

desired depth with a disposable tip and the rods were pulled back approximately 1 to 1.5 feet to expose the slotted stainless steel (or PVC) screen which allowed groundwater to enter into the sampling chamber. Water samples were then brought to the surface by means of a standard stainless steel or PVC disposable bailer and collected using the same procedure as used for monitoring well samples.

Groundwater samples collected by the HydroPunch were analyzed by one or more of the following EPA Methods (Table 6):

- VOCs by EPA Method 8260B
- SVOCs by EPA Method 8270C (one sample only)
- CAM-17 Metals by EPA Method 6010B/7470A
- PCBs by EPA Method 8082

5.7 Decontamination Procedure for Sampling Equipment

Equipment that came into contact with soil or water was decontaminated consistently between each use so as to minimize the potential for cross contamination and ensure that the collected samples were representative. Disposable equipment used only one time was not decontaminated but was properly disposed. Sampling devices were decontaminated using the following procedures:

- Non-phosphate detergent and tap water wash, using a brush if necessary
- Tap-water rinse
- Deionized/distilled water rinse

5.8 Investigation-Derived Waste Management

During the field sampling program, different types of potentially contaminated investigation-derived wastes (IDW) were generated that include the following:

- Used personal protective equipment (PPE);
- Disposable sampling equipment;
- Soil cuttings; and
- Decontamination fluids.

The EPA's National Contingency Plan requires that management of IDW comply with all applicable or relevant and appropriate requirements (ARARs) to the extent practicable. The sampling plan follows the Office of Emergency and Remedial Response Directive 9345.3-02 dated May 1991, which provides the guidance for the management of IDW.

Listed below are the procedures that were followed for handling the IDW:

- Used PPE and disposable equipment were double bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and were sent to a municipal landfill.

- Soil cuttings generated were placed into 55-gallon drums, sealed, and labeled as to contents, source and date of generation. Drums were stored on-site pending results of analytical tests. The remaining portion of the open borehole was backfilled to the surface with bentonite.
- Purge water generated was placed in 55-gallon drums, sealed, labeled and stored on-site pending the results of analytical tests.
- Decontamination water generated was placed into 55-gallon drums, sealed, and labeled as to contents, source and date of generation. Drums were stored on-site pending results of analytical tests.

5.9 Quality Control Sampling Procedures

Field quality control samples associated with the sampling program included duplicate soil gas samples, duplicate soil samples, duplicate groundwater samples, equipment blanks and travel blanks in accordance with the DTSC Preliminary Environmental Assessment (PEA) Guidance Manual (DTSC, 1999). Duplicate samples were collected at a frequency of 10 percent of the primary field samples. Equipment blanks were collected each day of soil/groundwater sampling, and were collected (except for dedicated sampling equipment) after equipment was decontaminated with distilled water).

Travel blanks were used to provide a check for potential cross-contamination of VOCs during transportation of samples. Travel blank samples were prepared by the laboratory and included as appropriate in sample coolers during transportation for each day that soil or groundwater samples were collected and analyzed for VOCs. The travel blanks were shipped to the laboratory with each sampling event.

6. SUMMARY OF FINDINGS AND ANALYTICAL RESULTS

This section presents a summary of the historical investigations, CCI, FI and Demolition oversight assessment work performed to evaluate site conditions and prepare for preparation of a Corrective Measures Study (CMS). The Current Conditions, Facility Investigation and Demolition oversight assessment work was performed by Haley & Aldrich in 2005 and 2006. The data presented herein is from concrete samples of the floors and pavement, soil, soil gas, and groundwater collected at various AOIs.

The analytical results of concrete samples are shown on Figures 7-1 and 7-2. The results of metals, PCBs, and SVOCs analyses on soil samples compared to the remediation criteria are shown on Figures 8-1 through 8-12. The results of VOCs in soil are shown on Figures 9-1 and 9-2. A summary of the soil gas sample data compared to the remediation criteria is shown on Figures 10-1 through 10-3. Select cross-sections showing lithologic conditions, USCS classifications and soil sample results are presented on Figures 11-1 through 11-17. Boring logs are included in Appendix I. Groundwater analytical results are shown on Figure 12 and 13. Site photos showing selective AOIs are shown in Appendix B.

6.1 Concrete Sample Results

In order to characterize the concrete for potential reuse on-site or off-site disposal, concrete chip and concrete core samples of building floors and outside paved areas were collected across the Site to assess concentrations of chemicals. Concrete samples were analyzed for lead, CAM-17 total metals and PCBs with some chip samples selectively analyzed for SVOCs and TPH. In addition, the samples with the highest concentrations of lead were also analyzed for leachable concentrations of metals (as soluble threshold limit concentration [STLC] and toxicity characteristic leaching procedure [TCLP]). A summary of the sampling and analysis for concrete is shown in Table 7. Results of analyses are summarized in Table 8. Results of lead analyses are shown on Figure 7-1 and results for PCBs and arsenic are shown on Figure 7-2. In addition, Figure 7-3 depicts characterization of concrete areas for disposal or re-use onsite as follows:

- Remove and crush on-site for reuse on-site,
- Non-hazardous to be removed and disposed of off-site, or
- Hazardous by California, RCRA or TSCA regulations to be removed and disposed of off-site.

Summary of Concrete Chip Sampling and Analysis

- Fifty concrete chip samples were collected and analyzed for lead, CAM-17 metals, PCBs, SVOCs and/or TPH. Selected samples with the highest concentrations of lead were also analyzed for leachable concentrations of lead by STLC and TCLP. Locations of concrete samples are shown on Figures 4 and 7-1.
- Analyses for lead were performed on 36 concrete chip samples including CAM-17 metals analyses on 13 concrete chip samples and lead analyses on 23 of the chip samples. Lead was detected at concentrations ranging up to 1,440 mg/kg (CS0014) in chip samples. Results of lead analyses are summarized in Table 8 and lead results are shown on Figure 7-1.

- In chip samples analyzed for CAM-17 metals, arsenic was detected at concentrations up to 11 mg/kg (CS0007). Other CAM-17 metals were not detected at concentrations above remediation criteria. Results of metal analyses are summarized in Table 8.
- STLC and TCLP lead analyses were performed on three concrete chips samples collected by Haley & Aldrich with the highest concentrations of lead. Of these, two samples analyzed for STLC for lead were below the MDL, and one sample had a concentration of 0.54 mg/L. TCLP for lead was not detected above the hazardous concentration of 5 mg/L with a maximum concentration of 0.152 mg/L (Figure 7-1).
- Analysis of concrete chip samples by STLC and TCLP was also performed by Earth Tech on approximately 35 and 5 samples, respectively. Nine samples exceeded the hazardous concentration of 5 mg/L and the maximum STLC concentration was 56.7 mg/L near AOI 41 (Figure 7-1). TCLP was not detected above reporting limits with the exception of one sample at 4 mg/L.
- PCBs analyses were performed on 27 concrete chip samples. Concentrations of PCBs were detected in 25 samples with concentrations up to 7,150 mg/kg (GS0018). Results of PCB analyses are summarized in Table 8.
- SVOCs were not detected at concentrations above the remediation criteria in the four samples analyzed. Five SVOCs and their maximum detected concentrations are listed below. Results of SVOC analyses are summarized in Table 8.

SVOCs Compound	Boring Number	Sample Depth (feet bgs)	Max. Concentration (mg/kg)
2,4-Dimethylphenol	GS0026	0	0.977 J
4-Methylphenol	GS0026	0	6.32 J
Butyl benzylphthalate	CS0017	0	1.91
Phenanthrene	CS0017	0	0.52
Phenol	GS0026	0	0.914 J

Summary of Concrete Core Sampling and Analysis

- Two hundred-fifty-two concrete core samples were collected and analyzed for one or more of the following: arsenic, lead or PCBs. Locations of concrete samples are shown on Figures 4, 7-1 and 7-2.
- Lead analyses were performed on 31 concrete core samples and detected concentrations ranged up to 307 mg/kg (CS0283). Results of lead analyses are summarized in Table 8 and shown on Figure 7-1.
- Arsenic analyses were performed on 35 concrete core samples and detected concentrations ranged up to 24.5 mg/kg (CS0275). Results of arsenic analyses are summarized in Table 8 and shown on Figure 7-2.
- PCBs analyses were performed on 235 concrete core samples and detected in 196 samples. Total PCBs were detected at concentrations up to 1,310 mg/kg in CS0061. Results of PCB analyses are summarized in Table 8 and shown on Figure 7-2.

Summary of Concrete Stockpile Sampling and Analysis

- Seven concrete samples were collected and analyzed for lead. Locations of concrete samples are shown on Figures 3, 6, and 7-1.
- Lead analyses were performed on seven stockpile samples. Concentrations of lead in stockpile samples range up to 325 mg/kg in CS0047. Results of lead analyses are summarized in Table 8 and shown on Figure 7-1.

Concrete Summary: The areas with lead or PCBs impacts greater than the remediation criteria of 800 mg/kg and 3.82 mg/kg, respectively in concrete are located in the following areas:

- North end of Warehouse #3(AOI 26);
- South end of Warehouse #3 (AOI 27);
- Hazardous material storage area (AOI 25);
- Old oil pump house (AOI 30);
- Southeast corner of Main Production Building in AGM Containment and Green Group Maintenance Areas; and
- Forklift repair area (AOI 10) in north-center portion of the Main Production Building.

Concrete removed from the Site and impacted with lead will be disposed of offsite at an appropriate disposal facility in accordance with California Health & Safety Code 25157.8(a), which requires that no person shall dispose waste that contains total lead in excess of 350 parts per million, except as provided in subdivision (c), on and after January 1, 1999.

6.2 Areas of Interest – Main Production Building

6.2.1 Mill Strip/Lead Melting Into Coils – AOI 1

AOI Description: The Mill Strip was located in the north-central portion of the Main Production Building. This area contained the initial process equipment for shaping the lead plates in the battery production. A soluble oil (98 percent water based, 2 percent oil) was used to lubricate the lead as it was rolled into gridded plates and perforated. The AOI is shown on Figure 2.

Previous Investigation History: A previous investigation in this area collected concrete chip samples of the floor. Reported maximum lead concentrations were not above the remediation criterion of 800 mg/kg. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts from historical uses, two borings (DP0014 and DP0015) were advanced to a total depth of 5 feet bgs. Soil and soil gas samples were collected from both borings and analyzed for VOCs.

FI Field Program Summary: Four step-out or step-down samples (DP0014A, DP0014B, DP0014C, and DP0014D) were advanced adjacent to and around boring location DP0014 to vertically and horizontally delineate VOCs in soil gas. Soil gas

samples were collected and analyzed at 5 and/or 15 feet bgs. Additionally, three soil borings (DP0184, DP0185 and DP0186) were advanced on the west side of the mill strip to assess potential PCBs impacts in soil that were identified in concrete samples. Soil borings were advanced to 8 feet bgs and soil samples analyzed for PCBs. Boring locations are shown on Figure 4.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths to 18 inches bgs for lead, pH, PCBs, and VOCs. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the two soil samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration reported was 3.35J mg/kg in boring DP0014 at 0 foot bgs which is likely a background concentration. Results of lead analyses are summarized in Table 9 and shown on Figure 8-1.
- VOCs were not detected at concentrations above the MDLs in the two soil samples analyzed. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-2.
- PCBs were not detected at concentrations above the MDLs in the three samples analyzed. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-1.
- Values for pH were reported at 9.08 and 7.98 in the two samples analyzed. Results of pH analyses are summarized in Table 11.

Summary of Soil Gas Sampling and Analysis

- Nine soil gas samples were collected at 5 and/or 15 feet bgs from five boring locations. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs were not detected at concentrations above remediation criteria. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-2. The maximum concentrations of VOCs detected are listed below for the depths of less than 15 feet bgs for which remediation criteria were developed, and for depths of 15 feet bgs and deeper.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Max. Concentration ($\mu\text{g}/\text{m}^3$)
1,1,1-TCA	DP0014	5	140
1,1-DCA	DP0014	5	180
1,1-Dichloropropene	DP0014	5	130
1,2-Dichloropropane	DP0014	5	63
1,3-Dichloropropane	DP0014	5	120
2,2-Dichloropropane	DP0014	5	64
Carbon Tetrachloride	DP0014	5	200
Chlorobenzene	DP0014	5	68
Chloroethane	DP0014	5	170
Chloroform	DP0014	5	150

Chloromethane	DP0014	5	150
Methylene Chloride	DP0014	5	170
PCE	DP0014	5	180
Toluene	DP0014	5	140
Trans-1,2-Dichloroethene	DP0014	5	54
Vinyl Chloride	DP0014	5	110
Total Xylenes	DP0014	5	260

VOC Soil Gas Compound 15 feet bgs and Deeper	Boring Number	Sample Depth (feet bgs)	Max. Concentration ($\mu\text{g}/\text{m}^3$)
1,1,1-TCA	DP0014C	15	31
1,1-DCA	DP0014C	15	5.9
1,1-DCE	DP0014C	15	94.2
1,2,4-Trimethylbenzene	DP0014C	15	5.5
1,3,5-Trimethylbenzene	DP0014C	15	4.1
1,4-Dichlorobenzene	DP0014C	15	4.7
Acetone	DP0014C	15	277
Benzene	DP0014C	15	4.4
Chloroform	DP0014C	15	150
Ethylbenzene	DP0014C	15	12.7
m,p-Xylenes	DP0014C	15	32.3
o-Xylene	DP0014C	15	8.2
Styrene	DP0014C	15	4.7
PCE	DP0014C	15	28.7
Toluene	DP0014C	15	34.5

AOI 1 Summary: The reported concentrations of COPCs in soil and soil gas samples analyzed are less than the remediation criteria. Therefore, no additional sampling is recommended.

6.2.2 Plate Pasting – AOI 2 (SWMUs Nos. 4 and 5)

AOI Description: The Plate Pasting and Manufacturing Area was located south of AOI 1 in the north-central portion of the Main Production Building. Part of the process where lead oxide was mixed with sulfuric acid to form a paste that is used to create either negative or positive battery plates was performed in this area. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations reported concrete chip samples of the floor with a maximum concentration of 14,400 mg/kg. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts from historical uses, three borings (DP0025, DP0027, and DP0028) were advanced to a total depth of 5 feet bgs. Soil samples were collected and analyzed for one or more of the following: lead, pH, and VOCs. Soil gas samples were not collected because VOCs were not considered a likely chemical of concern at this location based on historical operations. Boring locations are shown on Figure 4.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths to 18 inches bgs for lead, pH, and VOCs. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the three samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum lead concentration reported was 4.85J at 0 foot bgs in boring DP0028. Results of lead analyses are summarized in Table 9 and shown on Figure 8-2.
- VOCs were not detected above laboratory detection limits in the two soil samples analyzed. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-2.
- pH analyses were performed on three samples and results ranged from 8.18 to 8.78 at 1 foot bgs. Results of pH analyses are summarized in Table 11.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected in the upper 15 feet bgs at 5 feet bgs at borings DP0027 and DP0028. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.

VOCs were not detected at concentrations above the remediation criteria. The maximum concentration of toluene reported was 14 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in boring DP0028 at 5 feet bgs. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-2.

AOI 2 Summary: The reported concentrations of COPCs in soil and soil gas samples analyzed are less than the remediation criteria. Therefore, no additional sampling is recommended.

6.2.3 Scrap Conveyor – AOI 3 (SWMU No. 4)

AOI Description: The Scrap Conveyor Area was located south of AOI 2 in the center portion of the Main Production Building. This area contained process equipment for the removal of scrap waste lead oxide slurry collected in channels in this area (SWMU No. 4). The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations in this area reported lead in concrete chip samples at a maximum concentration of 41,700 mg/kg. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential lead impacts, one boring (DP0040) was advanced to 18 inches bgs at this AOI. A soil gas sample was not collected because VOCs were not considered a likely chemical of concern at this location. The boring location is shown on Figures 4 and 8-2.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- A soil sample was collected and analyzed at 0 foot bgs for lead. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the one sample analyzed at a concentration above the remediation criterion of 800 mg/kg. The reported lead concentration was 10.4 mg/kg in the sample from 0 foot bgs. Results of the lead analysis is summarized in Table 9 and shown on Figure 8-2.

AOI 3 Summary: The reported concentration of the COPC in the soil sample analyzed is less than the remediation criterion. Therefore, no additional sampling is recommended.

6.2.4 Steam Oven Chambers – AOI 4

AOI Description: The Steam Ovens Chambers Area was located in the central part of the east side of the Main Production Building east of AOI 3. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations in the Main Production Building did not focus on this area because it was not a lead processing area.

CCR Investigation Summary: To assess potential impacts from historical uses, two borings (DP0030 and DP0031) were advanced to a total depth of 5 feet bgs. Soil and soil gas samples were collected from both locations. Soil samples were analyzed for lead and pH and soil gas for VOCs. Boring locations are shown on Figures 4 and 8-2.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 2 feet for lead and pH. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the two samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration reported was 48.8 mg/kg in boring DP0030 at 0 foot bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-2.
- pH analyses were performed on two samples and the results were 9.17 and 9.26. Results of pH analyses are summarized in Table 11.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected at 5 feet bgs in each of the two borings. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs were not detected at concentrations above the remediation criteria in the soil gas samples collected. 1,2-dichloroethane and toluene were detected at a maximum concentration of 93 $\mu\text{g}/\text{m}^3$ and 59 $\mu\text{g}/\text{m}^3$, respectively. Results of VOC analyses are summarized in Table 10 and shown on Figure 10-2.

AOI 4 Summary: The reported concentrations of COPCs in soil and soil gas samples analyzed are less than the remediation criteria. Therefore, no additional sampling is recommended.

6.2.5 Red Lead Oxide Tank Area – AOI 5

AOI Description: The Red Lead Oxide Tank Area was located in the northwest portion of the Main Production Building west of AOI 2. Red lead oxide was generated for use in the manufacture of battery plates in this area. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations in this area collected concrete chip samples of the floor with a reported maximum lead concentration of 3,420 mg/kg. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts of lead from historical uses, one boring (DP0034) was advanced to a total depth of 18 inches bgs. Soil gas samples were not collected because VOCs were not considered a likely chemical of concern at this location based on historical use. The boring location is shown on Figures 4 and 8-2.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 2 feet for lead. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the two samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum reported concentration was 6.35 mg/kg at 0 foot bgs in boring DP0034. Results of lead analyses are summarized in Table 9 and shown on Figure 8-2.

AOI 5 Summary: The reported concentrations of COPCs in the soil samples analyzed are less than the remediation criterion. Therefore, no additional soil sampling is recommended.

6.2.6 Oxide Conveyors – AOI 6

AOI Description: The Oxide Conveyors Area was located in the northwest portion of the Main Production Building adjacent and southwest of AOI 5. Red lead oxide was generated for use in the manufacture of battery plates in this area. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations in this area collected concrete chip samples of the floor with a reported maximum lead concentration of 11,200 mg/kg. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts from historical uses, six borings (DP0035, DP0039, DP0121, DP0122, DP0123, and DP0124) were advanced to varying depths up to a total depth of 10 feet bgs. Soil samples were collected and analyzed for lead. Soil gas samples were not collected because VOCs were not considered a likely chemical of concern at this location. Boring locations are shown on Figures 4 and 8-2.

FI Field Program Summary: No additional sampling was performed as part of the FI program based on the assumption that impacts are related to fill around the conveyor vaults and can be addressed during demolition.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple depths for lead. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead concentrations in the 16 samples analyzed varied up to 1,950 mg/kg in DP0039 at 0 foot bgs and were above the remediation criterion of 800 mg/kg in two samples. Results of lead analyses are summarized in Table 9 and shown on Figure 8-2.
- STLC and TCLP analyses were also performed for lead on one sample with a total lead concentration of 1,000 mg/kg which resulted in concentrations of 2.84 and 0.408 mg/L, respectfully, and below the hazardous threshold of 5 mg/L. Results of lead analyses are shown on Table 9.

AOI 6 Summary: The reported concentrations of lead are greater than the remediation criteria of 800 mg/kg at DP0039 and DP0123; however, lead concentrations decrease to the east from DP0039 to DP0123. Considering all of the soil lead data at this AOI and adjacent AOIs 2, 3, 5, and 7, it appears that the extent of impacts is limited. Therefore, no further soil sampling is recommended prior to remediation activities, and additional sampling can be performed as needed during demolition and remediation work.

6.2.7 Lead Melting Pots – AOI 7

AOI Description: The Lead Melting Pots Area was located in the northwest portion of the Main Production Building adjacent and south of AOIs 5 and 6. The melting pots were used to melt lead ingots. The AOI is shown on Figure 2.

Previous Investigation History: Previous lead investigations of this area were not performed because it was inaccessible due to demolition activities going on at that time.

CCR Investigation Summary: To assess potential impacts of lead, five borings (DP0036, DP0037, DP0038, DP0125, and DP0126) were advanced to varying depths down to 5 feet bgs. Soil gas samples were not collected because VOCs were not considered to be likely chemicals of concern at this location. Boring locations are shown on Figure 4 and 8-2.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the impacts were delineated to the remediation criteria during the CCI based on interpretation of the extent of impacts from the existing data set.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple depths for lead. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was detected in the nine samples analyzed with reported concentrations ranging from 4.3 J to 1,320 mg/kg in DP0037 at 0 foot bgs. One of the nine samples analyzed was detected above the remediation criterion of 800 mg/kg. Lead concentrations in samples around DP0037 were below the remediation criterion. Results of lead analyses are summarized in Table 9 and shown on Figure 8-2.

AOI 7 Summary: The reported chemical concentrations of lead in soil are greater than the remediation criterion at DP0037. Considering all of the soil lead data at this AOI and adjacent AOIs 2, 3, 5, and 6, it appears that impacts to the area have been sufficiently delineated to initiate remedial activities. Therefore, no further soil sampling is recommended prior to remediation activities, and additional sampling can be performed as needed during demolition and remediation work.

6.2.8 Plastic Container Molding and Cover Manufacturing – AOI 8 (SWMU No. 6)

AOI Description: The Plastic Container Molding and Cover Manufacturing Area was located south of AOI 4 in the south-central portion of the Main Production Building. This AOI was also associated with the Hydraulic Oil Collection Channel (SWMU No. 6). The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations of concrete floors for lead in the Main Production Building did not find significant concentrations of lead in concrete samples collected and analyzed in this area. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1.

CCR Investigation Summary: To assess potential impacts from historical uses, five borings (DP0041, DP0042, DP0043, DP0044, and DP0045) were advanced to a total depth of 5 feet bgs. Soil samples were analyzed for VOCs and SVOCs. Soil gas was collected and analyzed for VOCs from each boring location. Additionally, seven soil grab samples (GS0027, GS0030, GS0031, GS0032, GS0033, GS0037, and GS0039) were collected and analyzed for TPH and PCBs during demolition of the floor slab to

assess a visibly stained area. Boring and grab sample locations are shown on Figure 4.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the results of sample analyses from the CCI and demolition oversight program indicate the impacts are sufficiently delineated to the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple near-surface depths of less than 3 feet bgs for CAM-17 metals, TPH, SVOCs, VOCs, PCBs, and PAHs. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the seven samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration of lead detected was 28.5 mg/kg in sample GS0027 at 1 foot bgs. Results of lead analyses are summarized in Table 9 and shown on Figure 8-3.
- Metals were not detected at concentrations above the remediation criteria in the two samples analyzed. Results of metals analyses are summarized in Table 10, except lead, and shown on Figure 8-3. The maximum concentrations of metals of concern are listed below.

Metal Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Arsenic	GS0027	2	1.50J
Chromium	GS0027	1	12.2
Zinc	GS0027	1	135

- SVOCs and VOCs were not detected at concentrations above the MDLs in the five soil samples analyzed. Results of SVOC and VOC analyses are summarized in Table 10 and shown on Figures 8-3 and 9-2, respectfully.
- TPH carbon chain (C4-C40) analysis was performed on eight grab samples and reported above the MDL in four samples. The maximum TPH concentrations reported were 50,000 mg/kg in sample GS0027 at 1 foot bgs and 23,900 mg/kg for sample GS0031 at 1 foot bgs. Results of TPH analyses are summarized in Table 10.
- PCBs were not detected in the four samples analyzed at concentrations above the remediation criterion. The maximum total PCB concentration reported was 0.202 mg/kg in GS0039 at 1 foot bgs. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-3.
- PAHs were analyzed in two samples and 10 compounds were reported above the MDLs in one sample GS0027 at 1 foot bgs. Benzo(a)anthracene and chrysene were above the remediation criteria in one sample. Results of PAH analyses are summarized in Table 10 and shown on Figure 8-3. The maximum concentrations of detected PAHs are listed below.

PAH Compounds	Boring Number	Sample Depth (feet bgs)	Maximum Concentration (mg/kg)
Acenaphthene	GS0027	1	0.025
Anthracene	GS0027	1	0.022
Benzo(a)anthracene	GS0027	1	0.252* (0.125)
Benzo(a)pyrene	GS0027	1	0.015J
Benzo(b)fluoranthene	GS0027	1	0.014J
Chrysene	GS0027	1	0.129* (0.125)
Fluoranthene	GS0027	1	0.148
Fluorene	GS0027	1	0.026
Phenanthrene	GS0027	1	0.369
Pyrene	GS0027	1	0.116

* Exceeded the remediation criterion indicated in parentheses.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected in the upper 15 feet bgs from five boring locations at 5 feet bgs. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs were not detected at concentrations above the remediation criteria. Results of soil gas VOC analyses are summarized in Table 12 and shown on Figure 10-3. The two VOCs detected in soil gas and their maximum concentrations are shown below.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu\text{g}/\text{m}^3$)
1,2-Dichloroethane	DP0044	5	88
Benzene	DP041/DP0042	5	100J

AOI 8 Summary: The reported concentrations of COPCs in soil and soil gas samples analyzed are less than the remediation criteria with the exception of benzo(a)anthracene and chrysene. The area is considered to be sufficiently delineated based on analytical results of soil samples from within the most visibly stained areas or worst case areas, and those from outside of those stains.

6.2.9 Power House/Steam Boiler/Oil Recovery Unit Room – AOI 9

AOI Description: The Power House/Steam Boiler/Oil Recovery Unit Room was located in northwest part of the Main Production Building. This area contained the power generation and steam production facilities. The AOI is shown on Figure 2.

Previous Investigation History: Previous investigations in this area collected concrete chip samples of the floor with a reported maximum concentration of 2,000 mg/kg. Concrete samples collected and analyzed during these investigations are shown on Figure 7-1. Historical information also indicated that dielectric oil was used in this area.

CCR Investigation Summary: To assess potential impacts from historical uses, four borings were advanced in this area, DP0019 and DP0021 to 2 feet bgs and DP0018

and DP0020 to 5 feet bgs. Soil samples were analyzed for one or more of the following: lead, VOCs, SVOCs, and PCBs. Soil gas samples were analyzed for VOCs from two borings. Boring locations are shown on Figures 4 and 8-1.

FI Field Program Summary: No additional sampling was performed as part of the FI program because the chemical concentrations detected during the CCI program were less than the remediation criteria.

Summary of Soil Sampling and Analysis

- Soil samples were collected and analyzed at multiple locations from near surface to depths less than 2 feet bgs for lead, VOCs, SVOCs, and PCBs. A summary of sampling and analysis for the AOI is shown in Table 4.
- Lead was not detected in the five samples analyzed at concentrations above the remediation criterion of 800 mg/kg. The maximum concentration reported was 12 mg/kg at 0 foot bgs in sample DP0021. Results of lead analyses are summarized in Table 9 and shown on Figure 8-2.
- VOCs were not detected above MDLs in the two soil samples analyzed. Results of VOC analyses are summarized in Table 10 and shown on Figure 9-2.
- PCBs were not detected above MDLs in the two samples analyzed. Results of PCB analyses are summarized in Table 10 and shown on Figure 8-2.
- SVOCs were not detected in the two samples analyzed at concentrations above the remediation criteria. Pentachlorophenol, which does not pose a significant risk to human health, was detected at an insignificant concentration of 4.09 mg/kg in boring location DP0019 at 1 foot bgs. No other SVOCs were detected in samples analyzed. Results of SVOC analyses are summarized in Table 10 and shown on Figure 8-2.

Summary of Soil Gas Sampling and Analysis

- Soil gas samples were collected in the upper 15 feet bgs from boring locations DP0018 and DP0020 at 3 feet and 5 feet bgs, respectively, and analyzed for VOCs. A summary of soil gas sampling and analysis for the AOI is shown in Table 5.
- VOCs were not detected in the two samples analyzed at concentrations above the remediation criteria. Results of VOC analyses are summarized in Table 12 and shown on Figure 10-2. The maximum reported concentrations of VOCs detected are listed below.

VOC Soil Gas Compounds Less than 15 feet bgs	Boring Number	Sample Depth (feet bgs)	Maximum Concentration ($\mu\text{g}/\text{m}^3$)
1,1,1-TCA	DP0020	5	23
Chloroethane	DP0020	5	60
CFC-12	DP0018	3	330
Ethylbenzene	DP0018	3	91
Toluene	DP0018	3	550
Total Xylenes	DP0018	3	45