2014 Remedial Action Annual Effectiveness Report

Alcoa (Point Comfort) / Lavaca Bay Superfund Site

March 31, 2015

ALCOA

2014 REMEDIAL ACTION ANNUAL EFFECTIVENESS REPORT

ALCOA (POINT COMFORT) / LAVACA BAY SUPERFUND SITE

Prepared for:

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CAPA	Chlor-Alkali Process Area
CCND	Calhoun County Navigation District
CD	Consent Decree
CDF	Confined Disposal Facility
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DMPA	Dredge Material Placement Area
DNAPL	Dense Non-Aqueous Phase Liquid
EE/CA	Engineering Evaluation/Cost Analysis
FS	Feasibility Study
GPA	Gypsum Placement Area
Hg	Total Mercury
JBC	Juvenile Blue Crab
MeHg	Methyl Mercury
MeHg/TOC	Methyl Mercury divided by Total Organic Carbon
MSL	Mean Sea Level
NGVD	National Geodetic Vertical Datum
OMMP	Operation, Maintenance and Monitoring Plan
RAAER	Remedial Action Annual Effectiveness Report
RDR	Remedial Design Report
RI	Remedial Investigation
ROD	Record of Decision
SOW	Statement of Work
TOC	Total Organic Carbon
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

1.1 Objective

This 2014 Remedial Action Annual Effectiveness Report (RAAER) for the Alcoa (Point Comfort)/Lavaca Bay Superfund Site (the "Site") in Point Comfort, Texas satisfies the requirements of the CERCLA Consent Decree/Statement of Work between Alcoa (Alcoa Inc. and Alcoa World Alumina Atlantic, L.L.C.), the United States of America and the State of Texas, entered in the United States District Court, Southern District on the effective date of March 1, 2005 (United States et al., 2005).

The objective of the RAAER is to create an integrated assessment of the progress towards achieving the overall Site remediation goals using results from all monitoring performed subsequent to the lodging of the Consent Decree.

1.2 CD/SOW Requirements for the RAAER

Per the Statement of Work attached to the Consent Decree, the RAAER:

> *"...shall be prepared to evaluate the effectiveness of the RA [Remedial Action] including, but not limited to, an evaluation of the performance of the hydraulic control system at CAPA, natural recovery of sediments in Lavaca Bay, trends in fish/shellfish tissue values, and an evaluation of O&M activities. In preparing the report, Settling Defendants shall use the O&M and Performance Monitoring data collected and any data collected during construction of the remedy. The Annual Effectiveness Report shall be submitted to EPA in accordance with the schedule contained in the Remedial Action Work Plan."*

The Remedial Action Work Plan (Alcoa, 2005a) specifies that the RAAER be submitted by March 31 of the year following the completion of each monitoring program.

The Statement of Work attached to the Consent Decree states that specific topics to be discussed in the RAAER include:

- Site information;
- Media description;
- Treatment system description;

- Treatment system performance;
- Observations and lessons learned; and
- Verification that site conditions have not changed and there have been no land use or property development changes that may affect the remedial action.

1.3 Site Description and Status of Remedial Activities

The Site is defined in the Consent Decree as:

> *"...the Alcoa/Lavaca Bay Superfund Site, generally consisting of the Plant, Dredge Island, Formosa Tract, and portions of Lavaca Bay, Cox Bay, Cox Creek, Cox Cove, Cox Lake (Cox Creek, Cox Cove, and Cox Lake are also known as Huisache Creek, Cove and Lake) and western Matagorda Bay located in Calhoun County, Texas, and areas containing hazardous substances depicted generally on the map attached as Appendix C." (Note: map from Consent Decree not presented herein).*

Although all areas of the Site were investigated during the Remedial Investigation, the risk assessments indicated that only certain parts of Lavaca Bay, the Dredge Island, and two areas on the Plant/Mainland (the Chlor-Alkali Process Area [CAPA] and the Witco Area) required development of remedial action objectives and subsequent remediation. Remediation of the Site, as described in the Record of Decision (ROD) (USEPA, 2001), consisted of actions that were initiated prior to the ROD (some of which were completed prior to the ROD and some of which are ongoing), and several future actions. This RAAER presents monitoring information that reflects the effects of both the completed actions and the ongoing activities. The following remedial actions have either been completed or represent an ongoing activity at the Site:

- Stabilization of the Dredge Island (completed as a non-time critical removal action prior to the ROD);
- Removal of CAPA sediment and sediment near Dredge Island (completed as a treatability study prior to the ROD);
- Extraction and treatment of groundwater at the CAPA (initiated as a treatability study prior to the ROD and continuing as an ongoing remedial action pursuant to the Consent Decree);
- Dredging of the Witco Channel (performed as part of routine plant maintenance prior to the ROD);
- Installation of a soil cap at the CAPA, with institutional controls to manage exposure to soil (completed prior to the ROD);
- Removal of Building R-300 at the CAPA (completed prior to the ROD);

- Natural recovery of sediments (ongoing activity);
- Institutional controls to manage exposure to finfish/shellfish (ongoing activity)
- Installation of a Dense Non-Aqueous Phase Liquid (DNAPL) containment system (slurry wall vertical barrier) at the Witco Area (installed in 2006);
- Installation of soil caps at the Witco Area, with institutional controls to manage exposure to soil (installed in 2006); and
- Dredging of the Witco Marsh (completed in 2006).

On May 23, 2007, USEPA published notice that an Explanation of Significant Differences (ESD) had been signed for the Site. The ESD indicates that enhanced natural recovery north of Dredge Island is no longer a necessary component of remedial action for the Site. The notice states:

> *"Although the remediation goal for sediment in open water areas of Lavaca Bay has been achieved, Alcoa will continue to monitor mercury levels in fish and marsh sediment. Results from the ongoing monitoring will be updated in the annual Remedial Action Effectiveness Report. EPA will review the report to determine if the remedy continues to be protective of human health and the environment. If EPA determines that the remedy is not protective, EPA can require Alcoa to undertake additional response actions."*

The Preliminary Close Out Report (PCOR) for the Alcoa/Lavaca Bay site was signed by USEPA on July 23, 2007. The PCOR documents that all construction activities required by the Record of Decision were completed. Long term monitoring of red drum and blue crab is required to evaluate the recovery of mercury levels in fish and shellfish.

The Consent Decree specifies certain performance monitoring activities to evaluate the effectiveness of the remedy. The scopes of each of these monitoring activities are contained in the Remedial Design Reports (RDRs) and/or Operation, Maintenance and Monitoring Plans (OMMPs) attached to the Consent Decree. The Consent Decree documents that govern operation, maintenance and monitoring for currently completed or ongoing activities are:

- Chlor-Alkali Process Area RDR and OMMP (Appendix A);
- Lavaca Bay Sediment Remediation and Long-Term Monitoring Plan OMMP (Appendix H);
- Lavaca Bay Finfish and Shellfish OMMP (Appendix I);
- Dredge Island OMMP (Appendix D);
- Chlor-Alkali Process Area Soils RDR and OMMP (Appendix F);

- Witco Tank Farm DNAPL Containment System RDR and OMMP (Appendix B); and
- Witco Area Soils RDR and OMMP (Appendix G).

As discussed below, additional activities have been performed in response to the 5-Year Review by EPA.

The RDRs/OMMPs provide detailed descriptions of the performance monitoring that is summarized in this RAAER. Although the general scopes of the relevant OMMPs are described subsequently, the reader is directed to the RDR/OMMP documents for specific details about each monitoring program. Due to the large size of the RDR/OMMP documents, they are not reproduced here.

USEPA issued the First 5-year Review Report in June 2011 (USEPA, 2011) and provided the following summary. The review concluded:

> *". . . that the completed and ongoing remedial activities and natural recovery processes have resulted in downward trends of mercury concentrations in open water sediment and marsh sediment. Overall, a significant amount of sediment recovery has occurred since sampling conducted during the RI in 1996. Small localized areas of open water sediment are not recovering as quickly as predicted in the Feasibility Study. Average mercury concentrations of red drum tissue measured in the Closed Area of Lavaca Bay continue to exhibit positive and negative inter-annual fluctuations. The fluctuations appear to be related in part to remediation and in part to physical, chemical and biological conditions not influenced by remedial activities.*

Based on the data review, document review, and site inspection, the following issues have been identified:

- *Empirical sediment recovery rates indicate that natural recovery of open-water sediment mercury concentrations is occurring, but at somewhat slower rate than predicted in the FS. The Marsh 14 Island left by the Dredge Island non-time critical removal action, and perhaps to a lesser extent Mainland Shoreline No. 3 and the Witco Harbor and channel appear to serve as an ongoing source of mercury-contaminated soil and sediment to Lavaca Bay. These soils and sediment appear to be decreasing the rate of sediment recovery predicted in the FS.*
- *Due to bimodal and/or outlier data distributions, it is difficult to determine temporal trends in marsh sediment concentrations. In order to calculate an accurate average sediment concentration in marshes, it is appropriate to review the statistical design of the marsh sediment monitoring program to assess whether the number and placement of samples should be modified to better capture the variability in sediment concentrations and to improve the understanding of temporal trends.*

- *Mercury studies performed at the beginning of the RI indicated that methylation occurs at a shallow depth (often one or two centimeters at depth). A smaller core sample interval, closer to the sediment surface may provide more useful information about where and how methyl mercury enters the food web.*
- *Inspections at Dredge Island are conducted quarterly and indicate that the island is in good shape and the performance objectives are met. Erosion of the interior side slopes of the confined disposal facility (CDF) caused by wave action of water in the CDF continues to be the most significant maintenance issue. Other items that need to be addressed on Dredge Island include: 1) erosion of the un-vegetated areas of the exterior side-slopes, 2) possible damage to the northeast decant structure below the mud line, 3) corrosion of metal portions of the decant structures, and 4) vegetation within the stone armor on the exterior side-slopes.*

To address the issues identified during the first five-year review, the following recommendations and follow-up actions have been identified:

- *Develop a plan to perform a focused, additional remedial measure in the area of the Dredge Island stabilization project, in order to assess whether the rate of finfish/shellfish tissue recovery can be accelerated.*
- *Assess the statistical design of the marsh sediment monitoring program to determine whether the number or placement of samples can be modified to better capture the variability in sediment concentrations and to improve the understanding of temporal trends.*
- *Evaluate a smaller core sample interval, closer to the sediment surface for future sediment sampling to provide more useful information about where and how methyl mercury enters the food web.*
- *Address the following issues related to the Dredge Island Stabilization Project:*
    - *Erosion of the interior side slops of the CDF caused by wave action of water in the CDF continues to be the most significant maintenance issue*
    - *Erosion of the un-vegetated areas of the exterior side-slopes.*
    - *Possible damage to the northeast decant structure below the mud line.*
    - *Corrosion of metal portions of the decant structures.*
    - *Vegetation within the stone armor on the exterior side-slopes."*

The status of these recommendations and follow-up actions are summarized below or are discussed in the indicated sections of the 2012 RAAER:

1. Remedial plan for the north end of Dredge Island (Marsh 14 removal):
    a. The 5-Year Review Response Action Plan was approved by EPA on August 14, 2012.
    b. Marsh 14 was removed in June 2013 as documented in the Response Action Completion Report (Alcoa, 2013).
2. Statistical Design of Marsh Sampling Plan: Section 3.3.1.
3. Evaluation of Smaller Sediment Core Interval: Sections 2.3 and 3.3.1

4. Dredge Island Stabilization Project Issues: All maintenance issues identified for the Dredge Island Stabilization Project were addressed during a maintenance event conducted in 2011, as described in the 2011 RAAER (Alcoa, 2012).

A Response Action Plan for the Mainland Shoreline No. 3 (MS3) Remedial Action was submitted to USEPA in August 2014 and subsequently approved by USEPA in October 2014. The MS3 Remedial Action further addresses the USEPA five-year review report recommendation by providing for the excavation of additional mercury-impacted sediment in the area near the north end of the Dredge Island. The excavation of mercury-impacted sediment is being performed in conjunction with a construction project at Alcoa's "alumina dock".

The materials excavated by the dredging operations in the remedial action area will be placed in the Dredge Island CDF. The total volume of material to be excavated is approximately 71,650 cubic yards (cy), of which approximately 26,200 cy is impacted with mercury.

2.0 OVERVIEW OF O&M AND PERFORMANCE MONITORING PROGRAMS

2.1 Chlor-Alkali Process Area Groundwater Extraction and Treatment System

The CAPA groundwater extraction and treatment system began full-scale operation in May 1998. The primary system components are four groundwater extraction wells, an air stripper that removes volatile organic compounds from the groundwater, and a series of carbon vessels that remove mercury. Ancillary piping, filters, pumps, tanks, etc. comprise the rest of the system. The objective of the groundwater extraction system is to provide hydraulic control of that portion of the dissolved mercury plume that was believed to contribute over 98 percent of the mercury mass flux from Zone B groundwater to Lavaca Bay prior to groundwater control. A treatability test conducted in 1997/1998 indicated that an aggregate extraction rate of approximately 10 gallons per minute (gpm) from the four extraction wells creates a cone of depression that extends parallel to the shoreline along the line of wells.

The system has operated continuously since 1998, with only minor interruptions for maintenance or trouble-shooting, or during power interruptions at the Point Comfort Operations (PCO) facility. Detailed information for the CAPA groundwater extraction and treatment system, including the results of investigations and system design, is provided in the CAPA Focused Investigation Data Report (Alcoa, 1998) and CAPA Groundwater Treatability Study Data Report (Alcoa, 1999).

Operations, maintenance, and monitoring were conducted in 2014 in accordance with the CAPA Groundwater RDR/OMMP (Consent Decree, Appendix A). The various maintenance activities, operational checks and sampling requirements are summarized in Table 3-3 of the RDR/OMMP. The discharge standards for the system effluent are shown in Table 3-1 of the RDR/OMMP. A summary of the CAPA groundwater extraction and treatment system performance for 2014 is provided in Section 3.1 of this report.

2.2 Chlor-Alkali Process Area Offshore Surface Water Sampling

As discussed in the 2006 RAAER (Alcoa, 2007), the performance objective for this component of the OMMP was achieved in 2006 and it is no longer part of the annual monitoring program.

2.3 Lavaca Bay Sediment Monitoring

A key factor in the success of the Lavaca Bay remedy is the reduction of sediment mercury concentrations through targeted sediment removal efforts, capping, natural recovery, and/or enhanced natural recovery. The purpose of the sediment monitoring program is to verify that source control and remedial measures have been effective in reducing sediment concentrations to acceptable levels.

As described in the Lavaca Bay Sediment Remediation and Long-Term Monitoring Plan (Consent Decree Appendix H), the sediment monitoring program was designed to evaluate surface (0-5 cm) sediment mercury concentrations from open water and marsh areas within the Closed Area. The boundaries of the Closed Area are defined in the Texas State Department of Health and Human Services (TSDHHS) Order against taking of finfish and shellfish for consumption.

The Consent Decree requires that the open water sediment monitoring program be performed until a mean mercury concentration of less than 0.5 mg/Kg (ppm) dry weight is measured in the Closed Area in two consecutive years. As documented in the 2005 RAAER (Alcoa, 2006a), this occurred in 2004 and 2005 when average concentrations of 0.293 ppm and 0.276 ppm, respectively, were measured in surface open water sediment samples from the Closed Area. Thus the performance objective of the open water sediment monitoring program established in the Consent Decree has been met. However, Alcoa has elected to continue monitoring of the northern half of the open water sediment sampling grid on a voluntary basis as part of its ongoing effort to better understand trends in fish tissue concentrations in the Closed Area of Lavaca Bay. In 2009 Alcoa decided to monitor the open water sediment every two years (even numbered years).

The open water sediment and marsh sediment sampling protocol has been modified over time to improve the utility of the monitoring results as documented in the 2012 RAAER (Section 2.3) as well as prior RAAERs. The sample depth intervals and monitoring parameters for annual open water sediment and marsh sediment programs are summarized in Table 2.3-1.

The Consent Decree states that the objective of the marsh performance standard is to attain an average mercury concentration in each marsh of less than 0.25 mg/Kg dry weight. Monitoring is to occur annually until the remediation goals are met for two consecutive events. If the marsh sediment monitoring data attain the remediation goal for two consecutive annual events in a given marsh, monitoring of that marsh is complete, even if monitoring of other marshes continues. Marshes other than 11 and 14 are currently monitored on a voluntary annual basis in an ongoing effort to better understand trends in fish tissue concentrations in the northern part of the Closed Area of Lavaca Bay.

2.4 Finfish and Shellfish Monitoring

The purpose of the Lavaca Bay Finfish and Shellfish OMMP is to collect and evaluate data to document whether the remediation goals have been met, and mercury levels in fish tissue have been reduced such that the overall risk throughout Lavaca Bay approaches that which would be present but for the historic Point Comfort Operations. Mercury concentrations in red drum tissue are used as a surrogate of risk, and the remediation goal for Lavaca Bay will be met when the mercury concentrations of red drum collected in the Closed Area have recovered to the levels measured in red drum collected from the Open Area. As discussed in Section 3.4, a rigorous statistical approach is used to compare the mercury concentrations of Closed Area and Open Area red drum tissue samples and to determine when the remediation goal has been met.

The OMMP also provides for collection of information to assess short-term trends in tissue recovery and to "qualitatively" evaluate remedy effectiveness. Trends in concentrations of red drum and juvenile blue crab are evaluated graphically. The OMMP states that increasing trends, based on multiple annual events, indicate that the sediment remediation efforts are not effective at reducing tissue concentrations, and would warrant consideration of additional remedial measures. Decreasing trends, also based on multiple annual events, indicate that the sediment remedies are having the desired effects, subject to quantitative confirmation by statistical comparison of Closed Area and Open Area red drum tissue samples. Static or fluctuating trends indicate that multiple parameters are influencing tissue concentrations, and further monitoring and possibly consideration of additional remedial measures may be necessary.

2.5 Dredge Island Inspections

An Engineering Evaluation/Cost Analysis (EE/CA) for a non-time-critical removal action was conducted by Alcoa for the Dredge Island in 1997 (Alcoa, 1997). A streamlined risk evaluation, prepared as part of the EE/CA, indicated that mercury from Dredge Island could enter Lavaca Bay via erosion of mercury-contaminated soils. Based on that finding, the EE/CA documented the selection of a removal action that minimized the potential for the release of mercury from the island due to either uncontrolled erosion during normal storm events or due to the effects of more intense storms (e.g., hurricanes).

The removal action was conducted between 1998 and 2001, and is referred to as the "Dredge Island Stabilization Project." The project included relocating the contents of the Dredge Materials Placement Areas (DMPAs) that contained elevated levels of mercury (approximately 523,000 cubic yards) into the Gypsum Placement Areas (GPAs). In addition, the containment dikes surrounding the GPAs were raised so that they would not be overtopped during a 100-year storm event (i.e., a storm event that has a probability of occurring once within 100 years). This required increasing 10,700 linear feet of dike to an approximate elevation of 30 feet MSL. As part of this work, most of the marshes on the north end of the island were removed. Erosion protection and runoff control structures were also installed on the island. The final design and as-built drawings for the Dredge Island remedy are contained in the Dredge Island Removal Action Plan, Volume 4 - Phase 1 Dredge Island Stabilization Completion Report (Alcoa, 2002).

The performance objective for the Dredge Island remedy is to interrupt the potential direct exposure pathway of contaminants in soils and sediments from Dredge Island as a result of a significant storm event or uncontrolled erosion during storm water runoff. The removal action and reconfiguration of Dredge Island was designed to achieve this objective through engineering means. Remaining tasks for Alcoa include preservation of the integrity of the reconfigured island through periodic inspections and maintenance and/or repairs, as needed.

The requirements provided in the OMMP for Dredge Island include inspection of the following primary components:

- The access bridge from mainland to northern shore of Dredge Island;
- The 10,500 lineal feet of the Alcoa Confined Disposal Facility (CDF) containment dikes;
- The storm protection on the Alcoa CDF dike exterior, including the armor layer, under-layer, and dike toe protection;

- The gravel erosion protection on the exterior dike slopes above the armor protections and the interior dike slopes above 26.5 ft. (NGVD 1929);
- The 25-ft. long concrete emergency spillway;
- The two dredge decant structures including the discharge structures;
- The two water stops installed in the Calhoun County Navigation District (CCND) CDF dikes; and
- The road on the Alcoa CDF dikes.

The access bridge was damaged during Hurricane Claudette in 2003 and subsequent Dredge Island inspections have not included detailed inspection of the bridge. However, Alcoa continues to maintain signage and navigational lighting to prevent access to and collision with the bridge.

Several Dredge Island maintenance issues were identified in the First Five Year Review Report. These issues were addressed during a maintenance event conducted in 2011, as described in the 2011 RAAER. Inspections conducted in 2014 have indicated the need to perform maintenance on Dredge Island, as discussed in Section 3.5.

2.6 CAPA Soil Cap Inspections

Soils contaminated with mercury greater than the applicable risk-based values were identified during the RI at the CAPA. These soils were generally associated with the area to the west of former Building R-300, and encompassed an area of approximately 1.8 acres. The remedial action objective for CAPA soils was to reduce the future exposure potential of site workers to mercury in soils at the CAPA. A clay/gravel cap was installed, which was graded for storm water drainage, and the storm water management structures were modified to collect only surface runoff. The grading objective was met by compaction of a clay sub-grade over the entire area, from approximately several inches thick at the perimeter to 1.2 feet thick at the center. A six-inch crushed limestone material was then placed over the compacted clay sub-grade. To limit usage of the area by Plant and contractor personnel, three-by-six feet warning signs were placed on the north and west sides of the capped area. Also, a memorandum was distributed to Plant employees to inform workers of the upgrades made to the area, the restrictions on the capped area, and disciplinary actions for not complying with the restrictions. Additional information is contained in the CAPA Soils RDR/OMMP. A similar memorandum is distributed annually for review by Site workers.

An inspection and maintenance program was developed for the capped area, as described in the RDR/OMMP. This program consists of quarterly inspections, and maintenance as required. The main components of the inspection are:

- Cap integrity (e.g., signs of vehicular traffic, burrowing, erosion, etc.);
- Vegetation growth;
- Signage integrity (e.g., upright and legible);
- Storm drains free of debris; and
- No equipment or waste storage.

All items noted on the inspections are corrected as soon as practicable.

2.7 Witco Area Inspections

Containment of DNAPL containing PAHs and capping of PAH-impacted soils at the Witco Area were components of the remedy as described in the Consent Decree. DNAPL and sediments/soil visibly contaminated with polyaromatic hydrocarbons (PAHs) had been observed at several locations at the Witco Area during previous investigations. In addition, surface soils in portions of the Witco Area exhibited elevated concentrations of PAHs that exceeded response action objectives (RAOs) associated with potential on-site worker exposure to surface soils. Additional information is contained in the Former Witco Area DNAPL Containment System and Witco Area Soils RDR/OMMPs.

Construction was performed during the period March 8, 2006 to December 29, 2006. The following remedial construction activities were performed:

- Construction of a new drainage channel, including the removal of visually-impacted sediments;
- Construction of a 100-foot long soil attapulgite slurry wall;
- Construction of a soil cap in the former tank farm area; and
- Removal of an oil/water separator and construction of a soil cap in the former processing area.

A Construction Completion Report was submitted in June 2007, and operations and maintenance activities were initiated in July 2007, as follows:

- Quarterly inspections (for two years, annual thereafter) of the drainage channel;
- Quarterly inspections of the soil caps at the former tank farm and oil/water separator;
- Placement of signage regarding prohibition of activities at the site (a Management Memo was developed and distributed at the facility);
- Inspections of the DNAPL collection sump (monthly for six months, quarterly thereafter until two years after construction, frequency to be reviewed at that time based on findings); and
- Removal of any DNAPL that collects in the sump.

A memorandum was distributed to Plant employees to inform workers of upgrades made to the area, the capped area restrictions and disciplinary actions for not complying with restrictions. A similar memorandum has been submitted annually for review by Site workers.

3.0 MONITORING RESULTS

3.1 Chlor-Alkali Process Area Groundwater Extraction and Treatment System

The primary monitoring results for the CAPA groundwater extraction and treatment system are provided in Tables 3.1-1, 3.1-2, 3.1-3, 3.1-4, and 3.1-5. Selected potentiometric data are shown on Figures 3.1-1, 3.1-2, 3.1-3, and 3.1-4. The potentiometric contours for the areas near Lavaca Bay utilize a surface water elevation for Lavaca Bay measured at a tidal gauge located south of the CAPA (CA Bay). In other words, contouring assumes that Lavaca Bay is in hydraulic connection with Zone B, as has been demonstrated previously due to the deep dredging of the Alcoa Industrial Channel. Graphs showing the concentrations of mercury and carbon tetrachloride in samples from the recovery wells over time are shown on Figures 3.1-5 and 3.1-6. The concentrations of mercury and carbon tetrachloride in the samples from the recovery wells have decreased over time since the groundwater extraction and treatment system has been operating. Field records and logs from system operational checks and maintenance activities are kept in project binders and maintained in the project filing system.

The data collected from the treatment system indicates that it is operating efficiently and as designed. Hydraulic control has been achieved and appears to be effectively reducing the potential for migration of mercury-impacted groundwater in Zone B west of former Building R-300 to Lavaca Bay. This conclusion is based on the evaluation of potentiometric surfaces created from water-level data collected from pumping and observation wells located at the CAPA. Concentrations of mercury and volatile organic compounds in system effluent samples were all less than the discharge standards listed in the RDR/OMMP. Therefore, all performance standards were met during 2014.

3.2 Chlor-Alkali Process Area Offshore Surface Water Sampling

The performance objective for this component of the OMMP was achieved in 2006 and it is no longer part of the annual monitoring program.

3.3 Sediment Monitoring

3.3.1 Remedial Objectives

As discussed in Section 2.3, the long-term sediment monitoring program includes open water sediment samples and marsh sediment samples collected within the Closed Area.

Open water sediment concentrations are decreasing within Closed Area (Figure 3.3-1). Surface sediment mercury concentrations in the northern half of the Closed Area have decreased from approximately 0.5 mg/Kg in 2006 to 0.3 mg/Kg in 2014, or about 40%.

As discussed in the Feasibility Study (Alcoa, 2000), sediment recovery rates can be evaluated quantitatively using the sediment mercury half-life, which is defined as the time needed for sediment concentrations to decrease by 50%. Assessment of recovery rates using observed data are termed empirical rates because they simply represent the observed change in mercury concentrations between two points in time. By definition, the empirical recovery rate assumes a linear decrease. Actual sediment recovery will typically occur in a non-linear fashion, with the rate of change decreasing asymptotically with time. Nonetheless, the empirical recovery rates provide useful real-time observations to compare against the projections presented in the Feasibility Study. Empirical sediment mercury half-lives ($t_{1/2}$) were calculated for open water sediment locations using surficial sediment mercury data available for the 1996 to 2014, 2004 to 2014, and 2006 to 2012 monitoring events using the following formula:

$$t_{1/2} = [(t_1 - t_2) \times (Hg_{t1} \times 0.5)] / (Hg_{t1} - Hg_{t2})$$

where t_1 and t_2 are the starting and ending times (in years) respectively, and Hg_{t1} and Hg_{t2} are the mercury concentrations (in mg/kg) for t_1 and t_2, respectively.

The following table lists empirical sediment recovery rates for a series of 4-year intervals to assess whether, on a "moving window" basis, empirical recovery rates are similar over time, or increasing or decreasing.

Empirical Sediment Recovery Half-Lives (years)

Time Period	Mean
2004-2008	11
2006-2010	10
2008-2012	15
2010-2014	11

The mean recovery half-life for each of the 4-year time periods is similar suggesting that the rate of recovery has not increased or decreased notably since 2004. The empirical sediment recovery half-lives are somewhat less that the recovery rate predicted in the RIFS for Lavaca Bay (7 years), which suggests that the actual sediment recovery rate is slower than predicted. However, future monitoring will be required to measure the impact of the Marsh 14 Response Action on sediment recovery rates with the Closed Area. Figure 3.3-2 provides an initial view of the changes in Marsh 15 sediment and biota, which is the monitoring station closest to the former Marsh 14. Marsh 15 was sampled in 2014 although the area of Marsh 15 has decreased. The Marsh 15 samples indicate a significant decrease in Hg concentration after the Marsh 14 removal. The biota data from nearby station LVB5504 decreased significantly as well. The biota results are discussed in Section 3.4.

The 2014 marsh sediment data are provided in Appendix A, and summarized in Table 3.3-1. The temporal trends in the monitoring data are illustrated in Figure 3.3-3[1]. The two graphs shown on Figure 3.3-3 separate the marsh trends into two groups, those marshes that have met the remedial objective of an average mercury concentration of less than 0.25 mg/Kg in two consecutive years, and those that have not.

As discussed in prior RAAERs, the average concentrations of mercury in some marshes appear to be influenced by the presence of outliers. There are two subsamples in the 2014 dataset for Marshes 6 and 19 which are significant outliers at the 0.01 level, as determined by the Dixon Q-test. The subsamples of the marshes are depicted in ascending rank order below:

[1] Data prior to 2014 shown in Figure 3.3-3 have been corrected to omit outliers in the calculation of average marsh concentrations.

Outliers

Without the outliers, the average mercury concentrations of Marshes 6 and 19 are 0.19 and 0.10 mg/Kg, respectively, and both values are below the remedial objective of 0.25 mg/Kg. The graphs in Figure 3.3-3 depict average mercury concentrations for Marshes 6 and 15 excluding the outlier samples. The average mercury concentration of Marsh 6 is 2012 was 0.21. Thus Marsh 6 has met the remedial objective for the second consecutive year. The average Marsh 19 mercury concentration is again below 0.25 mg/Kg since the exceedances observed in 2009, 2011 and 2012. Additionally, the average mercury concentration of Marsh 5 is below 0.25 mg/Kg for the second consecutive year, and Marsh 5 now meets the remedial objective.

In summary, Marshes 1, 2, 3, 5, 6, 11, and 19 have met the remedial objective for marshes. The average mercury concentrations for the remaining Marshes 7 and 15 was below 0.25 mg/Kg in 2014. These last two marshes will have met the remedial objective if the 2015 results are also below 0.25 mg/Kg.

3.3.2 Fate and Transport of Mercury in Sediment

Prior RAAERs (e.g., Section 3.3.2 of the 2012 RAAER) discussed the evaluation of spatial trends in mercury, methyl mercury (MeHg), and MeHg normalized for Total Organic Carbon (TOC) content in marsh sediment relative to uptake of MeHg in the food web in the Closed Area. These evaluations included maps of data to help understand where focused areas of MeHg may be occurring.

In this year's RAAER, an evaluation of temporal variability is presented to further assist the evaluation of MeHg uptake to the food web. Two of the conclusions of the Mercury Reconnaissance Study (Alcoa, 1996) were:

1). Methyl mercury and total mercury concentrations in shallow sediments are appropriate indicator parameters to use in the identification of locations which contribute significant levels of methyl mercury to the food chain, and

2). Methyl mercury concentrations as a percentage of total mercury concentrations in the surficial sediments tended to be higher in the grass flat and mudflat areas relative to the other habitat types sampled, which indicates that these areas may be more important locations for transfer of methyl mercury to the food chain, particularly when coupled with the potential for these areas to represent preferred feeding locations for higher trophic level species.

Graphs of the average MeHg, MeHg/TOC and TOC concentrations for each marsh versus time are shown in the upper tier of Figure 3.3-4. The average concentrations of these analytes measured in Open Area marshes during the 2007 Supplemental Studies are also shown in the lower tier of Figure 3.3-4. There are significant intra- and inter-annual variations in both TOC and MeHg production and degradation among the marshes, as well as significant spatial changes in concentrations. Therefore the 2007 data are not directly comparable to Closed Area data from other time periods, and even inter-annual comparisons of data within the Closed Area are subject to limitations. However, the Open Area data provide a qualitative guide against which elevated concentrations in the Closed Area marshes can be compared relative to the Mercury Reconnaissance Study conclusions listed above (i.e., assessing which marshes may contribute more MeHg to the food chain than other marshes). Marshes 5 and 6 (as well as the now-removed Marsh 14) typically contain(ed) higher average MeHg concentrations than the other Closed Area and Open Area marshes. Marshes 5 and 6 have five-year average concentrations that are 1.3 and 1.4 times, respectively, the average of all Closed Area marshes, and 2.1 and 2.3 times the average of the 2007 Open Area marsh samples. It is unclear why the MeHg concentrations reported for these particular marshes are elevated above the average.

The average MeHg, MeHg/TOC and TOC concentrations of all marshes are shown in the lower tier of graphs on Figure 3.3-4, as well as trend lines of the average concentrations. The average MeHg concentrations of all marshes do not appear to be decreasing at an observable rate over the 2008 to 2014 time frame, and appear to be elevated compared to the average MeHg concentration of the 2007 Open Area marshes.

The MeHg/TOC trends in Figure 3.3-4 differ from the MeHg trends in that the average MeHg/TOC concentrations appear to decrease slightly over this time period. Review of the TOC and MeHg graphs shown on Figure 3.3-4 suggests that the decrease in MeHg/TOC concentrations is due to increasing TOC concentrations of only a few marshes (Marsh 7 primarily, and also Marshes 5 and 6). As discussed above, the MeHg concentrations on whole appear to be relatively static over this time period. The factor(s) that may be causing the apparent increase in TOC concentrations in a few marshes over this time period are not known, and may not be indicative of meaningful trends that will extend into the future. The apparent decrease in MeHg/TOC concentrations of marsh sediment seems to echo the downward trends observed in juvenile blue crab concentrations (Section 3.4-2) but it is not clear that the two trends are specifically related.

The average MeHg/TOC concentrations of Marshes 1 and 14 (now removed) are elevated above the average of all Closed Area marshes by a factor of 1.37 and 1.67 respectively and 1.4 and 1.7 times the average of the 2007 Open Area marsh samples. Marshes 5 and 6, which exhibit elevated MeHg concentrations relative to the average of all marshes, have average MeHg/TOC concentrations that are similar to the average of all Closed Area marshes (i.e., 1.08 and 1.01 times the average, respectively). Thus it is unclear whether Marshes 5 and 6 are areas of enhanced MeHg uptake relative to other marshes.

The role of organic carbon in the methylation of inorganic mercury as well as the uptake of MeHg to the Closed Area food web has not been defined with site-specific data. Studies published in the literature indicate that particulate organic carbon in sediment can limit solubilization of Hg and MeHg by intestinal fluid and influence bioaccumulation into the benthic food chain (e.g., Lawrence et al, 1999). Further study of the influence of organic carbon on MeHg formation and bioaccumulation within the Closed Area marshes might provide useful information on the fate and transport of mercury within the Closed Area.

3.4 Finfish and Shell Fish Monitoring

3.4.1 Red Drum Monitoring

As described in Section 2.4, the evaluation of red drum mercury monitoring data includes both a qualitative review of temporal trends in red drum tissue concentrations and a quantitative statistical review of red drum concentrations from the Closed and Open Areas.

3.4.1.1 Qualitative Review of Red Drum Trends

A summary of the mean mercury concentrations in red drum tissue measured in samples collected during Fall monitoring events since 1997 is provided in Table 3.4-1, and a box-and-whisker plot of the data is shown in Figure 3.4-1. A box-and-whisker plot (Tukey, 1977) displays differences between populations without making assumptions about the underlying statistical distribution (a quantitative statistical evaluation of the data is provided in Section 3.4.1.2). The box-and-whisker plot displays the minimum value, the lower quartile, the median, the upper quartile, and the maximum value, and allows empirical observation of the spread and skewness in the data trends. Over the period since 1997, the box-and-whisker plot indicates there is considerable spread in the data from year to year. As discussed subsequently, the identification and trends in the high, intermediate and low subpopulations in the red drum data sets appear to be a more useful evaluation tool than the box and whisker plots due to the considerable spread in the composite data.

The process used to identify subpopulations was provided in the Amended 2007 RAAER (Alcoa, 2008b), and is based upon cumulative probability graphs. The cumulative probability graphs for the 2006 through 2014 red drum data are shown in Figures 3.4-2a through 3.4-2h, and indicate that the red drum data consistently include three subpopulations: low, intermediate and high mercury concentrations. The thresholds between the three subpopulations shown on the above figures are summarized below.

Red Drum Subpopulations in the Closed Area

Boundary of Subpopulations	2006	2007	2008	2009	2010	2011	2012	2014
Intermediate to High (mg/Kg ww)	1.75	1.50	1.75	1.75	1.75	1.75	1.75	1.75
Low to Intermediate (mg/Kg ww)	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

The consistent year-to-year presence of three subpopulations with similar concentration boundaries likely is an important but not yet fully understood characteristic of the distribution and uptake of methyl mercury in red drum. As discussed in Alcoa (2008b), the three red drum subpopulations may reflect foraging in different areas. The low subpopulation may represent fish that obtain the majority of their prey items from areas of the Bay with low rates of methyl mercury uptake to prey items, possibly including areas outside of the Closed Area. The high subpopulation may reflect feeding primarily in areas of elevated uptake of methyl mercury to prey items (e.g., marshes with elevated MeHg and/or MeHg/TOC). The intermediate subpopulation may feed in areas of less focused uptake of methyl mercury to prey items and/or migrate between the low and high methyl mercury uptake areas.

Geographic distributions of low, intermediate, and high subpopulations of red drum measured in 2014 are illustrated in Figure 3.4-3. As observed in prior years, the high subpopulation fish are collected in the Closed Area primarily north of Dredge Island and in the Witco Harbor. These areas that contain the high subpopulation of red drum coincide with the areas producing the high subpopulation of juvenile blue crab discussed in Section 3.4-2. The intermediate and low subpopulations of red drum collected in 2014 were found throughout the Closed Area.

The geographic trends in red drum subpopulations over the period 2006 to 2014 illustrated in Figure 3.4-4 illustrate a consistent pattern, i.e., the high subpopulation of red drum occurs year over year primarily in the area north and east of Dredge Island and the Witco Harbor. It is reasonable to therefore conclude that the source of MeHg uptake to these fish also occurs in a consistent area year over year. The juvenile blue crab data provide insight as to where the source of MeHg uptake occurs. These areas that contain excellent fish and crab habitat, probably produce an abundance of prey, and therefore hold fish better than areas with poorer habitat.

Temporal trends of the red drum subpopulations over the period 2006 to 2014 are illustrated in Figure 3.4-5. The line graphs on the left side of Figure 3.4-5 reflect relatively constant average mercury concentrations for the low and intermediate subpopulations from year to year, in contrast to the more variable high subpopulation average concentrations. The bar chart on the right side of Figure 3.4-5 indicates that the annual concentration of the high subpopulation has a significant influence on the annual average concentration of the entire red drum data set. Thus the inter-annual variability in the average red drum concentrations from the Closed Area is primarily a result of the variable concentration of the high subpopulation, as well as the number of high subpopulation red drum included in the total data set.

The concentration range of the low subpopulation is similar to red drum collected from the Adjacent Open Area. The concentration ranges of the intermediate and especially the high subpopulation will have to decrease to meet the remedial action objective.

As discussed in Sections 3.3.2 and 3.4.2, concentrations of MeHg/TOC in marsh sediment and mercury in juvenile blue crab appear to be decreasing. A decrease in any of the red drum subpopulations is not observed over this time period. Further monitoring will be required to assess whether there is a lag effect between recovery of marsh sediment and juvenile blue crab and the time to observe recovery in red drum (i.e., the mature three-year old red drum being replaced by younger fish), or whether there are additional factors inhibiting the recovery of the intermediate and high subpopulations of red drum.

3.4.1.2 Quantitative Review of Red Drum Trends

The following statistical analyses were conducted to quantitatively evaluate the 2014 red drum monitoring data in accordance with the methods prescribed in the OMMP. Specifically, the OMMP specifies the following steps:

Sample up to 30 red drum each from the Open and Closed Areas for mercury analysis. Due to logistical constraints, this target number may not be achievable; but as long as the total sample sizes from each area are reasonably close to the target, the statistical test can accommodate the variability from the ideal target sample size.

Evaluate assumptions of normality using normal quantile plots and a Kolmogorov-Smirnov goodness of fit test. Evaluate equality of variance using Bartlett's test

- o Transformations to the data should be made as appropriate. If the data are better fitted to a log-normal distribution, a logarithmic transformation may be appropriate prior to conducting the means testing. Quantile plots and a Kolmogorov-Smirnov goodness of fit test will be used to determine whether the untransformed or transformed data are more appropriate for use in the means test.

If data are normally distributed, conduct a parametric means test (t-test). If the data are not normally distributed, also conduct a non-parametric means test (Wilcoxon/Mann-Whitney or equivalent).

Conduct a post-hoc power analysis using the variance, mean differences, and sample size from the data to establish the event-specific decision error rates.

- If necessary, discuss deviations from the statistical test assumptions.
- For years that [Hg $_{Closed}$] > [Hg $_{Open}$], the post-hoc power analysis will not inform the decision making.
- For years when [Hg $_{Closed}$] = [Hg $_{Open}$], the post-hoc power analysis will provide the probability that a false positive error might have been made. To ensure that a Type II error has not been made when the null hypothesis is not rejected, statistical test assumptions should be met and the test power should be greater than 95 percent.

A total of 60 red drum tissue samples were collected in the 2014 monitoring event, 30 from the Closed Area and 30 from the Open Area. As discussed in Section 3.4 and Appendix B, one red drum sample from the Closed Area (Station CLO5804) and two red drum samples from the Open Area are associated with unrepresentative moisture contents and thus the reported Hg concentrations are not used in this quantitative comparison of Closed Area and Open Area red drum Hg data. Details of the 2014 red drum sampling and analysis event are provided in Appendix B. The distribution of all red drum samples was evaluated visually and statistically to assess normality.

A cumulative probability plot of the untransformed data for the 2014 sampling of the Red Drum mercury concentrations from the closed and adjacent areas is shown on the left side of Figure 3.4-6. The cumulative probability plot of the log-transformed data is presented on the right side of Figure 3.4-6. Both data sets generally plot along straight lines which indicate visually that the distributions can be considered normal or log normal. Testing the above visual analysis, goodness of fit tests (Shapiro-Wilk and Kolmogorov-Smirnov) were used to evaluate the data. These tests indicated that the untransformed data are not statistically different from a normal distribution. However, the tests rejected the null hypothesis that the Open (Adjacent) area followed a log normal distribution. Hence, based on the above analyses, the data were not transformed for the subsequent means test.

Using the non-transformed data, the equality of the variance of the Open and Closed areas was assessed using a Levine test which is a modern replacement for the Bartlett test for comparing variances. The variances were determined to be unequal for these two groups ($p=0.0022$).

Based on the determination that the non-transformed data sets were normally distributed and that the variances of the Open and Closed groups were unequal, a t-test and non-parametric Mann-Whitney U test were both used for evaluating the test hypothesis:

Null Hypothesis: $[Hg_{Closed}] = [Hg_{Open}]$ or $[Hg_{Closed}] - [Hg_{Open}] = 0$
Alternative Hypothesis: $[Hg_{Closed}] > [Hg_{Open}]$ or $[Hg_{Closed}] - [Hg_{Open}] > 0$

Table 3.4-2 presents the summary data for the 2014 annual red drum monitoring event, excluding outliers. Both the t-test and non-parametric Wilcoxon results indicate that the mean of the Closed Area samples was significantly higher than the mean of the Open Area samples ($p<0.001$ for the non-transformed data for both tests). In summary, these tests indicate that the mean of the Closed Area red drum samples remains statistically elevated compared to the Open Area red drum samples, and the remedial objective has not been achieved.

3.4.2 Juvenile Blue Crab Monitoring

The short-term trends in juvenile blue crab are used to qualitatively evaluate the remedy effectiveness. Juvenile blue crab are selected for this purpose because they are lower trophic level organisms with a much smaller foraging range and faster growth rates than red drum, and consequently should demonstrate a more focused response than red drum to changes in mercury availability.

As discussed in Section 2.4, the direction of the juvenile blue crab concentration trends (increasing versus decreasing) and the magnitude of the trend (how fast are concentrations increasing or decreasing) may provide a preliminary assessment of remedy effectiveness.

In order to show changes in mercury concentrations of juvenile blue crab over time, box plots similar to those for red drum as described in Section 3.4.1.1 were created (Figure 3.4-7). These box and whisker plots show the trends in concentrations of Hg in juvenile blue crab over time for both the Closed Area and the Open Area.

Similar to the red drum data analysis, cumulative probability graphs of juvenile blue crab mercury data are presented in Figures 3.4-8a through 3.4-8h. These figures indicate that, similar to the red drum data, the juvenile blue crab data set consistently include three subpopulations: low, intermediate and high mercury concentrations. The thresholds between the three subpopulations shown on the above figures are summarized below:

Juvenile Blue Crab Subpopulations in the Closed Area

Boundary of Subpopulations	2006	2007	2008	2009	2010	2011	2012	2014
Intermediate to High (mg/Kg ww)	0.30	0.30	0.30	0.25	0.20	0.20	0.20	0.20
Low to Intermediate (mg/Kg ww)	0.21	0.15	0.15	0.12	0.14	0.14	0.10	0.11

Geographic distributions of low, intermediate, and high subpopulations of juvenile blue crab measured in 2014 are illustrated in Figure 3.4-9. As observed in prior years, the high subpopulation crabs are collected in the Closed Area primarily north of Dredge Island. As discussed previously, the areas that contain the high subpopulation of juvenile blue crab coincide with the areas producing the high subpopulation of red drum discussed in Section 3.4-2. The low subpopulation of juvenile blue crabs collected in 2014 were found exclusively in the southern part of the Closed Area.

The geographic trends in juvenile blue crab subpopulations over the period 2006 to 2014 are illustrated in Figure 3.4-10. The geographic pattern for juvenile blue crab is similar to red drum in that the high subpopulation of juvenile blue crab primarily occurs in the area north and east of Dredge Island and the Witco Harbor. The juvenile blue crabs have a small home range, especially when compared to red drum, and the juvenile blue crabs are collected exclusively from marsh areas. Thus the juvenile blue crab data continue to confirm that uptake of MeHg to the food web is focused in these marsh areas.

Temporal trends of the juvenile blue crab subpopulations over the period 2006 to 2014 are illustrated in Figure 3.4-11. Mercury concentrations of the high and low subpopulations of juvenile blue crab appear to be decreasing over this time frame. As new individual red drum replace the mature red drum in the Closed Area, the decreasing concentrations of mercury in juvenile blue crab (prey item food source) are expected to result in associated decreases in the mercury content of the intermediate and high red drum subpopulations. The average MeHg/TOC concentrations of marsh sediment suggest a downward trend downward over the 2008 to 2012 period as well (Figure 3.4-12), although as discussed in Section 3.3.2, the TOC trends may be influenced by relatively few marshes. The relationships of MeHg/TOC in marsh sediment and mercury trends in juvenile blue crab have not been confirmed with site-specific data.

Juvenile blue crab data collected in the vicinity of Marsh 15 (which is near the former Marsh 14 area) are plotted in Figure 3.3-2. The 2014 juvenile blue crab data at this station are significantly lower than in prior years. Future monitoring will document whether this is the beginning of a new trend of low mercury concentrations resulting from the Marsh 14 remedial activity.

3.5 Dredge Island Inspections

Dredge Island inspections were conducted quarterly throughout 2014. The inspection records are provided in Appendix C. The inspections indicate that the island is in stable condition and the performance objectives are met. Erosion of the interior side slopes of the confined disposal facility (CDF) caused by wave action of water in the CDF continues to be the most significant maintenance issue but no repairs are required at this time. Vegetation on the dikes and armor stone of Dredge Island will be removed during 2015 to address this maintenance issue.

3.6 CAPA Soil Cap Inspections

Quarterly inspections were conducted during 2014 as required by the RDRs/OMMPs. The inspection records are contained in Appendix D. The most common maintenance issue is the presence of vegetation, which must be controlled to maintain cap integrity.

3.7 Witco Area Inspections

Inspections were conducted at the Witco Area in 2014 as required by the RDRs/OMMPs. Inspections records are contained in Appendix E.

The major conclusions of the 2014 inspections are as follows:

- No DNAPL has been observed in the collection sump since its installation. Several methods have been used to detect the presence of DNAPL, including the use of an interface probe, a weighted bailer, and weighted rope (to check for visual evidence of dark or oily substances).
- The soil caps are functioning well and no damage has been observed. Mowing is now performed on a regular basis.

Inspections and maintenance will continue at the frequency described in the RDR/OMMPs.

3.8 Verification of Site Conditions and Land Use

Site conditions and land uses within the Site remain consistent with those described in the ROD. The Texas Department of Health Order against taking of finfish and shellfish within the Closed Area remains current. The Alcoa PCO plant continues to operate and periodic maintenance dredging in the Alcoa and Matagorda Ship Channel continues to occur.

As described in the 2013 RAAER, industrial development projects at and adjacent to the Calhoun Port Authority (CPA) harbor (previously called the Calhoun County Navigation District or CCND) have been proposed in the past. These projects include the widening and deepening of the Matagorda Ship Channel, the Excelerate Energy L.P. liquefied natural gas (LNG) terminal, and the Sargas power plant.

Alcoa provided specific information in the 2013 RAAER regarding the proposed Excelerate LNG and Sargas Texas projects, both of which would have required dredging activities within the footprint of areas known to contain buried sediments with residual mercury contamination associated with the Lavaca Bay Superfund Site. As of the date of this report, both projects appear to not be progressing in a manner that would result in a disturbance of those sediments during the period between now and the next official reporting period or the next five year review. Alcoa understands that Excelerate has suspended the necessary federal permitting process and will notify the Department of Energy and Federal Energy Regulatory Commission as to their intent to proceed by April 15, 2015. The Sargas Texas project team has withdrawn their permit application to the Corps of Engineers and will not be pursuing a final project design that would require dredging of Lavaca Bay (Cox Bay) sediments known to contain elevated levels of mercury. At this time Alcoa does not anticipate that either these projects could result in any need for additional investigations, engineering considerations or special handing of impacted sediments which could impact the effectiveness of the existing remedy.

4.0 CONCLUSIONS

4.1 Comparisons to Performance Standards

Monitoring data collected in 2014 support the following conclusions:

- The CAPA groundwater extraction and treatment system continues to effectively control the discharge of mercury to the Bay System from Zone B groundwater beneath the CAPA. This conclusion is supported by the system effluent concentration data and the potentiometric data obtained from the groundwater extraction and treatment system.
- The performance standard for open water sediment in the Closed Area was met in 2005. Ongoing voluntary monitoring in the northern half of the Closed Area documents that surface sediment mercury concentrations have decreased from approximately 0.5 mg/Kg in 2006 to 0.3 mg/Kg in 2014, or about 40% (Figure 3.3-1).
- The mean recovery half-life for open water sediment has been calculated for four 4-year time periods since 2004, and the recovery rates are similar (between 11 and 15 years) suggesting that the rate of recovery has not increased or decreased notably since 2004. However, future monitoring will be required to measure the impact of the Marsh 14 Response Action on sediment recovery rates.
- Marshes 1, 2, 3, 5, 6, 11, and 19 have met the remedial objective for marshes. The average mercury concentrations for the remaining Marshes 7 and 15 was below 0.25 mg/Kg in 2014. These last two marshes will have met the remedial objective if the 2015 results are also below 0.25 mg/Kg (Figure 3.3-3).
- The mean concentration of mercury in red drum sampled in the Closed Area in 2014 was 1.06 mg/Kg and 0.40 mg/Kg in the Open Area (excluding outliers based on unrepresentative moisture contents as discussed in Section 3.4.1.1). The concentrations of mercury in the red drum samples from the Closed Area remain statistically elevated relative to the concentrations of red drum samples collected from the Open Area.
- Cumulative probability graphs for the 2006 through 2014 red drum data indicate that the red drum data consistently include three subpopulations: low, intermediate and high mercury concentrations. The geographic trends in red drum subpopulations over the period 2006 to 2014 (Figure 3.4-4) illustrate a consistent pattern. The high subpopulation of red drum occurs each year primarily in the area north and east of Dredge Island and the Witco Harbor.
- Temporal trends of the red drum subpopulations over the period 2006 to 2014 (Figure 3.4-5) reflect relatively constant average mercury concentrations for the low and intermediate subpopulations from year to year, in contrast to the more variable high subpopulation average concentrations. The concentration of the high subpopulation has a significant influence on the average concentration of the entire red drum data set.

- The geographic pattern for juvenile blue crab is similar to red drum in that the high subpopulation of juvenile blue crab primarily occurs in the area north and east of Dredge Island and the Witco Harbor. The juvenile blue crab have a small feeding range which exists primarily in the marsh areas. Thus the uptake of MeHg to the food web is focused in these marsh areas.
- The low subpopulation of juvenile blue crab collected in 2014 were found exclusively in the southern part of the Closed Area.
- Mercury concentrations of all juvenile blue crab subpopulations in the Closed Area appear to be decreasing (Figure 3.4-11).
- The 2014 inspections of Dredge Island indicate that the island is in stable condition and the performance objectives are met.
- No significant maintenance issues were noted for the CAPA soil cap during inspections performed in 2014.
- Inspections of the Witco Area in 2014 indicate that no DNAPL has accumulated and that soil caps are functioning well.

4.2 Plans for Subsequent Monitoring

All required annual monitoring activities conducted in 2014 will be continued in 2015 (red drum, juvenile blue crab and marsh sediment sampling). Alcoa will voluntarily continue to perform sediment sampling in marshes in the northern part of the Closed Area that have met the remedial objective of 0.25 mg/Kg in two consecutive years as part of the ongoing effort to better understand trends in tissue concentrations in the Closed Area of Lavaca Bay. The marsh sampling analytical suite will include total mercury, MeHg, TOC, and moisture content. Alcoa will also voluntarily continue to perform open water sediment monitoring every other year.

4.3 Summary of Overall Remedy Effectiveness

In summary, the overall remedy remains effective. Significant milestones include:

- The open water sediment performance objective of 0.5 mg/Kg Hg was met in 2005.
- Open water sediment mercury concentrations in the northern part of the Closed Area have decreased from approximately 0.5 mg/Kg in 2006 to 0.3 mg/Kg in 2014, or by about 40%.
- A total of seven marshes have met the remediation goal (Marshes 1, 2, 3, 5, 6, 11, and 19). The average mercury concentrations of the remaining two marshes (7 and 15) were

below 0.25 mg/Kg in 2014. These last two marshes will have met the remedial objective if the 2015 results are also below 0.25 mg/Kg.

- The average mercury concentrations of juvenile blue crab sampled in the Closed Area are decreasing. As younger red drum grow and replace the mature red drum in the Closed Area, associated decreases in the mercury content of the intermediate and high subpopulations of red drum are expected (subject to confirmation by future monitoring events).

4.4 Recommendations

Focused, site-specific studies of MeHg in marsh sediment and uptake of MeHg to the food web in the northern part of the Closed Area are recommended to assess whether additional adaptive sediment management tools are feasible to accelerate the rate of tissue recovery. The studies should focus on Marshes 1, 2, 5 and 6, which have relatively high MeHg concentrations and are proximate to juvenile blue crab sampling locations with elevated mercury levels relative to other parts of the Closed Area.

Studies of mercury fate and transport are recommended in areas that are potential sources to the system through remobilization of sediments. The focus of these studies would be the areas north and east of Dredge Island.

Work plans for these studies will be developed and submitted to the agency for review and approval prior to implementation in 2015.

The red drum tissue collection, processing and analysis procedures will be reviewed to evaluate the cause of three anomalous moisture values observed in the 2014 data. Revisions to the OMMP, if needed, will be drafted and submitted to the agency for review and approval.

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TABLES

Table 2.3-1
SUMMARY OF ANNUAL SEDIMENT MONITORING PROTOCOLS

Year of Sample Collection	Date of RAAER	Open Water Sediment Sample Depth Interval		Marsh Sediment Sample Depth Interval		Open Water Sediment Analytes		Marsh Sediment Analytes	
		0 - 5 cm	0- 2 cm	0 - 5 cm	0- 2 cm	Hg	Hg, MeHg, TOC	Hg	Hg, MeHg, TOC
Fall 2005	March 2006	X		X		X		X	
Fall 2006	March 2007	X		X		X		X	
Fall 2007	March 2008	X		X		X		X	
Fall 2008	March 2009	X		X					X
Fall 2009	March 2010			X					X
Fall 2010	March 2011	X		X		X			X
Fall 2011	March 2012		X		X		X		X
Fall 2012	March 2013	X	X		X		X		X
NA	March 2014								
Fall 2014	March 2015	X			X	X		X	

NOTE: Detailed sampling protocol provided in Appendix A of each RAAER.

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-C[7]	5/18/98		0.0019		<	0.001		<	0.001		<	0.001		<	0.001		<	0.001			
	5/29/98		0.00035		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	6/4/98		0.00021		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	6/9/98																			7.00	
	6/10/98		0.00041		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	6/18/98		0.00021		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	6/24/98		0.00027		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	7/1/98		0.00017			0.00041	J	<	0.001		<	0.002		<	0.001		<	0.001			
	7/1/98		0.0009																		Duplicate
	7/2/98																			5.17	
	7/8/98		0.00016		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		5.20	
	7/15/98		0.00018		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.00	
	7/22/98		0.00027		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	7/28/98		0.00042		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.45	
	8/5/98		0.00047		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.42	
	8/12/98		0.00042		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.52	
	8/19/98		0.00075		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	8/25/98		0.00052		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.86	
	9/2/98		-0.0007	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.73	
	9/9/98		0.00027	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.82	
	9/16/98		0.0010		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	9/23/98		0.0010		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		7.10	
	10/1/98		0.00076		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001			
	10/7/98		0.00090		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		7.12	
	10/14/98		0.00173		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.40	
	10/21/98		0.00053		<	0.001		<	0.001		<	0.002			0.0001	J	<	0.001		6.23	
	10/28/98		0.00050		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.31	
	11/4/98		0.00053		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.41	
	11/11/98		0.00007		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.45	
	11/18/98		0.00045		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.56	
	11/24/98		0.00012	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.51	
	12/2/98		0.00034		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.64	
	12/9/98		0.00038		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.85	
	12/16/98		0.00070		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.89	
	12/22/98		0.0010		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.92	
	12/29/98		0.0008			0.00028	J	<	0.001		<	0.002		<	0.001		<	0.001		5.53	
	1/6/99		0.00073		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		6.03	
	1/13/99		0.00033	J	<	0.001		<	0.001			0.00008	J	<	0.001		<	0.001		5.74	
	1/20/99																				
	1/26/99		0.00048		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		5.70	
	2/3/99		0.00058		<	0.001		<	0.001			0.001	J		0.00029	J	<	0.001		7.08	
	2/17/99		0.00078	J	<	0.001		<	0.001			0.0012	J		0.00036	J	<	0.001		7.13	
	2/24/99		0.00128		<	0.001		<	0.001			0.0019	J		0.00037	J	<	0.001		6.63	
	3/5/99		0.00159		<	0.001		<	0.001			0.0018	J		0.00036	J	<	0.001		6.65	
	3/10/99		0.00116		<	0.001		<	0.001			0.0017	J	<	0.001		<	0.001		6.68	
	3/17/99		0.00064		<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		7.08	
	3/24/99		0.00002	J	<	0.001		<	0.001			0.0016	J		0.000042	J	<	0.001		7.06	
	4/1/99		0.00023	J	<	0.001			0.00027	J		0.0022			0.00014	J	<	0.001		6.96	
	4/6/99		0.00020	J	<	0.001		<	0.001			0.0019	J	<	0.001		<	0.001		6.87	
	4/13/99		0.00070	J	<	0.001			0.00075	J		0.002	J	<	0.001		<	0.001		6.98	
	4/21/99		0.00120		<	0.001			0.00104			0.0018	J	<	0.001		<	0.001		6.98	
	4/28/99		0.00110		<	0.001			0.00224		<	0.002			0.00037	J	<	0.001		6.97	
	5/5/99		0.00066		<	0.001			0.00363		<	0.002			0.00029	J	<	0.001		7.00	
	5/12/99		0.00143			0.00065	J		0.00644		<	0.002		<	0.001		<	0.001		7.15	
	5/19/99		0.00169			0.00039	J		0.00482			0.00076	J	<	0.001		<	0.001		6.82	
	5/26/99		0.00135			0.00131			0.00884			0.00051	J	<	0.001		<	0.001		7.25	
	6/2/99		0.00201			0.00261			0.01224			0.00046	J	<	0.001		<	0.001		6.93	
	6/9/99		0.00181			0.00915			0.01922			0.000302	J	<	0.001		<	0.001		7.02	
	6/16/99		0.00148			0.01192			0.02667			0.00022	J	<	0.001		<	0.001		6.92	
	6/23/99		0.00228			0.0214			0.03472			0.000117	J	<	0.001		<	0.001		7.23	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-C	6/30/99		0.00076			0.01999			0.03766		<	0.002		<	0.001		<	0.001		6.68	
Continued	7/14/99																			7.04	
ST-A	7/22/99																			7.82	Carbon change out
	7/28/99																			7.82	
	8/4/99																			7.23	
	8/11/99																			7.51	
	8/18/99																			6.92	
	8/25/99		0.00086			0.004364			0.000146	J	<	0.002		<	0.001		<	0.001		6.94	
	9/1/99		0.00014	J		0.00486		<	0.001		<	0.002		<	0.001		<	0.001		6.95	
	9/8/99		0.000425	J		0.003008		<	0.001		<	0.002		<	0.001		<	0.001		7.21	
	9/15/99		0.00043	J		0.002892			0.000185	J	<	0.002		<	0.001		<	0.001		7.06	
	9/22/99		0.00089			0.002616			0.000152	J	<	0.002		<	0.001		<	0.001		7.21	
	9/29/99		0.00006	J		0.003224		<	0.001		<	0.002		<	0.001		<	0.001		7.27	
	10/6/99		0.00018	J		0.002757			0.000408		<	0.002		<	0.001		<	0.001		7.49	
	10/13/99		0.00021	J		0.00291			0.000788	J	<	0.002		<	0.001		<	0.001		7.36	
	10/20/99		0.00059			0.00136			0.001111		<	0.002		<	0.001		<	0.001		7.28	
	10/27/99		0.00033	J		0.003327			0.00275		<	0.002		<	0.001		<	0.001		7.22	
	11/3/99		0.00002	J		0.003567			0.004421		<	0.002		<	0.001		<	0.001		7.61	
	11/10/99		0.00118	J		0.003112			0.00622		<	0.002		<	0.001		<	0.001		7.50	
	11/17/99		0.00089	J		0.004599			0.009552		<	0.002		<	0.001		<	0.001		7.65	
	11/23/99		0.00062	J		0.007814			0.012587		<	0.002		<	0.001		<	0.001		7.22	
	12/2/99		0.00072	J		0.012289			0.016635		<	0.002		<	0.001		<	0.001		7.14	
	12/8/99		0.00072	J		0.011109			0.017479		<	0.002		<	0.001		<	0.001		7.33	
	12/15/99		0.00041	J		0.014068			0.013601		<	0.002		<	0.001		<	0.001		7.37	
	12/22/99		0.00040	J		0.01353			0.013122		<	0.002		<	0.001		<	0.001		7.40	
	12/29/99		0.00013	J		0.010233			0.016454		<	0.002		<	0.001		<	0.001		7.00	
	1/5/00		0.00074	J		0.021707			0.025836		<	0.002		<	0.001		<	0.001		7.41	
	1/12/00		0.00011	J		0.035346			0.036077		<	0.002		<	0.001		<	0.001		7.38	
	1/19/00		0.00061	J		0.062926			0.048082		<	0.002		<	0.001		<	0.001		7.06	
	1/26/00		0.00044	J		0.07067			0.042044		<	0.002		<	0.001		<	0.001		6.86	
	2/2/00		0.00010	J		0.115509			0.052529		<	0.002		<	0.001		<	0.001		6.82	
	2/9/00		0.00014	J		0.155503			0.059467		<	0.002		<	0.001		<	0.001		7.01	
	2/16/00		0.00016	J		0.177621			0.060686		<	0.002		<	0.001		<	0.001		6.80	
	2/24/00		0.00097			0.00194		<	0.001		<	0.002		<	0.001		<	0.001		7.66	
ST-B	3/3/00		0.00026	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		8.90	Carbon change out
	3/9/00		0.00011	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		7.20	
	3/15/00		0.00034	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		7.70	
	3/22/00		0.00002	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		7.10	
	3/29/00		0.00030	J	<	0.001		<	0.001		<	0.002		<	0.001		<	0.001		7.05	
	4/4/00		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.58	
	4/12/00		0.00060			0.008		<	0.001		<	0.005		<	0.001		<	0.001		7.10	
	4/19/00	<	0.00020		<	0.001		<	0.001		<	0.005			0.004		<	0.001		7.06	
	4/26/00	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.60	
	5/3/00	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.57	
	5/10/00	<	0.00040		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.49	
	5/17/00	<	0.00040		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.55	
	5/24/00		0.00110		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.45	
	5/31/00	<	0.00020		<	0.001			0.003		<	0.005		<	0.001		<	0.001		6.80	
	6/7/00	<	0.00020			0.01			0.005		<	0.005		<	0.001		<	0.001		6.87	
	6/14/00	<	0.00020		<	0.001			0.011		<	0.005		<	0.001		<	0.001			
	6/21/00		0.00030		<	0.001			0.019		<	0.005		<	0.001		<	0.001			
	6/29/00	<	0.00020			0.01			0.022		<	0.005		<	0.001		<	0.001			
	7/6/00		0.00020			0.013			0.029		<	0.005		<	0.001		<	0.001		6.75	
	7/12/00	<	0.00040			0.012			0.026		<	0.005		<	0.001		<	0.001		6.57	
	7/19/00	<	0.00020			0.02			0.032		<	0.005		<	0.001		<	0.001		7.05	
	7/26/00	<	0.00020			0.026			0.041		<	0.005		<	0.001		<	0.001		6.58	
	8/2/00		0.00030			0.038			0.037		<	0.005		<	0.001		<	0.001		6.35	
	8/9/00		0.00020			0.055			0.042		<	0.005		<	0.001		<	0.001			
	8/16/00		0.00030			0.07			0.05		<	0.005		<	0.001		<	0.001		6.41	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-B	8/23/00		0.00030			0.076			0.051		<	0.005		<	0.001		<	0.001		6.80	
Continued	8/29/00		0.00020			0.095			0.052		<	0.005		<	0.001		<	0.001		6.43	
ST-C	9/6/00		0.00580		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		8.43	Carbon change out
	9/12/00	<	0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.91	
	9/19/00	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		8.27	
	9/27/00		0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.12	
	10/3/00	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.97	
	10/11/00	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.21	
	10/18/00		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.88	
	10/25/00		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.95	
	11/1/00		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.13	
	11/8/00		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.18	
	11/15/00		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.40	
	11/21/00		0.00040		<	0.001			0.001		<	0.005		<	0.001		<	0.001		7.36	
	11/28/00		0.00040		<	0.001			0.002		<	0.005		<	0.001		<	0.001		7.01	
	12/6/00		0.00040		<	0.001			0.002		<	0.005		<	0.001		<	0.001		7.56	
	12/13/00		0.00030			0.001			0.002		<	0.005		<	0.001		<	0.001		6.98	
	12/20/00		0.00040			0.002			0.003		<	0.005		<	0.001		<	0.001		7.34	
	12/27/00		0.00030			0.003			0.004		<	0.005		<	0.001		<	0.001		7.64	
	1/3/01		0.00020			0.003			0.003		<	0.005		<	0.001		<	0.001		7.14	
	1/10/01		0.0004			0.007			0.005		<	0.005		<	0.001		<	0.001		7.20	
	1/17/01		0.0004			0.011			0.006		<	0.005		<	0.001		<	0.001		7.48	
	1/24/01		0.00030			0.014			0.007		<	0.005		<	0.001		<	0.001		7.27	
	1/30/01		0.00040			0.018			0.008		<	0.005		<	0.001		<	0.001		7.29	
	2/6/01		0.00030			0.021			0.009		<	0.005		<	0.001		<	0.001		7.30	
	2/14/01		0.00040			0.026			0.01		<	0.005		<	0.001		<	0.001		7.36	
	2/22/01		0.00030			0.032			0.011		<	0.005		<	0.001		<	0.001		7.40	
	2/28/01		0.00030			0.033			0.011		<	0.005		<	0.001		<	0.001		7.38	
	3/7/01		0.00630			0.039			0.013		<	0.005		<	0.001		<	0.001		7.48	
	3/15/01		0.00040			0.071			0.02		<	0.005		<	0.001		<	0.001		7.16	
	3/21/01		0.00040			0.087			0.023		<	0.005		<	0.001		<	0.001		6.89	
	3/28/01		0.00040			0.087			0.02		<	0.005		<	0.001		<	0.001		6.79	
	4/4/01		0.00050			0.12			0.025		<	0.005		<	0.001		<	0.001		6.54	
	4/11/01		0.00040			0.14			0.03		<	0.005		<	0.001		<	0.001		7.49	
ST-A	4/19/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		8.98	Carbon change out
	4/26/01	<	0.00020			0.0001		<	0.001		<	0.005		<	0.001		<	0.001		8.71	
	5/2/01	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.80	
	5/9/01		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.08	
	5/16/01	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.95	
	5/23/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.90	
	5/30/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.92	
	6/7/01	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.05	
	6/13/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.85	
	6/20/01	<	0.00020			0.002		<	0.001		<	0.005		<	0.001		<	0.001		7.04	
	6/27/01	<	0.00020			0.002		<	0.001		<	0.005		<	0.001		<	0.001		6.94	
	7/3/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.96	
	7/11/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.94	
	7/17/01	<	0.00200			0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	7/25/01	<	0.00020			0.18			0.01		<	0.005		<	0.001		<	0.001		6.99	
	8/1/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.01	
	8/9/01	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.93	
	8/15/01		0.00020			0.001			0.002		<	0.005		<	0.001		<	0.001		6.80	
	8/21/01	<	0.00020			0.001			0.003		<	0.005		<	0.001		<	0.001		6.90	
	8/30/01		0.00030			0.001			0.004		<	0.005		<	0.001		<	0.001		6.96	
	9/5/01		0.00020			0.002			0.005		<	0.005		<	0.001		<	0.001		6.98	
	9/14/01	<	0.00020			0.003			0.009		<	0.005		<	0.001		<	0.001			
	9/21/01	<	0.00020			0.005			0.012		<	0.005		<	0.001		<	0.001		6.94	
	9/24/01		0.00020			0.006			0.012		<	0.005		<	0.001		<	0.001		6.98	
	10/1/01	<	0.00020			0.006			0.01		<	0.005		<	0.001		<	0.001		7.01	
	10/9/01	<	0.00100			0.006			0.011		<	0.005		<	0.001		<	0.001		6.91	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-A Continued	10/15/01	<	0.00100			0.008			0.011		<	0.005		<	0.001		<	0.001		6.94	
	10/22/01	<	0.00020			0.009			0.013		<	0.005		<	0.001		<	0.001		7.44	
	10/29/01		0.00050			0.014			0.013		<	0.005		<	0.001		<	0.001		7.03	
	11/5/01	<	0.00100			0.16			0.015		<	0.005		<	0.001		<	0.001		7.07	
	11/12/01	<	0.00100			0.019			0.015		<	0.005		<	0.001		<	0.001		7.51	
	11/20/01	<	0.00100			0.015			0.012		<	0.005		<	0.001		<	0.001		7.73	
	11/28/01		0.00100			0.014			0.011		<	0.005		<	0.001		<	0.001		7.30	
	12/4/01	<	0.00100			0.02			0.013		<	0.005		<	0.001		<	0.001		7.49	
	12/10/01		0.00020			0.022			0.013		<	0.005		<	0.001		<	0.001		7.44	
	12/21/01		0.00020			0.038			0.015		<	0.005		<	0.001		<	0.001		7.26	
	12/27/01		0.00030			0.046			0.015		<	0.005		<	0.001		<	0.001		7.21	
	1/2/02	<	0.00020			0.0039			0.014		<	0.005		<	0.001		<	0.001		7.20	
	1/7/02	<	0.00020			0.038			0.013		<	0.005		<	0.001		<	0.001		7.20	
	1/14/02		0.00030			0.055			0.17		<	0.005		<	0.001		<	0.001		7.14	
	1/21/02		0.00020			0.066			0.017		<	0.005		<	0.001		<	0.001		7.18	
	1/29/02		0.00030			0.066			0.017		<	0.005		<	0.001		<	0.001		7.11	
	2/4/02	<	0.00020			0.066			0.016		<	0.005		<	0.001		<	0.001		7.11	
	2/11/02	<	0.00020			0.069			0.014		<	0.005		<	0.001		<	0.001		7.15	
ST-B	2/21/02		0.07500		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		8.11	Carbon change out
	2/25/02		0.03100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.69	
	3/4/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.32	
	3/11/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.17	
	3/18/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.14	
	3/25/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.07	
	4/2/02	<	0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.09	
	4/8/02	<	0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.07	
	4/15/02		0.02200		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.08	
	4/22/02		0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.11	
	4/30/02	<	0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.92	
	5/6/02		0.04800		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.98	
	5/13/02		0.14		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.03	
	5/20/02	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.10	
	5/29/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.14	
	6/3/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.11	
	6/10/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.02	
	6/18/02		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.10	
	6/24/02		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.07	
	7/1/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.05	
	7/8/02		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.13	
	7/15/02		0.00040		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.02	
	7/23/02		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.10	
	7/29/02		0.00050		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.00	
	8/5/02		0.00050		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	8/12/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		8.16	
	8/19/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.10	
	8/26/02		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.04	
	9/3/02	<	0.00020		<	0.001			0.001		<	0.005		<	0.001		<	0.001		7.16	
	9/11/02	<	0.00020		<	0.001			0.001		<	0.005		<	0.001		<	0.001		7.04	
	9/16/02	<	0.00020		<	0.001			0.002		<	0.005		<	0.001		<	0.001		7.06	
	9/23/02	<	0.00020		<	0.001			0.003		<	0.005		<	0.001		<	0.001		6.96	
	9/30/02	<	0.00020			0.002			0.005		<	0.005		<	0.001		<	0.001		6.99	
	10/8/02	<	0.00020			0.002			0.006		<	0.005		<	0.001		<	0.001			
	10/15/02	<	0.00020			0.002			0.006		<	0.005		<	0.001		<	0.001			
	10/22/02		0.00020			0.005			0.008		<	0.005		<	0.001		<	0.001		6.77	
	10/28/02		0.00040			0.008			0.01		<	0.005		<	0.001		<	0.001		7.13	
	11/4/02		0.00060			0.009			0.011		<	0.005		<	0.001		<	0.001		7.07	
	11/13/02	<	0.00020			0.013			0.011		<	0.005		<	0.001		<	0.001		6.80	
	11/20/02		0.00030			0.017			0.011		<	0.005		<	0.001		<	0.001		6.73	
	11/25/02		0.00020			0.018			0.013		<	0.005		<	0.001		<	0.001		6.91	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			**0.01**			**0.38**			**0.325**			**NA[6]**			**0.164**			**NA**		**6.0 - 9.0**	
ST-B Continued	12/2/02	<	0.00020			0.02			0.014		<	0.005		<	0.001		<	0.001		6.95	
	12/9/02	<	0.00020			0.027			0.014		<	0.005		<	0.001		<	0.001		7.20	
ST-C	12/16/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.91	Carbon change out
	12/23/02	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.22	
	1/3/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.13	
	1/6/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.04	
	1/14/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.21	
	1/22/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.43	
	1/27/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.15	
	2/3/03		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.10	
	2/11/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.22	
	2/18/03		0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.04	
	2/24/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.15	
	3/3/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.11	
	3/10/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.17	
	3/18/03		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	3/24/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.20	
	4/3/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.88	
	4/8/03	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.15	
	4/15/03		0.00060		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.12	
	4/22/03	<	0.00020		<	0.001			0.001		<	0.005		<	0.001		<	0.001		6.61	
	4/29/03	<	0.00020		<	0.001			0.001		<	0.005		<	0.001		<	0.001		7.12	
	5/5/03	<	0.00020		<	0.001			0.002		<	0.005		<	0.001		<	0.001		7.01	
	5/13/03	<	0.00020		<	0.001			0.002		<	0.005		<	0.001		<	0.001			
	5/19/03	<	0.00020		<	0.001			0.003		<	0.005		<	0.001		<	0.001		7.10	
	5/28/03	<	0.00020		<	0.001			0.003		<	0.005		<	0.001		<	0.001		7.24	
	6/2/03	<	0.00020		<	0.001			0.004		<	0.005		<	0.001		<	0.001		7.21	
	6/9/03		0.00060		<	0.001			0.004		<	0.005		<	0.001		<	0.001		6.97	
	6/17/03		0.00040		<	0.001			0.005		<	0.005		<	0.001		<	0.001		6.84	
	6/23/03		0.00030		<	0.001			0.005		<	0.005		<	0.001		<	0.001		7.06	
	6/30/03	<	0.00020		<	0.001			0.005		<	0.005		<	0.001		<	0.001		7.14	
	7/8/03	<	0.00020		<	0.001			0.005		<	0.005		<	0.001		<	0.001		7.04	
	7/14/03	<	0.00020		<	0.001			0.005		<	0.005		<	0.001		<	0.001		7.03	
	7/21/03	<	0.00020		<	0.001			0.006		<	0.005		<	0.001		<	0.001		7.14	
	7/28/03	<	0.00020			0.001			0.007		<	0.005		<	0.001		<	0.001		7.12	
	8/5/03	<	0.00020			0.003			0.008		<	0.005		<	0.001		<	0.001		6.99	
	8/11/03	<	0.00020			0.003			0.008		<	0.005		<	0.001		<	0.001		6.93	
	8/20/03	<	0.00020			0.006			0.011		<	0.005		<	0.001		<	0.001		7.10	
	8/29/03	<	0.00020			0.006			0.01		<	0.005		<	0.001		<	0.001		7.24	
	9/1/03	<	0.00020			0.006			0.01		<	0.005		<	0.001		<	0.001		8.61	
	9/8/03	<	0.0002			0.011			0.009		<	0.005		<	0.001		<	0.001		6.89	
	9/17/03	<	0.0002			0.011			0.009		<	0.005		<	0.001		<	0.001		6.95	
	9/22/03	<	0.00020			0.016			0.01		<	0.005		<	0.001		<	0.001		6.90	
	9/29/03	<	0.00020			0.017			0.01		<	0.005		<	0.001		<	0.001		6.88	
	10/6/03	<	0.00020			0.025			0.013		<	0.005		<	0.001		<	0.001		6.98	
	10/13/03	<	0.00020			0.027			0.011		<	0.005		<	0.001		<	0.001		6.92	
	10/20/03	<	0.00020			0.03			0.011		<	0.005		<	0.001		<	0.001		7.00	
	10/27/03	<	0.00020			0.033			0.01		<	0.005		<	0.001		<	0.001		7.00	
	11/3/03	<	0.00020			0.041			0.012		<	0.005		<	0.001		<	0.001		6.97	
	11/11/03		0.00030			0.036			0.01		<	0.005		<	0.001		<	0.001		6.68	
	11/17/03	<	0.00020			0.046			0.011		<	0.005		<	0.001		<	0.001		6.70	
	11/25/03	<	0.00020			0.036			0.008		<	0.005		<	0.001		<	0.001		6.95	
ST-A	12/2/03		0.00140		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.01	Carbon change out
	12/8/03		0.00170		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.04	
	12/15/03		0.00140		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.73	
	12/22/03		0.00200		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.95	
	1/1/04		0.00220		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.90	
	1/7/04		0.00150		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.97	
	1/13/04		0.00220		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.86	
	1/21/04		0.00180		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.85	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-A Continued	1/27/04		0.00140		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.90	
	2/4/04		0.00170		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.88	
	2/10/04		0.00140		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.89	
	2/17/04		0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.87	
	2/23/04		0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.88	
	3/1/04		0.00080		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.88	
	3/8/04		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.10	
	3/19/04	<	0.00020			0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.32	
	3/22/04	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.74	
	4/2/04	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.87	
	4/5/04	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.18	
	4/12/04		0.00060		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.00	
	4/20/04	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.72	
	5/5/04	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.68	
	5/10/04		0.00040		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.56	
	5/20/04		0.00030		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.83	
	5/24/04	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.15	
	6/1/04	<	0.00020		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.82	
	6/8/04		0.00050		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.80	
	6/14/04		0.00070		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.67	
	6/22/04		0.00070		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.87	
	6/30/04		0.00130		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.77	
	7/7/04		0.00140		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.92	
	7/13/04		0.00060		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.00	
	7/22/04		0.00100		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.70	
	7/27/04		0.00060		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.86	
	8/2/04		0.00100		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.89	
	8/10/04		0.00120		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.73	
	8/18/04		0.00150		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.68	
	8/25/04		0.00150		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.60	
	9/3/04		0.00120		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.78	
	9/8/04		0.00140		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.79	
	9/13/04		0.00040		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.82	
	9/20/04		0.00070		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.80	
	9/27/04		0.00120		<	0.001			0.002		<	0.005		<	0.001		<	0.001		6.88	
	10/6/04		0.00170			0.001			0.002		<	0.005		<	0.001		<	0.001		6.83	
	10/11/04		0.00100			0.001			0.002		<	0.005		<	0.001		<	0.001		7.02	
	10/21/04		0.00050			0.001			0.002		<	0.005		<	0.001		<	0.001		6.79	
	10/26/04	<	0.00020		<	0.005		<	0.005		<	0.05		<	0.005		<	0.005		6.73	
	11/1/04		0.00210			0.001			0.002		<	0.005		<	0.001		<	0.001		6.77	
	11/8/04		0.00120			0.002			0.003		<	0.005		<	0.001		<	0.001		6.71	
	11/15/04		0.00160			0.003			0.004		<	0.005		<	0.001		<	0.001		6.52	
	11/22/04		0.00160			0.004			0.003		<	0.005		<	0.001		<	0.001		7.03	
ST-B	11/29/04		0.00130		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.35	Carbon change out
	12/8/04		0.00070		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.80	
	12/13/04		0.00090		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.13	
	12/20/04		0.00130		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.95	
	12/28/04		0.00080		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.87	
	1/3/05		0.0022		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.69	
	1/11/05		0.003		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		8.66	
	1/17/05		0.0003		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.73	
	1/25/05		0.0005		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.14	
	2/1/05		0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.60	
	2/9/05		0.0003		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.00	
	2/14/05		0.0002		<	0.005		<	0.005		<	0.005		<	0.005		<	0.005		6.94	
	2/21/05		0.0004		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.91	
	2/28/05		0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.98	
	3/7/05		0.00028		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.08	
	3/14/05	B	0.00013		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.05	
	3/21/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.84	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-B Continued	3/29/05		0.00029		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.15	
	4/5/05		0.00023		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.87	
	4/11/05		0.00033		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.84	
	4/19/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.72	
	4/27/05	B	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.12	
	5/2/05	B	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.14	
	5/9/05		0.00051		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.90	
	5/16/05	B	0.00026		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.71	
	5/24/05		0.00051		<	0.001		J	0.0002		<	0.005		<	0.001		<	0.001		6.83	
	5/30/05		0.00074		<	0.001		J	0.0002		<	0.005		<	0.001		<	0.001		6.83	
	6/6/05		0.00035		<	0.001		J	0.0004		<	0.005		<	0.001		<	0.001		6.88	
	6/13/05	<	0.0002	B	<	0.001		J	0.0004		<	0.005		<	0.001		<	0.001		7.00	
	6/23/05	<	0.0002		<	0.001		J	0.0003		<	0.005		<	0.001		<	0.001		6.40	
	6/27/05		0.0005		J	0.0002		J	0.0006		<	0.005		<	0.001		<	0.001		7.82	
ST-C	7/7/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.40	Carbon change out 6/29/05
	7/11/05		0.00032		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		8.07	
	7/18/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.82	
	7/25/05		0.00037		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.85	
	8/2/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.82	
	8/9/05	B	0.00014		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.36	
	8/15/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.68	
	8/23/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.89	
	8/29/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.80	
	9/6/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.90	
	9/13/05		0.00065		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.77	
	9/20/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.59	
	9/30/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.76	
	10/4/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.91	
	10/12/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.68	
	10/17/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.77	
	10/25/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.78	
	11/2/05	B	0.00011		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.79	
	11/9/05	B	0.00018		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.56	
	11/14/05		0.0004		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.82	
	11/23/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.77	
	11/29/05	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.68	
	12/5/05	<	0.0001		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.55	
	12/16/05	<	0.0001		<	0.001		<	0.001		J	0.0005		<	0.001		<	0.001		6.75	
	12/19/05	<	0.0001		<	0.001		<	0.001		J	0.0002		<	0.001		<	0.001		7.60	
	12/28/05	<	0.0001	Y	<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		7.60	
	1/5/06	B	0.0001		<	0.001		<	0.001		J	0.0002		<	0.001		<	0.001		6.63	
	1/10/06	B	0.0001		<	0.001		<	0.001		J	0.0003		<	0.001		<	0.001		6.68	
	1/17/06		0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.82	
	1/25/06	B	0.00017		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.89	
	1/31/06		0.00024		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.79	
	2/6/06	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.85	
	2/13/06	<	0.0002		<	0.001		<	0.001		<	0.005		<	0.001		<	0.001		6.78	
	2/24/06	J	0.00019		<	0.0002		<	0.0002		<	0.0002		<	0.0002		<	0.0002		6.42	
	2/27/06	<	0.0001		<	0.0002		<	0.0002		<	0.0002		<	0.0002		<	0.0002		7.36	
	3/6/06	<	0.0001		H, <	0.0001		H, <	0.0002		H, <	0.0002		H, <	0.0002		H, <	0.0002		6.75	
	3/13/06		0.00057		<	0.0002		<	0.0002		<	0.0002		<	0.0002		<	0.0002		6.77	
	3/20/06		0.00032		<	0.0002		<	0.0002		<	0.0002		<	0.0002		<	0.0002		7.00	
	3/27/06	<	0.0001		<	0.0002		<	0.0002		<	0.0002		<	0.0002		<	0.0002		6.66	
	4/3/06	J	0.00018		<	0.0002		<	0.0002		<	0.0002		<	0.0002		<	0.0002		7.23	
	4/11/06	<	0.00013		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		6.86	
	4/18/06	<	0.00013		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		6.40	
	4/25/06	<	0.00013		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		6.76	
	5/3/06	<	0.00013		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		6.30	
	5/11/06		0.00052		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		6.86	
	5/17/06		0.00038		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		6.82	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-C Continued	5/22/06	<	0.00013		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		7.06	
	5/30/06	J	0.00015		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		6.95	
	6/5/06	<	0.00013		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		7.14	
	6/12/06	B	0.00038		<	0.00025		J	0.00026		<	0.00053		<	0.0002		<	0.00032		6.81	
	6/23/06	J	0.00016		<	0.00025		J	0.00039		<	0.00053		<	0.0002		<	0.00032		6.97	
	6/27/06	J	0.00018		<	0.00025		<	0.0002		<	0.00053		<	0.0002		<	0.00032		7.24	
	7/6/06	<	0.00013		<	0.00025		J	0.00048		<	0.00053		<	0.0002		<	0.00032		6.96	
	7/11/06	<	0.00013		<	0.00025		J	0.00053		<	0.00053		<	0.0002		<	0.00032		6.96	
	7/17/06	<	0.00013		<	0.00025			0.001		<	0.00053		<	0.0002		<	0.00032		7.01	
	7/24/06	B	0.00028		<	0.00025			0.001		<	0.00053		<	0.0002		<	0.00032		6.81	
	7/31/06		0.00026		J	0.00031			0.0017		<	0.00053		<	0.0002		<	0.00032		6.90	
	8/7/06		0.00022		J	0.00042			0.0017		<	0.00053		<	0.0002		<	0.00032		6.98	
	8/16/06	<	0.00013		J	0.0007			0.0024		<	0.00053		<	0.0002		<	0.00032		6.64	
	8/23/06	J	0.00018		J	0.00069			0.0026		<	0.00053		<	0.0002		<	0.00032		6.80	
	8/29/06	<	0.00013		J	0.00088			0.0029		<	0.00053		<	0.0002		<	0.00032		6.73	
	9/6/06	J	0.00017		J	0.00057			0.0022		<	0.00053		<	0.0002		<	0.00032		6.77	
	9/13/06	J	0.00017		J	0.00095			0.0027		<	0.00053		<	0.0002		<	0.00032		6.58	
	9/18/06	<	0.00013			0.001			0.0033		<	0.00053		<	0.0002		<	0.00032		6.94	
	9/26/06	<	0.00013			0.0015			0.0038		<	0.00053		<	0.0002		<	0.00032		6.88	
	10/3/06	<	0.00013			0.0017			0.0037		<	0.00053		<	0.0002		<	0.00032		6.78	
	10/9/06		0.00046			0.0015			0.0031		<	0.00053		<	0.0002		<	0.00032		6.88	
	10/17/06		0.00022		J	0.00084			0.0026		<	0.00053		<	0.0002		<	0.00032		6.58	
	10/24/06		0.00026			0.0013			0.0038		<	0.00053		<	0.0002		<	0.00032		7.06	
	11/2/06		0.00024			0.0016			0.0036		<	0.00053		<	0.0002		<	0.00032		6.67	
	11/8/06	<	0.00013			0.0015			0.004		<	0.00053		<	0.0002		<	0.00032		7.04	
	11/15/06	<	0.00013			0.0014		B	0.0035		<	0.00053		<	0.0002		<	0.00032		6.78	
	11/21/06	<	0.00013			0.0016			0.0031		<	0.00053		<	0.0002		<	0.00032		7.00	
	11/27/06		0.00034			0.0019			0.0039		<	0.00053		<	0.0002		<	0.00032		7.26	
	12/5/06		0.00071			0.0021			0.0034		<	0.00053		<	0.0002		<	0.00032		6.67	
	12/14/06	<	0.00013			0.0027			0.0037		<	0.00053		<	0.0002		<	0.00032		6.93	
	12/20/06		0.00022			0.0032			0.0034		<	0.00053		<	0.0002		<	0.00032		7.08	
	12/27/06		0.00051			0.0029			0.003		<	0.00053		<	0.0002		<	0.00032		7.04	
	1/2/07	<	0.00013			0.0026			0.0026		<	0.00053		<	0.0002		<	0.00032		6.70	
	1/11/07	<	0.00013			0.0029			0.003		<	0.00053		<	0.0002		<	0.00032		6.88	
	1/18/07	J	0.00016			0.0023			0.0022		<	0.00053		<	0.0002		<	0.00032		6.40	
	1/25/07		0.00023			0.0026			0.0025		<	0.00053		<	0.0002		<	0.00032		6.58	
	2/1/07	<	0.00013			0.0023			0.0023		<	0.00053		<	0.0002		<	0.00032		6.63	
	2/8/07		0.00025			0.003			0.0028		<	0.00053		<	0.0002		<	0.00032		6.70	
	2/13/07		0.00023			0.0026			0.0023		<	0.00053		<	0.0002		<	0.00032		6.90	
	2/20/07		0.00035			0.0045			0.0032		<	0.00053		<	0.0002		<	0.00032		6.96	
	3/1/07	<	0.00013			0.0036			0.0029		<	0.00053		<	0.0002		<	0.00032		6.65	
	3/8/07	<	0.00013			0.0039			0.0032		<	0.00053		<	0.0002		<	0.00032		6.58	
	3/16/07	<	0.00013			0.003			0.0027		<	0.00053		<	0.0002		<	0.00032		6.61	
	3/19/07	<	0.00013			0.0034			0.0032		<	0.00053		<	0.0002		<	0.00032		6.56	
	3/27/07	<	0.00013			0.0026			0.0026		<	0.00053		<	0.0002		<	0.00032		6.86	
	4/3/07	<	0.00013			0.0045			0.0031		<	0.00053		<	0.0002		<	0.00032		6.40	
	4/12/07	<	0.00013			0.0036			0.0025		<	0.00053		<	0.0002		<	0.00032		6.36	
	4/19/07	<	0.00013			0.0042			0.0024		<	0.00053		<	0.0002		<	0.00032		6.29	
	4/24/07	J	0.00013			0.005			0.0031		<	0.00053		<	0.0002		<	0.00032		6.30	
	5/1/07	<	0.00013			0.0051			0.0026		<	0.00053		<	0.0002		<	0.00032		6.80	
	5/10/07	<	0.00013			0.0032			0.0025		<	0.00053		<	0.0002		<	0.00032		6.63	
	5/18/07	<	0.00013			0.0032			0.0023		<	0.00053		<	0.0002		<	0.00032		6.50	
	5/25/07	B	0.00033			0.0038			0.0029		<	0.00053		<	0.0002		<	0.00032		5.49	
	5/31/07	B	0.00073			0.0047			0.0022		<	0.00053		<	0.0002		<	0.00032		6.51	
	6/6/07		0.00031			0.0039			0.0021		<	0.00053		<	0.0002		<	0.00032		6.32	
	6/15/07		0.00038			0.0058			0.0022		<	0.00053		<	0.0002		<	0.00032		6.19	
	6/21/07		0.00038			0.0066			0.0024		<	0.00053		<	0.0002		<	0.00032		6.90	
	6/25/07	<	0.00013			0.0056			0.0025		<	0.00053		<	0.0002		<	0.00032		6.87	
	7/6/07		0.00027			0.0053			0.0019		<	0.00053		<	0.0002		<	0.00032		6.88	
	7/11/07		0.0002			0.0055			0.0021		<	0.00053		<	0.0002		<	0.00032		6.89	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-A	7/20/07		0.00096		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		7.32	Carbon change out 7/16/07
	7/23/07		0.00027		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.82	
	7/30/07		0.00027		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		7.38	
	8/6/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.48	
	8/13/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.93	
	8/20/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.38	
	8/29/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.93	
	9/5/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.92	
	9/12/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.93	
	9/20/07	J	0.00019		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.19	
	9/26/07		0.00021		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.78	
	10/1/07	J	0.00014		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.78	
	10/10/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.78	
	10/18/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.78	
	10/25/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.97	
	10/29/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.65	
	11/7/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.20	
	11/16/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		5.98	
	11/19/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.81	
	11/29/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.28	
	12/3/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.30	
	12/11/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.38	
	12/17/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.66	
	12/26/07	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.38	
	1/3/08	J	0.0014		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.99	
	1/9/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.20	
	1/14/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.35	
	1/23/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.43	
	2/1/08		0.00027		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.22	
	2/7/08		0.00023		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.47	
	2/13/08		0.00031	B	<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.22	
	2/22/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032			
	2/27/08		0.00024		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		5.68	
	3/5/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		7.47	
	3/11/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.38	
	3/20/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.33	
	3/26/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.60	
	4/4/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.68	
	4/10/08	J	0.00017		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.65	
	4/18/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.49	
	4/24/08		0.00027		<	0.00025		<	0.0002		<	0.001		J,B	0.00089		<	0.00032		6.32	
	4/28/08		0.00022		<	0.00025		<	0.0002		<	0.001		J,B	0.00049		<	0.00032		6.33	
	5/8/08		0.00021		<	0.00025		J	0.00038		<	0.001		<	0.0002		<	0.00032		6.56	
	5/15/08	J	0.00019		<	0.00025		J	0.00048		<	0.001		<	0.0002		<	0.00032		6.35	
	5/22/08		0.00021		<	0.00025		J	0.00061		<	0.001		<	0.0002		<	0.00032		6.19	
	5/28/08	<	0.00013		<	0.00025		J	0.00071		<	0.001		<	0.0002		<	0.00032		6.05	
	6/4/08	<	0.00013		<	0.00025		<	0.0002		<	0.001		<	0.0002		<	0.00032		6.96	
	6/11/08	<	0.00013		<	0.00025		J	0.00097		<	0.001		<	0.0002		<	0.00032		6.88	
	6/20/08	<	0.00013		<	0.00025			0.0011		<	0.001		<	0.0002		<	0.00032		6.88	
	6/27/08		0.00049		<	0.00025			0.0012		<	0.001		<	0.0002		<	0.00032		6.76	
	7/2/08	<	0.00013		<	0.00025			0.0013		<	0.001		<	0.0002		<	0.00032		6.75	
	7/8/08	J	0.00016		<	0.00025			0.0013		<	0.002		<	0.0002		<	0.00032		6.75	
	7/14/08		0.00033		<	0.00025			0.0014		<	0.002		<	0.0002		<	0.00032		7.07	
	7/22/08	J	0.00016		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.88	
	7/31/08	<	0.00013			0.0011			0.0016		<	0.002		<	0.0002		<	0.00032		6.74	
	8/4/08		0.00021		J	0.00083			0.0021		<	0.002		<	0.0002		<	0.00032		6.74	
	8/11/08	<	0.00013			0.0011			0.0019		<	0.002		<	0.0002		<	0.00032		6.34	
	8/21/08		0.00026			0.0018			0.002		<	0.002		<	0.0002		<	0.00032		6.74	
	8/25/08		0.00028			0.0036			0.0018		<	0.002		<	0.0002		<	0.00032		6.55	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2] MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE			pH	COMMENTS
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-A Continued	9/4/08		0.00051			0.033			0.0033		<	0.002		<	0.0002		<	0.00032		6.77	
	9/8/08		0.00038			0.057			0.005		<	0.002		<	0.0002		<	0.00032		6.74	
	9/19/08	<	0.00013			0.065			0.0071		<	0.002		<	0.0002		<	0.00032		6.67	
	9/25/08	<	0.00013			0.09			0.0089		<	0.002		<	0.0002		<	0.00032		6.93	
ST-B	10/3/08		0.00072			0.0017		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.64	Carbon change out 10/2/08
	10/9/08		0.00086		J	0.00096		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.64	
	10/13/08		0.00091		J	0.00059		<	0.0002		<	0.002		<	0.0002		<	0.00032		7.01	
	10/22/08		0.00071		J	0.00062		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.95	
	10/27/08		0.00093		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.95	
	11/6/08		0.00048		J	0.0007		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.93	
	11/14/08		0.00038		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.44	
	11/21/08		0.00027		J	0.00043		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.93	
	11/26/08		0.00055		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.66	
	12/3/08		0.00032		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.77	
	12/11/08		0.00029		J	0.00044		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.60	
	12/19/08		0.00025		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.90	
	12/22/08		0.00033		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		7.01	
	12/31/08		0.00022		<	0.00025		<	0.0002		<	0.002		<	0.0002		<	0.00032		6.84	
	1/7/09		0.000419		U	0.0005		U	0.0005		J	0.00076		U	0.0006		U	0.0005		6.70	ALS Laboratory Group (2009)
	1/13/09		0.00026		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.97	
	1/23/09		0.00119		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.97	
	1/29/09		0.000288		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.07	
	2/4/09		0.000282		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.04	
	2/10/09	J	0.00009		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.72	
	2/19/09	J	0.000091		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.59	
	2/26/09	J	0.000079		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.98	
	3/4/09	J	0.0016		J	0.0017		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.77	
	3/10/09	J	0.00012		J	0.0022		J	0.00069		U	0.0005		U	0.0006		U	0.0005		6.90	
	3/19/09	J	0.000057		J	0.0025		J	0.00079		U	0.0005		U	0.0006		U	0.0005		6.60	
	3/26/09	J	0.000191		U	0.0005		J	0.0013		U	0.0005		U	0.0006		U	0.0005		6.65	
	4/2/09		0.000213			0.0072		J	0.0018		U	0.0005		U	0.0006		U	0.0005		7.11	
	4/7/09	J	0.000196			0.0074		J	0.0018		U	0.0005		U	0.0006		U	0.0005		6.61	
	4/17/09	J	0.000155			0.0099		J	0.0024		U	0.0005		U	0.0006		U	0.0005		6.75	
	4/23/09		0.00021			0.014		J	0.0031		U	0.0005		U	0.0006		U	0.0005		6.67	
	5/1/09	J	0.000045			0.012		J	0.0032		U	0.0005		U	0.0006		U	0.0005		6.72	
	5/5/09	J	0.000151			0.015		J	0.0034		U	0.0005		U	0.0006		U	0.0005		7.18	
	5/15/09	J	0.00017			0.019		J	0.0044		U	0.0005		U	0.0006		U	0.0005		6.90	
	5/21/09		0.000357			0.023		J	0.0041		U	0.0005		U	0.0006		U	0.0005		7.16	
	5/29/09		0.000266			0.018		J	0.0044		U	0.0005		U	0.0006		U	0.0005		7.01	
	6/1/09		0.000251			0.025			0.0051		U	0.0005		U	0.0006		U	0.0005		6.98	
	6/8/09		0.000379			0.031			0.0056		U	0.0005		U	0.0006		U	0.0005		6.87	
	6/18/09		0.000284			0.03			0.0059		U	0.0005		J	0.00065		U	0.0005		7.13	
	6/22/09		0.000222			0.03			0.0059		U	0.0005		U	0.0006		U	0.0005		7.20	
ST-C	7/3/09	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.94	
	7/9/09	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.40	
	7/15/09	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.95	
	7/22/09	J	0.000074		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.93	
	7/31/09	J	0.000065		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.05	
	8/7/09	J	0.000074		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.03	
	8/13/09	J	0.000082		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.59	
	8/20/09	J	0.000096		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.38	
	8/26/09	J	0.000094		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.40	
	9/3/09	J	0.000111		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.18	
	9/11/09	J	0.00014		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.09	
	9/15/09	J	0.000158		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.20	
	9/25/09	J	0.000126		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.36	
	10/1/09	J	0.000127		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.93	
	10/6/09	J	0.000188		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.76	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2] MERCURY Q[3]	RESULT	FLAG[4]	CARBON TETRACHLORIDE Q	RESULT	FLAG	CHLOROFORM Q	RESULT	FLAG	METHYLENE CHLORIDE Q	RESULT	FLAG	TETRACHLOROETHENE Q	RESULT	FLAG	TRICHLOROETHENE Q	RESULT	FLAG	pH	COMMENTS
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-C Continued	10/16/09	J	0.000096		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.90	
	10/22/09	J	0.00014		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.04	
	10/28/09	J	0.000176		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.99	
	11/4/09	J	0.000156		J	0.0027		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.00	
	11/10/09	J	0.000106		U	0.0005		J	0.0005		U	0.0005		U	0.0006		U	0.0005		7.09	
	11/16/09	J	0.000122		U	0.0005		J	0.00061		U	0.0005		U	0.0006		U	0.0005		6.99	
	11/24/09	J	0.000132		U	0.0005		J	0.00065		U	0.0005		U	0.0006		U	0.0005		7.05	
	11/30/09	J	0.000165		J	0.0027		J	0.00091		U	0.0005		U	0.0006		U	0.0005		6.97	
	12/8/09	J	0.00014		J	0.0015		J	0.0011		U	0.0005		U	0.0006		U	0.0005		7.04	
	12/15/09	J	0.00014		U	0.005		J	0.0013		U	0.0005		U	0.0006		U	0.0005		7..05	
	12/21/09	J	0.000096			0.0052		J	0.0014		U	0.0005		U	0.0006		U	0.0005		6.97	
	12/28/09	J	0.000165		J	0.0045		J	0.0016		U	0.0005		U	0.0006		U	0.0005		7.17	
	1/5/10	J	0.000096			0.0063		J	0.0017		U	0.0005		U	0.0006		U	0.0005		7.08	
	1/12/10	J	0.000131			0.0116		J	0.0046		J	0.002		U	0.0006		U	0.0005		6.42	
	1/19/10	J	0.000131			0.0069		J	0.0026		U	0.0005		U	0.0006		U	0.0005		6.18	
	1/25/10	J	0.000092		J	0.0039		J	0.0018		U	0.0005		U	0.0006		U	0.0005		6.38	
	2/1/10	J	0.000139			0.013		J	0.0037		U	0.0005		U	0.0006		U	0.0005		7.73	
	2/11/10	J	0.000141			0.033			0.0076		U	0.0005		U	0.0006		U	0.0005		6.60	
	2/17/10	J	0.000144			0.036			0.0082		U	0.0005		U	0.0006		U	0.0005		7.32	
	2/22/10	J	0.000108			0.032			0.0089		U	0.0005		U	0.0006		U	0.0005		6.77	
	3/2/10	J	0.000145			0.038			0.0083		U	0.0005		U	0.0006		U	0.0005		7.03	
	3/10/10	J	0.00016			0.044			0.009		U	0.0005		U	0.0006		U	0.0005		6.39	
ST-A	3/17/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.14	Carbon change out
	3/22/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.46	
	3/31/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.03	
	4/6/10	J	0.000084		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.20	
	4/12/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.63	
	4/22/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.44	
	4/28/10	J	0.000083		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.87	
	5/4/10	J	0.000043		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.62	
	5/10/10	J	0.000081		U	0.0005		J	0.00078		U	0.0005		U	0.0006		U	0.0005		6.75	
	5/20/10	U	0.000042		U	0.0005		J	0.0014		J	0.00077		U	0.0006		U	0.0005		6.58	
	5/24/10	J	0.000149		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.76	
	6/2/10	U	0.000042		U	0.0005		J	0.0017		U	0.0005		U	0.0006		U	0.0005		7.02	
	6/7/10	J	0.000066		J	0.0043		J	0.0019		U	0.0005		U	0.0006		U	0.0005		7.00	
	6/14/10	J	0.000088		J	0.0011		J	0.0021		U	0.0005		U	0.0006		U	0.0005		7.28	
	6/23/10	J	0.000159		J	0.0025		J	0.0032		U	0.0005		U	0.0006		U	0.0005		6.71	
	7/1/10	U	0.000042		J	0.0032		J	0.0044		U	0.0005		U	0.0006		U	0.0005		6.51	
	7/6/10	J	0.000049			0.066		J	0.0042		U	0.0005		U	0.0006		U	0.0005		6.48	
	7/12/10	U	0.000042			0.0061			0.0055		U	0.0005		U	0.0006		U	0.0005		6.99	
	7/22/10	J	0.000092			0.0084			0.007		U	0.0005		U	0.0006		U	0.0005		7.64	
	7/26/10	J	0.000069			0.0085			0.0071		U	0.0005		U	0.0006		U	0.0005		7.61	
	8/2/10	J	0.000069			0.015			0.0076		U	0.0005		U	0.0006		U	0.0005		7.40	
	8/12/10	U	0.000042			0.012			0.0081		U	0.0005		U	0.0006		U	0.0005		6.39	
	8/18/10	J	0.000078			0.016			0.0082		U	0.0005		U	0.0006		U	0.0005		6.51	
	8/23/10	J	0.00008			0.021			0.0096		U	0.0005		U	0.0006		U	0.0005		6.79	
	8/30/10	J	0.000075			0.02			0.0096		U	0.0005		U	0.0006		U	0.0005		6.85	
	9/8/10	U	0.000042			0.021			0.0092		U	0.0005		U	0.0006		U	0.0005		6.34	Carbon change out 9/10/10
ST-C	9/14/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.53	
	9/20/10	J	0.000043		U	0.0005		U	0.0005		U	0.0005		J	0.0011		U	0.0005		7.37	
	9/27/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.12	
	10/4/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.15	
	10/12/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.13	
	10/18/10		0.000439		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.18	
	10/28/10	J	0.000043		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.86	
	11/4/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.62	
	11/8/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.15	
	11/15/10	J	0.000048		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.43	
	11/23/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.33	
	11/29/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.96	

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-C Continued	12/6/10	J	0.000043		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.11	
	12/14/10	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.83	
	12/21/10	J	0.000075		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.88	
	12/28/10	J	0.000061		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		4.78	
	1/3/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.16	
	1/13/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.86	
	1/17/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.78	
	1/24/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.53	
	1/31/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.51	
	2/7/11	J	0.000058		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.58	
	2/14/11	J	0.000052		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.63	
	2/24/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.79	
	3/1/11	J	0.000057		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.36	
	3/11/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.80	
	3/18/11	J	0.000060		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.66	
	3/25/11	J	0.000054		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.10	
	4/1/11	J	0.000084		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.22	
	4/6/11	J	0.000055		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.44	
	4/13/11	U	0.000042		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.36	
	4/19/11	J	0.000055		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.07	
	4/25/11	J	0.000076		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.04	
	5/3/11	J	0.000049		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		7.18	
	5/13/11	J	0.000045		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.73	
	5/20/11	J	0.000048		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.75	
	5/26/11	J	0.000047		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.81	
	6/2/11	U	0.000042		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.02	
	6/8/11	J	0.000060		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.60	
	6/16/11	J	0.000079		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.43	
	6/22/11	J	0.000084		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.23	
	6/30/11	J	0.000104		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.32	
	7/7/11	J	0.000078		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.50	
	7/11/11	J	0.000126		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.25	
	7/22/11	J	0.000092		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.38	
	7/29/11	J	0.000101		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.38	
	8/4/11	J	0.000079		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.27	
	8/8/11	J	0.000082		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.34	
	8/19/11	J	0.000104		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.14	
	8/25/11	J	0.000108		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.39	
	9/1/11	J	0.000077		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.17	
	9/6/11	J	0.000102		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.00	
	9/12/11	J	0.000110		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		6.82	
	9/19/11		0.00195		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.26	
	9/26/11	J	0.000049		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		6.99	
	10/3/11	J	0.000084		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.22	
	10/10/11	J	0.000051		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.24	
	10/17/11	J	0.000091		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.20	
	10/27/11	J	0.001100		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.18	
	11/4/11	U	0.000042		U	0.0018		J	0.0015		U	0.0013		U	0.0017		U	0.0011		6.58	
	11/11/11	J	0.000084		U	0.0018		J	0.0013		U	0.0013		U	0.0017		U	0.0011		6.85	
	11/16/11	J	0.000071		U	0.0018		J	0.0016		U	0.0013		U	0.0017		U	0.0011		6.50	
	11/20/11	J	0.000063		U	0.0018		J	0.0017		U	0.0013		U	0.0017		U	0.0011		6.35	
	12/2/11	U	0.000042		U	0.0018		J	0.0014		U	0.0013		U	0.0017		U	0.0011		6.58	
	12/9/11	J	0.000052		U	0.0018		J	0.0014		U	0.0013		U	0.0017		U	0.0011		6.58	
	12/16/11		0.001480		U	0.0018		J	0.0015		U	0.0013		U	0.0017		U	0.0011		6.42	
	12/20/11	J	0.000048		U	0.0018		J	0.0016		U	0.0013		U	0.0017		U	0.0011		6.64	
	12/30/11	J	0.000046		U	0.0018		J	0.0013		U	0.0013		U	0.0017		U	0.0011		7.25	
	1/5/12	J	0.000113		U	0.0018		J	0.0012		U	0.0013		U	0.0017		U	0.0011		7.02	
	1/12/12	J	0.000097		U	0.0018		J	0.0010		U	0.0013		U	0.0017		U	0.0011		6.90	
	1/17/12	J	0.000150		U	0.0018		J	0.0016		U	0.0013		U	0.0017		U	0.0011		7.39	
	1/23/12	J	0.000094		U	0.0018		J	0.0015		U	0.0013		U	0.0017		U	0.0011		7.20	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-C Continued	2/1/12	J	0.000138		U	0.0018		J	0.0022		U	0.0013		U	0.0017		U	0.0011		7.48	
	2/6/12	J	0.000063			0.0400		J	0.0150		U	0.0013		U	0.0017		U	0.0011		8.66	
	2/15/12	J	0.000180			0.0240		J	0.0049		U	0.0013		U	0.0017		U	0.0011		7.41	
	2/22/12	J	0.000169			0.0390			0.0063		U	0.0013		U	0.0017		U	0.0011		7.65	
	2/27/12	J	0.000152			0.0540			0.0068		U	0.0013		U	0.0017		U	0.0011		7.14	
ST-A	3/9/12	U	0.000042		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.20	Carbon change out 3/8/12
	3/12/12	U	0.000042		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.30	
	3/23/12	U	0.000042		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.41	
	3/28/12	U	0.000042		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		7.32	
	4/4/12	U	0.000042		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		6.82	
	4/12/12	U	0.000042		U	0.0018		U	0.0010		U	0.0013		U	0.0017		U	0.0011		6.69	
ST-B	4/17/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.74	Carbon change out 4/16/12
	4/25/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.96	
	5/2/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.68	
	5/10/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.79	
	5/18/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.68	
	5/25/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.64	
	5/31/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.26	
	6/6/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.23	
	6/11/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.62	
	6/18/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.71	
	6/27/12	U	0.000042		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.54	
	7/2/12	J	0.000059		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		6.64	
	7/13/12	J	0.000048		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.62	
	7/20/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.46	
	7/24/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.62	
	8/2/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.53	
	8/10/12		See Note 8 below		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.43	
	8/15/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.43	
	8/23/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.28	
	8/29/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		7.27	
	9/7/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		7.27	
	9/13/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		7.88	
	9/21/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.36	
	9/28/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.72	
	10/3/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.35	
	10/10/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.05	
	10/18/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.16	
	10/26/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.21	
	11/2/12	J	0.000056		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.15	
	11/8/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.46	
	11/15/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.67	
	11/19/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.51	
	11/29/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		7.33	
	12/6/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		7.00	
	12/13/12	J	0.000052		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.59	
	12/19/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.14	
	12/28/12	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.18	
	1/3/13	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.56	
	1/10/13	J	0.000052		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.44	
	1/14/13	J	0.000046		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.38	
	1/25/13	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.21	
	2/1/13	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.25	
	2/5/13	J	0.000044		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.28	
	2/11/13	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.44	
	2/18/13	J	0.000046		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.24	
	2/24/13	U	0.000042		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.45	
	3/7/13	J	0.000044		U	0.001		J	0.0013		U	0.001		U	0.001		U	0.001		6.41	
	3/15/13	J	0.000044		U	0.001		J	0.0020		U	0.001		U	0.001		U	0.001		6.36	
	3/21/13	J	0.000068		U	0.001		J	0.0023		U	0.001		U	0.001		U	0.001		7.15	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-B Continued	3/27/13	J	0.000056		U	0.001		J	0.0022		U	0.001		U	0.001		U	0.001		8.08	
	4/4/13	U	0.000042		U	0.001		J	0.0033		U	0.001		U	0.001		U	0.001		7.80	
	4/11/13	U	0.000042		U	0.001		J	0.0028		U	0.001		U	0.001		U	0.001		7.29	
	4/17/13	J	0.000086		U	0.001		J	0.0039		U	0.001		U	0.001		U	0.001		7.17	
	4/26/13	J	0.000046		U	0.001		J	0.0045		U	0.001		U	0.001		U	0.001		7.15	
	5/2/13	J	0.000118		U	0.001		J	0.0046		U	0.001		U	0.001		U	0.001		7.16	
	5/9/13	J	0.000047		U	0.001		J	0.0049		U	0.001		U	0.001		U	0.001		7.15	
	5/15/13	U	0.000042		U	0.001		J	0.0045		U	0.001		U	0.001		U	0.001		7.20	
	5/23/13	U	0.000042		J	0.0012		J	0.0047		U	0.001		U	0.001		U	0.001		6.90	
	5/28/13	U	0.000042		J	0.0015		J	0.0044		U	0.001		U	0.001		U	0.001		7.13	
	6/4/13	U	0.000042		J	0.0021		J	0.0042		U	0.001		U	0.001		U	0.001		7.19	
	6/11/13	J	0.000073		J	0.0025		J	0.0037		U	0.001		U	0.001		U	0.001		7.05	
	6/19/13	J	0.000075		J	0.0032		J	0.0042		U	0.001		U	0.001		U	0.001		7.68	
	6/24/13	J	0.000074		J	0.0032		J	0.0040		U	0.001		U	0.001		U	0.001		7.15	
	7/2/13	J	0.000061		J	0.0034		J	0.0039		U	0.001		U	0.001		U	0.001		7.30	
	7/10/13	J	0.000043		J	0.0041		J	0.0037		U	0.001		U	0.001		U	0.001		6.91	
	7/16/13	J	0.000091		J	0.0048		J	0.0037		U	0.001		U	0.001		U	0.001		6.87	
	7/23/13	J	0.000061		J	0.0061		J	0.0039		U	0.001		U	0.001		U	0.001		6.81	
	8/2/13	U	0.000040		J	0.0065		J	0.0041		U	0.001		U	0.001		U	0.001		6.83	
	8/6/13	J	0.000086			0.0078		J	0.0045		U	0.001		U	0.001		U	0.001		6.68	
	8/15/13	J	0.000075			0.0086		J	0.0037		U	0.001		U	0.001		U	0.001		6.76	
	8/22/13	J	0.000074			0.0083		J	0.0042		U	0.001		U	0.001		U	0.001		6.79	
	8/26/13	J	0.000093			0.0082		J	0.0041		U	0.001		U	0.001		U	0.001		6.81	
	9/5/13	J	0.000092			0.011		J	0.0043		U	0.001		U	0.001		U	0.001		6.74	
	9/13/13	J	0.000072			0.014		J	0.0039		U	0.001		U	0.001		U	0.001		6.70	
ST-C	9/20/13	J	0.000086		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.84	Carbon change out 9/16/13
	9/26/13	J	0.000053		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.77	
	10/1/13	U	0.00004		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.61	
	10/7/13	U	0.00004		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.67	
	10/17/13	U	0.00004		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.43	
	10/25/13	J	0.000076		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.56	
	10/31/13	J	0.000059		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.39	
	11/7/13	J	0.000095		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.48	
	11/15/13	J	0.000105		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.44	
	11/18/13	J	0.00006		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.42	
	11/25/13	J	0.000057		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.39	
	12/5/13	J	0.000069		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.40	
	12/13/13	J	0.00004		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.43	
	12/17/13	J	0.000054		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.44	
	12/23/13	J	0.000052		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.41	
	1/3/14	J	0.000123		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		6.36	
	1/9/14	J	0.000111		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.26	
	1/16/14	J	0.000075		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.29	
	1/23/14	J	0.000081		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.41	
	1/26/14	J	0.00006		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.43	
	2/7/14	J	0.000064		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.40	
	2/10/14	J	0.000066		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.32	
	2/18/14	J	0.000047		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.36	
	2/24/14	U	0.00004		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.32	
	3/4/14	U	0.00004		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.44	
	3/10/14	J	0.000042		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.37	
	3/20/14	J	0.000044		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.32	
	3/24/14	J	0.000062		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.35	
	4/3/14	J	0.000048		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.25	
	4/10/14	U	0.00004		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.25	
	4/17/14	J	0.000081		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.34	
	4/23/14	J	0.000086		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.22	
	4/29/14	J	0.000042		U	0.0005		U	0.0002		U	0.0004		U	0.0003		U	0.0002		6.25	
	5/7/14	J	0.000084		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.25	
	5/13/14	J	0.000058		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.28	

TABLE 3.1-1
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
TREATMENT SYSTEM EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
TREATED GROUNDWATER DISCHARGE STANDARDS (mg/L)[5]			0.01			0.38			0.325			NA[6]			0.164			NA		6.0 - 9.0	
ST-C Continued	5/22/14	J	0.000097		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.32	
	5/27/14	U	0.00004		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.27	
	6/6/14	J	0.000047		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.24	
	6/11/14	J	0.000067		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.20	
	6/19/14	J	0.000083		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.14	
	6/23/14	J	0.000097		U	0.0006		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.36	
	6/30/14	J	0.000127		U	0.0006		J	0.0008		U	0.001		U	0.0006		U	0.0005		6.46	
	7/9/14	J	0.000055		U	0.0006		J	0.0008		U	0.001		U	0.0006		U	0.0005		6.27	
	7/15/14	J	0.000126		U	0.0006		J	0.0010		U	0.001		U	0.0006		U	0.0005		6.25	
	7/21/14	J	0.000095		U	0.0006		J	0.0011		U	0.001		U	0.0006		U	0.0005		6.91	
	7/29/14	U	0.000040		U	0.0006		J	0.0010		U	0.001		U	0.0006		U	0.0005		6.93	
	8/4/14	U	0.000040		U	0.0006		J	0.0014		U	0.001		U	0.0006		U	0.0005		7.07	
	8/15/14	J	0.000063		U	0.0006		J	0.0021		U	0.001		U	0.0006		U	0.0005		7.10	
	8/18/14	J	0.000097		J	0.00067		J	0.0026		U	0.001		U	0.0006		U	0.0005		7.21	
	8/25/14	J	0.000074		U	0.0006		J	0.0020		U	0.001		U	0.0006		U	0.0005		7.11	
	9/3/14	J	0.000107		U	0.0006		J	0.0023		U	0.001		U	0.0006		U	0.0005		6.42	
	9/12/14	J	0.000040		J	0.0013		J	0.0021		U	0.001		U	0.0006		U	0.0005		6.55	
	9/15/14	J	0.000129		U	0.0006		J	0.0007		U	0.001		U	0.0006		U	0.0005		6.39	
	9/23/14	J	0.000113		J	0.00084		J	0.0019		U	0.001		U	0.0006		U	0.0005		6.31	
	9/30/14	J	0.000102		J	0.00086		J	0.0021		U	0.001		U	0.0006		U	0.0005		6.73	
	10/8/14	J	0.000099		J	0.0009		J	0.0023		U	0.001		U	0.0006		U	0.0005		6.36	
	10/17/14	J	0.000113		J	0.00077		J	0.0018		U	0.001		U	0.0006		U	0.0005		6.34	
	10/23/14	J	0.000127		J	0.0012		J	0.0020		U	0.001		U	0.0006		U	0.0005		6.32	
	10/31/14	J	0.000091		J	0.0035		J	0.0027		U	0.001		U	0.0006		U	0.0005		6.29	
	11/3/14	J	0.000095		J	0.0039		J	0.0030		U	0.001		U	0.0006		U	0.0005		6.28	
	11/14/14	J	0.000078		J	0.0025		J	0.0028		U	0.001		U	0.0006		U	0.0005		6.28	
	11/21/14	J	0.000141		J	0.0038		J	0.0033		U	0.001		U	0.0006		U	0.0005		6.27	
	11/26/14	J	0.000100		J	0.0046		J	0.0032		U	0.001		U	0.0006		U	0.0005		6.34	
	12/4/14	J	0.000156			0.0052		J	0.0036		U	0.001		U	0.0006		U	0.0005		6.45	
	12/12/14	J	0.000152			0.0055		J	0.0037		U	0.001		U	0.0006		U	0.0005		6.27	
	12/15/14	J	0.000151			0.0056		J	0.0039		U	0.001		U	0.0006		U	0.0005		6.32	
	12/26/14	J	0.000064		J	0.0041		J	0.0034		U	0.001		U	0.0006		U	0.0005		6.37	
	12/31/14	J	0.000112		J	0.0046		J	0.0031		U	0.001		U	0.0006		U	0.0005		6.33	

NOTES:
1) mg/L - milligrams per liter
2) Grey cells indicate analyses not requested
3) Q - Qualifier
< - Not detected (ND) at a value greater than the reporting limit (RL), for data prior to 2/24/06.
< - Not detected at a value greater than the method detection limit (MDL). (noted in Result column, for data 2/24/06 to 12/31/08.)
U - Not detected at a value greater than the method detection limit (MDL). (MDL noted in Result column, for data 12/31/08 to present)
B - Indicates that a value for an inorganic analysis is an estimate. It is used when a compound is determined to be 12/31/08 but at a concentration less than the quantitation limit of the method, for data prior to 2/24/06.
B - Indicates that the compound was found in the blank sample for both inorganic and metals analysis, for data 2/24/06 to 12/31/08.
H - Indicates a sample was prepped or analyzed beyond the specified holding time
J - Value for an organic analysis is an estimate, for data prior to 2/24/06.
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value, for data 2/24/06 to present.
* - LCS or LCSD exceeds the control limits
4) Flag
B - Indicates that an analyte is present in the method blank as well as in the sample.
J - Value is an estimate; result falls within the MDL and the limit of quantitation (LQ) (Lancaster Laboratories).
Y - Used to identify a spike or spike duplicate recovery is outside the specified quality control limits
5) Treated groundwater discharge limitations recommended by the EPA in a letter dated 7/20/1998 to Mr. Ron Weddell.
6) NA - Not applicable
7) ST - Sample tap; sample tap either (A, B, or C) depends on arrangement of carbon canisters, which changes after each carbon change out.
8) Metals sample container was not received by laboratory.

TABLE 3.1-2
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
RECOVERY WELLS

SAMPLE LOCATION	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
CAO50B	5/18/98		3.900			52.0			1.30		<	0.5000			0.330		<	0.500			
	5/29/98		4.200			116			1.80		<	0.2000			0.340		<	0.100			
	7/1/98		4.000			125			2.10		<	0.1000			0.340		<	0.100			
	7/28/98		3.300			128			1.90		<	0.2000			0.310		<	0.100			
	8/25/98		3.400			130			2.00		<	0.2000			0.290		<	0.100			
	12/22/98		2.200			142			2.30			0.0120	J		0.240			0.004	J		
	4/28/99		1.800			89.0			1.60		<	0.2000			0.190		<	0.100			
	6/30/99		1.700			50.0			1.40		<	0.1000			0.160		<	0.050			
	10/20/99		1.520			44.3			0.93		<	0.1000			0.099		<	0.050			
	2/2/00		1.460			77.4			0.90		<	0.0500			0.110		<	0.025			
	9/27/00		0.440			40.0			1.10		<	1.0000		<	0.200		<	0.200			
	1/10/01		1.080			74.0			1.10		<	2.0000		<	0.400		<	0.400			
	5/30/01		0.940			74.0			1.10		<	2.0000		<	0.500		<	0.500			
	10/22/01		0.780			75.0			0.90		<	4.0000		<	0.800		<	0.800			
	3/25/02		0.450			14.0			0.50		<	0.5000		<	0.100		<	0.100			
	8/12/02		0.690			53.0			0.70		<	2.0000		<	0.500		<	0.500			
	1/3/03		0.700			65.0			0.70		<	2.0000		<	0.500		<	0.500			
	5/19/03		0.870			70.0			0.80		<	2.0000		<	0.400		<	0.400			
	10/6/03		0.790			64.0			0.80		<	2.0000		<	0.500		<	0.500			
	2/23/04		0.410			64.0			0.90		<	2.0000		<	0.500		<	0.500			
	7/13/04		0.710			68.0			0.80		<	2.0000		<	0.500		<	0.500			
	11/29/04		0.960			78.0			0.80		<	2.0000		<	0.400		<	0.400			
	5/16/05		0.813			34.0			0.47		<	1.0000		J	0.110		<	0.200			
	5/3/06		0.590			38.0			0.64		J,B	0.1300		J	0.140		<	0.064			
	9/20/07		1.600			69.0			0.68		<	0.4000		J	0.260		<	0.130			
	10/13/08		0.540			39.0			0.52		<	0.8000		J	0.140		<	0.120			
	7/9/09		0.503			40.0			0.42		<	0.0005			0.120			0.013			
	7/6/10		0.393			52.0			0.45		U	0.0005			0.140			0.013			
	7/22/11		0.404			35.0			0.45		U	0.0650		J	0.110		U	0.055		6.81	
	9/28/12		0.394			25.0			0.34		U	0.0250		J	0.079		U	0.025		7.00	
	9/26/13		0.350			31.0			0.33		U	·0.0250		J	0.080		U	0.025		6.89	
	9/5/14		0.486			32.0		J	0.30		U	0.1000		U	0.060		U	0.050		6.65	
CAO51B	5/18/98		0.980			73.0			1.20		<	0.5000		<	0.500		<	0.500			
	5/29/98		0.880			94.0			1.60		<	0.2000			0.110		<	0.100			
	7/1/98		0.760			79.0			1.80		<	0.2000			0.110		<	0.100			
	7/28/98		0.610			69.0			1.50		<	0.1000			0.078		<	0.050			
	8/25/98		0.540			64.0			1.60		<	0.0500			0.075			0.007	J		
	12/22/98		0.360			59.0			2.00		<	0.0200			0.083		<	0.020			
	4/28/99		0.370			37.0			1.60		<	0.0500			0.061			0.004	J		
	6/30/99		0.330			29.0			1.60			0.0050	J		0.063			0.004	J		
	10/20/99		0.342			37.2			1.50		<	0.0200			0.072			0.006	J		
	2/2/00		0.312			40.5			1.40		<	0.0200			0.060			0.005	J		
	9/27/00		0.201			21.0			1.50		<	1.0000		<	0.200		<	0.200			
	1/10/01		0.370			11.0			0.98		<	0.2000			0.060		<	0.050			
	5/30/01		0.160			12.0			1.00		<	0.5000		<	0.100		<	0.100			
	10/22/01		0.560			52.0			7.00		<	2.0000		<	0.400		<	0.400			
	3/25/02		0.045			13.0			1.20		<	0.5000		<	0.100		<	0.100			
	8/12/02		0.072			15.0			1.20		<	0.0050			0.050			0.005			
	1/3/03		0.067			5.6			0.92		<	0.0010			0.040		<	0.002			
	5/19/03		0.101			17.0			0.87		<	0.1000			0.040		<	0.020			
	10/6/03		0.096			15.0			0.90		<	0.5000		<	0.100		<	0.100			
	2/23/04		0.049			4.4			0.73		<	0.1000			0.040		<	0.020			
	7/13/04		0.040			4.3			0.83		<	0.1000			0.050		<	0.020			
	11/29/04		0.150			21.0			0.90		<	1.0000		<	0.200		<	0.200			
	5/16/05		0.116			9.7			0.73		<	0.2500		J	0.038		<	0.050			
	5/3/06		0.081			12.0			0.72		J,B	0.0520		J	0.045		<	0.016			
	9/20/07		0.130			12.0			0.75		<	0.0800		J	0.029		<	0.026			
	10/13/08		0.065			12.0			0.54		<	0.1600		J	0.035		<	0.025			
	7/9/09		0.0958			8.5			0.41		<	0.0005			0.026		J	0.0044			
	7/6/10		0.0134			1.6			0.32		U	0.0005			0.023		J	0.0067			
	7/22/11		0.0268			5.0			0.44		U	0.0065		J	0.025		U	0.0055		6.60	
	9/28/12		0.02040			9.8			0.36		U	0.0100		J	0.019		U	0.0100		6.71	

TABLE 3.1-2
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
RECOVERY WELLS

SAMPLE LOCATION	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
CAO51B	9/26/13		0.00702			1.8			0.25		U	0.0010			0.020			0.0053		6.70	
Continued	9/5/14		0.00722			1.8			0.18		U	0.0050		J	0.0079		J	0.0050		6.49	
CAO52B	5/18/98		5.800			49.0			1.80		<	0.5000			1.400		<	0.500			
	5/29/98		0.300			64.0			2.50		<	0.2000			1.800			0.092	J		
	6/24/98		0.230																		
	7/1/98		0.320			66.0			2.20		<	0.2000			1.500			0.076	J		
	7/28/98		0.240			72.0			1.60		<	0.1000			1.000			0.051			
	8/25/98		0.270			207			1.80		<	0.2000			1.200			0.062	J		
	4/28/99		0.250			34.0			1.40		<	0.1000			0.400			0.020	J		
	6/30/99		0.090			23.0			0.90		<	0.0400			0.400			0.016	J		
	10/20/99		0.870			55.1			2.30			0.0290			0.480			0.025	J		
	2/2/00		0.047			12.0			0.70			0.0013	J		0.150			0.008			
	9/27/00		0.044			25.0			1.10		<	1.0000		<	0.200		<	0.200			
	1/10/01		0.060			16.0			0.60		<	0.5000		<	0.100		<	0.100			
	5/30/01		0.031			21.0			0.80		<	0.5000			0.100		<	0.100			
	10/22/01		0.036			21.0			0.60		<	1.0000		<	0.200		<	0.200			
	3/25/02		0.024			22.0			0.60		<	1.0000		<	0.200		<	0.200			
	8/12/02		0.025			22.0			0.50		<	0.5000			0.100		<	0.100			
	1/3/03		0.025			16.0			0.60		<	0.5000			0.100		<	0.100			
	5/19/03		0.025			17.0			0.50		<	0.5000			0.100		<	0.100			
	10/6/03		0.023			18.0			0.50		<	0.5000			0.100		<	0.100			
	2/23/04		0.025			18.0			0.50		<	0.5000			0.100		<	0.100			
	7/13/04		0.018			19.0			0.40		<	0.5000			0.200		<	0.100			
	11/29/04		0.020			17.0			0.40		<	0.5000			0.100		<	0.100			
	5/16/05		0.020			12.0			0.39		<	0.5000		J	0.077		<	0.100			
	5/3/06		0.016			10.0			0.38		J,B	0.1100		J	0.079		<	0.032			
	9/20/07		0.025			13.0			0.40		<	0.0800			0.140		<	0.026			
	10/13/08		0.014			8.0			0.29		<	0.1600		J	0.056		<	0.025			
	7/9/09		0.013			10.0			0.27		<	0.0005			0.074		J	0.003			
	7/6/10		0.007			8.8			0.26		U	0.0005			0.098		J	0.003			
	7/22/11		0.006			9.9			0.30		U	0.0320		J	0.079		U	0.028		6.83	
	9/28/12		0.005			8.7			0.24		U	0.0200		J	0.070		U	0.020		6.89	
	9/26/13		0.003			8.7			0.20		U	0.0100			0.064		U	0.010		6.93	
	9/5/14		0.004			8.3			0.18		U	0.0100			0.054		U	0.005		6.76	
CAOU23B	5/18/98		3.900			88.0			2.60		<	0.5000		<	0.500		<	0.500			
	5/29/98		2.500			118			3.40			0.0400	J		0.640			0.026	J		
	7/1/98		2.400			112			3.40			0.0550	J		0.630			0.025	J		
	7/28/98		2.400			119			3.40			0.0250	J		0.620		<	0.100			
	8/25/98		2.800			124			3.40			0.0320			0.550		<	0.100			
	12/22/98		1.400			127			3.60			0.0390	J		0.790			0.044			
	4/28/99		1.200			81.0			2.80		<	0.2000			0.600		<	0.100			
	6/30/99		1.200			54.0			3.00			0.0430	J		0.590			0.031	J		
	10/20/99		0.089			23.6			0.83			0.0045	J		0.301			0.016			
	2/2/00		0.705			58.9			2.20			0.0156	J		0.472			0.026			
	9/27/00		0.780			45.0			2.00		<	1.0000			0.400		<	0.200			
	1/10/01		0.044			48.0			2.00		<	1.0000			0.400		<	0.200			
	5/30/01		0.500			25.0			0.80		<	1.0000			0.200		<	0.200			
	10/22/01		0.410			38.0			1.30		<	1.0000			0.500		<	0.200			
	3/25/02		0.220			52.0			19.00		<	2.0000			0.500		<	0.400			
	8/12/02		0.450			36.0			1.30		<	1.0000			0.400		<	0.200			
	1/3/03		0.490			44.0			1.40		<	2.0000			0.500		<	0.400			
	5/19/03		0.230			31.0			1.80		<	1.0000			0.400		<	0.200			
	10/6/03		0.260			31.0			2.20		<	1.0000			0.500		<	0.200			
	2/23/04		0.270			32.0			2.00		<	1.0000			0.600		<	0.200			
	7/13/04		0.300			36.0			1.50		<	1.0000			0.600		<	0.200			
	11/29/04		0.310			40.0			1.60		<	1.0000			0.600		<	0.200			
	5/16/05		0.259			36.0			1.60		J	0.0420			0.520		J	0.064			
	5/3/06		0.140			28.0			1.70		J,B	0.1500			0.410		<	0.064			
	9/20/07		0.250			26.0			1.20		<	0.2000			0.380		J	0.076			
	10/13/08		0.140			21.0			1.10		<	0.4000			0.350		<	0.063			
	7/9/09		0.141			20.0			1.00		J	0.0036			0.310			0.039			
	7/6/10		0.123			20.0			1.20		J	0.0034			0.450			0.051			

TABLE 3.1-2
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
RECOVERY WELLS

SAMPLE LOCATION	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
CAOU23B Continued	7/22/11		0.102			15.0			0.89		U	0.0320			0.310		J	0.031		6.77	
	9/28/12		0.085			14.0			0.77		U	0.0250			0.250		J	0.029		6.86	
	9/26/13		0.084			14.0			0.82		U	0.0100			0.300		J	0.030		7.09	
	9/5/14		0.174			16.0			0.64		U	0.0100			0.280		J	0.036		6.67	

NOTE:

1) mg/L - milligrams per liter

2) Grey cells indicate analyses not requested.

3) Q - Qualifier

< - Not detected (ND) at a value greater than the reporting limit (RL), for data prior to 2/24/06.

< - Not detected at a value greater than the method detection limit (MDL), noted in Result column, for data 2/24/06 to 12/31/08.

U - Not detected at a value greater than the method detection limit (MDL), noted in Result column, for data 12/31/08 to present.

B - Indicates that the compound was found in the blank sample for both inorganic and metals analysis, for data 2/24/06 to 12/31/08.

J - Value for an organic analysis is an estimate, for data prior to 2/24/06.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value, for data 2/24/06 to present.

4) Flag

J - Value is an estimate; result falls within the MDL and the limit of quantitation (LQ) (Lancaster Laboratories).

TABLE 3.1-3
CAPA GROUNDWATER TREATMENT SYSTEM
ANALYTICAL RESULTS
STRIPPER EFFLUENT

SAMPLE TAP	DATE	ANALYTICAL RESULTS (mg/L)[1,2]																		pH	COMMENTS
		MERCURY			CARBON TETRACHLORIDE			CHLOROFORM			METHYLENE CHLORIDE			TETRACHLOROETHENE			TRICHLOROETHENE				
		Q[3]	RESULT	FLAG[4]	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG	Q	RESULT	FLAG		
ST-9	5/18/98					0.63			0.034			0.0016			0.002		<	0.001			
	5/29/98		1.7																		
	6/10/98		1.0																		
	6/24/98		0.6																		
	7/1/98					0.33			0.018			0.00047	J		0.00079	J	<	0.001			
	7/28/98					0.32			0.019			0.00017	J		0.00062	J	<	0.001			
	8/25/98					0.26			0.018		<	0.002			0.00062	J	<	0.001			
	9/23/98					0.17			0.013		<	0.002			0.001		<	0.001			
	10/1/98					0.29			0.021		<	0.002			0.0008	J	<	0.001			
	10/7/98					0.037			0.006		<	0.002		<	0.001		<	0.001			
	12/16/98					0.026			0.0009		<	0.002		<	0.001		<	0.001			
	2/17/99					0.146			0.00324		<	0.002			0.001		<	0.001			
	3/10/99					0.050415			0.001822		<	0.002			0.00034	J	<	0.001			
	4/6/99					0.30273			0.006957		<	0.002			0.003346		<	0.001			
	5/5/99					0.872			0.062		<	0.002			0.007			0.0004	J		
	9/1/99					0.178			0.007		<	0.002			0.000979	J	<	0.001			
	9/29/99					0.033			0.0009		<	0.002			0.000204	J	<	0.001			
	10/27/99					11.931			0.516	J	<	0.002			0.172	J	<	0.001			
	2/24/00					0.00607			0.000256	J	<	0.002		<	0.001		<	0.001			
	8/9/00				<	0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	10/5/00					0.048			0.011		<	0.005		<	0.001		<	0.001			
	1/10/01					0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	5/30/01					0.005			0.021		<	0.005		<	0.001		<	0.001			
	10/22/01				<	0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	3/25/02				<	0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	8/12/02				<	0.001			0.006		<	0.005		<	0.001		<	0.001			
	1/3/03					0.003		<	0.001		<	0.005		<	0.001		<	0.001			
	5/19/03					0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	10/6/03					0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	11/3/03					0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	2/23/04					0.002		<	0.001		<	0.005		<	0.001		<	0.001			
	7/13/04				<	0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	11/29/04					0.001		<	0.001		<	0.005		<	0.001		<	0.001			
	5/16/05					0.001		J	0.4		<	0.005		<	0.001		<	0.001			
	6/13/05		0.106	B																	
	1/5/06				J	0.0007		J	0.0002		<	0.005		<	0.001		<	0.001			
	9/18/06				<	0.00025			0.001		<	0.00053		<	0.0002		<	0.00032			
	7/20/07				<	0.00025			0.0016		<	0.001		<	0.0002		<	0.00032			
	11/29/07				J	0.00042		<	0.0002		<	0.001		<	0.0002		<	0.00032			
	3/20/08				J	0.00073		<	0.0002		<	0.001		<	0.0002		<	0.00032			
	10/22/08					0.034			0.0014		<	0.002		J	0.0005		<	0.00032			
	11/26/08					0.0023		J	0.0002		<	0.002		<	0.0002		<	0.00032			
	3/4/09				J	0.0016		U	0.0005		U	0.0005		U	0.0006		U	0.0005			ALS Laboratory Group (2009)
	12/8/09				J	0.00069		U	0.0005		U	0.0005		U	0.0006		U	0.0005			
	3/10/10				U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005			
	8/18/10				J	0.0038		J	0.0037		U	0.0005		U	0.0006		U	0.0005			
	8/30/10		0.18		U	0.0005		U	0.0005		U	0.0005		U	0.0006		U	0.0005		6.77	
	3/18/11		0.188		J	0.0016		U	0.0005		U	0.0005		U	0.0006		U	0.0005		8.03	
	7/29/11		0.177		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		7.8	
	3/23/12		0.142		U	0.0018		U	0.001		U	0.0013		U	0.0017		U	0.0011		7.89	
	9/28/12		0.117		J	0.0011		U	0.001		U	0.001		U	0.001		U	0.001		6.91	
	3/27/13		0.124		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		8.54	
	9/26/13		0.124		J	0.0018		U	0.001		U	0.001		U	0.001		U	0.001		7.21	
	3/24/14		0.116		J	0.00085		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.56	
	9/5/14		0.155		J	0.0045		U	0.0006		U	0.001		U	0.0006		U	0.0005		6.72	

NOTES:
1) mg/L - milligrams per liter
2) Grey cells indicate analyses not requested.
3) Q - Qualifier
< - Not detected (ND) at a value greater than the reporting limit (RL), for data prior to 2/24/06.
< - Not detected at a value greater than the method detection limit (MDL). (noted in Result column, for data 2/24/06 to 12/31/08.)
U - Not detected at a value greater than the method detection limit (MDL). (MDL noted in Result column, for data 12/31/08 to present)
J - Value for an organic analysis is an estimate, for data prior to 2/24/06.
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value, for data 2/24/06 to present.
4) Flag
B - Indicates that an analyte is present in the method blank as well as in the sample.
J - Value is an estimate; result falls within the MDL and the limit of quantitation (LQ) (Lancaster Laboratories).

TABLE 3.1-4
CAPA GROUNDWATER TREATMENT SYSTEM
RECOVERY WELL PUMPING DATA

YEAR	MONTH	CA050B (gal)[1]	CA051B (gal)	CA052B (gal)	CA0U23B (gal)	TOTAL INFLUENT (gal)
1998	June	94,940	120,650	44,346	59,007	318,943
	July	94,464	143,035	46,670	103,993	388,162
	August	82,659	123,384	0	86,436	292,479
	September	52,560	168,124	27,020	13,602	261,306
	October	148,429	106,740	0	45,082	300,251
	November	84,170	70,057	0	90,008	244,235
	December	134,556	143,925	0	140,915	419,396
	TOTAL	**691,778**	**875,915**	**118,036**	**539,043**	**2,224,772**
1999	January	56,244	58,568	38,400	57,835	211,047
	February	43,480	41,230	14,454	66,873	166,037
	March	32,402	52,900	17,521	57,332	160,155
	April	86,908	73,850	25,635	89,265	275,658
	May	52,110	43,020	30,810	53,470	179,410
	June	51,070	50,110	32,000	52,310	185,490
	July	94,520	137,330	70,210	98,850	400,910
	August	60,300	91,700	62,790	63,870	278,660
	September	54,440	84,460	55,250	61,830	255,980
	October	59,750	118,130	65,400	82,860	326,140
	November	61,620	84,320	63,950	67,910	277,800
	December	33,170	41,080	38,180	37,680	150,110
	TOTAL	**686,014**	**876,698**	**514,600**	**790,085**	**2,867,397**
	CUMULATIVE TOTAL, ALL WELLS					**5,092,169**
2000	January	63,290	84,390	71,800	77,950	297,430
	February	77,580	96,090	84,360	79,630	337,660
	March	79,810	101,600	81,090	70,760	333,260
	April	58,820	75,800	63,660	56,470	254,750
	May	90,340	67,330	76,340	74,720	308,730
	June	94,060	111,140	73,990	83,730	362,920
	July	88,230	65,640	46,950	67,490	268,310
	August	60,300	91,700	62,790	63,870	278,660
	September	37,980	84,460	55,250	61,830	239,520
	October	103,210	67,430	77,250	96,270	344,160
	November	102,960	71,210	91,510	93,480	359,160
	December	90,830	2,450	76,480	41,210	210,970
	TOTAL	**947,410**	**919,240**	**861,470**	**867,410**	**3,595,530**
	CUMULATIVE TOTAL, ALL WELLS					**8,687,699**
2001	January	106,250	57,650	83,430	88,310	335,640
	February	65,070	29,070	75,050	100,330	269,520
	March	69,460	62,430	65,310	86,790	283,990
	April	71,520	57,640	52,830	63,090	245,080
	May	120,620	79,750	81,700	52,480	334,550
	June	61,820	56,160	89,260	47,550	254,790
	July	52,500	61,180	74,640	66,440	254,760
	August	69,270	72,300	118,580	81,120	341,270
	September	44,410	49,250	77,680	77,570	248,910
	October	107,030	33,520	66,620	47,870	255,040
	November	59,710	16,210	53,650	48,180	177,750
	December	81,500	81,500	71,100	60,800	294,900
	TOTAL	**909,160**	**656,660**	**909,850**	**820,530**	**3,296,200**
	CUMULATIVE TOTAL, ALL WELLS					**11,983,899**
2002	January	98,390	36,800	95,520	61,250	291,960
	February	74,600	28,450	72,020	52,110	227,180
	March	42,770	58,080	55,110	54,960	210,920
	April	84,520	85,820	75,770	82,670	328,780
	May	50,210	49,080	68,130	70,820	238,240
	June	83,990	77,020	64,090	73,860	298,960
	July	103,700	91,110	123,550	89,760	408,120
	August	79,220	75,700	80,840	73,170	308,930
	September	68,450	67,680	65,470	57,150	258,750
	October	83,260	83,700	83,860	86,470	337,290
	November	47,870	49,790	71,700	70,480	239,840
	December	83,500	74,330	67,720	82,790	308,340
	TOTAL	**900,480**	**777,560**	**923,780**	**855,490**	**3,457,310**
	CUMULATIVE TOTAL, ALL WELLS					**15,441,209**
2003	January	84,500	58,060	51,490	73,880	267,930
	February	49,680	48,730	52,040	23,230	173,680
	March	110,080	110,650	62,330	75,600	358,660
	April	83,350	64,460	73,230	60	221,100
	May	56,140	67,810	66,560	36,000	226,510
	June	80,680	89,200	62,490	35,640	268,010
	July	91,660	93,820	96,350	39,310	321,140
	August	64,540	77,480	94,940	29,610	266,570
	September	94,950	104,220	127,540	49,560	376,270
	October	36,780	83,190	100,920	68,590	289,480
	November	231,100	38,770	88,930	58,910	417,710
	December	110,190	27,090	108,400	24,090	269,770
	TOTAL	**1,093,650**	**863,480**	**985,220**	**514,480**	**3,456,830**
	CUMULATIVE TOTAL, ALL WELLS					**18,898,039**
2004	January	129,290	55,140	128,330	4,280	317,040
	February	97,630	59,860	58,300	35,060	250,850
	March	118,330	82,990	104,600	80,830	386,750
	April	76,220	51,410	52,430	61,080	241,140
	May	46,090	57,900	43,250	44,740	191,980
	June	66,830	62,810	64,390	49,780	243,810
	July	65,080	47,690	60,780	44,380	217,930
	August	67,980	79,900	61,700	45,780	255,360
	September	16,150	98,950	71,040	51,720	237,860
	October	15,930	42,940	69,920	50,340	179,130
	November	103,390	93,870	93,770	54,780	345,810
	December	64,540	77,000	76,890	56,320	274,750
	TOTAL	**867,460**	**810,460**	**885,400**	**579,090**	**3,142,410**
	CUMULATIVE TOTAL, ALL WELLS					**22,040,449**

TABLE 3.1-4
CAPA GROUNDWATER TREATMENT SYSTEM
RECOVERY WELL PUMPING DATA

YEAR	MONTH	CA050B (gal)[1]	CA051B (gal)	CA052B (gal)	CA0U23B (gal)	TOTAL INFLUENT (gal)
2005	January	78,750	35,700	65,760	47,560	227,770
	February	103,650	88,410	92,250	65,270	349,580
	March	95,120	47,260	78,380	51,580	272,340
	April	96,680	51,890	81,280	51,610	281,460
	May	103,370	102,640	89,680	38,940	334,630
	June	95,330	11,800	29,580	16,830	153,540
	July	64,660	54,670	56,790	18,940	195,060
	August	74,190	68,130	64,470	22,380	229,170
	September	73,810	75,280	63,620	38,040	250,750
	October	84,450	20,350	73,040	52,010	229,850
	November	125,440	18,950	99,370	38,910	282,670
	December	94,040	62,280	53,740	16,780	226,840
	TOTAL	**1,089,490**	**637,360**	**847,960**	**458,850**	**3,033,660**
	CUMULATIVE TOTAL, ALL WELLS					**25,074,109**
2006	January	91,090	65,510	62,440	67,880	286,920
	February	99,040	69,830	180	24,420	193,470
	March	82,410	69,150	40,220	50,430	242,210
	April	107,470	96,190	105,340	43,880	352,880
	May	130,240	79,280	127,530	73,690	410,740
	June	95,670	96,640	102,141	57,010	351,461
	July	114,830	110,010	131,199	67,870	423,909
	August	86,450	83,190	108,970	57,850	336,460
	September	5,190	113,640	146,870	74,010	339,710
	October	0	95,820	99,390	16,770	211,980
	November	36,240	93,710	68,760	43,920	242,630
	December	93,760	66,030	48,040	27,460	235,290
	TOTAL	**942,390**	**1,039,000**	**1,041,080**	**605,190**	**3,627,660**
	CUMULATIVE TOTAL, ALL WELLS					**28,701,769**
2007	January	56,240	73,810	0	59,320	189,370
	February	47,980	68,410	33,980	28,040	178,410
	March	41,510	41,310	34,260	33,140	150,220
	April	56,420	67,350	57,220	51,730	232,720
	May	57,130	55,440	56,500	28,740	197,810
	June	76,370	79,230	68,240	45,520	269,360
	July	86,610	70,410	43,660	31,250	231,930
	August	22,350	100,910	6,030	41,540	170,830
	September	58,700	73,050	51,800	12,340	195,890
	October	81,650	115,960	88,890	18,300	304,800
	November	17,440	77,710	80,430	50	175,630
	December	39,410	83,380	101,580	30,440	254,810
	TOTAL	**641,810**	**906,970**	**622,590**	**380,410**	**2,551,780**
	CUMULATIVE TOTAL, ALL WELLS					**31,253,549**
2008	January	75,870	85,800	71,610	48,490	281,770
	February	49,440	52,010	49,930	21,670	173,050
	March	28,360	89,270	77,750	34,140	229,520
	April	115,960	111,690	123,590	54,420	405,660
	May	61,950	65,360	97,900	43,270	268,480
	June	117,100	59,990	77,420	24,440	278,950
	July	90,450	96,410	113,900	51,380	352,140
	August	89,370	94,570	86,520	57,080	327,540
	September	77,560	88,830	37,870	56,980	261,240
	October	111,200	119,510	130,040	49,750	410,500
	November	117,320	89,360	107,970	45,400	360,050
	December	118,970	99,220	109,240	44,320	371,750
	TOTAL	**1,053,550**	**1,052,020**	**1,083,740**	**531,340**	**3,720,650**
	CUMULATIVE TOTAL, ALL WELLS					**34,974,199**
2009	January	102,620	98,940	68,640	39,400	309,600
	February	89,130	133,220	88,930	42,180	353,460
	March	89,510	97,320	84,060	44,870	315,760
	April	120,620	66,890	106,260	63,360	357,130
	May	78,350	90,300	101,380	60,280	330,310
	June	80,660	77,260	88,190	45,520	291,630
	July	91,040	100,080	98,360	53,990	343,470
	August	75,240	72,520	88,650	39,080	275,490
	September	89,350	75,160	91,560	46,250	302,320
	October	96,500	95,480	102,630	49,900	344,510
	November	113,300	99,640	111,400	52,860	377,200
	December	105,430	124,530	76,840	46,590	353,390
	TOTAL	**1,131,750**	**1,131,340**	**1,106,900**	**584,280**	**3,954,270**
	CUMULATIVE TOTAL, ALL WELLS					**38,928,469**
2010	January	52,720	57,060	56,230	38,510	204,520
	February	83,730	89,630	91,960	59,560	324,880
	March	65,750	84,780	103,060	63,970	317,560
	April	90,970	89,470	94,390	34,190	309,020
	May	61,190	68,940	84,160	55,090	269,380
	June	60,580	60,580	81,780	55,590	258,530
	July	87,350	93,790	89,940	66,060	337,140
	August	75,280	80,100	98,830	77,610	331,820
	September	78,290	68,920	82,540	28,350	258,100
	October	70,800	62,941	86,310	45,620	265,671
	November	84,990	93,090	87,220	71,100	336,400
	December	80,300	74,120	78,910	62,000	295,330
	TOTAL	**891,950**	**923,421**	**1,035,330**	**657,650**	**3,508,351**
	CUMULATIVE TOTAL, ALL WELLS					**42,436,820**

TABLE 3.1-4
CAPA GROUNDWATER TREATMENT SYSTEM
RECOVERY WELL PUMPING DATA

YEAR	MONTH	CA050B (gal)[1]	CA051B (gal)	CA052B (gal)	CA0U23B (gal)	TOTAL INFLUENT (gal)
2011	January	78,430	71,580	92,590	63,870	306,470
	February	63,050	55,840	48,380	34,460	201,730
	March	76,350	36,750	82,880	58,020	254,000
	April	71,410	53,250	90,600	75,830	291,090
	May	99,970	12,790	82,730	51,340	246,830
	June	44,800	162,810	32,220	68,900	308,730
	July	99,970	103,510	78,120	64,040	345,640
	August	101,610	102,590	75,780	65,340	345,320
	September	98,190	95,810	81,800	66,250	342,050
	October	89,080	71,740	92,250	74,890	327,960
	November	54,220	61,580	67,800	46,580	230,180
	December	46,060	35,400	53,940	28,430	163,830
	TOTAL	**923,140**	**863,650**	**879,090**	**697,950**	**3,363,830**
	CUMULATIVE TOTAL, ALL WELLS					**45,800,650**
2012	January	62,760	58,550	77,300	55,730	254,340
	February	116,490	115,930	130,622	87,250	450,292
	March	55,560	54,010	62,618	40,490	212,678
	April	86,230	88,490	85,780	62,650	323,150
	May	127,780	127,410	117,720	80,910	453,820
	June	98,460	69,470	97,250	53,250	318,430
	July	103,630	123,240	118,450	71,570	416,890
	August	120,300	137,100	142,630	61,240	461,270
	September	91,690	97,780	61,210	55,010	305,690
	October	91,890	87,080	124,050	66,130	369,150
	November	124,220	106,210	125,230	65,740	421,400
	December	116,910	85,380	116,720	45,790	364,800
	TOTAL	**1,195,920**	**1,150,650**	**1,259,580**	**745,760**	**4,351,910**
	CUMULATIVE TOTAL, ALL WELLS					**50,152,560**
2013	January	113,370	77,990	116,270	66,770	374,400
	February	112,590	95,460	75,310	70,800	354,160
	March	98,780	92,420	96,280	66,770	354,250
	April	89,340	82,670	90,170	61,090	323,270
	May	116,300	65,810	132,000	80,830	394,940
	June	125,010	82,630	106,160	44,350	358,150
	July	121,530	84,250	108,210	62,060	376,050
	August	141,140	90,940	125,180	72,250	429,510
	September	105,950	81,600	96,240	56,930	340,720
	October	125,250	115,720	115,850	78,450	435,270
	November	107,610	83,470	90,570	62,050	343,700
	December	130,840	79,140	105,340	70,960	386,280
	TOTAL	**1,387,710**	**1,032,100**	**1,257,580**	**793,310**	**4,470,700**
	CUMULATIVE TOTAL, ALL WELLS					**54,623,260**
2014	January	145,420	88,720	122,080	78,900	435,120
	February	110,220	72,030	95,290	61,110	338,650
	March	121,620	69,560	116,190	72,990	380,360
	April	111,760	91,620	123,420	78,860	405,660
	May	104,770	78,750	117,760	76,870	378,150
	June	111,550	85,960	124,430	82,170	404,110
	July	69,490	71,810	95,010	65,810	302,120
	August	89,790	82,060	80,530	70,360	322,740
	September	121,190	62,520	130,350	83,330	397,390
	October	70,820	72,170	97,650	64,820	305,460
	November	63,310	61,890	78,490	54,850	258,540
	December	125,550	103,600	125,340	88,360	442,850
	TOTAL	**1,245,490**	**940,690**	**1,306,540**	**878,430**	**4,371,150**
	CUMULATIVE TOTAL, ALL WELLS					**58,994,410**

NOTE:
1) gal - gallons

TABLE 3.1-5
CAPA GROUNDWATER TREATMENT SYSTEM
APPROXIMATE MASS OF MERCURY REMOVED
RECOVERY WELLS

YEAR	MONTH	CA050B			CA051B			CA052B			CA0U23B			MERCURY REMOVED, ALL WELLS
		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		
		(gal)[1]	(mg/L)[2,3]	(lbs)[4]	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(lbs)
1998	June	94,940	4.200	3.328	120,650	0.880	0.886	44,346	0.300	0.111	59,007	2.500	1.231	5.56
	July	94,464	4.000	3.153	143,035	0.760	0.907	46,670	0.320	0.125	103,993	2.400	2.083	6.27
	August	82,659	3.300	2.276	123,384	0.610	0.628	0	0.240	0.000	86,436	2.400	1.731	4.64
	September	52,560	3.400	1.491	168,124	0.540	0.758	27,020	0.270	0.061	13,602	2.800	0.318	2.63
	October	148,429	3.400	4.212	106,740	0.540	0.481	0	0.270	0.000	45,082	2.800	1.053	5.75
	November	84,170	3.400	2.388	70,057	0.540	0.316	0	0.270	0.000	90,008	2.800	2.103	4.81
	December	134,556	3.400	3.818	143,925	0.540	0.649	0	0.270	0.000	140,915	2.800	3.293	7.76
	TOTAL	**691,778**		**20.67**	**875,915**		**4.62**	**118,036**		**0.30**	**539,043**		**11.81**	**37.40**
1999	January	56,244	2.200	1.033	58,568	0.360	0.176	38,400	0.270	0.087	57,835	1.400	0.676	1.97
	February	43,480	2.200	0.798	41,230	0.360	0.124	14,454	0.270	0.033	66,873	1.400	0.781	1.74
	March	32,402	2.200	0.595	52,900	0.360	0.159	17,521	0.270	0.039	57,332	1.400	0.670	1.46
	April	86,908	2.200	1.596	73,850	0.360	0.222	25,635	0.270	0.058	89,265	1.400	1.043	2.92
	May	52,110	1.800	0.783	43,020	0.370	0.133	30,810	0.250	0.064	53,470	1.200	0.535	1.52
	June	51,070	1.800	0.767	50,110	0.370	0.155	32,000	0.250	0.067	52,310	1.200	0.524	1.51
	July	94,520	1.700	1.341	137,330	0.330	0.378	70,210	0.090	0.053	98,850	1.200	0.990	2.76
	August	60,300	1.700	0.855	91,700	0.330	0.253	62,790	0.090	0.047	63,870	1.200	0.640	1.79
	September	54,440	1.700	0.772	84,460	0.330	0.233	55,250	0.090	0.041	61,830	1.200	0.619	1.67
	October	59,750	1.700	0.848	118,130	0.330	0.325	65,400	0.090	0.049	82,860	1.200	0.830	2.05
	November	61,620	1.520	0.782	84,320	0.342	0.241	63,950	0.870	0.464	67,910	0.089	0.050	1.54
	December	33,170	1.520	0.421	41,080	0.342	0.117	38,180	0.870	0.277	37,680	0.089	0.028	0.84
	TOTAL	**686,014**		**10.59**	**876,698**		**2.51**	**514,600**		**1.28**	**790,085**		**7.39**	**21.77**
	CUMULATIVE TOTAL	***1,377,792***		***31.26***	***1,752,613***		***7.14***	***632,636***		***1.58***	***1,329,128***		***19.20***	***59.17***
2000	January	63,290	1.520	0.803	84,390	0.342	0.241	71,800	0.870	0.521	77,950	0.089	0.058	1.62
	February	77,580	1.460	0.945	96,090	0.312	0.250	84,360	0.047	0.033	79,630	0.705	0.469	1.70
	March	79,810	1.460	0.972	101,600	0.312	0.265	81,090	0.047	0.032	70,760	0.705	0.416	1.69
	April	58,820	1.460	0.717	75,800	0.312	0.197	63,660	0.047	0.025	56,470	0.705	0.332	1.27
	May	90,340	1.460	1.101	67,330	0.312	0.175	76,340	0.047	0.030	74,720	0.705	0.440	1.75
	June	94,060	1.460	1.146	111,140	0.312	0.289	73,990	0.047	0.029	83,730	0.705	0.493	1.96
	July	88,230	1.460	1.075	65,640	0.312	0.171	46,950	0.047	0.018	67,490	0.705	0.397	1.66
	August	60,300	1.460	0.735	91,700	0.312	0.239	62,790	0.047	0.025	63,870	0.705	0.376	1.37
	September	37,980	1.460	0.463	84,460	0.312	0.220	55,250	0.047	0.022	61,830	0.705	0.364	1.07
	October	103,210	0.440	0.379	67,430	0.201	0.113	77,250	0.044	0.028	96,270	0.780	0.627	1.15
	November	102,960	0.440	0.378	71,210	0.201	0.119	91,510	0.044	0.034	93,480	0.780	0.609	1.14
	December	90,830	0.440	0.334	2,450	0.201	0.004	76,480	0.044	0.028	41,210	0.780	0.268	0.63
	TOTAL	**947,410**		**9.05**	**919,240**		**2.28**	**861,470**		**0.83**	**867,410**		**4.85**	**17.00**
	CUMULATIVE TOTAL	***2,325,202***		***40.30***	***2,671,853***		***9.42***	***1,494,106***		***2.40***	***2,196,538***		***24.05***	***76.17***
2001	January	106,250	1.080	0.958	57,650	0.370	0.178	83,430	0.060	0.042	88,310	0.044	0.032	1.21
	February	65,070	1.080	0.586	29,070	0.370	0.090	75,050	0.060	0.038	100,330	0.044	0.037	0.75
	March	69,460	1.080	0.626	62,430	0.370	0.193	65,310	0.060	0.033	86,790	0.044	0.032	0.88
	April	71,520	1.080	0.645	57,640	0.370	0.178	52,830	0.060	0.026	63,090	0.044	0.023	0.87
	May	120,620	1.080	1.087	79,750	0.370	0.246	81,700	0.060	0.041	52,480	0.044	0.019	1.39
	June	61,820	0.940	0.485	56,160	0.160	0.075	89,260	0.031	0.023	47,550	0.500	0.198	0.78
	July	52,500	0.940	0.412	61,180	0.160	0.082	74,640	0.031	0.019	66,440	0.500	0.277	0.79
	August	69,270	0.940	0.543	72,300	0.160	0.097	118,580	0.031	0.031	81,120	0.500	0.338	1.01
	September	44,410	0.940	0.348	49,250	0.160	0.066	77,680	0.031	0.020	77,570	0.500	0.324	0.76
	October	107,030	0.940	0.840	33,520	0.160	0.045	66,620	0.031	0.017	47,870	0.500	0.200	1.10
	November	59,710	0.780	0.389	16,210	0.560	0.076	53,650	0.036	0.016	48,180	0.410	0.165	0.65
	December	81,500	0.780	0.531	81,500	0.560	0.381	71,100	0.036	0.021	60,800	0.410	0.208	1.14
	TOTAL	**909,160**		**7.45**	**656,660**		**1.71**	**909,850**		**0.33**	**820,530**		**1.85**	**11.34**
	CUMULATIVE TOTAL	***3,234,362***		***47.75***	***3,328,513***		***11.13***	***2,403,956***		***2.73***	***3,017,068***		***25.90***	***87.51***
2002	January	98,390	0.780	0.640	36,800	0.560	0.172	95,520	0.036	0.029	61,250	0.410	0.210	1.05
	February	74,600	0.780	0.486	28,450	0.560	0.133	72,020	0.036	0.022	52,110	0.410	0.178	0.82
	March	42,770	0.780	0.278	58,080	0.560	0.271	55,110	0.036	0.017	54,960	0.410	0.188	0.75
	April	84,520	0.450	0.317	85,820	0.045	0.032	75,770	0.024	0.015	82,670	0.220	0.152	0.52
	May	50,210	0.450	0.189	49,080	0.045	0.018	68,130	0.024	0.014	70,820	0.220	0.130	0.35
	June	83,990	0.450	0.315	77,020	0.045	0.029	64,090	0.024	0.013	73,860	0.220	0.136	0.49
	July	103,700	0.450	0.389	91,110	0.045	0.034	123,550	0.024	0.025	89,760	0.220	0.165	0.61
	August	79,220	0.690	0.456	75,700	0.072	0.045	80,840	0.025	0.017	73,170	0.450	0.275	0.79
	September	68,450	0.690	0.394	67,680	0.072	0.041	65,470	0.025	0.014	57,150	0.450	0.215	0.66
	October	83,260	0.690	0.479	83,700	0.072	0.050	83,860	0.025	0.017	86,470	0.450	0.325	0.87
	November	47,870	0.690	0.276	49,790	0.072	0.030	71,700	0.025	0.015	70,480	0.450	0.265	0.59
	December	83,500	0.690	0.481	74,330	0.072	0.045	67,720	0.025	0.014	82,790	0.450	0.311	0.85
	TOTAL	**900,480**		**4.70**	**777,560**		**0.90**	**923,780**		**0.21**	**855,490**		**2.55**	**8.36**
	CUMULATIVE TOTAL	***4,134,842***		***52.45***	***4,106,073***		***12.03***	***3,327,736***		***2.94***	***3,872,558***		***28.45***	***95.87***

TABLE 3.1-5
CAPA GROUNDWATER TREATMENT SYSTEM
APPROXIMATE MASS OF MERCURY REMOVED
RECOVERY WELLS

YEAR	MONTH	CA050B CUMULATIVE FLOW	CA050B MERCURY		CA051B CUMULATIVE FLOW	CA051B MERCURY		CA052B CUMULATIVE FLOW	CA052B MERCURY		CA0U23B CUMULATIVE FLOW	CA0U23B MERCURY		MERCURY REMOVED, ALL WELLS
		(gal)[1]	(mg/L)[2,3]	(lbs)[4]	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(lbs)
2003	January	84,500	0.700	0.494	58,060	0.067	0.032	51,490	0.025	0.011	73,880	0.490	0.302	0.84
	February	49,680	0.700	0.290	48,730	0.067	0.027	52,040	0.025	0.011	23,230	0.490	0.095	0.42
	March	110,080	0.700	0.643	110,650	0.067	0.062	62,330	0.025	0.013	75,600	0.490	0.309	1.03
	April	83,350	0.700	0.487	64,460	0.067	0.036	73,230	0.025	0.015	60	0.490	0.000	0.54
	May	56,140	0.700	0.328	67,810	0.067	0.038	66,560	0.025	0.014	36,000	0.490	0.147	0.53
	June	80,680	0.870	0.586	89,200	0.101	0.075	62,490	0.025	0.013	35,640	0.230	0.068	0.74
	July	91,660	0.870	0.665	93,820	0.101	0.079	96,350	0.025	0.020	39,310	0.230	0.075	0.84
	August	64,540	0.870	0.469	77,480	0.101	0.065	94,940	0.025	0.020	29,610	0.230	0.057	0.61
	September	94,950	0.870	0.689	104,220	0.101	0.088	127,540	0.025	0.027	49,560	0.230	0.095	0.90
	October	36,780	0.790	0.242	83,190	0.096	0.067	100,920	0.023	0.019	68,590	0.260	0.149	0.48
	November	231,100	0.790	1.524	38,770	0.096	0.031	88,930	0.023	0.017	58,910	0.260	0.128	1.70
	December	110,190	0.790	0.726	27,090	0.096	0.022	108,400	0.023	0.021	24,090	0.260	0.052	0.82
	TOTAL	**1,093,650**		**7.14**	**863,480**		**0.82**	**985,220**		**0.20**	**514,480**		**1.48**	**9.45**
	CUMULATIVE TOTAL	***5,228,492***		***59.60***	***4,969,553***		***12.65***	***4,312,956***		***3.14***	***4,387,038***		***29.93***	***105.32***
2004	January	129,290	0.790	0.852	55,140	0.096	0.044	128,330	0.023	0.025	4,280	0.260	0.009	0.93
	February	97,630	0.790	0.644	59,860	0.096	0.048	58,300	0.023	0.011	35,060	0.260	0.076	0.78
	March	118,330	0.410	0.405	82,990	0.049	0.034	104,600	0.025	0.022	80,830	0.270	0.182	0.64
	April	76,220	0.410	0.261	51,410	0.049	0.021	52,430	0.025	0.011	61,080	0.270	0.138	0.43
	May	46,090	0.410	0.158	57,900	0.049	0.024	43,250	0.025	0.009	44,740	0.270	0.101	0.29
	June	66,830	0.410	0.229	62,810	0.049	0.026	64,390	0.025	0.013	49,780	0.270	0.112	0.38
	July	65,080	0.710	0.386	47,690	0.040	0.016	60,780	0.018	0.009	44,380	0.300	0.111	0.52
	August	67,980	0.710	0.403	79,900	0.040	0.027	61,700	0.018	0.009	45,780	0.300	0.115	0.55
	September	16,150	0.710	0.096	98,950	0.040	0.033	71,040	0.018	0.011	51,720	0.300	0.129	0.27
	October	15,930	0.710	0.094	42,940	0.040	0.014	69,920	0.018	0.011	50,340	0.300	0.126	0.25
	November	103,390	0.710	0.613	93,870	0.040	0.031	93,770	0.018	0.014	54,780	0.300	0.137	0.80
	December	64,540	0.960	0.517	77,000	0.150	0.096	76,890	0.020	0.013	56,320	0.310	0.146	0.77
	TOTAL	**867,460**		**4.66**	**810,460**		**0.41**	**885,400**		**0.16**	**579,090**		**1.38**	**6.61**
	CUMULATIVE TOTAL	***6,095,952***		***64.25***	***5,780,013***		***13.07***	***5,198,356***		***3.30***	***4,966,128***		***31.31***	***111.93***
2005	January	78,750	0.960	0.631	35,700	0.150	0.045	65,760	0.020	0.011	47,560	0.310	0.123	0.81
	February	103,650	0.960	0.830	88,410	0.150	0.111	92,250	0.020	0.015	65,270	0.310	0.169	1.13
	March	95,120	0.960	0.762	47,260	0.150	0.059	78,380	0.020	0.013	51,580	0.310	0.133	0.97
	April	96,680	0.960	0.775	51,890	0.150	0.065	81,280	0.020	0.014	51,610	0.310	0.134	0.99
	May	103,370	0.813	0.701	102,640	0.116	0.099	89,680	0.020	0.015	38,940	0.259	0.084	0.90
	June	95,330	0.813	0.647	11,800	0.116	0.011	29,580	0.020	0.005	16,830	0.259	0.036	0.70
	July	64,660	0.813	0.439	54,670	0.116	0.053	56,790	0.020	0.009	18,940	0.259	0.041	0.54
	August	74,190	0.813	0.503	68,130	0.116	0.066	64,470	0.020	0.011	22,380	0.259	0.048	0.63
	September	73,810	0.813	0.501	75,280	0.116	0.073	63,620	0.020	0.010	38,040	0.259	0.082	0.67
	October	84,450	0.813	0.573	20,350	0.116	0.020	73,040	0.020	0.012	52,010	0.259	0.112	0.72
	November	125,440	0.813	0.851	18,950	0.116	0.018	99,370	0.020	0.016	38,910	0.259	0.084	0.97
	December	94,040	0.813	0.638	62,280	0.116	0.060	53,740	0.020	0.009	16,780	0.259	0.036	0.74
	TOTAL	**1,089,490**		**7.85**	**637,360**		**0.68**	**847,960**		**0.14**	**458,850**		**1.08**	**9.76**
	CUMULATIVE TOTAL	***7,185,442***		***72.11***	***6,417,373***		***13.75***	***6,046,316***		***3.44***	***5,424,978***		***32.39***	***121.68***
2006	January	91,090	0.813	0.618	65,510	0.116	0.063	62,440	0.020	0.010	67,880	0.259	0.147	0.84
	February	99,040	0.813	0.672	69,830	0.116	0.068	180	0.020	0.000	24,420	0.259	0.053	0.79
	March	82,410	0.813	0.559	69,150	0.116	0.067	40,220	0.020	0.007	50,430	0.259	0.109	0.74
	April	107,470	0.813	0.729	96,190	0.116	0.093	105,340	0.020	0.017	43,880	0.259	0.095	0.93
	May	130,240	0.590	0.641	79,280	0.081	0.054	127,530	0.016	0.017	73,690	0.140	0.086	0.80
	June	95,670	0.590	0.471	96,640	0.081	0.065	102,141	0.016	0.014	57,010	0.140	0.067	0.62
	July	114,830	0.590	0.565	110,010	0.081	0.074	131,199	0.016	0.018	67,870	0.140	0.079	0.74
	August	86,450	0.590	0.426	83,190	0.081	0.056	108,970	0.016	0.015	57,850	0.140	0.068	0.56
	September	5,190	0.590	0.026	113,640	0.081	0.077	146,870	0.016	0.020	74,010	0.140	0.086	0.21
	October	0	0.590	0.000	95,820	0.081	0.065	99,390	0.016	0.013	16,770	0.140	0.020	0.10
	November	36,240	0.590	0.178	93,710	0.081	0.063	68,760	0.016	0.009	43,920	0.140	0.051	0.30
	December	93,760	0.590	0.462	66,030	0.081	0.045	48,040	0.016	0.006	27,460	0.140	0.032	0.54
	TOTAL	**942,390**		**5.35**	**1,039,000**		**0.79**	**1,041,080**		**0.15**	**605,190**		**0.89**	**7.18**
	CUMULATIVE TOTAL	***8,127,832***		***77.45***	***7,456,373***		***14.54***	***7,087,396***		***3.58***	***6,030,168***		***33.28***	***128.86***
2007	January	56,240	0.590	0.277	73,810	0.081	0.050	0	0.016	0.000	59,320	0.140	0.069	0.40
	February	47,980	0.590	0.236	68,410	0.081	0.046	33,980	0.016	0.005	28,040	0.140	0.033	0.32
	March	41,510	0.590	0.204	41,310	0.081	0.028	34,260	0.016	0.005	33,140	0.140	0.039	0.28
	April	56,420	0.590	0.278	67,350	0.081	0.046	57,220	0.016	0.008	51,730	0.140	0.060	0.39
	May	57,130	0.590	0.281	55,440	0.081	0.037	56,500	0.016	0.008	28,740	0.140	0.034	0.36
	June	76,370	0.590	0.376	79,230	0.081	0.054	68,240	0.016	0.009	45,520	0.140	0.053	0.49
	July	86,610	0.590	0.426	70,410	0.081	0.048	43,660	0.016	0.006	31,250	0.140	0.037	0.52
	August	22,350	0.590	0.110	100,910	0.081	0.068	6,030	0.016	0.001	41,540	0.140	0.049	0.23
	September	58,700	0.590	0.289	73,050	0.081	0.049	51,800	0.016	0.007	12,340	0.140	0.014	0.36
	October	81,650	1.600	1.090	115,960	0.130	0.126	88,890	0.025	0.019	18,300	0.250	0.038	1.27
	November	17,440	1.600	0.233	77,710	0.130	0.084	80,430	0.025	0.017	50	0.250	0.000	0.33
	December	39,410	1.600	0.526	83,380	0.130	0.090	101,580	0.025	0.021	30,440	0.250	0.064	0.70
	TOTAL	**641,810**		**4.33**	**906,970**		**0.73**	**622,590**		**0.10**	**380,410**		**0.49**	**5.65**
	CUMULATIVE TOTAL	***8,769,642***		***81.78***	***8,363,343***		***15.26***	***7,709,986***		***3.69***	***6,410,578***		***33.77***	***134.50***

TABLE 3.1-5
CAPA GROUNDWATER TREATMENT SYSTEM
APPROXIMATE MASS OF MERCURY REMOVED
RECOVERY WELLS

YEAR	MONTH	CA050B			CA051B			CA052B			CA0U23B			MERCURY REMOVED, ALL WELLS
		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		
		(gal)[1]	(mg/L)[2,3]	(lbs)[4]	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(lbs)
2008	January	75,870	1.600	1.013	85,800	0.130	0.093	71,610	0.025	0.015	48,490	0.250	0.101	1.22
	February	49,440	1.600	0.660	52,010	0.130	0.056	49,930	0.025	0.010	21,670	0.250	0.045	0.77
	March	28,360	1.600	0.379	89,270	0.130	0.097	77,750	0.025	0.016	34,140	0.250	0.071	0.56
	April	115,960	1.600	1.548	111,690	0.130	0.121	123,590	0.025	0.026	54,420	0.250	0.114	1.81
	May	61,950	1.600	0.827	65,360	0.130	0.071	97,900	0.025	0.020	43,270	0.250	0.090	1.01
	June	117,100	1.600	1.564	59,990	0.130	0.065	77,420	0.025	0.016	24,440	0.250	0.051	1.70
	July	90,450	1.600	1.208	96,410	0.130	0.105	113,900	0.025	0.024	51,380	0.250	0.107	1.44
	August	89,370	1.600	1.193	94,570	0.130	0.103	86,520	0.025	0.018	57,080	0.250	0.119	1.43
	September	77,560	1.600	1.036	88,830	0.130	0.096	37,870	0.025	0.008	56,980	0.250	0.119	1.26
	October	111,200	0.540	0.501	119,510	0.065	0.065	130,040	0.014	0.015	49,750	0.140	0.058	0.64
	November	117,320	0.540	0.529	89,360	0.065	0.048	107,970	0.014	0.013	45,400	0.140	0.053	0.64
	December	118,970	0.540	0.536	99,220	0.065	0.054	109,240	0.014	0.013	44,320	0.140	0.052	0.65
	TOTAL	**1,053,550**		**10.99**	**1,052,020**		**0.97**	**1,083,740**		**0.19**	**531,340**		**0.98**	**13.14**
	CUMULATIVE TOTAL	***9,823,192***		***92.77***	***9,415,363***		***16.24***	***8,793,726***		***3.88***	***6,941,918***		***34.75***	***147.65***
2009	January	102,620	0.540	0.462	98,940	0.065	0.054	68,640	0.014	0.008	39,400	0.140	0.046	0.57
	February	89,130	0.540	0.402	133,220	0.065	0.072	88,930	0.014	0.010	42,180	0.140	0.049	0.53
	March	89,510	0.540	0.403	97,320	0.065	0.053	84,060	0.014	0.010	44,870	0.140	0.052	0.52
	April	120,620	0.540	0.544	66,890	0.065	0.036	106,260	0.014	0.012	63,360	0.140	0.074	0.67
	May	78,350	0.540	0.353	90,300	0.065	0.049	101,380	0.014	0.012	60,280	0.140	0.070	0.48
	June	80,660	0.540	0.363	77,260	0.065	0.042	88,190	0.014	0.010	45,520	0.140	0.053	0.47
	July	91,040	0.503	0.382	100,080	0.096	0.080	98,360	0.013	0.011	53,990	0.141	0.064	0.54
	August	75,240	0.503	0.316	72,520	0.096	0.058	88,650	0.013	0.010	39,080	0.141	0.046	0.43
	September	89,350	0.503	0.375	75,160	0.096	0.060	91,560	0.013	0.010	46,250	0.141	0.054	0.50
	October	96,500	0.503	0.405	95,480	0.096	0.076	102,630	0.013	0.011	49,900	0.141	0.059	0.55
	November	113,300	0.503	0.476	99,640	0.096	0.080	111,400	0.013	0.012	52,860	0.141	0.062	0.63
	December	105,430	0.503	0.443	124,530	0.096	0.100	76,840	0.013	0.009	46,590	0.141	0.055	0.61
	TOTAL	**1,131,750**		**4.92**	**1,131,340**		**0.76**	**1,106,900**		**0.13**	**584,280**		**0.69**	**6.50**
	CUMULATIVE TOTAL	***10,954,942***		***97.70***	10,546,703		***17.00***	***9,900,626***		***4.01***	***7,526,198***		***35.44***	***154.14***
2010	January	52,720	0.503	0.221	57,060	0.096	0.046	56,230	0.013	0.006	38,510	0.141	0.045	0.32
	February	83,730	0.503	0.351	89,630	0.096	0.072	91,960	0.013	0.010	59,560	0.141	0.070	0.50
	March	65,750	0.503	0.276	84,780	0.096	0.068	103,060	0.013	0.012	63,970	0.141	0.075	0.43
	April	90,970	0.503	0.382	89,470	0.096	0.072	94,390	0.013	0.011	34,190	0.141	0.040	0.50
	May	61,190	0.503	0.257	68,940	0.096	0.055	84,160	0.013	0.009	55,090	0.141	0.065	0.39
	June	60,580	0.503	0.254	60,580	0.096	0.048	81,780	0.013	0.009	55,590	0.141	0.065	0.38
	July	87,350	0.393	0.286	93,790	0.013	0.010	89,940	0.007	0.005	66,060	0.123	0.068	0.37
	August	75,280	0.393	0.247	80,100	0.013	0.009	98,830	0.007	0.006	77,610	0.123	0.080	0.34
	September	78,290	0.393	0.257	68,920	0.013	0.008	82,540	0.007	0.005	28,350	0.123	0.029	0.30
	October	70,800	0.393	0.232	62,941	0.013	0.007	86,310	0.007	0.005	45,620	0.123	0.047	0.29
	November	84,990	0.393	0.279	93,090	0.013	0.010	87,220	0.007	0.005	71,100	0.123	0.073	0.37
	December	80,300	0.393	0.263	74,120	0.013	0.008	78,910	0.007	0.005	62,000	0.123	0.064	0.34
	TOTAL	**891,950**		**3.31**	**923,421**		**0.41**	**1,035,330**		**0.09**	**657,650**		**0.72**	**4.53**
	CUMULATIVE TOTAL	***11,846,892***		***101.00***	***11,470,124***		***17.41***	***10,935,956***		***4.10***	***8,183,848***		***36.16***	***158.67***
2011	January	78,430	0.393	0.257	71,580	0.013	0.008	92,590	0.007	0.005	63,870	0.123	0.066	0.34
	February	63,050	0.393	0.207	55,840	0.013	0.006	48,380	0.007	0.003	34,460	0.123	0.035	0.25
	March	76,350	0.393	0.250	36,750	0.013	0.004	82,880	0.007	0.005	58,020	0.123	0.060	0.32
	April	71,410	0.393	0.234	53,250	0.013	0.006	90,600	0.007	0.005	75,830	0.123	0.078	0.32
	May	99,970	0.393	0.328	12,790	0.013	0.001	82,730	0.007	0.005	51,340	0.123	0.053	0.39
	June	44,800	0.393	0.147	162,810	0.013	0.018	32,220	0.007	0.002	68,900	0.123	0.071	0.24
	July	99,970	0.404	0.337	103,510	0.027	0.023	78,120	0.006	0.004	64,040	0.102	0.055	0.42
	August	101,610	0.404	0.343	102,590	0.027	0.023	75,780	0.006	0.004	65,340	0.102	0.056	0.42
	September	98,190	0.404	0.331	95,810	0.027	0.021	81,800	0.006	0.004	66,250	0.102	0.056	0.41
	October	89,080	0.404	0.300	71,740	0.027	0.016	92,250	0.006	0.004	74,890	0.102	0.064	0.38
	November	54,220	0.404	0.183	61,580	0.027	0.014	67,800	0.006	0.003	46,580	0.102	0.040	0.24
	December	46,060	0.404	0.155	35,400	0.027	0.008	53,940	0.006	0.003	28,430	0.102	0.024	0.19
	TOTAL	**923,140**		**3.07**	**863,650**		**0.16**	**879,090**		**0.05**	**697,950**		**0.66**	**3.92**
	CUMULATIVE TOTAL	***12,770,032***		***104.08***	***12,333,774***		***17.56***	***11,815,046***		***4.14***	***8,881,798***		***36.82***	***162.59***
2012	January	62,760	0.404	0.212	58,550	0.027	0.013	77,300	0.006	0.004	55,730	0.102	0.047	0.28
	February	116,490	0.404	0.393	115,930	0.027	0.026	130,622	0.006	0.006	87,250	0.102	0.074	0.50
	March	55,560	0.404	0.187	54,010	0.027	0.012	62,618	0.006	0.003	40,490	0.102	0.034	0.24
	April	86,230	0.404	0.291	88,490	0.027	0.020	85,780	0.006	0.004	62,650	0.102	0.053	0.37
	May	127,780	0.404	0.431	127,410	0.027	0.028	117,720	0.006	0.005	80,910	0.102	0.069	0.53
	June	98,460	0.404	0.332	69,470	0.027	0.016	97,250	0.006	0.005	53,250	0.102	0.045	0.40
	July	103,630	0.404	0.349	123,240	0.027	0.028	118,450	0.006	0.006	71,570	0.102	0.061	0.44
	August	120,300	0.404	0.406	137,100	0.027	0.031	142,630	0.006	0.007	61,240	0.102	0.052	0.50
	September	91,690	0.394	0.301	97,780	0.020	0.017	61,210	0.005	0.003	55,010	0.085	0.039	0.36
	October	91,890	0.394	0.302	87,080	0.020	0.015	124,050	0.005	0.005	66,130	0.085	0.047	0.37
	November	124,220	0.394	0.408	106,210	0.020	0.018	125,230	0.005	0.005	65,740	0.085	0.047	0.48
	December	116,910	0.394	0.384	85,380	0.020	0.015	116,720	0.005	0.005	45,790	0.085	0.032	0.44
	TOTAL	**1,195,920**		**4.00**	**1,150,650**		**0.24**	**1,259,580**		**0.06**	**745,760**		**0.60**	**4.89**
	CUMULATIVE TOTAL	***13,965,952***		***108.07***	***13,484,424***		***17.80***	***13,074,626***		***4.20***	***9,827,558***		***37.42***	***167.49***

TABLE 3.1-5
CAPA GROUNDWATER TREATMENT SYSTEM
APPROXIMATE MASS OF MERCURY REMOVED
RECOVERY WELLS

YEAR	MONTH	CA050B			CA051B			CA052B			CA0U23B			MERCURY REMOVED, ALL WELLS
		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		CUMULATIVE FLOW	MERCURY		
		(gal)[1]	(mg/L)[2,3]	(lbs)[4]	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(gal)	(mg/L)	(lbs)	(lbs)
2013	January	113,370	0.394	0.373	77,990	0.020	0.013	116,270	0.005	0.005	66,770	0.085	0.047	0.44
	February	112,590	0.394	0.370	95,460	0.020	0.016	75,310	0.005	0.003	70,800	0.085	0.050	0.44
	March	98,780	0.394	0.325	92,420	0.020	0.016	96,280	0.005	0.004	66,770	0.085	0.047	0.39
	April	89,340	0.394	0.294	82,670	0.020	0.014	90,170	0.005	0.004	61,090	0.085	0.043	0.35
	May	116,300	0.394	0.382	65,810	0.020	0.011	132,000	0.005	0.006	80,830	0.085	0.057	0.46
	June	125,010	0.394	0.411	82,630	0.020	0.014	106,160	0.005	0.004	44,350	0.085	0.031	0.46
	July	121,530	0.394	0.400	84,250	0.020	0.014	108,210	0.005	0.005	62,060	0.085	0.044	0.46
	August	141,140	0.394	0.464	90,940	0.020	0.015	125,180	0.005	0.005	72,250	0.085	0.051	0.54
	September	105,950	0.350	0.309	81,600	0.007	0.005	96,240	0.003	0.002	56,930	0.084	0.040	0.36
	October	125,250	0.350	0.366	115,720	0.007	0.007	115,850	0.003	0.003	78,450	0.084	0.055	0.43
	November	107,610	0.350	0.314	83,470	0.007	0.005	90,570	0.003	0.002	62,050	0.084	0.043	0.36
	December	130,840	0.350	0.382	79,140	0.007	0.005	105,340	0.003	0.003	70,960	0.084	0.050	0.44
	TOTAL	**1,387,710**		**4.39**	**1,032,100**		**0.14**	**1,257,580**		**0.05**	**793,310**		**0.56**	**5.13**
	CUMULATIVE TOTAL	***15,353,662***		***112.46***	***14,516,524***		***17.93***	***14,332,206***		***4.24***	***10,420,868***		***37.98***	***172.62***
2014	January	145,420	0.350	0.425	88,720	0.007	0.005	122,080	0.003	0.003	78,900	0.084	0.055	0.49
	February	110,220	0.350	0.322	72,030	0.007	0.004	95,290	0.003	0.002	61,110	0.084	0.043	0.37
	March	121,620	0.350	0.355	69,560	0.007	0.004	116,190	0.003	0.003	72,990	0.084	0.051	0.41
	April	111,760	0.350	0.326	91,620	0.007	0.005	123,420	0.003	0.003	78,860	0.084	0.055	0.39
	May	104,770	0.350	0.306	78,750	0.007	0.005	117,760	0.003	0.003	76,870	0.084	0.054	0.37
	June	111,550	0.350	0.326	85,960	0.007	0.005	124,430	0.003	0.003	82,170	0.084	0.057	0.39
	July	69,490	0.350	0.203	71,810	0.007	0.004	95,010	0.003	0.002	65,810	0.084	0.046	0.26
	August	89,790	0.350	0.262	82,060	0.007	0.005	80,530	0.003	0.002	70,360	0.084	0.049	0.32
	September	121,190	0.486	0.492	62,520	0.007	0.004	130,350	0.004	0.004	83,330	0.174	0.121	0.62
	October	70,820	0.486	0.287	72,170	0.007	0.004	97,650	0.004	0.003	64,820	0.174	0.094	0.39
	November	63,310	0.486	0.257	61,890	0.007	0.004	78,490	0.004	0.003	54,850	0.174	0.080	0.34
	December	125,550	0.486	0.509	103,600	0.007	0.006	125,340	0.004	0.004	88,360	0.174	0.128	0.65
	TOTAL	**1,245,490**		**4.07**	**940,690**		**0.06**	**1,306,540**		**0.04**	**878,430**		**0.83**	**5.00**
	CUMULATIVE TOTAL	***16,599,152***		***116.53***	***15,457,214***		***17.99***	***15,638,746***		***4.28***	***11,299,298***		***38.81***	***177.61***

Notes:
1) gal - gallons
2) mg/L - milligrams per liter
3) Mercury samples collected during the month were reported as that months' concentration. If a sample was not collected during a specific month, the previous month's result was reported.
4) lbs - pounds

TABLE 3-1

SUMMARY OF MARSH SEDIMENT MERCURY CONCENTRATIONS

MARSH	2004	2005	2006	2007	2008	2009	2010	2011	2012	2014
Marsh 1/2	0.263	0.495								
Marsh 1			0.111	0.153	0.097	0.112	0.113	0.131	0.094	0.098
Marsh 2			0.066	0.064	0.084	0.073	0.081	0.064	0.062	0.062
Marsh 3	0.279	0.298	0.129	0.211	0.111	0.155	0.148	0.159	0.132	0.093
Marsh 5	0.644	0.495	0.367	0.275	0.375	0.399	0.405	0.286	0.200	0.231
Marsh 6	N.A.	0.337	0.377	0.386	0.748	0.422	0.384	0.300	0.219	0.188
Marsh 7	0.625	0.347	0.297	0.279	0.422	0.391	0.219	0.381	0.308	0.139
Marsh 11	0.019	0.0205	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Marsh 14	0.626	0.587	1.05	0.909	1.26	1.109	0.535	0.719	N.A.	Removed
Marsh 15	0.943	0.273	0.369	0.327	0.418	0.374	0.440	0.480	0.287	0.034
Marsh 19	0.447	0.478	0.126	0.214	0.155	0.201	0.210	0.353	2.055	0.095

NOTES:

1) Concentrations are milligrams per Kilogram dry weight.
2) Marsh locations shown in Appendix A of the annual RAAER.
3) Basic Data provided in Appendix A of the annual RAAER.
4) Remediation goal is 0.25 mg/Kg measured in two consecutive years (Highlighted green if < 0.25 mg/Kg).
5) Text highlighted in red if outliers were removed (details in text of annual RAAER)
6) N.A. – not analyzed.
7) Marshes 1 and 2 were sampled as a single marsh in 2004 and 2005, but beginning in 2006 are sampled separately.

TABLE 3.4-1

SUMMARY OF RED DRUM AND JUVENILE BLUE CRAB TISSUE DATA 1997-2012

Red Drum Sampling Event	Closed Area Number of Samples	Closed Area Mean Hg (mg/Kg ww)	Open Area Number of Samples	Open Area Mean Hg (mg/Kg ww)
4Q 1997	34	1.41	27	0.51
2001 Annual	30	1.33	15	0.49
2002 Annual	22	1.03	8	0.64
2003 Annual	29	1.09	30	0.48
2004 Annual	29	0.76	32	0.47
2005 Annual	30	0.87	36	0.48
2006 Annual	30	1.17	30	0.43
2007 Annual	30	1.29	30	0.65
2008 Annual	30	0.9	30	0.40
2009 Annual	30	0.85	30	0.38
2010 Annual	30	0.88	30	0.38
2011 Annual	30	1.17	30	0.33
2012 Annual	30	1.06	30	0.40
2014 Annual	29	1.06	28	0.40
Juvenile Blue Crab Sampling Event	**Number of Samples**	**Mean Hg (mg/Kg ww)**	**Number of Samples**	**Mean Hg (mg/Kg ww)**
4Q 1997	49	0.59	27	0.19
2001 Annual	33	0.48	16	0.22
2002 Annual	71	0.26	26	0.11
2003 Annual	30	0.25	30	0.07
2004 Annual	31	0.14	30	0.07
2005 Annual	27	0.22	30	0.05
2006 Annual	30	0.21	30	0.08
2007 Annual	30	0.18	30	0.08
2008 Annual	30	0.16	30	0.06
2009 Annual	30	0.22	30	0.09
2010 Annual	30	0.23	30	0.09
2011 Annual	30	0.17	30	0.06
2012 Annual	30	0.14	30	0.06
2014 Annual	30	0.18	30	0.07

TABLE 3.4-2

SUMMARY OF 2014 RED DRUM TISSUE MERCURY RESULTS

Area	Sample Size*	Mean Hg (mg/kg ww)[1]	Standard Deviation
Closed	29	1.06	0.459
Open	28	0.40	0.209

NOTES:

1) mg/kg ww – milligrams per kilogram wet weight
2) Basic data presented in Appendix B.

* Excluded Samples:

1) Closed Area CLO5804
2) Open Area LVB6837

FIGURES

STATE OF TEXAS
MATTHEW K. WICKHAM
GEOLOGY
LIC. # 5330
LICENSED
PROFESSIONAL GEOSCIENTIST

EXPLANATION

CA018B	Well Designation
○	Monitoring Well
•	Piezometer
◉	Recovery Well
◪	Tidal Gauge
—1.5—	Estimated Potentiometric Surface Contour (Ft) C.I. = 0.5 Ft
(hatched area)	Area of Drawdown of Potentiometric Surface Caused by Pumping (not contoured)

Notes:
1. Groundwater elevations measured in pumping wells are probably influenced by well inefficiencies.
2. Groundwater elevations are corrected for salinity effects.
3. NM = Not measured.
4. Only wells measured for water levels are shown on this figure.
5. Surface water elevation used for contouring is from tidal gauge located south west of CAPA (CA Bay).

SOURCE:
Aerial image from Lanmon Aerial Photography Inc, dated 1/20/15.

ALCOA

FIGURE 3.1-1
POTENTIOMETRIC SURFACE OF ZONE B GROUNDWATER (3/24/2014)

PROJECT: 3371	DATE: MARCH, 2015	
REV:	BY: AJD	CHECKED: MKW

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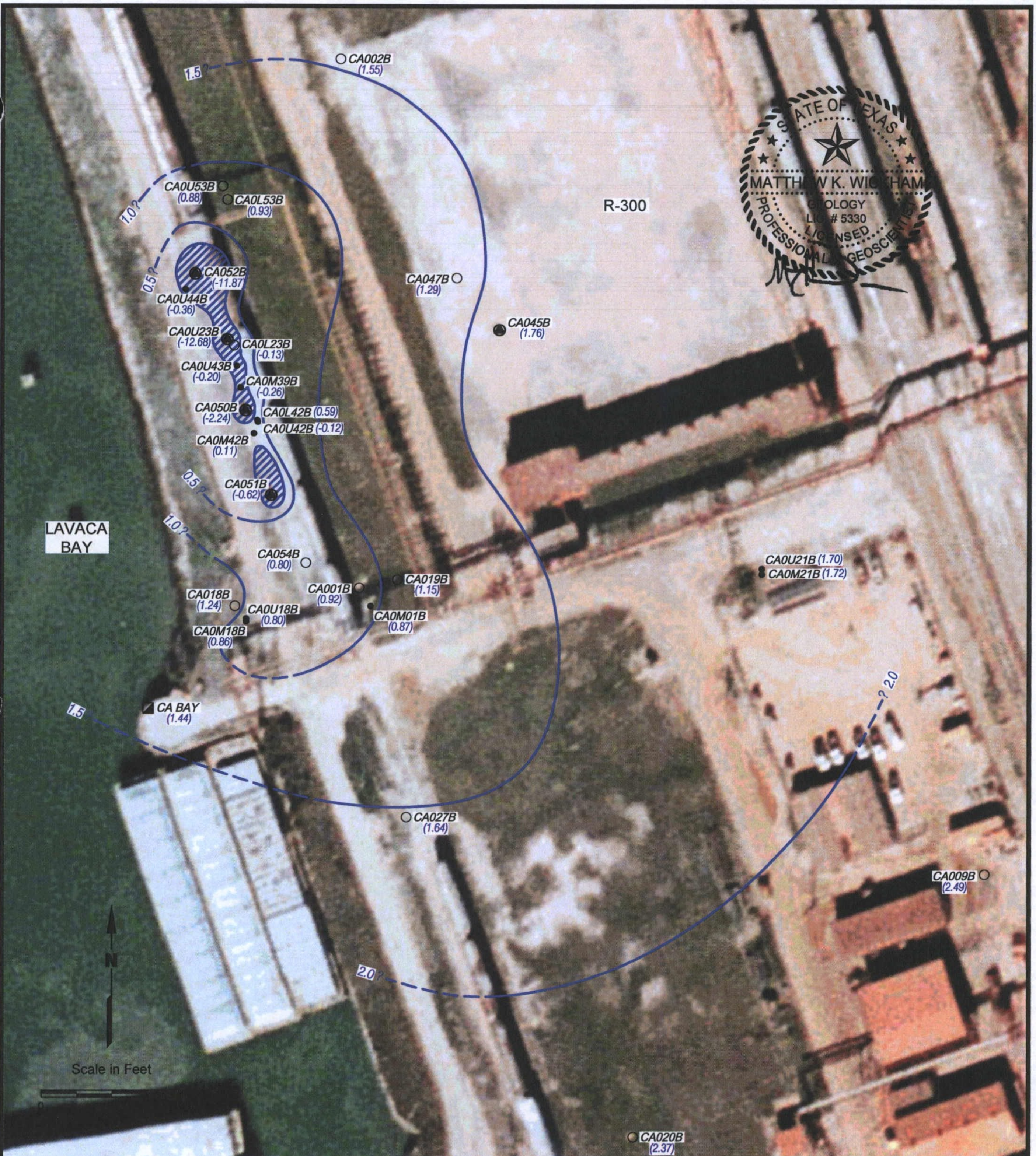

EXPLANATION

CA018B	Well Designation
○	Monitoring Well
•	Piezometer
◉	Recovery Well
◪	Tidal Gauge
—*1.5*—	Estimated Potentiometric Surface Contour (Ft) C.I. = 0.5 Ft
(hatched area)	Area of Drawdown of Potentiometric Surface Caused by Pumping (not contoured)

Notes:
1. Groundwater elevations measured in pumping wells are probably influenced by well inefficiencies.
2. Groundwater elevations are corrected for salinity effects.
3. NM = Not measured.
4. Only wells measured for water levels are shown on this figure.
5. Surface water elevation used for contouring is from tidal gauge located south west of CAPA (CA Bay).

SOURCE:
Aerial image from Lanmon Aerial Photography Inc, dated 1/20/15.

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FIGURE 3.1-2

POTENTIOMETRIC SURFACE OF ZONE B GROUNDWATER (5/7/2014)

PROJECT: 3371	DATE: MARCH, 2015	
REV:	BY: AJD	CHECKED: MKW

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EXPLANATION

CA018B	Well Designation
○	Monitoring Well
•	Piezometer
◉	Recovery Well
◪	Tidal Gauge

— *1.5* — Estimated Potentiometric Surface Contour (Ft) C.I. = 0.5 Ft

Area of Drawdown of Potentiometric Surface Caused by Pumping (not contoured)

Notes:
1. Groundwater elevations measured in pumping wells are probably influenced by well inefficiencies.
2. Groundwater elevations are corrected for salinity effects.
3. NM = Not measured.
4. Only wells measured for water levels are shown on this figure.
5. Surface water elevation used for contouring is from tidal gauge located south west of CAPA (CA Bay).

SOURCE:
Aerial image from Lanmon Aerial Photography Inc, dated 1/20/15.

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FIGURE 3.1-3

POTENTIOMETRIC SURFACE OF ZONE B GROUNDWATER (9/5/2014)

PROJECT: 3371	DATE: MARCH, 2015	
REV:	BY: AJD	CHECKED: MKW

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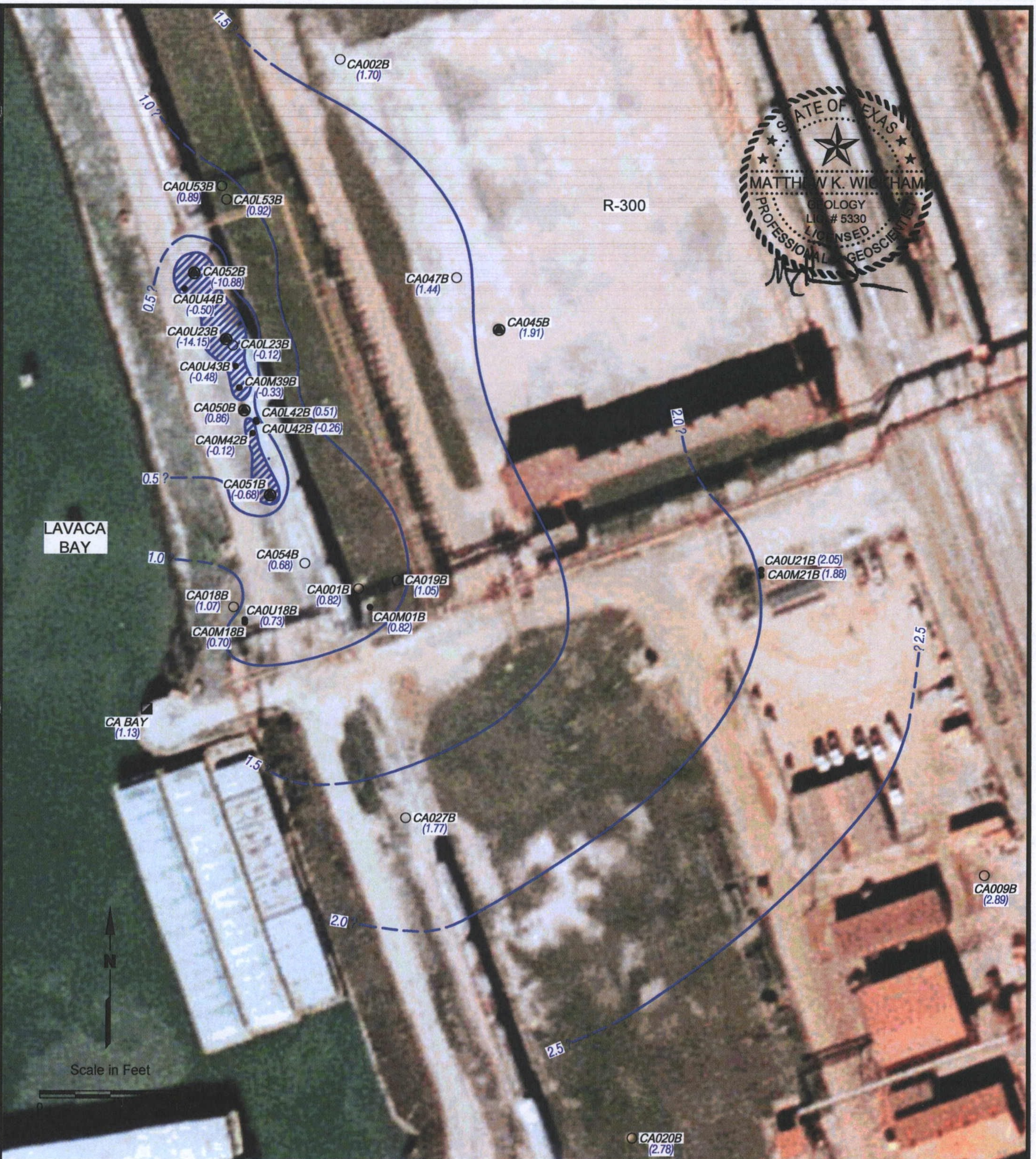
Point Comfort Operations



EXPLANATION

CA018B	Well Designation
○	Monitoring Well
•	Piezometer
◉	Recovery Well
◪	Tidal Gauge

— *1.5* — Estimated Potentiometric Surface Contour (Ft) C.I. = 0.5 Ft

Area of Drawdown of Potentiometric Surface Caused by Pumping (not contoured)

Notes:
1. Groundwater elevations measured in pumping wells are probably influenced by well inefficiencies.
2. Groundwater elevations are corrected for salinity effects.
3. NM = Not measured.
4. Only wells measured for water levels are shown on this figure.
5. Surface water elevation used for contouring is from tidal gauge located south west of CAPA (CA Bay).

SOURCE:
Aerial image from Lanmon Aerial Photography Inc, dated 1/20/15.

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FIGURE 3.1-4

POTENTIOMETRIC SURFACE OF ZONE B GROUNDWATER (12/12/2014)

PROJECT: 3371	DATE: MARCH, 2015	
REV:	BY: AJD	CHECKED: MKW

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FIGU .1-5
CAPA GROUNDWATE, ,REATMENT SYSTEM
Recovery Wells - Analytical Results
Mercury (Hg) vs. Time

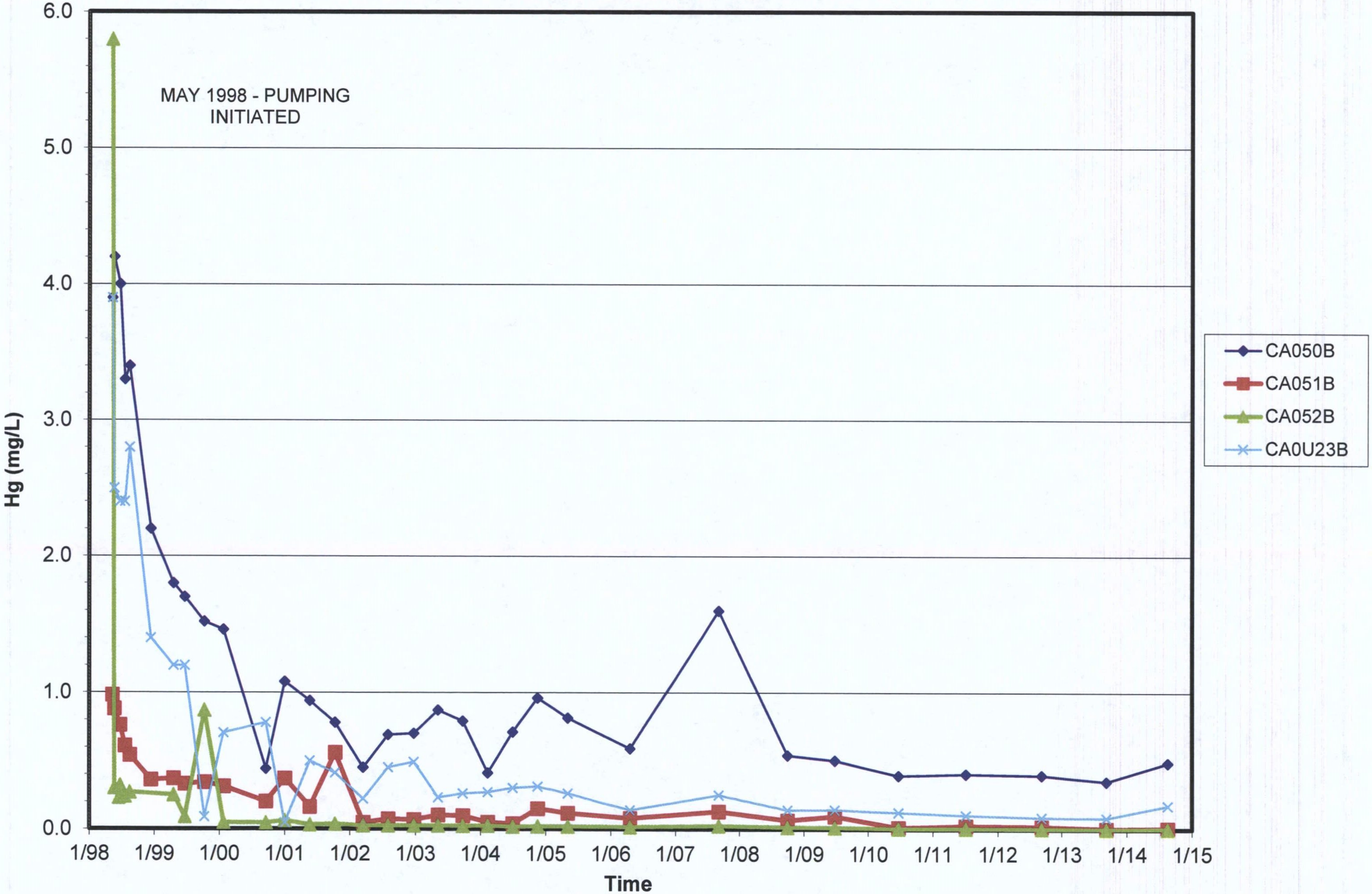
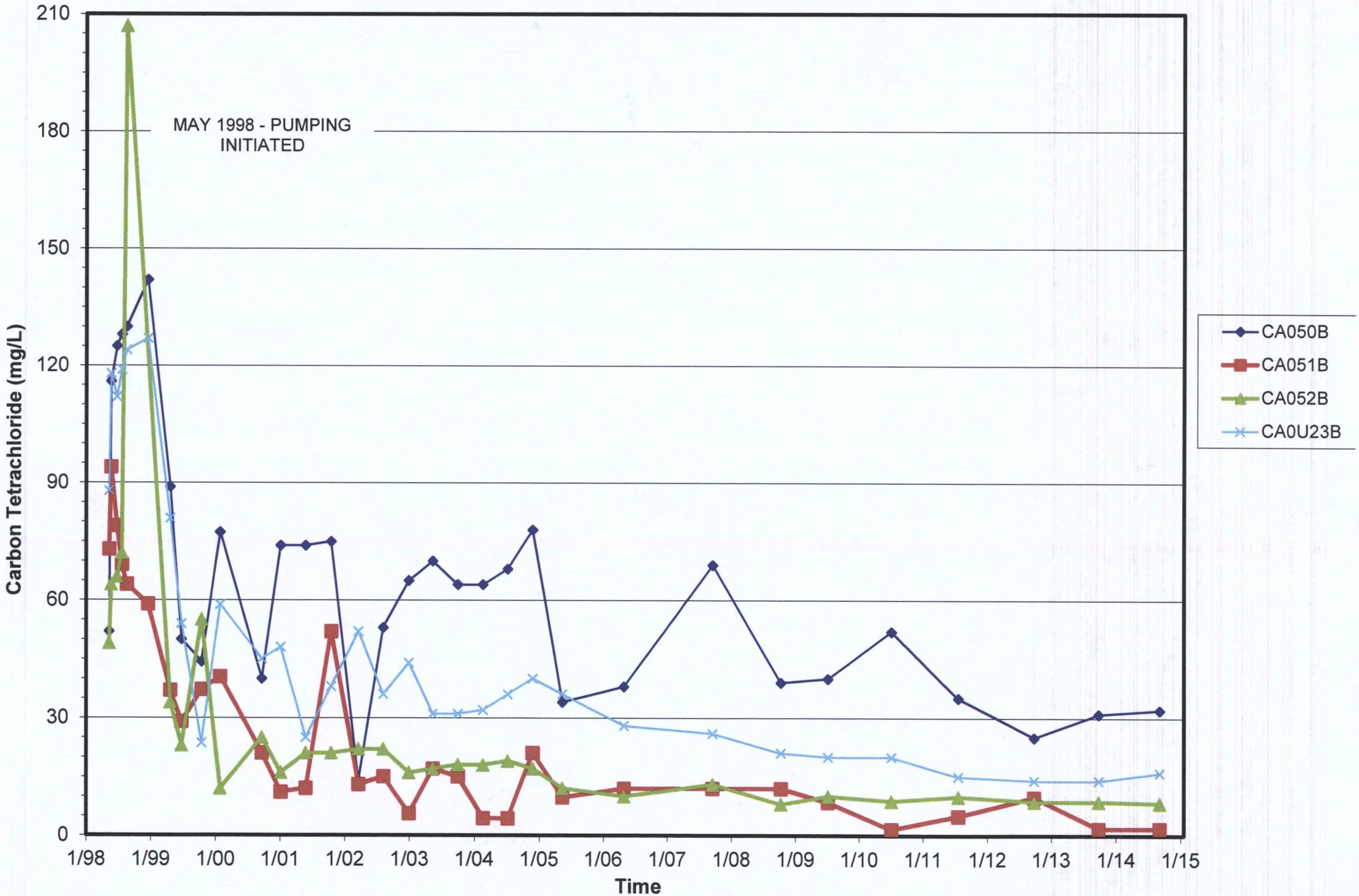
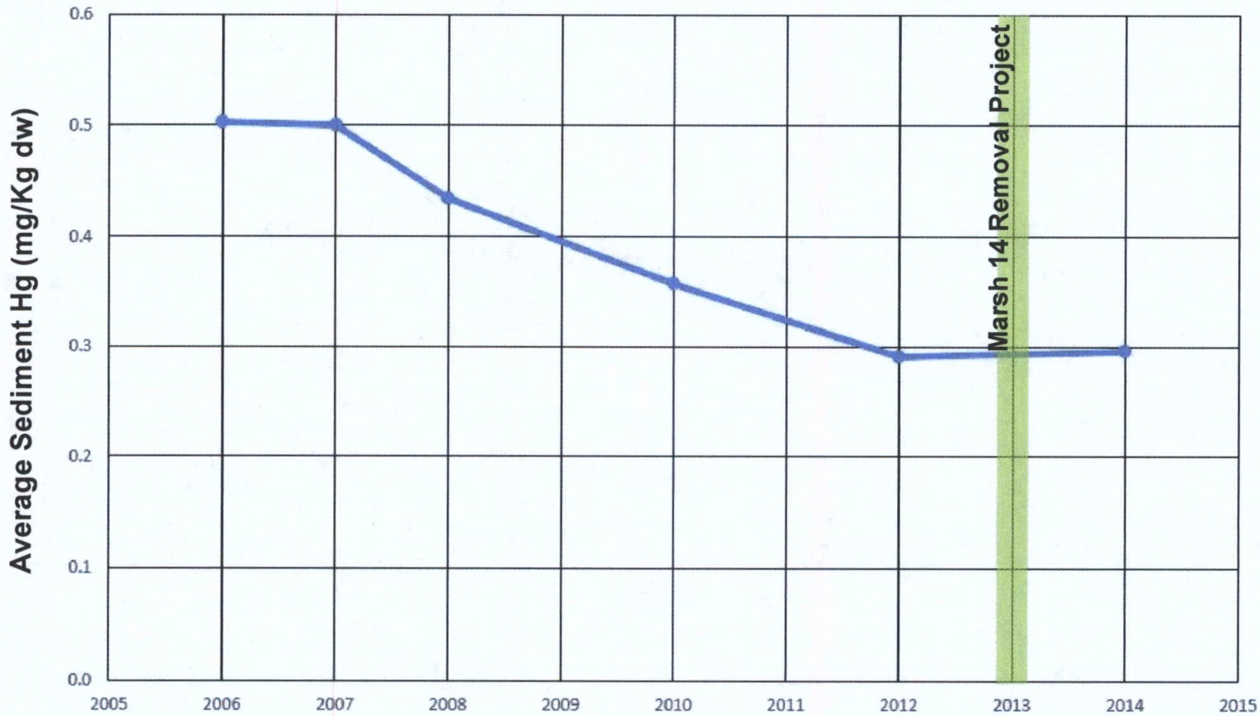


FIGURE 3.1-6
CAPA GROUNDWATER TREATMENT SYSTEM
Recovery Wells - Analytical Results
Carbon Tetrachloride vs. Time





Note: Sediment chemistry data are presented in Appendix A of the annual RAAER.

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FIGURE 3.3-1

MEAN NORTHERN CLOSED AREA OPEN WATER SEDIMENT TRENDS

PROJECT: 021684	DATE: 3/17/2015	
REV: 01	BY: SMM	CHECKED: BLM

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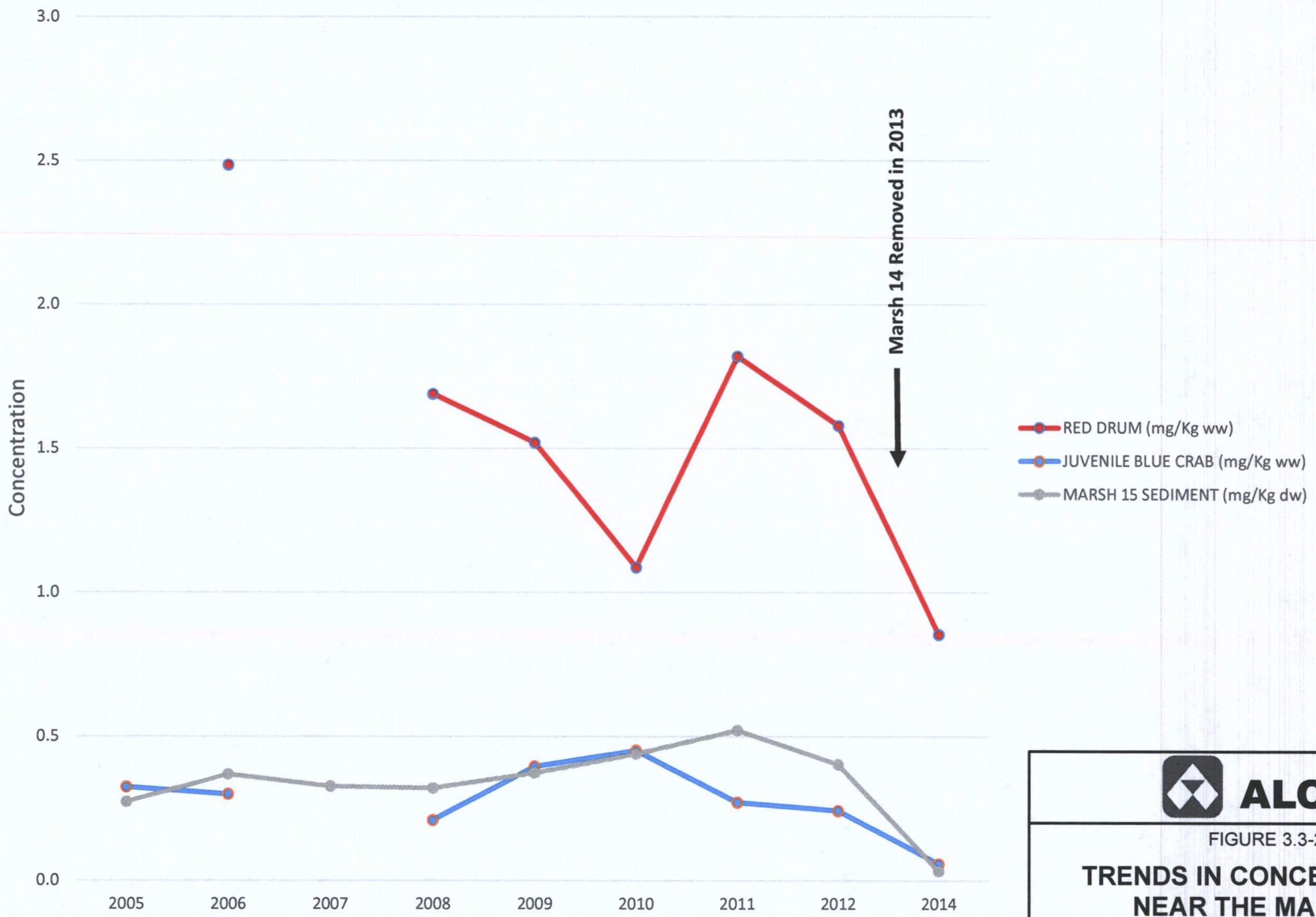

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FIGURE 3.3-2

TRENDS IN CONCENTRATION NEAR THE MARSH 14 REMOVAL AREA

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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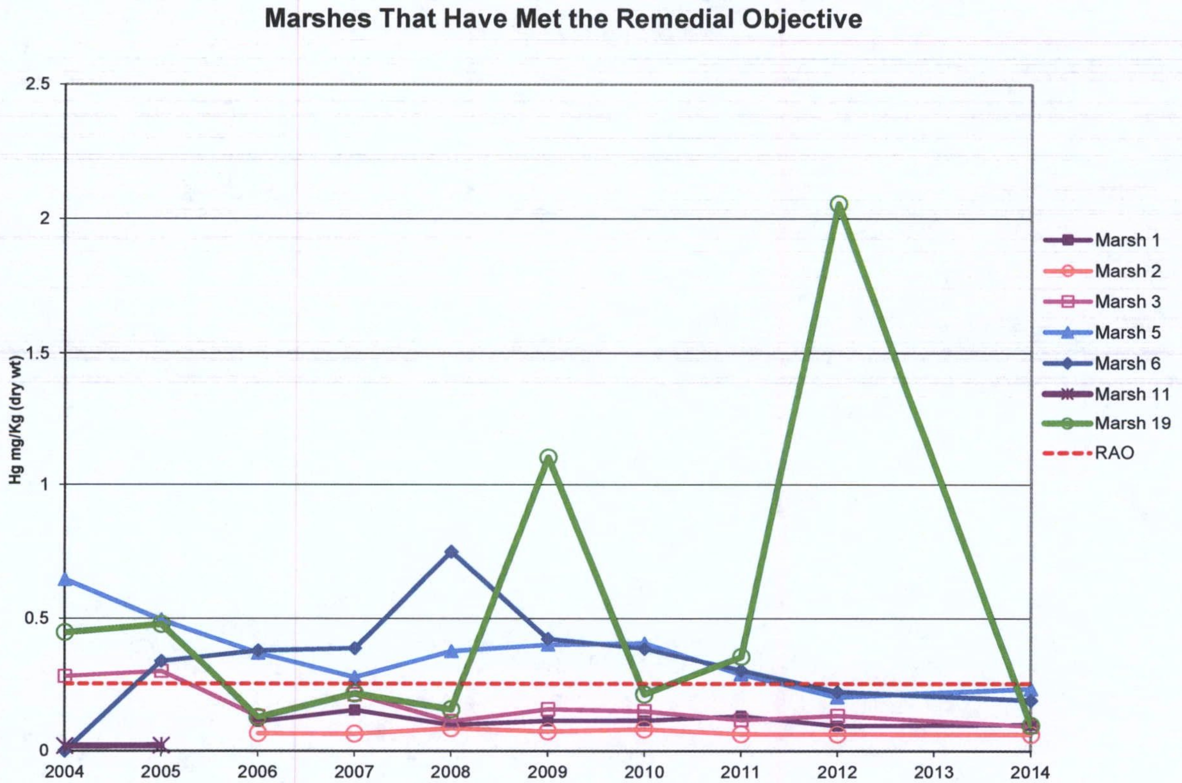

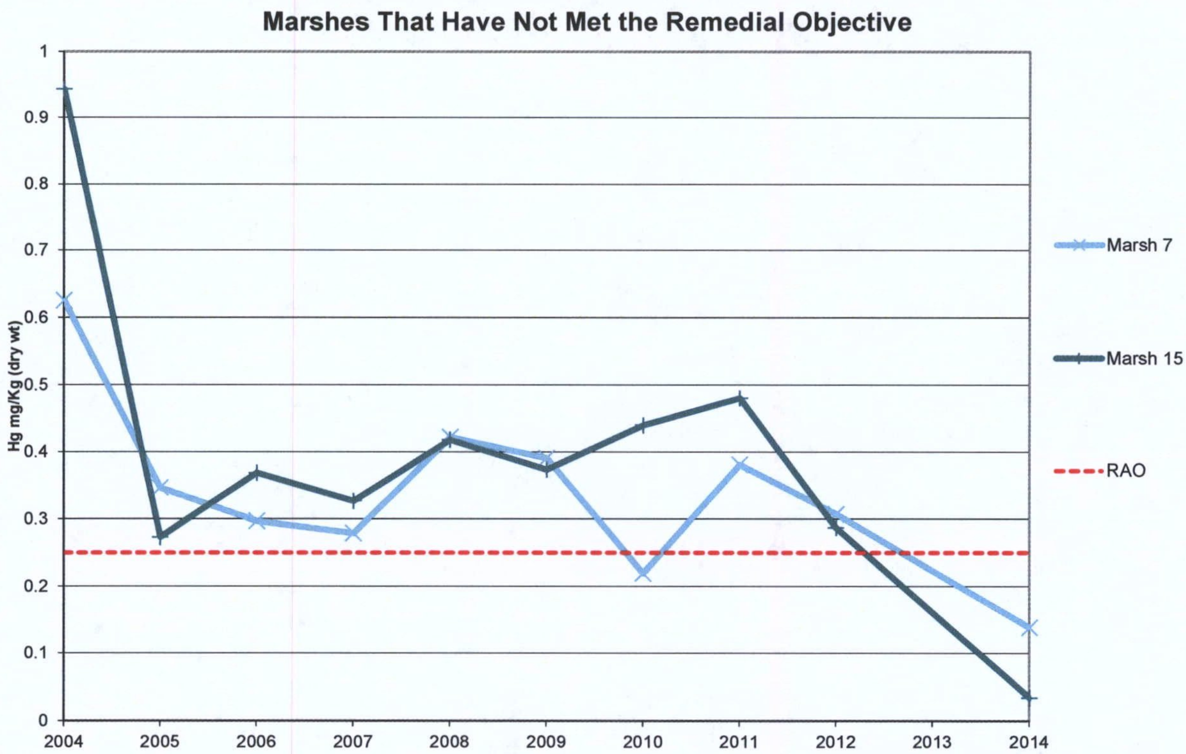

Note: Sediment chemistry data are presented in Appendix A of the annual RAAER.

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FIGURE 3.3-3

TRENDS IN MARSH SEDIMENT CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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Note: Sediment chemistry data are presented in Appendix A of the annual RAAER.

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FIGURE 3.3-4

CLOSED AREA MARSH SEDIMENT METHYL MERCURY CONCENTRATIONS

PROJECT: 021685	DATE: MARCH 2015	
REV: 01	BY: RHM	CHECKED: BLM

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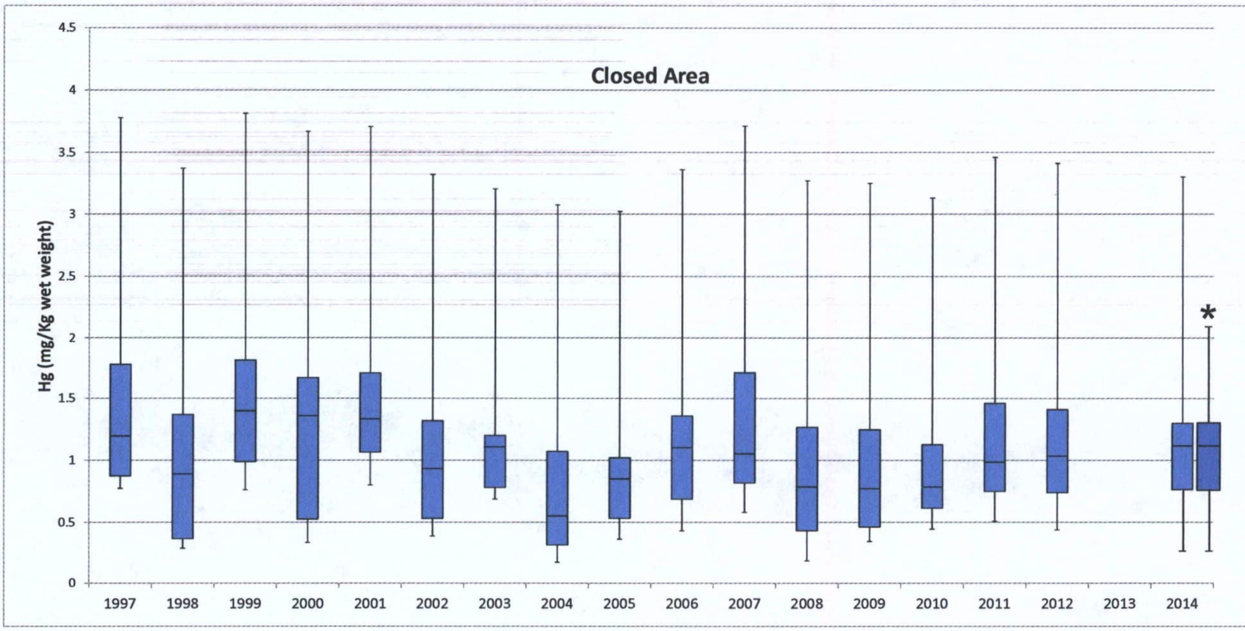

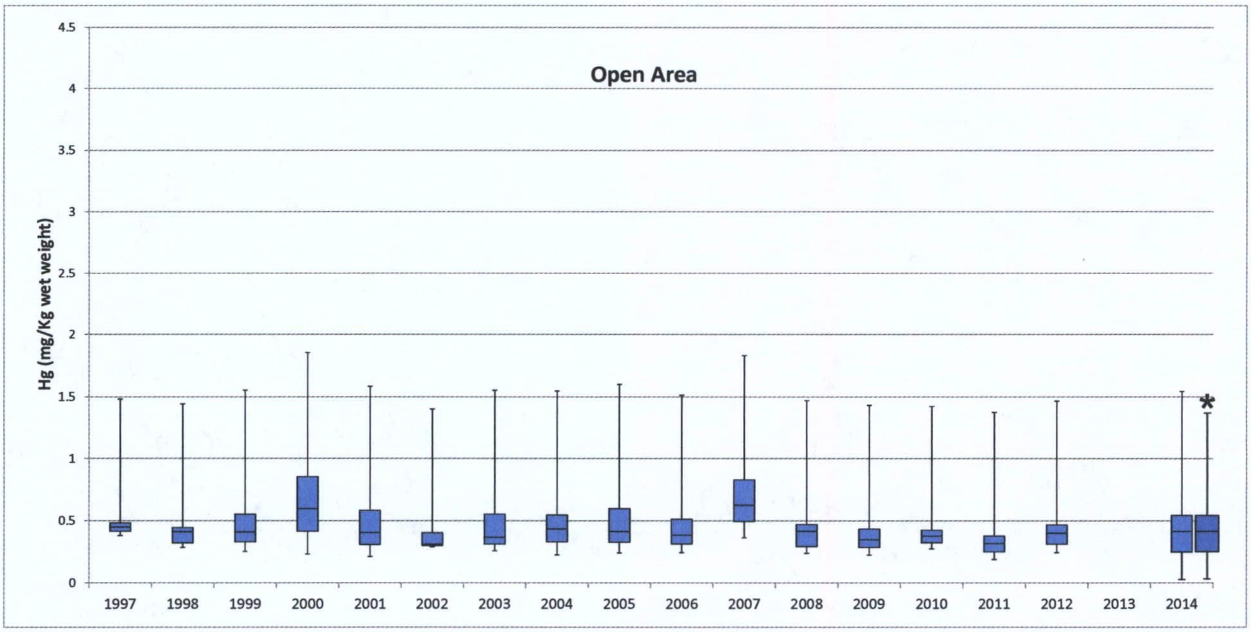

* 2014 DATA PLOTTED WITHOUT SAMPLE OUTLIERS. SEE TEXT FOR EXPLANATION AND DISCUSSION.

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FIGURE 3.4-1

TRENDS IN RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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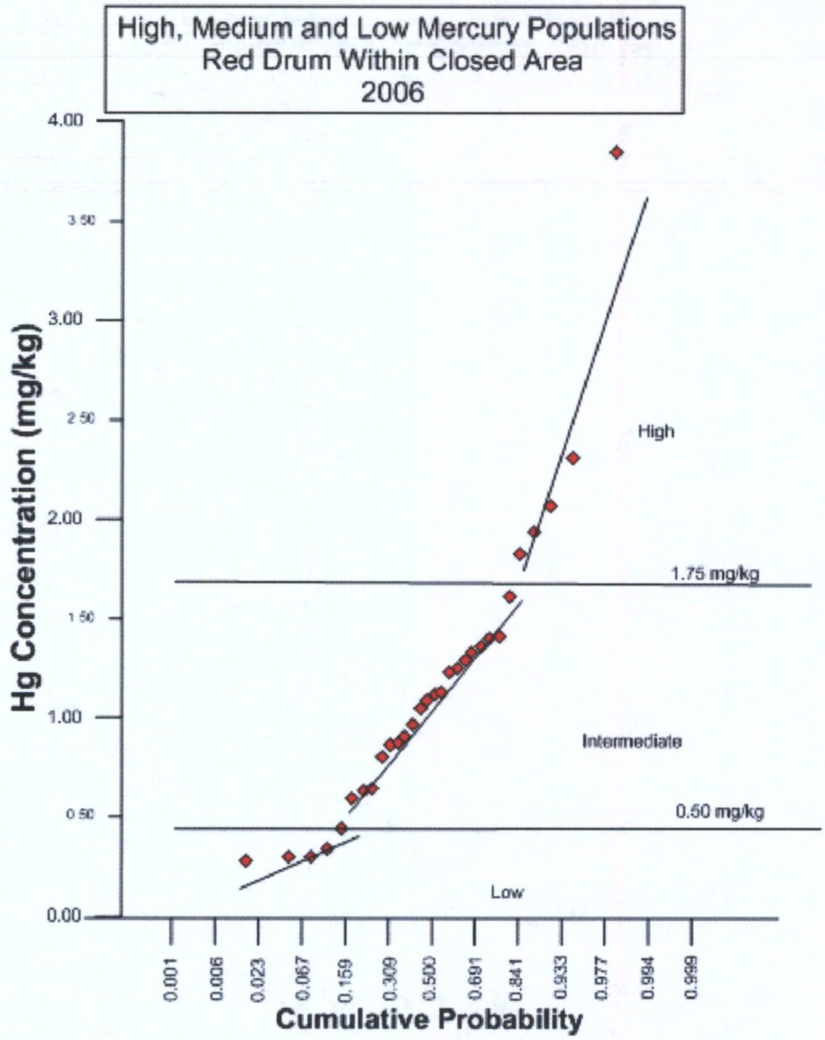

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-2a

CUMULATIVE PROBABILITY GRAPH OF 2006 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015
REV: 01	BY: SMM · CHECKED: BLM

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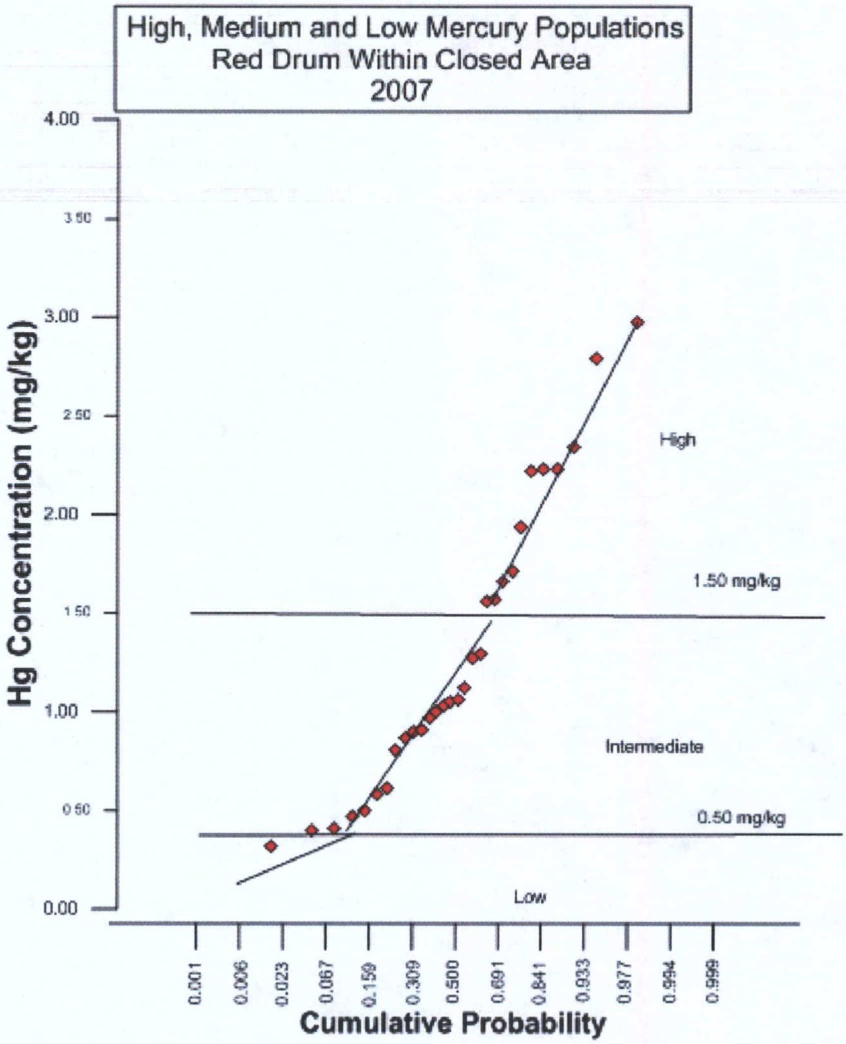

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

ALCOA

FIGURE 3.4-2b

CUMULATIVE PROBABILITY GRAPH OF 2007 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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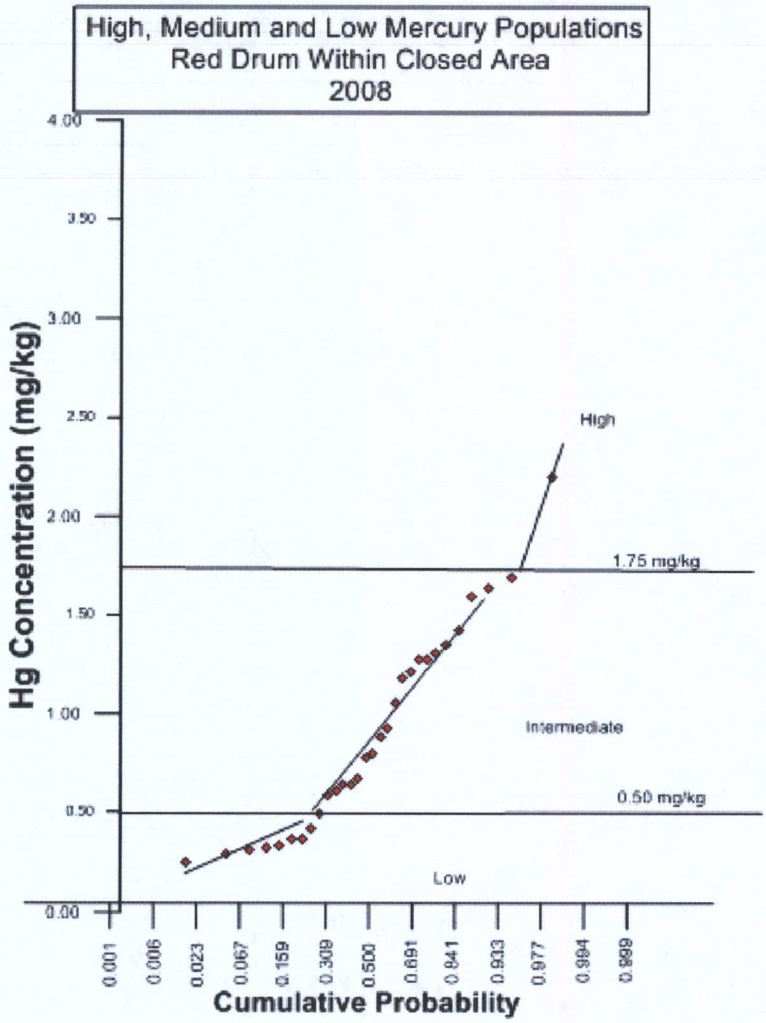

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

ALCOA

FIGURE 3.4-2c

CUMULATIVE PROBABILITY GRAPH OF 2008 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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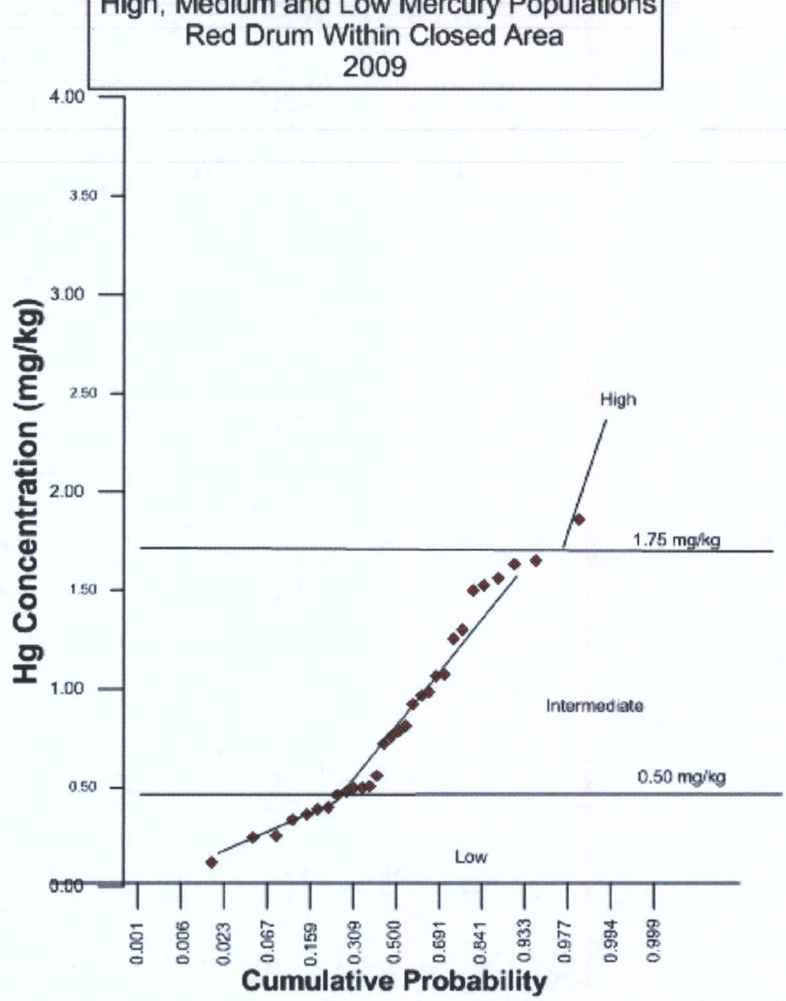

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-2d

CUMULATIVE PROBABILITY GRAPH OF 2009 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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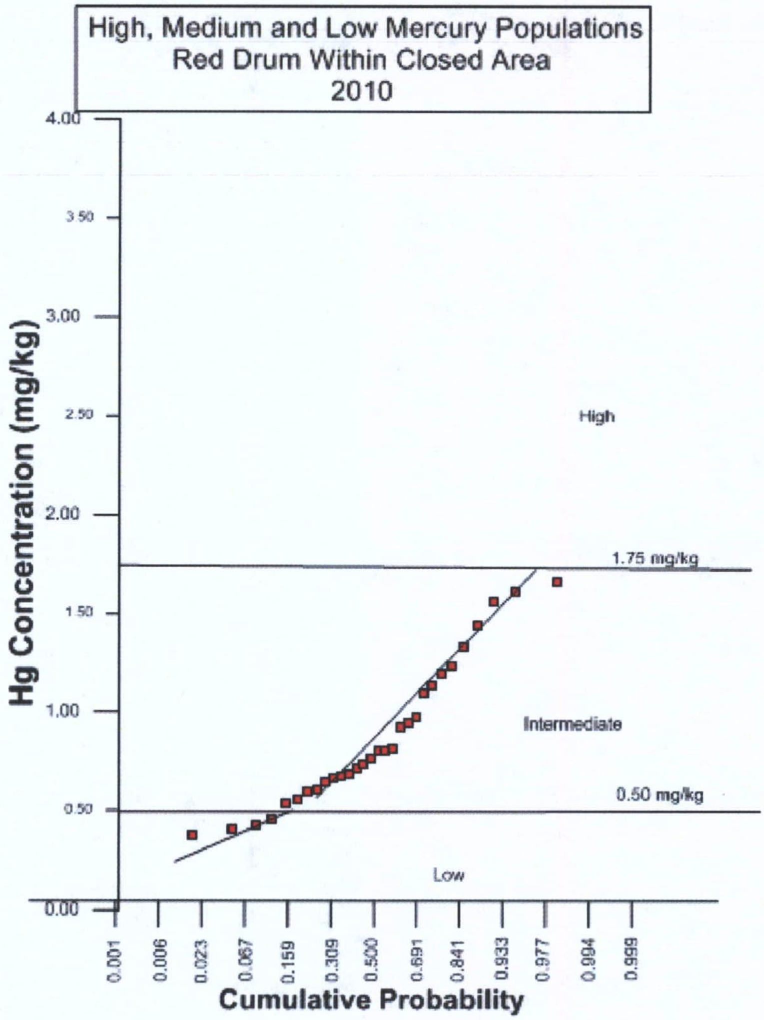

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-2e

CUMULATIVE PROBABILITY GRAPH OF 2010 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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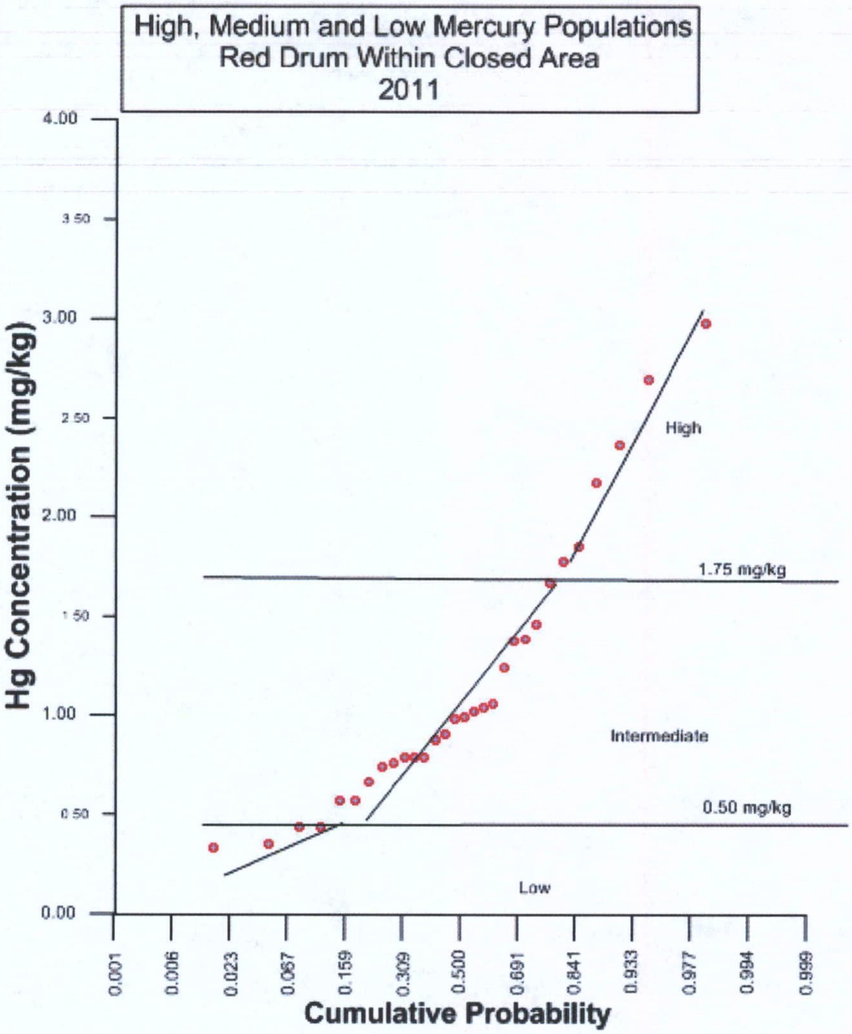

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-2f

CUMULATIVE PROBABILITY GRAPH OF 2011 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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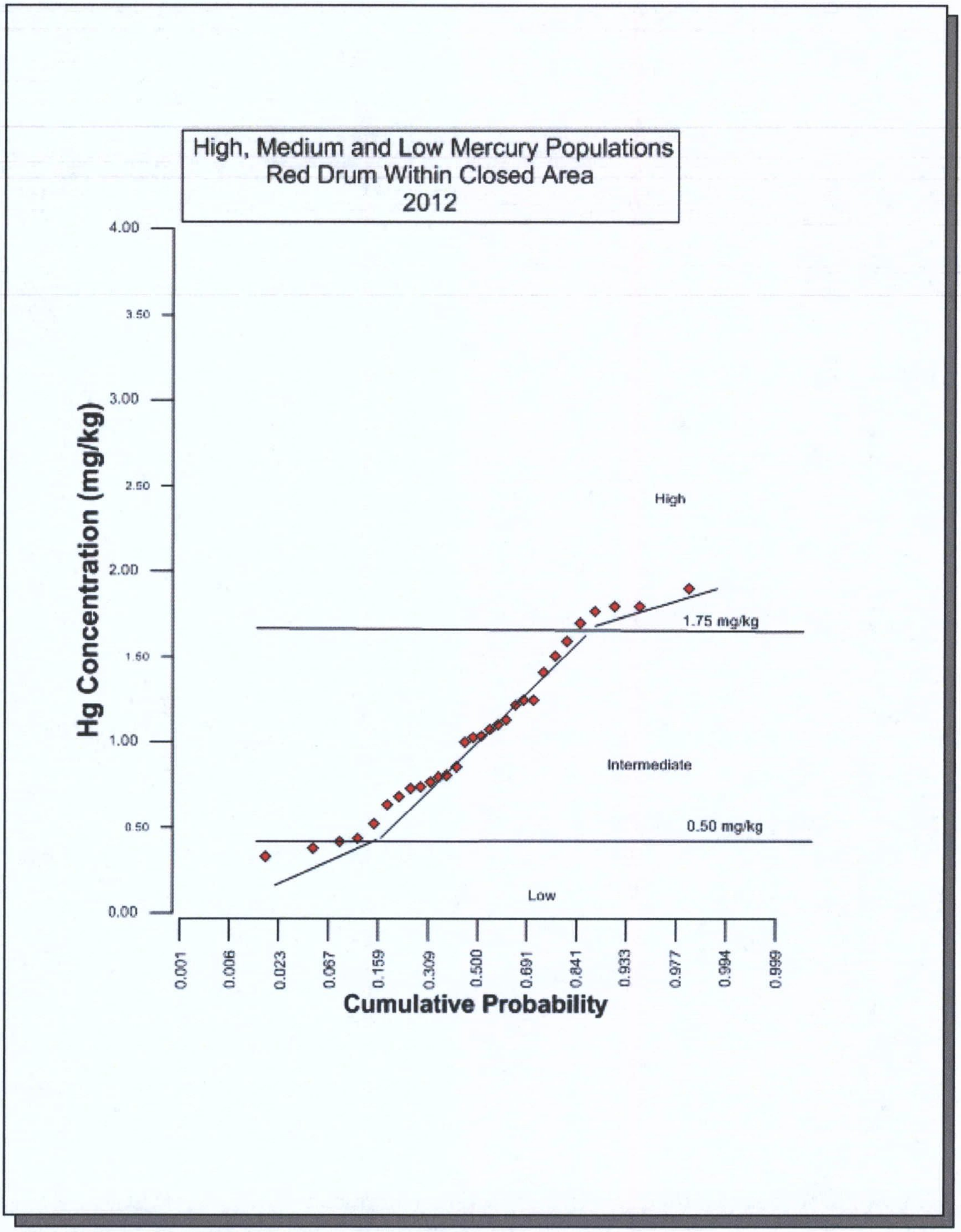

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-2g

CUMULATIVE PROBABILITY GRAPH OF 2012 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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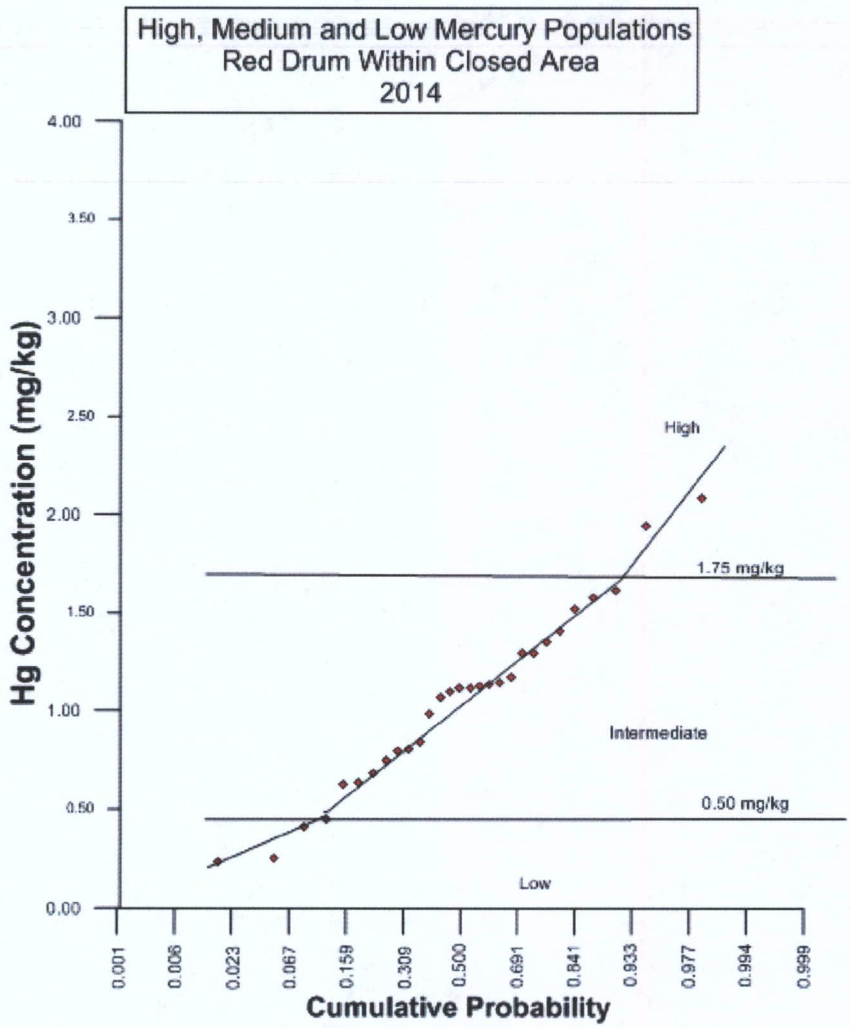

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-2h

CUMULATIVE PROBABILITY GRAPH OF 2014 RED DRUM MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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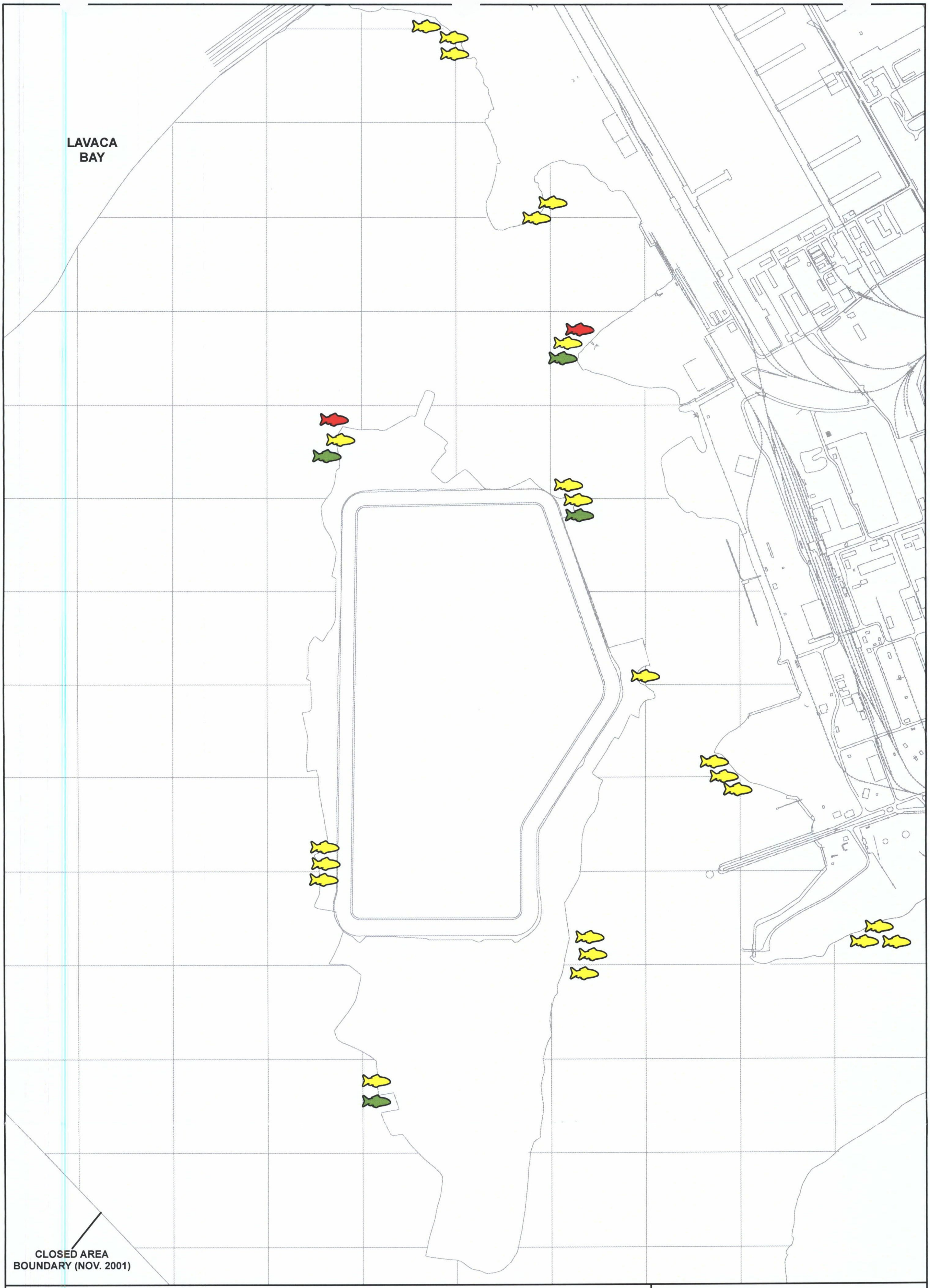

Legend

Total Hg wet weight (mg/Kg)

- <0.5
- 0.5 - 1.75
- >1.75

N

0 800 1,600

Feet

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FIGURE 3.4-3

GEOGRAPHIC DISTRIBUTION OF 2014 RED DRUM SUBPOPULATIONS

PROJECT: 021684	DATE:MARCH 2015
REV: 01	BY: SMM / CHECKED: BLM

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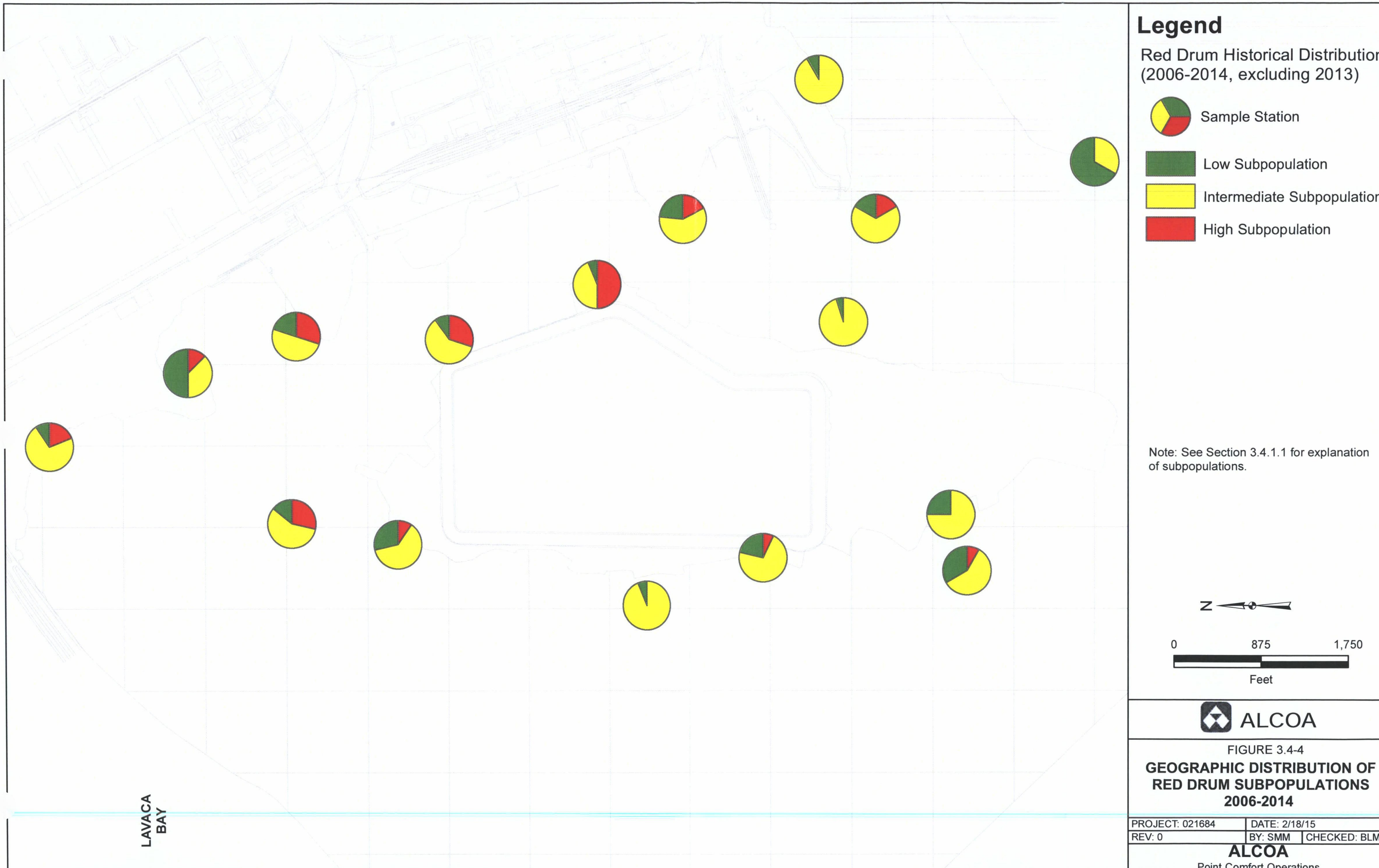

FIGURE 3.4-4

GEOGRAPHIC DISTRIBUTION OF RED DRUM SUBPOPULATIONS 2006-2014

PROJECT: 021684	DATE: 2/18/15
REV: 0	BY: SMM / CHECKED: BLM

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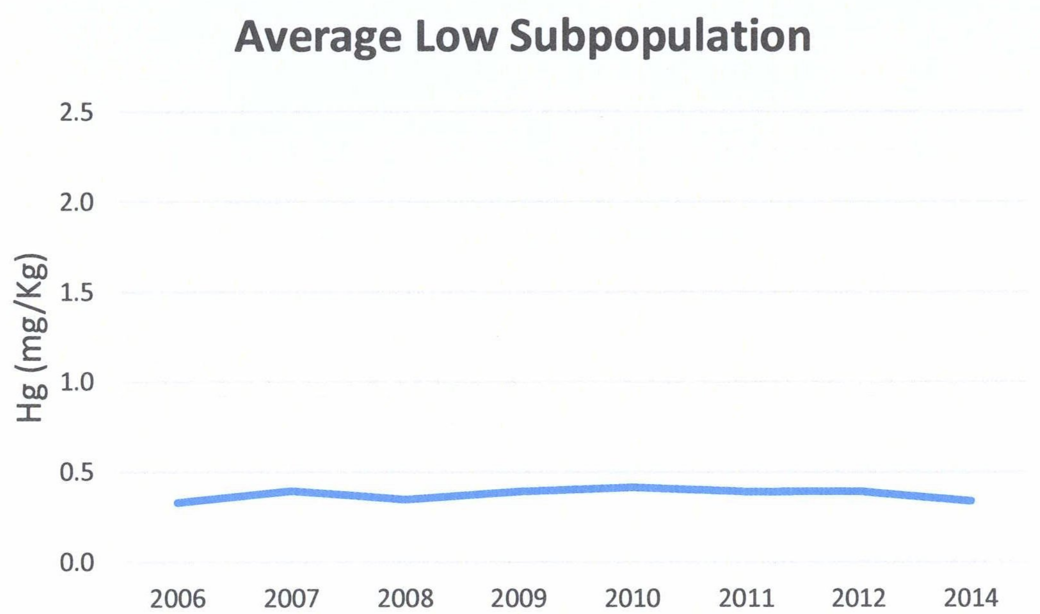
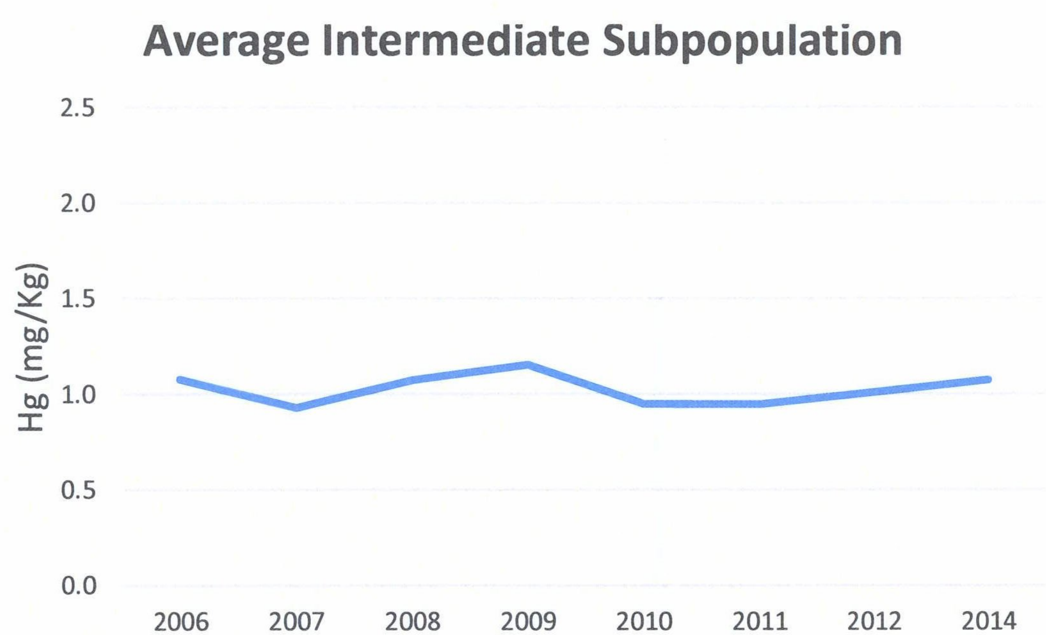
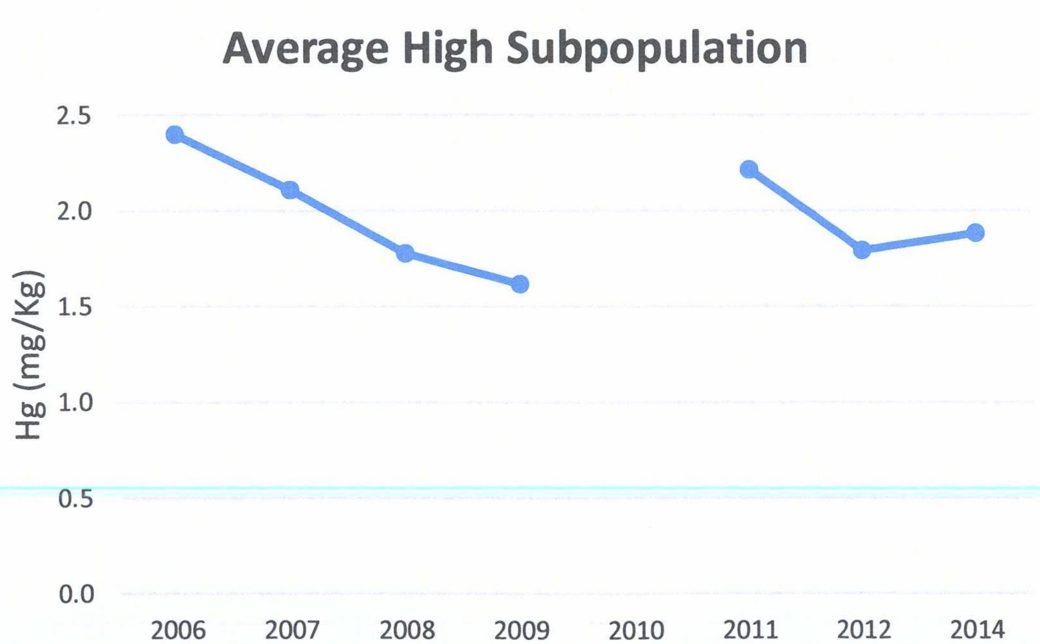
Point Comfort Operations







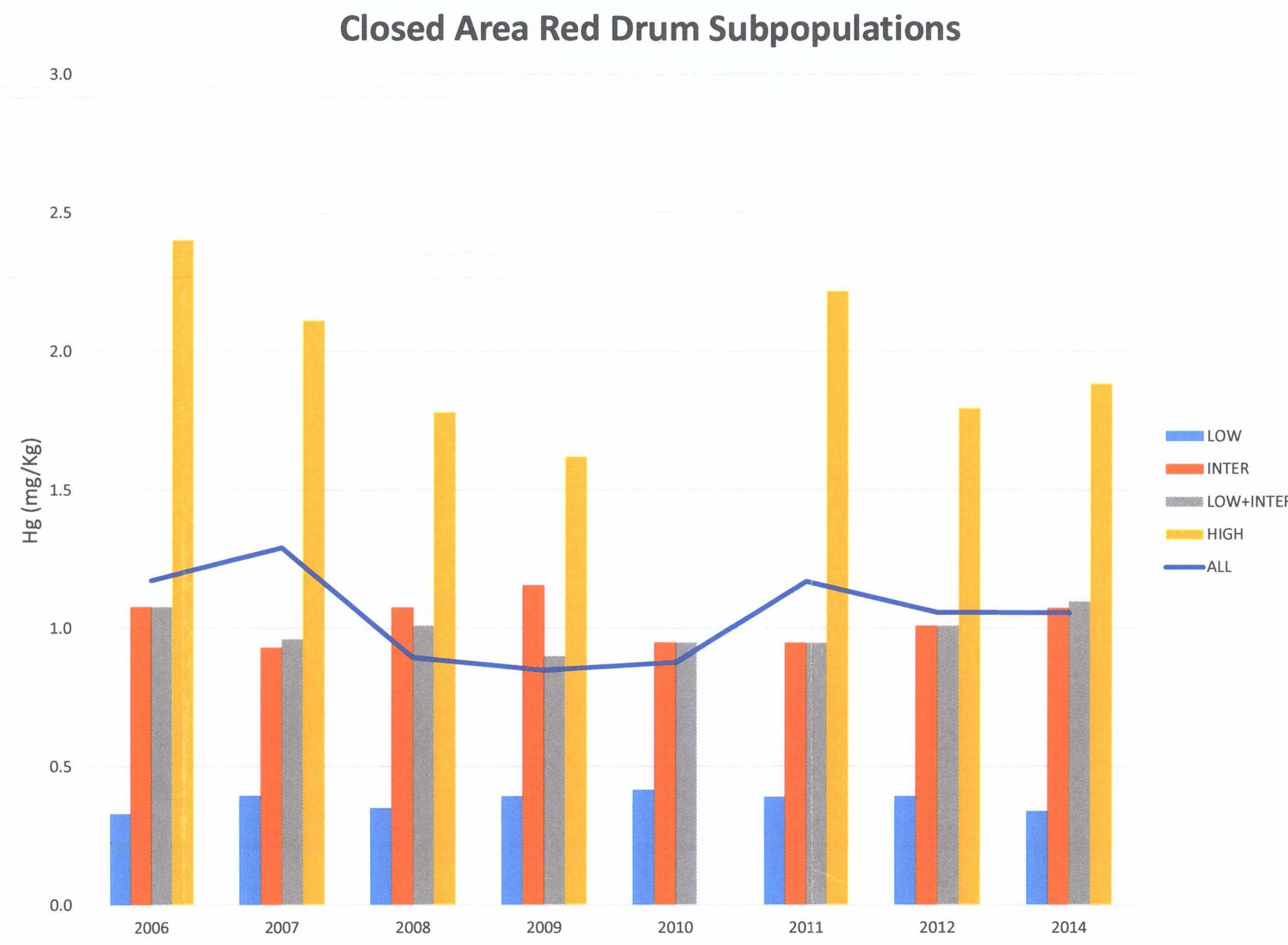


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FIGURE 3.4-5

TEMPORAL TRENDS IN RED DRUM SUBPOPULATIONS 2006 - 2014

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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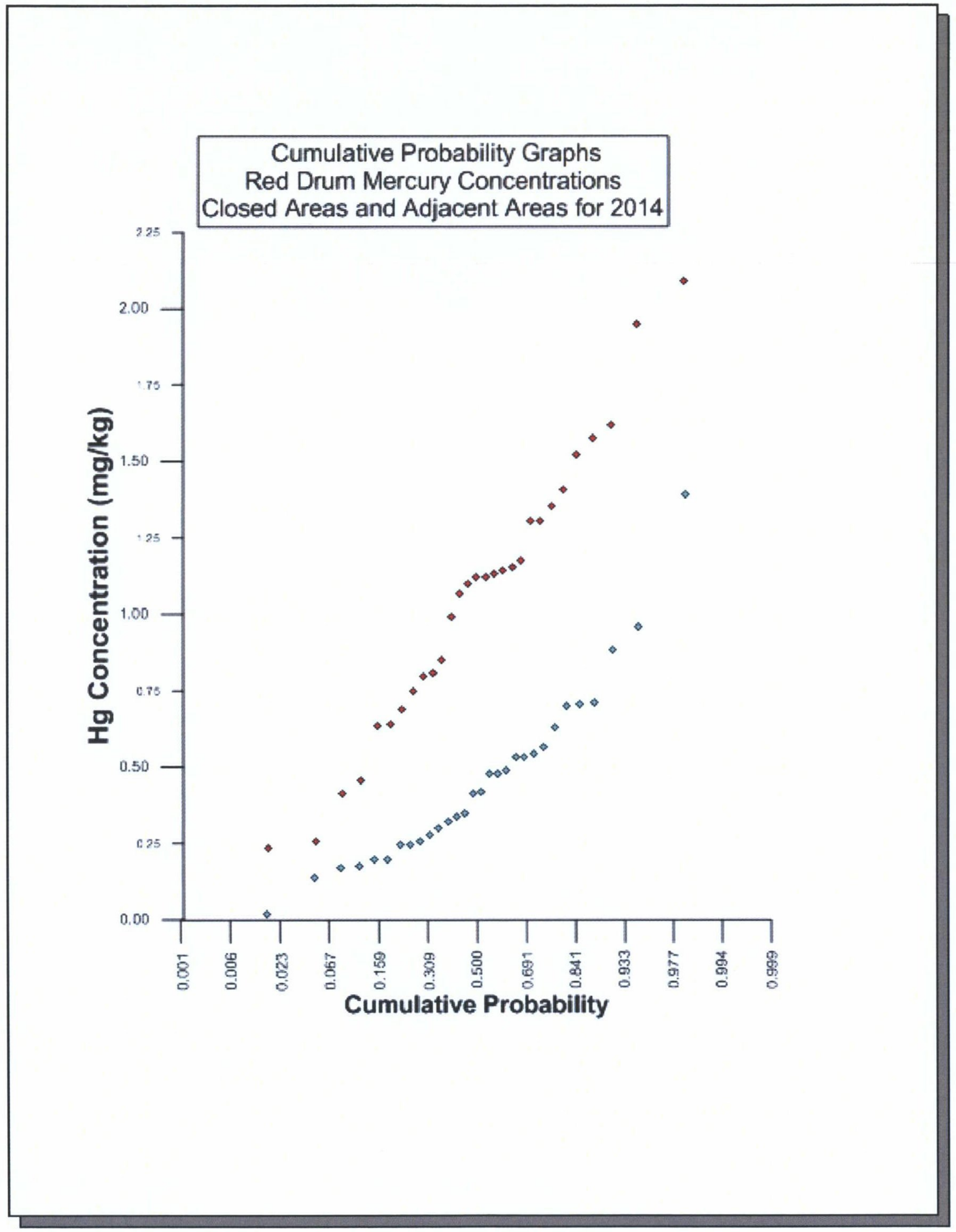

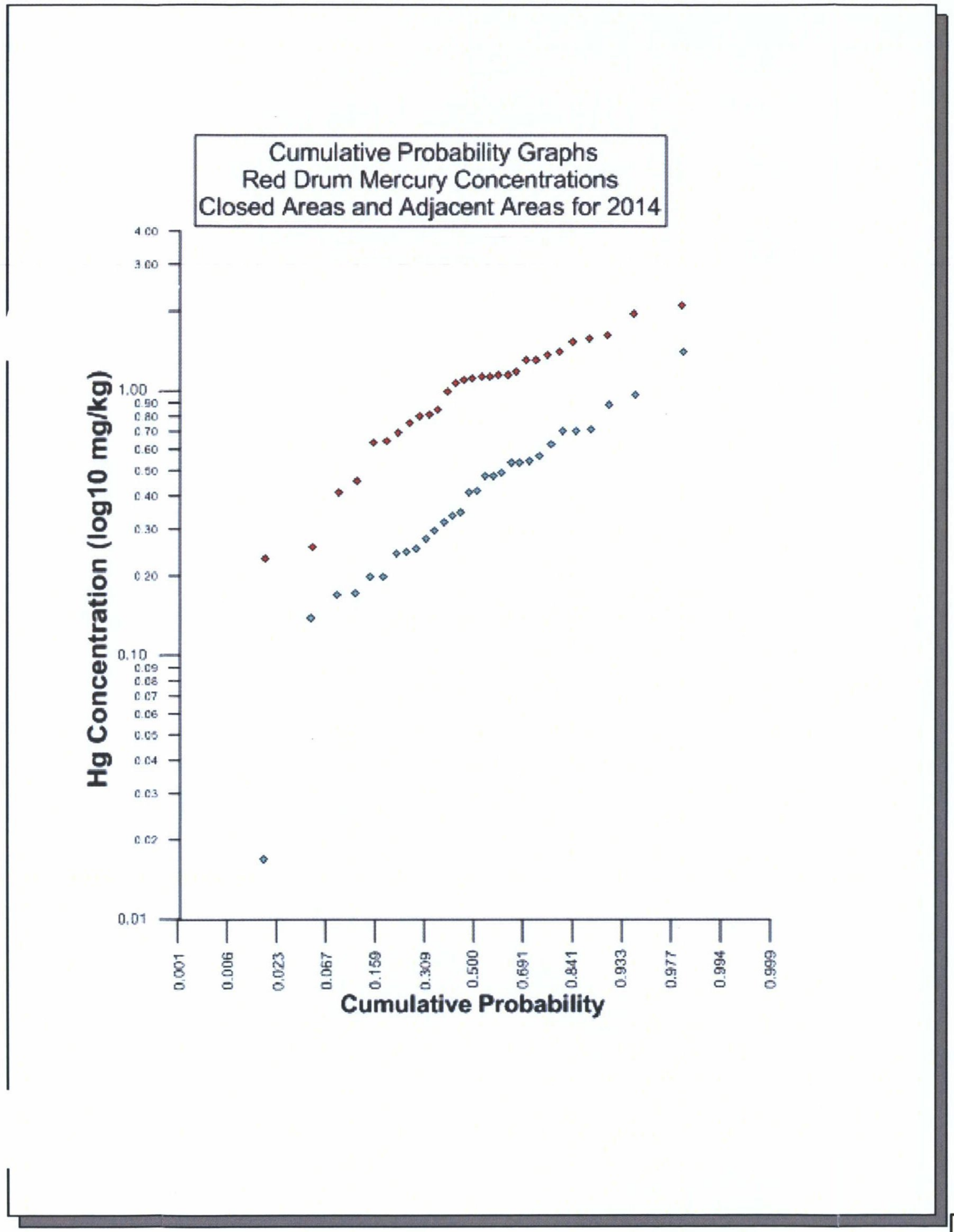

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FIGURE 3.4-6

STATISTICAL DISTRIBUTION OF RED DRUM TISSUE MERCURY DATA

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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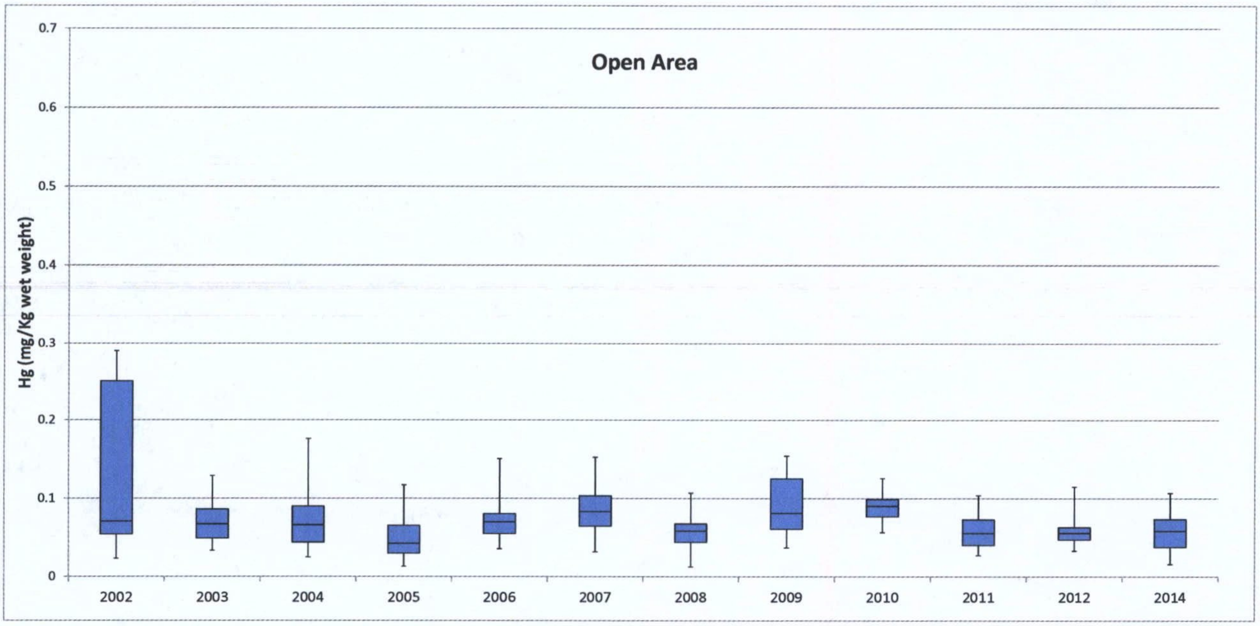
Point Comfort Operations



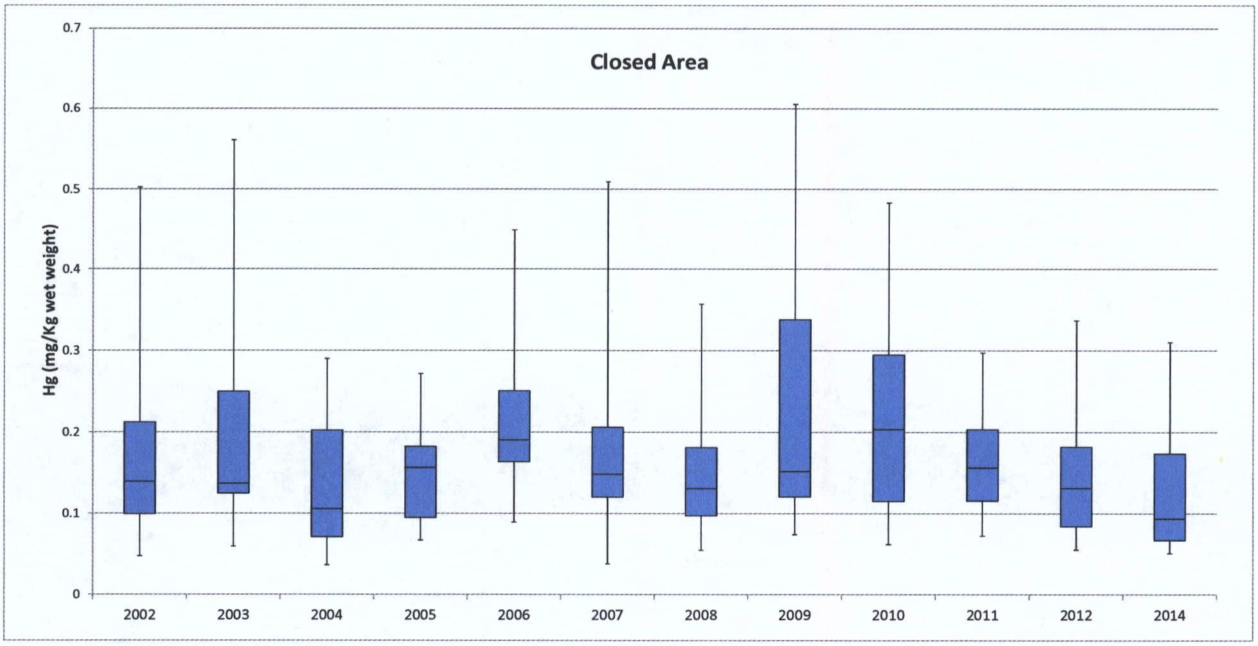


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FIGURE 3.4-7

TRENDS IN JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 0	BY: SMM	CHECKED: BLM

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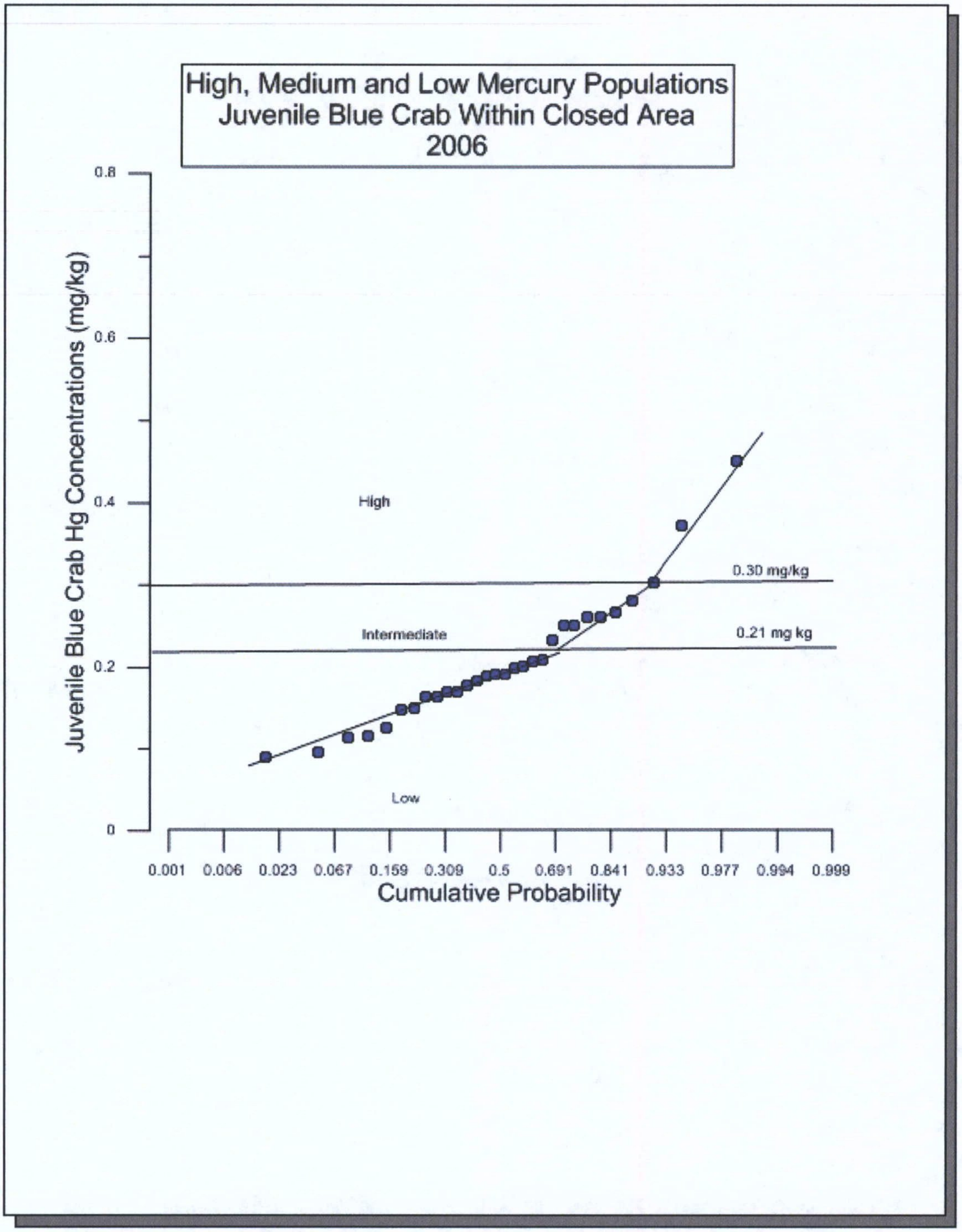

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-8a

CUMULATIVE PROBABILITY GRAPH OF 2006 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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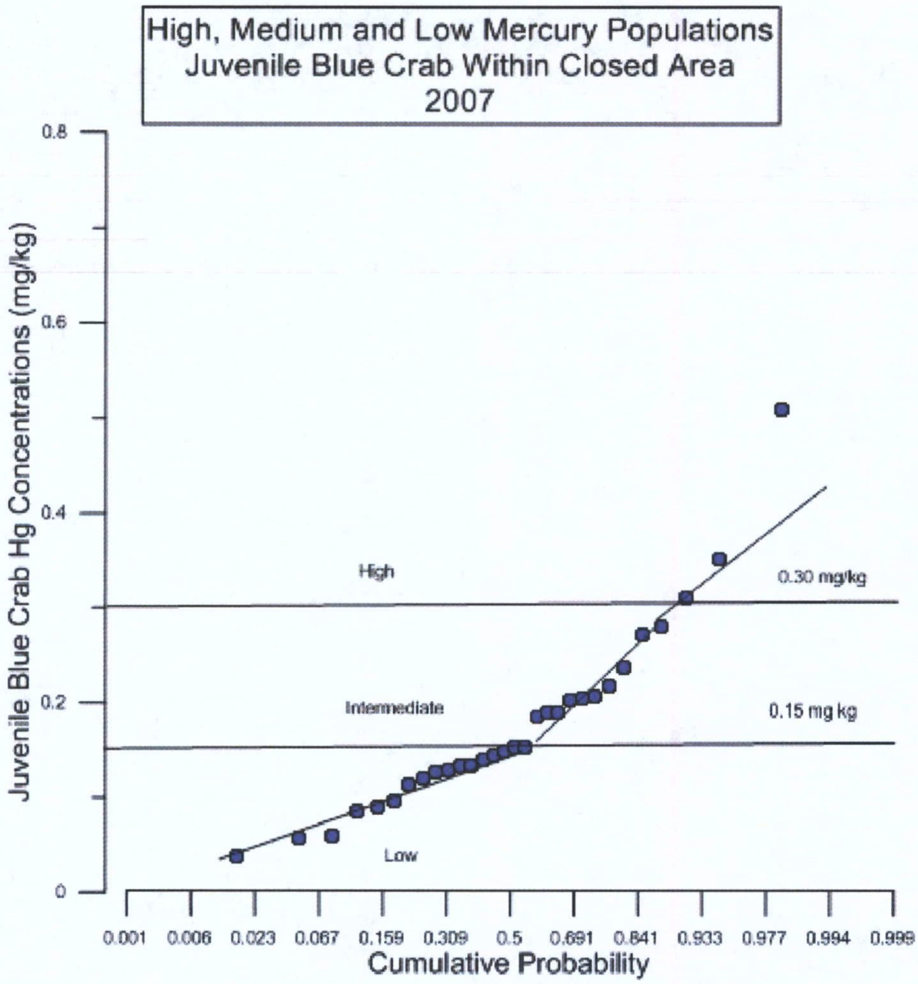

Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

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FIGURE 3.4-8b

CUMULATIVE PROBABILITY GRAPH OF 2007 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

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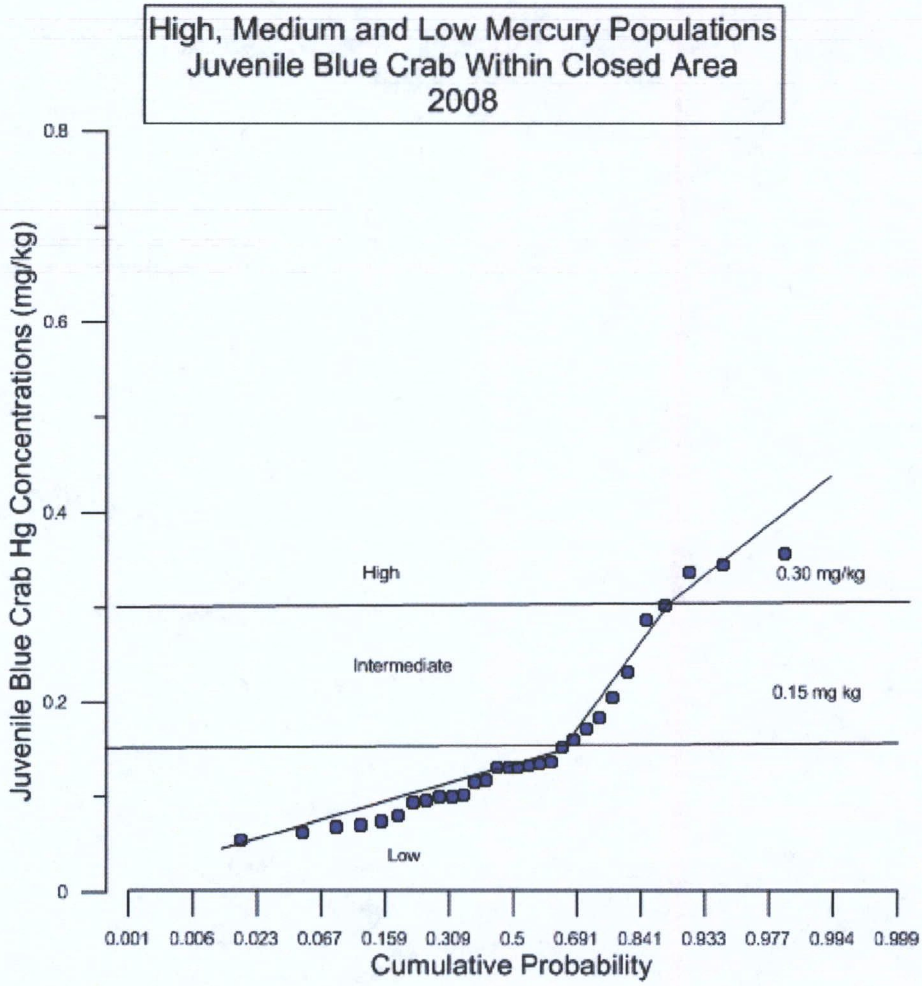


Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

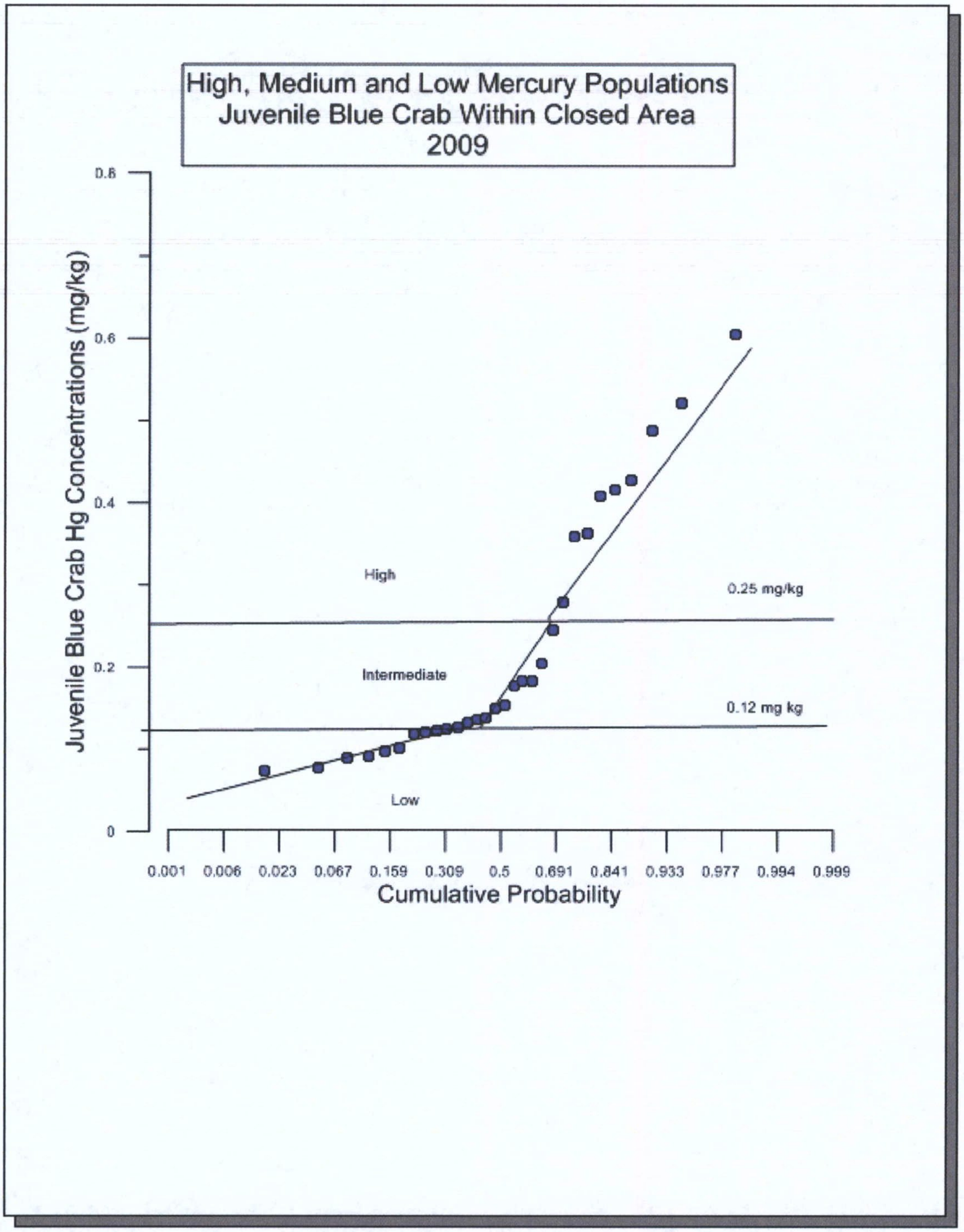
ALCOA

FIGURE 3.4-8c

CUMULATIVE PROBABILITY GRAPH OF 2008 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

ALCOA
Point Comfort Operations



Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

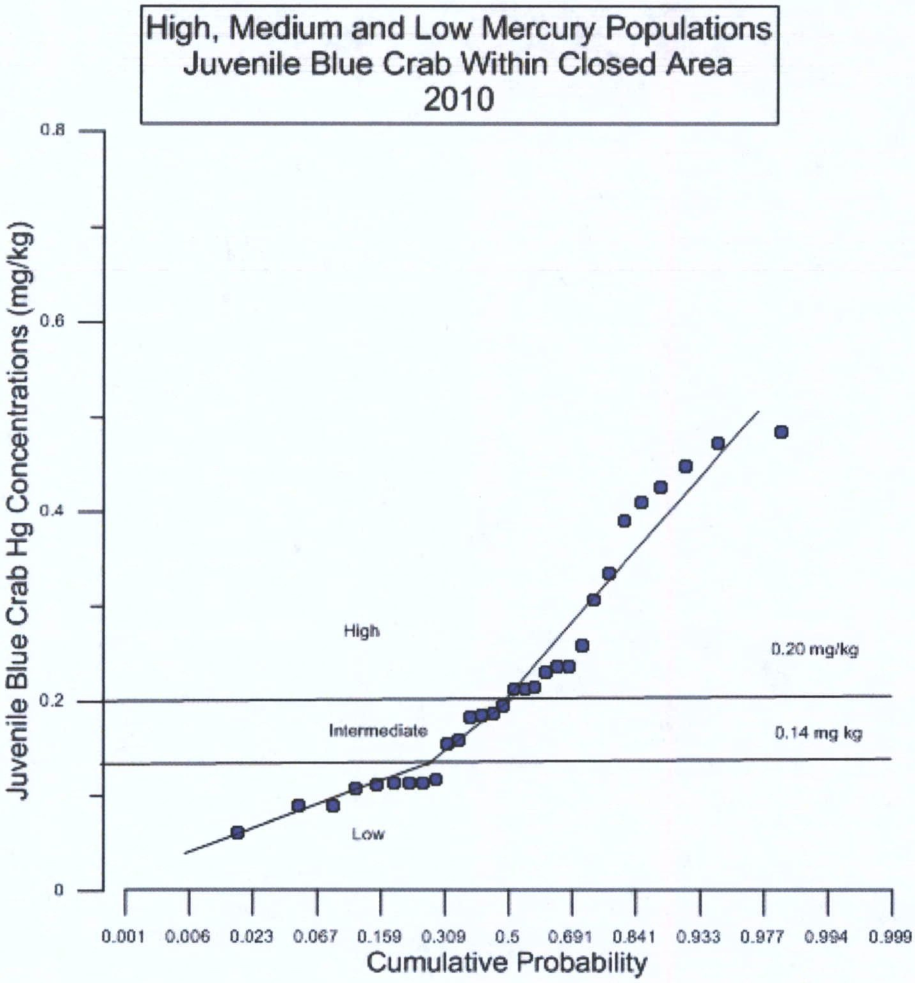
ALCOA

FIGURE 3.4-8d

CUMULATIVE PROBABILITY GRAPH OF 2009 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

ALCOA
Point Comfort Operations



Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

ALCOA

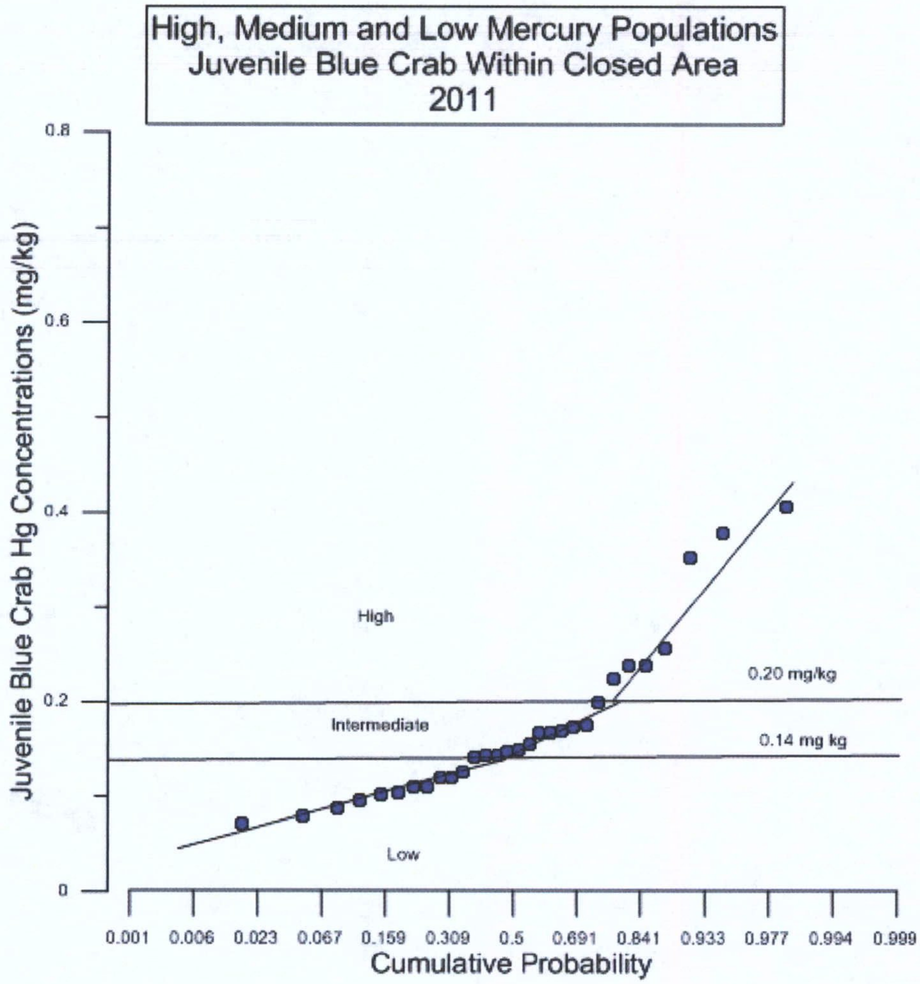
FIGURE 3.4-8e

CUMULATIVE PROBABILITY GRAPH OF 2010 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

ALCOA

Point Comfort Operations



Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

ALCOA

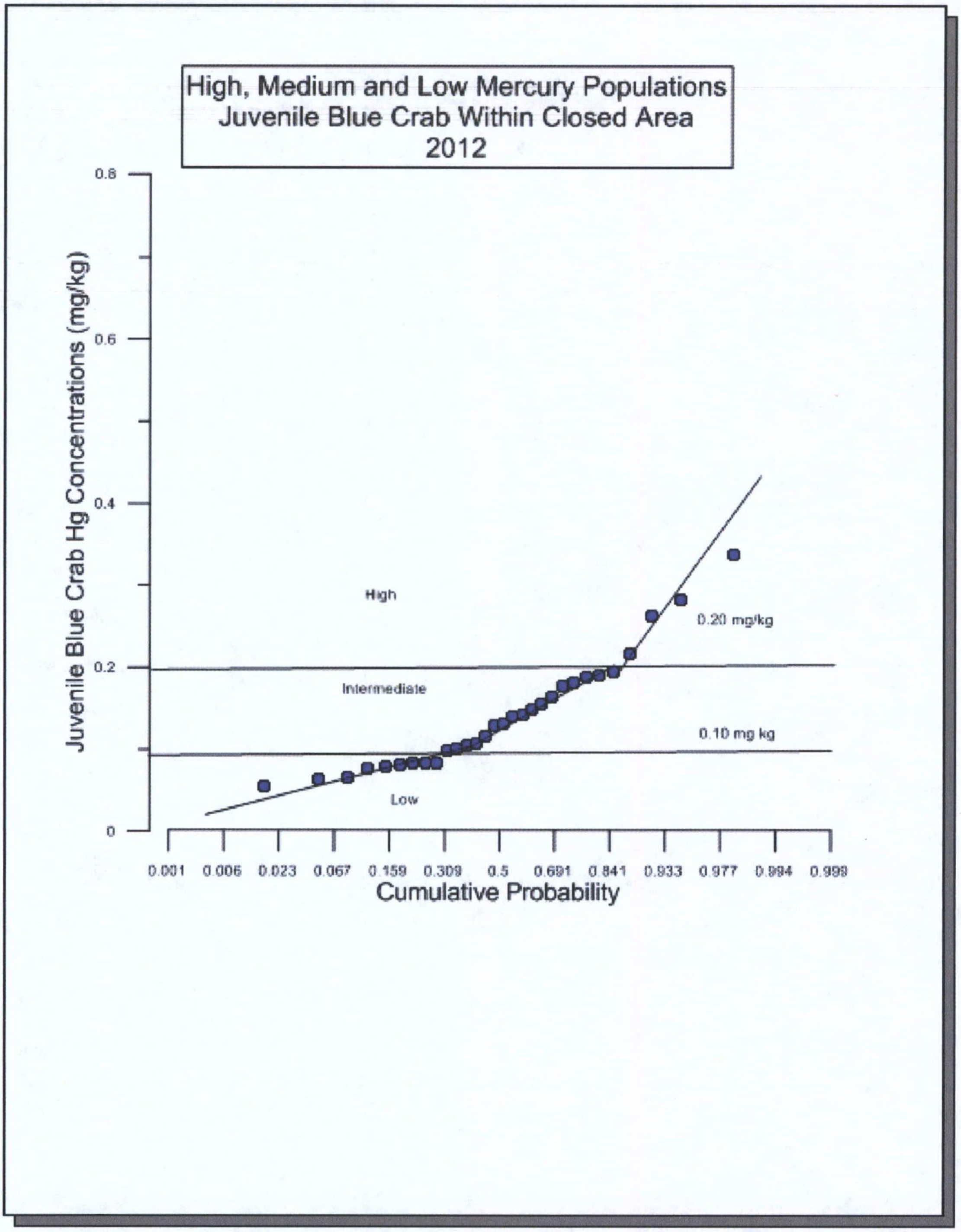
FIGURE 3.4-8f

CUMULATIVE PROBABILITY GRAPH OF 2011 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015
REV: 01	BY: SMM CHECKED: BLM

ALCOA

Point Comfort Operations



Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

ALCOA

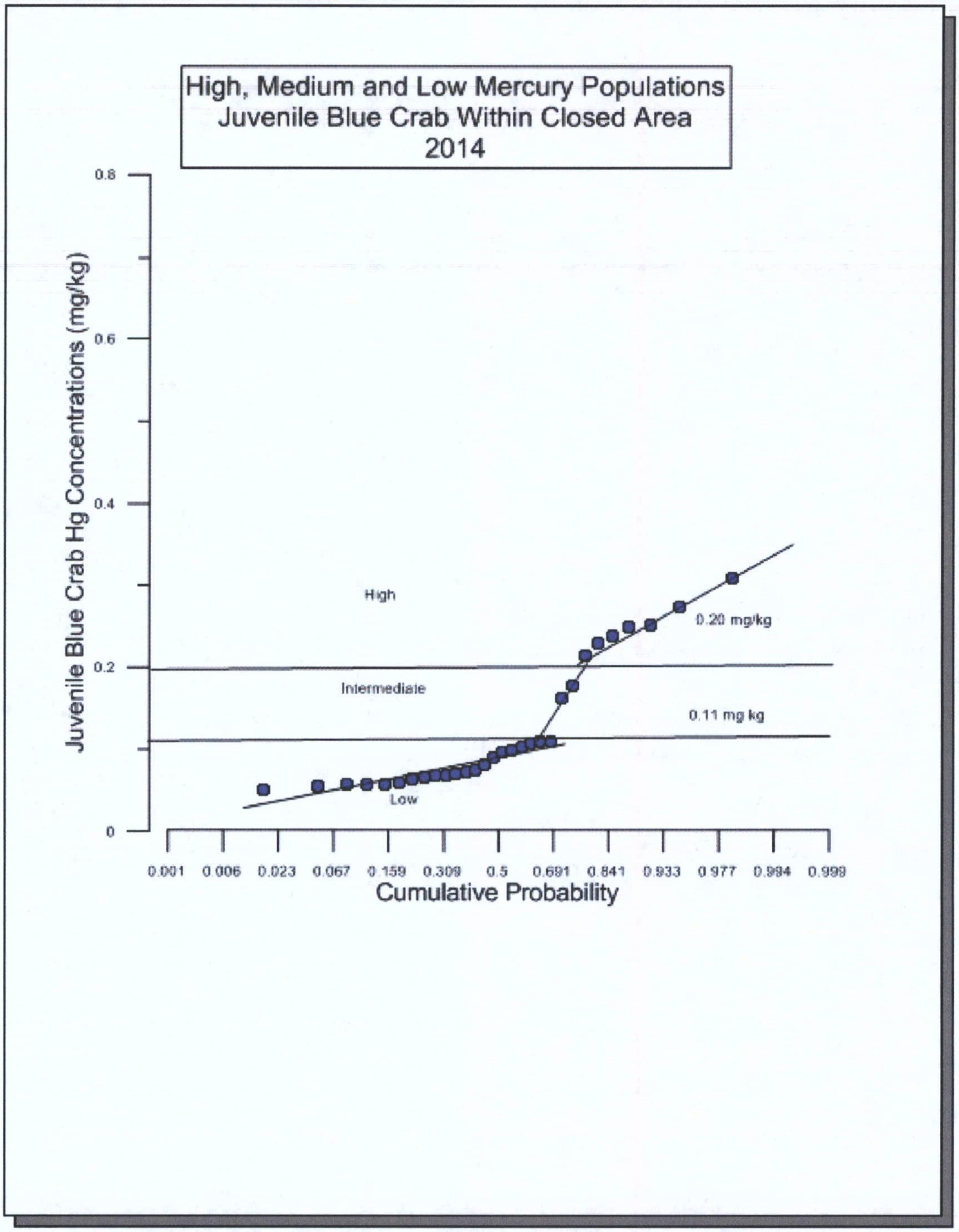
FIGURE 3.4-8g

CUMULATIVE PROBABILITY GRAPH OF 2012 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 01	BY: SMM	CHECKED: BLM

ALCOA

Point Comfort Operations



Note: Tissue chemistry data are presented in Appendix B of the annual RAAER

ALCOA

FIGURE 3.4-8h

CUMULATIVE PROBABILITY GRAPH OF 2014 JUVENILE BLUE CRAB MERCURY CONCENTRATIONS

PROJECT: 021684	DATE: MARCH 2015
REV: 01	BY: SMM · CHECKED: BLM

ALCOA

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Legend

Total Hg Wet Weight (mg/Kg)

- <0.11
- 0.11 - 0.20
- >0.20

ALCOA

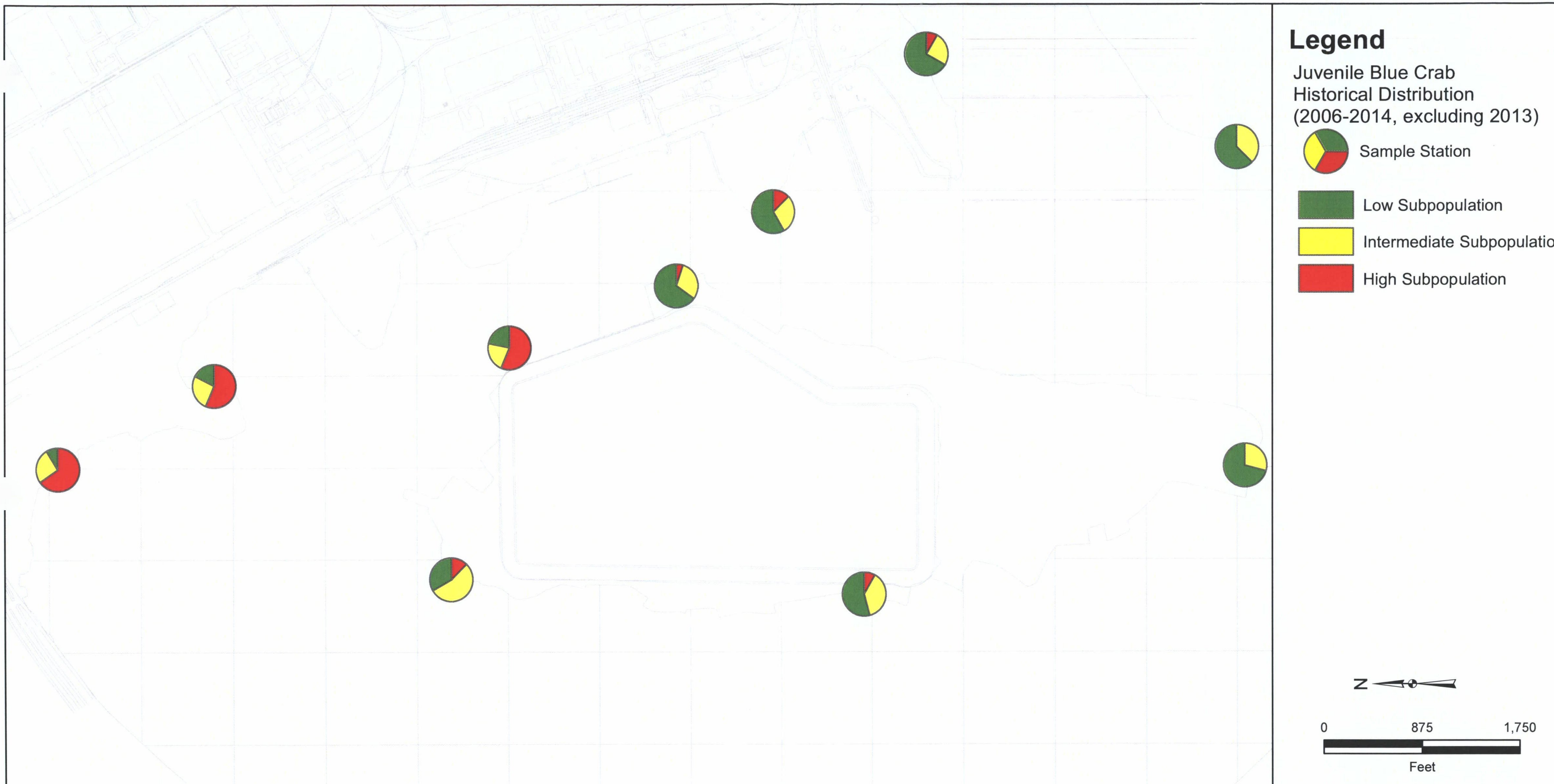
FIGURE 3.4-9

GEOGRAPHIC DISTRIBUTION OF 2014 JUVENILE BLUE CRAB SUBPOPULATIONS

PROJECT: 021684	DATE: MARCH 2015	
REV: 0	BY: RHM	CHECKED: BLM

ALCOA

Point Comfort Opreations



ALCOA

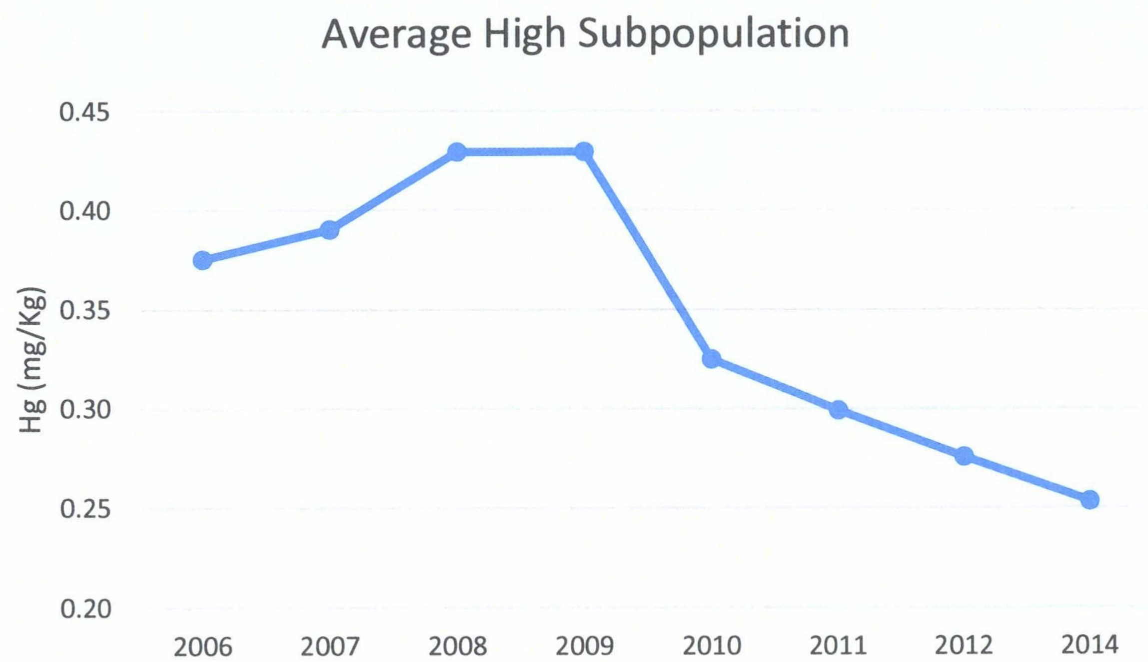
FIGURE 3.4-10

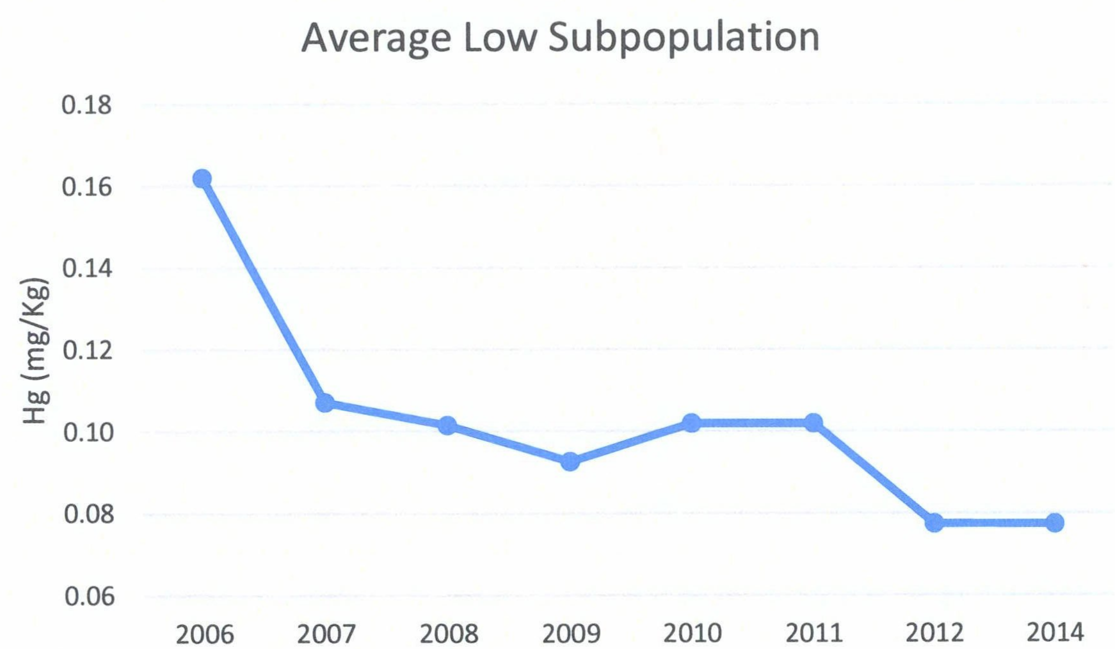
GEOGRAPHIC DISTRIBUTION OF JUVENILE BLUE CRAB SUBPOPULATIONS 2006-2014

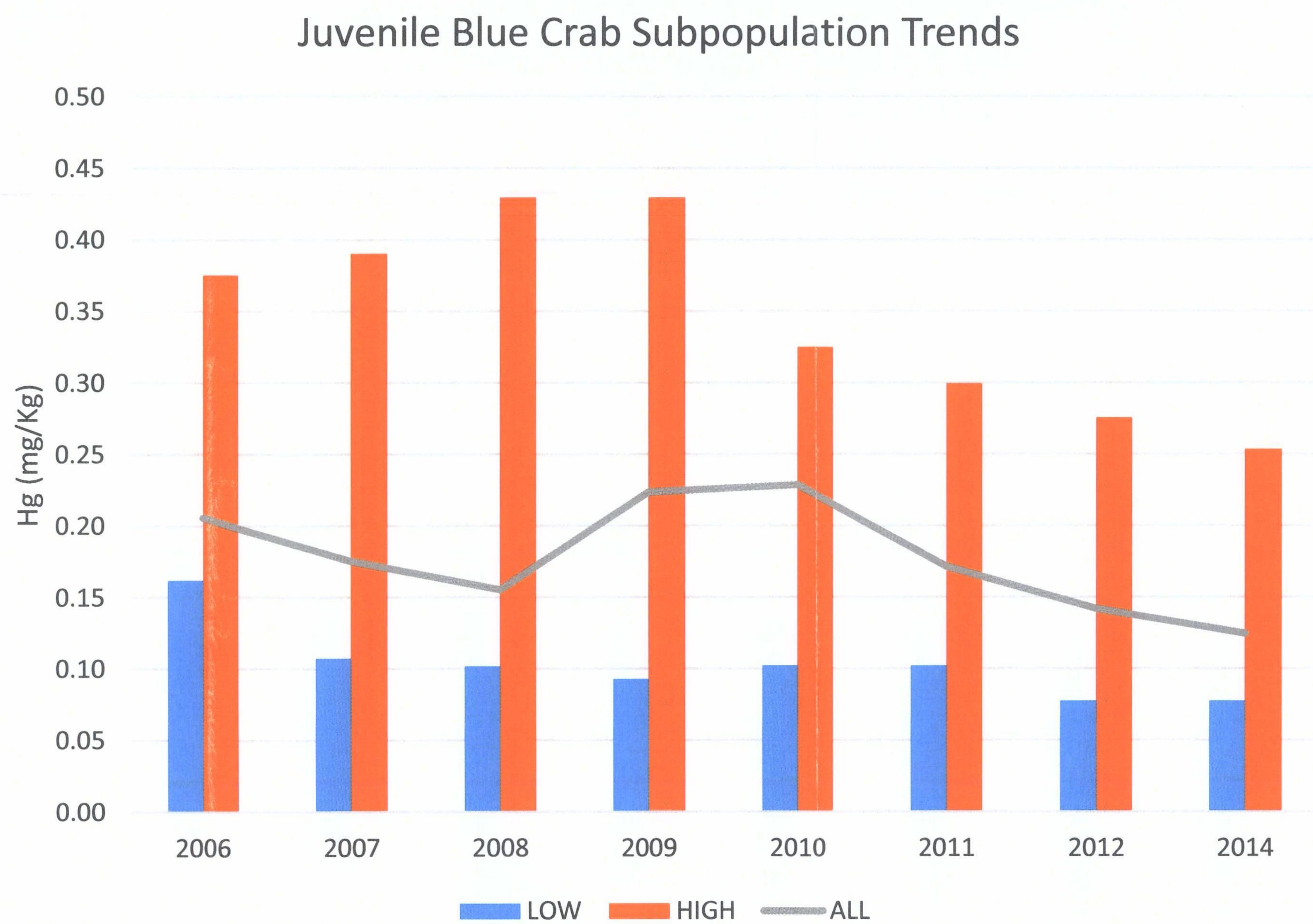
PROJECT: 021684	DATE: MARCH 2015
REV: 0	BY: SMM CHECKED: BLM

ALCOA

Point Comfort Operations







ALCOA

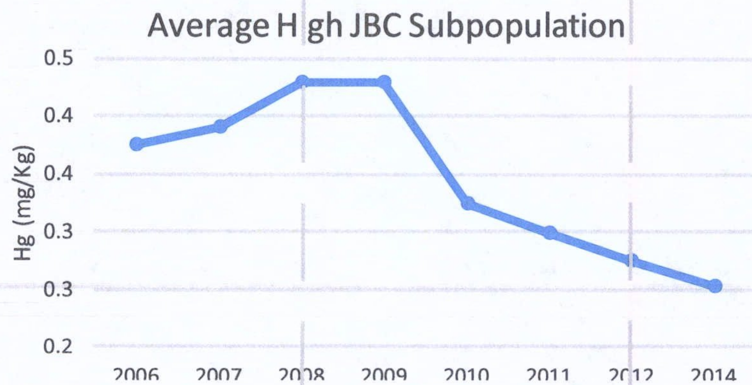
FIGURE 3.4-11

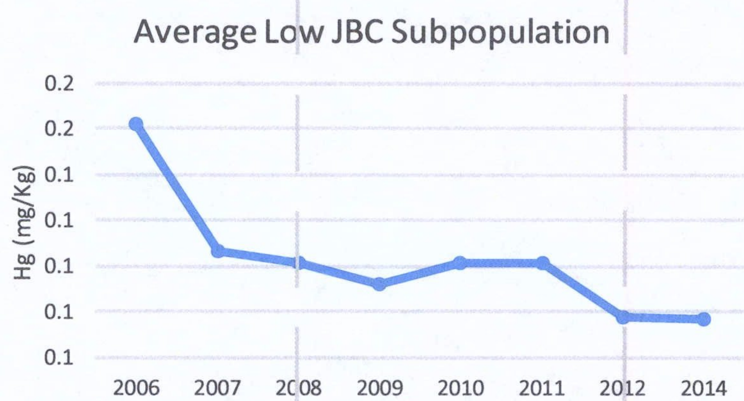
TEMPORAL DISTRIBUTION OF JUVENILE BLUE CRAB SUBPOPULATIONS 2006-2014

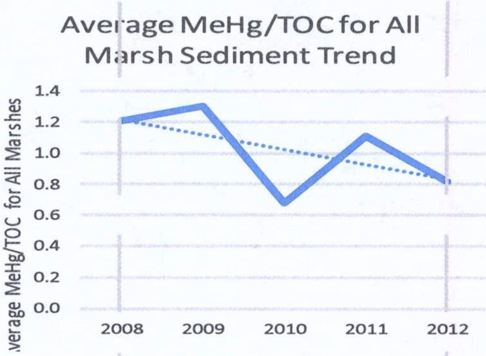
PROJECT: 021684	DATE: MARCH 2015	
REV: 0	BY: SMM	CHECKED: BLM

ALCOA

Point Comfort Operations







ALCOA

FIGURE 3.4-12

COMPARISON OF JUVENILE BLUE CRAB AND MEHG/TOC MARSH SEDIMENT TRENDS

PROJECT: 021684	DATE: MARCH 2015	
REV: 0	BY: SMM	CHECKED: BLM

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APPENDIX A

LAVACA BAY ANNUAL SEDIMENT MONITORING REPORT 2014

LAVACA BAY ANNUAL SEDIMENT MONITORING STUDY FALL 2014

Alcoa Point Comfort Operations
Lavaca Bay Superfund Site

February 2015

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LIST OF ACRONYMS AND ABBREVIATIONS

OMMP	- Operation Maintenance and Monitoring Plan
RAO	- Remedial Action Objective
RAAER	- Remedial Action Annual Effectiveness Report
Hg	- Mercury
ALS	- ALS Laboratory Group/Laboratory
GPS	- Global Positioning System
ID	- Identification

1.0 INTRODUCTION

The approved remedial action plan for the Alcoa/Lavaca Bay Superfund Site focuses on eliminating ongoing sources of mercury to the bay, reducing surface sediment concentrations of mercury and poly aromatic hydrocarbons, and ultimately reducing mercury concentrations in fish tissue. A key factor in the Lavaca Bay remedy is the reduction in sediment mercury concentrations through targeted sediment removal efforts, capping, enhanced natural recovery, and/or natural recovery. In accordance with the provisions of the Lavaca Bay Sediment Remediation and Long-Term Monitoring Plan Operations, Maintenance, and Monitoring Plan (OMMP, Appendix – to the Consent Decree, March 2005), surface sediment within open water and marshes of the Closed Area adjacent to the Point Comfort Facility will be sampled and analyzed annually for total mercury to document the effectiveness of the remedial action plan.

The Consent Decree requires that the marsh sediment monitoring program be performed until all designated marshes have met the Remedial Action Objective (RAO) for marsh sediment (0.25 mg/kg dry weight). An average total mercury concentration is calculated for each marsh and compared to the marsh sediment RAO. Sediment will be monitored in each marsh until the mean mercury concentration in the marsh is less than the RAO.

The RAO for marsh sediments has been met in Marshes 1, 2, 3, 11, and 19, and the RAO for marsh sediments has not been met in Marshes 5, 6, 7, and 15. Marsh 14 and sections of Marsh 15 were removed as part of the remediation dredge event near Dredge Island conducted in 2013. Pursuant to the Consent Decree, annual monitoring of sediments in Marsh 11 was discontinued in 2007. Alcoa elected to continue annual monitoring of sediment in marshes 1, 2, 3, and 19 on a voluntary basis as part of their on-going effort to better understand trends in tissue concentrations in the Closed Area of Lavaca Bay.

The Consent Decree requires that the open water sediment monitoring program be performed until a mean mercury concentration of less than 0.5 mg/kg dry weight is measured in the Closed Area in two consecutive years. As documented in the 2005 RAAER (Alcoa 2007), this occurred in 2004 and 2005 when the average concentrations of 0.293 ppm and 0.276 ppm, respectively, were measured in open water surface sediment samples from the Closed Area. Thus, the performance objective of the open water sediment monitoring program established in the Consent Decree has been met. However, Alcoa has elected to continue monitoring the northern half of the open water sediment sampling grid every other year (even years only) on a voluntary basis as part of their on-going effort to better understand trends in tissue concentrations in the Closed Area of Lavaca Bay.

1.1 PURPOSE AND SCOPE

The voluntary open water sediment monitoring program in 2014 consisted of a single surface sediment sample collected from each of the 58 stations shown in Figure 1. The top 5 cm of sediment were subsampled from an Ekman grab sampler and analyzed for Total Hg. Marshes 1, 2, 3, 5, 6, 7, 15, and 19 were also sampled during the 2014 monitoring event. Marsh 14 was not sampled because the area was dredged down to -3 ft. MLT in 2013. Seven of the ten sample stations included in Marsh 15 were not sampled in 2014 because the areas were dredged in 2013. The OMMP requires that marsh sediment samples be analyzed for Total Mercury. Marsh sample stations are shown in Figures 2a, 2b, and 2c.

This document presents a summary of sampling and analytical methods and the results of the 2014 annual sediment monitoring study. A detailed description of the methods and procedures for this study are presented in the OMMP.

1.2 SITE DESCRIPTION

Alcoa Point Comfort Operations is located in Calhoun County, Texas, adjacent to Lavaca Bay. The area in the bay adjacent to the Alcoa Plant is associated with elevated mercury concentrations in fish tissue and is closed to the taking of finfish and shellfish for consumption by order of the Texas Department of Health. This area is referred to as the Closed Area. The Remedial Investigation identified the Closed Area as an area where open water and marsh sediment contains elevated mercury concentrations. The study area and sampling strategy for the open water sediment samples and marsh sediment samples within the closed area are documented in the OMMP.

N

0 800 1,600 Feet

Legend	Notes
● Open Water Sample Station Locations ### Open Water Sample Station IDs ### Open Water Total Hg Results (0-5 cm mg/kg- dry weight)	2009 DOQQ

Lavaca Bay Annual Sediment Monitoring Study Fall 2014

Open Water Sample Stations and Total Hg Results

Alcoa Point Comfort Operations

Project: 98003-075

Date: 01/06/2015

Figure 1

M:\98003\075\Arc\Open_water\ow_tothg_2014

Legend

- Marsh Sample Station
- ## Marsh Sample Station ID
- ## Marsh Total Hg Result (mg/kg- dry weight) (0-2 cm Depth Interval)

Notes

2009 DOQQ

Lavaca Bay Annual Sediment Monitoring Study Fall 2014

Marsh Sample Stations 1, 2 and 3 and Total Hg Results

Alcoa Point Comfort Operations

Project: 98003-075
Date: 01/16/2015

Figure 2a

M:\98003\075\Arc\Marsh\marsh_14_stations123_Hg.mxd

N

0 85 170 340 Feet

Legend

- Marsh Sample Station
- ## Marsh Sample Station ID
- ## Marsh Total Hg Result (mg/kg- dry weight)

(0-2 cm Depth Interval)

Notes

2009 DOQQ

Lavaca Bay Annual Sediment Monitoring Study Fall 2014

Marsh Sample Stations 5, 6 and 7 and Total Hg Results

Alcoa Point Comfort Operations

Project: 98003-075

Date: 01/16/2015

Figure 2b

M:\98003\075\Arc\Marsh\marsh_14_stations567_Hg.mxd

Legend

- Marsh Sample Station
- ## Marsh Sample Station ID
- ## Marsh Total Hg Result (mg/kg- dry weight)

(0-2 cm Depth Interval)

Notes

2009 DOQQ

Lavaca Bay Annual Sediment Monitoring Study Fall 2014

Marsh Sample Stations 15 and 19 and Total Hg Results

Alcoa Point Comfort Operations

Project: 98003-075
Date: 01/16/2015

Figure 2c

M:\98003\075\Arc\Marsh\marsh_14_stations1519_Hg.mxd

2.0 METHODS

Sediment samples for the 2014 annual sediment monitoring study were collected and processed by Benchmark Ecological Services, Inc. (Benchmark). Samples collected for total mercury were analyzed by ALS Laboratory Group (ALS) in Houston, Texas. One set of open water samples was collected and processed on 2 December 2014 and 8 December 2014. The top 5 cm of sediment at open water samples stations were analyzed for Total Hg. Marsh samples consisted of the top 2 cm of sediment. Marsh samples were collected between 8 and 9 December 2014. Validation and evaluation of the analytical results was conducted by Environmental Chemistry Services, Inc., in Houston, Texas.

2.1 SAMPLE STATIONS

Sample stations were located using coordinates provided by Alcoa. The coordinates were entered into a sub-meter Global Positioning System (GPS), and the GPS was used to position personnel over the sample station. Actual coordinates for the final sample station locations were recorded using the sub-meter differential GPS. Open water sediment sample station locations are shown in Figure 1, and marsh sediment stations are shown in Figures 2a, 2b, and 2c.

2.2 SAMPLE COLLECTION

Open water sediment samples were collected using an Ekman grab sampler. On board the sample vessel, the top five centimeters of sediment were removed from the Ekman using a clean, disposable 60 mL syringe and placed in a pre-cleaned, labeled, 4 ounce sample jar. The lower end of the syringe barrel (needle lock) was cut off to transform the syringe barrel into an open cylinder. The open end of the syringe barrel was placed on the surface of the sediment, and while holding the syringe piston stationary, the barrel was pushed 5 cm into the sediment sample and a 0-5 cm depth sub-sample was collected. The syringe was marked at 5cm to ensure proper depth was sampled. Three sub-samples were removed with the syringe from each Ekman grab to provide the volume of sediment required for analysis. New (clean) syringes were used to collect and process each sample. The sub-samples were thoroughly homogenized by shaking. The sediment samples were analyzed for Total Hg by ALS Laboratory in Houston, Texas.

Marsh sediment samples were collected from the sediment surface using the same method used to collect samples from open water stations. These syringes were marked at a 2cm depth and inserted into the sediment while holding the piston at a stationary level. In some marshes the sediment from 0-2 cm was very fluid and could not be captured in the syringe barrel. At those sites a 5-6 cm deep sample would be collected. The syringes containing a 5-6 cm sample were then inverted, and the piston was used to push out all sediment except sediment between 0-2 cm depth. The handle of a clean plastic spoon was used to scrape away any extra sediment. The remaining 0-2 cm sample was then pushed into a clean, labeled sample jar using the syringe piston. To provide the volume of sediment required for analysis, the process was repeated 5 times in undisturbed sediment at the same location. Disposable plastic spoons were also used to remove the surface 2 cm of sediment when shell or rock did not allow the use of the syringe method. Marsh samples were homogenized by shaking the sealed sample jars.

Sample containers were labeled with the sample ID, station ID, collection date, time, and intended analysis and were placed in re-sealable plastic bags, bubble wrapped, and immediately placed in an insulated chest for storage and transport. Sediment samples designated for Total Mercury were hand-delivered to the ALS Laboratory in Houston for analysis.

Sample station coordinates, sample IDs, and sample collection dates for the open water stations are listed in Table 1. Sample station IDs, sample IDs, and sample collection dates for the marsh stations are listed in Table 2. A Chain of Custody form was completed for all samples collected.

Table 1 - 2014 Open Water Sediment Stations, Sample IDs, Field Data, and Results

Station ID	Easting[1]	Northing[1]	Sample ID	Date	Time	Water Depth[2] (ft)	Total Hg			
							% M	Total Hg (mg/kg)[3]	SQL[4] (mg/kg)	Flag
SMP0049	2750160.72	13428626.01	B12b-SE-16660	12/8/2014	10:33	8.0	38.8	0.204	0.000791	
SMP0048	2749341.99	13429024.37	B12b-SE-16659	12/8/2014	10:25	6.0	61.0	0.343	0.00127	
SMP0047	2748807.44	13428977.97	B12b-SE-16658	12/8/2014	10:18	3.1	48.2	0.154	0.000911	
SUP0132	2748912.93	13429530.71	B12b-SE-16657	12/8/2014	10:11	3.7	47.5	0.286	0.000924	
SMP0040	2748607.57	13429629.64	B12b-SE-16656	12/8/2014	10:05	2.3	20.9	0.202	0.000607	
SUP0129	2748653.19	13430038.66	B12b-SE-16655	12/8/2014	9:53	3.8	42.0	0.264	0.000832	
SUP0043	2748381.31	13430145.45	B12b-SE-16654	12/8/2014	9:50	3.2	37.5	0.416	0.000759	
STO0223	2748566.27	13430537.04	B12b-SE-16653	12/8/2014	9:43	7.6	52.8	0.286	0.00105	
SUP0119	2748160.51	13431081.21	B12b-SE-16652	12/8/2014	9:37	4.8	60.3	0.272	0.00125	
SUP0122	2748176.55	13430578.92	B12b-SE-16651	12/8/2014	9:32	3.5	42.2	0.322	0.000836	
SUP0053	2747611.47	13430462.84	B12b-SE-16650	12/8/2014	9:27	7.6	66.6	0.364	0.00144	
LVB0908	2747563.73	13430780.99	B12b-SE-16649	12/8/2014	9:21	7.0	63.6	0.389	0.00134	
LVB0907	2747376.87	13430961.62	B12b-SE-16648	12/8/2014	9:17	3.1	58.7	0.348	0.00116	
STO0218	2747777.45	13431345.18	B12b-SE-16647	12/8/2014	9:10	3.2	53.6	0.301	0.00104	
SMP0041	2749520.24	13429805.11	B12b-SE-16646	12/2/2014	16:11	5.6	51.4	0.254	0.000988	
LVB0917	2749209.45	13430037.46	B12b-SE-16645	12/2/2014	16:00	1.1	49.7	0.293	0.000994	
SUP0021	2749449.16	13430565.23	B12b-SE-16643	12/2/2014	15:51	3.1	36.2	0.442	0.000759	
SUP0020	2748985.14	13430779.00	B12b-SE-16642	12/2/2014	15:45	3.1	49.8	0.388	0.000997	
SMP0017	2748617.97	13431836.18	B12b-SE-16641	12/2/2014	15:35	5.8	70.6	0.464	0.00164	
LVB0904	2748641.79	13432744.86	B12b-SE-16640	12/2/2014	15:30	5.2	59.1	0.300	0.00117	
SMP0016	2747743.67	13432082.06	B12b-SE-16639	12/2/2014	15:23	4.1	64.8	0.422	0.00137	
SMP0012	2744500.63	13432072.64	B12b-SE-16638	12/2/2014	15:10	4.1	26.4	0.136	0.000650	
SMP0042	2742834.26	13428780.18	B12b-SE-16637	12/2/2014	14:55	5.8	35.2	0.176	0.000766	
STO0130	2743645.76	13428877.90	B12b-SE-16636	12/2/2014	14:49	5.1	31.9	0.123	0.000722	
SMP0044	2744495.61	13428799.31	B12b-SE-16635	12/2/2014	14:45	4.7	35.4	0.178	0.000747	
STO0164	2745314.94	13428861.66	B12b-SE-16634	12/2/2014	14:39	4.0	29.7	0.203	0.000694	
SUP0075	2746026.70	13428849.37	B12b-SE-16633	12/2/2014	14:34	1.8	32.5	0.176	0.000704	
LVB0911	2746239.49	13429015.55	B12b-SE-16632	12/2/2014	14:30	1.3	46.5	0.358	0.000895	
SUP0073	2746147.34	13429166.00	B12b-SE-16631	12/2/2014	14:24	2.1	36.3	0.985	0.000771	
STO0189	2746122.89	13429696.86	B12b-SE-16630	12/2/2014	14:18	2.1	24.9	0.196	0.000639	
SMP0038	2745310.67	13429626.01	B12b-SE-16628	12/2/2014	14:11	4.2	52.9	0.245	0.00104	

Table 1 - 2014 Open Water Sediment Stations, Sample IDs, Field Data, and Results

Station ID	Easting[1]	Northing[1]	Sample ID	Date	Time	Water Depth[2] (ft)	Total Hg			
							% M	Total Hg (mg/kg)[3]	SQL[4] (mg/kg)	Flag
STO0151	2744488.37	13429700.19	B12b-SE-16627	12/2/2014	14:06	4.4	38.4	0.268	0.000813	
SMP0036	2743588.26	13429860.32	B12b-SE-16626	12/2/2014	14:00	4.6	32.4	0.120	0.000702	
STO0113	2742830.84	13429691.99	B12b-SE-16625	12/2/2014	13:32	5.0	36.0	0.0956	0.000763	
SMP0026	2743046.10	13430435.29	B12b-SE-16624	12/2/2014	13:28	4.1	34.5	0.0891	0.000742	
STO0128	2743671.29	13430514.72	B12b-SE-16623	12/2/2014	13:20	4.3	39.7	0.126	0.000800	
SMP0028	2744496.84	13430472.30	B12b-SE-16622	12/2/2014	13:16	4.5	54.9	0.291	0.00110	
STO0162	2745304.18	13430536.26	B12b-SE-16621	12/2/2014	13:09	4.1	51.7	1.25	0.00103	
LVB0909	2746287.45	13430370.58	B12b-SE-16620	12/2/2014	13:00	1.1	25.9	0.145	0.000654	
SMP0031	2746745.14	13430803.08	B12b-SE-16619	12/2/2014	12:55	0.9	48.8	0.308	0.000961	
SUP0107	2746505.79	13430908.03	B12b-SE-16618	12/2/2014	12:46	1.2	32.8	0.293	0.000718	
SUP0106	2746515.50	13431130.39	B12b-SE-16617	12/2/2014	12:40	2.0	34.0	0.221	0.000756	
SUP0110	2747151.46	13431366.35	B12b-SE-16616	12/2/2014	12:20	2.6	46.8	0.282	0.000917	
STO0191	2746137.52	13431357.50	B12b-SE-16615	12/2/2014	12:12	2.8	50.3	0.196	0.000959	
SMP0020	2745308.37	13431267.53	B12b-SE-16614	12/2/2014	11:56	3.6	39.4	0.259	0.000785	
STO0153	2744498.74	13431335.51	B12b-SE-16613	12/2/2014	11:49	4.1	42.6	0.239	0.000556	
SMP0018	2743672.48	13431270.19	B12b-SE-16612	12/2/2014	11:42	4.2	27.7	0.110	0.000661	
STO0160	2745331.59	13432164.74	B12b-SE-16611	12/2/2014	11:31	3.5	39.5	0.199	0.000793	
SMP0014	2746128.08	13432083.73	B12b-SE-16609	12/2/2014	11:19	2.9	56.9	0.386	0.00112	
STO0203	2746943.76	13432164.00	B12b-SE-16608	12/2/2014	11:11	2.2	51.7	0.516	0.00102	
SUP0016	2747386.06	13432660.32	B12b-SE-16607	12/2/2014	11:05	2.3	47.0	0.290	0.000926	
SMP0009	2746969.43	13432891.05	B12b-SE-16606	12/2/2014	10:59	2.8	54.7	0.478	0.00109	
STO0193	2746141.21	13432989.67	B12b-SE-16605	12/2/2014	10:55	2.1	48.4	0.499	0.000911	
SMP0007	2745321.74	13432887.94	B12b-SE-16604	12/2/2014	10:45	3.1	29.7	0.164	0.000678	
LVB0901	2744487.49	13432733.80	B12b-SE-16603	12/2/2014	10:39	2.1	27.1	0.110	0.000680	
LVB0902	2745302.09	13433638.10	B12b-SE-16602	12/2/2014	10:15	2.1	26.4	0.0822	0.000652	
SMP0004	2746178.72	13433670.96	B12b-SE-16601	12/2/2014	10:08	2.3	32.2	0.168	0.000726	
STO0201	2746943.64	13433778.25	B12b-SE-16600	12/2/2014	9:58	2.2	31.5	0.201	0.000705	
Average								0.297		

[1]Coordinates reported in NAD 1983, State Plane, Texas South Central, Feet.
[2] Water Depths are not calibrated to tidal level.
[3]Results reported as dry weight.
[4]SQL - Sample Quantitation Limit.

Table 2 - 2014 Marsh Sediment Stations, Sample IDs, and Results

Habitat	Station ID	Sample ID	Date	Total Hg			
				% M	(mg/kg)[1] dry wt	SQL[2] (mg/kg)	Total Hg Flags
Marsh 1	Marsh-1-1R	B12b-SE-16719	12/9/2014	28.7	0.121	0.000683	
	Marsh-1-2R	B12b-SE-16717	12/9/2014	29.4	0.108	0.000687	
	Marsh-1-3R	B12b-SE-16718	12/9/2014	30.3	0.110	0.000686	
	Marsh-1-4R	B12b-SE-16716	12/9/2014	28.6	0.104	0.000687	
	Marsh-1-5R	B12b-SE-16715	12/9/2014	29.9	0.0814	0.000692	
	Marsh-1-6R	B12b-SE-16714	12/9/2014	30.3	0.0981	0.000717	
	Marsh-1-7R	B12b-SE-16713	12/9/2014	29.3	0.0969	0.000686	
	Marsh-1-8R	B12b-SE-16712	12/9/2014	28.9	0.104	0.000661	
	Marsh-1-9R	B12b-SE-16711	12/9/2014	30.0	0.124	0.000691	
	Marsh-1-10R	B12b-SE-16710	12/9/2014	27.6	0.115	0.000667	
	Marsh-1-11R	B12b-SE-16709	12/9/2014	30.3	0.0742	0.000676	
	Marsh-1-12R	B12b-SE-16708	12/9/2014	28.0	0.0413	0.000690	
	Average				**0.0982**		
Marsh 2	Marsh-2-1R	B12b-SE-16707	12/9/2014	25.9	0.0259	0.000652	
	Marsh-2-2R	B12b-SE-16706	12/9/2014	31.7	0.0734	0.000704	
	Marsh-2-3R	B12b-SE-16705	12/9/2014	35.7	0.0721	0.000743	
	Marsh-2-4R	B12b-SE-16704	12/9/2014	29.7	0.0743	0.000685	
	Marsh-2-5R	B12b-SE-16703	12/9/2014	32.5	0.0633	0.000711	
	Marsh-2-6R	B12b-SE-16702	12/9/2014	30.8	0.0609	0.000725	
	Average				**0.0617**		
Marsh 3	Marsh-3-1R	B12b-SE-16701	12/9/2014	23.2	0.0574	0.000643	
	Marsh-3-2R	B12b-SE-16700	12/9/2014	32.0	0.115	0.000695	
	Marsh-3-3R	B12b-SE-16699	12/9/2014	35.2	0.0630	0.000752	
	Marsh-3-4R	B12b-SE-16698	12/9/2014	28.7	0.0579	0.000697	
	Marsh-3-5R	B12b-SE-16697	12/9/2014	39.5	0.185	0.000806	
	Marsh-3-6R	B12b-SE-16696	12/9/2014	32.4	0.0774	0.000715	
	Average				**0.0926**		
Marsh 5	Marsh-5-1R	B12b-SE-16679	12/8/2014	30.2	0.122	0.000683	
	Marsh-5-2R	B12b-SE-16680	12/8/2014	42.6	0.385	0.000846	
	Marsh-5-3R	B12b-SE-16681	12/8/2014	41.6	0.407	0.000830	
	Marsh-5-4R	B12b-SE-16682	12/8/2014	28.8	0.118	0.000698	
	Marsh-5-5R	B12b-SE-16683	12/8/2014	51.7	0.260	0.00102	
	Marsh-5-6R	B12b-SE-16684	12/8/2014	36.3	0.0930	0.000761	
	Average				**0.2308**		

Table 2 - 2014 Marsh Sediment Stations, Sample IDs, and Results

Habitat	Station ID	Sample ID	Date	Total Hg			
				% M	(mg/kg)[1] dry wt	SQL[2] (mg/kg)	Total Hg Flags
Marsh 6	Marsh-6-1R	B12b-SE-16685	12/8/2014	34.0	0.0657	0.000713	
	Marsh-6-2R	B12b-SE-16686	12/8/2014	31.1	0.237	0.000701	
	Marsh-6-3R	B12b-SE-16687	12/8/2014	54.7	0.334	0.00107	
	Marsh-6-4R	B12b-SE-16688	12/8/2014	50.3	0.248	0.000971	
	Marsh-6-5R	B12b-SE-16689	12/8/2014	45.7	1.72	0.00451	
	Marsh-6-6R	B12b-SE-16691	12/8/2014	34.1	0.114	0.000732	
	Marsh-6-7R	B12b-SE-16692	12/8/2014	35.3	0.172	0.000740	
	Marsh-6-8R	B12b-SE-16693	12/8/2014	40.6	0.203	0.000798	
	Marsh-6-9R	B12b-SE-16694	12/8/2014	33.7	0.264	0.000736	
	Marsh-6-10R	B12b-SE-16695	12/8/2014	38.1	0.0502	0.000773	
	Average				**0.3408**		
Marsh 7	Marsh-7-1R	B12b-SE-16661	12/8/2014	30.2	0.00129	0.000699	J
	Marsh-7-2R	B12b-SE-16662	12/8/2014	29.1	0.203	0.000672	
	Marsh-7-3R	B12b-SE-16663	12/8/2014	29.4	0.0963	0.000687	
	Marsh-7-4R	B12b-SE-16664	12/8/2014	23.3	0.0955	0.000635	
	Marsh-7-5R	B12b-SE-16665	12/8/2014	39.1	0.201	0.000781	
	Marsh-7-6R	B12b-SE-16666	12/8/2014	39.3	0.235	0.000809	
	Average				**0.1387**		
Marsh 15	Marsh-15-1R	NA	NA	NA	NA	NA	
	Marsh-15-2R	NA	NA	NA	NA	NA	
	Marsh-15-3R	NA	NA	NA	NA	NA	
	Marsh-15-4R	NA	NA	NA	NA	NA	
	Marsh-15-5R	B12b-SE-16667	12/8/2014	24.9	0.0328	0.000634	
	Marsh-15-6R	NA	NA	NA	NA	NA	
	Marsh-15-7R	NA	NA	NA	NA	NA	
	Marsh-15-8R	NA	NA	NA	NA	NA	
	Marsh-15-9R	B12b-SE-16668	12/8/2014	20.3	0.0340	0.000633	
	Marsh-15-10R	B12b-SE-16669	12/8/2014	28.8	0.0343	0.000683	
	Average				**0.0342**		
Marsh 19	Marsh-19-1R	B12b-SE-16671	12/8/2014	20.5	0.0566	0.000632	
	Marsh-19-2R	B12b-SE-16672	12/8/2014	17.1	0.0422	0.000577	
	Marsh-19-3R	B12b-SE-16673	12/8/2014	39.2	1.31	0.00160	
	Marsh-19-4R	B12b-SE-16674	12/8/2014	31.0	0.0921	0.000695	
	Marsh-19-5R	B12b-SE-16675	12/8/2014	35.3	0.165	0.000759	
	Marsh-19-6R	B12b-SE-16676	12/8/2014	20.1	0.0612	0.000599	
	Marsh-19-7R	B12b-SE-16677	12/8/2014	27.1	0.213	0.000658	
	Marsh-19-8R	B12b-SE-16678	12/8/2014	11.8	0.0382	0.000546	
	Average				**0.2473**		

[1]Analytical results presented in dry weight.
[2]SQL - Sample Quantitation Limit.
J - Analyte detected below quantitation limits.

3.0 ANALYTICAL RESULTS

Sediment samples from open water stations (0-5 cm) and marsh stations (0-2 cm) were analyzed for Total Hg (Method 7471A) and percent moisture by ALS in Houston, Texas. Total mercury results were reported in mg/kg as dry weight. Benchmark received all final data packets from ALS Laboratory on 29 December 2014. Data validation and evaluation was completed by Environmental Chemistry Services on 13 January 2015.

Open water sediment station numbers, sample IDs, analytical results and percent moisture are listed for each sample in Table 1. Marsh sediment station numbers, sample identification numbers, and analytical results are listed in Table 2. The analytical results for the individual samples from each marsh were mathematically averaged in this report to produce the average mercury concentration for each marsh as required by the OMMP. Open water and marsh sediment analytical results are shown in the Figures and listed in Table 3.

Analytical results for sediment samples were validated according to the Standard Operating Procedure Data Validation (Appendix E) in the Quality Assurance Project Plan Alcoa (Point Comfort)/Lavaca Bay Superfund Site (22 August 2005). All analytical results were validated and may be included in the data used to evaluate the effectiveness of the approved remedy and to meet monitoring requirements specified in the Consent Decree.

Table 3 – Figures Showing Open Water and Marsh Sediment Results

Study Area	Analyte	Figure ID
Open Water Stations	Total Hg	Figure 1
Marshes 1, 2, and 3	Total Hg	Figure 2a
Marshes 5, 6, and 7	Total Hg	Figure 2b
Marshes15 and 19	Total Hg	Figure 2c

APPENDIX B

LAVACA BAY FINFISH AND SHELLFISH MONITORING REPORT 2014

LAVACA BAY FINFISH AND SHELLFISH MONITORING REPORT 2014

Alcoa Point Comfort Operations
Lavaca Bay Superfund Site

February 2015

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1.0 INTRODUCTION

A key factor in the success of the Lavaca Bay Remedy is the reduction in tissue mercury concentrations through targeted source control efforts, sediment removal efforts, capping, enhanced natural recovery, and/or natural recovery. The Consent Decree (March 2005) for the Lavaca Bay Superfund Site requires annual monitoring of finfish and shellfish for total mercury.

1.1 PURPOSE AND SCOPE

The objective of the program is to monitor the recovery of mercury levels in finfish and shellfish. The monitoring data collected under this program are used to assess the effectiveness of remedial actions implemented at the Site. This document presents a summary of sampling and analytical methods and the results of the 2014 monitoring study. A detailed description of the methods and procedures for this study are presented in the Lavaca Bay Finfish and Shellfish Operations, Maintenance, and Monitoring Plan (OMMP, Appendix I of the Consent Decree March 2005).

1.2 SITE DESCRIPTION

The Alcoa Point Comfort Operations Plant is located in Calhoun County, Texas, adjacent to Lavaca Bay. An area in the bay adjacent to the Alcoa Plant is associated with elevated mercury concentrations in fish tissue and is closed to the taking of finfish and blue crabs for consumption by order of the Texas Department of Health. This area is referred to as the "Closed Area" and is delineated in the figures contained in this report. The monitoring area specified in the OMMP includes both the Closed Area and designated areas outside the Closed Area (termed the "Adjacent Area" or the "Open Area").

2.0 METHODS

Red drum and juvenile blue crab tissue samples for the 2014 Finfish and Blue Crab Monitoring Study were collected and processed by Benchmark Ecological Services, Inc., and analyzed by Battelle Marine Sciences Laboratory (Battelle) in Sequim, Washington. Samples were collected between 29 September 2014 and 18 November 2014. Validation and evaluation of the analytical results were conducted by Environmental Chemistry Services, Inc., in Houston, Texas.

2.1 SAMPLE STATIONS

A total of 30 red drum samples were collected from 12 stations inside the Closed Area (Figure 1), and 30 samples were collected from 10 stations outside the Closed Area (Adjacent Area) (Figure 2). A total of 30 juvenile blue crab composite samples were collected from 10 stations inside the Closed Area (Figure 3). Thirty composite samples were collected from 10 stations outside the Closed Area (Adjacent Area) (Figure 4).

As described in the OMMP (p. 3-3), the objectives for selecting sample stations are to achieve equal geographic representation of the four quadrants (or zones) within the Closed Area. As also stated in the OMMP (p. 3-3), netting success will be variable and stations from which samples are collected and the number of samples per station will vary. The actual numbers of stations sampled for red drum and juvenile blue crab during the 2014 monitoring event are shown for each of the four Closed Area zones in Figures 1 and 3, respectively. Table 1 shows the number of red drum and juvenile blue crab samples collected per zone.

Table 1 – Number of Red Drum and Juvenile Blue Crab Samples Analyzed per Zone

Zone	Red Drum Samples	Juvenile Blue Crab Samples
Zone 1	4	3
Zone 2	15	15
Zone 3	5	3
Zone 4	6	9

The distribution of red drum samples ranged from 4 samples in Zone 1 to 15 samples in Zone 2. The number of juvenile blue crab samples ranged from 3 samples in Zones 1 and 3 (3 samples per zone), to 15 samples in Zone 2. The uneven distribution of samples among the zones was due to the uneven distribution of suitable habitat within the Zones.

The primary objective for the placement of both Adjacent Area and Closed Area monitoring stations was to achieve uniform distribution of stations within the sampling areas. The goal was to establish stations that would provide a geographically uniform distribution of samples (OMMP, p. 3-3). The general goal for both sampling areas was to collect approximately the same number of samples from 10 to 15 stations, distributed evenly over the sampling area. Whenever possible, red drum and juvenile blue crab samples were collected from the same stations.

Legend

- Red Drum Stations
- ### Total Hg (ug/g)
- Zone Boundaries
- Closed Area Boundary

Notes

2009 0.5m DOQQ (Point Comfort)
Calhoun County, Texas

Lavaca Bay Finfish and Shellfish Monitoring Report 2014

Closed Area Red Drum Sample Stations and Analytical Results

ALCOA PCO

Project: 98003-074
Date: 01/16/2015

Figure 1

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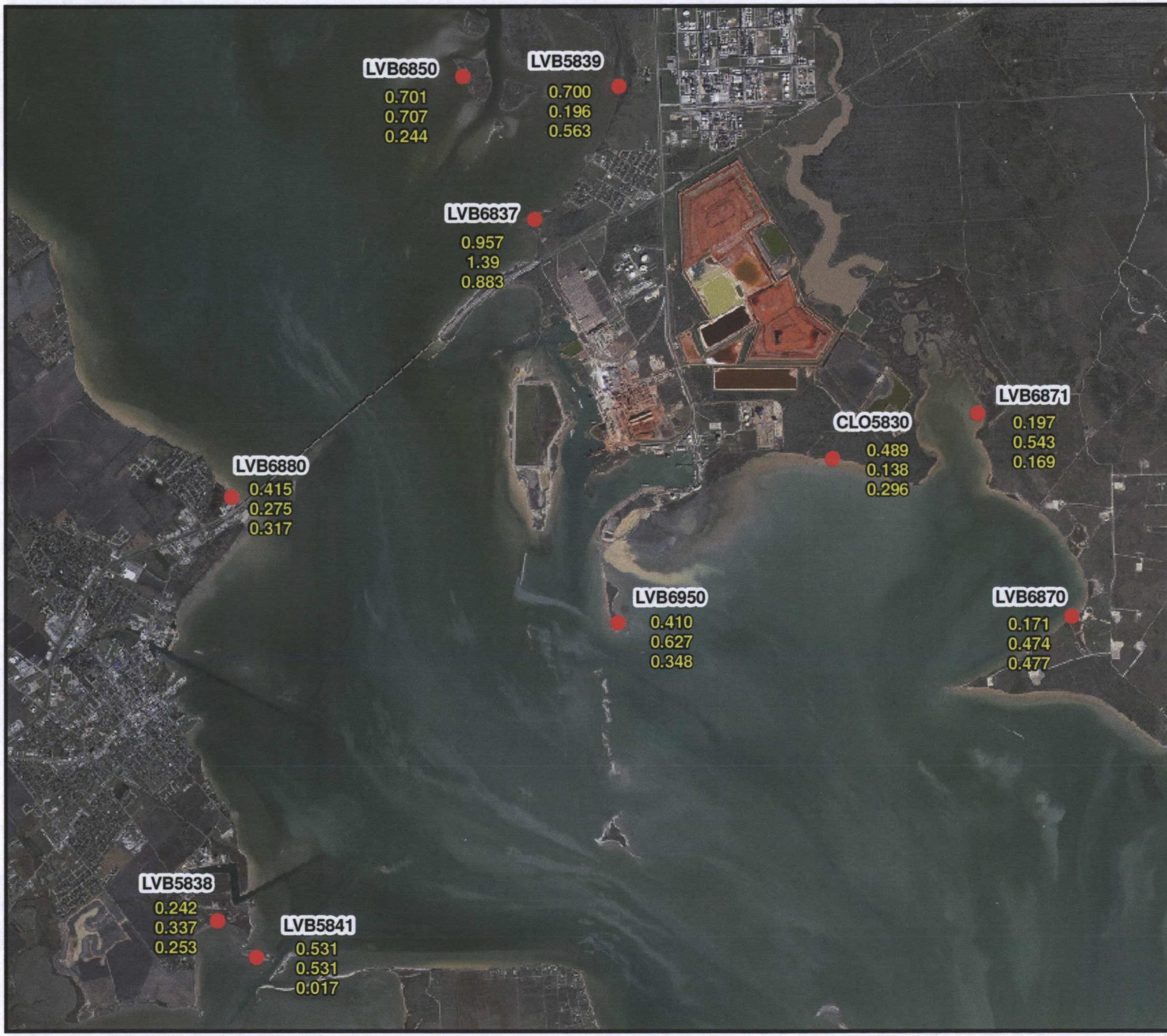


N

0 0.75 1.5 Miles

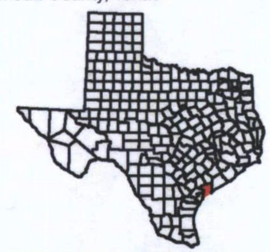
Legend

Red Drum Stations

Total Hg (ug/g)

Notes

2009 0.5m DOQQ (Point Comfort)
Calhoun County, Texas



Lavaca Bay Finfish and Shellfish Monitoring Report 2014

Adjacent Area Red Drum Sample Stations and Analytical Results

ALCOA PCO

Project: 98003-074
Date: 01/15/2015

Figure 2

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N

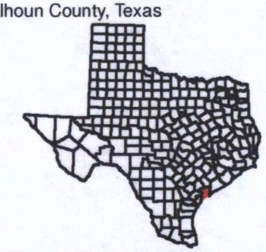
0 1,500 3,000 Feet

Legend

- Juvenile Blue Crab Stations
- ### Total Hg (ug/g)
- Zone Boundaries
- Closed Area

Notes

2009 0.5m DOQQ (Point Comfort)
Calhoun County, Texas



Lavaca Bay Finfish and Shellfish Monitoring Report 2014

Closed Area Juvenile Blue Crab Sample Stations and Analytical Results

ALCOA PCO

Project: 98003-074
Date: 01/15/2015

Figure 3

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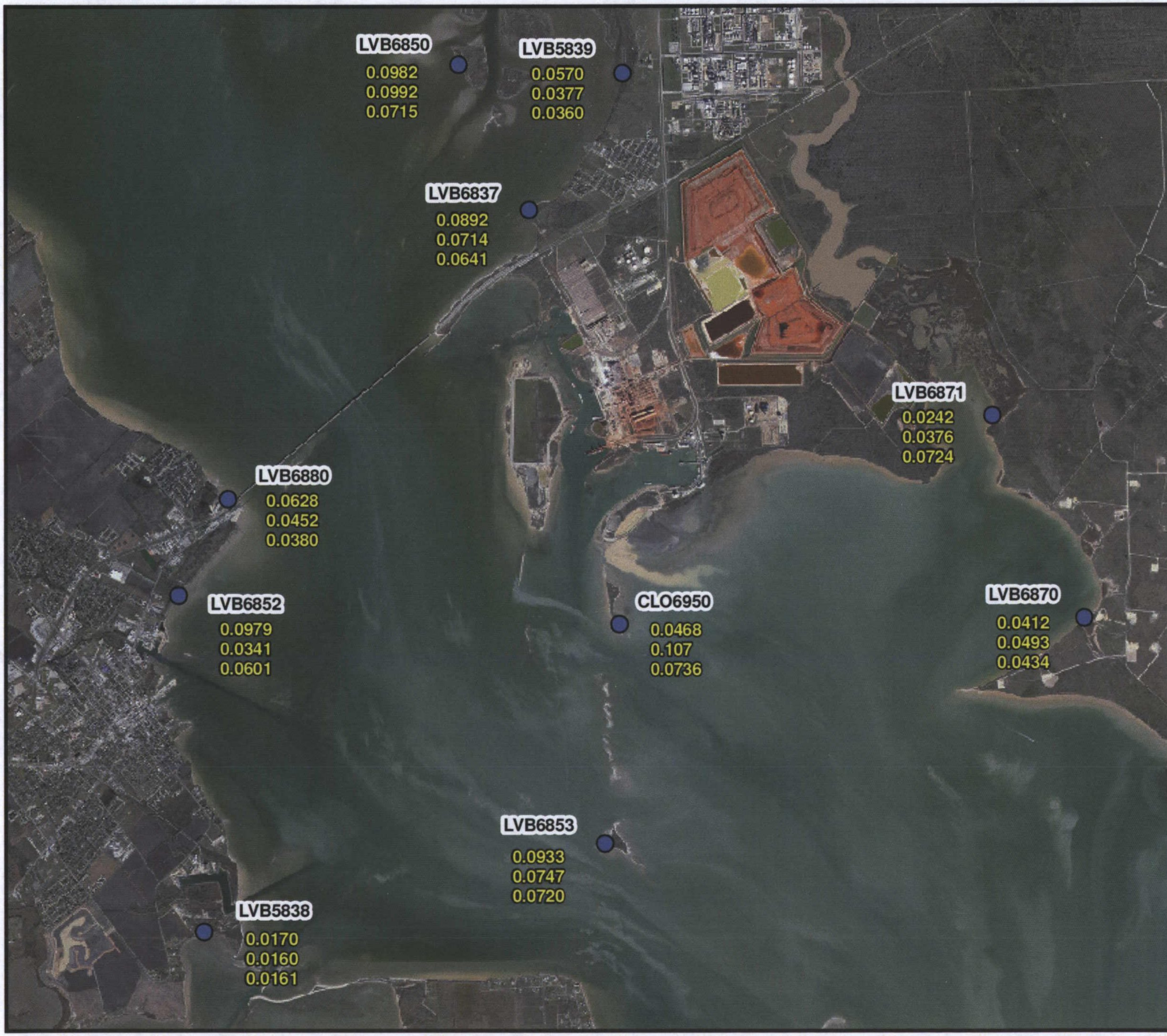


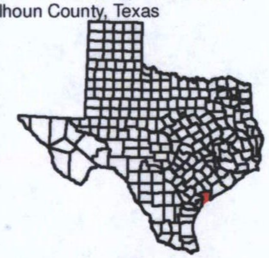
Legend

Juvenile Blue Crab Stations

Total Hg (ug/g)

Notes

2009 0.5m DOQQ (Point Comfort)
Calhoun County, Texas



Lavaca Bay Finfish and Shellfish Monitoring Report 2014

Adjacent Area Juvenile Blue Crab Sample Stations and Analytical Results

ALCOA PCO

Project: 98003-074

Date: 01/15/2015

Figure 4

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2.2 SAMPLE COLLECTION

2.2.1 Red Drum

Red drum were collected from the Closed Area and Adjacent Areas between 7 October 2014 and 18 November 2014. In the Closed Area, 30 red drum tissue samples were collected from the 12 sample stations shown in Figure 1. In the Adjacent Areas, 30 red drum tissue samples were collected from the 10 sample stations shown on Figure 2. Sampling was conducted from a 20-foot aluminum boat. A Global Positioning System (GPS) was used to determine the positions of all sample stations.

Red drum specimens were collected using gill nets (6 ft. x 150 ft.) with 6-inch stretch mesh. Multiple nets (1-3) were set at each sample station in the evening, and the nets were allowed to fish over night. The nets were retrieved the following morning, and the fish were removed. Gill nets were set at stations shown in Figures 1 and 2, and at two additional stations (CLO1414 and CLO6802), where no usable red drum were collected. Red drum with total lengths between 508 and 711 mm (20 to 28 inches) were removed from the gill nets, placed in plastic bags, and labeled with station identification (ID), date, and time. Labeled bags were immediately placed in an insulated box with ice for storage. Undersized and oversized red drum and specimens of other species were returned to the water.

The following information (at a minimum) was recorded on data sheets:

Station ID	Initials of field personnel	End date
Gear type	Set date	End time
Water depth	Set time	List of photo log entries

2.2.2 Juvenile Blue Crab

Juvenile blue crabs were collected from the Closed Area and Adjacent Areas between 29 of September and 21 of October 2014. In the Closed Area, 30 blue crab tissue samples were collected from 10 historical monitoring stations (Figure 3). In the Adjacent Area, 30 blue crab tissue samples were collected from 10 sample stations (Figure 4). Sampling was conducted from a 20-foot aluminum boat. A Global Positioning System was used to determine the positions of all sample stations.

Juvenile blue crabs were collected using barrel type minnow traps baited with commercial crab bait (Gulf menhaden, Mullet, and Sardines) or prepared chicken, when fish was not available. Traps were checked every 24 to 72 hours. Crabs were removed from the traps, inspected, and sorted by size in a clean sorting tray. Injured, dead, undersized, and oversized blue crabs as well as by-catch were returned to the water. Crabs that were between 25-75 mm in width were retained. Width is the distance between the tips of the primary lateral spines. Crabs collected in the field were placed in resealable bags labeled with station ID, date, and collection time. Labeled bags were immediately placed in an insulated chest with ice. Data sheets were used to record the same sample site information listed above for finfish samples.

2.3 SAMPLE PROCESSING

2.3.1 Red Drum

Red drum samples were processed within 24 hours of collection in the Alcoa Clean Lab (located at the Alcoa Point Comfort Facility) and remained on ice until processing was complete. Fish were weighed, measured, scaled, and rinsed with deionized (DI) water. Data were recorded on tissue processing data sheets and are listed in Table 2 (Closed Area specimens) and Table 3 (Adjacent Area specimens). After scaling, fish were placed in clean plastic bags and returned to cold storage until all fish were scaled.

In the clean lab, the fish were again rinsed with DI water and placed on pre-cleaned Teflon cutting boards. The right fillet (with skin) was removed with pre-cleaned hexane-rinsed stainless steel fillet knives. The fillets were cut into small cubes, mixed, and weighed (in grams). A 50-100g sub-sample was removed, weighed, and placed in a pre-cleaned sample container supplied by the analytical laboratory. Fillet weights and sample weights were recorded on sample processing data sheets and are listed in Tables 2 and 3 for Closed Area and Adjacent Area specimens, respectively. Sample jars were labeled with sample station ID, sample number, species, collection date, time, and initials of processing personnel.

The sample and container were placed into resealable plastic bags and stored at 4 ±2 degrees Celsius. A Chain of Custody form was completed for all samples collected.

2.3.2 Juvenile Blue Crab

Blue crabs were processed within 24 hours of collection in the Alcoa Clean Lab (located at the Alcoa Point Comfort Facility) and remained on ice or in a refrigerator until processing was complete. In the laboratory, crabs were rinsed with DI water and sorted by size on pre-cleaned Teflon cutting boards. Individual blue crabs were measured, weighed, and placed into sample containers. Each sample was a composite of 5 crabs measuring 25 to 75 mm in width. Individual crab weights and total sample weights were recorded on sample processing data sheets. Data associated with Closed Area and Adjacent Area monitoring are listed in Tables 4 and 5 respectively. Sample containers were labeled with the station ID, sample ID, collection date, and time and were placed in two resealable plastic bags in a secure refrigerator in the Clean Lab. Samples were shipped overnight to Battelle for analysis.

3.0 ANALYTICAL RESULTS

Red drum and juvenile blue crab samples were analyzed for total mercury and percent moisture by Battelle. Total mercury results were reported in µg/g as wet weight. Benchmark received the final data packet from the analytical laboratory 14 January 2015, and Analytical QA/QC was completed by Environmental Chemistry Services on 21 January 2015. Copies of the analytical data packets are included in Attachment A. Analytical results for red drum collected from the Closed Area are presented in Table 2, and the results for red drum from the Adjacent Area are presented in Table 3. Analytical results for juvenile blue crabs collected from the Closed Area monitoring stations are presented in Table 4, and results for juvenile blue crabs from the Adjacent Areas are presented in Table 5.

Analytical results for both red drum and juvenile blue crab samples were validated according to the Standard Operating Procedure Data Validation (Appendix E) in the Quality Assurance Project Plan Alcoa (Point Comfort)/Lavaca Bay Superfund Site (August 22, 2005). All analytical results were validated and may be included in the data used to evaluate the effectiveness of the approved remedy and to meet monitoring requirements specified in the Consent Decree.

Historically, Alcoa red drum tissue moisture content values are above 75%. A review of the Alcoa data for 745 red drum collected between 1998 and 2012, showed the average percent moisture of tissue was 79.3%, and it ranged between 69.4% and 85.6%. Ninety-five percent of all values for this period fell between 74.8% and 82.0%. Review of the 2014 data indicated three anomalously low moisture content values as follows:

Station ID	Sample ID	Moisture Content
CLO5804	B12b-TF-15257	67.6%
LVB6837	B12b-TF-15258	62.9%
LVB6837	B12b-TF-15259	66.1%

The moisture content of tissue is used to convert the Hg concentrations reported on a dry weight basis to wet weight Hg concentrations, which are then used in risk assessment. The atypically low moisture content values reported for the three samples listed above suggests that the samples may have been treated differently and the results may not be reliable. The results will be included in this report but should not be used in the evaluation of mercury trends in red drum samples.

Table 2 - Closed Area Red Drum Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Total Length (mm)	Standard Length (mm)	Total Weight (g)	Tissue Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
CLO5815	B12b-TF-15241	10/8/2014	8:32	595	490	2050	262.7	87.1	79.1%	1.61	
CLO5815	B12b-TF-15242	10/8/2014	8:32	665	540	2780	345.4	74.8	79.8%	1.35	
CLO5815	B12b-TF-15243	10/7/2014	18:13	536	441	1430	193.0	75.0	80.0%	1.15	
LVB5513	B12b-TF-15244	10/8/2014	10:05	540	450	1680	119.2	45.9	78.4%	1.13	
LVB5513	B12b-TF-15245	10/7/2014	17:40	610	500	2250	345.0	72.1	79.3%	0.847	
CLO5802	B12b-TF-15247	10/8/2014	9:23	535	450	1490	200.6	59.8	78.8%	1.30	
LVB5518	B12b-TF-15248	10/9/2014	8:45	561	454	1700	192.5	62.3	79.2%	0.689	
LVB5518	B12b-TF-15249	10/9/2014	8:45	545	450	1610	190.6	68.8	78.7%	0.453	
CLO5814	B12b-TF-15250	10/15/2014	11:47	520	401	1350	106.9	46.1	73.8%	0.632	
CLO5802	B12b-TF-15251	10/15/2014	10:00	531	424	1420	169.2	61.4	72.1%	1.58	
CLO5802	B12b-TF-15252	10/15/2014	10:00	682	555	3430	399.4	76.3	74.4%	1.30	
CLO5803	B12b-TF-15253	10/15/2014	9:20	570	450	1790	183.0	65.8	77.4%	1.12	
CLO5803	B12b-TF-15254	10/15/2014	9:20	694	560	3560	268.6	71.7	71.6%	1.95	
CLO5814	B12b-TF-15255	10/16/2014	11:30	582	455	1790	157.7	66.8	76.5%	0.796	
CLO5814	B12b-TF-15256	10/16/2014	11:30	535	432	1490	131.6	70.3	76.3%	0.748	
CLO5804	B12b-TF-15257	10/16/2014	10:08	587	465	1830	208.7	64.6	67.6%	3.65	
CLO5818	B12b-TF-15269	10/28/2014	10:15	514	400	1218	130.2	65.5	78.3%	1.10	
CLO5818	B12b-TF-15270	10/28/2014	10:15	685	560	3807	313.4	67.2	79.9%	0.807	
CLO5818	B12b-TF-15271	10/29/2014	9:00	702	560	3352	434.0	65.8	78.6%	0.641	
CLO5806	B12b-TF-15274	11/4/2014	8:08	585	465	1857	154.1	67.4	79.5%	2.09	
CLO5806	B12b-TF-15275	11/4/2014	8:08	659	556	2648	186.7	68.2	80.0%	1.52	
LVB5508	B12b-TF-15276	11/4/2014	8:00	512	413	1252	189.8	66.0	80.3%	1.12	
LVB5508	B12b-TF-15277	11/4/2014	8:00	524	431	1368	293.8	60.6	79.5%	1.07	
CLO5900	B12b-TF-15278	11/4/2014	8:50	566	447	1943	288.5	71.4	79.6%	1.41	
LVB5504	B12b-TF-15284	11/11/2014	8:30	689	545	3170	410.9	71.9	79.8%	1.14	
LVB5513	B12b-TF-15285	11/11/2014	9:02	575	460	1840	207.8	62.5	79.3%	0.990	
CLO5803	B12b-TF-15291	11/13/2014	11:45	681	540	3260	419.9	70.2	76.2%	0.232	
CLO5806	B12b-TF-15295	11/14/2014	8:55	706	570	3130	324.4	73.4	77.9%	0.414	
LVB5504	B12b-TF-15300	11/18/2014	9:49	600	480	2200	231.1	69.0	80.0%	1.17	
LVB5504	B12b-TF-15301	11/18/2014	9:49	669	535	3430	386.4	67.5	78.5%	0.255	
Average Values				**599**	**483**	**2204**	**248.2**	**67.2**	**77.7%**	**1.142**	

Table 3 - Adjacent Area Red Drum Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Total Length (mm)	Standard Length (mm)	Total Weight (g)	Tissue Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
LVB6837	B12b-TF-15258	10/16/2014	9:15	614	480	2120	162.1	86.3	62.9%	0.958	J-
LVB6837	B12b-TF-15259	10/16/2014	9:15	646	510	2960	236.9	76.0	66.1%	1.39	J-
LVB6837	B12b-TF-15260	10/16/2014	9:15	511	395	1240	105.8	64.9	71.8%	0.883	J-
LVB6850	B12b-TF-15261	10/17/2014	9:26	660	535	3310	225.0	62.8	71.9%	0.701	J-
LVB6850	B12b-TF-15262	10/17/2014	9:26	576	475	1900	205.2	59.6	71.7%	0.707	J-
LVB5839	B12b-TF-15263	10/17/2014	9:00	710	565	3340	256.0	60.3	73.2%	0.700	J-
LVB6850	B12b-TF-15264	10/21/2014	7:55	701	579	3850	459.7	65.7	76.2%	0.244	J
LVB5839	B12b-TF-15265	10/21/2014	7:10	681	556	3300	424.9	62.3	79.0%	0.196	J
LVB6870	B12b-TF-15266	10/28/2014	8:50	686	550	3347	432.9	75.8	79.2%	0.171	
LVB6870	B12b-TF-15267	10/28/2014	8:50	623	500	2240	197.2	65.8	77.5%	0.474	
LVB6870	B12b-TF-15268	10/28/2014	8:50	566	473	2250	338.2	72.0	78.3%	0.477	
LVB6871	B12b-TF-15272	10/29/2014	8:20	525	450	1520	212.6	65.6	78.0%	0.197	
LVB6880	B12b-TF-15273	11/4/2014	7:35	583	465	1890	261.6	67.3	79.9%	0.415	
LVB5838	B12b-TF-15279	11/5/2014	8:32	659	540	2945	211.4	70.2	78.9%	0.242	
LVB5838	B12b-TF-15280	11/5/2014	8:32	618	505	2870	368.6	71.5	79.8%	0.337	
LVB5838	B12b-TF-15281	11/5/2014	8:32	639	505	2737	326.8	68.6	79.9%	0.253	
LVB5841	B12b-TF-15282	11/5/2014	8:15	705	565	3470	386.8	69.0	79.0%	0.531	
LVB5839	B12b-TF-15283	11/11/2014	7:33	649	510	2590	299.3	70.0	80.6%	0.563	
LVB6871	B12b-TF-15286	11/12/2014	12:10	654	530	2960	320.2	66.2	78.7%	0.543	
LVB6871	B12b-TF-15287	11/12/2014	12:10	508	400	1320	172.1	73.3	79.3%	0.169	
CLO5830	B12b-TF-15288	11/13/2014	10:00	707	565	3640	481.1	68.0	78.7%	0.489	
CLO5830	B12b-TF-15289	11/13/2014	10:00	664	520	2740	341.4	68.5	78.8%	0.138	
CLO5830	B12b-TF-15290	11/13/2014	10:00	633	515	2580	264.6	69.3	78.5%	0.296	
LVB6950	B12b-TF-15292	11/14/2014	8:20	679	535	2840	196.5	70.4	77.9%	0.410	
LVB6950	B12b-TF-15293	11/14/2014	8:20	703	545	3210	333.6	68.8	80.5%	0.627	
LVB6950	B12b-TF-15294	11/14/2014	8:20	658	520	2830	395.6	72.0	78.0%	0.348	
LVB6880	B12b-TF-15296	11/18/2014	8:10	615	490	2770	273.6	67.3	78.0%	0.275	
LVB6880	B12b-TF-15297	11/18/2014	8:10	655	520	3050	387.7	65.1	80.0%	0.317	
LVB5841	B12b-TF-15298	11/18/2014	9:47	675	540	3290	406.7	73.8	80.0%	0.531	
LVB5841	B12b-TF-15299	11/18/2014	9:47	681	535	3360	425.7	72.2	79.8%	0.017	U
Average Values				**639**	**512**	**2749**	**303.7**	**69.0**	**77.1%**	**0.453**	

Table 4 - Closed Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
LVB5517	B12b-TS-15769	10/2/2014	15:18	64.9	16.0	29.3	69.3%	0.0748	
				40.0	4.8				
				36.6	4.6				
				27.4	1.7				
				33.4	2.2				
CLO5802	B12b-TS-15770	10/2/2014	16:36	25.0	1.5	30.9	64.0%	0.274	
				68.3	21.2				
				31.0	2.5				
				36.1	3.5				
				31.2	2.2				
CLO6802	B12b-TS-15771	10/2/2014	15:07	70.1	19.9	31.9	69.6%	0.0552	
				46.2	7.1				
				26.8	1.3				
				26.6	1.8				
				28.6	1.8				
LVB5517	B12b-TS-15772	10/2/2014	15:18	56.8	12.1	22.2	66.8%	0.0900	
				43.4	4.7				
				29.5	1.9				
				29.5	1.7				
				28.3	1.8				
CLO6802	B12b-TS-15775	10/2/2014	15:07	44.4	7.5	18.9	68.0%	0.0505	
				44.0	7.4				
				28.7	1.8				
				27.2	1.1				
				28.4	1.1				
CLO5815	B12b-TS-15779	10/2/2014	15:30	45.4	6.2	33.5	72.5%	0.109	
				61.4	14.6				
				29.3	1.5				
				27.4	1.7				
				52.4	9.5				
LVB5517	B12b-TS-15784	10/6/2014	12:29	43.9	6.5	16.6	69.8%	0.109	
				36.7	4.5				
				26.8	2.0				
				29.1	2.2				
				25.2	1.4				
CLO6802	B12b-TS-15786	10/2/2014	15:12	35.2	3.1	23.2	66.9%	0.0579	
				39.9	5.3				
				37.2	3.8				
				40.9	5.9				
				40.4	5.1				
CLO5802	B12b-TS-15788	10/2/2014	16:36	52.2	10.1	27.3	68.7%	0.230	
				29.3	2.5				
				26.2	1.6				
				25.2	1.4				
				47.8	11.7				
CLO5802	B12b-TS-15789	10/6/2014	11:00	45.3	7.9	54.5	65.8%	0.215	
				65.0	18.4				
				35.1	3.5				
				50.2	7.3				
				63.0	17.4				

Table 4 - Closed Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
LVB5504	B12b-TS-15790	10/2/2014	15:48	35.6	4.0	19.5	69.0%	0.0569	
				35.7	4.4				
				38.6	6.4				
				30.3	2.6				
				29.7	2.1				
LVB5513	B12b-TS-15791	10/2/2014	16:09	47.0	7.9	17.6	69.8%	0.0706	
				33.6	2.7				
				33.6	3.1				
				29.9	2.3				
				29.0	1.6				
CLO5814	B12b-TS-15795	10/6/2014	12:08	26.0	1.3	29.8	64.2%	0.104	
				26.9	1.5				
				39.4	3.6				
				62.2	20.3				
				34.7	3.1				
LVB5513	B12b-TS-15796	10/6/2014	12:00	61.0	12.3	71.3	67.4%	0.109	
				65.6	20.0				
				30.2	2.1				
				57.7	12.1				
				65.8	24.8				
CLO5815	B12b-TS-15797	10/6/2014	12:38	52.5	8.9	26.5	67.9%	0.0663	
				48.4	11.0				
				27.8	1.7				
				36.7	3.0				
				29.0	1.9				
CLO5815	B12b-TS-15798	10/9/2014	9:00	44.9	4.9	19.0	69.9%	0.0606	
				50.7	8.3				
				29.4	2.5				
				29.4	2.0				
				26.3	1.3				
LVB5508	B12b-TS-15799	10/9/2014	10:00	35.8	4.2	28.2	70.3%	0.177	
				27.4	1.9				
				28.8	2.0				
				51.9	14.1				
				38.0	6.0				
LVB5508	B12b-TS-15800	10/14/2014	12:40	65.7	24.8	46.2	67.2%	0.253	
				58.9	13.9				
				30.3	2.0				
				31.4	3.0				
				31.9	2.5				
CLO5814	B12b-TS-15802	10/9/2014	10:45	55.8	18.6	52.7	66.8%	0.0690	
				40.0	4.3				
				32.9	2.6				
				29.5	2.5				
				73.0	24.7				
LVB5513	B12b-TS-15803	10/9/2014	10:32	70.1	26.2	80.5	66.3%	0.0729	
				60.7	18.5				
				74.4	30.8				
				30.5	2.0				
				34.2	3.0				

Table 4 - Closed Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
CLO5900	B12b-TS-15804	10/9/2014	10:25	34.7	3.6	38.5	66.1%	0.0811	
				44.1	5.3				
				62.6	16.7				
				37.4	3.5				
				48.8	9.4				
LVB5504	B12b-TS-15807	10/14/2014	13:00	42.2	6.1	13.6	67.4%	0.0570	
				30.5	2.5				
				25.4	1.5				
				26.7	1.9				
				26.8	1.6				
CLO5814	B12b-TS-15808	10/14/2014	14:26	64.0	17.6	93.3	64.1%	0.0989	
				58.0	15.2				
				71.0	23.5				
				49.0	9.0				
				73.0	28.0				
LVB5504	B12b-TS-15809	10/14/2014	13:00	25.0	1.5	18.6	69.3%	0.0648	
				45.0	7.9				
				36.0	3.7				
				35.0	3.9				
				28.0	1.6				
LVB5508	B12b-TS-15810	10/15/2014	10:42	39.0	5.9	46.2	64.5%	0.251	
				26.0	1.9				
				63.0	23.3				
				52.0	13.2				
				30.0	1.9				
CLO5900	B12b-TS-15811	10/16/2014	10:48	26.0	1.5	14.8	68.7%	0.0970	
				31.5	2.6				
				38.5	4.5				
				37.0	3.9				
				29.5	2.3				
CLO5803	B12b-TS-15815	10/16/2014	11:45	26.5	1.4	69.9	67.9%	0.310	
				46.2	7.3				
				67.2	23.9				
				58.2	18.5				
				69.7	18.8				
CLO5900	B12b-TS-15817	10/16/2014	10:48	45.0	6.9	15.1	77.4%	0.0679	J
				34.0	3.1				
				26.0	1.4				
				25.0	1.3				
				33.0	2.4				
CLO5803	B12b-TS-15821	10/17/2014	10:24	30.0	2.0	27.2	67.0%	0.162	J
				37.0	3.8				
				48.0	12.3				
				29.0	2.1				
				45.0	7.0				

Table 4 - Closed Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
CLO5803	B12b-TS-15822	10/20/2014	12:30	59.0	21.3	36.7	65.0%	0.240	J
				43.0	9.0				
				31.0	2.1				
				28.0	2.6				
				26.0	1.7				
Average Values				**38.8**	**6.5**	**32.7**	**69.2%**	**0.1754**	

J Chain-of-Custody not signed by sampler

J- 28 day hold time exceeded

U Sample result was less than 5 times average method Blank

Table 5 - Adjacent Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
				59.2	17.5				
				52.5	11.9				
LVB6853	B12b-TS-15763	10/2/2014	13:20	57.6	11.9	59.9	68.8%	0.0933	
				50.5	12.1				
				42.7	6.5				
				28.7	7.3				
				53.3	13.3				
LVB6853	B12b-TS-15764	10/2/2014	13:20	53.3	13.7	55.5	71.9%	0.0747	
				54.1	11.2				
				49.4	10.0				
				40.8	4.7				
				41.4	6.9				
LVB6853	B12b-TS-15765	10/2/2014	13:20	57.4	16.6	72.0	71.4%	0.0720	
				67.9	24.0				
				61.8	19.8				
				31.6	3.1				
				44.9	9.6				
LVB5838	B12b-TS-15766	10/2/2014	12:50	46.4	8.9	40.0	76.8%	0.0170	
				58.9	13.6				
				36.0	4.8				
				36.9	4.8				
				37.5	5.5				
LVB5838	B12b-TS-15767	10/2/2014	12:50	25.6	1.8	18.9	72.2%	0.0160	
				31.0	2.6				
				34.8	4.2				
				25.7	1.6				
				37.6	5.7				
LVB5838	B12b-TS-15768	10/2/2014	12:50	32.6	3.6	17.0	72.4%	0.0161	
				30.7	2.8				
				32.6	3.3				
				54.5	11.5				
				44.9	9.0				
LVB6870	B12b-TS-15773	10/2/2014	13:45	42.1	6.9	40.0	71.7%	0.0412	
				54.9	11.0				
				25.3	1.6				
				43.8	7.0				
				30.3	2.5				
LVB6871	B12b-TS-15774	10/2/2014	14:03	31.3	3.4	16.3	74.1%	0.0242	
				25.2	1.7				
				27.3	1.7				
				63.7	17.5				
				60.1	15.0				
LVB6880	B12b-TS-15776	10/2/2014	17:08	35.7	4.6	44.7	63.9%	0.0628	
				37.9	4.7				
				30.9	2.9				
				35.2	3.7				
				35.8	3.0				
LVB6870	B12b-TS-15777	10/2/2014	13:45	38.9	5.0	22.0	68.5%	0.0493	
				49.2	9.0				
				25.2	1.3				

Table 5 - Adjacent Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
LVB6870	B12b-TS-15778	10/6/2014	13:21	71.3	27.6	44.4	70.4%	0.0434	
				39.5	5.8				
				36.5	4.7				
				34.4	4.1				
				27.0	2.2				
LVB6880	B12b-TS-15780	10/2/2014	17:08	31.2	2.1	15.6	65.1%	0.0452	
				35.5	2.5				
				44.5	7.3				
				32.3	2.2				
				25.9	1.5				
LVB6871	B12b-TS-15781	10/2/2014	14:03	42.3	5.7	21.1	69.8%	0.0376	
				26.0	1.9				
				27.0	1.8				
				27.3	2.3				
				48.1	9.4				
LVB6871	B12b-TS-15782	10/6/2014	13:08	63.2	20.8	28.5	64.3%	0.0724	
				31.4	2.9				
				28.5	2.2				
				26.0	1.6				
				25.7	1.0				
CLO6950	B12b-TS-15783	10/2/2014	14:28	31.0	2.7	18.2	74.6%	0.0468	
				29.3	2.3				
				28.2	1.8				
				52.9	9.4				
				28.1	2.0				
CLO6950	B12b-TS-15785	10/6/2014	12:50	73.6	25.7	33.3	71.3%	0.107	
				33.6	2.9				
				31.1	2.5				
				26.1	1.3				
				25.8	0.9				
LVB6852	B12b-TS-15787	10/2/2014	17:25	64.6	22.1	43.4	63.4%	0.0979	
				60.4	16.7				
				28.1	1.6				
				25.1	1.1				
				26.7	1.9				
LVB6837	B12b-TS-15792	10/2/2014	16:51	29.6	1.9	52.3	64.5%	0.0892	
				49.0	7.7				
				75.0	32.6				
				50.8	8.5				
				26.4	1.6				
LVB6880	B12b-TS-15793	10/6/2014	10:27	28.3	2.4	10.8	66.3%	0.0380	
				29.3	1.8				
				26.9	1.3				
				34.2	2.6				
				30.8	2.7				
LVB6852	B12b-TS-15794	10/6/2014	10:14	26.8	1.2	7.9	73.7%	0.0341	
				26.4	1.7				
				26.8	1.7				
				26.6	1.2				
				30.2	2.1				

Table 5 - Adjacent Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
CLO6950	B12b-TS-15801	10/9/2014	11:00	61.4	15.4	31.0	67.2%	0.0736	
				25.0	1.4				
				44.4	7.3				
				40.0	5.0				
				28.6	1.9				
LVB6837	B12b-TS-15805	10/9/2014	11:30	57.3	15.4	64.2	67.4%	0.0714	
				55.3	15.3				
				74.3	26.3				
				40.7	4.7				
				34.6	2.5				
LVB6837	B12b-TS-15806	10/14/2014	11:47	66.6	26.8	67.8	66.4%	0.0641	
				49.0	12.1				
				69.0	25.0				
				27.0	1.7				
				29.5	2.2				
LVB6852	B12b-TS-15812	10/14/2014	11:22	62.0	14.7	79.1	62.5%	0.0601	
				61.0	20.0				
				52.0	10.6				
				57.0	12.3				
				61.0	21.5				
LVB5839	B12b-TS-15813	10/16/2014	16:32	25.0	1.3	8.7	66.4%	0.0570	
				25.5	1.1				
				29.0	2.4				
				27.0	2.2				
				27.3	1.7				
LVB6850	B12b-TS-15814	10/16/2014	16:50	52.5	10.2	46.0	64.3%	0.0982	
				25.8	1.6				
				67.0	29.1				
				34.0	3.9				
				25.0	1.2				
LVB5839	B12b-TS-15816	10/16/2014	16:32	31.2	2.1	10.8	68.3%	0.0377	
				31.5	2.4				
				28.5	1.9				
				25.0	1.6				
				30.3	2.8				
LVB5839	B12b-TS-15818	10/17/2014	9:10	43.0	8.5	17.4	69.4%	0.0360	J
				27.0	1.8				
				34.0	3.1				
				27.0	1.8				
				29.0	2.2				
LVB6850	B12b-TS-15819	10/17/2014	9:50	38.0	4.9	73.4	66.9%	0.0992	J
				28.0	1.9				
				61.0	19.0				
				71.0	22.9				
				66.0	24.7				

Table 5 - Adjacent Area Juvenile Blue Crab Sample Stations, Sample IDs, Processing Data, and Analytical Results

Station ID	Sample ID	Date	Time	Width (mm)	Crab Weight (g)	Sample Weight (g)	Percent Moisture	Total Hg wet weight (µg/g)	Flag
LVB6850	B12b-TS-15820	10/20/2014	11:54	36.0	4.2	68.5	68.2%	0.0715	J
				35.0	3.7				
				58.0	16.2				
				72.0	28.6				
				61.0	15.8				
Average Values				**41.5**	**8.6**	**43.2**	**67.4%**	**0.0685**	

J Chain-of-Custody not signed by sampler

J- 28 day hold time exceeded

U Sample result was less than 5 times average method Blank

APPENDIX C

DREDGE ISLAND INSPECTION RECORDS 2014

DREDGE ISLAND INSPECTION RECORD

Inspector's Name: Kevin Dworsky	**Date:** 03/24/2014 (1Q14)
Weather: Overcast	**Time Begin:** 1000
Temperature: 54° F	**Time End:** 1200
KBD accompanied by Benchmark Ecological Services, Inc. during the inspection.	**Inspector's Signature:**

SPECIFIC ITEM TO INSPECT	TYPICAL PROBLEMS ENCOUNTERED	CONDITIONS OBSERVED NORMAL	CONDITIONS OBSERVED ABNORMAL	COMMENTS OR CORRECTIVE ACTION(S) IMPLEMENTED AND DATES
General Dredge Island	Erosion Deterioration Settling/Ponding Uplift Washouts Rodent Holes Vegetation	X X X X X X □	□ □ □ □ □ □ X	Shoreline bank cut observed near the northeast dike toe of the exterior slope. Appears to possibly be associated with the recent dredging event. Cut does not extend to the dike cross section but future erosion could eventually chase back into the toe of the dike. Monitor as part of future inspections. All original vehicular signs and some of the reflectors on Island are damaged. New signs have been placed in a few locations during 2011maintenance event on the island. These signs are in good condition. Slight to moderate vegetation on the road and moderate to heavy vegetation along the sides of the roads, interior dikes, outer dikes, and on toes of the exterior dikes. Hard to inspect some areas of the dikes and ramps thoroughly due to the heavy vegetation. Some rutting of the road and gravel of the exterior dike on the northeast side of the CDF caused by the heavy equipment used during the dredging event. Large trees/bushes are forming in the gravel along the roads and in the armor. Action will need to be taken in the future to remove all unwanted vegetation.
Access Bridge	Deterioration Damage Navigation Lights	□ □ □	X X X	Conditions similar to previous 4Q13 report. Bridge abutments severely eroded. Hazard signs indicating presence of water hazards appear in good condition. Detailed inspection of the bridge was not performed as part of this site visit. Bridge abutments are severely eroded.
CDF Dike	Erosion Deterioration Damage Vegetation	X X X X	□ □ □ □	Minor erosion has been noted on the interior dikes and on the access ramp in several locations. There is water inside the CDF from the previous dredging and recent rain events. Minor erosion observed in areas of the exterior dike side slope where the entry ramp meets the dike. The exterior CDF dike appears to be in good condition. The CDF dike appears stable and there is no required action at this time, however, water levels in the CDF should be maintained as low as possible, and erosion rills on the dike's interior and exterior should continue to be monitored during quarterly inspections. The material placed during the previous dredging event appears to be at the same elevation or higher than the dike in a few locations. These locations may need to be leveled out so that the material is below the top of the dike to prevent runoff from exiting the CDF interior. Minor to moderate geomembrane exposed along

DREDGE ISLAND INSPECTION RECORD

				the portions of the interior dike on all sides of the dike. Action in the near future may be necessary. The geomembrane component of the water stop on the CPA dike, near the ALCOA CDF station 23+00, is exposed due to severe erosion of the overlying topsoil. There are also large erosion rills on the exterior of the dike. Erosion in this area currently does not appear to impact the CDF dikes but should continue to be monitored during quarterly inspections. Was unable to view exterior for seepage due to large amounts of vegetation and low tidal conditions. There was no seepage noted from the dike.
Stone Storm Protection	Erosion Settlement Stone Deterioration Stone Movement Fabric Exposure Damage Vegetation	X X X X X X ☐	☐ ☐ ☐ ☐ ☐ ☐ X	Conditions similar to the previous 4Q13 report. No damage observed. Significant vegetation present. The amount of trees/bushes that are pushing through the armor has remained the same. Action to remove the vegetation will be necessary. Due to safety concerns associated with walking on the armor stone, this inspection was conducted without traversing the stone on the exterior dike slopes. The exterior dike locations were observed via the dike crest or by waterside inspection from the boat.
Gravel Erosion Protection	Erosion Fabric Exposure Deterioration Damage	☐ ☐ ☐ ☐	X X X X	Conditions similar to the previous 4Q13 report. The inside slope of the north and north sections of the east and west dikes have been repaired several times since the construction of the CDF due to erosion but geotextile fabric and overlying gravel erosion protection originally constructed on the interior slope was not placed as part of the work. These sections are currently showing minor to moderate erosion. Most of the remaining sections of the dikes' inside slope exhibit minor to moderate erosion and loss of gravel protection. No immediate action is required at these locations but they should continue to be monitored. Lack of geotextile and overlying gravel erosion protection on the slope interiors does not appear to be problematic as long as the water levels are kept low to prevent severe interior erosion.
Emergency Spillway	Obstructions Cracks in Concrete Deterioration Damage	X X X X	☐ ☐ ☐ ☐	Conditions similar to the previous 4Q13 report. Generally good condition. Slight erosion and some cracks in the concrete. Slight erosion has occurred along the outer and inner edge of the spillway. Some localized concrete deterioration observed.
Decant Structures	Weir Board Elevation Depth of Water Obstructions Deterioration Rust/Corrosion Damage Overflow Quality (NA)	X X X ☐ ☐ X ☐	☐ ☐ ☐ X X ☐ ☐	As of January 2012, the North Structure will be placed under restricted access until a thorough structural and safety inspection of this structure can be performed by a qualified structural engineer. All inspections will be completed visually from the dike. This recommendation was made due to the severe corrosion of the structural I-beam sections. North Structure: Coated surfaces on structure

DREDGE ISLAND INSPECTION RECORD

	Overflow Quantity Flap Gate	X X	☐ ☐	exhibiting moderate to severe rusting and pitting on handrails. Channel iron also exhibits moderate to severe corrosion. Severe corrosion of the structural I-beam sections was observed. The majority of the structural I-beams are not visible without removal of the grates and access of the structure interior. Therefore, the interior I-beam was not observed during this inspection. Plastic around the top of structure is in good condition. There is no discharge observed coming from the North Decant Structure. The area around the structure is dry (4.93' below the top of the grate to the top of the sediment). Inside the structure, the water level is 18.86' below the top of the grate. South Structure: Several stop logs were removed to allow water to decant during the previous dredging event. Minor rust observed on handrails and channel iron. A section of angle iron used to guide the stop logs in the slots has broken loose from the welds and show severe rusting. The plastic around the top of the structure is in good condition. The area around the structure is dry (7.02' below the top of the grate to the top of the sediment). Inside the structure, the water level is 17.68' below the top of the grate. The total depth of the decant structure is 18.08'. There is no discharge observed coming from the South Decant Structure.
Gravel Road	Potholes Ponding Deterioration Washouts Vegetation	X X X X ☐	☐ ☐ ☐ ☐ X	Generally in good condition. Some rutting at several locations. Moderate rutting on north east side of CDF due to the heavy equipment used during the previous dredging event. Some vegetation present on road. There is some slight erosion of the sides of the road. Several areas of thin gravel and geomembrane exposure. Action will need to be taken to remove the vegetation from the roadways in the near future.
Water Stops	Erosion Membrane Exposed Deterioration Damage	☐ ☐ X X	X X ☐ ☐	Conditions similar to the previous 4Q13 report. Severe erosion, fines accumulation, and geomembrane exposed at water stop on the inside CPA dike as previously reported. Moderate erosion on the exterior of the East CPA Dike. Severe erosion on the exterior of the West CPA Dike. Continue to monitor.
Reflectors Station Tags	Intact/Reflecting Intact/Legibility	X X	☐ ☐	Conditions similar to the previous 4Q13 report. Some reflectors and traffic signage observed to be leaning or entirely down on the ground. If the island is to be used for vehicular traffic in the future, a more detailed review of the reflectors and traffic signage should be completed.

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

1 – Viewing east side of the North Ramp

2 – Viewing west side of the North Ramp

3 – North Ramp, viewing washout

4 – North Inner Dike, viewing erosion damage

5 – Northeast Conner Outer Dike, viewing moderate rutting from heavy equipment

6 – Northeast Corner Outer Dike, viewing west


7 – Northeast Corner Inner Dike, viewing west


8 – Northeast Corner Inner Dike, viewing south


9 – East Outer Dike, viewing north


10 – North Outfall


11 – North Decant Structure


12 –Intrusive trees and vegetation in exterior gravel protection

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

	
13 – Southeast Inner Dike, viewing southwest	14 – Southeast Outer Dike, historic seepage area
	
15 – Southeast Corner Outer Dike, viewing north	16 – Southeast Corner Inner Dike, viewing north
	
17 – Southeast Corner Inner Dike, viewing west	18 – Southeast Corner Outer Dike, viewing west

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

19 – South Dike, viewing exposed geomembrane

20 – Southwest Corner Inner Dike, viewing north

21 – Southwest Corner Outer Dike, viewing north

22 – South Outfall

23 – South Decant Structure

24 – West Inner Dike, viewing exposed geomembrane

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

25 – Northwest Corner Outer Dike, viewing south

26 – Northwest Corner Inner Dike, viewing south

27 – West Inner Dike, viewing minor erosion

28 – Northwest Corner Outer Dike, viewing east

29 – Northwest Corner Inner Dike, viewing east

30 – Emergency Spillway, viewing minor deterioration of the concrete

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

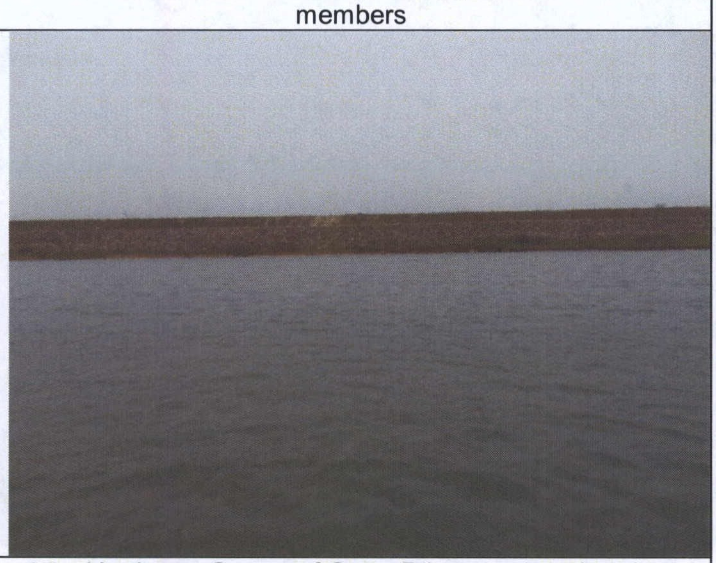
31 – Emergency Spillway, viewing minor washout along edge

32 – East CPA Inner Dike, viewing erosion and exposure of liner

33 – Viewing sign that was knocked down due to wind

34 – North Decant Structure, viewing rust on structural members

36 – South Decant Structure, viewing rust on structural members



37 – Northeast Corner of Outer Dike, viewing shoreline bank cut below the toe of the exterior slope.

DREDGE ISLAND INSPECTION RECORD

Inspector's Name: Kevin Dworsky **Weather:** Partly Cloudy Sky **Temperature:** 85° F **KBD accompanied by Benchmark Ecological Services, Inc. during the inspection.**	**Date:** 06/19/2014 (2Q14) **Time Begin:** 1000 **Time End:** 1200 **Inspector's Signature:**

SPECIFIC ITEM TO INSPECT	TYPICAL PROBLEMS ENCOUNTERED	CONDITIONS OBSERVED NORMAL	CONDITIONS OBSERVED ABNORMAL	COMMENTS OR CORRECTIVE ACTION(S) IMPLEMENTED AND DATES
General Dredge Island	Erosion	X	☐	Shoreline bank cut observed near the northeast dike toe of the exterior slope. It is associated with the previous dredging event of Marsh 13. Cut does not extend to the dike cross section but future erosion could eventually chase back into the toe of the dike. This should be monitored as part of future inspections. All original vehicular signs and some of the reflectors on Island are damaged and/or knocked down. New signs have been placed in a few locations during 2011maintenance event on the island. Some of these signs have also been knocked down by the strong winds. Slight to moderate vegetation on the road and moderate to heavy vegetation along the sides of the roads, interior dikes, outer dikes, and on toes of the exterior dikes. Hard to inspect some areas of the dikes and ramps thoroughly due to the heavy vegetation. Some rutting of the road and gravel of the exterior dike on the northeast side of the CDF caused by the heavy equipment used during the previous dredging event. Large trees/bushes are forming in the gravel of the inner and outer dikes and in the armor. Action will need to be taken in the future to remove all unwanted vegetation.
	Deterioration	X	☐	
	Settling/Ponding	X	☐	
	Uplift	X	☐	
	Washouts	X	☐	
	Rodent Holes	X	☐	
	Vegetation	☐	X	
Access Bridge	Deterioration	☐	X	Conditions similar to previous 1Q14 report. Bridge abutments severely eroded. Hazard signs indicating presence of water hazards appear in good condition. Detailed inspection of the bridge was not performed as part of this site visit.
	Damage	☐	X	
	Navigation Lights	☐	X	
CDF Dike	Erosion	☐	X	Minor erosion has been noted on the interior dikes and on the access ramp in several locations. There is very little water inside the CDF, most of which is from recent rain events. Minor erosion observed in areas of the exterior dike side slope where the entry ramp meets the dike. The exterior CDF dike appears to overall be in good condition. The CDF dike appears stable and there is no required action at this time, however, water levels in the CDF should be maintained as low as possible, and erosion rills on the dike's interior and exterior should continue to be monitored during quarterly inspections. The material placed during the previous dredging event appears to be at the same or higher elevation than the dike on the northeast side of the CDF. These locations may need to be leveled out so that the material is below the top of the dike to prevent runoff from exiting the CDF interior.
	Deterioration	X	☐	
	Damage	X	☐	
	Vegetation	X	☐	

DREDGE ISLAND INSPECTION RECORD

				Minor to moderate geomembrane exposed along the portions of the interior dike on all sides of the dike. Action in the near future may be necessary. The geomembrane component of the water stop on the CPA dike, near the Alcoa CDF station 23+00, is exposed due to severe erosion of the overlying topsoil. There are also large erosion rills on the exterior of the dike. Erosion in this area currently does not appear to impact the CDF dikes but should continue to be monitored during quarterly inspections. Was unable to view exterior for seepage due to large amounts of vegetation and low tidal conditions. There was no seepage noted from the top of the dike.
Stone Storm Protection	Erosion Settlement Stone Deterioration Stone Movement Fabric Exposure Damage Vegetation	X X X X X X ☐	☐ ☐ ☐ ☐ ☐ ☐ X	No damage observed. Significant vegetation present in areas. The amount of trees/bushes that are pushing through the armor has increased since the last inspection. Action to remove the vegetation will be necessary in the near future. Due to safety concerns associated with walking on the armor stone, this inspection was conducted without traversing the stone on the exterior dike slopes. The exterior dike locations were observed via the dike crest.
Gravel Erosion Protection	Erosion Fabric Exposure Deterioration Damage	☐ ☐ ☐ ☐	X X X X	The inside slope of the north and north sections of the east and west dikes have been repaired several times since the construction of the CDF due to erosion but geotextile fabric and overlying gravel erosion protection originally constructed on the interior slope was not placed as part of the work. These sections are currently showing minor to moderate erosion. Most of the remaining sections of the dikes' inside slope exhibit minor to moderate erosion and loss of gravel protection. No immediate action is required at these locations but they should continue to be monitored. Lack of geotextile and overlying gravel erosion protection on the slope interiors does not appear to be problematic as long as the water levels are kept low to prevent severe interior erosion.
Emergency Spillway	Obstructions Cracks in Concrete Deterioration Damage	X X X X	☐ ☐ ☐ ☐	Generally good condition. Slight erosion and some cracks in the concrete. Slight erosion has occurred along the outer and inner edge of the spillway. Some localized concrete deterioration observed.
Decant Structures	Weir Board Elevation Depth of Water Obstructions Deterioration Rust/Corrosion Damage Overflow Quality (NA) Overflow Quantity Flap Gate	X X X ☐ ☐ X ☐ X X	☐ ☐ ☐ X X ☐ ☐ ☐ ☐	As of January 2012, the North Structure will be placed under restricted access until a thorough structural and safety inspection of this structure can be performed by a qualified structural engineer. All inspections will be completed visually from the catwalk of the structure. This recommendation was made due to the severe visual corrosion of the structural I-beam sections. North Structure: Coated surfaces on structure exhibiting moderate to severe rusting and pitting on

				handrails. Channel iron also exhibits moderate to severe corrosion. Severe corrosion of the structural I-beam sections was observed. The majority of the structural I-beams are not visible without removal of the grates and access of the structure interior. Therefore, the interior I-beam was not observed during this inspection. Plastic around the top of structure is in good condition. There is no discharge observed coming from the North Decant Structure. The area around the structure is dry (5.33' below the top of the grate to the top of the sediment). Inside the structure, the water level is 17.17' below the top of the grate. South Structure: Several stop logs were removed to allow water to decant during the previous dredging event and have not been replaced. Minor rust observed on handrails and channel iron. A section of angle iron used to guide the stop logs in the slots has broken loose from the welds and show severe corrosion. The plastic around the top of the structure appears to be in good condition. The area around the structure is dry (7.67' below the top of the grate to the top of the sediment). Inside the structure, the water level is 17.75' below the top of the grate. The total depth of the decant structure is 18.08'. There is no discharge observed coming from the South Decant Structure.
Gravel Road	Potholes Ponding Deterioration Washouts Vegetation	X X X X □	□ □ □ □ X	Generally in good condition. Some rutting at several locations. Moderate rutting on north east side of CDF due to the heavy equipment used during the previous dredging event. Some minor to moderate vegetation present on road. There is some slight erosion on the sides of portions of the road. There are several areas of thin gravel and geomembrane exposure. Action will need to be taken to remove the vegetation from the roadways in the near future.
Water Stops	Erosion Membrane Exposed Deterioration Damage	□ □ X X	X X □ □	Severe erosion, fines accumulation, and geomembrane exposed at water stop on the inside CPA dike as previously reported. Moderate erosion on the exterior of the East CPA Dike. Severe erosion on the exterior of the West CPA Dike. Continue to monitor.
Reflectors Station Tags	Intact/Reflecting Intact/Legibility	X X	□ □	Some reflectors and traffic signage observed to be leaning or entirely down on the ground. If the island is to be used for vehicular traffic in the future, a more detailed review of the reflectors and traffic signage should be completed.

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas


1 – Viewing east side of the North Ramp


2 – Viewing west side of the North Ramp


3 – North Ramp, viewing washout


4 – North Inner Dike, viewing erosion damage


5 – Northeast Conner Outer Dike, viewing moderate rutting from heavy equipment

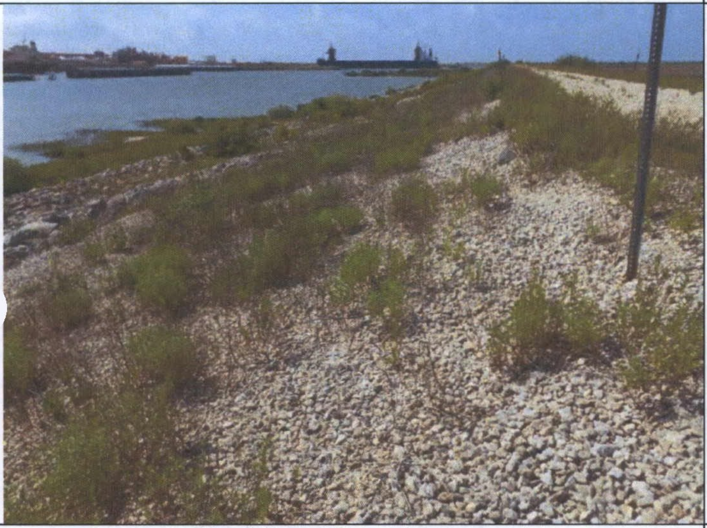

6 – Northeast Corner Outer Dike, viewing west

DREDGE ISLAND INSPECTION PHOTO LOG

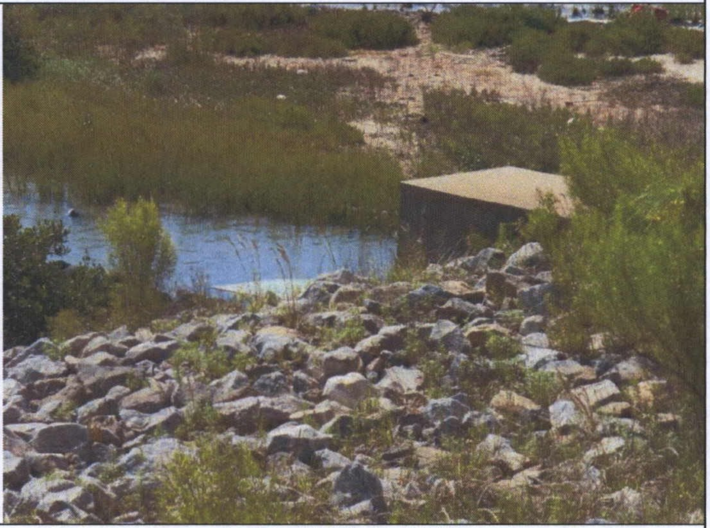
ALCOA PCO – Point Comfort, Texas

7 – Northeast Corner Inner Dike, viewing west

8 – Northeast Corner Inner Dike, viewing south



9 – East Outer Dike, viewing north



10 – North Outfall

11 – North Decant Structure

12 –Intrusive trees and vegetation in exterior gravel protection

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

13 – Southeast Inner Dike, viewing southwest

14 – Southeast Outer Dike, historic seepage area

15 – Southeast Corner Outer Dike, viewing north

16 – Southeast Corner Inner Dike, viewing north

17 – Southeast Corner Inner Dike, viewing west

18 – Southeast Corner Outer Dike, viewing west

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

19 – South Dike, viewing exposed geomembrane

20 – Southwest Corner Inner Dike, viewing north

21 – Southwest Corner Outer Dike, viewing north

22 – South Outfall

23 – South Decant Structure

24 – South Decant Structure, viewing water level in the CDF

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

25 – Northwest Corner Outer Dike, viewing south

26 – Northwest Corner Inner Dike, viewing south

27 – Northwest Corner of Inner Dike, viewing water level in CDF

28 – Northwest Corner Outer Dike, viewing east

29 – Northwest Corner Inner Dike, viewing east

30 – Emergency Spillway, viewing minor deterioration of the concrete

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

31 – Emergency Spillway, viewing minor washout along edge

32 – East CPA Inner Dike, viewing erosion and exposure of liner

33 – East CPA Outer Dike, viewing erosion

34 – North Decant Structure, viewing rust on structural members

36 – South Decant Structure, viewing rust on structural members

37 – Viewing sign that was knocked down due to strong winds

DREDGE ISLAND INSPECTION RECORD

Inspector's Name: Kevin Dworsky **Weather:** Mostly Clear, North Wind **Temperature:** 87° F **KBD accompanied by Benchmark Ecological Services, Inc. during the inspection.**	**Date:** 09/29/2014 (3Q14) **Time Begin:** 0900 **Time End:** 1100 **Inspector's Signature:**

SPECIFIC ITEM TO INSPECT	TYPICAL PROBLEMS ENCOUNTERED	CONDITIONS OBSERVED		COMMENTS OR CORRECTIVE ACTION(S) IMPLEMENTED AND DATES
		NORMAL	ABNORMAL	
General Dredge Island	Erosion Deterioration Settling/Ponding Uplift Washouts Rodent Holes Vegetation	X X X X X X ☐	☐ ☐ ☐ ☐ ☐ ☐ X	Shoreline bank cut observed near the northeast dike toe of the exterior slope. It is associated with the previous dredging event of Marsh 13. Cut does not extend to the dike cross section but future erosion could eventually chase back into the toe of the dike. This should be monitored as part of future inspections. All original vehicular signs and some of the reflectors on Island are damaged and/or knocked down. New signs have been placed in a few locations during 2011 maintenance event on the island. Some of these signs have also been knocked down by the strong winds. Slight to moderate vegetation on the road and moderate to heavy vegetation along the sides of the roads, interior dikes, outer dikes, and on toes of the exterior dikes. Hard to inspect some areas of the dikes and ramps thoroughly due to the heavy vegetation. Some rutting of the road and gravel of the exterior dike on the northeast side of the CDF caused by the heavy equipment used during the previous dredging event. Large trees/bushes are forming in the gravel of the inner and outer dikes and in the armor. Action will need to be taken in the future to remove all unwanted vegetation.
Access Bridge	Deterioration Damage Navigation Lights	☐ ☐ ☐	X X X	Conditions similar to previous 2Q14 report. Bridge abutments severely eroded. Hazard signs indicating presence of water hazards appear in good condition. Detailed inspection of the bridge was not performed as part of this site visit.
CDF Dike	Erosion Deterioration Damage Vegetation	☐ X X X	X ☐ ☐ ☐	Minor erosion has been noted on the interior dikes and on the access ramp in several locations. There is very little water inside the CDF, most of which is from recent rain events. Minor erosion observed in areas of the exterior dike side slope where the entry ramp meets the dike. The exterior CDF dike appears to overall be in good condition. The CDF dike appears stable and there is no required action at this time, however, water levels in the CDF should be maintained as low as possible, and erosion rills on the dike's interior and exterior should continue to be monitored during quarterly inspections. The material placed during the previous dredging event appears to be at the same or higher elevation than the dike on the northeast side of the CDF. These locations may need to be leveled out so that the material is below the top of the dike to prevent runoff from exiting the CDF interior.

DREDGE ISLAND INSPECTION RECORD

				Minor to moderate geomembrane exposed along the portions of the interior dike on all sides of the dike. Action in the near future may be necessary. The geomembrane component of the water stop on the CPA dike, near the Alcoa CDF station 23+00, is exposed due to severe erosion of the overlying topsoil. There are also large erosion rills on the exterior of the dike. Erosion in this area currently does not appear to impact the CDF dikes but should continue to be monitored during quarterly inspections. Was unable to view exterior for seepage due to large amounts of vegetation and low tidal conditions. There was no seepage noted from the top of the dike.
Stone Storm Protection	Erosion Settlement Stone Deterioration Stone Movement Fabric Exposure Damage Vegetation	X X X X X X ☐	☐ ☐ ☐ ☐ ☐ ☐ X	No damage observed. Significant vegetation present in areas. The amount of trees/bushes that are pushing through the armor has increased since the last inspection. Action to remove the vegetation will be necessary in the near future. Due to safety concerns associated with walking on the armor stone, this inspection was conducted without traversing the stone on the exterior dike slopes. The exterior dike locations were observed via the dike crest.
Gravel Erosion Protection	Erosion Fabric Exposure Deterioration Damage	☐ ☐ ☐ ☐	X X X X	The inside slope of the north and north sections of the east and west dikes have been repaired several times since the construction of the CDF due to erosion but geotextile fabric and overlying gravel erosion protection originally constructed on the interior slope was not placed as part of the work. These sections are currently showing minor to moderate erosion. Most of the remaining sections of the dikes' inside slope exhibit minor to moderate erosion and loss of gravel protection. No immediate action is required at these locations but they should continue to be monitored. Lack of geotextile and overlying gravel erosion protection on the slope interiors does not appear to be problematic as long as the water levels are kept low to prevent severe interior erosion.
Emergency Spillway	Obstructions Cracks in Concrete Deterioration Damage	X X X X	☐ ☐ ☐ ☐	Generally good condition. Slight erosion and some cracks in the concrete. Slight erosion has occurred along the outer and inner edge of the spillway. Some localized concrete deterioration observed.
Decant Structures	Weir Board Elevation Depth of Water Obstructions Deterioration Rust/Corrosion Damage Overflow Quality (NA) Overflow Quantity Flap Gate	X X X ☐ ☐ X ☐ X X	☐ ☐ ☐ X X ☐ ☐ ☐ ☐	As of January 2012, the North Structure will be placed under restricted access until a thorough structural and safety inspection of this structure can be performed by a qualified structural engineer. All inspections will be completed visually from the catwalk of the structure. This recommendation was made due to the severe visual corrosion of the structural I-beam sections. North Structure: Coated surfaces on structure exhibiting moderate to severe rusting and pitting on

DREDGE ISLAND INSPECTION RECORD

				handrails. Channel iron also exhibits moderate to severe corrosion. Severe corrosion of the structural I-beam sections was observed. The majority of the structural I-beams are not visible without removal of the grates and access of the structure interior. Therefore, the interior I-beam was not observed during this inspection. Plastic around the top of structure is in good condition. There is no discharge observed coming from the North Decant Structure. The area around the structure is dry (5.25' below the top of the grate to the top of the sediment). Inside the structure, the water level is 17.85' below the top of the grate. South Structure: Several stop logs were removed to allow water to decant during the previous dredging event and have not been replaced. Minor rust observed on handrails and channel iron. A section of angle iron used to guide the stop logs in the slots has broken loose from the welds and show severe corrosion. The plastic around the top of the structure appears to be in good condition. The area around the structure is dry (7.6' below the top of the grate to the top of the sediment). Inside the structure, the water level is 17.65' below the top of the grate. The total depth of the decant structure is 18.08'. There is no discharge observed coming from the South Decant Structure.
Gravel Road	Potholes Ponding Deterioration Washouts Vegetation	X X X X ☐	☐ ☐ ☐ ☐ X	Generally in good condition. Some rutting at several locations. Moderate rutting on north east side of CDF due to the heavy equipment used during the previous dredging event. Some minor to moderate vegetation present on road. There is some slight erosion on the sides of portions of the road. There are several areas of thin gravel and geomembrane exposure. Action will need to be taken to remove the vegetation from the roadways in the near future.
Water Stops	Erosion Membrane Exposed Deterioration Damage	☐ ☐ X X	X X ☐ ☐	Severe erosion, fines accumulation, and geomembrane exposed at water stop on the inside CPA dike as previously reported. Moderate erosion on the exterior of the East CPA Dike. Severe erosion on the exterior of the West CPA Dike. Continue to monitor.
Reflectors Station Tags	Intact/Reflecting Intact/Legibility	X X	☐ ☐	Some reflectors and traffic signage observed to be leaning or entirely down on the ground. If the island is to be used for vehicular traffic in the future, a more detailed review of the reflectors and traffic signage should be completed.

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

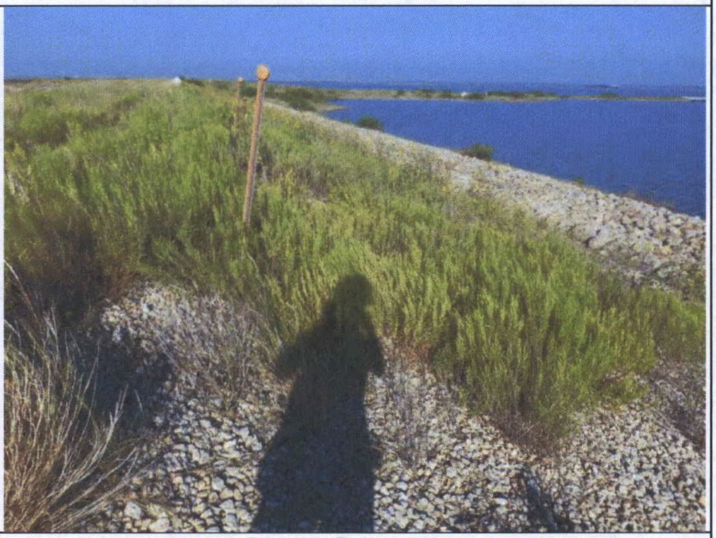
1 – Viewing east side of the North Ramp

2 – Viewing west side of the North Ramp

3 – North Ramp, viewing washout

4 – North Inner Dike, viewing erosion damage

5 – Northeast Conner Outer Dike, viewing moderate exposure of the geomembrane



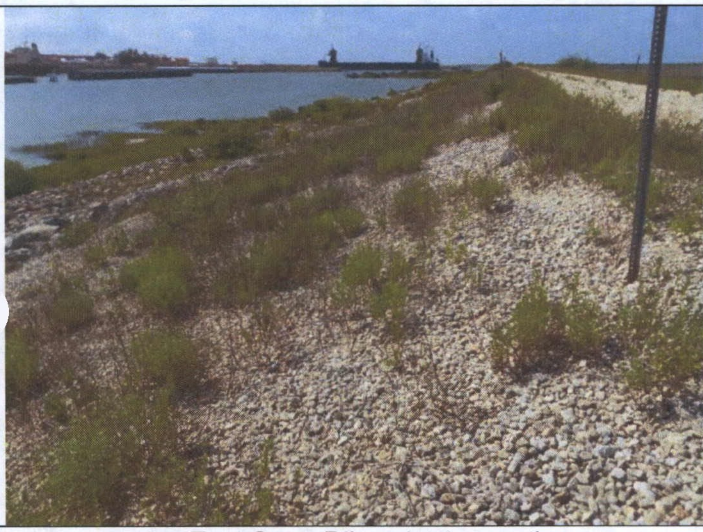
6 – Northeast Corner Outer Dike, viewing west

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas


7 – Northeast Corner Inner Dike, viewing west


8 – Northeast Corner Inner Dike, viewing south


9 – East Outer Dike, viewing north

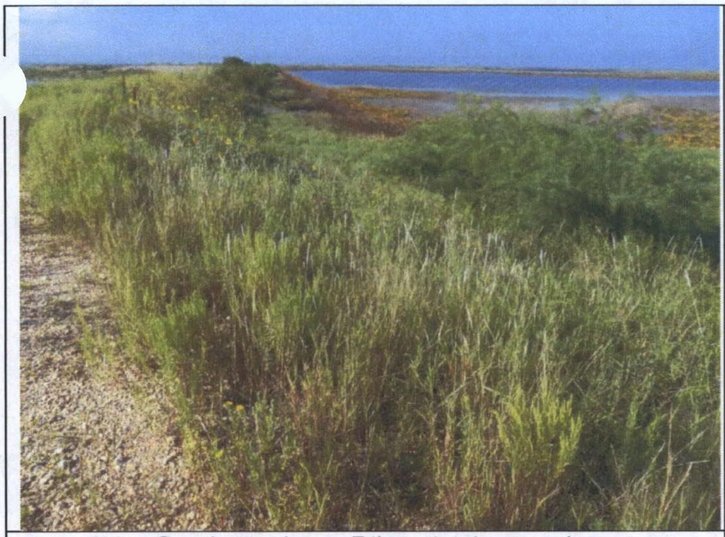

10 – North Outfall


11 – North Decant Structure

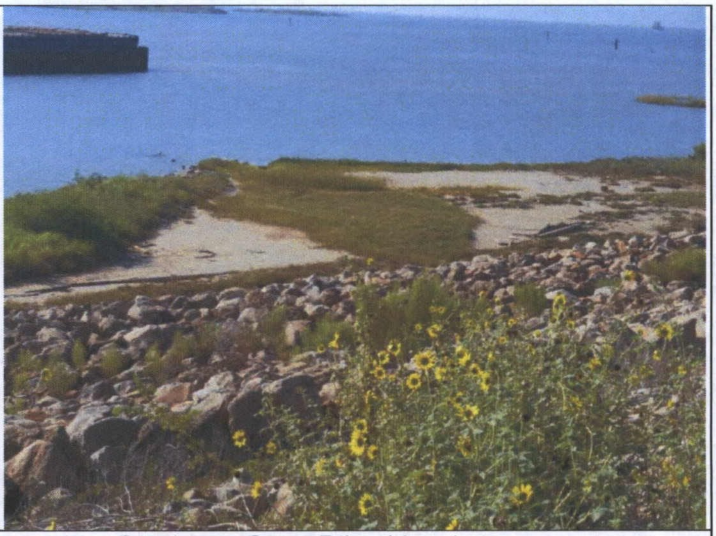

12 –Intrusive trees and vegetation in exterior gravel protection

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas



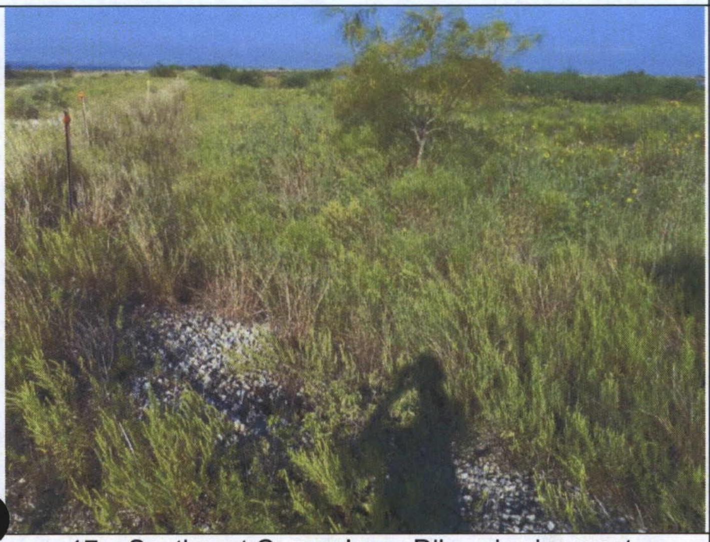
13 – Southeast Inner Dike, viewing southwest



14 – Southeast Outer Dike, historic seepage area

15 – Southeast Corner Outer Dike, viewing north

16 – Southeast Corner Inner Dike, viewing north



17 – Southeast Corner Inner Dike, viewing west

18 – Southeast Corner Outer Dike, viewing west

DREDGE ISLAND INSPECTION PHOTO LOG

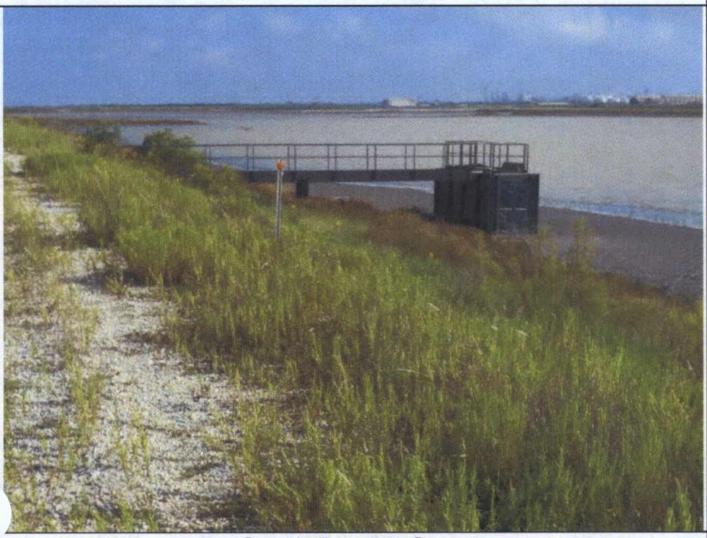
ALCOA PCO – Point Comfort, Texas

19 – South Dike, viewing exposed geomembrane

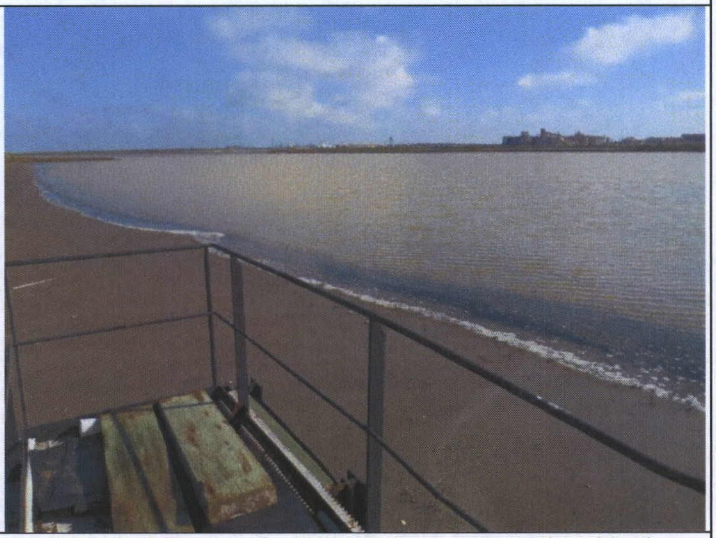
20 – Southwest Corner Inner Dike, viewing north

21 – Southwest Corner Outer Dike, viewing north

22 – South Outfall



23 – South Decant Structure



24 – South Decant Structure, viewing water level in the CDF

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

25 – Northwest Corner Outer Dike, viewing south

26 – Northwest Corner Inner Dike, viewing south

27 – Northwest Corner of Inner Dike, viewing water level in CDF

28 – Northwest Corner Outer Dike, viewing east

29 – Northwest Corner Inner Dike, viewing east

30 – Emergency Spillway, viewing minor deterioration of the concrete

DREDGE ISLAND INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

31 – Emergency Spillway, viewing minor washout along edge

32 – East CPA Inner Dike, viewing erosion and exposure of liner

33 – East CPA Outer Dike, viewing erosion

34 – North Decant Structure, viewing rust on structural members

36 – South Decant Structure, viewing rust on structural members

37 – Viewing sign that was knocked down due to strong winds

SITE INSPECTION LOG

Inspector's Name: Dan Bullock, P.E. (BBA, LLC)
Weather: Cloudy
Temperature: Approx. 65 F

STATE OF TEXAS
DANIEL B. BULLOCK
82596
REGISTERED
PROFESSIONAL ENGINEER

Daniel B. Bullock
2/16/15

Inspector's Signature:

Inspection Date: 11-20-14
Time Begin: Approx. 10:15 a.m.
Time End: Approx. 12:40 p.m.

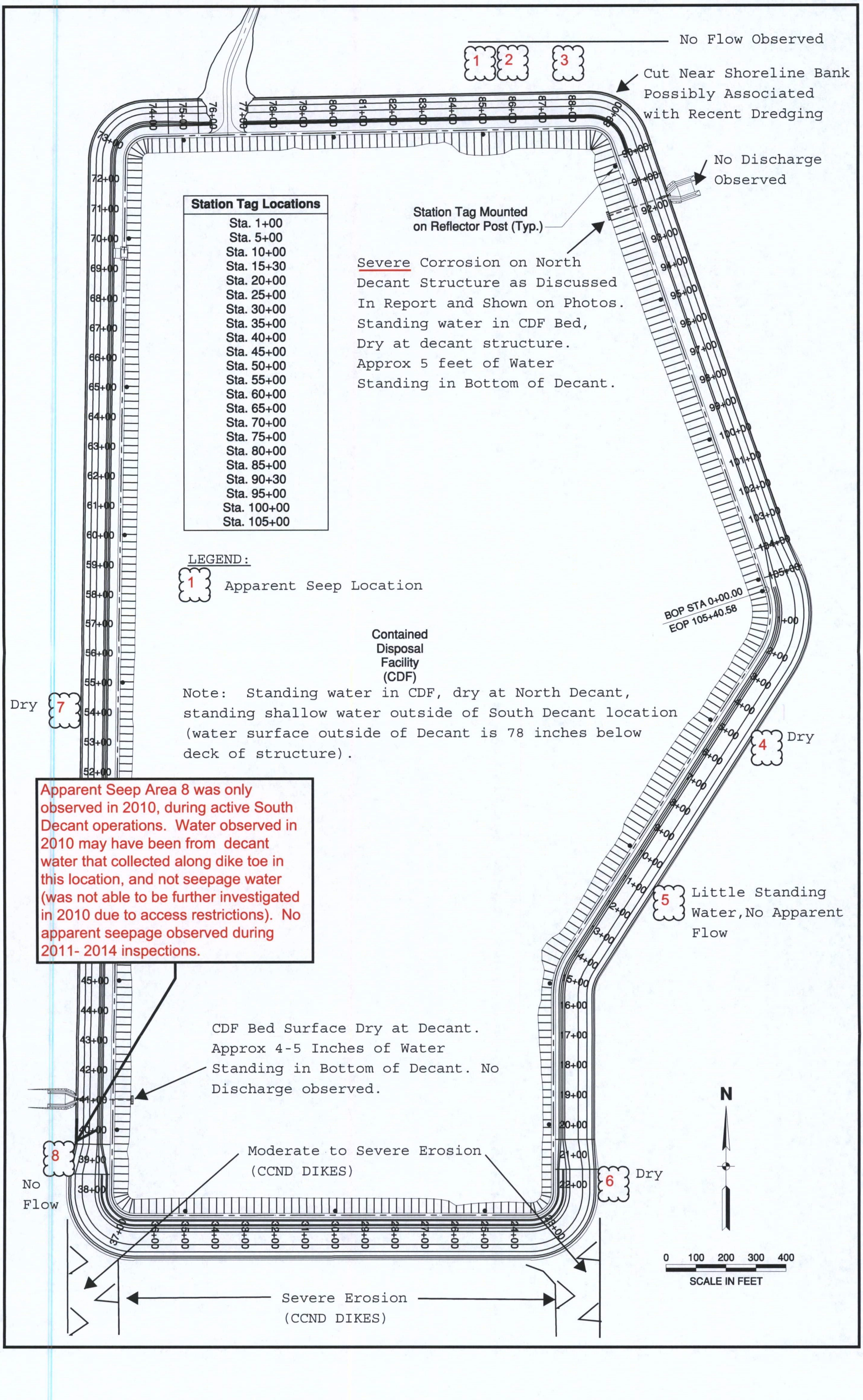
Sheet: 1 of 2

Specific Item to Inspect	Typical Problems Encountered	Conditions Observed: Normal	Conditions Observed: Abnormal	Comments or Corrective Action(s) Implemented and Dates
General Dredge Island	Erosion Deterioration Settling/Ponding Uplift Washouts Rodent Holes	☒ ☒ ☒ ☒ ☒ ☒	☐ ☐ ☐ ☐ ☐ ☐	Shoreline bank cut observed near northeast dike toe of exterior slope. Appears possibly associated with recent dredging. Cut does not extend to dike cross section but future erosion could eventually chase back into toe of dike. Monitor as part of future inspections. Minor erosion observed on North entry ramp, along edges of ramp crest. Vehicle traffic signs and reflectors need replacement/repair if island to be used for vehicular traffic – which is currently not the case.
Access Bridge	Deterioration Damage Navigation Lights	☐ ☐ ☐	☒ ☒ ☒	Conditions similar to those observed and reported in 12/19/06 inspection report. Detailed inspection of bridge not performed as part of this site visit. Bridge abutments severely eroded.
CDF Dike	Erosion Deterioration Damage Vegetation	☒ ☒ ☒ ☒	☐ ☐ ☐ ☐	The geomembrane component of the water stop on the CCND dike, near the Alcoa CDF Station 23+00 (east side) and Station 37+00 (west side), is exposed due to severe erosion of the overlying topsoil cover material (see attached photos) as noted in previous inspections. Some small (approx. 1 inch dia.) holes observed in exposed geomembrane. Erosion in these areas currently does not appear to impact the CDF dikes but should continue to be monitored during quarterly inspections. CDF dikes appear in generally good condition.
Stone Storm Protection	Erosion Settlement Stone Deterioration Stone Movement Fabric Exposure Damage	☒ ☒ ☒ ☒ ☒ ☒	☐ ☐ ☐ ☐ ☐ ☐	No damage observed. Vegetative growth within stone protection of exterior slopes observed – should continue to implement weed control program and periodic visual monitoring.
Gravel Erosion Protection	Erosion Fabric Exposure Deterioration Damage	☐ ☐ ☐ ☐	☒ ☒ ☒ ☒	The inside slopes of north dike, and north section of west and east dikes, have been repaired a couple of times since CDF construction (due to erosion issues) but geotextile fabric and overlying gravel erosion protection originally constructed on the interior slopes were not replaced as part of the repair work. Most of the remaining sections (generally along the south) of dike inside slope areas exhibit minor erosion and loss of gravel protection, no immediate action is required at these locations but they should continue to be monitored. Lack of geotextile and overlying gravel erosion protection on slope interiors does not appear to be problematic as long as water levels are kept low to prevent interior erosion.
Emergency Spillway	Obstructions Cracks in Concrete Deterioration Damage	☒ ☒ ☒ ☒	☐ ☐ ☐ ☐	Generally good condition. Some localized, minor, surficial concrete deterioration observed. Minor erosion, likely from localized rainfall runoff (not discharge) from concrete structure observed at upstream and downstream inverts of structure.

Decant Structures	Weir Board Elevation Depth of Water Obstructions Deterioration Rust/Corrosion Damage Overflow Quality (NA) Overflow Quantity Flap Gate	☒ ☒ ☒ ☐ ☐ ☒ ☐ ☒ ☒	☐ ☐ ☐ ☒ ☒ ☐ ☐ ☐ ☐	North Structure: Severe corrosion of structural steel was observed during this limited visual inspection. The majority of steel was not visible; however, the sample port (roughly 1 ft x 1 ft) section of the surface grate was removed to provide limited observation of the structure interior, and photographs were taken. Based on limited observation, the upper several feet of structural steel appeared to be in worse condition than steel at greater depths below the surface grate. Based on site observations of surface and near surface steel (see attached photos) it is recommended that personnel access to this structure (beyond access walkway), and use of the structure for operational purposes, be restricted until a thorough structural and safety inspection of this structure can be performed by a qualified structural engineer. Handrails and channel iron slots containing the stoplogs on the structure exhibit severe corrosion, per attached photos. CDF surface at decant was dry during inspection, with no on-going discharge. Approximately 5 feet of water was measured standing in the bottom of the structure. Plastic wrap around the structure was in place. South Structure: Generally minor to moderate rust observed on south decant structure hand rails and channel iron slots containing the stoplogs, with a few isolated areas of severe corrosion. Conditions appear to have worsened since last annual inspection. Adjustment of stoplogs likely difficult in areas due to corrosion of structure and broken welds (see attached photos). The majority of structural steel was not visible; however, the sample port (roughly 1 ft x 1 ft) section of the surface grate was removed to provide limited observation of the structure interior, and photographs were taken. Based on limited observation, the upper several feet of structural steel appeared to be in worse condition (exhibiting moderate corrosion) than steel at greater depths below the surface grate. Outside decant structure was dry. Inside decant structure contained approximately 4-5 inches of standing water in the bottom. No discharge operations observed at south structure location. Plastic wrap around structure in place. *Note: Terms used for this inspection to describe corrosion observations may include "mild or minor", "moderate" or "severe" – and are not based on steel inspection standards but simply offered to provide reader relative scale of limited visual observations made during this site inspection.*
Gravel Road	Potholes Ponding Deterioration Washouts	☒ ☒ ☒ ☒	☐ ☐ ☐ ☐	Generally good condition, some rutting and thin gravel surface observed at various locations, and some underlying geotextile fabric exposed in areas. Vegetation growth within gravel road – should continue to implement weed control program and continue to monitor.
Water Stops	Erosion Membrane Exposed Deterioration Damage	☐ ☐ ☒ ☒	☒ ☒ ☐ ☐	Erosion and fines accumulation observed near water stop areas. Observed in previous inspections. Appears to be associated with CCND dikes. Geomembrane exposed on CCND dike water stop areas as discussed under the CDF dike inspection item above. Continue to monitor.
Reflectors Station Tags	Intact/Reflecting Intact/Legibility	☒ ☒	☐ ☐	Some reflectors and traffic signage observed to be leaning or entirely down on the ground, if island is to be used for vehicular traffic in the future (currently it is not due to no access bridge), a more detailed review of reflectors and traffic signage should be completed.

Note:
Due to identified safety concerns associated with walking on armor stone, this inspection was conducted without traversing the stone on exterior dike slopes. Exterior dike locations were observed via dike crest or by waterside inspection from a boat.

11-20-2014 DI Inspection



URS

4-4

FIGURE 4-2
STATION NUMBER LOCATIONS

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

North Entry Ramp (facing North)

CDF – North Exterior Slope (facing East)

CDF – At North Entry Ramp Facing East

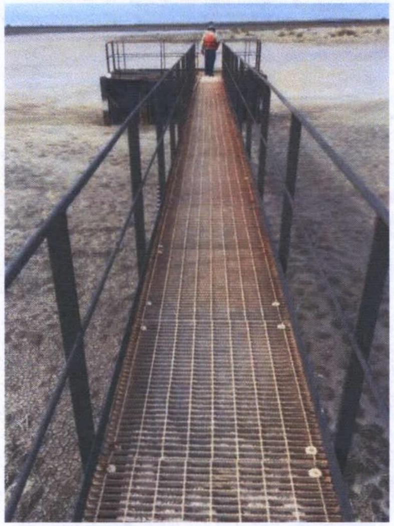
CDF – At North Entry Ramp Facing NW Corner

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

North End of CDF, Photo from North Dike, Facing South

East Dike, Facing South; North Decant Structure

North Decant Structure



North Decant Structure

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

North Decant Structure Corrosion

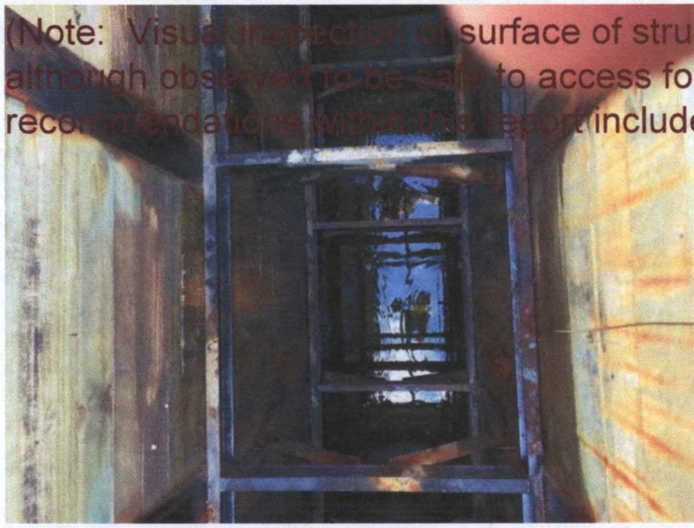
North Decant Structure Corrosion

North Decant Structure Corrosion

North Decant Structure Corrosion

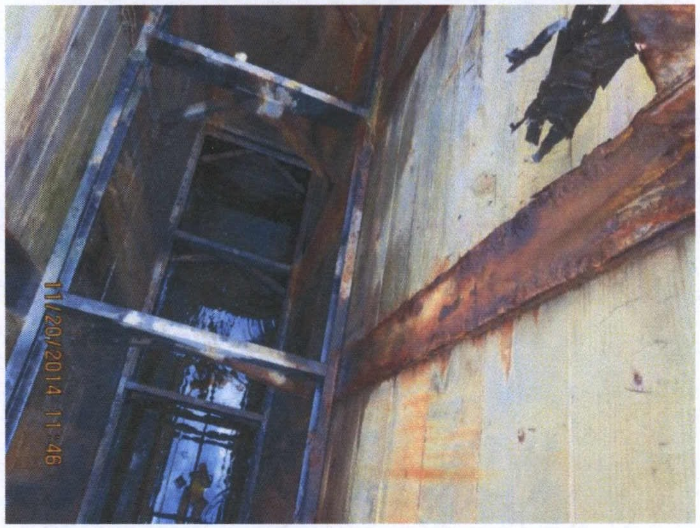
DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

(Note: Visual inspection of surface of structure completed prior to accessing; although observed to be safe to access for inspection at time of inspection, recommendations within this report include access and use restrictions.)



North Decant Structure Corrosion (inside)

North Decant Structure Corrosion (inside, near grate surface)



North Decant Structure Corrosion (inside)

North Decant Outfall

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

North Side CDF

East Side CDF, Facing North, Dike Crest

East Side CDF, Facing South, Exterior Dike Slope

East Side CDF, Facing North, Dike Crest and Exterior Slope

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

CDF SE Corner Exterior Slope, Historic Access Ramp in Background

CCND Dike Erosion at Water Stop (East Side, Facing South)

CCND Dike Erosion at Water Stop (West Side, Facing South)

SE Corner, Facing North, Exterior Slope

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

South Decant Structure

South Decant Structure

Dike Crest, South Decant Structure

South Decant Structure

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

South Decant Structure

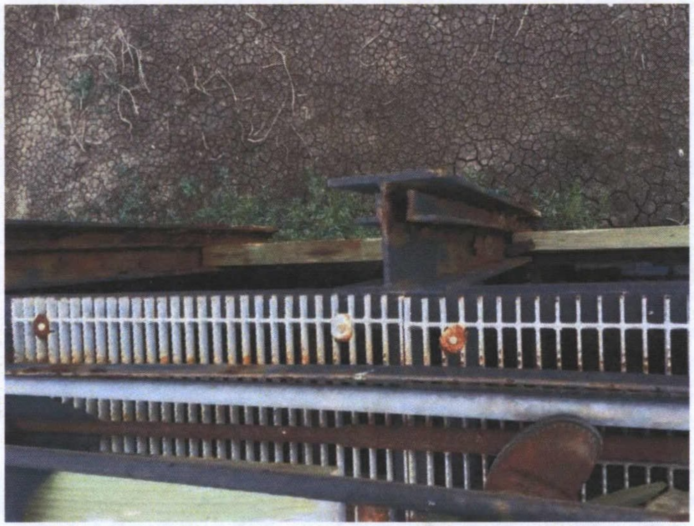
South Decant Structure

South Decant Structure Corrosion

South Decant Structure Corrosion

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

South Decant Structure Corrosion



South Decant Structure Corrosion

South Decant Structure

South Decant Structure

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

South Decant Structure Corrosion

South Decant Structure Corrosion (inside)

South Decant Structure Corrosion (inside)

South Decant Outfall

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

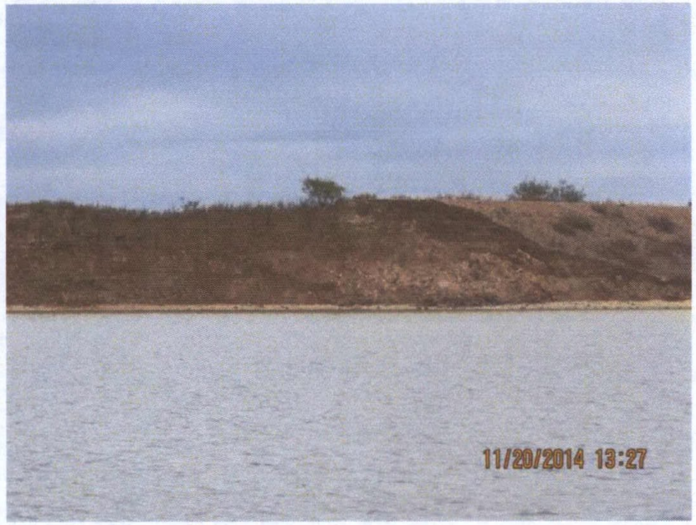
West Dike (emergency spillway)

West Dike (emergency spillway)

NW Corner CDF

DREDGE ISLAND SITE INSPECTION PHOTOGRAPHS
11/20/2014

NE CDF External Slope, Cut Near Toe from Dredge Operations



South CCND Dike Erosion (exterior)

South CCND Dike Erosion (exterior)

APPENDIX D

CAPA SOIL CAP INSPECTION RECORDS 2014

CAPA CAP INSPECTION RECORD

Date: 03/24/14 **Time Started:** 12:00 **Time Ended:** 12:30

Weather Conditions: 54°F, Mostly Cloudy, Scattered Showers

Observations/Comments:

ITEM TO INSPECT	TYPICAL PROBLEMS ENCOUNTERED	CONDITIONS		COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
		Normal	Abnormal	
Cap	Erosion	√		Southwest corner is showing signs of erosion
	Settling	√		None observed
	Ponding	√		Some minor ponding in various locations of the site
	Washouts	√		None observed
	Holes	√		None observed
	Vehicle Ruts	√		Minor rutting from herbicide treatment Northeast corner continues to be driven over
	Intrusive Vegetation	√		Some vegetation - continue herbicide treatment
Signage	In Place	√		Good condition
	Legible	√		Legible
Storm Drains	Grates	√		Northwest corner grate is damaged.
	Debris	√		West drain has some vegetation on it.
Equipment or Wastes	Proper Storage	√		Waste stored in system containment or at satellite collection station
Extraction Wells	Controllers	√		Good condition
	Boxes	√		Good condition
	Electrical	√		Good condition
	Conduit	√		Good condition
	Transfer Piping		√	Good condition. Secondary containment piping has broken away from the boxes.
Treatment System	Equipment	√		Good condition
	Building	√		Some support memebers showing signs of rust and pieces of the roof are loose. There are large leaks that occur during a heavy rain storm. Stairway has been boarded up. There is severe damage to the roof.
	Leaks	√		None observed
	Odors	√		None observed

Additional Comments or Observations: Cap and system is in good condition. All well piping from the wells to the system will be replaced next year. All secondary piping will be replaced at that time. Vegetation on the cap will be monitored closely.

Inspector:
Kevin Dworsky

Inspectors Signature:

PASTOR, BEHLING & WHEELER, LLC
620 E. Airline
Victoria, Texas 77901
Phone: 361-573-6443, Fax: 361-573-6449

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

1 - Cap, view Northeast from Southwest corner

2 - Cap, storm sewer drain at R-301

3 – Cap, West storm sewer drain

4 – Cap, Northwest corner storm drain

5 – Cap, North storm drain

6 – Cap, North storm drain

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

7 – Cap, view Southeast from Northwest corner

8 – Cap, view Southwest from Northeast corner

9 – Cap, view Northwest from Southeast corner

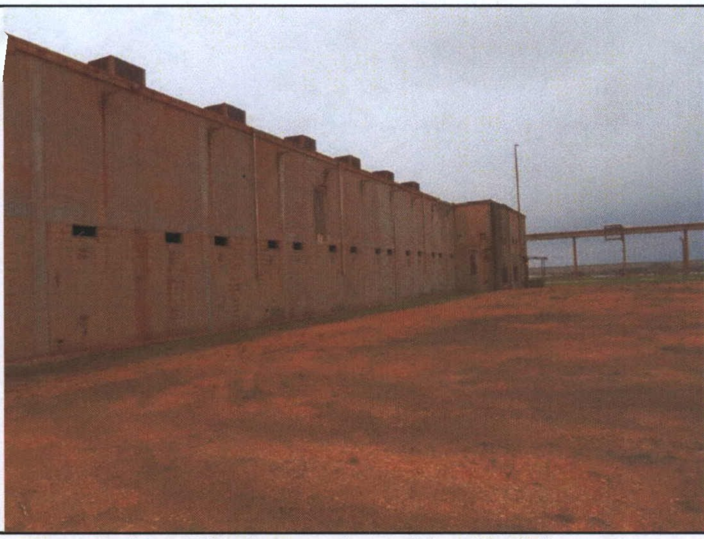
10 – Cap, Not in service extraction well

11 – Cap, current vegetation

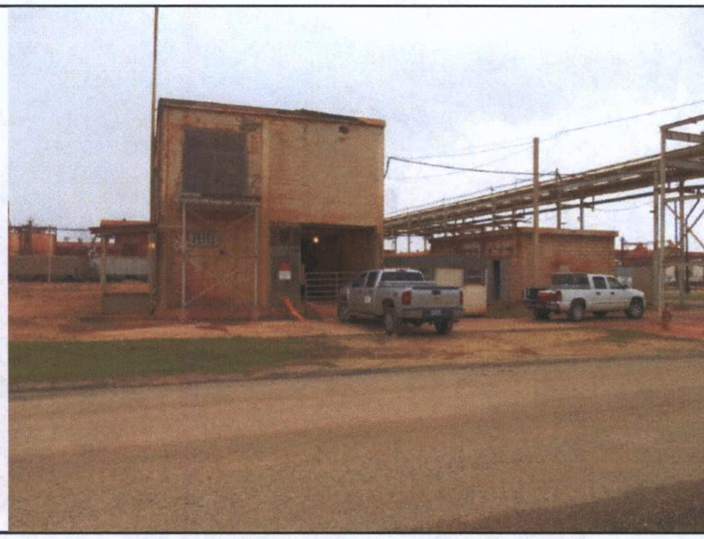
12 – Cap, Ruts on Northeast corner

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

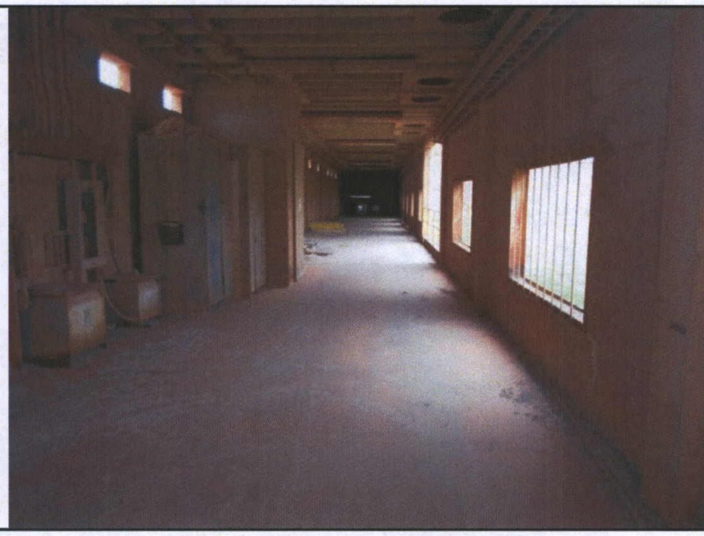


13 – Viewing northern side of building



14 – Building, showing damaged roof

15 – Building, viewing system



16 – Building, viewing corridor

17 – Viewing inside the recovery well box

18 – Viewing monitoring wells and recovery wells

CAPA CAP INSPECTION RECORD

Date: 06/19/14 **Time Started:** 9:30 **Time Ended:** 10:00

Weather Conditions: 83° F, Partly Cloudy Sky, Breezy

Observations/Comments:

ITEM TO INSPECT	TYPICAL PROBLEMS ENCOUNTERED	CONDITIONS		COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
		Normal	Abnormal	
Cap	Erosion	√		Southwest corner is showing signs of erosion due to runoff
	Settling	√		None observed
	Ponding	√		Some minor ponding in various locations of the site
	Washouts	√		None observed
	Holes	√		None observed
	Vehicle Ruts	√		Some ruts from herbicide treatment Northeast corner continues to be driven over
	Intrusive Vegetation	√		Some vegetation - continue herbicide treatment
Signage	In Place	√		Good condition
	Legible	√		Legible
Storm Drains	Grates	√		Northwest corner grate is damaged.
	Debris	√		Large amount of debris on the southwest drain. Vegetation covering the west drain.
Equipment or Wastes	Proper Storage	√		Waste stored in system containment or at satellite collection station
Extraction Wells	Controllers	√		In good working order
	Boxes	√		Good condition
	Electrical	√		Good condition
	Conduit	√		Good condition
	Transfer Piping		√	Good condition. Secondary containment piping has broken away from the boxes.
Treatment System	Equipment	√		Good condition
	Building	√		Some support memebers showing signs of rust and pieces of the roof are loose. There are large leaks that occur during a heavy rain storm. Stairway has been boarded up. There is severe damage to the roof.
	Leaks	√		None observed
	Odors	√		None observed

Additional Comments or Observations: Cap and system is in good condition. All well piping from the wells to the system will be replaced next year. All secondary piping will be replaced at that time.

Inspector:

Kevin Dworsky

Inspectors Signature:

PASTOR, BEHLING & WHEELER, LLC

620 E. Airline

Victoria, Texas 77901

Phone: 361-573-6443 Fax: 361-573-6449

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

1 - Cap, view Northeast from Southwest corner

2 - Cap, storm sewer drain at R-301

3 – Cap, West storm sewer drain

4 – Cap, Northwest corner storm drain

5 – Cap, North storm drain

6 – Cap, North storm drain

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

7 – Cap, view Southeast from Northwest corner

8 – Cap, view Southwest from Northeast corner

9 – Cap, view Northwest from Southeast corner

10 – Cap, view of damage to Northeast corner

11 – Cap, current vegetation

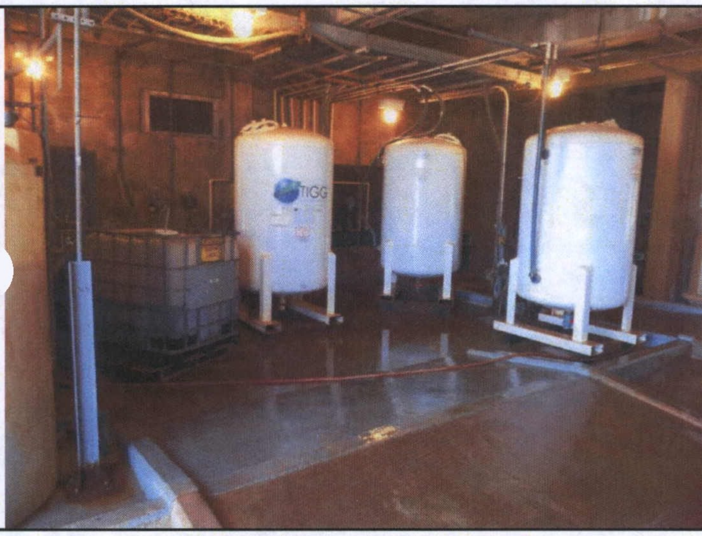
12 – Cap, Ruts from herbicide treatment

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

13 – Viewing northern side of building

14 – Building, showing damaged roof



15 – Building, viewing system

16 – Building, viewing corridor

17 – Viewing monitoring wells and recovery wells

18 – Viewing electrical conduit

CAPA CAP INSPECTION RECORD

Date: 09/29/14 **Time Started:** 11:30 **Time Ended:** 12:10

Weather Conditions: 80° F, Mostly Cloudy Sky, North Wind @ 10mph

Observations/Comments:

ITEM TO INSPECT	TYPICAL PROBLEMS ENCOUNTERED	CONDITIONS		COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
		Normal	Abnormal	
Cap	Erosion	√		Southwest corner is showing signs of erosion due to runoff. Some soil has migrated off the cap.
	Settling	√		None observed
	Ponding	√		Some minor ponding in various locations of the site
	Washouts	√		None observed
	Holes	√		None observed
	Vehicle Ruts	√		Some minor ruts from herbicide treatment Northeast corner continues to be driven over
	Intrusive Vegetation	√		Some vegetation - continue herbicide treatment
Signage	In Place	√		Good condition
	Legible	√		Legible
Storm Drains	Grates	√		Northwest corner grate is damaged.
	Debris	√		Vegetation covering the west drain.
Equipment or Wastes	Proper Storage	√		Waste stored in system containment or at satellite collection station
Extraction Wells	Controllers	√		In good working order
	Boxes	√		Good condition
	Electrical	√		Good condition
	Conduit	√		Good condition
	Transfer Piping		√	Good condition. Secondary containment piping has broken away from the boxes.
Treatment System	Equipment	√		Paddle has fallen off mixer. Bag filter stand needs to be secured.
	Building	√		Some support memebers showing signs of rust and pieces of the roof are loose. There are large leaks that occur during a heavy rain storm. Stairway has been boarded up. There is severe damage to the roof.
	Leaks	√		None observed
	Odors	√		None observed

Additional Comments or Observations: Cap and system is in good condition. All well piping from the wells to the system will be replaced next year. All secondary piping will be replaced at that time. Pump 50B was down during inspection.

Inspector:
Kevin Dworsky

Inspectors Signature:

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CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

1 - Cap, view Northeast from Southwest corner

2 - Cap, storm sewer drain at R-301

3 – Cap, West storm sewer drain

4 – Cap, Northwest corner storm drain

5 – Cap, North storm drain

6 – Cap, North storm drain

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

7 – Cap, view Southeast from Northwest corner

8 – Cap, view Southwest from Northeast corner

9 – Cap, view Northwest from Southeast corner

10 – Cap, view of damage to Northeast corner

11 – Cap, current vegetation

12 – Cap, Ruts from herbicide treatment and soil building up on edge of cap

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

	
13 – Viewing northern side of building	14 – Building, showing damaged roof
	
15 – Building, viewing system	16 – Building, viewing corridor
	
17 – Viewing monitoring wells and recovery wells	18 – Viewing system effluent outfall

CAPA CAP INSPECTION RECORD

Date: 12/24/14 **Time Started:** 12:15 **Time Ended:** 13:00

Weather Conditions: 52° F, Clear Sky, Windy

Observations/Comments:

ITEM TO INSPECT	TYPICAL PROBLEMS ENCOUNTERED	CONDITIONS		COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
		Normal	Abnormal	
Cap	Erosion	√		Southwest corner is showing signs of erosion due to runoff. Some soil has migrated off the cap.
	Settling	√		None observed
	Ponding	√		Some minor ponding in various locations of the site
	Washouts	√		None observed
	Holes	√		None observed
	Vehicle Ruts	√		Some minor ruts from herbicide treatment Northeast corner continues to be driven over
	Intrusive Vegetation	√		Some vegetation - continue herbicide treatment
Signage	In Place	√		Good condition
	Legible	√		Legible
Storm Drains	Grates	√		Northwest corner grate is damaged.
	Debris	√		Vegetation covering the west drain. Large amount of debris on the Southwest drain.
Equipment or Wastes	Proper Storage	√		Waste stored in system containment or at satellite collection station
Extraction Wells	Controllers	√		In good working order
	Boxes	√		Good condition
	Electrical	√		Good condition
	Conduit	√		Good condition
	Transfer Piping		√	Good condition. Secondary containment piping has broken away from the boxes.
Treatment System	Equipment	√		A hole was found in the exhaust pipe.
	Building	√		Some support memebers showing signs of rust and pieces of the roof are loose. There are large leaks that occur during a heavy rain storm. Stairway has been boarded up. There is severe damage to the roof.
	Leaks	√		None observed
	Odors	√		None observed

Additional Comments or Observations: Cap and system is in good condition. All well piping from the wells to the system will be replaced next year. All secondary piping will be replaced at that time.

Inspector:
Kevin Dworsky

Inspectors Signature: [signature]

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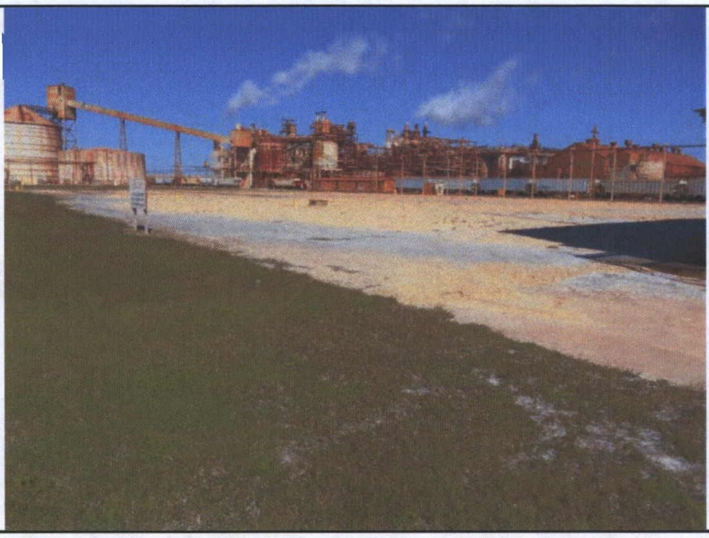
CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas



1 - Cap, view Northeast from Southwest corner

2 - Cap, storm sewer drain at R-301

3 – Cap, West storm sewer drain

4 – Cap, Northwest corner storm drain

5 – Cap, North storm drain

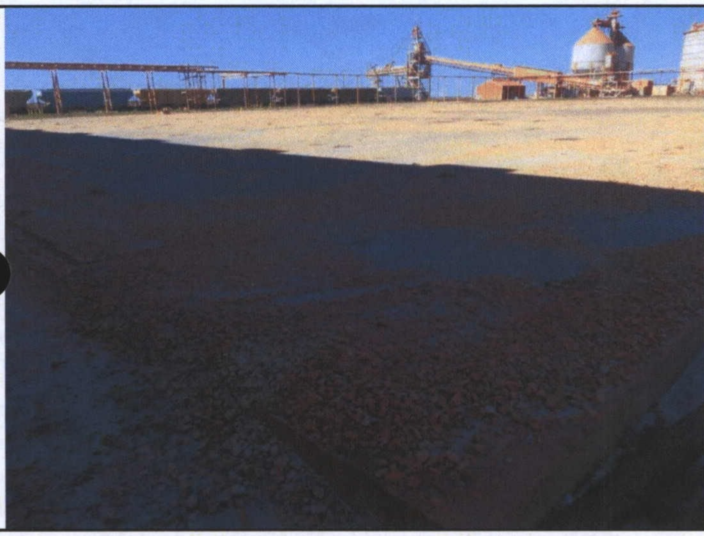
6 – Cap, North storm drain

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas


7 – Cap, view Southeast from Northwest corner


8 – Cap, view Southwest from Northeast corner


9 – Cap, view Northwest from Southeast corner

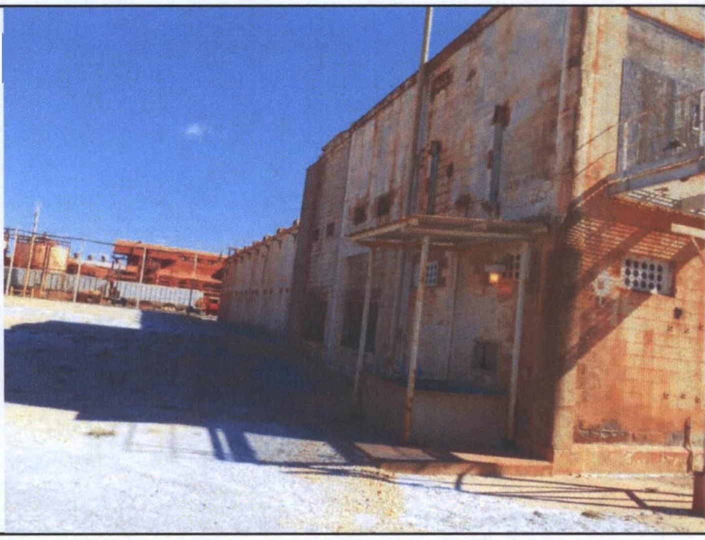

10 – Cap, view of damage to Northeast corner


11 – Cap, current vegetation


12 – Cap, Ruts from herbicide treatment and soil building up on edge of cap

CAPA CAP INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas



13 – Viewing northern side of building

14 – Building, showing damaged roof

15 – Building, viewing system

16 – Building, viewing corridor

17 – Viewing monitoring wells and recovery wells

18 – Viewing system effluent outfall

APPENDIX E

WITCO AREA INSPECTION RECORDS 2014

WITCO AREA INSPECTION RECORD

Date: 03/24/14 **Time Started:** 11:25 **Time Ended:** 12:00

Weather Conditions: 55° F, mostly cloudy sky, windy, scattered showers

Observations/Comments:

AREA	ITEM	CONDITIONS		COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
		Normal	Abnormal	
Drainage Channel	Cracks in Concrete	√		Few old cracks, no new ones in new channel.
	Obstructions	√		Vegetation is hanging into the drainage channel.
	Erosion	√		Slight erosion underneath the inlet pipes.
	Deterioration	√		Marks on concrete, cause is unknown. Areas of the old drainage channel continues to deteriorate.
	Washouts	√		Slight movement of rip rap at the toe of the drainage channel.
	Rip Rap	√		Slight movement and some vegetation.
Soil Cap (Tank Farm)	Erosion	√		None observed.
	Settlement	√		Few areas of ponding
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Intrusive Trees	√		None observed.
	Drainage/Rip Rap	√		Some vegetation and intrusive trees; continue with vegetation controls.
	Animal Damage	√		None observed.
	Vehicle Ruts	√		None observed.
	Damage	√		None observed.
Soil Cap (O/W Separator)	Erosion	√		None observed.
	Settlement	√		None observed.
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Damage	√		None observed.
Slope from Cap to Channel	Erosion	√		None observed.
	Slumping	√		None observed.
	Vegetation	√		Heavy vegetation in area.
Signage	Damage	√		Good condition
	Illegible	√		Good condition
DNAPL Collection Sump	Damage	√		Unable to place cap on sump due to location of lid.
	Product Level	√		WL in sump = 4.83' BMP, no DNAPL, 12.72' TD

Additional Comments or Observations: Continue shredding the Witco Area and remove vegetation from the rip rap area of the cap drainage and the edge of the drainage channel. Institute vegetaion control for the slope which includes weedeating of the vegetation. The deterioration of the old portion of the drainage channel and the heavy vegetation in it is currently not a concern unless the flow is restricted or there are signs of seepage from the cap. Vegetation needs to be controlled at the top of the channel.

Inspector:
Kevin Dworsky

Inspectors Signature: [signature]

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WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

1 - Northeast corner, viewing Southwest

2 - Northwest corner, viewing Southeast

3 – Southwest corner, viewing Northeast

4 - Southeast corner, viewing Northwest

5 - Slope between tank farm and drainage channel/marsh

6 - Slope between tank farm and drainage channel/marsh

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

7 – View of silt fence located at the bottom of the cap slope

8 - Northeast Witco Cap, viewing South

9 - View of rip rap at the end of the drainage channel

10 - View of West end of drainage channel, viewing West

11 - View of East end of drainage channel, viewing East

12 - View of drainage rip rap from tank farm cap

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

13 - View of vegetation in drainage rip rap from drainage channel

14 - View of heavily vegetated channel east of the cap rip rap

15 - View of deteriorating side slope on channel

16 - View of minor movement of rip rap at the end of the drainage channel

17 – View of minor erosion under inlet pipe

18 - View of monitoring well

WITCO AREA INSPECTION RECORD	PAGE 1 of 1

Date: 06/19/14 **Time Started:** 11:30 **Time Ended:** 12:00

Weather Conditions: 83° F, partly cloudy sky, breezy

Observations/Comments:

AREA	ITEM	CONDITIONS		COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
		Normal	Abnormal	
Drainage Channel	Cracks in Concrete	√		Few old cracks, no new ones in new channel.
	Obstructions	√		Vegetation is hanging into the drainage channel.
	Erosion	√		Slight erosion underneath the inlet pipes.
	Deterioration	√		Marks on concrete, cause is unknown. Areas of the old drainage channel continues to deteriorate. Heavy vegetation.
	Washouts	√		Slight movement of rip rap at the toe of the drainage channel.
	Rip Rap	√		Slight movement and some vegetation.
Soil Cap (Tank Farm)	Erosion	√		None observed.
	Settlement	√		Few areas of ponding
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Intrusive Trees	√		None observed.
	Drainage/Rip Rap	√		Some vegetation and intrusive trees; continue with vegetation controls.
	Animal Damage	√		None observed.
	Vehicle Ruts	√		None observed.
	Damage	√		None observed.
Soil Cap (O/W Separator)	Erosion	√		None observed.
	Settlement	√		None observed.
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Damage	√		None observed.
Slope from Cap to Channel	Erosion	√		None observed.
	Slumping	√		None observed.
	Vegetation	√		Heavy vegetation in area.
Signage	Damage	√		Good condition
	Illegible	√		Good condition
DNAPL Collection Sump	Damage	√		Unable to place cap on sump due to location of lid.
	Product Level	√		No DNAPL

Additional Comments or Observations: Continue shredding the Witco Area and remove vegetation from the rip rap area of the cap drainage and the edge of the drainage channel. Institute vegetaion control for the slope and top of the drainage channel which includes weedeating of the vegetation. The deterioration of the old portion of the drainage channel and the heavy vegetation in it is currently not a concern unless the flow is restricted or there are signs of seepage from the cap.

Inspector:
Kevin Dworsky

Inspectors Signature:

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WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

1 - Northeast corner, viewing Southwest

2 - Northwest corner, viewing Southeast

3 – Southwest corner, viewing Northeast

4 – Viewing of cap drainage

5 - Slope between tank farm and drainage channel/marsh

6 - Slope between tank farm and drainage channel/marsh

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

7 – Northeast Witco Cap, viewing North

8 - Northeast Witco Cap, viewing South

9 - View of rip rap at the end of the drainage channel

10 - View of West end of drainage channel, viewing West

11 - View of East end of drainage channel, viewing East

12 - View of drainage rip rap from tank farm cap

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

13 - View of vegetation in drainage rip rap from drainage channel

14 - View of heavily vegetated channel east of the cap rip rap

15 - View of deteriorating side slope on channel

16 - View of connection between old and new channel

17 – View of animal burrow above top of channel

18 - View of monitoring well

WITCO AREA INSPECTION RECORD

Date: 09/29/14 **Time Started:** 11:00 **Time Ended:** 11:20

Weather Conditions: 77° F, mostly cloudy sky, windy

Observations/Comments:

AREA	ITEM	CONDITIONS Normal	CONDITIONS Abnormal	COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
Drainage Channel	Cracks in Concrete	√		Few old cracks, no new ones in new channel.
	Obstructions	√		Vegetation is heavy in the upper channel. Vegetation is hanging into the drainage channel.
	Erosion	√		Slight erosion underneath the inlet pipes.
	Deterioration	√		Marks on concrete, cause is unknown. Areas of the old drainage channel continues to deteriorate. Signs of deterioration around inlet drains.
	Washouts	√		Slight movement of rip rap at the toe of the drainage channel.
	Rip Rap	√		Slight movement and some vegetation.
Soil Cap (Tank Farm)	Erosion	√		Difficult to inspect due to vegetation.
	Settlement	√		Few areas of ponding.
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Intrusive Trees	√		None observed.
	Drainage/Rip Rap	√		Heavy vegetation and intrusive trees; need vegetation control.
	Animal Damage	√		None observed.
	Vehicle Ruts	√		None observed.
	Damage	√		None observed.
Soil Cap (O/W Separator)	Erosion	√		None observed.
	Settlement	√		None observed.
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Damage	√		Minor to moderate rutting on cap.
Slope from Cap to Channel	Erosion	√		Minor signs of erosion.
	Slumping	√		None observed.
	Vegetation	√		Heavy vegetation in area.
Signage	Damage	√		Good condition
	Illegible	√		Good condition
DNAPL Collection Sump	Damage	√		Unable to place cap on sump due to location of lid.
	Product Level	√		WL in sump = 3.55' BMP, no DNAPL, 12.72' TD

Additional Comments or Observations: Continue shredding the Witco Area and remove vegetation from the rip rap area of the cap drainage and the edge of the drainage channel. Institute vegetaion control for the slope and top of lower drainage channel which includes weedeating of the vegetation. The deterioration of the old portion of the drainage channel and the heavy vegetation in it is currently not a concern unless the flow is restricted or there are signs of seepage from the cap.

Inspector:
Kevin Dworsky

Inspectors Signature:

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Phone: 361-573-6443 Fax: 361-573-6449

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

	
1 - Northeast corner, viewing Southwest	2 - Northwest corner, viewing Southeast
	
3 – Southwest corner, viewing Northeast	4 - Southeast corner, viewing Northwest
	
5 - Slope between tank farm and drainage channel/marsh	6 - Slope between tank farm and drainage channel/marsh

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

7 – View of silt fence located at the bottom of the cap slope

8 - Northeast Witco Cap, viewing South

9 - View of rip rap at the end of the drainage channel

10 - View of West end of drainage channel, viewing West

11 - View of East end of drainage channel, viewing East

12 - View of drainage rip rap from tank farm cap

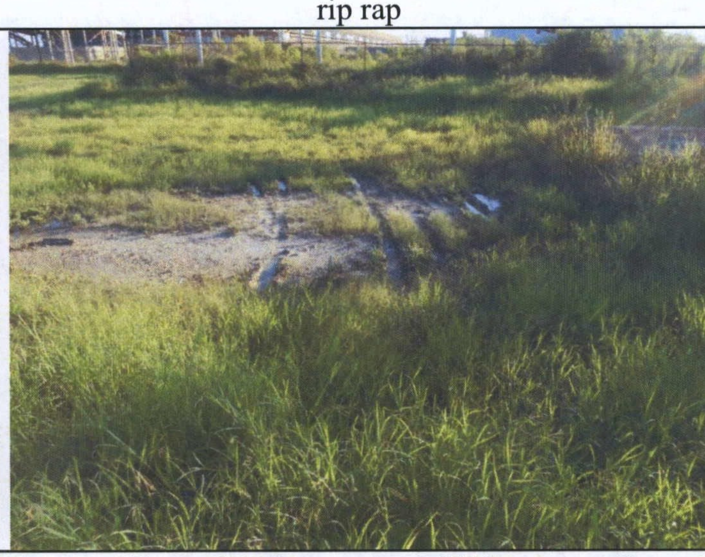
WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

13 - View of vegetation in drainage rip rap from drainage channel

14 - View of heavily vegetated channel east of the cap rip rap

15 - View of deteriorating side slope on channel



16 - View of rutting on the O/W Separator Cap

17 – View of minor erosion under inlet pipe

18 - View of monitoring well

WITCO AREA INSPECTION RECORD

Date: 12/24/14 **Time Started:** 13:00 **Time Ended:** 13:30

Weather Conditions: 77° F, mostly cloudy sky, windy

Observations/Comments:

AREA	ITEM	CONDITIONS: Normal	CONDITIONS: Abnormal	COMMENTS, CORRECTIVE ACTIONS NEEDED, COORECTIVE ACTIONS IMPLEMENTED (WITH DATE)
Drainage Channel	Cracks in Concrete	√		Few old cracks, no new ones in new channel.
	Obstructions	√		Vegetation is heavy in the upper channel. Vegetation is hanging into the drainage channel.
	Erosion	√		Slight erosion underneath the inlet pipes.
	Deterioration	√		Marks on concrete, cause is unknown. Areas of the old drainage channel continues to deteriorate. Signs of deterioration around inlet drains.
	Washouts	√		Slight movement of rip rap at the toe of the drainage channel.
	Rip Rap	√		Slight movement and some vegetation.
Soil Cap (Tank Farm)	Erosion	√		None observed.
	Settlement	√		Few areas of ponding.
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Intrusive Trees	√		None observed.
	Drainage/Rip Rap	√		Heavy vegetation and intrusive trees; need vegetation control.
	Animal Damage	√		None observed.
	Vehicle Ruts	√		Some rutting observed.
	Damage	√		None observed.
Soil Cap (O/W Separator)	Erosion	√		None observed.
	Settlement	√		Some signs of ponding.
	Vegetation	√		Healthy vegetation; continue with shredding of cap.
	Damage		√	Minor to moderate rutting on cap.
Slope from Cap to Channel	Erosion	√		Minor signs of erosion.
	Slumping	√		None observed.
	Vegetation		√	Heavy vegetation in area.
Signage	Damage	√		Good condition
	Illegible	√		Good condition
DNAPL Collection Sump	Damage	√		Unable to place cap on sump due to location of lid.
	Product Level	√		WL in sump = 4.30' BMP, no DNAPL, 12.74' TD

Additional Comments or Observations: Continue shredding the Witco Area and remove vegetation from the rip rap area of the cap drainage and the edge of the drainage channel. Institute vegetaion control for the slope and top of lower drainage channel which includes weedeating of the vegetation. The deterioration of the old portion of the drainage channel and the heavy vegetation in it is currently not a concern unless the flow is restricted or there are signs of seepage from the cap. Monitor wells are in good condition.

Inspector:

Kevin Dworsky

Inspectors Signature:

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WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

1 - Northeast corner, viewing Southwest

2 - Northwest corner, viewing Southeast

3 – Southwest corner, viewing Northeast

4 - Southeast corner, viewing Northwest

5 - Slope between tank farm and drainage channel/marsh

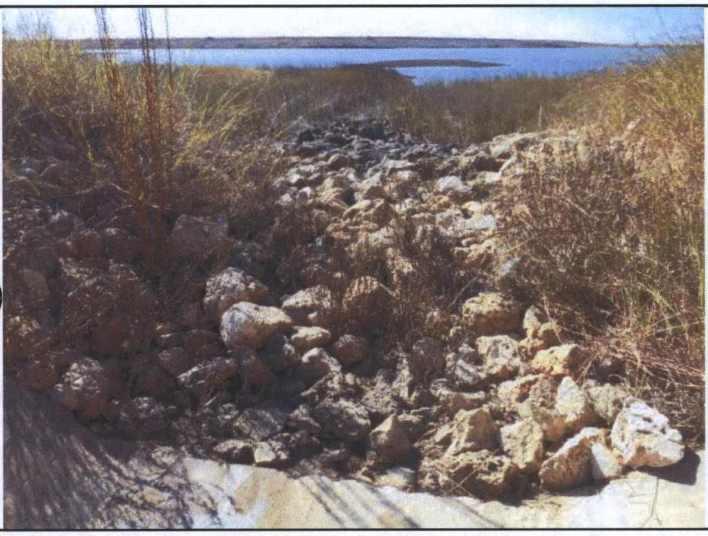
6 - Slope between tank farm and drainage channel/marsh

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

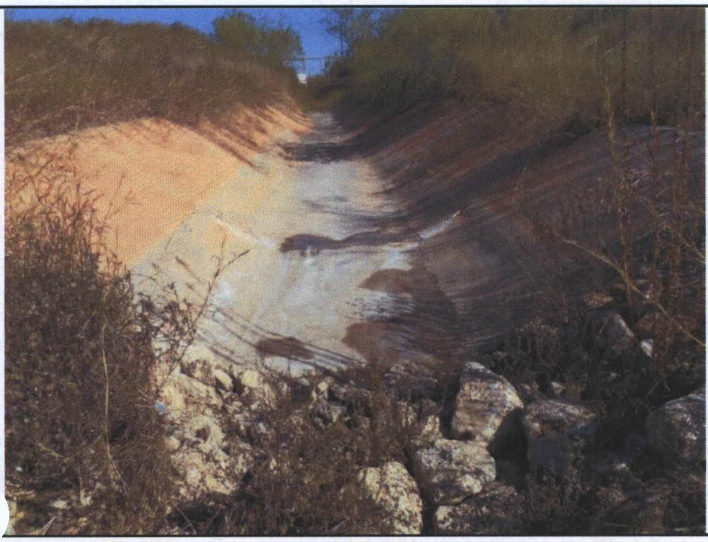
7 – View of silt fence located at the bottom of the cap slope

8 - Northeast Witco Cap, viewing South



9 - View of rip rap at the end of the drainage channel

10 - View of West end of drainage channel, viewing West



11 - View of East end of drainage channel, viewing East

12 - View of drainage rip rap from tank farm cap

WITCO INSPECTION PHOTO LOG

ALCOA PCO – Point Comfort, Texas

13 - View of vegetation in drainage rip rap from drainage channel

14 - View of heavily vegetated channel east of the cap rip rap

15 - View of deteriorating side slope on channel

16 - View of rutting on the O/W Separator Cap

17 – View of minor erosion under inlet pipe

18 - View of monitoring well