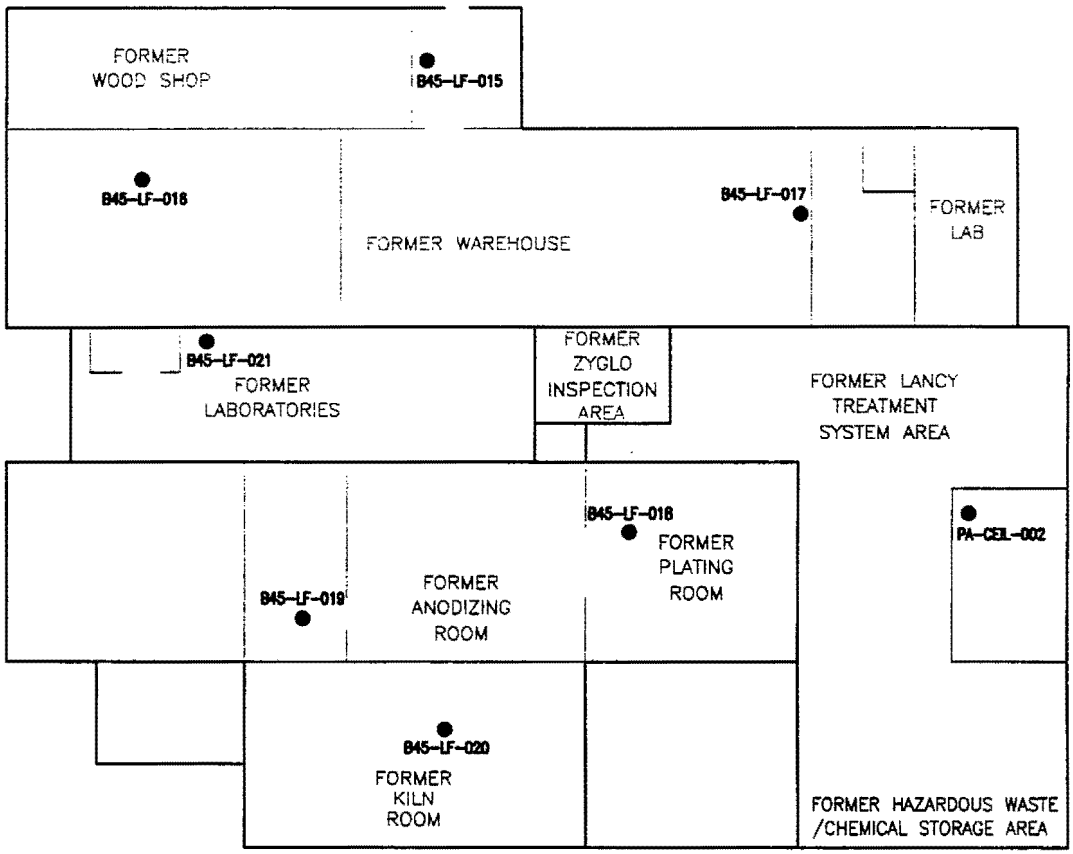
LEGEND

● B45-W-008 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-12
BUILDING 4 & 5 LIGHT FIXTURES
CLEARANCE WIPE SAMPLE LOCATIONS



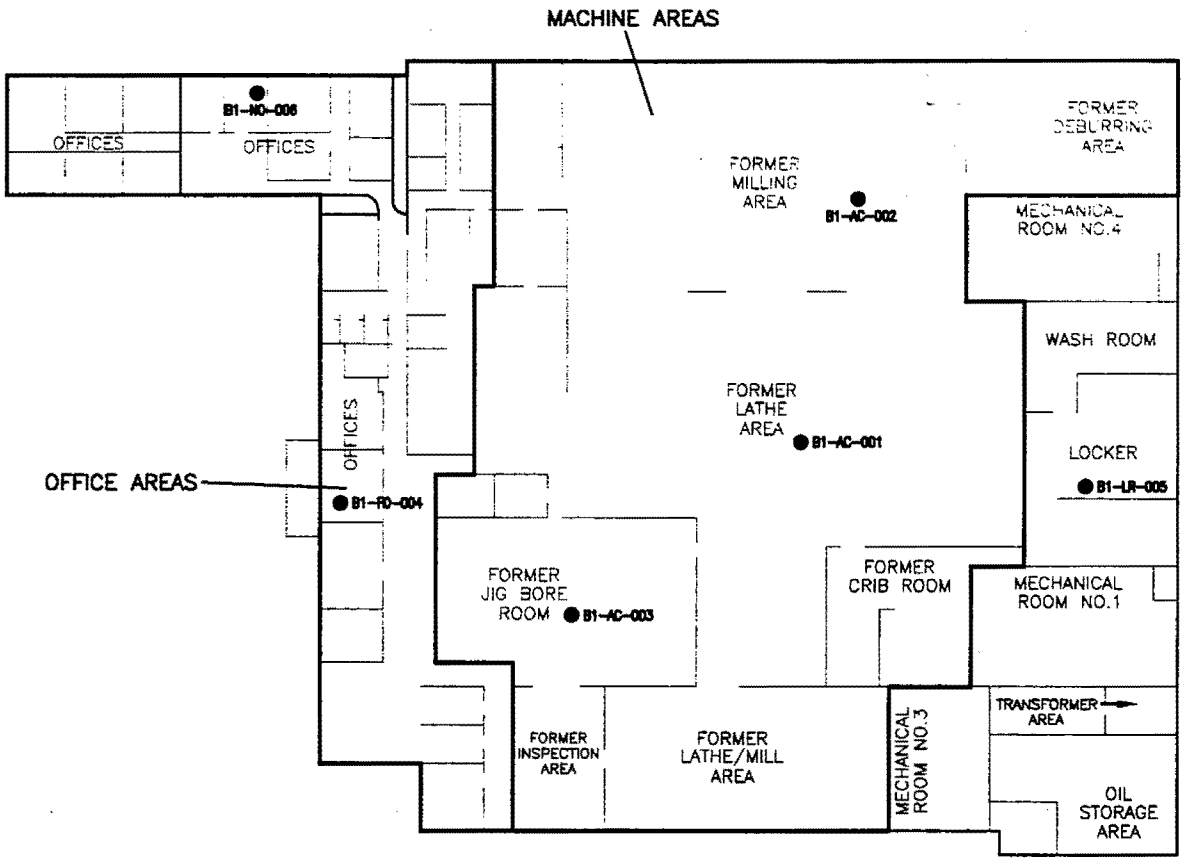
LEGEND

● B45-LF-015 SWIPE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-13
BUILDING 1
AIR CLEARANCE SAMPLE LOCATIONS



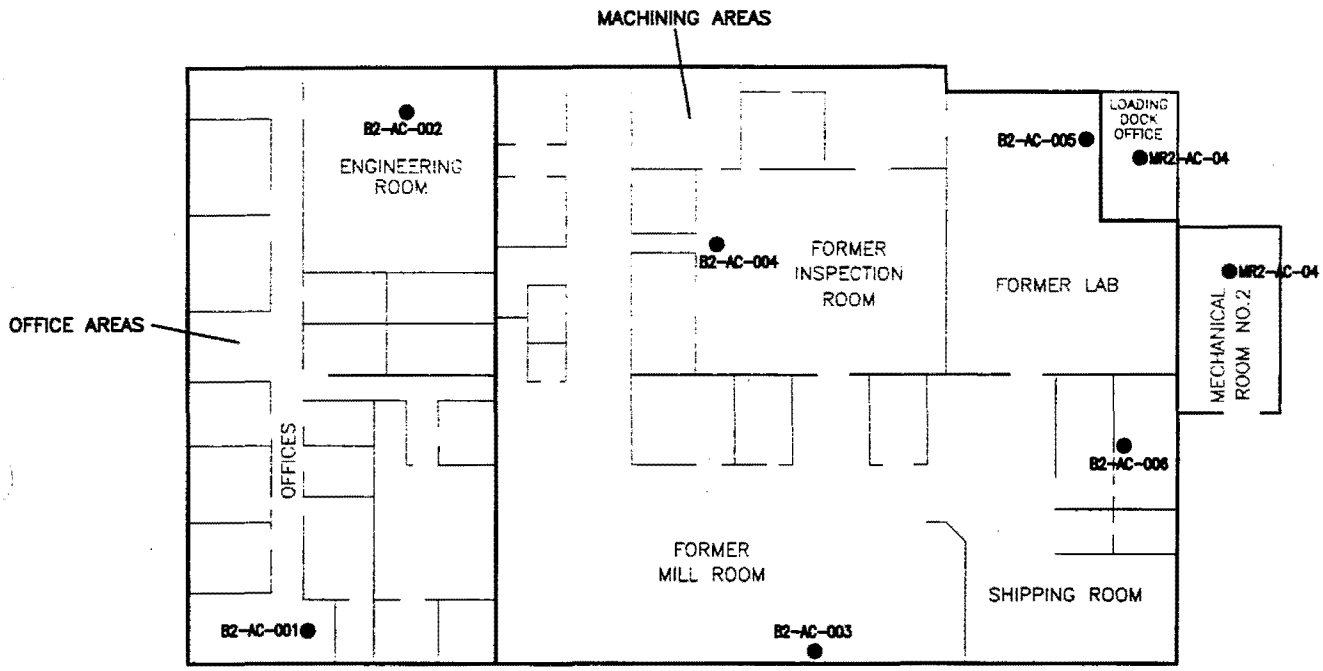
LEGEND

● B1-NO-006 AIR CLEARANCE SAMPLES

20' 0 20' 40'

SCALE: 1" = 40'

FIGURE 4-14
BUILDING 2
AIR CLEARANCE SAMPLE LOCATIONS



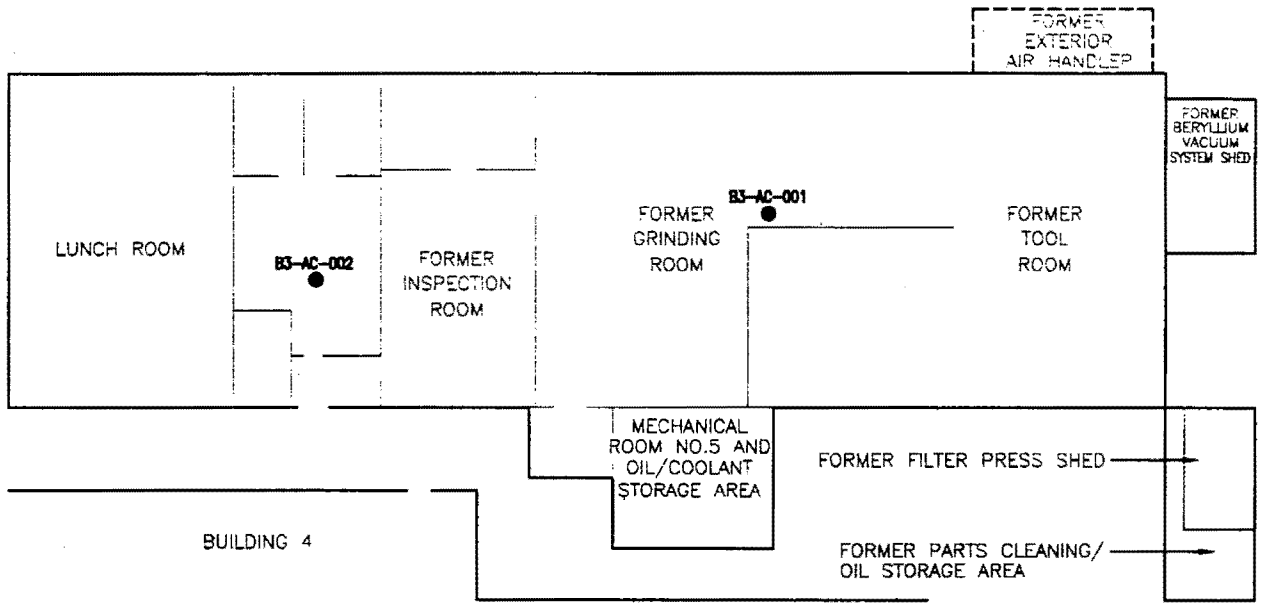
LEGEND

● B2-AC-001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-15
BUILDING 3
AIR CLEARANCE SAMPLE LOCATIONS



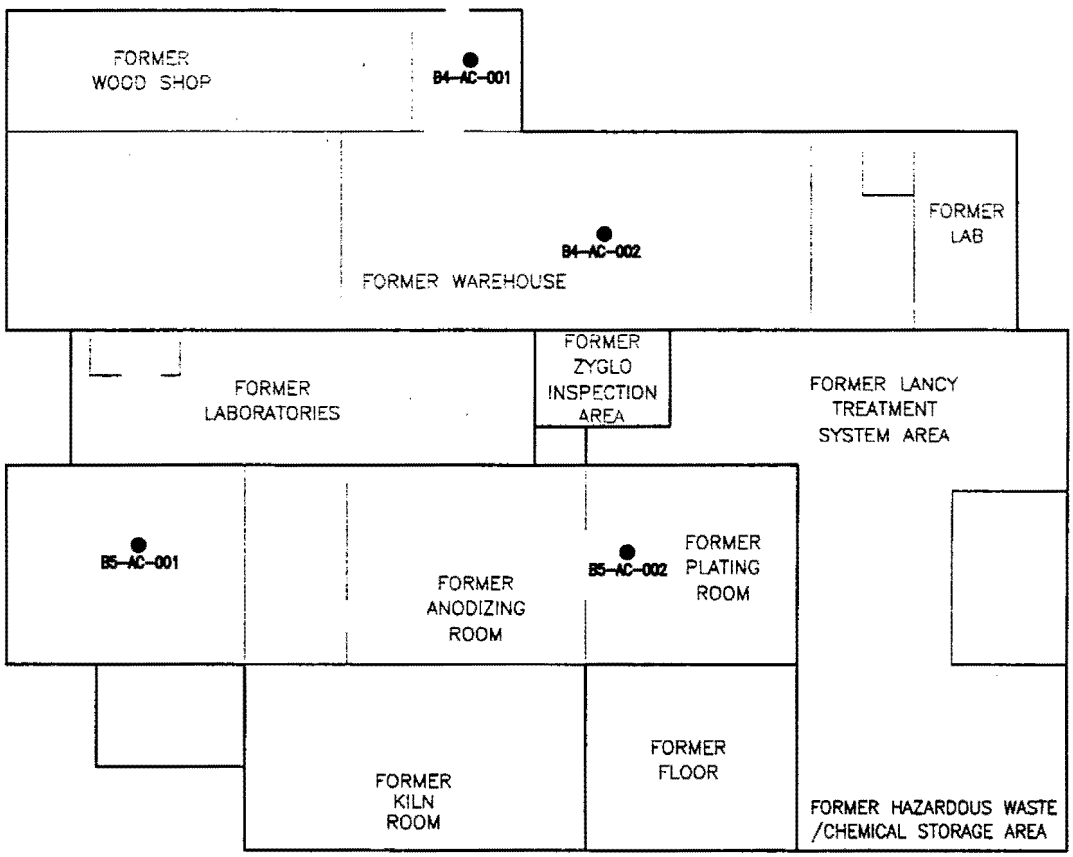
LEGEND

● B3–AC–001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

FIGURE 4-16
BUILDING 4 & 5
AIR CLEARANCE SAMPLE LOCATIONS



LEGEND

● B4-AC-001 AIR CLEARANCE SAMPLES

15' 0 15' 30'

SCALE: 1" = 30'

Table 4-3
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range (µg/ft²)
Ceiling Tiles, grid, and fiberglass	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
HVAC ductwork	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Air handlers	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Former beryllium vacuum system shed and beryllium vacuum piping	Building #3 (tub from shed) Building 4 (vacuum piping)	Removal	Not Applicable	Not Applicable
Carpeting	Buildings #1 and #2	Removal	Not Applicable	Not Applicable
Floors	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 5 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - 0.14 – 5.3 - 0.5 – 3.6 - 21.24 - 5.35 - 17.64 - 18.76 - 0.19
	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - 0.34 – 13.28 - ND – 5.13 - 0.38 - 1.85
	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5 - Floor drain - Sump	Decontamination	Building #3 - 5 samples - 1 sample - 1 sample - 1 sample - 1 sample - 1 sample	Building #3 - 0.09 – 4.5 - 0.06 - ND - 1.24 - 1.18 - 1.03
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area - Floor drain #2	Decontamination	Buildings #4 and #5 - 7 samples - 1 sample - 1 sample	Buildings #4 and #5 - 0.85 - 6 - ND - 1.03

Table 4-3 (continued)
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range ($\mu g/ft^2$)
Walls	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 9 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - ND – 16.08 - 0.05 – 3.1 - 4.35 - 4.39 - 1.36 - 1.4 - 0.20
	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - ND – 0.86 - 0.07 – 0.53 - 0.57 - 0.42
	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5	Decontamination	Building #3 - 8 samples - 1 sample - 1 sample - 1 sample	Building #3 - ND – 1.76 - 4.7 - ND - 5.25
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area	Decontamination	Buildings #4 and #5 - 7 samples - 1 sample	Buildings #4 and #5 - 0.09 – 4.38 - 0.23
Light fixtures and other ceiling materials	Building #1 - Machining areas - Office areas - Mechanical room 1 - Mechanical room 3 - Mechanical room 4 - Locker room - Oil storage area	Decontamination	Building #1 - 14 samples - 9 samples - 1 samples - 1 samples - 1 samples - 1 samples - 1 samples	Building #1 - 0.05 – 8.0 - 0.05 – 3.35 - 13.08 - 5.92 - 13.72 - 6.2 - 0.10

Table 4-3 (continued)
Summary of Beryllium Abatement Actions and Final Surface Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Beryllium Surface Wipe Concentration Range (µg/ft²)
Light fixtures and other ceiling materials	Building #2 - Machining areas - Office areas - Mechanical room 2 - Loading dock office	Decontamination	Building #2 - 9 samples - 5 samples - 1 samples - 1 samples	Building #2 - ND – 0.86 - 0.07 – 0.53 - 0.57 - 0.42
Light fixtures and other ceiling materials (Continued)	Building #3 - Shops / offices - Be vacuum system - Filter press shed - Mechanical room 5	Decontamination	Building #3 - 8 samples - 1 sample - 1 sample - 1 sample	Building #3 - 0.23 – 9.0 - 1.44 - 0.19 - 0.12
	Buildings #4 and #5 - Process rooms / labs - Exterior storage area	Decontamination	Buildings #4 and #5 - 8 samples - 1 sample	Buildings #4 and #5 - 0.81 – 6.6 - 1.71

ND – Not Detected.

Table 4-4
Summary of Beryllium Air Clearance Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Sample Type	Location	No. of Samples	Beryllium Air Concentration Range (mg/m³)
Air Filter Media	Building #1	6	All samples reported < 0.00005
Air Filter Media	Building #2	6	All samples reported < 0.00005
Air Filter Media	Building #3	2	All samples reported < 0.00005
Air Filter Media	Buildings #4 and #5	4	All samples reported < 0.00005

Table 4-5
Summary of Plating Ductwork Abatement Actions and Chromium Swipe Sampling Results
Former American Beryllium Company Facility, Tallevast, Florida

Building Feature	Location	Abatement Action	No. of Samples	Chromium Surface Wipe Concentration Range ($\mu g/ft^2$)
Plating ductwork	Building #5	Decontamination and Removal	Not Applicable	Not Applicable
Floors	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 5 samples - 1 sample	Building #5 - 3.32 – 64.15 - ND
Walls	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 4 samples - 1 sample	Building #5 - 0.16 – 3.27 - 0.3
Light fixtures and other ceiling materials	Building #5 - Process rooms / labs - Exterior storage area	Decontamination	Building #5 - 5 samples - 1 sample	Building #5 - 1.41 – 33.83 - 13.33