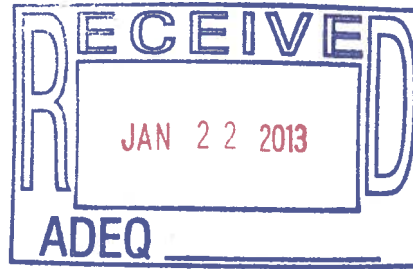




Sierrita Operations  
Environment, Land & Water Department  
6200 West Duval Mine Road  
PO Box 527  
Green Valley, Arizona 85622-0527



January 18, 2013

**Via Hand Delivery**

Ms. Danielle Taber  
Project Manager  
Voluntary Remediation Program  
Arizona Department of Environmental Quality  
1110 W. Washington St.  
Phoenix, AZ 85007

Re: **Voluntary Remediation Program; Revised Former CLEAR Plant Area  
Soil Excavation and Tier I Screening Risk Report**

Dear Ms. Taber:

Please find the enclosed Revised Former CLEAR Plant Area Soil Excavation and Tier I Screening Risk Report. This report was revised as discussed on the conference call held on January 15<sup>th</sup>, 2013. This revised report was completed for Freeport-McMoRan Sierrita Inc. by ARCADIS, Inc. pursuant to the Soil Excavation Work Plan that was provided on May 2, 2012 under the Voluntary Remediation Program. A Tier I Screening Risk Evaluation is described in this report and follows the results of the soil investigation conducted at the Former CLEAR Plant Area during May of 2012.

Please do not hesitate to contact me at (520) 393-2514 if you have any question regarding this submittal.

Sincerely,

Clinton D. Beck, E.I.T.  
Environmental Engineer  
Freeport-McMoRan Sierrita Inc.

CDB/ms  
dms: 20130116\_001

xc: John Patricki, Arizona Department of Environmental Quality  
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Ned Hall, Freeport-McMoRan Copper & Gold  
Stuart Brown, Freeport-McMoRan Copper & Gold

**Freeport McMoRan Sierrita, Inc.**

**Voluntary Remediation Program**

**Former CLEAR Plant Area Soil  
Excavation and Tier I Screening  
Risk Evaluation Report**

Sierrita Mine  
Green Valley, Arizona

January 18, 2013



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Lisa Gerwe, P.E.  
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Associate Vice President

**Former CLEAR Plant Area Soil  
Excavation and Tier I  
Screening Risk Evaluation**

Sierrita Mine  
Green Valley, Arizona

Prepared for:  
Freeport McMoRan Sierrita, Inc.

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Date:  
January 18, 2013

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## **1. Introduction**

The Freeport-McMoRan Sierrita Inc. (Sierrita) is an open-pit copper and molybdenum mining complex located northwest of Green Valley, Arizona (Figure 1). In 2008 Sierrita entered the Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP). The VRP covers certain operations not covered by other applicable regulatory programs, including the Former CLEAR Plant Area.

Under the VRP, a Soil Excavation Work Plan (ARCADIS, 2012) for the Former CLEAR Plant Area was submitted to ADEQ and approved on May 2, 2012 (ADEQ, 2012). The Soil Excavation Work Plan was prepared in support of constructing a new training facility building on a 1.3 acre area located north of the Former CLEAR Plant Building. The objectives of the Soil Excavation Work Plan were to obtain information to support a No Further Action (NFA) determination for soil in the Former CLEAR Plant Area affected by the construction of the new training facility, or to provide analytical data in support of a Declaration of Environmental Use Restriction (DEUR). A Tier I Screening Risk Evaluation (SRE) is described in this report and follows the results of the soil investigation conducted at the Former CLEAR Plant Area during May 2012.

### **1.1 Site Description**

The Former CLEAR Plant was historically located in the north-central portion of the Sierrita property; in the area that is now utilized for an asset recovery yard, contractor offices and material storage, metal fabrication shop, and the Central Accumulation Building (Figure 2). The Former CLEAR Plant Building is currently used as a training center. This building is also utilized for storage of miscellaneous materials such as computers and office equipment. The topography of the CLEAR Plant area generally slopes eastward and is incised by east-west trending drainages. The western portion of the area, where the new training facility will be located, is cut into bedrock. Fill ranging from a few inches to approximately 25 feet in thickness is present in the remaining area. In the western portion of the area, the fill is thin or non-existent, bedrock is at or near surface, and outcrops of granodiorite are visible. Additional information about the Former CLEAR Plant area topography is located in the Soil and Sediment Characterization Report (SSCR) (URS, 2011). According to interviews with current and former employees, the CLEAR Plant was commissioned in 1975, from 1977 to 1983 the CLEAR Plant produced metallic copper, and in 1995 it was demolished. Additional information about the CLEAR Plant operations is included in the SSCR (URS, 2011).

## 1.2 Summary of Previous Investigations

Multiple soil assessments associated with the Former CLEAR Plant Area soil were conducted at Sierrita (URS, 2011). The soil investigation activities included the collection and analysis of soil samples from the Former CLEAR Plant Area. During these assessments, 78 soil samples were collected from 34 locations within the Former CLEAR Plant Area and analyzed for mining related total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, calcium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, thallium, and zinc), total uranium, uranium isotopes (uranium-234, uranium-235, and uranium-238), and radium isotopes (radium-226 and radium-228). Only lead, copper, and arsenic concentration exceeded their respective non-residential soil remediation level (nr-SRL) or the groundwater protection level (GPL).

Figure 3 displays the location of soil samples collected during previous soil assessments relative to the location of the new training facility. In total, 10 soil samples, from six locations were collected within 50 yards of the new training facility footprint. Within the new training facility footprint, three soil sample locations had soil concentrations that exceeded nr-SRL for arsenic, copper or lead or the GPL for lead. Exceedances occurred at CP-T-3 at depths of 0.67 and 8 feet below grade surface (ft bgs) and at CP-16 from 0 to 0.25 ft bgs. One soil sample collected outside of the new training facility's footprint, CP-15, exceeded an nr-SRL for arsenic at a depth of 0-0.25 ft bgs. A summary of previously collected soil data is provided in the work plan (ARCADIS, 2012).

## 2. Soil Investigation Activities

Previous investigation in the Former CLEAR Plant Area had partially defined areas of potential contamination in the surface and subsurface soils. Additional surface and subsurface soil samples were collected in support of the construction of a new training facility in the Former CLEAR Plant Area and to better define metal concentrations in the surface and subsurface soils. Based on the previously collected data from the Former CLEAR Plant Area and as stated in the work plan, soil samples collected from the Former CLEAR Plant Area were only analyzed for lead, copper, and arsenic (ARCADIS, 2012).

## 2.1 Initial Soil Collection Activities

Between May 1, 2012 and May 2, 2012, 51 soil samples were initially collected and analyzed to assess whether arsenic, lead, and copper residuals were above the applicable ADEQ SRLs and GPLs. The locations of these samples are presented on Figure 4. Soil samples were collected by qualified personnel from areas identified in the Work Plan including:

- Eight samples from the west footer area;
- Eight samples from the east footer area;
- Twelve samples from the southern excavation;
- Two samples from previous sampling locations;
- One sample from the building pad;
- Twelve samples from the parking lot area; and
- Eight samples from excavated soil.

Discrete soil samples were collected immediately following the excavation of the southern excavation, west footer, east footer area and previously sampled locations. Samples from these areas were collected in a disposal plastic scoop and then transferred to a labeled plastic zip-top bag. Soil samples collected from the parking lot area and building pad were collected using a hand auger. Samples were collected from six-inches below ground surface and placed directly from the hand auger into a large, labeled plastic zip-top bag. The hand auger was decontaminated following procedures described in the Work Plan (ARCADIS, 2012).

Soil samples were then prepared for x-ray fluorescent (XRF) analysis by placing the sample in a no. 12 mesh sieve to remove large rocks and debris material. After each use, the sieve was decontaminated following procedures described in the Work Plan (ARCADIS, 2012). The sieved soil sample was then placed in a new labeled plastic zip-top bag and analyzed using a portable handheld XRF analyzer. The XRF analysis involved placing a sealed plastic bag containing the sieved soil sample on a non-metallic surface, flattening the bag of soil to form a continuous uniform layer of at least 1 cm thick, and then pressing the XRF analyzer against the plastic bag for 90



seconds. The XRF analysis provided preliminary metal concentration data for each sample. Samples were then transferred to laboratory supplied glass-jars and stored in ice-filled coolers.

Some samples were moist upon collection and were not sieved and prepared for XRF analysis. XRF analysis requires that the samples are dry. These samples were transferred directly from the plastic bags they were initially collected to laboratory supplied glass-jars and stored on ice. Samples were shipped to SVL Laboratories to be analyzed by USEPA Method 6010B for arsenic, copper, and lead, under chain-of-custody. Summary of analytical results is located in Table 1-1 and laboratory analytical reports are included in Appendix B.

Following the substantial completion of the southern excavation and footer excavation on May 2, 2012, six discrete samples and two composite samples were collected from excavated soil stockpile area. Discrete and composite samples were collected with disposable plastic scoops and then transferred to a labeled plastic zip-top bag. Composite samples were collected from four distinct locations and homogenized in the plastic zip-top bag. Both discrete and composite samples were then transferred to laboratory supplied glass-jars and stored on ice. Soil samples of excavated materials were shipped to SVL Laboratories for analysis by USEPA Method 6010B for arsenic, copper, and lead and for Toxicity Characteristic Leaching Procedures (TCLP) SW846 Method 1311 for arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver, under chain-of-custody. Procedures regarding sample collection, handling and analysis followed the Work Plan (ARCADIS, 2012). Table 1-2 contains a summary of the soil analytical results and laboratory analytical reports are included in Appendix B.

## **2.2 Supplemental Soil Collection Activities**

Based on initial XRF analysis data, visual inspection, and for excavation safety reasons, additional material was removed from the following areas after initial sampling occurred:

- North sidewall of the southern excavation
- Southern excavation floor;
- Building pad;
- West footer sidewalls and floor; and

- North footer sidewalls and floor.

Supplemental sampling was conducted on May 11 and May 21, 2012 to collect samples from proposed sample locations identified in the Work Plan that were not collected on May 1 and 2, 2012, from over-excavated areas where material had since been removed, and from areas where initial soil samples had concentrations above the r-SRL. Areas where additional excavation had occurred required additional sample locations to accurately characterize the in-place soil in the Former CLEAR Plant Area. These soil samples are indicated in Figures 4 and 5. Confirmation soil samples were collected from areas where analytical results from the initial sampling event indicated that concentrations of metals in soil were above the r-SRL, however for logistical or safety reasons no additional excavation of material took place. These soil samples are also indicated in Figures 4 and 5. Soil samples collected during supplementary soil and sampling included:

- Five samples from the west footer area;
- Five samples from the east footer area;
- Ten samples from the north footer area
- Ten samples from the southern excavation;
- One samples from previous sampling locations;
- Five samples from the building pad; and
- Two samples from the parking lot area

Samples from these areas were collected with disposable plastic scoops, with the exception of samples collected from the parking lot area and building pad, which were collected with a hand auger. Sampling and XRF procedures utilized during the initial sampling event were also followed during the supplemental sampling event. Procedures regarding sample collection, handling and analysis followed the Work Plan (ARCADIS, 2012).

### **2.3 Deviations from Work Plan**

The following deviations from the Work Plan were noted:

- Prior to laboratory analysis soil samples were analyzed using a portable XRF unit.
- Due to elevated soil sample concentrations and additional excavation areas following initial soil sample collection, extra soil samples were collected to confirm elevated soil sample concentrations and to accurately characterize the in-place soil in the Former CLEAR Plant Area following additional excavations.
- Investigational-derived waste was initially stored on the building pad area of future training facility immediately after excavation. The excavated soil was later moved to a concrete pad to await analytical results. Soil excavated following initial soil sampling was transported to Sierrita's leach facility to be utilized in process for copper recovery.
- The dimensions of the southern excavation and building footer trenches varied due to field conditions and additional areas that required soil removal. In general, the footer excavations were larger than anticipated, (see Figures 4 and 5).
- A concrete pad was discovered below portions of the excavated areas for the future training facility. In areas where concrete was present, "floor" samples were replaced with sidewall samples collected above the concrete surface. Areas where concrete was identified are shown in Figures 4 and 5.

### **3. Data Quality**

Analytical data provided by the laboratory were subjected to data review for control/quality assurance. Data quality was evaluated based on precision, accuracy, representiveness, comparability, and completeness characteristics. A summary of the data verification is provided in Appendix A. Copies of the analytical reports are provided in Appendix B. The results were considered useable for the intended purposes, and the project data objectives specified in the QAPP (URS, 2008) were met.

### **4. Tier I Screening Risk Evaluation**

As noted earlier, a Tier I SRE was performed based on soil data collected at locations specified in Section 2 (excluding excavated samples and samples earmarked for excavation) as follows by:

- a. estimating exposure point concentration (EPC), which is the site-wide constituent concentrations to which a hypothetical human receptor might be exposed, and
- b. consistent with the work plan (ARCADIS, 2012), comparing EPCs against available Arizona Non-Residential Soil Remediation Levels (SRLs); (Arizona Administrative Code (A.A.C.) § R18-7-205) Groundwater Protection Levels (ADEQ, 1996).

Although not part of the work plan (ARCADIS 2012), EPCs were also compared against Arizona Residential SRLs (A.A.C. § R18-7-205) to provide additional information for risk management purposes.

Consistent with USEPA guidelines for risk assessment, the EPC used in this evaluation is the lesser of the maximum detected concentration and the 95 percent upper confidence limit (UCL) (USEPA 1989). The 95 percent UCLs were estimated using ProUCL 4.1.00 (USEPA, 2010, 2011). Related ProUCL output files are presented in Appendix C. The 95 percent UCL for all three site-related constituents are below their respective maximum detected concentrations. As a result the 95 percent UCLs were selected as the EPC for all three site-related constituents.

## 5. Results and Discussion

Metals were detected in each soil sample collected from the Former CLEAR Plant Area. Concentrations of copper in the soil samples ranged between 133 and 8,970 mg/kg with the highest concentration detected in CPF-AW-SWE-D0.5-04, which was collected from the east sidewall of the west footer, 115 feet north of the southern excavation extent. Concentrations of lead in soil samples ranged between 5.1 and 3,760 mg/kg with the highest concentration detected in CPS-SWN-D2-01, which was collected from the south sidewall of the north footer, 15-feet east of the west footer excavation extent. Concentrations of arsenic in soil samples ranged between less than 2.5 and 21.7 mg/kg with the highest concentration detected in CPF-AN-SWS-D0.5-04, which was collected from the south sidewall of the north footer, 85-feet east of the west footer excavation extent.

Excavated soil samples analyzed by TCLP for the RCRA eight metals were well below associated regulatory limits. Table 1-1 provides a summary of the soil sample analyses. Table 1-2 provides results from total metals and TCLP analysis from excavated material.

The results of the Tier I SRE indicate that the EPCs for arsenic, copper, and lead are all below both the residential and non-residential SRLs. Arsenic and Lead EPCs are also below GPLs. A GPL for copper is not currently available. The results of this evaluation are summarized in Table 5-1.

## **6. Summary**

The current site investigation within the Former CLEAR Plant Area has been performed to delineate potential contamination in the surface and subsurface soils in support of the construction of a new training facility. Soil samples were collected in accordance with Work Plan with minor deviations. The soil samples collected to date provide analytical data used to conduct the Tier I SRE for VRP soil and sediment investigation areas, which include the Former CLEAR Plant Area. The results of the Tier I SRE suggest that the Former CLEAR Plant is an NFA site because the remaining concentrations of arsenic, copper, and lead in soil are below available SRLs and GPLs. These results imply that potential adverse impacts to either residential or commercial/industrial workers and/or underlying groundwater are not expected.

## **7. References**

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URS Corporation. 2011. Final Voluntary Remediation Program (VRP) Soil and Sediment Characterization Report, Freeport-McMoRan Sierrita Inc., Green Valley, Arizona. April.

Table 1-1: Soil Sample Results  
Former CLEAR Plant Area Soil Excavation  
Sierrita Operations  
May 2012

Map ID	Sample Name	Sample Date	Sample Time	Description	Copper (mg/kg)	Lead (mg/kg)	Arsenic (mg/kg)
<b>West Footer</b>							
1	CPF-AW-D4-05	5/2/2012	1505	West footer, floor, 10' N	924	63.1	<2.5
2	CPF-AW-SWE-D2.5-03	5/11/2012	1115	West footer, east sidewall, 25' N	423	37.5	2.6
3	CPF-AW-D4-02	5/1/2012	1315	West footer, floor, 40' N	248	11.7	<2.5
4	CPF-AW-SWW-D2-01	5/1/2012	1630	West footer, west sidewall 40' N	779	39.9	3.5
5	CPF-AW-SWE-D1.5-01	5/1/2012	1245	West footer, east sidewall, 65' N	360	18.7	3
6	CPF-AW-D3-01	5/1/2012	1250	West footer, floor, 65' N	313	11.5	2.6
7	CPF-AW-D2-05	5/11/2012	1135	West footer, floor, 92' N (80), following additional material removal from west footer	1,040	12.3	9.8
--	FD051112-E	5/11/2012	--	CPF-AW-D2-05	939	11.6	10.7
8	CPF-AW-SWW-D1-03	5/11/2012	1140	West footer, west sidewall, 92' N (80), following additional material removal from west footer	1290 J	120	7.6
9	CPF-AW-SWE-D0.5-04	5/11/2012	1145	West footer, east sidewall, 115' N	8970 J	1,140	15.0
10	CPF-AW-SWW-D0.75-04	5/11/2012	1155	West footer, west sidewall, 115' N	4,610	622	6.9
<b>East Footer</b>							
11	CPF-AE-SWW-D2-01	5/1/2012	1545	East footer, west sidewall 10' N	3,250	206	6.2
12	CPF-AE-SWW-D2-03	5/11/2012	1020	East footer, west sidewall 10' N, additional sample	2540 J	93.7	8.1
13	CPF-AE-D3-02	5/2/2012	1007	East footer, floor, 25' N	1,840	127	7.6
14	CPF-AE-D3-01	5/2/2012	945	East footer, floor, 50' N	2,330	56.0	10.9
--	FD050212-B	5/2/2012	--	CPF-AE-D3-01	2,290	49.6	9.6
15	CPF-AE-D3-05	5/11/2012	1040	East footer, floor, 50' N, additional sample	1680 J	36.9	12.2
16	CPF-AE-SWE-D1.5-01	5/2/2012	1017	East footer, east sidewall, 50' N	2,500	94.0	12.7
17	CPF-AE-SWE-D1.5-03	5/11/2012	1050	East footer, east sidewall, 50' N, additional sample	3060 J	35.6	9.5
18	CPF-AE-SWW-D1.5-02	5/2/2012	1025	East footer, west sidewall, 75' N	1,800	45.7	8.7
19	CPF-AE-D3-03	5/2/2012	1040	East footer floor, 75' N	1,860	38.3	9.3
20	CPF-AE-D3-04	5/2/2012	1045	East footer floor, 100' N	2,860	19.3	8.1
21	CPF-AE-SWE-D1.5-02	5/2/2012	1110	East footer east sidewall, 100' N	1,490	12.5	9.9
22	CPF-AE-SWW-D1-04	5/11/2012	1110	East footer, west sidewall, 110' N	4070 J	279	12.0
23	CPF-AE-D2-06	5/11/2012	1100	East footer, floor, 110' N	2,360	73.3	11.1
--	FD051112-D	5/11/2012	--	CPF-AE-D2-06	2,200	69.1	10.6
NR-SRL					41,000	800	10
R-SRL					3,100	400	10
GPL					--	290	290

Notes: Table 1-1 samples are representative of current soil conditions in and around the CLEAR Plant Excavation Area  
NR- SRL = Non-residential Soil Remediation Level R- SRL = Residential Soil Remediation Level  
mg/kg = milligram per kilogram GPL = Groundwater Protection Level

Table 1-1: Soil Sample Results  
Former CLEAR Plant Area Soil Excavation  
Sierrita Operations  
May 2012

Map ID	Sample Name	Sample Date	Sample Time	Description	Copper (mg/kg)	Lead (mg/kg)	Arsenic (mg/kg)
North Footer							
41	CPF-AN-SWN-D1-01	5/11/2012	1155	North footer, north sidewall, 10' E	1,910	171	6.1
42	CPF-AN-SWS-D0.5-05	5/21/2012	--	North footer, south sidewall, 10' E	3,760	578	6.3
43	CPF-AN-SWN-D1.5-02	5/11/2012	1215	North footer, north sidewall, 35' E	4,570	453	9.8
44	CPF-AN-SWS-D0.5-02	5/11/2012	1220	North footer, south sidewall, 35' E	2,470	279	6.3
45	CPF-AN-SWN-D1-03	5/11/2012	1225	North footer, north sidewall, 60' E	3,800	473	10.7
46	CPF-AN-SWS-D0.5-03	5/11/2012	1230	North footer, south sidewall, 60' E	3,810	470	18
47	CPF-AN-SWN-D1.5-04	5/11/2012	1240	North footer, north sidewall, 85' E	3,490	466	8.7
48	CPF-AN-SWS-D0.5-04	5/11/2012	1245	North footer, south sidewall, 85' E	4,390	379	21.7
49	CPF-AN-SWN-D0.5-05	5/11/2012	1300	North footer, north sidewall, 110' E	4,090	105	9.9
50	CPF-AN-D1-01	5/11/2012	1315	North footer, floor, 110' E	4,910	236	10.1
Building Pad							
51	CPB-S-02	5/11/2012	915	Building pad, northeast quadrant	2340 J	132	17.1
--	FD051112-A	5/11/2012	--	CPB-S-02	2,660	102	15.8
52	CPB-S-03	5/11/2012	930	Building pad, southeast quadrant	1700 J	17.7	6.9
53	CPB-S-04	5/11/2012	945	Building pad, southwest quadrant	1140 J	13.3	3.7
54	CPB-S-05	5/11/2012	100	Building pad, northwest quadrant	1,640	174	17.5
55	CPB-S-06	5/11/2012	1015	Building pad, center, following the removal 0 to 8 inches of surface material portions of the building pad	2,160	34.2	4.0
NR-SRL					41,000	800	10
R-SRL					3,100	400	10
GPL					--	290	290

Notes: Table 1 samples are representative of current soil conditions in and around the CLEAR Plant Excavation Area  
NR- SRL = Non-residential Soil Remediation Level R- SRL = Residential Soil Remediation Level  
mg/kg = milligram per kilogram GPL = Groundwater Protection Level



Table 1-1: Soil Sample Results  
Former CLEAR Plant Area Soil Excavation  
Sierrita Operations  
May 2012

Map ID	Sample Name	Sample Date	Sample Time	Description	Copper (mg/kg)	Lead (mg/kg)	Arsenic (mg/kg)
Southern Excavation							
24	CPS-SWW-D2.5-01	5/1/2012	1000	Southern excavation, west sidewall, 5' N	3,250	126	12.3
25	CPS-SWW-D2.5-02	5/11/2012	1005	Southern excavation, west sidewall, 5' N, additional sample	248	9.30	<2.5
26	CPS-SWS-D4.5-08	5/11/2012	1012	South excavation, south sidewall, 10' E, collected from adjacent sidewall near concrete floor and sidewall interface	451 J	20.3	3.2
27	CPS-SWN-D2-01	5/11/2012	920	Southern excavation, north sidewall, 32 (20)' E	4350 J	3,220	19.3
--	FD051112-B	5/11/2012	--	CPS-SWN-D2-01	3,440	2,840	17.8
28	CPS-SWS-D4-04	5/2/2012	1500	Southern excavation, south sidewall, 25' E	287	6.99	<2.5
29	CPS-SWN-D2-02	5/11/2012	930	Southern excavation, north sidewall, 40' E	261 J	13.0	3.1
30	CPS-SWS-D2.5-03	5/1/2012	1430	Southern excavation, south sidewall, 50' E	914	32.4	4.1
31	CPS-SWN-D2-03	5/11/2012	940	Southern excavation, north sidewall, 60' E	4150 J	617	11.9
32	CPS-SWS-D4.5-06	5/11/2012	950	South excavation, south sidewall, 75' E, collected from adjacent sidewall near concrete floor and sidewall interface	2200 J	97.2	14.3
33	CPS-SWS-D2.5-02	5/1/2012	1220	Southern excavation, south sidewall, 75' E	7,560	503	9.7
34	CPS-SWS-D2.5-07	5/11/2012	955	Southern excavation, south sidewall, 75' E, additional sample	1,580	20.6	5.0
35	CPS-SWN-D3.5-05	5/11/2012	1000	South excavation, north sidewall, 75' E, collected from adjacent sidewall near concrete floor and sidewall interface	4,560	643	13.1
36	CPS-SWN-D2-04	5/11/2012	945	Southern excavation, north sidewall, 80' E	1,350	29.5	3.2
37	CPS-SWS-D2-05	5/11/2012	948	Southern excavation, south sidewall, 80' E	3,220	34.0	6.7
38	CPS-SWS-D2.5-01	5/1/2012	1210	Southern excavation, south sidewall, 100' E	2,210	208	12
39	CPS-D5-06	5/1/2012	1435	Southern excavation, floor, 100' E	2,670	176	5.5
40	CPS-SWE-D2.5-01	5/2/2012	1700	Southern excavation, east sidewall, 5' N	2,220	258	5.6
Previous Sample Locations							
56	RCP-16-D2.5-01	5/2/2012	1357	Near CP-16	1,250	139	<2.5
57	RCP-T-3-D0.5-01	5/2/2012	1415	Near previous boring location CP-T-3	3,610	65.1	18.1
58	RCP-T-3-D0.5-02	5/11/2012	1345	Near previous boring location CP-T-3, additional sample	2,910	39.3	7.3
NR-SRL					41,000	800	10
R-SRL					3,100	400	10
GPL					--	290	290

Notes: Table 1-1 samples are representative of current soil conditions in and around the CLEAR Plant Excavation Area  
NR- SRL = Non-residential Soil Remediation Level R- SRL = Residential Soil Remediation Level  
mg/kg = milligram per kilogram GPL = Groundwater Protection Level

Table 1-1: Soil Sample Results  
Former CLEAR Plant Area Soil Excavation  
Sierrita Operations  
May 2012

Map ID	Sample Name	Sample Date	Sample Time	Description	Copper (mg/kg)	Lead (mg/kg)	Arsenic (mg/kg)
Parking Lot							
59	CPP-AN-S-01	5/2/2012	1450	Parking lot sample, northern area, area #35	987	48.8	3.5
60	CPP-AN-S-02	5/2/2012	1545	Parking lot sample, northern area, area # 25,	4,550	8.98	<2.5
61	CPP-AN-S-03	5/2/2012	1555	Parking lot sample, northern area, area #39	2,090	65.2	6.9
62	CPP-AN-S-04	5/2/2012	1541	Parking lot sample, northern area, area #23	133	5.1	<2.5
63	CPP-AN-S-05	5/11/2012	1135	Parking lot sample, northern area, area # 25, additional sample	264	9.25	2.6
64	CPP-AE-S-01	5/2/2012	1600	Parking lot sample, eastern area, area #21	2,850	21.8	5.9
65	CPP-AE-S-02	5/2/2012	1610	Parking lot sample, eastern area, area #12	1,410	64.8	4.2
66	CPP-AE-S-03	5/2/2012	1612	Parking lot sample, eastern area, area #17	1,890	45.9	9.3
67	CPP-AE-S-04	5/2/2012	1615	Parking lot sample, southern area, area # 13	3310 J	73.9 J	10.1 J
--	FD050212-D	5/2/2012	--	CPP-AE-S-04	209	11.3	2.8
68	CPP-AE-S-05	5/11/2012	1120	Parking lot sample, southern area, area # 13, additional sample	2,090	37.4	16.3
--	FD051112-C	5/11/2012	--	CPP-AE-S-05	1,990	48.1	13.5
69	CPP-AW-S-01	5/2/2012	1532	Parking lot sample, western area, area #1	679	9.98	2.5
70	CPP-AW-S-02	5/2/2012	1530	Parking lot sample, western area, area #3	1,520	65.6	4.5
71	CPP-AW-S-03	5/2/2012	1535	Parking lot sample, western area, area #4	217	11.9	2.6
72	CPP-AW-S-04	5/2/2012	1539	Parking lot sample, western area, area # 9	1,190	22.3	11.1
NR-SRL					41,000	800	10
R-SRL					3,100	400	10
GPL					--	290	290

Notes: Table 1-1 samples are representative of current soil conditions in and around the CLEAR Plant Excavation Area  
NR- SRL = Non-residential Soil Remediation Level R- SRL = Residential Soil Remediation Level  
mg/kg = milligram per kilogram GPL = Groundwater Protection Level

Table 1-2: Excavated / Waste Characterization Soil Sample Results  
 Former CLEAR Plant Area Soil Excavation  
 Sierrita Operations  
 May 2012

Map ID	Sample Name	Sample Date	Sample Time	Description	Total Metals Analysis (6010B)			TCLP Analysis (1311)							
					Copper (mg/kg)	Lead (mg/kg)	Arsenic (mg/kg)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)
Excavated Soil															
--	CPE-01	5/2/2012	1615	Excavated soil - west central	382	145	2.7	<0.050	<1.00	<0.0100	<0.0500	<0.0500	<0.00020	<0.050	<0.0500
--	CPE-02	5/2/2012	1620	Excavated soil - west south	921	33.7	3.9	<0.050	<1.00	<0.0100	<0.0500	<0.0500	<0.00020	<0.050	<0.0500
--	CPE-03	5/2/2012	1625	Excavated soil - northwest	5,500	986	9.6	<0.050	<1.00	0.0399	<0.0500	0.401	<0.00020	<0.050	<0.0500
--	CPE-04	5/2/2012	1630	Excavated soil - composite west side	2,880	243	6	<0.050	<1.00	0.0149	<0.0500	0.0649	<0.00020	<0.050	<0.0500
--	CPE-05	5/2/2012	1640	Excavated soil - northeast	2,020	38.3	6.6	<0.050	<1.00	0.0361	<0.0500	<0.0500	<0.00020	<0.050	<0.0500
--	CPE-06	5/2/2012	1645	Excavated soil- east central	2,120	71.0	8.4 J	<0.050	<1.00	0.0130	<0.0500	0.0699	<0.00020	<0.050	<0.0500
--	FD050212-E	5/2/2012	--	CPE-06	2100	59.1	5.2	--	--	--	--	--	--	--	--
--	CPE-07	5/2/2012	1642	Excavated soil - east southern	2,590	107	0.4	<0.050	<1.00	0.0213	<0.0500	0.289	<0.00020	<0.050	<0.0500
--	CPE-08	5/2/2012	1632	Excavated soil - composite east side	2,110	46.8	7.5	<0.050	<1.00	0.0209	<0.0500	<0.0500	<0.00020	<0.050	<0.0500
NR-SRL					41,000	800	10	--	--	--	--	--	--	--	--
R-SRL					3,100	400	10	--	--	--	--	--	--	--	--
GPL					--	290	290	--	--	--	--	--	--	--	--
40 CFR 261.24 Maximum Concentration for the Toxicity Characteristic					--	--	--	5.0	100.0	1.0	5.0	5.0	0.2	1.0	5.0

Notes:

NR- SRL = Non-residential Soil Remediation Level                      R- SRL = Residential Soil Remediation Level  
 mg/kg = milligram per kilogram                      GPL = Groundwater Protection Level    TCLP = Toxicity Characteristic Leaching Procedure

**Table 4-1**  
**Soil Data Used to Conduct the Tier I Screening Risk Evaluation**  
**Tier I Screening Risk Evaluation**  
**Former CLEAR PLANT**  
**Freeport McMoRan Sierrita Inc**  
**Green Valley, AZ**

Sample ID	Date	Units	Sample Depth - Top	Sample Depth - Bottom	Analytical Method	Constituent		
						Arsenic	Copper	Lead
CPB-S-02	5/11/2012	mg/kg	0	0.5	6010B	17.1 [15.8]	2340 [2660]	132 [102]
CPB-S-03	5/11/2012	mg/kg	0	0.5	6010B	6.9	1700	17.7
CPB-S-04	5/11/2012	mg/kg	0	0.5	6010B	3.7	1140	13.3
CPB-S-05	5/11/2012	mg/kg	0	0.5	6010B	17.5	1640	174
CPB-S-06	5/11/2012	mg/kg	0	0.5	6010B	4.0	2160	34.2
CPF-AE-D3-01	5/2/2012	mg/kg	2.5	3	6010B	10.9 [9.6]	2330 [2290]	56 [49.6]
CPF-AE-D3-05	5/11/2012	mg/kg	2.5	3	6010B	12.2	1680	36.9
CPF-AE-D3-02	5/2/2012	mg/kg	2.5	3	6010B	7.6	1840	127
CPF-AE-D3-03	5/2/2012	mg/kg	2.5	3	6010B	9.3	1860	38.3
CPF-AE-D3-04	5/2/2012	mg/kg	2.5	3	6010B	8.1	2860	19.3
CPF-AE-SWE-D1.5-01	5/2/2012	mg/kg	1	1.5	6010B	12.7	2500	94
CPF-AE-SWE-D1.5-03	5/11/2012	mg/kg	1	1.5	6010B	9.5	3060	35.6
CPF-AE-SWE-D1.5-02	5/2/2012	mg/kg	1	1.5	6010B	9.9	1490	12.5
CPF-AE-SWW-D1.5-02	5/2/2012	mg/kg	1	1.5	6010B	8.7	1800	45.7
CPF-AE-SWW-D2-01	5/1/2012	mg/kg	1.5	2	6010B	6.2	3250	206
CPF-AE-SWW-D2-03	5/11/2012	mg/kg	1.5	2	6010B	8.1	2540	93.7
CPF-AW-D2-05	5/11/2012	mg/kg	1.5	2	6010B	9.8 [10.7]	1040 [939]	12.3 [11.6]
CPF-AW-D3-01	5/1/2012	mg/kg	2.5	3	6010B	2.6	313	11.5
CPF-AW-D4-02	5/1/2012	mg/kg	3.5	4	6010B	2.5	248	11.7
CPF-AW-D4-05	5/2/2012	mg/kg	3.5	4	6010B	<2.5	924	63.1
CPF-AW-SWE-D1.5-01	5/1/2012	mg/kg	1	1.5	6010B	3	360	18.7
CPF-AW-SWE-D2.5-03	5/11/2012	mg/kg	2	2.5	6010B	2.6	423	37.5
CPF-AW-SWW-D2-01	5/1/2012	mg/kg	1.5	2	6010B	3.5	779	39.9
CPS-SWS-D4.5-08	5/11/2012	mg/kg	4	4.5	6010B	3.2	451	20.3
CPS-SWS-D4.5-06	5/11/2012	mg/kg	4	4.5	6010B	14.3	2200	97.2
CPS-SWN-D3.5-05	5/11/2012	mg/kg	3	3.5	6010B	13.1	4560	643
CPS-D5-06	5/1/2012	mg/kg	4.5	5	6010B	5.5	2670	176
CPS-SWE-D2.5-01	5/2/2012	mg/kg	2	2.5	6010B	5.6	2220	258
CPS-SWS-D2.5-01	5/1/2012	mg/kg	2	2.5	6010B	12	2210	208
CPS-SWS-D2.5-02	5/1/2012	mg/kg	2	2.5	6010B	9.7	7560	503
CPS-SWS-D2.5-07	5/11/2012	mg/kg	2	2.5	6010B	5.0	1580	20.6
CPS-SWS-D2.5-03	5/1/2012	mg/kg	2	2.5	6010B	4.1	914	32.4
CPS-SWS-D4-04	5/2/2012	mg/kg	3.5	4	6010B	<2.5	287	6.99
CPS-SWW-D2.5-01	5/1/2012	mg/kg	2	2.5	6010B	12.3	3250	126
CPS-SWW-D2.5-02	5/11/2012	mg/kg	2	2.5	6010B	<2.5	248	9.30
RCP-16-D2.5-01	5/2/2012	mg/kg	2	2.5	6010B	<2.5	1250	139
RCP-T-3-D0.5-01	5/2/2012	mg/kg	0	0.5	6010B	18.1	3610	65.1
RCP-T-3-D0.5-02	5/11/2012	mg/kg	0	0.5	6010B	7.3	2910	39.3
CPP-AE-S-01	5/2/2012	mg/kg	0	0.5	6010B	5.9	2850	21.8
CPP-AE-S-02	5/2/2012	mg/kg	0	0.5	6010B	4.2	1410	64.8
CPP-AE-S-03	5/2/2012	mg/kg	0	0.5	6010B	9.3	1890	45.9
CPP-AE-S-04	5/2/2012	mg/kg	0	0.5	6010B	10.1 [2.8]	3310 [209]	73.9 [11.3]
CPP-AE-S-05	5/11/2012	mg/kg	0	0.5	6010B	16.3 [13.5]	2090 [1990]	37.4 [48.1]
CPP-AN-S-01	5/2/2012	mg/kg	0	0.5	6010B	3.5	987	48.8
CPP-AN-S-02	5/2/2012	mg/kg	0	0.5	6010B	<2.5	4550	8.98
CPP-AN-S-05	5/11/2012	mg/kg	0	0.5	6010B	2.6	264	9.25
CPP-AN-S-03	5/2/2012	mg/kg	0	0.5	6010B	6.9	2090	65.2
CPP-AN-S-04	5/2/2012	mg/kg	0	0.5	6010B	<2.5	133	5.1
CPP-AW-S-01	5/2/2012	mg/kg	0	0.5	6010B	2.5	679	9.98
CPP-AW-S-02	5/2/2012	mg/kg	0	0.5	6010B	4.5	1520	65.6
CPP-AW-S-03	5/2/2012	mg/kg	0	0.5	6010B	2.6	217	11.9
CPP-AW-S-04	5/2/2012	mg/kg	0	0.5	6010B	11.1	1190	22.3
CPF-AW-SWW-D1-03	5/11/2012	mg/kg	0.5	1	6010B	7.6	1290	120
CPF-AE-SWW-D1-04	5/11/2012	mg/kg			6010B	12.0	4070	279
CPF-AE-D2-06	5/11/2012	mg/kg	1.5	2	6010B	11.1 [10.6]	2360 [2200]	73.3 [69.1]
CPS-SWS-D2-05	5/11/2012	mg/kg	1.5	2	6010B	6.7	3220	34.0
CPS-SWN-D2-01	5/11/2012	mg/kg	1.5	2	6010B	19.3 [17.8]	4350 [3440]	3220 [2840]
CPS-SWN-D2-02	5/11/2012	mg/kg	1.5	2	6010B	3.1	261	13.0
CPS-SWN-D2-03	5/11/2012	mg/kg	1.5	2	6010B	11.9	4150	617

**Table 4-1**  
**Soil Data Used to Conduct the Tier I Screening Risk Evaluation**  
**Tier I Screening Risk Evaluation**  
**Former CLEAR PLANT**  
**Freeport McMoRan Sierrita Inc**  
**Green Valley, AZ**

Sample ID	Date	Units	Sample Depth - Top	Sample Depth - Bottom	Analytical Method	Constituent		
						Arsenic	Copper	Lead
CPS-SWN-D2-04	5/11/2012	mg/kg	1.5	2	6010B	3.2	1350	29.5
CPF-AW-SWE-D0.5-04	5/11/2012	mg/kg	0	0.5	6010B	15.0	8970	1140
CPF-AW-SWW-D0.75-04	5/11/2012	mg/kg	0.25	0.75	6010B	6.9	4610	622
CPF-AN-SWN-D1-01	5/11/2012	mg/kg	0.5	1	6010B	6.1	1910	171
CPF-AN-SWN-D1.5-02	5/11/2012	mg/kg	1	1.5	6010B	9.8	4570	453
CPF-AN-SWS-D0.5-02	5/11/2012	mg/kg	0	0.5	6010B	6.3	2470	279
CPF-AN-SWN-D1-03	5/11/2012	mg/kg	0.5	1	6010B	10.7	3800	473
CPF-AN-SWS-D0.5-03	5/11/2012	mg/kg	0	0.5	6010B	18	3810	470
CPF-AN-SWN-D1.5-04	5/11/2012	mg/kg	1	1.5	6010B	8.7	3490	466
CPF-AN-SWS-D0.5-04	5/11/2012	mg/kg	0	0.5	6010B	21.7	4390	379
CPF-AN-SWN-D0.5-05	5/11/2012	mg/kg	0	0.5	6010B	9.9	4090	105
CPF-AN-D1-01	5/11/2012	mg/kg	0.5	1	6010B	10.1	4910	236
CPF-AN-SWS-D0.5-05	5/21/2012	mg/kg	0	0.5	6010B	6.3	3760	578

**Note(s):**

[ ] duplicate result

mg/kg

milligrams per kilogram

**Table 5-1  
Results Tier I Screening Evaluation  
Tier I Screening Risk Evaluation  
Former CLEAR PLANT  
Freeport McMoRan Sierrita Inc  
Green Valley, AZ**

Constituent	95% UCL	No. of Detects	No. of NDs	Frequency of Detect	Maximum Detected Concentration (mg/kg) <sup>a</sup>	EPC (mg/kg)	SRLs (mg/kg)		Is the EPC below the rSRL?	GPL (mg/kg)	Is the EPC below the GPL?
							Residential	Non-Residential			
Arsenic	9.0	66	6	92%	21.7	9.0	10	10	Yes	290	Yes
Copper	2650	72	0	100%	8970	2650	3,100	41,000	Yes	NA	--
Lead	289	72	0	100%	3030	289	400	800	Yes	290	Yes

**Notes:**

a Maximum detected concentration of lead represents the average of the primary sample (3220 mg/kg) and the duplicate sample (2840 mg/kg).

Excludes samples earmarked for excavation

95% UCL = 95 percent upper confidence limit

EPC = Exposure point concentration (lesser of the maximum detected concentration and the 95% UCL of the arithmetic mean)

GPL=Groundwater Protection Level (soil leaching; <http://www.azdeq.gov/viron/waste/ust/outreach/download/cleanup.pdf>)

SRLs = Soil Remediation Levels and were obtained from: [http://www.azsos.gov/public\\_services/title\\_18/18-07.htm](http://www.azsos.gov/public_services/title_18/18-07.htm)

mg/kg = milligrams per kilogram

NDs = nondetects

NA = not applicable

-- = Comparison not conducted due to absence of screening value

**Table 5-1  
Results Tier I Screening Evaluation  
Tier I Screening Risk Evaluation  
Former CLEAR PLANT  
Freeport McMoRan Sierrita Inc  
Green Valley, AZ**

Constituent	95% UCL	No. of Detects	No. of NDs	Frequency of Detect	Maximum Detected Concentration (mg/kg) <sup>a</sup>	EPC (mg/kg)	SRLs (mg/kg)		Is the EPC below the rSRL?	GPL (mg/kg)	Is the EPC below the GPL?
							Residential	Non-Residential			
Arsenic	9.0	66	6	92%	21.7	9.0	10	10	Yes	290	Yes
Copper	2650	72	0	100%	8970	2650	3,100	41,000	Yes	NA	--
Lead	289	72	0	100%	3030	289	400	800	Yes	290	Yes

**Notes:**

a Maximum detected concentration of lead represents the average of the primary sample (3220 mg/kg) and the duplicate sample (2840 mg/kg).

Excludes samples earmarked for excavation

95% UCL = 95 percent upper confidence limit

EPC = Exposure point concentration (lesser of the maximum detected concentration and the 95% UCL of the arithmetic mean)

GPL=Groundwater Protection Level (soil leaching; <http://www.azdeq.gov/environ/waste/ust/outreach/download/cleanup.pdf>)

SRLs = Soil Remediation Levels and were obtained from: [http://www.azsos.gov/public\\_services/title\\_18/18-07.htm](http://www.azsos.gov/public_services/title_18/18-07.htm)

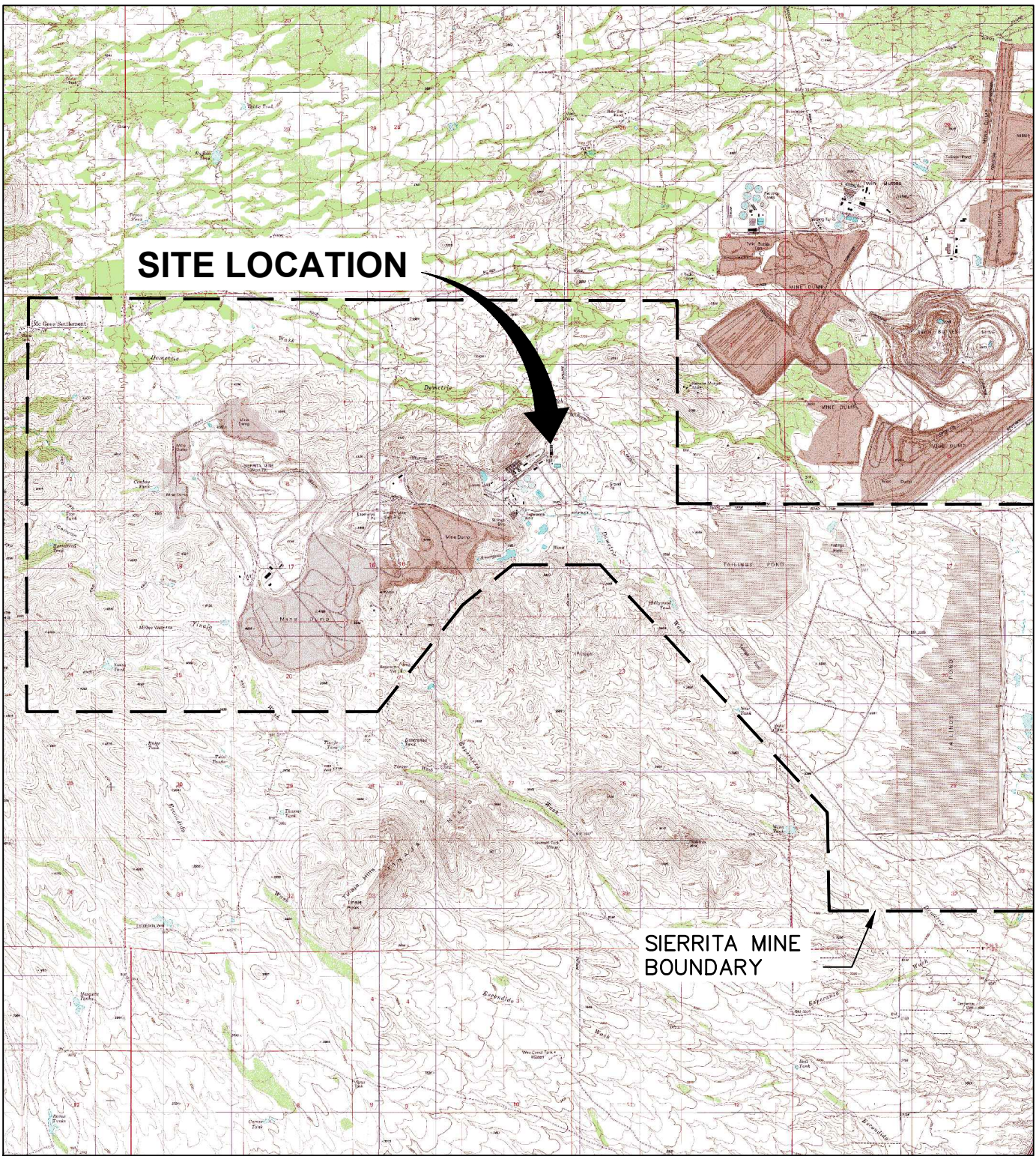
mg/kg = milligrams per kilogram

NDs = nondetects

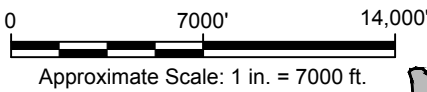
NA = not applicable


-- = Comparison not conducted due to absence of screening value

XREFS:  
CITY:(Reop) DIV(GROUP:(Reop) DB:(Reop) LD:(Opt) PIC:(Opt) PM:(Reop) TM:(Opt) LYR:(Opt) OFF:=REF\*  
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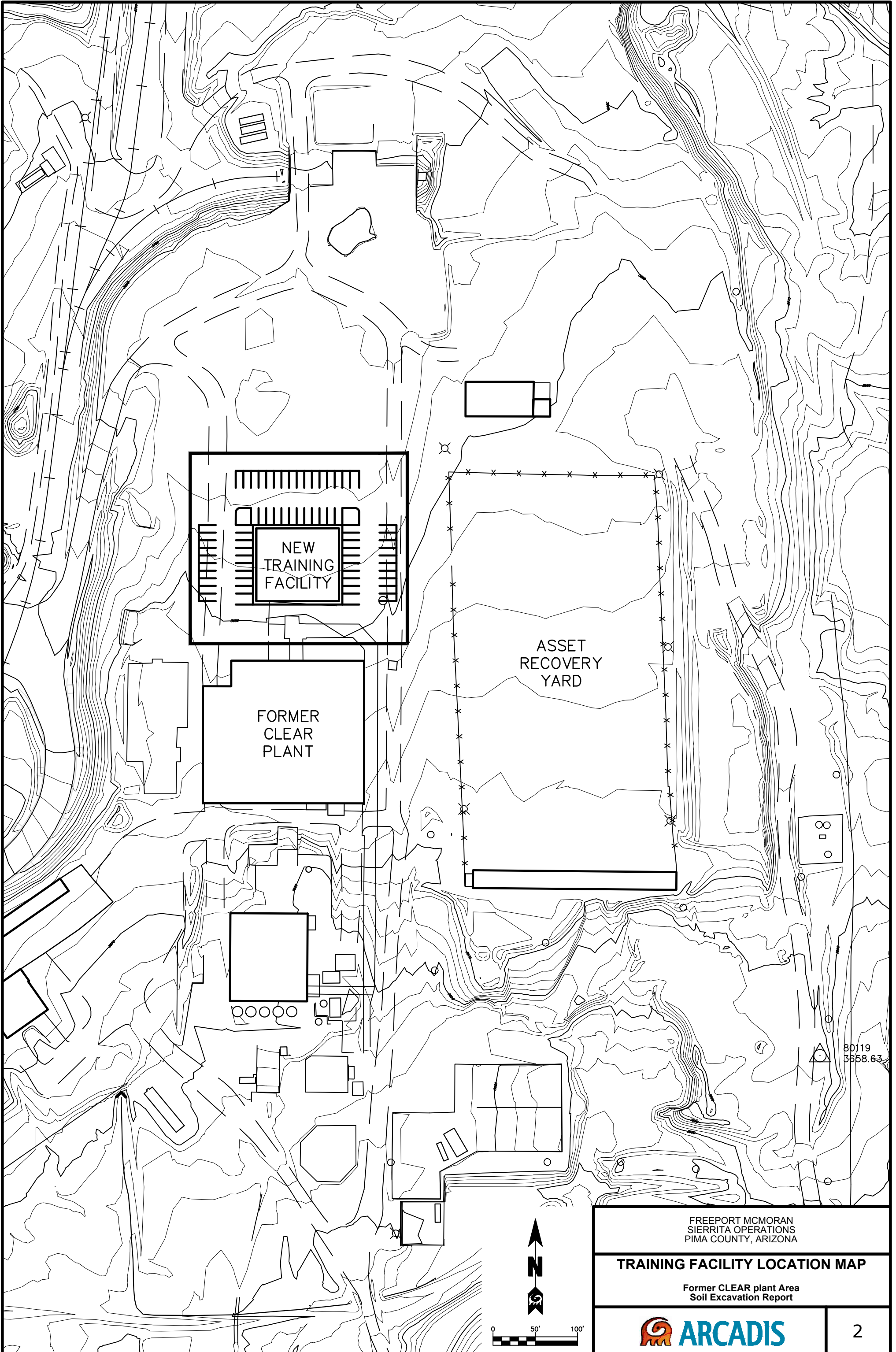


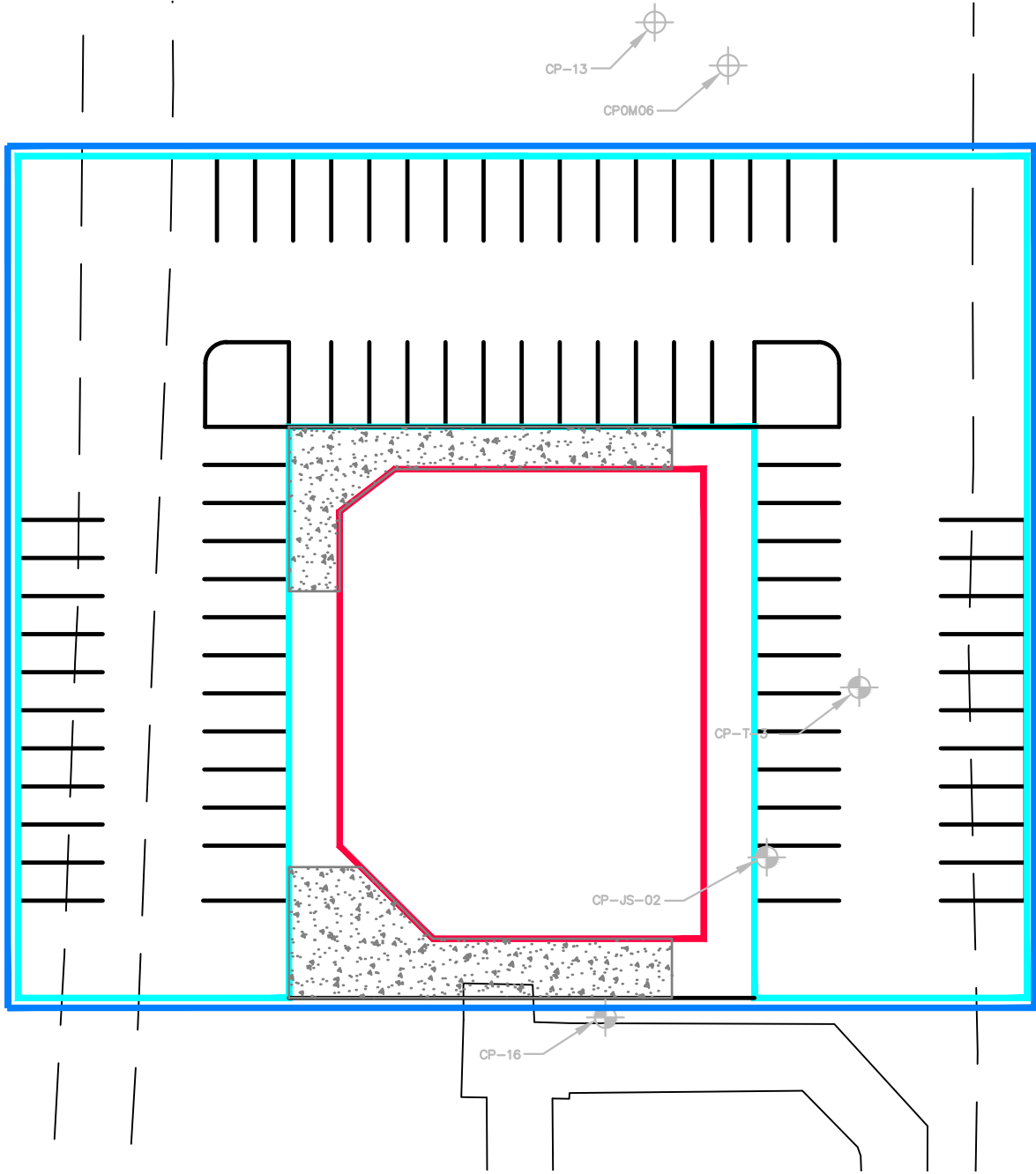
REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., ESPERANZA MILL, ARIZ, 1981, BATAMOTE HILLS, ARIZ. 1981, TWIN BUTTES, ARIZ., AND SAMANIEGO PEAK, ARIZ. 1981



FREEPORT-MCMORAN SIERRITA GREEN VALLEY, AZ	
<b>SITE LOCATION MAP</b>	
Former CLEAR Plant Area Excavation Report	
	FIGURE <b>1</b>







**LEGEND**



SSCR



APPROXIMATE TRAINING FACILITY AND PARKING LOT EXTENT



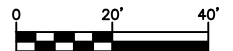
PARKING LOT AREA



BUILDING FOOTPRINT AREA



EXPOSED CONCRETE AREA

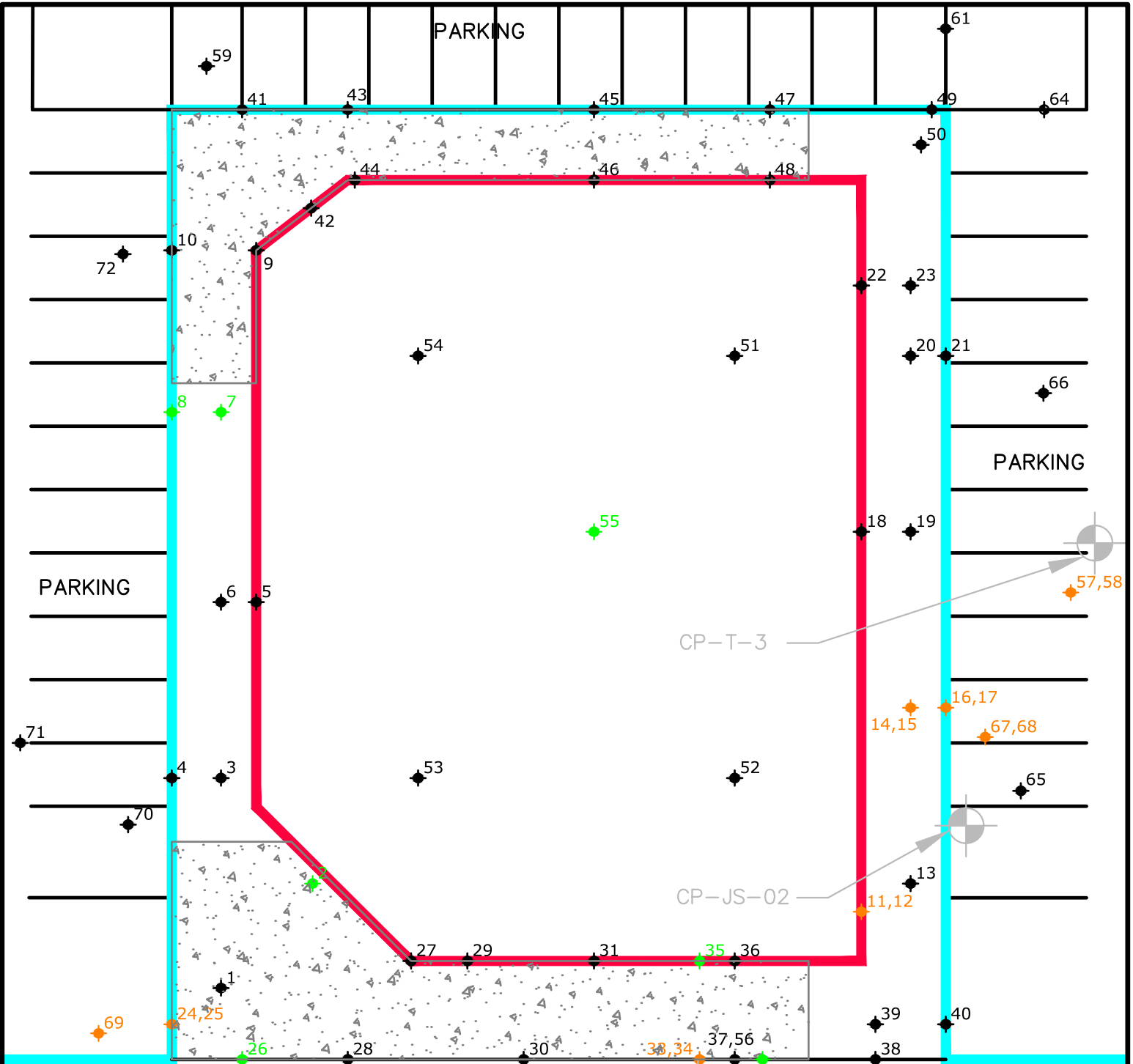


FREEPORT MCMORAN  
SIERRITA OPERATIONS  
PIMA COUNTY, ARIZONA








**PREVIOUSLY COLLECTED SOIL SAMPLES**

Former CLEAR Plant Area  
Soil Excavation Report




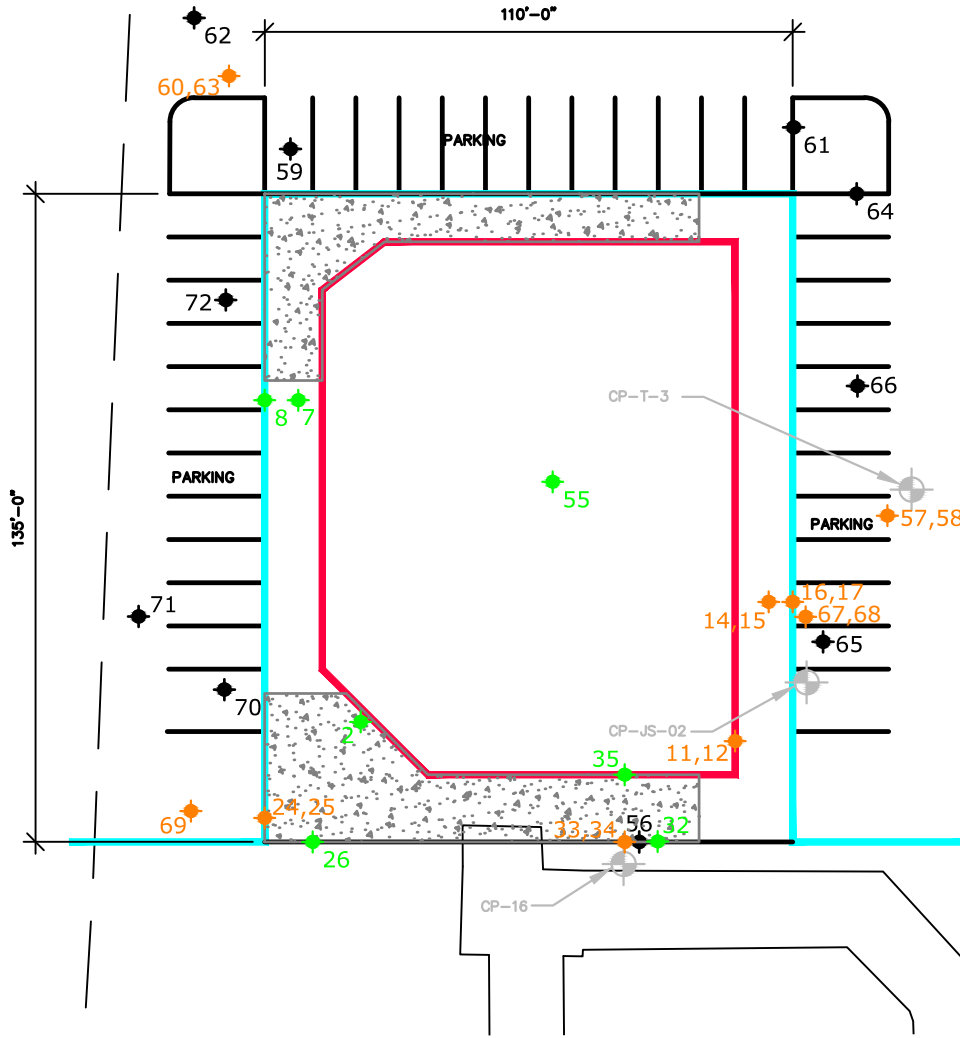


**LEGEND**








-  SSCR
-  Former CLEAR Plant Area Soil Sample
-  Former CLEAR Plant Area Soil Confirmation Sample
-  Former CLEAR Plant Area Soil Replacement Sample following Over-Excavation
-  PARKING LOT AREA
-  BUILDING FOOTPRINT AREA
-  EXPOSED CONCRETE AREA

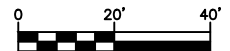


FREEPORT MCMORAN SIERRITA OPERATIONS PIMA COUNTY, ARIZONA	
<b>SOIL SAMPLES NEAR THE TRAINING FACILITY EXCAVATION AREAS</b>	
Former CLEAR Plant Area Soil Excavation Report	
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**LEGEND**

-  SSCR
-  Former CLEAR Plant Area Soil Sample
-  Former CLEAR Plant Area Soil Confirmation Sample
-  Former CLEAR Plant Area Soil Replacement Sample Following Over-Excavation
-  PARKING LOT AREA
-  BUILDING FOOTPRINT AREA
-  EXPOSED CONCRETE AREA



FREEPORT MCMORAN SIERRITA OPERATIONS PIMA COUNTY, ARIZONA	
<b>SOIL SAMPLES NEAR THE TRAINING                  FACILITY PARKING LOT AREAS</b> Former CLEAR Plant Area Soil Excavation Report	
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## **Appendix A**

Data Validation Summary

## **1.0 INTRODUCTION**

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This summary presents data verification results for soil samples collected from the Former CLEAR Plant Excavation Area at the Freeport-McMoRan Sierrita Inc. (Sierrita) Site between May 1<sup>st</sup>, 2012 and May 21<sup>st</sup>, 2012 during soil excavation activities for a new training facility. The data review was performed in accordance with the procedures specified in the USEPA Functional Guidelines for Inorganic Data Review and quality assurance and control parameters set by the project laboratory SVL Analytical Inc.

A total of 89 soil samples were collected during the sampling activities and submitted to SVL Analytical Inc. for the following parameters:

- Metals by USEPA Methods 6010B.

Additionally, eight of the 89 soil samples were also submitted to SVL Analytical Inc. for the following parameters:

- Toxicity Characteristic Leaching Procedure (TCLP) by USEPA Method 1311 for Metals by USEPA Methods 6010B.

A total of fourteen quality assurance samples consisting of equipment rinsate blanks and field duplicates were collected and analyzed as part of the monitoring event. Table A-1 presents a summary of the sample identifications, laboratory sample identifications, and requested analytical parameters.

## **2.0 QUALITY CONTROL PARAMETERS REVIEWED**

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Sample results were subject to a Level II data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody;
- Sample Preservation and Temperature Upon Laboratory Receipt
- Holding Times;
- Blank Contamination (laboratory blanks and equipment rinsate blanks);
- Laboratory Control Sample (LCS) Recovery;
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD; and
- Duplicates (field duplicate).

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

- J The analyte was positively identified; however, the result should be considered an estimated value.
- UJ The reporting limit is considered an estimated value.
- R Quality control indicates that the data is not usable.

Results qualified as “J” or UJ” are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

Results for the monitoring event that required qualification based on the data verification are summarized in Table A-2.

## **2.1 CHAIN-OF-CUSTODY**

Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures. The chain-of-custody documentation associated with project samples was found to be complete with the following exceptions:

- On the W2E0059 chain-of-custody, samples CPS-SWN-D2.5-01, CPS-SWN-D2.5-02, CPS-SWN-D2.5-03, and CPS-SWN-D2.5-04 were received by the laboratory, but not analyzed.
- On the W2E0059 chain-of-custody, sample label on CPS-D5-01 was difficult to read and identified based on the chain-of-custody.
- On the W2E0116 chain-of-custody, sample label on CPP-AW-S-04 was difficult to read and identified based on the chain-of-custody.
- On the W2E0116 chain-of-custody, sample CPP-AN-S-01 was not included in the shipment.
- On the W2E0118 chain-of-custody, sample CPF-AW-SWW-D1-02 was not included in the shipment. Field duplicate FD050212-A is a duplicated of CPF-AW-SWW-D1-02. For reporting purposes FD050212-A was reported as CPF-AW-SWW-D1-02 on the W2E0118 revised laboratory report.
- On the W2E0118 chain-of-custody, the request for TCLP analysis of the RCRA eight metals was not included on the chain-of-custody for samples CPE-01, CPE-02, CPE-03, CPE-04, CPE-05, CPE-06, CPE-07, and CPE-08. The TCLP analysis was requested after the laboratory received the samples.
- On the W2E0118 chain-of-custody, sample CPF-AW-SWE-D1-02 had two containers, but only one was indicated on the chain-of-custody.
- On the W2E0118 chain-of-custody, only the first page of the chain of custody was signed as relinquished.

- On the W2E0143 chain-of-custody, the sample jar for CPS-SWE-D2.5-01 was broken upon receipt by laboratory; however the contents of the jar were still intact and the sample was analyzed.
- On the W2E0381 chain-of-custody, CPS-SWN-D2-01 was not listed on the chain-of-custody, but was included on the W2E0380 chain-of-custody.
- On the W2E0381 chain-of-custody, CPF-AN-SWS-D0.5-01 was submitted, but not analyzed.
- On the W2E0380 chain-of-custody, RCP-T-3-D0.5-02 was not listed on the chain-of-custody, but was included on the W2E0381 chain-of-custody.
- On the W2E0729 chain-of-custody, CPF-AN-SWS-D0.5-05 did not list a sample time.

None of the chain-of-custody discrepancies impacted sample quality or samples results; therefore, data qualification was not required.

## **2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT**

Samples collected were received preserved and intact at the respective project laboratories. The samples were received by the laboratory at the correct temperature ( $4 \pm 2^\circ$  Celsius) with the following exceptions:

- Samples collected on May 1<sup>st</sup> and 2<sup>nd</sup>, 2012 associated with the W2E0143, W2E0116, and W2E0118 chain-of-custodies, were received at 9.1, 0.9, and 1.7 degrees Celsius. The temperature outliers did not significantly impact the preservation of metals in the soils or the sample results; therefore, data qualification was not required.
- Samples collected on May 11<sup>nd</sup>, 2012 associated with the W2E0381 and W2E0380 chain-of-custodies, were received at 12.8 and 18.2 degrees Celsius, respectively. The temperature outliers did not significantly impact the preservation of metals in the soils or the sample results; therefore, data qualification was not required.

Data qualification was not required based on target analytes that were analyzed and various resources including the Environmental Protection Agency publication SW-846 entitled “*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*”, which includes Method 6010B. Chapter three, Inorganic Analysis, from SW-846, does not recommend any preservation for solid matrix samples that are analyzed for total metals (excluding hexavalent chromium and mercury).



## **2.3 HOLDING TIMES**

All samples were extracted and analyzed within the holding time limits set by the respective methods.

## **2.4 BLANK CONTAMINATION**

### **2.4.1 Laboratory Blank**

Laboratory blanks were analyzed at the appropriate frequency as specified by the project laboratory. Target compounds were not detected in the laboratory blanks.

### **2.4.3 Equipment Rinsate Blank**

An equipment rinsate blank was performed at the appropriate frequency as specified in the Former CLEAR Plant Area Soil Excavation Work Plan (ARCADIS, 2012). Target compounds were not detected in the equipment rinsate blank.

## **2.5 LCS RECOVERY**

LCS recoveries were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS and the analyte was detected in the associated batch, then the analyte results were qualified “J”.
- If the analyte recovery was below acceptance limits for LCS then the analyte results in the associated analytical batch were qualified (“UJ” for non-detects and “J” for detected results).
- If the analyte recovery was less than 10 percent, the analyte results in the associated analytical batch were rejected and qualified “R”.

LCS percent recoveries were within acceptance limits.

## **2.7 MS/MSD RECOVERY AND RPD**

MS/MSD samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified “J”.
- Low MS/MSD recoveries for inorganic parameters result in sample qualification of the associated analytical batch.
- Low MS/MSD recoveries for organic parameters result in the data qualification of the unspiked sample rather than the analytical batch.
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

MS/MSD percent recoveries and RPDs were within acceptance limits except for the following:

- The MS and MSD recovery for copper and lead were outside the respective acceptance limits (75 to 125 percent) for analytical batch W222046. Results were not qualified because the unspiked sample results for copper and lead were more than four times the spike concentration.
- The MS and MSD recovery for copper were outside the respective acceptance limits (75 to 125 percent) for analytical batch W219054. Results were not qualified because the unspiked sample result for copper was more than four times the spike concentration.
- The MS and MSD recovery for copper (152 percent and 131 percent) was above the respective acceptance limits (75 to 125 percent) for analytical batch W220051. Data qualification “J” was required to indicate a potential bias for all copper samples in the batch.
- The MS recovery for copper (66 percent) was below the respective acceptance limits (75 to 125 percent) for analytical batch W220049. Results were not qualified because the unspiked sample result for copper was more than four times the spike concentration.
- The MS and MSD recovery for copper were outside the respective acceptance limits (75 to 125 percent) for analytical batch W220050. Results were not qualified because the unspiked sample result for copper was more than four times the spike concentration.

- The MSD recovery for copper was outside the respective acceptance limits (75 to 125 percent) for analytical batch W218375. Results were not qualified because the unspiked sample result for copper was more than four times the spike concentration.
- The MS recovery for copper was above the respective acceptance limits (75 to 125 percent) for analytical batch W218359. Results were not qualified because the unspiked sample result for copper was more than four times the spike concentration.
- The MS and MSD recovery for copper were outside the respective acceptance limits (75 to 125 percent) for analytical batch W218294. Results were not qualified because the unspiked sample result for copper was more than four times the spike concentration.

## **2.8 DUPLICATES**

### **2.8.1 Field Duplicates**

A field duplicate was collected at the appropriate frequency as specified in the Former CLEAR Plant Area Soil Excavation Work Plan (ARCADIS, 2012). Nine field duplicates were collected during the soil sampling event and submitted for analysis. The RPDs between the field duplicate and its associated sample were calculated and are presented in Table A-3. The field duplicates were evaluated by the following criteria:

- If an analyte was detected at a concentration greater than five times the method reporting limit, the RPD should be less than 35 percent for soil samples.
- If an analyte was detected at a concentration that is less than five times the method reporting limit, then the difference between the sample and the field duplicate should not exceed the method reporting limit.
- Duplicate RPDs are calculated by dividing the difference of the concentrations by the average of the concentrations.

Field duplicate RPDs were within acceptance limits with the following exceptions:

- The RPD values between sample CPP-AE-S-04 and field duplicate FD050212-D for arsenic (113 percent), copper (176 percent), and lead (147 percent) were above the acceptance limit. Data qualification “J” was required to indicate a potential bias.

- The RPD values between sample CPE-06 and field duplicate FD050212-E for arsenic (47 percent) was above the acceptance limit. Data qualification “J” was required to indicate a potential bias.

### 3.0 COMPLETENESS SUMMARY

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Two types of completeness were calculated for this project: contract and technical. A general goal for completeness for the soil sampling event is 90 percent. Results indicated as not reportable by the laboratory are not included in the completeness calculations. The following equations were used to calculate the two types of completeness:

$$\begin{aligned} \% \text{ Contract Completeness} = \\ & \left( \frac{\text{Number of contract compliant results}}{\text{Number of reported results}} \right) \\ & \times 100 \end{aligned}$$

$$\begin{aligned} \% \text{ Technical Completeness} = \\ & \left( \frac{\text{Number of usable results}}{\text{Number of reported results}} \right) \\ & \times 100 \end{aligned}$$

The overall contract completeness, which includes the evaluation of protocol and contract deviations, which includes the evaluation of the QC parameters listed in Section 2.0, was 95 percent (18 out of a total 313 results required qualification). The technical completeness attained for this monitoring period was 100 percent. The completeness results are provided in Table A-4. The results for the monitoring events were considered usable for the intended purposes.

Table A-1  
 Sampling and Analysis Schedule  
 Former CLEAR Plant Area Soil Excavation Report  
 Sierrita Mine  
 Green Valley, AZ

Sample Name	Laboratory ID	Collected	Sample Type	Parameters
CPS-SWW-D2.5-01	W2E0059-01	5/1/2012	N	Metals
CPS-D5-01*	W2E0059-02	5/1/2012	N	Metals
CPS-D5-02*	W2E0059-03	5/1/2012	N	Metals
FD050112-A*	W2E0059-04	5/1/2012	FD	Metals
CPS-D5-03*	W2E0059-05	5/1/2012	N	Metals
CPS-D5-04*	W2E0059-06	5/1/2012	N	Metals
CPS-SWS-D2.5-01	W2E0059-07	5/1/2012	N	Metals
CPS-SWS-D2.5-02	W2E0059-08	5/1/2012	N	Metals
CPS-D5-05*	W2E0059-09	5/1/2012	N	Metals
CPF-AW-SWE-D1.5-01	W2E0059-10	5/1/2012	N	Metals
CPF-AW-D3-01	W2E0059-11	5/1/2012	N	Metals
CPF-AW-D4-02	W2E0059-12	5/1/2012	N	Metals
CPS-SWS-D2.5-03	W2E0059-13	5/1/2012	N	Metals
CPS-D5-06	W2E0059-14	5/1/2012	N	Metals
CPF-AE-SWW-D2-01	W2E0059-15	5/1/2012	N	Metals
CPP-AN-S-01	W2E0116-01	5/2/2012	N	Metals
CPS-SWS-D4-04	W2E0116-02	5/2/2012	N	Metals
CPF-AW-D4-05	W2E0116-03	5/2/2012	N	Metals
RCP-16-D2.5-01	W2E0116-04	5/2/2012	N	Metals
RCP-T-3-D0.5-01	W2E0116-05	5/2/2012	N	Metals
EB050212-B	W2E0116-06	5/2/2012	EB	Metals
CPP-AW-S-02	W2E0116-07	5/2/2012	N	Metals
CPP-AW-S-01	W2E0116-08	5/2/2012	N	Metals
CPP-AW-S-03	W2E0116-09	5/2/2012	N	Metals
CPP-AW-S-04	W2E0116-10	5/2/2012	N	Metals
CPP-AN-S-04	W2E0116-11	5/2/2012	N	Metals
CPP-AN-S-02	W2E0116-12	5/2/2012	N	Metals
CPP-AN-S-03	W2E0116-13	5/2/2012	N	Metals
CPP-AE-S-01	W2E0116-15	5/2/2012	N	Metals
CPP-AE-S-02	W2E0116-16	5/2/2012	N	Metals
CPP-AE-S-03	W2E0116-17	5/2/2012	N	Metals
CPP-AE-S-04	W2E0116-18	5/2/2012	N	Metals
FD050212-D	W2E0116-19	5/2/2012	FD	Metals
FD050212-E	W2E0116-20	5/2/2012	FD	Metals
CPF-AW-D2-04*	W2E0118-01	5/2/2012	N	Metals
EB050212-A	W2E0118-02	5/2/2012	EB	Metals
CPF-AW-SWW-D2-01	W2E0118-03	5/1/2012	N	Metals
EB050112	W2E0118-04	5/1/2012	EB	Metals
CPF-AW-SWW-D2-01*	W2E0118-05	5/2/2012	N	Metals
CPF-AW-SWW-D1-02 *^	W2E0118-07	5/2/2012	N	Metals
CPF-AE-D3-01	W2E0118-08	5/2/2012	N	Metals
FD050212-B	W2E0118-09	5/2/2012	FD	Metals
CPF-AE-D3-02	W2E0118-10	5/2/2012	N	Metals
CPF-AE-SWE-D1.5-01	W2E0118-11	5/2/2012	N	Metals
CPF-AE-SWW-D1.5-02	W2E0118-12	5/2/2012	N	Metals
CPF-AE-D3-03	W2E0118-13	5/2/2012	N	Metals
CPF-AE-D3-04	W2E0118-14	5/2/2012	N	Metals

Table A-1  
 Sampling and Analysis Schedule  
 Former CLEAR Plant Area Soil Excavation Report  
 Sierrita Mine  
 Green Valley, AZ

Sample Name	Laboratory ID	Collected	Sample Type	Parameters
CPF-AE-SWE-D1.5-02	W2E0118-15	5/2/2012	N	Metals
CPE-04	W2E0118-16	5/2/2012	N	Metals
CPE-03	W2E0118-17	5/2/2012	N	Metals
CPE-02	W2E0118-18	5/2/2012	N	Metals
CPE-01	W2E0118-19	5/2/2012	N	Metals
CPE-05	W2E0118-20	5/2/2012	N	Metals
CPE-06	W2E0118-21	5/2/2012	N	Metals
CPE-07	W2E0118-22	5/2/2012	N	Metals
CPE-08	W2E0118-23	5/2/2012	N	Metals
CPB-S-01*	W2E0143-01	5/2/2012	N	Metals
CPS-SWE-D2.5-01	W2E0143-02	5/2/2012	N	Metals
EB051112-A	W2E0380-01	5/11/2012	EB	Metals
EB051112-B	W2E0380-02	5/11/2012	EB	Metals
CPF-AW-SWE-D2.5-03	W2E0380-03	5/11/2012	N	Metals
CPF-AW-D2-05	W2E0380-04	5/11/2012	N	Metals
CPF-AW-SWW-D0.75-04	W2E0380-05	5/11/2012	N	Metals
CPF-AN-SWN-D1-01	W2E0380-06	5/11/2012	N	Metals
CPF-AN-SWN-D1.5-02	W2E0380-07	5/11/2012	N	Metals
CPF-AN-SWS-D0.5-02	W2E0380-08	5/11/2012	N	Metals
CPF-AN-SWN-D1-03	W2E0380-09	5/11/2012	N	Metals
CPF-AN-SWS-D0.5-03	W2E0380-10	5/11/2012	N	Metals
CPF-AN-SWN-D1.5-04	W2E0380-11	5/11/2012	N	Metals
CPF-AN-SWS-D0.5-04	W2E0380-12	5/11/2012	N	Metals
CPF-AN-SWN-D0.5-05	W2E0380-13	5/11/2012	N	Metals
CPF-AN-D1-01	W2E0380-14	5/11/2012	N	Metals
CPP-AE-S-05	W2E0380-15	5/11/2012	N	Metals
CPP-AN-S-05	W2E0380-16	5/11/2012	N	Metals
CPF-AE-D2-06	W2E0380-17	5/11/2012	N	Metals
CPS-SWW-D2.5-02	W2E0380-18	5/11/2012	N	Metals
CPS-SWS-D2.5-07	W2E0380-19	5/11/2012	N	Metals
CPS-SWN-D3.5-05	W2E0380-20	5/11/2012	N	Metals
CPS-SWS-D2-05	W2E0380-21	5/11/2012	N	Metals
CPB-S-05	W2E0380-22	5/11/2012	N	Metals
CPB-S-06	W2E0380-23	5/11/2012	N	Metals
CPS-SWN-D2-04	W2E0380-25	5/11/2012	N	Metals
RCP-T-3-D0.5-02	W2E0380-26	5/11/2012	N	Metals
CPS-SWN-D2-02	W2E0381-01	5/11/2012	N	Metals
FD051112-E	W2E0381-02	5/11/2012	FD	Metals
CPB-S-02	W2E0381-03	5/11/2012	N	Metals
CPB-S-04	W2E0381-04	5/11/2012	N	Metals
FD051112-B	W2E0381-05	5/11/2012	FD	Metals
CPS-SWS-D4.5-08	W2E0381-06	5/11/2012	N	Metals
CPB-S-03	W2E0381-07	5/11/2012	N	Metals

Table A-1  
 Sampling and Analysis Schedule  
 Former CLEAR Plant Area Soil Excavation Report  
 Sierrita Mine  
 Green Valley, AZ

Sample Name	Laboratory ID	Collected	Sample Type	Parameters
CPS-SWS-D4.5-06	W2E0381-08	5/11/2012	N	Metals
CPS-SWN-D2-01	W2E0381-10	5/11/2012	N	Metals
FD051112-C	W2E0381-11	5/11/2012	FD	Metals
CPF-AE-SWW-D2-03	W2E0381-12	5/11/2012	N	Metals
CPF-AE-SWW-D1-04	W2E0381-13	5/11/2012	N	Metals
CPF-AW-SWW-D1-03	W2E0381-14	5/11/2012	N	Metals
FD051112-D	W2E0381-15	5/11/2012	FD	Metals
CPF-AW-SWE-D0.5-04	W2E0381-16	5/11/2012	N	Metals
CPF-AE-D3-05	W2E0381-17	5/11/2012	N	Metals
CPS-SWN-D2-03	W2E0381-18	5/11/2012	N	Metals
CPF-AE-SWE-D1.5-03	W2E0381-19	5/11/2012	N	Metals
FD051112-A	W2E0381-20	5/11/2012	FD	Metals
CPF-AN-SWS-D0.5-05	W2E0729-01	5/21/2012	N	Metals

Notes:

Metals = Total metals for arsenic, lead, and copper by EPA Method 6010B

TCPLP = RCRA 8 Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by EPA Method 1311

N = Normal field sample

FD = Field Duplicate

EB = Equipment Rinsate Blank

\*Samples were overexcavated following sample collection.

^The parent sample of FD050212-A, CPF-AW-SWW-D1-02, was inadvertently not submitted to the laboratory for analysis.

The sample ID for FD050212-A was subsequently changed to the parent sample ID to avoid confusion.

**Table A-2**  
**Qualified Analytical Results**  
**Former CLEAR Plant Area Soil Excavation Report**  
**Sierrita Mine**  
**-Green Valley, AZ**

Sample ID	Date Collected	Analyte	Result	Units	Qualified Result	Qualification Description
CPE-06	5/2/2012	Arsenic	8.4	mg/kg	J	Qualified due to field duplicate RPD outside of acceptance limits
CPP-AE-S-04	5/2/2012	Arsenic	10.1	mg/kg	J	Qualified due to field duplicate RPD outside of acceptance limits
CPP-AE-S-04	5/2/2012	Copper	3,310	mg/kg	J	Qualified due to field duplicate RPD outside of acceptance limits
CPP-AE-S-04	5/2/2012	Lead	73.9	mg/kg	J	Qualified due to field duplicate RPD outside of acceptance limits
CPB-S-02	5/11/2012	Copper	2,340	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPB-S-03	5/11/2012	Copper	1,700	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPB-S-04	5/11/2012	Copper	1,140	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPF-AE-D3-05	5/11/2012	Copper	1,680	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPF-AE-SWE-D1.5-03	5/11/2012	Copper	3,060	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPF-AE-SWW-D1-04	5/11/2012	Copper	4,070	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPF-AE-SWW-D2-03	5/11/2012	Copper	2,540	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPF-AW-SWE-D0.5-04	5/11/2012	Copper	8,970	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPF-AW-SWW-D1-03	5/11/2012	Copper	1,290	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPS-SWN-D2-01	5/11/2012	Copper	4,350	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPS-SWN-D2-02	5/11/2012	Copper	261	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPS-SWN-D2-03	5/11/2012	Copper	4,150	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPS-SWS-D4.5-06	5/11/2012	Copper	2,200	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits
CPS-SWS-D4.5-08	5/11/2012	Copper	451	mg/kg	J	Qualified due to MS/MSD recoveries outside of acceptance limits

Notes:

mg/kg = milligrams per kilogram

MS/MSD = matrix spike/matrix spike duplicate

J = Estimated value

RPD = relative percent difference



**Table A-3**  
**Field Duplicate Summary**  
**Former CLEAR Plant Area Soil Excavation Report**  
**Sierrita Mine**  
**Green Valley, AZ**

Sample ID / Field Duplicate ID	Parameters	Sample Result	Field Duplicate	RPD (%)
CPF-AW-D2-05 / FD051112-E	<b>Total Metals (mg/kg)</b>			
	Copper	1,040	939	10.2%
	Lead	12.3	11.6	5.9%
	Arsenic	9.8	10.7	8.8%
CPF-AE-D3-01 / FD050212-B	<b>Total Metals (mg/kg)</b>			
	Copper	2,330	2,290	1.7%
	Lead	56.0	49.6	12.1%
	Arsenic	10.9	9.6	12.7%
CPF-AE-D2-06 / FD051112-D	<b>Total Metals (mg/kg)</b>			
	Copper	2,360	2,200	7.0%
	Lead	73.3	69.1	5.9%
	Arsenic	11.1	10.6	4.6%
CPB-S-02 / FD051112-A	<b>Total Metals (mg/kg)</b>			
	Copper	2,340	2,660	12.8%
	Lead	132	102	25.6%
	Arsenic	17.1	15.8	7.9%
CPS-SWN-D2-01 / FD051112-B	<b>Total Metals (mg/kg)</b>			
	Copper	4,350	3,440	23.4%
	Lead	3,220	2,840	12.5%
	Arsenic	19.3	17.8	8.1%
CPP-AE-S-04 / FD050212-D	<b>Total Metals (mg/kg)</b>			
	Copper	3,310	209	176.2%
	Lead	73.9	11.3	146.9%
	Arsenic	10.1	2.8	113.2%
CPP-AE-S-05 / FD051112-C	<b>Total Metals (mg/kg)</b>			
	Copper	2,090	1,990	4.9%
	Lead	37.4	48.1	25.0%
	Arsenic	16.3	13.5	18.8%
CPE-06 / FD050212-E	<b>Total Metals (mg/kg)</b>			
	Copper	2,120	2,100	0.9%
	Lead	71.0	59.1	18.3%
	Arsenic	8.4	5.2	47.1%
CPS-D5-02 / FD050112-A	<b>Total Metals (mg/kg)</b>			
	Copper	1,900	1,610	16.5%
	Lead	72.5	93.8	25.6%
	Arsenic	5.2	6.5	22.2%

**Notes:**

RPD = Relative percent difference; [(difference)/(average)]\*100

mg/kg = milligrams per kilogram

**Table A-4**  
**Completeness Summary**  
**Former CLEAR Plant Area Soil Excavation Report**  
**Sierrita Mine**  
**Green Valley, AZ**

<b>Parameters</b>	<b>Total Number of Results</b>	<b>Number in Contractual Compliance</b>	<b>Percent Contractual Compliance</b>	<b>Number of Usable Results</b>	<b>Percent Technical Compliance</b>
<b>Metals</b>					
Arsenic	89	87 <sup>a</sup>	98	89	100
Copper	89	74 <sup>a,b</sup>	83	89	100
Lead	89	88 <sup>a</sup>	99	89	100
<b>TCLP RCRA 8 Metals</b>					
Arsenic	8	8	100	8	100
Barium	8	8	100	8	100
Cadmium	8	8	100	8	100
Chromium	8	8	100	8	100
Lead	8	8	100	8	100
Mercury	8	8	100	8	100
Selenium	8	8	100	8	100
Silver	8	8	100	8	100
<b>Total</b>					
	331	313	95	331	100

Notes:

Total number of results includes field samples and field duplicates

Percent Contractual Compliance = (Number of contract compliant results/Number of reported results) \* 100

Percent Technical Compliance = (Number of usable results/Number of reported results) \* 100

<sup>a</sup> = Qualified due to field duplicate relative percent difference

<sup>b</sup> = Qualified due to matrix spike/matrix spike duplicate recoveries outside limits



## **Appendix B**

Laboratory Reports



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
CPS-SWW-D2.5-01	W2E0059-01	Soil	01-May-12 10:00	LG	02-May-2012
CPS-D5-01	W2E0059-02	Soil	01-May-12 10:10	LG	02-May-2012
CPS-D5-02	W2E0059-03	Soil	01-May-12 11:45	LG	02-May-2012
FD050112-A	W2E0059-04	Soil	01-May-12 00:00	LG	02-May-2012
CPS-D5-03	W2E0059-05	Soil	01-May-12 12:00	LG	02-May-2012
CPS-D5-04	W2E0059-06	Soil	01-May-12 12:05	LG	02-May-2012
CPS-SWS-D2.5-01	W2E0059-07	Soil	01-May-12 12:10	LG	02-May-2012
CPS-SWS-D2.5-02	W2E0059-08	Soil	01-May-12 12:20	LG	02-May-2012
CPS-D5-05	W2E0059-09	Soil	01-May-12 12:35	LG	02-May-2012
CPF-AW-SWE-D1.5-01	W2E0059-10	Soil	01-May-12 12:45	LG	02-May-2012
CPF-AW-D3-01	W2E0059-11	Soil	01-May-12 12:50	LG	02-May-2012
CPF-AW-D4-02	W2E0059-12	Soil	01-May-12 13:15	LG	02-May-2012
CPS-SWS-D2.5-03	W2E0059-13	Soil	01-May-12 14:30	LG	02-May-2012
CPS-D5-06	W2E0059-14	Soil	01-May-12 14:35	LG	02-May-2012
CPF-AE-SWW-D2-01	W2E0059-15	Soil	01-May-12 15:45	LG	02-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-SWW-D2.5-01**

SVL Sample ID: **W2E0059-01 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 10:00

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	12.3	mg/kg	2.5	0.4		W218294	TJK	05/04/12 10:23	
EPA 6010B	<b>Copper</b>	3250	mg/kg	1.00	0.16		W218294	TJK	05/04/12 10:23	
EPA 6010B	<b>Lead</b>	126	mg/kg	0.75	0.35		W218294	TJK	05/04/12 10:23	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.6	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-D5-01**

SVL Sample ID: **W2E0059-02 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 10:10

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.2	mg/kg	2.5	0.4		W218294	TJK	05/04/12 10:41	
EPA 6010B	<b>Copper</b>	3930	mg/kg	1.00	0.16		W218294	TJK	05/04/12 10:41	
EPA 6010B	<b>Lead</b>	136	mg/kg	0.75	0.35		W218294	TJK	05/04/12 10:41	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	92.8	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-D5-02**

SVL Sample ID: **W2E0059-03 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 11:45

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	5.2	mg/kg	2.5	0.4		W218294	TJK	05/04/12 10:47	
EPA 6010B	<b>Copper</b>	1900	mg/kg	1.00	0.16		W218294	TJK	05/04/12 10:47	
EPA 6010B	<b>Lead</b>	72.5	mg/kg	0.75	0.35		W218294	TJK	05/04/12 10:47	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.3	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **FD050112-A**

SVL Sample ID: **W2E0059-04 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 00:00

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.5	mg/kg	2.5	0.4		W218294	TJK	05/04/12 10:53	
EPA 6010B	<b>Copper</b>	1610	mg/kg	1.00	0.16		W218294	TJK	05/04/12 10:53	
EPA 6010B	<b>Lead</b>	93.8	mg/kg	0.75	0.35		W218294	TJK	05/04/12 10:53	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.2	%	0.1			W218295	HLC	05/04/12 11:00	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-D5-03**

SVL Sample ID: **W2E0059-05 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 12:00

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	4.9	mg/kg	2.5	0.4		W218294	TJK	05/04/12 10:59	
EPA 6010B	<b>Copper</b>	2780	mg/kg	1.00	0.16		W218294	TJK	05/04/12 10:59	
EPA 6010B	<b>Lead</b>	204	mg/kg	0.75	0.35		W218294	TJK	05/04/12 10:59	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	94.8	%	0.1			W218295	HLC	05/04/12 11:00	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-D5-04**

SVL Sample ID: **W2E0059-06 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 12:05

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.7	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:04	
EPA 6010B	<b>Copper</b>	6020	mg/kg	10.0	1.60	10	W218294	TJK	05/04/12 12:17	D2
EPA 6010B	<b>Lead</b>	188	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:04	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	89.7	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-SWS-D2.5-01**

SVL Sample ID: **W2E0059-07 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 12:10

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	12.0	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:23	
EPA 6010B	<b>Copper</b>	2210	mg/kg	1.00	0.16		W218294	TJK	05/04/12 11:23	
EPA 6010B	<b>Lead</b>	208	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:23	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.7	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-SWS-D2.5-02**

SVL Sample ID: **W2E0059-08 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 12:20

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.7	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:29	
EPA 6010B	<b>Copper</b>	7560	mg/kg	10.0	1.60	10	W218294	TJK	05/04/12 12:35	D2
EPA 6010B	<b>Lead</b>	503	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:29	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.1	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-D5-05**

SVL Sample ID: **W2E0059-09 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 12:35

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	5.0	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:35	
EPA 6010B	<b>Copper</b>	3410	mg/kg	1.00	0.16		W218294	TJK	05/04/12 11:35	
EPA 6010B	<b>Lead</b>	201	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:35	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.4	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPF-AW-SWE-D1.5-01**

SVL Sample ID: **W2E0059-10 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 12:45

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	3.0	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:41	
EPA 6010B	<b>Copper</b>	360	mg/kg	1.00	0.16		W218294	TJK	05/04/12 11:41	
EPA 6010B	<b>Lead</b>	18.7	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:41	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.2	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPF-AW-D3-01**

SVL Sample ID: **W2E0059-11 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 12:50

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	2.6	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:47	
EPA 6010B	<b>Copper</b>	313	mg/kg	1.00	0.16		W218294	TJK	05/04/12 11:47	
EPA 6010B	<b>Lead</b>	11.5	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:47	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	92.0	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPF-AW-D4-02**

SVL Sample ID: **W2E0059-12 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 13:15

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:53	
EPA 6010B	Copper	248	mg/kg	1.00	0.16		W218294	TJK	05/04/12 11:53	
EPA 6010B	Lead	11.7	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:53	
<b>Percent Solids</b>										
Percent Solids	% Solids	92.9	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-SWS-D2.5-03**

SVL Sample ID: **W2E0059-13 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 14:30

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	4.1	mg/kg	2.5	0.4		W218294	TJK	05/04/12 11:59	
EPA 6010B	<b>Copper</b>	914	mg/kg	1.00	0.16		W218294	TJK	05/04/12 11:59	
EPA 6010B	<b>Lead</b>	32.4	mg/kg	0.75	0.35		W218294	TJK	05/04/12 11:59	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.2	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPS-D5-06**

SVL Sample ID: **W2E0059-14 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 14:35

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	5.5	mg/kg	2.5	0.4		W218294	TJK	05/04/12 12:05	
EPA 6010B	<b>Copper</b>	2670	mg/kg	1.00	0.16		W218294	TJK	05/04/12 12:05	
EPA 6010B	<b>Lead</b>	176	mg/kg	0.75	0.35		W218294	TJK	05/04/12 12:05	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.3	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0059**

Reported: 04-May-12 14:08

Client Sample ID: **CPF-AE-SWW-D2-01**

SVL Sample ID: **W2E0059-15 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 15:45

Received: 02-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.2	mg/kg	2.5	0.4		W218294	TJK	05/04/12 12:11	
EPA 6010B	<b>Copper</b>	3250	mg/kg	1.00	0.16		W218294	TJK	05/04/12 12:11	
EPA 6010B	<b>Lead</b>	206	mg/kg	0.75	0.35		W218294	TJK	05/04/12 12:11	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.4	%	0.1			W218295	HLC	05/04/12 11:00	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0059**  
Reported: 04-May-12 14:08

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
--------	---------	-------	--------	-----	-----	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	<2.5	0.4	2.5	W218294	04-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.16	1.00	W218294	04-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W218294	04-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	------------	----------	--------	-------------------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	98.7	100	98.7	80 - 120	W218294	04-May-12	
EPA 6010B	Copper	mg/kg	106	100	106	80 - 120	W218294	04-May-12	
EPA 6010B	Lead	mg/kg	101	100	101	80 - 120	W218294	04-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	--------------	-------------------	-----------------	--------	-------------------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	113	12.3	100	100	75 - 125	W218294	04-May-12	
EPA 6010B	Copper	mg/kg	3930	3250	100	R > 4S	75 - 125	W218294	04-May-12	M3
EPA 6010B	Lead	mg/kg	228	126	100	102	75 - 125	W218294	04-May-12	

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
--------	---------	-------	------------	--------------	-------------	-----	-----------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	115	113	100	2.0	20	W218294	04-May-12	
EPA 6010B	Copper	mg/kg	3870	3930	100	1.6	20	W218294	04-May-12	
EPA 6010B	Lead	mg/kg	227	228	100	0.7	20	W218294	04-May-12	



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0059**  
Reported: 04-May-12 14:08

---

### Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

---



# CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

Page 1 of 2

w2E0059 1/2 5/1/12

FOR SVL USE ONLY  
SVL JOB #

4.2

TEMP on Receipt:

### Table 1. -- Matrix Type

- 1 = Surface Water, 2 = Ground Water
- 3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
- 6 = Waste, 7 = Other

Invoice Sent To: Clint Beech  
 Contact: Martha Motley  
 Address: 6700 W. Dixie, Moreland  
Green Valley, AZ 85042  
 Phone Number: 520-345-2414  
 FAX Number: \_\_\_\_\_  
 PO#: \_\_\_\_\_

Report to Company: BEAWE asbill  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

Project Name: AZ001233.00014  
Sampler's Signature: Yim Jue

USACE?  Yes  No

Indicate State of sample origination: AZ

Sample ID	Date	Time	Collection	Collected by: (Init.)	Misc.	Matrix Type (From Table 1)	No. of Containers	Preservative(s)						Other (Specify)	Analyses Required	Krush Instructions (Days)	Comments
								Unpreserved	HNO <sub>3</sub> Filtered	HNO <sub>3</sub> Unfiltered	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH				
1 CPS-SWJ-DZ.5-01	5/1/12	1000	LB	S													
2 CPS-DS-01	1010																
3 CPS-SWJ-DZ.5-01	1050																
4 CPS-SWJ-DZ.5-02	1130																
5 CPS-DS-02	1145																
6 FDOE0112-A	-																
7 CPS-DS-03	1200																
8 CPS-DS-04	1205																
9 CPS-SWS-DZ.5-01	1210																
10 CPS-SWS-DZ.5-02	1220																

Relinquished by: M. Tam

Received by: Red Ex, Tucson Airport  
Received by: \_\_\_\_\_

Date: 5/1/12  
Date: 5/2/12

Time: 1740  
Time: 12:35

SVL-COC 9/05

White: LAB COPY Yellow: CUSTOMER COPY

Store (30 Days)

Return  Dispose

Sample Reject:

• on this work order

(1) Hold samples pending further instructions, per Lisa Jenise (Arcadis)...

\* Sample ID on Jar is CPS-D4-01

5/2/12 C. Mueyer SVL

Not on w2E0059

WLE 0059 12 5/2/12  
 WLD 0059

FOR SVL USE ONLY  
 SVL JOB #  
 4.2

TEMP on Receipt:

Table 1. -- Matrix Type  
 1 = Surface Water, 2 = Ground Water  
 3 = Soil/Sediment, 4 = Rinsate, 5 = Oil  
 6 = Waste, 7 = Other

Project Name:  
 Sampler's Signature: *[Signature]*

Page 2 of 2

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

Report to Company: \_\_\_\_\_  
 Contact: *see pg 1*  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

Invoice Sent To: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 PO#: \_\_\_\_\_

Indicate State of sample origination: \_\_\_\_\_

USACE?  Yes  No

Sample ID	Collection Date	Time	Collected by: (Init)	Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s)					Other (Specify)	Analyses Required	Rush Instructions (Days)	Comments
						Unpreserved	HNO <sub>3</sub> Filtered	HNO <sub>3</sub> Unfiltered	HCl	H <sub>2</sub> SO <sub>4</sub>				
① CPS-SWN-DZS-03	5/1/12	1730	L6	3		X								
CPS-D5-05	1255													
CPF-AW-SWE-DZS-01	1255													
CPF-AW-D3-01	1250													
CPF-AW-DH-02	1315													
CPS-SWS-DZS-03	1430													
CPS-D5-04	1435													
CPS-SWN-DZS-04	1530													
CPF-AE-SWN-DZ01	1515													

Relinquished by: *[Signature]* Date: 5/1/12 Time: 1630  
 Relinquished by: *[Signature]* Date: 5/1/12 Time: 1740  
 Received by: *[Signature]* Date: 5/1/12 Time: 1630  
 Received by: *[Signature]* Date: 5/1/12 Time: 1740

\* Sample Reject:  Return  Dispose  Store (30 days)

White: LAB COPY Yellow: CUSTOMER COPY  
 Mi-Tan  
 Fed Ex - Airport  
 5/2/12  
 12:35 SVL-COC 9/05  
 • On this work order  
 (1) Hold samples pending further instructions, per Lisa Gerrix (Attacus) 5/2/12  
 (1) [Signature] (SVL)

**SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST**

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/1/12 By: CP Seery

SVL Work No: W2E0059

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				FMI - Sicrits
2	Date and time of receipt at lab	✓				5/2/12 12:35
3	Received by	✓				Mark DLCC
4	Temperature blank or cooler temperature	✓				Temp. 4.2 °C.
5	Were the sample(s) received on ice	✓				Yes
6	Custody tape/bottle seals	✓				Yes
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				Good
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				
12	Did an SVL employee preserve sample(s) upon receipt				✓	
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (initials & date)				✓	
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
19	Shipper's air bill	✓				

V- Verified    VC- Verified Corrections Made    NV-Not Verified    NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0116**  
Reported: 08-May-12 09:51

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
CPP-AN-S-01	W2E0116-01	Soil	02-May-12 14:50	LG	03-May-2012
CPS-SWS-D4-04	W2E0116-02	Soil	02-May-12 15:00	LG	03-May-2012
CPF-AW-D4-05	W2E0116-03	Soil	02-May-12 15:05	LG	03-May-2012
RCP-16-D25-01	W2E0116-04	Soil	02-May-12 13:57	LG	03-May-2012
RCP-T-3-D0.5-01	W2E0116-05	Soil	02-May-12 14:15	LG	03-May-2012
EB050212-B	W2E0116-06	Water	02-May-12 16:00	LG	03-May-2012
CPP-AW-S-02	W2E0116-07	Soil	02-May-12 15:30	LG	03-May-2012
CPP-AW-S-01	W2E0116-08	Soil	02-May-12 15:32	LG	03-May-2012
CPP-AW-S-03	W2E0116-09	Soil	02-May-12 15:35	LG	03-May-2012
CPP-AW-S-04	W2E0116-10	Soil	02-May-12 15:39	LG	03-May-2012
CPP-AN-S-04	W2E0116-11	Soil	02-May-12 15:41	LG	03-May-2012
CPP-AN-S-02	W2E0116-12	Soil	02-May-12 15:45	LG	03-May-2012
CPP-AN-S-03	W2E0116-13	Soil	02-May-12 15:55	LG	03-May-2012
CPP-AE-S-01	W2E0116-15	Soil	02-May-12 16:00	LG	03-May-2012
CPP-AE-S-02	W2E0116-16	Soil	02-May-12 16:10	LG	03-May-2012
CPP-AE-S-03	W2E0116-17	Soil	02-May-12 16:12	LG	03-May-2012
CPP-AE-S-04	W2E0116-18	Soil	02-May-12 16:15	LG	03-May-2012
FD050212-D	W2E0116-19	Soil	02-May-12 00:00	LG	03-May-2012
FD050212-E	W2E0116-20	Soil	02-May-12 00:00	LG	03-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

**Case Narrative**

SVL DID NOT RECEIVE SAMPLE CPP-AN-S-01 (SAMPLE -14)



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(208) 784-1258

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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AN-S-01**

SVL Sample ID: **W2E0116-01 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 14:50

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	3.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 14:02	
EPA 6010B	<b>Copper</b>	987	mg/kg	1.00	0.16		W218375	TJK	05/07/12 14:02	
EPA 6010B	<b>Lead</b>	48.8	mg/kg	0.75	0.35		W218375	TJK	05/07/12 14:02	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.0	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPS-SWS-D4-04**

SVL Sample ID: **W2E0116-02 (Soil)**

Sampled: 02-May-12 15:00

Received: 03-May-12

Sampled By: LG

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 14:19	
EPA 6010B	Copper	287	mg/kg	1.00	0.16		W218375	TJK	05/07/12 14:19	
EPA 6010B	Lead	6.99	mg/kg	0.75	0.35		W218375	TJK	05/07/12 14:19	
<b>Percent Solids</b>										
Percent Solids	% Solids	91.3	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPF-AW-D4-05**

SVL Sample ID: **W2E0116-03 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:05

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 14:25	
EPA 6010B	Copper	924	mg/kg	1.00	0.16		W218375	TJK	05/07/12 14:25	
EPA 6010B	Lead	63.1	mg/kg	0.75	0.35		W218375	TJK	05/07/12 14:25	
<b>Percent Solids</b>										
Percent Solids	% Solids	85.2	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **RCP-16-D25-01**

SVL Sample ID: **W2E0116-04 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 13:57

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 14:31	
EPA 6010B	Copper	1250	mg/kg	1.00	0.16		W218375	TJK	05/07/12 14:31	
EPA 6010B	Lead	139	mg/kg	0.75	0.35		W218375	TJK	05/07/12 14:31	
<b>Percent Solids</b>										
Percent Solids	% Solids	98.3	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **RCP-T-3-D0.5-01**

SVL Sample ID: **W2E0116-05 (Soil)**

Sampled: 02-May-12 14:15

Received: 03-May-12

Sampled By: LG

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	18.1	mg/kg	2.5	0.4		W218375	TJK	05/07/12 14:37	
EPA 6010B	<b>Copper</b>	3610	mg/kg	1.00	0.16		W218375	TJK	05/07/12 14:37	
EPA 6010B	<b>Lead</b>	65.1	mg/kg	0.75	0.35		W218375	TJK	05/07/12 14:37	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	98.4	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **EB050212-B**

SVL Sample ID: **W2E0116-06 (Water)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:00

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	< 0.025	mg/L	0.025	0.007		W218352	TJK	05/07/12 12:39	
EPA 6010B	Copper	< 0.010	mg/L	0.010	0.003		W218352	TJK	05/07/12 12:39	
EPA 6010B	Lead	< 0.0075	mg/L	0.0075	0.0027		W218352	TJK	05/07/12 12:39	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AW-S-02**

SVL Sample ID: **W2E0116-07 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:30

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	4.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 14:43	
EPA 6010B	<b>Copper</b>	1520	mg/kg	1.00	0.16		W218375	TJK	05/07/12 14:43	
EPA 6010B	<b>Lead</b>	65.6	mg/kg	0.75	0.35		W218375	TJK	05/07/12 14:43	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.9	%	0.1			W218371	HLC	05/07/12 12:30	

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**John Kern**  
Laboratory Director





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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AW-S-01**

SVL Sample ID: **W2E0116-08 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:32

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	2.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:00	
EPA 6010B	<b>Copper</b>	679	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:00	
EPA 6010B	<b>Lead</b>	9.98	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:00	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	94.6	%	0.1			W218371	HLC	05/07/12 12:30	

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Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AW-S-03**

SVL Sample ID: **W2E0116-09 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:35

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	2.6	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:06	
EPA 6010B	<b>Copper</b>	217	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:06	
EPA 6010B	<b>Lead</b>	11.9	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:06	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.0	%	0.1			W218371	HLC	05/07/12 12:30	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AW-S-04**

SVL Sample ID: **W2E0116-10 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:39

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	11.1	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:12	
EPA 6010B	<b>Copper</b>	1190	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:12	
EPA 6010B	<b>Lead</b>	22.3	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:12	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.8	%	0.1			W218371	HLC	05/07/12 12:30	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AN-S-04**

SVL Sample ID: **W2E0116-11 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:41

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:18	
EPA 6010B	Copper	133	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:18	
EPA 6010B	Lead	5.10	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:18	
<b>Percent Solids</b>										
Percent Solids	% Solids	96.0	%	0.1			W218371	HLC	05/07/12 12:30	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AN-S-02**

SVL Sample ID: **W2E0116-12 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:45

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:24	
EPA 6010B	Copper	4550	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:24	
EPA 6010B	Lead	8.98	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:24	
<b>Percent Solids</b>										
Percent Solids	% Solids	96.1	%	0.1			W218371	HLC	05/07/12 12:30	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AN-S-03**

SVL Sample ID: **W2E0116-13 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 15:55

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.9	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:30	
EPA 6010B	<b>Copper</b>	2090	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:30	
EPA 6010B	<b>Lead</b>	65.2	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:30	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.1	%	0.1			W218371	HLC	05/07/12 12:30	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AE-S-01**

SVL Sample ID: **W2E0116-15 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:00

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	5.9	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:35	
EPA 6010B	<b>Copper</b>	2850	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:35	
EPA 6010B	<b>Lead</b>	21.8	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:35	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	98.0	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AE-S-02**

SVL Sample ID: **W2E0116-16 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:10

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	4.2	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:41	
EPA 6010B	<b>Copper</b>	1410	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:41	
EPA 6010B	<b>Lead</b>	64.8	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:41	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.4	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AE-S-03**

SVL Sample ID: **W2E0116-17 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:12

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.3	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:47	
EPA 6010B	<b>Copper</b>	1890	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:47	
EPA 6010B	<b>Lead</b>	45.9	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:47	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.7	%	0.1			W218371	HLC	05/07/12 12:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **CPP-AE-S-04**

SVL Sample ID: **W2E0116-18 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:15

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	10.1	mg/kg	2.5	0.4		W218375	TJK	05/07/12 15:53	
EPA 6010B	<b>Copper</b>	3310	mg/kg	1.00	0.16		W218375	TJK	05/07/12 15:53	
EPA 6010B	<b>Lead</b>	73.9	mg/kg	0.75	0.35		W218375	TJK	05/07/12 15:53	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	94.0	%	0.1			W218371	HLC	05/07/12 12:30	

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Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **FD050212-D**

SVL Sample ID: **W2E0116-19 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 00:00

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	2.8	mg/kg	2.5	0.4		W218375	TJK	05/07/12 16:11	
EPA 6010B	<b>Copper</b>	209	mg/kg	1.00	0.16		W218375	TJK	05/07/12 16:11	
EPA 6010B	<b>Lead</b>	11.3	mg/kg	0.75	0.35		W218375	TJK	05/07/12 16:11	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.0	%	0.1			W218371	HLC	05/07/12 12:30	

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**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0116**

Reported: 08-May-12 09:51

Client Sample ID: **FD050212-E**

SVL Sample ID: **W2E0116-20 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 00:00

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	5.2	mg/kg	2.5	0.4		W218375	TJK	05/07/12 16:17	
EPA 6010B	<b>Copper</b>	2100	mg/kg	1.00	0.16		W218375	TJK	05/07/12 16:17	
EPA 6010B	<b>Lead</b>	59.1	mg/kg	0.75	0.35		W218375	TJK	05/07/12 16:17	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	94.6	%	0.1			W218371	HLC	05/07/12 12:30	

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**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**  
 Work Order: **W2E0116**  
 Reported: 08-May-12 09:51

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	<2.5	0.4	2.5	W218375	07-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.16	1.00	W218375	07-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W218375	07-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	<0.025	0.007	0.025	W218352	07-May-12	
EPA 6010B	Copper	mg/L	<0.010	0.003	0.010	W218352	07-May-12	
EPA 6010B	Lead	mg/L	<0.0075	0.0027	0.0075	W218352	07-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	100	100	100	80 - 120	W218375	07-May-12	
EPA 6010B	Copper	mg/kg	108	100	108	80 - 120	W218375	07-May-12	
EPA 6010B	Lead	mg/kg	102	100	102	80 - 120	W218375	07-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	1.03	1.00	103	80 - 120	W218352	07-May-12	
EPA 6010B	Copper	mg/L	1.01	1.00	101	80 - 120	W218352	07-May-12	
EPA 6010B	Lead	mg/L	1.02	1.00	102	80 - 120	W218352	07-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	--------------	-------------------	-----------------	--------	-------------------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	103	3.5	100	99.5	75 - 125	W218375	07-May-12	
EPA 6010B	Copper	mg/kg	1070	987	100	78.9	75 - 125	W218375	07-May-12	M3
EPA 6010B	Lead	mg/kg	144	48.8	100	95.0	75 - 125	W218375	07-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	1.05	<0.025	1.00	105	75 - 125	W218352	07-May-12	
EPA 6010B	Copper	mg/L	1.04	<0.010	1.00	104	75 - 125	W218352	07-May-12	
EPA 6010B	Lead	mg/L	1.04	<0.0075	1.00	104	75 - 125	W218352	07-May-12	



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0116**  
Reported: 08-May-12 09:51

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	mg/kg	99.0	103	100	4.0	20	W218375	07-May-12	
EPA 6010B	Copper	mg/kg	1120	1070	100	4.7	20	W218375	07-May-12	
EPA 6010B	Lead	mg/kg	140	144	100	2.5	20	W218375	07-May-12	
<b>Metals (Total Recoverable)</b>										
EPA 6010B	Arsenic	mg/L	1.04	1.05	1.00	1.2	20	W218352	07-May-12	
EPA 6010B	Copper	mg/L	1.03	1.04	1.00	1.5	20	W218352	07-May-12	
EPA 6010B	Lead	mg/L	1.02	1.04	1.00	1.8	20	W218352	07-May-12	

**Notes and Definitions**

- M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
- LCS Laboratory Control Sample (Blank Spike)
- RPD Relative Percent Difference
- UDL A result is less than the detection limit
- R > 4S % recovery not applicable, sample concentration more than four times greater than spike level
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



# CHAIN OF CUSTODY RECORD

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Page 1 of     

**WAED116**  
FOR SVL USE ONLY  
SVL JOB #

TEMP on Receipt: 1.7c  
Table 1. -- Matrix Type  
1 = Surface Water, 2 = Ground Water  
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil  
6 = Waste, 7 = Other

Report to Company: Severe ow bill  
 Contact: Clint Beck  
 Address: Martha Motley  
6100 W. Powell Mtn. Rd  
Green Valley, AZ 85712  
 Phone Number: 520 313-0914  
 FAX Number: \_\_\_\_\_  
 PO#: \_\_\_\_\_

Invoice Sent To: Clint Beck  
 Contact: Martha Motley  
 Address: 6100 W. Powell Mtn. Rd  
Green Valley, AZ 85712  
 Phone Number: 520 313-0914  
 FAX Number: \_\_\_\_\_  
 PO#: \_\_\_\_\_

Project Name: Amene  
 Sampler's Signature: \_\_\_\_\_

Indicate State of sample origination: \_\_\_\_\_  
 USACE?  Yes  No

Sample ID	Collection Date	Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	No. of Containers	Preservative(s)	Other (Specify)	Analyses Required	Rush Instructions (Days)	Comments
1	5/7/12	1245	LG	3	1	Unpreserved		(Carbenc) Methods	2	
2										
3		1308								
4		1315								
5		1320								
6		1400								
7		1415								
8		1450								
9										
10		1500								

Reinquisitioned by: M. Tam  
 Date: 5/7/12 Time: 10:10  
 Received by: Clint Beck Time: 5/21/12  
 Received by: Clint Beck Time: 5/21/12

White: LAB COPY Yellow: CUSTOMER COPY SVL-COC 9/05



# CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

**W22E0116**  
 FOR SVL USE ONLY  
 SVL JOB #  
 TEMP on Receipt: 1.7c

**Table 1. -- Matrix Type**  
 1 = Surface Water, 2 = Ground Water  
 3 = Soil/Sediment, 4 = Rinsate, 5 = Oil  
 6 = Waste, 7 = Other

**Report to Company:** \_\_\_\_\_  
**Contact:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Phone Number:** \_\_\_\_\_  
**FAX Number:** \_\_\_\_\_  
**E-mail:** \_\_\_\_\_

**Invoice Sent To:** \_\_\_\_\_  
**Contact:** del page 1  
**Address:** \_\_\_\_\_  
**Phone Number:** \_\_\_\_\_  
**FAX Number:** \_\_\_\_\_  
**PO#:** \_\_\_\_\_

**Project Name:** \_\_\_\_\_  
**Sampler's Signature:** [Signature]

**Indicate State of sample origination:** AZ

USACE?  Yes  No

Sample ID	Collection		Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s)						Other (Specify)	Analyses Required	Rush Instructions (Days)	Comments	
	Date	Time			Unpreserved	HNO <sub>3</sub> Filtered	HNO <sub>3</sub> Unfiltered	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH					
1	5/11/12	1805	4	1	X										
2	5/11/12	1357	3	1											
3	5/11/12	1415	1	1											
4	5/11/12	1600	4	1											
5	5/11/12	1530	3	1	X										
6	5/11/12	1532	1	1											
7	5/11/12	1535	1	1											
8	5/11/12	1539	1	1											
9	5/11/12	1541	1	1											
10	5/11/12	1545	1	1											

Date: 5/11/12 Time: 15:00  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: [Signature]  
 Received by: \_\_\_\_\_

\* ID ON SAMPLE READS CPP-A-5-03. SVL ID'D SAMPLE BY DATE & TIME ON CONTAINER OF 5/11/12

White: LAB COPY Yellow: CUSTOMER COPY

Return  Dispose  Store (30 Days)





# CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

Page 3 of 3

*W2E0116*  
FOR SVL USE ONLY  
SVL JOB #

TEMP on Receipt: *1170c*

Table 1. -- Matrix Type

- 1 = Surface Water, 2 = Ground Water
- 3 = Soil/Sediment, 4 = Rinstate, 5 = Oil
- 6 = Waste, 7 = Other

Invoice Sent To: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 PO#: \_\_\_\_\_

Report to Company: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

Project Name: \_\_\_\_\_

Sampler's Signature: \_\_\_\_\_

Indicate State of sample origination: \_\_\_\_\_

USACE?  Yes  No

Sample ID <small>Please take care to distinguish between: 1 and I 2 and Z 5 and S Ø and O</small>	Collection		Misc. <small>Matrix Type (From Table 1)</small>	Preservative(s) <small>Unpreserved HNO<sub>3</sub> Filtered HNO<sub>3</sub> Unfiltered HCl H<sub>2</sub>SO<sub>4</sub> NaOH Other (Specify)</small>	Analyses Required	Rush Instructions (Days)	Comments
	Date	Time					
1 CPP-AN-S-08	5/12/12	1555	3	X		2	
2 CPP-AN-S-01	5/12/12	1450					
3 CPP-AE-S-01	5/12/12	1600					
4 CPP-AE-S-02	5/12/12	1610					
5 CPP-AE-S-03	5/12/12	1615					
6 CPP-AE-S-04	5/12/12	1615					
7 FPO05012-D							
8 FPO05012-E							
9							
10							

Date: *5/13/12* Time: *15:00*

Received by: *[Signature]*

\* Sample Reject:  Return  Dispose  Store (30 Days)

**\* SVL DID NOT RECEIVE THIS SAMPLE OF 5/13/12**

SAMPLE RECEIPT/CHAIN-OF-CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/3/12

By: CP Seery

SVL Work No: W2ED0116

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				FMI - SIERRITA
2	Date and time of receipt at lab	✓				5/3/12 12:00
3	Received by	✓				C. FLORES
4	Temperature blank or cooler temperature	✓				Temp. 17 °C.
5	Were the sample(s) received on ice	✓				YES
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				GOOD
8	Sample numbers/IDs agree with COC	✓				NOTED ON COC
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				
12	Did an SVL employee preserve sample(s) upon receipt				✓	NO
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (initials & date)				✓	
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	MISSING 1 SAMPLE
19	Shipper's air bill	✓				

V- Verified      VC- Verified Corrections Made      NV-Not Verified      NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0118**  
Reported: 17-May-12 11:48

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled		Date Received
CPF-AW-D2-04	W2E0118-01	Soil	02-May-12 11:50		03-May-2012
EB050212-A	W2E0118-02	Water	02-May-12 13:30		03-May-2012
CPF-AW-SWW-D2-01	W2E0118-03	Soil	01-May-12 16:30		03-May-2012
EB050112	W2E0118-04	Water	01-May-12 16:40		03-May-2012
CPF-AW-SWE-D2.5-02	W2E0118-05	Soil	02-May-12 08:10		03-May-2012
CPF-AW-SWW-D1-02	W2E0118-07	Soil	02-May-12 00:00		03-May-2012
CPF-AE-D3-01	W2E0118-08	Soil	02-May-12 09:45		03-May-2012
FD050212-B	W2E0118-09	Soil	02-May-12 00:00		03-May-2012
CPF-AE-D3-02	W2E0118-10	Soil	02-May-12 10:07		03-May-2012
CPF-AE-SWE-D1.5-01	W2E0118-11	Soil	02-May-12 10:17		03-May-2012
CPF-AE-SWW-D1.5-02	W2E0118-12	Soil	02-May-12 10:25		03-May-2012
CPF-AE-D3-03	W2E0118-13	Soil	02-May-12 10:40		03-May-2012
CPF-AE-D3-04	W2E0118-14	Soil	02-May-12 10:45		03-May-2012
CPF-AE-SWE-D1.5-02	W2E0118-15	Soil	02-May-12 11:10		03-May-2012
CPE-04	W2E0118-16	Soil	02-May-12 16:30	LG	03-May-2012
CPE-03	W2E0118-17	Soil	02-May-12 16:25	LG	03-May-2012
CPE-02	W2E0118-18	Soil	02-May-12 16:20	LG	03-May-2012
CPE-01	W2E0118-19	Soil	02-May-12 16:15	LG	03-May-2012
CPE-05	W2E0118-20	Soil	02-May-12 16:40	LG	03-May-2012
CPE-06	W2E0118-21	Soil	02-May-12 16:45	LG	03-May-2012
CPE-07	W2E0118-22	Soil	02-May-12 16:42	LG	03-May-2012
CPE-08	W2E0118-23	Soil	02-May-12 16:32	LG	03-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

**Case Narrative**

05/17/2012mab: Report reissued. Sample ID has been changed on sample -07 from FD050212-A to CPF-AW-SWW-D1-02 as requested by client.



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0118**  
Reported: 17-May-12 11:48

Client Sample ID: **CPF-AW-D2-04**

SVL Sample ID: **W2E0118-01 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 11:50  
Received: 03-May-12  
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	14.5	mg/kg	2.5	0.4		W218377	AS	05/07/12 14:26	
EPA 6010B	Copper	1720	mg/kg	1.00	0.16		W218377	AS	05/07/12 14:26	
EPA 6010B	Lead	81.7	mg/kg	0.75	0.35		W218377	AS	05/07/12 14:26	
<b>Percent Solids</b>										
Percent Solids	% Solids	97.1	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **EB050212-A**

SVL Sample ID: **W2E0118-02 (Water)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 13:30

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	< 0.025	mg/L	0.025	0.007		W218359	TJK	05/07/12 11:25	
EPA 6010B	Copper	< 0.010	mg/L	0.010	0.003		W218359	TJK	05/07/12 11:25	
EPA 6010B	Lead	< 0.0075	mg/L	0.0075	0.0027		W218359	TJK	05/07/12 11:25	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AW-SWW-D2-01**

SVL Sample ID: **W2E0118-03 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 16:30

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	3.5	mg/kg	2.5	0.4		W218377	AS	05/07/12 14:44	
EPA 6010B	<b>Copper</b>	779	mg/kg	1.00	0.16		W218377	AS	05/07/12 14:44	
EPA 6010B	<b>Lead</b>	39.9	mg/kg	0.75	0.35		W218377	AS	05/07/12 14:44	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.7	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **EB050112**

SVL Sample ID: **W2E0118-04 (Water)**

**Sample Report Page 1 of 1**

Sampled: 01-May-12 16:40

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	< 0.025	mg/L	0.025	0.007		W218359	TJK	05/07/12 11:43	
EPA 6010B	Copper	< 0.010	mg/L	0.010	0.003		W218359	TJK	05/07/12 11:43	
EPA 6010B	Lead	< 0.0075	mg/L	0.0075	0.0027		W218359	TJK	05/07/12 11:43	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AW-SWE-D2.5-02**

SVL Sample ID: **W2E0118-05 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 08:10

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	10.3	mg/kg	2.5	0.4		W218377	AS	05/07/12 14:50	
EPA 6010B	<b>Copper</b>	3040	mg/kg	1.00	0.16		W218377	AS	05/07/12 14:50	
EPA 6010B	<b>Lead</b>	459	mg/kg	0.75	0.35		W218377	AS	05/07/12 14:50	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.5	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director





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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AW-SWW-D1-02**

SVL Sample ID: **W2E0118-07 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 00:00

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	10.9	mg/kg	2.5	0.4		W218377	AS	05/07/12 14:56	
EPA 6010B	<b>Copper</b>	3240	mg/kg	1.00	0.16		W218377	AS	05/07/12 14:56	
EPA 6010B	<b>Lead</b>	480	mg/kg	0.75	0.35		W218377	AS	05/07/12 14:56	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.6	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AE-D3-01**

SVL Sample ID: **W2E0118-08 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 09:45

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	10.9	mg/kg	2.5	0.4		W218377	AS	05/07/12 15:02	
EPA 6010B	<b>Copper</b>	2330	mg/kg	1.00	0.16		W218377	AS	05/07/12 15:02	
EPA 6010B	<b>Lead</b>	56.0	mg/kg	0.75	0.35		W218377	AS	05/07/12 15:02	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.8	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **FD050212-B**

SVL Sample ID: **W2E0118-09 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 00:00

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.6	mg/kg	2.5	0.4		W218377	AS	05/07/12 15:08	
EPA 6010B	<b>Copper</b>	2290	mg/kg	1.00	0.16		W218377	AS	05/07/12 15:08	
EPA 6010B	<b>Lead</b>	49.6	mg/kg	0.75	0.35		W218377	AS	05/07/12 15:08	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.8	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AE-D3-02**

SVL Sample ID: **W2E0118-10 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 10:07

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	7.6	mg/kg	2.5	0.4		W218377	AS	05/07/12 15:26	
EPA 6010B	<b>Copper</b>	1840	mg/kg	1.00	0.16		W218377	AS	05/07/12 15:26	
EPA 6010B	<b>Lead</b>	127	mg/kg	0.75	0.35		W218377	AS	05/07/12 15:26	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.6	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0118**  
Reported: 17-May-12 11:48

Client Sample ID: **CPF-AE-SWE-D1.5-01**

SVL Sample ID: **W2E0118-11 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 10:17  
Received: 03-May-12  
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	12.7	mg/kg	2.5	0.4		W218377	AS	05/07/12 15:32	
EPA 6010B	<b>Copper</b>	2500	mg/kg	1.00	0.16		W218377	AS	05/07/12 15:32	
EPA 6010B	<b>Lead</b>	94.0	mg/kg	0.75	0.35		W218377	AS	05/07/12 15:32	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.4	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

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Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AE-SWW-D1.5-02**

SVL Sample ID: **W2E0118-12 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 10:25

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	8.7	mg/kg	2.5	0.4		W218377	AS	05/07/12 15:38	
EPA 6010B	<b>Copper</b>	1800	mg/kg	1.00	0.16		W218377	AS	05/07/12 15:38	
EPA 6010B	<b>Lead</b>	45.7	mg/kg	0.75	0.35		W218377	AS	05/07/12 15:38	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	98.4	%	0.1			W218372	HLC	05/07/12 12:31	

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**John Kern**  
Laboratory Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AE-D3-03**

SVL Sample ID: **W2E0118-13 (Soil)**

Sampled: 02-May-12 10:40

Received: 03-May-12

Sampled By:

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.3	mg/kg	2.5	0.4		W218377	AS	05/07/12 17:05	
EPA 6010B	<b>Copper</b>	1860	mg/kg	1.00	0.16		W218377	AS	05/07/12 17:05	
EPA 6010B	<b>Lead</b>	38.3	mg/kg	0.75	0.35		W218377	AS	05/07/12 17:05	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.0	%	0.1			W218372	HLC	05/07/12 12:31	

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Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AE-D3-04**

SVL Sample ID: **W2E0118-14 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 10:45

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	8.1	mg/kg	2.5	0.4		W218377	AS	05/07/12 15:51	
EPA 6010B	<b>Copper</b>	2860	mg/kg	1.00	0.16		W218377	AS	05/07/12 15:51	
EPA 6010B	<b>Lead</b>	19.3	mg/kg	0.75	0.35		W218377	AS	05/07/12 15:51	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.8	%	0.1			W218372	HLC	05/07/12 12:31	

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Laboratory Director





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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPF-AE-SWE-D1.5-02**

SVL Sample ID: **W2E0118-15 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 11:10

Received: 03-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.9	mg/kg	2.5	0.4		W218377	AS	05/07/12 15:57	
EPA 6010B	<b>Copper</b>	1490	mg/kg	1.00	0.16		W218377	AS	05/07/12 15:57	
EPA 6010B	<b>Lead</b>	12.5	mg/kg	0.75	0.35		W218377	AS	05/07/12 15:57	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.9	%	0.1			W218372	HLC	05/07/12 12:31	

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**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPE-04**

SVL Sample ID: **W2E0118-16 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:30

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.0	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:03	
EPA 6010B	<b>Copper</b>	2880	mg/kg	1.00	0.16		W218377	AS	05/07/12 16:03	
EPA 6010B	<b>Lead</b>	243	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:03	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.9	%	0.1			W218372	HLC	05/07/12 12:31	

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**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPE-03**

SVL Sample ID: **W2E0118-17 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:25

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.6	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:09	
EPA 6010B	<b>Copper</b>	5500	mg/kg	10.0	1.60	10	W218377	AS	05/07/12 18:14	D2
EPA 6010B	<b>Lead</b>	986	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:09	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.3	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPE-02**

SVL Sample ID: **W2E0118-18 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:20

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	3.9	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:15	
EPA 6010B	Copper	921	mg/kg	1.00	0.16		W218377	AS	05/07/12 16:15	
EPA 6010B	Lead	33.7	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:15	
<b>Percent Solids</b>										
Percent Solids	% Solids	93.8	%	0.1			W218372	HLC	05/07/12 12:31	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPE-01**

SVL Sample ID: **W2E0118-19 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:15

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	2.7	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:34	
EPA 6010B	Copper	382	mg/kg	1.00	0.16		W218377	AS	05/07/12 16:34	
EPA 6010B	Lead	145	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:34	
<b>Percent Solids</b>										
Percent Solids	% Solids	95.6	%	0.1			W218372	HLC	05/07/12 12:31	

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**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPE-05**

SVL Sample ID: **W2E0118-20 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:40

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.6	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:41	
EPA 6010B	<b>Copper</b>	2020	mg/kg	1.00	0.16		W218377	AS	05/07/12 16:41	
EPA 6010B	<b>Lead</b>	38.3	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:41	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.4	%	0.1			W218372	HLC	05/07/12 12:31	

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Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPE-06**

SVL Sample ID: **W2E0118-21 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:45

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	<b>Arsenic</b>	8.4	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:47	
EPA 6010B	<b>Copper</b>	2120	mg/kg	1.00	0.16		W218377	AS	05/07/12 16:47	
EPA 6010B	<b>Lead</b>	71.0	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:47	

**Percent Solids**

Percent Solids	<b>% Solids</b>	94.8	%	0.1			W218372	HLC	05/07/12 12:31	
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**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0118**  
Reported: 17-May-12 11:48

Client Sample ID: **CPE-07**

SVL Sample ID: **W2E0118-22 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:42  
Received: 03-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	4.4	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:53	
EPA 6010B	Copper	2590	mg/kg	1.00	0.16		W218377	AS	05/07/12 16:53	
EPA 6010B	Lead	107	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:53	
<b>Percent Solids</b>										
Percent Solids	% Solids	95.0	%	0.1			W218372	HLC	05/07/12 12:31	

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Laboratory Director





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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0118**

Reported: 17-May-12 11:48

Client Sample ID: **CPE-08**

SVL Sample ID: **W2E0118-23 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:32

Received: 03-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	7.5	mg/kg	2.5	0.4		W218377	AS	05/07/12 16:59	
EPA 6010B	Copper	2110	mg/kg	1.00	0.16		W218377	AS	05/07/12 16:59	
EPA 6010B	Lead	46.8	mg/kg	0.75	0.35		W218377	AS	05/07/12 16:59	
<b>Percent Solids</b>										
Percent Solids	% Solids	96.7	%	0.1			W218372	HLC	05/07/12 12:31	

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**John Kern**  
Laboratory Director



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 Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
 Work Order: **W2E0118**  
 Reported: 17-May-12 11:48

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	<2.5	0.4	2.5	W218377	07-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.16	1.00	W218377	07-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W218377	07-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	<0.025	0.007	0.025	W218359	07-May-12	
EPA 6010B	Copper	mg/L	<0.010	0.003	0.010	W218359	07-May-12	
EPA 6010B	Lead	mg/L	<0.0075	0.0027	0.0075	W218359	07-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	94.3	100	94.3	80 - 120	W218377	07-May-12	
EPA 6010B	Copper	mg/kg	92.5	100	92.5	80 - 120	W218377	07-May-12	
EPA 6010B	Lead	mg/kg	93.3	100	93.3	80 - 120	W218377	07-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	1.07	1.00	107	80 - 120	W218359	07-May-12	
EPA 6010B	Copper	mg/L	1.03	1.00	103	80 - 120	W218359	07-May-12	
EPA 6010B	Lead	mg/L	1.05	1.00	105	80 - 120	W218359	07-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	109	14.5	100	94.1	75 - 125	W218377	07-May-12	
EPA 6010B	Copper	mg/kg	1950	1720	100	R > 4S	75 - 125	W218377	07-May-12	M3
EPA 6010B	Lead	mg/kg	155	81.7	100	73.2	75 - 125	W218377	07-May-12	M2

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	1.03	<0.025	1.00	103	75 - 125	W218359	07-May-12	
EPA 6010B	Copper	mg/L	1.00	<0.010	1.00	100	75 - 125	W218359	07-May-12	
EPA 6010B	Lead	mg/L	1.02	<0.0075	1.00	102	75 - 125	W218359	07-May-12	



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**Project Name: Training Bldg. Soil Excavation 2012**  
 Work Order: **W2E0118**  
 Reported: 17-May-12 11:48

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	113	109	100	4.3	20	W218377	07-May-12	
EPA 6010B	Copper	mg/kg	1640	1950	100	17.3	20	W218377	07-May-12	
EPA 6010B	Lead	mg/kg	148	155	100	4.4	20	W218377	07-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	1.06	1.03	1.00	2.4	20	W218359	07-May-12	
EPA 6010B	Copper	mg/L	1.03	1.00	1.00	2.1	20	W218359	07-May-12	
EPA 6010B	Lead	mg/L	1.04	1.02	1.00	1.8	20	W218359	07-May-12	

**Quality Control - POST DIGESTION SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Lead	mg/kg	167	81.7	100	85.0	75 - 125	W218377	07-May-12	
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**Notes and Definitions**

D2	Sample required dilution due to high concentration of target analyte.
M2	Matrix spike recovery was low, but the LCS recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable



# CHAIN OF CUSTODY RECORD

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Page 1 of 3

W250112

FOR SVL USE ONLY  
SVL JOB #

Report to Company: Deimeasball  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone Number: \_\_\_\_\_  
FAX Number: \_\_\_\_\_  
E-mail: \_\_\_\_\_

Invoice Sent To: Clint Beck  
Contact: machram@idaho.gov  
Address: 1700 W. Idaho Mine Rd  
Green Valley AZ 85622  
Phone Number: 520-293-7414  
FAX Number: \_\_\_\_\_  
PO#: \_\_\_\_\_

TEMP on Receipt: 0.9°C

Table 1. -- Matrix Type

- 1 = Surface Water, 2 = Ground Water
- 3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
- 6 = Waste, 7 = Other

Project Name: AZ001253.0004

Sampler's Signature: [Signature]

Indicate State of sample origination: \_\_\_\_\_

USACE?  Yes  No

Please take care to distinguish between:  
1 and I  
2 and Z  
5 and S  
0 and O

Thanks!

Preservative(s)  
HCl  
HNO<sub>3</sub> Filtered  
HNO<sub>3</sub> Unfiltered  
Unpreserved  
H<sub>2</sub>SO<sub>4</sub>  
NaOH  
Other (Specify)

Misc.  
Matrix Type (From Table 1)  
No. of Containers

Collection  
Date  
Time

Sample ID  
Collected by: (Init.)

Analyses Required

metals (arsenic, copper, lead)

Rush Instructions (Days)

Comments

Relinquished by:

Relinquished by:

Ph. Tam

Date: 5/21/12 Time: 1810

Received by: [Signature]

Date: 5/21/12 Time: 1810

Date: 5/21/12 Time: 1810

Date: 5/21/12 Time: 15:00

\* Sample Reject:  Return  Dispose  Store (30 Days)

White: LAB COPY

Yellow: CUSTOMER COPY

SVL-COC 9/05

• on this work order

# TestAmerica

## CHAIN OF CUSTODY FORM

W2E0118

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303  
 [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803  
 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

THE LEADER IN ENVIRONMENTAL TESTING  
 TAL-0013-550 (10/10)

Page 2 of 3

Client Name / Address:		Project / PO Number:				Analysis Required			
Project Manager:		Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	Special Instructions
Project Number:		CPF - AN-SNW-02-01	S	jar	1	1030	5/11/12		ascenic lead report 0.9c
Fax Number:		EB050112	W	soil	1	1040	5/11/12		
		CPF-AW-SWE-02.5-02	S	soil	1	810	5/2/12		
		CPF-AW-SW-01-02	S	soil	1	930	5/2/12		
		FD050212-A			1				
		CPF-AE-03-01			1	945			
		FD050212-B			1				
		CPF-AE-03-02			1	1007			
		CPF-AE-SWE-01.5-01			1	1017			
		CPF-AE-SNW-01.5-02			1	1025			
		CPF-AE-03-03			1	1040			
		CPF-AE-03-04			1	1045			
		CPF-AE-SWE-01.5-02			1	1110			
		CPF-AN-SWN-00.5-01			1	1130			
Relinquished By:		Date / Time:				Received By: <i>[Signature]</i>			
Relinquished By:		Date / Time:				Received By:			
Relinquished By:		Date / Time:				Received in Lab By:			
		Turnaround Time: (Check)				Sample Integrity: (Check)			
		same day				intact			
		24 hours				on ice			
		48 hours				normal			

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

**\* SWL REVID 2 CONTAINERS WITH THIS ID, DATE, & TIME**

**\*\* SWL DID NOT RECEIVE THIS SAMPLE**

**on this work order**

W2E0118



### CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

TEMP on Receipt: 0.9°C

Table 1. -- Matrix Type  
 1 = Surface Water, 2 = Ground Water  
 3 = Soil/Sediment, 4 = Rinstate, 5 = Oil  
 6 = Waste, 7 = Other

Report to Company: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

Invoice Sent To: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 PO#: \_\_\_\_\_

Project Name: \_\_\_\_\_  
Sampler's Signature: \_\_\_\_\_

Indicate State of sample origination: \_\_\_\_\_

USACE?  Yes  No

Sample ID	Collection	Misc.	Preservative(s)	Analyses Required	Comments
1 CPE-04	Date: 5/17/12 Time: 1430	Matrix Type (From Table 1): S	Unpreserved	metal (arsenic, lead, copper)	
2 CPE-05	Date: 5/17/12 Time: 1435	No. of Containers: 3	HNO <sub>3</sub> Filtered		
3 CPE-07	Date: 5/17/12 Time: 1440		HNO <sub>3</sub> Unfiltered		
4 CPE-01	Date: 5/17/12 Time: 1445		HCl		
5 CPE-08	Date: 5/17/12 Time: 1450		H <sub>2</sub> SO <sub>4</sub>		
6 CPE-06	Date: 5/17/12 Time: 1455		NaOH		
7 CPE-07	Date: 5/17/12 Time: 1500		Other (Specify)		
8 CPE-08	Date: 5/17/12 Time: 1505				
9					
10					

Rush Instructions (Days): \_\_\_\_\_

Date: 5/13/12 Time: 15:00

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_

Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

SAMPLE RECEIPT/CHAIN-OF-CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/3/12  
 SVL Work No: W2E0118

By: CP Sewy

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				FMI SIERRITA
2	Date and time of receipt at lab	✓				5/3/12 15:00
3	Received by	✓				C. FLORES
4	Temperature blank or cooler temperature	✓				Temp. 0.9 °C.
5	Were the sample(s) received on ice	✓				YES
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				GOOD
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				
12	Did an SVL employee preserve sample(s) upon receipt				✓	NO
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (initials & date)				✓	
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	SAMPLE NOT LISTED ON ALL COC'S. CLIENT ONLY SIGNED FIRST COC.
19	Shipper's air bill	✓				

V- Verified      VC- Verified Corrections Made      NV-Not Verified      NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0143**  
Reported: 08-May-12 14:46

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
CPB-S-01	W2E0143-01	Soil	02-May-12 17:15	LG/MT	04-May-2012
CPS-SWE-D2.5-01	W2E0143-02	Soil	02-May-12 17:00	LG/MT	04-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).

The guidelines do not pertain to nitric-preserved metals.

**Default Cooler (Received Temperature: 9.1°C)**

<u>Labnumber</u>	<u>Container</u>	<u>Client ID</u>	<u>Labnumber</u>	<u>Container</u>	<u>Client ID</u>
W2E0143-01 A	Jar, glass	CPB-S-01	W2E0143-02 A	Jar, glass	CPS-SWE-D2.5-01





One Government Gulch - PO Box 929

Kellogg ID 83837-0929

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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0143**

Reported: 08-May-12 14:46

Client Sample ID: **CPB-S-01**

SVL Sample ID: **W2E0143-01 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 17:15

Received: 04-May-12

Sampled By: LG/MT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	21.6	mg/kg	2.5	0.4		W219054	DT	05/08/12 10:11	
EPA 6010B	<b>Copper</b>	1340	mg/kg	1.00	0.16		W219054	DT	05/08/12 10:11	
EPA 6010B	<b>Lead</b>	201	mg/kg	0.75	0.35		W219054	DT	05/08/12 10:11	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.7	%	0.1			W219059	HLC	05/08/12 11:59	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0143**  
Reported: 08-May-12 14:46

Client Sample ID: **CPS-SWE-D2.5-01**

SVL Sample ID: **W2E0143-02 (Soil)**

Sample Report Page 1 of 1

Sampled: 02-May-12 17:00  
Received: 04-May-12  
Sampled By: LG/MT

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	5.6	mg/kg	2.5	0.4		W219054	DT	05/08/12 10:28	
EPA 6010B	Copper	2220	mg/kg	1.00	0.16		W219054	DT	05/08/12 10:28	
EPA 6010B	Lead	258	mg/kg	0.75	0.35		W219054	DT	05/08/12 10:28	
<b>Percent Solids</b>										
Percent Solids	% Solids	96.7	%	0.1			W219059	HLC	05/08/12 11:59	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0143**  
Reported: 08-May-12 14:46

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
--------	---------	-------	--------	-----	-----	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	<2.5	0.4	2.5	W219054	08-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.16	1.00	W219054	08-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W219054	08-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	------------	----------	--------	-------------------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	95.8	100	95.8	80 - 120	W219054	08-May-12	
EPA 6010B	Copper	mg/kg	101	100	101	80 - 120	W219054	08-May-12	
EPA 6010B	Lead	mg/kg	96.5	100	96.5	80 - 120	W219054	08-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	--------------	-------------------	-----------------	--------	-------------------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	112	21.6	100	90.7	75 - 125	W219054	08-May-12	
EPA 6010B	Copper	mg/kg	1410	1340	100	R > 4S	75 - 125	W219054	08-May-12	M3
EPA 6010B	Lead	mg/kg	288	201	100	87.8	75 - 125	W219054	08-May-12	

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
--------	---------	-------	------------	--------------	-------------	-----	-----------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	113	112	100	0.5	20	W219054	08-May-12	
EPA 6010B	Copper	mg/kg	1470	1410	100	3.9	20	W219054	08-May-12	
EPA 6010B	Lead	mg/kg	294	288	100	2.0	20	W219054	08-May-12	



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0143**  
Reported: 08-May-12 14:46

---

### Notes and Definitions

M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303  
 [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803  
 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

Client Name / Address: Clint Beck/Marina Nottley 6700 W. Powell Mine Rd Green Valley, AZ 85622		Project / PO Number: Clear Plant +		Analysis Required			
Project Manager: L. Gerwe/M. Tani		Phone Number: 520-345-7414		Special Instructions: 9.1°C			
Sampler: CPS-S-01		Fax Number: 520-345-7414		Special Instructions: 2 day turn JW			
Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	Analysis Required	
S	NOTE jar	1	5/2/12	1715	NONE	X	
* CPS-SWE-02.S-01	↓	1	↓	1700	↓	X	
* SAMPLE JAR BROKEN ON RECEIPT. SAMPLE WAS CONTAINED IN BUBBLE WRAP BAG. DNL REPLACED JAR. OF 5/4/12							
Relinquished By: [Signature]		Date / Time: 5/3/12 12:00		Received By: [Signature]		Date / Time: 5/4/12 12:50	
Relinquished By:		Date / Time:		Received By:		Date / Time:	
Relinquished By:		Date / Time:		Received in Lab By:		Date / Time:	
				Turnaround Time: (Check)		same day 72 hours	
						24 hours 5 days	
						48 hours normal	
				Sample Integrity: (Check)		intact on ice	

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

SAMPLE RECEIPT/CHAIN-OF-CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/4/12  
 SVL Work No: W2E0143

By: CR Sewy

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				TEST AMERICA
2	Date and time of receipt at lab	✓				5/4/12 12:50
3	Received by	✓				C. FLORES
4	Temperature blank or cooler temperature	✓				Temp. 9.1 °C.
5	Were the sample(s) received on ice	✓				YES
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				1 BROKEN JAR
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested				✓	SOILS
12	Did an SVL employee preserve sample(s) upon receipt				✓	
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (initials & date)				✓	
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
19	Shipper's air bill	✓				

V- Verified      VC- Verified Corrections Made      NV-Not Verified      NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0166**  
Reported: 31-May-12 12:40

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CPE-04	W2E0166-01	Soil	02-May-12 16:30	07-May-2012
CPE-03	W2E0166-02	Soil	02-May-12 16:25	07-May-2012
CPE-02	W2E0166-03	Soil	02-May-12 16:20	07-May-2012
CPE-01	W2E0166-04	Soil	02-May-12 16:15	07-May-2012
CPE-05	W2E0166-05	Soil	02-May-12 16:40	07-May-2012
CPE-06	W2E0166-06	Soil	02-May-12 16:45	07-May-2012
CPE-07	W2E0166-07	Soil	02-May-12 16:42	07-May-2012
CPE-08	W2E0166-08	Soil	02-May-12 16:32	07-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-04**

SVL Sample ID: **W2E0166-01 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:30

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>TCLP Extraction Parameters</b>										
EPA 1311	<b>% Dry Solids</b>	97.2	%				W221254	JAA	05/29/12 08:40	
EPA 1311	<b>Final pH</b>	5.51	pH Units				W221254	JAA	05/29/12 08:40	
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 10:34	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 10:34	
EPA 6010B	<b>Cadmium</b>	0.0149	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 10:34	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 10:34	
EPA 6010B	<b>Lead</b>	0.0649	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 10:34	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 10:34	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 10:34	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:29	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Brandon Borgias**  
Systems Manager





One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-03**

SVL Sample ID: **W2E0166-02 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:25

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

**TCLP Extraction Parameters**

EPA 1311	<b>% Dry Solids</b>	98.2	%				W221254	JAA	05/29/12 08:40	
EPA 1311	<b>Final pH</b>	5.47	pH Units				W221254	JAA	05/29/12 08:40	

**TCLP Leachates (Metals)**

EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 10:54	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 10:54	
EPA 6010B	<b>Cadmium</b>	0.0399	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 10:54	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 10:54	
EPA 6010B	<b>Lead</b>	0.401	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 10:54	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 10:54	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 10:54	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:38	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Brandon Borgias**  
Systems Manager



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-02**

SVL Sample ID: **W2E0166-03 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:20

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>TCLP Extraction Parameters</b>										
EPA 1311	% Dry Solids	95.5	%				W221254	JAA	05/29/12 08:40	
EPA 1311	Final pH	5.20	pH Units				W221254	JAA	05/29/12 08:40	
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 11:01	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 11:01	
EPA 6010B	Cadmium	< 0.0100	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 11:01	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 11:01	
EPA 6010B	Lead	< 0.0500	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 11:01	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 11:01	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 11:01	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:40	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Brandon Borgias**  
Systems Manager



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Kellogg ID 83837-0929

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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-01**

SVL Sample ID: **W2E0166-04 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:15

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>TCLP Extraction Parameters</b>										
EPA 1311	% Dry Solids	96.1	%				W221254	JAA	05/29/12 08:40	
EPA 1311	Final pH	5.23	pH Units				W221254	JAA	05/29/12 08:40	
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 11:07	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 11:07	
EPA 6010B	Cadmium	< 0.0100	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 11:07	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 11:07	
EPA 6010B	Lead	< 0.0500	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 11:07	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 11:07	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 11:07	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:42	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-05**

SVL Sample ID: **W2E0166-05 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:40

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>TCLP Extraction Parameters</b>										
EPA 1311	% Dry Solids	97.0	%				W221254	JAA	05/29/12 08:40	
EPA 1311	Final pH	5.00	pH Units				W221254	JAA	05/29/12 08:40	
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 11:13	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 11:13	
EPA 6010B	Cadmium	0.0361	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 11:13	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 11:13	
EPA 6010B	Lead	< 0.0500	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 11:13	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 11:13	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 11:13	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:43	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-06**

SVL Sample ID: **W2E0166-06 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:45

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>TCLP Extraction Parameters</b>										
EPA 1311	<b>% Dry Solids</b>	95.1	%				W221254	JAA	05/29/12 08:40	
EPA 1311	<b>Final pH</b>	5.07	pH Units				W221254	JAA	05/29/12 08:40	
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 11:20	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 11:20	
EPA 6010B	<b>Cadmium</b>	0.0130	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 11:20	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 11:20	
EPA 6010B	<b>Lead</b>	0.0699	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 11:20	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 11:20	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 11:20	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:45	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Brandon Borgias**  
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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-07**

SVL Sample ID: **W2E0166-07 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:42

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>TCLP Extraction Parameters</b>										
EPA 1311	<b>% Dry Solids</b>	95.6	%				W221254	JAA	05/29/12 08:40	
EPA 1311	<b>Final pH</b>	5.12	pH Units				W221254	JAA	05/29/12 08:40	
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 11:37	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 11:37	
EPA 6010B	<b>Cadmium</b>	0.0213	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 11:37	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 11:37	
EPA 6010B	<b>Lead</b>	0.289	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 11:37	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 11:37	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 11:37	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:47	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0166**

Reported: 31-May-12 12:40

Client Sample ID: **CPE-08**

SVL Sample ID: **W2E0166-08 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 02-May-12 16:32

Received: 07-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>TCLP Extraction Parameters</b>										
EPA 1311	% Dry Solids	97.0	%				W221254	JAA	05/29/12 08:40	
EPA 1311	Final pH	5.18	pH Units				W221254	JAA	05/29/12 08:40	
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	< 0.050	mg/L Extract	0.050	0.007		W222074	DT	05/30/12 11:44	
EPA 6010B	Barium	< 1.00	mg/L Extract	1.00	0.0006		W222074	DT	05/30/12 11:44	
EPA 6010B	Cadmium	0.0209	mg/L Extract	0.0100	0.0006		W222074	DT	05/30/12 11:44	
EPA 6010B	Chromium	< 0.0500	mg/L Extract	0.0500	0.0015		W222074	DT	05/30/12 11:44	
EPA 6010B	Lead	< 0.0500	mg/L Extract	0.0500	0.0027		W222074	DT	05/30/12 11:44	
EPA 6010B	Selenium	< 0.050	mg/L Extract	0.050	0.013		W222074	DT	05/30/12 11:44	
EPA 6010B	Silver	< 0.0500	mg/L Extract	0.0500	0.0014		W222074	DT	05/30/12 11:44	
EPA 7470A	Mercury	< 0.00020	mg/L Extract	0.00020	0.000054		W222079	DJA	05/30/12 13:49	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Brandon Borgias**  
Systems Manager



Freeport McMoRan - Sierrita  
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 Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
 Work Order: **W2E0166**  
 Reported: 31-May-12 12:40

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**TCLP Extraction Parameters**

EPA 1311	Final pH	pH Units	4.93			W221254	29-May-12	
EPA 1311	% Dry Solids	%	0.00			W221254	29-May-12	

**TCLP Leachates (Metals)**

EPA 6010B	Arsenic	mg/L Extract	<0.050	0.007	0.050	W222074	30-May-12	
EPA 6010B	Barium	mg/L Extract	<1.00	0.0006	1.00	W222074	30-May-12	
EPA 6010B	Cadmium	mg/L Extract	<0.0100	0.0006	0.0100	W222074	30-May-12	
EPA 6010B	Chromium	mg/L Extract	<0.0500	0.0015	0.0500	W222074	30-May-12	
EPA 6010B	Lead	mg/L Extract	<0.0500	0.0027	0.0500	W222074	30-May-12	
EPA 6010B	Selenium	mg/L Extract	<0.050	0.013	0.050	W222074	30-May-12	
EPA 6010B	Silver	mg/L Extract	<0.0500	0.0014	0.0500	W222074	30-May-12	
EPA 7470A	Mercury	mg/L Extract	<0.00020	0.000054	0.00020	W222079	30-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**TCLP Leachates (Metals)**

EPA 6010B	Arsenic	mg/L Extract	1.03	1.00	103	80 - 120	W222074	30-May-12	
EPA 6010B	Barium	mg/L Extract	19.5	20.0	97.3	80 - 120	W222074	30-May-12	
EPA 6010B	Cadmium	mg/L Extract	0.186	0.200	93.2	80 - 120	W222074	30-May-12	
EPA 6010B	Chromium	mg/L Extract	0.951	1.00	95.1	80 - 120	W222074	30-May-12	
EPA 6010B	Lead	mg/L Extract	0.951	1.00	95.1	80 - 120	W222074	30-May-12	
EPA 6010B	Selenium	mg/L Extract	0.199	0.200	99.7	80 - 120	W222074	30-May-12	
EPA 6010B	Silver	mg/L Extract	1.03	1.00	103	80 - 120	W222074	30-May-12	
EPA 7470A	Mercury	mg/L Extract	0.00507	0.00500	101	80 - 120	W222079	30-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**TCLP Leachates (Metals)**

EPA 6010B	Arsenic	mg/L Extract	1.04	<0.050	1.00	104	75 - 125	W222074	30-May-12	
EPA 6010B	Barium	mg/L Extract	19.5	<1.00	20.0	96.5	75 - 125	W222074	30-May-12	
EPA 6010B	Cadmium	mg/L Extract	0.194	0.0149	0.200	89.3	75 - 125	W222074	30-May-12	
EPA 6010B	Chromium	mg/L Extract	0.950	<0.0500	1.00	94.4	75 - 125	W222074	30-May-12	
EPA 6010B	Lead	mg/L Extract	0.967	0.0649	1.00	90.2	75 - 125	W222074	30-May-12	
EPA 6010B	Selenium	mg/L Extract	0.200	<0.050	0.200	100	75 - 125	W222074	30-May-12	
EPA 6010B	Silver	mg/L Extract	1.07	<0.0500	1.00	107	75 - 125	W222074	30-May-12	
EPA 7470A	Mercury	mg/L Extract	0.00113	<0.00020	0.00100	113	70 - 130	W222079	30-May-12	





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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0166**  
Reported: 31-May-12 12:40

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
<b>TCLP Leachates (Metals)</b>										
EPA 6010B	Arsenic	mg/L Extract	1.04	1.04	1.00	0.5	20	W222074	30-May-12	
EPA 6010B	Barium	mg/L Extract	19.4	19.5	20.0	0.5	20	W222074	30-May-12	
EPA 6010B	Cadmium	mg/L Extract	0.193	0.194	0.200	0.2	20	W222074	30-May-12	
EPA 6010B	Chromium	mg/L Extract	0.952	0.950	1.00	0.1	20	W222074	30-May-12	
EPA 6010B	Lead	mg/L Extract	0.967	0.967	1.00	0.0	20	W222074	30-May-12	
EPA 6010B	Selenium	mg/L Extract	0.208	0.200	0.200	3.8	20	W222074	30-May-12	
EPA 6010B	Silver	mg/L Extract	1.08	1.07	1.00	0.4	20	W222074	30-May-12	
EPA 7470A	Mercury	mg/L Extract	0.00106	0.00113	0.00100	6.5	20	W222079	30-May-12	

**Notes and Definitions**

- LCS Laboratory Control Sample (Blank Spike)
- RPD Relative Percent Difference
- UDL A result is less than the detection limit
- R > 4S % recovery not applicable, sample concentration more than four times greater than spike level
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable

WAECHS OF 3/11/06 WAE0166

SVL 9/05

Page 5 of 5

# CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891



TEMP on Receipt: 0.0°C

Table 1. - Matrix Type  
 1 = Surface Water, 2 = Ground Water  
 3 = Soil/Sediment, 4 = Rinseate, 5 = Oil  
 6 = Waste, 7 = Other

Report to Company: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

Invoice Sent To: \_\_\_\_\_  
 Contact: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 FAX Number: \_\_\_\_\_  
 PO#: \_\_\_\_\_

Project Name: \_\_\_\_\_  
 Sampler's Signature: \_\_\_\_\_

Indicate State of sample origination: \_\_\_\_\_

USACE?  Yes  No

Sample ID	Collection	Misc.	Preservative(s)	Other (Specify)	Analyses Required	Comments
1 CPE-04	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S	Unpreserved			
2 CPE-05	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S	HNO <sub>3</sub> Filtered			
3 CPE-02	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S	HNO <sub>3</sub> Unfiltered			
4 CPE-01	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S	HCl			
5 CPE-05	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S	H <sub>2</sub> SO <sub>4</sub>			
6 CPE-06	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S	NaOH			
7 CPE-07	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S				
8 CPE-07	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S				
9 CPE-08	Date: 5/24/06 Time: 1300	Matrix Type (From Table 1) S				
10						

Analyses Required

metal (arsenic, lead, copper)

Rush Instructions (Days)

Date: 5/24/06  
Time: 1300

Date: 5/24/06  
Time: 1300

Relinquished by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Return  Dispose  Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SAMPLE RECEIPT/CHAIN-OF-CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/3/12 By: CP Seuy  
 CF 5/7/12  
 SVL Work No: W2E0118 - W2E0166

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				FMI SIERRITA
2	Date and time of receipt at lab	✓				5/3/12 15:00
3	Received by	✓				C. FLORES
4	Temperature blank or cooler temperature	✓				Temp. 0.9 °C.
5	Were the sample(s) received on ice	✓				YES
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				GOOD
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				
12	Did an SVL employee preserve sample(s) upon receipt				✓	NO
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (initials & date)					
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	SAMPLE NOT LISTED ON ALL COC'S. CLIENT ONLY SIGNED FIRST COC.
19	Shipper's air bill	✓				

V- Verified      VC- Verified Corrections Made      NV-Not Verified      NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
EBO51112-A	W2E0380-01	Water	11-May-12 11:20	LG	14-May-2012
EBO51112-B	W2E0380-02	Water	11-May-12 14:20	LG	14-May-2012
CPF-AW-SWE-D2.5-03	W2E0380-03	Soil	11-May-12 11:15	LG	14-May-2012
CPF-AW-D2-05	W2E0380-04	Soil	11-May-12 11:35	LG	14-May-2012
CPF-AW-SWW-D0.75-04	W2E0380-05	Soil	11-May-12 11:55	LG	14-May-2012
CPF-AN-SWN-D1-01	W2E0380-06	Soil	11-May-12 11:55	LG	14-May-2012
CPF-AN-SWN-D1.5-02	W2E0380-07	Soil	11-May-12 12:15	LG	14-May-2012
CPF-AN-SWS-D0.5-02	W2E0380-08	Soil	11-May-12 12:20	LG	14-May-2012
CPF-AN-SWN-D1-03	W2E0380-09	Soil	11-May-12 12:25	LG	14-May-2012
CPF-AN-SWS-D0.5-03	W2E0380-10	Soil	11-May-12 12:30	LG	14-May-2012
CPF-AN-SWN-D1.5-04	W2E0380-11	Soil	11-May-12 12:40	LG	14-May-2012
CPF-AN-SWS-D0.5-04	W2E0380-12	Soil	11-May-12 12:45	LG	14-May-2012
CPF-AN-SWN-D0.5-05	W2E0380-13	Soil	11-May-12 13:00	LG	14-May-2012
CPF-AN-D1-01	W2E0380-14	Soil	11-May-12 13:15	LG	14-May-2012
CPP-AE-S-05	W2E0380-15	Soil	11-May-12 11:20	LG	14-May-2012
CPP-AN-S-05	W2E0380-16	Soil	11-May-12 11:35	LG	14-May-2012
CPF-AE-D2-06	W2E0380-17	Soil	11-May-12 11:00	LG	14-May-2012
CPS-SWW-D2.5-02	W2E0380-18	Soil	11-May-12 10:05	LG	14-May-2012
CPS-SWS-D2.5-07	W2E0380-19	Soil	11-May-12 09:55	LG	14-May-2012
CPS-SWN-D3.5-05	W2E0380-20	Soil	11-May-12 10:00	LG	14-May-2012
CPB-SWS-D2-05	W2E0380-21	Soil	11-May-12 09:48	LG	14-May-2012
CPB-S-05	W2E0380-22	Soil	11-May-12 10:00	LG	14-May-2012
CPB-S-06	W2E0380-23	Soil	11-May-12 10:15	LG	14-May-2012
CPS-SWN-D2-04	W2E0380-25	Soil	11-May-12 09:45	LG	14-May-2012
RCP-T-3-D0.5-02	W2E0380-26	Soil	11-May-12 13:45	LG	14-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).

The guidelines do not pertain to nitric-preserved metals.

**Default Cooler (Received Temperature: 18.2°C)**

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W2E0380-01 A	Nitric HDPE	EBO51112-A	W2E0380-02 A	Nitric HDPE	EBO51112-B
W2E0380-03 A	Jar, glass	CPF-AW-SWE-D2.5-03	W2E0380-04 A	Jar, glass	CPF-AW-D2-05
W2E0380-05 A	Jar, glass	CPF-AW-SWW-D0.75-04	W2E0380-06 A	Jar, glass	CPF-AN-SWN-D1-01

**SVL holds the following certifications:**

AZ:0538, CA:2080, FL(NELAC):E87993, ID:ID00019 & ID00965 (Microbiology), NV:ID000192007A, WA:1268

Work order Report Page 1 of 29



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

**Default Cooler (Received Temperature: 18.2°C) (Continued)**

<u>Labnumber</u>	<u>Container</u>	<u>Client ID</u>	<u>Labnumber</u>	<u>Container</u>	<u>Client ID</u>
W2E0380-07 A	Jar, glass	CPF-AN-SWN-D1.5-02	W2E0380-08 A	Jar, glass	CPF-AN-SWS-D0.5-02
W2E0380-09 A	Jar, glass	CPF-AN-SWN-D1-03	W2E0380-10 A	Jar, glass	CPF-AN-SWS-D0.5-03
W2E0380-11 A	Jar, glass	CPF-AN-SWN-D1.5-04	W2E0380-12 A	Jar, glass	CPF-AN-SWS-D0.5-04
W2E0380-13 A	Jar, glass	CPF-AN-SWN-D0.5-05	W2E0380-14 A	Jar, glass	CPF-AN-D1-01
W2E0380-15 A	Jar, glass	CPP-AE-S-05	W2E0380-16 A	Jar, glass	CPP-AN-S-05
W2E0380-17 A	Jar, glass	CPF-AE-D2-06	W2E0380-18 A	Jar, glass	CPS-SWW-D2.5-02
W2E0380-19 A	Jar, glass	CPS-SWS-D2.5-07	W2E0380-20 A	Jar, glass	CPS-SWN-D3.5-05
W2E0380-21 A	Jar, glass	CPB-SWS-D2-05	W2E0380-22 A	Jar, glass	CPB-S-05
W2E0380-23 A	Jar, glass	CPB-S-06	W2E0380-25 A	Jar, glass	CPS-SWN-D2-04
W2E0380-26 A	Jar, glass	RCP-T-3-D0.5-02			



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Freeport McMoRan - Sierrita  
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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **EBO51112-A**

SVL Sample ID: **W2E0380-01 (Water)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:20

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Metals (Total Recoverable)**

EPA 6010B	Arsenic	< 0.025	mg/L	0.025	0.007		W220061	TJK	05/15/12 14:56	
EPA 6010B	<b>Copper</b>	0.053	mg/L	0.010	0.003		W220061	TJK	05/15/12 14:56	
EPA 6010B	Lead	< 0.0075	mg/L	0.0075	0.0027		W220061	TJK	05/15/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **EBO51112-B**

SVL Sample ID: **W2E0380-02 (Water)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 14:20

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Metals (Total Recoverable)**

EPA 6010B	Arsenic	< 0.025	mg/L	0.025	0.007		W220061	TJK	05/15/12 15:08	
EPA 6010B	Copper	< 0.010	mg/L	0.010	0.003		W220061	TJK	05/15/12 15:08	
EPA 6010B	Lead	< 0.0075	mg/L	0.0075	0.0027		W220061	TJK	05/15/12 15:08	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPF-AW-SWE-D2.5-03**

SVL Sample ID: **W2E0380-03 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:15

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	2.6	mg/kg	2.5	0.8		W220049	TJK	05/16/12 12:59	
EPA 6010B	<b>Copper</b>	423	mg/kg	1.00	0.29		W220049	TJK	05/16/12 12:59	
EPA 6010B	<b>Lead</b>	37.5	mg/kg	0.75	0.35		W220049	TJK	05/16/12 12:59	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.1	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPF-AW-D2-05**

SVL Sample ID: **W2E0380-04 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:35  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.8	mg/kg	2.5	0.8		W220049	TJK	05/16/12 13:17	
EPA 6010B	<b>Copper</b>	1040	mg/kg	1.00	0.29		W220049	TJK	05/16/12 13:17	
EPA 6010B	<b>Lead</b>	12.3	mg/kg	0.75	0.35		W220049	TJK	05/16/12 13:17	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	94.2	%	0.1			W220052	STA	05/16/12 15:09	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPF-AW-SWW-D0.75-04**

SVL Sample ID: **W2E0380-05 (Soil)**

Sample Report Page 1 of 1

Sampled: 11-May-12 11:55  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	6.9	mg/kg	2.5	0.8		W220049	TJK	05/16/12 13:23	
EPA 6010B	Copper	4610	mg/kg	1.00	0.29		W220049	TJK	05/16/12 13:23	
EPA 6010B	Lead	622	mg/kg	0.75	0.35		W220049	TJK	05/16/12 13:23	
<b>Percent Solids</b>										
Percent Solids	% Solids	98.1	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWN-D1-01**

SVL Sample ID: **W2E0380-06 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:55  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.1	mg/kg	2.5	0.8		W220049	TJK	05/16/12 13:29	
EPA 6010B	<b>Copper</b>	1910	mg/kg	1.00	0.29		W220049	TJK	05/16/12 13:29	
EPA 6010B	<b>Lead</b>	171	mg/kg	0.75	0.35		W220049	TJK	05/16/12 13:29	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.1	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWN-D1.5-02**

SVL Sample ID: **W2E0380-07 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 12:15  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	9.8	mg/kg	2.5	0.8		W220049	TJK	05/16/12 13:35	
EPA 6010B	Copper	4570	mg/kg	1.00	0.29		W220049	TJK	05/16/12 13:35	
EPA 6010B	Lead	453	mg/kg	0.75	0.35		W220049	TJK	05/16/12 13:35	
<b>Percent Solids</b>										
Percent Solids	% Solids	90.7	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWS-D0.5-02**

SVL Sample ID: **W2E0380-08 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 12:20

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.3	mg/kg	2.5	0.8		W220049	TJK	05/16/12 13:41	
EPA 6010B	<b>Copper</b>	2470	mg/kg	1.00	0.29		W220049	TJK	05/16/12 13:41	
EPA 6010B	<b>Lead</b>	279	mg/kg	0.75	0.35		W220049	TJK	05/16/12 13:41	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.5	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWN-D1-03**

SVL Sample ID: **W2E0380-09 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 12:25

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	10.7	mg/kg	2.5	0.8		W220049	TJK	05/16/12 13:59	
EPA 6010B	<b>Copper</b>	3800	mg/kg	1.00	0.29		W220049	TJK	05/16/12 13:59	
EPA 6010B	<b>Lead</b>	473	mg/kg	0.75	0.35		W220049	TJK	05/16/12 13:59	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.7	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWS-D0.5-03**

SVL Sample ID: **W2E0380-10 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 12:30

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	18.0	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:05	
EPA 6010B	<b>Copper</b>	3810	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:05	
EPA 6010B	<b>Lead</b>	470	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:05	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.6	%	0.1			W220052	STA	05/16/12 15:09	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWN-D1.5-04**

SVL Sample ID: **W2E0380-11 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 12:40  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	8.7	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:11	
EPA 6010B	Copper	3490	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:11	
EPA 6010B	Lead	466	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:11	
<b>Percent Solids</b>										
Percent Solids	% Solids	97.0	%	0.1			W220052	STA	05/16/12 15:09	

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**John Kern**  
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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWS-D0.5-04**

SVL Sample ID: **W2E0380-12 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 12:45

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	21.7	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:17	
EPA 6010B	<b>Copper</b>	4390	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:17	
EPA 6010B	<b>Lead</b>	379	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:17	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.7	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-SWN-D0.5-05**

SVL Sample ID: **W2E0380-13 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 13:00

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.9	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:23	
EPA 6010B	<b>Copper</b>	4090	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:23	
EPA 6010B	<b>Lead</b>	105	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:23	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.6	%	0.1			W220052	STA	05/16/12 15:09	

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Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPF-AN-D1-01**

SVL Sample ID: **W2E0380-14 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 13:15  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	10.1	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:29	
EPA 6010B	Copper	4910	mg/kg	10.0	2.90	10	W220049	TJK	05/16/12 15:50	D2
EPA 6010B	Lead	236	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:29	
<b>Percent Solids</b>										
Percent Solids	% Solids	98.1	%	0.1			W220052	STA	05/16/12 15:09	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**John Kern**  
Laboratory Director



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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPP-AE-S-05**

SVL Sample ID: **W2E0380-15 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:20  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	16.3	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:35	
EPA 6010B	<b>Copper</b>	2090	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:35	
EPA 6010B	<b>Lead</b>	37.4	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:35	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.3	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPP-AN-S-05**

SVL Sample ID: **W2E0380-16 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:35

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	2.6	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:41	
EPA 6010B	<b>Copper</b>	264	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:41	
EPA 6010B	<b>Lead</b>	9.25	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:41	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.6	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

Client Sample ID: **CPF-AE-D2-06**

SVL Sample ID: **W2E0380-17 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:00  
Received: 14-May-12  
Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	11.1	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:47	
EPA 6010B	<b>Copper</b>	2360	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:47	
EPA 6010B	<b>Lead</b>	73.3	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:47	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.7	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPS-SWW-D2.5-02**

SVL Sample ID: **W2E0380-18 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 10:05

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	< 2.5	mg/kg	2.5	0.8		W220049	TJK	05/16/12 14:53	
EPA 6010B	Copper	248	mg/kg	1.00	0.29		W220049	TJK	05/16/12 14:53	
EPA 6010B	Lead	9.30	mg/kg	0.75	0.35		W220049	TJK	05/16/12 14:53	
<b>Percent Solids</b>										
Percent Solids	% Solids	95.6	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPS-SWS-D2.5-07**

SVL Sample ID: **W2E0380-19 (Soil)**

Sampled: 11-May-12 09:55

Received: 14-May-12

Sampled By: LG

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	5.0	mg/kg	2.5	0.8		W220049	TJK	05/16/12 15:11	
EPA 6010B	<b>Copper</b>	1580	mg/kg	1.00	0.29		W220049	TJK	05/16/12 15:11	
EPA 6010B	<b>Lead</b>	20.6	mg/kg	0.75	0.35		W220049	TJK	05/16/12 15:11	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.5	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPS-SWN-D3.5-05**

SVL Sample ID: **W2E0380-20 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 10:00

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	13.1	mg/kg	2.5	0.8		W220049	TJK	05/16/12 15:17	
EPA 6010B	<b>Copper</b>	4560	mg/kg	1.00	0.29		W220049	TJK	05/16/12 15:17	
EPA 6010B	<b>Lead</b>	643	mg/kg	0.75	0.35		W220049	TJK	05/16/12 15:17	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	91.1	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPB-SWS-D2-05**

SVL Sample ID: **W2E0380-21 (Soil)**

Sampled: 11-May-12 09:48

Received: 14-May-12

Sampled By: LG

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.7	mg/kg	2.5	0.8		W220049	TJK	05/16/12 15:23	
EPA 6010B	<b>Copper</b>	3220	mg/kg	1.00	0.29		W220049	TJK	05/16/12 15:23	
EPA 6010B	<b>Lead</b>	34.0	mg/kg	0.75	0.35		W220049	TJK	05/16/12 15:23	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.4	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPB-S-05**

SVL Sample ID: **W2E0380-22 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 10:00

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	17.5	mg/kg	2.5	0.8		W220049	TJK	05/16/12 15:29	
EPA 6010B	Copper	1640	mg/kg	1.00	0.29		W220049	TJK	05/16/12 15:29	
EPA 6010B	Lead	174	mg/kg	0.75	0.35		W220049	TJK	05/16/12 15:29	
<b>Percent Solids</b>										
Percent Solids	% Solids	95.7	%	0.1			W220052	STA	05/16/12 15:09	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPB-S-06**

SVL Sample ID: **W2E0380-23 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 10:15

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	<b>Arsenic</b>	4.0	mg/kg	2.5	0.8		W220050	DT	05/16/12 12:37	
EPA 6010B	<b>Copper</b>	2160	mg/kg	1.00	0.29		W220050	DT	05/16/12 12:37	
EPA 6010B	<b>Lead</b>	34.2	mg/kg	0.75	0.35		W220050	DT	05/16/12 12:37	

**Percent Solids**

Percent Solids	<b>% Solids</b>	96.6	%	0.1			W220053	STA	05/16/12 15:14	
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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **CPS-SWN-D2-04**

SVL Sample ID: **W2E0380-25 (Soil)**

Sampled: 11-May-12 09:45

Received: 14-May-12

Sampled By: LG

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	3.2	mg/kg	2.5	0.8		W220050	DT	05/16/12 12:52	
EPA 6010B	<b>Copper</b>	1350	mg/kg	1.00	0.29		W220050	DT	05/16/12 12:52	
EPA 6010B	<b>Lead</b>	29.5	mg/kg	0.75	0.35		W220050	DT	05/16/12 12:52	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	88.9	%	0.1			W220053	STA	05/16/12 15:14	

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0380**

Reported: 16-May-12 16:23

Client Sample ID: **RCP-T-3-D0.5-02**

SVL Sample ID: **W2E0380-26 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 13:45

Received: 14-May-12

Sampled By: LG

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	7.3	mg/kg	2.5	0.8		W220050	DT	05/16/12 12:58	
EPA 6010B	<b>Copper</b>	2910	mg/kg	1.00	0.29		W220050	DT	05/16/12 12:58	
EPA 6010B	<b>Lead</b>	39.3	mg/kg	0.75	0.35		W220050	DT	05/16/12 12:58	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.1	%	0.1			W220053	STA	05/16/12 15:14	

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**Project Name: Training Bldg. Soil Excavation 2012**  
 Work Order: **W2E0380**  
 Reported: 16-May-12 16:23

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	<2.5	0.8	2.5	W220049	16-May-12	
EPA 6010B	Arsenic	mg/kg	<2.5	0.8	2.5	W220050	16-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.29	1.00	W220049	16-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.29	1.00	W220050	16-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W220049	16-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W220050	16-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	<0.025	0.007	0.025	W220061	15-May-12	
EPA 6010B	Copper	mg/L	<0.010	0.003	0.010	W220061	15-May-12	
EPA 6010B	Lead	mg/L	<0.0075	0.0027	0.0075	W220061	15-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	97.0	100	97.0	80 - 120	W220050	16-May-12	
EPA 6010B	Arsenic	mg/kg	106	100	106	80 - 120	W220049	16-May-12	
EPA 6010B	Copper	mg/kg	100	100	100	80 - 120	W220050	16-May-12	
EPA 6010B	Copper	mg/kg	110	100	110	80 - 120	W220049	16-May-12	
EPA 6010B	Lead	mg/kg	96.4	100	96.4	80 - 120	W220050	16-May-12	
EPA 6010B	Lead	mg/kg	106	100	106	80 - 120	W220049	16-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	1.05	1.00	105	80 - 120	W220061	15-May-12	
EPA 6010B	Copper	mg/L	1.03	1.00	103	80 - 120	W220061	15-May-12	
EPA 6010B	Lead	mg/L	1.07	1.00	107	80 - 120	W220061	15-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	102	4.0	100	97.9	75 - 125	W220050	16-May-12	
EPA 6010B	Arsenic	mg/kg	113	2.6	100	110	75 - 125	W220049	16-May-12	
EPA 6010B	Copper	mg/kg	2360	2160	100	R > 4S	75 - 125	W220050	16-May-12	M3
EPA 6010B	Copper	mg/kg	489	423	100	R > 4S	75 - 125	W220049	16-May-12	M3
EPA 6010B	Lead	mg/kg	144	34.2	100	110	75 - 125	W220050	16-May-12	
EPA 6010B	Lead	mg/kg	127	37.5	100	89.9	75 - 125	W220049	16-May-12	

**Metals (Total Recoverable)**

EPA 6010B	Arsenic	mg/L	1.05	<0.025	1.00	105	75 - 125	W220061	15-May-12	
EPA 6010B	Copper	mg/L	1.10	0.053	1.00	104	75 - 125	W220061	15-May-12	
EPA 6010B	Lead	mg/L	1.07	<0.0075	1.00	107	75 - 125	W220061	15-May-12	



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PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0380**  
Reported: 16-May-12 16:23

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	mg/kg	111	113	100	2.0	20	W220049	16-May-12	
EPA 6010B	Arsenic	mg/kg	103	102	100	1.1	20	W220050	16-May-12	
EPA 6010B	Copper	mg/kg	545	489	100	10.8	20	W220049	16-May-12	
EPA 6010B	Copper	mg/kg	2030	2360	100	15.2	20	W220050	16-May-12	
EPA 6010B	Lead	mg/kg	132	127	100	3.6	20	W220049	16-May-12	
EPA 6010B	Lead	mg/kg	126	144	100	13.5	20	W220050	16-May-12	
<b>Metals (Total Recoverable)</b>										
EPA 6010B	Arsenic	mg/L	1.04	1.05	1.00	1.5	20	W220061	15-May-12	
EPA 6010B	Copper	mg/L	1.07	1.10	1.00	2.5	20	W220061	15-May-12	
EPA 6010B	Lead	mg/L	1.05	1.07	1.00	1.9	20	W220061	15-May-12	

**Notes and Definitions**

- D2 Sample required dilution due to high concentration of target analyte.
- M3 The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
- LCS Laboratory Control Sample (Blank Spike)
- RPD Relative Percent Difference
- UDL A result is less than the detection limit
- R > 4S % recovery not applicable, sample concentration more than four times greater than spike level
- <RL A result is less than the reporting limit
- MRL Method Reporting Limit
- MDL Method Detection Limit
- N/A Not Applicable



## CHAIN OF CUSTODY FORM

W2E0380

18.2

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303  
 [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803  
 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

Page 1 of

Client Name / Address:		Project / PO Number:		Analysis Required				
Sierrita View Blvd Mineral Green Valley, AZ 85072		Clear Plant						
Project Manager:		Phone Number:						
Sampler: L. Genere / M. Shih		Fax Number: 520-393-2914						
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	Special Instructions	
EB0511Z-A	W	500mL	1	5/11/12	1120	HNO3		
EB0511Z-B	W	↓	1	↓	1420	↓		
CPF-AW-SWE-0250B-S	↓	602 jar	1	11/5	1115	none	Project Specific QAIQC	
CPF-AW-DZ-05	↓	↓	1	11/5	1135	↓		
CPF-AW-SWN-0075-04	↓	↓	1	11/5	1155	↓		
CPF-AN-SWN-DI-01	↓	↓	1	12/00	1715	↓		
CPF-AN-SWN-DI-02	↓	↓	1	12/00	1721	↓		
CPF-AN-SWS-1005-02	↓	↓	1	12/00	1728	↓		
CPF-AN-SWN-DI-03	↓	↓	1	12/00	1730	↓		
CPF-AN-SWS-1005-03	↓	↓	1	12/00	1740	↓		
CPF-AN-SWN-DI-04	↓	↓	1	12/00	1745	↓		
CPF-AN-SWS-1005-04	↓	↓	1	12/00	1755	↓		
CPF-AN-SWN-DI-05	↓	↓	1	12/00	1800	↓		
CPF-AN-SWS-1005-05	↓	↓	1	12/00	1815	↓		
Relinquished By:	Date / Time:		Received By:		Date / Time:		Turnaround Time: (Check)	
Sharon Gene	5/12/12 1000		[Signature]		5-14-12 11:35		same day 72 hours	
Relinquished By:	Date / Time:		Received By:		Date / Time:		24 hours 5 days	
Relinquished By:	Date / Time:		Received in Lab By:		Date / Time:		48 hours X normal	
Relinquished By:	Date / Time:		Received in Lab By:		Date / Time:		Sample Integrity: (Check) intact on ice	

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING  
TAL-0013-550 (1/0/10)

## CHAIN OF CUSTODY FORM

- Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303
- Tucson - 1870 W. Prince Road, Suite 58, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803
- Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

W2EO380

18.2

Page 2 of 2

Client Name / Address:		Project / PO Number:				Analysis Required															
Project Manager:		Phone Number:		Fax Number:		Preservatives		Sampling Time		Sampling Date		# of Cont.		Container Type		Sample Matrix		Sample Description		Special Instructions	
Sampler:						none		5/11/12		11/20		1		80z		S		CPP-AE-S-OS			
						↓		↓		11/35								CPP-AN-S-OS		PLEASE USE	
										11/00								CPE-AE-DZ-06		PROJECT SPECIFIC	
										10/05								CPS-SWN-DZS-07		O.A.C.E.	
										09/55								CPS-SWS-DZS-07			
										10/00								CPS-SWN-DZS-OS			
										09/48								CPS-SWS-DZ-OS			
										10/00								CPB-S-OS			
										10/15								CPB-S-OX			
										09/70								CPS-SWN-DZ-01			
										09/45								CPS-SWN-DZ-04			
Relinquished By: <i>Juan</i>		Date/Time: 5/12/12		1000																Turnaround Time: (Check)	
Relinquished By:		Date/Time:																		same day _____	
Relinquished By:		Date/Time:																		24 hours _____	
																				48 hours _____	
																				Sample Integrity: (Check)	
																				intact _____	
																				on ice _____	

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

\* SIL Did not receive sample RCP-T-3-DA.5-02 That is not on the COC - 5-14-12

SIL Did not receive sample RCP-T-3-DA.5-02 That is not on the COC - 5-14-12

**SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST**

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/14/12

By: OR Seery

SVL Work No: W2EC380

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				Freeport Sicrrita
2	Date and time of receipt at lab	✓				5-14-12 11:35
3	Received by	✓				Mark Ducc
4	Temperature blank or cooler temperature	Q6				Temp. 18.2 °C.
5	Were the sample(s) received on ice	✓				YES
6	Custody tape/bottle seals	✓				YES
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				Good
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				
12	Did an SVL employee preserve sample(s) upon receipt				✓	
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (initials & date)				✓	
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
19	Shipper's air bill	✓				

V- Verified    VC- Verified Corrections Made    NV- Not Verified    NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0381**  
Reported: 16-May-12 16:02

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CPS-SWN-D2-02	W2E0381-01	Soil	11-May-12 09:30	14-May-2012
FD051112-E	W2E0381-02	Soil	11-May-12 00:00	14-May-2012
CPB-S-02	W2E0381-03	Soil	11-May-12 09:15	14-May-2012
CPB-S-04	W2E0381-04	Soil	11-May-12 09:45	14-May-2012
FD051112-B	W2E0381-05	Soil	11-May-12 00:00	14-May-2012
CPS-SWS-D4.5-08	W2E0381-06	Soil	11-May-12 10:12	14-May-2012
CPB-S-03	W2E0381-07	Soil	11-May-12 09:30	14-May-2012
CPS-SWS-D4.5-06	W2E0381-08	Soil	11-May-12 09:50	14-May-2012
CPS-SWN-D2-01	W2E0381-10	Soil	11-May-12 09:20	14-May-2012
FD051112-C	W2E0381-11	Soil	11-May-12 00:00	14-May-2012
CPF-AE-SWW-D2-03	W2E0381-12	Soil	11-May-12 10:20	14-May-2012
CPF-AE-SWW-D1-04	W2E0381-13	Soil	11-May-12 11:10	14-May-2012
CPF-AW-SWW-D1-03	W2E0381-14	Soil	11-May-12 11:40	14-May-2012
FD051112-D	W2E0381-15	Soil	11-May-12 00:00	14-May-2012
CPF-AW-SWE-D0.5-04	W2E0381-16	Soil	11-May-12 11:45	14-May-2012
CPF-AE-D3-05	W2E0381-17	Soil	11-May-12 10:40	14-May-2012
CPS-SWN-D2-03	W2E0381-18	Soil	11-May-12 09:40	14-May-2012
CPF-AE-SWE-D1.5-03	W2E0381-19	Soil	11-May-12 10:50	14-May-2012
FD051112-A	W2E0381-20	Soil	11-May-12 00:00	14-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL. Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).

The guidelines do not pertain to nitric-preserved metals.

**Default Cooler (Received Temperature: 12.8°C)**

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W2E0381-01 A	Jar, glass	CPS-SWN-D2-02	W2E0381-02 A	Jar, glass	FD051112-E
W2E0381-03 A	Jar, glass	CPB-S-02	W2E0381-04 A	Jar, glass	CPB-S-04
W2E0381-05 A	Jar, glass	FD051112-B	W2E0381-06 A	Jar, glass	CPS-SWS-D4.5-08
W2E0381-07 A	Jar, glass	CPB-S-03	W2E0381-08 A	Jar, glass	CPS-SWS-D4.5-06
W2E0381-10 A	Jar, glass	CPS-SWN-D2-01	W2E0381-11 A	Jar, glass	FD051112-C
W2E0381-12 A	Jar, glass	CPF-AE-SWW-D2-03	W2E0381-13 A	Jar, glass	CPF-AE-SWW-D1-04
W2E0381-14 A	Jar, glass	CPF-AW-SWW-D1-03	W2E0381-15 A	Jar, glass	FD051112-D
W2E0381-16 A	Jar, glass	CPF-AW-SWE-D0.5-04	W2E0381-17 A	Jar, glass	CPF-AE-D3-05
W2E0381-18 A	Jar, glass	CPS-SWN-D2-03	W2E0381-19 A	Jar, glass	CPF-AE-SWE-D1.5-03
W2E0381-20 A	Jar, glass	FD051112-A			



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Kellogg ID 83837-0929

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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPS-SWN-D2-02**

SVL Sample ID: **W2E0381-01 (Soil)**

Sampled: 11-May-12 09:30

Received: 14-May-12

Sampled By:

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	3.1	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:00	
EPA 6010B	<b>Copper</b>	261	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:00	
EPA 6010B	<b>Lead</b>	13.0	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:00	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	92.8	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **FD051112-E**

SVL Sample ID: **W2E0381-02 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 00:00

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	10.7	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:12	
EPA 6010B	<b>Copper</b>	939	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:12	
EPA 6010B	<b>Lead</b>	11.6	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:12	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	94.5	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPB-S-02**

SVL Sample ID: **W2E0381-03 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 09:15

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	17.1	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:16	
EPA 6010B	<b>Copper</b>	2340	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:16	
EPA 6010B	<b>Lead</b>	132	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:16	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.9	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPB-S-04**

SVL Sample ID: **W2E0381-04 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 09:45

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	3.7	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:20	
EPA 6010B	Copper	1140	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:20	
EPA 6010B	Lead	13.3	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:20	
<b>Percent Solids</b>										
Percent Solids	% Solids	92.8	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director





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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **FD051112-B**

SVL Sample ID: **W2E0381-05 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 00:00

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	17.8	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:24	
EPA 6010B	<b>Copper</b>	3440	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:24	
EPA 6010B	<b>Lead</b>	2840	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:24	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	84.6	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPS-SWS-D4.5-08**

SVL Sample ID: **W2E0381-06 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 10:12

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	3.2	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:28	
EPA 6010B	<b>Copper</b>	451	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:28	
EPA 6010B	<b>Lead</b>	20.3	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:28	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	94.6	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPB-S-03**

SVL Sample ID: **W2E0381-07 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 09:30

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	Arsenic	6.9	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:41	
EPA 6010B	Copper	1700	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:41	
EPA 6010B	Lead	17.7	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:41	
<b>Percent Solids</b>										
Percent Solids	% Solids	93.5	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPS-SWS-D4.5-06**

SVL Sample ID: **W2E0381-08 (Soil)**

Sampled: 11-May-12 09:50

Received: 14-May-12

Sampled By:

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	14.3	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:45	
EPA 6010B	<b>Copper</b>	2200	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:45	
EPA 6010B	<b>Lead</b>	97.2	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:45	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	88.0	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Freeport McMoRan - Sierrita  
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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPS-SWN-D2-01**

SVL Sample ID: **W2E0381-10 (Soil)**

Sampled: 11-May-12 09:20

Received: 14-May-12

Sampled By:

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	19.3	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:49	
EPA 6010B	<b>Copper</b>	4350	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:49	
EPA 6010B	<b>Lead</b>	3220	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:49	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	85.5	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **FD051112-C**

SVL Sample ID: **W2E0381-11 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 00:00

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	13.5	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:53	
EPA 6010B	<b>Copper</b>	1990	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:53	
EPA 6010B	<b>Lead</b>	48.1	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:53	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.5	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPF-AE-SWW-D2-03**

SVL Sample ID: **W2E0381-12 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 10:20

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	8.1	mg/kg	2.5	0.8		W220051	TJK	05/16/12 12:57	
EPA 6010B	<b>Copper</b>	2540	mg/kg	1.00	0.29		W220051	TJK	05/16/12 12:57	
EPA 6010B	<b>Lead</b>	93.7	mg/kg	0.75	0.35		W220051	TJK	05/16/12 12:57	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.8	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPF-AE-SWW-D1-04**

SVL Sample ID: **W2E0381-13 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:10

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	12.0	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:01	
EPA 6010B	<b>Copper</b>	4070	mg/kg	1.00	0.29		W220051	TJK	05/16/12 13:01	
EPA 6010B	<b>Lead</b>	279	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:01	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.8	%	0.1			W220054	STA	05/16/12 14:56	

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**Kirby Gray**  
Technical Director





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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPF-AW-SWW-D1-03**

SVL Sample ID: **W2E0381-14 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:40

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	7.6	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:05	
EPA 6010B	<b>Copper</b>	1290	mg/kg	1.00	0.29		W220051	TJK	05/16/12 13:05	
EPA 6010B	<b>Lead</b>	120	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:05	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	98.7	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **FD051112-D**

SVL Sample ID: **W2E0381-15 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 00:00

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	10.6	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:10	
EPA 6010B	<b>Copper</b>	2200	mg/kg	1.00	0.29		W220051	TJK	05/16/12 13:10	
EPA 6010B	<b>Lead</b>	69.1	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:10	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	98.1	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPF-AW-SWE-D0.5-04**

SVL Sample ID: **W2E0381-16 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 11:45

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	15.0	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:14	
EPA 6010B	<b>Copper</b>	8970	mg/kg	10.0	2.90	10	W220051	TJK	05/16/12 14:00	D2
EPA 6010B	<b>Lead</b>	1140	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:14	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	97.0	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPF-AE-D3-05**

SVL Sample ID: **W2E0381-17 (Soil)**

Sampled: 11-May-12 10:40

Received: 14-May-12

Sampled By:

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	12.2	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:18	
EPA 6010B	<b>Copper</b>	1680	mg/kg	1.00	0.29		W220051	TJK	05/16/12 13:18	
EPA 6010B	<b>Lead</b>	36.9	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:18	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	96.9	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPS-SWN-D2-03**

SVL Sample ID: **W2E0381-18 (Soil)**

Sampled: 11-May-12 09:40

Received: 14-May-12

Sampled By:

**Sample Report Page 1 of 1**

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	11.9	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:30	
EPA 6010B	<b>Copper</b>	4150	mg/kg	1.00	0.29		W220051	TJK	05/16/12 13:30	
EPA 6010B	<b>Lead</b>	617	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:30	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	93.2	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0381**

Reported: 16-May-12 16:02

Client Sample ID: **CPF-AE-SWE-D1.5-03**

SVL Sample ID: **W2E0381-19 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 10:50

Received: 14-May-12

Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	9.5	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:34	
EPA 6010B	<b>Copper</b>	3060	mg/kg	1.00	0.29		W220051	TJK	05/16/12 13:34	
EPA 6010B	<b>Lead</b>	35.6	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:34	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	98.6	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0381**  
Reported: 16-May-12 16:02

Client Sample ID: **FD051112-A**

SVL Sample ID: **W2E0381-20 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 11-May-12 00:00  
Received: 14-May-12  
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	15.8	mg/kg	2.5	0.8		W220051	TJK	05/16/12 13:38	
EPA 6010B	<b>Copper</b>	2660	mg/kg	1.00	0.29		W220051	TJK	05/16/12 13:38	
EPA 6010B	<b>Lead</b>	102	mg/kg	0.75	0.35		W220051	TJK	05/16/12 13:38	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	95.9	%	0.1			W220054	STA	05/16/12 14:56	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Kirby Gray**  
Technical Director



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Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0381**  
Reported: 16-May-12 16:02

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	<2.5	0.8	2.5	W220051	16-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.29	1.00	W220051	16-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W220051	16-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	97.6	100	97.6	80 - 120	W220051	16-May-12	
EPA 6010B	Copper	mg/kg	101	100	101	80 - 120	W220051	16-May-12	
EPA 6010B	Lead	mg/kg	97.2	100	97.2	80 - 120	W220051	16-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	101	3.1	100	98.3	75 - 125	W220051	16-May-12	
EPA 6010B	Copper	mg/kg	413	261	100	152	75 - 125	W220051	16-May-12	MI
EPA 6010B	Lead	mg/kg	107	13.0	100	94.4	75 - 125	W220051	16-May-12	

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	98.4	101	100	2.9	20	W220051	16-May-12	
EPA 6010B	Copper	mg/kg	392	413	100	5.2	20	W220051	16-May-12	
EPA 6010B	Lead	mg/kg	101	107	100	5.8	20	W220051	16-May-12	

**Quality Control - POST DIGESTION SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Copper	mg/kg	342	261	100	81.2	75 - 125	W220051	16-May-12	
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SVL holds the following certifications:

AZ:0538, CA:2080, FL(NELAC):E87993, ID:ID00019 & ID00965 (Microbiology), NV:ID000192007A, WA:1268

Work order Report Page 21 of 22





Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0381**  
Reported: 16-May-12 16:02

---

### Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

---

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303  
 [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803  
 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

Client Name / Address:		Project/PO Number:		Analysis Required			
Sierrita 4200 W. Dune Mine Rd Green Valley, AZ 85626		Clear Point Geosci					
Project Manager:		Phone Number:					
Sampler: L-Gene / M Swin		520-345-2414					
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	Special Instructions
CPS-SW-N-DZ-02	S	30L	1	5/14/12	930	-	Please use project MS/MSD report
FOOS1117-E					915		
CPB-S-02					945		
CPB-S-04							
FOOS1117-B					1012		
CPS-SWS-DHS-08					0950		
CPB-S-03					0950		
CPS-SWS-DHS-06					1210		
CPF-AN-SWS-D06-01					0920		
CPS-SW-N-DZ-01							
FOOS1117-C							Hold for potential future analysis
CPF-AE-SW-N-DZ-03					1020		
CPF-AE-SW-N-DI-04							
Relinquished By:	YBY	Date/Time:	5/12/12 1000	Received By:	YBY	Date/Time:	5/14/12 11:45
Relinquished By:	YBY	Date/Time:	5/12/12 1000	Received By:	YBY	Date/Time:	5/12/12 1000
Relinquished By:		Date/Time:		Received in Lab By:		Date/Time:	
				Turnaround Time: (Check)		72 hours	
				same day		5 days	
				24 hours		normal	
				48 hours		X	
				Sample Integrity: (Check)		intact	
						on ice	

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

## CHAIN OF CUSTODY FORM

Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303  
 Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-9801 FAX (520) 807-3803  
 Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

W2EO381

Client Name / Address:		Project / PO Number:		Analysis Required						
Project Manager:		Phone Number:		Turnaround Time: (Check)						
Sampler:		Fax Number:		same day _____						
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	Special Instructions	24 hours _____	48 hours _____	72 hours _____
CPF-AW-SAW-D1-035		8oz	1	5/11/12	1140	none	As is			
F0051112-10							Project Specific			
CPF-AW-SWE-005-04					1145		INSURE			
CPF-AE-03-05					1040					
CPS-SWN-DZ-03					0940					
CPF-AE-SWE-DIS-03					1050					
F0051112-A										
Relinquished By: [Signature]		Date/Time: 5/12/12	1000	Received By: [Signature]		Date/Time: 5/14/12	11:45	Sample Integrity: (Check)		
Relinquished By:		Date/Time:		Received By:		Date/Time:		intact _____		
Relinquished By:		Date/Time:		Received in Lab By:		Date/Time:		on ice _____		

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

SAMPLE RECEIPT/CHAIN-OF-CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/14/12  
 SVL Work No: W2E038/

By: CRS

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				SIERRITA
2	Date and time of receipt at lab	✓				5/14/12 11:45
3	Received by	✓				C. FLORES
4	Temperature blank or cooler temperature	Ⓛb				Temp. 12.8°C.
5	Were the sample(s) received on ice	✓				YES
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				Good
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested					
12	Did an SVL employee preserve sample(s) upon receipt				✓	SOLIDS
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (initials & date)				✓	
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
19	Shipper's air bill	✓				

V- Verified      VC- Verified Corrections Made      NV-Not Verified      NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



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PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0729**  
Reported: 31-May-12 10:35

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received
CPF-AN-SWS-D0.5-05	W2E0729-01	Soil	21-May-12 00:00	TA/CB	25-May-2012

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.



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Kellogg ID 83837-0929

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Fax (208) 783-0891

Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**

Work Order: **W2E0729**

Reported: 31-May-12 10:35

Client Sample ID: **CPF-AN-SWS-D0.5-05**

SVL Sample ID: **W2E0729-01 (Soil)**

**Sample Report Page 1 of 1**

Sampled: 21-May-12 00:00

Received: 25-May-12

Sampled By: TA/CB

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
<b>Metals (Total) by EPA 6000/7000 Methods</b>										
EPA 6010B	<b>Arsenic</b>	6.3	mg/kg	2.5	0.8		W222046	AS	05/30/12 15:47	
EPA 6010B	<b>Copper</b>	3760	mg/kg	1.00	0.29		W222046	AS	05/30/12 17:27	
EPA 6010B	<b>Lead</b>	578	mg/kg	0.75	0.35		W222046	AS	05/30/12 15:47	
<b>Percent Solids</b>										
Percent Solids	<b>% Solids</b>	87.6	%	0.1			W221346	HLC	05/30/12 11:53	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

**Brandon Borgias**  
Systems Manager



One Government Gulch - PO Box 929

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Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0729**  
Reported: 31-May-12 10:35

**Quality Control - BLANK Data**

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
--------	---------	-------	--------	-----	-----	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	<2.5	0.8	2.5	W222046	30-May-12	
EPA 6010B	Copper	mg/kg	<1.00	0.29	1.00	W222046	30-May-12	
EPA 6010B	Lead	mg/kg	<0.75	0.35	0.75	W222046	30-May-12	

**Quality Control - LABORATORY CONTROL SAMPLE Data**

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	------------	----------	--------	-------------------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	104	100	104	80 - 120	W222046	30-May-12	
EPA 6010B	Copper	mg/kg	116	100	116	80 - 120	W222046	30-May-12	
EPA 6010B	Lead	mg/kg	102	100	102	80 - 120	W222046	30-May-12	

**Quality Control - MATRIX SPIKE Data**

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
--------	---------	-------	--------------	-------------------	-----------------	--------	-------------------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	109	6.3	100	103	75 - 125	W222046	30-May-12	
EPA 6010B	Copper	mg/kg	4190	3760	100	R > 4S	75 - 125	W222046	30-May-12	M3
EPA 6010B	Lead	mg/kg	638	578	100	R > 4S	75 - 125	W222046	30-May-12	M3

**Quality Control - MATRIX SPIKE DUPLICATE Data**

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	Batch ID	Analyzed	Notes
--------	---------	-------	------------	--------------	-------------	-----	-----------	----------	----------	-------

**Metals (Total) by EPA 6000/7000 Methods**

EPA 6010B	Arsenic	mg/kg	123	109	100	11.9	20	W222046	30-May-12	
EPA 6010B	Copper	mg/kg	5900	4190	100	34.0	20	W222046	30-May-12	D2,R4
EPA 6010B	Lead	mg/kg	1250	638	100	64.7	20	W222046	30-May-12	



Freeport McMoRan - Sierrita  
PO BOX 527  
Green Valley, AZ 85622

**Project Name: Training Bldg. Soil Excavation 2012**  
Work Order: **W2E0729**  
Reported: 31-May-12 10:35

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### Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
R4	MS/MSD RPD exceeded the method acceptance limit.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

---



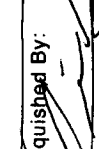


## CHAIN OF CUSTODY FORM

[ ] Phoenix - 4625 E. Cotton Center Blvd., Suite 189, Phoenix, AZ 85040 (602) 437-3340 FAX (602) 454-9303  
 [ ] Tucson - 1870 W. Prince Road, Suite 59, Tucson, AZ 85705 (520) 807-3801 FAX (520) 807-3803  
 [ ] Las Vegas - 6000 S Eastern Ave., Suite 5E, Las Vegas, NV 89119 (702) 429-1264

W2E0729 3.8<sup>ac</sup>

Page 1 of 1

Client Name / Address: <b>CLINT BECK / MARTHA MOTTLEY 6200 W. DURAN HWY RD. GREEN VALLEY, AZ 85622</b>		Project / PO Number: <b>W2E0143 CLEAR PLANT</b>		Analysis Required		
Project Manager: <b>Tim Aruendo / CLINT BECK</b>		Phone Number: <b>520-393-2514</b>				
Sampler: <b>CF-AU-SWS-DO.5-05</b>		Fax Number: <b>520-393-2514</b>				
Sample Matrix	Container Type	# of Cont.	Sampling Date	Sampling Time	Preservatives	Special Instructions
S	16oz Jar	1	5/21/12		NONE	2 DAY TURN
METALS (COBALT) (COPPER) (ZINC)						
Received By:  Date/Time: 5/24/12 (P.M.)						Turnaround Time: (Check) same day _____ 72 hours _____ 24 hours _____ 5 days _____ 48 hours _____ normal _____
Relinquished By:  Date/Time: 5/24/12 (P.M.)						Sample Integrity: (Check) intact _____ on ice _____
Relinquished By:  Date/Time: _____						

**Note:** By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

**SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST**

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 5/25/12 By: CPSewy

SVL Work No: W2E0729

Item	Description	V	VC	NV	NA	Comments
1	Client or project name	✓				Freeport McMoran
2	Date and time of receipt at lab	✓				5-25-12 13:35
3	Received by	✓				Mark Duce
4	Temperature blank or cooler temperature	✓				Temp. 3.8 °C.
5	Were the sample(s) received on ice	✓				Yes
6	Custody tape/bottle seals				✓	No
7	Condition of samples upon receipt (leaking; bubbles in VOA vials)	✓				Good
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				
12	Did an SVL employee preserve sample(s) upon receipt				✓	
13	Type of container for each sample / volume received	✓				
14	Analysis requested for each sample	✓				
15	Sample matrix description	✓				
16	COC properly completed & legible	✓				
17	Corrections properly made (Initials & date)				✓	
18	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	
19	Shipper's air bill	✓				

V- Verified    VC- Verified Corrections Made    NV-Not Verified    NA- Not Applicable

Additional Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



## **Appendix C**

ProUCL 4.1.00 Output Files

A	Draft	B	C	D	E	F	G	H	I	J	K	L		
1	Table C-1													
2	ProUCL Output Files for Arsenic, Copper, and Lead													
3	Tier I Screening Risk Evaluation													
4	Former CLEAR PLANT													
5	Freeport McMoRan Sierrita Inc													
6	Green Valley, AZ													
7														
8	General UCL Statistics for Data Sets with Non-Detects													
9	User Selected Options													
10	From File			For ProUCL.wst										
11	Full Precision			OFF										
12	Confidence Coefficient			95%										
13	Number of Bootstrap Operations			2000										
14														
15	Arsenic Results													
16														
17	General Statistics													
18	Number of Valid Data					72		Number of Detected Data					66	
19	Number of Distinct Detected Data					50		Number of Non-Detect Data					6	
20												Percent Non-Detects		8.33%
21														
22	Raw Statistics						Log-transformed Statistics							
23	Minimum Detected			2.5			Minimum Detected			0.916				
24	Maximum Detected			21.7			Maximum Detected			3.077				
25	Mean of Detected			8.539			Mean of Detected			1.986				
26	SD of Detected			4.652			SD of Detected			0.59				
27	Minimum Non-Detect			2.5			Minimum Non-Detect			0.916				
28	Maximum Non-Detect			2.5			Maximum Non-Detect			0.916				
29														
30	UCL Statistics													
31	Normal Distribution Test with Detected Values Only						Lognormal Distribution Test with Detected Values Only							
32	Lilliefors Test Statistic			0.0971			Lilliefors Test Statistic			0.0998				
33	5% Lilliefors Critical Value			0.109			5% Lilliefors Critical Value			0.109				
34	Data appear Normal at 5% Significance Level						Data appear Lognormal at 5% Significance Level							
35														
36	Assuming Normal Distribution						Assuming Lognormal Distribution							
37	DL/2 Substitution Method						DL/2 Substitution Method							
38	Mean			7.932			Mean			1.839				
39	SD			4.891			SD			0.748				
40	95% DL/2 (t) UCL			8.893			95% H-Stat (DL/2) UCL			9.963				
41														
42	Maximum Likelihood Estimate(MLE) Method						Log ROS Method							
43	Mean			7.819			Mean in Log Scale			1.873				
44	SD			5.066			SD in Log Scale			0.681				
45	95% MLE (t) UCL			8.814			Mean in Original Scale			7.987				
46	95% MLE (Tiku) UCL			8.796			SD in Original Scale			4.819				
47												95% t UCL	8.934	
48												95% Percentile Bootstrap UCL	8.908	
49												95% BCA Bootstrap UCL	8.906	
50												95% H UCL	9.628	
51														
52	Gamma Distribution Test with Detected Values Only						Data Distribution Test with Detected Values Only							
53	k star (bias corrected)			3.166			Data appear Normal at 5% Significance Level							

	A	B	C	D	E	F	G	H	I	J	K	L	
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7													
8	General UCL Statistics for Data Sets with Non-Detects												
9	User Selected Options												
10	From File			For ProUCL.wst									
11	Full Precision			OFF									
12	Confidence Coefficient			95%									
13	Number of Bootstrap Operations			2000									
54													
55	<b>Arsenic Results - Continued</b>												
56	Theta Star				2.697								
57	nu star				417.9								
58													
59	A-D Test Statistic				0.49				<b>Nonparametric Statistics</b>				
60	5% A-D Critical Value				0.757				Kaplan-Meier (KM) Method				
61	K-S Test Statistic				0.757				Mean		8.036		
62	5% K-S Critical Value				0.11				SD		4.724		
63	<b>Data appear Gamma Distributed at 5% Significance Level</b>						SE of Mean						0.561
64							95% KM (t) UCL						8.971
65	<b>Assuming Gamma Distribution</b>						95% KM (z) UCL						8.959
66	Gamma ROS Statistics using Extrapolated Data						95% KM (jackknife) UCL						8.971
67	Minimum		0.000001				95% KM (bootstrap t) UCL						8.999
68	Maximum		21.7				95% KM (BCA) UCL						8.951
69	Mean		7.828				95% KM (Percentile Bootstrap) UCL						8.966
70	Median		7.1				95% KM (Chebyshev) UCL						10.48
71	SD		5.046				97.5% KM (Chebyshev) UCL						11.54
72	k star		0.453				99% KM (Chebyshev) UCL						13.62
73	Theta star		17.28										
74	Nu star		65.22				<b>Potential UCLs to Use</b>						
75	AppChi2		47.64				95% KM (t) UCL				8.971		
76	95% Gamma Approximate UCL (Use when n >= 40)				10.72				95% KM (Percentile Bootstrap) UCL				8.966
77	95% Adjusted Gamma UCL (Use when n < 40)				10.79								
78	<b>Note: DL/2 is not a recommended method.</b>												
79													
80	<b>Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.</b>												
81	<b>These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).</b>												
82	<b>For additional insight, the user may want to consult a statistician.</b>												

A	Draft	B	C	D	E	F	G	H	I	J	K	L		
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2	ProUCL Output Files for Arsenic, Copper, and Lead													
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6	Green Valley, AZ													
7														
8	General UCL Statistics for Data Sets with Non-Detects													
9	User Selected Options													
10	From File			For ProUCL.wst										
11	Full Precision			OFF										
12	Confidence Coefficient			95%										
13	Number of Bootstrap Operations			2000										
83														
84	Copper Results													
85	General Statistics													
86	Number of Valid Observations					72		Number of Distinct Observations					69	
87														
88	Raw Statistics						Log-transformed Statistics							
89	Minimum			133			Minimum of Log Data			4.89				
90	Maximum			8970			Maximum of Log Data			9.102				
91	Mean			2322			Mean of log Data			7.424				
92	Geometric Mean			1676			SD of log Data			0.93				
93	Median			2065										
94	SD			1670										
95	Std. Error of Mean			196.8										
96	Coefficient of Variation			0.719										
97	Skewness			1.324										
98														
99	Relevant UCL Statistics													
100	Normal Distribution Test						Lognormal Distribution Test							
101	Lilliefors Test Statistic			0.101			Lilliefors Test Statistic			0.13				
102	Lilliefors Critical Value			0.104			Lilliefors Critical Value			0.104				
103	Data appear Normal at 5% Significance Level						Data not Lognormal at 5% Significance Level							
104														
105	Assuming Normal Distribution						Assuming Lognormal Distribution							
106	95% Student's-t UCL			2650			95% H-UCL			3287				
107	95% UCLs (Adjusted for Skewness)						95% Chebyshev (MVUE) UCL						3989	
108	95% Adjusted-CLT UCL (Chen-1995)			2678			97.5% Chebyshev (MVUE) UCL			4607				
109	95% Modified-t UCL (Johnson-1978)			2655			99% Chebyshev (MVUE) UCL			5821				
110														
111	Gamma Distribution Test						Data Distribution							
112	k star (bias corrected)			1.622			Data appear Normal at 5% Significance Level							
113	Theta Star			1431										
114	MLE of Mean			2322										
115	MLE of Standard Deviation			1823										
116	nu star			233.6										
117	Approximate Chi Square Value (.05)			199.2			Nonparametric Statistics							
118	Adjusted Level of Significance			0.0467			95% CLT UCL			2645				
119	Adjusted Chi Square Value			198.6			95% Jackknife UCL			2650				
120							95% Standard Bootstrap UCL			2640				
121	Anderson-Darling Test Statistic			0.776			95% Bootstrap-t UCL			2695				
122	Anderson-Darling 5% Critical Value			0.767			95% Hall's Bootstrap UCL			2708				

	A	B	C	D	E	F	G	H	I	J	K	L	
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5	Freeport McMoRan Sierrita Inc												
6	Green Valley, AZ												
7													
8	General UCL Statistics for Data Sets with Non-Detects												
9	User Selected Options												
10	From File			For ProUCL.wst									
11	Full Precision			OFF									
12	Confidence Coefficient			95%									
13	Number of Bootstrap Operations			2000									
123													
124	Copper Results - Continued												
125	Kolmogorov-Smirnov Test Statistic					0.0752		95% Percentile Bootstrap UCL					2647
126	Kolmogorov-Smirnov 5% Critical Value					0.107		95% BCA Bootstrap UCL					2686
127	Data follow Appr. Gamma Distribution at 5% Significance Level							95% Chebyshev(Mean, Sd) UCL					3180
128								97.5% Chebyshev(Mean, Sd) UCL					3551
129	Assuming Gamma Distribution							99% Chebyshev(Mean, Sd) UCL					4280
130	95% Approximate Gamma UCL (Use when n >= 40)					2722							
131	95% Adjusted Gamma UCL (Use when n < 40)					2731							
132													
133	Potential UCL to Use							Use 95% Student's-t UCL					2650
134													
135	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
136	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)												
137	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.												

A	Draft	B	C	D	E	F	G	H	I	J	K	L		
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6	Green Valley, AZ													
7														
8	General UCL Statistics for Data Sets with Non-Detects													
9	User Selected Options													
10	From File			For ProUCL.wst										
11	Full Precision			OFF										
12	Confidence Coefficient			95%										
13	Number of Bootstrap Operations			2000										
138														
139	Lead Results													
140	General Statistics													
141	Number of Valid Observations					72		Number of Distinct Observations					71	
142														
143	Raw Statistics						Log-transformed Statistics							
144	Minimum			5.1			Minimum of Log Data			1.629				
145	Maximum			3030			Maximum of Log Data			8.016				
146	Mean			190.1			Mean of log Data			4.212				
147	Geometric Mean			67.49			SD of log Data			1.415				
148	Median			57.95										
149	SD			398.7										
150	Std. Error of Mean			46.99										
151	Coefficient of Variation			2.097										
152	Skewness			5.49										
153														
154	Relevant UCL Statistics													
155	Normal Distribution Test						Lognormal Distribution Test							
156	Lilliefors Test Statistic			0.321			Lilliefors Test Statistic			0.0796				
157	Lilliefors Critical Value			0.104			Lilliefors Critical Value			0.104				
158	Data not Normal at 5% Significance Level						Data appear Lognormal at 5% Significance Level							
159														
160	Assuming Normal Distribution						Assuming Lognormal Distribution							
161	95% Student's-t UCL			268.4			95% H-UCL			288.9				
162	95% UCLs (Adjusted for Skewness)						95% Chebyshev (MVUE) UCL			352.2				
163	95% Adjusted-CLT UCL (Chen-1995)			299.9			97.5% Chebyshev (MVUE) UCL			427.2				
164	95% Modified-t UCL (Johnson-1978)			273.5			99% Chebyshev (MVUE) UCL			574.6				
165														
166	Gamma Distribution Test						Data Distribution							
167	k star (bias corrected)			0.581			Data appear Lognormal at 5% Significance Level							
168	Theta Star			326.9										
169	MLE of Mean			190.1										
170	MLE of Standard Deviation			249.3										
171	nu star			83.74										
172	Approximate Chi Square Value (.05)			63.65			Nonparametric Statistics							
173	Adjusted Level of Significance			0.0467			95% CLT UCL			267.4				
174	Adjusted Chi Square Value			63.29			95% Jackknife UCL			268.4				
175							95% Standard Bootstrap UCL			264.9				
176	Anderson-Darling Test Statistic			2.515			95% Bootstrap-t UCL			340.3				
177	Anderson-Darling 5% Critical Value			0.808			95% Hall's Bootstrap UCL			592				



	A	B	C	D	E	F	G	H	I	J	K	L		
1	Table C-1													
2	ProUCL Output Files for Arsenic, Copper, and Lead													
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4	Former CLEAR PLANT													
5	Freeport McMoRan Sierrita Inc													
6	Green Valley, AZ													
7														
8	General UCL Statistics for Data Sets with Non-Detects													
9	<b>User Selected Options</b>													
10	From File			For ProUCL.wst										
11	Full Precision			OFF										
12	Confidence Coefficient			95%										
13	Number of Bootstrap Operations			2000										
178														
179	<b>Lead Results - Continued</b>													
180	Kolmogorov-Smirnov Test Statistic					0.165		95% Percentile Bootstrap UCL					273.3	
181	Kolmogorov-Smirnov 5% Critical Value					0.11		95% BCA Bootstrap UCL					312.8	
182	<b>Data not Gamma Distributed at 5% Significance Level</b>							95% Chebyshev(Mean, Sd) UCL					394.9	
183								97.5% Chebyshev(Mean, Sd) UCL					483.5	
184	<b>Assuming Gamma Distribution</b>							99% Chebyshev(Mean, Sd) UCL					657.6	
185	95% Approximate Gamma UCL (Use when n >= 40)					250.1								
186	95% Adjusted Gamma UCL (Use when n < 40)					251.5								
187														
188	<b>Potential UCL to Use</b>							Use 95% H-UCL					288.9	
189														
190	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.													
191	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.													
192	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.													
193	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.													
194														
195	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
196	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)													
197	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.													