YEAR 1 INTERIM REPORT

GUADALUPE RIVER COORDINATED MONITORING PLAN FISH TISSUE MONITORING

Prepared for

County of Santa Clara Parks and Recreation Department
298 Garden Hill Drive
Los Gatos, CA 95032

January 20, 2012

URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612

26817576

TABLE OF CONTENTS

Section 1 Introduction 1-1

1.1 Project Setting 1-1
1.2 Regulatory Background 1-1

Section 2 Methods 2-1

2.1 Objectives 2-1
2.2 Stream Sampling 2-2
2.2.1 Collection 2-2
2.2.2 Species Identification 2-3
2.2.3 Gut Analysis 2-3
2.2.4 Sample Analysis 2-3
2.2.5 Water Quality 2-3
2.3 Reservoir Sampling 2-5
2.3.1 Collection 2-5
2.3.2 Sample Analysis 2-6
2.3.3 Water Quality 2-6

Section 3 Results and Discussion 3-1

3.1 Summary of Total Mercury and Methylmercury Results 3-1
3.2 Water Quality Results 3-7
3.3 Comparison to Numeric Targets 3-8

Section 4 Recommendations 4-1

4.1 Recommendations for Year 2 4-1

Section 5 References 5-1

TABLE OF CONTENTS

Tables

Table 1. Stream Site Locations and Dates of Sampling

Table 3. Total Mercury Fish Tissue Concentration by Location

Table 4. Total Mercury and Methylmercury Concentration by Location Type

Table 5. Weight of the Fish (g) by Location

Table 6. Total Mercury, Methylmercury, and Weight by Preparation Method

Table 7. Percentage of Inorganic Mercury in Whole Body and Gutted Fish Samples

Table 8. Water Quality Data

Table B-1. Analytical Results for the Stream Samples

Table B-2. Analytical Results for Reservoir and Lake Samples

Table D-1. Percentage of Inorganic Mercury in Whole Body and Gutted Fish Samples

Figures

Figure 1. Site Map

Figure 2. Modified Sampling Location for Guadalupe Creek at Meridian Ave.

Figure 3. Average Total Mercury Levels at Each Sampling Location

Figure 4. Mercury and Methylmercury in Whole Body and Gutted Fish

Figure 5. Distribution of Percent Inorganic Mercury in Whole Body and Gutted Fish

Figure D-1. Distribution of Samples with Calculated Inorganic Mercury

Figure D-2. Oneway Anova Test for Inorganic Mercury

Appendices

A Field Datasheets

B Analytical Results

C Laboratory Reports and QA-QC Memo

D Statistical Results

E Bird Nesting Season

TABLE OF CONTENTS

Acronyms

13267	California Water Code Section 13267
Basin Plan	SFRWQCB's Water Quality Control Plan
CMP	Coordinated Monitoring Plan
NMFS	National Marine Fisheries Service
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
TMDL	Total Maximum Daily Loads
USFWS	U.S. Fish and Wildlife Service
Water District	Santa Clara Valley Water District

This report presents the Year 1 (2011) results from fish survey efforts performed by URS to satisfy San Francisco Regional Water Quality Control Board (SFRWQCB) monitoring and reporting requirements for mercury Total Maximum Daily Loads (TMDL) in the Guadalupe River Watershed. These reporting requirements are in accordance with Clean Water Act Section 303(d), California Water Code Section 13267, and the Guadalupe River Coordinated Monitoring Plan (URS 2010). Specifically, this report presents fish sampling data and fish tissue mercury concentrations from several reservoirs and stream reaches within the Guadalupe River Watershed that will be used to evaluate long term trends in fish tissue concentrations.

1.1 PROJECT SETTING

The Guadalupe River watershed covers approximately 170 square miles, draining the eastern Santa Cruz Mountains to San Francisco Bay through Alviso Slough. The Guadalupe River begins at the confluence of Guadalupe Creek and Alamitos Creek. Important tributaries include Ross Creek, Canoas Creek, and Los Gatos Creek.

The Guadalupe River Watershed contains several reservoirs that are used for flood control, drinking water storage, groundwater recharge, and recreation. These reservoirs include Calero, Guadalupe, Almaden and Lexington reservoirs, and Lake Almaden. The area within the Guadalupe River Watershed was historically used for mercury mining, which has contributed to mercury levels within the watershed. Figure 1 illustrates the location of each sampling site.

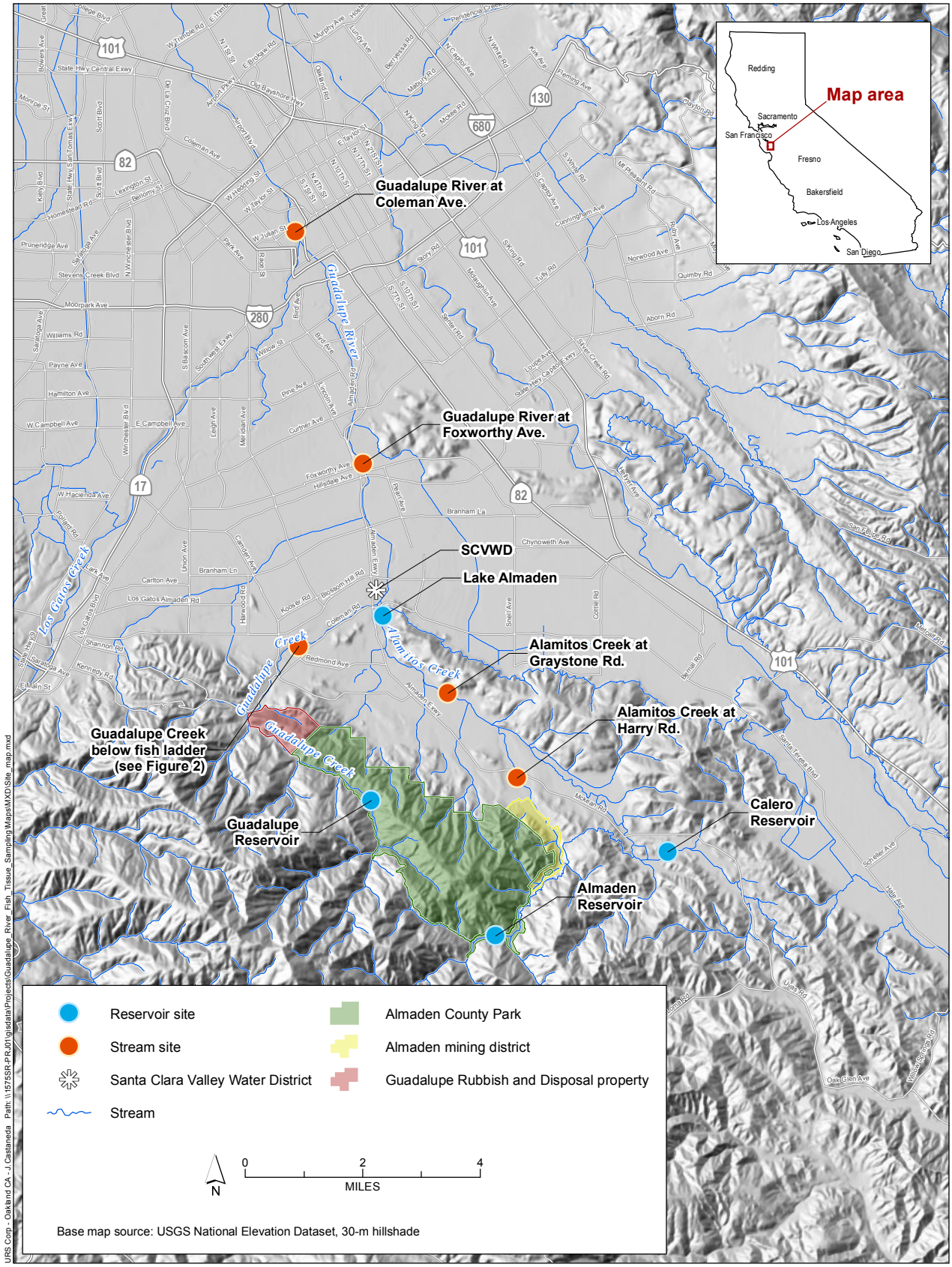
1.2 REGULATORY BACKGROUND

In 1998, several water bodies in the Guadalupe River watershed were identified by the California State Water Resources Control Board and the SFRWQCB as impaired by the presence of mercury according to provisions in the Clean Water Act Section 303(d). Being placed on the impaired waters list triggered the TMDL process for the watershed to address mercury loading to San Francisco Bay. On October 8, 2008, an amendment to the SFRWQCB's Water Quality Control Plan (Basin Plan) was adopted to amend mercury water quality objectives and incorporate TMDLs for mercury in the Guadalupe River watershed. The TMDL was approved on June 1, 2010 by the State Water Resources Control Board.

On November 23, 2009, the SFRWQCB, under the authority of California Water Code Section 13267, delivered a letter (13267 letter) requiring monitoring plans for mercury in waters downstream of New Almaden Mercury Mining District, Guadalupe Mercury Mine, and/or Bernal Mercury Mine. The 13267 letter was directed jointly to the County of Santa Clara, the Guadalupe Rubbish Disposal Company, Inc., the Midpeninsula Regional Open Space District, and the Santa Clara Valley Water District (Interested Parties).

On February 12, 2010, the Interested Parties presented a letter stating intent to develop a coordinated monitoring plan for monitoring mercury in waters downstream of the New Almaden Mercury Mine and Bernal Mercury Mine (Coordinated Monitoring Plan). The Final Coordinated Monitoring Plan (CMP) was submitted on November 15, 2010 by the Interested Parties to the SFRWQCB to satisfy the SFRWQCB's requirements for developing a plan for monitoring water and fish within the watershed. The CMP was approved by the SFRWQCB in a February 1, 2011 letter to the Interested Parties (SFRWQCB, 2011).

The survey efforts and results presented in this report are presented as part of the Coordinated Monitoring Plan's Fish Tissue Monitoring Objectives and satisfy the requirements for a Water Year 2011 Interim Monitoring Report due to the SFRWQCB on or before Jan 30, 2012.



URS Corp - Oakland CA - J. Castaneda Path: \\1575SR-PRJ01\gisdata\Projects\Guadalupe_River_Fish_Tissue_Sampling\Maps\MXD\Site_map.mxd

URS Santa Clara County Parks Department
Guadalupe River Fish Tissue Sampling

Figure 1
Site map

All samples were collected in the Guadalupe River watershed. The major tributaries in the Guadalupe River watershed include Los Gatos Creek, Alamitos Creek, and Arroyo Calero. Urban creeks in this watershed include Canoas Creek, Ross Creek, as well as Randol Creek and Golf Creek, both of which are tributaries to Alamitos Creek. Calero Reservoir is on Arroyo Calero, Almaden Reservoir is on Alamitos Creek, and Guadalupe Reservoir is on Guadalupe Creek. New Almaden Mining District is located along the watershed divide that drains towards both the Guadalupe Reservoir and the Almaden Reservoir.

2.1 OBJECTIVES

The following objectives are from the Guadalupe River Coordinated Monitoring Plan (URS 2010).

The objectives of the Fish Tissue Monitoring Plan are to satisfy the SFRWQCB reporting requirements in a manner that reflects the natural history of Guadalupe River watershed fish populations. The SFRWQCB formulated the following questions to guide the fish tissue monitoring and support the attainment of numeric targets derived for the Guadalupe River TMDL:

- What is the inter-annual variation in fish mercury for remediation effectiveness indicators (age-1 largemouth bass [*Micropterus salmoides*] in reservoirs and lakes) and California roach [*Hesperoleucus symmetricus*] in creeks and the river (trophic level 3 fish 5–15 cm and >15–35 cm in length)?
- What is the trend in fish tissue mercury concentrations in remediation effectiveness indicators and target fish?

To answer these questions, a multi-year monitoring program has been established where fish are collected in streams and reservoirs and analyzed for total mercury content to help assess the success of TMDL implementation efforts. Fish are collected from stream locations below reservoirs in the Guadalupe River watershed, Santa Clara Valley Water District (Water District) reservoirs, and Lake Almaden. This report summarizes the first year of the sampling results.

The size of fish selected as remediation effectiveness indicators were based on the size distribution and species that have been historically present in the Guadalupe River Watershed, and may not correspond to the sizes prescribed by the SFRWQCB (2010). The SFRWQCB selected those target sizes based on a recommendation by the US Fish and Wildlife Service (USFWS; 2005). However, USFWS based their findings on studies outside of the Guadalupe River Watershed. Therefore, it is likely that the size ranges listed in the SFRWQCB's numeric targets do not reflect the conditions in the Guadalupe River Watershed. However, fish collections will allow the monitoring of the fish population and identification of other species that meet the TMDL numeric targets. The numeric targets selected by the SFRWQCB are assumed to be protective of avian reproductive success because they were calculated using a reference dose for methylmercury with impaired reproductive success in captive mallard ducks (*Anas platyrhynchos*) as an endpoint USFWS 2005). Therefore, achievement of the numeric targets using the approach here would demonstrate the absence of reproductive harm to avian receptors.

2.2 STREAM SAMPLING

Stream sampling locations include Guadalupe River at Coleman Avenue, downstream of Los Gatos Creek; Guadalupe River at Foxworthy Avenue, downstream of Ross Creek; Guadalupe Creek below the Masson Dam fish ladder, downstream of Guadalupe Reservoir; Alamitos Creek at Graystone Lane, downstream of Arroyo Calero; and Alamitos Creek at Harry Road, downstream of Almaden Reservoir.

2.2.1 Collection

California roach were collected from five stream reaches within the Guadalupe River watershed, including sections of Alamitos Creek and Guadalupe Creek, as well as reaches within the Guadalupe River. These locations are shown on Figure 1. The locations and the dates of sampling are described in Table 1. Field data sheets and photographs of these sampling locations are included in Appendix A.

Table 1. Stream Site Locations and Dates of Sampling

Site #	Location	GPS Coordinates	Sampling Date (2011)
1	Guadalupe River at Coleman Ave. (downstream of the confluence of Los Gatos Creek)	-121.90005, 37.335818	June 21
2	Guadalupe River at Foxworthy Ave. (upstream of confluence of Los Gatos Creek)	-121.87807, 37.278827	June 22 and June 23
3	Guadalupe Creek below Masson Dam fish ladder (upstream of Meridian Ave.)	-121.897157, 37.23336	June 27
4	Alamitos Creek at Graystone Lane	-121.850808, 37.222467	June 22
5	Alamitos Creek at Harry Road	-121.829174, 37.201669	June 23

The upper Guadalupe Creek sampling location (planned for Meridian Avenue), approved in the Monitoring Plan, was relocated upstream to just below the Masson Dam fish ladder on Guadalupe Creek. The original upper Guadalupe Creek sampling site was moved to this location because vegetation density and flows during the time of sampling were not conducive to sampling. Figure 2 shows the location of the approved and proposed (actual) station in upper Guadalupe Creek.

Fish were collected using backpack electrofisher (Smith-Root Model LR-24) units. Stream conductivity and temperature measurements were recorded before each stream electrofishing session began in order to adjust electrofisher unit settings to minimize damage or mortality to non-target fish. Electrofishing was conducted in an upstream direction for each reach, following methods described in Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act [National Marine Fisheries Service (NMFS) 2000]. Block nets were used at the upstream extent of each reach in channels that were relatively wide or lacked in-stream features (i.e., a narrow channel leading to a relative high-gradient, low-flow riffle or a relatively isolated pool) to confine fish and prevent escape from the electrical field. Individuals greater than 4 cm were kept and processed for mercury analysis in the following manner:

- Specimen identified and the identity verified by fin ray counts (as described below)
- Fork and standard length (mm) measured on a fixed measuring board
- Specimen weighed using an electronic scale (Ohaus Scout SC4010, 400 + 0.1g)
- Carcass rinsed with deionized water
- Individual samples placed in a sterile container and assigned a specimen number

2.2.2 Species Identification

Captured specimens were verified by fin ray counts due to the morphological similarities between the target fish and hitch (*Lavinia exilicauda*), which is known to hybridize with California roach within the watershed. Dorsal ray counts were performed to distinguish between each species (California roach dorsal rays = 7–9, hitch dorsal rays = 10–13, [Moyle 2002]). Fish collected with dorsal ray counts of 10 or more were released. Fish collected with a dorsal ray count between 7 and 9 were kept for processing and analysis. Other fish not selected for analysis were identified and released in the immediate capture area.

2.2.3 Gut Analysis

A pilot gut removal analysis program was tested to determine whether gut contents may be obscuring inter-annual trends in tissue total mercury concentrations. The gastrointestinal tract was removed in 10% of individuals using scissors and a scapula and was discarded to determine the contribution of gut contents to whole body total mercury concentrations. Half of these fish and an additional 5% of fish with intact gastrointestinal tracts were analyzed for methylmercury.

2.2.4 Sample Analysis

Samples were placed on dry ice for temporary storage in the field then placed into a zero-degree freezer and transported to the laboratory on dry ice. Samples were analyzed within a 30 day turn-around time and did not require measures to prevent desiccation. Stream fish were analyzed individually for total mercury concentration.

2.2.5 Water Quality

Water quality parameters, including conductivity, temperature, pH, and dissolved oxygen were measured at all fish sampling locations.

URS Santa Clara County Parks Department
Guadalupe River Fish Tissue Sampling

Figure 2
Guadalupe at Meridian site

2.3 RESERVOIR SAMPLING

Lake and reservoir sampling locations include Guadalupe Reservoir, Almaden Reservoir, Calero Reservoir, and Lake Almaden. Lake Almaden is located on Alamitos Creek downstream of Almaden Reservoir and just upstream of Alamitos Creek's confluence with Guadalupe Creek (as shown on Figure 1).

2.3.1 Collection

Young of the year largemouth bass measuring 60 to 90 mm (standard length) were collected from reservoirs within the Guadalupe River watershed. The locations and dates of sampling are described in Table 2. At the Guadalupe Reservoir location, green sunfish (*Lepomis cyanellus*) were collected due to inability to collect enough largemouth bass individuals to satisfy sampling requirements. As stated in the Fish Tissue Monitoring Plan, if sufficient numbers of largemouth bass were not collected, other young of the year fish in the sunfish family could be substituted. Green sunfish was stated in the plan as an acceptable alternative.

Site #	Location	Sampling Date (2011)
1	Calero Reservoir	August 29
2	Lake Almaden	August 29
3	Almaden Reservoir	August 30
4	Guadalupe Reservoir	September 1

Fish were collected using a boat-mounted electrofisher unit [Smith-Root Model SR-16H equipped with a 7.5 generator powered pulsator (GPP)], with the exception of Guadalupe Reservoir. Due to access issues, the boat electrofisher was unable to be launched. Targeted fish were collected at this location through a combination of minnow traps and seine netting. Water conductivity and temperature were measured before electrofishing began in order to adjust electrofisher unit settings to minimize potential damage or mortality to encountered fish. Four amps of output power was initially employed and adjusted as necessary to elicit appropriate taxis. Captured fish were placed in an aerated live well until they were processed. Discrete locations within the reservoirs and Lake Almaden were not sampled individually; the sampling vessel boat was run as close to the shoreline as the draft allowed in a counter-clockwise direction from the launch point. Sampling depth ranged from 1 to 8 feet deep. Each fish collected for mercury analysis was processed in the following manner:

- Specimen identified and enumerated.
- Fork and standard length (mm) measured on a fixed measuring board.
- Whole fish (year old largemouth bass) placed into heavy-duty aluminum foil (shiny side out) and labeled.
- Samples placed on dry ice for temporary storage in the field and then placed into a zero-degree freezer and transported to the laboratory on dry ice.

2.3.2 Sample Analysis

Reservoir fish were composited and analyzed for total mercury content. Fish collected from each reservoir were grouped and composited using the "75% rule" by species (i.e., if the largest fish in a composite set is 90 mm, the smallest fish for that composite is 68 mm). Dry and wet weight concentrations of mercury were determined along with percent moisture.

2.3.3 Water Quality

Water quality parameters, including conductivity, temperature, pH, and dissolved oxygen were measured at all fish sampling locations.

3.1 SUMMARY OF TOTAL MERCURY AND METHYLMERCURY RESULTS

Total mercury and methylmercury concentrations for fish captured at each of the sampling locations are shown in Table 3 and 4 and on Figure 3. Analytical results for the fish sampling are tabulated in Appendix B. The laboratory reports and the QA/QC analysis of these results are included in Appendix C.

In general, lake and reservoir fish had higher average total mercury concentrations in their tissues than stream fish, with the exception of fish caught in Calero Reservoir.

Guadalupe Reservoir, Almaden Reservoir, and Lake Almaden had fish with higher total mercury concentrations in their tissues than fish at other sampling locations. Almaden Mining District drains towards both the Guadalupe and Almaden reservoirs and Lake Almaden receives a portion of its water from Almaden Reservoir. Total mercury concentrations in fish found at these sampling locations are almost order of magnitude greater than concentrations in similar fish at the Calero Reservoir.

Fish caught in upper Alamitos Creek (at Harry Road) had higher total mercury concentrations in their tissues than fish caught in downstream creek locations or in Guadalupe Creek (below the Masson Dam fish ladder). Fish caught in the lower Guadalupe River (at Coleman Avenue) had lower total mercury concentrations than other stream locations. This implies that Arroyo Calero and Los Gatos Creek are relatively clean inputs to the Guadalupe River system (Figure 3).

The weight of the fish collected at each location is shown on Table 5. Lake and reservoir fish were generally larger than stream fish, with the exception of fish collected in the Guadalupe River at Foxworthy Avenue. Table 6 shows the weight of the fish selected for analysis with the gut intact and the gut removed. Fish that were gutted were typically some of the larger fish at each location. It was also noted during sample collection that some of the larger roach were females gravid with eggs.

Total mercury and methylmercury concentrations in whole body fish and fish with the gut removed are also shown in Table 6. Total mercury and methylmercury concentrations were generally higher in the gutted fish than in the whole body fish. In samples analyzed for both total mercury and methylmercury, on average, methylmercury concentrations represented more than 85 percent of the total mercury results. For fish with the gut removed, methylmercury represented 90 percent of the total mercury, on average.

There is a well-established relationship between total mercury and methylmercury in fish tissue (Bloom 1992); this relationship was confirmed for small fish in the Guadalupe River watershed. The correlation between total mercury and methylmercury concentrations for samples analyzed for both parameters is shown in Figure 4. The correlation between total mercury and methylmercury is better for fish with the gut removed than for fish with the gut intact. Presumably this is due to the removal of sediment associated mercury in the contents of the gut.

Because there is a potential for the total mercury signal in the gut contents to obscure inter-annual trends in total mercury concentrations for whole body fish, a statistical test was performed to evaluate whether or not the gut would have a significant effect on the relative percentage of inorganic mercury in the fish (i.e., the normalized portion of total mercury that is not attributed to methylmercury). The results of this test are summarized in Table 7 and Figure 5 and detailed in Appendix D. Although removing the gut appears to reduce the amount of

inorganic mercury in the fish, the reduction was not statistically significant. Therefore the presence of total mercury in the gut is not overly influencing the total mercury result or masking the underlying methylmercury signal.

Table 3. Total Mercury Fish Tissue Concentration by Location

Sampling Location	Type	Count	Mean	Std Dev	CV	Min	Median	Max
Dry Weight Concentration - Mercury (ng/g, dry weight)								
Guadalupe River at Coleman Ave.[1]	Stream	20	600	89	0.15	480	566	827
Guadalupe River at Foxworthy Ave.[2]	Stream	20	1690	558	0.33	1020	1620	3080
Guadalupe Creek below Masson Dam fish ladder[3]	Stream	20	1720	572	0.33	1300	1620	3990
Alamitos Creek at Graystone Lane[4]	Stream	20	1700	551	0.32	1070	1530	3300
Alamitos Creek at Harry Road[5]	Stream	20	2880	939	0.33	1600	3010	5290
Guadalupe Reservoir	Lake	9	3170	779	0.25	2160	2920	4900
Lake Almaden	Lake	20	3010	591	0.20	1680	3200	3670
Almaden Reservoir	Lake	20	3720	1130	0.30	2300	3530	7210
Calero Reservoir	Lake	16	510	264	0.52	287	436	1320
Wet Weight Concentration - Mercury (mg/kg, wet weight)								
Guadalupe River at Coleman Ave.[1]	Stream	20	0.141	0.02	0.14	0.111	0.133	0.178
Guadalupe River at Foxworthy Ave.[2]	Stream	20	0.396	0.10	0.26	0.250	0.383	0.637
Guadalupe Creek below Masson Dam fish ladder[3]	Stream	20	0.439	0.08	0.17	0.336	0.432	0.691
Alamitos Creek at Graystone Lane[4]	Stream	20	0.419	0.11	0.26	0.309	0.377	0.728
Alamitos Creek at Harry Road[5]	Stream	20	0.666	0.20	0.29	0.393	0.694	1.15
Guadalupe Reservoir	Lake	9	0.776	0.21	0.27	0.551	0.742	1.25
Lake Almaden	Lake	20	0.650	0.11	0.17	0.380	0.682	0.825
Almaden Reservoir	Lake	20	0.818	0.23	0.29	0.552	0.771	1.58
Calero Reservoir	Lake	16	0.110	0.05	0.48	0.071	0.091	0.276

ng/g = nanogram per gram

mg/kg = milligrams per kilogram

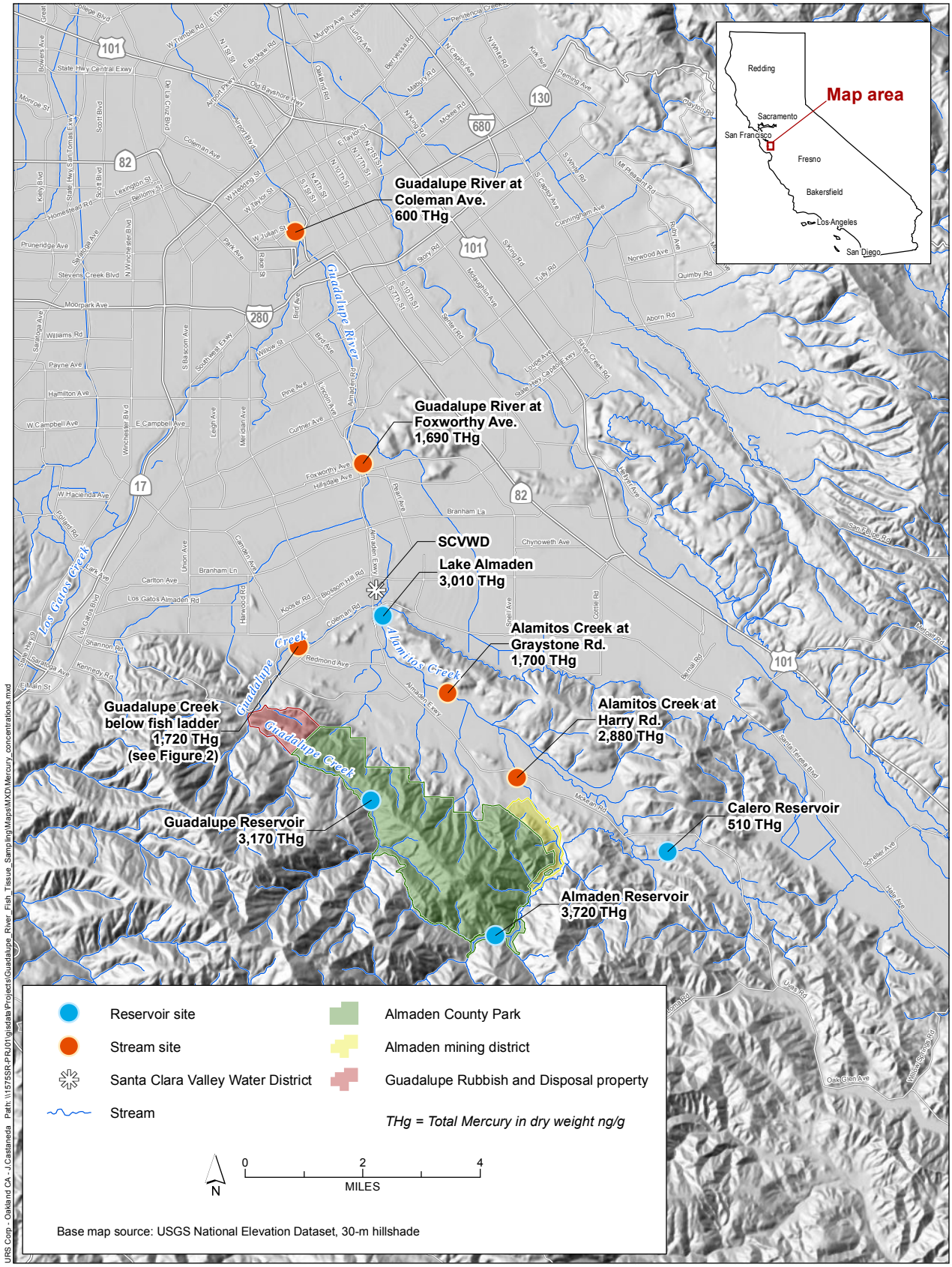
[1] Downstream of the confluence of Los Gatos Creek and the confluence of Canoas Creek

[2] Downstream of the confluence of Ross Creek and the confluence of Alamitos Creek

[3] Downstream of Guadalupe Reservoir; upstream of Alamitos Creek and Meridian Avenue

[4] Downstream of the confluence of Arroyo Calero

[5] Downstream of Almaden Reservoir



URS Corp - Oakland CA - J.Castaneda Path: \\1575SR-PRJ01\gisdata\Projects\Guadalupe_River_Fish_Tissue_Sampling\Maps\MXD\Mercury_concentrations.mxd

URS Santa Clara County Parks Department
Guadalupe River Fish Tissue Sampling

Figure 3
Average total mercury concentrations

Table 4. Total Mercury and Methylmercury Concentration by Location Type

Parameter	Type	Count	Mean	Std Dev	CV	Min	Median	Max
Dry Weight Concentration (ng/g, dry weight)								
Mercury	Stream	100	1720	937	0.55	480	1570	5290
	Lake	65	2640	1470	0.56	287	2920	7210
	All Samples	165	2080	1260	0.60	287	1780	7210
Methylmercury	Stream	10	1640	1000	0.61	449	1450	3630
	Lake	8	2560	1190	0.47	481	3110	3580
	All Samples	18	2050	1160	0.56	449	1950	3630
Wet Weight Concentration mg/kg, wet weight)								
Mercury	Stream	100	0.412	0.20	0.49	0.111	0.401	1.15
	Lake	65	0.586	0.33	0.56	0.071	0.675	1.58
	All Samples	165	0.481	0.27	0.56	0.071	0.444	1.58
Methylmercury	Stream	10	0.356	0.18	0.50	0.102	0.369	0.628
	Lake	8	0.561	0.27	0.48	0.099	0.672	0.796
	All Samples	18	0.447	0.24	0.54	0.099	0.422	0.796

ng/g = nanogram per gram

mg/kg = milligrams per kilogram

Table 5. Weight of the Fish (g) by Location

Sampling Location	Type	Count	Mean	Std Dev	CV	Min	Median	Max
Guadalupe River at Coleman Ave. [1]	Stream	20	2.0	0.8	0.42	0.9	1.7	4.4
Guadalupe River at Foxworthy Ave. [2]	Stream	20	13.7	9.6	0.70	4.3	10.7	32.8
Guadalupe Creek below Masson Dam fish ladder [3]	Stream	20	2.1	1.0	0.50	1.2	1.7	5.9
Alamitos Creek at Graystone Lane [4]	Stream	20	3.2	1.5	0.47	1.4	2.8	5.6
Alamitos Creek at Harry Road [5]	Stream	20	3.4	0.9	0.27	2.2	3.1	4.9
Guadalupe Reservoir	Lake	9	5.3	1.2	0.23	3.9	4.9	7.4
Lake Almaden	Lake	20	5.7	2.0	0.35	2.9	5.3	9.1
Almaden Reservoir	Lake	20	4.9	1.6	0.32	3.2	4.4	8.0
Calero Reservoir	Lake	16	6.1	2.7	0.45	3.2	5.2	11.6

Table 5. Weight of the Fish (g) by Location

Sampling Location	Type	Count	Mean	Std Dev	CV	Min	Median	Max

g = gram

[1] Downstream of the confluence of Los Gatos Creek and the confluence of Canoas Creek

[2] Downstream of the confluence of Ross Creek and the confluence of Alamitos Creek

[3] Downstream of Guadalupe Reservoir; upstream of Alamitos Creek and Meridian Avenue

[4] Downstream of the confluence of Arroyo Calero

[5] Downstream of Almaden Reservoir

Table 6. Total Mercury, Methylmercury, and Weight by Preparation Method

Parameter	Type	Count	Mean	Std Dev	CV	Min	Median	Max
Weight (g)	Whole Body	148	4.8	4.6	0.96	0.9	3.8	32.4
	Gutted Fish	17	8.3	7.5	0.90	2.4	5.9	32.8
	Both	165	5.1	5.0	0.98	0.9	4.0	32.8
Dry Weight Concentration (ng/g, dry weight)								
Mercury	Whole Body	148	1970	1150	0.59	287	1710	5290
	Gutted Fish	17	3070	1670	0.54	444	3300	7210
	Both	165	2080	1260	0.60	287	1780	7210
Methylmercury	Whole Body	9	1730	1070	0.62	449	1320	3380
	Gutted Fish	9	2370	1210	0.51	481	2860	3630
	Both	18	2050	1160	0.56	449	1950	3630
Wet Weight Concentration mg/kg, wet weight)								
Mercury	Whole Body	148	0.459	0.25	0.54	0.071	0.433	1.15
	Gutted Fish	17	0.664	0.38	0.57	0.091	0.680	1.58
	Both	165	0.481	0.27	0.56	0.071	0.444	1.58
Methylmercury	Whole Body	9	0.410	0.25	0.61	0.102	0.359	0.796
	Gutted Fish	9	0.484	0.24	0.49	0.099	0.597	0.736
	Both	18	0.447	0.24	0.54	0.099	0.422	0.796

g = gram

ng/g = nanogram per gram

mg/kg = milligrams per kilogram

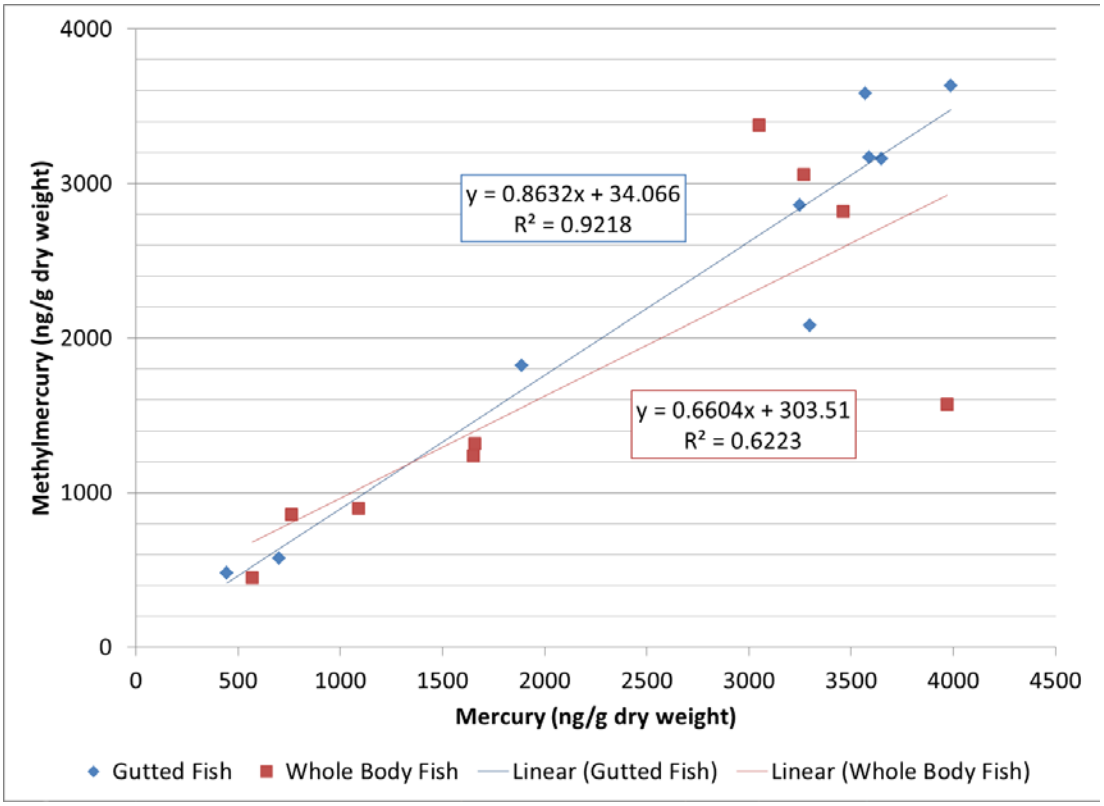


Figure 4. Total Mercury and Methylmercury in Whole Body and Gutted Fish

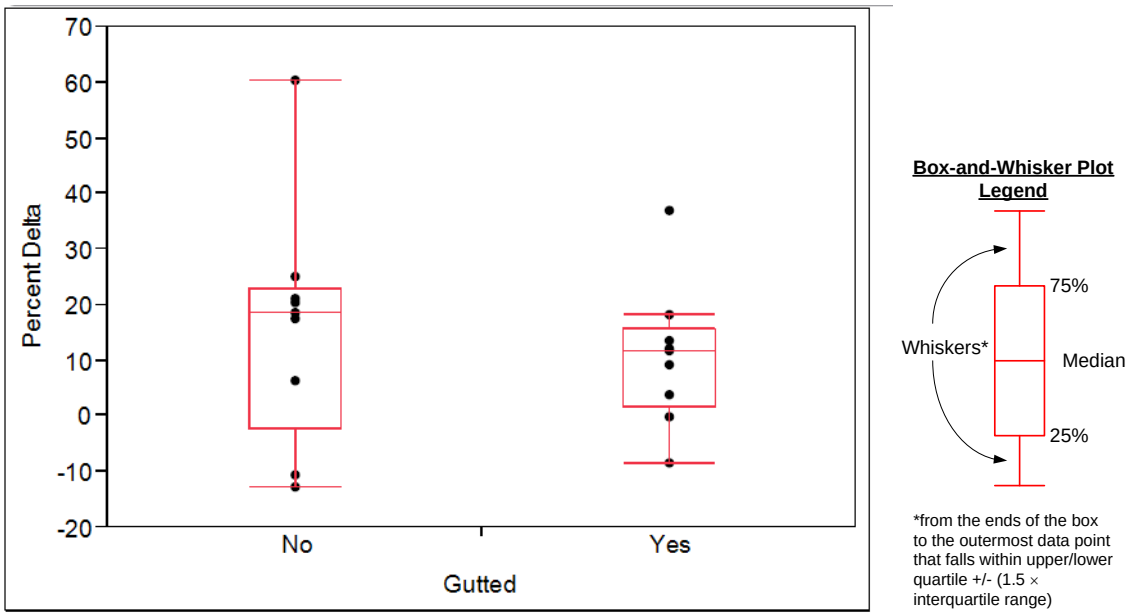
Table 7. Percentage of Inorganic Mercury in Whole Body and Gutted Fish Samples

	Summary Statistics -- Percent Delta					Shapiro-Wilk W Test		Statistical Comparison, α = 5%)		
Group	**No. of Samples**	**Mean**	**Std Dev**	**Min**	**Max**	**p-value**	**Distrib-ution**	**Appropriate Statistical Test**	**p-value**	**Significant Lower Percent Delta in Gutted Fish?**
Whole Body Fish	9	16.2	21.6	-12.7	60.5	0.210	Normal	t-Test (Equal Variance)	0.260	No
Gutted Fish	9	10.7	12.7	-8.3	37.0	0.592	Normal			

Percent Delta = (Total mercury, dry weight - Methylmercury, dry weight) / Total mercury, dry weight × 100%

Percent Delta may be considered as the percentage of total mercury which is not methylmercury (i.e., inorganic mercury).

Only data analyzed for both total mercury and methylmercury are used in this evaluation.



Note: Percent Delta = (Total mercury, dry weight - Methylmercury, dry weight) / Total mercury, dry weight × 100%. Percent Delta may be considered as the percentage of total mercury which is NOT methylmercury (i.e., inorganic mercury).

Figure 5. Distribution of Percent Inorganic Mercury in Whole Body and Gutted Fish

3.2 WATER QUALITY RESULTS

Water quality parameters, including conductivity, temperature, pH, and dissolved oxygen were measured at all fish sampling locations. These data are presented in **Table 8** below.

Table 8. Water Quality Data

Sampling Location	Type	Temperature (°C)	Dissolved Oxygen (mg/L, % saturation)	Conductivity (µm/cm)	pH
Guadalupe River at Coleman Ave. [1]	Stream	20.3	7.4, 84%	721	7.5
Guadalupe River at Foxworthy Ave. [2]	Stream	22.8 20.4	9.5, 111% 8.1, 90%	432 421	8.2 8.1
Guadalupe Creek below Masson Dam fish ladder [3]	Stream	13.8	10.7, 103%	264	7.8
Alamitos Creek at Graystone Lane [4]	Stream	21.3	10.2, 108%	442	8.0, 8.4
Alamitos Creek at Harry Road [5]	Stream	15.5	8.9, 90%	359	8.0
Guadalupe Reservoir[6]	Lake	-	-	-	-

Table 8. Water Quality Data

Sampling Location	Type	Temperature (°C)	Dissolved Oxygen (mg/L, % saturation)	Conductivity (µm/cm)	pH
Lake Almaden	Lake	28.3	Meter broke	441	7.2
Almaden Reservoir	Lake	23.5	Meter broke	332	7.2
Calero Reservoir	Lake	25.8	Meter broke	403	6.9

ng/g dw = nanograms per gram dry weight

[1] Downstream of the confluence of Los Gatos Creek and the confluence of Canoas Creek

[2] Downstream of the confluence of Ross Creek and the confluence of Alamitos Creek, sampled over the course of two days

[3] Downstream of Guadalupe Reservoir; upstream of Alamitos Creek and Meridian Avenue

[4] Downstream of the confluence of Arroyo Calero. Sampled over the course of two days.

[5] Downstream of Alamaden Reservoir

[6] No data collected due to broken meter and use of minnow traps.

3.3 COMPARISON TO NUMERIC TARGETS

The Basin Plan for mercury in the Guadalupe River watershed set forth numeric targets for mercury in fish tissue that, if attained, may provide for the protection of ecological and human health. The numeric targets for fish tissue mercury concentrations are:

- 0.05 mg/kg methylmercury fish average wet-weight concentration in whole trophic level 3 fish 5–15 cm in length, and
- 0.1 mg/kg methylmercury fish average wet-weight concentration measured in whole trophic level 3 fish 15–35 cm in length

All of the fish collected were trophic level 3 fish that were 5 to 15 cm in length. Total mercury and methylmercury concentrations for these fish, on a wet weight basis, are shown on Tables 3 and 4. None of the sampling locations met the numeric fish tissue target of 0.05 mg/kg wet weight methylmercury.

4.1 RECOMMENDATIONS FOR YEAR 2

This sampling effort represents the first year of sampling in a five-year program. The following recommendations are proposed for the second year sampling events.

- Analyze all fish samples for total mercury, but not methylmercury. Scientific literature has established that more than 90% of the total mercury in fish tissue is from methylmercury (Bloom 1992). Although these data were primarily based on larger fish, the results of the first year of sampling confirmed this finding for small fish in the Guadalupe River watershed.
- Analyze whole body fish. The results from the first year of sampling indicated that the presence of total mercury in the gut is not overly influencing the total mercury result or masking the underlying methylmercury signal.
- Permanently move the upper Guadalupe Creek sampling location (planned for Meridian Avenue) upstream to just below the Masson Dam fish ladder on Guadalupe Creek. The original upper Guadalupe Creek sampling site was moved to this location because vegetation density prevented sampling efficiently when water flow was elevated.

Bloom, NS (1992). On the Chemical Form of Mercury in Edible Fish and Marine Invertebrate Tissue. *Canadian Journal of Fisheries and Aquatic Sciences*, 49:1010-1017.

McGinnis, Samuel M. 2006. Field Guide to Freshwater Fishes of California. California Natural History Guides. 505 pp.

Moyle, Peter B. 2002. Inland Fishes of California. University of California Press, Ltd. 502 pp.

NMFS. 2000. Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act. June.

URS Corporation. 2010. Guadalupe River Coordinated Monitoring Plan. Prepared for the County of Santa Clara Parks Department. November 15.

USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002.

Appendix A

Field Datasheets

Site 1

SCVWD Fish Tissue Sampling for Mercury Page 1 of 2

Sampling #/Location:	Coleman Bridge	Weather:	Sunny 85°
Date:	06/21/2011	GPS Lat (DMS):	-121.90005
Time:	10:00	GPS Long (DMS):	37.335818

Water Quality Parameters	
Temperature (deg C):	~~NA~~ 20.22 °C
D.O. (mg/L):	7.41 ~~NA~~ ~~/probe non-functional~~
D.O. (%):	83.5 NA
Conductivity (us/cm):	~~752~~ 721
pH:	7.5

E-fisher settings		
Voltage:	160 V	
Duty Cycle (Hz):	25%	
Output (A):	~~0.8-1~~ 0.6-1	
Shocking seconds	2043 S	F=50Hz

Fish Sampling

#	Species	Fork L (mm)		Weight(g)	Ray Count	Condition	Disposition	
1	Red ear sunfish	75						
2	Roach	50	45	1.5	D:9 A:8		CB-R2	1
3	Red ear	95						
4	"	71						
5	"	69						
6	"	71						
7	"	67						
8	Roach	48	43	1.4	D:9 A:8		CB-R8	2
9	bass	107						
10	Sculpin	57						
11	Sculpin	62						
12	bass	34						
13	Roach	62	55	2.9	D:9 A:7		CB-Roach 13	3
14	trout	133		30.1		good		
15	trout	141		38.8		good		
16	Roach	58	52	2.9	D:9 A:7		CB-Roach 16	4
17	Roach	55	49	1.7	D:9 A:8		CB-Roach 17	5
18	Roach	52 ~~32~~	46	1.7	D:8 A:8		CB-Roach 18	6
19	Roach	45	41	0.9	D:9 A:7		CB-Roach 19	7
20	Roach *no Hg analysis	93/83	~~45~~	6.4	D:8 A:7		CB-Roach 20	8

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

Site 1

SCVWD Fish Tissue Sampling for Mercury Page 2 of 2

Sampling #/Location: Coleman Bridge Date: 6/21/11

Fish Sampling

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition	
21	Sculpin	65					
22	Sculpin	52					
23	Roach	56 / 50	1.9	D:9 A:8		CB - Roach 21	9
24	bluegill	77					
25	Roach	46 / 40	1.0	D:9 A:7		CB - Roach ~~20~~ 25	10
26	Roach / gutted wt 4.4g	72 / 65	5.2	D:8 A:7	gutted, male roe wt 4.4	CB - Roach 26 THg	11
27	Roach	58 / 52	2.7	D:8 A:8	7 gutted wt 2.4	CB - Roach 27 MeHg	12
28	Roach	54 / 49	2.4	D:8 A:~~8~~	7	CB - Roach 28	13
29	Roach	51 / 46	1.8	D:8 A:~~8~~	7	CB - Roach 29	14
30	Roach	49 / 44	1.5	D:8 A:~~8~~	7	CB - Roach 30	15
31	Roach 54	~~52~~ / 48	1.7	D:8 A:7		CB - Roach 31	16
32	Roach	60 / 53	2.9	D:9 A:7		CB - Roach 32	17
33	Roach	47 / 43	1.3	D:9 A:7		CB - Roach 33	18
34	Roach	56 / 49	2.2	D:8 A:7	whole MeHg	CB - Roach 34 MeHg	19
35	Roach	49 / 43	1.4	D:9 A:7		CB - Roach 35	20
36	Roach	48 / 43	1.4	D:9 A:6		CB - Roach 36	21
37	Roach	46 / 41	1.1	D:9 A:7		CB - Roach 37	22
38	Roach	44 / 39	1.0	D:9 A:7		CB - Roach 38	23
39	Roach	48 / 42	1.4	D:8 A:7		CB - Roach 39	24
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

AM:
- SUCKERS >200 small ~4-6cm
- Sculpin ~5
- bluegill ~10
- Juvenile roach >200 2-3 cm

~2-3 bass
2 trout (3 more observed, not caught ~ total 5 ~all about same size)

Site 2

SCVWD Fish Tissue Sampling for Mercury Page 1 of ~~3~~ 4

Sampling #/Location: Foxworthy Bridge	Weather: warm, clear
Date: 6/22/2011	GPS Lat (DMS):
Time: 0900 - 1230	GPS Long (DMS):

Water Quality Parameters
Temperature (deg C): 20.4
D.O. (mg/L): ~~89.7~~ 8.06
D.O. (%): 89.7%
Conductivity (us/cm): 421
pH: 8.08

E-fisher settings
Voltage: 205
Duty Cycle (Hz): ~~50 Hz~~ 30 %
Output (A): ≈1.3
1335 - shocking seconds
Freq = 50 Hz

Fish Sampling

#	Species	Standard L/ Fork L (mm)	Weight(g)	Dorsal/Anal Ray Count	Condition	Disposition	
1	Prickly Sculpin	53/63			Captured under	Released	
2	" "	92/107			Foxworthy	" "	
3	" "	78/92			Bridge	" "	
4	" "	58/69				" "	
5							
6					Fish from ~500m downstream of Bridge		
7	Largemouth Bass	179/200				Released	
8	Roach	60/65	4.3	9/7	whole	FX - R8 Thg	1
9	Roach	49/55	2.1	9/7	" "	FX - R9 Thg	2
10	Roach	63/69	5.1	8/7	" "	FX - R10 Thg	3
11	Roach	67/75	6.5	9/7	" "	FX - R11 Thg	4
~~12~~		~~93/104~~					
~~13~~ 12	Roach	93/104	16.4	9/7	whole	FX - R12	5
14	Largemouth Bass	32/36				Released	
15	Prickly Sculpin	60/50					
16	" "	51/41					
17	Roach	54/48	2.3	9/7		FX - R17	6
18	Rainbow Trout (SH)	108/117	21.0				
19	" "	114/125	28.5				
20	" "	114/122	24.8				

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

SH = Steel head

Site 2

SCVWD Fish Tissue Sampling for Mercury Page 2 of 4

Sampling #/Location: Foxworthy Bridge Date: 6/22/11

Fish Sampling Stanford

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition	
21	Rainbow trout stocked	123/133	30.8				
22	Roach	82/89	9.8	8/7	~~whole~~ Gutted MEHG	FX-R22	7 - Methyl Mercury
23	Roach	80/92	10.8	8/6	Gutted THG	FX-R23	8 - Total Mercury
24	Roach	87/77	6.3	9/7		FX-R24	9
25	Prickly ~~Sculpin~~ Sculpin	45/55					
26	Prickly Sculpin	46/53					
27	Largemouth Bass	38/42					
28	" "	37/42					
29	Sucker	74/68	5.6			FX-29	1
30	"	59/53	2.9			FX-S30	2
31		74/67	5.3			FX-S31	3
32		72/62	4.9			FX-S32	4
33		67/58	4.6			FX-S33	5
34		72/63	4.9			FX-S34	6
35		68/59	4.4			FX-S35	7
36		76/67	6.7			FX-S36	8
37		70/61	5.4			FX-S37	9
38		72/65	4.8			FX-S38	10
39		67/59	3.9			FX-S39	11
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

gutted wt 8.4g

gutted wt. 9.8g

Site 2

Sampling #/Location: Foxworthy Bridge	Weather: Clear 90s
Date: 6/23/2011	GPS Lat (DMS):
Time: 12:57	GPS Long (DMS):

Water Quality Parameters
Temperature (deg C): 22.8°c
D.O. (mg/L): 9.51
D.O. (%): 110.5
Conductivity (us/cm): 432
pH: 8.24

E-fisher settings
Voltage: 200
Duty Cycle (Hz): 20% 35 Hz
Output (A): 0.8
Seconds: 1416

Fish Sampling		Fork/Standard		D/A			
#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition	
1	Steelhead	129/115	31.7				
2	large mouth bass	210/182					
3	Steelhead	123/110	25.7				
4	large mouth bass	210/178					
5	large mouth bass	225/194					
6	roach	121/110	23.5	9/8		F2-R6	
7	roach	89/84	13.4	8/7		F2-R7	
8	roach	133/120	32.4	9/7		F2-R8	
9	roach	88/81	11.7	9/7		F2-R9	
10	roach	140/129	38.6	9/8	Gutted MeHg	F2-R10	gutted wt. 32.8
11	roach	64/59	3.7	8/6		F2-R11	
12	roach	70/64	5.5	8/6		F2-R12	
13	roach	124/114	26.7	8/7	Gutted THg	F2-R13	Gutted wt. 20.2
14	roach	117/105	26.3	9/7	Whole MeHg	F2-R14	
15	roach	70/64	4.4	8/7		F2-R15	
16	roach	101/92	15.9	9/8		F2-R16	
17	roach	114/104	23.2	9/7		F2-R17	
18	roach	80/72	6.6	9/8		F2-R18	
19	roach	70/62	5.3	8/8		F2-R19	
20	roach	65/59	4.0	8/6		F2-R20	

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

Site 2

SCVWD Fish Tissue Sampling for Mercury Page 4 of 4

Sampling #/Location: Date:

Fish Sampling Fork/Stand

#	Species	~~Fork L~~ (mm)	Weight(g)	Ray Count	Condition	Disposition
21	roach	86/78	9.6	9/8		F2-R21
22	unknown minnow	59/53			Not for analysis	NA3-01
23	roach	74/67	5.1	9/7		F2-R23
24	sac sucker	132/119				
25	prickly sculpin	129/111				
26	bluegill	119/100				
27	sac sucker	63/57				
28	sac sucker	62/54				
29	" "	69/60				
30	prickly sculpin	70/59				
31	sac sucker	65/58				
32		~~72~~				
33	prickly sculpin	72/61				
34	" "	125/109				
35	sac sucker	68/57				
36	sac sucker	48/42				
37	sac sucker	48/42				
38	prickly sculpin	99/84				
39	" "	104/87				
40	sac sucker	76/67				
41	" "	54/48				
42	" "	33/29				
43	" "	59/52				
44	" "	42/37				
45	prickly sculpin	66/56				
46	" "	66/56				
47	" "	62/51				
48	largemouth bass	37/34				
49	sac sucker	450/NA				
50						

2 other rainbow trout observed.

Site 3

SCVWD Fish Tissue Sampling for Mercury Page 1 of 3

Sampling #/Location: Guadalupe Ck below fish ladder	Weather: warm & sunny (i.e. gorgeous)
Date: 6/27/2011	GPS Lat (DMS):
Time: 1130	GPS Long (DMS):

Water Quality Parameters	
Temperature (deg C):	~~15.75~~ 13.75
D.O. (mg/L):	10.73
D.O. (%):	103.4
Conductivity (us/cm):	264
pH:	7.8

E-fisher settings	
Voltage:	225 V
Duty Cycle (Hz):	30%
Output (A):	0.8
1627 - Seconds	
40Hz - Freq.	

Fish Sampling

#	Species	Fork L (mm) standard	Weight(g)	Ray Count	Condition	Disposition
1	Rainbow trt/steelhead	167/192	NA		small burn on back	Released
2	" "	160/180	75.9			" "
3	" "	172/152	58.9			" "
4		149/130	42.3			" "
5		sniffed				
6	Sac Sucker "	185/210				" "
7	"	167/194				" "
8	~~bluegill~~ green sunfish	74/89				
9	~~bluegill~~ green sunfish	70/85				
10	5 prickly sculpin	81/96				
11	" "	85/102				
12	" "	78/97				
13	" "	106/126				
14	" "	46/54				
15	" "	84/99				
16	" "	83/96				
17	" "	75/91				
18	" "	44/53				
19	" "	56/58				
20	" "	61/72				

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

2 other rainbow trout observed.

Site 3

SCVWD Fish Tissue Sampling for Mercury Page 2 of 3

Sampling #/Location: Guad Ck below fish ladder Date: 6/27/2011

Fish Sampling		Standard		D/A		
#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
21	prickly sculpin	56/68				
22	" "	24/31				
23	" "	76/91				
24	" "	73/88				
25	" "	82/96				
26	" "	54/69				
27	" "	62/73				
28	" "	55/67				
29	" "	55/67				
30	" "	61/74				
31	" "	53/68				
32	Roach	46/53	1.9	9/8		LG-R32
33	" "	52/57	2.8	9/7		LG-R33
34	" "	41/47	1.7	9/8		LG-R34
35	" "	51/58	2.9	9/8		LG-R35
36	" "	35/40	1.0	9/8		LG-R36
37	" "	39/44	1.0	9/8		LG-R37
38	" "	40/46	1.5	9/7		LG-R38
39	" "	34/40	0.9	9/8		LG-R39
40	" "	48/55	1.9	9/8		LG-R40
41	" "	45/53	2.5	9/7		LG-R41
42	" "	35/42	0.9	8/8		LG-R42
43	" "	36/41	0.8	9/8		LG-R43
44	" "	40/46	1.2	9/8		LG-R44
45	" "	42/49	1.6	9/8		LG-R45
46	" "	41/48	1.4	9/8		LG-R46
47	" "	41/47	1.4	9/8		LG-R47
48	" "	50/57	2.5	9/8	gutted THg	LG-R48
49	" "	39/46	1.7	9/8		LG-R49
50	" "	47/54	2.2	9/8		LG-R50

gutted out 229

sculpin may be cliff sculpin

Site 3

SCVWD Fish Tissue Sampling for Mercury Page 3 of 3

Sampling #/Location: Guadalupe Ck below fish ladder Date: 6/27/2011

Fish Sampling Standard D/A

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
5 1	Roach	39/45	1.2	9/8		LG-R51
2	" "	46/54	2.1	9/8		LG-R52
3	" "	47/51	1.6	9/7		LG-R53
4	" "	43/50	1.7	9/8		LG-R54
5	" "	41/47	1.3	9/8		LG-R55
6	" "	41/47	1.3	8/8		LG-R56
7	" "	35/41	0.8	9/7		LG-R57
8	" "	36/42	1.0	9/8		LG-R58
9	" "	68/74	5.9	9/7	gutted-~~MG~~ MeHg	LG-R59
6 30	sac sucker	65/75				
31	" "	86/99				
32	" "	50/59				
33	" "	61/71				
34	" "	56/65				
35	" "	76/88				
36	" "	75/87				
37	" "	75/86				
38	" "	63/74				
39	" "	58/68				
7 40	" "	89/76				
41	" "	61/71				
42	" "	72/83				
43	" "	56/87				
44	" "	64/74				
45	" "	85/98				
46	" "	77/99				
47						
48						
49						
8 50						

gutted wt = 4.3g

Site 4

SCVWD Fish Tissue Sampling for Mercury Page 1 of 2

Sampling #/Location: Alamitos Creek / Greystone	Weather: Warm, sunny
Date: 6/22/2011	GPS Lat (DMS):
Time: 1500 -	GPS Long (DMS):

Water Quality Parameters	
Temperature (deg C):	21.3
D.O. (mg/L):	10.2
D.O. (%):	~~110%~~ 107 %
Conductivity (us/cm):	442
pH:	8.43

E-fisher settings	
Voltage:	200
Duty Cycle/(Hz):	25 % 50 Hz
Output (A):	0.8
~~Sec~~	2619 - 1902 = 717 seconds

Fish Sampling — Fork / Standard

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition	
1	Goldfish	102/85					
2	Sucker	91/89					
3	Sculpin	95/83					
4	Sucker	96/85					
5	Roach	50/45	1.6	D9 A8		AC-R5	1
6	Roach	69/61	4.8	D9 A7		AC-R6	2
7	Roach	53/48	2.2	D8 A7		AC-R7	3
8	~~Roach~~ Sculpin	90/78					
9	Roach	66/60	4.7	D9 A8		AC-R9	4
10	Sucker	86/75					
11	Roach	59/53	3.2	D9 A8		AC-R11	5
12	Roach	59/54	3.5	D9 A7		AC-R12	6
13	Roach	68/64	5.0	D9 A7		AC-R13	7
14	Roach	60/55	3.8	D8 A7		AC-R14	8
15	Roach	55/49	2.0	D8 A7		AC-R15	9
16	Roach	58/51	2.6	D9 A8		AC-R16	10
17	Roach	56/50	2.9	D9 A7		~~AC-R16~~ AC-R17	11
18	Sculpin	105/92					
19	Roach	79/72	7.4	D9 A6	gutted 5.4g ~~THg~~	AC-R19 MeHg	12
20	Roach	95/47	2.0	D8 A8		AC-R20	13

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

Site 4

SCVWD Fish Tissue Sampling for Mercury Page 2 of 2

Sampling #/Location: Alamitos Ck / Grey stone Date: 6/22/2011

Fish Sampling

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition	
21	Roach	55/49	2.3	D: 9 A 7		AC - R21	14
22	Roach	79/72	7.2	D 9 A 7	gutted 5.6g THG	AC - R22	15
23	Sculpin	42/36					
24	Roach	73/67	5.5	D 8 A 7		AC - R 24	16
25	Roach	46/41	1.6	D 8 A6		AC - R25	17
26	Roach	56/50	2.2	D 9 A 8		AC - R26	18
27	Roach	50/45	1.4	D X A 8	Dorsal fin gone	AC - R27	19
28	Sucker	78/69					
29	Sculpin	50/44					
30	Roach	48/43	1.4	D 8 A6		AC - R30	20
31	~~Ro~~ Sculpin	85/73					
32	Sculpin	80/69					
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

Site 5

SCVWD Fish Tissue Sampling for Mercury Page 1 of 2

Sampling #/Location: Los Alamitos Creek at Happy Road Bridge	Weather: Sunny, Clear
Date: 6/23/11	GPS Lat (DMS):
Time: 9:30	GPS Long (DMS):

Water Quality Parameters	
Temperature (deg C):	15.47
D.O. (mg/L):	~~[illegible]~~ 8.98
D.O. (%):	89.8
Conductivity (us/cm):	359
pH:	8.03

E-fisher settings	
Voltage:	210V
Duty Cycle/(Hz):	25% / 50Hz
Output (A):	0.8A
Time = 958sec.	

Fish Sampling		Fork/Standard		D/A		
#	Species	~~Fork~~ (mm)	Weight(g)	Ray Count	Condition	Disposition
1	Roach	58/50	2.2	8/7		HA-R1
2	Roach	71/64	5	9/7	Gutted MeHg	HA-R2
3	Roach	58/51	2.7	9/7		HA-R3
4	Roach	67/61	4.8	8/7		HA-R4
5	Roach	64/58	3.8	9/6		HA-R5
6	Roach	59/52	2.8	8/7		HA-R6
7	Roach	69/61	4.1	9/7		HA-R7
8	Roach	67/60	4.2	9/8		HA-R8
9	Roach	56/50	2.4	9/8		HA-R9
10	Prickly sculpin	110/95				
11	Roach 66/59	~~[illegible]~~	3.4	9/7		HA-R11
12	Roach	58/51	3.1	8/7		HA-R12
13	Sucker	85/75				
14	Roach	69/60	4.9	9/6		HA-R14
15	Roach	54/49	2.2	8/7		HA-R15
16	Roach	67/59	4.2	8/6		HA-R16
17	Roach	54/48	1.9	9/7		HA-R17
18	Sucker	91/80		~~[illegible]~~		
19	Roach	57/51	2.3	9/7		HA-R19
20	Roach	52/46	1.6	8/7		HA-R20

Gutted wt. 4.5

Length 66/59

20 samples per site, 17 whole THg, 1 ~~whole THg and MeHg, 1 gutted THg~~, 1 gutted Thg and MeHg.

1 whole MeHg

Site 5

SCVWD Fish Tissue Sampling for Mercury Page 2 of 2

Sampling #/Location: Harry Ave Bridge Almanitos Cr Date: 06/23/2011

Fish Sampling

#	Species	~~Fork~~ Fork/St (mm)	Weight(g)	Ray Count	Condition	Disposition
21	Prickly Sculpin	96/82				
22	" "	102/88				
23	Roach	52/46	1.5	8/7		HA-R23
24	Roach	47/42	1.2	9/7		HA-R24
25	Roach	47/42	1.1	8/7		HA-R25
26	Roach	56/50	2.4	9/8		HA-R26
27	Roach	55/49	2.3	8/8		HA-R27
28	Roach	52/47	1.9	9/7		HA-R28
29	Roach	62/57	3.1	8/7		HA-R29
30	Roach	59/53	2.8	9/7		HA-R30
31	Roach	64/57	2.9	9/8		HA-R31
32	Roach	72/65	5.0	9/7	Gutted THg	HA-R32
33	Rainbow Tot Steelhead	46/41	1.0		Good	Released
34	Roach	53/48			Good	Released
35	" "	47/43			"	"
36	" "	45/40			"	"
37	" "	44/39			"	"
38	" "	59/52			"	"
39	" "	46/40			"	"
40	" "	46/41			"	"
41	" "	44/38			"	"
42	" "	42/37			"	"
43	" "	43/49			"	"
44	" "	44/38			"	"
45	" "	48/41			"	"
46	" "	40/35			"	"
47	" "	49/42			"	"
48	" "	32/28			"	"
49	" "	48/43			"	"
50						

Gutted wt 4.5

Many YOY/juvenile sucker observed ~ 200

SCVWD Fish Tissue Sampling for Mercury Page 1 of 1

Sampling #/Location: Calero	Weather: Clear 70-80°
Date: 8/29/11	GPS Lat (DMS):
Time: 10:00	GPS Long (DMS):

Water Quality Parameters	
Temperature (deg C):	25.8
D.O. (mg/L):	meter broke
D.O. (%):	
Conductivity (us/cm):	403
pH:	6.9

E-fisher settings	~~120~~ seconds 1765
Voltage:	Hi 100-1000
Duty Cycle (Hz):	30
Output (A):	30% range
	4 amps

Fish Sampling

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
1	LMB	79	6.8	NA	good	Frozen
2	LMB	65	3.8		good	
3	LMB	89	10.4		good	
4	LMB	72	5.4		good	
5	LMB	80	7.2			
6	LMB	81	7.4			
7	LMB	90	11.6			
8	LMB	69	4.9			
9	LMB	63	3.2			
10	LMB	~~69~~ 69	4.2			
11	LMB	61	3.2			
12	LMB	83	7.8			Gutted MHg 7.4
13	LMB	66	3.3			
14	LMB	71	4.8			
15	LMB	90	11.2			Gutted THg 10.3
16	LMB	68	4.1			
17						
18						
19						
20						

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

SCVWD Fish Tissue Sampling for Mercury Page ___ of ___

Sampling #/Location: Date:

Fish Sampling						
#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						

SCVWD Fish Tissue Sampling for Mercury Page ___ of ___

Sampling #/Location:	Lake Almaden	Weather:	Sunny, Clear
Date:	08/29/2011	GPS Lat (DMS):	
Time:	14:34	GPS Long (DMS):	

Water Quality Parameters	
Temperature (deg C):	28.3
D.O. (mg/L):	
D.O. (%):	
Conductivity (us/cm):	441
pH:	7.18

E-fisher settings	272 sec
Voltage:	50-500
Duty Cycle (Hz):	30 Hz 40% Duty Cycle
Output (A):	8-10

Fish Sampling

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
1	LMB	71	5.0	NA		
2	LMB	65	3.6			
3	LMB	80	6.9			
4	LMB	70	4.2			
5	LMB	88	8.8			Gutted 7.4g THg
6	LMB	67	3.3			
7	LMB	84	6.9			
8	LMB	71	4.5			
9	LMB	63	2.9			
10	LMB	90	9.6			Gutted 9.1 g MeHg
11	LMB	65	3.3			
12	LMB	73	5.6			
13	LMB	67	4.3			
14	LMB	89	9.1			
15	LMB	72	4.8			
16	LMB	75	5.4			
17	LMB	89	8.7			
18	LMB	77	6.5			
19	LMB	73	5.2			
20	LMB	86	8.0			

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

SCVWD Fish Tissue Sampling for Mercury Page ___ of ___

Sampling #/Location: Date:

Fish Sampling						
#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						

SCVWD Fish Tissue Sampling for Mercury Page ___ of ___

Sampling #/Location: Almaden Res	Weather: Clear 70's
Date: 3/30/11	GPS Lat (DMS):
Time: 1010	GPS Long (DMS):

Water Quality Parameters	
Temperature (deg C):	23.5
D.O. (mg/L):	
D.O. (%):	
Conductivity (us/cm):	332
pH:	7.18

E-fisher settings	368 SEC
Voltage:	50-500
Duty Cycle (Hz):	60
Output (A):	10
	20% range

Fish Sampling

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
1	LMB	64	3.5			
2	LMB	68	4.0			
3	LMB	65	4.1			
4	LMB	62	3.3			
5	LMB	87	7.9			7.5g gutted MeHg
6	LMB	69	4.4			
7	LMB	65	4.0			
8	LMB	66	4.3			
9	LMB	78	7.7			
10	LMB	86	9.0			8.0g - Gutted THg
11	LMB	61	3.2			
12	LMB	74	5.9			
13	LMB	67	4.0			
14	LMB	62	3.4			
15	LMB	65	4.4			
16	LMB	74	5.2			
17	LMB	78	6.7			
18	LMB	77	6.7			
19	LMB	63	3.5			
20	LMB	67	5.0			

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

SCVWD Fish Tissue Sampling for Mercury Page ___ of ___

Sampling #/Location: Date:

Fish Sampling						
#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						

SCVWD Fish Tissue Sampling for Mercury Page ___ of ___

Sampling #/Location: Guadalupe Res	Weather: Clear, Calm
Date: 9/1/11	GPS Lat (DMS):
Time: 1300	GPS Long (DMS):

Water Quality Parameters	
Temperature (deg C):	
D.O. (mg/L):	
D.O. (%):	
Conductivity (us/cm):	
pH:	

E-fisher settings Minnow traps	
Voltage:	
Duty Cycle (Hz):	
Output (A):	

Fish Sampling

#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
1	Green Sunfish (GS)	66	4.7			
2	GS	74	6.3			
3	GS	61	4.0			
4	GS	76	5.7			5.3 gutted THg
5	GS	65	4.7			
6	GS	63	3.9			
7	GS	72	6.8			
8	GS	78	7.7			7.4 gutted MeHg
9	LMB	74	4.9			
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

20 samples per site, 17 whole THg, 1 whole THG and MeHg, 1 gutted THg, 1 gutted Thg and MeHg.

SCVWD Fish Tissue Sampling for Mercury Page ___ of ___

Sampling #/Location: Date:

Fish Sampling						
#	Species	Fork L (mm)	Weight(g)	Ray Count	Condition	Disposition
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						

Appendix B

Analytical Results

The results of the mercury analysis of both stream and reservoir fish specimens are presented below.

STREAM SAMPLING RESULTS

The results of the mercury and methylmercury analysis of stream fish specimens are presented in **Table B-1**.

Table B-1. Analytical Results for the Stream Samples

Sample ID	Date Collected	Mercury (ng/g dw)	Mercury (mg/kg ww)	Methyl-mercury (ng/g dw)	Methyl-mercury (mg/kg ww)	Percent Solids (%)	Weight (g)	Gutted?
Site #1. Guadalupe River at Coleman Ave.								
CB-R2	6/21/2011	549	0.11	--	--	20.24	1.5	
CB-R13	6/21/2011	827	0.17	--	--	20.76	2.9	
CB-R16	6/21/2011	630	0.16	--	--	25.96	2.9	
CB-R17	6/21/2011	493	0.13	--	--	25.63	1.7	
CB-R18	6/21/2011	652	0.14	--	--	21.86	1.7	
CB-R19	6/21/2011	759	0.18	--	--	23.4	0.9	
CB-R21	6/21/2011	589	0.13	--	--	22.48	1.9	
CB-R26	6/21/2011	703	0.15	576	0.119	20.68	4.4	yes
CB-R27	6/21/2011	649	0.15	--	--	23.6	2.4	yes
CB-R28	6/21/2011	550	0.12	--	--	22.13	2.4	
CB-R29	6/21/2011	631	0.14	--	--	22.65	1.8	
CB-R30	6/21/2011	563	0.15	--	--	26.02	1.5	
CB-R31	6/21/2011	652	0.18	--	--	26.9	1.7	
CB-R32	6/21/2011	546	0.13	--	--	23.61	2.9	
CB-R33	6/21/2011	541	0.13	--	--	24.13	1.3	
CB-R34	6/21/2011	568	0.13	449	0.102	22.66	2.2	
CB-R35	6/21/2011	480	0.12	--	--	25.9	1.4	
CB-R36	6/21/2011	540	0.13	--	--	24.28	1.4	
CB-R37	6/21/2011	523	0.12	--	--	23.78	1.1	
CB-R39	6/21/2011	533	0.13	--	--	24.91	1.4	
Site #2. Guadalupe River at Foxworthy Ave.								
FX-R8	6/22/2011	1380	0.35	--	--	25.07	4.3	
FX-R10	6/22/2011	1270	0.29	--	--	22.47	5.1	
FX-R11	6/22/2011	1020	0.25	--	--	24.5	6.5	
FX-R12	6/22/2011	2700	0.64	--	--	23.63	16.4	

Table B-1. Analytical Results for the Stream Samples

Sample ID	Date Collected	Mercury (ng/g dw)	Mercury (mg/kg ww)	Methyl-mercury (ng/g dw)	Methyl-mercury (mg/kg ww)	Percent Solids (%)	Weight (g)	Gutted?
FX-R24	6/22/2011	2130	0.47	--	--	21.93	6.3	
F2-R6	6/23/2011	2370	0.53	--	--	22.19	23.5	
F2-R7	6/23/2011	1160	0.31	--	--	26.36	13.4	
F2-R8	6/23/2011	1470	0.38	--	--	25.57	32.4	
F2-R9	6/23/2011	1730	0.45	--	--	25.89	11.7	
F2-R10	6/23/2011	1890	0.40	1820	0.385	21.09	32.8	yes
F2-R12	6/23/2011	1340	0.32	--	--	23.98	5.5	
F2-R13	6/23/2011	3080	0.61	--	--	19.78	20.2	yes
F2-R14	6/23/2011	1090	0.30	898	0.246	27.35	26.3	
F2-R15	6/23/2011	1980	0.43	--	--	21.55	4.4	
F2-R16	6/23/2011	1830	0.39	--	--	21.21	15.9	
F2-R17	6/23/2011	1250	0.32	--	--	25.31	23.2	
F2-R18	6/23/2011	1780	0.42	--	--	23.65	6.6	
F2-R19	6/23/2011	1070	0.30	--	--	28.29	5.3	
F2-R21	6/22/2011	1500	0.41	--	--	27.24	9.6	
F2-R23	6/22/2011	1730	0.38	--	--	21.91	5.1	
Site #3. Guadalupe Creek below Masson Dam fish ladder (upstream of Meridian Ave.)								
LG-R32	6/27/2011	1300	0.39	--	--	30.25	1.9	
LG-R33	6/27/2011	1660	0.45	1320	0.359	27.22	2.8	
LG-R34	6/27/2011	2100	0.57	--	--	27.11	1.7	
LG-R35	6/27/2011	1460	0.38	--	--	25.93	2.9	
LG-R38	6/27/2011	1580	0.45	--	--	28.73	1.5	
LG-R40	6/27/2011	1790	0.46	--	--	25.36	1.9	
LG-R41	6/27/2011	1540	0.43	--	--	28.16	2.5	
LG-R44	6/27/2011	1670	0.42	--	--	25.35	1.2	
LG-R45	6/27/2011	1550	0.41	--	--	26.5	1.6	
LG-R46	6/27/2011	1650	0.45	--	--	27.43	1.4	
LG-R47	6/27/2011	1830	0.46	--	--	25.32	1.4	
LG-R48	6/27/2011	1930	0.43	--	--	22.42	2.5	yes
LG-R49	6/27/2011	1660	0.44	--	--	26.32	1.7	
LG-R50	6/27/2011	1680	0.43	--	--	25.77	2.2	

Table B-1. Analytical Results for the Stream Samples

Sample ID	Date Collected	Mercury (ng/g dw)	Mercury (mg/kg ww)	Methyl-mercury (ng/g dw)	Methyl-mercury (mg/kg ww)	Percent Solids (%)	Weight (g)	Gutted?
LG-R52	6/27/2011	1520	0.41	--	--	26.75	2.1	
LG-R53	6/27/2011	1380	0.39	--	--	28.23	1.6	
LG-R54	6/27/2011	1390	0.40	--	--	28.78	1.7	
LG-R55	6/27/2011	1300	0.34	--	--	25.79	1.3	
LG-R56	6/27/2011	1450	0.36	--	--	24.56	1.3	
LG-R59	6/27/2011	3990	0.69	3630	0.628	17.32	5.9	yes
Site #4. Alamitos Creek at Graystone Lane								
AC-R5	6/22/2011	1760	0.41	--	--	23.39	1.6	
AC-R6	6/22/2011	1510	0.38	--	--	24.96	4.8	
AC-R7	6/22/2011	1990	0.45	--	--	22.45	2.2	
AC-R9	6/22/2011	1240	0.33	--	--	26.45	4.7	
AC-R11	6/22/2011	1070	0.31	--	--	28.85	3.2	
AC-R12	6/22/2011	1780	0.44	--	--	24.94	3.5	
AC-R13	6/22/2011	1610	0.42	--	--	26.29	5	
AC-R14	6/22/2011	1450	0.36	--	--	24.62	3.8	
AC-R15	6/22/2011	1540	0.37	--	--	24.21	2	
AC-R16	6/22/2011	1240	0.32	--	--	25.79	2.6	
AC-R17	6/22/2011	1160	0.33	--	--	28.63	2.9	
AC-R19	6/22/2011	3300	0.73	2080	0.458	22.07	5.4	yes
AC-R20	6/22/2011	1360	0.34	--	--	24.7	2	
AC-R21	6/22/2011	1270	0.35	--	--	27.47	2.3	
AC-R22	6/22/2011	2570	0.63	--	--	24.61	5.6	yes
AC-R24	6/22/2011	1650	0.38	1240	0.285	22.93	5.5	
AC-R25	6/22/2011	1390	0.38	--	--	26.95	1.6	
AC-R26	6/22/2011	1510	0.40	--	--	26.75	2.2	
AC-R27	6/22/2011	2210	0.52	--	--	23.54	1.4	
AC-R30	6/22/2011	2350	0.53	--	--	22.56	1.4	
Site #5. Alamitos Creek at Harry Road								
HA-R2	6/23/2011	3250	0.68	2860	0.597	20.89	4.5	yes
HA-R3	6/23/2011	2030	0.45	--	--	21.87	2.7	
HA-R4	6/23/2011	2940	0.74	--	--	25.06	4.8	

Table B-1. Analytical Results for the Stream Samples

Sample ID	Date Collected	Mercury (ng/g dw)	Mercury (mg/kg ww)	Methyl-mercury (ng/g dw)	Methyl-mercury (mg/kg ww)	Percent Solids (%)	Weight (g)	Gutted?
HA-R5	6/23/2011	3220	0.70	--	--	21.7	3.8	
HA-R6	6/23/2011	3080	0.70	--	--	22.67	2.8	
HA-R7	6/23/2011	5290	1.15	--	--	21.67	4.1	
HA-R8	6/23/2011	3250	0.74	--	--	22.78	4.2	
HA-R9	6/23/2011	1660	0.41	--	--	24.89	2.4	
HA-R11	6/23/2011	3320	0.71	--	--	21.54	3.4	
HA-R12	6/23/2011	2370	0.57	--	--	23.94	3.1	
HA-R14	6/23/2011	3970	0.96	1570	0.378	24.16	4.9	
HA-R15	6/23/2011	1850	0.47	--	--	25.55	2.2	
HA-R16	6/23/2011	3560	0.80	--	--	22.46	4.2	
HA-R19	6/23/2011	3310	0.71	--	--	21.5	2.3	
HA-R26	6/23/2011	1770	0.46	--	--	25.98	2.4	
HA-R27	6/23/2011	1600	0.39	--	--	24.59	2.3	
HA-R29	6/23/2011	2820	0.69	--	--	24.47	3.1	
HA-R30	6/23/2011	1790	0.46	--	--	25.52	2.8	
HA-R31	6/23/2011	2730	0.65	--	--	23.69	2.9	
HA-R32	6/23/2011	3820	0.90	--	--	23.42	4.5	yes

g = gram

ng/g dw = nanograms per gram, dry weight

mg/kg ww = milligrams per kilogram, wet weight

RESERVOIR AND LAKE SAMPLING RESULTS

The results of the mercury and methylmercury analysis of reservoir fish specimens are presented in **Table B-2**.

Table B-2. Analytical Results for Reservoir and Lake Samples

Sample ID	Date Collected	Mercury (ng/g dw)	Mercury (mg/kg ww)	Methyl-mercury (ng/g dw)	Methyl-mercury (mg/kg ww)	Percent Solids (%)	Weight (g)	Gutted?
Site #1. Calero Reservoir								
CR-LMB01	8/29/2011	337	0.07	--	--	20.91	6.8	
CR-LMB02	8/29/2011	431	0.10	--	--	23.45	3.8	
CR-LMB03	8/29/2011	851	0.18	--	--	21.54	10.4	
CR-LMB04	8/29/2011	440	0.09	--	--	20.76	5.4	
CR-LMB05	8/29/2011	454	0.10	--	--	21.23	7.2	
CR-LMB06	8/29/2011	515	0.12	--	--	22.9	7.4	
CR-LMB07	8/29/2011	1320	0.28	--	--	20.95	11.6	
CR-LMB08	8/29/2011	351	0.08	--	--	21.83	4.9	
CR-LMB09	8/29/2011	287	0.07	--	--	24.85	3.2	
CR-LMB10	8/29/2011	427	0.09	--	--	21.18	4.2	
CR-LMB11	8/29/2011	338	0.08	--	--	23.85	3.2	
CR-LMB12	8/29/2011	444	0.09	481	0.0989	20.55	7.4	yes
CR-LMB13	8/29/2011	347	0.07	--	--	21.33	3.3	
CR-LMB14	8/29/2011	463	0.11	--	--	23.53	4.8	
CR-LMB15	8/29/2011	763	0.14	860	0.157	18.24	10.3	
CR-LMB16	8/29/2011	372	0.09	--	--	23.72	4.1	
Site #2. Lake Almaden								
LA-LMB01	8/29/2011	2310	0.51	--	--	21.84	5	
LA-LMB02	8/29/2011	2590	0.58	--	--	22.43	3.6	
LA-LMB03	8/29/2011	3060	0.71	--	--	23.3	6.9	
LA-LMB04	8/29/2011	3360	0.67	--	--	20	4.2	
LA-LMB05	8/29/2011	3570	0.73	--	--	20.54	7.4	yes
LA-LMB06	8/29/2011	3330	0.69	--	--	20.69	3.3	
LA-LMB07	8/29/2011	3050	0.72	3380	0.796	23.55	6.9	
LA-LMB08	8/29/2011	3490	0.74	--	--	21.33	4.5	
LA-LMB09	8/29/2011	2750	0.58	--	--	21.14	2.9	
LA-LMB10	8/29/2011	3570	0.66	3580	0.667	18.61	9.1	yes

Table B-2. Analytical Results for Reservoir and Lake Samples

Sample ID	Date Collected	Mercury (ng/g dw)	Mercury (mg/kg ww)	Methyl-mercury (ng/g dw)	Methyl-mercury (mg/kg ww)	Percent Solids (%)	Weight (g)	Gutted?
LA-LMB11	8/29/2011	2870	0.63	--	--	21.96	3.3	
LA-LMB12	8/29/2011	1680	0.38	--	--	22.6	5.6	
LA-LMB13	8/29/2011	1820	0.44	--	--	24.08	4.3	
LA-LMB14	8/29/2011	3410	0.70	--	--	20.66	9.1	
LA-LMB15	8/29/2011	3520	0.72	--	--	20.45	4.8	
LA-LMB16	8/29/2011	3370	0.73	--	--	21.74	5.4	
LA-LMB17	8/29/2011	3480	0.74	--	--	21.34	8.7	
LA-LMB18	8/29/2011	2370	0.54	--	--	23	6.5	
LA-LMB19	8/29/2011	2970	0.68	--	--	22.74	5.2	
LA-LMB20	8/29/2011	3670	0.83	--	--	22.5	8	
Site #3. Almaden Reservoir								
AR-LMB01	8/30/2011	3630	0.80	--	--	21.94	3.5	
AR-LMB02	8/30/2011	4230	0.89	--	--	21.11	4	
AR-LMB03	8/30/2011	2890	0.65	--	--	22.38	4.1	
AR-LMB04	8/30/2011	3770	0.88	--	--	23.23	3.3	
AR-LMB05	8/30/2011	3590	0.75	3170	0.664	20.96	7.5	yes
AR-LMB06	8/30/2011	4240	1.00	--	--	23.56	4.4	
AR-LMB07	8/30/2011	3410	0.72	--	--	21.15	4	
AR-LMB08	8/30/2011	3470	0.79	--	--	22.77	4.3	
AR-LMB09	8/30/2011	3270	0.74	3060	0.689	22.55	7.7	
AR-LMB10	8/30/2011	7210	1.58	--	--	21.96	8	yes
AR-LMB11	8/30/2011	2700	0.60	--	--	22.04	3.2	
AR-LMB12	8/30/2011	3150	0.75	--	--	23.78	5.9	
AR-LMB13	8/30/2011	4210	0.93	--	--	22.03	4	
AR-LMB14	8/30/2011	2380	0.55	--	--	23.14	3.4	
AR-LMB15	8/30/2011	2300	0.56	--	--	24.19	4.4	
AR-LMB16	8/30/2011	4850	0.95	--	--	19.67	5.2	
AR-LMB17	8/30/2011	3410	0.72	--	--	21.17	6.7	
AR-LMB18	8/30/2011	5210	1.08	--	--	20.81	6.7	
AR-LMB19	8/30/2011	4010	0.88	--	--	21.93	3.5	
AR-LMB20	8/30/2011	2520	0.56	--	--	22.06	5	

Table B-2. Analytical Results for Reservoir and Lake Samples

Sample ID	Date Collected	Mercury (ng/g dw)	Mercury (mg/kg ww)	Methyl-mercury (ng/g dw)	Methyl-mercury (mg/kg ww)	Percent Solids (%)	Weight (g)	Gutted?
Site #4. Guadalupe Reservoir								
GR-GS01	9/1/2011	2910	0.74	--	--	25.32	4.7	
GR-GS02	9/1/2011	2810	0.74	--	--	26.42	6.3	
GR-GS03	9/1/2011	2920	0.69	--	--	23.49	4	
GR-GS04	9/1/2011	4900	1.25	--	--	25.45	5.3	yes
GR-GS05	9/1/2011	3030	0.79	--	--	26	4.7	
GR-GS06	9/1/2011	2160	0.55	--	--	25.52	3.9	
GR-GS07	9/1/2011	3460	0.83	2820	0.677	24.05	6.8	
GR-GS08	9/1/2011	3650	0.85	3160	0.736	23.34	7.4	yes
GR-GS09	9/1/2011	2670	0.55	--	--	20.62	4.9	

g = gram

ng/g dw = nanograms per gram, dry weight

mg/kg ww = milligrams per kilogram, wet weight

Appendix C

Laboratory Reports and QA-QC Memo

October 18, 2011

URS - Oakland
ATTN: Elizabeth Nielsen
1333 Broadway, Suite 800
Oakland, CA 94612
elizabeth_nielsen@urscorp.com

RE: Project URS-OA1101 Client Project ID: 26817576

Dear Ms. Nielsen,

On September 16, 2011, Brooks Rand Labs (BRL) received sixty-five (65) small fish samples. The samples were split into two work orders and were logged-in for the contracted analyses of homogenization, total mercury (Hg), and methylmercury (MeHg) according to the chain-of-custody (COC) forms. The samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

Note: Results were reported on both a wet-weight and dry-weight basis.

The results were blank-corrected as described in the calculations section of the relevant SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact me if you have any questions regarding this report.

Sincerely,

Jen Hartmann
Project Manager
jen@brooksrand.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations /certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	**MS**	matrix spike
BRL	Brooks Rand Labs	**MSD**	matrix spike duplicate
BS	laboratory fortified blank	**ND**	non-detect
CAL	calibration standard	**NR**	non-reportable
CCV	continuing calibration verification	**PS**	post preparation spike
COC	chain of custody record	**REC**	percent recovery
CRM	certified reference material	**RPD**	relative percent difference
D	dissolved fraction	**RSD**	relative standard deviation
DUP	duplicate	**SCV**	secondary calibration verification
ICV	initial calibration verification	**SOP**	standard operating procedure
MDL	method detection limit	**SRM**	standard reference material
MRL	method reporting limit	**T**	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H Holding time and/or preservation requirements not met. Result is estimated.
J Estimated value. A full explanation is presented in the narrative.
J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N Spike recovery was not within acceptance criteria. Result is estimated.
R Rejected, unusable value. A full explanation is presented in the narrative.
U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
LA-LMB01	1138054-01	Biota	Sample	08/29/2011	09/16/2011
LA-LMB02	1138054-02	Biota	Sample	08/29/2011	09/16/2011
LA-LMB03	1138054-03	Biota	Sample	08/29/2011	09/16/2011
LA-LMB04	1138054-04	Biota	Sample	08/29/2011	09/16/2011
LA-LMB05	1138054-05	Biota	Sample	08/29/2011	09/16/2011
LA-LMB06	1138054-06	Biota	Sample	08/29/2011	09/16/2011
LA-LMB08	1138054-07	Biota	Sample	08/29/2011	09/16/2011
LA-LMB09	1138054-08	Biota	Sample	08/29/2011	09/16/2011
LA-LMB11	1138054-09	Biota	Sample	08/29/2011	09/16/2011
LA-LMB12	1138054-10	Biota	Sample	08/29/2011	09/16/2011
LA-LMB13	1138054-11	Biota	Sample	08/29/2011	09/16/2011
LA-LMB14	1138054-12	Biota	Sample	08/29/2011	09/16/2011
LA-LMB15	1138054-13	Biota	Sample	08/29/2011	09/16/2011
LA-LMB16	1138054-14	Biota	Sample	08/29/2011	09/16/2011
LA-LMB17	1138054-15	Biota	Sample	08/29/2011	09/16/2011
LA-LMB18	1138054-16	Biota	Sample	08/29/2011	09/16/2011
LA-LMB19	1138054-17	Biota	Sample	08/29/2011	09/16/2011
LA-LMB20	1138054-18	Biota	Sample	08/29/2011	09/16/2011
CR-LMB01	1138054-19	Biota	Sample	08/29/2011	09/16/2011
CR-LMB02	1138054-20	Biota	Sample	08/29/2011	09/16/2011
CR-LMB03	1138054-21	Biota	Sample	08/29/2011	09/16/2011
CR-LMB04	1138054-22	Biota	Sample	08/29/2011	09/16/2011
CR-LMB05	1138054-23	Biota	Sample	08/29/2011	09/16/2011
CR-LMB06	1138054-24	Biota	Sample	08/29/2011	09/16/2011
CR-LMB07	1138054-25	Biota	Sample	08/29/2011	09/16/2011
CR-LMB08	1138054-26	Biota	Sample	08/29/2011	09/16/2011
CR-LMB09	1138054-27	Biota	Sample	08/29/2011	09/16/2011
CR-LMB10	1138054-28	Biota	Sample	08/29/2011	09/16/2011
CR-LMB11	1138054-29	Biota	Sample	08/29/2011	09/16/2011
CR-LMB13	1138054-30	Biota	Sample	08/29/2011	09/16/2011
CR-LMB14	1138054-31	Biota	Sample	08/29/2011	09/16/2011
CR-LMB16	1138054-32	Biota	Sample	08/29/2011	09/16/2011
AR-LMB01	1138054-33	Biota	Sample	08/30/2011	09/16/2011
AR-LMB02	1138054-34	Biota	Sample	08/30/2011	09/16/2011
AR-LMB03	1138054-35	Biota	Sample	08/30/2011	09/16/2011
AR-LMB04	1138054-36	Biota	Sample	08/30/2011	09/16/2011
AR-LMB06	1138054-37	Biota	Sample	08/30/2011	09/16/2011
AR-LMB07	1138054-38	Biota	Sample	08/30/2011	09/16/2011
AR-LMB08	1138054-39	Biota	Sample	08/30/2011	09/16/2011
AR-LMB10	1138054-40	Biota	Sample	08/30/2011	09/16/2011
AR-LMB11	1138054-41	Biota	Sample	08/30/2011	09/16/2011

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
AR-LMB12	1138054-42	Biota	Sample	08/30/2011	09/16/2011
AR-LMB13	1138054-43	Biota	Sample	08/30/2011	09/16/2011
AR-LMB14	1138054-44	Biota	Sample	08/30/2011	09/16/2011
AR-LMB15	1138054-45	Biota	Sample	08/30/2011	09/16/2011
AR-LMB16	1138054-46	Biota	Sample	08/30/2011	09/16/2011
AR-LMB17	1138054-47	Biota	Sample	08/30/2011	09/16/2011
AR-LMB18	1138054-48	Biota	Sample	08/30/2011	09/16/2011
AR-LMB19	1138054-49	Biota	Sample	08/30/2011	09/16/2011
AR-LMB20	1138054-50	Biota	Sample	08/30/2011	09/16/2011
GR-GS01	1138054-51	Biota	Sample	09/01/2011	09/16/2011
GR-GS02	1138054-52	Biota	Sample	09/01/2011	09/16/2011
GR-GS03	1138054-53	Biota	Sample	09/01/2011	09/16/2011
GR-GS04	1138054-54	Biota	Sample	09/01/2011	09/16/2011
GR-GS05	1138054-55	Biota	Sample	09/01/2011	09/16/2011
GR-GS06	1138054-56	Biota	Sample	09/01/2011	09/16/2011
GR-GS09	1138054-57	Biota	Sample	09/01/2011	09/16/2011

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Biota	SM 2540G	10/06/2011	10/11/2011	B111521	N/A
%TS	Biota	SM 2540G	10/07/2011	10/11/2011	B111523	N/A
Hg	Biota	EPA 1631 Appendix	10/06/2011	10/07/2011	B111519	1100699
Hg	Biota	EPA 1631 Appendix	10/07/2011	10/13/2011	B111522	1100717

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AR-LMB01										
1138054-33	%TS	Biota	N/A	21.94		0.84	2.80	%	B111523	N/A
1138054-33	Hg	Biota	N/A	3630		28.3	70.7	ng/g dry	B111522	1100717
1138054-33	Hg	Biota	N/A	797		6.20	15.5	ng/g	B111522	1100717
AR-LMB02										
1138054-34	%TS	Biota	N/A	21.11		0.84	2.80	%	B111523	N/A
1138054-34	Hg	Biota	N/A	4230		28.8	72.0	ng/g dry	B111522	1100717
1138054-34	Hg	Biota	N/A	894		6.08	15.2	ng/g	B111522	1100717
AR-LMB03										
1138054-35	%TS	Biota	N/A	22.38		0.84	2.80	%	B111523	N/A
1138054-35	Hg	Biota	N/A	2890		27.2	68.0	ng/g dry	B111522	1100717
1138054-35	Hg	Biota	N/A	646		6.08	15.2	ng/g	B111522	1100717
AR-LMB04										
1138054-36	%TS	Biota	N/A	23.23		0.84	2.80	%	B111523	N/A
1138054-36	Hg	Biota	N/A	3770		25.1	62.9	ng/g dry	B111522	1100717
1138054-36	Hg	Biota	N/A	875		5.84	14.6	ng/g	B111522	1100717
AR-LMB06										
1138054-37	%TS	Biota	N/A	23.56		0.84	2.80	%	B111523	N/A
1138054-37	Hg	Biota	N/A	4240		23.1	57.7	ng/g dry	B111522	1100717
1138054-37	Hg	Biota	N/A	999		5.44	13.6	ng/g	B111522	1100717
AR-LMB07										
1138054-38	%TS	Biota	N/A	21.15		0.84	2.80	%	B111523	N/A
1138054-38	Hg	Biota	N/A	3410		29.9	74.7	ng/g dry	B111522	1100717
1138054-38	Hg	Biota	N/A	721		6.32	15.8	ng/g	B111522	1100717
AR-LMB08										
1138054-39	%TS	Biota	N/A	22.77		0.84	2.80	%	B111523	N/A
1138054-39	Hg	Biota	N/A	3470		27.8	69.4	ng/g dry	B111522	1100717
1138054-39	Hg	Biota	N/A	790		6.32	15.8	ng/g	B111522	1100717
AR-LMB10										
1138054-40	%TS	Biota	N/A	21.96		0.84	2.80	%	B111523	N/A
1138054-40	Hg	Biota	N/A	7210		26.9	67.2	ng/g dry	B111522	1100717
1138054-40	Hg	Biota	N/A	1580		5.90	14.8	ng/g	B111522	1100717
AR-LMB11										
1138054-41	%TS	Biota	N/A	22.04		0.84	2.80	%	B111523	N/A
1138054-41	Hg	Biota	N/A	2700		26.2	65.5	ng/g dry	B111522	1100717
1138054-41	Hg	Biota	N/A	596		5.78	14.4	ng/g	B111522	1100717

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AR-LMB12										
1138054-42	%TS	Biota	N/A	23.78		0.84	2.80	%	B111523	N/A
1138054-42	Hg	Biota	N/A	3150		24.5	61.2	ng/g dry	B111522	1100717
1138054-42	Hg	Biota	N/A	748		5.82	14.5	ng/g	B111522	1100717
AR-LMB13										
1138054-43	%TS	Biota	N/A	22.03		0.84	2.80	%	B111523	N/A
1138054-43	Hg	Biota	N/A	4210		27.8	69.6	ng/g dry	B111522	1100717
1138054-43	Hg	Biota	N/A	928		6.13	15.3	ng/g	B111522	1100717
AR-LMB14										
1138054-44	%TS	Biota	N/A	23.14		0.84	2.80	%	B111523	N/A
1138054-44	Hg	Biota	N/A	2380		24.3	60.9	ng/g dry	B111522	1100717
1138054-44	Hg	Biota	N/A	552		5.63	14.1	ng/g	B111522	1100717
AR-LMB15										
1138054-45	%TS	Biota	N/A	24.19		0.84	2.80	%	B111523	N/A
1138054-45	Hg	Biota	N/A	2300		24.2	60.6	ng/g dry	B111522	1100717
1138054-45	Hg	Biota	N/A	556		5.86	14.7	ng/g	B111522	1100717
AR-LMB16										
1138054-46	%TS	Biota	N/A	19.67		0.84	2.80	%	B111523	N/A
1138054-46	Hg	Biota	N/A	4850		27.4	68.5	ng/g dry	B111522	1100717
1138054-46	Hg	Biota	N/A	954		5.39	13.5	ng/g	B111522	1100717
AR-LMB17										
1138054-47	%TS	Biota	N/A	21.17		0.84	2.80	%	B111523	N/A
1138054-47	Hg	Biota	N/A	3410		28.3	70.8	ng/g dry	B111522	1100717
1138054-47	Hg	Biota	N/A	722		5.99	15.0	ng/g	B111522	1100717
AR-LMB18										
1138054-48	%TS	Biota	N/A	20.81		0.84	2.80	%	B111523	N/A
1138054-48	Hg	Biota	N/A	5210		30.5	76.3	ng/g dry	B111522	1100717
1138054-48	Hg	Biota	N/A	1080		6.35	15.9	ng/g	B111522	1100717
AR-LMB19										
1138054-49	%TS	Biota	N/A	21.93		0.84	2.80	%	B111523	N/A
1138054-49	Hg	Biota	N/A	4010		27.5	68.8	ng/g dry	B111522	1100717
1138054-49	Hg	Biota	N/A	879		6.04	15.1	ng/g	B111522	1100717
AR-LMB20										
1138054-50	%TS	Biota	N/A	22.06		0.84	2.80	%	B111523	N/A
1138054-50	Hg	Biota	N/A	2520		27.2	67.9	ng/g dry	B111522	1100717
1138054-50	Hg	Biota	N/A	557		5.99	15.0	ng/g	B111522	1100717
CR-LMB01										
1138054-19	%TS	Biota	N/A	20.91		0.05	0.15	%	B111521	N/A
1138054-19	Hg	Biota	N/A	337		22.8	56.9	ng/g dry	B111519	1100699
1138054-19	Hg	Biota	N/A	70.6		4.76	11.9	ng/g	B111519	1100699

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
CR-LMB02										
1138054-20	%TS	Biota	N/A	23.45		0.05	0.15	%	B111521	N/A
1138054-20	Hg	Biota	N/A	431		20.3	50.8	ng/g dry	B111519	1100699
1138054-20	Hg	Biota	N/A	101		4.77	11.9	ng/g	B111519	1100699
CR-LMB03										
1138054-21	%TS	Biota	N/A	21.54		0.05	0.15	%	B111521	N/A
1138054-21	Hg	Biota	N/A	851		26.9	67.4	ng/g dry	B111519	1100699
1138054-21	Hg	Biota	N/A	183		5.80	14.5	ng/g	B111519	1100699
CR-LMB04										
1138054-22	%TS	Biota	N/A	20.76		0.05	0.15	%	B111521	N/A
1138054-22	Hg	Biota	N/A	440		26.3	65.9	ng/g dry	B111519	1100699
1138054-22	Hg	Biota	N/A	91.4		5.47	13.7	ng/g	B111519	1100699
CR-LMB05										
1138054-23	%TS	Biota	N/A	21.23		0.05	0.15	%	B111521	N/A
1138054-23	Hg	Biota	N/A	454		24.0	59.9	ng/g dry	B111519	1100699
1138054-23	Hg	Biota	N/A	96.4		5.09	12.7	ng/g	B111519	1100699
CR-LMB06										
1138054-24	%TS	Biota	N/A	22.90		0.05	0.15	%	B111521	N/A
1138054-24	Hg	Biota	N/A	515		22.8	57.0	ng/g dry	B111519	1100699
1138054-24	Hg	Biota	N/A	118		5.22	13.1	ng/g	B111519	1100699
CR-LMB07										
1138054-25	%TS	Biota	N/A	20.95		0.05	0.15	%	B111521	N/A
1138054-25	Hg	Biota	N/A	1320		21.6	53.9	ng/g dry	B111519	1100699
1138054-25	Hg	Biota	N/A	276		4.52	11.3	ng/g	B111519	1100699
CR-LMB08										
1138054-26	%TS	Biota	N/A	21.83		0.05	0.15	%	B111521	N/A
1138054-26	Hg	Biota	N/A	351		24.4	61.0	ng/g dry	B111519	1100699
1138054-26	Hg	Biota	N/A	76.5		5.33	13.3	ng/g	B111519	1100699
CR-LMB09										
1138054-27	%TS	Biota	N/A	24.85		0.05	0.15	%	B111521	N/A
1138054-27	Hg	Biota	N/A	287		24.8	62.0	ng/g dry	B111519	1100699
1138054-27	Hg	Biota	N/A	71.2		6.17	15.4	ng/g	B111519	1100699
CR-LMB10										
1138054-28	%TS	Biota	N/A	21.18		0.05	0.15	%	B111521	N/A
1138054-28	Hg	Biota	N/A	427		27.4	68.6	ng/g dry	B111519	1100699
1138054-28	Hg	Biota	N/A	90.4		5.81	14.5	ng/g	B111519	1100699
CR-LMB11										
1138054-29	%TS	Biota	N/A	23.85		0.05	0.15	%	B111521	N/A
1138054-29	Hg	Biota	N/A	338		21.9	54.8	ng/g dry	B111519	1100699
1138054-29	Hg	Biota	N/A	80.5		5.22	13.1	ng/g	B111519	1100699

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
CR-LMB13										
1138054-30	%TS	Biota	N/A	21.33		0.05	0.15	%	B111521	N/A
1138054-30	Hg	Biota	N/A	347		23.7	59.3	ng/g dry	B111519	1100699
1138054-30	Hg	Biota	N/A	74.1		5.06	12.6	ng/g	B111519	1100699
CR-LMB14										
1138054-31	%TS	Biota	N/A	23.53		0.84	2.80	%	B111523	N/A
1138054-31	Hg	Biota	N/A	463		25.0	62.5	ng/g dry	B111522	1100717
1138054-31	Hg	Biota	N/A	109		5.88	14.7	ng/g	B111522	1100717
CR-LMB16										
1138054-32	%TS	Biota	N/A	23.72		0.84	2.80	%	B111523	N/A
1138054-32	Hg	Biota	N/A	372		25.0	62.5	ng/g dry	B111522	1100717
1138054-32	Hg	Biota	N/A	88.3		5.93	14.8	ng/g	B111522	1100717
GR-GS01										
1138054-51	%TS	Biota	N/A	25.32		0.84	2.80	%	B111523	N/A
1138054-51	Hg	Biota	N/A	2910		22.5	56.2	ng/g dry	B111522	1100717
1138054-51	Hg	Biota	N/A	736		5.69	14.2	ng/g	B111522	1100717
GR-GS02										
1138054-52	%TS	Biota	N/A	26.42		0.84	2.80	%	B111523	N/A
1138054-52	Hg	Biota	N/A	2810		23.1	57.8	ng/g dry	B111522	1100717
1138054-52	Hg	Biota	N/A	742		6.11	15.3	ng/g	B111522	1100717
GR-GS03										
1138054-53	%TS	Biota	N/A	23.49		0.84	2.80	%	B111523	N/A
1138054-53	Hg	Biota	N/A	2920		24.5	61.2	ng/g dry	B111522	1100717
1138054-53	Hg	Biota	N/A	686		5.76	14.4	ng/g	B111522	1100717
GR-GS04										
1138054-54	%TS	Biota	N/A	25.45		0.84	2.80	%	B111523	N/A
1138054-54	Hg	Biota	N/A	4900		21.9	54.8	ng/g dry	B111522	1100717
1138054-54	Hg	Biota	N/A	1250		5.57	13.9	ng/g	B111522	1100717
GR-GS05										
1138054-55	%TS	Biota	N/A	26.00		0.84	2.80	%	B111523	N/A
1138054-55	Hg	Biota	N/A	3030		23.3	58.3	ng/g dry	B111522	1100717
1138054-55	Hg	Biota	N/A	787		6.06	15.2	ng/g	B111522	1100717
GR-GS06										
1138054-56	%TS	Biota	N/A	25.52		0.84	2.80	%	B111523	N/A
1138054-56	Hg	Biota	N/A	2160		22.1	55.2	ng/g dry	B111522	1100717
1138054-56	Hg	Biota	N/A	551		5.63	14.1	ng/g	B111522	1100717
GR-GS09										
1138054-57	%TS	Biota	N/A	20.62		0.84	2.80	%	B111523	N/A
1138054-57	Hg	Biota	N/A	2670		28.5	71.3	ng/g dry	B111522	1100717
1138054-57	Hg	Biota	N/A	551		5.88	14.7	ng/g	B111522	1100717

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
LA-LMB01										
1138054-01	%TS	Biota	N/A	21.84		0.05	0.15	%	B111521	N/A
1138054-01	Hg	Biota	N/A	2310		23.5	58.7	ng/g dry	B111519	1100699
1138054-01	Hg	Biota	N/A	505		5.13	12.8	ng/g	B111519	1100699
LA-LMB02										
1138054-02	%TS	Biota	N/A	22.43		0.05	0.15	%	B111521	N/A
1138054-02	Hg	Biota	N/A	2590		26.0	65.0	ng/g dry	B111519	1100699
1138054-02	Hg	Biota	N/A	581		5.83	14.6	ng/g	B111519	1100699
LA-LMB03										
1138054-03	%TS	Biota	N/A	23.30		0.05	0.15	%	B111521	N/A
1138054-03	Hg	Biota	N/A	3060		24.3	60.9	ng/g dry	B111519	1100699
1138054-03	Hg	Biota	N/A	713		5.67	14.2	ng/g	B111519	1100699
LA-LMB04										
1138054-04	%TS	Biota	N/A	20.00		0.05	0.15	%	B111521	N/A
1138054-04	Hg	Biota	N/A	3360		28.9	72.2	ng/g dry	B111519	1100699
1138054-04	Hg	Biota	N/A	672		5.78	14.4	ng/g	B111519	1100699
LA-LMB05										
1138054-05	%TS	Biota	N/A	20.54		0.05	0.15	%	B111521	N/A
1138054-05	Hg	Biota	N/A	3570		24.8	62.1	ng/g dry	B111519	1100699
1138054-05	Hg	Biota	N/A	734		5.10	12.8	ng/g	B111519	1100699
LA-LMB06										
1138054-06	%TS	Biota	N/A	20.69		0.05	0.15	%	B111521	N/A
1138054-06	Hg	Biota	N/A	3330		24.9	62.3	ng/g dry	B111519	1100699
1138054-06	Hg	Biota	N/A	689		5.16	12.9	ng/g	B111519	1100699
LA-LMB08										
1138054-07	%TS	Biota	N/A	21.33		0.05	0.15	%	B111521	N/A
1138054-07	Hg	Biota	N/A	3490		27.9	69.6	ng/g dry	B111519	1100699
1138054-07	Hg	Biota	N/A	744		5.94	14.9	ng/g	B111519	1100699
LA-LMB09										
1138054-08	%TS	Biota	N/A	21.14		0.05	0.15	%	B111521	N/A
1138054-08	Hg	Biota	N/A	2750		24.5	61.3	ng/g dry	B111519	1100699
1138054-08	Hg	Biota	N/A	582		5.18	13.0	ng/g	B111519	1100699
LA-LMB11										
1138054-09	%TS	Biota	N/A	21.96		0.05	0.15	%	B111521	N/A
1138054-09	Hg	Biota	N/A	2870		25.9	64.7	ng/g dry	B111519	1100699
1138054-09	Hg	Biota	N/A	630		5.69	14.2	ng/g	B111519	1100699
LA-LMB12										
1138054-10	%TS	Biota	N/A	22.60		0.05	0.15	%	B111521	N/A
1138054-10	Hg	Biota	N/A	1680		22.0	54.9	ng/g dry	B111519	1100699
1138054-10	Hg	Biota	N/A	380		4.97	12.4	ng/g	B111519	1100699

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
LA-LMB13										
1138054-11	%TS	Biota	N/A	24.08		0.05	0.15	%	B111521	N/A
1138054-11	Hg	Biota	N/A	1820		24.0	60.1	ng/g dry	B111519	1100699
1138054-11	Hg	Biota	N/A	439		5.79	14.5	ng/g	B111519	1100699
LA-LMB14										
1138054-12	%TS	Biota	N/A	20.66		0.05	0.15	%	B111521	N/A
1138054-12	Hg	Biota	N/A	3410		24.6	61.6	ng/g dry	B111519	1100699
1138054-12	Hg	Biota	N/A	704		5.09	12.7	ng/g	B111519	1100699
LA-LMB15										
1138054-13	%TS	Biota	N/A	20.45		0.05	0.15	%	B111521	N/A
1138054-13	Hg	Biota	N/A	3520		23.8	59.5	ng/g dry	B111519	1100699
1138054-13	Hg	Biota	N/A	720		4.87	12.2	ng/g	B111519	1100699
LA-LMB16										
1138054-14	%TS	Biota	N/A	21.74		0.05	0.15	%	B111521	N/A
1138054-14	Hg	Biota	N/A	3370		26.8	67.1	ng/g dry	B111519	1100699
1138054-14	Hg	Biota	N/A	733		5.83	14.6	ng/g	B111519	1100699
LA-LMB17										
1138054-15	%TS	Biota	N/A	21.34		0.05	0.15	%	B111521	N/A
1138054-15	Hg	Biota	N/A	3480		21.0	52.6	ng/g dry	B111519	1100699
1138054-15	Hg	Biota	N/A	744		4.49	11.2	ng/g	B111519	1100699
LA-LMB18										
1138054-16	%TS	Biota	N/A	23.00		0.05	0.15	%	B111521	N/A
1138054-16	Hg	Biota	N/A	2370		24.4	61.1	ng/g dry	B111519	1100699
1138054-16	Hg	Biota	N/A	544		5.62	14.1	ng/g	B111519	1100699
LA-LMB19										
1138054-17	%TS	Biota	N/A	22.74		0.05	0.15	%	B111521	N/A
1138054-17	Hg	Biota	N/A	2970		23.7	59.3	ng/g dry	B111519	1100699
1138054-17	Hg	Biota	N/A	675		5.39	13.5	ng/g	B111519	1100699
LA-LMB20										
1138054-18	%TS	Biota	N/A	22.50		0.05	0.15	%	B111521	N/A
1138054-18	Hg	Biota	N/A	3670		23.1	57.7	ng/g dry	B111519	1100699
1138054-18	Hg	Biota	N/A	825		5.19	13.0	ng/g	B111519	1100699

Accuracy & Precision Summary

Batch: B111519
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111519-SRM1	**Certified Reference Material (0951025, DORM-3)**								
	Hg		382.0	380.1	ng/g	100%	75-125		
B111519-SRM2	**Certified Reference Material (0951025, DORM-3)**								
	Hg		382.0	382.7	ng/g	100%	75-125		
B111519-DUP3	**Duplicate (1138054-12)**								
	Hg	3408		3749	ng/g dry			10%	30
B111519-MS3	**Matrix Spike (1138054-12)**								
	Hg	3408	14990	18320	ng/g dry	99%	70-130		
B111519-MSD3	**Matrix Spike Duplicate (1138054-12)**								
	Hg	3408	14970	18060	ng/g dry	98%	70-130	1%	30
B111519-DUP4	**Duplicate (1138054-21)**								
	Hg	851.1		804.2	ng/g dry			6%	30
B111519-MS4	**Matrix Spike (1138054-21)**								
	Hg	851.1	16320	17090	ng/g dry	100%	70-130		
B111519-MSD4	**Matrix Spike Duplicate (1138054-21)**								
	Hg	851.1	15790	16060	ng/g dry	96%	70-130	6%	30

Accuracy & Precision Summary

Batch: B111521
Lab Matrix: Biota
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits	
B111521-DUP3	**Duplicate (1138054-03)**							
	%TS	23.30		23.59	%		1%	15
B111521-DUP4	**Duplicate (1138054-18)**							
	%TS	22.50		22.18	%		1%	15

Accuracy & Precision Summary

Batch: B111522
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111522-SRM1	**Certified Reference Material (1051006, DORM-3)**								
	Hg		382.0	398.1	ng/g	104%	75-125		
B111522-SRM2	**Certified Reference Material (1051006, DORM-3)**								
	Hg		382.0	411.3	ng/g	108%	75-125		
B111522-DUP1	**Duplicate (1138054-32)**								
	Hg	372.1		352.5	ng/g dry			5%	30
B111522-MS1	**Matrix Spike (1138054-32)**								
	Hg	372.1	15790	16300	ng/g dry	101%	70-130		
B111522-MSD1	**Matrix Spike Duplicate (1138054-32)**								
	Hg	372.1	16800	17380	ng/g dry	101%	70-130	6%	30
B111522-DUP2	**Duplicate (1138054-35)**								
	Hg	2886		3036	ng/g dry			5%	30
B111522-MS2	**Matrix Spike (1138054-35)**								
	Hg	2886	17590	20650	ng/g dry	101%	70-130		
B111522-MSD2	**Matrix Spike Duplicate (1138054-35)**								
	Hg	2886	17120	20090	ng/g dry	101%	70-130	3%	30
B111522-DUP3	**Duplicate (1138054-52)**								
	Hg	2810		3045	ng/g dry			8%	30
B111522-MS3	**Matrix Spike (1138054-52)**								
	Hg	2810	14780	17650	ng/g dry	100%	70-130		
B111522-MSD3	**Matrix Spike Duplicate (1138054-52)**								
	Hg	2810	13560	16180	ng/g dry	99%	70-130	9%	30

Accuracy & Precision Summary

Batch: B111523
Lab Matrix: Biota
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits	
B111523-DUP1	**Duplicate (1138054-31)**							
	%TS	23.53		22.59	%		4%	15
B111523-DUP2	**Duplicate (1138054-34)**							
	%TS	21.11		21.52	%		2%	15
B111523-DUP3	**Duplicate (1138054-41)**							
	%TS	22.04		22.19	%		0.7%	15

Method Blanks & Reporting Limits

Batch: B111519
Matrix: Biota
Method: EPA 1631 Appendix
Analyte: Hg

Sample	Result	Units
B111519-BLK1	0.03	ng/g
B111519-BLK2	0.02	ng/g
B111519-BLK3	0.04	ng/g
B111519-BLK4	0.01	ng/g

Average: 0.03 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.08 **Limit:** 0.03 **MRL:** 0.10

Method Blanks & Reporting Limits

Batch: B111521
Matrix: Biota
Method: SM 2540G
Analyte: %TS

Sample	Result	Units
B111521-BLK1	-0.02	%
B111521-BLK2	-0.07	%

Average: -0.05
Limit: 0.15

MDL: 0.05
MRL: 0.15

Method Blanks & Reporting Limits

Batch: B111522
Matrix: Biota
Method: EPA 1631 Appendix
Analyte: Hg

Sample	Result	Units
B111522-BLK1	0.03	ng/g
B111522-BLK2	0.02	ng/g
B111522-BLK3	0.03	ng/g
B111522-BLK4	0.02	ng/g

Average: 0.03 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.08 **Limit:** 0.03 **MRL:** 0.10

Method Blanks & Reporting Limits

Batch: B111523
Matrix: Biota
Method: SM 2540G
Analyte: %TS

Sample	Result	Units
B111523-BLK1	-0.28	%
B111523-BLK2	-0.28	%

Average: -0.28
Limit: 2.80

MDL: 0.84
MRL: 2.80

Sample Containers

Lab ID: 1138054-01
Sample: LA-LMB01
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-02
Sample: LA-LMB02
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-03
Sample: LA-LMB03
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-04
Sample: LA-LMB04
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-05
Sample: LA-LMB05
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-06
Sample: LA-LMB06
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-07
Sample: LA-LMB08
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-08
Sample: LA-LMB09
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-09
Sample: LA-LMB11
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-10
Sample: LA-LMB12
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-11
Sample: LA-LMB13
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-12
Sample: LA-LMB14
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-13
Sample: LA-LMB15
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-14
Sample: LA-LMB16
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-15
Sample: LA-LMB17
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-16
Sample: LA-LMB18
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-17
Sample: LA-LMB19
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-18
Sample: LA-LMB20
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-19
Sample: CR-LMB01
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-20
Sample: CR-LMB02
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-21
Sample: CR-LMB03
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-22
Sample: CR-LMB04
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-23
Sample: CR-LMB05
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-24
Sample: CR-LMB06
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-25
Sample: CR-LMB07
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-26
Sample: CR-LMB08
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-27
Sample: CR-LMB09
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-28
Sample: CR-LMB10
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-29
Sample: CR-LMB11
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-30
Sample: CR-LMB13
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-31
Sample: CR-LMB14
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-32
Sample: CR-LMB16
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-33
Sample: AR-LMB01
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-34
Sample: AR-LMB02
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-35
Sample: AR-LMB03
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-36
Sample: AR-LMB04
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-37
Sample: AR-LMB06
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-38
Sample: AR-LMB07
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-39
Sample: AR-LMB08
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-40
Sample: AR-LMB10
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-41
Sample: AR-LMB11
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-42
Sample: AR-LMB12
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-43
Sample: AR-LMB13
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-44
Sample: AR-LMB14
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-45
Sample: AR-LMB15
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-46
Sample: AR-LMB16
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-47
Sample: AR-LMB17
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-48
Sample: AR-LMB18
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-49
Sample: AR-LMB19
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-50
Sample: AR-LMB20
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-51
Sample: GR-GS01
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-52
Sample: GR-GS02
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-53
Sample: GR-GS03
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-54
Sample: GR-GS04
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-55
Sample: GR-GS05
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1138054-56
Sample: GR-GS06
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1138054-57
Sample: GR-GS09
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Shipping Containers

Cooler

Received: September 16, 2011 9:00
Tracking No: 9583 0347 2980 via FedEx
Coolant Type: Dry Ice
Temperature: 0.4 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138054

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- [x] 20 (standard)
- [ ] 15
- [ ] 10
- [ ] 5
- [ ] Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. LA= Lake Almaden
1	LA-LMB01	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 5.0
2	LA-LMB02	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 3.6
3	LA-LMB03	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 6.9
4	LA-LMB04	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 4.2
5	LA-LMB05	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 7.4 gutted
6	LA-LMB06	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 3.3
7	LA-LMB07	8/29	14:30	DP	X	1	NA			X	X	X							Wt. (g): 6.9
8	LA-LMB08	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 4.5
9	LA-LMB09	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 2.9
10	LA-LMB10	8/29	14:30	DP	X	1	NA			X	X	X							Wt. (g): 9.1 gutted

Relinquished by: Michael Carbiener	Date: 9/15/11	Time: 16:00	Relinquished by:	Date:	Time:
Received by: Fedex	Date:	Time:	Received at BRL by: [signature]	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138054

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. LA= Lake Almaden
1	LA-LMB11	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 3.3
2	LA-LMB12	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 5.6
3	LA-LMB13	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 4.3
4	LA-LMB14	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 9.1
5	LA-LMB15	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 4.8
6	LA-LMB16	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 5.4
7	LA-LMB17	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 8.7
8	LA-LMB18	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 6.5
9	LA-LMB19	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 5.2
10	LA-LMB20	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 8.0

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: Tyler Rahn	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138054

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- [x] 20 (standard)
- [ ] 15
- [ ] 10
- [ ] 5
- [ ] Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. CR = Calero Reservoir
1	CR-LMB01	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 6.8
2	CR-LMB02	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 3.8
3	CR-LMB03	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 10.4
4	CR-LMB04	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 5.4
5	CR-LMB05	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 7.2
6	CR-LMB06	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 7.4
7	CR-LMB07	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 11.6
8	CR-LMB08	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 4.9
9	CR-LMB09	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 3.2
10	CR-LMB10	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 4.2

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138054

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	CR-LMB11	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 3.2
2	CR-LMB12	8/29	10:00	DP	X	1	NA			X	X	X							Wt. (g): 7.4 gutted
3	CR-LMB13	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 3.3
4	CR-LMB14	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 4.8
5	CR-LMB15	8/29	10:00	DP	X	1	NA			X	X	X							Wt. (g): 10.3
6	CR-LMB16	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 4.1
7		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):
8		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):
9		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):
10		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138054

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. AR= Almaden Res
1	AR-LMB01	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 3.5
2	AR-LMB02	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.0
3	AR-LMB03	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.1
4	AR-LMB04	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 3.3
5	AR-LMB05	8/30	10:10	DP	X	1	NA			X	X	X							Wt. (g): 7.5 gutted
6	AR-LMB06	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.4
7	AR-LMB07	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.0
8	AR-LMB08	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.3
9	AR-LMB09	8/30	10:10	DP	X	1	NA			X	X	X							Wt. (g): 7.7
10	AR-LMB10	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 8.0 gutted

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138054

White: LAB COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. AR = Almaden Res
1	AR-LMB11	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 3.2
2	AR-LMB12	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 5.9
3	AR-LMB13	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.0
4	AR-LMB14	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 3.4
5	AR-LMB15	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.4
6	AR-LMB16	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 5.2
7	AR-LMB17	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 6.7
8	AR-LMB18	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 6.7
9	AR-LMB19	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 3.5
10	AR-LMB20	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 5.0

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: Tyler Fahr	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138054

White: LAB COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. GR= Guadalupe Res
1	GR-GS01	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 4.7
2	GR-GS02	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 6.3
3	GR-GS03	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 4.0
4	GR-GS04	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 5.3 gutted
5	GR-GS05	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 4.7
6	GR-GS06	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 3.9
7	GR-GS07	9/1	1300	DP	X	1	NA			X	X	X							Wt. (g): 6.8
8	GR-GS08	9/1	1300	DP	X	1	NA			X	X	X							Wt. (g): 7.4 gutted
9	GR-LMB09	9/1	1300	DP	X	1	NA			X	X								Wt. (g) 4.9
10		9/1	1300	DP	X	1	NA			X	X								Wt. (g):

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

October 14, 2011

URS - Oakland
ATTN: Elizabeth Nielsen
1333 Broadway, Suite 800
Oakland, CA 94612
elizabeth_nielsen@urscorp.com

RE: Project URS-OA1101 Client Project ID: 26817576

Dear Ms. Nielsen,

On September 16, 2011, Brooks Rand Labs (BRL) received sixty-five (65) small fish samples. The samples were split into two work orders and were logged-in for the contracted analyses of homogenization, total mercury (Hg), and methylmercury (MeHg) according to the chain-of-custody (COC) forms. The samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

Note: Results were reported on both a wet-weight and dry-weight basis.

Spike sets in batch B111620 were spiked at a level less than that of the native sample. Consequently, these recoveries are not valid indicators of data quality. A post-preparation spike (PS) was performed on both native samples and met acceptance criteria.

The results were blank-corrected as described in the calculations section of the relevant SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Jen Hartmann
Project Manager
jen@brooksrand.com

Lydia Greaves
Project Manager
lydia@brooksrand.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations /certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	**MS**	matrix spike
BRL	Brooks Rand Labs	**MSD**	matrix spike duplicate
BS	laboratory fortified blank	**ND**	non-detect
CAL	calibration standard	**NR**	non-reportable
CCV	continuing calibration verification	**PS**	post preparation spike
COC	chain of custody record	**REC**	percent recovery
CRM	certified reference material	**RPD**	relative percent difference
D	dissolved fraction	**RSD**	relative standard deviation
DUP	duplicate	**SCV**	secondary calibration verification
ICV	initial calibration verification	**SOP**	standard operating procedure
MDL	method detection limit	**SRM**	standard reference material
MRL	method reporting limit	**T**	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H Holding time and/or preservation requirements not met. Result is estimated.
J Estimated value. A full explanation is presented in the narrative.
J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N Spike recovery was not within acceptance criteria. Result is estimated.
R Rejected, unusable value. A full explanation is presented in the narrative.
U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
LA-LMB07	1138053-01	Biota	Sample	08/29/2011	09/16/2011
LA-LMB10	1138053-02	Biota	Sample	08/29/2011	09/16/2011
CR-LMB12	1138053-03	Biota	Sample	08/29/2011	09/16/2011
CR-LMB15	1138053-04	Biota	Sample	08/29/2011	09/16/2011
AR-LMB05	1138053-05	Biota	Sample	08/30/2011	09/16/2011
AR-LMB09	1138053-06	Biota	Sample	08/30/2011	09/16/2011
GR-GS07	1138053-07	Biota	Sample	09/01/2011	09/16/2011
GR-GS08	1138053-08	Biota	Sample	09/01/2011	09/16/2011

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Biota	SM 2540G	10/06/2011	10/11/2011	B111521	N/A
Hg	Biota	EPA 1631 Appendix	10/06/2011	10/07/2011	B111519	1100699
MeHg	Biota	EPA 1630	09/28/2011	10/06/2011	B111620	1100694

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AR-LMB05										
1138053-05	%TS	Biota	N/A	20.96		0.05	0.15	%	B111521	N/A
1138053-05	Hg	Biota	N/A	3590		23.8	59.4	ng/g dry	B111519	1100699
1138053-05	Hg	Biota	N/A	752		4.98	12.5	ng/g	B111519	1100699
1138053-05	MeHg	Biota	N/A	3170		69.5	208	ng/g dry	B111620	1100694
1138053-05	MeHg	Biota	N/A	664		14.6	43.7	ng/g	B111620	1100694
AR-LMB09										
1138053-06	%TS	Biota	N/A	22.55		0.05	0.15	%	B111521	N/A
1138053-06	Hg	Biota	N/A	3270		24.6	61.6	ng/g dry	B111519	1100699
1138053-06	Hg	Biota	N/A	738		5.56	13.9	ng/g	B111519	1100699
1138053-06	MeHg	Biota	N/A	3060		41.7	125	ng/g dry	B111620	1100694
1138053-06	MeHg	Biota	N/A	689		9.4	28.2	ng/g	B111620	1100694
CR-LMB12										
1138053-03	%TS	Biota	N/A	20.55		0.05	0.15	%	B111521	N/A
1138053-03	Hg	Biota	N/A	444		24.6	61.6	ng/g dry	B111519	1100699
1138053-03	Hg	Biota	N/A	91.2		5.06	12.7	ng/g	B111519	1100699
1138053-03	MeHg	Biota	N/A	481		4.5	13.4	ng/g dry	B111620	1100694
1138053-03	MeHg	Biota	N/A	98.9		0.9	2.8	ng/g	B111620	1100694
CR-LMB15										
1138053-04	%TS	Biota	N/A	18.24		0.05	0.15	%	B111521	N/A
1138053-04	Hg	Biota	N/A	763		29.1	72.7	ng/g dry	B111519	1100699
1138053-04	Hg	Biota	N/A	139		5.30	13.3	ng/g	B111519	1100699
1138053-04	MeHg	Biota	N/A	860		4.7	14.0	ng/g dry	B111620	1100694
1138053-04	MeHg	Biota	N/A	157		0.9	2.6	ng/g	B111620	1100694
GR-GS07										
1138053-07	%TS	Biota	N/A	24.05		0.05	0.15	%	B111521	N/A
1138053-07	Hg	Biota	N/A	3460		23.9	59.8	ng/g dry	B111519	1100699
1138053-07	Hg	Biota	N/A	832		5.75	14.4	ng/g	B111519	1100699
1138053-07	MeHg	Biota	N/A	2820		40.6	122	ng/g dry	B111620	1100694
1138053-07	MeHg	Biota	N/A	677		9.8	29.3	ng/g	B111620	1100694
GR-GS08										
1138053-08	%TS	Biota	N/A	23.34		0.05	0.15	%	B111521	N/A
1138053-08	Hg	Biota	N/A	3650		23.9	59.7	ng/g dry	B111519	1100699
1138053-08	Hg	Biota	N/A	852		5.57	13.9	ng/g	B111519	1100699
1138053-08	MeHg	Biota	N/A	3160		36.3	109	ng/g dry	B111620	1100694
1138053-08	MeHg	Biota	N/A	736		8.5	25.4	ng/g	B111620	1100694

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
LA-LMB07										
1138053-01	%TS	Biota	N/A	23.55		0.05	0.15	%	B111521	N/A
1138053-01	Hg	Biota	N/A	3050		16.5	41.4	ng/g dry	B111519	1100699
1138053-01	Hg	Biota	N/A	718		3.90	9.74	ng/g	B111519	1100699
1138053-01	MeHg	Biota	N/A	3380		39.4	118	ng/g dry	B111620	1100694
1138053-01	MeHg	Biota	N/A	796		9.3	27.8	ng/g	B111620	1100694
LA-LMB10										
1138053-02	%TS	Biota	N/A	18.61		0.05	0.15	%	B111521	N/A
1138053-02	Hg	Biota	N/A	3570		26.6	66.6	ng/g dry	B111519	1100699
1138053-02	Hg	Biota	N/A	664		4.96	12.4	ng/g	B111519	1100699
1138053-02	MeHg	Biota	N/A	3580		50.7	152	ng/g dry	B111620	1100694
1138053-02	MeHg	Biota	N/A	667		9.4	28.3	ng/g	B111620	1100694

Accuracy & Precision Summary

Batch: B111519
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111519-SRM1	**Certified Reference Material (0951025, DORM-3)**								
	Hg		382.0	380.1	ng/g	100%	75-125		
B111519-SRM2	**Certified Reference Material (0951025, DORM-3)**								
	Hg		382.0	382.7	ng/g	100%	75-125		
B111519-DUP2	**Duplicate (1138053-04)**								
	Hg	762.5		837.6	ng/g dry			9%	30
B111519-MS2	**Matrix Spike (1138053-04)**								
	Hg	762.5	17310	17910	ng/g dry	99%	70-130		
B111519-MSD2	**Matrix Spike Duplicate (1138053-04)**								
	Hg	762.5	17070	17300	ng/g dry	97%	70-130	3%	30

Accuracy & Precision Summary

Batch: B111521
Lab Matrix: Biota
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits	
B111521-DUP2	**Duplicate (1138053-02)**							
	%TS	18.61		19.28	%		4%	15

Accuracy & Precision Summary

Batch: B111620
Lab Matrix: Biota
Method: EPA 1630

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111620-SRM1	**Certified Reference Material (1106028, NIST 1946 SRM)**								
	MeHg		394.0	426.1	ng/g	108%	65-135		
B111620-DUP2	**Duplicate (1138053-01)**								
	MeHg	3382		2556	ng/g dry			28%	35
B111620-MS2	**Matrix Spike (1138053-01)**								
	MeHg	3382	2927	5950	ng/g dry	88%	65-135		
B111620-MSD2	**Matrix Spike Duplicate (1138053-01)**								
	MeHg	3382	2854	6315	ng/g dry	103%	65-135	6%	35
B111620-PS1	**Post Spike (1138053-01)**								
	MeHg	3382	13130	19120	ng/g dry	120%	67-133		
B111620-DUP3	**Duplicate (1138053-05)**								
	MeHg	3166		3043	ng/g dry			4%	35
B111620-MS3	**Matrix Spike (1138053-05)**								
	MeHg	3166	3307	7176	ng/g dry	121%	65-135		
B111620-MSD3	**Matrix Spike Duplicate (1138053-05)**								
	MeHg	3166	3040	7190	ng/g dry	132%	65-135	0.2%	35
B111620-PS2	**Post Spike (1138053-05)**								
	MeHg	3166	23180	28360	ng/g dry	109%	67-133		

Method Blanks & Reporting Limits

Batch: B111519
Matrix: Biota
Method: EPA 1631 Appendix
Analyte: Hg

Sample	Result	Units
B111519-BLK1	0.03	ng/g
B111519-BLK2	0.02	ng/g
B111519-BLK3	0.04	ng/g
B111519-BLK4	0.01	ng/g

Average: 0.03 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.08 **Limit:** 0.03 **MRL:** 0.10

Method Blanks & Reporting Limits

Batch: B111521
Matrix: Biota
Method: SM 2540G
Analyte: %TS

Sample	Result	Units
B111521-BLK1	-0.02	%
B111521-BLK2	-0.07	%

Average: -0.05
Limit: 0.15

MDL: 0.05
MRL: 0.15

Method Blanks & Reporting Limits

Batch: B111620
Matrix: Biota
Method: EPA 1630
Analyte: MeHg

Sample	Result	Units
B111620-BLK1	-0.03	ng/g
B111620-BLK2	-0.006	ng/g
B111620-BLK3	-0.03	ng/g
B111620-BLK4	-0.03	ng/g

Average: 0.0 **Standard Deviation:** 0.0 **MDL:** 1.0
Limit: 2.0 **Limit:** 0.7 **MRL:** 3.0

Sample Containers

Lab ID: 1138053-01
Sample: LA-LMB07
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2 oz.	640967	none	n/a		Cooler

Lab ID: 1138053-02
Sample: LA-LMB10
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2oz.	640967	none	n/a		Cooler

Lab ID: 1138053-03
Sample: CR-LMB12
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2 oz.	640967	none	n/a		Cooler

Lab ID: 1138053-04
Sample: CR-LMB15
Report Matrix: Biota
Sample Type: Sample
Collected: 08/29/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2 oz.	640967	none	n/a		Cooler

Lab ID: 1138053-05
Sample: AR-LMB05
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2 oz.	640967	none	n/a		Cooler

Lab ID: 1138053-06
Sample: AR-LMB09
Report Matrix: Biota
Sample Type: Sample
Collected: 08/30/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2 oz.	640967	none	n/a		Cooler

Sample Containers

Lab ID: 1138053-07
Sample: GR-GS07
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2 oz.	640967	none	n/a		Cooler

Lab ID: 1138053-08
Sample: GR-GS08
Report Matrix: Biota
Sample Type: Sample
Collected: 09/01/2011
Received: 09/16/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	2 oz.	640967	none	n/a		Cooler

Shipping Containers

Cooler

Received: September 16, 2011 9:00
Tracking No: 9583 0347 2980 via FedEx
Coolant Type: Dry Ice
Temperature: 0.4 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138053

COPY

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N
Contact: Elizabeth Nielsen		If so, by: email / fax (circle one)
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. LA= Lake Almaden
1	LA-LMB01	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 5.0
2	LA-LMB02	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 3.6
3	LA-LMB03	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 6.9
4	LA-LMB04	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 4.2
5	LA-LMB05	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 7.4 gutted
6	LA-LMB06	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 3.3
7	LA-LMB07	8/29	14:30	DP	X	1	NA			X	X	X							Wt. (g): 6.9
8	LA-LMB08	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 4.5
9	LA-LMB09	8/29	14:30	DP	X	1	NA			X	X								Wt. (g): 2.9
10	LA-LMB10	8/29	14:30	DP	X	1	NA			X	X	X							Wt. (g): 9.1 gutted

Relinquished by: Michael Carbiener	Date: 9/15/11	Time: 16:00	Relinquished by:	Date:	Time:
Received by: Fedex	Date:	Time:	Received at BRL by: [signature]	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138053

COPY

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N
Contact: Elizabeth Nielsen		If so, by: email / fax (circle one)
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- [x] 20 (standard)
- [ ] 15
- [ ] 10
- [ ] 5
- [ ] Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	CR-LMB11	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 3.2
2	CR-LMB12	8/29	10:00	DP	X	1	NA			X	X	X							Wt. (g): 7.4 gutted
3	CR-LMB13	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 3.3
4	CR-LMB14	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 4.8
5	CR-LMB15	8/29	10:00	DP	X	1	NA			X	X	X							Wt. (g): 10.3
6	CR-LMB16	8/29	10:00	DP	X	1	NA			X	X								Wt. (g): 4.1
7		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):
8		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):
9		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):
10		8/29	10:00	DP	X	1	NA			X	X								Wt. (g):

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: Tyler Rankin	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138053

COPY

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268
PO #:		

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection: Date	Collection: Time	Miscellaneous: Sampler (initials)	Miscellaneous: Matrix type (Tissue)	Miscellaneous: # of containers	Miscellaneous: Field filtered? (Y/N)	Field Preservation: Unpreserved / ice only	Field Preservation: HCl / HNO_3 (circle one)	Field Preservation: Other (frozen)	Analyses required: Total Hg, EPA 1631	Analyses required: Methyl Hg, EPA 1630	Analyses required: ICP-MS Metals (specify)	Analyses required: As / Se species (specify)	Analyses required: % Solids	Analyses required: Filtration	Analyses required: Other (specify)	Analyses required: Other (specify)	Comments
																			Samples will be individually homogenized for analysis. AR= Almaden Res
1	AR-LMB01	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 3.5
2	AR-LMB02	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.0
3	AR-LMB03	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.1
4	AR-LMB04	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 3.3
5	AR-LMB05	8/30	10:10	DP	X	1	NA			X	X	X							Wt. (g): 7.5 gutted
6	AR-LMB06	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.4
7	AR-LMB07	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.0
8	AR-LMB08	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 4.3
9	AR-LMB09	8/30	10:10	DP	X	1	NA			X	X	X							Wt. (g): 7.7
10	AR-LMB10	8/30	10:10	DP	X	1	NA			X	X								Wt. (g): 8.0 gutted

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:
Received by:	Date:	Time:	Received at BRL by: [signature]
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:

Date:	Time:
Date: 9/16/11	Time: 0900
BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1138053

White: LAB COPY

COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis. GR= Guadalupe Res
1	GR-GS01	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 4.7
2	GR-GS02	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 6.3
3	GR-GS03	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 4.0
4	GR-GS04	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 5.3 gutted
5	GR-GS05	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 4.7
6	GR-GS06	9/1	1300	DP	X	1	NA			X	X								Wt. (g): 3.9
7	GR-GS07	9/1	1300	DP	X	1	NA			X	X	X							Wt. (g): 6.8
8	GR-GS08	9/1	1300	DP	X	1	NA			X	X	X							Wt. (g): 7.4 gutted
9	GR-LMB09	9/1	1300	DP	X	1	NA			X	X								Wt. (g) 4.9
10		9/1	1300	DP	X	1	NA			X	X								Wt. (g):

Relinquished by: Michael Carbiener	Date:	Time:	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 9/16/11	Time: 0900
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

August 17, 2011

URS - Oakland
ATTN: Elizabeth Nielsen
1333 Broadway, Suite 800
Oakland, CA 94612
elizabeth_nielsen@urscorp.com

RE: Project URS-OA1101 Client Project ID: 26817576

Dear Ms. Nielsen,

On July 20, 2011, Brooks Rand Labs (BRL) received one hundred (100) small fish samples. The samples were split into two work orders and were logged-in for the contracted analyses of homogenization, total mercury (Hg), and methylmercury (MeHg) according to the chain-of-custody (COC) form(s). The samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

Note: Results were reported on both a wet-weight and dry-weight basis.

The results were blank-corrected as described in the calculations section of the relevant SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Jen Hartmann
Jr. Project Manager
jen@brooksrand.com

Lydia Greaves
Jr. Project Manager
lydia@brooksrand.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations /certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	**MS**	matrix spike
BRL	Brooks Rand Labs	**MSD**	matrix spike duplicate
BS	laboratory fortified blank	**ND**	non-detect
CAL	calibration standard	**NR**	non-reportable
CCV	continuing calibration verification	**PS**	post preparation spike
COC	chain of custody record	**REC**	percent recovery
CRM	certified reference material	**RPD**	relative percent difference
D	dissolved fraction	**RSD**	relative standard deviation
DUP	duplicate	**SCV**	secondary calibration verification
ICV	initial calibration verification	**SOP**	standard operating procedure
MDL	method detection limit	**SRM**	standard reference material
MRL	method reporting limit	**T**	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H Holding time and/or preservation requirements not met. Result is estimated.
J Estimated value. A full explanation is presented in the narrative.
J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N Spike recovery was not within acceptance criteria. Result is estimated.
R Rejected, unusable value. A full explanation is presented in the narrative.
U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
HA-R7	1130014-01	Biota	Sample	06/23/2011	07/20/2011
HA-R8	1130014-02	Biota	Sample	06/23/2011	07/20/2011
HA-R9	1130014-03	Biota	Sample	06/23/2011	07/20/2011
HA-R11	1130014-04	Biota	Sample	06/23/2011	07/20/2011
HA-R12	1130014-05	Biota	Sample	06/23/2011	07/20/2011
HA-R15	1130014-06	Biota	Sample	06/23/2011	07/20/2011
HA-R16	1130014-07	Biota	Sample	06/23/2011	07/20/2011
HA-R19	1130014-08	Biota	Sample	06/23/2011	07/20/2011
HA-R26	1130014-09	Biota	Sample	06/23/2011	07/20/2011
HA-R27	1130014-10	Biota	Sample	06/23/2011	07/20/2011
HA-R29	1130014-11	Biota	Sample	06/23/2011	07/20/2011
HA-R30	1130014-12	Biota	Sample	06/23/2011	07/20/2011
HA-R31	1130014-13	Biota	Sample	06/23/2011	07/20/2011
HA-R32	1130014-14	Biota	Sample	06/23/2011	07/20/2011
CB-R37	1130014-15	Biota	Sample	06/21/2011	07/20/2011
CB-R2	1130014-16	Biota	Sample	06/21/2011	07/20/2011
CB-R13	1130014-17	Biota	Sample	06/21/2011	07/20/2011
CB-R16	1130014-18	Biota	Sample	06/21/2011	07/20/2011
CB-R17	1130014-19	Biota	Sample	06/21/2011	07/20/2011
CB-R18	1130014-20	Biota	Sample	06/21/2011	07/20/2011
CB-R19	1130014-21	Biota	Sample	06/21/2011	07/20/2011
CB-R21	1130014-22	Biota	Sample	06/21/2011	07/20/2011
CB-R27	1130014-23	Biota	Sample	06/21/2011	07/20/2011
CB-R28	1130014-24	Biota	Sample	06/21/2011	07/20/2011
CB-R29	1130014-25	Biota	Sample	06/21/2011	07/20/2011
CB-R30	1130014-26	Biota	Sample	06/21/2011	07/20/2011
CB-R31	1130014-27	Biota	Sample	06/21/2011	07/20/2011
CB-R32	1130014-28	Biota	Sample	06/21/2011	07/20/2011
CB-R33	1130014-29	Biota	Sample	06/21/2011	07/20/2011
CB-R35	1130014-30	Biota	Sample	06/21/2011	07/20/2011
CB-R36	1130014-31	Biota	Sample	06/21/2011	07/20/2011
CB-R39	1130014-32	Biota	Sample	06/21/2011	07/20/2011
AC-R5	1130014-33	Biota	Sample	06/22/2011	07/20/2011
AC-R6	1130014-34	Biota	Sample	06/22/2011	07/20/2011
AC-R7	1130014-35	Biota	Sample	06/22/2011	07/20/2011
AC-R9	1130014-36	Biota	Sample	06/22/2011	07/20/2011
AC-R11	1130014-37	Biota	Sample	06/22/2011	07/20/2011
AC-R12	1130014-38	Biota	Sample	06/22/2011	07/20/2011
AC-R13	1130014-39	Biota	Sample	06/22/2011	07/20/2011
AC-R14	1130014-40	Biota	Sample	06/22/2011	07/20/2011
AC-R15	1130014-41	Biota	Sample	06/22/2011	07/20/2011

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
AC-R16	1130014-42	Biota	Sample	06/22/2011	07/20/2011
AC-R17	1130014-43	Biota	Sample	06/22/2011	07/20/2011
AC-R20	1130014-44	Biota	Sample	06/22/2011	07/20/2011
AC-R21	1130014-45	Biota	Sample	06/22/2011	07/20/2011
AC-R22	1130014-46	Biota	Sample	06/22/2011	07/20/2011
AC-R25	1130014-47	Biota	Sample	06/22/2011	07/20/2011
AC-R26	1130014-48	Biota	Sample	06/22/2011	07/20/2011
AC-R27	1130014-49	Biota	Sample	06/22/2011	07/20/2011
AC-R30	1130014-50	Biota	Sample	06/22/2011	07/20/2011

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Biota	SM 2540G	08/04/2011	08/08/2011	B111087	N/A
%TS	Biota	SM 2540G	08/09/2011	08/12/2011	B111089	N/A
Hg	Biota	EPA 1631 Appendix	08/04/2011	08/05/2011	B111086	1100541
Hg	Biota	EPA 1631 Appendix	08/09/2011	08/11/2011	B111088	1100548

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AC-R11										
1130014-37	%TS	Biota	N/A	28.85		0.15	0.50	%	B111089	N/A
1130014-37	Hg	Biota	N/A	1070		21.9	54.8	ng/g dry	B111088	1100548
1130014-37	Hg	Biota	N/A	309		6.32	15.8	ng/g	B111088	1100548
AC-R12										
1130014-38	%TS	Biota	N/A	24.94		0.15	0.50	%	B111089	N/A
1130014-38	Hg	Biota	N/A	1780		25.5	63.7	ng/g dry	B111088	1100548
1130014-38	Hg	Biota	N/A	444		6.35	15.9	ng/g	B111088	1100548
AC-R13										
1130014-39	%TS	Biota	N/A	26.29		0.15	0.50	%	B111089	N/A
1130014-39	Hg	Biota	N/A	1610		21.4	53.4	ng/g dry	B111088	1100548
1130014-39	Hg	Biota	N/A	424		5.62	14.0	ng/g	B111088	1100548
AC-R14										
1130014-40	%TS	Biota	N/A	24.62		0.15	0.50	%	B111089	N/A
1130014-40	Hg	Biota	N/A	1450		23.9	59.7	ng/g dry	B111088	1100548
1130014-40	Hg	Biota	N/A	357		5.88	14.7	ng/g	B111088	1100548
AC-R15										
1130014-41	%TS	Biota	N/A	24.21		0.15	0.50	%	B111089	N/A
1130014-41	Hg	Biota	N/A	1540		26.0	64.9	ng/g dry	B111088	1100548
1130014-41	Hg	Biota	N/A	373		6.28	15.7	ng/g	B111088	1100548
AC-R16										
1130014-42	%TS	Biota	N/A	25.79		0.15	0.50	%	B111089	N/A
1130014-42	Hg	Biota	N/A	1240		24.3	60.6	ng/g dry	B111088	1100548
1130014-42	Hg	Biota	N/A	320		6.26	15.6	ng/g	B111088	1100548
AC-R17										
1130014-43	%TS	Biota	N/A	28.63		0.15	0.50	%	B111089	N/A
1130014-43	Hg	Biota	N/A	1160		20.5	51.2	ng/g dry	B111088	1100548
1130014-43	Hg	Biota	N/A	331		5.86	14.7	ng/g	B111088	1100548
AC-R20										
1130014-44	%TS	Biota	N/A	24.70		0.15	0.50	%	B111089	N/A
1130014-44	Hg	Biota	N/A	1360		25.1	62.8	ng/g dry	B111088	1100548
1130014-44	Hg	Biota	N/A	335		6.21	15.5	ng/g	B111088	1100548
AC-R21										
1130014-45	%TS	Biota	N/A	27.47		0.15	0.50	%	B111089	N/A
1130014-45	Hg	Biota	N/A	1270		21.7	54.3	ng/g dry	B111088	1100548
1130014-45	Hg	Biota	N/A	349		5.97	14.9	ng/g	B111088	1100548

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AC-R22										
1130014-46	%TS	Biota	N/A	24.61		0.15	0.50	%	B111089	N/A
1130014-46	Hg	Biota	N/A	2570		23.4	58.6	ng/g dry	B111088	1100548
1130014-46	Hg	Biota	N/A	633		5.77	14.4	ng/g	B111088	1100548
AC-R25										
1130014-47	%TS	Biota	N/A	26.95		0.15	0.50	%	B111089	N/A
1130014-47	Hg	Biota	N/A	1390		26.8	67.1	ng/g dry	B111088	1100548
1130014-47	Hg	Biota	N/A	375		7.23	18.1	ng/g	B111088	1100548
AC-R26										
1130014-48	%TS	Biota	N/A	26.75		0.15	0.50	%	B111089	N/A
1130014-48	Hg	Biota	N/A	1510		21.6	54.0	ng/g dry	B111088	1100548
1130014-48	Hg	Biota	N/A	403		5.78	14.5	ng/g	B111088	1100548
AC-R27										
1130014-49	%TS	Biota	N/A	23.54		0.15	0.50	%	B111089	N/A
1130014-49	Hg	Biota	N/A	2210		31.5	78.7	ng/g dry	B111088	1100548
1130014-49	Hg	Biota	N/A	520		7.41	18.5	ng/g	B111088	1100548
AC-R30										
1130014-50	%TS	Biota	N/A	22.56		0.15	0.50	%	B111089	N/A
1130014-50	Hg	Biota	N/A	2350		31.2	78.1	ng/g dry	B111088	1100548
1130014-50	Hg	Biota	N/A	530		7.05	17.6	ng/g	B111088	1100548
AC-R5										
1130014-33	%TS	Biota	N/A	23.39		0.15	0.50	%	B111089	N/A
1130014-33	Hg	Biota	N/A	1760		27.9	69.6	ng/g dry	B111088	1100548
1130014-33	Hg	Biota	N/A	411		6.51	16.3	ng/g	B111088	1100548
AC-R6										
1130014-34	%TS	Biota	N/A	24.96		0.15	0.50	%	B111089	N/A
1130014-34	Hg	Biota	N/A	1510		24.7	61.7	ng/g dry	B111088	1100548
1130014-34	Hg	Biota	N/A	376		6.16	15.4	ng/g	B111088	1100548
AC-R7										
1130014-35	%TS	Biota	N/A	22.45		0.15	0.50	%	B111089	N/A
1130014-35	Hg	Biota	N/A	1990		28.7	71.8	ng/g dry	B111088	1100548
1130014-35	Hg	Biota	N/A	446		6.45	16.1	ng/g	B111088	1100548
AC-R9										
1130014-36	%TS	Biota	N/A	26.45		0.15	0.50	%	B111089	N/A
1130014-36	Hg	Biota	N/A	1240		23.5	58.6	ng/g dry	B111088	1100548
1130014-36	Hg	Biota	N/A	328		6.20	15.5	ng/g	B111088	1100548
CB-R13										
1130014-17	%TS	Biota	N/A	20.76		0.15	0.50	%	B111089	N/A
1130014-17	Hg	Biota	N/A	827		30.0	74.9	ng/g dry	B111088	1100548
1130014-17	Hg	Biota	N/A	172		6.22	15.6	ng/g	B111088	1100548

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
CB-R16										
1130014-18	%TS	Biota	N/A	25.96		0.15	0.50	%	B111089	N/A
1130014-18	Hg	Biota	N/A	630		24.8	61.9	ng/g dry	B111088	1100548
1130014-18	Hg	Biota	N/A	164		6.43	16.1	ng/g	B111088	1100548
CB-R17										
1130014-19	%TS	Biota	N/A	25.63		0.15	0.50	%	B111089	N/A
1130014-19	Hg	Biota	N/A	493		29.0	72.4	ng/g dry	B111088	1100548
1130014-19	Hg	Biota	N/A	126		7.42	18.6	ng/g	B111088	1100548
CB-R18										
1130014-20	%TS	Biota	N/A	21.86		0.15	0.50	%	B111089	N/A
1130014-20	Hg	Biota	N/A	652		32.9	82.3	ng/g dry	B111088	1100548
1130014-20	Hg	Biota	N/A	143		7.19	18.0	ng/g	B111088	1100548
CB-R19										
1130014-21	%TS	Biota	N/A	23.40		0.15	0.50	%	B111089	N/A
1130014-21	Hg	Biota	N/A	759		28.8	71.9	ng/g dry	B111088	1100548
1130014-21	Hg	Biota	N/A	178		6.73	16.8	ng/g	B111088	1100548
CB-R2										
1130014-16	%TS	Biota	N/A	20.24		0.15	0.50	%	B111089	N/A
1130014-16	Hg	Biota	N/A	549		36.2	90.6	ng/g dry	B111088	1100548
1130014-16	Hg	Biota	N/A	111		7.34	18.3	ng/g	B111088	1100548
CB-R21										
1130014-22	%TS	Biota	N/A	22.48		0.15	0.50	%	B111089	N/A
1130014-22	Hg	Biota	N/A	589		29.4	73.5	ng/g dry	B111088	1100548
1130014-22	Hg	Biota	N/A	132		6.61	16.5	ng/g	B111088	1100548
CB-R27										
1130014-23	%TS	Biota	N/A	23.60		0.15	0.50	%	B111089	N/A
1130014-23	Hg	Biota	N/A	649		27.8	69.6	ng/g dry	B111088	1100548
1130014-23	Hg	Biota	N/A	153		6.57	16.4	ng/g	B111088	1100548
CB-R28										
1130014-24	%TS	Biota	N/A	22.13		0.15	0.50	%	B111089	N/A
1130014-24	Hg	Biota	N/A	550		30.9	77.4	ng/g dry	B111088	1100548
1130014-24	Hg	Biota	N/A	122		6.85	17.1	ng/g	B111088	1100548
CB-R29										
1130014-25	%TS	Biota	N/A	22.65		0.15	0.50	%	B111089	N/A
1130014-25	Hg	Biota	N/A	631		30.4	75.9	ng/g dry	B111088	1100548
1130014-25	Hg	Biota	N/A	143		6.88	17.2	ng/g	B111088	1100548
CB-R30										
1130014-26	%TS	Biota	N/A	26.02		0.15	0.50	%	B111089	N/A
1130014-26	Hg	Biota	N/A	563		29.6	74.0	ng/g dry	B111088	1100548
1130014-26	Hg	Biota	N/A	147		7.71	19.3	ng/g	B111088	1100548

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
CB-R31										
1130014-27	%TS	Biota	N/A	26.90		0.15	0.50	%	B111089	N/A
1130014-27	Hg	Biota	N/A	652		28.5	71.3	ng/g dry	B111088	1100548
1130014-27	Hg	Biota	N/A	175		7.67	19.2	ng/g	B111088	1100548
CB-R32										
1130014-28	%TS	Biota	N/A	23.61		0.15	0.50	%	B111089	N/A
1130014-28	Hg	Biota	N/A	546		32.8	82.0	ng/g dry	B111088	1100548
1130014-28	Hg	Biota	N/A	129		7.74	19.4	ng/g	B111088	1100548
CB-R33										
1130014-29	%TS	Biota	N/A	24.13		0.15	0.50	%	B111089	N/A
1130014-29	Hg	Biota	N/A	541		32.0	80.0	ng/g dry	B111088	1100548
1130014-29	Hg	Biota	N/A	131		7.73	19.3	ng/g	B111088	1100548
CB-R35										
1130014-30	%TS	Biota	N/A	25.90		0.15	0.50	%	B111089	N/A
1130014-30	Hg	Biota	N/A	480		27.7	69.3	ng/g dry	B111088	1100548
1130014-30	Hg	Biota	N/A	124		7.18	18.0	ng/g	B111088	1100548
CB-R36										
1130014-31	%TS	Biota	N/A	24.28		0.15	0.50	%	B111089	N/A
1130014-31	Hg	Biota	N/A	540		30.7	76.8	ng/g dry	B111088	1100548
1130014-31	Hg	Biota	N/A	131		7.46	18.6	ng/g	B111088	1100548
CB-R37										
1130014-15	%TS	Biota	N/A	23.78		0.15	0.50	%	B111089	N/A
1130014-15	Hg	Biota	N/A	523		32.2	80.4	ng/g dry	B111088	1100548
1130014-15	Hg	Biota	N/A	124		7.65	19.1	ng/g	B111088	1100548
CB-R39										
1130014-32	%TS	Biota	N/A	24.91		0.15	0.50	%	B111089	N/A
1130014-32	Hg	Biota	N/A	533		32.0	79.9	ng/g dry	B111088	1100548
1130014-32	Hg	Biota	N/A	133		7.96	19.9	ng/g	B111088	1100548
HA-R11										
1130014-04	%TS	Biota	N/A	21.54		0.07	0.24	%	B111087	N/A
1130014-04	Hg	Biota	N/A	3320		12.6	31.6	ng/g dry	B111086	1100541
1130014-04	Hg	Biota	N/A	714		2.72	6.81	ng/g	B111086	1100541
HA-R12										
1130014-05	%TS	Biota	N/A	23.94		0.07	0.24	%	B111087	N/A
1130014-05	Hg	Biota	N/A	2370		12.4	30.9	ng/g dry	B111086	1100541
1130014-05	Hg	Biota	N/A	566		2.96	7.39	ng/g	B111086	1100541
HA-R15										
1130014-06	%TS	Biota	N/A	25.55		0.07	0.24	%	B111087	N/A
1130014-06	Hg	Biota	N/A	1850		11.5	28.8	ng/g dry	B111086	1100541
1130014-06	Hg	Biota	N/A	473		2.94	7.35	ng/g	B111086	1100541

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
HA-R16										
1130014-07	%TS	Biota	N/A	22.46		0.07	0.24	%	B111087	N/A
1130014-07	Hg	Biota	N/A	3560		14.1	35.2	ng/g dry	B111086	1100541
1130014-07	Hg	Biota	N/A	798		3.16	7.90	ng/g	B111086	1100541
HA-R19										
1130014-08	%TS	Biota	N/A	21.50		0.07	0.24	%	B111087	N/A
1130014-08	Hg	Biota	N/A	3310		15.4	38.6	ng/g dry	B111086	1100541
1130014-08	Hg	Biota	N/A	711		3.32	8.30	ng/g	B111086	1100541
HA-R26										
1130014-09	%TS	Biota	N/A	25.98		0.07	0.24	%	B111087	N/A
1130014-09	Hg	Biota	N/A	1770		12.0	29.9	ng/g dry	B111086	1100541
1130014-09	Hg	Biota	N/A	460		3.11	7.78	ng/g	B111086	1100541
HA-R27										
1130014-10	%TS	Biota	N/A	24.59		0.07	0.24	%	B111087	N/A
1130014-10	Hg	Biota	N/A	1600		11.0	27.6	ng/g dry	B111086	1100541
1130014-10	Hg	Biota	N/A	393		2.71	6.78	ng/g	B111086	1100541
HA-R29										
1130014-11	%TS	Biota	N/A	24.47		0.15	0.50	%	B111089	N/A
1130014-11	Hg	Biota	N/A	2820		23.6	59.0	ng/g dry	B111088	1100548
1130014-11	Hg	Biota	N/A	690		5.78	14.4	ng/g	B111088	1100548
HA-R30										
1130014-12	%TS	Biota	N/A	25.52		0.15	0.50	%	B111089	N/A
1130014-12	Hg	Biota	N/A	1790		25.2	63.0	ng/g dry	B111088	1100548
1130014-12	Hg	Biota	N/A	456		6.43	16.1	ng/g	B111088	1100548
HA-R31										
1130014-13	%TS	Biota	N/A	23.69		0.15	0.50	%	B111089	N/A
1130014-13	Hg	Biota	N/A	2730		24.9	62.3	ng/g dry	B111088	1100548
1130014-13	Hg	Biota	N/A	648		5.91	14.8	ng/g	B111088	1100548
HA-R32										
1130014-14	%TS	Biota	N/A	23.42		0.15	0.50	%	B111089	N/A
1130014-14	Hg	Biota	N/A	3820		24.9	62.2	ng/g dry	B111088	1100548
1130014-14	Hg	Biota	N/A	896		5.83	14.6	ng/g	B111088	1100548
HA-R7										
1130014-01	%TS	Biota	N/A	21.67		0.07	0.24	%	B111087	N/A
1130014-01	Hg	Biota	N/A	5290		11.1	27.8	ng/g dry	B111086	1100541
1130014-01	Hg	Biota	N/A	1150		2.41	6.03	ng/g	B111086	1100541
HA-R8										
1130014-02	%TS	Biota	N/A	22.78		0.07	0.24	%	B111087	N/A
1130014-02	Hg	Biota	N/A	3250		13.5	33.7	ng/g dry	B111086	1100541
1130014-02	Hg	Biota	N/A	740		3.07	7.68	ng/g	B111086	1100541

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
HA-R9										
1130014-03	%TS	Biota	N/A	24.89		0.07	0.24	%	B111087	N/A
1130014-03	Hg	Biota	N/A	1660		12.7	31.8	ng/g dry	B111086	1100541
1130014-03	Hg	Biota	N/A	414		3.17	7.93	ng/g	B111086	1100541

Accuracy & Precision Summary

Batch: B111086
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111086-SRM1	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	241.6	ng/g	109%	75-125		
B111086-SRM2	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	244.7	ng/g	110%	75-125		
B111086-DUP1	**Duplicate (1130012-36)**								
	Hg	2373		2334	ng/g dry			2%	30
B111086-MS1	**Matrix Spike (1130012-36)**								
	Hg	2373	5498	9034	ng/g dry	121%	70-130		
B111086-MSD1	**Matrix Spike Duplicate (1130012-36)**								
	Hg	2373	5320	8303	ng/g dry	111%	70-130	8%	30
B111086-DUP2	**Duplicate (1130012-41)**								
	Hg	3083		3566	ng/g dry			15%	30
B111086-MS2	**Matrix Spike (1130012-41)**								
	Hg	3083	6396	10180	ng/g dry	111%	70-130		
B111086-MSD2	**Matrix Spike Duplicate (1130012-41)**								
	Hg	3083	6580	10690	ng/g dry	116%	70-130	5%	30
B111086-DUP3	**Duplicate (1130012-44)**								
	Hg	1248		1238	ng/g dry			0.8%	30
B111086-MS3	**Matrix Spike (1130012-44)**								
	Hg	1248	4921	6561	ng/g dry	108%	70-130		
B111086-MSD3	**Matrix Spike Duplicate (1130012-44)**								
	Hg	1248	5104	6595	ng/g dry	105%	70-130	0.5%	30

Accuracy & Precision Summary

Batch: B111087
Lab Matrix: Biota
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B111087-DUP1	**Duplicate (1130012-36)**						
	%TS	22.19		24.62	%		10% 15
B111087-DUP2	**Duplicate (1130012-41)**						
	%TS	19.78		19.46	%		2% 15
B111087-DUP3	**Duplicate (1130012-44)**						
	%TS	25.31		22.11	%		13% 15

Accuracy & Precision Summary

Batch: B111088
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111088-BS1	**Laboratory Fortified Blank (1132043)**								
	Hg		0.1000	0.11	ng/g	108%	75-125		
B111088-SRM1	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	213.7	ng/g	96%	75-125		
B111088-SRM2	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	216.9	ng/g	98%	75-125		
B111088-DUP1	**Duplicate (1130014-11)**								
	Hg	2818		2744	ng/g dry			3%	30
B111088-MS1	**Matrix Spike (1130014-11)**								
	Hg	2818	9058	12140	ng/g dry	103%	70-130		
B111088-MSD1	**Matrix Spike Duplicate (1130014-11)**								
	Hg	2818	9319	11980	ng/g dry	98%	70-130	1%	30
B111088-DUP2	**Duplicate (1130014-14)**								
	Hg	3825		4314	ng/g dry			12%	30
B111088-MS2	**Matrix Spike (1130014-14)**								
	Hg	3825	9256	12910	ng/g dry	98%	70-130		
B111088-MSD2	**Matrix Spike Duplicate (1130014-14)**								
	Hg	3825	9669	13420	ng/g dry	99%	70-130	4%	30
B111088-DUP3	**Duplicate (1130014-34)**								
	Hg	1508		1335	ng/g dry			12%	30
B111088-MS3	**Matrix Spike (1130014-34)**								
	Hg	1508	9589	10950	ng/g dry	99%	70-130		
B111088-MSD3	**Matrix Spike Duplicate (1130014-34)**								
	Hg	1508	9523	10960	ng/g dry	99%	70-130	0.02%	30
B111088-DUP4	**Duplicate (1130014-36)**								
	Hg	1241		1266	ng/g dry			2%	30

Accuracy & Precision Summary

Batch: B111088
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111088-MS4	**Matrix Spike (1130014-36)**								
	Hg	1241	8826	9985	ng/g dry	99%	70-130		
B111088-MSD4	**Matrix Spike Duplicate (1130014-36)**								
	Hg	1241	9384	10550	ng/g dry	99%	70-130	6%	30

Accuracy & Precision Summary

Batch: B111089
Lab Matrix: Biota
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B111089-DUP1	**Duplicate (1130014-12)**						
	%TS	25.52		25.79	%		1% 15
B111089-DUP2	**Duplicate (1130014-17)**						
	%TS	20.76		20.30	%		2% 15
B111089-DUP3	**Duplicate (1130014-22)**						
	%TS	22.48		23.22	%		3% 15
B111089-DUP4	**Duplicate (1130014-28)**						
	%TS	23.61		24.20	%		2% 15

Method Blanks & Reporting Limits

Batch: B111086
Matrix: Biota
Method: EPA 1631 Appendix
Analyte: Hg

Sample	Result	Units
B111086-BLK1	0.04	ng/g
B111086-BLK2	0.04	ng/g
B111086-BLK3	0.02	ng/g
B111086-BLK4	0.02	ng/g

Average: 0.03 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.08 **Limit:** 0.03 **MRL:** 0.10

Method Blanks & Reporting Limits

Batch: B111087
Matrix: Biota
Method: SM 2540G
Analyte: %TS

Sample	Result	Units
B111087-BLK1	0.0003	%
B111087-BLK2	-0.0001	%

Average: 0.00
Limit: 0.24

MDL: 0.07
MRL: 0.24

Method Blanks & Reporting Limits

Batch: B111088
Matrix: Biota
Method: EPA 1631 Appendix
Analyte: Hg

Sample	Result	Units
B111088-BLK1	0.02	ng/g
B111088-BLK2	0.02	ng/g
B111088-BLK3	0.01	ng/g
B111088-BLK4	0.02	ng/g

Average: 0.02 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.08 **Limit:** 0.03 **MRL:** 0.10

Method Blanks & Reporting Limits

Batch: B111089
Matrix: Biota
Method: SM 2540G
Analyte: %TS

Sample	Result	Units
B111089-BLK1	-0.30	%
B111089-BLK2	-0.40	%

Average: -0.35
Limit: 0.50

MDL: 0.15
MRL: 0.50

Sample Containers

Lab ID: 1130014-01
Sample: HA-R7
Comments: 4.1 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-02
Sample: HA-R8
Comments: 4.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-03
Sample: HA-R9
Comments: 2.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-04
Sample: HA-R11
Comments: 3.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-05
Sample: HA-R12
Comments: 3.1 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-06
Sample: HA-R15
Comments: 2.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-07
Sample: HA-R16
Comments: 4.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-08
Sample: HA-R19
Comments: 2.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-09
Sample: HA-R26
Comments: 2.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-10
Sample: HA-R27
Comments: 2.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-11
Sample: HA-R29
Comments: 3.1 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-12
Sample: HA-R30
Comments: 2.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-13
Sample: HA-R31
Comments: 2.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-14
Sample: HA-R32
Comments: 4.5 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-15
Sample: CB-R37
Comments: 1.1 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-16
Sample: CB-R2
Comments: 1.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-17
Sample: CB-R13
Comments: 2.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-18
Sample: CB-R16
Comments: 2.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-19
Sample: CB-R17
Comments: 1.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-20
Sample: CB-R18
Comments: 1.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-21
Sample: CB-R19
Comments: 0.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-22
Sample: CB-R21
Comments: 1.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-23
Sample: CB-R27
Comments: 2.4 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-24
Sample: CB-R28
Comments: 2.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-25
Sample: CB-R29
Comments: 1.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-26
Sample: CB-R30
Comments: 1.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-27
Sample: CB-R31
Comments: 1.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-28
Sample: CB-R32
Comments: 2.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-29
Sample: CB-R33
Comments: 1.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-30
Sample: CB-R35
Comments: 1.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-31
Sample: CB-R36
Comments: 1.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-32
Sample: CB-R39
Comments: 1.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-33
Sample: AC-R5
Comments: 1.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-34
Sample: AC-R6
Comments: 4.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-35
Sample: AC-R7
Comments: 2.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-36
Sample: AC-R9
Comments: 4.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-37
Sample: AC-R11
Comments: 3.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-38
Sample: AC-R12
Comments: 3.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-39
Sample: AC-R13
Comments: 5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-40
Sample: AC-R14
Comments: 3.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-41
Sample: AC-R15
Comments: 2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-42
Sample: AC-R16
Comments: 2.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-43
Sample: AC-R17
Comments: 2.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-44
Sample: AC-R20
Comments: 2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-45
Sample: AC-R21
Comments: 2.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130014-46
Sample: AC-R22
Comments: 5.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-47
Sample: AC-R25
Comments: 1.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-48
Sample: AC-R26
Comments: 2.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-49
Sample: AC-R27
Comments: 1.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130014-50
Sample: AC-R30
Comments: 1.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Shipping Containers

Cooler

Received: July 20, 2011 10:53
Tracking No: 9583 0347 0005 via FedEx
Coolant Type: Dry Ice
Temperature: 1.6 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130014

COPY

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
* 1	HA-R2	6/23	9:30	DP	X	1	NA			X	X	X			X				Wt. (g) = 4.5 gutted
2	HA-R3	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.7
3	HA-R4	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.8
4	HA-R5	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 3.8
5	HA-R6	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.8
6	HA-R7	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.1
7	HA-R8	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.2
8	HA-R9	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.4
9	HA-R11	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 3.4
10	HA-R12	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 3.1

Relinquished by: David Pecora SP	Date: 07/19/11 SP	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: Tyler Fuh	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

* On work order 1130012

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130014

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
*✓ 1	HA-R14	6/23	9:30	DP	X	1	NA			X	X	X			X				Wt. (g) = 4.9
2	HA-R15	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.2
3	HA-R16	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.2
4	HA-R19	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.3
5	HA-R26	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.4
6	HA-R27	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.3
7	HA-R29	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 3.1
8	HA-R30	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.8
9	HA-R31	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.9
10	HA-R32	6/23	9:30	DP	X	1	NA		✓	X	X				X				Wt. (g) = 4.5 gutted

Relinquished by: David Pecora	Date: 07/19/11	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by:	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

* On work order 1130012

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130014

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	CB-R37	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.1
2	CB-R2	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.5
3	CB-R13	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.9
4	CB-R16	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.9
5	CB-R17	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.7
6	CB-R18	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.7
7	CB-R19	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 0.9
8	CB-R21	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.9
* 9	CB-R26	6/21	10:00	DP	X	1	NA			X	X	X			X				Wt. (g) = 4.4 gutted
10	CB-R27	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.4 gutted

Relinquished by: David Pecora SP	Date: 07/19/11 SP	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by:	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

* On work order 1130012

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130014

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	CB-R28	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.4
2	CB-R29	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.8
3	CB-R30	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.5
4	CB-R31	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.7
5	CB-R32	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.9
6	CB-R33	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.3
*7	CB-R34	6/21	10:00	DP	X	1	NA			X	X	X			X				Wt. (g) = 2.2
8	CB-R35	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.4
9	CB-R36	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.4
10	CB-R39	6/21	10:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.4

Relinquished by: David Pecora DP	Date: 07/19/11 DP	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

* On work order 1130012

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130014

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	AC-R5	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.6
2	AC-R6	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 4.8
3	AC-R7	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.2
4	AC-R9	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 4.7
5	AC-R11	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 3.2
6	AC-R12	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 3.5
7	AC-R13	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 5
8	AC-R14	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 3.8
9	AC-R15	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 2
10	AC-R16	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.6

Relinquished by: David Pecora	Date: 07/19/11	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by:	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130014

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	AC-R17	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.9
*✓ 2	AC-R19	6/22	15:00	DP	X	1	NA			X	X	X			X				Wt. (g) = 5.4 gutted
3	AC-R20	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 2
4	AC-R21	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.3
5	AC-R22	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 5.6 gutted
*✓ 6	AC-R24	6/22	15:00	DP	X	1	NA			X	X	X			X				Wt. (g) = 5.5
7	AC-R25	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.6
8	AC-R26	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 2.2
9	AC-R27	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.4
10	AC-R30	6/22	15:00	DP	X	1	NA			X	X				X				Wt. (g) = 1.4

Relinquished by: David Pecora SP	Date: 07/19/11 SP	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

* On work order 1130012

August 17, 2011

URS - Oakland
ATTN: Elizabeth Nielsen
1333 Broadway, Suite 800
Oakland, CA 94612
elizabeth_nielsen@urscorp.com

RE: Project URS-OA1101 Client Project ID: 26817576

Dear Ms. Nielsen,

On July 20, 2011, Brooks Rand Labs (BRL) received one hundred (100) small fish samples. The samples were split into two work orders and were logged-in for the contracted analyses of homogenization, total mercury (Hg), and methylmercury (MeHg) according to the chain-of-custody (COC) form(s). The samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

Note: Results were reported on both a wet-weight and dry-weight basis.

The results were blank-corrected as described in the calculations section of the relevant SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more information please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

Jen Hartmann
Jr. Project Manager
jen@brooksrand.com

Lydia Greaves
Jr. Project Manager
lydia@brooksrand.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations /certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	**MS**	matrix spike
BRL	Brooks Rand Labs	**MSD**	matrix spike duplicate
BS	laboratory fortified blank	**ND**	non-detect
CAL	calibration standard	**NR**	non-reportable
CCV	continuing calibration verification	**PS**	post preparation spike
COC	chain of custody record	**REC**	percent recovery
CRM	certified reference material	**RPD**	relative percent difference
D	dissolved fraction	**RSD**	relative standard deviation
DUP	duplicate	**SCV**	secondary calibration verification
ICV	initial calibration verification	**SOP**	standard operating procedure
MDL	method detection limit	**SRM**	standard reference material
MRL	method reporting limit	**T**	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H Holding time and/or preservation requirements not met. Result is estimated.
J Estimated value. A full explanation is presented in the narrative.
J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N Spike recovery was not within acceptance criteria. Result is estimated.
R Rejected, unusable value. A full explanation is presented in the narrative.
U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
LG-R33	1130012-01	Biota	Sample	06/27/2011	07/20/2011
LG-R59	1130012-02	Biota	Sample	06/27/2011	07/20/2011
F2-R10	1130012-03	Biota	Sample	06/23/2011	07/20/2011
F2-R14	1130012-04	Biota	Sample	06/23/2011	07/20/2011
HA-R2	1130012-05	Biota	Sample	06/23/2011	07/20/2011
HA-R14	1130012-06	Biota	Sample	06/23/2011	07/20/2011
CB-R26	1130012-07	Biota	Sample	06/21/2011	07/20/2011
CB-R34	1130012-08	Biota	Sample	06/21/2011	07/20/2011
AC-R19	1130012-09	Biota	Sample	06/22/2011	07/20/2011
AC-R24	1130012-10	Biota	Sample	06/22/2011	07/20/2011
LG-R32	1130012-11	Biota	Sample	06/27/2011	07/20/2011
LG-R34	1130012-12	Biota	Sample	06/27/2011	07/20/2011
LG-R35	1130012-13	Biota	Sample	06/27/2011	07/20/2011
LG-R38	1130012-14	Biota	Sample	06/27/2011	07/20/2011
LG-R40	1130012-15	Biota	Sample	06/27/2011	07/20/2011
LG-R41	1130012-16	Biota	Sample	06/27/2011	07/20/2011
LG-R44	1130012-17	Biota	Sample	06/27/2011	07/20/2011
LG-R45	1130012-18	Biota	Sample	06/27/2011	07/20/2011
LG-R46	1130012-19	Biota	Sample	06/27/2011	07/20/2011
LG-R47	1130012-20	Biota	Sample	06/27/2011	07/20/2011
LG-R48	1130012-21	Biota	Sample	06/27/2011	07/20/2011
LG-R49	1130012-22	Biota	Sample	06/27/2011	07/20/2011
LG-R50	1130012-23	Biota	Sample	06/27/2011	07/20/2011
LG-R52	1130012-24	Biota	Sample	06/27/2011	07/20/2011
LG-R53	1130012-25	Biota	Sample	06/27/2011	07/20/2011
LG-R54	1130012-26	Biota	Sample	06/27/2011	07/20/2011
LG-R55	1130012-27	Biota	Sample	06/27/2011	07/20/2011
LG-R56	1130012-28	Biota	Sample	06/27/2011	07/20/2011
FX-R8	1130012-29	Biota	Sample	06/22/2011	07/20/2011
FX-R10	1130012-30	Biota	Sample	06/22/2011	07/20/2011
FX-R11	1130012-31	Biota	Sample	06/22/2011	07/20/2011
FX-R12	1130012-32	Biota	Sample	06/22/2011	07/20/2011
F2-R21	1130012-33	Biota	Sample	06/22/2011	07/20/2011
F2-R23	1130012-34	Biota	Sample	06/22/2011	07/20/2011
FX-R24	1130012-35	Biota	Sample	06/22/2011	07/20/2011
F2-R6	1130012-36	Biota	Sample	06/23/2011	07/20/2011
F2-R7	1130012-37	Biota	Sample	06/23/2011	07/20/2011
F2-R8	1130012-38	Biota	Sample	06/23/2011	07/20/2011
F2-R9	1130012-39	Biota	Sample	06/23/2011	07/20/2011
F2-R12	1130012-40	Biota	Sample	06/23/2011	07/20/2011
F2-R13	1130012-41	Biota	Sample	06/23/2011	07/20/2011

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
F2-R15	1130012-42	Biota	Sample	06/23/2011	07/20/2011
F2-R16	1130012-43	Biota	Sample	06/23/2011	07/20/2011
F2-R17	1130012-44	Biota	Sample	06/23/2011	07/20/2011
F2-R18	1130012-45	Biota	Sample	06/23/2011	07/20/2011
F2-R19	1130012-46	Biota	Sample	06/23/2011	07/20/2011
HA-R3	1130012-47	Biota	Sample	06/23/2011	07/20/2011
HA-R4	1130012-48	Biota	Sample	06/23/2011	07/20/2011
HA-R5	1130012-49	Biota	Sample	06/23/2011	07/20/2011
HA-R6	1130012-50	Biota	Sample	06/23/2011	07/20/2011

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
%TS	Biota	SM 2540G	08/04/2011	08/08/2011	B111085	N/A
%TS	Biota	SM 2540G	08/04/2011	08/08/2011	B111087	N/A
Hg	Biota	EPA 1631 Appendix	08/04/2011	08/05/2011	B111084	1100540
Hg	Biota	EPA 1631 Appendix	08/04/2011	08/05/2011	B111086	1100541
MeHg	Biota	EPA 1630	08/02/2011	08/15/2011	B111233	1100551

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
AC-R19										
1130012-09	%TS	Biota	N/A	22.07		0.12	0.40	%	B111085	N/A
1130012-09	Hg	Biota	N/A	3300		12.1	30.2	ng/g dry	B111084	1100540
1130012-09	Hg	Biota	N/A	728		2.66	6.66	ng/g	B111084	1100540
1130012-09	MeHg	Biota	N/A	2080		4.4	13.2	ng/g dry	B111233	1100551
1130012-09	MeHg	Biota	N/A	458		1.0	2.9	ng/g	B111233	1100551
AC-R24										
1130012-10	%TS	Biota	N/A	22.93		0.12	0.40	%	B111085	N/A
1130012-10	Hg	Biota	N/A	1650		12.8	32.1	ng/g dry	B111084	1100540
1130012-10	Hg	Biota	N/A	378		2.94	7.35	ng/g	B111084	1100540
1130012-10	MeHg	Biota	N/A	1240		4.3	12.8	ng/g dry	B111233	1100551
1130012-10	MeHg	Biota	N/A	285		1.0	2.9	ng/g	B111233	1100551
CB-R26										
1130012-07	%TS	Biota	N/A	20.68		0.12	0.40	%	B111085	N/A
1130012-07	Hg	Biota	N/A	703		14.1	35.3	ng/g dry	B111084	1100540
1130012-07	Hg	Biota	N/A	145		2.92	7.31	ng/g	B111084	1100540
1130012-07	MeHg	Biota	N/A	576		4.9	14.6	ng/g dry	B111233	1100551
1130012-07	MeHg	Biota	N/A	119		1.0	3.0	ng/g	B111233	1100551
CB-R34										
1130012-08	%TS	Biota	N/A	22.66		0.12	0.40	%	B111085	N/A
1130012-08	Hg	Biota	N/A	568		12.1	30.3	ng/g dry	B111084	1100540
1130012-08	Hg	Biota	N/A	129		2.74	6.86	ng/g	B111084	1100540
1130012-08	MeHg	Biota	N/A	449		4.1	12.3	ng/g dry	B111233	1100551
1130012-08	MeHg	Biota	N/A	102		0.9	2.8	ng/g	B111233	1100551
F2-R10										
1130012-03	%TS	Biota	N/A	21.09		0.12	0.40	%	B111085	N/A
1130012-03	Hg	Biota	N/A	1890		10.7	26.7	ng/g dry	B111084	1100540
1130012-03	Hg	Biota	N/A	399		2.25	5.62	ng/g	B111084	1100540
1130012-03	MeHg	Biota	N/A	1820		45.7	137	ng/g dry	B111233	1100551
1130012-03	MeHg	Biota	N/A	385		9.6	28.9	ng/g	B111233	1100551
F2-R12										
1130012-40	%TS	Biota	N/A	23.98		0.07	0.24	%	B111087	N/A
1130012-40	Hg	Biota	N/A	1340		10.2	25.5	ng/g dry	B111086	1100541
1130012-40	Hg	Biota	N/A	322		2.44	6.11	ng/g	B111086	1100541
F2-R13										
1130012-41	%TS	Biota	N/A	19.78		0.07	0.24	%	B111087	N/A
1130012-41	Hg	Biota	N/A	3080		16.0	39.9	ng/g dry	B111086	1100541
1130012-41	Hg	Biota	N/A	610		3.16	7.89	ng/g	B111086	1100541

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
F2-R14										
1130012-04	%TS	Biota	N/A	27.35		0.12	0.40	%	B111085	N/A
1130012-04	Hg	Biota	N/A	1090		10.2	25.6	ng/g dry	B111084	1100540
1130012-04	Hg	Biota	N/A	297		2.80	7.01	ng/g	B111084	1100540
1130012-04	MeHg	Biota	N/A	898		3.4	10.1	ng/g dry	B111233	1100551
1130012-04	MeHg	Biota	N/A	246		0.9	2.8	ng/g	B111233	1100551
F2-R15										
1130012-42	%TS	Biota	N/A	21.55		0.07	0.24	%	B111087	N/A
1130012-42	Hg	Biota	N/A	1980		14.4	36.0	ng/g dry	B111086	1100541
1130012-42	Hg	Biota	N/A	426		3.10	7.76	ng/g	B111086	1100541
F2-R16										
1130012-43	%TS	Biota	N/A	21.21		0.07	0.24	%	B111087	N/A
1130012-43	Hg	Biota	N/A	1830		14.8	37.1	ng/g dry	B111086	1100541
1130012-43	Hg	Biota	N/A	387		3.15	7.87	ng/g	B111086	1100541
F2-R17										
1130012-44	%TS	Biota	N/A	25.31		0.07	0.24	%	B111087	N/A
1130012-44	Hg	Biota	N/A	1250		11.5	28.7	ng/g dry	B111086	1100541
1130012-44	Hg	Biota	N/A	316		2.90	7.26	ng/g	B111086	1100541
F2-R18										
1130012-45	%TS	Biota	N/A	23.65		0.07	0.24	%	B111087	N/A
1130012-45	Hg	Biota	N/A	1780		13.1	32.8	ng/g dry	B111086	1100541
1130012-45	Hg	Biota	N/A	421		3.11	7.77	ng/g	B111086	1100541
F2-R19										
1130012-46	%TS	Biota	N/A	28.29		0.07	0.24	%	B111087	N/A
1130012-46	Hg	Biota	N/A	1070		11.1	27.8	ng/g dry	B111086	1100541
1130012-46	Hg	Biota	N/A	304		3.15	7.87	ng/g	B111086	1100541
F2-R21										
1130012-33	%TS	Biota	N/A	27.24		0.07	0.24	%	B111087	N/A
1130012-33	Hg	Biota	N/A	1500		10.7	26.7	ng/g dry	B111086	1100541
1130012-33	Hg	Biota	N/A	408		2.91	7.27	ng/g	B111086	1100541
F2-R23										
1130012-34	%TS	Biota	N/A	21.91		0.07	0.24	%	B111087	N/A
1130012-34	Hg	Biota	N/A	1730		12.5	31.3	ng/g dry	B111086	1100541
1130012-34	Hg	Biota	N/A	379		2.75	6.87	ng/g	B111086	1100541
F2-R6										
1130012-36	%TS	Biota	N/A	22.19		0.07	0.24	%	B111087	N/A
1130012-36	Hg	Biota	N/A	2370		13.0	32.4	ng/g dry	B111086	1100541
1130012-36	Hg	Biota	N/A	527		2.88	7.19	ng/g	B111086	1100541

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
F2-R7										
1130012-37	%TS	Biota	N/A	26.36		0.07	0.24	%	B111087	N/A
1130012-37	Hg	Biota	N/A	1160		8.72	21.8	ng/g dry	B111086	1100541
1130012-37	Hg	Biota	N/A	306		2.30	5.75	ng/g	B111086	1100541
F2-R8										
1130012-38	%TS	Biota	N/A	25.57		0.07	0.24	%	B111087	N/A
1130012-38	Hg	Biota	N/A	1470		11.5	28.8	ng/g dry	B111086	1100541
1130012-38	Hg	Biota	N/A	376		2.95	7.37	ng/g	B111086	1100541
F2-R9										
1130012-39	%TS	Biota	N/A	25.89		0.07	0.24	%	B111087	N/A
1130012-39	Hg	Biota	N/A	1730		11.3	28.4	ng/g dry	B111086	1100541
1130012-39	Hg	Biota	N/A	449		2.94	7.34	ng/g	B111086	1100541
FX-R10										
1130012-30	%TS	Biota	N/A	22.47		0.12	0.40	%	B111085	N/A
1130012-30	Hg	Biota	N/A	1270		14.2	35.5	ng/g dry	B111084	1100540
1130012-30	Hg	Biota	N/A	285		3.19	7.97	ng/g	B111084	1100540
FX-R11										
1130012-31	%TS	Biota	N/A	24.50		0.07	0.24	%	B111087	N/A
1130012-31	Hg	Biota	N/A	1020		9.04	22.6	ng/g dry	B111086	1100541
1130012-31	Hg	Biota	N/A	250		2.21	5.53	ng/g	B111086	1100541
FX-R12										
1130012-32	%TS	Biota	N/A	23.63		0.07	0.24	%	B111087	N/A
1130012-32	Hg	Biota	N/A	2700		11.6	29.0	ng/g dry	B111086	1100541
1130012-32	Hg	Biota	N/A	637		2.74	6.85	ng/g	B111086	1100541
FX-R24										
1130012-35	%TS	Biota	N/A	21.93		0.07	0.24	%	B111087	N/A
1130012-35	Hg	Biota	N/A	2130		12.3	30.8	ng/g dry	B111086	1100541
1130012-35	Hg	Biota	N/A	466		2.70	6.75	ng/g	B111086	1100541
FX-R8										
1130012-29	%TS	Biota	N/A	25.07		0.12	0.40	%	B111085	N/A
1130012-29	Hg	Biota	N/A	1380		11.5	28.7	ng/g dry	B111084	1100540
1130012-29	Hg	Biota	N/A	346		2.88	7.20	ng/g	B111084	1100540
HA-R14										
1130012-06	%TS	Biota	N/A	24.16		0.12	0.40	%	B111085	N/A
1130012-06	Hg	Biota	N/A	3970		10.6	26.6	ng/g dry	B111084	1100540
1130012-06	Hg	Biota	N/A	958		2.57	6.42	ng/g	B111084	1100540
1130012-06	MeHg	Biota	N/A	1570		3.9	11.8	ng/g dry	B111233	1100551
1130012-06	MeHg	Biota	N/A	378		1.0	2.9	ng/g	B111233	1100551

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
HA-R2										
1130012-05	%TS	Biota	N/A	20.89		0.12	0.40	%	B111085	N/A
1130012-05	Hg	Biota	N/A	3250		14.4	36.0	ng/g dry	B111084	1100540
1130012-05	Hg	Biota	N/A	680		3.01	7.52	ng/g	B111084	1100540
1130012-05	MeHg	Biota	N/A	2860		4.8	14.5	ng/g dry	B111233	1100551
1130012-05	MeHg	Biota	N/A	597		1.0	3.0	ng/g	B111233	1100551
HA-R3										
1130012-47	%TS	Biota	N/A	21.87		0.07	0.24	%	B111087	N/A
1130012-47	Hg	Biota	N/A	2030		14.0	35.0	ng/g dry	B111086	1100541
1130012-47	Hg	Biota	N/A	445		3.06	7.65	ng/g	B111086	1100541
HA-R4										
1130012-48	%TS	Biota	N/A	25.06		0.07	0.24	%	B111087	N/A
1130012-48	Hg	Biota	N/A	2940		12.1	30.2	ng/g dry	B111086	1100541
1130012-48	Hg	Biota	N/A	737		3.03	7.57	ng/g	B111086	1100541
HA-R5										
1130012-49	%TS	Biota	N/A	21.70		0.07	0.24	%	B111087	N/A
1130012-49	Hg	Biota	N/A	3220		11.7	29.2	ng/g dry	B111086	1100541
1130012-49	Hg	Biota	N/A	700		2.53	6.33	ng/g	B111086	1100541
HA-R6										
1130012-50	%TS	Biota	N/A	22.67		0.07	0.24	%	B111087	N/A
1130012-50	Hg	Biota	N/A	3080		12.0	29.9	ng/g dry	B111086	1100541
1130012-50	Hg	Biota	N/A	698		2.71	6.78	ng/g	B111086	1100541
LG-R32										
1130012-11	%TS	Biota	N/A	30.25		0.12	0.40	%	B111085	N/A
1130012-11	Hg	Biota	N/A	1300		9.77	24.4	ng/g dry	B111084	1100540
1130012-11	Hg	Biota	N/A	394		2.95	7.39	ng/g	B111084	1100540
LG-R33										
1130012-01	%TS	Biota	N/A	27.22		0.12	0.40	%	B111085	N/A
1130012-01	Hg	Biota	N/A	1660		11.9	29.6	ng/g dry	B111084	1100540
1130012-01	Hg	Biota	N/A	452		3.23	8.07	ng/g	B111084	1100540
1130012-01	MeHg	Biota	N/A	1320		3.4	10.3	ng/g dry	B111233	1100551
1130012-01	MeHg	Biota	N/A	359		0.9	2.8	ng/g	B111233	1100551
LG-R34										
1130012-12	%TS	Biota	N/A	27.11		0.12	0.40	%	B111085	N/A
1130012-12	Hg	Biota	N/A	2100		10.7	26.7	ng/g dry	B111084	1100540
1130012-12	Hg	Biota	N/A	569		2.89	7.23	ng/g	B111084	1100540
LG-R35										
1130012-13	%TS	Biota	N/A	25.93		0.12	0.40	%	B111085	N/A
1130012-13	Hg	Biota	N/A	1460		11.4	28.5	ng/g dry	B111084	1100540
1130012-13	Hg	Biota	N/A	379		2.96	7.40	ng/g	B111084	1100540

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
LG-R38										
1130012-14	%TS	Biota	N/A	28.73		0.12	0.40	%	B111085	N/A
1130012-14	Hg	Biota	N/A	1580		10.8	27.1	ng/g dry	B111084	1100540
1130012-14	Hg	Biota	N/A	454		3.11	7.78	ng/g	B111084	1100540
LG-R40										
1130012-15	%TS	Biota	N/A	25.36		0.12	0.40	%	B111085	N/A
1130012-15	Hg	Biota	N/A	1790		10.6	26.6	ng/g dry	B111084	1100540
1130012-15	Hg	Biota	N/A	455		2.70	6.74	ng/g	B111084	1100540
LG-R41										
1130012-16	%TS	Biota	N/A	28.16		0.12	0.40	%	B111085	N/A
1130012-16	Hg	Biota	N/A	1540		8.28	20.7	ng/g dry	B111084	1100540
1130012-16	Hg	Biota	N/A	432		2.33	5.83	ng/g	B111084	1100540
LG-R44										
1130012-17	%TS	Biota	N/A	25.35		0.12	0.40	%	B111085	N/A
1130012-17	Hg	Biota	N/A	1670		11.2	28.1	ng/g dry	B111084	1100540
1130012-17	Hg	Biota	N/A	424		2.85	7.13	ng/g	B111084	1100540
LG-R45										
1130012-18	%TS	Biota	N/A	26.50		0.12	0.40	%	B111085	N/A
1130012-18	Hg	Biota	N/A	1550		10.9	27.2	ng/g dry	B111084	1100540
1130012-18	Hg	Biota	N/A	412		2.88	7.21	ng/g	B111084	1100540
LG-R46										
1130012-19	%TS	Biota	N/A	27.43		0.12	0.40	%	B111085	N/A
1130012-19	Hg	Biota	N/A	1650		11.4	28.4	ng/g dry	B111084	1100540
1130012-19	Hg	Biota	N/A	454		3.11	7.79	ng/g	B111084	1100540
LG-R47										
1130012-20	%TS	Biota	N/A	25.32		0.12	0.40	%	B111085	N/A
1130012-20	Hg	Biota	N/A	1830		12.3	30.7	ng/g dry	B111084	1100540
1130012-20	Hg	Biota	N/A	463		3.11	7.78	ng/g	B111084	1100540
LG-R48										
1130012-21	%TS	Biota	N/A	22.42		0.12	0.40	%	B111085	N/A
1130012-21	Hg	Biota	N/A	1930		13.6	34.0	ng/g dry	B111084	1100540
1130012-21	Hg	Biota	N/A	432		3.05	7.62	ng/g	B111084	1100540
LG-R49										
1130012-22	%TS	Biota	N/A	26.32		0.12	0.40	%	B111085	N/A
1130012-22	Hg	Biota	N/A	1660		11.0	27.6	ng/g dry	B111084	1100540
1130012-22	Hg	Biota	N/A	437		2.90	7.26	ng/g	B111084	1100540
LG-R50										
1130012-23	%TS	Biota	N/A	25.77		0.12	0.40	%	B111085	N/A
1130012-23	Hg	Biota	N/A	1680		12.4	30.9	ng/g dry	B111084	1100540
1130012-23	Hg	Biota	N/A	434		3.19	7.96	ng/g	B111084	1100540

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
LG-R52										
1130012-24	%TS	Biota	N/A	26.75		0.12	0.40	%	B111085	N/A
1130012-24	Hg	Biota	N/A	1520		10.8	27.0	ng/g dry	B111084	1100540
1130012-24	Hg	Biota	N/A	407		2.88	7.21	ng/g	B111084	1100540
LG-R53										
1130012-25	%TS	Biota	N/A	28.23		0.12	0.40	%	B111085	N/A
1130012-25	Hg	Biota	N/A	1380		11.0	27.4	ng/g dry	B111084	1100540
1130012-25	Hg	Biota	N/A	390		3.10	7.74	ng/g	B111084	1100540
LG-R54										
1130012-26	%TS	Biota	N/A	28.78		0.12	0.40	%	B111085	N/A
1130012-26	Hg	Biota	N/A	1390		9.86	24.6	ng/g dry	B111084	1100540
1130012-26	Hg	Biota	N/A	399		2.84	7.09	ng/g	B111084	1100540
LG-R55										
1130012-27	%TS	Biota	N/A	25.79		0.12	0.40	%	B111085	N/A
1130012-27	Hg	Biota	N/A	1300		11.8	29.4	ng/g dry	B111084	1100540
1130012-27	Hg	Biota	N/A	336		3.03	7.58	ng/g	B111084	1100540
LG-R56										
1130012-28	%TS	Biota	N/A	24.56		0.12	0.40	%	B111085	N/A
1130012-28	Hg	Biota	N/A	1450		12.2	30.4	ng/g dry	B111084	1100540
1130012-28	Hg	Biota	N/A	357		2.99	7.47	ng/g	B111084	1100540
LG-R59										
1130012-02	%TS	Biota	N/A	17.32		0.12	0.40	%	B111085	N/A
1130012-02	Hg	Biota	N/A	3990		16.5	41.2	ng/g dry	B111084	1100540
1130012-02	Hg	Biota	N/A	691		2.86	7.15	ng/g	B111084	1100540
1130012-02	MeHg	Biota	N/A	3630		5.6	16.8	ng/g dry	B111233	1100551
1130012-02	MeHg	Biota	N/A	628		1.0	2.9	ng/g	B111233	1100551

Accuracy & Precision Summary

Batch: B111084
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111084-SRM1	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	224.2	ng/g	101%	75-125		
B111084-SRM2	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	221.3	ng/g	100%	75-125		
B111084-DUP1	**Duplicate (1130012-03)**								
	Hg	1894		1921	ng/g dry			1%	30
B111084-MS1	**Matrix Spike (1130012-03)**								
	Hg	1894	4724	6952	ng/g dry	107%	70-130		
B111084-MSD1	**Matrix Spike Duplicate (1130012-03)**								
	Hg	1894	4584	6752	ng/g dry	106%	70-130	3%	30
B111084-DUP2	**Duplicate (1130012-04)**								
	Hg	1085		1101	ng/g dry			1%	30
B111084-MS2	**Matrix Spike (1130012-04)**								
	Hg	1085	4602	5665	ng/g dry	100%	70-130		
B111084-MSD2	**Matrix Spike Duplicate (1130012-04)**								
	Hg	1085	4441	5710	ng/g dry	104%	70-130	0.8%	30
B111084-DUP3	**Duplicate (1130012-30)**								
	Hg	1267		1325	ng/g dry			4%	30
B111084-MS3	**Matrix Spike (1130012-30)**								
	Hg	1267	5724	7174	ng/g dry	103%	70-130		
B111084-MSD3	**Matrix Spike Duplicate (1130012-30)**								
	Hg	1267	6073	7680	ng/g dry	106%	70-130	7%	30

Accuracy & Precision Summary

Batch: B111085
Lab Matrix: Biota
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B111085-DUP1	**Duplicate (1130012-03)**						
	%TS	21.09		20.69	%		2% 15
B111085-DUP2	**Duplicate (1130012-04)**						
	%TS	27.35		27.74	%		1% 15
B111085-DUP3	**Duplicate (1130012-30)**						
	%TS	22.47		24.01	%		7% 15

Accuracy & Precision Summary

Batch: B111086
Lab Matrix: Biota
Method: EPA 1631 Appendix

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111086-SRM1	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	241.6	ng/g	109%	75-125		
B111086-SRM2	**Certified Reference Material (0910049, IAEA 407)**								
	Hg		222.0	244.7	ng/g	110%	75-125		
B111086-DUP1	**Duplicate (1130012-36)**								
	Hg	2373		2334	ng/g dry			2%	30
B111086-MS1	**Matrix Spike (1130012-36)**								
	Hg	2373	5498	9034	ng/g dry	121%	70-130		
B111086-MSD1	**Matrix Spike Duplicate (1130012-36)**								
	Hg	2373	5320	8303	ng/g dry	111%	70-130	8%	30
B111086-DUP2	**Duplicate (1130012-41)**								
	Hg	3083		3566	ng/g dry			15%	30
B111086-MS2	**Matrix Spike (1130012-41)**								
	Hg	3083	6396	10180	ng/g dry	111%	70-130		
B111086-MSD2	**Matrix Spike Duplicate (1130012-41)**								
	Hg	3083	6580	10690	ng/g dry	116%	70-130	5%	30
B111086-DUP3	**Duplicate (1130012-44)**								
	Hg	1248		1238	ng/g dry			0.8%	30
B111086-MS3	**Matrix Spike (1130012-44)**								
	Hg	1248	4921	6561	ng/g dry	108%	70-130		
B111086-MSD3	**Matrix Spike Duplicate (1130012-44)**								
	Hg	1248	5104	6595	ng/g dry	105%	70-130	0.5%	30

Accuracy & Precision Summary

Batch: B111087
Lab Matrix: Biota
Method: SM 2540G

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B111087-DUP1	**Duplicate (1130012-36)**						
	%TS	22.19		24.62	%		10% 15
B111087-DUP2	**Duplicate (1130012-41)**						
	%TS	19.78		19.46	%		2% 15
B111087-DUP3	**Duplicate (1130012-44)**						
	%TS	25.31		22.11	%		13% 15

Accuracy & Precision Summary

Batch: B111233
Lab Matrix: Biota
Method: EPA 1630

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B111233-SRM1	**Certified Reference Material (1106028, NIST 1946 SRM)**								
	MeHg		394.0	359.3	ng/g	91%	65-135		
B111233-DUP1	**Duplicate (1130012-03)**								
	MeHg	1824		1738	ng/g dry			5%	35
B111233-MS1	**Matrix Spike (1130012-03)**								
	MeHg	1824	3416	5522	ng/g dry	108%	65-135		
B111233-MSD1	**Matrix Spike Duplicate (1130012-03)**								
	MeHg	1824	3426	5548	ng/g dry	109%	65-135	0.5%	35

Method Blanks & Reporting Limits

Batch: B111084
Matrix: Biota
Method: EPA 1631 Appendix
Analyte: Hg

Sample	Result	Units
B111084-BLK1	0.03	ng/g
B111084-BLK2	0.02	ng/g
B111084-BLK3	0.04	ng/g
B111084-BLK4	0.02	ng/g

Average: 0.03 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.08 **Limit:** 0.03 **MRL:** 0.10

Method Blanks & Reporting Limits

Batch: B111085
Matrix: Biota
Method: SM 2540G
Analyte: %TS

Sample	Result	Units
B111085-BLK1	-0.20	%
B111085-BLK2	-0.20	%

Average: -0.20
Limit: 0.40

MDL: 0.12
MRL: 0.40

Method Blanks & Reporting Limits

Batch: B111086
Matrix: Biota
Method: EPA 1631 Appendix
Analyte: Hg

Sample	Result	Units
B111086-BLK1	0.04	ng/g
B111086-BLK2	0.04	ng/g
B111086-BLK3	0.02	ng/g
B111086-BLK4	0.02	ng/g

Average: 0.03 **Standard Deviation:** 0.01 **MDL:** 0.04
Limit: 0.08 **Limit:** 0.03 **MRL:** 0.10

Method Blanks & Reporting Limits

Batch: B111087
Matrix: Biota
Method: SM 2540G
Analyte: %TS

Sample	Result	Units
B111087-BLK1	0.0003	%
B111087-BLK2	-0.0001	%

Average: 0.00
Limit: 0.24

MDL: 0.07
MRL: 0.24

Method Blanks & Reporting Limits

Batch: B111233
Matrix: Biota
Method: EPA 1630
Analyte: MeHg

Sample	Result	Units
B111233-BLK1	0.2	ng/g
B111233-BLK2	0.2	ng/g
B111233-BLK3	0.1	ng/g
B111233-BLK4	0.1	ng/g

Average: 0.2 **Standard Deviation:** 0.1 **MDL:** 1.0
Limit: 2.0 **Limit:** 0.7 **MRL:** 3.0

Sample Containers

Lab ID: 1130012-01
Sample: LG-R33
Comments: 2.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-02
Sample: LG-R59
Comments: 5.9 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-03
Sample: F2-R10
Comments: 32.8 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-04
Sample: F2-R14
Comments: 26.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-05
Sample: HA-R2
Comments: 4.5 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-06
Sample: HA-R14
Comments: 4.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-07
Sample: CB-R26
Comments: 4.4 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-08
Sample: CB-R34
Comments: 2.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/21/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-09
Sample: AC-R19
Comments: 5.4 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-10
Sample: AC-R24
Comments: 5.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-11
Sample: LG-R32
Comments: 1.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-12
Sample: LG-R34
Comments: 1.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-13
Sample: LG-R35
Comments: 2.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-14
Sample: LG-R38
Comments: 1.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-15
Sample: LG-R40
Comments: 1.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-16
Sample: LG-R41
Comments: 2.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-17
Sample: LG-R44
Comments: 1.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-18
Sample: LG-R45
Comments: 1.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-19
Sample: LG-R46
Comments: 1.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-20
Sample: LG-R47
Comments: 1.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-21
Sample: LG-R48
Comments: 2.5 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-22
Sample: LG-R49
Comments: 1.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-23
Sample: LG-R50
Comments: 2.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-24
Sample: LG-R52
Comments: 2.1 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-25
Sample: LG-R53
Comments: 1.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-26
Sample: LG-R54
Comments: 1.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-27
Sample: LG-R55
Comments: 1.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-28
Sample: LG-R56
Comments: 1.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/27/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-29
Sample: FX-R8
Comments: 4.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-30
Sample: FX-R10
Comments: 5.1 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-31
Sample: FX-R11
Comments: 6.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-32
Sample: FX-R12
Comments: 16.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-33
Sample: F2-R21
Comments: 9.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-34
Sample: F2-R23
Comments: 5.1 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-35
Sample: FX-R24
Comments: 6.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/22/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-36
Sample: F2-R6
Comments: 23.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-37
Sample: F2-R7
Comments: 13.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-38
Sample: F2-R8
Comments: 32.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-39
Sample: F2-R9
Comments: 11.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-40
Sample: F2-R12
Comments: 5.5 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-41
Sample: F2-R13
Comments: 20.2 g gutted

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-42
Sample: F2-R15
Comments: 4.4 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-43
Sample: F2-R16
Comments: 15.9 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-44
Sample: F2-R17
Comments: 23.2 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-45
Sample: F2-R18
Comments: 6.6 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-46
Sample: F2-R19
Comments: 5.3 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-47
Sample: HA-R3
Comments: 2.7 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-48
Sample: HA-R4
Comments: 4.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-49
Sample: HA-R5
Comments: 3.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Lab ID: 1130012-50
Sample: HA-R6
Comments: 2.8 g

Report Matrix: Biota
Sample Type: Sample

Collected: 06/23/2011
Received: 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Client-Provided	Plastic Bag	Client Provided	none	n/a		Cooler

Sample Containers

Lab ID: 1130012-51 **Report Matrix:** DIW **Collected:** 07/29/2011
Sample: HB111148- Sm MB+TS **Sample Type:** Homog Blank **Received:** 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71313080 60	none	n/a		Cooler

Lab ID: 1130012-52 **Report Matrix:** DIW **Collected:** 07/29/2011
Sample: HB111148- Lg MB+TS **Sample Type:** Homog Blank **Received:** 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71313080 60	none	n/a		Cooler

Lab ID: 1130012-53 **Report Matrix:** DIW **Collected:** 08/01/2011
Sample: HB111166 Mort/Pest.+TS **Sample Type:** Homog Blank **Received:** 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71313080 60	none	n/a		Cooler

Lab ID: 1130012-54 **Report Matrix:** DIW **Collected:** 08/01/2011
Sample: HB111166 Mag. Bull./+TS **Sample Type:** Homog Blank **Received:** 07/20/2011

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg-T	250 mL	71313080 60	none	n/a		Cooler

Shipping Containers

Cooler

Received: July 20, 2011 8:40
Tracking No: 9583 0347 0005 via FedEx
Coolant Type: Dry Ice
Temperature: 1.6 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130012

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	LG-R32	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.9
2	LG-R33	6/27	11:30	DP	X	1	NA			X	X	X			X				Wt. (g) = 2.8
3	LG-R34	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.7
4	LG-R35	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.9
5	LG-R38	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.5
6	LG-R40	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.9
7	LG-R41	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.5
8	LG-R44	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.2
9	LG-R45	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.6
10	LG-R46	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.4

Relinquished by: David Pecora DP	Date: 07/19/11 DP	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by:	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

Tracking # 9583 0347 0005

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130012

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	LG-R47	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.4
2	LG-R48	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.5 gutted
3	LG-R49	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.7
4	LG-R50	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.2
5	LG-R52	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.1
6	LG-R53	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.6
7	LG-R54	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.7
8	LG-R55	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.3
9	LG-R56	6/27	11:30	DP	X	1	NA			X	X				X				Wt. (g) = 1.3
10	LG-R59	6/27	11:30	DP	X	1	NA			X	X	X			X				Wt. (g) = 5.9 gutted

Relinquished by: David Pecora	Date: 07/19/11	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by:	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	FX-R8	6/22	12:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.3
2	FX-R10	6/22	12:30	DP	X	1	NA			X	X				X				Wt. (g) = 5.1
3	FX-R11	6/22	12:30	DP	X	1	NA			X	X				X				Wt. (g) = 6.5
4	FX-R12	6/22	12:30	DP	X	1	NA			X	X				X				Wt. (g) = 16.4
5	F2-R21	6/22	12:30	DP	X	1	NA			X	X				X				Wt. (g) = 9.6
6	F2-R23	6/22	12:30	DP	X	1	NA			X	X				X				Wt. (g) =5.1
7	FX-R24	6/22	12:30	DP	X	1	NA			X	X				X				Wt. (g) = 6.3
8	F2-R6	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 23.5
9	F2-R7	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 13.4
10	F2-R8	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 32.4

Relinquished by: David Pecora	Date: 07/19/11	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by:	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130012

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		
Client project ID: 26817576		Email: elizabeth_nielsen@urscorp.com
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	F2-R9	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 11.7
2	F2-R10	6/23	13:00	DP	X	1	NA			X	X	X			X				Wt. (g) = 32.8 gutted
3	F2-R12	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 5.5
4	F2-R13	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 20.2 gutted
5	F2-R14	6/23	13:00	DP	X	1	NA			X	X	X			X				Wt. (g) = 26.3
6	F2-R15	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 4.4
7	F2-R16	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 15.9
8	F2-R17	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 23.2
9	F2-R18	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 6.6
10	F2-R19	6/23	13:00	DP	X	1	NA			X	X				X				Wt. (g) = 5.3

Relinquished by: David Pecora SP	Date: 07/19/11 SP	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: [signature]	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

BROOKS RAND LABS
MEANINGFUL METALS DATA
3958 6th Avenue NW
Seattle, WA 98107
Phone: 206-632-6206
Fax: 206-632-6017
samples@brooksrand.com
www.brooksrand.com

Chain of Custody Record

1130012

White: LAB COPY
Yellow: CUSTOMER COPY

Client: URS Corporation	Address: 1333 Broadway, Suite 800 Oakland, CA 94612	COC receipt confirmation? Y / N If so, by: email / fax (circle one)
Contact: Elizabeth Nielsen		Email: elizabeth_nielsen@urscorp.com
Client project ID: 26817576		
PO #:	Phone #: 510 - 874 - 3063	Fax #: 510 - 874 - 3268

Requested TAT in business days:
- ■ 20 (standard)
- ☐ 15
- ☐ 10
- ☐ 5
- ☐ Other ____

Surcharges apply for expedited turn around times.

	Sample ID	Collection		Miscellaneous				Field Preservation			Analyses required								Comments
		Date	Time	Sampler (initials)	Matrix type (Tissue)	# of containers	Field filtered? (Y/N)	Unpreserved / ice only	HCl / HNO_3 (circle one)	Other (frozen)	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As / Se species (specify)	% Solids	Filtration	Other (specify)	Other (specify)	Samples will be individually homogenized for analysis.
1	HA-R2	6/23	9:30	DP	X	1	NA			X	X	X			X				Wt. (g) = 4.5 gutted
2	HA-R3	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.7
3	HA-R4	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.8
4	HA-R5	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 3.8
5	HA-R6	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.8
* 6	HA-R7	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.1
* 7	HA-R8	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 4.2
* 8	HA-R9	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 2.4
* 9	HA-R11	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 3.4
* 10	HA-R12	6/23	9:30	DP	X	1	NA			X	X				X				Wt. (g) = 3.1

Relinquished by: David Pecora SP	Date: 07/19/11 SP	Time: 15:00	Relinquished by:	Date:	Time:
Received by:	Date:	Time:	Received at BRL by: Tyler Fah	Date: 7/20/11	Time: 0840
Shipping carrier: Fed Ex	# of coolers: 1		BRL work order ID:	BRL project ID:	

* On work order 1130013

URS

Memorandum

Date: October 20, 2011

To: Mike Carbiener and Terry Cooke

From: Elizabeth Nielsen

Subject: QA/QC Evaluation for the Guadalupe River Watershed 2011 Fish Sampling

Data associated with the fish sampling in the Guadalupe River watershed during June and September 2011 have been evaluated for quality assurance and quality control (QA/QC) in accordance with EPA guidelines. This memorandum is a review of the data reported by the Brooks Rand Labs on Aug 17th, Oct 14th, and Oct 18, 2011 for BRL Reports 1130012, 1130014, 1138053, and 1138054. These data were reviewed for the QA/QC elements of precision, accuracy, reporting limits, and contamination.

The QA/QC parameters reviewed during data evaluation include the following.

- Holding Times - Holding times were checked to see if they were in excess of EPA guidelines. Holding times were calculated using analysis date, preparation date, and/or test date in relation to sampling date.
- Method Blanks - Blank analyses were reviewed for evidence of potential contamination.
- Laboratory Control Samples or Certified Reference Materials- Spike recoveries were reviewed as a check for analytical accuracy.
- Matrix Spikes (MS) - Spike recoveries and relative percent differences (RPDs) were reviewed as a check for analytical precision and accuracy.
- Laboratory Duplicates - RPDs were reviewed as a check for analytical precision.

The following EPA qualifications were used when deemed necessary for inorganic results.

- "U" - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- "J" - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- "J+" - The result is an estimated quantity, but the result may be biased high.
- "J-" - The result is an estimated quantity, but the result may be biased low.
- "UJ" - The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- "R" - The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

Below is a brief discussion of each QA/QC element reviewed and the relevant findings.

Requested Analysis

Tables A.1 and A.2 list each of the tissue samples requested for analysis and the requested parameters. All of the requested analyses were reported.

Sample Handling:

Stream fish samples were received by Brooks Rand Labs on September 16th and reservoir and lake fish samples were received on July 20th on dry ice. Samples were received frozen, in good condition and under chain of custody (COC). No sampling handing problems were identified.

Holding Times

Recommended hold times for mercury and methylmercury in biota is 1 year when frozen. All samples were analyzed within recommended holding times.

Method Blanks

Method blanks consist of clean laboratory matrix that is carried through each step of the analysis with the environmental samples for each parameter. Four method blanks were analyzed for each mercury or methyl mercury analytical batch. The averages for each of these series of blanks were less than the method detection limit. Multiple blanks were also analyzed for total solids. The absolute values of the average of the blanks were less than the reporting limit. All method blanks were less than the reporting limit for target analytes.

Sample results were blank corrected.

Laboratory Control Samples or Certified Reference Materials

Certified reference material spikes (or blank spikes) are well-characterized, laboratory-generated samples used to monitor the laboratory's day-to-day performance for analyses and assess the accuracy of the analytical process independent of matrix effects. All recoveries were within laboratory generated control limits.

Matrix Spikes

MS/MSD samples are analyzed to evaluate matrix interference for an analytical batch and to assess accuracy and precision. All MS/MSD recoveries and RPDs were within laboratory generated control limits.

Laboratory Duplicates

MS/MSD samples are analyzed as a check on the precision of the analytical process. RPDs were within laboratory generated control limits.

Summary

The data reviewed are of acceptable precision and accuracy without qualification.

Attachment A – Analytical Results

Table A.1: Requested Analysis and Analytical Results for the Stream Sampling

Sample ID	Date Collected	Mercury (ng/g dw)	Methylmercury (ng/g dw)	Percent Solids (%)	Weight and Field Preparation
BRL Report 1130012					
LG-R32	6/27/11	1300	--	30.25	1.9 g
LG-R33	6/27/11	1660	1320	27.22	2.8 g
LG-R34	6/27/11	2100	--	27.11	1.7 g
LG-R35	6/27/11	1460	--	25.93	2.9 g
LG-R38	6/27/11	1580	--	28.73	1.5 g
LG-R40	6/27/11	1790	--	25.36	1.9 g
LG-R41	6/27/11	1540	--	28.16	2.5 g
LG-R44	6/27/11	1670	--	25.35	1.2 g
LG-R45	6/27/11	1550	--	26.5	1.6 g
LG-R46	6/27/11	1650	--	27.43	1.4 g
LG-R47	6/27/11	1830	--	25.32	1.4 g
LG-R48	6/27/11	1930	--	22.42	2.5 g, gutted
LG-R49	6/27/11	1660	--	26.32	1.7 g
LG-R50	6/27/11	1680	--	25.77	2.2 g
LG-R52	6/27/11	1520	--	26.75	2.1 g
LG-R53	6/27/11	1380	--	28.23	1.6 g
LG-R54	6/27/11	1390	--	28.78	1.7 g
LG-R55	6/27/11	1300	--	25.79	1.3 g
LG-R56	6/27/11	1450	--	24.56	1.3 g
LG-R59	6/27/11	3990	3630	17.32	5.9 g, gutted
FX-R8	6/22/11	1380	--	25.07	4.3 g
FX-R10	6/22/11	1270	--	22.47	5.1 g
FX-R11	6/22/11	1020	--	24.5	6.5 g
FX-R12	6/22/11	2700	--	23.63	16.4 g
F2-R21	6/22/11	1500	--	27.24	9.6 g
F2-R23	6/22/11	1730	--	21.91	5.1 g
FX-R24	6/22/11	2130	--	21.93	6.3 g
F2-R6	6/23/11	2370	--	22.19	23.5 g
F2-R7	6/23/11	1160	--	26.36	13.4 g
F2-R8	6/23/11	1470	--	25.57	32.4 g
F2-R9	6/23/11	1730	--	25.89	11.7 g
F2-R10	6/23/11	1890	1820	21.09	32.8 g, gutted
F2-R12	6/23/11	1340	--	23.98	5.5 g
F2-R13	6/23/11	3080	--	19.78	20.2 g, gutted
F2-R14	6/23/11	1090	898	27.35	26.3 g
F2-R15	6/23/11	1980	--	21.55	4.4 g
F2-R16	6/23/11	1830	--	21.21	15.9 g
F2-R17	6/23/11	1250	--	25.31	23.2 g

Table A.1: Requested Analysis and Analytical Results for the Stream Sampling

Sample ID	Date Collected	Mercury (ng/g dw)	Methylmercury (ng/g dw)	Percent Solids (%)	Weight and Field Preparation
F2-R18	6/23/11	1780	--	23.65	6.6 g
F2-R19	6/23/11	1070	--	28.29	5.3 g
HA-R2	6/23/11	3250	2860	20.89	4.5 g, gutted
HA-R3	6/23/11	2030	--	21.87	2.7 g
HA-R4	6/23/11	2940	--	25.06	4.8 g
HA-R5	6/23/11	3220	--	21.7	3.8 g
HA-R6	6/23/11	3080	--	22.67	2.8 g
HA-R14	6/23/11	3970	1570	24.16	4.9 g
CB-R26	6/21/11	703	576	20.68	4.4 g, gutted
CB-R34	6/21/11	568	449	22.66	2.2 g
AC-R19	6/22/11	3300	2080	22.07	5.4 g, gutted
AC-R24	6/22/11	1650	1240	22.93	5.5 g
BRL Report 1130014					
HA-R7	6/23/11	5290	--	21.67	4.1 g
HA-R8	6/23/11	3250	--	22.78	4.2 g
HA-R9	6/23/11	1660	--	24.89	2.4 g
HA-R11	6/23/11	3320	--	21.54	3.4 g
HA-R12	6/23/11	2370	--	23.94	3.1 g
HA-R15	6/23/11	1850	--	25.55	2.2 g
HA-R16	6/23/11	3560	--	22.46	4.2 g
HA-R19	6/23/11	3310	--	21.5	2.3 g
HA-R26	6/23/11	1770	--	25.98	2.4 g
HA-R27	6/23/11	1600	--	24.59	2.3 g
HA-R29	6/23/11	2820	--	24.47	3.1 g
HA-R30	6/23/11	1790	--	25.52	2.8 g
HA-R31	6/23/11	2730	--	23.69	2.9 g
HA-R32	6/23/11	3820	--	23.42	4.5 g, gutted
CB-R37	6/21/11	523	--	23.78	1.1 g
CB-R2	6/21/11	549	--	20.24	1.5 g
CB-R13	6/21/11	827	--	20.76	2.9 g
CB-R16	6/21/11	630	--	25.96	2.9 g
CB-R17	6/21/11	493	--	25.63	1.7 g
CB-R18	6/21/11	652	--	21.86	1.7 g
CB-R19	6/21/11	759	--	23.4	0.9 g
CB-R21	6/21/11	589	--	22.48	1.9 g
CB-R27	6/21/11	649	--	23.6	2.4 g, gutted
CB-R28	6/21/11	550	--	22.13	2.4 g
CB-R29	6/21/11	631	--	22.65	1.8 g
CB-R30	6/21/11	563	--	26.02	1.5 g
CB-R31	6/21/11	652	--	26.9	1.7 g
CB-R32	6/21/11	546	--	23.61	2.9 g

Table A.1: Requested Analysis and Analytical Results for the Stream Sampling

Sample ID	Date Collected	Mercury (ng/g dw)	Methylmercury (ng/g dw)	Percent Solids (%)	Weight and Field Preparation
CB-R33	6/21/11	541	--	24.13	1.3 g
CB-R35	6/21/11	480	--	25.9	1.4 g
CB-R36	6/21/11	540	--	24.28	1.4 g
CB-R39	6/21/11	533	--	24.91	1.4 g
AC-R5	6/22/11	1760	--	23.39	1.6 g
AC-R6	6/22/11	1510	--	24.96	4.8 g
AC-R7	6/22/11	1990	--	22.45	2.2 g
AC-R9	6/22/11	1240	--	26.45	4.7 g
AC-R11	6/22/11	1070	--	28.85	3.2 g
AC-R12	6/22/11	1780	--	24.94	3.5 g
AC-R13	6/22/11	1610	--	26.29	5 g
AC-R14	6/22/11	1450	--	24.62	3.8 g
AC-R15	6/22/11	1540	--	24.21	2 g
AC-R16	6/22/11	1240	--	25.79	2.6 g
AC-R17	6/22/11	1160	--	28.63	2.9 g
AC-R20	6/22/11	1360	--	24.7	2 g
AC-R21	6/22/11	1270	--	27.47	2.3 g
AC-R22	6/22/11	2570	--	24.61	5.6 g, gutted
AC-R25	6/22/11	1390	--	26.95	1.6 g
AC-R26	6/22/11	1510	--	26.75	2.2 g
AC-R27	6/22/11	2210	--	23.54	1.4 g
AC-R30	6/22/11	2350	--	22.56	1.4 g

Table A.2: Requested Analysis and Analytical Results for Reservoir and Lake Sampling

Sample ID	Date Collected	Mercury (ng/g dw)	Methylmercury (ng/g dw)	Percent Solids (%)	Weight and Field Preparation
BRL Report 1130012					
LA-LMB07	8/29/11	3050	3380	23.55	6.9 g
LA-LMB10	8/29/11	3570	3580	18.61	9.1 g
CR-LMB12	8/29/11	444	481	20.55	7.4 g, gutted
CR-LMB15	8/29/11	763	860	18.24	10.3 g
AR-LMB05	8/30/11	3590	3170	20.96	7.5 g, gutted
AR-LMB09	8/30/11	3270	3060	22.55	7.7 g
GR-GS07	9/1/11	3460	2820	24.05	6.8 g
GR-GS08	9/1/11	3650	3160	23.34	7.4 g, gutted
BRL Report 1130014					
LA-LMB01	8/29/11	2310	--	21.84	5.0 g
LA-LMB02	8/29/11	2590	--	22.43	3.6 g
LA-LMB03	8/29/11	3060	--	23.3	6.9 g

Table A.2: Requested Analysis and Analytical Results for Reservoir and Lake Sampling

Sample ID	Date Collected	Mercury (ng/g dw)	Methylmercury (ng/g dw)	Percent Solids (%)	Weight and Field Preparation
LA-LMB04	8/29/11	3360	--	20	4.2 g
LA-LMB05	8/29/11	3570	--	20.54	7.4 g, gutted
LA-LMB06	8/29/11	3330	--	20.69	3.3 g
LA-LMB08	8/29/11	3490	--	21.33	4.5 g
LA-LMB09	8/29/11	2750	--	21.14	2.9 g
LA-LMB11	8/29/11	2870	--	21.96	3.3 g
LA-LMB12	8/29/11	1680	--	22.6	5.6 g
LA-LMB13	8/29/11	1820	--	24.08	4.3 g
LA-LMB14	8/29/11	3410	--	20.66	9.1 g
LA-LMB15	8/29/11	3520	--	20.45	4.8 g
LA-LMB16	8/29/11	3370	--	21.74	5.4 g
LA-LMB17	8/29/11	3480	--	21.34	8.7 g
LA-LMB18	8/29/11	2370	--	23	6.5 g
LA-LMB19	8/29/11	2970	--	22.74	5.2 g
LA-LMB20	8/29/11	3670	--	22.5	8.0 g
CR-LMB01	8/29/11	337	--	20.91	6.8 g
CR-LMB02	8/29/11	431	--	23.45	3.8 g
CR-LMB03	8/29/11	851	--	21.54	10.4 g
CR-LMB04	8/29/11	440	--	20.76	5.4 g
CR-LMB05	8/29/11	454	--	21.23	7.2 g
CR-LMB06	8/29/11	515	--	22.9	7.4 g
CR-LMB07	8/29/11	1320	--	20.95	11.6 g
CR-LMB08	8/29/11	351	--	21.83	4.9 g
CR-LMB09	8/29/11	287	--	24.85	3.2 g
CR-LMB10	8/29/11	427	--	21.18	4.2 g
CR-LMB11	8/29/11	338	--	23.85	3.2 g
CR-LMB13	8/29/11	347	--	21.33	3.3 g
CR-LMB14	8/29/11	463	--	23.53	4.8 g
CR-LMB16	8/29/11	372	--	23.72	4.1 g
AR-LMB01	8/30/11	3630	--	21.94	3.5 g
AR-LMB02	8/30/11	4230	--	21.11	4.0 g
AR-LMB03	8/30/11	2890	--	22.38	4.1 g
AR-LMB04	8/30/11	3770	--	23.23	3.3 g
AR-LMB06	8/30/11	4240	--	23.56	4.4 g
AR-LMB07	8/30/11	3410	--	21.15	4.0 g
AR-LMB08	8/30/11	3470	--	22.77	4.3 g
AR-LMB10	8/30/11	7210	--	21.96	8.0 g, gutted
AR-LMB11	8/30/11	2700	--	22.04	3.2 g
AR-LMB12	8/30/11	3150	--	23.78	5.9 g
AR-LMB13	8/30/11	4210	--	22.03	4.0 g
AR-LMB14	8/30/11	2380	--	23.14	3.4 g

Table A.2: Requested Analysis and Analytical Results for Reservoir and Lake Sampling

Sample ID	Date Collected	Mercury (ng/g dw)	Methylmercury (ng/g dw)	Percent Solids (%)	Weight and Field Preparation
AR-LMB15	8/30/11	2300	--	24.19	4.4 g
AR-LMB16	8/30/11	4850	--	19.67	5.2 g
AR-LMB17	8/30/11	3410	--	21.17	6.7 g
AR-LMB18	8/30/11	5210	--	20.81	6.7 g
AR-LMB19	8/30/11	4010	--	21.93	3.5 g
AR-LMB20	8/30/11	2520	--	22.06	5.0 g
GR-GS01	9/1/11	2910	--	25.32	4.7 g
GR-GS02	9/1/11	2810	--	26.42	6.3 g
GR-GS03	9/1/11	2920	--	23.49	4.0 g
GR-GS04	9/1/11	4900	--	25.45	5.3 g, gutted
GR-GS05	9/1/11	3030	--	26	4.7 g
GR-GS06	9/1/11	2160	--	25.52	3.9 g
GR-GS09	9/1/11	2670	--	20.62	4.9 g

Appendix D

Statistical Results

STATISTICAL RESULTS

The results of the statistical analysis are presented below.

Table D-1. Percentage of Inorganic Mercury in Whole Body and Gutted Fish Samples

	Summary Statistics -- Percent Delta					Shapiro-Wilk W Test		Statistical Comparison, α = 5%)		
Group	**No. of Samples**	**Mean**	**Std Dev**	**Min**	**Max**	**p-value**	**Distrib-ution**	**Appropriate Statistical Test**	**p-value**	**Significant Lower Percent Delta in Gutted Fish?**
Whole Body Fish	9	16.2	21.6	-12.7	60.5	0.210	Normal	t-Test (Equal Variance)	0.260	No
Gutted Fish	9	10.7	12.7	-8.3	37.0	0.592	Normal			

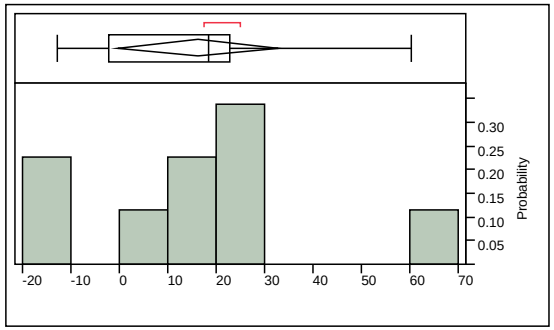
Percent Delta = (Total mercury, dry weight - Methylmercury, dry weight) / Total mercury, dry weight × 100%

Percent Delta may be considered as the percentage of total mercury which is not methylmercury (i.e., inorganic mercury).

Only data analyzed for both total mercury and methylmercury are used in this evaluation.

Distributions Gutted=No

Percent Delta



Quantiles

100.0%	maximum	60.4534
99.5%		60.4534
97.5%		60.4534
90.0%		60.4534
75.0%	quartile	22.8996
50.0%	median	18.4971
25.0%	quartile	-2.1988
10.0%		-12.713
2.5%		-12.713
0.5%		-12.713
0.0%	minimum	-12.713

Moments

Mean	16.192
Std Dev	21.630341
Std Err Mean	7.2101136
Upper 95% Mean	32.819405
Lower 95% Mean	-0.433699
N	9

Fitted Normal

Parameter Estimates

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	μ	16.192853	-0.433699	32.819405
Dispersion	σ	21.630341	14.610366	41.438777

-2log(Likelihood) = 79.8746395290953

Goodness-of-Fit Test

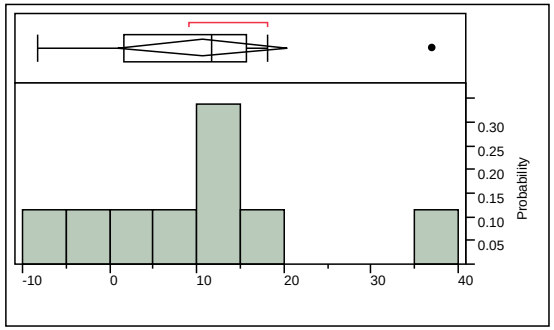
Shapiro-Wilk W Test

W	Prob<W
0.892218	0.2103

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

Distributions Gutted=Yes

Percent Delta



Quantiles

100.0%	maximum	36.9607
99.5%		36.9607
97.5%		36.9607
90.0%		36.9607
75.0%	quartile	15.745
50.0%	median	11.6892
25.0%	quartile	1.7118
10.0%		-8.3333
2.5%		-8.3333
0.5%		-8.3333
0.0%	minimum	-8.3333

Moments

Mean	10.696
Std Dev	12.693754
Std Err Mean	4.2312515
Upper 95% Mean	20.454146
Lower 95% Mean	0.9395796
N	9

Fitted Normal

Parameter Estimates

Type	Parameter	Estimate	Lower 95%	Upper 95%
Location	μ	10.696863	0.9395796	20.454146
Dispersion	σ	12.693754	8.5740857	24.318325

-2log(Likelihood) = 70.2808753084666

Goodness-of-Fit Test

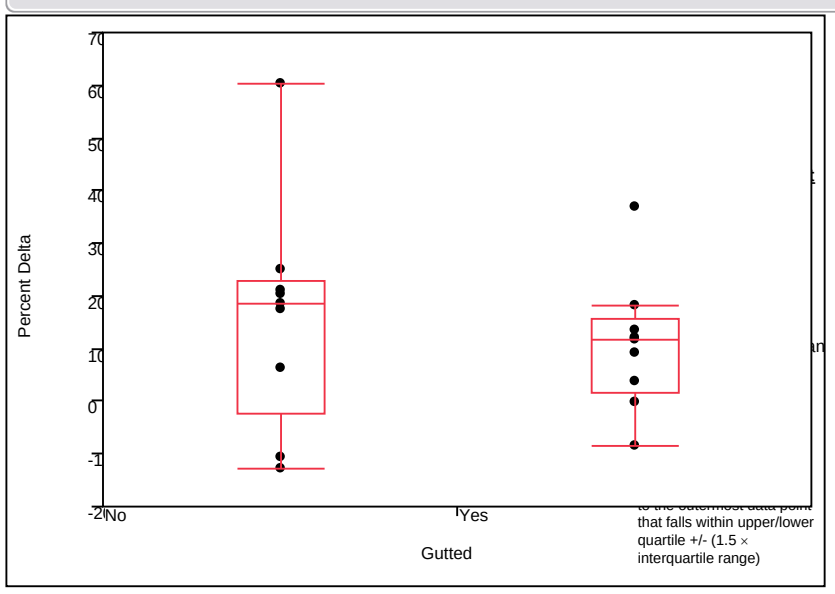
Shapiro-Wilk W Test

W	Prob<W
0.940938	0.5918

Note: Ho = The data is from the Normal distribution. Small p-values reject Ho.

Figure D-1. Distribution of Samples with Calculated Inorganic Mercury

Oneway Analysis of Percent Delta By Gutted



Quantiles

Level	Minimum	10%	25%	Median	75%	90%	Maxi
No	-12.713	-12.713	-2.19883	18.49711	22.89959	60.4534	60.45
Yes	-8.33333	-8.33333	1.711796	11.69916	15.74505	36.9697	36.96

Oneway Anova

Summary of Fit

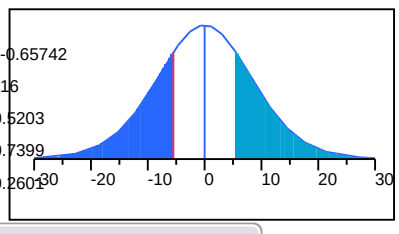
Rsquare	0.026302
Adj Rsquare	-0.03455
Root Mean Square Error	17.73419
Mean of Response	13.44486
Observations (or Sum Wgts)	18

t Test

Yes-No

Assuming equal variances

Difference	-5.4968	t Ratio	-0.65742
Std Err Dif	8.3660	DF	16
Upper CL Dif	12.226	Prob > |t|	0.5203
Lower CL Dif	-23.218	Prob > t	0.7399
Confidence	0.95	Prob < t	0.2601



Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Gutted	1	135.9266	135.927	0.4322	0.5203
Error	16	5032.0244	314.502		
C. Total	17	5167.9509			

Means for Oneway Anova

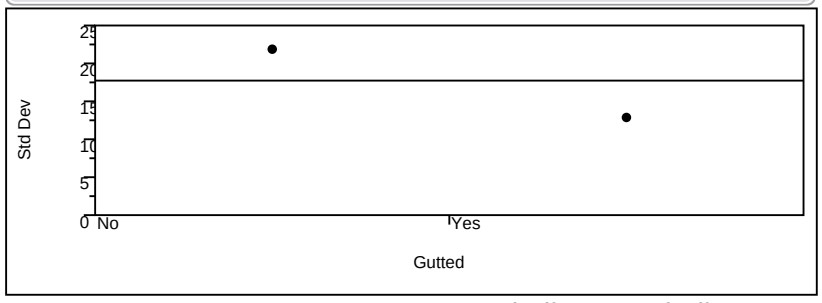
Level	Number	Mean	Std Error	Lower 95%	Upper 95%
No	9	16.1929	5.9114	3.661	28.724
Yes	9	10.6969	5.9114	-1.835	23.228

Std Error uses a pooled estimate of error variance

Means and Std Deviations

Level	Number	Mean	Std Dev	Std Err Mean	Lower 95%	Upper 95%
No	9	16.1929	21.6303	7.2101	-0.4337	32.819
Yes	9	10.6969	12.6938	4.2313	0.9396	20.454

Tests that the Variances are Equal



Level	Count	Std Dev	MeanAbsDif to Mean	MeanAbsDif to Median
No	9	21.63034	14.59760	14.12366
Yes	9	12.69375	8.59436	8.51642

Test	F Ratio	DFNum	DFDen	p-Value
O'Brien[.5]	1.1745	1	16	0.2945
Brown-Forsythe	0.8569	1	16	0.3683
Levene	1.0593	1	16	0.3187
Bartlett	2.0447	1	.	0.1527
F Test 2-sided	2.9037	8	8	0.1528

Figure D-2. Oneway Anova Test for Inorganic Mercury

Appendix E

Bird Nesting Season

Literature and Background Review of Focus Bird Species

URS biologists performed a desktop background and literature review of information regarding the breeding seasons and presence of three focus species of bird: belted kingfisher, Forster's tern, and osprey. Information was obtained from local bird experts, local bird observatory groups, public university libraries and journal catalogs, government agency documents, and internet searches.

Information on bird breeding seasons specifically within the Guadalupe River watershed is lacking. However, species information obtained from the California Department of Fish and Game's (CDFG) Species and Life History accounts provided information regarding distribution patterns of all three focus species in the SF Bay region of California. The published species list for the USFWS Don Edwards San Francisco Bay National Wildlife Refuge, which encompasses the entire shoreline and nearby marshes and watersheds of the south bay, was reviewed for seasonal presence of the three focus species. Additional peer-reviewed publications on Forster's tern and mercury contamination levels in the bay, as well as observation publications from the local Audobon Society chapter provided specific information on local breeding patterns

The CDFG life history accounts and range maps show that both the Forster's tern and belted kingfisher are year-round residents of the Guadalupe watershed. The osprey is a winter resident in the Guadalupe watershed during its migration south.

The nesting season for Forster's terns in the San Francisco Bay Area occurs between April to August (Ackerman and Eagles-Smith 2007), although some Forster's terns can be found locally in the winter (Bousman 2007). An average of 3,804 Forster's tern breeding colonies were observed annually within the San Francisco Bay estuary from 1982-2003, with 212 breeding colonies observed annually in Alviso slough, the estuary into which the Guadalupe River drains (Strong et al 2004). Forster's terns have also been found inland, foraging in reservoirs and percolation ponds within the watershed. Whether these inland observations were of breeding or nonbreeding individuals is unknown (Bousman 2007). However, according to San Francisco Bay Bird Observatory Senior Biologist Alvaro Jaramillo, Forster's terns breed on the bay itself, and would not be expected to breed within the Guadalupe River watershed (SFBBO 2012).

Belted kingfisher is an occasional resident of the south bay throughout the year (USFWS 2008). Its breeding season occurs between April and August, reaching peak activity in May and June (CDFG 1990). The belted kingfisher has been seen nesting along creeks and streams with riparian vegetation such as Coyote Creek (Bousman 2007). Since the belted kingfisher is a yearlong resident of the south bay, its presence in the Guadalupe River watershed could be expected at any time of the year. During breeding season, kingfisher nesting sites may occur within streams and creeks of the watershed.

Osprey are a rare visitor to the south bay during the summer, and uncommon throughout the rest of the year (USFWS 2008, SFBBO 2012). Their breeding season

occurs between March and September (CDFG 1990). In Santa Clara County, the number of recorded osprey observations has been increasing during the period from 1966-2004. Since then, one osprey nest was observed in Santa Clara County in 2004, and two more osprey nests were observed in 2005 (Bousman 2007). Despite these occurrences, a low number of Osprey remain present throughout the year, and their abundance seems to drop during breeding season, suggesting osprey are only visitors to the area and not using it for breeding. It is not likely that Osprey breed within the Guadalupe River watershed.

References

Ackerman, J. T., and C. A. Eagles-Smith. 2008. A Dual Life-Stage Approach to Monitoring the Effects of Mercury Concentrations on the Reproductive Success of Forster's Terns in San Francisco Bay. Annual Report, U. S. Geological Survey, Western Ecological Research Center, Davis, CA 47 pp.

Bousman, W.G. 2007. Breeding Bird Atlas of Santa Clara County, California. Santa Clara Valley Audobon Society, Cupertino, CA

CDFG. 1990. CWHR Life History Accounts and Range Maps. California Wildlife Habitat Relationships (CWHR) Program, California Department of Fish and Game. Sacramento, CA

San Francisco Bay Bird Observatory (SFBBO). 2012. Personal communication between Alvaro Jaramillo, SFBBO and Michael Carbiener, URS. January 20, 201.

Strong, C., L. Spear, T. Ryan, and R. Dakin. 2004. Forster's Tern, Caspian Tern, and California Gull colonies in San Francisco Bay: habitat use, numbers and trends, 1982–2003. Waterbirds 27:411–423.

USFWS. 2008. Don Edwards San Francisco Bay National Wildlife Refuge Bird List. U.S. Fish and Wildlife Service.