5. **Feature No. 17 (Former 3-Stage Clarifier A-1-ZG)**
A 3-stage clarifier (A-1-ZG) was previously located in the northern part of Building 68. Clarifier A-1-ZG was suspected to have received effluent generated in the blueprint room. One soil boring (B68-SB26) and one soil vapor probe (B68-SG54) were installed at the location of Clarifier A-1-ZG. TPH, VOCs and PCBs were not detected in any of the soil samples collected from boring B68-SB26. Heavy metals, including chromium (total) were not identified above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was detected at a concentration of 4.1 mg/kg (10 feet bgs). In soil vapor, PCE and TCE were present at concentrations of at 28 µg/L and 8.6 µg/L, respectively.

6. **Feature No. 18 (3-Stage Clarifier in Polyurethane Paint Booth)**
A 3-stage clarifier in the polyurethane paint booth was previously located in the northwest area of Building 68. This clarifier was suspected to have received paint residue from the polyurethane paint booth. One soil boring (B68-SB27) and one soil vapor probe (B68-SG53) were installed at the location of Feature No. 18. TPH and VOC compounds were not detected in any of the soil samples collected from boring B68-SB27. In the sample collected at 1 foot bgs, PCB (Aroclor-1260) was detected at a concentration of 172 µg/kg, but PCBs were not detected in any of the remaining soil samples analyzed. Heavy metals, including chromium (total) were not detected above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was identified at a maximum concentration of 5.7 mg/kg (5 feet bgs). In soil vapor sample B68-SG53, PCE and TCE were reported at concentrations of 19 µg/L and 9.9 µg/L, respectively.

BUILDING 69

Building 69 was located in the north central portion of Plant A-1 North, between Buildings 68 and 74. Building 69 was primarily used for assembly of parts for various aircraft. 19 target features, where chemicals were reportedly used or stored, were identified in Building 69. These features included process lines, welding tanks, furnaces and degreasers used in the fabrication and subassembly/assembly of aircraft parts.

1. **Feature No. 20 (X-ray Room Floor Drain)**
A floor drain was previously located within the former X-ray room in the south central part of Building 69. One soil boring (B69-SB30) was drilled adjacent to the floor drain. TPH and PCBs were not detected in any of the soil samples collected from boring B69-SB30. PCE was the only VOC detected at a concentration of 10 µg/kg (1 foot bgs). Heavy metals, including chromium (total) were not identified above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was reported at a peak concentration of 12.3 mg/kg (1 foot bgs).

2. **Feature No. 22 (Former Arc/Gas Weld Tanks)**
The former arc/gas weld tanks were previously located in the southwest area of Building 69. One soil boring (B69-SB33) was drilled at the location of the former tanks. TPH was not detected in any of the soil samples from boring B69-SB33. PCE was reported at a concentration of 40 µg/kg (1 foot bgs). Heavy metals, including chromium (total) were not detected above their TTLC or STLC based

on the CCR, Title 22. Chromium (total) was reported at concentrations of 49.3 mg/kg (1 foot bgs), 3.3 mg/kg (5 feet bgs) and 3.6 mg/kg (10 feet bgs).

3. **Feature No. 26 (Abandoned Aboveground Spot Welding Tanks)**
Six aboveground spot welding tanks were previously located at the southeast part of Building 69. The tanks were used to clean aluminum parts prior to welding. One soil boring (B69-SB37) was drilled at the location of Feature No. 26. TPH was not detected in any of the soil samples collected from boring B69-SB37. PCE and dichlorodifluoromethane were identified at maximum concentrations of 16 µg/kg (5 feet bgs) and 17 µg/kg (40 feet bgs), respectively. Heavy metals, including chromium (total) were not detected above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was reported at a peak concentration of 13.2 mg/kg (10 feet bgs).

4. **Feature No. 31 (Former 2-Stage Clarifier/Sand Trap)**
A 2-stage clarifier/sand trap was previously located at the new sand blasting area in the east central part of Building 69 in the vicinity of Column No. 314. The clarifier was associated with the sand blasting activities, which were used to clean metal surfaces. One soil boring (B69-SB44) and one soil vapor probe (B69-SG121) were installed adjacent to Feature No. 31. TPH was not detected in any of the soil samples analyzed. The only VOC detected in soil samples was PCE at a peak concentration of 70 µg/kg (1 foot bgs). In soil vapor sample B69-SG121, PCE, TCE and 1,1-dichloroethene (1,1-DCE) were detected at concentrations of 303 µg/L, 9.1 µg/L, and 0.7 µg/L, respectively. The elevated PCE concentration exceeds the Regional Board's VOC screening level for the subject site. However, the distribution pattern of PCE vapors in the vicinity of Feature No. 31 indicates that Feature No. 33 (former sump A-1-X), located approximately 60 feet northwest from Feature No. 31, is the primary source of PCE in this area. PCE vapor contamination in the vicinity of Feature No. 31 must be remediated by the soil vapor extraction system being designed for Feature No. 33.

Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was detected at a peak concentration of 8.8 mg/kg (1 foot bgs).

BUILDING 74

Building 74 was located in the central part of Plant A-1 North, immediately east of Building 69. It was constructed in 1941 as a one-story high bay building used for the production and assembly of aircrafts. Six target features were identified in Building 74.

1. **Feature No. 39 (Subsurface Collection Pit)**
A subsurface collection pit was previously located at the northeast corner of Building 74. The pit was four feet deep and appeared to serve as a utility pit. One soil boring (B74-SB56) and one soil vapor probe (B74-SG45) were installed adjacent to the Feature No. 39. TPH, VOCs, and PCBs were not detected in the any of the samples from the boring B74-SB56. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was detected at a peak concentration of 4.6 mg/kg (10 feet bgs). In soil vapor sample B74-SG45, PCE and TCE were identified at concentrations of 3.0 µg/L and 2.1 µg/L, respectively. No other VOC compounds were detected in the soil vapor sample.

2. **Feature No. 41 (Oil Reservoir/Elevator Shaft Area)**
An elevator shaft was previously located at the southeast corner of Building 74. The elevator, with its own oil reservoir, was hydraulically operated and was in operation since the building's construction. One soil boring (B74-SB58) was drilled adjacent to the former oil reservoir. TPH and PCBs were not detected in any of the soil samples analyzed. PCE was detected at a maximum concentration of 39 µg/kg in two soil samples collected at 1 foot bgs and 10 feet bgs. Heavy metals, including chromium (total) were not detected above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was identified at a peak concentration of 8.9 mg/kg (5 feet bgs).

CONCLUSIONS:

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. VOC concentrations detected in soil matrix and soil vapor samples obtained beneath the features described above were below the Regional Board's VOC screening level of 127 µg/kg for the subject site. Also, the concentrations of PCBs and heavy metals, including chromium (total), detected in soil matrix samples were below the TTLC and the STLC criteria based on the CCR, Title 22. These contaminants appear not to pose a significant threat to groundwater quality. Groundwater beneath the site is at approximately 193 feet bgs. Therefore, further soil assessment or cleanup is not required. The elevated PCE vapor concentrations detected beneath Feature No. 31 (Building 69) however appear to be associated with the PCE plume from Feature No. 33 (Building 69). This PCE plume must be remediated by the proposed soil vapor extraction system being designed for Feature No. 33. In addition, assessment or cleanup may be needed in the event that previously undiscovered subsurface features or signs of soil contamination are discovered during future site redevelopment activities.

The "no further requirements" determination for these features does not affect the requirements for either assessment or cleanup of adjacent features at the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

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Gray Davis
Governor

August 27, 2001

Mr. Gene Matsushita
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NO FURTHER REQUIREMENTS (SOIL ONLY), FEATURE NO. 6 (FORMER ALUMINUM AND SULFURIC ANODIZING PROCESS TANK AREA), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "B", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 6: Plant A-1 North, Area "B" Burbank, California* dated July 21, 2000. This report summarizes the results of a shallow soil excavation performed at three areas within Feature No. 6 (former aluminum and sulfuric anodizing process tank), which was previously located in the southeast central part of Building 68, Lockheed Martin Plant A-1 North Area "B". The objective of the excavations was to remove shallow soils impacted with tetrachloroethene (PCE) and chromium. This remedial activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we have the following comments:

1. A metal plating processing line (Feature No. 6), consisting of 18 dip tanks for aluminum conversion and sulfuric anodizing, was previously located in a concrete secondary containment structure (A-1-ZF) in Building 68. The processing line had eight anodizing tanks and ten aluminum conversion tanks used to provide a chemical film on aircraft parts. Metal plating operations at Feature No. 6 were discontinued in 1984. The secondary containment A-1-ZF was removed in 1987.

2. In 1985, eleven (11) soil borings (A-1-ZF-SL1 through A-1-ZL-SL9, A-1-SL1 and A-1-M-SL1) were drilled in the vicinity of the secondary containment structure A-1-ZF. Soil samples were collected at 5 and 10 feet below ground surface (bgs) and analyzed for chromium, sulfate and pH. Chromium (total) was detected at a maximum concentration of 102 mg/kg (5 feet bgs).

3. In 1987, additional assessment activities were conducted at Feature No. 6. A total of six (6) soil borings (A-1-ZF-B1 through A-1-ZF-B6) were drilled to depths of 20 to 40 feet bgs. Chromium (total) and soluble chromium were detected at maximum concentrations of 445 mg/kg (5 feet bgs in boring A-1-ZF-B3) and 11.3 mg/L (10 feet in soil boring A-1-ZFB3), respectively. Soluble chromium detected at 5 and 10 feet bgs in boring A-1-ZFB3 exceeded the STLC of 5 mg/L. No hexavalent chromium was found in boring A-1-ZF-B3.

4. During the February 1998 preliminary site investigation, eight (8) soil borings (B68-SB6 through B68-SB13) were drilled to a maximum depth of 40 feet bgs at Feature No. 6. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs. All samples were analyzed for: a) Total Petroleum Hydrocarbons (TPH) using EPA Method 8015 Modified; b) volatile organic compounds (VOCs) using EPA Method 8260A; c) pH using EPA Method 9045; and d) heavy metals using EPA Method 6010/7000 series.

   The concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations Title 22 (CCR, Title 22), except in boring B68-SB7. Chromium (total) was detected in boring B68-SB7 at a concentration of 1,280 mg/kg (5 feet bgs). In addition, soluble chromium was detected in boring B68-SB7 at a concentration of 20.1 mg/L, which exceeds the STLC of 5 mg/L for chromium (total). Hexavalent chromium was also detected at a peak concentration of 64 mg/kg (1 foot bgs at B68-7A). TPH was not identified in any of the soil samples analyzed. PCE was the primary VOC found at a peak concentration of 167 µg/kg (1 foot bgs at B68-SB11). This concentration exceeded the PCE screening concentration of 127 µg/kg.

   In soil vapor probe B68-SG105 (5 feet bgs), which was located within Feature No. 6, PCE was also detected at a concentration of 293 µg/L. The distribution pattern of PCE vapors detected beneath Feature No. 6 and the surrounding area indicates that this vapor plume is associated with Feature No. 33 (Former sump A-1-X). Feature No. 33 was formerly located in Building 69 east of Feature No. 6. A proposed soil vapor extraction (SVE) system is being designed to remediate the PCE plume associated with Feature No. 33.

5. Soil Removal Actions:

   Based on the assessment results, contaminant concentrations detected in three areas (designated as Feature Nos. 6A, 6B and 6C) within Feature No. 6 were above the soil screening guidelines. At Feature Nos. 6A and 6B, soil samples exceeded the screening guideline of 5 mg/L for soluble chromium. At Feature No. 6C, PCE concentration was above the PCE screening concentration of 127 µg/kg. These areas were excavated in July and August 1999, in accordance with Tetra Tech's *Delineation Work Plan, Plant A-1 North Area "B": Burbank, California* dated September 4, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated January 26, 1999.

   Confirmation soil samples were collected from the base and sidewalls of the excavations to verify whether the soil cleanup goal had been achieved. The excavations were backfilled with imported clean soil. Reportedly, the concentrations of residual heavy metals, including that of total chromium (maximum of 3.56 mg/kg), in the imported soil were below the CCR, Title 22 screening criteria. No TPH, VOCs, PCBs, pesticides and SVOCs were detected in any of the samples collected from the imported soil. Approximately 387 cubic yards of chromium and PCE-impacted soil was disposed as California hazardous waste at Safety Kleen's facility in Buttonwillow, California. The three excavations are discussed below:

Feature 6A Excavation

i. In January 2001, boring B68-SB7B was drilled to a depth of 180 feet bgs, adjacent to former boring B68-SB7, which had the highest concentrations of chromium (total) and hexavalent chromium within Feature No. 6. The purpose of this boring was to determine the vertical extent of heavy metals contamination. Soil samples were collected at 20 feet bgs and every 20-foot interval to 180 feet bgs. Based on the analytical results, heavy metal concentrations, including chromium (total) and hexavalent chromium, were below the TTLC and STLC based on the CCR, Title 22 criteria. Chromium (total) and hexavalent chromium were detected in all samples at peak concentrations of 256 mg/kg and 13.3 mg/kg at 20 feet bgs, respectively.

ii. A shallow soil excavation was completed at Feature 6A to remove chromium-contaminated soil detected in former boring B68-SB7. Approximately 220 cubic yards of soil was removed to a depth of 17 feet bgs.

iii. Thirteen (13) confirmation soil samples were collected from the excavation. Chromium (total) and hexavalent chromium were detected at maximum concentrations of 216 mg/kg (10 feet bgs) and 27.5 mg/kg (10 feet bgs).

Feature No. 6B Excavation

i. A shallow soil excavation was performed at Feature 6B to remove chromium-contaminated soil detected in former boring A-1-ZF-B3. Approximately 113 cubic yards of soil was removed to a depth of 10 feet bgs.

ii. Six (6) confirmation soil samples were collected from the excavation. Chromium (total) and hexavalent chromium were detected at maximum concentrations of 157 mg/kg (5 feet bgs) and 14.6 mg/kg (10 feet bgs). Soluble chromium was also detected at a peak concentration of 3.05 mg/L (5 feet bgs) in the sample with the highest total chromium concentration.

Feature No. 6C Excavation

i. A shallow soil excavation was performed at Feature No. 6C to remove PCE-contaminated soil detected in former boring B68-SB11. Approximately 54 cubic yards of soil was removed to a depth of 5 feet bgs.

ii. Five (5) confirmation soil samples were collected from the excavation. PCE was detected at a peak concentration of 26 µg/kg (3 feet bgs). No other VOCs were found in any of the confirmation samples analyzed.

6. Groundwater:

Groundwater beneath the site is at approximately 193 feet bgs. Based on water quality data from the early 1990's to the present, some heavy metals have been detected in groundwater monitoring wells (A-1-CW04, A-1-CW05, A-1-CW06 and A-1-CW9) located immediately downgradient from Plant A-1

North, including barium, chromium (total), lead, nickel, selenium, thallium and zinc. Note that chromium (total), nickel and selenium were detected only once in monitoring well A-1-CW9 at concentrations of 11 µg/L, 57 µg/L and 24 µg/L, respectively. Thallium was also found once at a concentration of 103 µg/L in monitoring well A-1-CW05. In upgradient monitoring well (LBC6-CW10) and cross-gradient monitoring wells (A-1-CW03R, A-1-CW03, A-1-CW02, A-1-CW01) barium, chromium (total), lead and zinc were also detected. Based on the current heavy metal concentrations, groundwater remediation is not warranted for heavy metals in this area.

Elevated concentrations of VOCs (primarily PCE and TCE) have been detected in groundwater monitoring wells located in the vicinity of Plant A-1 North. For example, PCE and TCE were detected at maximum concentrations of 2,900 µg/L and 810 µg/L, respectively in monitoring well A-1-CW04. Under a Consent Decree with the U.S. Environmental Protection Agency, Lockheed Martin is extracting and treating VOC-polluted groundwater within the Burbank Operable Unit including the Plant A-1 North area.

CONCLUSIONS:

Based on the subject submittal and other information in our files, we have no further soil requirements with respect to the San Fernando Valley Cleanup Program. The concentrations of heavy metals, including chromium (total) and hexavalent chromium, detected in soil matrix samples did not exceed the Regional Board's screening levels and were below the TTLC and the STLC criteria based on the CCR, Title 22. Based upon the above information, these contaminants remaining in the soil appear not to pose a significant threat to groundwater quality; therefore, further soil assessment or cleanup is not required. Water quality data obtained to date from downgradient monitoring wells indicates that some heavy metals have been detected in the groundwater at low concentrations, such as barium, chromium (total), lead, nickel, selenium, thallium and zinc. However, these contaminants were either found only once during 9 years of monitoring (from 1992 to present) or were also found in upgradient and cross-gradient monitoring wells. This suggests a source(s) other than the subject features are responsible. Based on historical and the current low concentrations of heavy metals in the groundwater, which are 0.1 mg/L of barium (MCL is 1 mg/L) and 0.34 mg/L of zinc (secondary MCL is 5 mg/L) as detected in monitoring well A-1-CW9 (first quarter 2001 sampling) located immediately downgradient from the subject feature, groundwater cleanup will not be required. However, the Regional Board may require groundwater cleanup for heavy metals in the future if new information is obtained, such as concentrations that are approaching or which exceed drinking water standards or conditions arise that threaten drinking water wells or the water quality of lower aquifers.

PCE concentrations detected in confirmation soil samples taken at the Feature No. 6C excavation were below the VOC screening level of 127 µg/kg and do not pose a threat to groundwater quality; therefore, further soil assessment or cleanup is not required. In the case of VOCs in soil vapor, distribution patterns for PCE and TCE indicate three main VOC sources at the subject site: 1) Feature Nos. 33 and 38 in Area "B" and 2) Feature No. 48 in Area "C". The VOC plumes originating from these sources are commingled, laterally and vertically widespread and have impacted the groundwater beneath the subject site. While Feature No. 6 do not appear to be a major VOC source, elevated VOC concentrations detected in its vicinity appear to be associated with the VOC plume migrating from Feature No. 33 (former sump A-1-X). Elevated VOC concentrations beneath Feature No. 6 exceed the Regional Board's VOC screening level of

127 µg/L and must be remediated by the proposed SVE system being designed for Feature No. 33. Based on the above information, we have no further requirements for Feature No. 6

As part of the groundwater monitoring program for the Burbank Operable Unit, you are required to continue taking and analyzing samples for heavy metals in the vicinity of Plant A-1 North. The samples must be analyzed for heavy metals including hexavalent chromium using EPA Method 218.6.

The soil only *no further requirements* determination for Feature No. 6 does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the current or future requirements related to cleanup of polluted groundwater underlying the subject site. Also, additional assessment or cleanup may be needed in the event that new information is obtained, such as previously undiscovered subsurface features or signs of soil contamination discovered during future site redevelopment activities. This Regional Board's *no further requirements* decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Michael Lauffer, Office of the Chief Counsel
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Gray Davis
Governor

August 27, 2001

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PARTIAL NO FURTHER REQUIREMENTS (SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "B", BURBANK, CALIFORNIA (FILE NO. 104.5152) (CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Data Report, Additional LA-CRWQCB Requirements for Area "B" at Plant A-1 North: Burbank, California* dated April 6, 2001. The report documents the results of a supplementary investigation, which was conducted in February and March 2001 at the subject facility in response to a Regional Board staff letter to Lockheed Martin dated December 21, 1999. The purpose of this assessment was to delineate the extent of soil contamination detected during the February 1998 preliminary site assessment. The report also summarized the results of soil sampling in areas of concern, such as the transformer vaults, which were not previously assessed due to access limitations. These investigations were conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

The purpose of the preliminary site investigation in Area "B" was to document the presence or absence of contaminants beneath chemical use and storage features. These features were identified based on site inspections and review of previous investigation reports. At least one soil boring was drilled at each feature. Multiple soil borings were completed in features that covered a large area. In addition, soil borings were drilled on a 200-foot grid to provide a general assessment of Area "B". Soil borings were drilled to a maximum depth of 40 feet below ground surface (bgs) and soil samples were collected at 1 foot bgs and every 5 feet to 40 feet bgs. All samples were analyzed for Total Petroleum Hydrocarbons (TPH) using EPA Method 8015 Modified. Based on the chemicals used in a given area, samples were analyzed for volatile organic compounds (VOCs) using EPA Method 8260A, polychlorinated biphenyls (PCBs) using EPA Method 8081, pH using EPA Method 9045, semi-VOCs using EPA Method 8270B, and heavy metals using EPA Method 6010/7000 series. Soil vapor samples were also collected at 5 feet bgs adjacent to the target features and on a 100-foot grid throughout Area "B" to determine VOC concentrations in the vapor phase.

This letter will focus on the areas of concern within Plant A-1 North, Area "B" that were not covered in the Regional Board's *partial no further requirements* letter dated June 26, 2001 that was issued for Area "B" based on the February 1998 assessment results. However, our comments concerning Feature Nos. 6, 28, 29 and 30 will be covered in a separate letter.

FINDINGS:

A. Building 68

Building 68 was located in the west central part of Plant A-1 North. The primary function performed in Building 68 was fabrication and assembly of aircraft parts and subassemblies for various aircraft. Based on the site inspection and review of the *Environmental Assessment Report, Lockheed Plant A-1 North (May 1995)*, 21 suspected chemical use and storage areas were identified in Building 68.

1. **Feature No. 2 (Former Machine Shop Degreaser)**
   A former machine shop degreaser was formerly located in the southeast part of Building 68. In February 1998, one soil boring (B68-SB2) and one soil vapor probe (B68-SG145) were installed at Feature No. 2. TPH was not detected in any of the soil samples analyzed from boring B68-SB2. Tetrachloroethene (PCE) was the only VOC found in boring B68-SB2 at a maximum concentration of 26 µg/kg (1 foot bgs). PCE, trichloroethene (TCE) and 1,1-dichloroethene (1,1-DCE) were reported in soil vapor sample B68-SG145 at concentrations of 79 µg/L, 28 µg/L and 5.4 µg/L, respectively. No other VOCs were detected in the soil vapor sample.

   In March 2001, multi-depth soil gas probes were installed at 20, 40 and 60 feet bgs beneath Feature No. 2. PCE, TCE and 1,2-dichloroethene (1,2-DCE) were reported at maximum concentrations of 247 µg/L, 73.3 µg/L and 13.6 µg/L, respectively in the sample taken at 60 feet bgs. The distribution pattern of PCE vapors detected beneath Feature No. 2 and the surrounding area indicates that this vapor plume is commingled with a more widespread vapor plume associated with Feature No. 33 (Former sump A-1X). Feature No. 33 was formerly located in Building 69 northeast of Feature No. 2. This PCE plume must be remediated by the proposed soil vapor extraction (SVE) system being designed for Feature No. 33.

2. **Feature No. 3 (Former 3-stage Clarifier in Paint Pit)**
   A former 3-stage clarifier, which was associated with a machine shop used for parts manufacturing, was previously located in the southern section of Building 68. One soil boring (B68-SB3) and one soil vapor probe (B68-SG130) was drilled adjacent to the clarifier during the February 1998 assessment. TPH and PCBs were not detected in any of the soil samples analyzed from boring B68-SB3. PCE, the only VOC detected in soil samples, was reported at a peak concentration of 34 µg/kg (5 feet bgs). In soil vapor, PCE and TCE were the only VOCs detected at concentrations of 143 µg/L and 23 µg/L, respectively. Heavy metals, including chromium (total) were not reported above their Total Threshold Limit Concentration (TTLC) or Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations, Title 22 (CCR, Title 22). Chromium (total) was found at a maximum concentration of 8.5 mg/kg (5 feet bgs).

   In March 2001, multi-depth soil gas samples were collected at 20, 40 and 60 feet bgs beneath Feature No. 3. PCE and TCE were the primary VOCs detected at peak concentrations of 396 µg/L and 75 µg/L, respectively in a sample taken at 60 feet bgs. The distribution pattern of PCE vapors detected in the Feature No. 3 area indicates that this vapor plume is commingled with a more widespread

vapor plume associated with Feature No. 33 (Former sump A-1X). Feature No. 33 was formerly located in Building 69 northeast of Feature No. 3. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

3. **Feature No. 4 (Former Sump and Clarifier in Paint Pit)**
A former sump and clarifier was formerly located in the southeast part of Building 68, west of column 204. This feature was suspected to have collected runoff from the paint room, which used various paints and primers. During the February 1998 investigation, one soil boring (B68-SB4) and one soil gas probe (B68-SG129) were drilled adjacent to Feature No. 4. TPH and PCBs were not detected in any of the soil samples analyzed from boring B68-SB4. PCE, the only VOC in the sample, was detected at a concentration of 8 µg/kg (1 foot bgs). In soil gas sample B68-SG129, PCE and TCE were reported at concentrations of 163 µg/L and 35 µg/L, respectively. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 18.5 mg/kg (5 feet bgs).

In March 2001, multi-depth soil gas samples were collected beneath Feature No. 4. PCE and TCE were the primary VOCs detected at peak concentrations of 331 µg/L and 94 µg/L, respectively in a sample taken at 60 feet bgs. The distribution pattern of PCE vapors detected in the Feature No. 4 area indicates that this vapor plume is commingled with a more widespread vapor plume associated with Feature No. 33 (Former sump A-1X). Feature No. 33 was formerly located in Building 69 northeast of Feature No. 4. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

4. **Feature No. 5 (Former 2-stage Clarifier A-1-M)**
Former Clarifier A-1-M was formerly located in the south central section of Building 68. This clarifier was suspected to have collected effluent from the aluminum conversion and sulfuric anodizing process tanks. In February 1998, one soil boring (B68-SB5) and one soil vapor probe (B68-SG120) was drilled at Feature No. 5. TPH and PCBs were not detected in any of the soil samples analyzed from boring B68-SB5. PCE was the only VOC detected at a concentration of 15 µg/kg (1 foot bgs). No VOCs were detected in any of the remaining samples from boring B68-SB5. In soil vapor sample B68-SG120, PCE and TCE were the only VOCs found at concentrations of 126.6 µg/L and 9.3 µg/L, respectively. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 46.9 mg/kg (10 feet bgs).

In March 2001, multi-depth soil gas samples were collected beneath Feature No. 5. PCE and TCE were the primary VOCs detected at peak concentrations of 346 µg/L and 48 µg/L, respectively in a sample taken at 60 feet bgs. The distribution pattern of PCE vapors detected in the Feature No. 5 area indicates that this vapor plume is commingled with a more widespread vapor plume associated with Feature No. 33 (Former sump A-1X). Feature No. 33 was formerly located in Building 69 northeast of Feature No. 5. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

5. **Feature No. 8 (Former Neutralizing Sump A-1-A)**
Sump A-1-A (Feature No. 8) was previously located in the southeast central part of Building 68. This sump was suspected to have collected liquids associated with the aluminum conversion and sulfuric anodizing process line located east of Sump A-1-A. During the February 1998 investigation, one soil boring (B68-SB15) was drilled at the location of the former sump. TPH was not detected in any of the soil samples from boring B68-SB15. PCE was reported in the upper 20 feet of samples at a peak concentration of 34 µg/kg (10 feet bgs). VOCs were not detected in any of the remaining samples from boring B68-SB15. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. However, chromium (total) concentrations increased with depth and peaked at 429 mg/kg (20 feet bgs). Sump A-1-A was removed in 1987.

In July 2000, boring B68-SB15A was drilled to a depth of 40 feet bgs adjacent to sump A-1-A to determine the vertical extent of chromium impact. Soil samples were collected every 5 feet and analyzed for total and hexavalent chromium. Total chromium was detected in all samples and peaked at a concentration of 139 mg/kg (20 feet bgs). Hexavalent chromium was found between 15 feet bgs and 35 feet bgs and had a maximum concentration of 8 mg/kg (25 feet bgs). The analytical results indicate that total and hexavalent chromium concentrations were below the TTLC and STLC based on the California CCR, Title 22.

6. **Feature No. 9 (Former Penetrant Inspection Facility)**
A former penetrant inspection facility, where oil/kerosene based solutions were used for the inspection of aircraft parts, was located in the south central section of Building 68. In February 1998, two soil borings (B68-SB16 and B68-SB17) were drilled to a depth of 20 feet bgs. TPH (in the motor oil carbon range) was detected at a concentration of 3,730 mg/kg (1 foot bgs) in boring B68-SB16. TPH was not reported in any of the remaining soil samples analyzed from borings B68-SB16 and B68-SB17. PCE and TCE were also reported at concentrations of 278 µg/kg and 61 µg/kg, respectively in the sample taken at 1 foot bgs from boring B68-SB16. No VOCs were identified in any of the remaining samples analyzed. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 63.3 mg/kg (10 feet bgs).

In July 1999, Feature No. 9 was excavated to a depth of 5 feet bgs to remove PCE-contaminated soils encountered at 1 foot bgs in boring B68-SB16. Elevated PCE concentrations were also detected in post-excavation samples B68-9-W-3 (230 µg/kg) and B68-W2-3 (340 µg/kg). In March 2001, additional soil gas samples were collected at 5, 20, 40, and 60 feet bgs to delineate the vertical extent of PCE impact. PCE vapor concentrations increased with depth and peaked at 226 µg/L (60 feet bgs). The distribution pattern of PCE vapors detected in the Feature No. 9 area indicates that this vapor plume is commingled with a more widespread vapor plume associated with Feature No. 33 (Former sump A-1X), which was formerly located in Building 69 east of Feature No. 9. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

7. **Feature No. 10 (Former Oakite Solution Tanks) and Feature No. 11 (Former Sump at Oakite Solution Tanks)**
Two Oakite solution tanks (Feature No. 10) were formerly located in the southern part of Building 68, south of the transformer vault. The Oakite tanks were used for paint stripping operations in the small parts paint room. In February 1998, one soil boring (B68-SB18) was drilled at Feature No. 10. TPH and VOCs were not detected in any of the soil samples collected from boring B68-SB18. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 114 mg/kg (5 feet bgs).

A sump (Feature No. 11) was previously located east of the Oakite solution tanks in the southern section of Building 68 The sump was associated with the floor drains and clean-outs around the Oakite tanks. In February 1998, one soil boring (B68-SB19) was drilled adjacent to the sump. TPH was not detected in any of the soil samples collected from boring B68-SB19. PCE was the only VOC reported at a concentration of 7 µg/kg (10 feet bgs). Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was detected at a peak concentration of 72.8 mg/kg (10 feet bgs).

In July 2000, soil boring B68-SB18A was drilled to a depth of 40 feet bgs between former Feature Nos. 10 and 11 to evaluate total and hexavalent chromium distribution in this area. Chromium (total) was detected in all samples at a peak concentration of 13.1 mg/kg. Hexavalent chromium was identified at a concentration of 2.8 mg/kg (10 feet bgs). Hexavalent chromium was not detected in the remaining samples from boring B68-SB18A. Based on the analytical results, total and hexavalent chromium concentrations were not reported above their TTLC or STLC based on the California CCR, Title 22.

In March 2001, additional gas samples were collected at 20, 40 and 60 feet bgs at the location of former soil gas probe B68-SG118. PCE and TCE were detected at peak concentrations of 137 µg/L and 80 µg/L, respectively at 60 feet bgs. PCE vapor distribution pattern in the Feature Nos. 10 and 11 area indicates that this vapor plume is commingled with the vapor plume associated with Feature No. 33 (Former sump A-1X). Feature No. 33 was formerly located in Building 69 northeast of Feature Nos. 10 and 11. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

8. **Feature No. 15 (Floor Drains in the Former Hull Paint Booth)**
Two floor drains were previously located within the aircraft hull paint booth in the central west part of Building 68. The two floor drains were suspected to have collected wastewater and paint residue from the hull paint booth. During the February 1998 investigation, two soil borings (B68-SB23 and B68-SB24) and two soil vapor probes (B68-SG84 and B68-SG85) were drilled adjacent to the floor drains. TPH was not detected in any of the soil samples collected beneath this feature. PCE, TCE and xylenes were detected in boring B68-SB24 at concentrations of 48 µg/kg (1 foot bgs), 11 µg/kg (1 foot bgs) and 7 µg/kg (30 feet bgs), respectively. VOCs were not identified in any of the remaining samples analyzed from borings B68-SB23 and B68-SB24. In soil vapor, PCE and TCE were the primary VOC detected at peak concentrations of 116 µg/L and 51 µg/L, respectively. Heavy metals,

including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 23.8 (1 foot bgs) in soil boring B68-SB24, respectively.

In February 2001, multi-depth soil gas probes were installed to a depth of 180 feet bgs in boring B69-33-SB11 in the vicinity of the floor drains. These probes were also installed to delineate the VOC contamination associated with Feature No. 33 (Former Sump A-1-X) and 38 (Former Skin Mills), which were located in Building 69 east of Feature No. 15. Maximum concentrations of PCE and TCE were identified at 463 µg/L and 1,114 µg/L, respectively at 160 feet bgs. The distribution pattern of PCE and TCE vapors in the Feature No. 15 area appears to be commingled with the vapor plume associated with Feature Nos. 33 and 38. This VOC vapor plume must be remediated by the proposed SVE system being designed for Feature Nos. 33 and 38.

9. **Feature No. 45 (Former Non-Destructive Testing and Penetrant Facility)**
A non-destructive testing and penetrant inspection facility was previously located in the southeast corner of Building 68, west of the machine shop degreaser. Aircraft parts were dipped in an oil/kerosene solution, dried and then dusted to check for cracks or other flaws. Two floor drains were formerly located in the penetrant facility area. A mixture of penetrant oil and rinse water was suspected to have been discharged to the floor drains. Two soil borings (B68-SB66 and B68-SB67) and two soil vapor samples (B68-SG136 and B68-SG153) were drilled adjacent to the two floor drains. TPH was not detected in any of the soil samples. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 15.5 mg/kg (10 feet bgs) in boring B68-SB66. PCE was the primary VOC detected at a peak concentration of 55 µg/kg in soil sample B68-SB67 (1 foot bgs). In soil vapor, PCE was detected at a maximum concentration of 112 µg/L (B68-SG136).

In March 2001, additional soil gas samples were collected at 20, 40 and 60 feet bgs at the location of former soil gas probe B68-SG136. PCE and TCE were the primary VOCs detected at peak concentrations of 300 µg/L (60 feet bgs) and 76 µg/L (60 feet bgs), respectively. PCE vapor distribution pattern in the Feature No. 45 area indicates that this vapor plume is commingled with the vapor plume associated with Feature No. 33 (Former sump A-1-X). Feature No. 33 was formerly located in Building 69 northeast of Feature No. 45. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

10. **Feature No. 46 (Former Unknown Pit)**
A former pit was previously located in the central section of Building 68. No previous information regarding pit usage was available. In February 1998, one soil boring (B68-SB68) was drilled at Feature No. 46. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 51.1 mg/kg (1 foot bgs). 1,2,4-trichlorobenzene was detected at a concentration of 6 µg/kg (10 feet bgs), but VOCs were not identified in the remaining samples analyzed from boring B68-SB68. TPH was also not present in any of the soil samples analyzed. In addition to soil samples, a soil vapor sample was collected at B68-SG87 located approximately 50 feet southeast of

Feature No. 46. The location of vapor probe B68-SG87 was chosen to also address a former milling machine area. PCE and TCE were detected in soil vapor at concentrations of 191 µg/L and 12 µg/L, respectively.

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B68-SG87. PCE and TCE were detected at peak concentrations of 385.4 µg/L and 39 µg/L, respectively at 40 feet bgs. PCE vapor distribution pattern in the vicinity of Feature No. 46 indicates that this vapor plume is commingled with the vapor plume associated with Feature No. 38 (Former Skin Mills). Feature No. 38 was formerly located in Building 69 east of Feature No. 46. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 38.

11. **Water Collection Sump, Transformer Vaults 68-1 and 68-2**
The *Environmental Assessment Report, Lockheed Plant A-1 North (May 1995)* indicated that transformer vaults 68-1 and 68-2 housed transformers containing oil with PCBs. In September 2000 and February 2001, two soil samples (B68-XFMR1-1-14 and B68-XFMR-2-13) were collected beneath transformer vaults 68-1 and 68-2 for PCB analysis. Aroclor-1254 was detected at a concentration of 6.7 mg/kg in sample B68-XFMR1-1-14. This concentration is below the TTLC of 50 mg/kg for PCBs based on the California CCR, Title 22. However, it exceeds the U.S. Environmental Protection Agency, Region 9 Preliminary Remediation Goal (2000) of 1 mg/kg (industrial sites) for Aroclor 1254.

B. Building 69

Building 69 was located in the north central portion of Plant A-1 North, between Buildings 68 and 74. Building 69 was primarily used for assembly of parts for various aircraft. 19 target features, where chemicals were reportedly used or stored, were identified in Building 69. These features included process lines, welding tanks, furnaces and degreasers used in the fabrication and subassembly/assembly of aircraft parts.

1. **Feature No. 21 (Former Furnace Quench Tanks/Heat Treat Furnace Area)**
Three furnace quench tanks were formerly located in the southeast corner of Building 69, east of the X-ray room. The quench tanks and oven were used to treat aluminum parts. In February 1998, two soil borings (B69-SB31 and B69-SB32) and two soil vapor probes (B69-SG146 and B69-SG147) were drilled at Feature No. 21. TPH was not detected in any of the soil samples collected from borings B69-SB31 and B69-SB32. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 7.6 mg/kg (5 foot bgs). PCE was detected at a peak concentration of 15 µg/kg (1 foot bgs). PCE and TCE were detected at maximum concentrations of 74 µg/L and 7.4 µg/L in soil vapor sample B69-SG147, respectively. No other VOCs were detected in either soil vapor samples.

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG147. PCE and TCE were the only VOCs detected at peak concentrations of 146.6 µg/L (40 feet bgs) and 14.7 µg/L (60 feet bgs), respectively. PCE vapor distribution pattern in the

Feature No. 21 area indicates that this plume is associated with Feature No. 33 (Former Sump A-1-X), formerly located in Building 69 northwest of Feature No. 21. This PCE plume is within the capture zone of the proposed SVE system being designed for Feature No. 33.

2. **Feature No. 23 (Former Machine Pit)**
A machine pit was formerly located in the south central part of Building 69. During removal of the pit in 1994, oily sludge residues were observed. In February 1998, one soil boring (B69-SB34) and one soil vapor probe (B69-SG138) were drilled at Feature No. 23. TPH was not detected in any of the soil samples collected from boring B69-SB34. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 8 mg/kg (1 foot bgs). PCE was detected at concentrations of 271 µg/kg (1 foot bgs) and 6 µg/kg (20 feet bgs), respectively. TCE was also found at 6 µg/kg (1 foot bgs). VOCs were not detected in any of the remaining samples analyzed from boring B69-SB34. In soil vapor sample B69-SG138, PCE was the main VOC detected at a concentration of 225 µg/L.

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG138. PCE and TCE were the main VOCs detected at peak concentrations of 357.7 µg/L and 22.7 µg/L at 60 feet bgs, respectively. PCE vapor distribution pattern in the Feature No. 23 area indicates that this plume is associated with Feature No. 33 (Former Skin Mills), which was formerly located in Building 69 northwest of Feature No. 23. This PCE plume is within the capture zone of the proposed SVE system being designed for Feature No. 33.

3. **Feature No. 25 (Former Sump A-1-Y)**
Former Sump A-1-Y, which collected overspill residue and rinse water from the adjacent spot welding tanks, was located in the southeast portion of Building 69. In February 1998, one soil boring (B69-SB36) and one soil vapor probe (B69-SG139) were drilled adjacent to the sump. TPH and PCBs were not detected in any of the soil samples collected from boring B69-SB36. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 18.9 mg/kg (10 foot bgs). PCE was detected at concentrations of 11 µg/kg (5 feet bgs) and 8 µg/kg (10 feet bgs), but VOCs were not found in any of the remaining samples analyzed from boring B69-SB36. PCE was also detected in soil vapor sample B69-SG139 at a concentration of 168 µg/L.

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG139. PCE and TCE were the primary VOCs detected at peak concentrations of 349.6 µg/L and 26.1 µg/L at 60 feet bgs, respectively. PCE vapor distribution pattern in the vicinity of Feature No. 25 indicates that this plume is associated with Feature No. 33 (Former Skin Mills), which was formerly located in Building 69 northwest of Feature No. 25. This PCE plume is within the capture zone of the proposed SVE system being designed for Feature No. 33.

4. **Feature No. 27 (Former 2-Stage Clarifier/Sand Trap)**
A former 2-stage clarifier/sand trap was located in the south central part of Building 69, near the cadmium/chromium plating tanks. The clarifier was associated with sand blasting equipment, which

was used to clean metal surfaces. During the February 1998 assessment, one soil boring (B69-SB38) and one soil gas (B69-SG132) were drilled adjacent to Feature No. 27. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 7.1 mg/kg (1 foot bgs). TPH and PCBs were not detected in any of the soil samples collected from boring B69-SB38. PCE was detected at a concentration of 7 µg/kg (5 feet bgs), but VOCs were not found in any of the remaining samples from boring B69-SB38. In soil vapor, PCE was also detected at a concentration of 186 µg/L.

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG132. PCE was the primary VOC detected at a peak concentration of 419.6 µg/L at 40 feet bgs. PCE vapor distribution pattern in the vicinity of Feature No. 27 indicates that this vapor plume is associated with Feature No. 33 (Former Skin Mills), which was formerly located in Building 69 northwest of Feature No. 27. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

5. **Feature No. 32 (Former 2-Stage Clarifier/Sand Trap)**
The 2-stage clarifier/sand trap was previously located at the original sand blasting location in the east central section of Building 69, approximately 18 feet west of Column 156. The clarifier was associated with sand blasting operations, which were used to clean aluminum parts. In February 1998, one soil boring (B69-SB45) and one soil vapor probe (B69-SG112) were drilled adjacent to the clarifier. TPH and PCBs were not detected in any of the soil samples collected from boring B69-SB45. PCE was detected at a peak concentration of 12 µg/kg (10 feet bgs), but VOCs were not found below 10 feet bgs in boring B69-SB45. PCE was also detected at a concentration of 170 µg/L in soil vapor sample B69-SG112. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was reported at a maximum concentration of 15.2 mg/kg (10 feet bgs).

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG112. PCE was the primary VOCs detected at a peak concentration of 178.4 µg/L (20 feet bgs). PCE vapor distribution pattern in the Feature No. 32 area indicates that this vapor plume is associated with Feature No. 33 (Former Sump A-1-X), which was formerly located in Building 69 west of Feature No. 32. This PCE plume is within the capture zone of the proposed SVE system being designed for Feature No. 33.

6. **Feature No. 35 (Former Degreaser in Pickling/Degreaser Area)**
A former degreaser was located in the pickling/degreaser area in the south central part of Building 69, north of the pickling dip tanks. In February 1998, one soil boring (B69-SB48) and one soil vapor probe (B69-SG108) were drilled adjacent to Feature No.35. PCBs and TPH were not detected in any of the soil samples analyzed from boring B69-SB48. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 8 mg/kg (1 foot bgs). PCE was detected at a maximum concentration of 116 µg/kg (20 feet bgs). PCE was also detected in soil vapor sample B69-SG108 at a concentration of 464 µg/L.

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG108. PCE was the primary VOC detected at a peak concentration of 1,453.5 µg/L (40 feet bgs). PCE vapor distribution pattern in the vicinity of Feature No. 35 indicates that this vapor plume is commingled with a more widespread plume associated with Feature Nos. 33 (Former Sump A-1-X) and 38 (Former Skin Mills), which were formerly located in Building 69. The PCE plume beneath Feature No. 35 is within the capture zone of the proposed SVE system being designed for Feature Nos. 33 and 38.

7. **Feature No. 36 (Pickling Dip Tanks)**
Five aboveground dip tanks were formerly located in the south central portion of Building 69, northwest of the cadmium/chromium plating tanks. The process tanks containing acids, pickling solution, alkaline cleaner and rinsate were used to remove oxides from metal parts. In February 1998, one soil boring (B69-SB49) and one soil vapor probe (B69-SG110) were drilled adjacent Feature No. 36. TPH was not detected in any of the soil samples analyzed from boring B69-SB49. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 9.3 mg/kg (5 feet bgs). PCE was detected at concentrations of 115 µg/kg (5 feet bgs) and 9 µg/kg (10 feet bgs), but VOCs were not found in any of the remaining samples analyzed from boring B69-SB49. PCE was also detected at a concentration of 2,975 µg/L in soil vapor sample B69-SG110.

In March 2001, soil gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG110. PCE was the primary VOC detected at a peak concentration of 1,315.4 µg/L (40 feet bgs). During a previous delineation investigation in the vicinity of Feature No. 36 soil gas probes were installed in soil boring B69-38-SB6 to a depth of 180 feet bgs. PCE was detected at a maximum concentration of 3,909.4 µg/L (140 feet bgs) in vapor probe B69-38-SB6. PCE vapor distribution pattern in the vicinity of Feature No. 36 indicates that this vapor plume is associated with Feature Nos. 33 (Former Sump A-1-X) and 38 (Former Skin Mills), which were formerly located in Building 69. This PCE plume must be remediated by the proposed SVE system being designed for Feature Nos. 33 and 38.

8. **Feature No. 37 (Former Vertical Heat Treat Quench Tanks)**
The former vertical heat treat quench tanks, which was used for drying parts after they were dipped in the quench tanks, were located in the central west section of Building 69, northwest of the transformer vault and pickling area. In February 1998, boring B69-SB50 and soil vapor probe B69-SG92 were drilled at Feature No. 37. TPH was not detected in any of the soil samples analyzed from boring B69-SB50. PCE was detected at a concentration of 161 µg/kg (1 foot bgs), but VOCs were not reported in any of the remaining samples analyzed from boring B69-SB50. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was found at a maximum concentration of 7.4 mg/kg (1 foot bgs).

In March 2001, gas samples were collected to a depth of 60 feet bgs at the location of former soil gas probe B69-SG92. PCE was the primary VOCs detected at a peak concentration of 548 µg/L at 40

feet bgs. PCE vapor distribution pattern in the vicinity of Feature No. 37 indicates that this vapor plume is associated with Feature No. 33 (Former Sump A-1-X), which was formerly located in Building 69 northeast of Feature No. 37. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 33.

9. **Feature No. 38 (Former Spar Mills)**
Based on the soil gas data previously collected from 20 feet to 180 feet bgs at the former spar mills (Feature No. 38), Regional Board staff required additional step-out soil gas probes to delineate the extent of VOC impact. In February and March 2001, three soil gas probes (B69-33-SB11, B69-38-SB10 and B69-38-SB11) were installed. Probes B69-33-SB11 and B69-38-SB11 were co-located to also delineate the VOC impact at Feature No. 15 (Former Floor Drains in Hull Paint Booth) and former soil gas point A95-SG22 (Area A), respectively. PCE and TCE were the primary VOCs detected in these additional probes. The VOC distribution pattern indicates that the PCE and TCE plumes from Feature No. 38 extend as far west as Feature No. 15, as far north as soil gas point A95-SG22 and to a lesser extent northwest towards the north section of Building 68. Based on the VOC distribution pattern, it appears that the PCE and TCE vapor contamination in the vicinity of Feature No. 15 and soil gas point A95-SG22 (Area A) are commingled with a more widespread plume associated with Feature Nos. 33 and 38. The VOC plume detected in the vicinity of Feature No. 15 and soil gas point A95-SG22 (Area A) must be remediated by the proposed SVE system being designed for the subject site.

Our December 21, 1999 letter to Lockheed Martin noted that shallow PCE-impacted soil must be excavated in the spar mill area. On June 4, 2001, two areas within Feature No. 38 were excavated. The first excavation extended to a depth of 10 feet bgs in the location of boring B69-SB53. The second area was excavated to a depth of 5 feet bgs. PCE was the primary VOC detected in confirmation samples collected from the sidewalls and bottom of the excavations at concentrations that ranged from non-detect to 330 µg/kg.

10. **Former Transformer Vaults 69-1 and 69-2**
The *Environmental Assessment Report, Lockheed Plant A-1 North (May 1995)* indicated that transformers in vault 69-1 contained oil with PCBs. In August and October 2000, four soil samples were collected beneath transformer vaults 69-1 and 69-2 for PCB analysis. Aroclor-1262 was detected at a peak concentration of 3.8 mg/kg in sample B69-28-XFMR1-2-11. This concentration is below the TTLC of 50 mg/kg for PCBs based on the California CCR, Title 22. However, it is above the U.S. Environmental Protection Agency, Region 9 PRG of 1 mg/kg (industrial site) for PCBs. The U.S. Environmental Protection Agency has no Preliminary Remediation Goal set for Aroclor 1262.

C. Building 74

Building 74 was located in the central part of Plant A-1 North, immediately east of Building 69. It was constructed in 1941 as a one-story high bay building used for the production and assembly of aircraft. Six target features were identified in Building 74.

1. **Feature No. 42 (Former Subsurface Collection Sump)**
A subsurface collection sump was formerly located at the south end of Building 74. No information was available on the specific purpose of the sump and potential chemicals used in its vicinity. During the February 1998 investigation, one soil boring (B74-SB59) and one soil vapor probe (B74-SG155) were installed adjacent to the sump. TPH and PCBs were not detected in the soil samples. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the California CCR, Title 22. Chromium (total) was identified at a peak concentration of 11.8 mg/kg (10 feet bgs). PCE was reported at a maximum concentration of 9 µg/kg (1 foot bgs). In soil vapor sample B74-SG155, PCE and TCE were detected at concentrations of 268 µg/L and 6.4 µg/L, respectively.

In March 2001, soil gas probes were installed to a depth of 60 feet bgs to delineate the extent of VOC impact beneath Feature No. 42. PCE was the primary VOC detected at a maximum concentration of 653.8 µg/L (40 feet bgs). The PCE plume detected in the Feature No. 42 area appears to be commingled with the PCE vapor plume associated with Feature Nos. 33 and 48. This PCE plume must be remediated by the proposed SVE system being designed for Feature Nos. 33 and 48.

2. **Former Transformer Vaults 74-1 and 74-2**
The *Environmental Assessment Report, Lockheed Plant A-1 North (May 1995)* indicated that transformer vaults 74-1 and 74-2 contained transformers with PCBs. In September 2000, two soil samples (B74-XFMR1-1-14 and B74-XFMR-2-1-14) were collected beneath the transformer vaults. Aroclor-1262 was detected in both samples at a maximum concentration of 10 mg/kg, which is below the TTLC of 50 mg/kg for PCBs based on the California CCR, Title 22 criteria. However, it is above the U.S. Environmental Protection Agency, Region 9 PRG of 1 mg/kg (industrial site) for PCBs. The U.S. Environmental Protection Agency has no Preliminary Remediation Goal set for Aroclor 1262.

3. **Areal Coverage Soil Gas Probes**
Based on the February 1998 soil gas investigation data, multi-depth soil gas samples were required in five soil gas probe locations (B74-SG62, B74-SG93, B74-SG94, B74-SG113 and B74-SG140) to delineate the VOC impact. In March 2001, soil gas probes were installed to a depth of 60 feet bgs. PCE was the primary VOC detected at a maximum concentration of 1,038.2 µg/L (60 feet bgs at probe B74-SG113A). The elevated PCE concentrations detected in these probes appear to be associated with the PCE vapor plume from Feature Nos. 33 and 48. This PCE plume must be remediated by the proposed SVE system being designed for Feature Nos. 33 and 48.

D. Groundwater

Groundwater beneath the site is at approximately 193 feet bgs. Based on water quality data from the early 1990's to the present, some heavy metals have been detected in groundwater monitoring wells (A-1-CW04, A-1-CW05, A-1-CW06 and A-1-CW9) located immediately downgradient from Plant A-1 North, including barium, chromium (total), lead, nickel, selenium, thallium and zinc. Note that chromium (total), nickel and selenium were detected only once in monitoring well A-1-CW9 at concentrations of 11 µg/L, 57 µg/L and 24 µg/L, respectively. Thallium was also found once at a concentration of 103 µg/L in monitoring well A-1-CW05. In upgradient monitoring well (LBC6-

CW10) and cross-gradient monitoring wells (A-1-CW03R, A-1-CW03, A-1-CW02, A-1-CW01) barium, chromium (total), lead and zinc were also detected. Based on the current heavy metal concentrations, groundwater remediation is not warranted for heavy metals in this area.

Elevated concentrations of VOCs (primarily PCE and TCE) have been detected in groundwater monitoring wells located in the vicinity of Plant A-1 North. For example, PCE and TCE were detected at maximum concentrations of 2,900 µg/L and 810 µg/L, respectively in monitoring well A-1-CW04. Under a Consent Decree with the U.S. Environmental Protection Agency, Lockheed Martin is extracting and treating VOC-polluted groundwater within the Burbank Operable Unit including the Plant A-1 North area.

CONCLUSIONS:

Based on the subject submittal and other information in our files, we have no further soil requirements with respect to the San Fernando Valley Cleanup Program. The concentrations of heavy metals, including chromium (total) and hexavalent chromium, detected in soil matrix samples did not exceed the Regional Board's screening levels and were below the TTLC and the STLC criteria based on the CCR, Title 22. Based upon the above information, these contaminants remaining in the soil appear not to pose a significant threat to groundwater quality; therefore, further soil assessment or cleanup is not required. Water quality data obtained to date from downgradient monitoring wells indicates that some heavy metals have been detected in the groundwater at low concentrations, such as barium, chromium (total), lead, nickel, selenium, thallium and zinc. However, these contaminants were either found only once during 9 years of monitoring (from 1992 to present) or were also found in upgradient and cross-gradient monitoring wells. This suggests a source(s) other than the subject features are responsible. Based on historical and the current low concentrations of heavy metals in the groundwater, which are 0.1 mg/L of barium (MCL is 1 mg/L) and 0.34 mg/L of zinc (secondary MCL is 5 mg/L) as detected in monitoring well A-1-CW9 (first quarter 2001 sampling) located immediately downgradient from the subject features, groundwater cleanup will not be required. However, the Regional Board may require groundwater cleanup for heavy metals in the future if new information is obtained, such as concentrations that are approaching or which exceed drinking water standards or conditions arise that threaten drinking water wells or the water quality of lower aquifers.

In the case of VOCs in soil, distribution patterns for PCE and TCE indicate three main VOC sources at the subject site: 1) Feature Nos. 33 and 38 in Area "B" and 2) Feature No. 48 in Area "C". The VOC plumes originating from these sources are commingled, laterally and vertically widespread and have impacted the groundwater beneath the subject site. These VOC plume(s) appear to have migrated beneath some of the individual features discussed above. While these individual features do not appear to be major VOC sources, elevated VOC concentrations detected in their vicinity appear to be associated with the VOC plume(s) migrating from either Feature Nos. 33, 38 or 48. The elevated VOC concentrations beneath some of these features exceed the Regional Board's VOC screening level of 127 µg/L and must be remediated by the proposed SVE system being designed for the subject site. Based on the information obtained during the subject assessment in Area "B", we have no further requirements for the features discussed above, except

Feature Nos. 33 and 38. Currently, Lockheed Martin is extracting and treating VOC-polluted groundwater within the Burbank Operable Unit under a Consent Decree with the U.S. Environmental Protection Agency.

We recommend Lockheed Martin evaluate the potential health risk posed by contaminant concentrations for construction workers and future site occupants as some of the contaminants, such as PCBs, exceed the U.S. Environmental Protection Agency's (Region 9) Preliminary Remediation Goal or site screening level.

The soil only "no further requirements" determination for these features does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the current or future requirements related to cleanup of polluted groundwater underlying the subject site. Also, additional assessment or cleanup may be needed in the event that new information is obtained, such as previously undiscovered subsurface features or signs of soil contamination discovered during future site redevelopment activities. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Michael Lauffer, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
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Gray Davis
Governor

August 27, 2001

Mr. Gene Matsushita
Lockheed Martin Corporation
Burbank Program Office
2550 North Hollywood Way, 3rd Floor
Burbank, CA 91505-1055

PARTIAL NO FURTHER REQUIREMENTS (SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "B", BURBANK, CALIFORNIA (FILE NO. 104.5152) (CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

On June 26, 2001 and August 27, 2001, the Regional Board issued *partial no further requirements* (NFRs) letters for Lockheed Martin's Plant A-1 North, Area "B". These NFRs were based on the *Preliminary Site Investigation Report, Plant A-1 North, Area "B": Burbank, California* (May 22, 1998) and *Data Report, Additional LA-CRWQCB Requirements for Area "B" at Plant A-1 North: Burbank, California* (April 6, 2001). This letter will focus on the areas of concern within Plant A-1 North, Area "B" that were not discussed in the above NFR letters.

The preliminary site investigation report documents the results of the soil matrix and soil gas investigation, which was conducted in Area "B" in February 1998. The purpose of this investigation was to document the presence or absence of contaminants beneath chemical use and storage features. These features were identified based on site inspections and review of previous investigation reports. At least one soil boring was drilled at each feature. Multiple soil borings were completed in features that covered a large area. In addition, soil borings were drilled on a 200-foot grid to provide a general assessment of Area "B". Soil borings were drilled to a maximum depth of 40 feet below ground surface (bgs) and soil samples were collected at 1 foot bgs and every 5 feet to 40 feet bgs. All samples were analyzed for Total Petroleum Hydrocarbons (TPH) using EPA Method 8015 Modified. Based on the chemicals used in a given area, samples were analyzed for volatile organic compounds (VOCs) using EPA Method 8260A, polychlorinated biphenyls (PCBs) using EPA Method 8081, pH using EPA Method 9045, semi-VOCs (SVOCs) using EPA Method 8270B, and heavy metals using EPA Method 6010/7000 series. Soil vapor samples were also collected at 5 feet bgs adjacent to the target features and on a 100-foot grid throughout Area "B" to determine VOC concentrations in the vapor phase.

A supplementary investigation was conducted in Area "B" in February and March 2001 in response to a Regional Board staff letter to Lockheed Martin dated December 21, 1999. The purpose of this assessment was to delineate the extent of soil contamination detected during the February 1998 preliminary site assessment. These investigations were conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

FINDINGS:

A. Building 68

Building 68 was located in the west central part of Plant A-1 North. The primary function performed in Building 68 was fabrication and assembly of aircraft parts and subassemblies for various aircraft. Based on the site inspection and review of the *Environmental Assessment Report, Lockheed Plant A-1 North (May 1995)*, 21 suspected chemical use and storage areas were identified in Building 68.

1. **Feature No. 7 (Former Machine Pit)**
   A machine pit was formerly located in the southeast central part of Building 68. During the February 1998 assessment, one soil boring (B68-SB14) and one soil vapor probe (B68-SG106) were drilled adjacent to Feature No. 7. TPH was not detected in any of the soil samples collected from boring B68-SB14. Tetrachloroethene (PCE) was the primary VOC detected at a concentration of 60 µg/kg (1 foot bgs), but VOCs were not identified in any remaining samples analyzed from boring B68-SB14. In soil vapor sample B68-SG106, PCE was also the primary VOC found at a concentration of 77 µg/L.

2. **Feature No. 12 (Former Sump at Paint Shop Dip Tank Area)**
   A sump was previously located in the southwest section of Building 68, south of the Paint Shop dip tanks. The sump was associated with the floor drains and clean-outs in the paint shop. In February 1998, one soil boring (B68-SB20) and one soil vapor sample (B68-SG118) were drilled adjacent to the sump. TPH in the motor oil carbon range was detected at a concentration of 61 mg/kg (1 foot bgs), but no TPH was found in any of the remaining soil samples collected from boring B68-SB20. VOCs were not detected in any of the soil samples from Feature No.12, but soil vapor sample B68-SG118 reported PCE, trichloroethene (TCE), and Freon 11 at concentrations of 41.7 µg/L, 27.5 µg/L, and 2.1 µg/L, respectively. No other VOC were detected in the soil vapor sample. Heavy metals, including chromium (total) were not reported above their Total Threshold Limit Concentration (TTLC) or Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations, Title 22 (CCR, Title 22). Chromium (total) was found at a maximum concentration of 20.8 mg/kg (5 feet bgs).

3. **Feature No. 19 (Former TCA Degreaser)**
   A former 1,1,1-trichloroethane (TCA) degreaser was located outside the north wall of Building 68. In February 1998, one soil boring (B68-SB28) was drilled to a total depth of 20 feet bgs adjacent to the degreaser. TPH and VOCs were not detected in any of the soil samples collected from boring B68-SB28. In addition to soil matrix samples, two soil vapor samples (A63-SG35 and A63-SG36) were collected in the vicinity of Feature No. 19. PCE was the primary VOC reported in soil vapor samples A63-SG35 and A63-SG36 at a peak concentration of 122 µg/L (A63-SG36).

4. **Feature No. 47 (Former Spar Mill/Router Area)**
   A spar mill/router area, which contained equipment for machining aircraft parts, was previously located at the north central section of Building 68. In February 25, 1999, six borings (B68-47-SB2 to B68-47-SB6) were drilled to a depth of 40 feet bgs in the Feature No. 47 area. Another boring (B69-

38-SB9) was drilled to a depth of 180 feet bgs to assess both Feature Nos. 38 and 47. TPH in the motor oil and diesel carbon ranges were detected at maximum concentrations of 852 mg/kg and 304 mg/kg, respectively in a soil sample collected at 5 feet below ground surface (bgs) from boring B68-47-SB3. TPH in the gasoline carbon range was not detected in any of the samples analyzed. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was found at a maximum concentration of 9.66 mg/kg (1 foot bgs).

PCE was the primary VOC detected at a peak concentration of 144 µg/kg (5 feet bgs) in soil samples collected from boring B68-47-SB3. The remainder of the samples from this boring had PCE concentrations ranging from 7.9 µg/kg to non-detect. PCE was also the main VOC detected at concentrations of 72 µg/L and 60 µg/L in soil gas samples B68-SG69and B68-SG70), respectively which were collected in the vicinity of Feature No. 47 during the February 1998 assessment. Multi-depth soil gas probes (20 feet to 180 feet in boring B69-38-SB9) were also installed at Feature No. 47 to delineate the PCE vapor plume from Feature No. 38, which was located east of Feature No. 47. VOC concentrations, primarily PCE and TCE, increase with depth. Maximum PCE and TCE vapor concentrations were 1,550 µg/L (140 feet bgs) and 686 ug/L (165 feet bgs), respectively. Soil gas data from multi-depth probes located in the vicinity of Feature Nos. 38 and 47 show that Feature No. 38 is the main source of VOC vapors found in the vicinity of Feature 47. The VOC plume detected beneath Feature No. 47 must be remediated by the proposed soil vapor extraction (SVE) system being designed for Feature Nos. 38.

B. Building 69

Building 69 was located in the north central portion of Plant A-1 North, between Buildings 68 and 74. Building 69 was primarily used for assembly of parts for various aircraft. 19 target features, where chemicals were reportedly used or stored, were identified in Building 69. These features included process lines, welding tanks, furnaces and degreasers used in the fabrication and subassembly/assembly of aircraft parts.

1. **Feature No. 24 (Former Tank A-1-G)**
   Former Tank A-1-G, a 300-gallon waste storage tank, was previously located in the southwest section of Building 69, adjacent to the former arc/gas weld tank area. This tank reportedly received dilute chromic acid and sulfuric acid from the arc/gas weld tanks. During the February 1998 assessment, one soil boring (B69-SB35) and one soil vapor probe (B69-SG137) were drilled adjacent to Feature No. 24. TPH (in the motor oil carbon range) was detected at a peak concentration of 187 mg/kg (5 feet bgs). PCE was detected at concentrations of 85 µg/kg (5 feet bgs), 12 µg/kg (20 feet bgs), and 8 µg/kg (30 feet bgs). In soil vapor sample B69-SG137, PCE was the primary VOC identified at a peak concentration of 50 µg/kg. PCBs were not reported in any of the samples analyzed from boring B69-SB35. Heavy metals, including chromium (total) were not detected above their TTLC or STLC based on the CCR, Title 22. Lead and soluble lead concentrations were 260 mg/kg and 0.66 mg/L in the 10-foot sample, respectively. Chromium (total) was detected at concentrations of 31.3 mg/kg (5 feet bgs) and 131 mg/kg (10 feet bgs), respectively.

Based on the February 1998 data, Regional Board staff requested additional soil sampling for hexavalent chromium analysis. In June 2001, one soil boring was drilled and sampled at 10 feet bgs. Chromium (total) was reported at a concentration of 48.4 mg/kg. No hexavalent chromium was detected in the sample.

C. Building 74

Building 74 was located in the central part of Plant A-1 North, immediately east of Building 69. It was constructed in 1941 as a one-story high bay building used for the production and assembly of aircraft. Six target features were identified in Building 74.

1. **Feature No. 40 (Former Paint Spray Booth)**
A former paint spray booth was located in the southeast corner of Building 74. In February 1998, one soil boring (B74-SB57) and one soil vapor probe (B74-SG135) were drilled adjacent to Feature No. 40. Soil samples were collected at 1 foot and 5-foot depth intervals to 20 feet bgs. TPH, primarily in the motor oil carbon range, was detected at a concentration of 768 mg/kg (5 feet bgs), but TPH was not reported in any of the remaining soil samples from boring B74-SB57. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was identified at a concentration of 10 mg/kg (10 feet bgs). PCE was detected in soil and soil vapor (B74-SG135) samples at peak concentrations of 45 µg/kg (1 foot bgs) and 307 µg/L.

   The distribution pattern of PCE vapors detected beneath Feature No. 40 and the surrounding area indicates that this vapor plume is mainly associated with Feature No. 48, a solvent basin formerly located in Building 93. This PCE plume must be remediated by the proposed SVE system being designed for Feature No. 48.

2. **Feature No. 43 (Flammable Materials Storage Area)**
A flammable material storage area, which was used for temporary storage of 55-gallon drums containing various chemicals, was previously located in the south end of Building 74. In February 1998, one soil boring (B74-SB60) and one soil vapor sample (B74-SG141) were drilled at Feature No. 43. Soil samples were collected at 1 foot and 5-foot depth intervals to 20 feet bgs. Heavy metals, including chromium (total) were not detected above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was found at a concentration of 6.3 mg/kg (1 foot bgs). TPH, SVOCs and PCBs were not detected in any of the soil samples from boring B74-SB60. PCE was reported at a concentration 94 µg/kg (1 foot bgs), but VOCs were not detected in any of the remaining soil samples analyzed from boring B74-SB60. PCE was also found at a concentration of 390 µg/kg in soil vapor sample B74-SG141.

   The distribution pattern of PCE vapors detected beneath Feature No. 43 and the surrounding area indicates that this vapor plume is primarily associated with the PCE vapor plume from either Feature No. 33 (Former sump A-1-X) or Feature No. 48 (Former Solvent Basin). Feature Nos. 33 and 48 were formerly located in Building 69 and Building 93, respectively. This PCE plume must be remediated by the proposed SVE system being designed for Feature Nos. 33 and 48.

3. **Feature No. 44 (Cooling Water Drainage Pits and Trench)**
A drainage pit and associated trench, which collected cooling water used in welding activities, were formerly located in the southwest corner of Building 74. In February 1998, two soil borings (B69-SB61 and B69-SB62) were drilled to total depths of 40 feet bgs adjacent to Feature No. 44. TPH and PCBs were not detected in the any of the soil samples from borings B74-SB61 and B74-SB62. Heavy metals, including chromium (total) were not reported above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was detected at concentrations of 7 mg/kg (10 feet bgs in B74-SB61) and 8.7 mg/kg (5 feet bgs in B74-SB62). PCE was the only VOC detected at a peak concentration of 42 µg/kg (20 feet bgs in boring B74-SB62). In soil vapor samples B74-SG133 and B74-SG134, which were collected adjacent to Feature No. 44, PCE was also the primary VOC reported at a peak concentration of 387 µg/L (B74-SG134).

Based on the PCE vapor distribution pattern in the Feature No. 43 area, it appears that the PCE vapors detected beneath Feature No. 44 is associated with the PCE plume from either Feature No. 33 (Former sump A-1-X) or Feature No. 48 (Former Solvent Basin). This PCE plume must be remediated by the proposed SVE system being designed for Feature Nos. 33 and 48.

D. Groundwater

Groundwater beneath the site is at approximately 193 feet bgs. Based on water quality data from the early 1990's to the present, some heavy metals have been detected in groundwater monitoring wells (A-1-CW04, A-1-CW05, A-1-CW06 and A-1-CW9) located immediately downgradient from Plant A-1 North, including barium, chromium (total), lead, nickel, selenium, thallium and zinc. Note that chromium (total), nickel and selenium were detected only once in monitoring well A-1-CW9 at concentrations of 11 µg/L, 57 µg/L and 24 µg/L, respectively. Thallium was also found once at a concentration of 103 µg/L in monitoring well A-1-CW05. In upgradient monitoring well (LBC6-CW10) and cross-gradient monitoring wells (A-1-CW03R, A-1-CW03, A-1-CW02, A-1-CW01) barium, chromium (total), lead and zinc were also detected. Based on the current heavy metal concentrations, groundwater remediation is not warranted for heavy metals in this area.

Elevated concentrations of VOCs (primarily PCE and TCE) have been detected in groundwater monitoring wells located in the vicinity of Plant A-1 North. For example, PCE and TCE were detected at maximum concentrations of 2,900 µg/L and 810 µg/L, respectively in monitoring well A-1-CW04. Under a Consent Decree with the U.S. Environmental Protection Agency, Lockheed Martin is extracting and treating VOC-polluted groundwater within the Burbank Operable Unit including the Plant A-1 North area.

CONCLUSIONS:

Based on the subject submittal and other information in our files, we have no further soil requirements with respect to the San Fernando Valley Cleanup Program. The concentrations of heavy metals, including chromium (total) and hexavalent chromium, detected in soil matrix samples did not exceed the Regional Board's screening levels and were below the TTLC and the STLC criteria based on the CCR, Title 22. Based upon the above information, these contaminants remaining in the soil appear not to pose

a significant threat to groundwater quality; therefore, further soil assessment or cleanup is not required. Water quality data obtained to date from downgradient monitoring wells indicates that some heavy metals have been detected in the groundwater at low concentrations, such as barium, chromium (total), lead, nickel, selenium, thallium and zinc. However, these contaminants were either found only once during 9 years of monitoring (from 1992 to present) or were also found in upgradient and cross-gradient monitoring wells. This suggests a source(s) other than the subject features are responsible. Based on historical and the current low concentrations of heavy metals in the groundwater, which are 0.1 mg/L of barium (MCL is 1 mg/L) and 0.34 mg/L of zinc (secondary MCL is 5 mg/L) as detected in monitoring well A-1-CW9 (first quarter 2001 sampling) located immediately downgradient from the subject features, groundwater cleanup will not be required. However, the Regional Board may require groundwater cleanup for heavy metals in the future if new information is obtained, such as concentrations that are approaching or which exceed drinking water standards or conditions arise that threaten drinking water wells or the water quality of lower aquifers.

In the case of VOCs in soil, distribution patterns for PCE and TCE indicate three main VOC sources at the subject site: 1) Feature Nos. 33 and 38 in Area "B" and 2) Feature No. 48 in Area "C". The VOC plumes originating from these sources are commingled, laterally and vertically widespread and have impacted the groundwater beneath the subject site. These VOC plumes appear to have migrated beneath some of the individual features discussed above. While these individual features do not appear to be major VOC sources, elevated VOC concentrations detected in their vicinity appear to be associated with the VOC plume(s) migrating from either Feature Nos. 33, 38 or 48. The elevated VOC concentrations beneath some of these features exceed the Regional Board's VOC screening level of 127 µg/L and must be remediated by the proposed SVE system being designed for the subject site. Based on the information obtained during the subject assessment in Area "B", we have no further requirements for the features discussed above. Currently, Lockheed Martin is extracting and treating VOC-polluted groundwater within the Burbank Operable Unit under a Consent Decree with the U.S. Environmental Protection Agency.

The soil only "no further requirements" determination for these features does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the current or future requirements related to cleanup of polluted groundwater underlying the subject site. Also, additional assessment or cleanup may be needed in the event that new information is obtained, such as previously undiscovered subsurface features or signs of soil contamination discovered during future site redevelopment activities. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Michael Lauffer, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
Paul Lisak, L. A. County Fire Dept., Health Hazmat
Mel Blevins, ULARA Watermaster
Dan Batrack, Tetra Tech (Pasadena)
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Robert Ovrom, City of Burbank
Bruce Feng, City of Burbank
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Dennis Barlow, City of Burbank
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Gray Davis
Governor

FILE

October 28, 1999

B. P. O.

DATE REC'D. 10/29/99

WBS # 37

COPIES TO: Ljug, Warren
Reg, Gilbert

Ms. Carol Yuge
Lockheed Martin Corporation
Burbank Program Office
2550 North Hollywood Way, 3rd Floor
Burbank, CA 91505-1055

Dear Ms. Yuge:

NO FURTHER REQUIREMENTS, FEATURE 21 (FORMER COMPRESSORS), LOCKHEED MARTIN PLANT A-1 NORTH, BUILDING 71, AREA "C", BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

This letter is in reference to the *Final Report – Feature 21 Air Compressors, Phase IIB Delineation Investigation Report, Plant A-1 North, Area "C": Burbank, California* dated August 2, 1999, prepared by your consultant, Tetra Tech. This report summarizes the results of soil investigation to assess the condition of the soil beneath the former air compressor area located in Building 71.

Based on Regional Board staff's review of the subject report, we have the following comments with respect to the San Fernando Cleanup Program:

1. A total of 41 soil samples were collected from 5 soil borings drilled to a maximum depth of 40 feet bgs in the subject area. These samples were analyzed for Total petroleum hydrocarbon (TPH) compounds and selected samples were analyzed for volatile organic compounds (VOCs) and Title 22 metals.

2. Concentrations of diesel related petroleum hydrocarbons ranged from 7 mg/kg to 49 mg/kg. Motor oil related hydrocarbons were also detected at concentrations ranging from 8 mg/kg to 152 mg/kg. Gasoline related hydrocarbons were not detected.

3. VOCs were not detected in any of the soil samples analyzed.

4. Metal concentrations detected in the samples were below the hazardous waste criteria described in the California Administrative Code (CAC) Title 22. Metal concentrations were below the Total Threshold Limit Concentration (TTLC) and ten times the Soluble Threshold Limit Concentration (STLC) specified in Title 22.

5. Analysis of two soil gas samples (C72-SG183 and B68-SG152) that were collected at 5 feet bgs in the vicinity of the former air compressors detected a maximum of concentration of 1.6 ug/L PCE.

6. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Cleanup Program. The concentrations of soil contaminants detected beneath Feature 21 are below the soil screening concentrations and are not a threat to groundwater quality. Therefore, further soil assessment or cleanup is not necessary. However, additional assessment or cleanup may be needed in the event that previously unknown potential sources or signs of soil impact are discovered during the planned site demolition activities.

The "no further requirements" determination for Feature 21 does not affect the requirements for either assessment or cleanup of adjacent features at the subject site. The jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency, are not affected by this Regional Board's "no further requirements" decision. Such agencies may choose to make their own determinations regarding the site.

If you need additional information, please contact Alex Carlos at (213) 576-6726.

Sincerely,

ARTHUR G. HEATH, Ph.D.
Unit Chief
San Fernando/San Gabriel Cleanup Program

c: Diane Strassmaier, U.S. EPA, Region IX
Jorge Leon, SWRCB, Office of the Chief Counsel
Hamid Saebfar, CALEPA, DTSC, Region 3
Paul Lisak, Los Angeles County Fire Dept., Health Hazmat Division
Mel Blevins, ULARA Watermaster
Scott Warren, Lockheed Martin Corporation
Robert Ovrom, City of Burbank
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Dennis Mackay, City of Burbank
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Devin Burns, City of Burbank

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Gray Davis
Governor

September 25, 2000

Ms. Carol Yuge
Lockheed Martin Corporation
Burbank Program Office
2550 North Hollywood Way, 3rd Floor
Burbank, CA 91505-1055

Dear Ms. Yuge:

NO FURTHER REQUIREMENTS (SOIL ONLY), FEATURE NO. 5 (FORMER MACHING PAD), BUILDING 75, LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

We have reviewed the *Delineation Excavation Report Feature 5: Plant A-1 North, Area "C" Burbank, California* dated June 12, 2000, prepared by your consultant, Tetra Tech. This report summarizes the results of a soil excavation program performed at Feature No. 5 (Machine Pad), formerly located in the southwest corner of Building 70, Plant A-1 North Area "C". The objective of the limited excavation was to delineate and remove tetrachloroethene (PCE) contaminated soil that was previously discovered beneath Feature No. 5. This remediation effort was conducted in compliance with Cleanup and Abatement Order No. 87-161.

Based on our review of the subject report, we have the following comments:

1. During the preliminary site investigation, one soil boring (C70-SB7) was drilled to a depth of 20 feet below ground surface (bgs) at Feature No. 5. Five soil samples were collected from this boring and analyzed for petroleum hydrocarbons, volatile organic compounds (VOCs) and heavy metals. Only tetrachloroethene (PCE) was detected at a concentration of 514 µg/kg at 1 foot bgs, which is above the Regional Board's VOC soil screening level.

2. On July 15, 1999, a limited soil excavation was performed in the area of soil boring C70-SB7 to remove PCE-contaminated soil beneath the Feature No. 5. Approximately 35 cubic yards of soil was removed to a depth of 8 feet bgs. This soil removal action was conducted based on Tetra Tech's *Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by this Regional Board in a letter to Lockheed Martin dated March 22, 1999.

   A total of eight confirmation soil samples were collected from the base and sidewalls of the excavation. The samples were analyzed for VOCs using EPA Method 8260B. The purpose was to verify that the soil cleanup goal had been achieved. PCE concentrations in the final confirmation samples ranged from non-detect (5 µg/kg) to 42 µg/kg. No other VOCs were detected in the final confirmation samples. The excavation was backfilled with gravel and clean soil. Reportedly, the excavated soil was hauled off-site for treatment and recycling at American Remedial Technologies located in Lynwood, California.

3. Soil gas samples collected at 5 feet bgs, within approximately 50 feet from Feature No. 5 contained total VOC concentrations ranging from 5.1 µg/L (C72-SG196) to 19.8 µg/L (C70-SG185). These

concentrations are relatively low and are not considered a threat to groundwater quality. In general, VOC concentration trends in soil gas increase with distance from Feature No. 5.

4. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. The concentrations of soil contaminants detected in final confirmation soil samples beneath Feature No. 5 are below the soil screening concentrations and appear not to pose a threat to groundwater quality. Therefore, further soil assessment or cleanup is not required.

The "no further requirements" determination for Feature No. 5 does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of polluted groundwater underlying Feature No. 5. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
Paul Lisak, L. A. County Fire Dept., Health Hazmat
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Gray Davis
Governor

March 5, 2001

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NO FURTHER REQUIREMENTS, FEATURE NO. 1 (FORMER FLOOR DRAINS) (SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152) (CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Remedial Excavation Report, Feature No. 1: Plant A-1 North, Area "C" Burbank, California* dated July 21, 2000. This report summarizes the results of a shallow soil excavation performed at Feature No. 1 (floor drains), formerly located at the loading dock south of Building 70, Lockheed Martin Plant A-1 North Area "C". The objective of the excavation was to remove soil contaminated with tetrachloroethene (PCE) beneath and around one of the floor drains. This remediation activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we have the following comments:

1. During the February 1998 preliminary site investigation, three soil borings (C70-SB1 through C70-SB3) were drilled to a depth of 20 feet below ground surface (bgs), adjacent to three floor drains. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 20 feet bgs. Samples were analyzed for the presence of total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-VOCs (SVOCs), polychlorinated biphenyls (PCBs), pH and heavy metals. Tetrachloroethene (PCE) was detected at a maximum concentration of 1,700 µg/kg (10 feet bgs in C70-SB3). SVOCs were only detected in samples taken at 5 and 10 feet bgs in soil boring C70-SB3. The maximum concentration of SVOC (identified as phenanthrene) was 32 mg/kg at 10 feet bgs. The concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations Title 22 (CCR, Title 22). Chromium (total) was detected at a maximum concentration of 42.8 mg/kg (10 feet bgs in boring C70-SB3). TPH or PCBs were not detected above the soil screening concentration for the site.

2. In March 1999, further assessment was conducted to determine the extent of PCE and SVOC contamination beneath one of the floor drains. Five soil borings were drilled to a depth of 40 feet bgs. One boring was drilled adjacent to the previous boring C70-SB3 and four borings were completed 20 to 30 feet from former boring C70-SB3. Soil samples were collected at 1 foot, 5 feet and every 5 feet bgs to the termination depth. A total of 42 samples were collected and analyzed for VOCs and SVOCs (14 samples from 5 feet to 15 feet bgs). PCE and naphthalene were the primary VOCs detected at maximum concentrations of 107 µg/kg (5 feet bgs) and 547 µg/kg (10 feet bgs), respectively. SVOCs (acenapthene, phenanthrene, fluoranthene and pyrene) were detected only in the 10-foot sample (boring C70-1-SB1) at concentrations ranging from 1.1 mg/kg to 3.6 mg/kg, which are below the U.S. EPA Region IX residential preliminary remedial goals (November 22, 2000). Based on the assessment data, PCE contaminated soil that exceed the Regional Board's VOC screening level of 127 µg/L was limited to the area around the former C70-SB3 soil boring to a depth of 10 feet bgs.

3. A shallow soil removal action was performed from November 9 through December 1, 1999 to remove PCE-contaminated soil detected at the C70-SB3 soil boring. Approximately 140 cubic yards of soil was removed to a depth of 15 feet bgs. This soil removal action was conducted based on Tetra Tech's *Final Remedial Action Plan, Feature No. 1, Plant A-1 North Area "C": Burbank, California* dated October 29, 1999 and approved by Regional Board staff in a letter to Lockheed Martin dated November 9, 1999.

   A total of 8 final confirmation soil samples were collected from the base and sidewalls of the excavation. The purpose was to verify that the soil cleanup goal had been achieved. VOCs and SVOCs were not detected in the final confirmation samples.

   Soil excavated from the immediate vicinity of Feature No. 1 was placed in a stockpile designated *affected soil*, while soil from the perimeter of the excavation was designated *clean soil*. The excavation was backfilled with imported fill material. No TPH, VOCs, PCBs, pesticides and SVOCs were detected in any of the samples collected from the imported material. Heavy metal concentrations, including total chromium (3.5 µg/kg) detected in the imported material were below the CCR Title 22 screening criteria. Approximately 40 cubic yards of *affected soil* was disposed of as non-RCRA hazardous waste at the Kettleman Hills facility in Kettleman City, California.

4. During the 1998 site-wide soil gas investigation, three soil gas samples were collected at 5 feet bgs adjacent to the floor drains. PCE concentrations detected in soil gas samples ranged from 1.7 µg/L (C70-SG206) to 56 µg/L (C70-SG204). No other VOCs were detected.

   Supplementary soil gas samples were collected at 20 feet, 40 feet and 55 feet bgs adjacent to former C70-SB3 soil boring. Trichloroethene and PCE were the primary VOCs detected in the

samples at maximum concentrations of 9 µg/L and 57 µg/L, respectively. These concentrations are below the Regional Board's VOC screening criteria and are not considered a threat to groundwater quality..

5. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. The concentrations of PCE and SVOCs detected in final confirmation soil samples were non-detect. Therefore, further soil assessment or cleanup is not required.

The "no further requirements" determination for Feature No. 1 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of polluted groundwater underlying Feature No. 1. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U. S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
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Gray Davis
Governor

March 6, 2001

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NO FURTHER REQUIREMENTS, FEATURE NO. 50 (FORMER CONVEYOR TRENCH)(SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152) (CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 50: Plant A-1 North, Area "C" Burbank, California* dated July 24, 2000. This report summarizes the results of a shallow soil excavation performed at Feature No. 50 (former conveyor trench), previously located at the southwest portion of Building 93, Lockheed Martin Plant A-1 North Area "C". The conveyor trench was previously used to move aluminum parts into and out of a quench tank (Feature No. 49). The objective of the excavation was to delineate and remove tetrachloroethene (PCE)-contaminated soil that exceed the soil screening level of 127 µg/kg based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). This remediation effort was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we have the following comments:

1. During the February 1998 preliminary site investigation, soil boring C93-SB60 was drilled to a depth of 40 feet below ground surface (bgs) at Feature No. 50. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs. Samples were analyzed for the presence of total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), pH and heavy metals. PCE was detected at a maximum concentration of 269 µg/kg (5 feet bgs). TPH was not detected in any of the samples and the concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations Title 22 (CCR, Title 22). Chromium (total) was detected at maximum concentration of 11.1 mg/kg (5 feet bgs).

2. During the 1998 site-wide soil gas investigation, soil gas sample C93-SG157 was collected at 5 feet bgs in the vicinity of Feature No. 50. PCE was the only VOC detected at a concentration of 111 µg/L, which is below the Regional Board's VOC screening level and is not considered a threat to groundwater quality.

3. Based on the shallow nature of the PCE contamination beneath Feature No. 50, further delineation was performed through soil excavation between July 9 and August 11, 1999. The objective of the excavation was to remove VOC-contaminated shallow soils that exceed the soil screening level. Approximately 150 cubic yards of soil was removed to a depth of 12 feet bgs. This soil removal action was conducted based on Tetra Tech's *Final Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 4, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated March 22, 1999. During the excavation, two thin layers of dark soil, 1 to 4 inches thick, consisting of burnt trash, glass and metal were encountered between 4 feet and 7 feet bgs in an area approximately 5 feet from Feature No. 50. A separate investigation was conducted to characterize the debris material.

4. A total of 12 final confirmation soil samples were collected from the base and sidewalls of the excavation. The purpose of this activity was to verify that the soil cleanup goal had been achieved. PCE concentrations, above the soil screening level of 127 µg/kg, were detected in four samples taken from the excavation's western and eastern sidewalls. However, the excavation could not be extended further west or east due to structural obstructions. It appears that VOCs detected in the sidewall samples are associated with the VOC release at Feature No. 48, a former degreaser basin located approximately 20 feet southwest from Feature No. 50. Based on the soil vapor extraction system pilot study that was performed at Feature No.48, the residual PCE concentrations detected in the Feature No. 50 excavation were within the capture zone of the SVE system extraction well.

   Soil excavated from the immediate vicinity of boring C93-SB60 (an area with elevated PCE concentrations) and the trash debris were placed in a stockpile designated *affected soil.* Soil from the area away from C93-SB60 was designated *clean stockpile.* Low concentrations of PCE (8.4 µg/kg) was detected in the *clean soil stockpile.* Approximately 105 cubic yards of *affected soil* was disposed of off-site as California Hazardous Waste at the Safety Kleen facility in Buttonwillow, California. The excavation was backfilled with clean imported soil. No VOCs, semi-VOCs, TPH or polychlorinated biphenyls (PCBs) were detected in the imported material. Heavy metal concentrations in the imported soil, including that of total chromium at 3.56 mg/kg, were below the CCR Title 22 guidelines.

5. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. The PCE contamination detected in the perimeter of the Feature No. 50 excavation appears to be associated with the VOC release at Feature No. 48 (former degreaser basin) located next to Feature No. 50. Residual VOCs detected in the perimeter of Feature No. 50 will be addressed by the SVE system that will be installed for Feature No.48. Therefore, further soil assessment or cleanup is not required at Feature No. 50.

The "no further requirements" determination for Feature No. 50 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of polluted groundwater underlying the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
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Gray Davis
Governor

March 8, 2001

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NO FURTHER REQUIREMENTS, FEATURE NO. 34 (FORMER BOILER BLOWDOWN SUMP)(SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 34: Plant A-1 North, Area "C" Burbank, California* dated June 12, 2000. This report summarizes the results of a shallow soil excavation performed at Feature No. 34 (former boiler blowdown sump), previously located at the northeast corner of Building 75, Lockheed Martin Plant A-1 North Area "C". The objective of the excavation was to delineate and remove tetrachloroethene (PCE) - contaminated soil that exceeded the soil screening level of 127 µg/kg based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). This remediation activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we have the following comments:

1. During the February 1998 preliminary site investigation, soil boring C75-SB43 was drilled to a depth of 40 feet below ground surface (bgs) adjacent to Feature No. 34. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs. Samples were analyzed for total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs). PCE was detected at a maximum concentration of 332 µg/kg (5 feet bgs).

2. On July 22, 1999, a shallow soil excavation was performed to remove PCE-contaminated soil beneath Feature No. 34. Approximately 35 cubic yards of soil was removed to a depth of 12 feet bgs. This soil removal action was conducted based on Tetra Tech's *Final Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated March 22, 1999. During the excavation, an 8-inch thick layer of debris material was encountered at 7 feet bgs. A separate investigation was conducted to characterize this material.

3. A total of 5 confirmation soil samples were collected from the base and sidewalls of the excavation. The purpose of this activity was to verify that the soil cleanup goal had been achieved. Only PCE was detected at a maximum concentration of 38 µg/kg (5 feet bgs).

4. Soil excavated from the immediate vicinity of soil boring C75-SB43 (an area with elevated PCE concentration) was placed in a stockpile designated *affected soil.* Soil from the area away from C75-SB43 was designated *clean stockpile.* PCE was detected at 9.7 µg/kg in the *clean stockpile.* The *clean stockpile* from Feature No. 34 and other areas at the site was used to backfill this excavation. Approximately 30 cubic yards of *affected soil* was disposed of off-site at American Remedial Technologies, a soil treatment and recycling facility in Lynwood, California.

5. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. The concentration of PCE (38 µg/kg at 5 feet bgs) detected in the final confirmation soil samples taken at the Feature No. 34 excavation were below the Regional Board's VOC screening level of 127 µg/kg for the subject site. This impacted soil does not pose a threat to groundwater quality. Therefore, further soil assessment or cleanup is not required.

The "no further requirements" determination for Feature No. 34 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of the polluted groundwater underlying the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
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Gray Davis
Governor

March 8, 2001

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NO FURTHER REQUIREMENTS, FEATURE NO. 49 (FORMER CONTAINMENT PIT)(SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 49: Plant A-1 North, Area "C" Burbank, California* dated June 29, 2000. The report summarizes the results of a shallow soil excavation performed at Feature No. 49 (former concrete containment pit), previously located at the southeast area of Building 93, Lockheed Martin Plant A-1 North Area "C". The objective of the excavation was to delineate and remove tetrachloroethene (PCE) - contaminated soil that exceeded the soil screening level of 127 µg/kg based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). This remediation activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we have the following comments:

1. Feature No. 49, a concrete containment pit, was previously used to contained a quench tank. It was backfilled with soil when the quench tank was removed. During the February 1998 preliminary site investigation, soil boring C93-SB59 was drilled at the center of the containment pit to a depth of 40 feet below ground surface (bgs). Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs in order to assess the backfill material and the native soil beneath the pit. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), pH and heavy metals. PCE concentrations that exceeded the soil screening level of 127 µg/kg were detected at 5 feet (155 µg/kg) and 10 feet bgs (150 µg/kg) in the backfill soil. In the native soil, maximum PCE concentration was 16 µg/kg (40 feet bgs). No TPH was detected and heavy metals were below the soil screening levels for the site. The concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations Title 22. Chromium (total) was detected at a maximum concentration of 8.6 µg/L (5 feet bgs).

2. During the 1998 soil gas investigation, soil gas sample C93-SG157 (5 feet bgs) was taken at Feature No. 49. PCE was the only VOC detected at a concentration of 111 µg/L, which is below the Regional Board's VOC screening level and is not considered a threat to groundwater quality.

3. In July 1999, a shallow soil excavation was performed to remove the backfill material within the containment pit. Soil samples obtained from the backfill material contained PCE at a maximum concentration of 320 µg/kg. No other VOCs were present in the samples. After removing all the soil from the containment pit, it was rinsed and backfilled with clean imported soil. The rinsate water was pumped out and transported to D/K Environmental in Los Angeles for disposal. Approximately 150 cubic yards of soil was disposed of off-site at American Remedial Technologies, a soil treatment and recycling facility in Lynwood, California. This soil removal action was conducted based on Tetra Tech's *Final Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated March 22, 1999.

4. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. All backfill material within the containment pit was excavated. PCE concentrations detected in soil samples obtained in native soil below the containment pit were low (<16 µg/kg) and do not pose a threat to groundwater quality. Therefore, further soil assessment or cleanup is not required.

The "no further requirements" determination for Feature No. 49 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of the polluted groundwater underlying the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
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Gray Davis
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March 30, 2001

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NO FURTHER REQUIREMENTS (SOIL ONLY), FEATURE NO. 19 (FORMER SPAR MILL SUMP AND SAND TRAP), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152) (CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 19: Plant A-1 North, Area "C" Burbank, California* dated July 21, 2000. This report summarizes the results of a shallow soil excavation performed at Feature No. 19 (former spar mill sump and sand trap), previously located in Building 70, Lockheed Martin Plant A-1 North Area "C". The objective of the excavation was to delineate and remove shallow soils impacted with petroleum hydrocarbons, tetrachloroethene (PCE), lead and selenium that exceed the soil screening level for the subject site. This remediation activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we make the following findings:

1. During the February 1998 preliminary site investigation, soil boring C70-SB23 was drilled to a depth of 40 feet below ground surface (bgs) adjacent to Feature No. 19. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs) and heavy metals. TPH, PCE, lead and selenium were detected at maximum concentrations of 16,900 mg/kg, 63,300 (µg/kg), 63 mg/kg and 10.9 mg/kg, respectively. These concentrations exceed the soil screening level for the site. In the case of lead and selenium, their concentrations were above ten times the STLC based on the California Code of Regulations Title 22 (CCR, Title 22) screening criteria. The concentrations of other heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) criteria based on the CCR, Title 22. Chromium (total) was detected at a maximum concentration of 8 mg/kg (10 feet bgs). PCB, identified as Aroclor-1254, was also detected at a maximum concentration of 3.55 mg/kg (10 feet bgs).

2. During the 1998 soil gas investigation, soil gas sample C70-SG163 (5 feet bgs) was taken at Feature No. 19. PCE was the primary VOC detected at a concentration of 76 µg/L. Vertical delineation of the PCE contamination at Feature No. 19 was accomplished by installing multi-depth soil vapor probes to a maximum depth of 180 feet bgs in soil boring B69-33-SB10. These multi-depth probes were also installed to delineate the extent of PCE contamination associated with Feature No. 33, a former sump (A-1-X) located in Building 69 Area "B". The maximum PCE concentration detected at B69-33-SB10 was 683 µg/L at 145 feet bgs. This value is relatively lower than those near Feature No. 33. It appears that Feature No. 33 is the main source of PCE contamination beneath Feature No. 19. This PCE vapor plume will be remediated by the soil vapor extraction system being designed for Feature No. 33.

3. A shallow soil excavation was performed between July 22, 1999 and September 3, 1999 to remove TPH, PCE, lead and selenium contaminated soil beneath Feature No. 19. Approximately 326 cubic yards of soil was removed to a depth of 15 feet bgs. This soil removal action was conducted based on Tetra Tech's *Final Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated March 22, 1999.

4. A total of 16 confirmation soil samples were collected from the base and sidewalls of the above referenced excavation. The purpose of this activity was to verify that the soil cleanup goal had been achieved. PCE was the only VOC detected in the confirmation samples at a maximum concentration of 12 µg/kg (12 feet bgs). TPH, PCBs (Aroclor-1254), lead and selenium were also detected at maximum concentrations of 444 mg/kg (12 feet bgs), 370 µg/kg (14 feet bgs), 3.49 mg/kg (14 feet bgs) and 1.11 mg/kg (15 feet bgs), respectively. These concentrations are below the soil screening levels for the subject site. Residual lead and selenium concentrations were below the CCR, Title 22 screening criteria.

   The excavation was backfilled with imported clean soil. Reportedly, the concentrations of residual heavy metals, including that of total chromium (maximum of 3.56 mg/kg), in the imported soil were below the CCR, Title 22 screening criteria.

5. Soil excavated from the immediate vicinity of soil boring C70-SB23 (an area with elevated TPH, PCE lead and selenium concentrations) was placed in a stockpile designated *affected soil*. Approximately 261 cubic yards of *affected soil* was disposed of off-site at American Remedial Technologies, a soil treatment and recycling facility in Lynwood, California. Soil from the perimeter of the excavation was designated *clean soil* stockpile. Selenium was not detected in the *clean soil*. However, PCE, TPH and PCBs (Aroclor-1254) were detected at maximum concentrations of 25 µg/kg, 159 mg/kg, 860 µg/kg, respectively.

6. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. VOC concentrations detected in final confirmation soil samples taken at the Feature No. 19 excavation were below the VOC screening level of 127 µg/kg based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). Also, the concentrations of TPH, PCBs, lead and selenium were below the screening criteria for the subject site. This impacted soil does not pose a threat to groundwater quality. Therefore, further soil assessment or cleanup is not required. The remaining PCE vapor contamination detected multi-depth probe B69-33-SB10 appears associated with the VOC release at Feature No. 33, a sump previously located in Building 69.

The "no further requirements" determination for Feature No. 19 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of polluted groundwater underlying the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
Paul Lisak, L. A. County Fire Dept., Health Hazmat
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Gray Davis
Governor

March 30, 2001

Mr. Gene Matsushita
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NO FURTHER REQUIREMENTS (SOIL ONLY), FEATURE NO. 35 (FORMER PAINT BOOTH), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 35: Plant A-1 North, Area "C" Burbank, California* dated June 6, 2000. This report summarizes the results of a shallow soil excavation activity performed at Feature No. 35 (former paint booth). This feature was previously located in the southeast part of Building 75, Lockheed Martin Plant A-1 North Area "C". The objective of the excavation was to remove tetrachloroethene (PCE) impacted soil that exceeded the soil screening level of 127 µg/kg, based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). This remedial activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we make the following findings:

1. During the February 1998 preliminary site investigation, soil boring C75-SB44 was drilled to a depth of 20 feet below ground surface (bgs) at Feature No. 35. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 20 feet bgs. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs) and heavy metals. PCE was detected at a maximum concentration of 462 µg/kg (5 feet bgs), which exceed the soil screening level of 127 µg/kg for the site. TPH was not present in the samples analyzed. The concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations Title 22 (CCR, Title 22). Chromium (total) was detected at a maximum concentration of 11.5 mg/kg (5 feet bgs).

2. During the 1998 soil gas investigation, soil gas sample C75-SG190 (5 feet bgs) was taken from beneath Feature No. 35. PCE was the primary VOC detected at a concentration of 985 µg/L. In order to delineate the PCE contamination beneath Feature No. 35 and Feature No.

48, multi-depth soil gas probes were installed to a maximum depth of 60 feet bgs in soil boring C93-48-SB14, located adjacent to Feature No. 35. The maximum PCE concentration detected at C93-48-SB14 was 1,608 µg/L (60 feet bgs). The concentrations of PCE detected in C93-48-SB14 were relatively lower compared with PCE concentrations detected in multi-depth probes located near Feature No. 48, a former vapor degreaser basin in Area "C" Building 93. It appears that PCE vapors associated with the PCE release at Feature No. 48 have migrated toward Feature No. 35. The PCE contamination beneath Feature No. 35 will be remediated by a future soil vapor extraction system being designed for Feature No. 48.

3. A shallow soil excavation was performed from July 13, 1999 to remove VOC contaminated soil beneath Feature No. 35. Approximately 92 cubic yards of soil was removed to a depth of 10 feet bgs. This soil removal action was in accordance with Tetra Tech's *Final Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated March 22, 1999.

4. A total of 7 confirmation soil samples were collected from the base and sidewalls of the excavation. The purpose of this activity was to verify that the soil cleanup goal had been achieved. PCE was the only VOC detected in confirmation samples at a maximum concentration of 120 µg/kg (5 feet bgs). The excavation was backfilled with imported clean soil. Reportedly, the concentrations of residual heavy metals, including that of total chromium (maximum of 3.56 mg/kg), were below the CCR, Title 22 screening criteria.

5. Soil excavated from the immediate vicinity of soil boring C75-SB44 (an area with elevated PCE concentration) was placed in a stockpile designated *affected soil.* Approximately 23 cubic yards of *affected soil* was disposed of off-site at American Remedial Technologies, a soil treatment and recycling facility in Lynwood, California. Soil from the perimeter of the excavation was designated *clean soil* stockpile. TPH was not detected in the *clean soil.* PCE was the only VOC detected in the *clean soil* at a maximum concentration of 48 µg/kg.

6. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. VOC concentrations detected in final confirmation soil samples taken at the Feature No. 35 excavation were below the VOC screening level of 127 µg/kg based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook*

(May 1996). This impacted soil does not pose a threat to groundwater quality. Therefore, further soil assessment or cleanup is not required. The remaining PCE vapor contamination detected in multi-depth probes located adjacent to Feature No. 35 appears associated with the PCE release at Feature No. 48, a vapor degreaser basin previously located in Building 93. This PCE vapor plume will be remediated by a future soil vapor extraction system being designed for Feature No. 48.

The "no further requirements" determination for Feature No. 35 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of polluted groundwater underlying the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
Paul Lisak, L. A. County Fire Dept., Health Hazmat
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Winston H. Hickox
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March 30, 2001

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NO FURTHER REQUIREMENTS (SOIL ONLY), FEATURE NO. 51 (FORMER REFRIGERATOR FLOOR DRAIN)(SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 51: Plant A-1 North, Area "C" Burbank, California* dated July 21, 2000. This report summarizes the results of a shallow soil excavation performed at Feature No. 51 (former refrigerator floor drain), previously located adjacent to the Aluminum Treat Refrigerator in Building 93, Lockheed Martin Plant A-1 North Area "C". The objective of the excavation was to remove tetrachloroethene (PCE) - contaminated soil that exceed the soil screening level of 127 µg/kg based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). This remediation activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we make the following findings:

1. During the February 1998 preliminary site investigation, soil boring C93-SB61 was drilled to a depth of 40 feet below ground surface (bgs) adjacent to Feature No. 51. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs) and heavy metals. PCE and selenium were detected at maximum concentrations of 165 µg/kg (5 feet bgs) and 10.1 mg/kg (11 feet bgs), respectively. These concentrations are above the soil screening levels for PCE (127 µg/kg) and selenium (10 mg/kg). TPH and PCBs were not detected in the samples. Except for selenium, the concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations Title 22 (CCR, Title 22). Chromium (total) was detected at a maximum concentration of 7.7 mg/kg (5 feet bgs).

2. During the 1998 soil gas investigation, soil gas sample C93-SG114 (5 feet bgs) was taken near Feature No. 51. PCE was the primary VOC detected at a concentration of 114 µg/L.

3. A shallow soil excavation was performed between July 9, 1999 and August 17, 1999 to remove PCE and selenium contaminated soil beneath Feature No. 51. Approximately 172 cubic yards of soil was removed to a depth of 10 feet bgs. This soil removal action was conducted in accordance with Tetra Tech's *Final Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated March 22, 1999. During the excavation, two thin layers of dark soil, 1 to 4 inches thick, consisting of glass and metal were encountered between 4 feet and 7 feet bgs. A separate investigation was conducted to characterize the debris material.

   A total of 11 confirmation soil samples were collected from the base and sidewalls of the excavation. The purpose of this activity was to verify that the soil cleanup goal had been achieved. PCE was the primary VOC detected in confirmation samples at a maximum concentration of 110 µg/kg (5 feet bgs). Selenium was not detected in the samples.

   The excavation was backfilled with imported clean soil. Reportedly, the concentrations of residual heavy metals, including that of total chromium (maximum of 3.56 mg/kg), in the imported soil were below the CCR, Title 22 screening criteria.

4. Soil excavated from the immediate vicinity of soil boring C93-SB61 (an area with elevated PCE and selenium concentrations) was placed in a stockpile designated *affected soil.* Soil from the perimeter of the excavation was designated *clean stockpile.* TPH and selenium were not detected in the *clean stockpile.* However, PCE was detected at 33 µg/kg. Approximately 122 cubic yards of *affected soil* was disposed of off-site at American Remedial Technologies, a soil treatment and recycling facility in Lynwood, California.

5. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program. Selenium was not detected in final confirmation soil samples taken at the Feature No. 51 excavation. VOC concentrations detected in final confirmation samples were below the Regional Board's VOC screening level of 127 µg/kg for the subject site. This impacted soil does not pose a threat to groundwater quality. Therefore, further soil assessment or cleanup is not required.

The "no further requirements" determination for Feature No. 51 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site, or the requirements related to cleanup of polluted groundwater underlying the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
Paul Lisak, L. A. County Fire Dept., Health Hazmat
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Gray Davis
Governor

April 23, 2001

Mr. Gene Matsushita
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ADDITIONAL SOIL GAS REQUIREMENTS, FEATURE NO. 15 (FORMER SUMP), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

On April 6, 2001, we issued a "partial no further requirements" letter for Feature No. 15, a former sump previously located at the northwest corner of Building 70, Lockheed Martin Plant A-1 North Area "C". This feature was excavated to a depth of 10 feet below ground surface (bgs) to remove tetrachloroethene (PCE)-contaminated soil that exceeded the Regional Board's VOC soil screening level of 127 µg/kg for the subject site. VOC concentrations detected in post-excavation soil samples were below the screening level and do not pose a threat to groundwater quality. However, we indicated in that letter that additional soil gas assessment is necessary to delineate the VOC vapor plume beneath this feature. In addition, the soil below 10 feet bgs must be remediated by the soil vapor extraction system being designed for the subject site.

Based on the February 1998 and March 2001 soil gas data collected to a maximum depth of 60 feet bgs, PCE was detected at a peak concentration of 646 µg/L (20 feet bgs). The spatial distribution and relatively high concentrations of PCE vapors detected in soil gas probes in the vicinity of Feature No. 15 indicates that the area beneath this feature is a source of PCE vapors. Therefore, multi-depth soil gas probes must be installed to a maximum depth of 180 feet bgs at Feature No. 15 to fully delineate the vertical extent of the VOC plume.

A work plan describing the scope of the above investigation must be submitted to the Regional Board by **May 18, 2001**. If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

DIXON ORIOLA, Unit Chief
San Gabriel/San Fernando Valley Cleanup Programs

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
Paul Lisak, L. A. County Fire Dept., Health Hazmat
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Gray Davis
Governor

April 4, 2001

Mr. Gene Matsushita
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NO FURTHER REQUIREMENTS (SOIL ONLY), FEATURE 36 (FORMER SUBSURFACE COLLECTION SUMP) BUILDING 75, LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", BURBANK, CALIFORNIA (FILE NO. 104.5152) (CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report Feature 36: Plant A-1 North, Area "C" Burbank, California* dated June 6, 2000. This report summarizes the results of a shallow soil excavation performed at Feature No. 36 (subsurface collection sump), previously located at the southern section of Building 75, Plant A-1 North Area "C". The objective of the excavation was to remove tetrachloroethene (PCE) - contaminated soil that was previously detected beneath Feature No. 36. This contaminated soil exceeds the soil screening level of 127 µg/kg based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). The remedial activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we make the following findings:

1. During the February 1998 preliminary site investigation, soil boring C75-SB45 was drilled to a depth of 40 feet below ground surface (bgs) adjacent to Feature No. 36. Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs Soil samples were analyzed for petroleum hydrocarbons, volatile organic compounds (VOCs) and heavy metals. The peak PCE concentration of 156 µg/kg detected at 5 feet bgs exceeded the soil screening level of 127 µg/kg. TPH was not detected in any of the samples. The concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) screening criteria based on the California Code of Regulations Title 22 (CCR, Title 22). Chromium (total) was detected at a maximum concentration of 10.5 mg/kg (5 feet bgs) and non-detect at 10 feet bgs.

2. During the 1998 soil gas investigation, soil gas sample C75-SG189 (5 feet bgs) was taken at Feature No. 36. PCE was the primary VOC detected at a concentration of 373 µg/L. Approximately 40 feet east of Feature No. 36, multi-depth soil gas probes were installed to a maximum depth of 180 feet bgs in soil boring C93-48-SB12. The multi-depth probes were installed to delineate the extent of PCE contamination associated with Feature No. 48, a former degreaser basin located in Area "C", Building 93. The maximum PCE concentration detected at C93-48-SB12 was 2,247 µg/L (160 feet bgs). In general, PCE concentrations detected in C93-48-SB12 were relatively lower compared with those detected in multi-depth probes located closer to Feature No. 48. The spatial distribution of PCE vapors suggest that Feature No. 48 is the main source of PCE contamination in the southeast portion of Plant A-1 North and the vapor plume has migrated in the Feature No. 36 area. This PCE contamination will be remediated by a future soil vapor extraction system being designed for Feature No.48.

3. A shallow soil excavation was performed between July 15, 1999 and August 5, 1999 to remove PCE-contaminated soil beneath Feature No. 36. Approximately 172 cubic yards of soil was removed to a depth of 18 feet bgs. This soil removal action was conducted in accordance with Tetra Tech's *Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by this Regional Board in a letter to Lockheed Martin dated March 22, 1999.

4. A total of fourteen confirmation soil samples were collected from the base and sidewalls of the excavation. The purpose of this activity was to verify that the removal action had achieved the cleanup goal by removing VOC-contaminated soil that exceeded the VOC soil screening level of 127 µg/kg for groundwater protection based on the Regional Board's Interim Site Assessment & Cleanup Guidebook (May, 1996). PCE was the only VOC detected in the confirmation samples at a maximum concentration of 87 µg/kg.

5. The Feature No. 36 excavation was backfilled with clean imported soil. Residual heavy metal concentrations in the imported soil, including total chromium (maximum of 3.56 mg/kg), were below the CCR Title 22 screening criteria.

6. Excavated soil from the immediate area surrounding soil boring C75-SB45 (an area with the highest PCE concentration) was placed in a stockpile designated *affected soil*. Approximately 153 cubic yards of *affected soil* was disposed of off-site at American Remedial Technologies, a soil treatment and recycling facility in Lynwood, California. Approximately 19 cubic yards of soil removed from the perimeter of the excavation, away from boring C75-SB45, was designated *clean stockpile*. TPH and VOCs were not detected in soil samples taken from the *clean stockpile*.

7. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Cleanup Program. The PCE concentrations detected in final confirmation soil samples taken from the Feature No. 36 excavation are below the VOC soil screening level and appear not to pose a threat to groundwater quality. The PCE contamination detected in multi-depth vapor probe C93-48-SB12, located in the vicinity Feature No. 36, appears to be associated with the Feature No. 48 PCE plume. The PCE vapor plume detected in the vicinity of Feature No. 36 will be remediated by a future soil vapor extraction system being designed for Feature No. 48. Therefore, further soil assessment or cleanup is not required at Feature No. 36.

The "no further requirements" determination for Feature No. 36 (soil only) does not affect the requirements for either assessment or cleanup of adjacent features at the subject site. This Regional Board's "no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
Diane Strassmaier, U.S. EPA, Region IX
Hamid Saebfar, CALEPA, DTSC, Region 3
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April 6, 2001

Mr. Gene Matsushita
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PARTIAL NO FURTHER REQUIREMENTS (SOIL ONLY), FEATURE NO. 15 (FORMER SUMP), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", 2555 N. HOLLYWOOD WAY, BURBANK, CALIFORNIA (FILE NO. 104.5152)(CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

We have reviewed the *Delineation Excavation Report, Feature No. 15: Plant A-1 North, Area "C" Burbank, California* dated January 12, 2000. The report summarizes the results of a shallow soil excavation activity performed at Feature No. 15 (former sump). This feature was previously located at the northwest corner of Building 70, Lockheed Martin Plant A-1 North Area "C". The objective of the excavation was to remove tetrachloroethene (PCE)-contaminated soil that exceeded the soil screening level of 127 µg/kg, based on the Regional Board's *Interim Site Assessment and Cleanup Guidebook* (May 1996). This remedial activity was conducted in compliance with Cleanup and Abatement Order No. 87-161, issued by the Regional Board on December 17, 1987.

Based on our review of the subject report, we make the following findings:

1. Reportedly, the sump was used to collect waste oil from the spar mill area. In 1999, the sump was removed and a soil sample was taken directly beneath it. The sample contained 160 mg/kg of petroleum hydrocarbons and 0.054 mg/kg of volatile organic compounds (VOCs).

2. During the February 1998 preliminary site investigation, soil boring C70-SB18 was drilled at the former sump location to a depth of 40 feet below ground surface (bgs). Soil samples were collected at 1 foot, 5 feet and every 5-foot interval to 40 feet bgs. Samples were analyzed for total petroleum hydrocarbons (TPH), VOCs and heavy metals. Tetrachloroethene (PCE) was detected at a concentration of 1,600 µg/kg (5 feet bgs), which exceed the soil screening level of 127 µg/kg for the site. TPH and heavy metals detected were below the soil screening levels for the site. The concentrations of heavy metals, including chromium (total), were below the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations Title 22 (CCR, Title 22). Chromium (total) was detected at maximum concentration of 8.8 mg/kg (1 foot bgs).

3. On July 12, 1999, a shallow soil excavation was performed to remove PCE-contaminated soil beneath Feature No. 15. Approximately 68 cubic yards of soil was removed to a depth of 10 feet bgs. This soil removal action was conducted in accordance with Tetra Tech's *Final Delineation Work Plan, Plant A-1 North Area "C": Burbank, California* dated September 18, 1998 and approved by Regional Board staff in a letter to Lockheed Martin dated March 22, 1999.

4. A total of 5 confirmation soil samples were collected from the base and sidewalls of the excavation. The purpose was to verify that the soil cleanup goal had been achieved. PCE was the primary VOC detected in the confirmation samples at a maximum concentration of 27 µg/kg (10 feet bgs).

5. Soil excavated from the immediate vicinity of soil boring C70-SB18, which had elevated PCE concentration, was placed in a stockpile designated *affected soil.* The *affected soil* stockpile was disposed of off-site at American Remedial Technologies, a soil treatment and recycling facility in Lynwood, California. Soil from the area away from C70-SB18 was designated *suspect clean* stockpile. No VOCs were detected in the *suspect clean* stockpile.

6. The excavation was backfilled with *clean soil* from the Feature No. 15 and Feature No. 19 excavations and imported clean soil. Reportedly, the concentrations of residual heavy metals, including chromium (total), in the imported soil were below the CCR, Title 22 screening criteria. Chromium (total) was detected at maximum concentration of 3.56 mg/kg.

7. During the 1998 preliminary site investigation, soil gas sample C70-SG161 was collected at 5 feet bgs beneath Feature No. 15. PCE was the primary VOC detected at a concentration of 320 µg/L. On March 12, 2001, PCE was also detected at 20 feet, 40 feet and 60 feet bgs at a peak concentration of 646 µg/L (20 feet bgs). The spatial distribution of PCE vapor concentrations detected in multi-depth probes in the vicinity of Feature No. 15 indicates that the soil beneath this feature is a source of PCE vapors. Therefore, additional soil gas assessment will be required to fully delineate the vertical extent of PCE contamination between 60 feet and 180 feet bgs. This requirement will be covered in a separate letter. The PCE vapor plume in beneath this feature must be remediated by the soil vapor extraction system being designed for the site.

8. Groundwater beneath the site is at approximately 193 feet bgs.

Based on the subject submittal and other information in our files, we have no further requirements with respect to the San Fernando Valley Cleanup Program for the upper 10 feet of soil beneath Feature No. 15. VOC concentrations detected in final confirmation soil samples obtained from the Feature No. 15 excavation were below the Regional Board's VOC screening level of 127 µg/kg for the subject site and do not pose a threat to groundwater quality. Therefore, further soil assessment or cleanup is not required. However, the soil below 10 feet bgs must be remediated by the soil vapor extraction system being designed for the subject site.

The purpose of this "partial no further requirements" is to allow site redevelopment with the condition that no grading or excavation shall extent below 10 feet bgs in the Feature No. 15 area. The "partial no further requirements" determination for Feature No. 15 does not affect the requirements for either assessment or cleanup of the soil below 10 feet bgs at this feature, the adjacent features at the subject site, or the requirements related to cleanup of polluted groundwater underlying the subject site. This Regional Board's "partial no further requirements" decision does not affect the jurisdictional requirements of other agencies, such as the U.S. Environmental Protection Agency. Such agencies may choose to make their own determinations regarding the site.

If you have any questions, please call Alex Carlos at (213) 576-6726.

Sincerely,

Dennis A. Dickerson
Executive Officer

cc: Jorge Leon, SWRCB, Office of the Chief Counsel
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California Regional Water Quality Control Board

Los Angeles Region

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Gray Davis
Governor

July 3, 2001

Mr. Gene Matsushita
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PARTIAL NO FURTHER REQUIREMENTS (SOIL ONLY), LOCKHEED MARTIN PLANT A-1 NORTH, AREA "C", BURBANK, CALIFORNIA (FILE NO. 104.5152) (CLEANUP & ABATEMENT ORDER NO. 87-161)

Dear Mr. Matsushita:

On January 31, 1999, Regional Board staff provided Lockheed Martin the comments on the *Preliminary Site Investigation Report, Plant A-1 North, Area "C": Burbank, California* dated June 16, 1998. This report summarizes the results of soil matrix and soil gas investigations in Plant A-1 North, Area "C". These investigations were conducted in February 1998, in compliance with Cleanup and Abatement Order No. 87-161. Based on our review of the report, additional site assessment was required in some potential contaminant source areas. However, supplementary assessment was not required in areas where contaminant concentrations detected were below soil screening levels for the subject site. This letter will focus on these latter areas within Area "C".

The purpose of the preliminary site investigation in Area "C" was to document the presence or absence of contaminants beneath chemical use and storage features. These features were identified based on site inspections and review of previous investigation reports. At least one soil boring was drilled adjacent to each feature. Multiple soil borings were completed in features that covered a large area. In addition, soil borings were drilled on a 200-foot grid to provide a general assessment of Area "C". Soil borings were drilled to a maximum depth of 40 feet below ground surface (bgs) and soil samples were collected at 1 foot below ground surface (bgs) and every 5 feet to 40 feet bgs. All soil samples were analyzed for Total Petroleum Hydrocarbons (TPH) using EPA Method 8015 Modified. Based on the chemicals used in a given area, samples were analyzed for volatile organic compounds (VOCs) using EPA Method 8260A, polychlorinated biphenyls (PCBs) using EPA Method 8081, pH using EPA Method 9045, semi-VOCs using EPA Method 8270B, and heavy metals using EPA Method 6010/7000 series. Soil vapor samples were also collected at 5 feet bgs adjacent to each feature and on a 100-foot grid throughout Area "C".

FINDINGS:

BUILDING 70

Building 70 was previously located in the southern section of Plant A-1 North, between Buildings 72 and 75. Building 70 contained various hydraulic presses, mills and routers for machining operations. Twenty target features, where chemicals were reportedly used or stored, were identified in Building 70.

1. **Feature No. 6 (Former 2-Stage Clarifier)**
A former 2-stage clarifier was located in the southwest part of Building 70. During the removal of the 2-stage clarifier, VOCs were detected in the underlying soils. One soil boring (C70-SB8) and one soil vapor probe (C70-SG185) were installed adjacent to Feature No. 6. However, soil boring C70-SB8 was relocated due to drilling refusal. The relocated boring was designated C70-SB8A. The sample collected at 1 foot bgs contained 14 µg/kg of tetrachloroethene (PCE), but VOCs were not detected in the remaining soil samples analyzed from boring C70-SB8A. No TPH was identified in any of the soil samples analyzed. In soil vapor sample C70-SG185, PCE and trichloroethene (TCE) were the only VOCs detected at concentrations of 16 µg/L and 3.8 µg/L, respectively.

2. **Feature No. 9 (Former Spar Mill Sand Trap at East End of Southernmost Utility Trench)**
A former sand trap, which received waste oil from the spar mills, was previously located in the east end of the southernmost utility trench in the central part of Building 70. One soil boring (C70-SB12) was drilled adjacent to Feature No. 9 to assess the soil beneath the sand trap. TPH was detected at a maximum concentration of 123 mg/kg (diesel and motor oil carbon ranges)(5 feet bgs). PCE was detected at concentrations of 30 µg/kg (1 foot bgs) and 9 µg/kg (5 feet bgs). No VOCs were identified in any of the remaining samples analyzed from boring C70-SB12. PCBs were not detected in any of the soil samples. Heavy metals, including chromium (total) were not detected above their Total Threshold Limit Concentration (TTLC) or Soluble Threshold Limit Concentration (STLC) based on the California Code of Regulations, Title 22 (CCR, Title 22). Chromium (total) was identified at a maximum concentration of 5.4 mg/kg (1 foot bgs).

3. **Feature No. 10 (Spar Mill Sump at Central Area of Southernmost Utility Trench)**
A spar mill sump, which received waste oil from the spar mill, was previously located in the central area of the southernmost utility trench in Building 70. One soil boring (C70-SB13) and one soil vapor probe (C70-SG173) were installed adjacent to this feature. PCE and methylene chloride were detected at maximum concentrations of 8 µg/kg (1 foot bgs) and 63 µg/kg (10 feet bgs), respectively. VOCs were not detected in any of the soil samples analyzed below 10 feet bgs. PCBs and TPH were not detected in any of the soil samples collected from boring C70-SB13. Heavy metals, including chromium (total), were not detected above their TTLC or STLC based on the CCR, Title 22. Chromium (total) was reported at a maximum concentration of 8.4 mg/kg (1 foot bgs). In soil vapor sample C70-SG173, PCE, TCE, 1,1,1-thrichloroethane (1,1,1-TCA) and 1,1-dichloroethene (1,1-DCE) were detected at concentrations of 99 µg/L, 23 µg/L, 2 µg/L, and 6.3 µg/L, respectively.

4. **Feature No. 11 (Former Spar Mill Sump and Sand Trap at West End of Southernmost Utility Trench)**
A former spar mill sump and sand trap, which received waste oil from the adjacent spar mill, were previously located at the west end of the southernmost utility trench in Building 70. One soil boring (C70-SB14) and one soil vapor probe (C70-SG172) were installed adjacent to this feature. TPH, VOCs and PCBs were not detected in any of the soil samples analyzed from boring C70-SB14. Selenium was reported at a concentration of 11.3 mg/kg (10 feet bgs), but no soluble selenium was detected using the California Waste Extraction Test (WET). Chromium (total) was also detected at a maximum concentration of 3.3 mg/kg (1 foot and 5 feet bgs). Heavy metals, including chromium (total), were not

detected above their TTLC or STLC based on the CCR, Title 22. In soil vapor sample C70-SG172, PCE, TCE, 1,1,1-TCA and 1,1-DCE were reported at concentrations of 58 µg/L, 16 µg/L, 0.83 µg/L, and 3 µg/L, respectively.

5. **Feature No. 13 (Former Sump and Sand Trap Adjacent to Former Invomill)**
A former sump and sand trap were previously located adjacent to the Invomill in the northwest corner of Building 70. One soil boring (C70-SB16) and one soil vapor probe (C70-SG160) were installed adjacent to Feature No. 13. TPH (motor oil carbon range) was detected at 1 foot bgs and 5 feet bgs at concentrations of 179 mg/kg and 62 mg/kg, respectively. PCE and dichlorodifloromethane were also detected at peak concentrations of 44 µg/kg (1 foot bgs) and 7 µg/kg (40 feet bgs), respectively. No other VOCs were identified in any of the soil samples from C70-SB16. Chromium (total) was reported at a maximum concentration of 12.8 mg/kg (5 feet bgs). Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. In soil vapor sample C70-SG160, PCE, TCE and 1,1-DCE were the only VOCs detected at concentrations of 20 µg/L, 5 µg/L and 1.3 µg/L, respectively.

6. **Feature No. 14 (Former Collection Pit)**
A former collection pit, which was suspected to have received waste oil and coolant from the Invomill and spar mills, was previously located in the northwest section of Building 70. One soil boring (C70-SB17) was drilled adjacent to this feature. TPH was detected at a concentration of 410 mg/kg (motor oil carbon range) at 1 foot bgs. Dichlorodifluoromethane was the only VOC detected at a maximum concentration of 9 µg/kg (30 feet bgs). VOCs were not identified in any of the remaining samples analyzed from boring C70-SB17. No PCBs were detected in any of the soil samples. Selenium was reported at concentrations of 11.9 mg/kg (1 foot bgs) and 12.4 mg/kg (10 feet bgs), but no soluble selenium was detected in either soil sample. Chromium (total) was identified at a maximum concentration of 18.9 mg/kg (5 feet bgs). Heavy metals were not detected above their TTLC or STLC based on the CCR, Title 22.

7. **Feature No. 16 (Floor Drain between Former Coolant Pressure Tank and Spar Mill)**
A floor drain was previously located in the north central part of Building 70. Reportedly, the drain received an oil-based discharge from the coolant tank. One soil boring (C70-SB19) was drilled to a maximum depth of 20 feet bgs. PCE was detected at a concentration of 25 µg/kg (1 foot bgs). VOCs were not present in any of the remaining samples analyzed from boring C70-SB19. TPH was not detected in any of the soil samples analyzed.

8. **Feature No. 17 (Northern Spar Mill Utility Trenches)**
Spar mill utility trenches were previously located in the north central area of Building 70. These trenches were suspected to have received waste oil from the spar mills. Two 20-foot soil borings (C70-SB20 and C70-SB21) and two soil vapor probes (C70-SG162 and C70-SG165) were installed at the west and east ends of Feature No. 17. In soil matrix, PCE was reported at a maximum concentration of 28 µg/kg (5 feet bgs). TPH and PCBs were not detected in any of the soil samples collected from borings C70-SB20 and C70-SB21. Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was identified at a maximum concentration of 8.2 mg/kg (5 feet bgs in C70-SB20). In soil vapor samples, PCE, TCE, 1,1,1-TCA, 1,1-DCE and

Freon-22 were detected at maximum concentrations of 236 µg/L, 40 µg/L, 0.63 µg/L, 15.0 µg/L and 1.0 µg/L, respectively. No other VOCs were detected in the soil vapor samples. Based on the PCE vapor distribution pattern, it appears that the elevated PCE concentrations detected in the Feature No. 17 area is primarily associated with the PCE plume from Feature No. 33 (Building 69, Area "B") and to lesser extent with Feature No. 15, a former sump located approximately 80 feet northwest from Feature No. 17. PCE soil vapor contamination in the vicinity of Feature Nos. 15 and 17 must be remediated by a soil vapor extraction (SVE) system being designed for Feature No. 33.

9. **Feature No. 18 (Spar Mill Sump at North Central Utility Trench)**
A sump, which received oil from the spar mill, was previously located along the north central utility trench at Building 70. One soil boring (C70-SB22) and one soil vapor probe (C70-SG164) were installed adjacent to Feature No. 18. In soil matrix samples, PCE was the only VOC detected at a maximum concentration of 19 µg/kg (5 feet bgs). TPH and PCBs were not present in any of the soil samples analyzed. Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was only reported at a concentration of 7.9 mg/kg (5 feet bgs). In soil vapor sample C70-SG164, PCE, TCE and 1,1,1-TCA were detected at concentrations of 198 µg/L, 12 µg/L, 0.57 µg/L, respectively. Based on the PCE vapor distribution pattern, it appears that the elevated PCE concentrations detected in the Feature No. 18 area is primarily associated with the PCE plume from Feature No. 33 (Building 69, Area "B") and to some extent with Feature No. 15, a former sump located approximately 120 feet northwest from Feature No. 18. PCE soil vapor contamination in the vicinity of Feature Nos. 15 and 18 must be remediated by the proposed SVE system being designed for Feature No. 33.

BUILDING 71

Building 71 was previously located in the southeastern section of Plant A-1 North. This building housed the facility's chillers, boilers, air compressors and water treatment system. Eight target features were identified in Building 71.

1. **Feature No. 22 (Former Sump and Sand Trap)**
A former sump and sand trap was previously located at the northwest corner of Building 71. This feature was suspected to have received runoff from a drain line associated with the boilers. One soil boring (C71-SB30) was drilled adjacent to this feature. TPH and PCBs were not detected in any of the soil samples collected from boring C71-SB30. Dichlorodifluoromethane was the only VOC detected at a peak concentration of 10 µg/kg (20 feet bgs). Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was detected at a maximum concentration of 12.2 mg/kg (1 foot bgs).

2. **Feature No. 23 (Floor Drain in Chiller Area)**
A floor drain in the chiller area was previously located in the west central section of Building 71. This floor drain was suspected to have collected runoff from the chillers. One soil boring (C71-SB31) was drilled adjacent to the drain to a total depth of 20 feet bgs. TPH and VOCs were not detected in any of the soil samples analyzed.

3. **Feature No. 24 (Former Subsurface Sump in Water Treatment Softening Area [WTSA])**
A subsurface sump was previously located in the WTSA, which was in the southeast section of Building 71. This sump was suspected to have received drainage from the water softeners. One soil boring (C71-SB32) was drilled to a total depth of 10 feet bgs using a hand auger due to space limitation. TPH and VOCs were not detected in the soil samples analyzed. Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was reported at a maximum concentration of 6.6 mg/kg (10 feet bgs).

4. **Feature No. 25 (Drainage Trench)**
A drainage trench was previously located in the southeast part of Building 71, south of the former subsurface sump in the WTSA. This trench was suspected to have received effluent from the water softener. One soil boring (C71-SB33) was drilled adjacent to Feature No. 25. TPH and VOCs were not detected in any of the soil samples analyzed. Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was reported at a peak concentration of 9.4 mg/kg (10 feet bgs).

5. **Feature No. 26 (Former Aboveground Clarifier)**
An aboveground clarifier was previously located in the southeast corner of Building 71. This clarifier was suspected to have received condensate from the air compressors. One soil boring (C71-SB34) was drilled to a total depth of 20 feet bgs adjacent to Feature No. 26. TPH, PCE and TCE were detected only at 1 foot bgs at concentrations of 2,320 mg/kg (motor oil carbon range), 56 µg/kg and 16 µg/kg, respectively. PCBs were not detected in any of the samples analyzed. Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was detected at a maximum concentration of 9.4 mg/kg (10 foot bgs).

6. **Feature No. 28 (Former Tank A-1-F3/A-1-F300)**
A 10,000-gallon underground storage tank (A-1-F3)(UST) containing fuel oil was previously located outside the south part of Building 71. This UST was removed in 1989 and replaced with a 30,000-gallon diesel UST (A-1-F300). Based on previous investigations, petroleum compounds were detected in the soil around the former USTs. One soil boring (C71-SB36) was drilled at the west end of the former UST. The sample collected at 1 foot bgs contained TPH at concentrations of 120 mg/kg (motor oil carbon range) and 29 mg/kg (diesel fuel carbon range). TPH was not detected in any of the remaining soil samples analyzed. VOCs were not reported in any of the samples analyzed from boring C71-SB36.

BUILDING 72

Building 72 was previously located between Buildings 71 and 70 in the southern part of Plant A-1 North. This two-story building previously contained a machine shop, a maintenance shop, a chemistry laboratory and offices. Three target features were identified in Building 72.

1. **Feature No. 29 (Blowdown Sump)**
   A blowdown sump was previously located in the northwest corner of Building 72. This sump was suspected to have collected runoff from the air compressors in Building 71. One soil boring (C72-SB37) was drilled adjacent to the sump. The only VOC detected in the samples analyzed was dichlorodifluoromethane at a concentration of 18 µg/kg (30 feet bgs). TPH was not detected in any of the soil samples analyzed.

2. **Feature No. 30 (Former Hazardous Materials Storage Area)**
   A former hazardous material storage area for chemicals used by maintenance personnel was previously located in the southeast portion of Building 72. Two soil borings (C72-SB38 and C72-SB39) were drilled to a depth of 20 feet bgs. TPH, VOCs, PCBs and semi-VOCs were not detected in any of the soil samples analyzed. Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was present at a peak concentration of 7.5 mg/kg (1 foot bgs in C72-SB38). In addition to the soil borings, two soil vapor samples (C72-SG184 and C72-SG196) were collected at Feature No. 30. PCE and TCE were the only VOCs detected at maximum concentrations of 13 µg/L and 0.9 µg/L, respectively.

3. **Feature No. 31 (Chip Collection Sump)**
   A chip collection sump was previously located at the south end of Building 72. This sump was suspected to have collected runoff from the chip collection area. One soil boring (C72-SB40) and one soil vapor probe (C72-SG195) were installed adjacent to the sump. TPH was detected at 1 foot bgs at concentrations of 2,500 mg/kg (motor oil carbon range) and 489 mg/kg (diesel carbon range). TPH was not detected in any of the remaining soil samples analyzed. PCE was the only VOC detected at a concentration of 25 µg/kg (1 foot bgs). Heavy metals were not reported above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was present at a peak concentration of 5 mg/kg (5 feet bgs). In soil vapor, PCE, TCE and Freon-22 were detected at concentrations of 5.5 µg/L, 3.3 µg/L and 4 µg/L, respectively.

BUILDING 73

Building 73 was previously located in the southern section of Plant A-1 North. This two-story structure was built in 1941 to house acetylene generators and a paint room. Two target features, where chemicals were reportedly used or stored, were identified in Building 73.

Feature No. 32 (Former Sump for Acetylene Generators)
A sump for the acetylene generators was previously located south of former Building 73. This sump was suspected to have collected runoff from the acetylene generators. One soil boring (C73-SB41) was drilled adjacent to the former sump. TPH, PCBs and VOCs were not detected in any of the soil samples analyzed from boring C73-SB41. Heavy metals were not detected above their TTLC and STLC based on the CCR, Title 22. Chromium (total) was present at a maximum concentration of 8.2 mg/kg (1 foot bgs).

BUILDING 75

Building 75 was previously located between Buildings 74 and 80 in the southeastern section of Plant A-1 North. Building 75 was used in various machining and subassembly operations. Five target features, where chemicals were potentially used or stored, were identified in Building 75.

1. **Feature No. 37 (Machine Foundation Pit)**
   A machine foundation pit was previously located at the southwest section of Building 75. This feature was suspected to have collected oil and solvents from former machine presses. One soil boring (C75-SB46) and one soil vapor probe (C75-SG188) were installed adjacent to Feature No. 37. In soil matrix samples, PCE was the only VOC detected at a peak concentration of 22 µg/kg (5 feet bgs). No VOCs were detected in any of the samples analyzed below 5 feet bgs. TPH was not identified in any of the soil samples analyzed from boring C75-SB46. In soil vapor, PCE and TCE were detected at concentrations of 168 µg/L and 1 µg/L, respectively. Approximately 150 feet east of Feature No. 37, multi-depth soil gas probes were installed to a maximum depth of 180 feet bgs in soil boring C93-48-SB12. The multi-depth probes were installed to delineate the extent of PCE contamination associated with Feature No. 48, a former degreaser basin also located in Area "C". The maximum PCE concentration detected at C93-48-SB12 was 2,247 µg/L (160 feet bgs). The PCE concentrations detected in C93-48-SB12 were relatively lower compared with the PCE concentrations detected in four other multi-depth probes installed in Building 75, which suggest that Feature No. 48 as the potential source of the PCE contamination detected in these areas. PCE contamination in Building 75 will be addressed in the proposed SVE system being designed for Feature No.48.

2. **Feature No. 38 (Machine Pad)**
   A machine pad was previously located in the west central area of Building 75. One soil boring (C75-SB47) was drilled to a depth of 20 feet bgs adjacent to Feature No. 38. PCE was the only VOC detected at concentrations of 8 µg/kg (1 foot bgs) and 5 µg/kg (5 feet bgs). VOCs were not detected in any of the remaining samples analyzed. TPH was not detected in any of the samples analyzed from boring C75-SB47.

BUILDING 80

Building 80 was previously located in the southeast corner of Plant A-1 North. Building 80 was a two-story structure used for storage, minor subassembly of electronic components and office space. During the site inspection, this building was being leased to Calstart Industries for research and development of alternative fuel vehicles. Five target features were identified in Building 80.

1. **Feature No. 39 (Former Aboveground TCA Degreaser)**
   A former aboveground 1,1,1-TCA degreaser used for cleaning circuit boards was located at the southeast corner of Building 80. One soil boring (C80-SB48) was drilled to a total depth of 19 feet bgs adjacent to Feature No. 39. TPH and VOCs were not detected in the any of the soil samples analyzed. In addition to the soil boring, one soil vapor probe (C80-SG216) was installed at this feature. PCE and