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U.S. Environmental Protection Agency
75 Hawthorne Street
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E & E Project No: 002693.2094.01RA

Attention: Federal On-Scene Coordinator, Tom Dunkelman

**Subject: Cordero and McDermitt Mercury Mine Sites, Humboldt County, Nevada
Interim Removal Assessment Report
Latitude: 41° 54' 59.87"; Longitude: 117° 49' 05.31" W**

INTRODUCTION

The United States Environmental Protection Agency (U.S. EPA) Federal On-Scene Coordinator (FOSC) Tom Dunkelman tasked Ecology and Environment, Inc.'s (E & E's) Superfund Technical Assessment and Response Team (START) to provide support with the completion of a Region 9 Emergency Response Section (ERS) removal assessment at two roadway areas located on the Fort McDermitt Paiute Shoshone Indian Reservation in Fort McDermitt, Nevada, and at specific areas of concern (AOCs) located within the town of McDermitt, Nevada. These areas were selected for assessment because of their potential relation to mine waste originating from the former Cordero and McDermitt mercury mines, located approximately 11 miles west-southwest of McDermitt, Nevada. This removal assessment was initiated by the U.S. EPA in response to regulatory concern over the potential adverse impacts to human health or the environment from dispersion of mine waste used for property development.

During September and October 2010, U.S. EPA and the START collected a total of 56 surface soil samples, 31 shallow subsurface soil samples, and four background surface soil samples from the following locations: two roadways located on the Fort McDermitt Paiute Shoshone Indian Reservation; roadways within the town of McDermitt, Nevada; the McDermitt Combined School property; and the former Cordero and McDermitt mercury mines. In addition, three creek sediment samples and one surface water sample were collected from the seasonal surface water drainage pathway located downgradient of the former Cordero and McDermitt mercury mines. The purpose of this report is to document the results of the 2010 sampling activity at each AOC and provide information to assist in determining whether environmental hazards that pose an "imminent and substantial endangerment to human health or the environment" are present at these AOCs. This report is considered an interim report as additional assessment work is currently planned for the site.

SITE DESCRIPTION

The site assessment activities that generated the results summarized within this interim report took place within five unique site study areas (Figure 1). Site location figures are provided in this report as Attachment A. The following sections describe each study area location and the AOCs targeted during this assessment.

Fort McDermitt Paiute Shoshone Indian Reservation, Nevada

The Fort McDermitt Paiute Shoshone Indian Reservation is located in Humboldt County, Nevada, approximately 2.7 miles south of McDermitt, Nevada. The Fort McDermitt Paiute Shoshone Indian Reservation site consists of two AOCs: an unpaved public access road (North Road) and an unpaved privately owned residential driveway (South Road).

The public access road, which connects the Paiute Shoshone Indian Reservation administration office to the municipal landfill, is located approximately 5 miles east of Highway 95 off North Road, and approximately 16 miles east of the Cordero Mine. The public access AOC is approximately 1,630 feet long by 30 feet wide (48,900 square feet). The geographical coordinates for the public access road are 41° 58' 26.30" Latitude North and 117° 37' 21.44" Longitude West (Figure 2).

The privately owned residential driveway is located off South Road approximately 0.6 miles east of Highway 95, and approximately 15 miles east of the Cordero Mine. The residential driveway is approximately 150 feet long by 30 feet wide (4,500 square feet). The geographical coordinates for the residential driveway are 41° 56' 44.82" Latitude North and 117° 41' 51.39" Longitude West (Figure 3).

McDermitt, Nevada Combined School

The McDermitt Combined School is located in McDermitt, Humboldt County, Nevada approximately 0.2 miles east of Highway 95 along State Line Road. The geographical coordinates for the McDermitt Combined School are 41° 59' 52.07" Latitude North and 117° 42' 59.41" Longitude West (Figure 4).

The McDermitt Combined School operates under the Humboldt County School District as a kindergarten-twelfth grade (K-12) school in the community. The school building consists of an approximately 40,000-square-foot one-story structure with several portable classrooms on a primarily paved surface. Located immediately east of the paved school area is an unpaved playground with playground equipment that encompasses a total area of approximately 45,264 square feet (1.04 acres), beyond which is an unpaved track with a grass centered football field. In the northeast portion of the school property is an unpaved parking area/access road area that encompasses a total area of approximately 199,100 square feet (4.57 acres), and an unpaved track with a grass-centered football field.

McDermitt, Nevada Roadways

The town of McDermitt, Nevada is an unincorporated community situated on the Nevada-Oregon border and encompasses approximately 13.2 square miles (8,448 acres) of land area. McDermitt is served by U.S. Highway 95, a major north-south highway linking Boise, Idaho, 192 miles to the north, with Winnemucca, Nevada, 73 miles to the south. The geographical coordinates for the approximate center of McDermitt, Nevada are 41° 59' 51.43" Latitude North and 117° 43' 08.00" Longitude West (Figure 4).

The town area is primarily located east and west of U.S. Highway 95 within the Nevada state boundary; however, the community spans north into the Oregon state boundary. The town area located east of Highway 95 consists of several commercial businesses, several paved two lane residential access roads, and mostly unpaved property driveways. The town area located west of Highway 95 consists of several commercial businesses, the east-west Cordero Mine Road, and several unpaved residential access roads. According to 2010 United States Census Bureau results (<http://factfinder2.census.gov/>), a total of 101 housing units are located within the McDermitt census-designated place (CDP).

Visual observations conclude that red colored soils have been historically used as fill material throughout the town of McDermitt, in roads, driveways and residential yards. Based on information received by the U.S. EPA and previous sampling conducted by the U.S. EPA, this fill material is believed to have originated from the Cordero and/or McDermitt mercury mines.

Four AOCs were identified from the town of McDermitt roadways: the unpaved Cemetery Road, a soil berm located along Lava Road, and an unpaved area along Jaca Road, which are all located east of Highway 95, and Margarita Road, located west of Highway 95. Both the unpaved Cemetery Road and unpaved Margarita Road support vehicle traffic. The soil berm located along Lava Road is not accessible to vehicle traffic, and the unpaved area along Jaca Road is not a common vehicle right-of-way; however, the area is accessible to parked vehicles. At each of the four roadway AOCs red colored soils were identified; however, the presence of red colored soils, presumably related to the Cordero and/or McDermitt mercury mines, is not limited to these four AOCs.

Cordero and McDermitt Mercury Mines

The Cordero and McDermitt mines are inactive mercury mines adjacently located at the end of Cordero Mine Road approximately 11 miles west-southwest of McDermitt, Nevada. The geographical coordinates for the approximate location of the Cordero and McDermitt mines are 41° 54' 59.87" Latitude North and 117° 49' 05.31" Longitude West (Figure 5).

The Cordero and McDermitt mines are located within the Opalite mining district, which is primarily a mercury-producing district, centered approximately 15 miles west of McDermitt, Nevada and extending north into southern Malheur County, Oregon. The Opalite mercury mining district was first discovered in 1917 at the Bretz deposit located in southern Malheur County, Oregon. The Opalite deposit, which gave the district its name, was discovered near the Bretz deposit in 1924. The Bretz and Opalite mines located in southern Malheur County, Oregon, produced mercury intermittently between 1926 and the late 1960's.

Outcropping cinnabar ore was first discovered in the area of Cordero and McDermitt mines in 1929, and by 1931 the first claims were staked. The property was leased in 1933 to the Bradley Mining Company which produced approximately 45 flasks of mercury before ending their lease. In 1939, Horse Heaven Mines acquired lease on the mining claim, naming it Cordero. The Cordero Mine quickly became a major producer in the Opalite mining district, and by 1941 was the largest producer of mercury in Nevada. The Cordero Mining Company operated surface and underground workings until 1967 when the property was sold to the Fred H. Lenway Company, which operated the property until 1970. Between its discovery and the time Cordero mine ceased production in 1970, the Cordero mine produced over 100,000 flasks of mercury (*McDermitt Mine, McDermitt, Nevada; Description of Operations*).

Underground mining in the district ceased with the closure of the Cordero mine, however exploration in the district continued. In the fall of 1970, Sierra Mineral Management acquired the property and began exploration drilling. Placer Amex Inc., in a joint venture with Sierra Mineral Management began underground drilling in 1972. By 1974, Placer Amex Inc. had discovered a new, near-surface mercury ore-body with reserves of approximately 3,000,000 tons of 10 pound/ton mercury ore. In April 1974, construction and stripping of the new McDermitt mine had begun and the mine complex was officially opened in June of 1975. In 1975, the McDermitt mine was the largest and only mercury mine in production in the United States (*McDermitt Mine, McDermitt, Nevada; Description of Operations*). Mining operations at the McDermitt mine generally consisted of ore grinding, flotation concentration, mercury distillation, and tailings waste disposal. The principal mercury-bearing minerals at the mine site are cinnabar (70%) and

corderoite (30%), which are found in Miocene-age lake sediments located 50 to 150 feet below ground surface (bgs).

The Cordero and McDermitt mines are the largest historical producer of mercury in the State of Nevada, having produced mercury between 1935 and the mid-1980s. Mining operations at the McDermitt mine ceased in the late 1980s and a final closure report was submitted in December 1994 by Placer Dome to the Nevada Department of Environmental Protection (NDEP) requesting final closure approval under Water Pollution Control Permit #NEV88034. Currently the mine site is non-operational and consists of an approximately 135-acre open-pit mine with an approximately 11.25-acre calcine pile (mercury retort waste) located immediately south of the open pit, several abandoned mine working structures, a mine shaft, test pits, several dried tailings ponds, and several smaller mine tailings and calcine piles.

Surface Drainage Down-Gradient of Cordero and McDermitt Mines

Surface water from the Cordero and McDermitt Mines drain down slope to the northeast, into McDermitt Creek (approximately 3.5 miles) and Chuck Creek (approximately 4.5 miles) and then eastward to the Quinn River (approximately 5.5 miles). These surface water bodies flow year-round in the upper elevations of the nearby mountains and valley edges but become ephemeral toward the valley center. Marshlands are sporadically present along the Quinn River as ground water is directed to the surface by subsurface obstructions. The uses of surface water are limited to fishing in the perennial portions and water fowl hunting in the marshlands. The area is agricultural, with cattle ranching and some seed fanning. Except for the former Cordero and McDermitt mines, there is no industrial base in the area (Figure 6).

SITE BACKGROUND

On June 19, 1987, a Preliminary Assessment Review (PAR) (Review of the Preliminary Assessment of the McDermitt mine, ICF Technology, June 1987) that described potential environmental contaminant problems at the McDermitt mine site was completed by the U.S. EPA through the Field Investigation Team (FIT) contract. The PAR identified annual site inspections by the Nevada Division of Mine Inspection and the Nevada Division of Environmental Protection that indicated "hazardous waste problems" associated with the containment of disposed tailings and excessive blood mercury levels in employees working the retort section of the mill. The PAR recommended that more information be gathered regarding general site history, groundwater well locations, population density, and possible future sample locations in order to determine what further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) may be necessary.

In February 1988, U.S. EPA conducted a Site Inspection (SI) at the McDermitt mine (U.S. EPA CERCLA Site Inspection Report, August, 1988). At this time, the McDermitt mine was not in operation; however, it was reported there were plans for the mine to re-open in the fall of 1988. The U.S. EPA did not collect any environmental media data (e.g., soil, water) during the SI and recommended no further action under CERCLA.

On December 1, 2009, Carl Brickner (U.S. EPA Site Assessment Manager) and Tom Dunkelman (U.S. EPA FOSC) conducted a site visit at the Cordero and McDermitt mines to determine if conditions had significantly changed since the 1988 U.S. EPA SI Report. Laura Mayo of the U.S. EPA Tribal Program requested the site visit because Duane Masters, the Environmental Director for the Paiute Shoshone Indian Reservation, reported that two roadways located on the reservation were built in approximately 1970 using mine waste from the Cordero Mine and requested U.S. EPA assistance for further assessment.

According to the 1988 SI Report, mine processing equipment was reported to the northeast of the open-pit mine. During the 2009 site visit, the U.S. EPA team observed that the previously identified processing equipment had been dismantled and the former processing area was difficult to distinguish. In addition, a fence had been placed around the large stockpile of suspected calcine material to the south of the open-pit mine, which was not present in 1988.

During the 2009 site visit, the U.S. EPA performed field screening for mercury in surface soil using an X-Ray Fluorescence (XRF) analysis and collected data from five locations at the McDermitt mine, and from the Fort McDermitt Paiute Shoshone Indian Reservation municipal landfill access road. The in-situ XRF data indicated elevated mercury concentrations up to 700 parts per million (ppm) at areas near the former mine shaft; up to 4,600 ppm at areas south of the open-pit mine; and up to 60 ppm at the Fort McDermitt Paiute Shoshone Indian Reservation municipal landfill access road. No samples were collected for laboratory analysis during the 2009 site visit.

Based on these findings, the U.S. EPA recommended additional assessment activity to determine whether or not the no further action recommendation for the McDermitt mine site was sufficient based on:

- Proximity of the Cordero and McDermitt mercury mines to the town of McDermitt, Nevada and the Fort McDermitt Paiute Shoshone Indian Reservation, Nevada;
- Physical setting changes at the McDermitt mine that have occurred since the 1988 SI Report; and
- Elevated mercury concentrations detected within in-situ surface soils at the McDermitt mine and the Paiute Shoshone Indian Reservation municipal landfill access road.

START ACTIVITY

START conducted two sampling events for this removal assessment: September 14 and October 19 and 20, 2010. Photographs of the removal assessment activities are included in this report as Attachment B.

September Data Collection Activities

On September 14, 2010, START members Neil Ellis and Brian Milton and U.S EPA FOSC Tom Dunkelman mobilized to the Fort McDermitt Paiute Shoshone Indian Reservation to conduct sampling at two roadway areas. Prior to mobilization and in order to support the U.S. EPA's environmental data collection activities, the START identified project data quality objectives (DQOs) and developed the *Sampling and Analysis Plan (SAP)*, *Cordero Mercury Mine Site Removal Assessment of Two Roadways Areas*, September 2010. The scope of work and objectives outlined in the SAP were based on direction from the U.S. EPA. The SAP describes the project and data use objectives, data collection rationale, data quality assurance goals, requirements for sampling and analysis activities, and sampling and data collection methods.

The sample team conducted all assessment activities in accordance with the September 2010 SAP with the following exceptions:

- At the request of the FOSC, the analyte list identified in the SAP was amended from total arsenic, lead and mercury to the California Assessment Method metals list (CAM17) for additional soil characterization and potential contaminant concerns.

- At the request of the FOSC, two biased surface soil samples were collected within a surface water drainage pathway located east-southeast of the open-pit mine to determine if contaminant migration through surface water run off is a potential concern to downgradient locations.

The START collected a total of 31 soil samples: 19 surface soil samples, including three duplicates samples and three background surface soil samples; nine subsurface soil samples from 6 inches below ground surface (bgs), including one background sample; and three subsurface soil samples from 18 inches bgs. A triple volume of soil was collected for two of the soil samples for matrix spike/matrix spike duplicate (MS/MSD) analysis. In addition, the START collected one equipment rinsate blank sample. Sample locations for the North Road, South Road, and Cordero and McDermitt mine AOCs are presented in Figures 2, 3 and 5, respectively. Table C1 in Attachment C summarizes the soil samples collected and analyzed during this sampling event.

The START submitted all samples on September 15, 2010, to the U.S. EPA Region 9 Laboratory in Richmond, California, for analysis for CAM 17 metals by EPA Method 6010B/7471.

October Data Collection Activities

On October 19 and October 20, 2010, START members Neil Ellis and Sara Dwight and FOSC Tom Dunkelman conducted additional sampling for the removal assessment. Prior to mobilization, the START developed the *Emergency Response and Time Critical Quality Assurance Sampling Plan for Soil, Water and Miscellaneous Matrix Sampling* (ER-QASP), dated October 13, 2010. The scope of work and objectives outlined in the ER-QASP were based on direction from the U.S. EPA.

Four study areas were identified in the ER-QASP for assessment sampling: the McDermitt Combined School; roadways in the area of McDermitt, Nevada; an area of mine waste at the former Cordero and McDermitt mines; and seasonal surface water drainage pathways downgradient of the Cordero and McDermitt mines. The ER-QASP only generally described potential sampling approaches and allowed that the actual sampling approach for each of the study areas would be established in the field. The following documents the actual sampling approaches for each study area:

- **McDermitt Combined School** There were two areas at the school where historical information indicated that mine waste had been used for construction and/or fill. Based on visible evidence of non-native soil/material, the START identified the northeast parking/access road area and Track 1 as an AOC and designated it as Lot 1. START identified a second AOC, designated Lot 2, which consisted of Track 2 and the adjacent playground area. The START employed a semi-systematic sampling approach to sample the parking and playground areas by establishing sampling grids with 80-foot by 80-foot sections and collecting one 4-point composite surface soil sample from near the center of each grid section. The START determined the size of the grid sections using the Visual Sampling Plan (VSP) software (Battelle Memorial, 2010); according to the VSP output the grid sizing used would allow detection of a contaminant “hot spot” with a semi-major axis of 50 feet with 95 percent accuracy. Additionally, the START collected samples at 6 and 18 inches bgs from a subset of the grid locations. The START also collected 4-point composite surface soil samples from the perimeters of Tracks 1 and 2.

Surface composite samples consisted of four equally-sized aliquots collected from 0 to 6 inches bgs using clean, stainless steel trowels. The aliquots were homogenized in a clean plastic bag, and then transferred into certified clean, 4-ounce glass jars. The START

collected subsurface samples from the target depths with a clean, 2-inch diameter, stainless steel hand auger. Subsurface samples were homogenized and transferred to sample jars as described for the 4-point aliquot samples. Sample locations are documented on Figure 4 and a list of samples is provided in Table C2 in Attachment C.

- McDermitt, Nevada Roadways The START identified four roads (Cemetery Road, Lava Road, Jaca Road, and Margarita Road) with visible evidence that mine waste may have been used for road construction and/or fill. In these AOCs, START collected biased surface soil samples from 0 to 6 inches bgs with a clean, stainless-steel trowel, transferring the soil directly into certified clean, 4-ounce glass jars. Sample locations are documented on Figure 4 and a list of samples is provided in Table C2 in Attachment C.
- Cordero and McDermitt Mines The FOSC identified four AOCs in the mine study area with visible evidence of mine waste/material: a large calcine pile located immediately south of the open-pit mine (Waste Pile 1); a pile of apparent waste located near the former mine furnace area (Waste Pile 2); another pile of apparent waste adjacent to a barbed-wire fence crossing along the unpaved mine access road (Waste Pile 3); and a tailings impoundment pond located south of the large calcine pile (Waste Pile 4). The START collected biased, 4-point composite soil samples from 0 to 6 inches bgs in each of the AOCs. Samples were handled as described in the McDermitt Combined School section above. Sample locations are documented on Figure 5 and a list of samples is provided in Table C2 in Attachment C.
- Surface Water Drainage Downgradient of Cordero and McDermitt Mines The FOSC identified three routes of surface water drainage downgradient of Cordero and McDermitt Mines for sampling: two at the northern end of Chuck Creek and one at the confluence of Chuck Creek and McDermitt Creek (Figure 6). The START collected biased sediment samples from 0 to 6 inches bgs at a discrete location in each of the drainage AOCs in the same manner described in the roadways section above. A list of samples is provided in Table C2.

START conducted all sampling in accordance with the ER-QASP with the following exceptions:

- At the request of the FOSC, shallow sediment samples collected from surface water drainage pathways downgradient of the Cordero and McDermitt mines were also analyzed for methylmercury by EPA Method 1630 for contaminant characterization. This additional analysis required the collection of two sample volumes at each sample location.
- At the request of the FOSC, a surface water sample was collected downgradient of the Cordero and McDermitt mines at the confluence of Chuck Creek and McDermitt Creek for surface water characterization. The START collected this surface water sample by dipping a 500-milliliter, certified-clean polyethylene sample container to a depth of approximately 2 inches below the water surface then transferring the sample into a 500-milliliter certified-clean polyethylene sample container preserved with nitric acid. This sample was analyzed for CAM 17 metals by EPA Method 200.7/245.1.

The START collected a total of 63 soil/sediment samples: 41 surface soil samples, including five duplicate samples; ten subsurface soil samples from 6 inches below ground surface (bgs), including one duplicate sample; nine subsurface soil samples from 18 inches bgs; and three

sediment samples from 0 to 6 inches bgs. A triple volume of soil was collected for five of the soil samples for MS/MSD analysis. In addition, the START collected one surface water sample and two equipment rinsate sample; one of the rinsate samples was designated for MS/MSD analysis.

The START delivered all samples, except the sediment samples designated for methylmercury analysis, on October 21, 2010, to the U.S. EPA Region 9 Laboratory in Richmond, California, for analysis for CAM 17 metals by EPA Method 6010B/7471. START shipped the sediment samples requiring methylmercury analysis to Columbia Analytical Service, Inc. in Kelso, Washington on October 22, 2010 for analysis by EPA method 1630.

ANALYTICAL RESULTS AND DISCUSSION

A START chemist validated laboratory data generated from the assessment sampling in accordance with the U.S. EPA *Region 9 Superfund Data Evaluation/Validation Guidance* (R9QA/006.1, draft, dated December 2001) and the *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plans and Data Validation* (EPA/540/G-90/004, OSWER Directive 9360.4, dated April 1990). The validating chemist found all data to be acceptable as definitive data with qualification and determined to be usable to meet project data use objectives. A complete summary of the validated data is included in Attachment C as Tables C3 through C5. Data qualifications are documented in the analytical data review summaries in Attachment D.

The START compared contaminant concentrations in surface soil, shallow subsurface soil, and sediments to the November 2010 U.S. EPA Regional Screening Levels (RSLs) for residential and industrial land use and compared surface water data to the California Regional Water Quality Control Board (RWQCB) San Francisco Bay Region Environmental Screening Levels (ESLs) for fresh water habitats and chronic exposure levels for fresh water referenced in the U.S. EPA's 2009 National Recommended Water Quality Criteria (WQC) table. Based on evaluation of the assessment data, arsenic and mercury were identified as the only contaminants of potential concern (COPCs) with concentrations exceeding the site action level.

Background Sample Data

The sampling team collected four background soil samples during the September 2010 sampling event: one surface soil sample (COR-NR-BKG-01) and one subsurface soil sample (COR-NR-BKG-01-6) at the same location in the vicinity of the North Road study area, and two surface soil samples (COR-SR-BKG-01 and COR-SR-BKG-02) in the vicinity of the South Road study area. Samples were collected from areas with no visible evidence of mine waste or fill.

Arsenic was the only analyte with concentrations exceeding the residential and industrial RSLs. In the North Road study area samples COR-NR-BKG-01 and COR-NR-BKG-01-6 the concentration of arsenic documented was 5.2 milligrams per kilogram (mg/kg) in both samples; mercury was detected at 0.13 mg/kg in the surface soil sample and not detected in the sample from 6 inches bgs. The concentration of arsenic documented in both samples COR-SR-BKG-01 and COR-SR-BKG-02 from the South Road study area was 5.7 mg/kg; no mercury was detected in either sample. The data for arsenic and mercury in the background samples are consistent with depth and from location to location.

To determine whether the concentrations of arsenic and mercury documented in the background samples are actually representative of background concentration of these analytes, the START compared the data to concentrations for these metals reported in the U.S. Geological Service (USGS) Profession Paper 1270 (PP1270), *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States*, dated 1984. The average concentrations of arsenic

and mercury in the conterminous U.S. reported in PP1270 are 7.2 mg/kg and 0.09 mg/kg, respectively. Figure 4 in PP1270 depicts arsenic concentrations of approximately 10 mg/kg in two samples from northern Nevada and southern Oregon, the PP1270 study locations closest to McDermitt. Figure 25 in PP1270 reports mercury concentrations of 0.032 mg/kg and 0.051 for these study locations. The PP1270 data for arsenic and mercury are consistent with the data from this assessment.

The findings that assessment sample background data are consistent in the surface sample and the sample from 6 inches bgs, are consistent between sample locations in the North and South Road study areas, and are consistent with the data reported in PP1270 support the determination that the background samples collected during this assessment are representative of background/native soils in the area and can be used for comparison to other soil data collected in this assessment. Further, since the background levels of arsenic exceed the RSLs, the background levels documented in this assessment appear to be the best standard for comparison to site data to determine whether study areas have been impacted by mine waste/materials.

Paiute Shoshone Indian Reservation, North and South Roadway Study Areas

Data for the North and South Road study area samples are reported in Table C3 (Attachment C) and are presented on Figure 2 and Figure 3 (Attachment A), respectively. Data for COPCs are summarized below in Table 1 and Table 2.

Surface soil samples were collected at seven locations in the North Road study area; at each of the locations except COR-NR-7 samples were also collected from either 6 inches bgs or 6 inches bgs and 18 inches bgs. Arsenic was detected in all soil samples collected from the North Road study area. Concentrations in surface soil samples ranged from 16 to 73 mg/kg and averaged 39.7 mg/kg. Concentrations of arsenic in all surface samples significantly exceeded background concentrations, with concentrations ranging from three to 13 times background levels, and exceeded the RSLs. In samples collected from 6 inches bgs arsenic concentrations ranged from 5.9 to 35 mg/kg and averaged 14.3 mg/kg. Concentrations of arsenic in samples from 6 inches bgs significantly exceeded background concentrations at only two locations (COR-NR-04 and COR-NR-06); at the other four locations arsenic concentrations were 2.5 times background or less. All arsenic concentrations at this depth exceeded the RSLs. Arsenic concentrations in samples collected from 18 inches bgs ranged from 5.3 to 11 mg/kg and averaged 8.2 mg/kg. Concentrations of arsenic in samples from 18 inches bgs did not significantly exceed background concentrations, although concentrations did exceed the RSLs. Concentrations of arsenic decreased with depth in all samples, except at sample location COR-NR-01 where the arsenic concentration at 18 inches bgs (11 mg/kg) exceeded the concentration at 6 inches bgs (5.9 mg/kg). On average arsenic concentrations decreased approximately 67 percent from surface soil to soil 6 inches bgs and over 63 percent from surface soil to soil 18 inches bgs.

Mercury was detected in all surface soil samples from the North Road study area at concentrations ranging 20 to 110 mg/kg, with an average concentration of 72 mg/kg. Concentrations of mercury in surface samples significantly exceeded the background concentration and exceeded the residential RSL in all but one location. In samples collected from 6 inches bgs mercury concentrations ranged from non-detected to 17 mg/kg and averaged 7 mg/kg. Concentrations of mercury in samples from 6 inches bgs significantly exceeded background concentrations but did not exceed RSLs. Mercury was only detected in one of the three samples collected from 18 inches bgs; the detected concentration of 4 mg/kg exceeded background concentrations but was well below the RSLs. Concentrations of mercury decreased with depth in all samples. On average mercury concentrations decreased approximately 87

percent from surface soil to soil 6 inches bgs and over 99 percent from surface soil to soil 18 inches bgs.

Table 1 Assessment Data Summary for Arsenic and Mercury North Road Study Area, Paiute Shoshone Indian Reservation			
		Arsenic	Mercury
<i>Residential U.S. EPA Regional Screening Level</i>		0.39	23
<i>Industrial U.S. EPA Regional Screening Level</i>		1.6	310
<i>Average Site Background Concentration</i>		5.45	0.13 ¹
Sample Number	Sample Description		
COR-NR-01	Surface soil	16	25
COR-NR-01-6	Soil 6" below ground surface (bgs)	5.9	Not detected (ND)
COR-NR-01-18	Soil 18" bgs	11	ND
COR-NR-02	Surface soil	51	80
COR-NR-02-6	Soil 6" bgs	6.3	1.1
COR-NR-03	Surface soil	31	97
COR-NR-103	Surface soil – duplicate of COR-NR-03	28	45
COR-NR-03-6	Soil 6" bgs	14	10
COR-NR-03-18	Soil 18" bgs	8.3	4
COR-NR-04	Surface soil	56	97
COR-NR-04-6	Soil 6" bgs	18	12
COR-NR-05	Surface soil	35	110
COR-NR-05-6	Soil 6" bgs	6.7	2.4
COR-NR-05-18	Soil 18" bgs	5.3	ND
COR-NR-06	Surface soil	73	76
COR-NR-06-6	Soil 6" bgs	35	17
COR-NR-07	Surface soil	16	20
¹ Only detected concentration of mercury. All other background samples were non-detect. All units are milligrams per kilogram			

Surface soil samples were collected at four locations in the South Road study area; at two of the locations samples were also collected from 6 inches bgs. In this study area, arsenic concentrations in surface soil samples ranged from 63 to 93 mg/kg and averaged 77 mg/kg. Concentrations of arsenic in all South Road surface samples significantly exceeded background concentrations, with concentrations ranging from 11 to 17 times background levels, and exceeded the RSLs. Arsenic concentrations in the two samples collected 6 inches bgs were 12 mg/kg and 31 mg/kg; these concentrations are approximately two to six times higher than background levels and exceeded the RSLs. Concentrations of arsenic decreased with depth in the two locations where samples were collected at 6 inches bgs; the arsenic concentrations decreased approximately 50 percent and 83 percent at depth at these locations

In the South Road study area samples, mercury was detected in all surface soil samples at concentrations ranging 49 to 94 mg/kg, with an average concentration of 67 mg/kg. Concentrations of mercury in surface samples significantly exceeded background concentrations and exceeded the residential RSL in all four surface sample locations. Mercury concentrations in the two samples collected from 6 inches bgs mercury concentration were 6.8 mg/kg and 20

mg/kg; these concentrations exceeded background levels but did not exceed RSLs. Concentrations of mercury decreased with depth in each of the samples (69 percent and 86 percent).

Table 2 Assessment Data Summary for Arsenic and Mercury South Road Study Area, Paiute Shoshone Indian Reservation			
		Arsenic	Mercury
<i>Residential U.S. EPA Regional Screening Level</i>		0.39	23
<i>Industrial U.S. EPA Regional Screening Level</i>		1.6	310
<i>Average Site Background Concentration</i>		5.45	0.13 ¹
Sample Number	Sample Description		
COR-SR-01	Surface soil	73	49
COR-SR-01-6	Soil 6" below ground surface (bgs)	12	6.8
COR-SR-02	Surface soil	78	94
COR-SR-03	Surface soil	63	64
COR-SR-03-6	Soil 6" bgs	31	20
COR-SR-04	Surface soil	93	61
¹ Only detected concentration of mercury. All other background samples were non-detect. All units are milligrams per kilogram			

McDermitt Combined School Study Areas

Data for the McDermitt Combined School study area samples are reported in Table C4 (Attachment C) and are presented as Figure 4 (Attachment A). Data for COPCs are summarized below in Table 3 and Table 4.

The northeast parking/access road area and Track 1 comprise the Lot 1 study area. Surface soil samples were collected at 15 locations in the northeast parking/access road area; subsurface samples were collected at six of the 15 locations from 6 inches bgs and 18 inches bgs. One surface soil sample was collected from Track 1. Arsenic was detected in all soil samples collected from the Lot 1 study area. Concentrations in surface soil samples ranged from 20 to 61 mg/kg and averaged 38.2 mg/kg. Concentrations of arsenic in all surface samples significantly exceeded background concentrations, with concentrations ranging from 3.7 to 11 times background levels, and exceeded the RSLs. In samples from 6 inches bgs arsenic concentration ranged from 4.8 to 9.9 mg/kg and averaged 7 mg/kg. Concentrations of arsenic in samples from 6 inches bgs exceeded background concentrations at four of the six sample locations; however, all arsenic concentrations at this depth were less than twice background arsenic levels. All arsenic concentrations at this depth exceeded the RSLs. Arsenic concentration in samples collected from 18 inches bgs ranged from 3.9 to 6.5 mg/kg and averaged 4.6 mg/kg. Concentrations of arsenic in samples from 18 inches bgs only exceeded background concentrations at one sample location, although concentrations did exceed the RSLs at all locations. Concentrations of arsenic decreased with depth at all sample locations. On average arsenic concentrations decreased approximately 82 percent from surface soil to soil 6 inches bgs and 88 percent from surface soil to soil 18 inches bgs. The arsenic concentration in the composite surface soil sample from Track 1 was significantly lower than the concentrations documented in the northeast parking/access road area and did not exceed background concentration. Levels of arsenic in surface soils from Track 1 were lower than those documented at 18 inches bgs in the northeast parking/access road area, indicating that the material on the track is from a different source than the material used for fill in the parking area.

Mercury was detected in all surface soil samples from the Lot 1 study area at concentrations ranging from 27 to 140 mg/kg; the average concentration of mercury in surface soil is 57.2 mg/kg. Concentrations of mercury in surface samples significantly exceeded background concentrations and exceeded the residential RSL in all sample locations. In samples from 6 inches bgs mercury concentration ranged from 0.3 to 61 mg/kg. The 61 mg/kg of mercury documented in sample COR-LOT1-06-6 exceeded the concentration of 31 mg/kg in surface soil at that location. Excluding sample COR-LOT1-06-6, the average concentration of mercury in soils at 6 inches bgs in Lot 1 was 0.7 mg/kg. Concentrations of mercury in samples from 6 inches bgs slightly exceeded background concentrations but, with the exception of sample COR-LOT1-06-6, did not exceed RSLs. Mercury was detected in all but one of the six samples collected from 18 inches bgs; the detected concentrations, which ranged from 0.16 to 0.32 mg/kg, slightly exceeded background concentrations but were well below the RSLs. Concentrations of mercury decreased with depth in all samples, except in sample COR-LOT1-06-6. On average mercury concentrations decreased approximately 98.8 percent from surface soil to soil 6 inches bgs (excluding sample COR-LOT1-06-6) and over 99 percent from surface soil to soil 18 inches bgs.

Table 3 Assessment Data Summary for Arsenic and Mercury McDermitt Combined School Lot 1 Study Area			
		Arsenic	Mercury
<i>Residential U.S. EPA Regional Screening Level</i>		0.39	23
<i>Industrial U.S. EPA Regional Screening Level</i>		1.6	310
<i>Average Site Background Concentration</i>		5.45	0.13 ¹
Sample Number	Sample Description		
COR-LOT1-01	Surface soil	24	45
COR-LOT1-02	Surface soil	36	71
COR-LOT1-02D	Surface soil – Duplicate	20	21
COR-LOT1-03	Surface soil	53	36
COR-LOT1-03-6	Soil 6” bgs	9.9	0.66
COR-LOT1-03-18	Soil 18” bgs	4.7	0.16
COR-LOT1-04	Surface soil	44	58
COR-LOT1-05	Surface soil	38	27
COR-LOT1-06	Surface soil	38	31
COR-LOT1-06-6	Soil 6” bgs	4.8	61
COR-LOT1-06-18	Soil 18” bgs	3.9	0.32
COR-LOT1-07	Surface soil	60	39
COR-LOT1-08	Surface soil	61	46
COR-LOT1-09	Surface soil	45	59
COR-LOT1-09-6	Soil 6” bgs	5.4	1.5
COR-LOT1-09-18	Soil 18” bgs	3.9	0.19
COR-LOT1-10	Surface soil	32	74
COR-LOT1-11	Surface soil	34	68
COR-LOT1-11D	Surface soil – Duplicate	36	140
COR-LOT1-11-6	Soil 6” bgs	9.2	0.59
COR-LOT1-11-18	Soil 18” bgs	4.3	0.29
COR-LOT1-12	Surface soil	28	45
COR-LOT1-13	Surface soil	37	130
COR-LOT1-13-6	Soil 6” bgs	7.1	0.3
COR-LOT1-13-18	Soil 18” bgs	4.6	<0.16

COR-LOT1-14	Surface soil	23	27
COR-LOT1-14-6	Soil 6" bgs	5.8	0.44
COR-LOT1-14-18	Soil 18" bgs	6.5	0.27
COR-LOT1-15	Surface soil	40	40
COR-TRK1-01	Surface soil	2.3	0.29
¹ Only detected concentration of mercury. All other background samples were non-detect. All units are milligrams per kilogram			

The Lot 2 study area at the McDermitt Combined School consists of Track 2 and the adjacent playground area. Surface soil samples were collected at six locations in the playground area; subsurface samples were collected at three of the six locations from 6 inches bgs and 18 inches bgs. One composite surface soil sample was collected from Track 2. Arsenic was detected in all soil samples collected from the Lot 2 study area. Concentrations in surface soil samples ranged from 19 to 24 mg/kg and averaged 21.5 mg/kg; these concentrations were approximately 4 times background concentrations and exceeded the RSLs. In samples from 6 inches bgs arsenic concentration ranged from 21 to 33 mg/kg and averaged 21.2 mg/kg. Concentrations of arsenic in samples from 6 inches bgs exceeded background concentrations in all of the sample locations and the arsenic levels were at or higher than the corresponding surface soil samples from these locations. All arsenic concentrations at this depth exceeded the RSLs. Arsenic concentration in samples collected from 18 inches bgs ranged from 3.6 to 5.5 mg/kg and averaged 4.4 mg/kg. Concentrations of arsenic in samples from 18 inches bgs were below background concentrations in two of the three locations, although concentrations did exceed the RSLs at all locations. Concentrations of arsenic were the same in surface and samples from 6 inches bgs; however, the concentration decreased at the 18 inch bgs depth. The arsenic concentration in the composite surface soil sample from Track 2 was lower than the concentrations documented in surface soil at the playground area but still exceeded background concentrations.

Mercury was detected in all surface soil samples from the Lot 2 study area at concentrations ranging from 3.4 to 21 mg/kg; the average concentration of mercury in surface soil is 13.8 mg/kg. Similar concentrations were documented in the samples from 6 inches bgs where arsenic levels ranged from 1.9 to 26 mg/kg and averaged 12.2 mg/kg. Concentrations of mercury in surface samples and samples from 6 inches bgs exceeded background concentrations but exceeded the residential RSL in only one sample location. The concentration of mercury in samples collected from 18 inches bgs significantly decreased from the levels documented in surface and 6-inch bgs samples, with mercury levels ranging from non-detect to 0.2 mg/kg. The mercury concentration in the composite surface soil sample from Track 2 was lower than the concentrations documented in surface soil at the playground area but still exceeded background concentrations but did not exceed RSLs.

Table 4 Assessment Data Summary for Arsenic and Mercury McDermitt Combined School Lot 2 Study Area			
		Arsenic	Mercury
<i>Residential U.S. EPA Regional Screening Level</i>		0.39	23
<i>Industrial U.S. EPA Regional Screening Level</i>		1.6	310
<i>Average Site Background Concentration</i>		5.45	0.13 ¹
Sample Number	Sample Description		
COR-LOT2-01	Surface soil	24	11
COR-LOT2-02	Surface soil	23	15
COR-LOT2-02D	Surface soil – Duplicate	20	21

COR-LOT2-02-6	Soil 6" bgs	33	11
COR-LOT2-02-6D	Soil 6" bgs – Duplicate	21	10
COR-LOT2-02-18	Soil 18" bgs	5.5	0.2
COR-LOT2-03	Surface soil	22	17
COR-LOT2-03D	Surface soil – Duplicate	23	20
COR-LOT2-03-6	Soil 6" bgs	24	26
COR-LOT2-03-18	Soil 18" bgs	4.2	<0.17
COR-LOT2-04	Surface soil	20	21
COR-LOT2-04D	Surface soil – Duplicate	21	5.7
COR-LOT2-04-6	Soil 6" bgs	6.8	1.9
COR-LOT2-04-18	Soil 18" bgs	3.6	<0.16
COR-LOT2-05	Surface soil	19	3.4
COR-LOT2-06	Surface soil	22	9.9
COR-TRK2-01	Surface soil	8	1.6
¹ Only detected concentration of mercury. All other background samples were non-detect. All units are milligrams per kilogram			

McDermitt, Nevada Roadway Study Areas

Data for the town of McDermitt, Nevada roadway study area samples are reported in Table C4 (Attachment C) and are presented as Figure 4 (Attachment A). Data for COPCs are summarized below in Table 5.

Surface soil samples were collected at four separate roadway locations including: Cemetery Road, Lava Road, Jaca Road, and Margarita Road. Arsenic was detected in all surface soil samples collected from the roadway study areas at concentrations ranging from 30 to 58 mg/kg, with an average concentration of 42 mg/kg. Concentrations of arsenic in all samples significantly exceeded background concentrations, with concentrations ranging from four to 10 times background levels, and exceeded the RSLs. Mercury was detected in all surface soil samples collected from the roadway study areas at concentrations ranging from 25 to 690 mg/kg, with an average of 249.2 mg/kg. Concentrations of mercury in all samples significantly exceeded background concentrations and exceeded the residential RSL. Concentrations of mercury in samples collected from the Cemetery Road and Jaca Road also exceeded the industrial RSL.

Table 5			
Assessment Data Summary for Arsenic and Mercury			
McDermitt Nevada Roadway Study Areas			
		Arsenic	Mercury
<i>Residential U.S. EPA Regional Screening Level</i>		0.39	23
<i>Industrial U.S. EPA Regional Screening Level</i>		1.6	310
<i>Average Site Background Concentration</i>		5.45	0.13 ¹
Sample Number	Sample Description		
COR-CEM-01	Surface Soil	58	400
COR-CEM-02	Surface Soil	53	75
COR-LAVA-01	Surface Soil	37	56
COR-JACA-01	Surface Soil	32	690
COR-ROAD1-01	Surface Soil	30	25
¹ Only detected concentration of mercury. All other background samples were non-detect. All units are milligrams per kilogram			

Cordero and McDermitt Mine Study Areas

Data for the Cordero and McDermitt Mine study area samples are reported in Table C3 and Table C4 (Attachment C) and are presented as Figure 5 (Attachment A). Data for COPCs are summarized below in Table 6.

Surface soil samples were collected at five locations from the large calcine pile (approximately 11.25-acres) located immediately south of the open-pit mine (Waste Pile 1), which is believed to be the source of roadway base and fill material at the previously discussed site study areas. Arsenic was detected in all surface soil samples collected from Waste Pile 1 at concentrations ranging from 23 to 66 mg/kg, with an average of 45.4 mg/kg. Concentrations of arsenic in all samples significantly exceeded background concentrations, with concentrations ranging from four to 11 times background levels, and exceeded the RSLs. Mercury was detected in all surface soil samples collected from Waste Pile 1 at concentrations ranging from 19 to 76 mg/kg, with an average of 44 mg/kg. Concentrations of mercury in all samples significantly exceeded background concentrations and exceeded the residential RSL in four out of five samples.

Surface soil samples were also collected from the Cordero and McDermitt mine property at four unique locations with visible evidence of mine waste. Arsenic was detected in all surface soil samples collected from the additional mine waste locations at concentrations ranging from 13 to 200 mg/kg. Concentrations of arsenic in all samples significantly exceeded background concentrations, with concentrations ranging from three to 36 times background levels, and exceeded the RSLs. Mercury was detected in all surface soil samples collected from the additional mine waste locations at concentrations ranging from 32 to 1,100 mg/kg. Concentrations of mercury in all samples significantly exceeded background concentrations and exceeded the residential RSL. Concentrations of mercury in samples collected from Waste Pile 3 and Waste Pile 4 exceeded the industrial RSL.

Table 6			
Assessment Data Summary for Arsenic and Mercury			
Cordero and McDermitt Mine Study Areas			
		Arsenic	Mercury
<i>Residential U.S. EPA Regional Screening Level</i>		0.39	23
<i>Industrial U.S. EPA Regional Screening Level</i>		1.6	310
<i>Average Site Background Concentration</i>		5.45	0.13 ¹
Sample Number	Sample Description		
COR-WP1-01	Surface Soil	66	76
COR-WP1-02	Surface Soil	52	63
COR-WP1-03	Surface Soil	55	19
COR-WP1-04	Surface Soil	31	34
COR-WP1-05	Surface Soil	23	28
COR-WP2-01	Surface Soil	14	79
COR-WP3-01	Surface Soil	73	1,100
COR-WP4-01	Surface Soil	200	750
COR-MINE-01	Surface Soil	13	32
COR-MINE-02	Surface Soil	14	63
¹ Only detected concentration of mercury. All other background samples were non-detect. All units are milligrams per kilogram			

Surface Water Drainage Downgradient of Cordero and McDermitt Mines

Data for the surface water drainage routes downgradient of Cordero and McDermitt Mines are reported in Table C3 and Table C4 (Attachment C) and are presented as Figure 6 (Attachment A). Data for COPCs are summarized below in Table 7.

Surface sediment samples were collected from three separate surface water drainage routes downgradient of Cordero and McDermitt mines. Arsenic was detected in all surface sediment samples collected from the downgradient drainage routes at concentrations ranging from 7.5 to 25 mg/kg, with an average of 14.5 mg/kg. Concentrations of arsenic in all sediment samples slightly exceeded background soil concentration, with concentrations ranging from near background to three times background levels, and exceeded and the RSLs. Mercury was detected in all surface sediment samples collected from the downgradient drainage routes at concentrations ranging from 0.34 to 0.45 mg/kg, with an average of 0.39 mg/kg. Concentrations of mercury only slightly exceeded the detected background soil concentration. Methylmercury was not detected in any of the surface sediment samples collected.

One surface water sample was collected from Chuck Creek located downgradient of Cordero and McDermitt mines. Arsenic was detected in the surface water sample at a concentration of 12 µg/L, and exceeds the ESL. Mercury was not detected above the laboratory reporting limit in surface water.

Table 7			
Assessment Data Summary for Arsenic and Mercury			
Surface Water Drainage Downgradient of Cordero and McDermitt Mines			
		Arsenic	Mercury
<i>Environmental Screening Level</i>		0.14	--
<i>National Recommended Fresh Water Quality Criteria</i>		150	0.77
Sample Number	Sample Description		
COR-CRK-SED01	Surface Sediment	7.5	0.34
COR-CRK-SED02	Surface Sediment	11	0.4
COR-CRK-SED03	Surface Sediment	25	0.45
COR-CRK	Surface Water	12	<0.030
Sediment sample units are milligrams per kilogram			
Surface water sample units are in micrograms per liter			

CONCLUSIONS AND RECOMMENDATIONS

In September and October 2010, the START collected surface and subsurface soil samples, creek sediment samples, and a surface water sample as part of an on going removal assessment at the Cordero and McDermitt Mines and associated AOCs in the vicinity of the mines. Based on review of the laboratory analytical results generated from the September and October 2010 sampling events, the following conclusions and recommendations are presented.

- Results of this assessment document that the concentrations of arsenic and mercury in surface soil samples collected from all of the soil study areas are consistent with the concentration of arsenic and mercury in samples from the calcine mine waste pile. These findings corroborate reports that material from the calcine waste pile was used as road base/fill in the study areas.

- In each of the soil study areas, concentrations of both arsenic and mercury in soil decrease substantially with depth. While concentrations of both metals decreased between the surface and 6 inches bgs, their levels still exceeded background at 6 inches bgs. Sample data document that concentrations of arsenic and mercury were near or below background levels in samples collected from 18 inches bgs in the study areas, therefore the vertical limit of contamination lies between 6 and 18 inches bgs. Based on these findings, it appears that calcine mine waste was deposited directly on native soils. Further sampling of intervals between 6 and 18 inches bgs would be required to more exactly delineate the depth of contamination and calculate the volume of affected soil. For study areas where only surface sampling was conducted, sampling at depth is recommended.
- The limited sediment sample data from this assessment indicates that Chuck Creek and McDermitt Creek, downgradient of the Cordero and McDermitt Mines, may have been impacted by drainage from the mines. Further sampling, which would include collection of surface water and sediment background samples, is needed to confirm this preliminary finding.
- Development of a comprehensive Conceptual Site Model (CSM) is recommended to aid in evaluating exposure pathways and routes and receptors in each of the study areas to determine those areas where contamination may have the greatest potential impacts. Additional information, such as patterns of use of the affected areas, meteorological data, and data regarding the bioavailability/bioaccessibility of the contaminants may be needed to develop the CSM.
- Bioavailability and speciation sampling to characterize the physical and chemical character of arsenic and mercury and determine the degree to which arsenic and mercury in soils is available for uptake in potentially exposed persons within the study areas of concern is currently on-going. Ingestion accounts for most of the arsenic and mercury taken into the blood when exposure occurs by both ingestion and breathing arsenic and mercury. For this reason, the extent to which arsenic and mercury is absorbed from the digestive tract is an important factor in arsenic and mercury exposure and toxicity.
- While areas where calcine mine waste was used as road base/fill were visibly apparent, sampling adjacent to these areas where mine waste is not visible may be warranted to determine whether erosion or runoff from the contaminated areas has affected surrounding soil. Additional sampling should be further evaluated after bioavailability and speciation analysis for mercury and arsenic has been completed.

Please contact me at 510-893-6700 if you have any questions regarding START's activities associated with this assessment.

Respectfully,



David Neil Ellis
START Project Manager

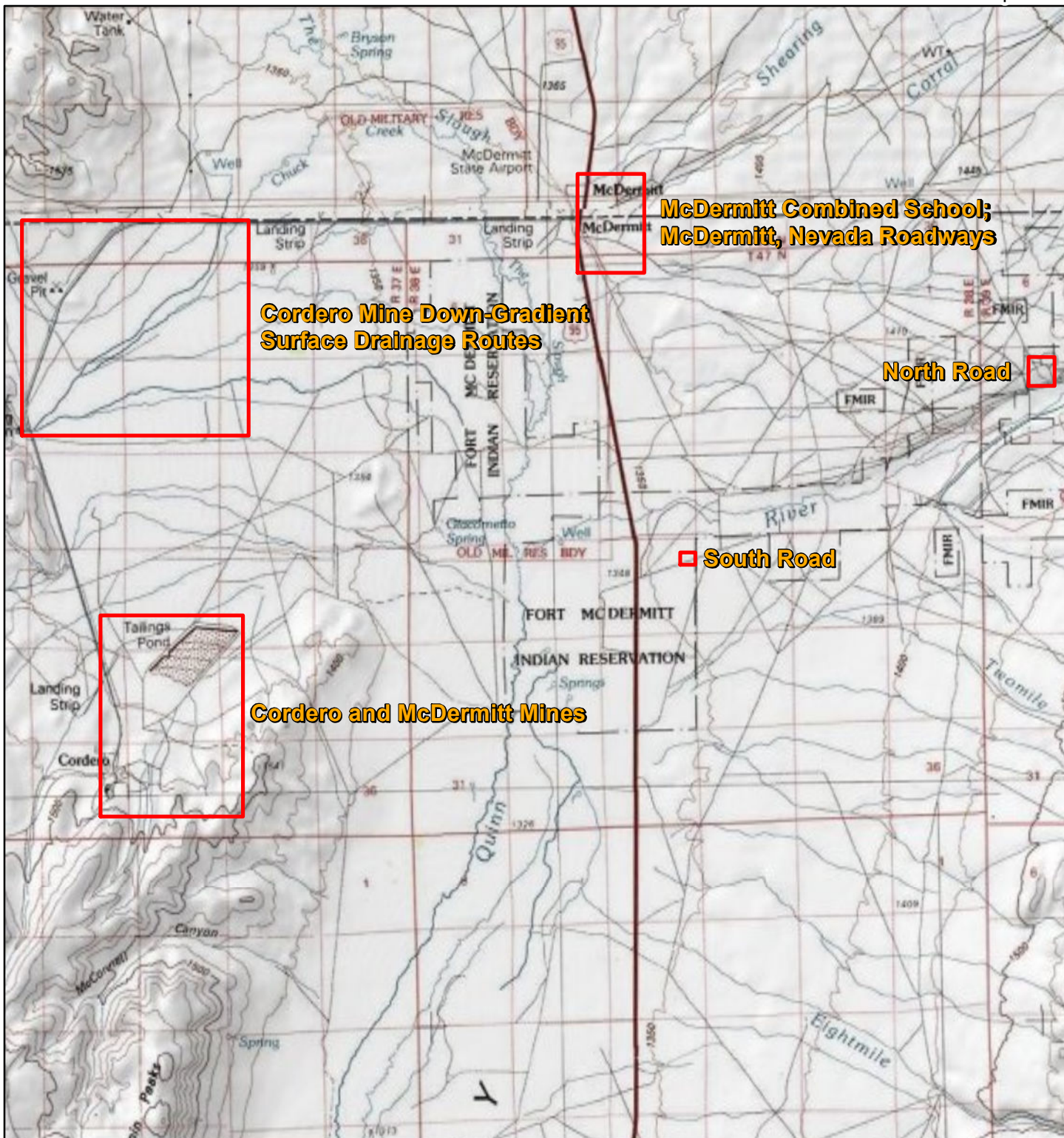
Attachment A: Figure 1 – Study Area Locations
Figure 2 – North Road, Paiute Shoshone Indian Reservation
Figure 3 – South Road, Paiute Shoshone Indian Reservation
Figure 4 – McDermitt Combined School; McDermitt, Nevada Roadways
Figure 5 – Cordero Mine
Figure 6 – Cordero Mine Down-Gradient Surface Drainage Routes

Attachment B: Photographs

Attachment C: Table C1 – Sample Summary, September 2010
Table C2 – Sample Summary, October 2010
Table C2 – Summary of Analytical Results for CAM 17 Metals (Soil)
September, 2010
Table C3 – Summary of Analytical Results for CAM 17 Metals (Soil and
Sediment) October, 2010
Table C4 – Summary of Analytical Results for CAM 17 Metals (Water)

Attachment D: Analytical Data Review Summaries

Attachment A:
Figures



LEGEND



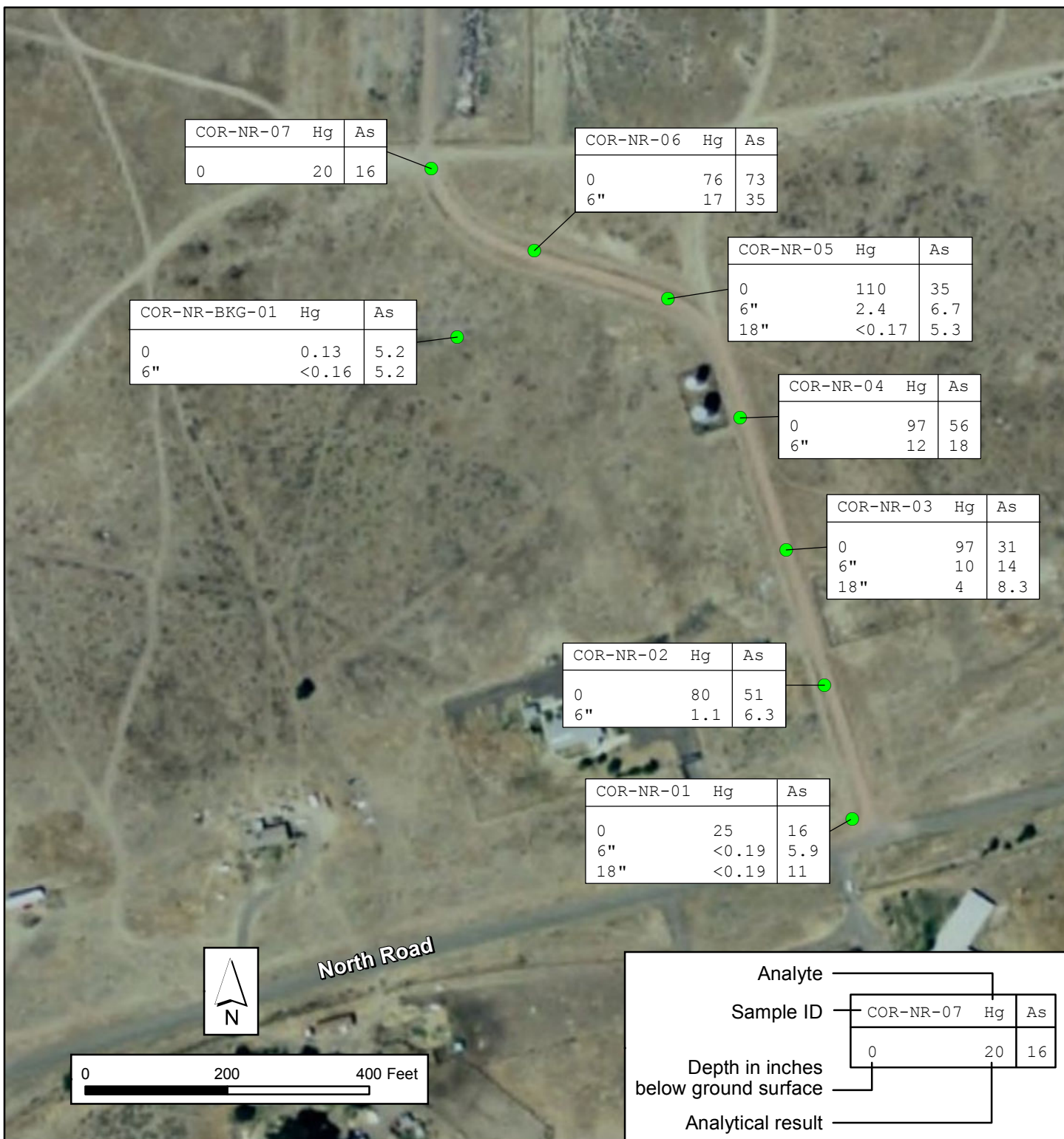
Site study area



0 1.5 3 Miles

Figure 1
Study Area Locations

Cordero and McDermitt
Mercury Mine Site
McDermitt, Nevada
Fort McDermitt, Nevada



LEGEND

- Discrete soil sample location

ABBREVIATIONS

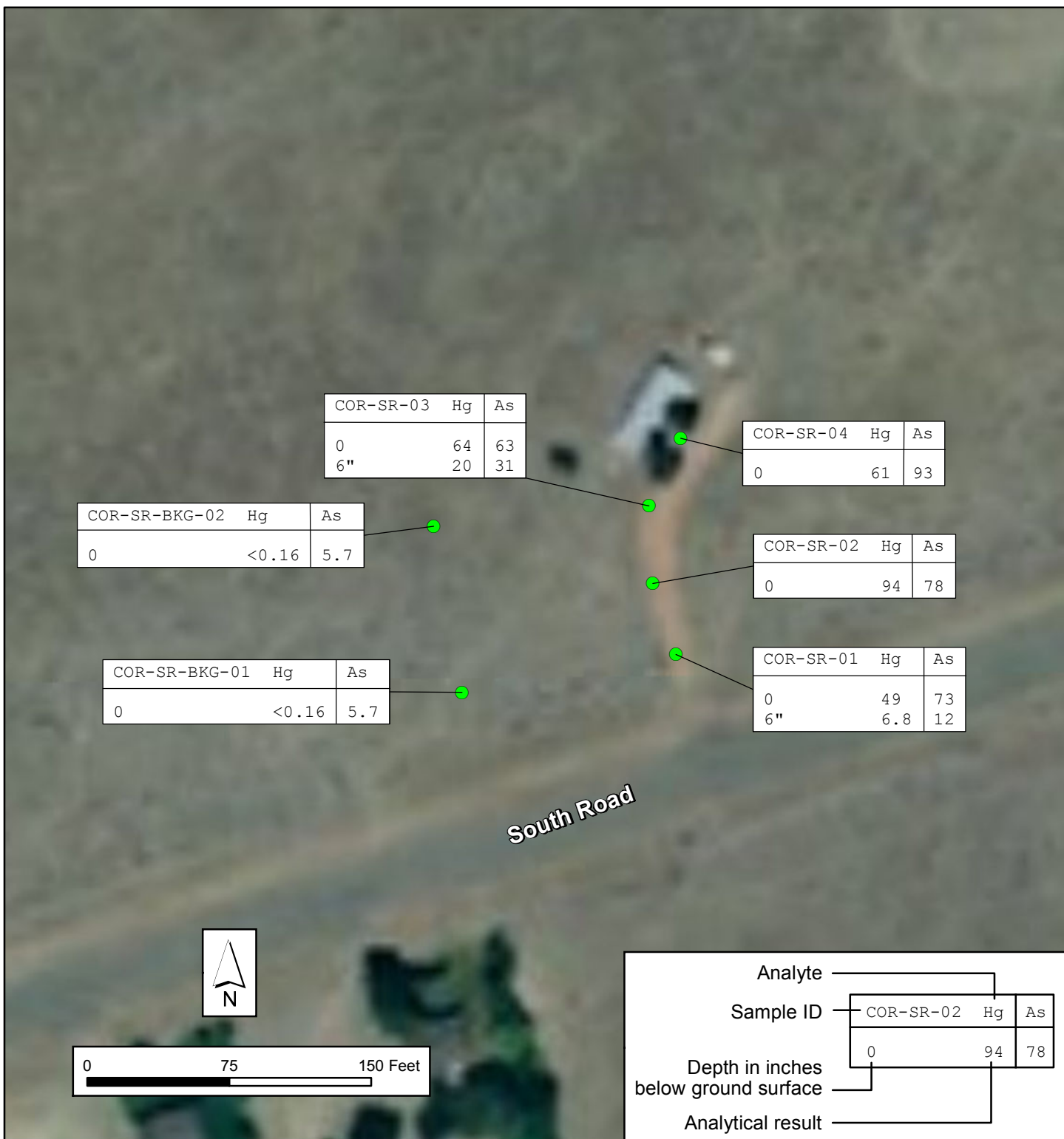
Hg Mercury
As Arsenic

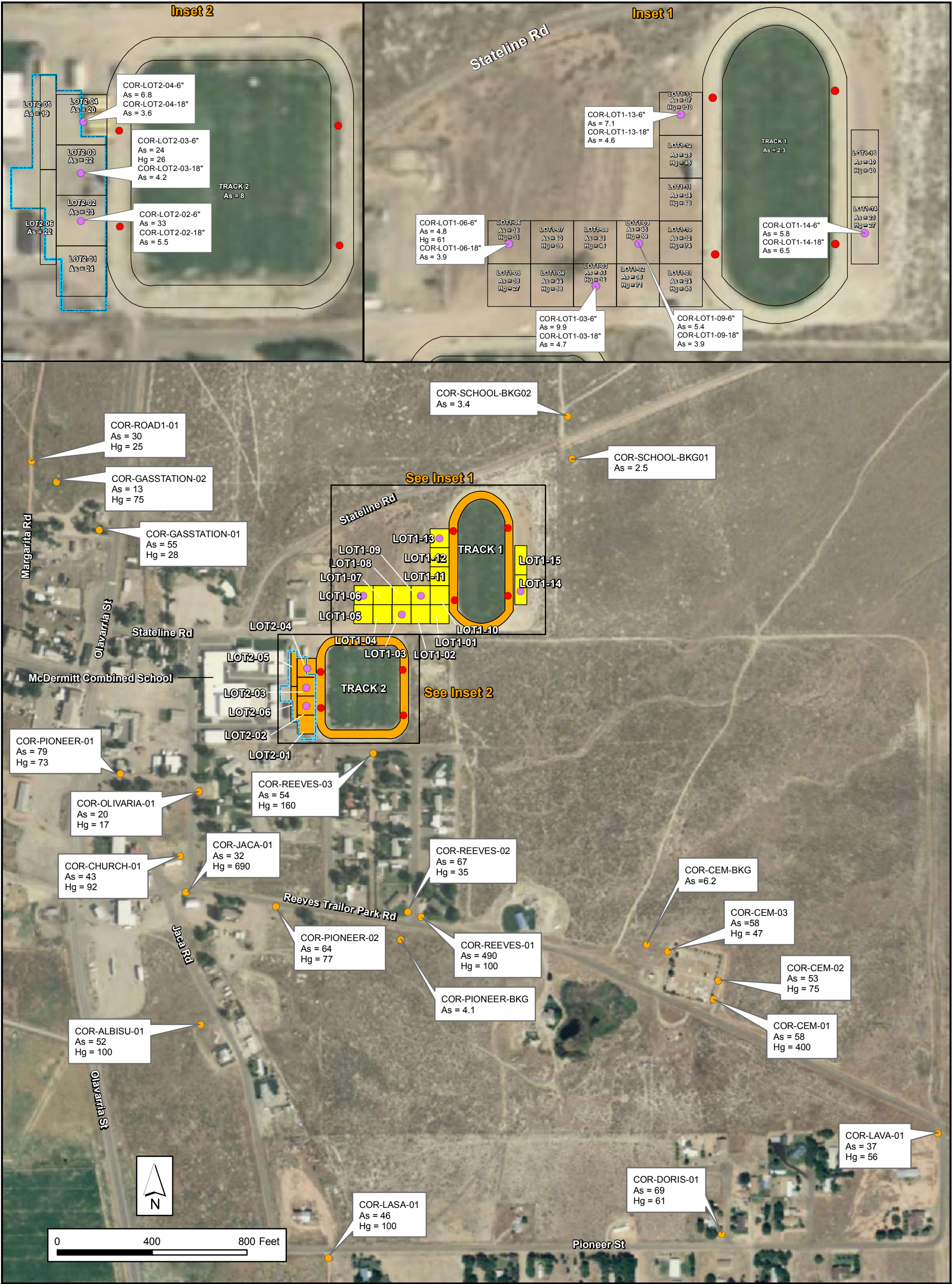
NOTES

Analytical results in milligrams per kilogram (mg/kg)

Figure 2
North Road

Cordero and McDermitt
Mercury Mine Site
Paiute Shoshone Indian Reservation
Fort McDermitt, Nevada





LEGEND

- Discrete soil sample location
- 4-point composite track sample aliquot
- Subsurface soil sample location
- 4-point composite sample grid (Approximately 6,400 square feet, 80' x 80')
- Sample grid containing As above action level
- Sample grid containing As and Hg above action levels
- Playground

NOTE

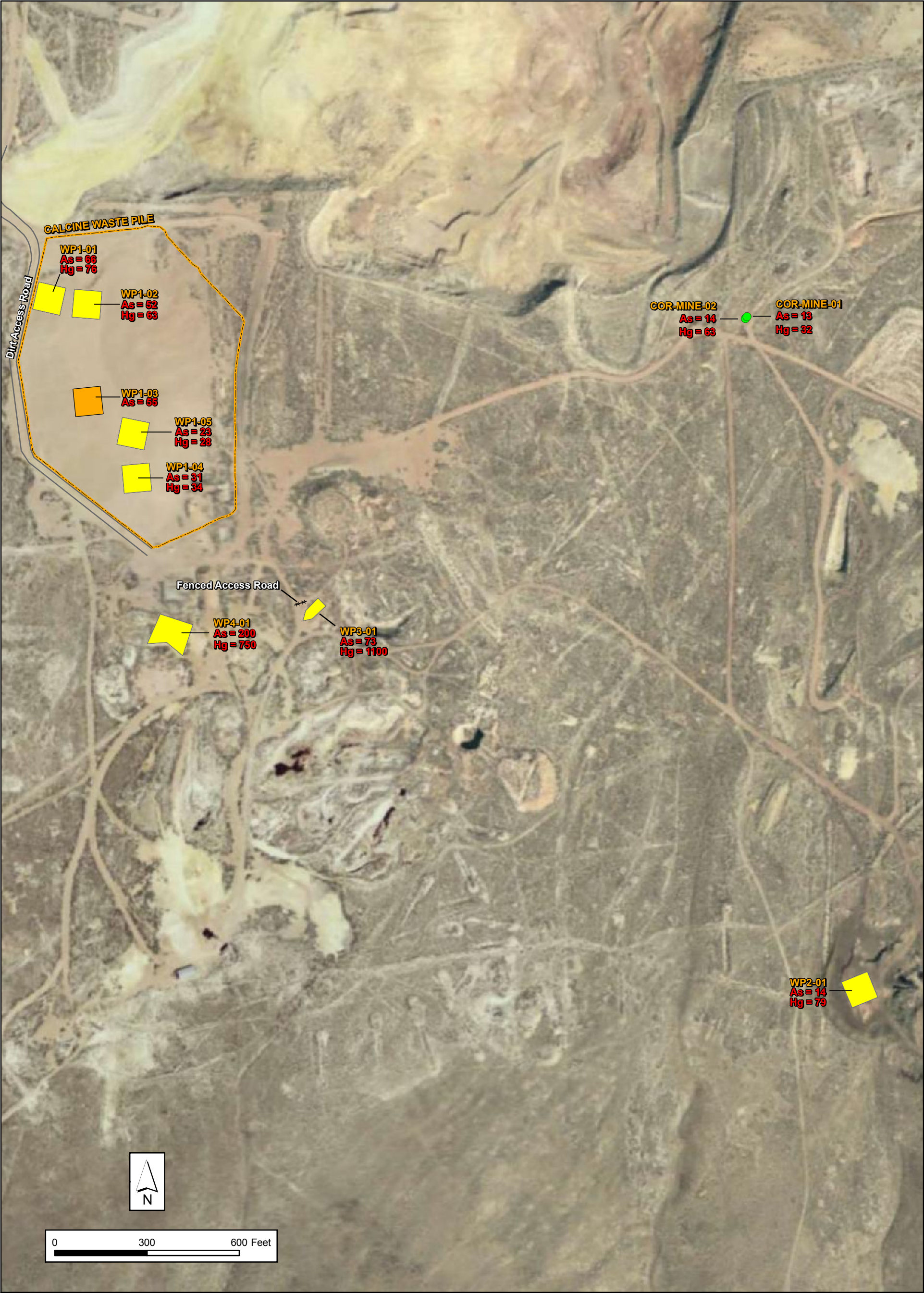
Analytical results in milligrams per kilogram


ABBREVIATIONS

- | | |
|-----|--------------------------------|
| 6" | 6 Inches below ground surface |
| 18" | 18 Inches below ground surface |
| As | Arsenic |
| Hg | Mercury |

Figure 4
McDermitt Combined School;
McDermitt, Nevada Roadways

Cordero and McDermitt Mercury Mine Site
McDermitt, Nevada



LEGEND <ul style="list-style-type: none">Discrete stormwater drainage pathway soil sample location4-point composite soil sample gridSample grid containing As above action levelSample grid containing As and Hg above action levels	NOTE <p>Analytical results in milligrams per kilogram</p> ABBREVIATIONS <table><tr><td>As</td><td>Arsenic</td></tr><tr><td>Hg</td><td>Mercury</td></tr></table>	As	Arsenic	Hg	Mercury	Figure 5 Cordero Mine Cordero and McDermitt Mercury Mine Site McDermitt, Nevada 
As	Arsenic					
Hg	Mercury					



LEGEND

- Discrete creek sediment sample location
- Discrete surface water sample location

NOTE

Sediment analytical results in milligrams per kilogram
Surface water analytical results in micrograms per liter

ABBREVIATIONS

As Arsenic
Hg Mercury

Figure 6
Cordero and McDermitt Mines
Down-gradient Surface Drainage Routes

Cordero and McDermitt Mercury Mine Site
McDermitt, Nevada

Attachment B:
Photographs

ECOLOGY AND ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team
Cordero and McDermitt Mercury Mines Removal Assessment
Humboldt County, Nevada

E&E Project. No.: 002693.2094.01RA

TDD No: TO2-09-10-06-0002



PHOTO 1

Date: 09/14/10

Direction: South

Photographer: B. Milton

Description: Paiute Shoshone Indian Reservation North Road study area.



PHOTO 2

Date: 09/14/10

Direction: Down

Photographer: B. Milton

Description: Paiute Shoshone Indian Reservation North Road study area. Note color variation between surface and shallow subsurface soils.



PHOTO 3

Date: 09/14/10

Direction: Down

Photographer: B. Milton

Description: Soil boring at the Paiute Shoshone Indian Reservation North Road study area.

ECOLOGY AND ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team
Cordero and McDermitt Mercury Mines Removal Assessment
Humboldt County, Nevada

E&E Project. No.: 002693.2094.01RA

TDD No: TO2-09-10-06-0002



PHOTO 4

Date: 09/14/10

Direction: North

Photographer: B. Milton

Description: Paiute Shoshone Indian
Reservation South Road study area.



PHOTO 5

Date: 09/14/10

Direction: West

Photographer: S. Dwight

Description: Paiute Shoshone Indian
Reservation South Road study area background
soil sample location.



PHOTO 6

Date: 10/19/10

Direction: West

Photographer: S. Dwight

Description: McDermitt Combined School
LOT1 study area.

ECOLOGY AND ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team
Cordero and McDermitt Mercury Mines Removal Assessment
Humboldt County, Nevada

E&E Project. No.: 002693.2094.01RA

TDD No: TO2-09-10-06-0002



PHOTO 7

Date: 10/20/10

Direction: North

Photographer: S. Dwight

Description: McDermitt Combined School
LOT2 study area.



PHOTO 8

Date: 10/19/10

Direction: North

Photographer: S. Dwight

Description: McDermitt Roadway (Cemetery
Road) study area.

ECOLOGY AND ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team
Cordero and McDermitt Mercury Mines Removal Assessment
Humboldt County, Nevada

E&E Project. No.: 002693.2094.01RA

TDD No: TO2-09-10-06-0002



PHOTO 9

Date: 10/19/10

Direction: North

Photographer: S. Dwight

Description: Cordero Mine calcine pile located immediately south of the open-pit mine.



PHOTO 10

Date: 10/19/10

Direction: South

Photographer: S. Dwight

Description: Cordero Mine calcine pile located immediately south of the open-pit mine.

Attachment C:
Tables

Table C1
Sample Summary, September 2010
Cordero and McDermitt Mercury Mines Removal Assessment

Sample Number	Sample Location	Sample Description	QA/QC Sample
<i>Area of Concern (AOC): North Road (Municipal Waste Transfer Access Road) Paiute Shoshone Indian Reservation</i>			
COR-NR-01	1	Surface soil	
COR-NR-01-6	1	Soil 6" below ground surface (bgs)	
COR-NR-01-18	1	Soil 18" bgs	
COR-NR-02	2	Surface soil	
COR-NR-02-6	2	Soil 6" bgs	
COR-NR-03	3	Surface soil	
COR-NR-103	3	Surface soil	Duplicate of COR-NR-03
COR-NR-03-6	3	Soil 6" bgs	
COR-NR-03-18	3	Soil 18" bgs	
COR-NR-04	4	Surface soil	Matrix spike/matrix spike duplicate (MS/MSD)
COR-NR-04-6	4	Soil 6" bgs	
COR-NR-05	5	Surface soil	
COR-NR-05-6	5	Soil 6" bgs	
COR-NR-05-18	5	Soil 18" bgs	
COR-NR-06	6	Surface soil	
COR-NR-06-6	6	Soil 6" bgs	
COR-NR-07	7	Surface soil	
COR-NR-BKG-01	Background 1	Surface soil	
COR-NR-BKG-01-6"	Background 1	Soil 6" bgs	
<i>AOC: South Road (Residential Driveway) Paiute Shoshone Indian Reservation</i>			
COR-SR-01	1	Surface soil	
COR-SR-101	1	Surface soil	Duplicate of COR-SR-01
COR-SR-01-6	1	Soil 6" bgs	
COR-SR-02	2	Surface soil	
COR-SR-03	3	Surface soil	
COR-SR-03-6	3	Soil 6" bgs	
COR-SR-04	4	Surface soil	MS/MSD
COR-SR-104	4	Surface soil	Duplicate of COR-SR-04
COR-SR-BKG-01	Background 1	Surface soil	
COR-SR-BKG-02	Background 2	Surface soil	
<i>AOC: Cordero Mine</i>			
COR-MINE-01	1	Surface soil	
COR-MINE-02	2	Surface soil	
TDD Number: TO2-09-10-06-0002		Project Number: 002693.2094.01R	

Table C2
Sample Summary, October 2010
Cordero and McDermitt Mercury Mines Removal Assessment

Sample Number	Sample Location	Sample Description	QA/QC Sample
<i>Area of Concern (AOC): McDermitt Combined School Lot 1 (northeast parking/access road and Track 1)</i>			
COR-LOT1-01	1	Surface soil	
COR-LOT1-02	2	Surface soil	
COR-LOT1-03	3	Surface soil	
COR-LOT1-03-6	3	Soil 6" bgs	
COR-LOT1-03-18	3	Soil 18" bgs	
COR-LOT1-04	4	Surface soil	
COR-LOT1-04D	2	Surface soil	Duplicate of COR-LOT1-04
COR-LOT1-05	5	Surface soil	
COR-LOT1-06	6	Surface soil	
COR-LOT1-06-6	6	Soil 6" bgs	
COR-LOT1-06-18	6	Soil 18" bgs	Matrix spike/matrix spike duplicate (MS/MSD)
COR-LOT1-07	7	Surface soil	
COR-LOT1-08	8	Surface soil	
COR-LOT1-09	9	Surface soil	
COR-LOT1-09-6	9	Soil 6" bgs	
COR-LOT1-09-18	9	Soil 18" bgs	
COR-LOT1-10	10	Surface soil	
COR-LOT1-11	11	Surface soil	MS/MSD
COR-LOT1-11D	11	Surface soil	Duplicate of COR-LOT1-11
COR-LOT1-11-6	11	Soil 6" bgs	MS/MSD
COR-LOT1-11-18	11	Soil 18" bgs	
COR-LOT1-12	12	Surface soil	
COR-LOT1-13	13	Surface soil	
COR-LOT1-13-6	13	Soil 6" bgs	
COR-LOT1-13-18	13	Soil 18" bgs	
COR-LOT1-14	14	Surface soil	
COR-LOT1-14-6	14	Soil 6" bgs	
COR-LOT1-14-18	14	Soil 18" bgs	
COR-LOT1-15	15	Surface soil	
COR-TRK1-01	Track 1	Surface soil	
<i>AOC: Lot 2 (Track 2 and playground)</i>			
COR-LOT2-01	1	Surface soil	
COR-LOT2-02	2	Surface soil	MS/MSD
COR-LOT2-02D	2	Surface soil	Duplicate of COR-LOT2-02
COR-LOT1-02-6	2	Soil 6" bgs	
COR-LOT1-02-6D	2	Soil 6" bgs	Duplicate of COR-LOT2-02-6
COR-LOT1-02-18	2	Soil 18" bgs	
COR-LOT2-03	3	Surface soil	

Table C2
Sample Summary, October 2010
Cordero and McDermitt Mercury Mines Removal Assessment

Sample Number	Sample Location	Sample Description	QA/QC Sample
COR-LOT2-03D	3	Surface soil	Duplicate of COR-LOT2-02
COR-LOT1-03-6	3	Soil 6" bgs	
COR-LOT1-03-18	3	Soil 18" bgs	
COR-LOT2-04	4	Surface soil	
COR-LOT2-04D	4	Surface soil	Duplicate of COR-LOT2-02
COR-LOT1-04-6	4	Soil 6" bgs	
COR-LOT1-04-18	4	Soil 18" bgs	MS/MSD
COR-LOT2-05	5	Surface soil	
COR-LOT2-06	6	Surface soil	
COR-TRK2-01	Track 2	Surface soil	
AOC: McDermitt roadways			
COR-CEM-01	Cemetery Road 1	Surface soil	
COR-CEM-02	Cemetery Road 2	Surface soil	
COR-JACA-01	Jaca Road	Surface soil	
COR-LAVA-01	Lava Road	Surface soil	
COR-ROAD1-01	Margarita Road	Surface soil	
AOC: Cordero Mine			
COR-WP1-01	1	Surface soil	
COR-WP1-02	1	Surface soil	
COR-WP1-03	1	Surface soil	
COR-WP1-04	1	Surface soil	
COR-WP1-05	1	Surface soil	
COR-WP2-01	2	Surface soil	
COR-WP3-01	3	Surface soil	
COR-WP4-01	4	Surface soil	
AOC: Drainage Routes			
COR-CRK-SED01	1	Sediment	
COR-CRK-SED02	2	Sediment	
COR-CRK-SED03	3	Sediment	
COR-CRK	1	Surface water	

TDD Number: TO2-09-10-06-0002

Project Number: 002693.2094.01R

Table C3. Summary of Analytical Results for CAM 17 Metals (Soil), September 2010
Cordero and McDermitt Mercury Mines Removal Assessment
Fort McDermitt Paiute Shoshone Indian Reservation and McDermitt, Humboldt County, Nevada

TDD: TO2-09-10-06-0002

Project No. 002693.2094.01RA

Analyte			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Residential USEPA Regional Screening Level			31	0.39	15,000	160	70	120,000	23	3,100	400	23	390	1,500	390	390	NA	390	23,000
Industrial USEPA Regional Screening Level			410	1.6	190,000	2,000	800	1,500,000	300	41,000	800	310	5,100	20,000	5,100	5,100	NA	5,200	310,000
Sample ID	Sample Location and Description	Sample Date	All Units Reported in mg/kg																
North Road Samples																			
COR-NR-01	Location 1 (Surface)	09/14/2010	2.5	16	170	0.68	<0.54 U	9.9	5.9	13	13	25 J	<5.4 U	9.7	<2.2 U	<1.1 U	<5.4 U	30	54
COR-NR-01-6"	Location 1 (6" bgs)	09/14/2010	<2.6 U	5.9 C1, J	160	1.6	0.36 C1, J	23	8.8	26	9.4	<0.19 U	<6.4 U	22	<2.6 U	<1.3 U	<6.4 U	38	91
COR-NR-01-18"	Location 1 (18" bgs)	09/14/2010	<2.7 U	11 C1, J	350	1.4	0.45 C1, J	23	7.4	27	5.6	<0.19 U	<6.7 U	22	<2.7 U	<1.3 U	<6.7 U	54	84
COR-NR-02	Location 2 (Surface)	09/14/2010	4.0	51	150	0.48	<0.52 U	2.1	2.1	7.6	13	80 J	11	<5.2 U	<2.1 U	<1.0 U	<5.2 U	32	53
COR-NR-02-6"	Location 2 (6" bgs)	09/14/2010	<2.1 U	6.3 C1, J	93	0.70	<0.53 U	4.4	4.9	8.3	5.3	1.1 J	<5.3 U	4.2 C1, J	<2.1 U	<1.1 U	<5.3 U	37	60
COR-NR-03	Location 3 (Surface)	09/14/2010	3.9	31	150	0.57	<0.52 U	6.9	4.0	9.5	33	97 J	5.4	6.1	<2.1 U	<1.0 U	<5.2 U	28	56
COR-NR-03-6"	Location 3 (6" bgs)	09/14/2010	2.0 C1, J	14 C1, J	120	0.68	<0.52 U	5.9	4.6	9.8	11	10 J	2.9 C1, J	5.4	<2.1 U	<1.0 U	<5.2 U	32	59
COR-NR-03-18"	Location 3 (18" bgs)	09/14/2010	1.2 C1, J	8.3 C1, J	180	0.87	<0.55 U	11	6.6	15	10	4 J	<5.5 U	10	<2.2 U	<1.1 U	<5.5 U	35	62
COR-NR-04	Location 4 (Surface)	09/14/2010	4.1 J, Q4	56 C1, J	180	0.51	<0.53 U	1.7	1.7 C1, J	4.4	17	97 J	9.0 J, Q4	<5.3 U	<2.1 U	<1.1 U	<5.3 U	24	56
COR-NR-04-6"	Location 4 (6" bgs)	09/14/2010	1.3 C1, J	18 C1, J	160	0.69	<0.53 U	4.2	5.8	8.5	8.4	12 J	<5.3 U	4.9 C1, J	<2.1 U	<1.1 U	<5.3 U	36	61
COR-NR-05	Location 5 (Surface)	09/14/2010	5.0	35	140	0.48	<0.52 U	4.7	3.4	7.2	11	110 J	6.1	3.5 C1, J	<2.1 U	<1.0 U	<5.2 U	27	54
COR-NR-05-6"	Location 5 (6" bgs)	09/14/2010	<2.1 U	6.7 C1, J	79	0.65	<0.52 U	3.6	4.8	7.6	4.8	2.4 J	<5.2 U	4.1 C1, J	<2.1 U	<1.0 U	<5.2 U	32	50
COR-NR-05-18"	Location 5 (18" bgs)	09/14/2010	<2.3 U	5.3 C1, J	300	1.1	0.35 C1, J	16	8.5	20	8.3	<0.17 U	<5.7 U	16	<2.3 U	<1.1 U	<5.7 U	36	65
COR-NR-06	Location 6 (Surface)	09/14/2010	11	73	160	0.45	0.27 C1, J	1.0 C1, J	1.6 C1, J	3.5 C1, J	17	76 J	14	<5.5 U	<2.2 U	<1.1 U	<5.5 U	27	55
COR-NR-06-6"	Location 6 (6" bgs)	09/14/2010	6.0	35	140	0.59	<0.54 U	2.9	3.5	6.4	22	17 J	6.1 C1, J	3.1 U	<2.1 U	<1.1 U	<5.4 U	33	66
COR-NR-07	Location 7 (Surface)	09/14/2010	2.4	16	210	0.74	0.43 C1, J	11	6.3	16	17	20 J	<5.3 U	11	<2.1 U	<1.1 U	<5.3 U	33	69
COR-NR-BKG-01	Background 1 (Surface)	09/14/2010	<2.1 U	5.2 C1, J	280	0.88	0.41 C1, J	15	8.0	21	12	0.13 J	<5.3 U	14	<2.1 U	<1.1 U	<5.3 U	36	70
COR-NR-BKG-01-6"	Background 1 (6" bgs)	09/14/2010	<2.1 U	5.2 C1, J	280	0.93	0.42 C1, J	15	8.1	21	9.1	<0.16 U	<5.3 U	15	<2.1 U	<1.1 U	<5.3 U	36	67
South Road Samples																			
COR-SR-01	Location 1 (Surface)	09/14/2010	11	73	140	0.51	<0.52 U	2.0	2.0 C1, J	4.5	17	49 J	12	<5.2 U	<2.1 U	<1.0 U	<5.2 U	31	63
COR-SR-01-6"	Location 1 (6" bgs)	09/14/2010	1.7 C1, J	12 C1, J	210	0.72	0.35 C1, J	8.6	6.9	13	10	6.8 J	<5.2 U	8.4	<2.1 U	<1.0 U	<5.2 U	37	72
COR-SR-02	Location 2 (Surface)	09/14/2010	12	78	160	0.51	<0.53 U	1.7	2	4.8	18	94 J	14	<5.3 U	<2.1 U	<1.1 U	<5.3 U	31	73
COR-SR-03	Location 3 (Surface)	09/14/2010	9.2	63	130	0.47	<0.52 U	1.2	1.7 C1, J	3.5 C1, J	14	64 J	12	<5.2 U	<2.1 U	<1.0 U	<5.2 U	23	44
COR-SR-03-6"	Location 3 (6" bgs)	09/14/2010	5.2	31	180	0.62	<0.53 U	6.5	5.7	10	12	20 J	4.9 C1, J	5.4	<2.1 U	<1.1 U	<5.3 U	37	72
COR-SR-04	Location 4 (Surface)	09/14/2010	19	93	130	0.45	<0.54 U	1.4	2.0 C1, J	4.3	18	61 J	13	<5.4 U	<2.2 U	<1.1 U	<5.4 U	30	62
COR-SR-BKG-01	Background 1 (Surface)	09/14/2010	<2.1 U	5.7 C1, J	200	0.69	0.37 C1, J	8.4	7.1	12	8.5	<0.16 U	<5.2 U	7.9	<2.1 U	<1.0 U	<5.2 U	36	57
COR-SR-BKG-02	Background 2 (Surface)	09/14/2010	<2.1 U	5.7 C1, J	210	0.74	0.34 C1, J	8.3	6.7	13	8.1	<0.16 U	<5.3 U	7.8	<2.1 U	<1.1 U	<5.3 U	35	59
Cordero Mine Samples																			
COR-MINE-01	Location 1 (Surface)	09/14/2010	4.4	13	210	0.89	<0.65 U	6.5	12	12	8.0	32 J	<6.5 U	7.1	<2.6 U	<1.3 U	<6.5 U	37	46
COR-MINE-02	Location 2 (Surface)	09/14/2010	5.9	14	200	0.78	<0.64 U	8.9	8.6	12	9.4	63 J	<6.4 U	8.8	<2.6 U	<1.3 U	<6.4 U	32	54

Laboratory Notes:

J - The associated numerical value is an estimated quantity.
C1 - The associated numerical value is below the quantitation limit
ND, U - Not detected

General Notes:

Laboratory soil analyses for Metals by USEPA Method 6010B/7471B
USEPA Regional Screening Levels (RSL), November 2010
mg/kg = milligrams per kilogram
bgs = below ground surface
6" = 6 inches
18" = 18 inches
Bold Result exceeds USEPA Residential RSL
Bold Result exceeds USEPA Residential and Industrial RSL

Table C4. Summary of Analytical Results for CAM 17 Metals (Soil and Sediment), October 2010
Cordero and McDermitt Mercury Mines Removal Assessment
McDermitt, Humboldt County, Nevada

Analyte			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Methyl Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Residential USEPA Regional Screening Level			31	0.39	15,000	160	70	120,000	23	3,100	400	23	7.8	390	1,500	390	390	NA	390	23,000
Industrial USEPA Regional Screening Level			410	1.6	190,000	2,000	800	1,500,000	300	41,000	800	310	100	5,100	20,000	5,100	5,100	NA	5,200	310,000
Sample ID	Sample Location and Description	Sample Date	All Units Reported in mg/kg																	
McDermitt Combined School Samples - Lot 1 (Back Parking Lot and Track 1)																				
COR-LOT1-01	Location 1 (Surface)	10/19/2010	3.2	24	220	0.82	<0.55 ND,U	8.3	4	11	9.6	45	-	5.7	5.7	<2.2 ND,U	<1.1 ND,U	<5.5 ND,U	35	78
COR-LOT1-02	Location 2 (Surface)	10/19/2010	7.7	36	270	0.95	<0.57 ND,U	12	3.9	14	12	71	-	7.8	9.2	<2.3	<1.1	<5.7	42	76
COR-LOT1-03	Location 3 (Surface)	10/19/2010	13	53	180	0.71	<5.4 ND,U	6.4	2.7	6.3	15	36	-	11	4.3	<2.2 C1,J	<1.1 ND,U	<5.4 ND,U	29	64
COR-LOT1-03-6"	Location 3 (6" bgs)	10/19/2010	<2.5 ND,U	9.9	260	0.95	<0.63 ND,U	18	4.4	23	3.8	0.66	-	<0.63 ND,U	11	<2.5 ND,U	<1.3 ND,U	<6.3 ND,U	65	50
COR-LOT1-03-18"	Location 3 (18" bgs)	10/19/2010	<2.4 ND,U	4.7	320	0.78	<0.59 ND,U	15	6.6	21	5.1	0.16	-	<0.59 ND,U	14	<2.4 ND,U	<1.2 ND,U	<5.9 ND,U	33	53
COR-LOT1-04	Location 4 (Surface)	10/19/2010	8.1	44	170	0.66	<0.50 ND,U	3.9	2.7	6.6	12	58	-	8.4	<5 ND,U	<2 ND,U	<1 ND,U	<5 ND,U	27	55
COR-LOT1-05	Location 5 (Surface)	10/19/2010	7.9	38	150	0.58	<0.54 ND,U	4.6	3.2	7.5	11	27	-	6	3.7	<2 C1,J	<1.1 ND,U	<5.4 ND,U	27	50
COR-LOT1-06	Location 6 (Surface)	10/19/2010	8	38	140	0.57	<0.51 ND,U	5.1	2.8	7	11	31	-	6.4	3.8	<2.1 C1,J	<1 ND,U	<5.1 ND,U	27	50
COR-LOT1-06-6"	Location 6 (6" bgs)	10/19/2010	<2.3 ND,U	4.8	170	0.7	0.42 C1,J	14	7.1	19	5.7	61	-	<5.8 ND,U	12	<2.3 ND,U	<1.2 ND,U	<5.8 ND,U	34	57
COR-LOT1-06-18"	Location 6 (18" bgs)	10/19/2010	<2.2 J,Q4,ND,U	3.9	200	0.91	<0.54 ND,U	16	7.8	19	6.7	0.32	-	<5.4 J,Q4,ND,U	14	<2.2 ND,U	<1.1 ND,U	<5.4 ND,U	34	58
COR-LOT1-07	Location 7 (Surface)	10/19/2010	18	60	150	0.52	<0.57 ND,U	1.1	2	9	14	39	-	12	<5.7 ND,U	<2.3 ND,U	<1.1 ND,U	<5.7 ND,U	23	60
COR-LOT1-08	Location 8 (Surface)	10/19/2010	14	61	200	0.73	<0.56 ND,U	2.9	2.7	7.7	15	46	-	12	<5.6 ND,U	<2.2 ND,U	<1.1 ND,U	<5.6 ND,U	29	61
COR-LOT1-09	Location 9 (Surface)	10/19/2010	6.7	45	170	0.74	<0.56 ND,U	1.4	2.1	6.4	14	59	-	8.5	<5.6 ND,U	<2.2 ND,U	<1.1 ND,U	<5.6 ND,U	23	64
COR-LOT1-09-6"	Location 9 (6" bgs)	10/19/2010	<2.2 ND,U	5.4	220	0.84	<0.55 ND,U	16	7.8	23	6.3	1.5	-	<5.5 ND,U	13	<2.2 ND,U	<1.1 ND,U	<5.5 ND,U	37	57
COR-LOT1-09-18"	Location 9 (18" bgs)	10/19/2010	<0.23 ND,U	3.9	130	0.77	<0.57 ND,U	16	7.4	18	7	0.19	-	<5.7 ND,U	11	<2.3 ND,U	<1.1 ND,U	<5.7 ND,U	31	52
COR-LOT1-10	Location 10 (Surface)	10/19/2010	4.2	32	170	0.69	<0.56 ND,U	3.1	2.6	7.7	11	74	-	7.7	<5.6 ND,U	<2.2 ND,U	<1.1 ND,U	<5.6 ND,U	26	65
COR-LOT1-11	Location 11 (Surface)	10/19/2010	4.3 J,Q4	34	190	0.72	<0.56 ND,U	4.1 J, Q4,Q6	2.6	8.4	11	68	-	6.7	3 C1,J	<2.2 ND,U	<1.1 ND,U	<5.6 ND,U	25	70
COR-LOT1-11-6"	Location 11 (6" bgs)	10/19/2010	1.4 C1,Q4,J	9.2	420	1.2	<0.63 ND,U	22	6.2	23	4.9	0.59	-	<6.3 ND,J,Q4,U	14	<2.5 ND,U	0.64 C1,J	<6.3 ND,U	58	64
COR-LOT1-11-18"	Location 11 (18" bgs)	10/19/2010	<2.2 ND,U	4.3	160	0.76	<0.54 ND,U	15	8	17	6.4	0.29	-	<5.4 ND,U	12	<2.2 ND,U	<1.1 ND,U	<5.4 ND,U	32	55
COR-LOT1-12	Location 12 (Surface)	10/19/2010	3.7	28	180	0.75	0.28 C1,J	4	3.8	7.7	11	45	-	5.8	3.2 C1,J	<2.2 ND,U	<1.1 ND,U	<5.6 ND,U	31	64
COR-LOT1-13	Location 13 (Surface)	10/19/2010	4.7	37	160	0.67	<0.54 ND,U	2.1	2.1	6.3	13	130	-	7.1	<5.4 ND,U	<2.2 ND,U	<1.1 ND,U	<5.4 ND,U	20	70

Table C4. Summary of Analytical Results for CAM 17 Metals (Soil and Sediment), October 2010
Cordero and McDermitt Mercury Mines Removal Assessment
McDermitt, Humboldt County, Nevada

TDD: TO2-09-10-06-0002

Project No. 002693.2094.01RA

Analyte			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Methyl Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Residential USEPA Regional Screening Level			31	0.39	15,000	160	70	120,000	23	3,100	400	23	7.8	390	1,500	390	390	NA	390	23,000
Industrial USEPA Regional Screening Level			410	1.6	190,000	2,000	800	1,500,000	300	41,000	800	310	100	5,100	20,000	5,100	5,100	NA	5,200	310,000
Sample ID	Sample Location and Description	Sample Date	All Units Reported in mg/kg																	
COR-LOT1-13-6"	Location 13 (6" bgs)	10/19/2010	<2.4	7.1	270	0.97	<0.61	19	7.4	19	5.7	0.30	-	<6.1	12	<2.4	<1.2	<6.1	47	59
			ND,U				ND,U							ND,U		ND,U	ND,U	ND,U		
COR-LOT1-13-18"	Location 13 (18" bgs)	10/19/2010	<2.3	4.6	200	0.71	0.29	14	7.1	17	6.7	<0.16	-	<5.7	11	<2.3	<1.1	<5.7	33	57
			ND,U				C1,J						ND,U		ND,U	ND,U	ND,U			
COR-LOT1-14	Location 14 (Surface)	10/19/2010	3	23	180	0.54	<0.54	6.4	4.9	8.1	9.5	27	-	3.9	5.7	<2.2	<1.1	<5.4	28	67
							ND,U							C1,J		ND,U	ND,U	ND,U		
COR-LOT1-14-6"	Location 14 (6" bgs)	10/19/2010	<2.5	5.8	370	0.91	<0.62	17	5.5	17	5.4	0.44	-	<6.2	11	<2.5	<1.2	<2.5	33	56
			ND,U				ND,U							ND,U		ND,U	ND,U	ND,U		
COR-LOT1-14-18"	Location 14 (18" bgs)	10/19/2010	<2.4	6.5	380	0.56	<0.59	11	13	13	9	0.27	-	<5.9	11	<2.4	<1.2	<5.9	32	34
			ND,U				ND,U							ND,U		ND,U	ND,U	ND,U		
COR-LOT1-15	Location 15 (Surface)	10/19/2010	6.9	40	180	0.58	<0.56	3.8	2.8	7	15	40	-	7.8	3.2	<2.2	<1.1	<5.6	26	68
							ND,U								C1,J	ND,U	ND,U	ND,U		
COR-TRK1-01	Track 1 (Surface)	10/19/2010	<0.21	2.3	280	0.21	<0.52	4.8	5.9	4.2	<0.31	0.29	-	<5.2	3.5	<2.1	<1	<5.2	52	56
			ND,U				ND,U					N			ND,U	C1,J				
McDermitt Combined School Samples - Lot 2 (Playground Area and Track 2)																				
COR-LOT2-01	Location 1 (Surface)	10/20/2010	14	24	190	0.8	<0.54	9	4.4	12	16	11	-	<0.54	7.5	<2.2	<1.1	<0.54	33	65
							ND,U							ND,U		ND,U	ND,U	ND,U		
COR-LOT2-02	Location 2 (Surface)	10/20/2010	7.3	23	180	0.65	<0.50	8	5.3	9.3	12	15	-	3.1	7	<2	<0.99	<5	31	57
			J,Q4				ND,U					J,Q5		C1,J		ND,U	ND,U	ND,U		
COR-LOT2-02-6"	Location 2 (6" bgs)	10/20/2010	17	33	190	0.96	<0.56	5	5.1	6.6	17	11	-	<5.6	4.3	<2.2	<1.1	<5.6	30	46
							ND,U							ND,U	C1,J	ND,U	ND,U	ND,U		
COR-LOT2-02-18"	Location 2 (18" bgs)	10/20/2010	<2.3	5.5	210	0.77	<0.57	15	8.3	16	6.3	0.2	-	<5.7	12	<2.3	<1.1	<5.7	36	55
			ND,U				ND,U							ND,U		ND,U	ND,U	ND,U		
COR-LOT2-03	Location 3 (Surface)	10/20/2010	4.3	22	170	0.61	<0.56	13	4.9	10	14	17	-	4.8	9.3	<2.2	<1.1	<5.6	28	75
							ND,U							C1,J		ND,U	ND,U	ND,U		
COR-LOT2-03-6"	Location 3 (6" bgs)	10/20/2010	10	24	120	0.72	<0.57	4.9	3.8	8.3	19	26	-	<5.7	3.5	<2.3	<1.1	<5.7	25	64
							ND,U							ND,U	C1,J	ND,U	ND,U	ND,U		
COR-LOT2-03-18"	Location 3 (18" bgs)	10/20/2010	<2.4	4.2	200	0.85	<0.61	16	7.3	17	7	<0.17	-	<6.1	13	<2.4	<1.2	<6.1	36	62
			ND,U				ND,U					ND,U		ND,U		ND,U	ND,U	ND,U		
COR-LOT2-04	Location 4 (Surface)	10/20/2010	9.6	20	150	0.78	0.32	8.2	5.2	11	18	21	-	<5.4	7.4	<2.2	<1.1	<5.4	29	62
							C1,J							ND,U						
COR-LOT2-04-6"	Location 4 (6" bgs)	10/20/2010	2.2	6.8	190	0.72	<0.57	13	5.9	14	9.2	1.9	-	<5.7	10	<2.3	<1.1	<5.7	32	57
			C1,J				ND,U							ND,U		ND,U	ND,U	ND,U		
COR-LOT2-04-18"	Location 4 (18" bgs)	10/20/2010	<2.3	3.6	160	0.68	<0.56	15	6.8	15	5.7	<0.16	-	<5.6	12	<2.3	<1.1	<5.6	33	55
			ND,U,J,Q4				ND,U			J,Q4		ND,U		ND,U,J,Q4		ND,U	ND,U	ND,U		
COR-LOT2-05	Location 5 (Surface)	10/20/2010	4.3	19	120	0.58	<0.52	24	5.7	14	9.8	3.4	-	<5.2	17	<2.1	<1	<5.2	31	53
							ND,U							ND,U		ND,U	ND,U	ND,U		
COR-LOT2-06	Location 6 (Surface)	10/20/2010	6	22	130	0.67	<0.47	23	6.6	16	12	9.9	-	<4.7	19	<0.19	<0.94	<4.7	35	54
							ND,U							ND,U		ND,U	ND,U	ND,U		
COR-TRK2-01	Track 2 (Surface)	10/20/2010	<2	8	180	0.59	<0.51	11	6.1	13	6.7	1.6	-	<5.1	9.5	<2	<1	<5.1	36	56
			ND,U				ND,U							ND,U		ND,U	ND,U	ND,U		
McDermitt City Road Samples																				
COR-CEM-01	Cemetery Road, Location 1 (Surface)	10/20/2010	5.6	58	210	0.7	<5.7	2.3	2.5	5.3	19	400	-	8.9	<5.7	<2.3	<1.1	<5.7	25	67
							ND,U								ND,U	ND,U	ND,U	ND,U		

Table C4. Summary of Analytical Results for CAM 17 Metals (Soil and Sediment), October 2010
Cordero and McDermitt Mercury Mines Removal Assessment
McDermitt, Humboldt County, Nevada

TDD: TO2-09-10-06-0002

Project No. 002693.2094.01RA

Analyte			Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Methyl Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Residential USEPA Regional Screening Level			31	0.39	15,000	160	70	120,000	23	3,100	400	23	7.8	390	1,500	390	390	NA	390	23,000
Industrial USEPA Regional Screening Level			410	1.6	190,000	2,000	800	1,500,000	300	41,000	800	310	100	5,100	20,000	5,100	5,100	NA	5,200	310,000
Sample ID	Sample Location and Description	Sample Date	All Units Reported in mg/kg																	
COR-CEM-02	Cemetery Road, Location 2 (Surface)	10/20/2010	4.7	53	190	0.56	<0.54	2.2	2.1	4.7	16	75	-	8.5	<5.4	<2.1	<1.1	<5.4	21	71
							ND,U								ND,U	ND,U	ND,U	ND,U		
COR-LAVA-01	Lava Road (Surface)	10/20/2010	5	37	170	0.62	<0.56	4.6	4.2	6.9	22	56	-	7.3	<5.6	<2.2	<1.1	<5.6	25	65
							ND,U								ND,U	ND,U	ND,U	ND,U		
COR-JACA-01	Jaca Road (Surface)	10/20/2010	5.8	32	160	0.54	0.53	7.8	4.3	16	71	690	-	6.1	6.7	<2.1	<1.1	<5.3	27	80
																ND,U	ND,U	ND,U		
COR-ROAD1-01	Unknown Access Road (Surface)	10/20/2010	3.5	30	190	0.52	<0.51	4.2	2.6	6.4	12	25	-	5.3	2.8	1.8	<1	<5.1	26	67
							ND,U									C1,J	C1,J	ND,U	ND,U	
Cordero Mine Waste Pile Samples																				
COR-WP1-01	Main Waste Pile, Location 1 (Surface)	10/19/2010	22	66	220	0.69	<0.57	3.1	3.2	8.1	20	76	-	9	<0.57	1.2	<1.1	<5.7	26	96
							ND,U									ND,U	C1,J	ND,U	ND,U	
COR-WP1-02	Main Waste Pile, Location 1 (Surface)	10/19/2010	6.1	52	190	0.69	<0.58	2.1	1.7	6.1	20	63	-	8.3	<5.8	<2.3	<1.2	<5.8	21	83
							ND,U		C1,J							ND,U	ND,U	ND,U	ND,U	
COR-WP1-03	Main Waste Pile, Location 1 (Surface)	10/19/2010	9.3	55	200	0.93	<0.57	1.6	2	5.9	14	19	-	7.4	<5.7	<2.3	<1.1	<5.7	19	67
							ND,U		C1,J											
COR-WP1-04	Main Waste Pile, Location 1 (Surface)	10/19/2010	4	31	210	0.62	<0.58	2.5	4.5	7.1	14	34	-	7.4	<5.8	<2.3	<1.2	<5.8	17	110
							ND,U													
COR-WP1-05	Main Waste Pile, Location 1 (Surface)	10/19/2010	1.7	23	110	0.62	0.57	1.4	1.8	12	8.1	28	-	6.9	<5.7	2.8	<1.1	<5.7	9.8	50
			C1,J				ND,U		C1,J							ND,U		ND,U	ND,U	
COR-WP2-01	Waste Pile 2 (Surface)	10/19/2010	5.4	14	180	0.73	<0.56	2.5	11	9.5	7.6	79	-	3.4	2.9	<2.2	<1.1	<5.6	3.9	33
							ND,U								C1,J	C1,J	ND,U	ND,U	ND,U	
COR-WP3-01	Waste Pile 3 (Surface)	10/19/2010	28	73	230	0.58	<0.57	3.9	3	6.3	49	1,100	-	19	<5.7	3.4	0.67	<5.7	34	110
							ND,U									ND,U		C1,J	ND,U	
COR-WP4-01	Waste Pile 4 (Surface)	10/19/2010	4.8	200	120	9	<1.3	6.9	5.7	37	22	750	-	15	<13	3.4	<2.7	<13	26	760
			C1,J				ND,U									ND,U	C1,J	ND,U	ND,U	
Surface Water Drainage Routes Down Gradient of Cordero Mine																				
COR-CRK-SED01	Creek Sediment, Location 1	10/20/2010	<3.9	7.5	190	0.96	<0.99	22	9.7	31	5.7	0.34	0.78	<9.9	19	<3.9	<2	<9.9	67	61
			ND,U				ND,U				C1,J				ND,U		ND,U	ND,U	ND,U	
COR-CRK-SED02	Creek Sediment, Location 2	10/20/2010	<2.1	11	170	0.52	<0.53	11	6.4	15	1.9	0.4	<0.4	<5.3	9.4	<2.1	<1.1	<5.3	50	42
			ND,U				ND,U				C1,J		ND	ND,U		ND,U	ND,U	ND,U		
COR-CRK-SED03	Creek Sediment, Location 3	10/20/2010	<2	25	230	0.57	<0.5	9.1	7.9	18	2.2	0.45	<0.4	<5	9.5	<2	<0.99	<5	62	48
			ND,U				ND,U				C1,J		ND	ND,U		ND,U	ND,U	ND,U		

Laboratory Notes:

J - The associated numerical value is an estimated quantity.

C1 - The associated numerical value is below the quantitation limit

ND, U - Not detected

General Notes:

Laboratory soil analyses for Metals by USEPA Method 6010B/7471B

Laboratory soil analyses for Methyl Mercury (Hg) by USEPA Method 1630

USEPA Regional Screening Levels (RSL), November 2010

mg/kg = milligrams per kilogram

bgs = below ground surface

6" = 6 inches

18" = 18 inches

Bold Result exceeds USEPA Residential RSL

Bold Result exceeds USEPA Residential and Industrial RSL

**Table C5. Summary of Analytical Results for CAM 17 Metals (Water)
Cordero and McDermitt Mercury Mines Removal Assessment
McDermitt, Humboldt County, Nevada**

TDD No.: TO2-09-10-06-0002

PAN No.: 002693.2094.01RA

ANALYTE	Sample ID:		COR-CRK	COR-NR-03-ERB		COR-RB-101910		COR-RB-102010		
	Sample Location Description:		Church Creek Surface Water Sample	Rinsate Blank Sample 9/14/10		Rinsate Blank Sample 10/19/10		Rinsate Blank Sample 10/20/10		
	Collection Date:		10/20/2010	09/14/2010		10/19/2010		10/20/2010		
USEPA Method 200.7 Metals (units in ug/L)										
ANTIMONY	6	-	<20	ND,U	<20	ND,U	<20	ND,U	<20	ND,U
ARSENIC	0.14	150	12	C1,J	<20	ND,U	<20	ND,U	<20	ND,U
BARIUM	1,000	-	9.5	C1,J	<10	ND,U	<10	ND,U	<10	ND,U
BERYLLIUM	2.7	-	<1	ND,U	<1	ND,U	<1	ND,U	<1	ND,U
CADMIUM	0.25	0.25	<5	ND,U	<5	ND,U	<5	ND,U	<5	ND,U
CHROMIUM	50	-	<10	ND,U	<10	ND,U	<10	ND,U	<10	ND,U
COBALT	3	-	<10	ND,U	<10	ND,U	<10	ND,U	<10	ND,U
COPPER	9	-	<10	ND,U	<10	ND,U	<10	ND,U	<10	ND,U
LEAD	2.5	2.5	<20	ND,U	<20	ND,U	<20	ND,U	<20	ND,U
MOLYBDENUM	-	-	<20	ND,U	<20	ND,U	<20	ND,U	<20	ND,U
NICKEL	52	52	<10	ND,U	<10	ND,U	<10	ND,U	<10	ND,U
SELENIUM	5	5	<20	ND,U	<20	ND,U	<20	ND,U	<20	ND,U
SILVER	0.34	-	<10	ND,U	<10	ND,U	<10	ND,U	<10	ND,U
THALLIUM	2	-	<20	ND,U	<20	ND,U	<20	ND,U	<20	ND,U
VANADIUM	15	-	5.6	C1,J	<10	ND,U	<10	ND,U	<10	ND,U
ZINC	120	120	<10	ND,U	<10	ND,U	<10	ND,U	<10	ND,U
USEPA Method 245.1 - Mercury (units in ug/L)										
MERCURY	-	0.77	<0.030	ND,U	NR		<0.030	ND,U	0.022	C1,J
Environmental Screening Levels (ESLs), Final Surface Water Screening Levels for Fresh Water Habitats, May 2008										
USEPA National Recommended Fresh Water Quality Criteria for Protection of Aquatic Life and Human Health in Surface Water, Criterion Continuous Concentration (Chronic), 2009										

Laboratory Notes:

- J - The reported result for this analyte should be considered an estimated value.
- C1 - The reported concentration for this analyte is below the quantitation limit.
- ND,U - Analyte not detected
- NR - Analyte not reported

General Notes:

- ESLs - San Francisco Bay Regional Water Quality Board, Environmental Screening Levels, May 2008, ESLs for Fresh Water Habitats is the lowest of published ESLs for ceiling values (taste & odor), drinking water goals, aquatic habitat goals, and bioaccumulation and human consumption goals.
- ug/L - micrograms per liter
- BOLD** - Exceeds the ESL, Final Surface Water Screening Levels for Fresh Water Habitats, May 2008
- BOLD** - Exceeds the USEPA National Recommended Fresh Water Quality Criteria for Protection of Aquatic Life and Human Health in Surface Water, 2009

Attachment D:
Analytical Data Review Summaries


ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Laboratory: EPA Region 9 Laboratory	Lab Project Number: 1010070
Sampling Dates: 10/19/10 & 10/20/10	Sample Matrix: Water
Analytical Method: CAM Metals (EPA 6010B/7471A)	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song 
Technical QA Reviewer: Howard Edwards
Project Manager: Neil Ellis

Date: 3/10/11
Date: 3/28/11
Date: _____

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	COR-RB-101910	1010070-01
2	COR-RB-102010	1010070-02
3	COR-CRK	1010070-03
4		
5		
6		
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12		
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16		
17		
18		
19		
20		

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

- X Included: no problems
- * Included: problems noted in review
- O Not Included and/or Not Available
- NR Not Required
- RS Provided As Re-submission

Case Narrative:

- X Case Narrative present

Quality Control Summary Package:

- X Data Summary sheets
- X Initial and Continuing Calibration results
- NR CRDL Standard results
- X Preparation Blank and Calibration Blank results
- X ICP Interference Check Sample results
- X Matrix Spike recoveries
- X Matrix Duplicate results
- X Laboratory Control Sample recoveries
- NR Method of Standard Additions results
- NR ICP Serial Dilution results
- NR Instrument Detection Limits
- NR ICP Interelement Correction Factors
- NR ICP Linear Ranges
- X Preparation Log
- X Analysis Run Log

Raw QC Data Package Section

- X Chain-of-Custody Records
- X Instrument Printouts
- X Sample Preparation Notebook Pages
- X Logbook and Worksheet Pages
- X Percent Solids Determination

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Initial and Continuing Calibrations	YES
3	Laboratory Control Sample	YES
4	Matrix Spike	YES
5	Blanks and Background Samples	YES
6	Duplicate Analyses	NA
7	Interference Check Samples and Serial Dilution Analysis	YES
8	Post Digestion Spike and Standard Addition Analysis	N/A
9	Analyte Quantitation	YES
10	Overall Assessment of Data	YES
11	Usability of Data	YES

Comments: NA: Not Analyzed N/A: Not Applicable.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

1. HOLDING TIMES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer's judgement.

All Sample Matrices:

Mercury: 28 days (from collection) for analysis.

Hexavalent chromium: 24 hours (from collection) for analysis.

All other metals: 180 days (from collection) for analysis.

Comments: All holding times were met.

2. INITIAL AND CONTINUING CALIBRATION VERIFICATION

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Unless flagged below, an initial calibration verification (ICV) and a calibration blank were analyzed at the beginning of the run, and a continuing calibration verification (CCV) and a calibration blank were analyzed after every ten samples, and at the end of the run. ICV and CCV recoveries were within a range of 80-120% for mercury and tin, and 90-110% for all other metals. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 65% or above 135% (for mercury and tin) or below 75% or above 125% (for all other metals), all associated data are rejected (R).

Comments: All recoveries of metals in initial and continuing calibration verifications were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

3. LABORATORY CONTROL SAMPLE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Percent recoveries of LCS were within the control limits.

4. MATRIX SPIKE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Matrix Spikes Analyzed

Matrix spike recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. Unless flagged below, one laboratory control sample was analyzed at a rate of one per batch or one per 20 samples. Recoveries were within a range of 75-125%.

For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Sample COR-RB-101910 was used for matrix spike and matrix spike duplicate analysis. All recoveries were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

5. BLANKS AND BACKGROUND SAMPLES

☒ Acceptable
☐ Detection Limits Adjusted

The following blanks were analyzed:

☒ Method (preparation) Blanks
☐ Field Blanks
☐ Calibration Blanks
☒ Rinsate Blanks
☐ Background Samples

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: No contamination was found in the method blank or the rinsate blank at reporting limit level.

6. DUPLICATE ANALYSES

☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ No Duplicates Analyzed

Type of duplicates analyzed:

☐ Field Duplicates
☐ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the detected results as estimated (J) for any analyte whose RPD in a laboratory duplicate exceeds 20% for water samples or 35% for soil samples.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

7. INTERFERENCE CHECK SAMPLES AND SERIAL DILUTION ANALYSIS

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ Not required

Interference Check Samples (ICS) - Unless flagged below, an ICS was analyzed at the beginning and end of each run and at least twice every eight hours. Recoveries were within a range of 80-120%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J) if the concentrations of Al, Ca, Fe, or Mg are higher in the sample than in the ICS.

Serial Dilution Analysis - Unless flagged below, a serial dilution analysis was performed at a rate of one per 20 samples on a sample having analyte concentrations greater than 50 times the IDL. Percent differences were within a range of 0-10%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments: ICS recoveries were within the control limit.
Serial Dilution Analysis: Not required.

8. POST DIGESTION SPIKE AND STANDARD ADDITIONS

- ☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Post-digestion spikes - If a furnace AA result was flagged by the laboratory with an E to indicate interference, and the associated post-digestion spike recovery was less than 10%, the associated results are rejected (R).

Method of Standard Additions - If the method of standard additions was required and the correlation coefficient was less than 0.995, the associated results were qualified as estimated (J).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

9. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Water samples:

$$\text{ug/L} = \frac{(\text{Instrument printout concentration, mg/L})(1000 \text{ ug/mg})(\text{final volume of extract, mL})}{(\text{Initial volume of extract, mL})}$$

Soil samples:

$$\text{mg/kg} = \frac{(\text{Instrument printout concentration, mg/L})(\text{final volume of extract, mL})(0.001 \text{ L/mL})}{(\text{weight of sample extracted, g})(0.001 \text{ kg/g})(\text{fraction solids})}$$

Comments: Analyte quantitation is acceptable.

Sample COR-CRK

As: $(0.01165 \text{ mg/L}) (50\text{mL}/50\text{mL}) = 11.65 \text{ ug/L}$.

Lab reported 12 ug/L.

Sample COR-RB-102010

Hg: $(0.0219 \text{ ug/L}) (20\text{mL}/20\text{mL}) = 0.0219 \text{ ug/L}$.

Lab reported 0.022 ug/L.

10. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

- ☒ Acceptable
☐ Acceptable with Qualification
☐ Rejected

Accepted data meet the minimum requirements for the following EPA data category:

- ☐ ERS Screening
☐ Non-definitive with 10 % Conformation by Definitive Methodology
☐ Definitive, Comprehensive Statistical Error Determination was performed.
☒ Definitive, Comprehensive Statistical Error Determination was not performed.

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

11. USABILITY OF DATA

A. These data are considered usable for the data use objectives stated in the EPA EMERGENCY RESPONSE SECTION AND SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM QUALITY ASSURANCE SAMPLING PLAN FOR SOIL MATRIX SAMPLING, CORDERO MERCURY MINE SITE, FORT MCDERMITT, NEVADA, OCTOBER 13, 2010 (QASP).

The following data use objective was indicated in the QASP:

TO BE COMPARED WITH A BACKGROUND OR REFERENCE SAMPLES(S).

TO BE COMPARED WITH SITE-SPECIFIC ACTION LEVELS OR RISK-BASED ACTION LEVELS (E.G., EPA PRGS) TO ASSIST IN DETERMINATION IF HEALTH THREATS EXIST.

THE DATA ARE USABLE FOR THE ABOVE OBJECTIVES.

B. These data meet quality objectives stated in the QASP.

AS INDICATED IN SECTION 2.4 OF THE QASP, THE INVESTIGATION WILL GENERATE DEFINITIVE DATA AND TABLE E OF THE QASP OUTLINES THE DATA QUALITY INDICATOR GOALS APPLICABLE TO THE DEFINITIVE DATA QUALITY LEVEL. THE DATA IN THIS PACKAGE MEET THESE REQUIREMENTS.

12. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data qualifiers indicated, and a copy of the chain of custody for the samples.



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Emergency Response Section

SDG: 10294F

Project Number: R11S15

75 Hawthorne Street

Reported: 11/23/10 14:54

Project: Cordero Mercury Mine FY11 Sampling

San Francisco CA, 94105

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010070-01							Water - Sampled: 10/19/10 16:05	
Sample ID: COR-RB-101910							Metals by EPA 200 Series Methods	
Mercury		ND	U	0.030	ug/L	BOJ0141	11/01/10 11/02/10	245.1/SOP515
Antimony		ND	U	20	"	BOJ0136	10/27/10 11/03/10	200.7/SOP505
Arsenic		ND	U	20	"	"	"	200.7/SOP505
Barium		ND	U	10	"	"	"	200.7/SOP505
Beryllium		ND	U	1	"	"	11/02/10	200.7/SOP505
Cadmium		ND	U	5	"	"	"	200.7/SOP505
Chromium		ND	U	10	"	"	"	200.7/SOP505
Cobalt		ND	U	10	"	"	"	200.7/SOP505
Copper		ND	U	10	"	"	"	200.7/SOP505
Lead		ND	U	20	"	"	"	200.7/SOP505
Molybdenum		ND	U	20	"	"	"	200.7/SOP505
Nickel		ND	U	10	"	"	11/03/10	200.7/SOP505
Selenium		ND	U	20	"	"	11/02/10	200.7/SOP505
Silver		ND	U	10	"	"	"	200.7/SOP505
Thallium		ND	U	20	"	"	"	200.7/SOP505
Vanadium		ND	U	10	"	"	"	200.7/SOP505
Zinc		ND	U	10	"	"	"	200.7/SOP505
Lab ID: 1010070-02							Water - Sampled: 10/20/10 10:05	
Sample ID: COR-RB-102010							Metals by EPA 200 Series Methods	
Mercury		0.022	Cl, J	0.030	ug/L	BOJ0141	11/01/10 11/02/10	245.1/SOP515
Antimony		ND	U	20	"	BOJ0136	10/27/10 11/03/10	200.7/SOP505
Arsenic		ND	U	20	"	"	"	200.7/SOP505
Barium		ND	U	10	"	"	"	200.7/SOP505
Beryllium		ND	U	1	"	"	11/02/10	200.7/SOP505
Cadmium		ND	U	5	"	"	"	200.7/SOP505
Chromium		ND	U	10	"	"	"	200.7/SOP505
Cobalt		ND	U	10	"	"	"	200.7/SOP505
Copper		ND	U	10	"	"	"	200.7/SOP505
Lead		ND	U	20	"	"	"	200.7/SOP505
Molybdenum		ND	U	20	"	"	"	200.7/SOP505
Nickel		ND	U	10	"	"	11/03/10	200.7/SOP505
Selenium		ND	U	20	"	"	11/02/10	200.7/SOP505
Silver		ND	U	10	"	"	"	200.7/SOP505
Thallium		ND	U	20	"	"	"	200.7/SOP505
Vanadium		ND	U	10	"	"	"	200.7/SOP505
Zinc		ND	U	10	"	"	"	200.7/SOP505

Lab ID: 1010070-03

1010070 FINAL 11 23 10 1454

Water - Sampled: 10/20/10 11:48

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m. 3/10/11



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294F
Project Number: R11S15	75 Hawthorne Street	Reported: 11/23/10 14:54
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Sample ID: COR-CRK								
Mercury		ND	U	0.030	ug/L	BOJ0141	11/01/10	11/02/10 245.1/SOP515
Antimony		ND	U	20	"	BOJ0136	10/27/10	11/03/10 200.7/SOP505
Arsenic		12	Cl, J	20	"	"	"	200.7/SOP505
Barium		9.5	Cl, J	10	"	"	"	200.7/SOP505
Beryllium		ND	U	1	"	"	"	11/02/10 200.7/SOP505
Cadmium		ND	U	5	"	"	"	200.7/SOP505
Chromium		ND	U	10	"	"	"	200.7/SOP505
Cobalt		ND	U	10	"	"	"	200.7/SOP505
Copper		ND	U	10	"	"	"	200.7/SOP505
Lead		ND	U	20	"	"	"	200.7/SOP505
Molybdenum		ND	U	20	"	"	"	200.7/SOP505
Nickel		ND	U	10	"	"	"	11/03/10 200.7/SOP505
Selenium		ND	U	20	"	"	"	11/02/10 200.7/SOP505
Silver		ND	U	10	"	"	"	200.7/SOP505
Thallium		ND	U	20	"	"	"	200.7/SOP505
Vanadium		5.6	Cl, J	10	"	"	"	200.7/SOP505
Zinc		ND	U	10	"	"	"	200.7/SOP505

ms 3/10/11



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294F
Reported: 11/23/10 14:54

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	--------------------------	-----------------------	-------	----------------	------------------	------	----------------	-----	--------------

Batch B0J0136 - 200 Series Digest - Metals by 200.7

Prepared: 10/27/10 Analyzed: 11/03/10
Metals by EPA 200 Series Methods - Quality Control

Blank (B0J0136-BLK1)

Antimony	ND	U	20	ug/L
Arsenic	ND	U	20	"
Barium	ND	U	10	"
Beryllium	ND	U	1	"
Cadmium	ND	U	5	"
Chromium	ND	U	10	"
Cobalt	ND	U	10	"
Copper	ND	U	10	"
Lead	ND	U	20	"
Molybdenum	ND	U	20	"
Nickel	ND	U	10	"
Selenium	ND	U	20	"
Silver	ND	U	10	"
Thallium	ND	U	20	"
Vanadium	ND	U	10	"
Zinc	ND	U	10	"

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3/10/11

LCS (B0J0136-BS1)

Aluminum	1,990	100	ug/L	2000	99	85-115
Antimony	801	20	"	800	100	85-115
Arsenic	817	20	"	800	102	85-115
Barium	193	10	"	200	96	85-115
Beryllium	197	1	"	200	98	85-115
Boron	287	100	"	300	96	85-115
Cadmium	197	5	"	200	99	85-115
Calcium	977	100	"	1000	98	85-115
Chromium	382	10	"	400	96	85-115
Cobalt	193	10	"	200	97	85-115
Copper	292	10	"	300	97	85-115
Iron	3,030	100	"	3000	101	85-115
Lead	975	20	"	1000	97	85-115
Magnesium	1,970	500	"	2000	98	85-115
Manganese	185	5	"	200	92	85-115
Molybdenum	369	20	"	400	92	85-115
Nickel	514	10	"	500	103	85-115
Potassium	9,870	2,000	"	10000	99	85-115
Selenium	2,040	20	"	2000	102	85-115
Silver	71.5	10	"	75.0	95	85-115
Sodium	3,200	500	"	3000	107	85-115
Thallium	1,970	20	"	2000	98	85-115
Vanadium	297	10	"	300	99	85-115
Zinc	199	10	"	200	100	85-115



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294F
Reported: 11/23/10 14:54

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B0J0136 - 200 Series Digest - Metals by 200.7

Prepared: 10/27/10 Analyzed: 11/03/10
Metals by EPA 200 Series Methods - Quality Control

Matrix Spike (B0J0136-MS2)

Source: 1010070-02

Antimony	816		20	ug/L	800	ND	102	70-130		20
Arsenic	829		20	"	800	ND	104	70-130		20
Barium	196		10	"	200	ND	98	70-130		20
Beryllium	207		1	"	200	ND	104	70-130		20
Cadmium	201		5	"	200	ND	100	70-130		20
Chromium	409		10	"	400	ND	102	70-130		20
Cobalt	206		10	"	200	ND	103	70-130		20
Copper	299		10	"	300	ND	100	70-130		20
Lead	992		20	"	1000	ND	99	70-130		20
Molybdenum	397		20	"	400	ND	99	70-130		20
Nickel	526		10	"	500	ND	105	70-130		20
Selenium	2,050		20	"	2000	ND	103	70-130		20
Silver	72.4		10	"	75.0	ND	97	70-130		20
Thallium	2,000		20	"	2000	ND	100	70-130		20
Vanadium	309		10	"	300	ND	103	70-130		20
Zinc	212		10	"	200	ND	106	70-130		20

Matrix Spike Dup (B0J0136-MSD2)

Source: 1010070-02

Antimony	818		20	ug/L	800	ND	102	70-130	0.2	20
Arsenic	837		20	"	800	ND	105	70-130	0.9	20
Barium	201		10	"	200	ND	100	70-130	2	20
Beryllium	202		1	"	200	ND	101	70-130	2	20
Cadmium	200		5	"	200	ND	100	70-130	0.5	20
Chromium	400		10	"	400	ND	100	70-130	2	20
Cobalt	201		10	"	200	ND	101	70-130	3	20
Copper	299		10	"	300	ND	100	70-130	0.02	20
Lead	987		20	"	1000	ND	99	70-130	0.6	20
Molybdenum	385		20	"	400	ND	96	70-130	3	20
Nickel	539		10	"	500	ND	108	70-130	3	20
Selenium	2,050		20	"	2000	ND	102	70-130	0.3	20
Silver	72		10	"	75.0	ND	96	70-130	0.5	20
Thallium	2,010		20	"	2000	ND	101	70-130	0.6	20
Vanadium	307		10	"	300	ND	102	70-130	0.5	20
Zinc	207		10	"	200	ND	103	70-130	.3	20

Batch B0J0141 - 245.1 Hg Prep. - Mercury

Prepared: 11/01/10 Analyzed: 11/02/10
Metals by EPA 200 Series Methods - Quality Control

Blank (B0J0141-BLK1)

Mercury ND U 0.03 ug/L

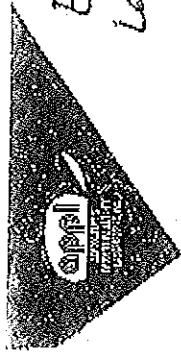
LCS (B0J0141-BS1)

Mercury 0.194 0.03 ug/L 0.200 97 85-115

Matrix Spike (B0J0141-MS2)

Source: 1010070-01

Mercury 0.206 0.03 ug/L 0.200 ND 103 70-130



EPA Region 9
Lab
APPL, Inc.
4208 W. Swift
Fresno, CA 93722

CHAIN OF CUSTODY RECORD
Page 4 of 6
C.O.C. No. 29876

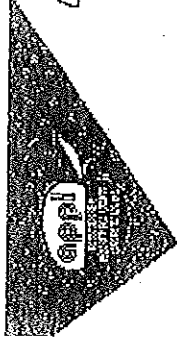
Phone: (559) 275 2175
Fax: (559) 275-4422

Report to: PLEASE PRINT
Company Name: EcoLogix Environment Phone: 415/264-7651
Address: _____
Attn: Neil Ellis dellis@ene.com Fax: _____

Invoice to: PLEASE PRINT
Company Name: _____ Phone: _____
Address: _____ Fax: _____
Attn: _____

Project Name/Number	Sampler (Print)	Sampler (Signature)	Location	Date Collected	Time Collected	Matrix	Number of Containers	Analysis Requested/Method Number	Date Shipped:
Codomo Mercury Mine Site									
Purchase Order Number									
Sample Identification									
COR-WP1-01				10/19/10	1400	Soil	1		
COR-WP1-02					1415				
COR-WP1-03					1420				
COR-WP1-04					1405				
COR-WP1-05					1425				
COR-WP2-01					1519				
COR-WP3-01					1525				
COR-WP4-01					1535				
COR-RB-102010					1605 (Water)				
Shuttle Temperature:									
Turnaround Requested: MUST CHECK ONE									
<input type="checkbox"/> Standard (2-3 week)									
<input type="checkbox"/> One week									
<input type="checkbox"/> 24-48 hour									
Relinquished by sampler:									
Relinquished by:									
Sample Disposal:									
<input type="checkbox"/> Return to client									
<input type="checkbox"/> Disposal by Lab (see day number)									
Relinquished by:									
Relinquished by:									
Relinquished by:									

White: Return to client with report
Yellow: Laboratory Copy
Pink: Sampler



EPA Region 9
Lab

APPL, Inc.
4203 W. Swift
Fresno, CA 93722

Phone: (559) 275 2175
Fax: (559) 275-4422

CHAIN OF CUSTODY REQUIRED
Page 6 of 6
C.O.C. No. 29879

PLEASE PRINT

Report to:

Company Name: Ecology + Environment

Address:

Attn: Neil Ellis dellis@ene.com

PLEASE PRINT

Invoice to:

Company Name:

Address:

Attn:

Phone: 415-264-7651

Fax:

Project Name/Number

Cadotte Mercury Mine Site

Purchase Order Number

Sampler (Print)

Neil Ellis (START)

Sampler (Signature)

[Signature]

Sample Identification

COR-LAVA-01

COR-JACA-01

COR-ROADI-01

COR-CRKSED1

COR-CRKSED2

COR-CRKSED3

COR-CRK

COR-RB3-102010

Location

Date Collected

10/20/10

Matrix

Collected

Time

Number of Containers

Soil

1

1113

1120

1150

1235

1240

1148

Water

1005

Shuttle Temperature:

Turnaround Requested: MUST CHECK ONE

☐ Standard (2-3 week) ☐ One week ☐ 24-48 hour

Relinquished by sampler:

Date: 10/20/10 Time: 11:30

Relinquished by:

Date: 10/20/10 Time: 11:30

White: Return to client with report

Yellow: Laboratory Copy

Pink: Sampler

Analysis Requested/Method Number

Date Shipped:

Carrier:

Waybill No.:

Comments:

Sample Disposal:

☐ Return to client ☐ Disposal by Lab (per request)

Time

Received by:

Date

Time

Received at Lab:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

Laboratory: Columbia Analytical Services, Inc	Lab Project Number: K1011863
Sampling Dates: 10/20/10	Sample Matrix: Soil
Analytical Method: Methylmercury by EPA 1630	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song

Technical QA Reviewer: Howard Edwards

Project Manager: Neil Ellis

Date:

3/10/11

Date:

3/28/11

Date:

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	COR-CRK-SED01	K1011863-001
2	COR-CRK-SED02	K1011863-002
3	COR-CRK-SED03	K1011863-003
4		
5		
6		
7		
8		
9		

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

- X Included: no problems
- * Included: problems noted in review
- O Not Included and/or Not Available
- NR Not Required
- RS Provided As Re-submission

Case Narrative:

- X Case Narrative present

Quality Control Summary Package:

- X Data Summary sheets
- X Initial and Continuing Calibration results
- NR CRDL Standard results
- X Preparation Blank and Calibration Blank results
- NR ICP Interference Check Sample results
- X Matrix Spike recoveries
- X Matrix Duplicate results
- X Laboratory Control Sample recoveries
- NR Method of Standard Additions results
- NR ICP Serial Dilution results
- NR Instrument Detection Limits
- NR ICP Interelement Correction Factors
- NR ICP Linear Ranges
- X Preparation Log
- X Analysis Run Log

Raw QC Data Package Section

- X Chain-of-Custody Records
- X Instrument Printouts
- X Sample Preparation Notebook Pages
- X Logbook and Worksheet Pages
- X Percent Solids Determination

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Initial and Continuing Calibrations	YES
3	Laboratory Control Sample	YES
4	Matrix Spike	YES
5	Blanks and Background Samples	YES
6	Duplicate Analyses	YES
7	Interference Check Samples and Serial Dilution Analysis	N/A
8	Post Digestion Spike and Standard Addition Analysis	N/A
9	Analyte Quantitation	YES
10	Overall Assessment of Data	YES
11	Usability of Data	YES

Comments: N/A: Not Applicable.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

1. HOLDING TIMES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer's judgement.

All Sample Matrices:

Mercury: 28 days (from collection) for analysis.

Hexavalent chromium: 24 hours (from collection) for analysis.

All other metals: 180 days (from collection) for analysis.

Comments: Analysis met the required holding time.

2. INITIAL AND CONTINUING CALIBRATION VERIFICATION

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Unless flagged below, an initial calibration verification (ICV) and a calibration blank were analyzed at the beginning of the run, and a continuing calibration verification (CCV) and a calibration blank were analyzed after every ten samples, and at the end of the run. ICV and CCV recoveries were within a range of 80-120% for mercury. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 65% or above 135%, all associated data are rejected (R).

Comments: All recoveries of Methyl mercury in initial and continuing calibration verifications were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

3. LABORATORY CONTROL SAMPLE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Percent recoveries of LCS were within the control limits.

4. MATRIX SPIKE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Matrix Spikes Analyzed

Matrix spike recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. Unless flagged below, one laboratory control sample was analyzed at a rate of one per batch or one per 20 samples. Recoveries were within a range of 75-125%.

For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Sample COR-CRK-SED01 was used for matrix spike and matrix spike duplicate. The recoveries were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

5. BLANKS AND BACKGROUND SAMPLES

☒ Acceptable
☐ Detection Limits Adjusted

The following blanks were analyzed:

☒ Method (preparation) Blanks
☐ Filter Blanks
☐ Calibration Blanks
☐ Rinsate Blanks
☐ Background Samples

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: No contamination was found in the method blank at reporting limit level.

6. DUPLICATE ANALYSES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Duplicates Analyzed

Type of duplicates analyzed:

☐ Field Duplicates
☒ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the detected results as estimated (J) for any analyte whose RPD in a laboratory duplicate exceeds 20% for water samples or 35% for soil samples.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

Comments: RPD of MS & MSD < 35%.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

7. INTERFERENCE CHECK SAMPLES AND SERIAL DILUTION ANALYSIS

☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Interference Check Samples (ICS) - Unless flagged below, an ICS was analyzed at the beginning and end of each run and at least twice every eight hours. Recoveries were within a range of 80-120%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J) if the concentrations of Al, Ca, Fe, or Mg are higher in the sample than in the ICS.

Serial Dilution Analysis - Unless flagged below, a serial dilution analysis was performed at a rate of one per 20 samples on a sample having analyte concentrations greater than 50 times the IDL. Percent differences were within a range of 0-10%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments:

8. POST DIGESTION SPIKE AND STANDARD ADDITIONS

☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Post-digestion spikes - If a furnace AA result was flagged by the laboratory with an E to indicate interference, and the associated post-digestion spike recovery was less than 10%, the associated results are rejected (R).

Method of Standard Additions - If the method of standard additions was required and the correlation coefficient was less than 0.995, the associated results were qualified as estimated (J).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

9. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Water samples:

$$\text{ug/L} = \frac{(\text{Instrument printout concentration, mg/L})(1000 \text{ ug/mg})(\text{final volume of extract, mL})}{(\text{Initial volume of extract, mL})}$$

Soil samples:

$$\text{mg/kg} = \frac{(\text{Instrument printout concentration, mg/L})(\text{final volume of extract, mL})(0.001 \text{ L/mL})}{(\text{weight of sample extracted, g})(0.001 \text{ kg/g})(\text{fraction solids})}$$

Comments: Analyte quantitation is acceptable.
Sample COR-CRK-SED01
Methyl Mercury: 0.779 ug/kg. Lab reported 0.78 ug/kg.

10. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

☒ Acceptable
☐ Acceptable with Qualification
☐ Rejected

Accepted data meet the minimum requirements for the following EPA data category:

☐ ERS Screening
☐ Non-definitive with 10 % Confirmation by Definitive Methodology
☐ Definitive, Comprehensive Statistical Error Determination was performed.
☒ Definitive, Comprehensive Statistical Error Determination was not performed.

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project Number: 002693.2094.01RA

11. USABILITY OF DATA

A. These data are considered usable for the data use objectives stated in the EPA EMERGENCY RESPONSE SECTION AND SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM QUALITY ASSURANCE SAMPLING PLAN FOR SOIL MATRIX SAMPLING, CORDERO MERCURY MINE SITE, FORT MCDERMITT, NEVADA, OCTOBER 13, 2010 (QASP).

The following data use objective was indicated in the QASP:

TO BE COMPARED WITH A BACKGROUND OR REFERENCE SAMPLES(S).

TO BE COMPARED WITH SITE-SPECIFIC ACTION LEVELS OR RISK-BASED ACTION LEVELS (E.G., EPA PRGS) TO ASSIST IN DETERMINATION IF HEALTH THREATS EXIST.

THE DATA ARE USABLE FOR THE ABOVE OBJECTIVES.

B. These data meet quality objectives stated in the QASP.

AS INDICATED IN SECTION 2.4 OF THE QASP, THE INVESTIGATION WILL GENERATE DEFINITIVE DATA AND TABLE E OF THE QASP OUTLINES THE DATA QUALITY INDICATOR GOALS APPLICABLE TO THE DEFINITIVE DATA QUALITY LEVEL. THE DATA IN THIS PACKAGE MEET THESE REQUIREMENTS.

12. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data qualifiers indicated, and a copy of the chain of custody for the samples.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: 002693.2094.01RA
 Sample Matrix: Soil

Service Request: K1011863
 Date Collected: 10/20/2010
 Date Received: 10/23/2010

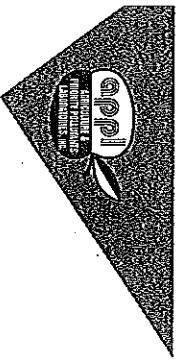
Methyl Mercury

Prep Method: CAS SOP
 Analysis Method: CAS SOP
 Test Notes:


Units: ng/g
 Basis: Dry

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
COR-CRK-SED01	K1011863-001	0.7	1	11/18/2010	11/19/2010	0.78	
COR-CRK-SED02	K1011863-002	0.4	1	11/18/2010	11/19/2010	ND	
COR-CRK-SED03	K1011863-003	0.4	1	11/18/2010	11/19/2010	ND	
Method Blank 1	K1011863-MB1	0.4	1	11/18/2010	11/19/2010	ND	
Method Blank 2	K1011863-MB2	0.4	1	11/18/2010	11/19/2010	ND	
Method Blank 3	K1011863-MB3	0.4	1	11/18/2010	11/19/2010	ND	

M. A. J.
 3/10/11



Customer Account

APPL, Inc. 
4203 W. Swift
Fresno, CA 93722

Phone: (559) 275 2175
Fax: (559) 275-4422

CHAIN OF CUSTODY RECORD
K1511803
C.O.C. No. 29878

PLEASE PRINT

PLEASE PRINT

Report to:

Invoice to:

Company Name

Ecology & Environment

Ecology & Environment

Phone: 415-764-7651

Address

1940 Webster St

Fax:

Address

Fax:

Attn: Alex Evers

Attn: Alex Evers

Project Name/Number

Sampler (Print)

Analysis Requested/Method Number

Date Shipped: 10/22/10

Purchase Order Number

Sampler (Signature)

Carrier: FedEx

Waybill No.: 86973461100

Comments:

Sample Identification

Location

Date Collected

Time Collected

Matrix

Number of Containers

METAL MERCURY
EPA 1631

COR-CRK-SED01

Creek

10/20/10 1:50 PM

Soil

1

COR-CRK-SED02

Creek

10/20/10 12:45 PM

Soil

1

COR-CRK-SED03

Creek

10/20/10 1:50 PM

Soil

1

Shuttle Temperature:

Turnaround Requested: MUST CHECK ONE

Sample Disposal:

Relinquished by sampler:

Date

Time

Received by:

Date

Time

Relinquished by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Relinquished by:

Date

Time

Received by:

Date

Time

Relinquished by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

Received by:

Date

Time

White: Return to client with report

Yellow: Laboratory Copy

Pink: Sampler


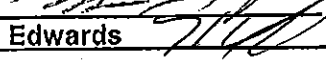
ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Laboratory: EPA Region 9 Laboratory	Lab Project Number: 1010068
Sampling Dates: 10/19/10 & 10/20/10	Sample Matrix: Soil
Analytical Method: CAM Metals (EPA 6010B/7471A)	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song 
 Technical QA Reviewer: Howard Edwards 
 Project Manager: Neil Ellis

Date: 3/10/11
 Date: 3/28/11
 Date: _____

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	COR-LOT1-07	1010068-01
2	COR-LOT1-08	1010068-02
3	COR-LOT1-09	1010068-03
4	COR-LOT1-10	1010068-04
5	COR-LOT1-11	1010068-05
6	COR-LOT1-11D	1010068-06
7	COR-LOT1-12	1010068-07
8	COR-LOT1-13	1010068-08
9	COR-LOT2-01	1010068-09
10	COR-LOT2-02	1010068-10
11	COR-LOT2-02D	1010068-11
12	COR-LOT2-03	1010068-12
13	COR-LOT2-03D	1010068-13
14	COR-LOT2-04	1010068-14
15	COR-LOT2-04D	1010068-15
16	COR-LOT2-05	1010068-16
17	COR-LOT2-06	1010068-17
18	COR-LOT2-06D	1010068-18
19	COR-WP1-01	1010068-19
20	COR-WP1-02	1010068-20

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Sample No.	Sample I.D.	Laboratory I.D.
21	COR-WP1-03	1010068-21
22	COR-WP1-04	1010068-22

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

- ☒ Included: no problems
- ☐ * Included: problems noted in review
- ☐ O Not Included and/or Not Available
- ☐ NR Not Required
- ☐ RS Provided As Re-submission

Case Narrative:

- ☒ Case Narrative present

Quality Control Summary Package:

- ☒ Data Summary sheets
- ☒ Initial and Continuing Calibration results
- ☐ NR CRDL Standard results
- ☒ Preparation Blank and Calibration Blank results
- ☒ ICP Interference Check Sample results
- ☐ * Matrix Spike recoveries
- ☐ * Matrix Duplicate results
- ☒ Laboratory Control Sample recoveries
- ☐ NR Method of Standard Additions results
- ☐ NR ICP Serial Dilution results
- ☐ NR Instrument Detection Limits
- ☐ NR ICP Interelement Correction Factors
- ☐ NR ICP Linear Ranges
- ☒ Preparation Log
- ☒ Analysis Run Log

Raw QC Data Package Section

- ☒ Chain-of-Custody Records
- ☒ Instrument Printouts
- ☒ Sample Preparation Notebook Pages
- ☒ Logbook and Worksheet Pages
- ☒ Percent Solids Determination

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Initial and Continuing Calibrations	YES
3	Laboratory Control Sample	YES
4	Matrix Spike	NO
5	Blanks and Background Samples	YES
6	Duplicate Analyses	NO
7	Interference Check Samples and Serial Dilution Analysis	YES
8	Post Digestion Spike and Standard Addition Analysis	N/A
9	Analyte Quantitation	YES
10	Overall Assessment of Data	YES
11	Usability of Data	YES

Comments: N/A: Not Applicable.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

1. HOLDING TIMES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer's judgement.

All Sample Matrices:

Mercury: 28 days (from collection) for analysis.

Hexavalent chromium: 24 hours (from collection) for analysis.

All other metals: 180 days (from collection) for analysis.

Comments: All holding times were met.

2. INITIAL AND CONTINUING CALIBRATION VERIFICATION

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Unless flagged below, an initial calibration verification (ICV) and a calibration blank were analyzed at the beginning of the run, and a continuing calibration verification (CCV) and a calibration blank were analyzed after every ten samples, and at the end of the run. ICV and CCV recoveries were within a range of 80-120% for mercury and tin, and 90-110% for all other metals. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 65% or above 135% (for mercury and tin) or below 75% or above 125% (for all other metals), all associated data are rejected (R).

Comments: All recoveries of metals in initial and continuing calibration verifications were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

3. LABORATORY CONTROL SAMPLE

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Percent recoveries of LCS were within the control limits.

4. MATRIX SPIKE

☐ Acceptable
☒ Acceptable with qualification
☐ Unacceptable
☐ No Matrix Spikes Analyzed

Matrix spike recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. Unless flagged below, one laboratory control sample was analyzed at a rate of one per batch or one per 20 samples. Recoveries were within a range of 75-125%.

For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Samples COR-LOT1-11 and COR-LOT2-02 were used for matrix spike and matrix spike duplicate analysis. All recoveries except antimony were within the control limits. The detected antimony results were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

5. BLANKS AND BACKGROUND SAMPLES

☒ Acceptable
☐ Detection Limits Adjusted

The following blanks were analyzed:

☒ Method (preparation) Blanks
☐ Field Blanks
☐ Calibration Blanks
☒ Rinsate Blanks
☐ Background Samples

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: No contamination was found in the method blank or the rinsate blank at reporting limit level.

6. DUPLICATE ANALYSES

☐ Acceptable
☒ Acceptable with qualification
☐ Unacceptable
☐ No Duplicates Analyzed

Type of duplicates analyzed:

☒ Field Duplicates
☐ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the detected results as estimated (J) for any analyte whose RPD in a laboratory duplicate exceeds 20% for water samples or 35% for soil samples.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT1-11	COR-LOT1-11D	RPD (%)
Antimony	4.3	4.3	0
Arsenic	34	36	6
Barium	190	190	0
Beryllium	0.72	0.74	3
Cadmium	<0.56	<0.55	0
Chromium	4.1	4.3	5
Cobalt	2.6	2.9	11
Copper	8.4	8.6	2
Lead	11	11	0
Mercury	58	140	83*
Molybdenum	6.7	6.8	1
Nickel	3.0	3.2	6
Selenium	<2.2	<2.2	0
Silver	<1.1	<1.1	0
Thallium	<5.6	<5.5	0
Vanadium	25	26	4
Zinc	70	68	3

Comments: The RPDs except mercury were within the control limits (less than 35%). The detected mercury results were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT2-02	COR-LOT2-02D	RPD (%)
Antimony	7.3	7.1	3
Arsenic	23	20	14
Barium	180	180	0
Beryllium	0.65	0.68	5
Cadmium	<0.50	<0.53	0
Chromium	8.0	8.5	6
Cobalt	5.3	5.2	2
Copper	9.3	10	7
Lead	12	12	0
Mercury	15	21	33
Molybdenum	3.1	2.6	18
Nickel	7.0	7.5	7
Selenium	<2.0	<2.1	0
Silver	<0.99	<1.1	0
Thallium	<5.0	<5.3	0
Vanadium	31	32	3
Zinc	57	58	2

Comments: All RPDs were within the control limits (less than 35%).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT2-03	COR-LOT2-03D	RPD (%)
Antimony	4.3	5.7	12
Arsenic	22	23	4
Barium	170	150	13
Beryllium	0.61	0.52	16
Cadmium	<0.56	0.30	Not calculated
Chromium	13	7.8	50*
Cobalt	4.9	4.1	18
Copper	10	9.5	5
Lead	14	12	15
Mercury	17	20	16
Molybdenum	4.8	4.4	9
Nickel	9.3	6.5	35*
Selenium	<2.2	<2.2	0
Silver	<1.1	<1.1	0
Thallium	<5.6	<5.6	0
Vanadium	28	25	11
Zinc	75	71	5

Comments: The RPDs except chromium and nickel were within the control limits (less than 35%). The detected chromium and nickel results were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT2-04	COR-LOT2-04D	RPD (%)
Antimony	9.6	11	14
Arsenic	20	21	5
Barium	150	140	7
Beryllium	0.78	0.83	6
Cadmium	0.32	0.29	10
Chromium	8.2	7.0	16
Cobalt	5.2	5.0	4
Copper	11	16	37*
Lead	18	19	5
Mercury	21	5.7	115*
Molybdenum	<5.4	<5.4	0
Nickel	7.4	12	47*
Selenium	<2.2	<2.2	0
Silver	<1.1	<1.1	0
Thallium	<5.4	<5.4	0
Vanadium	29	32	10
Zinc	62	73	16

Comments: The RPDs except copper, mercury, and zinc were within the control limits (less than 35%). The detected copper, mercury, and zinc results were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT2-06	COR-LOT2-06D	RPD (%)
Antimony	6.0	6.2	3
Arsenic	22	21	5
Barium	130	120	8
Beryllium	0.67	0.69	3
Cadmium	<0.47	<0.48	0
Chromium	23	28	20
Cobalt	6.6	6.8	3
Copper	16	16	0
Lead	12	12	0
Mercury	9.9	10	1
Molybdenum	<4.7	<4.8	0
Nickel	19	24	23
Selenium	<1.9	<1.9	0
Silver	<0.94	<0.96	0
Thallium	<4.7	<4.8	0
Vanadium	35	38	8
Zinc	54	56	4

Comments: All RPDs were within the control limits (less than 35%).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

7. INTERFERENCE CHECK SAMPLES AND SERIAL DILUTION ANALYSIS

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ Not required

Interference Check Samples (ICS) - Unless flagged below, an ICS was analyzed at the beginning and end of each run and at least twice every eight hours. Recoveries were within a range of 80-120%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J) if the concentrations of Al, Ca, Fe, or Mg are higher in the sample than in the ICS.

Serial Dilution Analysis - Unless flagged below, a serial dilution analysis was performed at a rate of one per 20 samples on a sample having analyte concentrations greater than 50 times the IDL. Percent differences were within a range of 0-10%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments: ICS recoveries were within the control limit.
Serial Dilution Analysis: Not required.

8. POST DIGESTION SPIKE AND STANDARD ADDITIONS

☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Post-digestion spikes - If a furnace AA result was flagged by the laboratory with an E to indicate interference, and the associated post-digestion spike recovery was less than 10%, the associated results are rejected (R).

Method of Standard Additions - If the method of standard additions was required and the correlation coefficient was less than 0.995, the associated results were qualified as estimated (J).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

9. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Water samples:

$$\text{ug/L} = \frac{(\text{Instrument printout concentration, mg/L})(1000 \text{ ug/mg})(\text{final volume of extract, mL})}{(\text{Initial volume of extract, mL})}$$

Soil samples:

$$\text{mg/kg} = \frac{(\text{Instrument printout concentration, mg/L})(\text{final volume of extract, mL})(0.001 \text{ L/mL})}{(\text{weight of sample extracted, g})(0.001 \text{ kg/g})(\text{fraction solids})}$$

Comments: Analyte quantitation is acceptable.

Sample COR-WP1-01

As: $(0.6018 \text{ mg/L}) (0.05 \text{ L}/1.05 \text{ g}) (2) (100/87) (1000 \text{ g}/1 \text{ kg}) = 65.8 \text{ mg/kg}$

Lab reported 66 mg/kg.

Sample COR-NR-01

Hg: $(0.011 \text{ mg/L}) (0.03 \text{ L}/0.2008 \text{ g}) (40) (100/87) (1000 \text{ g}/1 \text{ kg}) = 75.56 \text{ mg/kg}$

Lab reported 76 mg/kg.

10. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

☐ Acceptable
☒ Acceptable with Qualification
☐ Rejected

Accepted data meet the minimum requirements for the following EPA data category:

☐ ERS Screening
☐ Non-definitive with 10 % Confirmation by Definitive Methodology
☐ Definitive, Comprehensive Statistical Error Determination was performed.
☒ Definitive, Comprehensive Statistical Error Determination was not performed.

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

11. USABILITY OF DATA

A. These data are considered usable for the data use objectives stated in the EPA EMERGENCY RESPONSE SECTION AND SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM QUALITY ASSURANCE SAMPLING PLAN FOR SOIL MATRIX SAMPLING, CORDERO MERCURY MINE SITE, FORT MCDERMITT, NEVADA, OCTOBER 13, 2010 (QASP).

The following data use objective was indicated in the QASP:

TO BE COMPARED WITH A BACKGROUND OR REFERENCE SAMPLES(S).

TO BE COMPARED WITH SITE-SPECIFIC ACTION LEVELS OR RISK-BASED ACTION LEVELS (E.G., EPA PRGS) TO ASSIST IN DETERMINATION IF HEALTH THREATS EXIST.

THE DATA ARE USABLE FOR THE ABOVE OBJECTIVES.

B. These data meet quality objectives stated in the QASP.

AS INDICATED IN SECTION 2.4 OF THE QASP, THE INVESTIGATION WILL GENERATE DEFINITIVE DATA AND TABLE E OF THE QASP OUTLINES THE DATA QUALITY INDICATOR GOALS APPLICABLE TO THE DEFINITIVE DATA QUALITY LEVEL. THE DATA IN THIS PACKAGE MEET THESE REQUIREMENTS.

12. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data qualifiers indicated, and a copy of the chain of custody for the samples.



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

Phone:(510) 412-2300

Fax:(510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294D

Reported: 11/24/10 14:01

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010068-01								Soil - Sampled: 10/19/10 10:35
Sample ID: COR-LOT1-07								Metals by EPA 6000/7000 Series Methods
Mercury		39 J		3.4	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		18 J		2.3	"	B0K0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		60		2.3	"	"	"	6010C/SOP503
Barium		150		5.7	"	"	"	6010C/SOP503
Beryllium		0.52		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.57	"	"	"	6010C/SOP503
Chromium		1.1 J		1.1	"	"	"	6010C/SOP503
Cobalt		2.0 Cl, J		2.3	"	"	"	6010C/SOP503
Copper		9.0 J		4.6	"	"	"	6010C/SOP503
Lead		14		3.4	"	"	"	6010C/SOP503
Molybdenum		12		5.7	"	"	"	6010C/SOP503
Nickel		ND U		5.7	"	"	"	6010C/SOP503
Selenium		ND U		2.3	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium		ND U		5.7	"	"	"	6010C/SOP503
Vanadium		23		2.3	"	"	"	6010C/SOP503
Zinc		60		9.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-07								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		87		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010068-02								Soil - Sampled: 10/19/10 10:45
Sample ID: COR-LOT1-08								Metals by EPA 6000/7000 Series Methods
Mercury		46 J		3.3	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		14 J		2.2	"	B0K0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		61		2.2	"	"	"	6010C/SOP503
Barium		200		5.6	"	"	"	6010C/SOP503
Beryllium		0.73		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.56	"	"	"	6010C/SOP503
Chromium		2.9 J		1.1	"	"	"	6010C/SOP503
Cobalt		2.7		2.2	"	"	"	6010C/SOP503
Copper		7.7 J		4.4	"	"	"	6010C/SOP503
Lead		15		3.3	"	"	"	6010C/SOP503
Molybdenum		12		5.6	"	"	"	6010C/SOP503
Nickel		ND U		5.6	"	"	"	6010C/SOP503
Selenium		ND U		2.2	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium		ND U		5.6	"	"	"	6010C/SOP503
Vanadium		29		2.2	"	"	"	6010C/SOP503
Zinc		61		8.9	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-08								Conventional Chemistry Parameters by APHA/EPA Methods



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294D
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 14:01
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010068-02								Soil - Sampled: 10/19/10 10:45
Sample ID: COR-LOT1-08								
% Solids		90		1	%	B0K0021	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010068-03								Soil - Sampled: 10/19/10 10:50
Sample ID: COR-LOT1-09								
Mercury		59	J	3.1	mg/kg dry	B0K0037	11/05/10 11/08/10	7471B/SOP517
Antimony		6.7	J	2.2	"	B0K0013	11/02/10 11/19/10	6010C/SOP503
Arsenic		45		2.2	"	"	"	6010C/SOP503
Barium		170		5.6	"	"	"	6010C/SOP503
Beryllium		0.74		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.56	"	"	"	6010C/SOP503
Chromium		1.4	J	1.1	"	"	"	6010C/SOP503
Cobalt		2.1	Cl, J	2.2	"	"	"	6010C/SOP503
Copper		6.4	J	4.4	"	"	"	6010C/SOP503
Lead		14		3.3	"	"	"	6010C/SOP503
Molybdenum		8.5		5.6	"	"	"	6010C/SOP503
Nickel		ND	U	5.6	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.6	"	"	"	6010C/SOP503
Vanadium		23		2.2	"	"	"	6010C/SOP503
Zinc		64		8.9	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-09								
% Solids		90		1	%	B0K0021	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010068-04								Soil - Sampled: 10/19/10 10:55
Sample ID: COR-LOT1-10								
Mercury		74	J	3.1	mg/kg dry	B0K0037	11/05/10 11/08/10	7471B/SOP517
Antimony		4.2	J	2.2	"	B0K0013	11/02/10 11/19/10	6010C/SOP503
Arsenic		32		2.2	"	"	"	6010C/SOP503
Barium		170		5.6	"	"	"	6010C/SOP503
Beryllium		0.69		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.56	"	"	"	6010C/SOP503
Chromium		3.1	J	1.1	"	"	"	6010C/SOP503
Cobalt		2.6		2.2	"	"	"	6010C/SOP503
Copper		7.7	J	4.4	"	"	"	6010C/SOP503
Lead		11		3.3	"	"	"	6010C/SOP503
Molybdenum		7.7		5.6	"	"	"	6010C/SOP503
Nickel		ND	U	5.6	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.6	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294D
Reported: 11/24/10 14:01

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010068-04						Soil - Sampled: 10/19/10 10:55		
Sample ID: COR-LOT1-10						Metals by EPA 6000/7000 Series Methods		
Vanadium		26		2.2	mg/kg dry	BOK0013	11/02/10	11/19/10 6010C/SOP503
Zinc		65		8.9	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-10						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		90		1	%	BOK0021	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010068-05						Soil - Sampled: 10/19/10 11:00		
Sample ID: COR-LOT1-11						Metals by EPA 6000/7000 Series Methods		
Mercury		68 J		6.3	mg/kg dry	BOK0037	11/05/10	11/08/10 7471B/SOP517
Antimony		4.3 J, Q4 J		2.2	"	BOK0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		34		2.2	"	"	"	6010C/SOP503
Barium		190		5.6	"	"	"	6010C/SOP503
Beryllium		0.72		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.56	"	"	"	6010C/SOP503
Chromium		4.1 J, Q4, Q6 J		1.1	"	"	"	6010C/SOP503
Cobalt		2.6		2.2	"	"	"	6010C/SOP503
Copper		8.4 J		4.4	"	"	"	6010C/SOP503
Lead		11		3.3	"	"	"	6010C/SOP503
Molybdenum		6.7		5.6	"	"	"	6010C/SOP503
Nickel		3.0 C1, J J		5.6	"	"	"	6010C/SOP503
Selenium		ND U		2.2	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium		ND U		5.6	"	"	"	6010C/SOP503
Vanadium		25		2.2	"	"	"	6010C/SOP503
Zinc		70		8.9	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-11						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		90		1	%	BOK0021	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010068-06						Soil - Sampled: 10/19/10 11:00		
Sample ID: COR-LOT1-11D						Metals by EPA 6000/7000 Series Methods		
Mercury		140 J		6.2	mg/kg dry	BOK0037	11/05/10	11/08/10 7471B/SOP517
Antimony		4.3 J		2.2	"	BOK0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		36		2.2	"	"	"	6010C/SOP503
Barium		190		5.5	"	"	"	6010C/SOP503
Beryllium		0.74		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.55	"	"	"	6010C/SOP503
Chromium		4.3 J		1.1	"	"	"	6010C/SOP503
Cobalt		2.9		2.2	"	"	"	6010C/SOP503
Copper		8.6 J		4.4	"	"	"	6010C/SOP503
Lead		11		3.3	"	"	"	6010C/SOP503
Molybdenum		6.8		5.5	"	"	"	6010C/SOP503
Nickel		3.2 C1, J J		5.5	"	"	"	6010C/SOP503
Selenium		ND U		2.2	"	"	"	6010C/SOP503

[Signature] 3/10/11



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294D
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 14:01
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010068-06 Soil - Sampled: 10/19/10 11:00								
Sample ID: COR-LOT1-11D								
Metals by EPA 6000/7000 Series Methods								
Silver		ND	U	1.1	mg/kg dry	B0K0013	11/02/10 11/19/10	6010C/SOP503
Thallium		ND	U	5.5	"	"	" "	6010C/SOP503
Vanadium		26		2.2	"	"	" "	6010C/SOP503
Zinc		68		8.8	"	"	" "	6010C/SOP503
Sample ID: COR-LOT1-11D								
Conventional Chemistry Parameters by APHA/EPA Methods								
% Solids		91		1	%	B0K0021	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010068-07 Soil - Sampled: 10/19/10 11:05								
Sample ID: COR-LOT1-12								
Metals by EPA 6000/7000 Series Methods								
Mercury		45	J	3.1	mg/kg dry	B0K0037	11/05/10 11/08/10	7471B/SOP517
Antimony		3.7	J	2.2	"	B0K0013	11/02/10 11/19/10	6010C/SOP503
Arsenic		28		2.2	"	"	" "	6010C/SOP503
Barium		180		5.6	"	"	" "	6010C/SOP503
Beryllium		0.75		0.11	"	"	" "	6010C/SOP503
Cadmium		0.28	Cl, J	0.56	"	"	" "	6010C/SOP503
Chromium		4.0	J	1.1	"	"	" "	6010C/SOP503
Cobalt		3.8		2.2	"	"	" "	6010C/SOP503
Copper		7.7	J	4.4	"	"	" "	6010C/SOP503
Lead		11		3.3	"	"	" "	6010C/SOP503
Molybdenum		5.8		5.6	"	"	" "	6010C/SOP503
Nickel		3.2	Cl, J J	5.6	"	"	" "	6010C/SOP503
Selenium		ND	U	2.2	"	"	" "	6010C/SOP503
Silver		ND	U	1.1	"	"	" "	6010C/SOP503
Thallium		ND	U	5.6	"	"	" "	6010C/SOP503
Vanadium		31		2.2	"	"	" "	6010C/SOP503
Zinc		64		8.9	"	"	" "	6010C/SOP503
Sample ID: COR-LOT1-12								
Conventional Chemistry Parameters by APHA/EPA Methods								
% Solids		90		1	%	B0K0021	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010068-08 Soil - Sampled: 10/19/10 11:10								
Sample ID: COR-LOT1-13								
Metals by EPA 6000/7000 Series Methods								
Mercury		130	J	6.2	mg/kg dry	B0K0037	11/05/10 11/08/10	7471B/SOP517
Antimony		4.7	J	2.2	"	B0K0013	11/02/10 11/19/10	6010C/SOP503
Arsenic		37		2.2	"	"	" "	6010C/SOP503
Barium		160		5.4	"	"	" "	6010C/SOP503
Beryllium		0.67		0.11	"	"	" "	6010C/SOP503
Cadmium		ND	U	0.54	"	"	" "	6010C/SOP503
Chromium		2.1	J	1.1	"	"	" "	6010C/SOP503
Cobalt		2.1	Cl, J	2.2	"	"	" "	6010C/SOP503
Copper		6.3	J	4.3	"	"	" "	6010C/SOP503
Lead		13		3.3	"	"	" "	6010C/SOP503
Molybdenum		7.1		5.4	"	"	" "	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294D

Reported: 11/24/10 14:01

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010068-08							Soil - Sampled: 10/19/10 11:10	
Sample ID: COR-LOT1-13								Metals by EPA 6000/7000 Series Methods
Nickel		ND	U	5.4	mg/kg dry	B0K0013	11/02/10 11/19/10	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		20		2.2	"	"	"	6010C/SOP503
Zinc		70		8.7	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-13								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		92		1	%	B0K0021	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010068-09							Soil - Sampled: 10/20/10 09:00	
Sample ID: COR-LOT2-01								Metals by EPA 6000/7000 Series Methods
Mercury		11	J	0.81	mg/kg dry	B0K0037	11/05/10 11/08/10	7471B/SOP517
Antimony		14	J	2.2	"	B0K0013	11/02/10 11/19/10	6010C/SOP503
Arsenic		24		2.2	"	"	"	6010C/SOP503
Barium		190		5.4	"	"	"	6010C/SOP503
Beryllium		0.80		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		9.0	J	1.1	"	"	"	6010C/SOP503
Cobalt		4.4		2.2	"	"	"	6010C/SOP503
Copper		12	J	4.3	"	"	"	6010C/SOP503
Lead		16		3.2	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.4	"	"	"	6010C/SOP503
Nickel		7.5	J	5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		33		2.2	"	"	"	6010C/SOP503
Zinc		65		8.6	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		93		1	%	B0K0021	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010068-10							Soil - Sampled: 10/20/10 09:05	
Sample ID: COR-LOT2-02								Metals by EPA 6000/7000 Series Methods
Mercury		15	J, Q5 J	6.4	mg/kg dry	B0K0037	11/05/10 11/08/10	7471B/SOP517
Antimony		7.3	J, Q4 J	2	"	B0K0013	11/02/10 11/19/10	6010C/SOP503
Arsenic		23		2	"	"	"	6010C/SOP503
Barium		180		5	"	"	"	6010C/SOP503
Beryllium		0.65		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		8.0	J	0.99	"	"	"	6010C/SOP503
Cobalt		5.3		2	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294D
Reported: 11/24/10 14:01

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1010068-10

Soil - Sampled: 10/20/10 09:05

Sample ID: COR-LOT2-02

Metals by EPA 6000/7000 Series Methods								
Copper		9.3	J	4	mg/kg dry	B0K0013	11/02/10	11/19/10 6010C/SOP503
Lead		12		3	"	"	"	6010C/SOP503
Molybdenum		3.1	Cl, J	5	"	"	"	6010C/SOP503
Nickel		7.0	J	5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	0.99	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		31		2	"	"	"	6010C/SOP503
Zinc		57		8	"	"	"	6010C/SOP503

Sample ID: COR-LOT2-02

% Solids 94 1 % Conventional Chemistry Parameters by APHA/EPA Methods
B0K0021 11/03/10 11/04/10 3550C/SOP460

Lab ID: 1010068-11

Soil - Sampled: 10/20/10 09:05

Sample ID: COR-LOT2-02D

Metals by EPA 6000/7000 Series Methods								
Mercury		21	J	6.3	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		7.1	J	2.1	"	B0K0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		20		2.1	"	"	"	6010C/SOP503
Barium		180		5.3	"	"	"	6010C/SOP503
Beryllium		0.68		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.53	"	"	"	6010C/SOP503
Chromium		8.5	J	1.1	"	"	"	6010C/SOP503
Cobalt		5.2		2.1	"	"	"	6010C/SOP503
Copper		10	J	4.2	"	"	"	6010C/SOP503
Lead		12		3.2	"	"	"	6010C/SOP503
Molybdenum		2.6	Cl, J	5.3	"	"	"	6010C/SOP503
Nickel		7.5	J	5.3	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		32		2.1	"	"	"	6010C/SOP503
Zinc		58		8.4	"	"	"	6010C/SOP503

Sample ID: COR-LOT2-02D

% Solids 95 1 % Conventional Chemistry Parameters by APHA/EPA Methods
B0K0021 11/03/10 11/04/10 3550C/SOP460

Lab ID: 1010068-12

Soil - Sampled: 10/20/10 09:10

Sample ID: COR-LOT2-03

Metals by EPA 6000/7000 Series Methods								
Mercury		17	J	6.7	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		4.3	J	2.2	"	B0K0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		22		2.2	"	"	"	6010C/SOP503
Barium		170		5.6	"	"	"	6010C/SOP503
Beryllium		0.61		0.11	"	"	"	6010C/SOP503

3/10/11



United States Environmental Protection Agency Region 9 Laboratory

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Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294D

Reported: 11/24/10 14:01

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010068-12						Soil - Sampled: 10/20/10 09:10		
Sample ID: COR-LOT2-03						Metals by EPA 6000/7000 Series Methods		
Cadmium		ND	U	0.56	mg/kg dry	B0K0013	11/02/10	11/19/10 6010C/SOP503
Chromium		13	J	1.1	"	"	"	6010C/SOP503
Cobalt		4.9		2.2	"	"	"	6010C/SOP503
Copper		10	J	4.5	"	"	"	6010C/SOP503
Lead		14		3.4	"	"	"	6010C/SOP503
Molybdenum		4.8	Cl, J	5.6	"	"	"	6010C/SOP503
Nickel		9.3	J	5.6	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.6	"	"	"	6010C/SOP503
Vanadium		28		2.2	"	"	"	6010C/SOP503
Zinc		75		9	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-03						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		89		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010068-13						Soil - Sampled: 10/20/10 09:10		
Sample ID: COR-LOT2-03D						Metals by EPA 6000/7000 Series Methods		
Mercury		20	J	6.1	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		5.7	J	2.2	"	B0K0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		23		2.2	"	"	"	6010C/SOP503
Barium		150		5.6	"	"	"	6010C/SOP503
Beryllium		0.52		0.11	"	"	"	6010C/SOP503
Cadmium		0.30	Cl, J	0.56	"	"	"	6010C/SOP503
Chromium		7.8	J	1.1	"	"	"	6010C/SOP503
Cobalt		4.1		2.2	"	"	"	6010C/SOP503
Copper		9.5	J	4.4	"	"	"	6010C/SOP503
Lead		12		3.3	"	"	"	6010C/SOP503
Molybdenum		4.4	Cl, J	5.6	"	"	"	6010C/SOP503
Nickel		6.5	J	5.6	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.6	"	"	"	6010C/SOP503
Vanadium		25		2.2	"	"	"	6010C/SOP503
Zinc		71		8.9	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-03D						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		90		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010068-14						Soil - Sampled: 10/20/10 09:20		
Sample ID: COR-LOT2-04						Metals by EPA 6000/7000 Series Methods		
Mercury		21	J	6.1	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		9.6	J	2.2	"	B0K0013	11/02/10	11/19/10 6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294D
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 14:01
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1010068-14

Soil - Sampled: 10/20/10 09:20

Sample ID: COR-LOT2-04

Metals by EPA 6000/7000 Series Methods

Arsenic		20		2.2	mg/kg dry	B0K0013	11/02/10	11/19/10	6010C/SOP503
Barium		150		5.4	"	"	"	"	6010C/SOP503
Beryllium		0.78		0.11	"	"	"	"	6010C/SOP503
Cadmium		0.32	CI, J	0.54	"	"	"	"	6010C/SOP503
Chromium		8.2	J	1.1	"	"	"	"	6010C/SOP503
Cobalt		5.2		2.2	"	"	"	"	6010C/SOP503
Copper		11	J	4.3	"	"	"	"	6010C/SOP503
Lead		18		3.2	"	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.4	"	"	"	"	6010C/SOP503
Nickel		7.4	J	5.4	"	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	"	6010C/SOP503
Vanadium		29		2.2	"	"	"	"	6010C/SOP503
Zinc		62		8.6	"	"	"	"	6010C/SOP503

Sample ID: COR-LOT2-04

Conventional Chemistry Parameters by APHA/EPA Methods

% Solids	93	1	%	B0K0021	11/03/10	11/04/10	3550C/SOP460
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Lab ID: 1010068-15

Soil - Sampled: 10/20/10 09:20

Sample ID: COR-LOT2-04D

Metals by EPA 6000/7000 Series Methods

Mercury		5.7	J	0.76	mg/kg dry	B0K0037	11/05/10	11/08/10	7471B/SOP517
Antimony		11	J	2.2	"	B0K0013	11/02/10	11/19/10	6010C/SOP503
Arsenic		21		2.2	"	"	"	"	6010C/SOP503
Barium		140		5.4	"	"	"	"	6010C/SOP503
Beryllium		0.83		0.11	"	"	"	"	6010C/SOP503
Cadmium		0.29	CI, J	0.54	"	"	"	"	6010C/SOP503
Chromium		7.0	J	1.1	"	"	"	"	6010C/SOP503
Cobalt		5.0		2.2	"	"	"	"	6010C/SOP503
Copper		16	J	4.3	"	"	"	"	6010C/SOP503
Lead		19		3.2	"	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.4	"	"	"	"	6010C/SOP503
Nickel		12	J	5.4	"	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	"	6010C/SOP503
Vanadium		32		2.2	"	"	"	"	6010C/SOP503
Zinc		73		8.6	"	"	"	"	6010C/SOP503

Sample ID: COR-LOT2-04D

Conventional Chemistry Parameters by APHA/EPA Methods

% Solids	93	1	%	B0K0021	11/03/10	11/04/10	3550C/SOP460
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Lab ID: 1010068-16

Soil - Sampled: 10/20/10 09:25



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
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Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294D
Reported: 11/24/10 14:01

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010068-16						Soil - Sampled: 10/20/10 09:25		
Sample ID: COR-LOT2-05						Metals by EPA 6000/7000 Series Methods		
Mercury		3.4	J	0.77	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		4.3	J	2.1	"	B0K0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		19		2.1	"	"	"	6010C/SOP503
Barium		120		5.2	"	"	"	6010C/SOP503
Beryllium		0.58		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.52	"	"	"	6010C/SOP503
Chromium		24	J	1	"	"	"	6010C/SOP503
Cobalt		5.7		2.1	"	"	"	6010C/SOP503
Copper		14	J	4.1	"	"	"	6010C/SOP503
Lead		9.8		3.1	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.2	"	"	"	6010C/SOP503
Nickel		17	J	5.2	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	6010C/SOP503
Vanadium		31		2.1	"	"	"	6010C/SOP503
Zinc		53		8.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-05						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		97		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010068-17						Soil - Sampled: 10/20/10 09:18		
Sample ID: COR-LOT2-06						Metals by EPA 6000/7000 Series Methods		
Mercury		9.9	J	0.77	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony		6.0	J	1.9	"	B0K0013	11/02/10	11/19/10 6010C/SOP503
Arsenic		22		1.9	"	"	"	6010C/SOP503
Barium		130		4.7	"	"	"	6010C/SOP503
Beryllium		0.67		0.09	"	"	"	6010C/SOP503
Cadmium		ND	U	0.47	"	"	"	6010C/SOP503
Chromium		23	J	0.94	"	"	"	6010C/SOP503
Cobalt		6.6		1.9	"	"	"	6010C/SOP503
Copper		16	J	3.8	"	"	"	6010C/SOP503
Lead		12		2.8	"	"	"	6010C/SOP503
Molybdenum		ND	U	4.7	"	"	"	6010C/SOP503
Nickel		19	J	4.7	"	"	"	6010C/SOP503
Selenium		ND	U	1.9	"	"	"	6010C/SOP503
Silver		ND	U	0.94	"	"	"	6010C/SOP503
Thallium		ND	U	4.7	"	"	"	6010C/SOP503
Vanadium		35		1.9	"	"	"	6010C/SOP503
Zinc		54		7.6	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-06						Conventional Chemistry Parameters by APHA/EPA Methods		



United States Environmental Protection Agency
Region 9 Laboratory

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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294D
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 14:01
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1010068-17 Soil - Sampled: 10/20/10 09:18

Sample ID: COR-LOT2-06
% Solids 98 1 % Conventional Chemistry Parameters by APHA/EPA Methods
B0K0021 11/03/10 11/04/10 3550C/SOP460

Lab ID: 1010068-18 Soil - Sampled: 10/20/10 09:18

Sample ID: COR-LOT2-06D Metals by EPA 6000/7000 Series Methods

Mercury	10 J	0.77	mg/kg dry	B0K0037	11/05/10	11/08/10	7471B/SOP517
Antimony	6.2 J	1.9	"	B0K0013	11/02/10	11/19/10	6010C/SOP503
Arsenic	21	1.9	"	"	"	"	6010C/SOP503
Barium	120	4.8	"	"	"	"	6010C/SOP503
Beryllium	0.69	0.10	"	"	"	"	6010C/SOP503
Cadmium	ND U	0.48	"	"	"	"	6010C/SOP503
Chromium	28 J	0.96	"	"	"	"	6010C/SOP503
Cobalt	6.8	1.9	"	"	"	"	6010C/SOP503
Copper	16 J	3.9	"	"	"	"	6010C/SOP503
Lead	12	2.9	"	"	"	"	6010C/SOP503
Molybdenum	ND U	4.8	"	"	"	"	6010C/SOP503
Nickel	24 J	4.8	"	"	"	"	6010C/SOP503
Selenium	ND U	1.9	"	"	"	"	6010C/SOP503
Silver	ND U	0.96	"	"	"	"	6010C/SOP503
Thallium	ND U	4.8	"	"	"	"	6010C/SOP503
Vanadium	38	1.9	"	"	"	"	6010C/SOP503
Zinc	56	7.7	"	"	"	"	6010C/SOP503

Sample ID: COR-LOT2-06D
% Solids 98 1 % Conventional Chemistry Parameters by APHA/EPA Methods
B0K0021 11/03/10 11/04/10 3550C/SOP460

Lab ID: 1010068-19 Soil - Sampled: 10/19/10 14:00

Sample ID: COR-WP1-01 Metals by EPA 6000/7000 Series Methods

Mercury	76 J	6.9	mg/kg dry	B0K0037	11/05/10	11/08/10	7471B/SOP517
Antimony	22 J	2.3	"	B0K0013	11/02/10	11/19/10	6010C/SOP503
Arsenic	66	2.3	"	"	"	"	6010C/SOP503
Barium	220	5.7	"	"	"	"	6010C/SOP503
Beryllium	0.69	0.11	"	"	"	"	6010C/SOP503
Cadmium	ND U	0.57	"	"	"	"	6010C/SOP503
Chromium	3.1 J	1.1	"	"	"	"	6010C/SOP503
Cobalt	3.2	2.3	"	"	"	"	6010C/SOP503
Copper	8.1 J	4.6	"	"	"	"	6010C/SOP503
Lead	20	3.4	"	"	"	"	6010C/SOP503
Molybdenum	9.0	5.7	"	"	"	"	6010C/SOP503
Nickel	ND U	5.7	"	"	"	"	6010C/SOP503
Selenium	1.2 Cl, J	2.3	"	"	"	"	6010C/SOP503
Silver	ND U	1.1	"	"	"	"	6010C/SOP503
Thallium	ND U	5.7	"	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294D

Reported: 11/24/10 14:01

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID:	1010068-19						Soil - Sampled: 10/19/10 14:00	
Sample ID:	COR-WP1-01						Metals by EPA 6000/7000 Series Methods	
Vanadium		26		2.3	mg/kg dry	B0K0013	11/02/10	11/19/10 6010C/SOP503
Zinc		96		9.2	"	"	"	6010C/SOP503
Sample ID:	COR-WP1-01						Conventional Chemistry Parameters by APHA/EPA Methods	
% Solids		87		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460
Lab ID:	1010068-20						Soil - Sampled: 10/19/10 14:15	
Sample ID:	COR-WP1-02						Metals by EPA 6000/7000 Series Methods	
Mercury		63	J	7	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony	RE1	6.1	J	2.3	"	B0K0013	11/02/10	11/20/10 6010C/SOP503
Arsenic	RE1	52		2.3	"	"	"	6010C/SOP503
Barium	RE1	190		5.8	"	"	"	6010C/SOP503
Beryllium	RE2	0.69		0.12	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.58	"	"	"	6010C/SOP503
Chromium	RE2	2.1	J	1.2	"	"	"	6010C/SOP503
Cobalt	RE2	1.7	Cl, J	2.3	"	"	"	6010C/SOP503
Copper		6.1	J	4.7	"	"	"	11/19/10 6010C/SOP503
Lead	RE2	20		3.5	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	8.3		5.8	"	"	"	6010C/SOP503
Nickel	RE1	ND	U	5.8	"	"	"	11/20/10 6010C/SOP503
Selenium	RE1	ND	U	2.3	"	"	"	6010C/SOP503
Silver	RE2	ND	U	1.2	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.8	"	"	"	11/19/10 6010C/SOP503
Vanadium	RE1	21		2.3	"	"	"	11/20/10 6010C/SOP503
Zinc	RE2	83		9.3	"	"	"	11/21/10 6010C/SOP503
Sample ID:	COR-WP1-02						Conventional Chemistry Parameters by APHA/EPA Methods	
% Solids		86		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460
Lab ID:	1010068-21						Soil - Sampled: 10/19/10 14:20	
Sample ID:	COR-WP1-03						Metals by EPA 6000/7000 Series Methods	
Mercury		19	J	6.9	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony	RE1	9.3	J	2.3	"	B0K0013	11/02/10	11/20/10 6010C/SOP503
Arsenic	RE1	55		2.3	"	"	"	6010C/SOP503
Barium	RE1	200		5.7	"	"	"	6010C/SOP503
Beryllium	RE2	0.93		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.57	"	"	"	6010C/SOP503
Chromium	RE2	1.6	J	1.1	"	"	"	6010C/SOP503
Cobalt	RE2	2.0	Cl, J	2.3	"	"	"	6010C/SOP503
Copper		5.9	J	4.6	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	14		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	7.4		5.7	"	"	"	6010C/SOP503
Nickel	RE1	ND	U	5.7	"	"	"	11/20/10 6010C/SOP503



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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294D
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 14:01
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID:	1010068-21	Soil - Sampled: 10/19/10 14:20						
Sample ID:	COR-WP1-03	Metals by EPA 6000/7000 Series Methods						
Selenium	RE1	ND	U	2.3	mg/kg dry	B0K0013	11/02/10	11/20/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.7	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE1	19		2.3	"	"	"	11/20/10 6010C/SOP503
Zinc	RE2	67		9.2	"	"	"	11/21/10 6010C/SOP503
Sample ID:	COR-WP1-03	Conventional Chemistry Parameters by APHA/EPA Methods						
% Solids		87		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460

Lab ID:	1010068-22	Soil - Sampled: 10/19/10 14:05						
Sample ID:	COR-WP1-04	Metals by EPA 6000/7000 Series Methods						
Mercury		34	J	7	mg/kg dry	B0K0037	11/05/10	11/08/10 7471B/SOP517
Antimony	RE1	4.0	J	2.3	"	B0K0013	11/02/10	11/20/10 6010C/SOP503
Arsenic	RE1	31		2.3	"	"	"	6010C/SOP503
Barium	RE1	210		5.8	"	"	"	6010C/SOP503
Beryllium	RE2	0.62		0.12	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.58	"	"	"	6010C/SOP503
Chromium	RE2	2.5	J	1.2	"	"	"	6010C/SOP503
Cobalt	RE2	4.5		2.3	"	"	"	6010C/SOP503
Copper		7.1	J	4.7	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	14		3.5	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	7.4		5.8	"	"	"	6010C/SOP503
Nickel	RE1	ND	U	5.8	"	"	"	11/20/10 6010C/SOP503
Selenium	RE1	ND	U	2.3	"	"	"	6010C/SOP503
Silver	RE2	ND	U	1.2	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.8	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE1	17		2.3	"	"	"	11/20/10 6010C/SOP503
Zinc	RE2	110		9.3	"	"	"	11/21/10 6010C/SOP503
Sample ID:	COR-WP1-04	Conventional Chemistry Parameters by APHA/EPA Methods						
% Solids		86		1	%	B0K0021	11/03/10	11/04/10 3550C/SOP460

no
3/10/11



United States Environmental Protection Agency

Region 9 Laboratory

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Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294D

Reported: 11/24/10 14:01

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	--------------------------	-----------------------	-------	----------------	------------------	------	----------------	-----	--------------

Batch B0K0013 - 3050B Sid Acid Dig - Metals by 6010

Prepared: 11/02/10 Analyzed: 11/19/10


Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0K0013-BLK1)

Antimony	ND	U		2 mg/kg wet						
Arsenic	ND	U		2 "						
Barium	ND	U		5 "						
Beryllium	ND	U		0.1 "						
Cadmium	ND	U		0.5 "						
Chromium	ND	U		1 "						
Cobalt	ND	U		2 "						
Copper	ND	U		4 "						
Lead	ND	U		3 "						
Molybdenum	ND	U		5 "						
Nickel	ND	U		5 "						
Selenium	ND	U		2 "						
Silver	ND	U		1 "						
Thallium	ND	U		5 "						
Vanadium	ND	U		2 "						
Zinc	ND	U		8 "						

Blank (B0K0013-BLK2)

Antimony	ND	U		2 mg/kg wet						
Arsenic	ND	U		2 "						
Barium	ND	U		5 "						
Beryllium	ND	U		0.1 "						
Cadmium	ND	U		0.5 "						
Chromium	ND	U		1 "						
Cobalt	ND	U		2 "						
Copper	ND	U		4 "						
Lead	ND	U		3 "						
Molybdenum	ND	U		5 "						
Nickel	ND	U		5 "						
Selenium	ND	U		2 "						
Silver	ND	U		1 "						
Thallium	ND	U		5 "						
Vanadium	ND	U		2 "						
Zinc	ND	U		8 "						


3/10/11

Matrix Spike (B0K0013-MS1)

Source: 1010068-05

Antimony	75.5		2.2 mg/kg dry	110	4.32	65	75-125	20
Arsenic	438		2.2 "	440	34.3	92	75-125	20
Barium	592		5.6 "	440	191	91	75-125	20
Beryllium	10.9		0.11 "	11.0	0.72	93	75-125	20
Cadmium	10		0.56 "	11.0	ND	91	75-125	20
Chromium	67.1		1.1 "	44.0	4.1	143	75-125	20



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294D

Reported: 11/24/10 14:01

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	--------------------------	-----------------------	-------	----------------	------------------	------	----------------	-----	--------------

Batch B0K0013 - 3050B Sld Acid Dig - Metals by 6010

Prepared: 11/02/10 Analyzed: 11/19/10

Metals by EPA 6000/7000 Series Methods - Quality Control

Reference (B0K0013-SRM2)

Barium	5.87			5 "	5.30		111	47.17-153		
Beryllium	20.8			0.1 "	18.8		110	81.38-118		
Cadmium	41.3			0.5 "	41.6		99	77.16-123		
Chromium	106			1 "	96.5		110	80.06-119		
Cobalt	143			2 "	140		102	82.42-118		
Lead	207			3 "	224		92	74.82-125		
Nickel	58.4			5 "	56.8		103	76.58-123		
Selenium	56.4			2 "	37.0		152	47.57-152		
Silver	25.3			1 "	20.9		121	63.16-136		
Thallium	33.9			5 "	38.1		89	64.57-135		
Vanadium	75.6			2 "	65.8		115	80.55-119		
Zinc	194			8 "	175		111	72.97-127		

Reference (B0K0013-SRM3)

Copper	6,780			20 mg/kg wet	6680		101	85.73-114		
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Reference (B0K0013-SRM4)

Copper	6,750			20 mg/kg wet	6680		101	85.73-114		
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Batch B0K0021 - Solids, Dry Weight (Prep) - Solids, Dry Weight

Prepared: 11/03/10 Analyzed: 11/04/10

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B0K0021-BLK1)

% Solids	ND	U		1 %						
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Blank (B0K0021-BLK2)

% Solids	ND	U		1 %						
----------	----	---	--	-----	--	--	--	--	--	--

Duplicate (B0K0021-DUP1)

Source: 1010068-01

% Solids	87			1 %		87			0	20
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Duplicate (B0K0021-DUP2)

Source: 1010068-11

% Solids	94			1 %		95			1	20
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Batch B0K0037 - 7471B Hg Digest - Mercury, High Level

Prepared: 11/05/10 Analyzed: 11/08/10

Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0K0037-BLK1)

Mercury	ND	U		0.15 mg/kg wet						
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Blank (B0K0037-BLK2)

Mercury	ND	U		0.15 mg/kg wet						
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Duplicate (B0K0037-DUP1)

Source: 1010068-05

Mercury	69.6			6.3 mg/kg dry		68.3			2	20
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Duplicate (B0K0037-DUP2)

Source: 1010068-10

Mercury	33			5.9 mg/kg dry		15.5			72	20
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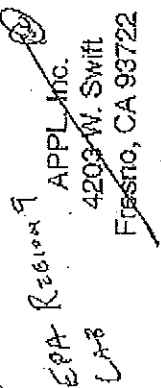
Matrix Spike (B0K0037-MS1)

Source: 1010068-05

CHAIN OF CUSTODY RECORD

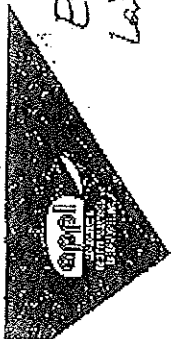
PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
SAMPLERS: (Signature)		SAMPLE IDENTIFICATION					
DATE	TIME	MATRIX	COMP	GRAB			
10/19/10	0935	Soil	X		COR-LOT1-01	1	<div style="transform: rotate(-45deg); border: 1px solid black; padding: 5px;"> 10/19/10 0935 10/19/10 0945 10/19/10 0955 10/19/10 1010 10/19/10 1010 10/19/10 1025 10/19/10 1030 10/19/10 1035 10/19/10 1045 10/19/10 1050 10/19/10 1055 10/19/10 1100 10/19/10 1100 10/19/10 1105 10/19/10 1110 </div>
	0945				COR-LOT1-02		
	0955				COR-LOT1-03		
	1010				COR-LOT1-04		
	1010				COR-LOT1-04D		
	1025				COR-LOT1-05		
	1030				COR-LOT1-06		
	1035				COR-LOT1-07		
	1045				COR-LOT1-08		
	1050				COR-LOT1-09		
	1055				COR-LOT1-10		
	1100				COR-LOT1-11		
	1100				COR-LOT1-11D		
	1105				COR-LOT1-12		
	1110				COR-LOT1-13		
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
Received by Laboratory by: (Signature)		Date / Time		Temp.		Seals Intact (Y/N)	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files



2988
N¹⁰
C.O.C.

White: Return to client with report	Yellow: Laboratory Copy	Pink: Sampler
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EPA Region 9 APPL, INC.
4208 W. SWIR
Fresno, CA 93722

CHAIN OF CUSTODY RECORD
Page 4 of 6

Phone: (559) 275 2175
Fax: (559) 275-4422

C.O.C. No. 29876

Report to: PLEASE PRINT
Company Name: Ecology + Environment Phone: 415/364-7651
Address: _____
Attn: Neil Ellis dellis@ene.com Fax: _____
Invoice to: PLEASE PRINT
Company Name: _____ Phone: _____
Address: _____ Fax: _____
Attn: _____

Project Name/Number	Sampler (Print)	Sampler (Signature)	Location	Date Collected	Time Collected	Matrix	Number of Containers	Analysis Requested/Method Number	Date Shipped
COR-WP1-01	<u>Cooloco Mercury Mine Site</u>	<u>D. New Earth (Gross)</u>		<u>10/19/10</u>	<u>1400</u>	<u>Soil</u>	<u>1</u>		
COR-WP1-02				<u>1</u>	<u>1415</u>				
COR-WP1-03					<u>1420</u>				
COR-WP1-04					<u>1405</u>				
COR-WP1-05					<u>1425</u>				
COR-WP2-01					<u>1519</u>				
COR-WP3-01					<u>1525</u>				
COR-WP4-01					<u>1535</u>				
COR-RB-102010					<u>1605</u>	<u>Water</u>			

Comments: Please send results to dellis@ene.com

Signature: Neil Ellis

Shuttle Temperature: _____

Turnaround Requested: MUST CHECK ONE
☐ Standard (2-3 week) ☐ One week ☐ 24-48 hour

Relinquished by sampler: Neil Ellis Date: 10/21/10 Time: 11:30
Relinquished by: _____ Date: _____ Time: _____

Sample Disposal: ☐ Return to client ☐ Disposal by Lab (copy to client)
Received by: _____ Date: 10/21/10 Time: 11:30

Yellow: Laboratory Copy Pink: Sampler

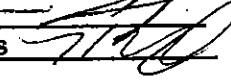
ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Laboratory: EPA Region 9 Laboratory	Lab Project Number: 1011001
Sampling Dates: 10/19/10 & 10/20/10	Sample Matrix: Soil (XRF cups)
Analytical Method: CAM Metals (EPA 6010B/7471A)	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song 
 Technical QA Reviewer: Howard Edwards 
 Project Manager: Nell Ellis

Date: 3/10/11
 Date: 3/28/11
 Date: _____

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	COR-LOT1-01	1011001-01
2	COR-LOT1-02	1011001-02
3	COR-LOT1-03	1011001-03
4	COR-LOT1-04	1011001-04
5	COR-LOT1-05	1011001-05
6	COR-LOT1-06	1011001-06
7	COR-LOT1-07	1011001-07
8	COR-LOT1-08	1011001-08
9	COR-LOT1-09-18"	1011001-09
10	COR-LOT1-11	1011001-10
11	COR-LOT1-11 (PD)	1011001-11
12	COR-LOT1-12	1011001-12
13	COR-WP1-01	1011001-13
14	COR-WP1-03	1011001-14
15	COR-WP2-01	1011001-15
16	COR-WP3-01	1011001-16
17	COR-WP3-01 (PD)	1011001-17
18	COR-WP4-01	1011001-18
19	COR-LOT2-01	1011001-19
20	COR-LOT2-02	1011001-20

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Sample No.	Sample I.D.	Laboratory I.D.
21	COR-LOT2-02-6"	1011001-21
22	COR-LOT2-04	1011001-22
23	COR-LOT2-05	1011001-23
24	COR-LOT2-06	1011001-24
25	COR-TRK2-01	1011001-25
26	COR-CEM-02	1011001-26
27	COR-CEM-02 (PD)	1011001-27
28	COR-JACA-01	1011001-28
29	COR-LAVA-01	1011001-29

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

- ☒ Included: no problems
- ☐ * Included: problems noted in review
- ☐ O Not Included and/or Not Available
- ☐ NR Not Required
- ☐ RS Provided As Re-submission

Case Narrative:

- ☒ Case Narrative present

Quality Control Summary Package:

- ☒ Data Summary sheets
- ☒ Initial and Continuing Calibration results
- ☐ NR CRDL Standard results
- ☒ Preparation Blank and Calibration Blank results
- ☒ ICP Interference Check Sample results
- ☐ * Matrix Spike recoveries
- ☐ * Matrix Duplicate results
- ☒ Laboratory Control Sample recoveries
- ☐ NR Method of Standard Additions results
- ☐ NR ICP Serial Dilution results
- ☐ NR Instrument Detection Limits
- ☐ NR ICP Interelement Correction Factors
- ☐ NR ICP Linear Ranges
- ☒ Preparation Log
- ☒ Analysis Run Log

Raw QC Data Package Section

- ☒ Chain-of-Custody Records

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

<u>X</u>	Instrument Printouts
<u>X</u>	Sample Preparation Notebook Pages
<u>X</u>	Logbook and Worksheet Pages
<u>X</u>	Percent Solids Determination

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Initial and Continuing Calibrations	YES
3	Laboratory Control Sample	YES
4	Matrix Spike	NO
5	Blanks and Background Samples	YES
6	Duplicate Analyses	YES
7	Interference Check Samples and Serial Dilution Analysis	YES
8	Post Digestion Spike and Standard Addition Analysis	N/A
9	Analyte Quantitation	YES
10	Overall Assessment of Data	YES
11	Usability of Data	YES

Comments: N/A: Not Applicable.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

1. HOLDING TIMES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer's judgement.

All Sample Matrices:

Mercury: 28 days (from collection) for analysis.

Hexavalent chromium: 24 hours (from collection) for analysis.

All other metals: 180 days (from collection) for analysis.

Comments: All holding times were met.

2. INITIAL AND CONTINUING CALIBRATION VERIFICATION

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Unless flagged below, an initial calibration verification (ICV) and a calibration blank were analyzed at the beginning of the run, and a continuing calibration verification (CCV) and a calibration blank were analyzed after every ten samples, and at the end of the run. ICV and CCV recoveries were within a range of 80-120% for mercury and tin, and 90-110% for all other metals. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 65% or above 135% (for mercury and tin) or below 75% or above 125% (for all other metals), all associated data are rejected (R).

Comments: All recoveries of metals in initial and continuing calibration verifications were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

3. LABORATORY CONTROL SAMPLE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Percent recoveries of LCS were within the control limits.

4. MATRIX SPIKE

- ☐ Acceptable
☒ Acceptable with qualification
☐ Unacceptable
☐ No Matrix Spikes Analyzed

Matrix spike recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. Unless flagged below, one laboratory control sample was analyzed at a rate of one per batch or one per 20 samples. Recoveries were within a range of 75-125%.

For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Samples COR-LOT1-11 and COR-LOT2-02 were used for matrix spike and matrix spike duplicate. All recoveries except antimony, molybdenum, cobalt, copper, and mercury were within the control limits. Qualification for mercury was not necessary since the amount of mercury present in the parent sample was greater than the amount spiked. The detected results of Sb, Mo, Co, and Cu were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

5. BLANKS AND BACKGROUND SAMPLES

- ☒ Acceptable
☐ Detection Limits Adjusted

The following blanks were analyzed:

- ☒ Method (preparation) Blanks
☐ Field Blanks
☐ Calibration Blanks
☐ Rinsate Blanks
☐ Background Samples

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: No contamination was found in the method blank at reporting limit level.

6. DUPLICATE ANALYSES

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Duplicates Analyzed

Type of duplicates analyzed:

- ☒ Field Duplicates
☐ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the detected results as estimated (J) for any analyte whose RPD in a laboratory duplicate exceeds 20% for water samples or 35% for soil samples.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT1-11	COR-LOT1-11 (PD)	RPD (%)
Antimony	3.7	3.7	0
Arsenic	35	34	3
Barium	210	200	5
Beryllium	0.80	0.79	1
Cadmium	0.30	<0.50	Not calculated
Chromium	6.4	6.1	5
Cobalt	2.9	2.9	0
Copper	13	13	0
Lead	13	13	0
Mercury	210	150	33
Molybdenum	5.6	5.6	0
Nickel	4.1	4.0	2
Selenium	<1.9	<2.0	0
Silver	<0.94	<1.0	0
Thallium	<4.7	<5.0	0
Vanadium	28	28	0
Zinc	71	74	4

Comments: All RPDs were within the control limit (<35%).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-WP3-01	COR-WP3-01 (PD)	RPD (%)
Antimony	40	40	0
Arsenic	69	68	1
Barium	290	280	4
Beryllium	0.64	0.63	2
Cadmium	0.68	0.64	Not Calculated
Chromium	3.3	3.2	3
Cobalt	2.8	2.6	7
Copper	9.5	9.6	1
Lead	64	64	0
Mercury	1200	1100	9
Molybdenum	12	12	0
Nickel	<5.0	<5.0	0
Selenium	6.6	6.7	2
Silver	0.56	0.54	4
Thallium	<5.0	<5.0	0
Vanadium	28	28	0
Zinc	110	110	0

Comments: All RPDs were within the control limits (<35%).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-CEM-02	COR-CEM-02 (PD)	RPD (%)
Antimony	8.4	8.5	1
Arsenic	76	77	1
Barium	330	340	3
Beryllium	0.78	0.78	0
Cadmium	0.45	0.53	16
Chromium	2.2	2.1	5
Cobalt	2.1	2.2	5
Copper	11	12	9
Lead	28	28	0
Mercury	140	110	24
Molybdenum	11	11	0
Nickel	<5.0	<5.0	0
Selenium	1.2	1.3	8
Silver	<1.0	<1.0	0
Thallium	<5.0	<5.0	0
Vanadium	32	32	0
Zinc	110	110	0

Comments: The RPDs were within the control limits (<35%).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

7. INTERFERENCE CHECK SAMPLES AND SERIAL DILUTION ANALYSIS

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ Not required

Interference Check Samples (ICS) - Unless flagged below, an ICS was analyzed at the beginning and end of each run and at least twice every eight hours. Recoveries were within a range of 80-120%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J) if the concentrations of Al, Ca, Fe, or Mg are higher in the sample than in the ICS.

Serial Dilution Analysis - Unless flagged below, a serial dilution analysis was performed at a rate of one per 20 samples on a sample having analyte concentrations greater than 50 times the IDL. Percent differences were within a range of 0-10%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments: ICS recoveries were within the control limit.
Serial Dilution Analysis: Not required.

8. POST DIGESTION SPIKE AND STANDARD ADDITIONS

- ☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Post-digestion spikes - If a furnace AA result was flagged by the laboratory with an E to indicate interference, and the associated post-digestion spike recovery was less than 10%, the associated results are rejected (R).

Method of Standard Additions - If the method of standard additions was required and the correlation coefficient was less than 0.995, the associated results were qualified as estimated (J).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

9. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Water samples:

$$\text{ug/L} = \frac{(\text{Instrument printout concentration, mg/L})(1000 \text{ ug/mg})(\text{final volume of extract, mL})}{(\text{Initial volume of extract, mL})}$$

Soil samples:

$$\text{mg/kg} = \frac{(\text{Instrument printout concentration, mg/L})(\text{final volume of extract, mL})(0.001 \text{ L/mL})}{(\text{weight of sample extracted, g})(0.001 \text{ kg/g})(\text{fraction solids})}$$

Comments: Analyte quantitation is acceptable.

Sample COR-CEM-02

As: $(0.7688 \text{ mg/L}) (0.05 \text{ L}/1.01 \text{ g}) (2) (1000 \text{ g}/1 \text{ kg}) = 76.119 \text{ mg/kg}$

Lab reported 76 mg/kg.

Sample COR-NR-01

Hg: $(0.00966 \text{ mg/L}) (0.03 \text{ L}/0.2127 \text{ g}) (100) (1000 \text{ g}/1 \text{ kg}) = 136.25 \text{ mg/kg}$

Lab reported 140 mg/kg.

10. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

☐ Acceptable
☒ Acceptable with Qualification
☐ Rejected

Accepted data meet the minimum requirements for the following EPA data category:

☐ ERS Screening
☐ Non-definitive with 10 % Conformation by Definitive Methodology
☐ Definitive, Comprehensive Statistical Error Determination was performed.
☒ Definitive, Comprehensive Statistical Error Determination was not performed.

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

11. USABILITY OF DATA

A. These data are considered usable for the data use objectives stated in the EPA EMERGENCY RESPONSE SECTION AND SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM QUALITY ASSURANCE SAMPLING PLAN FOR SOIL MATRIX SAMPLING, CORDERO MERCURY MINE SITE, FORT MCDERMITT, NEVADA, OCTOBER 13, 2010 (QASP).

The following data use objective was indicated in the QASP:

TO BE COMPARED WITH A BACKGROUND OR REFERENCE SAMPLES(S).

TO BE COMPARED WITH SITE-SPECIFIC ACTION LEVELS OR RISK-BASED ACTION LEVELS (E.G., EPA PRGS) TO ASSIST IN DETERMINATION IF HEALTH THREATS EXIST.

THE DATA ARE USABLE FOR THE ABOVE OBJECTIVES.

B. These data meet quality objectives stated in the QASP.

AS INDICATED IN SECTION 2.4 OF THE QASP, THE INVESTIGATION WILL GENERATE DEFINITIVE DATA AND TABLE E OF THE QASP OUTLINES THE DATA QUALITY INDICATOR GOALS APPLICABLE TO THE DEFINITIVE DATA QUALITY LEVEL. THE DATA IN THIS PACKAGE MEET THESE REQUIREMENTS.

12. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data qualifiers indicated, and a copy of the chain of custody for the samples.



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10305A
Project Number: R11S15	75 Hawthorne Street	Reported: 12/03/10 14:11
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1011001-01						Soil - Sampled: 10/19/10 09:35		
Sample ID: COR-LOT1-01						Metals by EPA 6000/7000 Series Methods		
Mercury		48	A2, J	14	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		2.2	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		22		2	"	"	"	6010C/SOP503
Barium		190		5	"	"	"	6010C/SOP503
Beryllium		0.75		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		9.8		1	"	"	"	6010C/SOP503
Cobalt		3.6	J	2	"	"	"	6010C/SOP503
Copper		16	J	4	"	"	"	6010C/SOP503
Lead		9.1		3	"	"	"	6010C/SOP503
Molybdenum		4.0	Cl, J J	5	"	"	"	6010C/SOP503
Nickel		5.8		5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		29		2	"	"	"	6010C/SOP503
Zinc		66		8	"	"	"	6010C/SOP503
Lab ID: 1011001-02						Soil - Sampled: 10/19/10 09:45		
Sample ID: COR-LOT1-02						Metals by EPA 6000/7000 Series Methods		
Mercury		150	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		8.5	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		41		2	"	"	"	6010C/SOP503
Barium		250		5	"	"	"	6010C/SOP503
Beryllium		0.82		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		9.0		1	"	"	"	6010C/SOP503
Cobalt		3.1	J	2	"	"	"	6010C/SOP503
Copper		17	J	4	"	"	"	6010C/SOP503
Lead		14		3	"	"	"	6010C/SOP503
Molybdenum		8.2	J	5	"	"	"	6010C/SOP503
Nickel		6.8		5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		37		2	"	"	"	6010C/SOP503
Zinc		74		8	"	"	"	6010C/SOP503
Lab ID: 1011001-03						Soil - Sampled: 10/19/10 09:55		
Sample ID: COR-LOT1-03						Metals by EPA 6000/7000 Series Methods		
Mercury		89	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

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Project Manager: Thomas Dunkelman

Emergency Response Section

SDG: 10305A

Project Number: R11S15

75 Hawthorne Street

Reported: 12/03/10 14:11

Project: Cordero Mercury Mine FY11 Sampling

San Francisco CA, 94105

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1011001-03

Soil - Sampled: 10/19/10 09:55

Sample ID: COR-LOT1-03

Metals by EPA 6000/7000 Series Methods								
Antimony	10	J	2	mg/kg wet	B0K0016	11/02/10	11/22/10	6010C/SOP503
Arsenic	54		2	"	"	"	"	6010C/SOP503
Barium	210		5	"	"	"	"	6010C/SOP503
Beryllium	0.80		0.10	"	"	"	"	6010C/SOP503
Cadmium	ND	U	0.50	"	"	"	"	6010C/SOP503
Chromium	4.4		1	"	"	"	"	6010C/SOP503
Cobalt	3.0	J	2	"	"	"	"	6010C/SOP503
Copper	13	J	4	"	"	"	"	6010C/SOP503
Lead	17		3	"	"	"	"	6010C/SOP503
Molybdenum	10	J	5	"	"	"	"	6010C/SOP503
Nickel	3.7	Cl, J	5	"	"	"	"	6010C/SOP503
Selenium	ND	U	2	"	"	"	"	6010C/SOP503
Silver	ND	U	1	"	"	"	"	6010C/SOP503
Thallium	ND	U	5	"	"	"	"	6010C/SOP503
Vanadium	30		2	"	"	"	"	6010C/SOP503
Zinc	72		8	"	"	"	"	6010C/SOP503

Lab ID: 1011001-04

Soil - Sampled: 10/19/10 10:10

Sample ID: COR-LOT1-04

Metals by EPA 6000/7000 Series Methods								
Mercury	64	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10	7471B/SOP517
Antimony	8.7	J	2	"	B0K0016	11/02/10	11/22/10	6010C/SOP503
Arsenic	44		2	"	"	"	"	6010C/SOP503
Barium	170		5	"	"	"	"	6010C/SOP503
Beryllium	0.73		0.10	"	"	"	"	6010C/SOP503
Cadmium	ND	U	0.50	"	"	"	"	6010C/SOP503
Chromium	4.6		1	"	"	"	"	6010C/SOP503
Cobalt	2.7	J	2	"	"	"	"	6010C/SOP503
Copper	12	J	4	"	"	"	"	6010C/SOP503
Lead	13		3	"	"	"	"	6010C/SOP503
Molybdenum	8.1	J	5	"	"	"	"	6010C/SOP503
Nickel	3.1	Cl, J	5	"	"	"	"	6010C/SOP503
Selenium	ND	U	2	"	"	"	"	6010C/SOP503
Silver	ND	U	1	"	"	"	"	6010C/SOP503
Thallium	ND	U	5	"	"	"	"	6010C/SOP503
Vanadium	28		2	"	"	"	"	6010C/SOP503
Zinc	55		8	"	"	"	"	6010C/SOP503

Lab ID: 1011001-05

Soil - Sampled: 10/19/10 10:25

Sample ID: COR-LOT1-05

Metals by EPA 6000/7000 Series Methods								
Mercury	37	J, A2	14	mg/kg wet	B0K0041	11/09/10	11/10/10	7471B/SOP517
Antimony	6.1	J	2	"	B0K0016	11/02/10	11/22/10	6010C/SOP503



United States Environmental Protection Agency

Region 9 Laboratory

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Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10305A

Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID:	1011001-05	Soil - Sampled: 10/19/10 10:25						
Sample ID:	COR-LOT1-05	Metals by EPA 6000/7000 Series Methods						
Arsenic		26		2	mg/kg wet	B0K0016	11/02/10	11/22/10 6010C/SOP503
Barium		150		5	"	"	"	6010C/SOP503
Beryllium		0.62		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		7.2		1	"	"	"	6010C/SOP503
Cobalt		3.3	J	2	"	"	"	6010C/SOP503
Copper		11	J	4	"	"	"	6010C/SOP503
Lead		10		3	"	"	"	6010C/SOP503
Molybdenum		4.6	Cl, J	5	"	"	"	6010C/SOP503
Nickel		5.1		5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		28		2	"	"	"	6010C/SOP503
Zinc		51		8	"	"	"	6010C/SOP503

Lab ID:	1011001-06	Soil - Sampled: 10/19/10 10:30						
Sample ID:	COR-LOT1-06	Metals by EPA 6000/7000 Series Methods						
Mercury		71	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		16	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		64		2	"	"	"	6010C/SOP503
Barium		190		5	"	"	"	6010C/SOP503
Beryllium		0.72		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		4.6		1	"	"	"	6010C/SOP503
Cobalt		2.7	J	2	"	"	"	6010C/SOP503
Copper		12	J	4	"	"	"	6010C/SOP503
Lead		18		3	"	"	"	6010C/SOP503
Molybdenum		12	J	5	"	"	"	6010C/SOP503
Nickel		3.0	Cl, J	5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		31		2	"	"	"	6010C/SOP503
Zinc		74		8	"	"	"	6010C/SOP503

Lab ID:	1011001-07	Soil - Sampled: 10/19/10 10:35						
Sample ID:	COR-LOT1-07	Metals by EPA 6000/7000 Series Methods						
Mercury		87	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		22	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		82		2	"	"	"	6010C/SOP503

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3/10/11



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10305A
Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1011001-07						Soil - Sampled: 10/19/10 10:35		
Sample ID: COR-LOT1-07						Metals by EPA 6000/7000 Series Methods		
Barium		220		5	mg/kg wet	B0K0016	11/02/10	6010C/SOP503
Beryllium		0.68		0.10	"	"	"	6010C/SOP503
Cadmium		0.54		0.50	"	"	"	6010C/SOP503
Chromium		3.3		1	"	"	"	6010C/SOP503
Cobalt		2.3	J	2	"	"	"	6010C/SOP503
Copper		12	J	4	"	"	"	6010C/SOP503
Lead		22		3	"	"	"	6010C/SOP503
Molybdenum		16	J	5	"	"	"	6010C/SOP503
Nickel		ND	U	5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		32		2	"	"	"	6010C/SOP503
Zinc		84		8	"	"	"	6010C/SOP503
Lab ID: 1011001-08						Soil - Sampled: 10/19/10 10:45		
Sample ID: COR-LOT1-08						Metals by EPA 6000/7000 Series Methods		
Mercury		62	A2, J	15	mg/kg wet	B0K0041	11/09/10	7471B/SOP517
Antimony		12	J	2	"	B0K0016	11/02/10	6010C/SOP503
Arsenic		57		2	"	"	"	6010C/SOP503
Barium		210		5	"	"	"	6010C/SOP503
Beryllium		0.85		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		4.3		1	"	"	"	6010C/SOP503
Cobalt		2.9	J	2	"	"	"	6010C/SOP503
Copper		12	J	4	"	"	"	6010C/SOP503
Lead		17		3	"	"	"	6010C/SOP503
Molybdenum		11	J	5	"	"	"	6010C/SOP503
Nickel		3.1	C1, J	5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		31		2	"	"	"	6010C/SOP503
Zinc		72		8	"	"	"	6010C/SOP503
Lab ID: 1011001-09						Soil - Sampled: 10/19/10 11:25		
Sample ID: COR-LOT1-09-18"						Metals by EPA 6000/7000 Series Methods		
Mercury		0.20	A2, J	0.15	mg/kg wet	B0K0041	11/09/10	7471B/SOP517
Antimony		ND	U	2	"	B0K0016	11/02/10	6010C/SOP503
Arsenic		2.3		2	"	"	"	6010C/SOP503
Barium		130		5	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman Project Number: R11S15 Project: Cordero Mercury Mine FY11 Sampling	Emergency Response Section 75 Hawthorne Street San Francisco CA, 94105	SDG: 10305A Reported: 12/03/10 14:11
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Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1011001-09								
Sample ID: COR-LOT1-09-18"								
Soil - Sampled: 10/19/10 11:25								
Metals by EPA 6000/7000 Series Methods								
Beryllium		0.70		0.10	mg/kg wet	B0K0016	11/02/10	11/22/10 6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		14		1	"	"	"	6010C/SOP503
Cobalt		5.2	J	2	"	"	"	6010C/SOP503
Copper		15	J	4	"	"	"	6010C/SOP503
Lead		6.1		3	"	"	"	6010C/SOP503
Molybdenum		ND	U	5	"	"	"	6010C/SOP503
Nickel		10		5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		27		2	"	"	"	6010C/SOP503
Zinc		42		8	"	"	"	6010C/SOP503
Lab ID: 1011001-10								
Sample ID: COR-LOT1-11								
Soil - Sampled: 10/19/10 11:00								
Metals by EPA 6000/7000 Series Methods								
Mercury		210	A2, J, Q5	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		3.7	J, Q4 J	1.9	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		35		1.9	"	"	"	6010C/SOP503
Barium		210		4.7	"	"	"	6010C/SOP503
Beryllium		0.80		0.09	"	"	"	6010C/SOP503
Cadmium		0.30	Cl, J	0.47	"	"	"	6010C/SOP503
Chromium		6.4		0.94	"	"	"	6010C/SOP503
Cobalt		2.9	J	1.9	"	"	"	6010C/SOP503
Copper		13	J	3.8	"	"	"	6010C/SOP503
Lead		13		2.8	"	"	"	6010C/SOP503
Molybdenum		5.6	J, Q4 J	4.7	"	"	"	6010C/SOP503
Nickel		4.1	Cl, J	4.7	"	"	"	6010C/SOP503
Selenium		ND	U	1.9	"	"	"	6010C/SOP503
Silver		ND	U	0.94	"	"	"	6010C/SOP503
Thallium		ND	U	4.7	"	"	"	6010C/SOP503
Vanadium		28		1.9	"	"	"	6010C/SOP503
Zinc		71		7.5	"	"	"	6010C/SOP503
Lab ID: 1011001-11								
Sample ID: COR-LOT1-11 (PD)								
Soil - Sampled: 10/19/10 11:00								
Metals by EPA 6000/7000 Series Methods								
Mercury		150	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		3.7	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		34		2	"	"	"	6010C/SOP503
Barium		200		5	"	"	"	6010C/SOP503
Beryllium		0.79		0.10	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

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Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10305A

Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1011001-11

Soil - Sampled: 10/19/10 11:00

Sample ID: COR-LOT1-11 (PD)

Metals by EPA 6000/7000 Series Methods								
Cadmium		ND	U	0.50	mg/kg wet	B0K0016	11/02/10	11/22/10 6010C/SOP503
Chromium		6.1		1	"	"	"	6010C/SOP503
Cobalt		2.9	J	2	"	"	"	6010C/SOP503
Copper		13	J	4	"	"	"	6010C/SOP503
Lead		13		3	"	"	"	6010C/SOP503
Molybdenum		5.6	J	5	"	"	"	6010C/SOP503
Nickel		4.0	Cl, J	5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		28		2	"	"	"	6010C/SOP503
Zinc		74		8	"	"	"	6010C/SOP503

Lab ID: 1011001-12

Soil - Sampled: 10/19/10 11:05

Sample ID: COR-LOT1-12

Metals by EPA 6000/7000 Series Methods								
Mercury		78	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		3.5	J	1.9	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		31		1.9	"	"	"	6010C/SOP503
Barium		170		4.7	"	"	"	6010C/SOP503
Beryllium		0.85		0.09	"	"	"	6010C/SOP503
Cadmium		0.41	Cl, J	0.47	"	"	"	6010C/SOP503
Chromium		4.1		0.93	"	"	"	6010C/SOP503
Cobalt		2.9	J	1.9	"	"	"	6010C/SOP503
Copper		11	J	3.7	"	"	"	6010C/SOP503
Lead		12		2.8	"	"	"	6010C/SOP503
Molybdenum		5.7	J	4.7	"	"	"	6010C/SOP503
Nickel		3.3	Cl, J	4.7	"	"	"	6010C/SOP503
Selenium		ND	U	1.9	"	"	"	6010C/SOP503
Silver		ND	U	0.93	"	"	"	6010C/SOP503
Thallium		ND	U	4.7	"	"	"	6010C/SOP503
Vanadium		23		1.9	"	"	"	6010C/SOP503
Zinc		69		7.5	"	"	"	6010C/SOP503

Lab ID: 1011001-13

Soil - Sampled: 10/19/10 14:00

Sample ID: COR-WP1-01

Metals by EPA 6000/7000 Series Methods								
Mercury		150	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		17	J	1.9	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		55		1.9	"	"	"	6010C/SOP503
Barium		260		4.7	"	"	"	6010C/SOP503
Beryllium		0.79		0.09	"	"	"	6010C/SOP503
Cadmium		0.33	Cl, J	0.47	"	"	"	6010C/SOP503
Chromium		5.6		0.94	"	"	"	6010C/SOP503

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3/10/11



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10305A

Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1011001-13

Soil - Sampled: 10/19/10 14:00

Sample ID: COR-WP1-01

Metals by EPA 6000/7000 Series Methods								
Cobalt		3.8	J	1.9	mg/kg wet	B0K0016	11/02/10	11/22/10 6010C/SOP503
Copper		14	J	3.8	"	"	"	6010C/SOP503
Lead		26		2.8	"	"	"	6010C/SOP503
Molybdenum		8.1	J	4.7	"	"	"	6010C/SOP503
Nickel		3.9	Cl, J	4.7	"	"	"	6010C/SOP503
Selenium		1.1	Cl, J	1.9	"	"	"	6010C/SOP503
Silver		ND	U	0.94	"	"	"	6010C/SOP503
Thallium		ND	U	4.7	"	"	"	6010C/SOP503
Vanadium		30		1.9	"	"	"	6010C/SOP503
Zinc		120		7.5	"	"	"	6010C/SOP503

Lab ID: 1011001-14

Soil - Sampled: 10/19/10 14:20

Sample ID: COR-WP1-03

Metals by EPA 6000/7000 Series Methods								
Mercury		78	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		6.1	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		56		2	"	"	"	6010C/SOP503
Barium		240		5	"	"	"	6010C/SOP503
Beryllium		0.99		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		1.6		1	"	"	"	6010C/SOP503
Cobalt		2.3	J	2	"	"	"	6010C/SOP503
Copper		10	J	4	"	"	"	6010C/SOP503
Lead		20		3	"	"	"	6010C/SOP503
Molybdenum		6.9	J	5	"	"	"	6010C/SOP503
Nickel		ND	U	5	"	"	"	6010C/SOP503
Selenium		1.1	Cl, J	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		21		2	"	"	"	6010C/SOP503
Zinc		82		8	"	"	"	6010C/SOP503

Lab ID: 1011001-15

Soil - Sampled: 10/19/10 15:20

Sample ID: COR-WP2-01

Metals by EPA 6000/7000 Series Methods								
Mercury		200	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		8.6	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		24		2	"	"	"	6010C/SOP503
Barium		330		5	"	"	"	6010C/SOP503
Beryllium		0.82		0.10	"	"	"	6010C/SOP503
Cadmium		0.39	Cl, J	0.50	"	"	"	6010C/SOP503
Chromium		1.9		1	"	"	"	6010C/SOP503
Cobalt		8.6	J	2	"	"	"	6010C/SOP503
Copper		15	J	4	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10305A

Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1011001-15

Soil - Sampled: 10/19/10 15:20

Sample ID: COR-WP2-01

Metals by EPA 6000/7000 Series Methods								
Lead		15		3	mg/kg wet	B0K0016	11/02/10	11/22/10 6010C/SOP503
Molybdenum		3.8	Cl, J	5	"	"	"	6010C/SOP503
Nickel		3.0	Cl, J	5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		39		2	"	"	"	6010C/SOP503
Zinc		37		8	"	"	"	6010C/SOP503

Lab ID: 1011001-16

Soil - Sampled: 10/19/10 15:25

Sample ID: COR-WP3-01

Metals by EPA 6000/7000 Series Methods								
Mercury		1,200	A2, J	60	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		40	J	2	"	B0K0016	11/02/10	11/22/10 6010C/SOP503
Arsenic		69		2	"	"	"	6010C/SOP503
Barium		290		5	"	"	"	6010C/SOP503
Beryllium		0.64		0.10	"	"	"	6010C/SOP503
Cadmium		0.68		0.50	"	"	"	6010C/SOP503
Chromium		3.3		1	"	"	"	6010C/SOP503
Cobalt		2.8	J	2	"	"	"	6010C/SOP503
Copper		9.5	J	4	"	"	"	6010C/SOP503
Lead		64		3	"	"	"	6010C/SOP503
Molybdenum		12	J	5	"	"	"	6010C/SOP503
Nickel		ND	U	5	"	"	"	6010C/SOP503
Selenium		6.6		2	"	"	"	6010C/SOP503
Silver		0.56	Cl, J	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		28		2	"	"	"	6010C/SOP503
Zinc		110		8	"	"	"	6010C/SOP503

Lab ID: 1011001-17

Soil - Sampled: 10/19/10 15:25

Sample ID: COR-WP3-01 (PD)

Metals by EPA 6000/7000 Series Methods								
Mercury		1,100	A2, J	60	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		40	J	2	"	B0K0016	11/02/10	11/23/10 6010C/SOP503
Arsenic		68		2	"	"	"	6010C/SOP503
Barium		280		5	"	"	"	6010C/SOP503
Beryllium		0.63		0.10	"	"	"	6010C/SOP503
Cadmium		0.64		0.50	"	"	"	6010C/SOP503
Chromium		3.2		1	"	"	"	6010C/SOP503
Cobalt		2.6	J	2	"	"	"	6010C/SOP503
Copper		9.6	J	4	"	"	"	6010C/SOP503
Lead		64		3	"	"	"	6010C/SOP503
Molybdenum		12	J	5	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10305A
Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID:	1011001-17	Soil - Sampled: 10/19/10 15:25						
Sample ID:	COR-WP3-01 (PD)	Metals by EPA 6000/7000 Series Methods						
Nickel		ND	U	5	mg/kg wet	B0K0016	11/02/10 11/23/10	6010C/SOP503
Selenium		6.7		2	"	"	"	6010C/SOP503
Silver		0.54	Cl, J	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		28		2	"	"	"	6010C/SOP503
Zinc		110		8	"	"	"	6010C/SOP503
Lab ID:	1011001-18	Soil - Sampled: 10/19/10 15:35						
Sample ID:	COR-WP4-01	Metals by EPA 6000/7000 Series Methods						
Mercury		600	A2, J	60	mg/kg wet	B0K0041	11/09/10 11/10/10	7471B/SOP517
Antimony		4.1	J	4	"	B0K0016	11/02/10 11/24/10	6010C/SOP503
Arsenic		160		4	"	"	"	6010C/SOP503
Barium		91		10	"	"	"	6010C/SOP503
Beryllium		6.5		0.20	"	"	"	6010C/SOP503
Cadmium		0.86	Cl, J	1	"	"	"	6010C/SOP503
Chromium		4.8		2	"	"	"	6010C/SOP503
Cobalt		5.1	J	4	"	"	"	6010C/SOP503
Copper		30	J	8	"	"	"	6010C/SOP503
Lead		17		6	"	"	"	6010C/SOP503
Molybdenum		12		10	"	"	"	6010C/SOP503
Nickel		5.0	Cl, J J	10	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	4	"	"	11/29/10	6010C/SOP503
Silver		ND	U	2	"	"	11/24/10	6010C/SOP503
Thallium		ND	U	10	"	"	"	6010C/SOP503
Vanadium		22		4	"	"	"	6010C/SOP503
Zinc		590		16	"	"	"	6010C/SOP503
Lab ID:	1011001-19	Soil - Sampled: 10/20/10 09:00						
Sample ID:	COR-LOT2-01	Metals by EPA 6000/7000 Series Methods						
Mercury		11	A2, J	1.5	mg/kg wet	B0K0041	11/09/10 11/10/10	7471B/SOP517
Antimony		8.7	J	2	"	B0K0016	11/02/10 11/23/10	6010C/SOP503
Arsenic		19		2	"	"	"	6010C/SOP503
Barium		240		5	"	"	"	6010C/SOP503
Beryllium		0.73		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		9.0		1	"	"	"	6010C/SOP503
Cobalt		4.4	J	2	"	"	"	6010C/SOP503
Copper		13	J	4	"	"	"	6010C/SOP503
Lead		17		3	"	"	"	6010C/SOP503
Molybdenum		ND	U	5	"	"	"	6010C/SOP503
Nickel		8.3		5	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10305A
Project Number: R11S15	75 Hawthorne Street	Reported: 12/03/10 14:11
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID:	1011001-19						Soil - Sampled: 10/20/10 09:00	
Sample ID:	COR-LOT2-01							Metals by EPA 6000/7000 Series Methods
Selenium		ND	U	2	mg/kg wet	B0K0016	11/02/10	11/23/10 6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		32		2	"	"	"	6010C/SOP503
Zinc		61		8	"	"	"	6010C/SOP503

Lab ID:	1011001-20						Soil - Sampled: 10/20/10 09:05	
Sample ID:	COR-LOT2-02							Metals by EPA 6000/7000 Series Methods
Mercury		23	A2, J, Q5	3	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		6.6	J, Q4 J	1.9	"	B0K0016	11/02/10	11/23/10 6010C/SOP503
Arsenic		19		1.9	"	"	"	6010C/SOP503
Barium		190		4.7	"	"	"	6010C/SOP503
Beryllium		0.76		0.09	"	"	"	6010C/SOP503
Cadmium		0.23	Cl, J	0.47	"	"	"	6010C/SOP503
Chromium		9.9		0.93	"	"	"	6010C/SOP503
Cobalt		5.0	J, Q4 J	1.9	"	"	"	6010C/SOP503
Copper		13	J, Q4 J	3.7	"	"	"	6010C/SOP503
Lead		15		2.8	"	"	"	6010C/SOP503
Molybdenum		ND	J, Q4, U	4.7	"	"	"	6010C/SOP503
Nickel		8.0		4.7	"	"	"	6010C/SOP503
Selenium		ND	U	1.9	"	"	"	6010C/SOP503
Silver		ND	U	0.93	"	"	"	6010C/SOP503
Thallium		ND	U	4.7	"	"	"	6010C/SOP503
Vanadium		31		1.9	"	"	"	6010C/SOP503
Zinc		58		7.5	"	"	"	6010C/SOP503

Lab ID:	1011001-21						Soil - Sampled: 10/20/10 09:30	
Sample ID:	COR-LOT2-02-6"							Metals by EPA 6000/7000 Series Methods
Mercury		20	A2, J	2.9	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		11	J	1.9	"	B0K0016	11/02/10	11/23/10 6010C/SOP503
Arsenic		31		1.9	"	"	"	6010C/SOP503
Barium		250		4.7	"	"	"	6010C/SOP503
Beryllium		0.93		0.09	"	"	"	6010C/SOP503
Cadmium		ND	U	0.47	"	"	"	6010C/SOP503
Chromium		6.5		0.94	"	"	"	6010C/SOP503
Cobalt		6.0	J	1.9	"	"	"	6010C/SOP503
Copper		9.9	J	3.8	"	"	"	6010C/SOP503
Lead		19		2.8	"	"	"	6010C/SOP503
Molybdenum		ND	U	4.7	"	"	"	6010C/SOP503
Nickel		5.4		4.7	"	"	"	6010C/SOP503
Selenium		ND	U	1.9	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10305A

Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1011001-21

Soil - Sampled: 10/20/10 09:30

Sample ID: COR-LOT2-02-6"

Metals by EPA 6000/7000 Series Methods

Silver		ND	U	0.94	mg/kg wet	B0K0016	11/02/10	11/23/10	6010C/SOP503
Thallium		ND	U	4.7	"	"	"	"	6010C/SOP503
Vanadium		31		1.9	"	"	"	"	6010C/SOP503
Zinc		57		7.5	"	"	"	"	6010C/SOP503

Lab ID: 1011001-22

Soil - Sampled: 10/20/10 09:20

Sample ID: COR-LOT2-04

Metals by EPA 6000/7000 Series Methods

Mercury		13	A2, J	2.8	mg/kg wet	B0K0041	11/09/10	11/10/10	7471B/SOP517
Antimony		8.2	J	1.9	"	B0K0016	11/02/10	11/23/10	6010C/SOP503
Arsenic		20		1.9	"	"	"	"	6010C/SOP503
Barium		170		4.6	"	"	"	"	6010C/SOP503
Beryllium		0.81		0.09	"	"	"	"	6010C/SOP503
Cadmium		0.40	Cl, J	0.46	"	"	"	"	6010C/SOP503
Chromium		9.7		0.93	"	"	"	"	6010C/SOP503
Cobalt		5.2	J	1.9	"	"	"	"	6010C/SOP503
Copper		12	J	3.7	"	"	"	"	6010C/SOP503
Lead		20		2.8	"	"	"	"	6010C/SOP503
Molybdenum		ND	U	4.6	"	"	"	"	6010C/SOP503
Nickel		7.7		4.6	"	"	"	"	6010C/SOP503
Selenium		ND	U	1.9	"	"	"	"	6010C/SOP503
Silver		ND	U	0.93	"	"	"	"	6010C/SOP503
Thallium		ND	U	4.6	"	"	"	"	6010C/SOP503
Vanadium		29		1.9	"	"	"	"	6010C/SOP503
Zinc		62		7.4	"	"	"	"	6010C/SOP503

Lab ID: 1011001-23

Soil - Sampled: 10/20/10 09:25

Sample ID: COR-LOT2-05

Metals by EPA 6000/7000 Series Methods

Mercury		6.7	A2, J	0.27	mg/kg wet	B0K0041	11/09/10	11/10/10	7471B/SOP517
Antimony		3.7	J	2	"	B0K0016	11/02/10	11/23/10	6010C/SOP503
Arsenic		18		2	"	"	"	"	6010C/SOP503
Barium		130		5	"	"	"	"	6010C/SOP503
Beryllium		0.62		0.10	"	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	"	6010C/SOP503
Chromium		25		1	"	"	"	"	6010C/SOP503
Cobalt		5.4	J	2	"	"	"	"	6010C/SOP503
Copper		15	J	4	"	"	"	"	6010C/SOP503
Lead		11		3	"	"	"	"	6010C/SOP503
Molybdenum		ND	U	5	"	"	"	"	6010C/SOP503
Nickel		16		5	"	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	"	6010C/SOP503



United States Environmental Protection Agency

Region 9 Laboratory

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Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10305A

Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1011001-23

Soil - Sampled: 10/20/10 09:25

Sample ID: COR-LOT2-05

Metals by EPA 6000/7000 Series Methods								
Thallium		ND	U	5	mg/kg wet	B0K0016	11/02/10	11/23/10 6010C/SOP503
Vanadium		31		2	"	"	"	6010C/SOP503
Zinc		57		8	"	"	"	6010C/SOP503

Lab ID: 1011001-24

Soil - Sampled: 10/20/10 09:18

Sample ID: COR-LOT2-06

Metals by EPA 6000/7000 Series Methods								
Mercury		11	A2, J	2.6	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		5.9	J	1.9	"	B0K0016	11/02/10	11/23/10 6010C/SOP503
Arsenic		23		1.9	"	"	"	6010C/SOP503
Barium		140		4.7	"	"	"	6010C/SOP503
Beryllium		0.71		0.09	"	"	"	6010C/SOP503
Cadmium		0.26	Cl, J	0.47	"	"	"	6010C/SOP503
Chromium		23		0.94	"	"	"	6010C/SOP503
Cobalt		6.2	J	1.9	"	"	"	6010C/SOP503
Copper		16	J	3.8	"	"	"	6010C/SOP503
Lead		13		2.8	"	"	"	6010C/SOP503
Molybdenum		ND	U	4.7	"	"	"	6010C/SOP503
Nickel		19		4.7	"	"	"	6010C/SOP503
Selenium		ND	U	1.9	"	"	"	6010C/SOP503
Silver		ND	U	0.94	"	"	"	6010C/SOP503
Thallium		ND	U	4.7	"	"	"	6010C/SOP503
Vanadium		33		1.9	"	"	"	6010C/SOP503
Zinc		57		7.5	"	"	"	6010C/SOP503

Lab ID: 1011001-25

Soil - Sampled: 10/20/10 10:10

Sample ID: COR-TRK2-01

Metals by EPA 6000/7000 Series Methods								
Mercury		3.1	A2, J	0.15	mg/kg wet	B0K0041	11/09/10	11/10/10 7471B/SOP517
Antimony		ND	U	2	"	B0K0016	11/02/10	11/23/10 6010C/SOP503
Arsenic		5.0		2	"	"	"	6010C/SOP503
Barium		150		5	"	"	"	6010C/SOP503
Beryllium		0.65		0.10	"	"	"	6010C/SOP503
Cadmium		0.27	Cl, J	0.50	"	"	"	6010C/SOP503
Chromium		14		1	"	"	"	6010C/SOP503
Cobalt		4.9	J	2	"	"	"	6010C/SOP503
Copper		16	J	4	"	"	"	6010C/SOP503
Lead		7.9		3	"	"	"	6010C/SOP503
Molybdenum		ND	U	5	"	"	"	6010C/SOP503
Nickel		9.8		5	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10305A

Reported: 12/03/10 14:11

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1011001-25							Soil - Sampled: 10/20/10 10:10	
Sample ID: CQR-TRK2-01							Metals by EPA 6000/7000 Series Methods	
Vanadium		36		2	mg/kg wet	B0K0016	11/02/10 11/23/10	6010C/SOP503
Zinc		56		8	"	"	"	6010C/SOP503
Lab ID: 1011001-26							Soil - Sampled: 10/20/10 10:50	
Sample ID: COR-CEM-02							Metals by EPA 6000/7000 Series Methods	
Mercury		140	A2, J	14	mg/kg wet	B0K0041	11/09/10 11/10/10	7471B/SOP517
Antimony		8.4	J	2	"	B0K0016	11/02/10 11/23/10	6010C/SOP503
Arsenic		76		2	"	"	"	6010C/SOP503
Barium		330		5	"	"	"	6010C/SOP503
Beryllium		0.78		0.10	"	"	"	6010C/SOP503
Cadmium		0.45	Cl, J	0.50	"	"	"	6010C/SOP503
Chromium		2.2		1	"	"	"	6010C/SOP503
Cobalt		2.1	J	2	"	"	"	6010C/SOP503
Copper		11	J	4	"	"	"	6010C/SOP503
Lead		28		3	"	"	"	6010C/SOP503
Molybdenum		11	J	5	"	"	"	6010C/SOP503
Nickel		ND	U	5	"	"	"	6010C/SOP503
Selenium		1.2	Cl, J	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		32		2	"	"	"	6010C/SOP503
Zinc		110		8	"	"	"	6010C/SOP503
Lab ID: 1011001-27							Soil - Sampled: 10/20/10 10:50	
Sample ID: COR-CEM-02 (PD)							Metals by EPA 6000/7000 Series Methods	
Mercury		110	A2, J	15	mg/kg wet	B0K0041	11/09/10 11/10/10	7471B/SOP517
Antimony		8.5	J	2	"	B0K0016	11/02/10 11/23/10	6010C/SOP503
Arsenic		77		2	"	"	"	6010C/SOP503
Barium		340		5	"	"	"	6010C/SOP503
Beryllium		0.78		0.10	"	"	"	6010C/SOP503
Cadmium		0.53		0.50	"	"	"	6010C/SOP503
Chromium		2.1		1	"	"	"	6010C/SOP503
Cobalt		2.2	J	2	"	"	"	6010C/SOP503
Copper		12	J	4	"	"	"	6010C/SOP503
Lead		28		3	"	"	"	6010C/SOP503
Molybdenum		11	J	5	"	"	"	6010C/SOP503
Nickel		ND	U	5	"	"	"	6010C/SOP503
Selenium		1.3	Cl, J	2	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		32		2	"	"	"	6010C/SOP503
Zinc		110		8	"	"	"	6010C/SOP503



United States Environmental Protection Agency

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Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Emergency Response Section

SDG: 10305A

Project Number: R11S15

75 Hawthorne Street

Reported: 12/03/10 14:11

Project: Cordero Mercury Mine FY11 Sampling

San Francisco CA, 94105

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1011001-28

Soil - Sampled: 10/20/10 11:13

Sample ID: COR-JACA-01

Metals by EPA 6000/7000 Series Methods

Mercury		34	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10	7471B/SOP517
Antimony		7.6	J	2	"	B0K0016	11/02/10	11/23/10	6010C/SOP503
Arsenic		35		2	"	"	"	"	6010C/SOP503
Barium		190		5	"	"	"	"	6010C/SOP503
Beryllium		0.61		0.10	"	"	"	"	6010C/SOP503
Cadmium		0.59		0.50	"	"	"	"	6010C/SOP503
Chromium		9.7		1	"	"	"	"	6010C/SOP503
Cobalt		4.7	J	2	"	"	"	"	6010C/SOP503
Copper		22	J	4	"	"	"	"	6010C/SOP503
Lead		85		3	"	"	"	"	6010C/SOP503
Molybdenum		6.1	J	5	"	"	"	"	6010C/SOP503
Nickel		8.7		5	"	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	"	6010C/SOP503
Vanadium		31		2	"	"	"	"	6010C/SOP503
Zinc		96		8	"	"	"	"	6010C/SOP503

Lab ID: 1011001-29

Soil - Sampled: 10/20/10 11:00

Sample ID: COR-LAVA-01

Metals by EPA 6000/7000 Series Methods

Mercury		93	A2, J	15	mg/kg wet	B0K0041	11/09/10	11/10/10	7471B/SOP517
Antimony		6.9	J	2	"	B0K0016	11/02/10	11/23/10	6010C/SOP503
Arsenic		44		2	"	"	"	"	6010C/SOP503
Barium		230		5	"	"	"	"	6010C/SOP503
Beryllium		0.75		0.10	"	"	"	"	6010C/SOP503
Cadmium		0.50		0.50	"	"	"	"	6010C/SOP503
Chromium		4.9		1	"	"	"	"	6010C/SOP503
Cobalt		4.3	J	2	"	"	"	"	6010C/SOP503
Copper		14	J	4	"	"	"	"	6010C/SOP503
Lead		28		3	"	"	"	"	6010C/SOP503
Molybdenum		7.6	J	5	"	"	"	"	6010C/SOP503
Nickel		4.0	Cl, J	5	"	"	"	"	6010C/SOP503
Selenium		ND	U	2	"	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	"	6010C/SOP503
Vanadium		31		2	"	"	"	"	6010C/SOP503
Zinc		85		8	"	"	"	"	6010C/SOP503

m. 12/3/10/11



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10305A
Project Number: R11S15	75 Hawthorne Street	Reported: 12/03/10 14:11
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B0K0016 - 3050B Sld Acid Dig - Metals by 6010

Prepared: 11/02/10 Analyzed: 11/22/10
Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0K0016-BLK1)

Antimony	ND	U		2 mg/kg wet
Arsenic	ND	U		2 "
Barium	ND	U		5 "
Beryllium	ND	U		0.1 "
Cadmium	ND	U		0.5 "
Chromium	ND	U		1 "
Cobalt	ND	U		2 "
Copper	ND	U		4 "
Lead	ND	U		3 "
Molybdenum	ND	U		5 "
Nickel	ND	U		5 "
Selenium	ND	U		2 "
Silver	ND	U		1 "
Thallium	ND	U		5 "
Vanadium	ND	U		2 "
Zinc	ND	U		8 "

Blank (B0K0016-BLK2)

Antimony	ND	U		2 mg/kg wet
Arsenic	ND	U		2 "
Barium	ND	U		5 "
Beryllium	ND	U		0.1 "
Cadmium	ND	U		0.5 "
Chromium	ND	U		1 "
Cobalt	ND	U		2 "
Copper	ND	U		4 "
Lead	ND	U		3 "
Molybdenum	ND	U		5 "
Nickel	ND	U		5 "
Selenium	ND	U		2 "
Silver	ND	U		1 "
Thallium	ND	U		5 "
Vanadium	ND	U		2 "
Zinc	ND	U		8 "

Matrix Spike (B0K0016-MS1)

Source: 1011001-10

Antimony	57.4		2 mg/kg wet	98.0	3.73	55	75-125	20
Arsenic	381		2 "	392	34.7	88	75-125	20
Barium	542		5 "	392	206	86	75-125	20
Beryllium	9.31		0.1 "	9.80	0.804	87	75-125	20
Cadmium	8.31		0.5 "	9.80	0.304	82	75-125	20
Chromium	39.5		1 "	39.2	6.42	84	75-125	20



United States Environmental Protection Agency Region 9 Laboratory

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Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10305A
Project Number: R11S15	75 Hawthorne Street	Reported: 12/03/10 14:11
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B0K0016 - 3050B Std Acid Dig - Metals by 6010

Prepared: 11/02/10 Analyzed: 11/22/10
Metals by EPA 6000/7000 Series Methods - Quality Control

Reference (B0K0016-SRM2)

Beryllium	19.4		0.1	"	18.8		103	81.38-118		
Cadmium	39.5		0.5	"	41.6		95	77.16-123		
Chromium	101		1	"	96.5		105	80.06-119		
Cobalt	129		2	"	140		92	82.42-118		
Lead	198		3	"	224		88	74.82-125		
Nickel	55.9		5	"	56.8		99	76.58-123		
Selenium	44.5		2	"	37.0		120	47.57-152		
Silver	24.3		1	"	20.9		116	63.16-136		
Thallium	31.6		5	"	38.1		83	64.57-135		
Vanadium	70.9		2	"	65.8		108	80.55-119		
Zinc	169		8	"	175		97	72.97-127		

Reference (B0K0016-SRM3)

Copper	6,370		20	mg/kg wet	6680		95	85.73-114		
Silver	28.2		5	"	20.9		135	63.16-136		

Reference (B0K0016-SRM4)

Copper	6,360		20	mg/kg wet	6680		95	85.73-114		
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Batch B0K0041 - 7471B Hg Digest - Mercury, High Level

Prepared: 11/09/10 Analyzed: 11/10/10
Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0K0041-BLK1)

Mercury	ND	U	0.15	mg/kg wet						
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Blank (B0K0041-BLK2)

Mercury	ND	U	0.15	mg/kg wet						
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Duplicate (B0K0041-DUP1)

Mercury	131	Source: 1011001-10	14	mg/kg wet		210			46	20
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Duplicate (B0K0041-DUP2)

Mercury	18	Source: 1011001-20	3	mg/kg wet		23.5			26	20
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Matrix Spike (B0K0041-MS1)

Mercury	155	Source: 1011001-10 Q10	15	mg/kg wet	1.43	210	NR	80-120		200
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Matrix Spike (B0K0041-MS2)

Mercury	20.3	Source: 1011001-20 Q10	3	mg/kg wet	1.46	23.5	NR	80-120		200
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Reference (B0K0041-SRM1)

Mercury	12.5		0.75	mg/kg wet	12.3		101	63.41-137		
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Reference (B0K0041-SRM2)

Mercury	12.4		0.75	mg/kg wet	12.3		101	63.41-137		
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CHAIN OF CUSTODY RECORD

1031 S. 46th St., Bldg. 201
Richmond, CA 94804-4698

PROJ. NO.		PROJECT NAME		NO. OF CON-TAINERS		REMARKS	
SAMPLERS: (Signature)		CORBERO Mole Site					
DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION		
10/19/10	0935	Soil	X		COR-LOT1-01	1	
	0945		X		COR-LOT1-02	1	
	0955		X		COR-LOT1-03	1	
	1010		X		COR-LOT1-04	1	
	1025		X		COR-LOT1-05	1	
	1030		X		COR-LOT1-06	1	
	1035		X		COR-LOT1-07	1	
	1045		X		COR-LOT1-08	1	
	1125		X		COR-LOT1-09-18"	1	
	1100		X		COR-LOT1-11	1	
	1105		X		COR-LOT1-11 (PA)	1	
	1105		X		COR-LOT1-12	1	
	1400		X		COR-WP1-01	1	
	1420		X		COR-WP1-03	1	
	1520		X		COR-WP2-01	1	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
[Signature]		10/29/10 10:35		[Signature]		[Signature]	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
[Signature]		[Signature]		[Signature]		[Signature]	
Received for Laboratory by: (Signature)		Date / Time		Temp.		Seals Intact (Y/N)	
[Signature]		10/24/10 10:35					
Conditions / Remarks				HAND DELIVERED 22°C			

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

CHAIN OF CUSTODY RECORD

1337 S. 46th St., Bldg. 201
Richmond, CA 94804-4698

205-2

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
SAMPLERS: (Signature)		SAMPLE IDENTIFICATION					
DATE	TIME	MATRIX	COMP	GRAB			
10/19/10	1525	Soil	X		COR-WP3-01	1	<p>Asbestos (As) & Mercury (Hg) Anionic-Cover</p>
10/19/10	1525		X		COR-WP3-01 (PD)	1	
10/19/10	1535		X		COR-WP4-01	1	
10/20/10	0900		X		COR-LOT2-01	1	
10/20/10	0905		X		COR-LOT2-02	1	
	0930		X		COR-LOT2-02-6"	1	
	0920		X		COR-LOT2-04	1	
	0925		X		COR-LOT2-05	1	
	0918		X		COR-LOT2-06	1	
	1010		X		COR-TRK2-01	1	
	1050		X		COR-CEM-02	1	
	1050		X		COR-CEM-02 (PD)	1	
	1113		X		COR-JACA-01	1	
	1100	Soil	X		COR-LAVA-01	1	
<p>Relinquished by: (Signature) <i>[Signature]</i> Date / Time 10/20/10 10:35 Received by: (Signature) _____ Date / Time _____</p> <p>Relinquished by: (Signature) <i>[Signature]</i> Date / Time 10/20/10 10:35 Received by: (Signature) _____ Date / Time _____</p> <p>Received for Laboratory by: (Signature) <i>[Signature]</i> Date / Time 10/20/10 10:35 Temp. 22°C Seals Intact (Y/N)</p>							

Hand DELIVERED

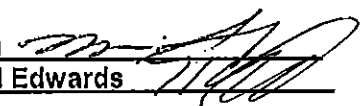
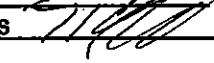
ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Laboratory: EPA Region 9 Laboratory	Lab Project Number: 1009025
Sampling Dates: 09/14/10	Sample Matrix: Soil
Analytical Method: CAM Metals (EPA 6010B/7471A)	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song 
 Technical QA Reviewer: Howard Edwards 
 Project Manager: Neil Ellis

Date: 3/10/11
 Date: 3/28/11
 Date: _____

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	COR-NR-01	1009025-01
2	COR-NR-01-6	1009025-02
3	COR-NR-01-18	1009025-03
4	COR-NR-02	1009025-04
5	COR-NR-02-6	1009025-05
6	COR-NR-03	1009025-06
7	COR-NR-03-6	1009025-07
8	COR-NR-03-18	1009025-08
9	COR-NR-04 MS/MSD	1009025-09
10	COR-NR-04-6	1009025-10
11	COR-NR-103	1009025-11
12	COR-NR-05	1009025-12
13	COR-NR-05-6	1009025-13
14	COR-NR-05-18	1009025-14
15	COR-NR-06	1009025-15
16	COR-NR-06-6	1009025-16
17	COR-NR-07	1009025-17
18	COR-SR-01	1009025-18
19	COR-SR-01-6	1009025-19
20	COR-SR-02	1009025-20

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Sample No.	Sample I.D.	Laboratory I.D.
21	COR-SR-03	1009025-21
22	COR-SR-03-6	1009025-22
23	COR-NR-BKG-01	1009025-23
24	COR-NR-BKG-01-6	1009025-24
25	COR-SR-04	1009025-25
26	COR-SR-104	1009025-26
27	COR-SR-04 MS/MSD	1009025-27
28	COR-SR-101	1009025-28
29	COR-SR-BKG-01	1009025-29
30	COR-SR-BKG-02	1009025-30
31	COR-MINE-01	1009025-31
32	COR-MINE-02	1009025-32
33	COR-NR-03-ERB	1009025-33

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

- ☒ Included: no problems
- ☐ * Included: problems noted in review
- ☐ O Not Included and/or Not Available
- ☐ NR Not Required
- ☐ RS Provided As Re-submission

Case Narrative:

- ☒ Case Narrative present

Quality Control Summary Package:

- ☒ Data Summary sheets
- ☒ Initial and Continuing Calibration results
- ☐ NR CRDL Standard results
- ☒ Preparation Blank and Calibration Blank results
- ☒ ICP Interference Check Sample results
- ☐ * Matrix Spike recoveries
- ☐ * Matrix Duplicate results
- ☒ Laboratory Control Sample recoveries
- ☐ NR Method of Standard Additions results
- ☐ NR ICP Serial Dilution results
- ☐ NR Instrument Detection Limits
- ☐ NR ICP Interelement Correction Factors
- ☐ NR ICP Linear Ranges

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

 X Preparation Log
 X Analysis Run Log

Raw QC Data Package Section

 X Chain-of-Custody Records
 X Instrument Printouts
 X Sample Preparation Notebook Pages
 X Logbook and Worksheet Pages
 X Percent Solids Determination

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Initial and Continuing Calibrations	YES
3	Laboratory Control Sample	YES
4	Matrix Spike	NO
5	Blanks and Background Samples	YES
6	Duplicate Analyses	NO
7	Interference Check Samples and Serial Dilution Analysis	YES
8	Post Digestion Spike and Standard Addition Analysis	N/A
9	Analyte Quantitation	YES
10	Overall Assessment of Data	YES
11	Usability of Data	YES

Comments: N/A: Not Applicable.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

1. HOLDING TIMES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer's judgement.

All Sample Matrices:

Mercury: 28 days (from collection) for analysis.

Hexavalent chromium: 24 hours (from collection) for analysis.

All other metals: 180 days (from collection) for analysis.

Comments: All holding times were met.

2. INITIAL AND CONTINUING CALIBRATION VERIFICATION

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Unless flagged below, an initial calibration verification (ICV) and a calibration blank were analyzed at the beginning of the run, and a continuing calibration verification (CCV) and a calibration blank were analyzed after every ten samples, and at the end of the run. ICV and CCV recoveries were within a range of 80-120% for mercury and tin, and 90-110% for all other metals. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 65% or above 135% (for mercury and tin) or below 75% or above 125% (for all other metals), all associated data are rejected (R).

Comments: All recoveries of metals in initial and continuing calibration verifications were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

3. LABORATORY CONTROL SAMPLE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Percent recoveries of LCS were within the control limits.

4. MATRIX SPIKE

- ☐ Acceptable
☒ Acceptable with qualification
☐ Unacceptable
☐ No Matrix Spikes Analyzed

Matrix spike recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. Unless flagged below, one laboratory control sample was analyzed at a rate of one per batch or one per 20 samples. Recoveries were within a range of 75-125%.

For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Samples COR-NR-04 MS/MSD and COR-SR-04 MS/MSD were designated for matrix spike and matrix spike duplicate. All recoveries except antimony were within the control limits. The recoveries of antimony were below 30%. The non-detected antimony results were rejected (R) and the detected antimony results were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

5. BLANKS AND BACKGROUND SAMPLES

☒ Acceptable
☐ Detection Limits Adjusted

The following blanks were analyzed:

☒ Method (preparation) Blanks
☐ Field Blanks
☐ Calibration Blanks
☒ Rinsate Blanks
☐ Background Samples

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: No contamination was found in the method blank or the equipment rinsate blank at reporting limit level.

6. DUPLICATE ANALYSES

☐ Acceptable
☒ Acceptable with qualification
☐ Unacceptable
☐ No Duplicates Analyzed

Type of duplicates analyzed:

☒ Field Duplicates
☐ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the detected results as estimated (J) for any analyte whose RPD in a laboratory duplicate exceeds 20% for water samples or 35% for soil samples.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-NR-03	COR-NR-103	RPD (%)
Antimony	3.9	3.8	3
Arsenic	31	28	10
Barium	150	140	7
Beryllium	0.57	0.53	7
Cadmium	<0.52	<0.52	0
Chromium	6.9	6.8	1
Cobalt	4.0	4.0	0
Copper	9.5	8.2	15
Lead	33	30	10
Mercury	97	45	73*
Molybdenum	5.4	4.9	6
Nickel	6.1	5.7	10
Selenium	<2.1	<2.1	0
Silver	<1.0	<1.0	0
Thallium	<5.2	<5.2	0
Vanadium	28	28	0
Zinc	56	51	9

Comments: The RPD of Mercury was outside of control limit (>35%). The detected mercury results were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-SR-01	COR-SR-101	RPD (%)
Antimony	11	13	17
Arsenic	73	79	8
Barium	140	150	7
Beryllium	0.51	0.49	4
Cadmium	<0.52	0.27	Not Calculated
Chromium	2.0	1.8	11
Cobalt	2.0	2.1	5
Copper	4.5	4.6	2
Lead	17	18	6
Mercury	49	110	77*
Molybdenum	12	13	8
Nickel	<5.2	<5.3	0
Selenium	<2.1	<2.1	0
Silver	<1.0	<1.1	0
Thallium	<5.2	<5.3	0
Vanadium	31	31	0
Zinc	63	65	3

Comments: The RPD of Mercury was outside of control limit (>35%). The detected mercury results were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-SR-04	COR-SR-104	RPD (%)
Antimony	19	17	11
Arsenic	84	97	14
Barium	130	140	7
Beryllium	0.45	0.51	13
Cadmium	<0.54	0.47	Not Calculated
Chromium	1.4	1.3	7
Cobalt	2.0	2.0	0
Copper	4.3	4.3	0
Lead	18	19	5
Mercury	61	85	33
Molybdenum	13	16	21
Nickel	<5.4	<5.4	0
Selenium	<2.2	<2.2	0
Silver	<1.1	<1.1	0
Thallium	<5.4	<5.4	0
Vanadium	30	39	26
Zinc	62	67	8

Comments: The RPDs were within the control limits (<35%).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

7. INTERFERENCE CHECK SAMPLES AND SERIAL DILUTION ANALYSIS

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ Not required

Interference Check Samples (ICS) - Unless flagged below, an ICS was analyzed at the beginning and end of each run and at least twice every eight hours. Recoveries were within a range of 80-120%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J) if the concentrations of Al, Ca, Fe, or Mg are higher in the sample than in the ICS.

Serial Dilution Analysis - Unless flagged below, a serial dilution analysis was performed at a rate of one per 20 samples on a sample having analyte concentrations greater than 50 times the IDL. Percent differences were within a range of 0-10%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments: ICS recoveries were within the control limit.
Serial Dilution Analysis: Not required.

8. POST DIGESTION SPIKE AND STANDARD ADDITIONS

☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Post-digestion spikes - If a furnace AA result was flagged by the laboratory with an E to indicate interference, and the associated post-digestion spike recovery was less than 10%, the associated results are rejected (R).

Method of Standard Additions - If the method of standard additions was required and the correlation coefficient was less than 0.995, the associated results were qualified as estimated (J).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

9. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Water samples:

$$\text{ug/L} = \frac{(\text{Instrument printout concentration, mg/L})(1000 \text{ ug/mg})(\text{final volume of extract, mL})}{(\text{Initial volume of extract, mL})}$$

Soil samples:

$$\text{mg/kg} = \frac{(\text{Instrument printout concentration, mg/L})(\text{final volume of extract, mL})(0.001 \text{ L/mL})}{(\text{weight of sample extracted, g})(0.001 \text{ kg/g})(\text{fraction solids})}$$

Comments: Analyte quantitation is acceptable.

Sample COR-NR-01-6

As: $(0.04651 \text{ mg/L}) (0.05 \text{ L} / 1.005 \text{ g}) (2) (100 / 78) (1000 \text{ g} / 1 \text{ kg}) = 5.933 \text{ mg/kg}$

Lab reported 5.9 mg/kg.

Sample COR-NR-01

Hg: $(0.0165 \text{ mg/L}) (0.03 \text{ L} / 0.212 \text{ g}) (10) (100 / 93) (1000 \text{ g} / 1 \text{ kg}) = 25.1065 \text{ mg/kg}$

Lab reported 25 mg/kg.

10. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

☐ Acceptable
☒ Acceptable with Qualification
☐ Rejected

Accepted data meet the minimum requirements for the following EPA data category:

☐ ERS Screening
☐ Non-definitive with 10 % Confirmation by Definitive Methodology
☐ Definitive, Comprehensive Statistical Error Determination was performed.
☒ Definitive, Comprehensive Statistical Error Determination was not performed.

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

11. USABILITY OF DATA

A. These data are considered usable for the data use objectives stated in the EPA EMERGENCY RESPONSE SECTION AND SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM QUALITY ASSURANCE SAMPLING PLAN FOR SOIL MATRIX SAMPLING, CORDERO MERCURY MINE SITE, FORT MCDERMITT, NEVADA, OCTOBER 13, 2010 (QASP).

The following data use objective was indicated in the QASP:

TO BE COMPARED WITH A BACKGROUND OR REFERENCE SAMPLES(S).

TO BE COMPARED WITH SITE-SPECIFIC ACTION LEVELS OR RISK-BASED ACTION LEVELS (E.G., EPA PRGS) TO ASSIST IN DETERMINATION IF HEALTH THREATS EXIST.

THE DATA ARE USABLE FOR THE ABOVE OBJECTIVES.

B. These data meet quality objectives stated in the QASP.

AS INDICATED IN SECTION 2.4 OF THE QASP, THE INVESTIGATION WILL GENERATE DEFINITIVE DATA AND TABLE E OF THE QASP OUTLINES THE DATA QUALITY INDICATOR GOALS APPLICABLE TO THE DEFINITIVE DATA QUALITY LEVEL. THE DATA IN THIS PACKAGE MEET THESE REQUIREMENTS.

12. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data qualifiers indicated, and a copy of the chain of custody for the samples.



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1009025-01

Soil - Sampled: 09/14/10 09:24

Sample ID: COR-NR-01

Metals by EPA 6000/7000 Series Methods								
Antimony		2.5	J	2.2	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		16		2.2	"	"	"	6010C/SOP503
Barium		170		5.4	"	"	"	6010C/SOP503
Beryllium		0.68		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		9.9		1.1	"	"	"	6010C/SOP503
Cobalt		5.9		2.2	"	"	"	6010C/SOP503
Copper		13		4.3	"	"	"	6010C/SOP503
Lead		13		3.2	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.4	"	"	"	6010C/SOP503
Nickel		9.7		5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		30		2.2	"	"	"	6010C/SOP503
Zinc		54		8.6	"	"	"	6010C/SOP503

Lab ID: 1009025-02

Soil - Sampled: 09/14/10 09:35

Sample ID: COR-NR-01-6

Metals by EPA 6000/7000 Series Methods								
Antimony		ND	U R	2.6	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		5.9		2.6	"	"	"	6010C/SOP503
Barium		160		6.4	"	"	"	6010C/SOP503
Beryllium		1.6		0.13	"	"	"	6010C/SOP503
Cadmium		0.36	Cl, J	0.64	"	"	"	6010C/SOP503
Chromium		23		1.3	"	"	"	6010C/SOP503
Cobalt		8.8		2.6	"	"	"	6010C/SOP503
Copper		26		5.1	"	"	"	6010C/SOP503
Lead		9.4		3.8	"	"	"	6010C/SOP503
Molybdenum		ND	U	6.4	"	"	"	6010C/SOP503
Nickel		22		6.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.6	"	"	"	6010C/SOP503
Silver		ND	U	1.3	"	"	"	6010C/SOP503
Thallium		ND	U	6.4	"	"	"	6010C/SOP503
Vanadium		38		2.6	"	"	"	6010C/SOP503
Zinc		91		10	"	"	"	6010C/SOP503

Lab ID: 1009025-03

Soil - Sampled: 09/14/10 09:50

Sample ID: COR-NR-01-18

Metals by EPA 6000/7000 Series Methods								
Antimony		ND	U R	2.7	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		11		2.7	"	"	"	6010C/SOP503
Barium		350		6.7	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10259B
Project Number: R10SB4	75 Hawthorne Street	Reported: 10/27/10 14:21
Project: Cordero Mercury Mine 2010 XRF Confirmation	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1009025-03

Soil - Sampled: 09/14/10 09:50

Sample ID: COR-NR-01-18

Metals by EPA 6000/7000 Series Methods

Beryllium		1.4		0.13	mg/kg dry	BOJ0029	10/07/10	10/14/10	6010C/SOP503
Cadmium		0.45	Cl, J	0.67	"	"	"	"	6010C/SOP503
Chromium		23		1.3	"	"	"	"	6010C/SOP503
Cobalt		7.4		2.7	"	"	"	"	6010C/SOP503
Copper		27		5.3	"	"	"	"	6010C/SOP503
Lead		5.6		4	"	"	"	"	6010C/SOP503
Molybdenum		ND	U	6.7	"	"	"	"	6010C/SOP503
Nickel		22		6.7	"	"	"	"	6010C/SOP503
Selenium		ND	U	2.7	"	"	"	"	6010C/SOP503
Silver		ND	U	1.3	"	"	"	"	6010C/SOP503
Thallium		ND	U	6.7	"	"	"	"	6010C/SOP503
Vanadium		54		2.7	"	"	"	"	6010C/SOP503
Zinc		84		11	"	"	"	"	6010C/SOP503

Lab ID: 1009025-04

Soil - Sampled: 09/14/10 10:00

Sample ID: COR-NR-02

Metals by EPA 6000/7000 Series Methods

Antimony		4.0	J	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10	6010C/SOP503
Arsenic		51		2.1	"	"	"	"	6010C/SOP503
Barium		150		5.2	"	"	"	"	6010C/SOP503
Beryllium		0.48		0.10	"	"	"	"	6010C/SOP503
Cadmium		ND	U	0.52	"	"	"	"	6010C/SOP503
Chromium		2.1		1	"	"	"	"	6010C/SOP503
Cobalt		2.1		2.1	"	"	"	"	6010C/SOP503
Copper		7.6		4.2	"	"	"	"	6010C/SOP503
Lead		13		3.1	"	"	"	"	6010C/SOP503
Molybdenum		11		5.2	"	"	"	"	6010C/SOP503
Nickel		ND	U	5.2	"	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	"	6010C/SOP503
Vanadium		32		2.1	"	"	"	"	6010C/SOP503
Zinc		53		8.4	"	"	"	"	6010C/SOP503

Lab ID: 1009025-05

Soil - Sampled: 09/14/10 10:10

Sample ID: COR-NR-02-6

Metals by EPA 6000/7000 Series Methods

Antimony		ND	U R	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10	6010C/SOP503
Arsenic		6.3		2.1	"	"	"	"	6010C/SOP503
Barium		93		5.3	"	"	"	"	6010C/SOP503
Beryllium		0.70		0.11	"	"	"	"	6010C/SOP503
Cadmium		ND	U	0.53	"	"	"	"	6010C/SOP503
Chromium		4.4		1.1	"	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-05							Soil - Sampled: 09/14/10 10:10	
Sample ID: COR-NR-02-6							Metals by EPA 6000/7000 Series Methods	
Cobalt		4.9		2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Copper		8.3		4.2	"	"	"	6010C/SOP503
Lead		5.3		3.2	"	"	"	6010C/SOP503
Molybdenum		ND U		5.3	"	"	"	6010C/SOP503
Nickel		4.2	Cl, J	5.3	"	"	"	6010C/SOP503
Selenium		ND U		2.1	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium		ND U		5.3	"	"	"	6010C/SOP503
Vanadium		37		2.1	"	"	"	6010C/SOP503
Zinc		60		8.5	"	"	"	6010C/SOP503
Lab ID: 1009025-06							Soil - Sampled: 09/14/10 10:20	
Sample ID: COR-NR-03							Metals by EPA 6000/7000 Series Methods	
Antimony		3.9	J	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		31		2.1	"	"	"	6010C/SOP503
Barium		150		5.2	"	"	"	6010C/SOP503
Beryllium		0.57		0.10	"	"	"	6010C/SOP503
Cadmium		ND U		0.52	"	"	"	6010C/SOP503
Chromium		6.9		1	"	"	"	6010C/SOP503
Cobalt		4.0		2.1	"	"	"	6010C/SOP503
Copper		9.5		4.2	"	"	"	6010C/SOP503
Lead		33		3.1	"	"	"	6010C/SOP503
Molybdenum		5.4		5.2	"	"	"	6010C/SOP503
Nickel		6.1		5.2	"	"	"	6010C/SOP503
Selenium		ND U		2.1	"	"	"	6010C/SOP503
Silver		ND U		1	"	"	"	6010C/SOP503
Thallium		ND U		5.2	"	"	"	6010C/SOP503
Vanadium		28		2.1	"	"	"	6010C/SOP503
Zinc		56		8.3	"	"	"	6010C/SOP503
Lab ID: 1009025-07							Soil - Sampled: 09/14/10 10:24	
Sample ID: COR-NR-03-6							Metals by EPA 6000/7000 Series Methods	
Antimony		2.0	Cl, J J	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		14		2.1	"	"	"	6010C/SOP503
Barium		120		5.2	"	"	"	6010C/SOP503
Beryllium		0.68		0.10	"	"	"	6010C/SOP503
Cadmium		ND U		0.52	"	"	"	6010C/SOP503
Chromium		5.9		1	"	"	"	6010C/SOP503
Cobalt		4.6		2.1	"	"	"	6010C/SOP503
Copper		9.8		4.2	"	"	"	6010C/SOP503
Lead		11		3.1	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

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Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10259B
Project Number: R10SB4	75 Hawthorne Street	Reported: 10/27/10 14:21
Project: Córdero Mercury Mine 2010 XRF Confirmation	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1009025-07

Soil - Sampled: 09/14/10 10:24

Sample ID: COR-NR-03-6

Metals by EPA 6000/7000 Series Methods

Molybdenum		2.9	Cl, J	5.2	mg/kg dry	B0J0029	10/07/10	10/14/10	6010C/SOP503
Nickel		5.4		5.2	"	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	"	6010C/SOP503
Vanadium		32		2.1	"	"	"	"	6010C/SOP503
Zinc		59		8.4	"	"	"	"	6010C/SOP503

Lab ID: 1009025-08

Soil - Sampled: 09/14/10 10:43

Sample ID: COR-NR-03-18

Metals by EPA 6000/7000 Series Methods

Antimony		1.2	Cl, J	2.2	mg/kg dry	B0J0029	10/07/10	10/14/10	6010C/SOP503
Arsenic		8.3		2.2	"	"	"	"	6010C/SOP503
Barium		180		5.5	"	"	"	"	6010C/SOP503
Beryllium		0.87		0.11	"	"	"	"	6010C/SOP503
Cadmium		ND	U	0.55	"	"	"	"	6010C/SOP503
Chromium		11		1.1	"	"	"	"	6010C/SOP503
Cobalt		6.6		2.2	"	"	"	"	6010C/SOP503
Copper		15		4.4	"	"	"	"	6010C/SOP503
Lead		10		3.3	"	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.5	"	"	"	"	6010C/SOP503
Nickel		10		5.5	"	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	"	6010C/SOP503
Thallium		ND	U	5.5	"	"	"	"	6010C/SOP503
Vanadium		35		2.2	"	"	"	"	6010C/SOP503
Zinc		62		8.7	"	"	"	"	6010C/SOP503

Lab ID: 1009025-09

Soil - Sampled: 09/14/10 11:10

Sample ID: COR-NR-04 MS/MSD

Metals by EPA 6000/7000 Series Methods

Antimony		4.1	J, Q4	2.1	mg/kg dry	B0J0029	10/07/10	10/14/10	6010C/SOP503
Arsenic		56		2.1	"	"	"	"	6010C/SOP503
Barium		180		5.3	"	"	"	"	6010C/SOP503
Beryllium		0.51		0.11	"	"	"	"	6010C/SOP503
Cadmium		ND	U	0.53	"	"	"	"	6010C/SOP503
Chromium		1.7		1.1	"	"	"	"	6010C/SOP503
Cobalt		1.7	Cl, J	2.1	"	"	"	"	6010C/SOP503
Copper		4.4		4.3	"	"	"	"	6010C/SOP503
Lead		17		3.2	"	"	"	"	6010C/SOP503
Molybdenum		9.0	J, Q4	5.3	"	"	"	"	6010C/SOP503
Nickel		ND	U	5.3	"	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-09						Soil - Sampled: 09/14/10 11:10		
Sample ID: COR-NR-04 MS/MSD						Metals by EPA 6000/7000 Series Methods		
Silver		ND	U	1.1	mg/kg dry	B0J0029	10/07/10	10/14/10 6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		24		2.1	"	"	"	6010C/SOP503
Zinc		56		8.5	"	"	"	6010C/SOP503
Lab ID: 1009025-10						Soil - Sampled: 09/14/10 11:25		
Sample ID: COR-NR-04-6						Metals by EPA 6000/7000 Series Methods		
Antimony		1.3	Cl, J J	2.1	mg/kg dry	B0J0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		18		2.1	"	"	"	6010C/SOP503
Barium		160		5.3	"	"	"	6010C/SOP503
Beryllium		0.69		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.53	"	"	"	6010C/SOP503
Chromium		4.2		1.1	"	"	"	6010C/SOP503
Cobalt		5.8		2.1	"	"	"	6010C/SOP503
Copper		8.5		4.3	"	"	"	6010C/SOP503
Lead		8.4		3.2	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.3	"	"	"	6010C/SOP503
Nickel		4.9	Cl, J	5.3	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		36		2.1	"	"	"	6010C/SOP503
Zinc		61		8.5	"	"	"	6010C/SOP503
Lab ID: 1009025-11						Soil - Sampled: 09/14/10 10:20		
Sample ID: COR-NR-103						Metals by EPA 6000/7000 Series Methods		
Antimony		3.8	J	2.1	mg/kg dry	B0J0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		28		2.1	"	"	"	6010C/SOP503
Barium		140		5.2	"	"	"	6010C/SOP503
Beryllium		0.53		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.52	"	"	"	6010C/SOP503
Chromium		6.8		1	"	"	"	6010C/SOP503
Cobalt		4.0		2.1	"	"	"	6010C/SOP503
Copper		8.2		4.2	"	"	"	6010C/SOP503
Lead		30		3.1	"	"	"	6010C/SOP503
Molybdenum		4.9	Cl, J	5.2	"	"	"	6010C/SOP503
Nickel		5.7		5.2	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	6010C/SOP503
Vanadium		28		2.1	"	"	"	6010C/SOP503



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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10259B
Project Number: R10SB4	75 Hawthorne Street	Reported: 10/27/10 14:21
Project: Cordero Mercury Mine 2010 XRF Confirmation	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1009025-11 Soil - Sampled: 09/14/10 10:20

Sample ID: COR-NR-103
Zinc 51 8.3 mg/kg dry B0J0029 Metals by EPA 6000/7000 Series Methods 10/07/10 10/14/10 6010C/SOP503

Lab ID: 1009025-12 Soil - Sampled: 09/14/10 11:31

Sample ID: COR-NR-05
Antimony 5.0 J 2.1 mg/kg dry B0J0029 Metals by EPA 6000/7000 Series Methods 10/07/10 10/14/10 6010C/SOP503

Arsenic	35	2.1	"	"	"	6010C/SOP503
Barium	140	5.2	"	"	"	6010C/SOP503
Beryllium	0.48	0.10	"	"	"	6010C/SOP503
Cadmium	ND U	0.52	"	"	"	6010C/SOP503
Chromium	4.7	1	"	"	"	6010C/SOP503
Cobalt	3.4	2.1	"	"	"	6010C/SOP503
Copper	7.2	4.2	"	"	"	6010C/SOP503
Lead	11	3.1	"	"	"	6010C/SOP503
Molybdenum	6.1	5.2	"	"	"	6010C/SOP503
Nickel	3.5 Cl, J	5.2	"	"	"	6010C/SOP503
Selenium	ND U	2.1	"	"	"	6010C/SOP503
Silver	ND U	1	"	"	"	6010C/SOP503
Thallium	ND U	5.2	"	"	"	6010C/SOP503
Vanadium	27	2.1	"	"	"	6010C/SOP503
Zinc	54	8.3	"	"	"	6010C/SOP503

Lab ID: 1009025-13 Soil - Sampled: 09/14/10 11:36

Sample ID: COR-NR-05-6
Antimony ND U R 2.1 mg/kg dry B0J0029 Metals by EPA 6000/7000 Series Methods 10/07/10 10/14/10 6010C/SOP503

Arsenic	6.7	2.1	"	"	"	6010C/SOP503
Barium	79	5.2	"	"	"	6010C/SOP503
Beryllium	0.65	0.10	"	"	"	6010C/SOP503
Cadmium	ND U	0.52	"	"	"	6010C/SOP503
Chromium	3.6	1	"	"	"	6010C/SOP503
Cobalt	4.8	2.1	"	"	"	6010C/SOP503
Copper	7.6	4.2	"	"	"	6010C/SOP503
Lead	4.8	3.1	"	"	"	6010C/SOP503
Molybdenum	ND U	5.2	"	"	"	6010C/SOP503
Nickel	4.1 Cl, J	5.2	"	"	"	6010C/SOP503
Selenium	ND U	2.1	"	"	"	6010C/SOP503
Silver	ND U	1	"	"	"	6010C/SOP503
Thallium	ND U	5.2	"	"	"	6010C/SOP503
Vanadium	32	2.1	"	"	"	6010C/SOP503
Zinc	50	8.3	"	"	"	6010C/SOP503

Lab ID: 1009025-14 Soil - Sampled: 09/14/10 11:43

Sample ID: COR-NR-05-18 Metals by EPA 6000/7000 Series Methods



United States Environmental Protection Agency
Region 9 Laboratory

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Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-14						Soil - Sampled: 09/14/10 11:43		
Sample ID: COR-NR-05-18						Metals by EPA 6000/7000 Series Methods		
Antimony		ND	U R	2.3	mg/kg dry	BOJ0029	10/07/10 10/14/10	6010C/SOP503
Arsenic		5.3		2.3	"	"	"	6010C/SOP503
Barium		300		5.7	"	"	"	6010C/SOP503
Beryllium		1.1		0.11	"	"	"	6010C/SOP503
Cadmium		0.35	CI, J	0.57	"	"	"	6010C/SOP503
Chromium		16		1.1	"	"	"	6010C/SOP503
Cobalt		8.5		2.3	"	"	"	6010C/SOP503
Copper		20		4.6	"	"	"	6010C/SOP503
Lead		8.3		3.4	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.7	"	"	"	6010C/SOP503
Nickel		16		5.7	"	"	"	6010C/SOP503
Selenium		ND	U	2.3	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.7	"	"	"	6010C/SOP503
Vanadium		36		2.3	"	"	"	6010C/SOP503
Zinc		65		9.1	"	"	"	6010C/SOP503
Lab ID: 1009025-15						Soil - Sampled: 09/14/10 12:00		
Sample ID: COR-NR-06						Metals by EPA 6000/7000 Series Methods		
Antimony		11	J	2.2	mg/kg dry	BOJ0029	10/07/10 10/14/10	6010C/SOP503
Arsenic		73		2.2	"	"	"	6010C/SOP503
Barium		160		5.5	"	"	"	6010C/SOP503
Beryllium		0.45		0.11	"	"	"	6010C/SOP503
Cadmium		0.27	CI, J	0.55	"	"	"	6010C/SOP503
Chromium		1.0	CI, J	1.1	"	"	"	6010C/SOP503
Cobalt		1.6	CI, J	2.2	"	"	"	6010C/SOP503
Copper		3.5	CI, J	4.4	"	"	"	6010C/SOP503
Lead		17		3.3	"	"	"	6010C/SOP503
Molybdenum		14		5.5	"	"	"	6010C/SOP503
Nickel		ND	U	5.5	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.5	"	"	"	6010C/SOP503
Vanadium		27		2.2	"	"	"	6010C/SOP503
Zinc		55		8.8	"	"	"	6010C/SOP503
Lab ID: 1009025-16						Soil - Sampled: 09/14/10 12:15		
Sample ID: COR-NR-06-6						Metals by EPA 6000/7000 Series Methods		
Antimony		6.0	J	2.1	mg/kg dry	BOJ0029	10/07/10 10/14/10	6010C/SOP503
Arsenic		35		2.1	"	"	"	6010C/SOP503
Barium		140		5.4	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

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Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1009025-16

Soil - Sampled: 09/14/10 12:15

Sample ID: COR-NR-06-6

Metals by EPA 6000/7000 Series Methods

							10/07/10	10/14/10	6010C/SOP503
Beryllium		0.59		0.11	mg/kg dry	B0J0029	"	"	6010C/SOP503
Cadmium		ND U		0.54	"	"	"	"	6010C/SOP503
Chromium		2.9		1.1	"	"	"	"	6010C/SOP503
Cobalt		3.5		2.1	"	"	"	"	6010C/SOP503
Copper		6.4		4.3	"	"	"	"	6010C/SOP503
Lead		22		3.2	"	"	"	"	6010C/SOP503
Molybdenum		6.1		5.4	"	"	"	"	6010C/SOP503
Nickel		3.1	Cl, J	5.4	"	"	"	"	6010C/SOP503
Selenium		ND U		2.1	"	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	"	6010C/SOP503
Thallium		ND U		5.4	"	"	"	"	6010C/SOP503
Vanadium		33		2.1	"	"	"	"	6010C/SOP503
Zinc		66		8.6	"	"	"	"	6010C/SOP503

Lab ID: 1009025-17

Soil - Sampled: 09/14/10 12:30

Sample ID: COR-NR-07

Metals by EPA 6000/7000 Series Methods

							10/07/10	10/14/10	6010C/SOP503
Antimony		2.4	J	2.1	mg/kg dry	B0J0029	"	"	6010C/SOP503
Arsenic		16		2.1	"	"	"	"	6010C/SOP503
Barium		210		5.3	"	"	"	"	6010C/SOP503
Beryllium		0.74		0.11	"	"	"	"	6010C/SOP503
Cadmium		0.43	Cl, J	0.53	"	"	"	"	6010C/SOP503
Chromium		11		1.1	"	"	"	"	6010C/SOP503
Cobalt		6.3		2.1	"	"	"	"	6010C/SOP503
Copper		16		4.3	"	"	"	"	6010C/SOP503
Lead		17		3.2	"	"	"	"	6010C/SOP503
Molybdenum		ND U		5.3	"	"	"	"	6010C/SOP503
Nickel		11		5.3	"	"	"	"	6010C/SOP503
Selenium		ND U		2.1	"	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	"	6010C/SOP503
Thallium		ND U		5.3	"	"	"	"	6010C/SOP503
Vanadium		33		2.1	"	"	"	"	6010C/SOP503
Zinc		69		8.5	"	"	"	"	6010C/SOP503

Lab ID: 1009025-18

Soil - Sampled: 09/14/10 13:40

Sample ID: COR-SR-01

Metals by EPA 6000/7000 Series Methods

							10/07/10	10/14/10	6010C/SOP503
Antimony		11	J	2.1	mg/kg dry	B0J0029	"	"	6010C/SOP503
Arsenic		73		2.1	"	"	"	"	6010C/SOP503
Barium		140		5.2	"	"	"	"	6010C/SOP503
Beryllium		0.51		0.10	"	"	"	"	6010C/SOP503
Cadmium		ND U		0.52	"	"	"	"	6010C/SOP503
Chromium		2.0		1	"	"	"	"	6010C/SOP503



United States Environmental Protection Agency

Region 9 Laboratory

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Project Number: R10SB4

Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10259B

Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-18								Soil - Sampled: 09/14/10 13:40
Sample ID: COR-SR-01								Metals by EPA 6000/7000 Series Methods
Cobalt		2.0	Cl, J	2.1	mg/kg dry	B0J0029	10/07/10 10/14/10	6010C/SOP503
Copper		4.5		4.2	"	"	"	6010C/SOP503
Lead		17		3.1	"	"	"	6010C/SOP503
Molybdenum		12		5.2	"	"	"	6010C/SOP503
Nickel		ND	U	5.2	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	6010C/SOP503
Vanadium		31		2.1	"	"	"	6010C/SOP503
Zinc		63		8.4	"	"	"	6010C/SOP503
Lab ID: 1009025-19								Soil - Sampled: 09/14/10 13:43
Sample ID: COR-SR-01-6								Metals by EPA 6000/7000 Series Methods
Antimony		1.7	Cl, J J	2.1	mg/kg dry	B0J0029	10/07/10 10/14/10	6010C/SOP503
Arsenic		12		2.1	"	"	"	6010C/SOP503
Barium		210		5.2	"	"	"	6010C/SOP503
Beryllium		0.72		0.10	"	"	"	6010C/SOP503
Cadmium		0.35	Cl, J	0.52	"	"	"	6010C/SOP503
Chromium		8.6		1	"	"	"	6010C/SOP503
Cobalt		6.9		2.1	"	"	"	6010C/SOP503
Copper		13		4.2	"	"	"	6010C/SOP503
Lead		10		3.1	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.2	"	"	"	6010C/SOP503
Nickel		8.4		5.2	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	6010C/SOP503
Vanadium		37		2.1	"	"	"	6010C/SOP503
Zinc		72		8.4	"	"	"	6010C/SOP503
Lab ID: 1009025-20								Soil - Sampled: 09/14/10 13:52
Sample ID: COR-SR-02								Metals by EPA 6000/7000 Series Methods
Antimony		12	J	2.1	mg/kg dry	B0J0029	10/07/10 10/14/10	6010C/SOP503
Arsenic		78		2.1	"	"	"	6010C/SOP503
Barium		160		5.3	"	"	"	6010C/SOP503
Beryllium		0.51		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.53	"	"	"	6010C/SOP503
Chromium		1.7		1.1	"	"	"	6010C/SOP503
Cobalt		2.2		2.1	"	"	"	6010C/SOP503
Copper		4.8		4.2	"	"	"	6010C/SOP503
Lead		18		3.2	"	"	"	6010C/SOP503



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SDG: 10259B

Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1009025-20

Soil - Sampled: 09/14/10 13:52

Sample ID: COR-SR-02

Metals by EPA 6000/7000 Series Methods								
Molybdenum		14		5.3	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Nickel		ND U		5.3	"	"	"	6010C/SOP503
Selenium		ND U		2.1	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium		ND U		5.3	"	"	"	6010C/SOP503
Vanadium		31		2.1	"	"	"	6010C/SOP503
Zinc		73		8.4	"	"	"	6010C/SOP503

Lab ID: 1009025-21

Soil - Sampled: 09/14/10 13:56

Sample ID: COR-SR-03

Metals by EPA 6000/7000 Series Methods								
Antimony		9.2 J		2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		63		2.1	"	"	"	6010C/SOP503
Barium		130		5.2	"	"	"	6010C/SOP503
Beryllium		0.47		0.10	"	"	"	6010C/SOP503
Cadmium		ND U		0.52	"	"	"	6010C/SOP503
Chromium		1.2		1	"	"	"	6010C/SOP503
Cobalt		1.7 Cl, J		2.1	"	"	"	6010C/SOP503
Copper		3.5 Cl, J		4.2	"	"	"	6010C/SOP503
Lead		14		3.1	"	"	"	6010C/SOP503
Molybdenum		12		5.2	"	"	"	6010C/SOP503
Nickel		ND U		5.2	"	"	"	6010C/SOP503
Selenium		ND U		2.1	"	"	"	6010C/SOP503
Silver		ND U		1	"	"	"	6010C/SOP503
Thallium		ND U		5.2	"	"	"	6010C/SOP503
Vanadium		23		2.1	"	"	"	6010C/SOP503
Zinc		44		8.4	"	"	"	6010C/SOP503

Lab ID: 1009025-22

Soil - Sampled: 09/14/10 14:00

Sample ID: COR-SR-03-6

Metals by EPA 6000/7000 Series Methods								
Antimony		5.2 J		2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		31		2.1	"	"	"	6010C/SOP503
Barium		180		5.3	"	"	"	6010C/SOP503
Beryllium		0.62		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.53	"	"	"	6010C/SOP503
Chromium		6.5		1.1	"	"	"	6010C/SOP503
Cobalt		5.7		2.1	"	"	"	6010C/SOP503
Copper		10		4.3	"	"	"	6010C/SOP503
Lead		12		3.2	"	"	"	6010C/SOP503
Molybdenum		4.9 Cl, J		5.3	"	"	"	6010C/SOP503
Nickel		5.4		5.3	"	"	"	6010C/SOP503
Selenium		ND U		2.1	"	"	"	6010C/SOP503

[Signature]
3/10/11



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-22						Soil - Sampled: 09/14/10 14:00		
Sample ID: COR-SR-03-6						Metals by EPA 6000/7000 Series Methods		
Silver		ND	U	1.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		37		2.1	"	"	"	6010C/SOP503
Zinc		72		8.5	"	"	"	6010C/SOP503
Lab ID: 1009025-23						Soil - Sampled: 09/14/10 12:16		
Sample ID: COR-NR-BKG-01						Metals by EPA 6000/7000 Series Methods		
Antimony		ND	U R	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		5.2		2.1	"	"	"	6010C/SOP503
Barium		280		5.3	"	"	"	6010C/SOP503
Beryllium		0.88		0.11	"	"	"	6010C/SOP503
Cadmium		0.41	Cl, J	0.53	"	"	"	6010C/SOP503
Chromium		15		1.1	"	"	"	6010C/SOP503
Cobalt		8.0		2.1	"	"	"	6010C/SOP503
Copper		21		4.2	"	"	"	6010C/SOP503
Lead		12		3.2	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.3	"	"	"	6010C/SOP503
Nickel		14		5.3	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		36		2.1	"	"	"	6010C/SOP503
Zinc		70		8.4	"	"	"	6010C/SOP503
Lab ID: 1009025-24						Soil - Sampled: 09/14/10 12:22		
Sample ID: COR-NR-BKG-01-6						Metals by EPA 6000/7000 Series Methods		
Antimony		ND	U R	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		5.2		2.1	"	"	"	6010C/SOP503
Barium		280		5.3	"	"	"	6010C/SOP503
Beryllium		0.93		0.11	"	"	"	6010C/SOP503
Cadmium		0.42	Cl, J	0.53	"	"	"	6010C/SOP503
Chromium		15		1.1	"	"	"	6010C/SOP503
Cobalt		8.1		2.1	"	"	"	6010C/SOP503
Copper		21		4.2	"	"	"	6010C/SOP503
Lead		9.1		3.2	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.3	"	"	"	6010C/SOP503
Nickel		15		5.3	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		36		2.1	"	"	"	6010C/SOP503

3/10/11



United States Environmental Protection Agency Region 9 Laboratory

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Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
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Lab ID: 1009025-24

Soil - Sampled: 09/14/10 12:22

Sample ID: COR-NR-BKG-01-6

Zinc 67 8.4 mg/kg dry B0J0029 10/07/10 10/14/10 6010C/SOP503 Metals by EPA 6000/7000 Series Methods

Lab ID: 1009025-25

Soil - Sampled: 09/14/10 14:10

Sample ID: COR-SR-04

Antimony	19 J	2.2	mg/kg dry	B0J0029	10/07/10	10/14/10	6010C/SOP503
Arsenic	84	2.2	"	"	"	"	6010C/SOP503
Barium	130	5.4	"	"	"	"	6010C/SOP503
Beryllium	0.45	0.11	"	"	"	"	6010C/SOP503
Cadmium	ND U	0.54	"	"	"	"	6010C/SOP503
Chromium	1.4	1.1	"	"	"	"	6010C/SOP503
Cobalt	2.0 Cl, J	2.2	"	"	"	"	6010C/SOP503
Copper	4.3	4.3	"	"	"	"	6010C/SOP503
Lead	18	3.3	"	"	"	"	6010C/SOP503
Molybdenum	13	5.4	"	"	"	"	6010C/SOP503
Nickel	ND U	5.4	"	"	"	"	6010C/SOP503
Selenium	ND U	2.2	"	"	"	"	6010C/SOP503
Silver	ND U	1.1	"	"	"	"	6010C/SOP503
Thallium	ND U	5.4	"	"	"	"	6010C/SOP503
Vanadium	30	2.2	"	"	"	"	6010C/SOP503
Zinc	62	8.7	"	"	"	"	6010C/SOP503

Lab ID: 1009025-26

Soil - Sampled: 09/14/10 14:10

Sample ID: COR-SR-104

Antimony	17 J	2.2	mg/kg dry	B0J0029	10/07/10	10/14/10	6010C/SOP503
Arsenic	97	2.2	"	"	"	"	6010C/SOP503
Barium	140	5.4	"	"	"	"	6010C/SOP503
Beryllium	0.51	0.11	"	"	"	"	6010C/SOP503
Cadmium	0.47 Cl, J	0.54	"	"	"	"	6010C/SOP503
Chromium	1.3	1.1	"	"	"	"	6010C/SOP503
Cobalt	2.0 Cl, J	2.2	"	"	"	"	6010C/SOP503
Copper	4.3 J	4.4	"	"	"	"	6010C/SOP503
Lead	19	3.3	"	"	"	"	6010C/SOP503
Molybdenum	16	5.4	"	"	"	"	6010C/SOP503
Nickel	ND U	5.4	"	"	"	"	6010C/SOP503
Selenium	ND U	2.2	"	"	"	"	6010C/SOP503
Silver	ND U	1.1	"	"	"	"	6010C/SOP503
Thallium	ND U	5.4	"	"	"	"	6010C/SOP503
Vanadium	39	2.2	"	"	"	"	6010C/SOP503
Zinc	67	8.7	"	"	"	"	6010C/SOP503

Lab ID: 1009025-27

Soil - Sampled: 09/14/10 14:10

Sample ID: COR-SR-04 MS/MSD

Metals by EPA 6000/7000 Series Methods



United States Environmental Protection Agency
Region 9 Laboratory

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Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-27		Soil - Sampled: 09/14/10 14:10						
Sample ID: COR-SR-04 MS/MSD		Metals by EPA 6000/7000 Series Methods						
Antimony		17	J, Q4 J	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		93		2.1	"	"	"	6010C/SOP503
Barium		190		5.4	"	"	"	6010C/SOP503
Beryllium		0.56		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		1.3		1.1	"	"	"	6010C/SOP503
Cobalt		2.1	CI	2.1	"	"	"	6010C/SOP503
Copper		4.6		4.3	"	"	"	6010C/SOP503
Lead		21		3.2	"	"	"	6010C/SOP503
Molybdenum		16		5.4	"	"	"	6010C/SOP503
Nickel		ND	U	5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		35		2.1	"	"	"	6010C/SOP503
Zinc		75		8.6	"	"	"	6010C/SOP503
Lab ID: 1009025-28		Soil - Sampled: 09/14/10 13:40						
Sample ID: COR-SR-101		Metals by EPA 6000/7000 Series Methods						
Antimony		13	J	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		79		2.1	"	"	"	6010C/SOP503
Barium		150		5.3	"	"	"	6010C/SOP503
Beryllium		0.49		0.11	"	"	"	6010C/SOP503
Cadmium		0.27	CI, J	0.53	"	"	"	6010C/SOP503
Chromium		1.8		1.1	"	"	"	6010C/SOP503
Cobalt		2.1		2.1	"	"	"	6010C/SOP503
Copper		4.6		4.3	"	"	"	6010C/SOP503
Lead		18		3.2	"	"	"	6010C/SOP503
Molybdenum		13		5.3	"	"	"	6010C/SOP503
Nickel		ND	U	5.3	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		31		2.1	"	"	"	6010C/SOP503
Zinc		65		8.5	"	"	"	6010C/SOP503
Lab ID: 1009025-29		Soil - Sampled: 09/14/10 14:20						
Sample ID: COR-SR-BKG-01		Metals by EPA 6000/7000 Series Methods						
Antimony		ND	U R	2.1	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		5.7		2.1	"	"	"	6010C/SOP503
Barium		200		5.2	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10259B
Project Number: R10SB4	75 Hawthorne Street	Reported: 10/27/10 14:21
Project: Cordero Mercury Mine 2010 XRF Confirmation	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID:	1009025-29							Soil - Sampled: 09/14/10 14:20
Sample ID:	COR-SR-BKG-01							Metals by EPA 6000/7000 Series Methods
Beryllium		0.69		0.10	mg/kg dry	B0J0029	10/07/10	10/14/10 6010C/SOP503
Cadmium		0.37	Cl, J	0.52	"	"	"	6010C/SOP503
Chromium		8.4		1	"	"	"	6010C/SOP503
Cobalt		7.1		2.1	"	"	"	6010C/SOP503
Copper		12		4.2	"	"	"	6010C/SOP503
Lead		8.5		3.1	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.2	"	"	"	6010C/SOP503
Nickel		7.9		5.2	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	6010C/SOP503
Vanadium		36		2.1	"	"	"	6010C/SOP503
Zinc		57		8.4	"	"	"	6010C/SOP503

Lab ID:	1009025-30							Soil - Sampled: 09/14/10 14:20
Sample ID:	COR-SR-BKG-02							Metals by EPA 6000/7000 Series Methods
Antimony		ND	U R	2.1	mg/kg dry	B0J0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		5.7		2.1	"	"	"	6010C/SOP503
Barium		210		5.3	"	"	"	6010C/SOP503
Beryllium		0.74		0.11	"	"	"	6010C/SOP503
Cadmium		0.34	Cl, J	0.53	"	"	"	6010C/SOP503
Chromium		8.3		1.1	"	"	"	6010C/SOP503
Cobalt		6.7		2.1	"	"	"	6010C/SOP503
Copper		13		4.2	"	"	"	6010C/SOP503
Lead		8.1		3.2	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.3	"	"	"	6010C/SOP503
Nickel		7.8		5.3	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.3	"	"	"	6010C/SOP503
Vanadium		35		2.1	"	"	"	6010C/SOP503
Zinc		59		8.4	"	"	"	6010C/SOP503

Lab ID:	1009025-31							Soil - Sampled: 09/14/10 15:05
Sample ID:	COR-MINE-01							Metals by EPA 6000/7000 Series Methods
Antimony		4.4	J	2.6	mg/kg dry	B0J0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		13		2.6	"	"	"	6010C/SOP503
Barium		210		6.5	"	"	"	6010C/SOP503
Beryllium		0.89		0.13	"	"	"	6010C/SOP503
Cadmium		ND	U	0.65	"	"	"	6010C/SOP503
Chromium		6.5		1.3	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

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Project Manager: Thomas Dunkelman

Project Number: R10SB4

Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10259B

Reported: 10/27/10 14:21

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-31							Soil - Sampled: 09/14/10 15:05	
Sample ID: COR-MINE-01							Metals by EPA 6000/7000 Series Methods	
Cobalt		12		2.6	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Copper		12		5.2	"	"	"	6010C/SOP503
Lead		8.0		3.9	"	"	"	6010C/SOP503
Molybdenum		ND U		6.5	"	"	"	6010C/SOP503
Nickel		7.1		6.5	"	"	"	6010C/SOP503
Selenium		ND U		2.6	"	"	"	6010C/SOP503
Silver		ND U		1.3	"	"	"	6010C/SOP503
Thallium		ND U		6.5	"	"	"	6010C/SOP503
Vanadium		37		2.6	"	"	"	6010C/SOP503
Zinc		46		10	"	"	"	6010C/SOP503
Lab ID: 1009025-32							Soil - Sampled: 09/14/10 15:10	
Sample ID: COR-MINE-02							Metals by EPA 6000/7000 Series Methods	
Antimony		5.9 J		2.6	mg/kg dry	BOJ0029	10/07/10	10/14/10 6010C/SOP503
Arsenic		14		2.6	"	"	"	6010C/SOP503
Barium		200		6.4	"	"	"	6010C/SOP503
Beryllium		0.78		0.13	"	"	"	6010C/SOP503
Cadmium		ND U		0.64	"	"	"	6010C/SOP503
Chromium		8.9		1.3	"	"	"	6010C/SOP503
Cobalt		8.6		2.6	"	"	"	6010C/SOP503
Copper		12		5.1	"	"	"	6010C/SOP503
Lead		9.4		3.9	"	"	"	6010C/SOP503
Molybdenum		ND U		6.4	"	"	"	6010C/SOP503
Nickel		8.8		6.4	"	"	"	6010C/SOP503
Selenium		ND U		2.6	"	"	"	6010C/SOP503
Silver		ND U		1.3	"	"	"	6010C/SOP503
Thallium		ND U		6.4	"	"	"	6010C/SOP503
Vanadium		32		2.6	"	"	"	6010C/SOP503
Zinc		54		10	"	"	"	6010C/SOP503
Lab ID: 1009025-33							Water - Sampled: 09/14/10 10:52	
Sample ID: COR-NR-03-ERB							Metals by EPA 200 Series Methods	
Antimony		ND U R		20	ug/L	BOJ0047	10/11/10	10/20/10 200.7/SOP505
Arsenic		ND U		20	"	"	"	200.7/SOP505
Barium		ND U		10	"	"	"	200.7/SOP505
Beryllium		ND U		1	"	"	"	200.7/SOP505
Cadmium		ND U		5	"	"	"	200.7/SOP505
Chromium		ND U		10	"	"	"	200.7/SOP505
Cobalt		ND U		10	"	"	"	200.7/SOP505
Copper		ND U		10	"	"	"	200.7/SOP505



United States Environmental Protection Agency
Region 9 Laboratory

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Project Manager: Thomas Dunkelmann	Emergency Response Section	SDG: 10259B
Project Number: R10SB4	75 Hawthorne Street	Reported: 10/27/10 14:21
Project: Cordero Mercury Mine 2010 XRF Confirmation	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID:	1009025-33						Water - Sampled: 09/14/10 10:52	
Sample ID:	COR-NR-03-ERB						Metals by EPA 200 Series Methods	
Lead		ND	U	20	ug/L	BOJ0047	10/11/10	10/20/10 200.7/SOP505
Molybdenum		ND	U	20	"	"	"	200.7/SOP505
Nickel		ND	U	10	"	"	"	200.7/SOP505
Selenium		ND	U	20	"	"	"	200.7/SOP505
Silver		ND	U	10	"	"	"	200.7/SOP505
Thallium		ND	U	20	"	"	"	200.7/SOP505
Vanadium		ND	U	10	"	"	"	200.7/SOP505
Zinc		ND	U	10	"	"	"	200.7/SOP505

ms 3/10/11



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelmann
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/05/10 14:04

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-01								Soil - Sampled: 09/14/10 09:24
Sample ID: COR-NR-01								Metals by EPA 6000/7000 Series Methods
Mercury		25	J	1.5	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		93		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-02								Soil - Sampled: 09/14/10 09:35
Sample ID: COR-NR-01-6								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U	0.19	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-01-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		78		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-03								Soil - Sampled: 09/14/10 09:50
Sample ID: COR-NR-01-18								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U	0.19	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-01-18								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		75		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-04								Soil - Sampled: 09/14/10 10:00
Sample ID: COR-NR-02								Metals by EPA 6000/7000 Series Methods
Mercury		80	J	3.2	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-02								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		95		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-05								Soil - Sampled: 09/14/10 10:10
Sample ID: COR-NR-02-6								Metals by EPA 6000/7000 Series Methods
Mercury		1.1	J	0.15	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-02-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		94		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-06								Soil - Sampled: 09/14/10 10:20
Sample ID: COR-NR-03								Metals by EPA 6000/7000 Series Methods
Mercury		97	J	7.8	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-03								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		96		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-07								Soil - Sampled: 09/14/10 10:24
Sample ID: COR-NR-03-6								Metals by EPA 6000/7000 Series Methods
Mercury		10	J	1.6	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-03-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		96		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-08								Soil - Sampled: 09/14/10 10:43
Sample ID: COR-NR-03-18								Metals by EPA 6000/7000 Series Methods
Mercury		4.0	J	0.16	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-03-18								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		92		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-09								Soil - Sampled: 09/14/10 11:10



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Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/05/10 14:04

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-09								Soil - Sampled: 09/14/10 11:10
Sample ID: COR-NR-04 MS/MSD								Metals by EPA 6000/7000 Series Methods
Mercury		97	J, Q5 J	8	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-04 MS/MSD								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		94		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-10								Soil - Sampled: 09/14/10 11:25
Sample ID: COR-NR-04-6								Metals by EPA 6000/7000 Series Methods
Mercury		12	J	1.6	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-04-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		94		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-11								Soil - Sampled: 09/14/10 10:20
Sample ID: COR-NR-103								Metals by EPA 6000/7000 Series Methods
Mercury		45	J	1.6	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-103								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		96		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-12								Soil - Sampled: 09/14/10 11:31
Sample ID: COR-NR-05								Metals by EPA 6000/7000 Series Methods
Mercury		110	J	7.8	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-05								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		96		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-13								Soil - Sampled: 09/14/10 11:36
Sample ID: COR-NR-05-6								Metals by EPA 6000/7000 Series Methods
Mercury		2.4	J	0.15	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-05-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		96		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-14								Soil - Sampled: 09/14/10 11:43
Sample ID: COR-NR-05-18								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U	0.17	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-05-18								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		88		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-15								Soil - Sampled: 09/14/10 12:00
Sample ID: COR-NR-06								Metals by EPA 6000/7000 Series Methods
Mercury		76	J	3.3	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-06								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		91		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-16								Soil - Sampled: 09/14/10 12:15
Sample ID: COR-NR-06-6								Metals by EPA 6000/7000 Series Methods
Mercury		17	J	1.5	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-06-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		93		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-17								Soil - Sampled: 09/14/10 12:30



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Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10259B

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Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-17								Soil - Sampled: 09/14/10 12:30
Sample ID: COR-NR-07								Metals by EPA 6000/7000 Series Methods
Mercury		20	J	1.6	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-07								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		94		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-18								Soil - Sampled: 09/14/10 13:40
Sample ID: COR-SR-01								Metals by EPA 6000/7000 Series Methods
Mercury		49	J	3.2	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-SR-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		95		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-19								Soil - Sampled: 09/14/10 13:43
Sample ID: COR-SR-01-6								Metals by EPA 6000/7000 Series Methods
Mercury		6.8	J	1.6	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-SR-01-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		96		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-20								Soil - Sampled: 09/14/10 13:52
Sample ID: COR-SR-02								Metals by EPA 6000/7000 Series Methods
Mercury		94	J	15	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-SR-02								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		95		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-21								Soil - Sampled: 09/14/10 13:56
Sample ID: COR-SR-03								Metals by EPA 6000/7000 Series Methods
Mercury		64	J	3.2	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-SR-03								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		95		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-22								Soil - Sampled: 09/14/10 14:00
Sample ID: COR-SR-03-6								Metals by EPA 6000/7000 Series Methods
Mercury		20	J	1.6	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-SR-03-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		94		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-23								Soil - Sampled: 09/14/10 12:16
Sample ID: COR-NR-BKG-01								Metals by EPA 6000/7000 Series Methods
Mercury		0.13	CI, J J	0.16	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-BKG-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		95		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-24								Soil - Sampled: 09/14/10 12:22
Sample ID: COR-NR-BKG-01-6								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U J	0.16	mg/kg dry	B0I0103	09/21/10 09/22/10	7471B/SOP517
Sample ID: COR-NR-BKG-01-6								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		95		0	%	B0I0101	09/20/10 09/22/10	3550C/SOP460
Lab ID: 1009025-25								Soil - Sampled: 09/14/10 14:10



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Project: Cordero Mercury Mine 2010 XRF Confirmation	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-25								Soil - Sampled: 09/14/10 14:10
Sample ID: COR-SR-04								Metals by EPA 6000/7000 Series Methods
Mercury		61	J	3.3	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-SR-04								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		92		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-26								Soil - Sampled: 09/14/10 14:10
Sample ID: COR-SR-104								Metals by EPA 6000/7000 Series Methods
Mercury		85	J	7.7	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-SR-104								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		92		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-27								Soil - Sampled: 09/14/10 14:10
Sample ID: COR-SR-04 MS/MSD								Metals by EPA 6000/7000 Series Methods
Mercury		93	J	15	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-SR-04 MS/MSD								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		93		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-28								Soil - Sampled: 09/14/10 13:40
Sample ID: COR-SR-101								Metals by EPA 6000/7000 Series Methods
Mercury		110	J	16	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-SR-101								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		94		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-29								Soil - Sampled: 09/14/10 14:20
Sample ID: COR-SR-BKG-01								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U	0.16	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-SR-BKG-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		96		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-30								Soil - Sampled: 09/14/10 14:20
Sample ID: COR-SR-BKG-02								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U	0.16	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-SR-BKG-02								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		95		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-31								Soil - Sampled: 09/14/10 15:05
Sample ID: COR-MINE-01								Metals by EPA 6000/7000 Series Methods
Mercury		32	J	1.9	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-MINE-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		77		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-32								Soil - Sampled: 09/14/10 15:10
Sample ID: COR-MINE-02								Metals by EPA 6000/7000 Series Methods
Mercury		63	J	3.2	mg/kg dry	B0I0103	09/21/10	09/22/10 7471B/SOP517
Sample ID: COR-MINE-02								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		78		0	%	B0I0101	09/20/10	09/22/10 3550C/SOP460
Lab ID: 1009025-33								Water - Sampled: 09/14/10 10:52



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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10259B
Project Number: R10SB4	75 Hawthorne Street	Reported: 10/05/10 14:04
Project: Cordero Mercury Mine 2010 XRF Confirmation	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1009025-33							Water - Sampled: 09/14/10 10:52	
Sample ID: COR-NR-03-ERB							Metals by EPA 200 Series Methods	
Mercury		ND U		0.030	ug/L	B010159	09/29/10	09/29/10 245.1/SOP515

mt 3/10/11



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Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10259B

Reported: 10/27/10 14:21

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B0J0029 - 3050B Std Acid Dig - Metals by 6010

Prepared: 10/07/10 Analyzed: 10/14/10

Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0J0029-BLK1)

Antimony	ND	U		2 mg/kg wet
Arsenic	ND	U		2 "
Barium	ND	U		5 "
Beryllium	ND	U		0.1 "
Cadmium	ND	U		0.5 "
Chromium	ND	U		1 "
Cobalt	ND	U		2 "
Copper	ND	U		4 "
Lead	ND	U		3 "
Molybdenum	ND	U		5 "
Nickel	ND	U		5 "
Selenium	ND	U		2 "
Silver	ND	U		1 "
Thallium	ND	U		5 "
Vanadium	ND	U		2 "
Zinc	ND	U		8 "

Blank (B0J0029-BLK2)

Antimony	ND	U		2 mg/kg wet
Arsenic	ND	U		2 "
Barium	ND	U		5 "
Beryllium	ND	U		0.1 "
Cadmium	ND	U		0.5 "
Chromium	ND	U		1 "
Cobalt	ND	U		2 "
Copper	ND	U		4 "
Lead	ND	U		3 "
Molybdenum	ND	U		5 "
Nickel	ND	U		5 "
Selenium	ND	U		2 "
Silver	ND	U		1 "
Thallium	ND	U		5 "
Vanadium	ND	U		2 "
Zinc	ND	U		8 "

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Matrix Spike (B0J0029-MS1)

Source: 1009025-09

Antimony	34.2		2.1 mg/kg dry	106	4.11	28	75-125	20
Arsenic	437		2.1 "	422	55.6	90	75-125	20
Barium	546		5.3 "	422	183	86	75-125	20
Beryllium	9.85		0.11 "	10.6	0.514	88	75-125	20
Cadmium	9.44		0.53 "	10.6	ND	89	75-125	20
Chromium	40.8		1.1 "	42.2	1.67	93	75-125	20

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SDG: 10259B

Reported: 10/27/10 14:21

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B0J0029 - 3050B Std Acid Dig - Metals by 6010

Prepared: 10/07/10 Analyzed: 10/14/10

Metals by EPA 6000/7000 Series Methods - Quality Control

Reference (B0J0029-SRM2)

Arsenic	1,130		2	"	921		122	65.98-134
Barium	5.6		5	"	5.25		107	47.17-153
Beryllium	19.4		0.1	"	18.6		104	81.38-118
Cadmium	40.7		0.5	"	41.2		99	77.16-123
Chromium	101		1	"	95.5		106	80.06-119
Cobalt	135		2	"	139		97	82.42-118
Copper	6,590		20	"	6610		100	85.73-114
Lead	209		3	"	222		94	74.82-125
Nickel	58		5	"	56.2		103	76.58-123
Selenium	55.5		2	"	36.6		152	47.57-152
Silver	26.7		1	"	20.7		129	63.16-136
Thallium	32.8		5	"	37.7		87	64.57-135
Vanadium	73.9		2	"	65.1		113	80.55-119
Zinc	177		8	"	173		102	72.97-127

Batch B0J0047 - 200 Series Digest - Metals by 200.7

Prepared: 10/11/10 Analyzed: 10/20/10

Metals by EPA 200 Series Methods - Quality Control

Blank (B0J0047-BLK1)

Antimony	ND	U	20	ug/L
Arsenic	ND	U	20	"
Barium	ND	U	10	"
Beryllium	ND	U	1	"
Cadmium	ND	U	5	"
Chromium	ND	U	10	"
Cobalt	ND	U	10	"
Copper	ND	U	10	"
Lead	ND	U	20	"
Molybdenum	ND	U	20	"
Nickel	ND	U	10	"
Selenium	ND	U	20	"
Silver	ND	U	10	"
Thallium	ND	U	20	"
Vanadium	ND	U	10	"
Zinc	ND	U	10	"

Blank (B0J0047-BLK2)

Antimony	ND	U	20	ug/L
Arsenic	ND	U	20	"
Barium	ND	U	10	"
Beryllium	ND	U	1	"
Cadmium	ND	U	5	"
Chromium	ND	U	10	"
Cobalt	ND	U	10	"



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SDG: 10259B

Reported: 10/27/10 14:21

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	--------------------------	-----------------------	-------	----------------	------------------	------	----------------	-----	--------------

Batch B0J0047 - 200 Series Digest - Metals by 200.7

Prepared: 10/11/10 Analyzed: 10/20/10

Metals by EPA 200 Series Methods - Quality Control

Blank (B0J0047-BLK2)

Copper	ND	U	10	"
Lead	ND	U	20	"
Molybdenum	ND	U	20	"
Nickel	ND	U	10	"
Selenium	ND	U	20	"
Silver	ND	U	10	"
Thallium	ND	U	20	"
Vanadium	ND	U	10	"
Zinc	ND	U	10	"

m *3/10/11*

LCS (B0J0047-BS1)

Antimony	825		20 ug/L	800	103	85-115	200
Arsenic	782		20 "	800	98	85-115	200
Barium	200		10 "	200	100	85-115	200
Beryllium	198		1 "	200	99	85-115	200
Cadmium	198		5 "	200	99	85-115	200
Chromium	388		10 "	400	97	85-115	200
Cobalt	196		10 "	200	98	85-115	200
Copper	293		10 "	300	98	85-115	200
Lead	976		20 "	1000	98	85-115	200
Molybdenum	379		20 "	400	95	85-115	200
Nickel	507		10 "	500	101	85-115	200
Selenium	2,080		20 "	2000	104	85-115	200
Silver	71.7		10 "	75.0	96	85-115	200
Thallium	1,900		20 "	2000	95	85-115	200
Vanadium	298		10 "	300	99	85-115	200
Zinc	200		10 "	200	100	85-115	200

LCS (B0J0047-BS2)

Antimony	817		20 ug/L	800	102	85-115	200
Arsenic	771		20 "	800	96	85-115	200
Barium	199		10 "	200	100	85-115	200
Beryllium	196		1 "	200	98	85-115	200
Cadmium	194		5 "	200	97	85-115	200
Chromium	385		10 "	400	96	85-115	200
Cobalt	196		10 "	200	98	85-115	200
Copper	291		10 "	300	97	85-115	200
Lead	965		20 "	1000	97	85-115	200
Molybdenum	383		20 "	400	96	85-115	200
Nickel	507		10 "	500	101	85-115	200
Selenium	2,030		20 "	2000	102	85-115	200
Silver	70.8		10 "	75.0	94	85-115	200
Thallium	1,910		20 "	2000	96	85-115	200



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R10SB4
Project: Cordero Mercury Mine 2010 XRF
Confirmation

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10259B
Reported: 10/05/10 14:04

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B0I0101 - Solids, Dry Weight (Prep) - Solids, Dry Weight										
					Prepared: 09/20/10 Analyzed: 09/22/10					
Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control										
Blank (B0I0101-BLK1)										
% Solids	ND	U		0 %						
Blank (B0I0101-BLK2)										
% Solids	ND	U		0 %						
Duplicate (B0I0101-DUP1)										
% Solids	94		Source: 1009025-09	0 %		94			0	20
Duplicate (B0I0101-DUP2)										
% Solids	92		Source: 1009025-27	0 %		93			1	20
Batch B0I0103 - 7471B Hg Digest - Mercury, High Level										
					Prepared: 09/21/10 Analyzed: 09/22/10					
Metals by EPA 6000/7000 Series Methods - Quality Control										
Blank (B0I0103-BLK1)										
Mercury	ND	U		0.15 mg/kg wet						
Blank (B0I0103-BLK2)										
Mercury	ND	U		7.5 mg/kg wet						
Duplicate (B0I0103-DUP1)										
Mercury	69.8		Source: 1009025-09	8 mg/kg dry		97.4			33	20
Duplicate (B0I0103-DUP2)										
Mercury	112		Source: 1009025-27	16 mg/kg dry		93.3			18	20
Matrix Spike (B0I0103-MS1)										
Mercury	79.4	Q10	Source: 1009025-09	8 mg/kg dry	1.57	97.4	NR	80-120		200
Matrix Spike (B0I0103-MS2)										
Mercury	407	Q10	Source: 1009025-27	16 mg/kg dry	1.54	93.3	NR	80-120		200
Reference (B0I0103-SRM1)										
Mercury	12.1			0.75 mg/kg wet	12.3		98	63.41-137		
Reference (B0I0103-SRM2)										
Mercury	11.4			0.75 mg/kg wet	12.3		93	63.41-137		
Batch B0I0159 - 245.1 Hg Prep. - Mercury										
					Prepared & Analyzed: 09/29/10					
Metals by EPA 200 Series Methods - Quality Control										
Blank (B0I0159-BLK1)										
Mercury	ND	U		0.03 ug/L						
LCS (B0I0159-BS1)										
Mercury	0.22			0.03 ug/L	0.200		110	85-115		
Matrix Spike (B0I0159-MS1)										
Mercury	0.223		Source: 1009025-33	0.03 ug/L	0.200	ND	112	70-130		20
Matrix Spike Dup (B0I0159-MSD1)										
Mercury	0.219		Source: 1009025-33	0.03 ug/L	0.200	ND	110	70-130	2	20

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS
SAMPLERS: (Signature)		CORDERO Mine Site				
DATE		TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION
9/14/10	6324	Soil		X		COR-NR-01
9/14/10	6335	Soil		X		COR-NR-01-6"
	6950			X		COR-NR-01-18"
	1060			X		COR-NR-02
	1010			X		COR-NR-02-6"
	1020			X		COR-NR-03
	1024			X		COR-NR-03-6"
	1110			X		COR-NR-04 (Ashes)
	1125			X		COR-NR-04-6"
	1043			X		COR-NR-03-18"
	1020			X		COR-NR-103
	1131			X		COR-NR-05
	1136			X		COR-NR-05-6"
	1143			X		COR-NR-05-18"
	1200			X		COR-NR-06
Relinquished by: (Signature)		Date / Time	Received by: (Signature)		Date / Time	Received by: (Signature)
9/14/10		1530	9/15/10		1530	
Relinquished by: (Signature)		Date / Time	Received by: (Signature)		Date / Time	Received by: (Signature)
9/14/10		1530	9/15/10		1530	
Received for Laboratory by: (Signature)		Date / Time	Temp.		Seals Intact (Y/N)	
			11°C		N	
Conditions / Remarks						Hand-delivered 11°C

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		CORDERO MINE SITE		NO. OF CONTAINERS		REMARKS					
SAMPLERS (Signature)		DATE		TIME		MATRIX		COMB		GRAB		SAMPLE IDENTIFICATION	
<i>[Signature]</i>		9/14/10	1215	Soil			X	COR-NR-06-6"	402-1	X			
		9/14/10	1230	Soil			X	COR-NR-07		X			
							X	COR-NR-08		X			
							X	COR-NR-09		X			
							X	COR-NR-10		X			
							X	COR-NR-11		X			
							X	COR-NR-12		X			
							X	COR-NR-13		X			
							X	COR-NR-14		X			
							X	COR-NR-15		X			
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time		Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
<i>[Signature]</i>		9/14/10 1724		<i>[Signature]</i>		9/15/10 1530							
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time		Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
<i>[Signature]</i>				<i>[Signature]</i>									
Received for Laboratory by: (Signature)		Date / Time		Temp.		Seals Intact (Y/N)		Conditions / Remarks					
<i>[Signature]</i>				11°C		N		Hand-delivered				11°C	

CHAIN OF CUSTODY RECORD

Region 3 Laboratory

[illegible]

Distribution: Original Accompanies Shipment; Copy to Corresponding Field Files

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Laboratory: EPA Region 9 Laboratory	Lab Project Number: 1010067
Sampling Dates: 10/19/10	Sample Matrix: Soil
Analytical Method: CAM Metals (EPA 6010B/7471A)	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song
Technical QA Reviewer: Howard Edwards
Project Manager: Nell Ellis

Date: 3/10/11
Date: 3/28/11
Date: _____

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	COR-LOT1-09-6"	1010067-01
2	COR-LOT1-09-18"	1010067-02
3	COR-LOT1-03-6"	1010067-03
4	COR-LOT1-03-18"	1010067-04
5	COR-LOT1-11-6"	1010067-05
6	COR-LOT1-11-18"	1010067-06
7	COR-LOT1-13-6"	1010067-07
8	COR-LOT1-13-18"	1010067-08
9	COR-LOT1-06-6"	1010067-09
10	COR-LOT1-06-18"	1010067-10
11	COR-TRK1-01	1010067-11
12	COR-LOT1-14	1010067-12
13	COR-LOT1-15	1010067-13
14	COR-LOT1-14-6"	1010067-14
15	COR-LOT1-14-18"	1010067-15
16	COR-LOT1-01	1010067-16
17	COR-LOT1-02	1010067-17
18	COR-LOT1-03	1010067-18
19	COR-LOT1-04	1010067-19
20	COR-LOT1-04D	1010067-20

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Sample No.	Sample I.D.	Laboratory I.D.
21	COR-LOT1-05	1010067-21
22	COR-LOT1-06	1010067-22

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

- X Included: no problems
- * Included: problems noted in review
- O Not Included and/or Not Available
- NR Not Required
- RS Provided As Re-submission

Case Narrative:

- X Case Narrative present

Quality Control Summary Package:

- X Data Summary sheets
- X Initial and Continuing Calibration results
- NR CRDL Standard results
- X Preparation Blank and Calibration Blank results
- X ICP Interference Check Sample results
- * Matrix Spike recoveries
- * Matrix Duplicate results
- X Laboratory Control Sample recoveries
- NR Method of Standard Additions results
- NR ICP Serial Dilution results
- NR Instrument Detection Limits
- NR ICP Interelement Correction Factors
- NR ICP Linear Ranges
- X Preparation Log
- X Analysis Run Log

Raw QC Data Package Section

- X Chain-of-Custody Records
- X Instrument Printouts
- X Sample Preparation Notebook Pages
- X Logbook and Worksheet Pages
- X Percent Solids Determination

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Initial and Continuing Calibrations	YES
3	Laboratory Control Sample	YES
4	Matrix Spike	NO
5	Blanks and Background Samples	YES
6	Duplicate Analyses	YES
7	Interference Check Samples and Serial Dilution Analysis	YES
8	Post Digestion Spike and Standard Addition Analysis	N/A
9	Analyte Quantitation	YES
10	Overall Assessment of Data	YES
11	Usability of Data	YES

Comments: N/A: Not Applicable.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

1. HOLDING TIMES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer's judgement.

All Sample Matrices:

Mercury: 28 days (from collection) for analysis.
Hexavalent chromium: 24 hours (from collection) for analysis.
All other metals: 180 days (from collection) for analysis.

Comments: All holding times were met.

2. INITIAL AND CONTINUING CALIBRATION VERIFICATION

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Unless flagged below, an initial calibration verification (ICV) and a calibration blank were analyzed at the beginning of the run, and a continuing calibration verification (CCV) and a calibration blank were analyzed after every ten samples, and at the end of the run. ICV and CCV recoveries were within a range of 80-120% for mercury and tin, and 90-110% for all other metals. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 65% or above 135% (for mercury and tin) or below 75% or above 125% (for all other metals), all associated data are rejected (R).

Comments: All recoveries of metals in initial and continuing calibration verifications were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

3. LABORATORY CONTROL SAMPLE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Percent recoveries of LCS were within the control limits.

4. MATRIX SPIKE

- ☐ Acceptable
☒ Acceptable with qualification
☐ Unacceptable
☐ No Matrix Spikes Analyzed

Matrix spike recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. Unless flagged below, one laboratory control sample was analyzed at a rate of one per batch or one per 20 samples. Recoveries were within a range of 75-125%.

For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Samples COR-LOT1-11-6" and COR-LOT1-06-18" were used for matrix spike and matrix spike duplicate analysis. All recoveries except antimony, barium, copper, molybdenum, and zinc were within the control limits. The detected results of Sb, Ba, Cu, Mo, and Zn were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

5. BLANKS AND BACKGROUND SAMPLES

☒ Acceptable
☐ Detection Limits Adjusted

The following blanks were analyzed:

☒ Method (preparation) Blanks
☐ Field Blanks
☐ Calibration Blanks
☒ Rinsate Blanks
☐ Background Samples

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: No contamination was found in the method blank or the rinsate blank at reporting limit level.

6. DUPLICATE ANALYSES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Duplicates Analyzed

Type of duplicates analyzed:

☒ Field Duplicates
☐ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the detected results as estimated (J) for any analyte whose RPD in a laboratory duplicate exceeds 20% for water samples or 35% for soil samples.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT1-04	COR-LOT1-04D	RPD (%)
Antimony	8.1	7.9	3
Arsenic	44	35	23
Barium	170	130	27
Beryllium	0.66	0.60	10
Cadmium	<0.50	<0.54	0
Chromium	3.9	3.2	20
Cobalt	2.7	2.1	25
Copper	6.6	8.7	27
Lead	12	10	18
Mercury	58	52	11
Molybdenum	8.4	7.0	18
Nickel	<5.0	<5.4	0
Selenium	<2.0	<2.2	0
Silver	<1.0	<1.1	0
Thallium	<5.0	<5.4	0
Vanadium	27	22	20
Zinc	55	44	22

Comments: The RPDs were within the control limits (less than 35%).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

7. INTERFERENCE CHECK SAMPLES AND SERIAL DILUTION ANALYSIS

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ Not required

Interference Check Samples (ICS) - Unless flagged below, an ICS was analyzed at the beginning and end of each run and at least twice every eight hours. Recoveries were within a range of 80-120%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J) if the concentrations of Al, Ca, Fe, or Mg are higher in the sample than in the ICS.

Serial Dilution Analysis - Unless flagged below, a serial dilution analysis was performed at a rate of one per 20 samples on a sample having analyte concentrations greater than 50 times the IDL. Percent differences were within a range of 0-10%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments: ICS recoveries were within the control limit.
Serial Dilution Analysis: Not required.

8. POST DIGESTION SPIKE AND STANDARD ADDITIONS

☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Post-digestion spikes - If a furnace AA result was flagged by the laboratory with an E to indicate interference, and the associated post-digestion spike recovery was less than 10%, the associated results are rejected (R).

Method of Standard Additions - If the method of standard additions was required and the correlation coefficient was less than 0.995, the associated results were qualified as estimated (J).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

9. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Water samples:

$$\text{ug/L} = \frac{(\text{Instrument printout concentration, mg/L})(1000 \text{ ug/mg})(\text{final volume of extract, mL})}{(\text{Initial volume of extract, mL})}$$

Soil samples:

$$\text{mg/kg} = \frac{(\text{Instrument printout concentration, mg/L})(\text{final volume of extract, mL})(0.001 \text{ L/mL})}{(\text{weight of sample extracted, g})(0.001 \text{ kg/g})(\text{fraction solids})}$$

Comments: Analyte quantitation is acceptable.

Sample COR-LOT1-06-6"

As: $(0.04207 \text{ mg/L}) (0.05 \text{ L}/1.01 \text{ g}) (2) (100/86) (1000 \text{ g}/1 \text{ kg}) = 4.843 \text{ mg/kg}$

Lab reported 4.8 mg/kg.

Sample COR-NR-01

Hg: $(0.0187 \text{ mg/L}) (0.03 \text{ L}/0.2137 \text{ g}) (20) (100/86) (1000 \text{ g}/1 \text{ kg}) = 61.05 \text{ mg/kg}$

Lab reported 61 mg/kg.

10. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

☐ Acceptable
☒ Acceptable with Qualification
☐ Rejected

Accepted data meet the minimum requirements for the following EPA data category:

☐ ERS Screening
☐ Non-definitive with 10 % Confirmation by Definitive Methodology
☐ Definitive, Comprehensive Statistical Error Determination was performed.
☒ Definitive, Comprehensive Statistical Error Determination was not performed.

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

11. USABILITY OF DATA

A. These data are considered usable for the data use objectives stated in the EPA EMERGENCY RESPONSE SECTION AND SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM QUALITY ASSURANCE SAMPLING PLAN FOR SOIL MATRIX SAMPLING, CORDERO MERCURY MINE SITE, FORT MCDERMITT, NEVADA, OCTOBER 13, 2010 (QASP).

The following data use objective was indicated in the QASP:

TO BE COMPARED WITH A BACKGROUND OR REFERENCE SAMPLES(S).

TO BE COMPARED WITH SITE-SPECIFIC ACTION LEVELS OR RISK-BASED ACTION LEVELS (E.G., EPA PRGS) TO ASSIST IN DETERMINATION IF HEALTH THREATS EXIST.

THE DATA ARE USABLE FOR THE ABOVE OBJECTIVES.

B. These data meet quality objectives stated in the QASP.

AS INDICATED IN SECTION 2.4 OF THE QASP, THE INVESTIGATION WILL GENERATE DEFINITIVE DATA AND TABLE E OF THE QASP OUTLINES THE DATA QUALITY INDICATOR GOALS APPLICABLE TO THE DEFINITIVE DATA QUALITY LEVEL. THE DATA IN THIS PACKAGE MEET THESE REQUIREMENTS.

12. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data qualifiers indicated, and a copy of the chain of custody for the samples.



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294C
Reported: 11/24/10 13:13

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-01						Soil - Sampled: 10/19/10 11:20		
Sample ID: COR-LOT1-09-6"						Metals by EPA 6000/7000 Series Methods		
Mercury		1.5		0.18	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND	U	2.2	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		5.4		2.2	"	"	"	6010C/SOP503
Barium		220	J	5.5	"	"	"	6010C/SOP503
Beryllium		0.84		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.55	"	"	"	6010C/SOP503
Chromium		16		1.1	"	"	"	6010C/SOP503
Cobalt		7.8		2.2	"	"	"	6010C/SOP503
Copper		23	J	4.4	"	"	"	6010C/SOP503
Lead		6.3		3.3	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.5	"	"	"	6010C/SOP503
Nickel		13		5.5	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.5	"	"	"	6010C/SOP503
Vanadium		37		2.2	"	"	"	6010C/SOP503
Zinc		57	J	8.8	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-09-6"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		85		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-02						Soil - Sampled: 10/19/10 11:25		
Sample ID: COR-LOT1-09-18"						Metals by EPA 6000/7000 Series Methods		
Mercury		0.19		0.16	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND	U	2.3	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		3.9		2.3	"	"	"	6010C/SOP503
Barium		130	J	5.7	"	"	"	6010C/SOP503
Beryllium		0.77		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.57	"	"	"	6010C/SOP503
Chromium		16		1.1	"	"	"	6010C/SOP503
Cobalt		7.4		2.3	"	"	"	6010C/SOP503
Copper		18	J	4.5	"	"	"	6010C/SOP503
Lead		7.0		3.4	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.7	"	"	"	6010C/SOP503
Nickel		11		5.7	"	"	"	6010C/SOP503
Selenium		ND	U	2.3	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.7	"	"	"	6010C/SOP503
Vanadium		31		2.3	"	"	"	6010C/SOP503
Zinc		52	J	9.1	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-09-18"						Conventional Chemistry Parameters by APHA/EPA Methods		

[Signature] 3/10/11



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294C

Reported: 11/24/10 13:13

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-02								Soil - Sampled: 10/19/10 11:25
Sample ID: COR-LOT1-09-18"								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		88		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-03								Soil - Sampled: 10/19/10 11:35
Sample ID: COR-LOT1-03-6"								Metals by EPA 6000/7000 Series Methods
Mercury		0.66		0.19	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND U		2.5	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		9.9		2.5	"	"	"	6010C/SOP503
Barium		260 J		6.3	"	"	"	6010C/SOP503
Beryllium		0.95		0.13	"	"	"	6010C/SOP503
Cadmium		ND U		0.63	"	"	"	6010C/SOP503
Chromium		18		1.3	"	"	"	6010C/SOP503
Cobalt		4.4		2.5	"	"	"	6010C/SOP503
Copper		23 J		5.1	"	"	"	6010C/SOP503
Lead		3.8		3.8	"	"	"	6010C/SOP503
Molybdenum		ND U		6.3	"	"	"	6010C/SOP503
Nickel		11		6.3	"	"	"	6010C/SOP503
Selenium		ND U		2.5	"	"	"	6010C/SOP503
Silver		ND U		1.3	"	"	"	6010C/SOP503
Thallium	RE1	ND U		6.3	"	"	"	11/19/10 6010C/SOP503
Vanadium		65		2.5	"	"	"	11/17/10 6010C/SOP503
Zinc		50 J		10	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-03-6"								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		79		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-04								Soil - Sampled: 10/19/10 11:40
Sample ID: COR-LOT1-03-18"								Metals by EPA 6000/7000 Series Methods
Mercury		0.16		0.16	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND U		2.4	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		4.7		2.4	"	"	"	6010C/SOP503
Barium		320 J		5.9	"	"	"	6010C/SOP503
Beryllium		0.78		0.12	"	"	"	6010C/SOP503
Cadmium		ND U		0.59	"	"	"	6010C/SOP503
Chromium		15		1.2	"	"	"	6010C/SOP503
Cobalt		6.6		2.4	"	"	"	6010C/SOP503
Copper		21 J		4.7	"	"	"	6010C/SOP503
Lead		5.1		3.5	"	"	"	6010C/SOP503
Molybdenum		ND U		5.9	"	"	"	6010C/SOP503
Nickel		14		5.9	"	"	"	6010C/SOP503
Selenium		ND U		2.4	"	"	"	6010C/SOP503
Silver		ND U		1.2	"	"	"	6010C/SOP503
Thallium	RE1	ND U		5.9	"	"	"	11/19/10 6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294C
Reported: 11/24/10 13:13

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-04							Soil - Sampled: 10/19/10 11:40	
Sample ID: COR-LOT1-03-18"							Metals by EPA 6000/7000 Series Methods	
Vanadium		33		2.4	mg/kg dry	B0K0008	11/02/10	11/17/10 6010C/SOP503
Zinc		53	J	9.4	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-03-18"							Conventional Chemistry Parameters by APHA/EPA Methods	
% Solids		85		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-05							Soil - Sampled: 10/19/10 11:50	
Sample ID: COR-LOT1-11-6"							Metals by EPA 6000/7000 Series Methods	
Mercury		0.59		0.18	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		1.4	Cl, Q4, J J	2.5	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		9.2		2.5	"	"	"	6010C/SOP503
Barium		420	J, Q4 J	6.3	"	"	"	6010C/SOP503
Beryllium		1.2		0.13	"	"	"	6010C/SOP503
Cadmium		ND	U	0.63	"	"	"	6010C/SOP503
Chromium		22		1.3	"	"	"	6010C/SOP503
Cobalt		6.2		2.5	"	"	"	6010C/SOP503
Copper		23	J, Q4 J	5.1	"	"	"	6010C/SOP503
Lead		4.9		3.8	"	"	"	6010C/SOP503
Molybdenum		ND	J, Q4, U	6.3	"	"	"	6010C/SOP503
Nickel		14		6.3	"	"	"	6010C/SOP503
Selenium		ND	U	2.5	"	"	"	6010C/SOP503
Silver		0.64	Cl, J	1.3	"	"	"	6010C/SOP503
Thallium	RE1	ND	U	6.3	"	"	"	11/19/10 6010C/SOP503
Vanadium		58		2.5	"	"	"	11/17/10 6010C/SOP503
Zinc		64	J, Q4 J	10	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-11-6"							Conventional Chemistry Parameters by APHA/EPA Methods	
% Solids		79		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-06							Soil - Sampled: 10/19/10 11:55	
Sample ID: COR-LOT1-11-18"							Metals by EPA 6000/7000 Series Methods	
Mercury		0.29		0.16	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND	U	2.2	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		4.3		2.2	"	"	"	6010C/SOP503
Barium		160	J	5.4	"	"	"	6010C/SOP503
Beryllium		0.76		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		15		1.1	"	"	"	6010C/SOP503
Cobalt		8.0		2.2	"	"	"	6010C/SOP503
Copper		17	J	4.3	"	"	"	6010C/SOP503
Lead		6.4		3.2	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.4	"	"	"	6010C/SOP503
Nickel		12		5.4	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294C
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 13:13
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-06							Soil - Sampled: 10/19/10 11:55	
Sample ID: COR-LOT1-11-18"								Metals by EPA 6000/7000 Series Methods
Selenium		ND	U	2.2	mg/kg dry	BOK0008	11/02/10	11/17/10 6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium	RE1	ND	U	5.4	"	"	"	11/19/10 6010C/SOP503
Vanadium		32		2.2	"	"	"	11/17/10 6010C/SOP503
Zinc		55	J	8.6	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-11-18"								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		86		1	%	BOK0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-07							Soil - Sampled: 10/19/10 12:05	
Sample ID: COR-LOT1-13-6"								Metals by EPA 6000/7000 Series Methods
Mercury		0.30		0.18	mg/kg dry	BOK0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND	U	2.4	"	BOK0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		7.1		2.4	"	"	"	6010C/SOP503
Barium		270	J	6.1	"	"	"	6010C/SOP503
Beryllium		0.97		0.12	"	"	"	6010C/SOP503
Cadmium		ND	U	0.61	"	"	"	6010C/SOP503
Chromium		19		1.2	"	"	"	6010C/SOP503
Cobalt		7.4		2.4	"	"	"	6010C/SOP503
Copper		19	J	4.9	"	"	"	6010C/SOP503
Lead		5.7		3.7	"	"	"	6010C/SOP503
Molybdenum		ND	U	6.1	"	"	"	6010C/SOP503
Nickel		12		6.1	"	"	"	6010C/SOP503
Selenium		ND	U	2.4	"	"	"	6010C/SOP503
Silver		ND	U	1.2	"	"	"	6010C/SOP503
Thallium	RE1	ND	U	6.1	"	"	"	11/19/10 6010C/SOP503
Vanadium		47		2.4	"	"	"	11/17/10 6010C/SOP503
Zinc		59	J	9.8	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-13-6"								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		82		1	%	BOK0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-08							Soil - Sampled: 10/19/10 12:08	
Sample ID: COR-LOT1-13-18"								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U	0.16	mg/kg dry	BOK0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND	U	2.3	"	BOK0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		4.6		2.3	"	"	"	6010C/SOP503
Barium		200	J	5.7	"	"	"	6010C/SOP503
Beryllium		0.71		0.11	"	"	"	6010C/SOP503
Cadmium		0.29	Cl, J	0.57	"	"	"	6010C/SOP503
Chromium		14		1.1	"	"	"	6010C/SOP503
Cobalt		7.1		2.3	"	"	"	6010C/SOP503
Copper		17	J	4.6	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294C
Reported: 11/24/10 13:13

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-08						Soil - Sampled: 10/19/10 12:08		
Sample ID: COR-LOT1-13-18"						Metals by EPA 6000/7000 Series Methods		
Lead		6.7		3.4	mg/kg dry	B0K0008	11/02/10	11/17/10 6010C/SOP503
Molybdenum		ND U		5.7	"	"	"	6010C/SOP503
Nickel		11		5.7	"	"	"	6010C/SOP503
Selenium		ND U		2.3	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium	RE1	ND U		5.7	"	"	"	11/19/10 6010C/SOP503
Vanadium		33		2.3	"	"	"	11/17/10 6010C/SOP503
Zinc		57 J		9.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-13-18"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		87		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-09						Soil - Sampled: 10/19/10 12:20		
Sample ID: COR-LOT1-06-6"						Metals by EPA 6000/7000 Series Methods		
Mercury		61		3.3	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND U		2.3	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		4.8		2.3	"	"	"	6010C/SOP503
Barium		170 J		5.8	"	"	"	6010C/SOP503
Beryllium		0.70		0.12	"	"	"	6010C/SOP503
Cadmium		0.42 Cl, J		0.58	"	"	"	6010C/SOP503
Chromium		14		1.2	"	"	"	6010C/SOP503
Cobalt		7.1		2.3	"	"	"	6010C/SOP503
Copper		19 J		4.7	"	"	"	6010C/SOP503
Lead		5.7		3.5	"	"	"	6010C/SOP503
Molybdenum		ND U		5.8	"	"	"	6010C/SOP503
Nickel		12		5.8	"	"	"	6010C/SOP503
Selenium		ND U		2.3	"	"	"	6010C/SOP503
Silver		ND U		1.2	"	"	"	6010C/SOP503
Thallium	RE1	ND U		5.8	"	"	"	11/19/10 6010C/SOP503
Vanadium		34		2.3	"	"	"	11/17/10 6010C/SOP503
Zinc		57 J		9.3	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-06-6"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		86		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-10						Soil - Sampled: 10/19/10 12:25		
Sample ID: COR-LOT1-06-18"						Metals by EPA 6000/7000 Series Methods		
Mercury		0.32		0.16	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND J, Q4, U		2.2	"	B0K0008	11/02/10	11/17/10 6010C/SOP503
Arsenic		3.9		2.2	"	"	"	6010C/SOP503
Barium	RE1	200 J		5.4	"	"	"	11/19/10 6010C/SOP503
Beryllium	RE1	0.91		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.54	"	"	"	11/17/10 6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294C
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 13:13
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-10						Soil - Sampled: 10/19/10 12:25		
Sample ID: COR-LOT1-06-18"						Metals by EPA 6000/7000 Series Methods		
Chromium		16		1.1	mg/kg dry	BOK0008	11/02/10	11/17/10 6010C/SOP503
Cobalt	RE1	7.8		2.2	"	"	"	11/19/10 6010C/SOP503
Copper	RE1	19	J	4.3	"	"	"	6010C/SOP503
Lead		6.7		3.2	"	"	"	11/17/10 6010C/SOP503
Molybdenum		ND	J, Q4, U	5.4	"	"	"	6010C/SOP503
Nickel		14		5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium	RE1	ND	U	5.4	"	"	"	11/19/10 6010C/SOP503
Vanadium		34		2.2	"	"	"	11/17/10 6010C/SOP503
Zinc	RE1	58	J	8.6	"	"	"	11/19/10 6010C/SOP503
Sample ID: COR-LOT1-06-18"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		86		1	%	BOK0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-11						Soil - Sampled: 10/19/10 12:30		
Sample ID: COR-TRK1-01						Metals by EPA 6000/7000 Series Methods		
Mercury		0.29		0.14	mg/kg dry	BOK0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND	U	2.1	"	BOK0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		2.3		2.1	"	"	"	6010C/SOP503
Barium		280	J	5.2	"	"	"	6010C/SOP503
Beryllium		0.21		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.52	"	"	"	6010C/SOP503
Chromium		4.8		1	"	"	"	6010C/SOP503
Cobalt		5.9		2.1	"	"	"	6010C/SOP503
Copper		4.2	J	4.1	"	"	"	6010C/SOP503
Lead		ND	U	3.1	"	"	"	6010C/SOP503
Molybdenum		ND	U	5.2	"	"	"	6010C/SOP503
Nickel		3.5	Cl, J	5.2	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5.2	"	"	"	6010C/SOP503
Vanadium		52		2.1	"	"	"	6010C/SOP503
Zinc		56	J	8.2	"	"	"	6010C/SOP503
Sample ID: COR-TRK1-01						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		97		1	%	BOK0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-12						Soil - Sampled: 10/19/10 12:35		
Sample ID: COR-LOT1-14						Metals by EPA 6000/7000 Series Methods		
Mercury		27		3.3	mg/kg dry	BOK0036	11/05/10	11/08/10 7471B/SOP517
Antimony		3.0	J	2.2	"	BOK0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		23		2.2	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294C
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 13:13
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-12								Soil - Sampled: 10/19/10 12:35
Sample ID: COR-LOT1-14								Metals by EPA 6000/7000 Series Methods
Barium		180	J	5.4	mg/kg dry	B0K0008	11/02/10	11/19/10 6010C/SOP503
Beryllium		0.54		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		6.4		1.1	"	"	"	6010C/SOP503
Cobalt		4.9		2.2	"	"	"	6010C/SOP503
Copper		8.1	J	4.3	"	"	"	6010C/SOP503
Lead		9.5		3.3	"	"	"	6010C/SOP503
Molybdenum		3.9	Cl, J	5.4	"	"	"	6010C/SOP503
Nickel		5.7		5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		28		2.2	"	"	"	6010C/SOP503
Zinc		67	J	8.7	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-14								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		92		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-13								Soil - Sampled: 10/19/10 12:40
Sample ID: COR-LOT1-15								Metals by EPA 6000/7000 Series Methods
Mercury		40		3.4	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		6.9	J	2.2	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		40		2.2	"	"	"	6010C/SOP503
Barium		180	J	5.6	"	"	"	6010C/SOP503
Beryllium		0.58		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.56	"	"	"	6010C/SOP503
Chromium		3.8		1.1	"	"	"	6010C/SOP503
Cobalt		2.8		2.2	"	"	"	6010C/SOP503
Copper		7.0	J	4.5	"	"	"	6010C/SOP503
Lead		15		3.4	"	"	"	6010C/SOP503
Molybdenum		7.8	J	5.6	"	"	"	6010C/SOP503
Nickel		3.2	Cl, J	5.6	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.6	"	"	"	6010C/SOP503
Vanadium		26		2.2	"	"	"	6010C/SOP503
Zinc		68	J	9	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-15								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		89		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-14								Soil - Sampled: 10/19/10 12:50
Sample ID: COR-LOT1-14-6"								Metals by EPA 6000/7000 Series Methods



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294C
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 13:13
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-14						Soil - Sampled: 10/19/10 12:50		
Sample ID: COR-LOT1-14-6"						Metals by EPA 6000/7000 Series Methods		
Mercury		0.44		0.19	mg/kg dry	BOK0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND U		2.5	"	BOK0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		5.8		2.5	"	"	"	6010C/SOP503
Barium		370 J		6.2	"	"	"	6010C/SOP503
Beryllium		0.91		0.12	"	"	"	6010C/SOP503
Cadmium		ND U		0.62	"	"	"	6010C/SOP503
Chromium		17		1.2	"	"	"	6010C/SOP503
Cobalt		5.5		2.5	"	"	"	6010C/SOP503
Copper		17 J		5	"	"	"	6010C/SOP503
Lead		5.4		3.8	"	"	"	6010C/SOP503
Molybdenum		ND U		6.2	"	"	"	6010C/SOP503
Nickel		11		6.2	"	"	"	6010C/SOP503
Selenium		ND U		2.5	"	"	"	6010C/SOP503
Silver		ND U		1.2	"	"	"	6010C/SOP503
Thallium		ND U		6.2	"	"	"	6010C/SOP503
Vanadium		33		2.5	"	"	"	6010C/SOP503
Zinc		56 J		10	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-14-6"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		80		1	%	BOK0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-15						Soil - Sampled: 10/19/10 12:55		
Sample ID: COR-LOT1-14-18"						Metals by EPA 6000/7000 Series Methods		
Mercury		0.27		0.17	mg/kg dry	BOK0036	11/05/10	11/08/10 7471B/SOP517
Antimony		ND U		2.4	"	BOK0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		6.5		2.4	"	"	"	6010C/SOP503
Barium		380 J		5.9	"	"	"	6010C/SOP503
Beryllium		0.56		0.12	"	"	"	6010C/SOP503
Cadmium		ND U		0.59	"	"	"	6010C/SOP503
Chromium		11		1.2	"	"	"	6010C/SOP503
Cobalt		13		2.4	"	"	"	6010C/SOP503
Copper		13 J		4.7	"	"	"	6010C/SOP503
Lead		9.0		3.5	"	"	"	6010C/SOP503
Molybdenum		ND U		5.9	"	"	"	6010C/SOP503
Nickel		11		5.9	"	"	"	6010C/SOP503
Selenium		ND U		2.4	"	"	"	6010C/SOP503
Silver		ND U		1.2	"	"	"	6010C/SOP503
Thallium		ND U		5.9	"	"	"	6010C/SOP503
Vanadium		32		2.4	"	"	"	6010C/SOP503
Zinc		34 J		9.4	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-14-18"						Conventional Chemistry Parameters by APHA/EPA Methods		



United States Environmental Protection Agency Region 9 Laboratory

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Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294C
Reported: 11/24/10 13:13

Sample Results

Analyte	Reanalysis / Extract.	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-15								Soil - Sampled: 10/19/10 12:55
Sample ID: COR-LOT1-14-18"								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		85		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-16								Soil - Sampled: 10/19/10 09:35
Sample ID: COR-LOT1-01								Metals by EPA 6000/7000 Series Methods
Mercury		45		3.3	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		3.2 J		2.2	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		24		2.2	"	"	"	6010C/SOP503
Barium		220 J		5.5	"	"	"	6010C/SOP503
Beryllium		0.82		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.55	"	"	"	6010C/SOP503
Chromium		8.3		1.1	"	"	"	6010C/SOP503
Cobalt		4.0		2.2	"	"	"	6010C/SOP503
Copper		11 J		4.4	"	"	"	6010C/SOP503
Lead		9.6		3.3	"	"	"	6010C/SOP503
Molybdenum		5.7 J		5.5	"	"	"	6010C/SOP503
Nickel		5.7		5.5	"	"	"	6010C/SOP503
Selenium		ND U		2.2	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium		ND U		5.5	"	"	"	6010C/SOP503
Vanadium		35		2.2	"	"	"	6010C/SOP503
Zinc		78 J		8.8	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		91		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-17								Soil - Sampled: 10/19/10 09:45
Sample ID: COR-LOT1-02								Metals by EPA 6000/7000 Series Methods
Mercury		71		3.4	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		7.7 J		2.3	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		36		2.3	"	"	"	6010C/SOP503
Barium		270 J		5.7	"	"	"	6010C/SOP503
Beryllium		0.95		0.11	"	"	"	6010C/SOP503
Cadmium		ND U		0.57	"	"	"	6010C/SOP503
Chromium		12		1.1	"	"	"	6010C/SOP503
Cobalt		3.9		2.3	"	"	"	6010C/SOP503
Copper		14 J		4.6	"	"	"	6010C/SOP503
Lead		12		3.4	"	"	"	6010C/SOP503
Molybdenum		7.8 J		5.7	"	"	"	6010C/SOP503
Nickel		9.2		5.7	"	"	"	6010C/SOP503
Selenium		ND U		2.3	"	"	"	6010C/SOP503
Silver		ND U		1.1	"	"	"	6010C/SOP503
Thallium		ND U		5.7	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

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Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294C
Reported: 11/24/10 13:13

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-17						Soil - Sampled: 10/19/10 09:45		
Sample ID: COR-LOT1-02						Metals by EPA 6000/7000 Series Methods		
Vanadium		42		2.3	mg/kg dry	B0K0008	11/02/10	11/19/10 6010C/SOP503
Zinc		76	J	9.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-02						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		87		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-18						Soil - Sampled: 10/19/10 09:55		
Sample ID: COR-LOT1-03						Metals by EPA 6000/7000 Series Methods		
Mercury		36		3.3	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		13	J	2.2	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		53		2.2	"	"	"	6010C/SOP503
Barium		180	J	5.4	"	"	"	6010C/SOP503
Beryllium		0.71		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		6.4		1.1	"	"	"	6010C/SOP503
Cobalt		2.7		2.2	"	"	"	6010C/SOP503
Copper		6.3	J	4.3	"	"	"	6010C/SOP503
Lead		15		3.3	"	"	"	6010C/SOP503
Molybdenum		11	J	5.4	"	"	"	6010C/SOP503
Nickel		4.3	Cl, J	5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		29		2.2	"	"	"	6010C/SOP503
Zinc		64	J	8.7	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-03						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		92		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-19						Soil - Sampled: 10/19/10 10:10		
Sample ID: COR-LOT1-04						Metals by EPA 6000/7000 Series Methods		
Mercury		58		3	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		8.1	J	2	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		44		2	"	"	"	6010C/SOP503
Barium		170	J	5	"	"	"	6010C/SOP503
Beryllium		0.66		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.50	"	"	"	6010C/SOP503
Chromium		3.9		1	"	"	"	6010C/SOP503
Cobalt		2.7		2	"	"	"	6010C/SOP503
Copper		6.6	J	4	"	"	"	6010C/SOP503
Lead		12		3	"	"	"	6010C/SOP503
Molybdenum		8.4	J	5	"	"	"	6010C/SOP503
Nickel		ND	U	5	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section

75 Hawthorne Street

San Francisco CA, 94105

SDG: 10294C

Reported: 11/24/10 13:13

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-19								Soil - Sampled: 10/19/10 10:10
Sample ID: COR-LOT1-04								Metals by EPA 6000/7000 Series Methods
Selenium		ND	U	2	mg/kg dry	B0K0008	11/02/10	11/19/10 6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5	"	"	"	6010C/SOP503
Vanadium		27		2	"	"	"	6010C/SOP503
Zinc		55	J	8	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-04								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		93		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-20								Soil - Sampled: 10/19/10 10:10
Sample ID: COR-LOT1-04D								Metals by EPA 6000/7000 Series Methods
Mercury		52		2.9	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		7.9	J	2.2	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		35		2.2	"	"	"	6010C/SOP503
Barium		130	J	5.4	"	"	"	6010C/SOP503
Beryllium		0.60		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		3.2		1.1	"	"	"	6010C/SOP503
Cobalt		2.1	Cl, J	2.2	"	"	"	6010C/SOP503
Copper		8.7	J	4.3	"	"	"	6010C/SOP503
Lead		10		3.2	"	"	"	6010C/SOP503
Molybdenum		7.0	J	5.4	"	"	"	6010C/SOP503
Nickel		ND	U	5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		22		2.2	"	"	"	6010C/SOP503
Zinc		44	J	8.6	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-04D								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		93		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-21								Soil - Sampled: 10/19/10 10:25
Sample ID: COR-LOT1-05								Metals by EPA 6000/7000 Series Methods
Mercury		27		3.2	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		7.9	J	2.2	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		38		2.2	"	"	"	6010C/SOP503
Barium		150	J	5.4	"	"	"	6010C/SOP503
Beryllium		0.58		0.11	"	"	"	6010C/SOP503
Cadmium		ND	U	0.54	"	"	"	6010C/SOP503
Chromium		4.6		1.1	"	"	"	6010C/SOP503
Cobalt		3.2		2.2	"	"	"	6010C/SOP503
Copper		7.5	J	4.3	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

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Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294C
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 13:13
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010067-21						Soil - Sampled: 10/19/10 10:25		
Sample ID: COR-LOT1-05						Metals by EPA 6000/7000 Series Methods		
Lead		11		3.2	mg/kg dry	B0K0008	11/02/10	11/19/10 6010C/SOP503
Molybdenum		6.0	J	5.4	"	"	"	6010C/SOP503
Nickel		3.7	Cl, J	5.4	"	"	"	6010C/SOP503
Selenium		ND	U	2.2	"	"	"	6010C/SOP503
Silver		ND	U	1.1	"	"	"	6010C/SOP503
Thallium		ND	U	5.4	"	"	"	6010C/SOP503
Vanadium		27		2.2	"	"	"	6010C/SOP503
Zinc		50	J	8.6	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-05						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		93		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460
Lab ID: 1010067-22						Soil - Sampled: 10/19/10 10:30		
Sample ID: COR-LOT1-06						Metals by EPA 6000/7000 Series Methods		
Mercury		31		3.3	mg/kg dry	B0K0036	11/05/10	11/08/10 7471B/SOP517
Antimony		8.0	J	2.1	"	B0K0008	11/02/10	11/19/10 6010C/SOP503
Arsenic		38		2.1	"	"	"	6010C/SOP503
Barium		140	J	5.1	"	"	"	6010C/SOP503
Beryllium		0.57		0.10	"	"	"	6010C/SOP503
Cadmium		ND	U	0.51	"	"	"	6010C/SOP503
Chromium		5.1		1	"	"	"	6010C/SOP503
Cobalt		2.8		2.1	"	"	"	6010C/SOP503
Copper		7.0	J	4.1	"	"	"	6010C/SOP503
Lead		11		3.1	"	"	"	6010C/SOP503
Molybdenum		6.4	J	5.1	"	"	"	6010C/SOP503
Nickel		3.8	Cl, J	5.1	"	"	"	6010C/SOP503
Selenium		ND	U	2.1	"	"	"	6010C/SOP503
Silver		ND	U	1	"	"	"	6010C/SOP503
Thallium		ND	U	5.1	"	"	"	6010C/SOP503
Vanadium		27		2.1	"	"	"	6010C/SOP503
Zinc		50	J	8.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT1-06						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		90		1	%	B0K0005	11/01/10	11/02/10 3550C/SOP460

3/10/11



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Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294C
Reported: 11/24/10 13:13

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B0K0005 - Solids, Dry Weight (Prep) - Solids, Dry Weight

Prepared: 11/01/10 Analyzed: 11/02/10
Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B0K0005-BLK1)

% Solids ND U 1 %

Blank (B0K0005-BLK2)

% Solids ND U 1 %

Duplicate (B0K0005-DUP1)

Source: 1010067-22

% Solids 91 1 % 90 1 20

Duplicate (B0K0005-DUP2)

Source: 1010067-01

% Solids 86 1 % 85 1 20

Batch B0K0008 - 3050B Sld Acid Dig - Metals by 6010

Prepared: 11/02/10 Analyzed: 11/17/10
Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0K0008-BLK1)

Antimony	ND	U	2 mg/kg wet
Arsenic	ND	U	2 "
Barium	ND	U	5 "
Beryllium	ND	U	0.1 "
Cadmium	ND	U	0.5 "
Chromium	ND	U	1 "
Cobalt	ND	U	2 "
Copper	ND	U	4 "
Lead	ND	U	3 "
Molybdenum	ND	U	5 "
Nickel	ND	U	5 "
Selenium	ND	U	2 "
Silver	ND	U	1 "
Thallium	ND	U	5 "
Vanadium	ND	U	2 "
Zinc	ND	U	8 "

Blank (B0K0008-BLK2)

Antimony	ND	U	2 mg/kg wet
Arsenic	ND	U	2 "
Barium	ND	U	5 "
Beryllium	ND	U	0.1 "
Cadmium	ND	U	0.5 "
Chromium	ND	U	1 "
Cobalt	ND	U	2 "
Copper	ND	U	4 "
Lead	ND	U	3 "
Molybdenum	ND	U	5 "
Nickel	ND	U	5 "
Selenium	ND	U	2 "
Silver	ND	U	1 "



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294C
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 13:13
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD Limit
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Batch B0K0008 - 3050B Sld Acid Dig - Metals by 6010

Prepared: 11/02/10 Analyzed: 11/17/10
Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0K0008-BLK2)

Thallium	ND	U	5	"					
Vanadium	ND	U	2	"					
Zinc	ND	U	8	"					

MAJ 3/10/11

Matrix Spike (B0K0008-MS1)

Source: 1010067-05

Antimony	71.9		2.4	mg/kg dry	119	1.38	59	75-125	20
Arsenic	412		2.4	"	478	9.18	84	75-125	20
Barium	781		6	"	478	416	76	75-125	20
Beryllium	10.6		0.12	"	11.9	1.19	78	75-125	20
Cadmium	9.81		0.6	"	11.9	ND	82	75-125	20
Chromium	59		1.2	"	47.8	21.6	78	75-125	20
Cobalt	95.8		2.4	"	119	6.17	75	75-125	20
Copper	66.6		4.8	"	59.7	23	73	75-125	20
Lead	96.1		3.6	"	119	4.93	76	75-125	20
Molybdenum	85.1		6	"	119	ND	71	75-125	20
Nickel	106		6	"	119	13.6	77	75-125	20
Selenium	406		2.4	"	478	ND	85	75-125	20
Silver	10.4		1.2	"	11.9	0.635	82	75-125	20
Vanadium	155		2.4	"	119	58.1	82	75-125	20
Zinc	152		9.6	"	119	63.7	74	75-125	20

Matrix Spike (B0K0008-MS2)

Source: 1010067-10

Antimony	71.1		2.3	mg/kg dry	115	ND	62	75-125	20
Arsenic	419		2.3	"	461	3.95	90	75-125	20
Barium	621		5.8	"	461	199	92	75-125	20
Beryllium	11.2		0.12	"	11.5	0.906	90	75-125	20
Cadmium	10.2		0.58	"	11.5	ND	88	75-125	20
Chromium	58.4		1.2	"	46.1	16.2	92	75-125	20
Cobalt	104		2.3	"	115	7.77	84	75-125	20
Copper	65.5		4.7	"	57.6	19.2	80	75-125	20
Lead	104		3.5	"	115	6.74	84	75-125	20
Molybdenum	88.8		5.8	"	115	ND	77	75-125	20
Nickel	112		5.8	"	115	13.8	85	75-125	20
Selenium	421		2.3	"	461	ND	91	75-125	20
Silver	10.3		1.2	"	11.5	ND	89	75-125	20
Thallium	389		5.8	"	461	ND	85	75-125	20
Vanadium	139		2.3	"	115	33.8	91	75-125	20
Zinc	164		9.3	"	115	58	92	75-125	20

Matrix Spike (B0K0008-MS3)

Source: 1010067-05RE1

Thallium	380		6	mg/kg dry	478	ND	80	75-125	20
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Matrix Spike Dup (B0K0008-MSD1)

Source: 1010067-05



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294C
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 13:13
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B0K0008 - 3050B Sld Acid Dig - Metals by 6010						Prepared: 11/02/10 Analyzed: 11/17/10				
						Metals by EPA 6000/7000 Series Methods - Quality Control				
Reference (B0K0008-SRM1)										
Cadmium	38.7		0.5	"	41.6		93	77.16-123		
Chromium	94.8		1	"	96.5		98	80.06-119		
Cobalt	133		2	"	140		95	82.42-118		
Lead	199		3	"	224		89	74.82-125		
Nickel	54.2		5	"	56.8		95	76.58-123		
Selenium	52.4		2	"	37.0		142	47.57-152		
Silver	27.9		1	"	20.9		134	63.16-136		
Thallium	31		5	"	38.1		81	64.57-135		
Vanadium	69.8		2	"	65.8		106	80.55-119		
Zinc	178		8	"	175		102	72.97-127		
Reference (B0K0008-SRM2)										
Antimony	263		2	mg/kg wet	213		124	60.75-140		
Arsenic	1,110		2	"	930		119	65.98-134		
Barium	5.42		5	"	5.30		102	47.17-153		
Beryllium	18.4		0.1	"	18.8		98	81.38-118		
Cadmium	40.4		0.5	"	41.6		97	77.16-123		
Chromium	99.8		1	"	96.5		103	80.06-119		
Cobalt	133		2	"	140		95	82.42-118		
Lead	205		3	"	224		91	74.82-125		
Nickel	57.1		5	"	56.8		100	76.58-123		
Selenium	54.2		2	"	37.0		146	47.57-152		
Silver	26.4		1	"	20.9		126	63.16-136		
Thallium	33.1		5	"	38.1		87	64.57-135		
Vanadium	71.9		2	"	65.8		109	80.55-119		
Zinc	182		8	"	175		104	72.97-127		
Reference (B0K0008-SRM3)										
Copper	6,240		20	mg/kg wet	6680		93	85.73-114		
Reference (B0K0008-SRM4)										
Copper	6,370		20	mg/kg wet	6680		95	85.73-114		
Batch B0K0036 - 7471B Hg Digest - Mercury, High Level						Prepared: 11/05/10 Analyzed: 11/08/10				
						Metals by EPA 6000/7000 Series Methods - Quality Control				
Blank (B0K0036-BLK1)										
Mercury	ND	U	0.15	mg/kg wet						
Blank (B0K0036-BLK2)										
Mercury	ND	U	0.15	mg/kg wet						
Duplicate (B0K0036-DUP1)										
Mercury	0.495		0.19	mg/kg dry		0.592			18	20

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CON-TAINERS		REMARKS	
SAMPLERS: (Signature)		SAMPLE IDENTIFICATION					
DATE	TIME	MATRIX	COMP	GRAB			
10/19/10	1120	Soil		X	COR-LOT1-09-6"		
	1125				COR-LOT1-09-18"		
	1135				COR-LOT1-03-6"		
	1140				COR-LOT1-03-18"		
	1150				COR-LOT1-11-6"		
	1155				COR-LOT1-11-18"		
	1205				COR-LOT1-13-6"		
	1208				COR-LOT1-13-18"		
	1220				COR-LOT1-06-6"		
	1225			✓	COR-LOT1-06-18"		
	1230		X		COR-TRK1-01		
	1235		X		COR-LOT1-14		
	1240		X		COR-LOT1-15		
	1250			X	COR-LOT1-14-6"		
✓	1255	✓		✓	COR-LOT1-14-18"		
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
		10/21/10 11:30					
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Date / Time	
Received by Laboratory by: (Signature)		Date / Time		Temp.		Seals Intact (Y/N)	
		10/21/10 1130		68		HAND DELIVERED	
Conditions / Remarks							
ELNWERED							

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	REMARKS				
SAMPLERS: (Signature)	Davis N. Ellis (owner) D.M.B.C.						
DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION		
10/19/10	0935	Soil	X		COR-LOT1-01		
	0945				COR-LOT1-02		
	0955				COR-LOT1-03		
	1010				COR-LOT1-04		
	1010				COR-LOT1-04D		
	1025				COR-LOT1-05		
	1030				COR-LOT1-06		
	1035				COR-LOT1-07		
	1045				COR-LOT1-08		
	1050				COR-LOT1-09		
	1055				COR-LOT1-10		
	1100				COR-LOT1-11		
	1100				COR-LOT1-11D		
	1105				COR-LOT1-12		
	1110				COR-LOT1-13		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)		
(Signature)	10/21/10 11:30	(Signature)	(Signature)	10/21/10 11:30	(Signature)		
Received for Laboratory by: (Signature)	Date / Time	Temp.	Seals Intact (Y/N)				
(Signature)	10/21/10 11:30	60°C					

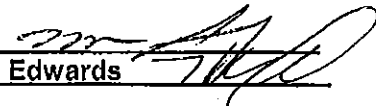
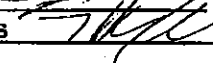
ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Laboratory: EPA Region 9 Laboratory	Lab Project Number: 1010069
Sampling Dates: 10/19/10 & 10/20/10	Sample Matrix: Soil
Analytical Method: CAM Metals (EPA 6010B/7471A)	Data Reviewer: M. Song

REVIEW AND APPROVAL:

Data Reviewer: Mindy Song 
 Technical QA Reviewer: Howard Edwards 
 Project Manager: Nell Ellis

Date: 3/10/11
 Date: 3/28/11
 Date: _____

SAMPLE IDENTIFICATION:

Sample No.	Sample I.D.	Laboratory I.D.
1	COR-WP1-05	1010069-01
2	COR-WP2-01	1010069-02
3	COR-WP3-01	1010069-03
4	COR-WP4-01	1010069-04
6	COR-LOT2-02-6"	1010069-05
6	COR-LOT2-02-18"	1010069-06
7	COR-LOT2-03-6"	1010069-07
8	COR-LOT2-03-18"	1010069-08
9	COR-LOT2-04-6"	1010069-09
10	COR-LOT2-04-18"	1010069-10
11	COR-TRK2-01	1010069-11
12	COR-LOT2-02-6"D	1010069-12
13	COR-CEM-01	1010069-13
14	COR-CEM-02	1010069-14
15	COR-LAVA-01	1010069-15
16	COR-JACA-01	1010069-16
17	COR-ROAD1-01	1010069-17
18	COR-CRKSED1	1010069-18
19	COR-CRKSED2	1010069-19
20	COR-CRKSED3	1010069-20

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

DATA PACKAGE COMPLETENESS CHECKLIST:

Checklist Code:

<u> X </u>	Included: no problems
<u> * </u>	Included: problems noted in review
<u> O </u>	Not Included and/or Not Available
<u> NR </u>	Not Required
<u> RS </u>	Provided As Re-submission

Case Narrative:

<u> X </u>	Case Narrative present
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Quality Control Summary Package:

<u> X </u>	Data Summary sheets
<u> X </u>	Initial and Continuing Calibration results
<u> NR </u>	CRDL Standard results
<u> X </u>	Preparation Blank and Calibration Blank results
<u> X </u>	ICP Interference Check Sample results
<u> * </u>	Matrix Spike recoveries
<u> * </u>	Matrix Duplicate results
<u> X </u>	Laboratory Control Sample recoveries
<u> NR </u>	Method of Standard Additions results
<u> NR </u>	ICP Serial Dilution results
<u> NR </u>	Instrument Detection Limits
<u> NR </u>	ICP Interelement Correction Factors
<u> NR </u>	ICP Linear Ranges
<u> X </u>	Preparation Log
<u> X </u>	Analysis Run Log

Raw QC Data Package Section

<u> X </u>	Chain-of-Custody Records
<u> X </u>	Instrument Printouts
<u> X </u>	Sample Preparation Notebook Pages
<u> X </u>	Logbook and Worksheet Pages
<u> X </u>	Percent Solids Determination

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

DATA VALIDATION SUMMARY

The data were reviewed following procedures and limits specified in the EPA OSWER directive, *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures* (EPA/540/G-90/004, OSWER Directive 9360.4-01, dated April 1990).

Indicate with a YES or NO whether each item is acceptable without qualification:

1	Holding Times	YES
2	Initial and Continuing Calibrations	YES
3	Laboratory Control Sample	YES
4	Matrix Spike	NO
5	Blanks and Background Samples	YES
6	Duplicate Analyses	NO
7	Interference Check Samples and Serial Dilution Analysis	YES
8	Post Digestion Spike and Standard Addition Analysis	N/A
9	Analyte Quantitation	YES
10	Overall Assessment of Data	YES
11	Usability of Data	YES

Comments: N/A: Not Applicable.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

1. HOLDING TIMES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Samples were extracted and analyzed within required holding times except as noted under Comments. In addition, no problems were identified with regard to sample preservation or custody unless specified. For those samples analyzed outside holding time requirements, the detected results have been qualified as estimated (J), and the nondetected results have been qualified either as estimated (UJ) or rejected (R) based on the reviewer's judgement.

All Sample Matrices:

Mercury: 28 days (from collection) for analysis.

Hexavalent chromium: 24 hours (from collection) for analysis.

All other metals: 180 days (from collection) for analysis.

Comments: All holding times were met.

2. INITIAL AND CONTINUING CALIBRATION VERIFICATION

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable

Unless flagged below, an initial calibration verification (ICV) and a calibration blank were analyzed at the beginning of the run, and a continuing calibration verification (CCV) and a calibration blank were analyzed after every ten samples, and at the end of the run. ICV and CCV recoveries were within a range of 80-120% for mercury and tin, and 90-110% for all other metals. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 65% or above 135% (for mercury and tin) or below 75% or above 125% (for all other metals), all associated data are rejected (R).

Comments: All recoveries of metals in initial and continuing calibration verifications were within the control limits.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

3. LABORATORY CONTROL SAMPLE

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Laboratory Control Samples Analyzed

Laboratory control sample recoveries are used for a qualitative indication of accuracy (bias) independent of matrix effects. LCS recovery limits should either be specified in the Sampling and Analysis Plan or can be established by the laboratory. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Percent recoveries of LCS were within the control limits.

4. MATRIX SPIKE

- ☐ Acceptable
☒ Acceptable with qualification
☐ Unacceptable
☐ No Matrix Spikes Analyzed

Matrix spike recoveries are used for a qualitative indication of accuracy (bias) due to matrix effects. Unless flagged below, one laboratory control sample was analyzed at a rate of one per batch or one per 20 samples. Recoveries were within a range of 75-125%.

For analytes which exceeded these control limits, associated detected results are qualified as estimated (J). In cases where the recovery was below 30%, all associated nondetected results are rejected (R) and detected results are qualified as estimated (J).

Comments: Sample COR-LOT2-04-18" was used for matrix spike and matrix spike duplicate analysis. All recoveries except antimony, copper, and molybdenum were within the control limits. The detected results of Sb, Cu, and Mo were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

5. BLANKS AND BACKGROUND SAMPLES

☒ Acceptable
☐ Detection Limits Adjusted

The following blanks were analyzed:

☒ Method (preparation) Blanks
☐ Field Blanks
☐ Calibration Blanks
☒ Rinsate Blanks
☐ Background Samples

Preparation (method) blanks were prepared for each batch of samples extracted. A preparation blank was analyzed after every continuing calibration standard, prior to sample analysis unless noted below. Any compound detected in the sample and also detected in any associated blank, must be qualified as non-detect (U) when the sample concentration is less than 5x the blank concentration.

Comments: No contamination was found in the method blank or the rinsate blank at reporting limit level.

6. DUPLICATE ANALYSES

☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ No Duplicates Analyzed

Type of duplicates analyzed:

☒ Field Duplicates
☐ Laboratory Duplicates

Calculate the relative Percent Difference (RPD) between the members of duplicate pairs using the equation indicated below. Qualify the detected results as estimated (J) for any analyte whose RPD in a laboratory duplicate exceeds 20% for water samples or 35% for soil samples.

$$RPD = \frac{2(\text{Value 1} - \text{Value 2})}{\text{Value 1} + \text{Value 2}} \times 100\%$$

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

Analyte (mg/kg)	COR-LOT2-02-6"	COR-LOT2-02-6"D	RPD (%)
Antimony	17	11	43*
Arsenic	33	31	6
Barium	190	240	23
Beryllium	0.96	1.0	4
Cadmium	<0.56	<0.51	0
Chromium	5.0	6.8	31
Cobalt	5.1	5.0	2
Copper	6.6	7.3	10
Lead	17	16	6
Mercury	11	25	78*
Molybdenum	<5.6	<5.1	0
Nickel	4.3	5.2	19
Selenium	<2.2	<2.1	0
Silver	<1.1	<1.0	0
Thallium	<5.6	<5.1	0
Vanadium	30	29	3
Zinc	46	74	47*

Comments: The RPDs except antimony, mercury, and zinc were within the control limits (less than 35%). The detected results of Sb, Hg, and Zn were qualified as estimated (J).

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

7. INTERFERENCE CHECK SAMPLES AND SERIAL DILUTION ANALYSIS

- ☒ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☐ Not required

Interference Check Samples (ICS) - Unless flagged below, an ICS was analyzed at the beginning and end of each run and at least twice every eight hours. Recoveries were within a range of 80-120%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J) if the concentrations of Al, Ca, Fe, or Mg are higher in the sample than in the ICS.

Serial Dilution Analysis - Unless flagged below, a serial dilution analysis was performed at a rate of one per 20 samples on a sample having analyte concentrations greater than 50 times the IDL. Percent differences were within a range of 0-10%. For analytes which exceeded these control limits, associated detected results are qualified as estimated (J).

Comments: ICS recoveries were within the control limit.
Serial Dilution Analysis: Not required.

8. POST DIGESTION SPIKE AND STANDARD ADDITIONS

- ☐ Acceptable
☐ Acceptable with qualification
☐ Unacceptable
☒ Not required

Post-digestion spikes - If a furnace AA result was flagged by the laboratory with an E to indicate interference, and the associated post-digestion spike recovery was less than 10%, the associated results are rejected (R).

Method of Standard Additions - If the method of standard additions was required and the correlation coefficient was less than 0.995, the associated results were qualified as estimated (J).

Comments:

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

9. ANALYTE QUANTITATION

Confirm that analyte quantitation was performed correctly using the following formulas:

Water samples:

$$\text{ug/L} = \frac{(\text{Instrument printout concentration, mg/L})(1000 \text{ ug/mg})(\text{final volume of extract, mL})}{(\text{Initial volume of extract, mL})}$$

Soil samples:

$$\text{mg/kg} = \frac{(\text{Instrument printout concentration, mg/L})(\text{final volume of extract, mL})(0.001 \text{ L/mL})}{(\text{weight of sample extracted, g})(0.001 \text{ kg/g})(\text{fraction solids})}$$

Comments: Analyte quantitation is acceptable.

Sample COR-CEM-01

As: $(0.5148 \text{ mg/L}) (0.05 \text{ L}/1.02 \text{ g}) (2) (100/88) (1000 \text{ g}/1 \text{ kg}) = 57.35 \text{ mg/kg}$

Lab reported 58 mg/kg.

Sample COR-NR-01

Hg: $(0.00593 \text{ mg/L}) (0.03 \text{ L}/0.2045 \text{ g}) (400) (100/88) (1000 \text{ g}/1 \text{ kg}) = 395.4 \text{ mg/kg}$

Lab reported 400 mg/kg.

10. OVERALL ASSESSMENT OF DATA

On the basis of this review, the following determination has been made with regard to the overall data usability for the specified level.

☐ Acceptable
☒ Acceptable with Qualification
☐ Rejected

Accepted data meet the minimum requirements for the following EPA data category:

☐ ERS Screening
☐ Non-definitive with 10 % Conformation by Definitive Methodology
☐ Definitive, Comprehensive Statistical Error Determination was performed.
☒ Definitive, Comprehensive Statistical Error Determination was not performed.

Any qualifications to individual sample analysis results are detailed in the appropriate section above or appear under the comments section below. In cases where several QC criteria are out of specification, it may be appropriate to further qualify the data usability. The data reviewer must use professional judgment and express concerns and comments on the data validity for each specific data package.

Comments: Data as reported are valid.

ANALYTICAL DATA REVIEW SUMMARY

Tier 2 Validation

Site Name: Cordero Mercury Mine Site	Location: Fort McDermitt, Nevada
TDD Number: 09-10-06-0002	Project No: 002693.2094.01RA

11. USABILITY OF DATA

A. These data are considered usable for the data use objectives stated in the EPA EMERGENCY RESPONSE SECTION AND SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM QUALITY ASSURANCE SAMPLING PLAN FOR SOIL MATRIX SAMPLING, CORDERO MERCURY MINE SITE, FORT MCDERMITT, NEVADA, OCTOBER 13, 2010 (QASP).

The following data use objective was indicated in the QASP:

TO BE COMPARED WITH A BACKGROUND OR REFERENCE SAMPLE(S).

TO BE COMPARED WITH SITE-SPECIFIC ACTION LEVELS OR RISK-BASED ACTION LEVELS (E.G., EPA PRGS) TO ASSIST IN DETERMINATION IF HEALTH THREATS EXIST.

THE DATA ARE USABLE FOR THE ABOVE OBJECTIVES.

B. These data meet quality objectives stated in the QASP.

AS INDICATED IN SECTION 2.4 OF THE QASP, THE INVESTIGATION WILL GENERATE DEFINITIVE DATA AND TABLE E OF THE QASP OUTLINES THE DATA QUALITY INDICATOR GOALS APPLICABLE TO THE DEFINITIVE DATA QUALITY LEVEL. THE DATA IN THIS PACKAGE MEET THESE REQUIREMENTS.

12. DOCUMENTATION OF LABORATORY CORRECTIVE ACTION

Problem: No problems requiring corrective action were found.

Resolution: Not required.

Attached are copies of all data summary sheets, with data qualifiers indicated, and a copy of the chain of custody for the samples.



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294E
Reported: 11/24/10 15:54

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-01		Soil - Sampled: 10/19/10 14:25						
Sample ID: COR-WP1-05		Metals by EPA 6000/7000 Series Methods						
Mercury		28	J	6.9	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	1.7	CI, J	2.3	"	B0K0014	11/02/10	11/20/10 6010C/SOP503
Arsenic	RE2	23		2.3	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	110		5.7	"	"	"	11/20/10 6010C/SOP503
Beryllium	RE2	0.62		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.57	"	"	"	6010C/SOP503
Chromium	RE2	1.4		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	1.8	CI, J	2.3	"	"	"	6010C/SOP503
Copper		12	J	4.6	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	8.1		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	6.9	J	5.7	"	"	"	6010C/SOP503
Nickel	RE2	ND	U	5.7	"	"	"	6010C/SOP503
Selenium	RE1	2.8		2.3	"	"	"	11/20/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.7	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	9.8		2.3	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	50	J	9.2	"	"	"	6010C/SOP503
Sample ID: COR-WP1-05		Conventional Chemistry Parameters by APHA/EPA Methods						
% Solids		87		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-02		Soil - Sampled: 10/19/10 15:19						
Sample ID: COR-WP2-01		Metals by EPA 6000/7000 Series Methods						
Mercury		79	J	6.3	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	5.4	J	2.2	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	14		2.2	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	180		5.6	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.73		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.56	"	"	"	6010C/SOP503
Chromium	RE2	2.5		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	11	J	2.2	"	"	"	6010C/SOP503
Copper		9.5		4.5	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	7.6		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	3.4	CI, J	5.6	"	"	"	6010C/SOP503
Nickel	RE2	2.9	CI, J	5.6	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.2	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.6	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	39		2.2	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	33	J	8.9	"	"	"	6010C/SOP503
Sample ID: COR-WP2-01		Conventional Chemistry Parameters by APHA/EPA Methods						



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Project Manager: Thomas Dunkelman
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Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294E
Reported: 11/24/10 15:54

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-02							Soil - Sampled: 10/19/10 15:19	
Sample ID: COR-WP2-01							Conventional Chemistry Parameters by APHA/EPA Methods	
% Solids		89		1	%	BOK0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-03							Soil - Sampled: 10/19/10 15:25	
Sample ID: COR-WP3-01							Metals by EPA 6000/7000 Series Methods	
Mercury		1,100	J	68	mg/kg dry	BOK0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	28	J	2.3	"	BOK0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	73		2.3	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	230		5.7	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.58		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.57	"	"	"	6010C/SOP503
Chromium	RE2	3.9		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	3.0		2.3	"	"	"	6010C/SOP503
Copper		6.3	J	4.5	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	49		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	19	J	5.7	"	"	"	6010C/SOP503
Nickel	RE2	ND	U	5.7	"	"	"	6010C/SOP503
Selenium	RE1	3.4		2.3	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	0.67	CI, J	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.7	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	34		2.3	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	110	J	9.1	"	"	"	6010C/SOP503
Sample ID: COR-WP3-01							Conventional Chemistry Parameters by APHA/EPA Methods	
% Solids		88		1	%	BOK0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-04							Soil - Sampled: 10/19/10 15:35	
Sample ID: COR-WP4-01							Metals by EPA 6000/7000 Series Methods	
Mercury		750	J	72	mg/kg dry	BOK0040	11/09/10	11/09/10 7471B/SOP517
Antimony		4.8	CI, J	5.3	"	BOK0014	11/02/10	11/22/10 6010C/SOP503
Arsenic		200		5.3	"	"	"	6010C/SOP503
Barium		120		13	"	"	"	6010C/SOP503
Beryllium		9.0		0.27	"	"	"	6010C/SOP503
Cadmium		ND	U	1.3	"	"	"	6010C/SOP503
Chromium		6.9		2.7	"	"	"	6010C/SOP503
Cobalt		5.7		5.3	"	"	"	6010C/SOP503
Copper		37	J	11	"	"	"	6010C/SOP503
Lead		22		8	"	"	"	6010C/SOP503
Molybdenum		15	J	13	"	"	"	6010C/SOP503
Nickel		ND	U	13	"	"	"	6010C/SOP503
Selenium		3.4	CI, J	5.3	"	"	"	6010C/SOP503
Silver		ND	U	2.7	"	"	"	6010C/SOP503
Thallium		ND	U	13	"	"	"	6010C/SOP503



United States Environmental Protection Agency
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Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294E
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 15:54
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-04								Soil - Sampled: 10/19/10 15:35
Sample ID: COR-WP4-01								Metals by EPA 6000/7000 Series Methods
Vanadium		26		5.3	mg/kg dry	B0K0014	11/02/10	11/22/10 6010C/SOP503
Zinc		760	J	21	"	"	"	6010C/SOP503
Sample ID: COR-WP4-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		75		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-05								Soil - Sampled: 10/20/10 09:30
Sample ID: COR-LOT2-02-6"								Metals by EPA 6000/7000 Series Methods
Mercury		11	J	3	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	17	J	2.2	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	33		2.2	"	"	"	11/21/10 6010C/SOP503
Barium	RE2	190		5.6	"	"	"	6010C/SOP503
Beryllium	RE2	0.96		0.11	"	"	"	6010C/SOP503
Cadmium	RE2	ND	U	0.56	"	"	"	6010C/SOP503
Chromium	RE2	5.0		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	5.1		2.2	"	"	"	6010C/SOP503
Copper		6.6	J	4.5	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	17		3.3	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	U	5.6	"	"	"	6010C/SOP503
Nickel	RE2	4.3	Cl, J	5.6	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.2	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.6	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	30		2.2	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	46	J	8.9	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-02-6"								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		90		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-06								Soil - Sampled: 10/20/10 09:35
Sample ID: COR-LOT2-02-18"								Metals by EPA 6000/7000 Series Methods
Mercury		0.20	J	0.15	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	ND	U	2.3	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	5.5		2.3	"	"	"	11/21/10 6010C/SOP503
Barium	RE2	210		5.7	"	"	"	6010C/SOP503
Beryllium	RE2	0.77		0.11	"	"	"	6010C/SOP503
Cadmium	RE2	ND	U	0.57	"	"	"	6010C/SOP503
Chromium	RE2	15		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	8.3		2.3	"	"	"	6010C/SOP503
Copper		16	J	4.6	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	6.3		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	U	5.7	"	"	"	6010C/SOP503
Nickel	RE2	12		5.7	"	"	"	6010C/SOP503



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Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 15:54
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-06						Soil - Sampled: 10/20/10 09:35		
Sample ID: COR-LOT2-02-18"						Metals by EPA 6000/7000 Series Methods		
Selenium	RE1	ND	U	2.3	mg/kg dry	B0K0014	11/02/10	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.7	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	36		2.3	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	55	J	9.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-02-18"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		87		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-07						Soil - Sampled: 10/20/10 09:40		
Sample ID: COR-LOT2-03-6"						Metals by EPA 6000/7000 Series Methods		
Mercury		26	J	6.4	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	10	J	2.3	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	24		2.3	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	120		5.7	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.72		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.57	"	"	"	6010C/SOP503
Chromium	RE2	4.9		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	3.8		2.3	"	"	"	6010C/SOP503
Copper		8.3	J	4.6	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	19		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	U	5.7	"	"	"	6010C/SOP503
Nickel	RE2	3.5	CI, J	5.7	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.3	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.7	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	25		2.3	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	64	J	9.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-03-6"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		87		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-08						Soil - Sampled: 10/20/10 09:45		
Sample ID: COR-LOT2-03-18"						Metals by EPA 6000/7000 Series Methods		
Mercury		ND	U	0.17	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	ND	U	2.4	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	4.2		2.4	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	200		6.1	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.85		0.12	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.61	"	"	"	6010C/SOP503
Chromium	RE2	16		1.2	"	"	"	6010C/SOP503
Cobalt	RE2	7.3		2.4	"	"	"	6010C/SOP503
Copper		17	J	4.9	"	"	"	11/20/10 6010C/SOP503



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Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294E
Reported: 11/24/10 15:54

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-08							Soil - Sampled: 10/20/10 09:45	
Sample ID: COR-LOT2-03-18"								Metals by EPA 6000/7000 Series Methods
Lead	RE2	7.4		3.7	mg/kg dry	B0K0014	11/02/10	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	U	6.1	"	"	"	6010C/SOP503
Nickel	RE2	13		6.1	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.4	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.2	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	6.1	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	36		2.4	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	62	J	9.8	"	"	"	6010C/SOP503

Sample ID: COR-LOT2-03-18"
% Solids 82 1 % Conventional Chemistry Parameters by APHA/EPA Methods
B0K0022 11/03/10 11/04/10 3550C/SOP460

Lab ID: 1010069-09 Soil - Sampled: 10/20/10 09:55

Sample ID: COR-LOT2-04-6"								Metals by EPA 6000/7000 Series Methods
Mercury		1.9	J	0.16	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	2.2	CI, J J	2.3	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	6.8		2.3	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	190		5.7	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.72		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.57	"	"	"	6010C/SOP503
Chromium	RE2	13		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	5.9		2.3	"	"	"	6010C/SOP503
Copper		14	J	4.6	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	9.2		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	U	5.7	"	"	"	6010C/SOP503
Nickel	RE2	10		5.7	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.3	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.7	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	32		2.3	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	57	J	9.1	"	"	"	6010C/SOP503

Sample ID: COR-LOT2-04-6"
% Solids 88 1 % Conventional Chemistry Parameters by APHA/EPA Methods
B0K0022 11/03/10 11/04/10 3550C/SOP460

Lab ID: 1010069-10 Soil - Sampled: 10/20/10 10:00

Sample ID: COR-LOT2-04-18"								Metals by EPA 6000/7000 Series Methods
Mercury		ND	U	0.16	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	ND	J, Q4, U	2.3	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	3.6		2.3	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	160		5.6	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.68		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.56	"	"	"	6010C/SOP503



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SDG: 10294E
Reported: 11/24/10 15:54

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-10						Soil - Sampled: 10/20/10 10:00		
Sample ID: COR-LOT2-04-18"						Metals by EPA 6000/7000 Series Methods		
Chromium	RE2	15		1.1	mg/kg dry	B0K0014	11/02/10	11/21/10 6010C/SOP503
Cobalt	RE2	6.8		2.3	"	"	"	6010C/SOP503
Copper		15	J, Q4 J	4.5	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	5.7		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	J, Q4, U	5.6	"	"	"	6010C/SOP503
Nickel	RE2	12		5.6	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.3	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.6	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	33		2.3	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	55	J	9	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-04-18"						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		89		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-11						Soil - Sampled: 10/20/10 10:10		
Sample ID: COR-TRK2-01						Metals by EPA 6000/7000 Series Methods		
Mercury		1.6	J	0.15	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	ND	U	2	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	8.0		2	"	"	"	11/21/10 6010C/SOP503
Barium	RE2	180		5.1	"	"	"	6010C/SOP503
Beryllium	RE2	0.59		0.10	"	"	"	6010C/SOP503
Cadmium	RE2	ND	U	0.51	"	"	"	6010C/SOP503
Chromium	RE2	11		1	"	"	"	6010C/SOP503
Cobalt	RE2	6.1		2	"	"	"	6010C/SOP503
Copper		13	J	4.1	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	6.7		3	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	U	5.1	"	"	"	6010C/SOP503
Nickel	RE2	9.5		5.1	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.1	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	36		2	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	56	J	8.1	"	"	"	6010C/SOP503
Sample ID: COR-TRK2-01						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		93		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-12						Soil - Sampled: 10/20/10 09:30		
Sample ID: COR-LOT2-02-6"D						Metals by EPA 6000/7000 Series Methods		
Mercury		25	J	6.7	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	11	J	2.1	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	31		2.1	"	"	"	11/21/10 6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294E
Reported: 11/24/10 15:54

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-12						Soil - Sampled: 10/20/10 09:30		
Sample ID: COR-LOT2-02-6"D						Metals by EPA 6000/7000 Series Methods		
Barium	RE2	240		5.1	mg/kg dry	B0K0014	11/02/10	11/21/10 6010C/SOP503
Beryllium	RE2	1.0		0.10	"	"	"	6010C/SOP503
Cadmium	RE2	ND	U	0.51	"	"	"	6010C/SOP503
Chromium	RE2	6.8		1	"	"	"	6010C/SOP503
Cobalt	RE2	5.0		2.1	"	"	"	6010C/SOP503
Copper		7.3	J	4.1	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	16		3.1	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	ND	U	5.1	"	"	"	6010C/SOP503
Nickel	RE2	5.2		5.1	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.1	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.1	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	29		2.1	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	74	J	8.2	"	"	"	6010C/SOP503
Sample ID: COR-LOT2-02-6"D						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		90		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-13						Soil - Sampled: 10/20/10 10:45		
Sample ID: COR-CEM-01						Metals by EPA 6000/7000 Series Methods		
Mercury		400	J	68	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	5.6	J	2.3	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	58		2.3	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	210		5.7	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.70		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.57	"	"	"	6010C/SOP503
Chromium	RE2	2.3		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	2.5		2.3	"	"	"	6010C/SOP503
Copper		5.3	J	4.6	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	19		3.4	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	8.9	J	5.7	"	"	"	6010C/SOP503
Nickel	RE2	ND	U	5.7	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.3	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.7	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	25		2.3	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	67	J	9.1	"	"	"	6010C/SOP503
Sample ID: COR-CEM-01						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		88		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-14						Soil - Sampled: 10/20/10 10:50		
Sample ID: COR-CEM-02						Metals by EPA 6000/7000 Series Methods		



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294E
Project Number: R11S15	75 Hawthorne Street	Reported: 11/24/10 15:54
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-14						Soil - Sampled: 10/20/10 10:50		
Sample ID: COR-CEM-02						Metals by EPA 6000/7000 Series Methods		
Mercury		75	J	6.9	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	4.7	J	2.1	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	53		2.1	"	"	"	11/21/10 6010C/SOP503
Barium	RE1	190		5.4	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.56		0.11	"	"	"	11/21/10 6010C/SOP503
Cadmium	RE2	ND	U	0.54	"	"	"	6010C/SOP503
Chromium	RE2	2.2		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	2.1		2.1	"	"	"	6010C/SOP503
Copper		4.7	J	4.3	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	16		3.2	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	8.5	J	5.4	"	"	"	6010C/SOP503
Nickel	RE2	ND	U	5.4	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.1	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium		ND	U	5.4	"	"	"	11/20/10 6010C/SOP503
Vanadium	RE2	21		2.1	"	"	"	11/21/10 6010C/SOP503
Zinc	RE2	71	J	8.6	"	"	"	6010C/SOP503
Sample ID: COR-CEM-02						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		87		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-15						Soil - Sampled: 10/20/10 11:00		
Sample ID: COR-LAVA-01						Metals by EPA 6000/7000 Series Methods		
Mercury		56	J	6.7	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	5.0	J	2.2	"	B0K0014	11/02/10	11/21/10 6010C/SOP503
Arsenic	RE2	37		2.2	"	"	"	11/21/10 6010C/SOP503
Barium	RE2	170		5.6	"	"	"	6010C/SOP503
Beryllium	RE2	0.62		0.11	"	"	"	6010C/SOP503
Cadmium	RE2	ND	U	0.56	"	"	"	6010C/SOP503
Chromium	RE2	4.6		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	4.2		2.2	"	"	"	6010C/SOP503
Copper		6.9	J	4.4	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	22		3.3	"	"	"	11/21/10 6010C/SOP503
Molybdenum	RE2	7.3	J	5.6	"	"	"	6010C/SOP503
Nickel	RE2	ND	U	5.6	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.2	"	"	"	11/21/10 6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	"	11/21/10 6010C/SOP503
Thallium	RE2	ND	U	5.6	"	"	"	6010C/SOP503
Vanadium	RE2	25		2.2	"	"	"	6010C/SOP503
Zinc	RE2	65	J	8.9	"	"	"	6010C/SOP503
Sample ID: COR-LAVA-01						Conventional Chemistry Parameters by APHA/EPA Methods		



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

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Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294E
Reported: 11/24/10 15:54

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-15								Soil - Sampled: 10/20/10 11:00
Sample ID: COR-LAVA-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		90		1	%	B0K0022	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010069-16								Soil - Sampled: 10/20/10 11:13
Sample ID: COR-JACA-01								Metals by EPA 6000/7000 Series Methods
Mercury		690	J	64	mg/kg dry	B0K0040	11/09/10 11/09/10	7471B/SOP517
Antimony	RE1	5.8	J	2.1	"	B0K0014	11/02/10 11/21/10	6010C/SOP503
Arsenic	RE2	32		2.1	"	"	" 11/22/10	6010C/SOP503
Barium	RE2	160		5.3	"	"	"	6010C/SOP503
Beryllium	RE2	0.54		0.11	"	"	"	6010C/SOP503
Cadmium	RE2	ND	U	0.53	"	"	"	6010C/SOP503
Chromium	RE2	7.8		1.1	"	"	"	6010C/SOP503
Cobalt	RE2	4.3		2.1	"	"	"	6010C/SOP503
Copper		16	J	4.2	"	"	" 11/20/10	6010C/SOP503
Lead	RE2	71		3.2	"	"	" 11/22/10	6010C/SOP503
Molybdenum	RE2	6.1	J	5.3	"	"	"	6010C/SOP503
Nickel	RE2	6.7		5.3	"	"	"	6010C/SOP503
Selenium	RE1	ND	U	2.1	"	"	" 11/21/10	6010C/SOP503
Silver	RE2	ND	U	1.1	"	"	" 11/22/10	6010C/SOP503
Thallium	RE2	ND	U	5.3	"	"	"	6010C/SOP503
Vanadium	RE2	27		2.1	"	"	"	6010C/SOP503
Zinc	RE2	80	J	8.5	"	"	"	6010C/SOP503
Sample ID: COR-JACA-01								Conventional Chemistry Parameters by APHA/EPA Methods
% Solids		94		1	%	B0K0022	11/03/10 11/04/10	3550C/SOP460
Lab ID: 1010069-17								Soil - Sampled: 10/20/10 11:20
Sample ID: COR-ROAD1-01								Metals by EPA 6000/7000 Series Methods
Mercury		25	J	6.6	mg/kg dry	B0K0040	11/09/10 11/09/10	7471B/SOP517
Antimony	RE1	3.5	J	2	"	B0K0014	11/02/10 11/22/10	6010C/SOP503
Arsenic	RE1	30		2	"	"	"	6010C/SOP503
Barium	RE1	190		5.1	"	"	"	6010C/SOP503
Beryllium	RE1	0.52		0.10	"	"	"	6010C/SOP503
Cadmium	RE1	ND	U	0.51	"	"	"	6010C/SOP503
Chromium	RE1	4.2		1	"	"	"	6010C/SOP503
Cobalt	RE1	2.6		2	"	"	"	6010C/SOP503
Copper		6.4	J	4.1	"	"	" 11/20/10	6010C/SOP503
Lead	RE1	12		3.1	"	"	" 11/22/10	6010C/SOP503
Molybdenum	RE1	5.3	J	5.1	"	"	"	6010C/SOP503
Nickel	RE1	2.8	CI, J	5.1	"	"	"	6010C/SOP503
Selenium	RE1	1.8	CI, J	2	"	"	"	6010C/SOP503
Silver	RE1	ND	U	1	"	"	"	6010C/SOP503
Thallium	RE1	ND	U	5.1	"	"	"	6010C/SOP503



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Thomas Dunkelman	Emergency Response Section	SDG: 10294E
Project Number: RIIS15	75 Hawthorne Street	Reported: 11/24/10 15:54
Project: Cordero Mercury Mine FY11 Sampling	San Francisco CA, 94105	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-17						Soil - Sampled: 10/20/10 11:20		
Sample ID: COR-ROAD1-01						Metals by EPA 6000/7000 Series Methods		
Vanadium	RE1	26		2	mg/kg dry	B0K0014	11/02/10	11/22/10 6010C/SOP503
Zinc	RE1	67	J	8.2	"	"	"	6010C/SOP503
Sample ID: COR-ROAD1-01						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		91		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-18						Soil - Sampled: 10/20/10 11:50		
Sample ID: COR-CRKSED1						Metals by EPA 6000/7000 Series Methods		
Mercury		0.34	J	0.32	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE2	ND	U	3.9	"	B0K0014	11/02/10	11/22/10 6010C/SOP503
Arsenic	RE2	7.5		3.9	"	"	"	6010C/SOP503
Barium	RE1	190		9.9	"	"	"	11/21/10 6010C/SOP503
Beryllium	RE2	0.96		0.20	"	"	"	11/22/10 6010C/SOP503
Cadmium	RE2	ND	U	0.99	"	"	"	6010C/SOP503
Chromium	RE2	22		2	"	"	"	6010C/SOP503
Cobalt	RE2	9.7		3.9	"	"	"	6010C/SOP503
Copper		31	J	7.9	"	"	"	11/20/10 6010C/SOP503
Lead	RE2	5.7	CI, J	5.9	"	"	"	11/22/10 6010C/SOP503
Molybdenum	RE2	ND	U	9.9	"	"	"	6010C/SOP503
Nickel	RE2	19		9.9	"	"	"	6010C/SOP503
Selenium	RE2	ND	U	3.9	"	"	"	6010C/SOP503
Silver	RE2	ND	U	2	"	"	"	6010C/SOP503
Thallium	RE2	ND	U	9.9	"	"	"	6010C/SOP503
Vanadium	RE2	67		3.9	"	"	"	6010C/SOP503
Zinc	RE2	61	J	16	"	"	"	6010C/SOP503
Sample ID: COR-CRKSED1						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		47		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-19						Soil - Sampled: 10/20/10 12:35		
Sample ID: COR-CRKSED2						Metals by EPA 6000/7000 Series Methods		
Mercury		0.40	J	0.15	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	RE1	ND	U	2.1	"	B0K0014	11/02/10	11/22/10 6010C/SOP503
Arsenic	RE1	11		2.1	"	"	"	6010C/SOP503
Barium	RE1	170		5.3	"	"	"	6010C/SOP503
Beryllium	RE1	0.52		0.11	"	"	"	6010C/SOP503
Cadmium	RE1	ND	U	0.53	"	"	"	6010C/SOP503
Chromium	RE1	11		1.1	"	"	"	6010C/SOP503
Cobalt	RE1	6.4		2.1	"	"	"	6010C/SOP503
Copper		15	J	4.3	"	"	"	11/20/10 6010C/SOP503
Lead	RE1	1.9	CI, J	3.2	"	"	"	11/22/10 6010C/SOP503
Molybdenum	RE1	ND	U	5.3	"	"	"	6010C/SOP503
Nickel	RE1	9.4		5.3	"	"	"	6010C/SOP503



United States Environmental Protection Agency Region 9 Laboratory

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Project Manager: Thomas Dunkelman
Project Number: R11S15
Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section
75 Hawthorne Street
San Francisco CA, 94105

SDG: 10294E
Reported: 11/24/10 15:54

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed Method
Lab ID: 1010069-19						Soil - Sampled: 10/20/10 12:35		
Sample ID: COR-CRKSED2						Metals by EPA 6000/7000 Series Methods		
Selenium	REI	ND	U	2.1	mg/kg dry	B0K0014	11/02/10	11/22/10 6010C/SOP503
Silver	REI	ND	U	1.1	"	"	"	6010C/SOP503
Thallium	REI	ND	U	5.3	"	"	"	6010C/SOP503
Vanadium	REI	50		2.1	"	"	"	6010C/SOP503
Zinc	REI	42	J	8.5	"	"	"	6010C/SOP503
Sample ID: COR-CRKSED2						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		94		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460
Lab ID: 1010069-20						Soil - Sampled: 10/20/10 12:40		
Sample ID: COR-CRKSED3						Metals by EPA 6000/7000 Series Methods		
Mercury		0.45	J	0.16	mg/kg dry	B0K0040	11/09/10	11/09/10 7471B/SOP517
Antimony	REI	ND	U	2	"	B0K0014	11/02/10	11/22/10 6010C/SOP503
Arsenic	REI	25		2	"	"	"	6010C/SOP503
Barium	REI	230		5	"	"	"	6010C/SOP503
Beryllium	REI	0.57		0.10	"	"	"	6010C/SOP503
Cadmium	REI	ND	U	0.50	"	"	"	6010C/SOP503
Chromium	REI	9.1		0.99	"	"	"	6010C/SOP503
Cobalt	REI	7.9		2	"	"	"	6010C/SOP503
Copper		18	J	4	"	"	"	11/20/10 6010C/SOP503
Lead	REI	2.2	CI, J	3	"	"	"	11/22/10 6010C/SOP503
Molybdenum	REI	ND	U	5	"	"	"	6010C/SOP503
Nickel	REI	9.5		5	"	"	"	6010C/SOP503
Selenium	REI	ND	U	2	"	"	"	6010C/SOP503
Silver	REI	ND	U	0.99	"	"	"	6010C/SOP503
Thallium	REI	ND	U	5	"	"	"	6010C/SOP503
Vanadium	REI	62		2	"	"	"	6010C/SOP503
Zinc	REI	48	J	7.9	"	"	"	6010C/SOP503
Sample ID: COR-CRKSED3						Conventional Chemistry Parameters by APHA/EPA Methods		
% Solids		94		1	%	B0K0022	11/03/10	11/04/10 3550C/SOP460

m-A 3/10/11



United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman Project Number: R11S15 Project: Cordero Mercury Mine FY11 Sampling	Emergency Response Section 75 Hawthorne Street San Francisco CA, 94105	SDG: 10294E Reported: 11/24/10 15:54
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Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B0K0014 - 3050B Sld Acid Dig - Metals by 6010

Prepared: 11/02/10 Analyzed: 11/20/10
Metals by EPA 6000/7000 Series Methods - Quality Control

Blank (B0K0014-BLK1)

Copper	ND	U		4 mg/kg wet
Thallium	ND	U		5 "

Blank (B0K0014-BLK2)

Antimony	ND	U		2 mg/kg wet
Barium	ND	U		5 "
Selenium	ND	U		2 "

Blank (B0K0014-BLK3)

Arsenic	ND	U		2 mg/kg wet
Beryllium	ND	U		0.1 "
Cadmium	ND	U		0.5 "
Chromium	ND	U		1 "
Cobalt	ND	U		2 "
Lead	ND	U		3 "
Molybdenum	ND	U		5 "
Nickel	ND	U		5 "
Silver	ND	U		1 "
Vanadium	ND	U		2 "
Zinc	ND	U		8 "

Handwritten signature and date: 3/10/11

Matrix Spike (B0K0014-MS1)

Source: 1010069-10

Copper	54.4			4.5 mg/kg dry	55.2	15.3	71	75-125	20
Thallium	354			5.6 "	442	ND	80	75-125	20

Matrix Spike (B0K0014-MS2)

Source: 1010069-10RE1

Antimony	50.8			2.3 mg/kg dry	110	ND	46	75-125	20
Barium	564			5.6 "	442	165	90	75-125	20
Selenium	360			2.3 "	442	ND	81	75-125	20

Matrix Spike (B0K0014-MS3)

Source: 1010069-10RE2

Arsenic	375			2.3 mg/kg dry	442	3.6	84	75-125	20
Beryllium	10.4			0.11 "	11.0	0.682	88	75-125	20
Cadmium	9.2			0.56 "	11.0	ND	83	75-125	20
Chromium	51.7			1.1 "	44.2	14.6	84	75-125	20
Cobalt	92.5			2.3 "	110	6.78	78	75-125	20
Lead	93.8			3.4 "	110	5.67	80	75-125	20
Molybdenum	80.7			5.6 "	110	ND	73	75-125	20
Nickel	101			5.6 "	110	11.6	81	75-125	20
Silver	9.34			1.1 "	11.0	ND	85	75-125	20
Vanadium	128			2.3 "	110	33.1	86	75-125	20
Zinc	143			9 "	110	55	80	75-125	20



United States Environmental Protection Agency

Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804

Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Thomas Dunkelman

Project Number: R11S15

Project: Cordero Mercury Mine FY11 Sampling

Emergency Response Section


75 Hawthorne Street

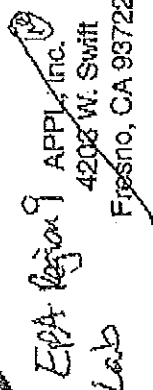
San Francisco CA, 94105

SDG: 10294E

Reported: 11/24/10 15:54

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B0K0022 - Solids, Dry Weight (Prep) - Solids, Dry Weight						Prepared: 11/03/10 Analyzed: 11/04/10				
Blank (B0K0022-BLK1)						Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control				
% Solids	ND	U		1 %						
Duplicate (B0K0022-DUP1)						Source: 1010069-03				
% Solids	88			1 %		88			0.4	20
Batch B0K0040 - 7471B Hg Digest - Mercury, High Level						Prepared & Analyzed: 11/09/10				
Blank (B0K0040-BLK1)						Metals by EPA 6000/7000 Series Methods - Quality Control				
Mercury	ND	U		0.15 mg/kg wet						
Blank (B0K0040-BLK2)						 3/10/11				
Mercury	ND	U		0.15 mg/kg wet						
Duplicate (B0K0040-DUP2)						Source: 1010069-10				
Mercury	ND	U		0.17 mg/kg dry		ND				20
Matrix Spike (B0K0040-MIS2)						Source: 1010069-10				
Mercury	1.57			0.16 mg/kg dry	1.57	ND	100	80-120		200
Reference (B0K0040-SRM1)										
Mercury	13			0.75 mg/kg wet	12.3		105	63.41-137		
Reference (B0K0040-SRM2)										
Mercury	12.3			0.75 mg/kg wet	12.3		100	63.41-137		



CHAIN OF CUSTODY RECORD
Page 4 of 6

Phone: (559) 275-2175
Fax: (559) 275-4422

29875

Report to:		PLEASE PRINT	
Company Name		Invoice to:	
Address		Company Name	
Phone: 415/266-2651		Address	
Fax:		Phone:	
Attn: Neil Ellis		Fax:	
bellis@ene.com		Attn:	
Project Name/Number		Analyst's Requested/Method Number	
Cedaro Mercury Mine Site			
Purchase Order Number			
Sampler (Print)		Data Shipped:	
D. New Line (Copper)		Carrier:	
Sampler (Signature)		Waybill No.:	
N.E.L.		Comments:	
Location		Please send results to dellis@ene.com	
Sample Identification	Date Collected	Time Collected	Matrix
COR-WP1-01	10/19/10	1400	Soil
COR-WP1-02		1415	
COR-WP1-03		1420	
COR-WP1-04		1405	
COR-WP1-05		1425	
COR-WP2-01		1519	
COR-WP3+01		1525	
COR-WP4+01		1535	
COR-RB-102010		1605	
Shuttle Temperature:		Sample Disposal:	
		Return to client	
		Disposal by Lab (see notes)	
Relinquished by sampler:		Received by:	
Date: 10/20/10		Date: 10/20/10	
Time: 11:30		Time: 11:30	
Relinquished by:		Received by:	
Date: 10/20/10		Date: 10/20/10	
Time: 11:30		Time: 11:30	

White: Return to client with report	Yellow: Laboratory Copy	Pink: Sampler
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CHAIN OF CUSTODY RECORD

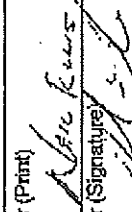
Page 5 of 6



Phone: (559) 275 2175

Fax: (559) 275-4422

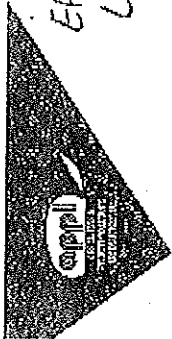
C.O.C. N° 29880

APPL INC.
4203 W. Swift
Fresno, CA 93722

Report to: Company Name: <u>Ecology & Environment</u> Phone: <u>(415) 268-7651</u> Address: _____ Attn: <u>Nick Kous (Samar)</u>		PLEASE PRINT Invoice to: _____ Company Name: _____ Address: _____ Attn: _____ Phone: _____ Fax: _____	
Project Name/Number: <u>Cadeca Mercury Mine Site</u> Purchase Order Number: _____	Sampler (Print): <u>Nick Kous (Samar)</u> Sampler (Signature): 	Analysis Requested/Method Number: _____	
Sample Identification: COR-LOT2-02-6" COR-LOT2-02-18" COR-LOT2-03-6" COR-LOT2-03-18" COR-LOT2-04-6" COR-LOT2-04-18" COR-TRK2-01 COR-LOT2-02-6" COR-CEM-01 COR-CEM-02	Location: _____ _____ _____ _____ _____ _____ _____ _____ _____	Date Collected: 10/20/09 _____ _____ _____ _____ _____ _____ _____ _____	Time Collected: 0930 0935 0940 0945 0955 1000 1010 0930 1045 1050
Mix: Sil		Number of Containers: 1	Date Shipped: _____ Carrier: _____ Waybill No.: _____ Comments: _____

Shuttle Temperature: _____		Sample Disposal: <input type="checkbox"/> Return to client <input type="checkbox"/> Disposal by Lab (no way return)	
Relinquished by sampler: 	Relinquished by: Date: <u>10/20/09</u> Time: <u>11:30</u>	Received by: Date: <u>10/21/09</u> Time: <u>11:30</u>	Received by: 

White: Return to client with report Yellow: Laboratory Copy Pink: Sampler



EPA Region 9
Lab

APPL INC.
4203 W. Swift
Fresno, CA 93722

CHAIN OF CUSTODY RECORD

Phone: (559) 275 2175

Fax: (559) 275-4422

Page 6 of 6

C.O.C. No. 29879

Report to:		PLEASE PRINT		Invoice to:		PLEASE PRINT	
Company Name		Ecology + Environment		Company Name			
Address				Address			
Attn: Neil Ellis dellis@ene.com				Attn:			
Project Name/Number		Sampler (Print)		Analysis Requested/Method Number		Date Shipped:	
Purchase Order Number		Sampler (Signature)				Carrier:	
						Waybill No.:	
						Comments:	
Sample Identification	Location	Date Collected	Time Collected	Matrix	Number of Containers		
COR-LAVA-01		10/20/10	1100	Soil	1	X	
COR-JACA-01			1113				
COR-ROAD1-01			1120				
COR-CRKSED1			1150				
COR-CRKSED2			1235				
COR-CRKSE D3			1240				
COR-CRK			1148	Water			
COR-RS-102010			1005				
Shuttle Temperature:						Sample Disposit:	
Reinquired by sampler:						Return to client	
Reinquired by:						Disposal by Lab (30-day retention)	
Date		Time		Received by:		Date	
10/20/10		11:10		10/20/10		11:30	
Date		Time		Received by:		Date	
White: Return to client with report		Yellow: Laboratory Copy		Pink: Sampler			