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September 29, 2014

Ms. Eleanor Wehner, P.G.
Texas Commission on Environmental Quality
Remediation Division
VCP-CA Section, Mail Code MC-221
Post Office Box 13087
Austin, Texas 78753

Re: Texas Custodial Trust
Former ASARCO Smelter Site, El Paso, Texas

Subject: Excavations and Disposal of Soil at the Powerhouse (AE11) Impacted by Polychlorinated Biphenyls (PCBs)

Dear Ms. Wehner:

The purpose of this letter is to summarize the investigation, excavation, and proposed disposal activities associated with soils impacted by polychlorinated biphenyls (PCBs) at the powerhouse location of the Former ASARCO Smelter Site (Site) in El Paso, Texas. PCBs were used at the Site at in a variety of equipment (e.g., transformers and rectifiers), and interviews with former workers indicate that PCBs were used and possibly disposed of onsite. In 2012, an investigation plan for PCBs in soil at the Site (Malcolm Pirnie, 2012) was submitted to the Texas Commission on Environmental Quality (TCEQ) and United States Environmental Protection Agency (USEPA). Soil samples were collected from locations with equipment containing PCBs as illustrated in Figure 1. The distribution of PCBs in soil based on samples collected from the 2012 investigation plan is presented in Figure 2. Soils impacted by PCBs were identified in three locations north (PCB-03), east (AE5/PCB-02), and south (AE8) of the former copper stack and adjacent to the former powerhouse (AE11). The Additional PCB Sampling and Remediation Plan (Malcolm Pirnie, 2013) provided the approach to delineate PCB concentrations in soil to the residential assessment level (RAL) under the Texas Risk Reduction Program (TRRP) of 1.1 mg/kg and the approach for remediation at each of the four areas having PCBs in surface soil. The 2013 remediation plan was submitted to TCEQ and USEPA and made final based on comments received from the agencies. Area AE8 was removed from further consideration because concentrations of PCBs in soil samples were below all regulatory screening levels. Locations PCB-03 and AE5 were previously remediated prior to the stack demolition conducted on April 13, 2013. The delineation, excavation and disposal of PCBs in surface soil at AE11 (powerhouse) are presented in this submittal.

Regulatory Approach

The investigation and remediation of surface soil impacted by PCBs at AE11 are being conducted as a self-implementing cleanup and disposal program under the Toxic Substances

Control Act (TSCA; 40 CFR 761.61(a)). Concentrations of PCBs reported in surface soil samples from AE11 ranged from 4.63 mg/k for AE11-N2 to 3,440 mg/kg for AE11-N1. The TSCA limits for contact with PCBs are 1 mg/kg for high occupancy land use (residential, day care centers, and schools) and 25 mg/kg for low occupancy land use (C/I). Bulk soil wastes excavated from areas with PCB concentrations greater than 50 mg/kg will be disposed in an approved hazardous waste landfill or PCB disposal facility consistent with the requirements for managing PCB-containing remediation waste regulated under TSCA [§761.61(a)(5)(i)(B)(2)(ii)]. Bulk soil wastes excavated from areas with PCB concentrations <50 mg/kg will be segregated and disposed of in Landfill Cell 4, which has been approved for disposal of Category I material.

The remediation of the Site will be conducted under TRRP. Tier 1 PCLs have been established under TRRP based on direct contact with PCBs in soil ($^{Tot}Soil_{Comb}$) of 1.1 mg/kg for residential land use and 7.1 mg/kg for C/I land use. In compliance with requirements under TRRP, concentrations of PCBs in soil at AE11 have been delineated to the residential PCL of 1.1 mg/kg as the RAL. The potential routes of exposure to PCBs in soil also include volatilization from soil to air ($^{Air}Soil_{Inh\text{-}v}$) and leaching from soil to groundwater ($^{GW}Soil_{Ing}$). The TRRP $^{Air}Soil_{Inh\text{-}v}$ for PCBs on a 0.5-acre property is 11 mg/kg, and the TRRP $^{GW}Soil_{Ing}$ for PCBs in soil is 91 mg/kg on a 0.5-acre property. The direct contact pathway, therefore, is the basis for critical PCL for PCBs in soil at the Site.

AE11 is completely within the plant site footprint, so future land use is C/I. As a result, a response action under TRRP is required for soil with concentrations in excess of 7.1 mg/kg. Action levels complying with requirements under TSCA and TRRP have been applied to the remediation of PCBs in soil at AE11 as follows:

- PCBs <1 mg/kg – no action
- PCBs >1 mg/kg <7.1 mg/kg – deed recordation under TRRP restricting land use to C/I
- PCBs >7.1mg/kg <50 mg/kg – excavation and on-site disposal in Landfill Cell 4
- PCBs >50 mg/kg – excavation and off-site disposal PCB-approved disposal facility

Investigation and Excavation Summary

Figure 3 provides a summary of the lateral distribution of PCBs in soil at AE11. Excavations were performed at AE11 by removing all soils with PCB concentrations above the 7.1 mg/kg C/I PCL. The lateral extents of excavation are illustrated in Figure 3. A total of three excavation events in April, May, and July 2014 were conducted at AE11 at approximately 2-foot depth intervals with confirmation samples collected from the bottom of each excavation events.

The first excavation event in April 2014 removed the top 2 feet of soil generating approximately 149 cubic yards (cy) of PCB-containing remediation waste soil that were placed in 12 20-yard roll-off bins. The soils placed in all 12 bins were partially collected from areas having PCB concentrations greater than 50 mg/kg. Confirmation samples collected from the bottom of the first level of excavation at approximately 2 feet below ground surface (bgs) had PCB concentrations ranging from 12.026 mg/kg at AE11-N1 to 1,380 mg/kg at AE11-E/SLAB6.

The second excavation event in May 2014 removed an additional 2-foot interval generating an additional 132 cy of PCB-containing remediation waste soil and placed in eight 20-yard bins. All of the areas excavated as part of the May event were characterized as having PCBs above 50 mg/kg. Confirmation samples collected from the bottom of the May excavation event at approximately 4 feet bgs indicated three subareas within the excavation exceeding the 7.1 mg/kg PCL including:

1. Subarea 1 – approximately 500 square feet (sf) in south corner of excavation centered around sample location AE11-SLAB2. PCB concentrations in confirmation samples from Subarea 1 range from 11.1 mg/kg to 413 mg/kg.
2. Subarea 2 – approximately 300 sf along northeast side of the excavation from sample location AE11-E4 to AE11-E/SLAB2. PCB concentrations in confirmation samples from Subarea 1 range from 14.71 mg/kg to 28.8 mg/kg.
3. Subarea 3 – approximately 100 sf area around sample location AE11-SLAB3. The PCB concentration in confirmation sample at AE11-SLAB3 is 42.8 mg/kg.

The third excavation event in July 2014 was planned to remove PCB impacted soil from the three subareas described above. The excavation was complicated by the presence of a 2-foot cobble layer at the bottom of the excavation following the second event as shown in Photo 1 below. The cobble layer was characterized as containing approximate 4-inch to 12-inch cobbles.

Photo 1 – Cobble surface at the base of the excavation at AE11 approximately 4 feet bgs.

As part of the July excavation event, approximately 40 yards of the 2-foot cobble layer were removed from the base of excavation and stockpiled on sheeting as shown in Photo 2.

Photo 2 – Cobble stock pile at AE11.

Soil excavated as part of the July event was segregated based on subarea. Approximately 12 cy of PCB-containing remediation waste soil was removed from subarea 1 and placed in a separate 20-yard bin (Bin #946). The soil from subarea 1 had PCB concentrations greater than 50 mg/kg. Soil removed from subareas 2 and 3 were combined in one roll-off bin (Bin #929). A total of approximately 10 cy of PCB-containing remediation waste soil from documented areas with PCB concentration below 50 mg/kg. Confirmation samples collected from the bottom of the excavation following the July event had PCB concentration ranging from 0.107 mg/kg at AE11-E2 to 5.57 mg/kg. Figure 4 provides an illustration of the residual concentrations of PCBs in soil across AE11 prior to backfill demonstrating the 7.1 mg/kg had been met.

Waste Characterization and Disposal

A total of 22 roll-off bins with PCB-containing remediation waste soil and approximately 40 cy of stockpiled cobbles have been generated as part of the remediation of PCBs in surface soil at AE11. Three-point composite samples were collected from each 12 cy waste bin to characterize the waste for disposal. The remediation plan (Malcolm Pirnie, 2013) call for remediation waste soil to be stockpiled in 20 cy volumes and collection of a five-point composite sample for waste characterization prior to transferring waste to roll-off bins for disposal. The excavation approach was revised to place 12 cy of remediation waste soil directly into 20-yard bins to remove the additional stockpiling step. Three-point composite samples were collected from each bin to maintain the original sample collection frequency (1 sample per 4 cy). The concentrations of PCBs in remediation waste samples collected from bins at AE11 are summarized in the table below.

Table 1 – PCB Concentrations in Waste Characterization Samples

Bin No.	PCB Conc. (mg/kg)
704	41.9
717	74.5
729	11.8
752	96
763	18.2
764	15.9
859	10.4
929	2.7
946	21.31
966	Content from April bins
1025	24.3
1034	107.8
1043	77
1067	24.3
1129	4
1130	13
1131	8.1
1133	155
1167	18.5
1177	Content from April bins
1184	Content from April bins
1196	Content from April bins

Note: The remediation waste soil in Bins 966, 1177, 1184 and 1196 were taken from 20-yard bins that were filled beyond their weight capacity during the April 2014 excavation event at AE11. Material characterized for Bins 764, 859, 1025, 1034, 1129, 1130, 1131 and 1133 are the sources of materials for Bins 966, 1177,1184 and 1196.

All waste bins except Bin #929 have soils excavated from areas with PCB concentration characterized as being greater than 50 mg/kg prior to excavation. As a result, all 21 bins will be disposed of offsite at an approved PCB disposal facility in accordance with requirements under TSCA (§761.61(a)(5)(i)(B)(1)(iii)). Bin #929 was documented as strictly containing soil from areas characterized as having PCB concentrations below 50 mg/kg. Bin #929 will be disposed of in Landfill Cell 4, which has been approved for disposal of Category I materials. Finally, stockpiled cobbles removed from the excavation at AE11 will also be placed in Landfill Cell4. The cobbles represent an environmental medium that is too large in size for comparison to health-based remediation criteria. Due to the large size of the cobbles, the adsorptive surface of this particular medium is very low compared to the overall mass of the cobbles. The cobble

layer was encountered between 4 and 8 feet bgs. The confirmation soil samples collected beneath the cobble layer have PCB concentrations below the 7.1 mg/kg PCL indicating a minimal mass of PCBs passed through the layer. Finally, the cobbles do not have any staining or odors indicating impacts from chemical contamination. Based on these observations, placement of cobbles in Landfill Cell 4 will be protective of human health and the environment.

If you have any questions regarding this submittal, please feel free contact me at 602-797-4536.

Very truly yours,

MALCOLM PIRNIE, INC.

Scott M. Brown, P.E.
Project Manager

Glenn C. Hoeger
Principal Scientist

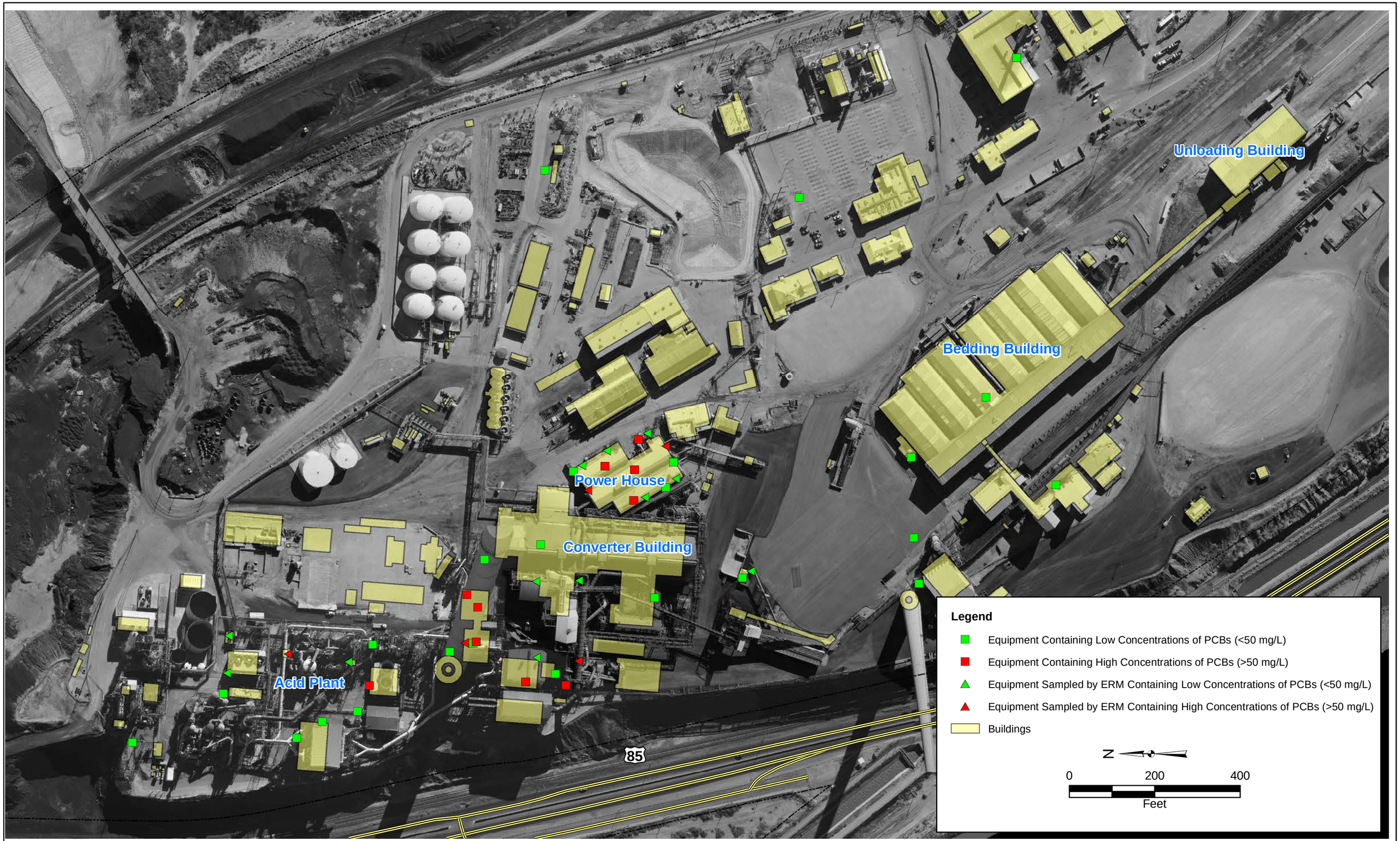
cc: Roberto Puga (Project Navigator)
Michael Berry

Attachments

References

Malcolm Pirnie, 2012. PCB Investigation Work Plan, Former ASARCO Smelter Site, El Paso, Texas. Prepared for Texas Custodial Trust, April 2012.

Malcolm Pirnie, 2013. Additional PCB Sampling and Remediation Plan as an Addendum to the PCB Investigation Work Plan (April 2012). Letter to Jim Sher of the Texas Commission on Environmental Quality (TCEQ), dated January 25, 2013.



MALCOLM PIRNIE	401 E. Main St. Suite 400 El Paso, TX 79901		Texas Custodial Trust El Paso Smelter Site PCB Investigations	Locations of Equipment Conatining PCBs September 2014 | FIGURE 1

Map Document: (S:\GIS_Resources\Standards_Guidelines\MapTemplates\GIS_TEMPLATES_2005\11x17_Landscape.mxt)
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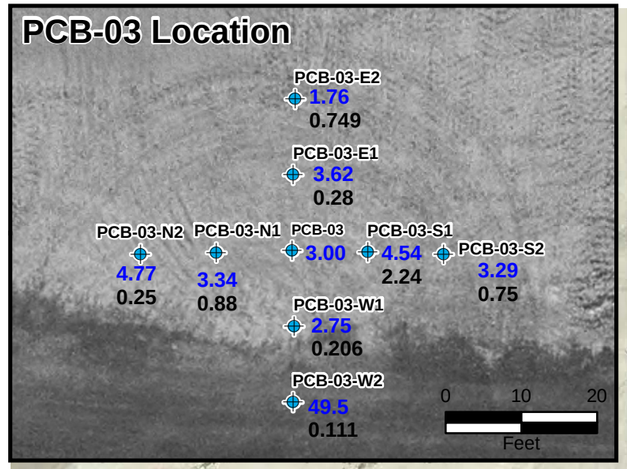

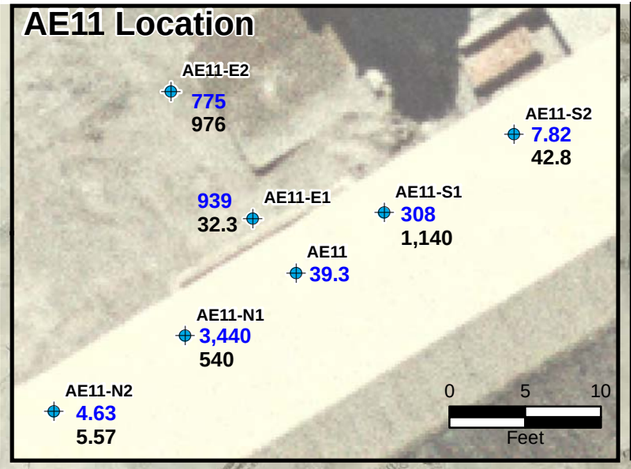

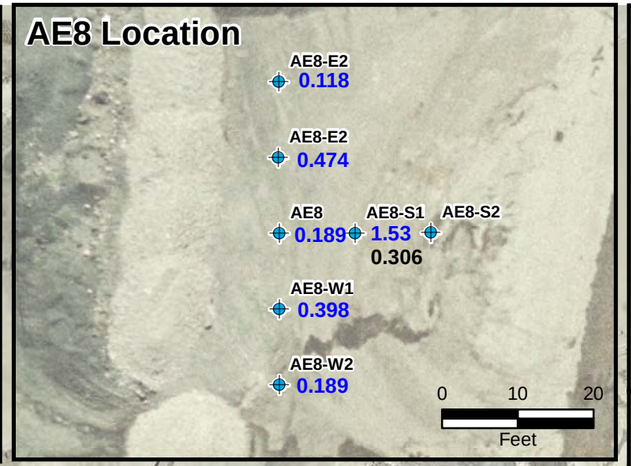

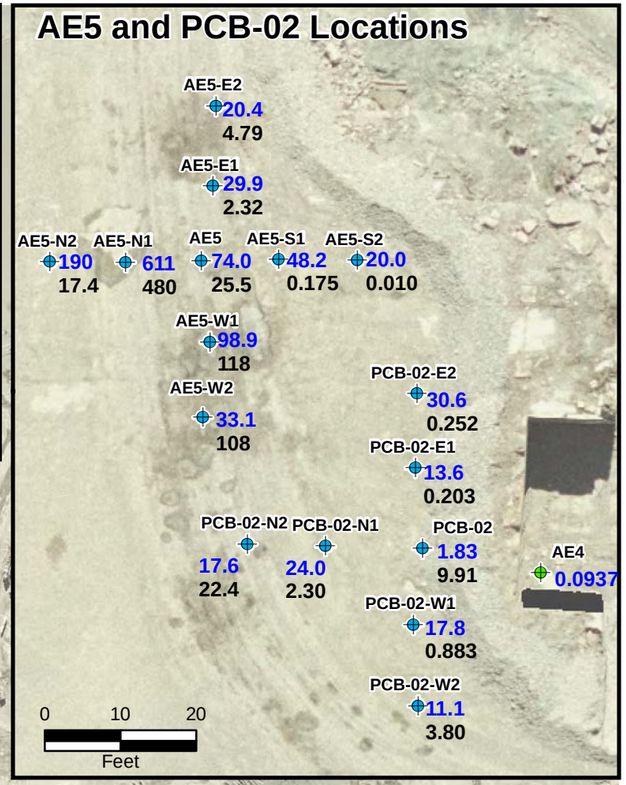

Legend

Sample Locations

Notes:
1. PCB-03 sample locations are projected in front of the stack.
2. Two samples were collected at each location. One sample was collected at the 0'-0.5' interval and one sample was collected at the 0.5'-1.0' interval. If concentrations were less than 1.0 mg/kg then the next step out sample was not analyzed.
3. **Blue** = shallow sample (0'-0.5' interval)
   Black = deep sample (0.5'-1.0' interval)

N

0 100 200
Feet

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Texas Custodial Trust
El Paso Smelter Site
PCB Investigations

PCB Step-Out Sampling Results

September 2014

FIGURE 2

Map Document: (S:\GIS_Resources\Standards_Guidelines\MapTemplates\GIS_TEMPLATES_2005\11x17_Landscape.mxt)
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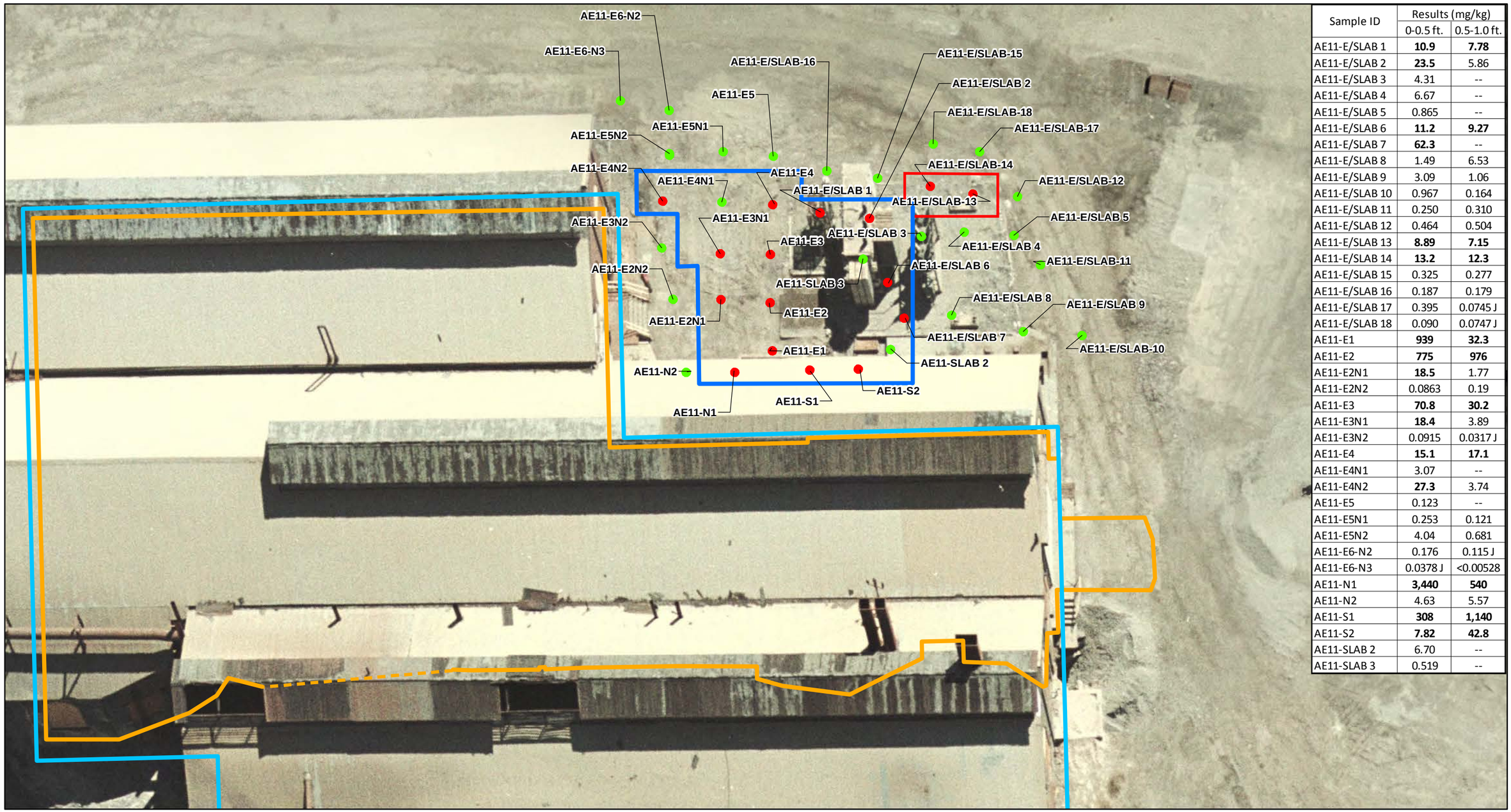

Sample ID	Results (mg/kg)	
	0-0.5 ft.	0.5-1.0 ft.
AE11-E/SLAB 1	**10.9**	**7.78**
AE11-E/SLAB 2	**23.5**	5.86
AE11-E/SLAB 3	4.31	--
AE11-E/SLAB 4	6.67	--
AE11-E/SLAB 5	0.865	--
AE11-E/SLAB 6	**11.2**	**9.27**
AE11-E/SLAB 7	**62.3**	--
AE11-E/SLAB 8	1.49	6.53
AE11-E/SLAB 9	3.09	1.06
AE11-E/SLAB 10	0.967	0.164
AE11-E/SLAB 11	0.250	0.310
AE11-E/SLAB 12	0.464	0.504
AE11-E/SLAB 13	**8.89**	**7.15**
AE11-E/SLAB 14	**13.2**	**12.3**
AE11-E/SLAB 15	0.325	0.277
AE11-E/SLAB 16	0.187	0.179
AE11-E/SLAB 17	0.395	0.0745 J
AE11-E/SLAB 18	0.090	0.0747 J
AE11-E1	**939**	**32.3**
AE11-E2	**775**	**976**
AE11-E2N1	**18.5**	1.77
AE11-E2N2	0.0863	0.19
AE11-E3	**70.8**	**30.2**
AE11-E3N1	**18.4**	3.89
AE11-E3N2	0.0915	0.0317 J
AE11-E4	**15.1**	**17.1**
AE11-E4N1	3.07	--
AE11-E4N2	**27.3**	3.74
AE11-E5	0.123	--
AE11-E5N1	0.253	0.121
AE11-E5N2	4.04	0.681
AE11-E6-N2	0.176	0.115 J
AE11-E6-N3	0.0378 J	<0.00528
AE11-N1	**3,440**	**540**
AE11-N2	4.63	5.57
AE11-S1	**308**	**1,140**
AE11-S2	**7.82**	**42.8**
AE11-SLAB 2	6.70	--
AE11-SLAB 3	0.519	--

LEGEND

- Samples below the TRRP Total Soil Combined (C/I), 30-acre Site (7.1 mg/kg)
- Samples location exceeding the TRRP Total Soil Combined (C/I), 30-acre Site (7.1 mg/kg)
- Powerhouse Basement Boundary
- Powerhouse Building Boundary
- Approximate Excavation Boundary

Note:
Bold - Sample exceeds the TRRP Total Soil Combined (C/I), 30-acre Site (7.1 mg/kg)

N

0 20 40 Feet

GRAPHIC SCALE

FORMER EL PASO SMELTER SITE
EL PASO, TEXAS

PBC EXCAVATION DELINEATION

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FIGURE 3

CITY: Highlands Ranch DIV/GROUP: GIS DB: BG
Project (Project #)
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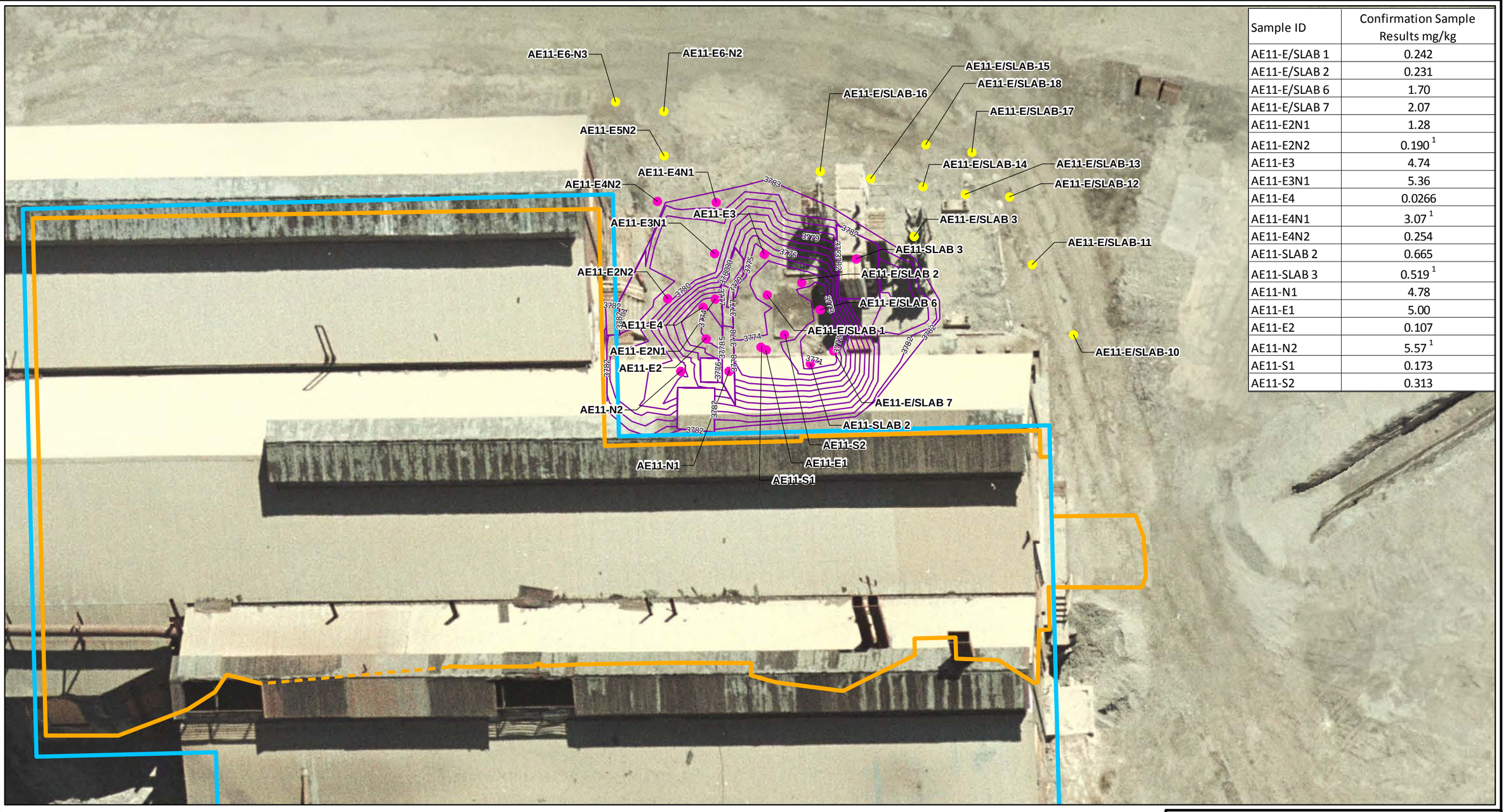

Sample ID	Confirmation Sample Results mg/kg
AE11-E/SLAB 1	0.242
AE11-E/SLAB 2	0.231
AE11-E/SLAB 6	1.70
AE11-E/SLAB 7	2.07
AE11-E2N1	1.28
AE11-E2N2	0.190 [1]
AE11-E3	4.74
AE11-E3N1	5.36
AE11-E4	0.0266
AE11-E4N1	3.07 [1]
AE11-E4N2	0.254
AE11-SLAB 2	0.665
AE11-SLAB 3	0.519 [1]
AE11-N1	4.78
AE11-E1	5.00
AE11-E2	0.107
AE11-N2	5.57 [1]
AE11-S1	0.173
AE11-S2	0.313

LEGEND

- Confirmation Samples
- Horizontal Delineation Samples
- Powerhouse Basement Boundary
- Powerhouse Building Boundary

Note:
[1] Samples originally collected during the excavation delineation

N

0 20 40 Feet

GRAPHIC SCALE

FORMER EL PASO SMELTER SITE
EL PASO, TEXAS

PBC EXCAVATION

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FIGURE
4

CITY: Highlands Ranch DIV/GROUP: GIS DB: BG
Project (Project #)
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