ENCYCLE/TEXAS, INC.

CORRECTIVE MEASURES STUDY AND CORRECTIVE MEASURES IMPLEMENTATION WORK PLAN

5500 UP RIVER ROAD
CORPUS CHRISTI, TEXAS

MAY 27, 2005

ARCADIS
Infrastructure, environment, buildings

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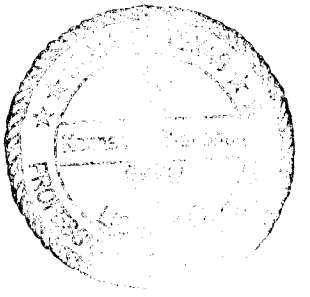

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Corrective Measures Study and Corrective Measures Implementation Work Plan

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1. INTRODUCTION

1.1 General

This report provides a Corrective Measures Study (CMS) and a Corrective Measures Implementation (CMI) Work Plan for the Encycle/Texas, Inc. (Encycle) facility located at 5500 Up River Road in Corpus Christi, Texas. The CMS and CMI Work Plan have been prepared in accordance with Part VII.B. of the Consent Decree issued to Encycle and ASARCO, Inc., which was entered in the U.S. District Court for the Southern District of Texas on October 6, 1999; and Section 6 of the Stipulation and Order Modifying Consent Decree between the United States and the State of Texas vs. Encycle and ASARCO, Inc., that was entered in the U.S. District Court for the Southern District of Texas on August 13, 2004.

This CMS and CMI Work Plan report does not address affected sediments in the Corpus Christi Ship Channel adjacent to the Encycle 01 Landfill. A CMS for the affected sediments in the Corpus Christi Ship Channel adjacent to the Encycle 01 Landfill will be prepared as a separate report, pending Texas Commission on Environmental Quality (TCEQ) approval of the ecological protective concentration levels (PCLs) submitted to the TCEQ on April 25, 2005.

1.2 Purpose

The purpose of the CMS is to identify, develop, evaluate, and recommend corrective measures alternatives that will eliminate, or reduce to acceptable levels, risks to human health and ecological receptors posed by releases and/or potential releases of contaminants at solid waste management units (SWMUs) and areas of concern (AOCs) at the Encycle facility. The purpose of the CMI Work Plan is to provide detailed proposed engineering design, monitoring plans, schedules, and financial assurance for implementation of the remedies selected in the CMS.

1.3 Overview of Corrective Action Objectives

The overall corrective action objectives for site media are, to the extent practicable, to eliminate releases from SWMUs/AOCs (referred to herein as "SWMUs") that pose threats to human health and the environment, and to reduce or eliminate exposure to contaminated media to a level consistent with reasonably expected future, as well as current land use. The source, nature, and extent of releases from SWMUs at the site were determined during the RCRA Facility Investigation (RFI) conducted during 2000

- 2002, the Phase II RFI conducted during 2003, East and West Lagoon closure activities conducted during 2000 - 2004, and soil sampling below cracks in concrete floors as part of RCRA final facility closure activities conducted during 2003 - 2004. Media cleanup standards were developed in the baseline risk assessment (BLRA) that was submitted to the TCEQ on April 14, 2004, and as modified in the BLRA Addendum submitted to the TCEQ on August 27, 2004, and the revised BLRA Addendum submitted to the TCEQ on November 19, 2004. Authorization to proceed with the CMS was granted in a January 31, 2005 letter from the TCEQ.

1.4 Report Organization

This report is divided into four main sections, this introduction (Section 1), the CMS (Section 2), CMI Work Plan (Section 3), and references (Section 4). The CMS Section is subdivided into subsections 2.1 through 2.7. The CMI Work Plan is subdivided into subsections 3.1 through 3.5.

2. CORRECTIVE MEASURES STUDY

2.1 Description of Current Conditions

2.1.1 Site Description

The Encycle facility (site) is approximately 108 acres in size and is bordered by the Corpus Christi Ship Channel to the north; McBride Lane and Valero Refining (formerly Coastal Refining) to the east; Up River Road, a gasoline service station (LPST ID No. 94543), and vacant lots to the south; and a 54-acre public grain elevator to the west. The site location is shown on Figure 1, and Figure 2 is an aerial photograph of the site area.

Figure 3 depicts the layout of the site, which is divided into three parcels designated as the Meaney Tract, the Northern Tract, and the Southern Tract. The Meaney Tract consists of approximately 16.8 acres at the west end of the site. The Meaney Tract is leased to Encycle by the Meaney-Walsh Properties No. 1 Ltd. Two SWMUs (Boneyard, Waste Pile) are located on the Meaney Tract.

The Northern Tract, which is owned by Encycle, occupies the low-lying northern portion of the site between the Union Pacific Railroad right-of-way and the Corpus Christi Ship Channel. Two SWMUs (01 Landfill, East and West Lagoons) are located on the Northern Tract.

The Southern Tract, which is owned by Encycle, occupies the topographically higher southern portion of the site, east of the Meaney Tract. The Southern Tract contains numerous buildings and concrete-paved areas associated with historic ASARCO and Encycle operations. As shown on Figure 4, sixteen SWMUs (Railroad Tracks Area, Feed Tank 1, Feed Tank 2, Road Leading to the West of Building C, Former Sludge Drying Beds, Reactor Clarifier, Facility No. 1, Facility No. 2, Facility No. 3, West Cell House, NOR 43 Building, Product Storage Building C/Lettered Bins, Product Storage Bins/Numbered Bins, Building North of Facility 2, Old Casting Building, Storm Sewer System) are located on the Southern Tract.

2.1.2 Operational History

The site was originally developed by American Smelting and Refining Company (now ASARCO, Inc.) in 1941 to process mineral ores for the production of high grade zinc. The facility began operation in 1942 and produced high grade zinc from sulfide ore concentrates using electrolyte purification circuits and pyro-metallurgical processes. Facility operations expanded in 1956 to increase production of zinc, and the zinc products including high grade zinc, continuous galvanizing grade zinc, and zinc alloys. Cadmium and zinc sulfate powder were other by-products produced at the facility.

The facility was shut down during 1985, and the site was inactive from 1986 until April 1988. The facility was operated by Encycle from 1988 through 2002 as a commercial waste management facility treating primarily inorganic hazardous and non-hazardous materials for the purpose of recycling, reclamation, and reduction in volume using hydro-metallurgical processes. Products included copper, lead, zinc, nickel, chromium, cobalt, and silver-bearing materials.

Facility operations ceased in 2003. Closure of the facility's hazardous and solid waste management units was conducted during 2003 and 2004 in accordance with the approved Closure Plans for the non-permitted, permitted, interim-authorized, and planned permitted units, and the August 13, 2004 Stipulation and Order Modifying Consent Decree. As of December 31, 2004, all such units have been closed and approved by the TCEQ except for four units on the Southern Tract (Thickener No. 2, Feed Tank No. 2, Facility 2 Press 225045, and Thickener 6 Overflow Tank 825220) as discussed in the following paragraph. Additional details regarding RCRA final closure activities at the site were provided to the TCEQ in reports entitled "Final Closure Certification Report, Containment Building (Numbered Bins)" dated February 2, 2004; "Final Closure Certification Report, Facility No. 3 Non-Permitted Units" dated April 20, 2004; "Final Closure Certification Report, Facility No. 1 Non-

Permitted Units" dated September 23, 2004; "Final Closure Certification Report, Lettered Bins Building (Building C)" dated November 5, 2004; "Final Closure Certification Report, Facility No. 2 Non-Permitted Units" dated November 9, 2004; and "Final Closure Certification Report, Receiving Building (Building B) and Facility No. 1 and Facility No. 3 Permitted Container Storage Areas" dated November 11, 2004.

In accordance with Section 5.1.3 of the August 13, 2004 Stipulation and Order Modifying Consent Decree, four non-permitted units currently remain in service in the Southern Tract (Thickener No. 2, Feed Tank No. 2, Facility 2 Press 225045, Thickener 6 Overflow Tank 825220). These four active units are associated with the facility wastewater treatment system which is currently operative. As detailed below in Section 3.1, remedial equipment cleaning water generated during corrective measures implementation will be routed to the Encycle wastewater treatment system.

2.1.3 Recent Corrective Action Activities

The regulatory history of the site and historic site environmental investigations were previously provided to the TCEQ in Sections 3 and 4, respectively, of the August 13, 2002 RCRA Facility Investigation Report. An updated summary of site environmental investigations was provided to the TCEQ in Section 2.3 of the April 14, 2004 Baseline Risk Assessment. A chronology of recent (2002 – present) corrective action activities at the site is as follows:

- August 13, 2002: Report entitled "RCRA Facility Investigation Report" submitted to TCEQ.
- December 12, 2002: TCEQ letter approving RFI, requests Phase II RFI.
- May 9, 2003: Report entitled "Phase II RCRA Facility Investigation Report" submitted to TCEQ.
- September 4, 2003: TCEQ letter requesting investigation of Corpus Christi Ship Channel.
- November 2003: Removed sediments above West Lagoon high-density polyethylene liner, located in the Northern Tract, as part of the Closure Plan for the East and West Lagoons.

- November 2003 – November 2004: Conducted final RCRA closure of the facility's hazardous and solid waste management units.

- December 3, 2003: Report entitled "Phase II RCRA Facility Investigation Report Addendum – Sediment Sampling Results" submitted to TCEQ.

- January 15, 2004: TCEQ letter approving Phase II RFI Addendum, authorizing preparation of BLRA.

- February 2, 2004: Report entitled "Final Closure Certification Report, Containment Building (Numbered Bins)" submitted to TCEQ.

- March 2004: Removed (excavated) sediments and affected clay bottom soils from the East Lagoon, located in the Northern Tract, as part of the Closure Plan for the East and West Lagoons.

- March 11, 2004: TCEQ letter approving Closure Certification Report for the Containment Building (Numbered Bins).

- April 14, 2004: Report entitled "Baseline Risk Assessment" submitted to TCEQ.

- April 20, 2004: Report entitled "Final Closure Certification Report, Facility No. 3 Non-Permitted Units" submitted to TCEQ.

- May 24, 2004: TCEQ letter approving Closure Certification Report for the Facility No. 3 Non-Permitted Units.

- June 2004: Removed sediments and decontaminated North and South Demin Tanks, located on Southern Tract, as part of the Closure Plan for the East and West Lagoons.

- June 3, 2004: TCEQ letter requesting additional information regarding BLRA.

- August 13, 2004: Stipulation and Order Modifying Consent Decree between the United States and the State of Texas vs. Encycle/Texas, Inc. and ASARCO Incorporated, entered into the U.S. District Court for the Southern District of Texas.

- August 27, 2004: Report entitled "Baseline Risk Assessment Addendum" submitted to TCEQ.

- September 23, 2004: Report entitled "Final Closure Certification Report, Facility No. 1 Non-Permitted Units" submitted to TCEQ.

- October 12, 2004: TCEQ letter regarding August 27, 2004 BLRA Addendum. TCEQ requests additional information in a Revised BLRA Addendum.

- October 14, 2004: Report entitled "Final Closure Certification Report – East and West Lagoons" submitted to TCEQ.

- October 15, 2004: TCEQ letter approving Closure Certification Report for the Facility No. 1 Non-Permitted Units.

- October 27, 2004: Tier I Exclusion Criteria Checklist, excluding Corpus Christi Ship Channel, submitted to TCEQ.

- November 5, 2004: Report entitled "Final Closure Certification Report, Lettered Bins Building (Building C)" submitted to TCEQ.

- November 9, 2004: Report entitled "Final Closure Certification Report, Facility No. 2 Non-Permitted Units" submitted to TCEQ.

- November 11, 2004: Report entitled "Final Closure Certification Report – Receiving Building (Building B) and Facility No. 1 and Facility No. 3 Permitted Container Storage Areas" submitted to TCEQ.

- November 18, 2004: TCEQ approves Tier I Exclusion Criteria Checklist, excluding Corpus Christi Ship Channel.

- November 19, 2004: Revised BLRA Addendum submitted to TCEQ.

- November 30, 2004: TCEQ letter approving Closure Certification Report for East and West Lagoons, and requesting deed certification of East and West Lagoons. Closure of the East and West Lagoons completed prior to January 1, 2005 as specified in Section 5.1.4 of the August 13, 2004 Stipulation and Order Modifying Consent Decree.

- December 9, 2004: TCEQ letter approving Closure Certification Report for the Facility No. 2 Non-Permitted Units. Closure of the facility's non-permitted waste management units completed prior to January 1, 2005 as specified in Section 5.1.3 of the August 13, 2004 Stipulation and Order Modifying Consent Decree.

- December 29, 2004: TCEQ letter approving Closure Certification Report for the Receiving Building (Building B) and Facility No. 1 and Facility No. 3 Permitted Container Storage Areas.

- December 30, 2004: TCEQ letter approving Closure Certification Report for the Lettered Bins Building (Building C). Closure of the facility's permitted hazardous waste management units completed prior to January 1, 2005 as specified in Section 5.1.2 of the August 13, 2004 Stipulation and Order Modifying Consent Decree.

- January 31, 2005: TCEQ letter regarding Revised BLRA Addendum, authorizing preparation of a CMS.

- February 28 – March 1, 2005: Collected additional shallow soil samples in the Boneyard, Waste Pile, 01 Landfill, Railroad Tracks, Road Leading to the West of Building C, and Storm Sewer System areas to more precisely delineate the extent and determine the volume of soils containing one or more constituents of concern (COCs) above the preliminary remediation goals (PRGs).

- March 17, 2005: Collected representative shallow soil samples from the Boneyard, Waste Pile, 01 Landfill, and Railroad Tracks for pilot-scale soil stabilization treatability testing.

- April 11, 2005: Deed certification for East and West Lagoons filed at Nueces County Deed Records office.

- April 25, 2005: Revised BLRA Addendum with ecological PCLs for affected sediments in the Corpus Christi Ship Channel adjacent to the Encycle 01 Landfill submitted to TCEQ.

2.1.4 Solid Waste Management Units

A description of the SWMUs at the Encycle facility was previously provided to the TCEQ in Section 3.3 of the August 13, 2002 RCRA Facility Investigation Report, and in Section 2.1 of the April 14, 2004 Baseline Risk Assessment. The locations of the SWMUs are shown on Figure 4. The following is an updated summary of each SWMU:

2.1.4.1 Solid Waste Management Units on the Meaney Tract

- Boneyard. The boneyard is an unpaved, grass and gravel-covered area at the west-center end of the site. No buildings are present in the boneyard. The boneyard had contained approximately 1,660 cubic yards of soil, concrete, and wood railroad ties located in several above-ground piles. The above-ground piles occupied an area of approximately 140 feet by 80 feet, with an average height of approximately 4 feet. The soil and concrete piles (approximately 660 cubic yards) were removed from the boneyard and disposed of at the US Ecology Texas landfill in Robstown, Texas during November 2001. The wooden railroad ties (approximately 1,000 cubic yards) remain in the boneyard (see Appendix A, photographs 1 and 2). As detailed in the ARCADIS July 16, 2001 letter report entitled "RCRA Facility Investigation – Boneyard", core samples collected from the wooden railroad ties contained Toxicity Characteristic Leaching Procedure (TCLP) metals concentrations below characteristically hazardous levels. As detailed below in Section 2.1.5, the concentrations of several metals (antimony, arsenic, cadmium, lead, manganese, silver, zinc) in the shallow (0 – 2.5 foot depth) soils in portions of the Boneyard area exceed the PRGs developed in the BLRA and BLRA Addendum.

- Waste Pile. The Waste Pile is an approximate 3.9-acre unpaved area at the southwest end of the site. The Waste Pile was used during the 1970s and early 1980s by ASARCO for drying of neutralization plant sludge that may have contained metals. The Waste Pile is currently an empty, grass and brush-covered area (see Appendix A, photograph 3). As detailed below in Section 2.1.5, the concentrations of several metals (cadmium, manganese, zinc) in the shallow soils (0 – 2.5 foot depth) in portions of the Waste Pile area exceed the PRGs developed in the BLRA and BLRA Addendum.

2.1.4.2 Solid Waste Management Units on the Northern Tract

- 01 Landfill. The 01 Landfill consists of approximately 5.8 acres in the northeast corner of the site. The 01 Landfill had been used by ASARCO for disposal of construction debris, concrete electrolytic cells that had been taken out of service, refractory brick, and filter cake. The filter cake consisted of filter paper with associated metal salts. Closure activities associated with the 01 Landfill were completed during 1986, including capping with approximately four feet of compacted clay, emplacement of concrete rip rap on the north side of the landfill adjacent to the Corpus Christi Ship Channel, and installation of a groundwater monitoring system. The 01 Landfill clay cap had several eroded areas that were repaired during December 1998 using approximately 80 cubic yards of low-permeability, compacted clay. The repaired areas were then covered with approximately 80 cubic yards of topsoil that was hydramulched with grass seed and fertilizer. As detailed below in Section 2.1.5, the concentration of arsenic in several soil samples adjacent to the northeast and northwest corners of the 01 Landfill exceed the arsenic PRG of 200 milligrams per kilogram (mg/kg) developed in the BLRA and BLRA Addendum.

- East and West Lagoons. The East and West Lagoons are active storm water storage lagoons located at the north-center end of the site. The West Lagoon is approximately 0.5 acres in size with an 80-millimeter high-density polyethylene (HDPE) liner, and the East Lagoon is approximately 3.5-acres in size with a clay bottom. The East and West Lagoons are connected via a concrete spillway, and both lagoons have 9-foot-high perimeter concrete walls. As part of the TCEQ-approved closure plan for the East and West Lagoons, the sediments above the HDPE liner in the West Lagoon, the sediments above the clay bottom of the East Lagoon, and the clay bottom soils of the East Lagoon that contained COC concentrations above the target cleanup standards (lower of the Risk Reduction Standard 2 medium-specific concentrations (MSCs) adjusted for saline groundwater, and Alternate LDR Treatment Standards for Contaminated Soils) were excavated and disposed of offsite at the US Ecology Texas landfill between November 2003 and March 2004. Additional details regarding closure of the East and West Lagoons is provided in the report entitled "Final Closure Certification Report, East and West Lagoons" dated October 14, 2004, which was approved by the TCEQ on November 30, 2004. As detailed below in Section 2.1.5, the concentrations of COCs in soil samples below West Lagoon HDPE liner, on the clay bottom of

the East Lagoon following March 2004 soil excavation activities, and outside the perimeter concrete walls of the East and West Lagoons do not exceed the PRGs developed in the BLRA and BLRA Addendum.

2.1.4.3 Solid Waste Management Units on the Southern Tract

- Railroad Tracks Area. Several parallel railroad tracks approximately 500 feet in length are located on both the north and south sides of Product Storage Building C (Lettered Bins Building). The railroad tracks were used during ASARCO operations for transport of zinc ore concentrates and zinc products. The railroad tracks were used by Encycle for rail transport and unloading of metal-bearing materials received from off-site sources, and for loading of products. As part of the November 6, 1992 Administrative Order, soils were excavated to background levels during 1994 along a portion of the railroad tracks directly northeast of Product Storage Building C as shown on Figure 4. The area of soils excavation was approximately 110 feet in length, 16 feet in width, and 2 to 5 feet in depth. Additional details regarding the soil excavation activities were provided in Appendix E of the January 31, 2000 RFI Work Plan. As detailed below in Section 2.1.5, the concentrations of arsenic and lead in the shallow (0 – 1.5 foot depth) soils in portions of the Railroad Tracks area exceed the PRGs that were developed in the BLRA and BLRA Addendum.

- Feed Tank 1. Feed Tank 1 is a 22,500-gallon wooden and brick tank located within a concrete secondary containment area that extends to approximately 10 feet below grade. Feed Tank 1 was used during ASARCO operations for leaching of zinc oxide material, and during Encycle operations for slurrying of solid waste materials as part of the recycling process. All wastes were removed from Feed Tank 1, and Feed Tank 1 and the underlying concrete secondary containment area were decontaminated during 2004 as part of the RCRA final closure activities associated with the non-permitted units in Facility No. 1. Additional details regarding the closure of Feed Tank 1 were provided in the report entitled "Final Closure Certification Report, Facility No. 1 Non-Permitted Units" dated September 23, 2004. As detailed below in Section 2.1.5, the concentrations of COCs in soil in the Feed Tank 1 area do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Feed Tank 2. Feed Tank 2 is a 24,000-gallon wooden and brick tank located within a concrete secondary containment area that extends to approximately 10

feet below grade. Feed Tank 2 was used during ASARCO operations for leaching of zinc oxide material, and during Encycle operations for slurrying of solid waste materials as part of the recycling process. As specified in Section 5.1.3 of the August 13, 2004 Stipulation and Order Modifying Consent Decree, Feed Tank 2 is currently used as part of the facility wastewater treatment system operation. Closure of Feed Tank 2 is deferred until 120 days after Feed Tank 2 is no longer used as part of the facility wastewater treatment operation. As detailed below in Section 2.1.5, the concentrations of COCs in soil in the Feed Tank 2 area do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Road Leading to the West of Building C. The Road Leading to the West of Building C is a concrete road approximately 20 feet in width and 1,000 feet in length extending from Product Storage Building C (Lettered Bins Building) on the west to the Old Casting Building on the east (see Figure 4). The road was used during ASARCO operations for vehicular transport of zinc ore concentrates and zinc products, and during Encycle operations for vehicular transport of metal-bearing materials. As detailed below in Section 2.1.5, the concentrations of arsenic and lead in the shallow (0 – 0.5 foot depth) soils adjacent to portions of the concrete Road Leading to the West of Building C exceed the PRGs developed in the BLRA and BLRA Addendum.

- Former Sludge Drying Beds. The former sludge drying beds is an approximate 200-foot by 60-foot concrete slab with 18-inch-high perimeter concrete walls. The former sludge drying beds are currently empty, and were previously used for drying of wastewater treatment system sludge until the early 1990's. As detailed below in Section 2.1.5, the concentrations of COCs in soil below the former sludge drying beds do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Reactor Clarifier. The reactor clarifier consists of two above-ground steel tanks (400,000 gallon and 570,000 gallon capacity, respectively). The reactor clarifier tanks are used for settlement of solid of solids and sludge from wastewater as part of the wastewater treatment system operation at the site. As detailed below in Section 2.1.5, the concentration of lead in one shallow (0-6 inch depth) soil sample (soil boring B-42) directly north of the eastern (400,000 gallon) reactor clarifier tank exceeds the lead PRG of 1,600 mg/kg developed in the BLRA and BLRA Addendum.

- Facility No. 1. Facility No. 1 is an approximate 50,000 square foot building used during ASARCO operations for purification of zinc sulfate solution in tanks and other process equipment. Facility No. 1 was used during Encycle operations for wastewater treatment and for storage and processing of hazardous and non-hazardous metal-bearing materials. The metal-bearing materials were stored in containers, and processing occurred in tanks and filter presses. RCRA final closure of one permitted container storage area and 22 non-permitted units (tanks, filter presses) in Facility No. 1 was conducted during 2004 in accordance with the August 13, 2004 Stipulation and Order Modifying Consent Decree. Additional details regarding RCRA final closure activities are provided in the reports entitled "Final Closure Certification Report, Facility No. 1 Non-Permitted Units" dated September 23, 2004, and "Final Closure Certification Report – Receiving Building (Building B) and Facility No. 1 and Facility No. 3 Permitted Container Storage Areas" dated November 11, 2004. As detailed below in Section 2.1.5, the concentrations of COCs in soils in the Facility No. 1 area, including soil samples collected below cracks in the Facility No. 1 concrete floor as part of RCRA final closure activities, do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Facility No. 2. Facility No. 2 is an approximate 54,000 square foot building used during ASARCO operations for leaching of zinc ore concentrates in tanks and other process equipment. Facility No. 2 was used during Encycle operations for wastewater treatment, and processing of hazardous and non-hazardous metal-bearing materials in tanks and filter presses. RCRA final closure of 29 non-permitted units (tanks, filter presses, drum filters, dryer) in and adjacent to the Facility No. 2 building was conducted during 2004 in accordance with the August 13, 2004 Stipulation and Order Modifying Consent Decree. Additional details regarding RCRA final closure activities are provided in the report entitled "Final Closure Certification Report, Facility No. 2 Non-Permitted Units" dated November 9, 2004. As specified in Section 5.1.3 of the August 13, 2004 Stipulation and Order Modifying Consent Decree, closure of three non-permitted units in Facility No. 2 (Thickener No. 2, 48 inch Filter Press No. 225045, Thickener No. 6 Overflow Tank No. 825220) is deferred until 120 days after these units are no longer used as part of the facility wastewater treatment system operation. As detailed below in Section 2.1.5, the concentrations of COCs in soils in the Facility No. 2 area, including soil samples collected below cracks in the Facility No. 2 concrete floor as part of RCRA final closure activities, do not exceed the PRGs

developed in the BLRA and BLRA Addendum.

- Facility No. 3. Facility No. 3 is an approximate 15,000 square foot building used during ASARCO operations for pre-leaching of zinc ore concentrates in tanks and other process equipment. Facility No. 3 was used during Encycle operations for storage and processing of hazardous and non-hazardous metal-bearing materials. The metal-bearing materials were stored in containers, and processing occurred in tanks and filter presses. RCRA final closure of one permitted container storage area and nine non-permitted units (tanks, filter press, drum filters) in the Facility No. 3 building was conducted during 2004 in accordance with the August 13, 2004 Stipulation and Order Modifying Consent Decree. Additional details regarding RCRA final closure activities are provided in the reports entitled "Final Closure Certification Report, Facility No. 3 Non-Permitted Units" dated April 20, 2004, and "Final Closure Certification Report – Receiving Building (Building B) and Facility No. 1 and Facility No. 3 Permitted Container Storage Areas" dated November 11, 2004. As detailed below in Section 2.1.5, the concentrations of COCs in soils in the Facility No. 3 area, including soil samples collected below cracks in the Facility No. 3 concrete floor as part of RCRA final closure activities, do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- West Cell House. The West Cell House is an approximate 40,000 square foot building used during ASARCO operations for electrowinning of zinc in lined concrete tanks filled with electrolytic solutions consisting of zinc sulfate and sulfuric acid. The West Cell House is currently inactive and was not used during Encycle operations. As detailed below in Section 2.1.5, the concentrations of COCs in soil below the West Cell House do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- NOR 43 Building. The NOR 43 Building is an approximate 12,000 square foot building used during ASARCO operations of melting of zinc using natural gas-fired furnaces, and casting the molten metal in various sized moldings to produce metallic zinc product. The NOR 43 building was used during Encycle operations for storage of non-hazardous materials. As detailed below in Section 2.1.5, the concentrations of COCs in soil below in the NOR 43 building do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Product Storage Building C (Lettered Bins Building). Product Storage

Building C (Lettered Bins Building) is an approximate 55,000 square foot building used during ASARCO operations for storage of incoming feedstock consisting of granular concentrated zinc oxide or zinc sulfide ore concentrates. The Lettered Bins Building was used during Encycle operations for storage of bulk solids in concrete storage bins. The bulk solids were removed, and the concrete storage bins (Bins A, B, C, D, E, F, G, GG, H, K, L, M, N, P, R and S) were decontaminated during 2004 in accordance with the August 13, 2004 Stipulation and Order Modifying Consent Decree. Additional details regarding RCRA final closure activities are provided in the report entitled "Final Closure Certification Report, Lettered Bins Building (Building C)" dated November 5, 2004. As detailed below in Section 2.1.5, the concentrations of COCs in RFI soil borings directly east (soil boring B-34) and west (soil borings B-33, B-194, B-195) of the Lettered Bins Building do not exceed the PRGs developed in the BLRA and BLRA Addendum. However, as detailed below in Section 2.1.5, the concentrations of arsenic and/or lead in shallow soils (0 – 0.5 foot depth) below one or more cracks in the concrete floors of Bins F, G, H, and P within the Lettered Bins Building exceed the PRGs developed in the BLRA and BLRA Addendum.

- Product Storage Bins (Numbered Bins). The Product Storage Bins (Numbered Bins Building) is an approximate 30,000 square foot building used during ASARCO operations for storage of incoming feedstock consisting of granular concentrated zinc oxide or zinc sulfide ore concentrates. The Numbered Bins Building was used during Encycle operations for storage of bulk solids in concrete storage bins. The bulk solids in the Numbered Bins Building concrete storage bins were removed, and the concrete storage bins (Bins 1, 2, 3, 4, 5, 6, 11 and 12) were decontaminated between November 2003 and January 2004 in accordance with the August 13, 2004 Stipulation and Order Modifying Consent Decree. Additional details regarding RCRA final closure activities are provided in the report entitled "Final Closure Certification Report, Containment Building (Numbered Bins)" dated February 2, 2004. As detailed below in Section 2.1.5, the concentrations of COCs in soils in the Numbered Bins Building area, including soil samples collected below cracks in the Numbered Bins Building concrete floor as part of RCRA final closure activities, do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Building North of Facility 3 (3-sided Bin). The Building North of Facility 3 (3-sided Bin) is an empty, 750 square foot concrete slab formerly used during

ASARCO operations for storage of intermediate zinc-bearing materials. As detailed below in Section 2.1.5, the concentrations of COCs in soils below the 3-sided Bin do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Old Casting Building. The Old Casting Building is an approximate 20,000 square foot building used during ASARCO operations for melting of zinc using natural gas-fired furnaces, and casting the molten metal in various sized moldings to produce metallic zinc product. The Old Casting Building was used during Encycle operations for storage of non-hazardous materials. As detailed below in Section 2.1.5, the concentrations of COCs in soils below the Old Casting Building do not exceed the PRGs developed in the BLRA and BLRA Addendum.

- Storm Sewer System. The storm sewer system consists of approximately 2 liner miles of underground piping accessed via approximately 200 storm drains with metal grates. The storm sewer system is used to collect and gravity-drain storm water into a concrete storm water sump at the north-center end of the Southern Tract. A pipe near the top of the storm water sump gravity-drains the storm water into the West Lagoon in the Northern Tract. The storm sewer piping was mapped, cleaned, and repaired during 2000 and 2001 as part of the TCEQ-approved closure activities for the East and West Lagoons. Additional details regarding the mapping, cleaning, and repairing of the storm sewer system piping is provided in the report entitled "Final Closure Certification Report, East and West Lagoons" dated October 14, 2004, which was approved by the TCEQ on November 30, 2004. Soil samples were collected from ten soil borings (borings B-108 through B-117) adjacent to the storm sewer system piping during 2000 as part of the RFI. Also, soil samples were collected during 2001 from excavated soils that were returned to the excavation following repair of damaged storm sewer system piping as part of the Closure Plan for the East and West Lagoons. Additionally, a soil boring (boring B-247) was advanced near soil boring B-113 and Storm Drain 114 during March 2005 as part of the CMS. As detailed below in Section 2.1.5, the concentrations of arsenic and lead in the shallow soils adjacent to portions of the storm sewer system piping exceed the PRGs developed in the BLRA and BLRA Addendum.

2.1.4.4 Grain Elevator

The Grain Elevator is an offsite, public grain elevator on an approximate 54-acre tract located directly west of the Meaney Tract. The Grain Elevator Property is owned by Meaney-Walsh Properties No. 2, Ltd. No wastes or products at the Encycle facility were stored or managed at the Grain Elevator property. COC concentrations in soil samples collected from 20 soil borings on Grain Elevator property as part of the RFI do not exceed Risk Reduction Standard No. 2 Medium Specific Concentrations (MSCs) for residential land use given in 30 Texas Administrative Code (TAC) Chapter 335, Subchapter S; or the PRGs developed in the BLRA and BLRA Addendum.

2.1.5 Nature and Extent of Contamination

2.1.5.1 General

The nature and extent of contamination at the Encycle facility was determined during the RFI conducted between 2000 and 2002; the Phase II RFI conducted during 2003; East and West Lagoon closure activities conducted between 2000 and 2004; and RCRA final facility closure activities conducted during 2003 and 2004. The extent of soil impacts at several SWMUs (Boneyard, Waste Pile, 01 Landfill, Railroad Tracks, Road Leading to the West of Building C, Storm Sewer System) was further defined during February and March 2005 as part of the CMS. The CMS soil sampling involved collection of shallow (0-0.5 foot depth, and 1-1.5 foot depth) soil samples from 30 soil borings to more precisely delineate the extent and determine the volume of affected soils that exceed the PRGs developed in the BLRA and BLRA Addendum. The soil samples were collected using a clean, stainless steel hand auger, and the borings were plugged with bentonite following soil sample collection. The CMS soil sample locations are shown in red on Figure 3, and copies of the analytical laboratory reports for the CMS soil samples are provided in Appendix B.

2.1.5.2 Description of Soil Impacts

A description of soil impacts at the Encycle facility was previously provided in the August 13, 2002 RFI Report, and the May 9, 2003 Phase II RFI Report. As discussed above in Section 2.1.5.1, shallow soil samples were collected from 30 additional soil borings during February and March 2005 to more precisely define the extent of soil impacts. Updated soil sample analytical results for the Meaney Tract, Northern Tract, and Southern Tract are provided in Tables 1, 2, and 3, respectively. Constituent

concentrations in soil that exceed the PRGs developed in the BLRA and BLRA Addendum are highlighted in red in Tables 1, 2, and 3.

The nineteen COCs at the site (antimony, arsenic, barium, bismuth, cadmium, chromium, cobalt, copper, cyanide, lead, manganese, mercury, nickel, selenium, silver thallium, tin, vanadium, zinc) were detected above background levels in soil samples in portions of the site. COC concentrations in soil are generally highest at the surface (0-0.5 foot), and decrease with depth and with distance away from the SWMUs. As shown on Figures 5 through 14, the highest COC concentrations in surface soils are generally located along the railroad tracks at the north-central end of the Southern Tract. COC concentrations in surface soil are also elevated (exceed PRGs) in portions of the boneyard and waste pile on the Meaney Tract; the 01 Landfill on the Northern Tract; and the Road Leading to the West of Building C, reactor clarifier, storm sewer system, and Lettered Bins Building on the Southern Tract.

COC concentrations in most areas of the site decline relatively rapidly with depth, and with only one exception, COC concentrations in soils below a depth of 5 feet do not exceed the PRGs. The arsenic concentration in the 5-5.5 foot depth soil sample from soil boring B-140 on the northern tract exceeds the PRG for arsenic. Soil boring B-140 is located immediately adjacent to the northwest corner of the 01 Landfill.

COCs in soil samples that exceed the PRGs are summarized on Table 4. Figure 15 shows the approximate extent and depth of COCs in soils on the Meaney Tract that exceed the PRGs, and Figure 16 shows the approximate extent and depth of COCs in soils on the Northern and Southern Tracts that exceed the PRGs.

2.1.5.3 Description of Groundwater Impacts

Two shallow water-bearing units are present at the site. The uppermost water-bearing unit in the low-lying northern portion of the site (Northern Tract, northern portion of Meaney Tract) consists of Quaternary Alluvium and fill materials (undifferentiated). The fill materials, obtained from dredging activities, extend along both sides the entire length of the Corpus Christi Ship Channel (Groat, 1975). Groundwater flow in the fill/alluvium is northerly toward the Corpus Christi Ship Channel, and depth to groundwater in the fill/alluvium monitor wells at the site ranges from approximately 1 to 7 feet. As approved in an October 23, 2000 TCEQ letter, groundwater in the fill/alluvium at the site is naturally saline with a total dissolved solids (TDS) concentration above 10,000 milligrams per liter (mg/L).

The uppermost water-bearing unit in the topographically higher southern portion of the site (Southern Tract, southern portion of Meaney Tract) is the Quaternary-age Beaumont Formation. Groundwater flow in the Beaumont Formation is northerly, and depth to groundwater in the Beaumont Formation monitor wells at the site ranges from approximately 16 to 23 feet. As detailed in Section 7.5 of the August 13, 2004 RFI Report, the saturated sand strata in the Beaumont Formation in the southern portion of the site and the saturated sand strata in the fill/alluvium in the northern portion of the site occur at approximately the same elevation. Therefore, these sand strata are likely hydraulically connected. Water table maps also indicate shallow groundwater in the Beaumont Formation at the site flows northerly and discharges into the fill/alluvium.

A description of groundwater quality at the site was provided in Section 8.3 of the August 13, 2004 RFI Report, and in Section 5.3 of the October 14, 2004 Final Closure Certification Report for the East and West Lagoons. Groundwater analytical data at the site is summarized in Table 5. As shown in Table 5, the concentrations of metals in several of the groundwater samples from the fill/alluvium monitor wells exceed background concentrations, but have consistently been below the Risk Reduction Standard No. 2 groundwater protection standards adjusted for saline groundwater (30 TAC Chapter 335.559), and below the Texas Risk Reduction Program (TRRP) Tier 1 protective concentration levels (PCLs) for Class 3 groundwater (30 TAC Chapter 350).

None of the COCs in groundwater samples from Beaumont Formation monitor wells MW-14, MW-16, MW-17, MW-19, MW-20, and MW-21 exceeded background concentrations. As shown in Table 5, the concentrations of arsenic, bismuth, copper, cyanide, manganese, nickel, and/or selenium in one or more groundwater samples from Beaumont Formation monitor wells MW-7, MW-11, MW-12, MW-13, MW-15, and MW-18 exceeded background concentrations. The TDS concentrations in groundwater samples from Beaumont Formation monitor well MW-7 range from 6,646 to 8,540 mg/L, indicating the shallow groundwater in the Beaumont Formation at the site is moderately saline. As detailed in the August 13, 2002 RFI report, groundwater at the site is not used, and no water wells were identified within a ½-mile radius of the site. As detailed in the November 19, 2004 Revised BLRA Addendum, ingestion of groundwater by commercial/industrial workers could result in an unacceptable risk and/or hazard calculation if the workers ingested, on a chronic basis, groundwater produced from a shallow water well completed in the Beaumont Formation at the site. Therefore, as discussed below in Section 3.1, the Encycle property and Meaney Tract will be deed recorded for commercial/industrial use with a water well ban to eliminate the groundwater ingestion exposure pathway at the site.

2.2 Corrective Action Objectives and Preliminary Remediation Goals

2.2.1 Corrective Action Objectives

The overall corrective action objectives for site media are, to the extent practicable, to eliminate releases from SWMUs that pose threats to human health and the environment, and to reduce or eliminate exposure to contaminated media to a level consistent with reasonably expected future, as well as current land use.

Several corrective action activities have been completed at the site to eliminate releases from SWMUs that pose threats to human health and the environment. As detailed in Section 9 of the August 13, 2002 RFI Report, interim corrective measures for the SWMUs included (1) soil excavation in a portion of the Railroad Tracks area directly northeast of the Lettered Bins Building as part of the November 6, 1992 Administrative Order, (2) repair of the 01 Landfill clay cap in 1998, and (3) removal of the soil and debris piles from the Boneyard in November 2001. Closure activities associated with the East and West Lagoons, North and South Demin Tanks, and storm sewer system piping were completed in 2004 as detailed in the report entitled "Final Closure Certification Report – East and West Lagoons" dated October 14, 2004. Decontamination and closure of the facility's hazardous and solid waste management units was conducted during 2003 and 2004 in accordance with the August 13, 2004 Stipulation and Order Modifying Consent Decree.

The site-specific corrective action objectives to reduce or eliminate exposure to contaminated media to a level consistent with reasonably expected future, as well as current land use are summarized on Table 6. The corrective action objectives for the Northern and Southern Tracts (Encycle owned property) will be exposure prevention. Exposure prevention measures will include remediation and/or engineering and institutional controls. Engineering controls are barriers which are designed to prevent humans and environmental receptors from having contact with or exposure to affected media. Institutional controls are recorded in the property deeds to inform future site owners that land use designations (i.e., commercial/industrial) and exposure prevention mechanisms established at the site (i.e., water well ban, etc.) must be maintained to prevent future exposures.

In accordance with Exhibit A of the Confidential Compromise Settlement Agreement and Release between ASARCO LLC and Encycle/Texas, Inc. and Meaney-Walsh Properties No. 1, LTD, the corrective action objectives for the Meaney Tract will be to remove soils that exceed the PRGs and replace with uncontaminated soil. Therefore,

soils on the Meaney Tract containing metal concentrations above the PRGs developed in the August 27, 2004 BLRA Addendum will be remediated (i.e., excavated) to concentrations that do not exceed the PRGs. Following soils excavation on the Meaney Tract, no post-closure care other than Institutional Controls (i.e., deed recordation) will be required. The deed recordation of the Meaney Tract will include land use designation as commercial/industrial with a water well ban as specified in Exhibit A of the Confidential Compromise Settlement Agreement and Release (see Appendix D).

2.2.2 Preliminary Remediation Goals

Current land use at the site is commercial/industrial, and future land use at the site will continue to be commercial/industrial. PRGs for commercial/industrial soils in the Meaney Tract, Northern Tract, and Southern Tract were provided in Attachment 3, Table A, of the August 27, 2004 BLRA Addendum. PRGs for soil are summarized on Table 7.

PRGs were not developed for commercial/industrial exposure to COCs in groundwater. As detailed in the August 13, 2002 RFI Report, groundwater is currently not used at the site, groundwater in the fill/alluvium in the northern portion of the site is naturally saline, and no water wells were identified within a ½-mile radius of the site. As discussed in the November 19, 2004 Revised BLRA Addendum, Encycle acknowledges that the chronic ingestion of groundwater from the Beaumont Formation by commercial/industrial workers could result in an unacceptable risk hazard. Therefore, the corrective action objective for affected shallow groundwater at the site, including the Meaney Tract, will be exposure prevention using institutional controls (i.e., deed recordation as commercial/industrial property with a water well ban).

2.2.3 Media Locations and Volumes

2.2.3.1 Soil

The aerial extent and volume of soil at the site that exceeds the PRGs have been estimated based on COC concentration data from soil samples collected at the site. Figure 15 shows the approximate extent of affected soils on the Meaney Tract that exceed the PRGs. Figure 16 shows the approximate extent of the affected soils on the Northern Tract and Southern Tract that exceed the PRGs. The estimated volume of soil at each SMWU that exceeds the PRGs for one or more constituents, based on soil sample analytical data collected at the site, is summarized on Table 8.

As shown on Table 8, an in-situ volume of approximately 3,380 cubic yards of soil on the Meaney Tract, 732 cubic yards of soil on the Northern Tract, and 2,606 cubic yards of soil on the Southern Tract exceed the PRGs.

2.2.3.2 Groundwater

The affected shallow groundwater in the Beaumont Formation is located in the southern portion of the site below a depth ranging from approximately 16 to 23 feet. The saline shallow groundwater in the fill/alluvium is located in the northern portion of the site below a depth ranging from approximately 1 to 7 feet. The entire Encycle facility, including the Meaney Tract, will be deed recorded for commercial/industrial land use with a water well ban to eliminate the potential for chronic ingestion of shallow groundwater at the site.

2.3 Identification and Screening of Corrective Measures Technologies

The purpose of this section of the CMS is to identify and screen corrective measures technologies for a more detailed evaluation as remedies to achieve the corrective action objectives at the site. In addition to the RFI, Phase II RFI, BLRA, BLRA Addendum, and Revised BLRA Addendum Reports, sources of information for identifying and screening of corrective measures technologies included:

- EPA publications and regulations.
- TCEQ publications and regulations.
- Reference books.
- Laboratory and bench scale studies.
- Technology and vendor files.

The screening of the various technologies involved the following considerations:

- The technology should be reliable, based on proven techniques, and have been successfully implemented under similar conditions.
- The technology should be appropriate for site conditions and COC characteristics, based on bench scale studies and/or engineering judgment.

- The technology should be capable, by itself or in combination with other technologies, of achieving the corrective action objectives.

2.3.1 Site Characteristics

Site characteristic information obtained from the RFI and Phase II RFI Reports were used to screen out technologies that cannot be effectively implemented. Site-specific characteristics that could affect the technology suitability include factors such as:

- Type, location, and volume of contaminated media.
- Nature and degree of contamination.
- Soil permeability.
- Existing structures and pavement.
- Proximity of underground utilities.
- Existing land use (industrial/commercial).
- Projected future land use (industrial/commercial).
- Landowner agreements (i.e., Meaney Tract).

A technology was deemed unsuitable if site characteristics prevent the technology from effectively meeting the corrective action objectives.

2.3.2 COC Characteristics

The identification of specific COC characteristics that limit the effectiveness, and thereby the feasibility of technologies, was an element of the screening process. Those technologies identified as potentially feasible were evaluated with respect to COC types and COC concentrations. The COCs at the site consist of metals which have low volatility and are not biodegradable. A technology was deemed unsuitable if it is not compatible with the identified COC characteristics.

2.3.3 Corrective Measures Technology Limitations

During the screening process, the level of development, performance record, and inherent construction, operation, and maintenance problems were considered for the various corrective measure technologies. The technologies were screened to eliminate those technologies that may not prove feasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objectives within a reasonable time frame. The screening process focused on eliminating those technologies that have several limitations for a given set of site specific conditions and COC characteristics, or eliminating technologies based on inherent limitations.

2.3.4 Corrective Measures Technology Screening Results

Table 9 summarizes the technology screening for affected soils at the site that exceed the PRGs, and affected shallow groundwater. The technologies retained for further evaluation are as follows:

Affected Soils that Exceed PRGs:

- Institutional Controls (Deed Notice)
- Access Restrictions (Fencing)
- Concrete Cap
- Asphalt Cap
- Clay Cap
- Excavation and Offsite Disposal
- Excavation, Stabilization, and Offsite Disposal
- Excavation and Disposal in a Corrective Action Management Unit (CAMU) at the Encycle Facility

Affected Shallow Groundwater:

- Institutional Controls (Deed Notice)

2.4 Laboratory and Bench Scale Studies

2.4.1 Methodology

Laboratory and bench scale studies were conducted to obtain site-specific data regarding the effectiveness of soil stabilization as a treatment technology. As detailed in the August 13, 2002 RFI Report and the May 9, 2003 Phase II RFI Report, the total

metals concentrations in soils at the site are variable, and the lithology of the soils are variable. Therefore, to evaluate the effectiveness of soil stabilization under variable site conditions, composite surface soil samples were collected from five separate areas of the site during February and March 2005. The composite surface samples were collected from a depth of 0 to 6 inches, which represents the depth interval with the highest total metal concentrations. Composite surface soil sampling locations are shown on Figure 17.

The composite surface soil samples were submitted to STL Laboratories in Corpus Christi, Texas, for TCLP metals analyses. Composite surface soil samples also were submitted to five remediation contractors (Entact, Envirocon, Remedial Construction Services, US Ecology Texas, and Williams Environmental Services/Compass Environmental) for bench scale soil stabilization treatability testing. The composite surface soil samples were collected using a clean stainless steel trowel, and composited in a clean polyethylene wheelbarrow using the trowel. The primary objective of the bench scale testing was to determine if addition of treatment reagents could cost-effectively reduce the TCLP metals concentrations of the soils to Class II non-hazardous levels (30 TAC Chapter 335.521(a)), and Alternate LDR Treatment Standards for Contaminated Soil (40 CFR Part 268.49(c)(1)(C)), which are based on Universal Treatment Standards for Non-wastewater (40 CFR Part 268.48). Table 10 summarizes the target soil stabilization treatment limits for the affected soils that exceed PRGs.

2.4.2 Results

Analytical results for TCLP metals concentrations in the composite soil samples, prior to stabilization, are summarized on Table 11, and copies of the analytical laboratory reports are provided in Appendix C. As shown on Table 11, TCLP cadmium concentrations in all of the composite soil samples exceeded the Class 2 nonhazardous disposal limit for cadmium (<0.5 mg/L TCLP) and the Alternate LDR Treatment Standard for Contaminated Soil (1.1 mg/L TCLP). TCLP lead and zinc concentrations in several of the soil samples also exceeded Class 2 nonhazardous disposal limits and Alternate LDR Treatment Standards for Contaminated Soil. Therefore, based on the TCLP analytical results, treatment of affected surface soils in portions of the boneyard, waste pile, railroad tracks, and 01 Landfill would be required to meet Class 2 nonhazardous disposal limits and Alternate LDR Treatment Standards for Contaminated Soil.

The bench scale treatability testing conducted by the remediation contractors showed that the affected soils could be treated with the addition of treatment reagents to reduce TCLP metal concentrations to levels below Class 2 nonhazardous limits and Alternate LDR Treatment Standards for Contaminated Soil. The soil stabilization cost estimates provided by the remediation contractors averaged approximately $30 per cubic yard. These soil stabilization costs were incorporated into the soil remediation cost estimates for the soil stabilization alternative as discussed below in Section 2.6.

2.5 Detailed Description of Corrective Measure Alternatives

This section provides a detailed description of the corrective measure alternatives for affected soils that met the corrective action objectives carried forward from the screening process in Section 2.3. The alternatives described below are consistent with the current and planned future commercial/industrial use of the site. As shown on Table 9, four corrective measure alternatives were retained for the Meaney Tract, and eight corrective measure alternatives were retained for the Northern and Southern Tracts.

The corrective measure alternatives for the Meaney Tract are described in Section 2.5.1, the corrective measure alternatives for the Northern Tract are described in Section 2.5.2, and the corrective measure alternatives for the Southern Tract are described in Section 2.5.3.

2.5.1 Meaney Tract

2.5.1.1 Deed Notice

The deed notice for the Meaney Tract will be used along with one of the soil treatment/removal technologies described below in this section to address soils exceeding PRGs on the Meaney Tract. The deed notice will designate land use at the Meaney Tract as commercial/industrial with a water well ban. The deed notice will be prepared using the Model Deed Certification Language for Risk Reduction Standard No. 3 cleanups as specified in 30 TAC Chapter 350.569. The draft deed notice language for the Meaney Tract are provided in Appendix D. Deed notice attachments will include (1) the current notice of registration (NOR) for the Encycle facility, (2) a list of constituents and concentrations left in place at the site, including the results of post-remediation confirmation soil samples, and a map showing post-remediation confirmation soil sample locations, (3) a metes and bounds description and property plat of the Meaney Tract prepared by a State of Texas-registered professional land

surveyor, and (4) a legal description of the Meaney Tract. Following completion of soil remediation on the Meaney Tract and receipt of the post-remediation confirmation soil sample analytical results showing soils exceeding the PRGs have been removed, the deed notice will be signed by the landowner and filed at the Nueces County Deed Records Office. Proof of filing of the deed notice will be provided to the TCEQ.

2.5.1.2 Excavation and Offsite Disposal

This removal technology would involve excavation of soils on the Meaney Tract exceeding PRGs, and offsite disposal of the soils without on-site treatment. Excavation and offsite disposal would include (1) excavating the soils exceeding PRGs on the Meaney Tract, (2) placing the excavated soils into approximate 200 cubic yard stockpiles on a paved and bermed area of the Encycle site, (3) sampling the excavated soil stockpiles for TCLP metals analyses for waste classification purposes, and (4) disposal of the soils at an offsite authorized landfill following landfill operator approval. Soil containing TCLP metals concentrations above the Class I non-hazardous limits given in 30 TAC Chapter 335.521(a) would be disposed of at an authorized Class I hazardous waste landfill. Soils containing TCLP metals concentrations between Class II non-hazardous limits and Class I non-hazardous limits would be disposed of at an authorized Class I non-hazardous landfill. Soils containing TCLP metals concentrations below Class II non-hazardous limits would be disposed of at an authorized Class II non-hazardous landfill.

Following completion of soil excavation and receipt of verification soil sample analytical results showing the soils exceeding PRGs have been excavated, the excavated areas would be backfilled to pre-existing grade using clean, compacted, select fill from an offsite source.

2.5.1.3 Excavation, Stabilization, and Offsite Disposal

This technology would combine the removal technology of soil excavation and the treatment technology of soil stabilization. Using these combined technologies, offsite disposal costs potentially could be reduced relative to direct disposal of untreated excavated soils at a hazardous waste landfill. This technology would include (1) excavating the soils exceeding PRGs on the Meaney Tract, (2) placing the excavated soils into approximate 200 cubic yard stockpiles on a paved and bermed area of the Encycle site, (3) sampling the excavated soil stockpiles for TCLP metals analyses, (4) mixing of solidification/stabilizing binding agents with the soils in stockpiles that have one or more TCLP metals concentrations in excess of the target soil stabilization

treatment limits shown on Table 10, (5) collecting confirmation soil samples from the soil stockpiles to ensure the target soil stabilization treatment limits shown on Table 10 been met, and (6) transporting the soils to an authorized offsite Class II non-hazardous landfill. If the confirmation samples collected from the stabilized soil stockpiles show the target soil stabilization treatment limits have not been met, additional binding agents (phosphates, sulfides, carbonates, etc.) would be added and those re-treated stockpiles would be re-sampled. This process would continue until the target soil stabilization treatment limits have been met.

Following completion of soil excavation and soil stabilization, and receipt of verification soil sample analytical results from the excavated areas showing the soils exceeding PRGs have been excavated, the excavated areas would be backfilled to grade using clean, compacted, select fill from an offsite source.

2.5.1.4 Excavation and Disposal in a CAMU at the Encycle Facility

This technology would involve excavation of the soils on the Meaney Tract exceeding PRGs, and disposal of the excavated soils in a CAMU on Encycle-owned property. As shown on Figure 18, the southeast corner of the Encycle facility has an approximate 300-foot by 300-foot area that is undeveloped. This area of the Encycle facility is relatively undisturbed, and soil samples collected in this area were used to establish site-specific background concentrations. Soil boring logs show a clay stratum is present in this area from the surface to a depth ranging from approximately 4 to 12 feet, and groundwater occurs below a depth of approximately 6 feet. As shown on Figure 19, the base of the CAMU would be constructed above the base of the clay stratum and above the water table.

The CAMU would be constructed in accordance with the design requirements specified in 40 CFR Part 264.552(e)(3), which includes the following:

- A composite liner consisting of a flexible membrane liner (FML) installed in direct contact with an underlying two-foot layer of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ centimeters per second (cm/sec). The FML would consist of a 60-mil HDPE liner with an additional non-woven geotextile layer to protect the HDPE liner from punctures.

- A leachate collection system that is designed and constructed to maintain less than a 30 centimeter depth of leachate over the liner.

As shown on Figure 19, a geotechnical soil sample was collected from soil boring Geotech-1 as part of the RFI. The intrinsic permeability of the soil sample was $2.99x10^{-5}$ cm/sec. Therefore, prior to construction of the CAMU, additional soil samples would be collected from the clay stratum at the proposed CAMU location to determine if portions of the clay stratum in this area have a permeability less than 10^{-7} cm/sec. If the permeability results of these additional soil samples show the in-situ permeability of the clay stratum at the proposed CAMU location does not meet the $1x10^{-7}$ cm/sec permeability requirement for the basal portion of the CAMU composite liner, then offsite low-permeability ($<10^{-7}$ cm/sec) clay soils would be delivered to the site and compacted in approximate 6-inch lifts to a depth of 2 feet. Each lift would be compacted to at least 90% Standard Proctor density.

Following construction of the CAMU composite liner and overlying leachate collection system, excavated soils on the Meaney Tract exceeding PRGs would be excavated and placed into approximate 200 cubic yard stockpiles on a paved and bermed area of the Encycle site. Each excavated soil stockpile would then be sampled for TCLP metals analyses. In accordance with 40 CFR Part 264.552(e)(4)(iv)(B), the excavated soils would be treated, if needed, to meet Alternate LDR Treatment Standards for Contaminated Soil prior to final disposal in the CAMU. Therefore, if the TCLP analyses show the concentrations of one or more metals in an excavated soil stockpile exceeds Alternate LDR Treatment Standards for Contaminated Soil, those soil stockpiles would be treated at the Encycle site using solidification/stabilization to meet the Alternate LDR Treatment Standards for Contaminated Soil prior to final disposal in the CAMU. Following disposal of the excavated (and treated if necessary) Meaney Tract soils into the CAMU, the excavated areas on the Meaney Tract would be backfilled to grade using clean, select fill from an offsite source.

As shown on Table 12, the CAMU design assumes a 300-foot by 300-foot base, a side slope of 1:5 (vertical/horizontal) to minimize cap erosion, and a maximum affected soil thickness of 10 feet placed into the CAMU. Therefore, as shown on Table 8, in addition to the excavated soils on the Meaney Tract, the CAMU would have sufficient additional capacity for the soils exceeding PRGs on the Northern and Southern Tracts.

Following final placement of the excavated soils into the CAMU, a cover (cap) would be constructed on the top of the CAMU. In accordance with 40 CFR Part 264.310(a) and 40 CFR 264.552(e)(6)(iv), the cap would designed to provide long-term minimization of migration of liquids through the closed unit, function with minimum maintenance, promote drainage and minimize erosion so the cover's integrity is maintained, and have a permeability less than or equal to the permeability of any

bottom liner system or natural subsoils present. The CAMU cap would include a minimum 3-foot-thick, compacted, low-permeability ($<10^{-7}$ cm/sec) clay layer overlain by 6 inches of topsoil seeded with grass. The cap would be sloped to drain storm water off the cap.

Post-closure care of the CAMU would be required as specified in 40 CFR Part 264.310(b) and 40 CFR Part 264.552(e)(6)(v). Post-closure care activities would include installation and implementation of a groundwater monitoring system, maintenance of the CAMU cap, and operation and maintenance of the leachate collection system.

2.5.2 Northern Tract

2.5.2.1 Deed Notice

The deed notice for the Northern Tract will be used along with one of the soil fencing, capping, and/or treatment/removal technologies described below in this section to address soils exceeding PRGs on the Northern Tract. The deed notice will designate land use at the Northern Tract as commercial/industrial with a water well ban. The deed notice will be prepared using the Model Deed Certification Language for Risk Reduction Standard No. 3 cleanups as specified in 30 TAC Chapter 350.569. The Northern Tract and Southern Tract are both owned by Encycle. Therefore, the deed notice for the Northern Tract and Southern Tract may be combined and filed as one deed notice.

Deed notice attachments will include (1) the current notice of registration (NOR) for the Encycle facility, (2) a list of constituents and concentrations left in place at the site, including the results of post-remediation confirmation soil samples, and a map showing post-remediation confirmation soil sample locations, (3) a metes and bounds description and property plat of the Encycle-owned property (Northern and Southern Tracts) prepared by a State of Texas-registered professional land surveyor, and (4) a legal description of the Encycle-owned property.

The corrective action objectives for soils on the Northern Tract include exposure prevention. Therefore, if any soils are left in place above the PRGs (i.e., capped), a metes and bounds description and survey plat showing each of these areas would be prepared by a State of Texas-registered professional land surveyor. A description of post-closure care requirements for any soils left in place above the PRGs also would be included in the deed notice. The deed notice will be signed by the landowner (i.e.,

Encycle) and filed at the Nueces County Deed Records Office. Proof of filing of the deed notice will be provided to the TCEQ.

2.5.2.2 Access Restrictions (Fencing)

Access restrictions for soils left in place above the PRGs on the Northern Tract would consist of fencing and signs to prevent accidental human exposure to soils exceeding PRGs. Implementation of this corrective action alternative would include placing a 6-foot-high chain-link fence with 3-strand barbed wire around the affected soils. The fence would be marked with signs stating to contact Encycle prior to entry into the fenced area. No potential exposure pathways would be eliminated under this alternative. However, the area of affected soils exceeding PRGs would be readily identified, and future excavation workers could be protected using applicable personal protective equipment.

2.5.2.3 Concrete Cap

A concrete cap is a containment approach in which the soils exceeding PRGs on the Northern Tract would be capped with rigid concrete to prevent direct contact with the affected soils, and to prevent storm water contact with the affected soils. This alternative would initially involve grading of the affected areas to remove vegetation and loose surface materials (i.e., gravel, etc.), and to level the area prior to paving. Base preparation would include emplacement of a 2-inch-thick compacted sand layer. The base material would then be covered using 6-inch-thick, 3,000 pounds per square inch (PSI) concrete reinforced with No. 4 steel reinforcing bars on 12-inch-centers each way. Expansion joints would also be constructed on a 40-foot spacing to minimize the potential for cracking of the concrete.

2.5.2.4 Asphalt Cap

An asphalt cap is a containment approach in which the soils exceeding PRGs on the Northern Tract would be capped with flexible asphalt to prevent direct contact with the affected soils, and to prevent storm water contact with the affected soils. This alternative would initially involve grading of the affected areas to remove vegetation and loose surface materials (i.e., gravel, etc.), and to level the area prior to paving. Base preparation would include emplacement of a 6-inch-thick, lime-stabilized caliche gravel base layer. The base material would then be covered using asphalt compacted to a minimum thickness of 2 inches. The asphalt aggregate would consist of gravel, crushed gravel, or crushed stone (i.e., limestone, etc).

2.5.2.5 Clay Cap

A clay cap is a containment approach in which the soils exceeding PRGs on the Northern Tract would be capped with at least three feet of low-permeability ($<10^{-7}$ cm/sec) clay to prevent direct contact with the affected soils, and to prevent storm water contact with the affected soils. This alternative would initially involve grading of the affected areas to remove vegetation and loose surface materials (i.e., gravel, etc.) prior to capping with clay. The clay would then be emplaced in loose 6- to 9-inch lifts, and each lift would be compacted to at least 90% Proctor Density. Following emplacement and compaction of the clay to a minimum thickness of three feet, a 6-inch-thick layer of select topsoil would be emplaced, seeded with grass, fertilized, and watered.

2.5.2.6 Excavation and Offsite Disposal

This removal technology would involve excavation of soils on the Northern Tract exceeding PRGs, and offsite disposal of the soils without on-site treatment. The procedures for excavation and offsite disposal of soils on the Northern Tract would be similar to those described above in Section 2.5.1.3 for the Meaney Tract. Excavation and offsite disposal would include (1) excavating the soils exceeding PRGs on the Northern Tract, (2) placing the excavated soils into approximate 200 cubic yard stockpiles on a paved and bermed area of the Encycle site, (3) sampling the excavated soil stockpiles for TCLP metals analyses for waste classification purposes, and (4) disposal of the soils at an authorized offsite landfill. Soil containing TCLP metals concentrations above the Class I non-hazardous limits given in 30 TAC Chapter 335.521(a) would be disposed of at an authorized hazardous waste landfill. Soils containing TCLP metals concentrations between Class II non-hazardous limits and Class I non-hazardous limits would be disposed of at an authorized Class I non-hazardous landfill. Soils containing TCLP metals concentrations below Class II non-hazardous limits would be disposed of at an authorized Class II non-hazardous landfill.

Following completion of soil excavation and receipt of verification soil sample analytical results showing the soils exceeding PRGs have been excavated, the excavated areas would be backfilled and compacted to pre-existing grade using clean, select fill from an offsite source.

2.5.2.7 Excavation, Stabilization, and Offsite Disposal

This technology would involve the removal technology of soil excavation and the

treatment technology of soil stabilization. Using these combined technologies, offsite disposal costs potentially could be reduced relative to direct disposal of untreated excavated soils at an authorized hazardous waste landfill. The procedures for excavation, stabilization, and offsite disposal of soils on the Northern Tract would be similar to those described above in Section 2.5.1.4 for the Meaney Tract. This technology would include (1) excavating the soils exceeding PRGs on the Northern Tract, (2) placing the excavated soils into approximate 200 cubic yard stockpiles on a paved and bermed area of the Encycle site, (3) sampling the excavated soil stockpiles for TCLP metals analyses, (4) mixing of solidification/stabilizing binding agents with the soils in stockpiles that have one or more TCLP metals concentrations in excess of the target soil stabilization treatment limits shown on Table 10, (5) collecting confirmation soil samples from the soil stockpiles to ensure the target soil stabilization treatment limits shown on Table 10 been met, and (6) transporting the soils to an authorized offsite Class II non-hazardous landfill. If the confirmation samples collected from the stabilized soil stockpiles show the target soil stabilization treatment limits have not been met, additional binding agents (phosphates, sulfides, carbonates, etc.) would be added and those re-treated stockpiles would be re-sampled. This process would continue until the target soil stabilization treatment limits have been met.

Following completion of soil excavation and soil stabilization, and receipt of verification soil sample analytical results from the excavated areas showing the soils exceeding PRGs have been excavated, the excavated areas would be backfilled to grade using clean, compacted, select fill from an offsite source.

2.5.2.8 Excavation and Disposal in a CAMU at the Encycle Facility

This technology would involve excavation of the soils on the Northern Tract exceeding PRGs, and disposal of the excavated soils in a CAMU on Encycle-owned property. Details regarding construction of the CAMU are provided in Section 2.5.1.5. As shown on Table 12, the CAMU would have sufficient capacity for final disposal of the soils exceeding PRGs at the Encycle facility, including the approximately 732 cubic yards of soils on the Northern Tract that exceed the PRGs (see Table 8).

Following completion of soil excavation and on-site stabilization, and receipt of verification soil sample analytical results from the excavated areas showing the soils exceeding PRGs have been excavated, the excavated areas would be backfilled and compacted to grade using clean, select fill from an offsite source.

2.5.3 Southern Tract

2.5.3.1 Deed Notice

The deed notice for the Southern Tract will be used along with one of the soil fencing, capping, and/or treatment/removal technologies described below in this section to address soils exceeding PRGs on the Southern Tract. The deed notice will designate land use at the Southern Tract as commercial/industrial with a water well ban. The deed notice will be prepared using the Model Deed Certification Language for Risk Reduction Standard No. 3 cleanups as specified in 30 TAC Chapter 350.569. The Northern Tract and Southern Tract are both owned by Encycle. Therefore, the deed notice for the Northern Tract and Southern Tract may be combined and filed as one deed notice.

Deed notice attachments will include (1) the current notice of registration (NOR) for the Encycle facility, (2) a list of constituents and concentrations left in place at the site, including the results of post-remediation confirmation soil samples, and a map showing post-remediation confirmation soil sample locations, (3) a metes and bounds description and property plat of the Encycle-owned property (Northern and Southern Tracts) prepared by a State of Texas-registered professional land surveyor, and (4) a legal description of the Encycle-owned property.

The corrective action objectives for soils on the Southern Tract include exposure prevention. Therefore, if any soils are left in place above the PRGs (capped, placed into an on-site CAMU), a metes and bounds description and survey plat showing each of these areas will be prepared by a State of Texas-registered professional land surveyor. A description of post-closure care requirements for any soils left in place above the PRGs also will be included in the deed notice. The deed notice will be signed by the landowner (i.e., Encycle) and filed at the Nueces County Deed Records Office. Proof of filing of the deed notice will be provided to the TCEQ.

2.5.3.2 Access Restrictions (Fencing)

Access restrictions for soils left in place above the PRGs on the Southern Tract would consist of fencing and signs to prevent accidental human exposure to soils exceeding PRGs. Implementation of this corrective action alternative would include placing a 6-foot-high chain-link fence with 3-strand barbed wire around either (1) each individual area of affected soils exceeding PRGs that are left in place, or (2) maintaining the existing perimeter fence that surrounds the Southern Tract. The fence would be

marked with signs stating to contact Encycle prior to entry into the fenced area. No potential exposure pathways would be eliminated under this alternative. However, the area of affected soils exceeding PRGs would be readily identified, and future excavation workers could be protected using applicable personal protective equipment.

2.5.3.3 Concrete Cap

A concrete cap is a containment approach in which the soils exceeding PRGs on the Southern Tract would be capped with rigid concrete to prevent direct contact with the affected soils, and to prevent storm water contact with the affected soils. As shown on Table 4, some of the affected soils exceeding PRGs on the Southern Tract are currently located below concrete pavement (Lettered Bins Building, Storm Sewer System B-111 and Storm Drain 219 areas). Therefore, for areas already located under concrete, this alternative would involve repairing of any cracks or gaps in the existing concrete pavement.

For unpaved areas of the Southern Tract, this alternative would initially involve grading to remove vegetation and loose surface materials (i.e., gravel, etc.), and to level the area prior to paving. Base preparation would include emplacement of a 2-inch-thick compacted sand layer. The base material would then be covered using 6-inch-thick, 3,000 pounds per square inch (PSI) concrete reinforced with No. 4 steel reinforcing bars on 12-inch-centers each way. Sealed expansion joints would also be constructed on a 40-foot spacing to minimize the potential for cracking of the concrete.

2.5.3.4 Asphalt Cap

An asphalt cap is a containment approach in which the soils exceeding PRGs on the Southern Tract would be capped with flexible asphalt to prevent direct contact with the affected soils, and to prevent storm water contact with the affected soils. This alternative would not be applicable to the Lettered Bins Building or the Storm Drain 219/soil boring B-111 areas, which are currently paved with concrete. This alternative would initially involve grading of the affected areas to remove vegetation and loose surface materials (i.e., gravel, etc.), and to level the area prior to paving. Base preparation would include emplacement of a 6-inch-thick, lime-stabilized caliche gravel base layer. The base material would then be covered using asphalt compacted to a minimum thickness of 2 inches. The asphalt aggregate would consist of gravel, crushed gravel, or crushed stone (i.e., limestone, etc).

2.5.3.5 Clay Cap

A clay cap is a containment approach in which the soils exceeding PRGs on the Southern Tract would be capped with at least three feet of low-permeability ($<10^{-7}$ cm/sec) clay to prevent direct contact with the affected soils, and to prevent storm water contact with the affected soils. This alternative would not be applicable to the Lettered Bins Building or the Storm Drain 219/soil boring B-111 areas, which are currently paved with concrete. This alternative would initially involve grading of the affected areas to remove vegetation and loose surface materials (i.e., gravel, etc.) prior to capping with clay. The clay would then be emplaced in loose 6- to 9-inch lifts, and each lift would be compacted to at least 90% Proctor Density. Following emplacement and compaction of the clay to a minimum thickness of three feet, a 6-inch-thick layer of select topsoil would be emplaced, seeded with grass, fertilized, and watered.

2.5.3.6 Excavation and Offsite Disposal

This removal technology would involve excavation of soils on the Southern Tract exceeding PRGs, and offsite disposal of the soils without on-site treatment. The procedures for excavation and offsite disposal of soils on the Southern Tract would be similar to those described above in Section 2.5.1.3 for the Meaney Tract. Excavation and offsite disposal would include (1) excavating the soils exceeding PRGs on the Southern Tract, (2) placing the excavated soils into approximate 200 cubic yard stockpiles on a paved and bermed area of the Encycle site, (3) sampling the excavated soil stockpiles for TCLP metals analyses for waste classification purposes, and (4) disposal of the soils at an authorized offsite landfill. Soil containing TCLP metals concentrations above the Class I non-hazardous limits given in 30 TAC Chapter 335.521(a) would be disposed of at an authorized hazardous waste landfill. Soils containing TCLP metals concentrations between Class II non-hazardous limits and Class I non-hazardous limits would be disposed of at an authorized Class I non-hazardous landfill. Soils containing TCLP metals concentrations below Class II non-hazardous limits would be disposed of at an authorized Class II non-hazardous landfill.

Following completion of soil excavation and receipt of verification soil sample analytical results showing the soils exceeding PRGs have been excavated, the excavated areas would be backfilled and compacted to pre-existing grade using clean, select fill from an offsite source.

2.5.3.7 Excavation, Stabilization, and Offsite Disposal

This technology would involve the removal technology of soil excavation and the treatment technology of soil stabilization. Using these combined technologies, offsite disposal costs potentially could be reduced relative to direct disposal of untreated excavated soils at an authorized hazardous waste landfill. The procedures for excavation, stabilization, and offsite disposal of soils on the Southern Tract would be similar to those described above in Section 2.5.1.4 for the Meaney Tract. This technology would include (1) excavating the soils exceeding PRGs on the Southern Tract, (2) placing the excavated soils into approximate 200 cubic yard stockpiles on a paved and bermed area of the Encycle site, (3) sampling the excavated soil stockpiles for TCLP metals analyses, (4) mixing of solidification/stabilizing binding agents with the soils in stockpiles that have one or more TCLP metals concentrations in excess of the target soil stabilization treatment limits shown on Table 10, (5) collecting confirmation soil samples from the soil stockpiles to ensure the target soil stabilization treatment limits shown on Table 10 been met, and (6) transporting the soils to an authorized offsite Class II non-hazardous landfill. If the confirmation samples collected from the stabilized soil stockpiles show the target soil stabilization treatment limits have not been met, additional binding agents (phosphates, sulfides, carbonates, etc.) would be added and those re-treated stockpiles would be re-sampled. This process would continue until the target soil stabilization treatment limits have been met.

Following completion of soil excavation and soil stabilization, and receipt of verification soil sample analytical results from the excavated areas showing the soils exceeding PRGs have been excavated, the excavated areas would be backfilled and compacted to grade using clean, compacted, select fill from an offsite source.

2.5.3.8 Excavation and Disposal in a CAMU at the Encycle Facility

This technology would involve excavation of the soils on the Southern Tract exceeding PRGs, and disposal of the excavated soils in a CAMU on Encycle-owned property. Details regarding construction of the CAMU are provided in Section 2.5.1.5. As shown on Table 12, the CAMU would have sufficient capacity for final disposal of the soils exceeding PRGs at the Encycle facility, including the approximately 2,606 cubic yards of soils on the Southern Tract that exceed the PRGs (see Table 8).

Following completion of soil excavation and on-site stabilization, and receipt of verification soil sample analytical results from the excavated areas showing the soils

exceeding PRGs have been excavated, the excavated areas would be backfilled to grade using clean, select fill from an offsite source.

2.6 Detailed Evaluation of Corrective Measure Alternatives

This section of the report provides a detailed evaluation of the corrective measures alternatives that were described above in Section 2.5. The purpose of the detailed evaluation is to compare each remedial alternative to a specific set of criteria, which will allow selection the most appropriate final remedies for soils that exceed the PRGs on the Meaney Tract, Northern Tract, and Southern Tract. The corrective measure alternatives were subjected to detailed evaluation based on the following criteria, which includes criteria described in 30 TAC Chapter 335.562, and the EPA document "*RCRA Corrective Action Plan*" (EPA, May 1994):

- Overall protection of human health and the environment. This assessment evaluates how the alternative achieves and maintains protection of human health and the environment.

- Control the source of releases. This assessment evaluates the effectiveness of the alternative to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health or the environment.

- Compliance with applicable laws and regulations. This assessment evaluates the regulatory compliance applicable to the remedy, including management of wastes associated with the remedy.

- Long-term effectiveness and permanence. This assessment evaluates the long-term effectiveness of the remedy in maintaining protection of human health and the environment. The principal factors to be considered include (1) the likelihood that the technology will meet required process efficiencies or performance specifications, (2) the type of long-term management required, (3) requirements for long-term monitoring, (4) operation and maintenance functions, (5) difficulties and uncertainties associated with long-term operation and maintenance, (6) the potential need for replacement technical components, (7) the magnitude of threats or risks should the remedial action need replacement, (8) the degree of confidence that controls can adequately handle potential problems, and (9) the uncertainties associated with land disposal residuals and untreated wastes.

- Reduction of toxicity, mobility, or volume. This assessment evaluates the degree to which the remedy significantly and irreversibly reduces the toxicity, mobility, or volume of contaminants.

- Short-term effectiveness. This assessment evaluates the short-term risks that may be posed to human health and the environment during the remedy construction/implementation phase. This includes the overall safety to workers and the community during remedy implementation, including general physical safety and the potential for exposure to COCs during implementation of the remedy.

- Implementability. This assessment evaluates the degree of difficulty associated with constructing the remedy; expected operational reliability of the remedy; ability to monitor the effectiveness of the remedy; availability of required materials and services; and the available capacity and location of needed treatment, storage, and disposal services.

- Cost. This assessment evaluates the capital and operation and maintenance (O&M) costs of each alternative, and the net present value of long-term capital and operation and maintenance costs.

The detailed evaluation of the corrective measures alternatives for the Meaney Tract, Northern Tract, and Southern Tract are presented in Sections 2.6.1, 2.6.2, and 2.6.3, respectively.

One of the corrective measures alternatives retained for detailed evaluation on the Meaney Tract, Northern Tract, and Southern Tract is deed notice. As discussed above in Section 2.5, deed notice is not stand-alone alternative, but rather used in combination with more comprehensive alternatives. Therefore, deed notice was not evaluated independently because each remedy will include a deed notice.

2.6.1 Meaney Tract

The corrective measures alternatives retained for detailed evaluation on the Meaney Tract are (1) excavation and offsite disposal, (2) excavation, stabilization and offsite disposal, and (3) excavation and disposal in a CAMU at the Encycle facility.

2.6.1.1 Excavation and Offsite Disposal

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs would be excavated, stockpiled, and sampled to classify the wastes, then disposed of offsite at an authorized landfill. Following collection of verification soil samples from the excavation floor and walls, and receipt of laboratory analytical results showing soils exceeding the PRGs have been excavated, the excavated areas would be backfilled with clean soil from an offsite source. The magnitude of residual risk to human health and the environment using this alternative would be low due to the permanent removal of contaminated soil exceeding PRGs from the site.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and permanently removed from the site.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation by qualified excavation contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910, and sampling of the excavated soils would be conducted prior to offsite disposal to properly classify the soils and obtain offsite landfill operator approval. The soils would be transported to the offsite permitted landfill by licensed waste haulers, and each shipment would be properly manifested.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are good due to the permanent removal of the contaminated soils exceeding PRGs. The adequacy and reliability of controls at the offsite disposal facility are expected to be good, since TSD regulations stipulate extensive performance standards that owners and operators must achieve in order to minimize the releases of wastes from these permitted landfills into the environment.

- Reduction of Toxicity, Mobility, or Volume – No reduction of contaminant toxicity or volume would occur since the soils exceeding PRGs would be removed from the site and contained in an off-site permitted landfill. Therefore, the mobility of the contaminants at the offsite landfill is

significantly reduced due to the design criteria of the landfill.

- Short-Term Effectiveness – Excavation of soils would be controlled with water and/or other wetting agents to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Excavation workers would wear personal protective equipment (PPE) to prevent exposure to the COCs in the soils. Stockpiled soils would be placed on plastic in a paved and bermed area of the Encycle site, and covered with plastic (Visqueen). Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the excavated soils are disposed at the offsite landfill, and the excavated areas are backfilled with clean soil.

- Implementability – The affected soil areas are readily accessible to standard excavating equipment. The effectiveness of the remedy is easily monitored by collecting verification soil samples from the excavation floors and walls to ensure soils exceeding PRGs have been removed. Qualified contractors with excavating equipment and labor are readily available, thereby assuring competitive bidding. Two local commercial landfills are available for disposal of the soils, including the US Ecology Texas landfill in Robstown, Texas, for Class I hazardous, Class I non-hazardous, and Class II non-hazardous soils; and the Allied Waste/BFI El Centro landfill in Robstown, Texas, for disposal of Class II non-hazardous soils. Other permitted landfills are available in the San Antonio and Houston, Texas areas for competitive bidding. No construction difficulties are anticipated other than excavating in close proximity to the underground petroleum pipelines in the southern portion of the boneyard. The underground pipeline companies would be notified prior to excavation. The depth and orientation of each pipeline would be determined by hand excavating and exposing each pipeline at the east and west ends of the excavation area. Although it is anticipated that the pipelines are located below the base of the soil excavation, any soils that require excavation within one foot of a pipeline would be removed using hand-held shovels to avoid the potential for damage to the pipeline.

- Cost – The cost for the soil excavation and off-site disposal alternative is $774,183. A detailed cost breakdown is presented on Table 13.

2.6.1.2 Excavation, Stabilization, and Offsite Disposal

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs would initially be excavated, stockpiled, and sampled to determine if TCLP metals concentrations in the excavated soil stockpiles exceed the Target Soil Stabilization Treatment Limits for disposal at a Class 2 non-hazardous landfill shown on Table 10. If the TCLP concentrations of one or more metals exceed the Target Soil Stabilization Treatment Limits, those soil stockpiles would be treated by mixing of solidification/stabilization binding agents with the soils until confirmation soil samples from the treated soil stockpiles meet the Target Soil Stabilization Treatment Limits. The treated soils would then be disposed of offsite at an authorized Class 2 non-hazardous waste landfill. Following collection of verification soil samples from the excavation showing soils exceeding the PRGs have been excavated, the excavated areas would be backfilled with clean soil from an offsite source. The magnitude of residual risk to human health and the environment using this alternative would be low due to the permanent removal of contaminated soil exceeding PRGs from the site.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and permanently removed from the site.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation by qualified excavation and soil stabilization contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910. Confirmation sampling of the excavated soils following soil stabilization would be conducted to verify the Target Soil Stabilization Treatment Limits have been prior to disposal at a permitted Class 2 non-hazardous landfill. The soils would be transported to the offsite by licensed waste haulers, and each shipment would be properly manifested.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are good due to the permanent removal of the contaminated soils exceeding PRGs, and the soil stabilization binding agents would permanently reduce the mobility of the COCs. The adequacy and reliability

of soil stabilization procedures are expected to be good because soil stabilization is a common treatment technology for metals-affected soils, and the soil treatability contractors that would bid on this work have been provided with site-specific soil samples during March 2005 for treatability evaluation. Controls at the offsite disposal facility are expected to be good, since TSD regulations stipulate extensive performance standards that owners and operators must achieve in order to minimize the releases of wastes from these permitted landfills into the environment.

- Reduction of Toxicity, Mobility, or Volume – Soil stabilization binding agents would reduce the mobility of metals in the excavated soils, and the soils exceeding PRGs would be removed from the site and contained in an off-site permitted landfill. The mobility of the contaminants at the offsite landfill is reduced due to both the design criteria of the landfill and the binding agents that would be added to the excavated soils that exceeded the Target Soil Stabilization Treatment Limits. The volume of the affected soils would be increased due to the soil stabilization process. Soil stabilization would increase the volume of treated soils by approximately 33% based on application of this technology at other sites, and based on the site-specific treatability testing conducted by the soil treatability contractors during March 2005.

- Short-Term Effectiveness – Excavation of soils and mixing of soil stabilization binding agents would be controlled using water and/or other wetting agents to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Excavation and soil stabilization workers would wear personal protective equipment (PPE) to prevent exposure to the COCs in the soils. Soil stabilization would be conducted on plastic sheeting in a paved and bermed area of the Southern Tract, which is surrounded by fencing to prevent trespassing. Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the soils are disposed at the offsite landfill, and the excavated areas are backfilled with clean soil.

- Implementability – The affected soil areas are readily accessible to standard excavating equipment, and soil stabilization binding additives/reagents are widely available and relatively inexpensive. The effectiveness of the remedy is easily monitored by collecting verification soil samples from the excavation floors and walls to ensure soils exceeding PRGs have been removed, and by

collection of confirmation soil samples from the stabilized soil stockpiles to ensure the Target Soil Stabilization Treatment Limits have been met. Qualified soil stabilization contractors with excavating equipment, soil stabilization mixing equipment, and labor are readily available, thereby assuring competitive bidding. Two local commercial landfills are available for disposal of the soils that are stabilized to meet Class 2 non-hazardous disposal criteria (US Ecology Texas landfill in Robstown, Texas; and Allied Waste/BFI El Centro landfill in Robstown, Texas). Other Class 2 non-hazardous landfills are available in the Donna, Houston, and San Antonio areas for competitive bidding. No construction difficulties are anticipated other than excavating in close proximity to the underground petroleum pipelines in the southern portion of the boneyard. The underground pipeline companies would be notified prior to excavation. The depth and orientation of each pipeline would be determined by hand excavating and exposing each pipeline at the east and west ends of the excavation area. Although it is anticipated that the pipelines are located below the base of the excavation, any soils that require excavation within one foot of a pipeline would be removed using hand-held shovels to avoid the potential for damage to the pipeline.

- Cost – The cost for the excavation, stabilization, and off-site disposal alternative is $691,304. A detailed cost breakdown is presented on Table 14.

2.6.1.3 Excavation and Disposal in a CAMU at the Encycle Facility

- Overall Protection of Human Health and the Environment – Using this alternative, a CAMU would be constructed in the relatively undisturbed southeast corner of the Southern Tract on the Encycle site as shown on Figures 18 and 19. After construction of the CAMU composite bottom liner and leachate collection system is completed, the CAMU would be ready to accept excavated soils. Soils on the Meaney Tract containing metals concentrations above the PRGs would be excavated, stockpiled on plastic in a bermed area of the Encycle site, and sampled to determine if TCLP metals concentrations in the excavated soil stockpiles exceed the Alternate LDR Treatment Standards for Contaminated Soils shown on Table 10. Soil stockpiles that contain TCLP metals concentrations not exceeding the Alternate LDR Treatment Standards for Contaminated soils would be disposed of in the CAMU. Soil stockpiles containing TCLP concentrations of one or more metals above the Alternate LDR Treatment Standards for Contaminated Soil would be treated by mixing of solidification/stabilization binding agents to the soils until confirmation soil

samples from the treated soil stockpiles show the Alternate LDR Treatment Standards for Contaminated Soils have been meet. The treated soils would then be disposed of in the CAMU. Following collection of verification soil samples from the soil excavation floors and sidewalls on the Meaney Tract showing soils exceeding the PRGs have been excavated, the excavated areas would be backfilled with clean soil from an offsite source. The magnitude of residual risk to human health and the environment would be low because the affected soil areas exceeding PRGs would be excavated and placed into a CAMU constructed with a composite bottom liner, a leachate collection system, a groundwater monitoring system, and a low-permeability clay cap to prevent releases from the CAMU.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and placed into a CAMU. The CAMU would include a leachate collection system to capture leachate generated in the CAMU. Depending upon metals concentrations in the leachate, the leachate would either be (1) pumped into the City of Corpus Christi sanitary sewer system in accordance with a City of Corpus Christi Wastewater Discharge Permit, or (2) disposed of at a permitted, commercial fluid disposal facility.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation and CAMU construction by qualified excavation and soil stabilization contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910. Sampling of the excavated soil stockpiles would be conducted to determine if soil treatment would be required to meet Alternate LDR Treatment Standards for Contaminated Soil prior to final disposal in the CAMU. The CAMU would be constructed in accordance with the requirements of 40 CFR Part 264.552. Any leachate generated in the CAMU would be collected and disposed of at an authorized facility.

- Long-Term Effectiveness and Permanence – This alternative would result in increased risk to the Encycle facility relative to the two offsite disposal options discussed above in Sections 2.6.2.1 and 2.6.2.2 because the soils exceeding PRGs would remain in the CAMU located at the southeastern end of the Southern Tract on Encycle-owned property. Long-term monitoring and operation and maintenance of the CAMU cap, groundwater monitoring

system, and leachate collection system would be required. Although the potential for releases from the CAMU would be low due to the leachate collection system and composite liner, any releases from the CAMU to the underlying groundwater would require assessment and potentially remediation of soils and/or groundwater.

- Reduction of Toxicity, Mobility, or Volume – Soil stabilization binding agents would significantly reduce the mobility of metals in the excavated soils that exceed Alternate LDR Treatment Standards for Contaminated Soils. The mobility of the contaminants in the CAMU would also be reduced because of the design criteria of the CAMU. The volume of the affected soils would be increased due to the soil stabilization process. Soil stabilization would increase the volume of treated soils by approximately 33% based on application of this technology at other sites, and based on the site-specific treatability testing conducted by the soil treatability contractors during March 2005.

- Short-Term Effectiveness – This alternative would result in increased risk relative to the two offsite disposal options discussed above in Sections 2.6.1.1 and 2.6.1.2 because (1) the affected soils exceeding PRGs would not be excavated until construction of the CAMU composite liner system and leachate collection system has been completed (approximately 3 -4 months), and (2) the final CAMU cap would not be constructed until all of the affected soils exceeding PRGs have been excavated and placed into the CAMU. Excavation of soils and mixing of soil stabilization binding agents would be controlled to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Fugitive dust emissions from the affected soils in the CAMU prior to capping of the CAMU would be controlled by dust suppression (i.e., watering) and, if needed, intermediate cover (i.e., clean soil layers) placed above the affected soil layers. Excavation and soil stabilization workers would wear personal protective equipment (PPE) to prevent exposure to the COCs in the soils. Soil stabilization would be conducted on plastic sheeting in a paved and bermed area of the Southern Tract, which is surrounded by fencing to prevent trespassing. Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the affected soils exceeding PRGs are placed into the CAMU, and the CAMU is capped.

- Implementability – No problems are anticipated with regards to availability of

necessary equipment, materials, and labor to construct the CAMU. The implementability of this alternative results in higher risk relative to the two offsite disposal options discussed above in Sections 2.6.2.1 and 2.6.2.2 because CAMU construction will require re-locating of overhead power lines currently present at the proposed CAMU location, and the potential for leachate generation, CAMU cap settlement, and CAMU cap erosion which would require maintenance.

- Cost – The cost for the excavation of affected soils exceeding PRGs and disposal of affected soils in a CAMU at the Encycle facility is presented on Table 15. As shown on Table 15, the CAMU construction cost has been allocated proportionally to the Meaney Tract, Northern Tract, and Southern Tract based on the volume of soils exceeding PRGs on each of these tracts. As shown on Table 8, the in-situ volume of soils on the Meaney Tract (3,380 cubic yards) is approximately 50 percent of the total in-situ volume of soils exceeding PRGs (6,718 cubic yards). Therefore, 50 percent of the CAMU construction costs are allocated to the Meaney Tract. Correspondingly, 11 percent of the CAMU construction costs are allocated to the Northern Tract, and 39 percent of the CAMU construction costs are allocated to the Southern Tract. The CAMU costs include capital costs and post-closure costs for a 30-year post-closure care period. The net present value of annual post-closure costs has been calculated as specified in 30 TAC Chapter 37.13, using an annual inflation factor of 4 percent (US Dept. of Commerce, April 2005). As shown on Table 15, the cost for the excavation, stabilization, and disposal in a CAMU alternative is $1,238,789 for the Meaney Tract.

2.6.2 Northern Tract

The corrective measures alternatives retained for detailed evaluation on the Northern Tract are (1) fencing, (2) concrete cap, (3) asphalt cap, (4) clay cap, (5) excavation and offsite disposal, (6) excavation, stabilization and offsite disposal, and (7) excavation and disposal in a CAMU at the Encycle facility.

2.6.2.1 Access Restrictions (Fencing)

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Northern Tract would be enclosed inside a fence with signs that are labeled with a statement to contact Encycle prior to entry into the fenced area. The effectiveness of this

alternative in protecting human health and the environment is poor because the affected soils that exceed PRGs directly northeast of the 01 Landfill are surface soils that would be in contact with surface water runoff. The affected surface soils also would be subject to airborne particulate releases.

- Control the Source of Releases – This remedy will not control the source of releases and prevent further releases because the source of the releases would not be capped or removed.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy involves only fencing, signs, and deed recordation. No wastes would be generated using this remedy.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are poor because the exposed surface soils would be subject to surface water and wind erosion/dispersion.

- Reduction of Toxicity, Mobility, or Volume – No reduction of contaminant toxicity, mobility, or volume would occur.

- Short-Term Effectiveness – There are no short-term impacts associated with this alternative since no action is involved other than fence and sign installation.

- Implementability – Implementability considerations are good because the remedy is easy to construct and local equipment and labor are readily available.

- Cost – The cost for the fencing alternative on the Northern Tract is $25,728 as detailed on Table 16.

2.6.2.2 Capping (Concrete, Asphalt, or Clay Cap)

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Northern Tract would be capped using either 6-inch-thick rigid concrete pavement with an underlying 2-inch-thick sand layer, 2-inch-thick flexible asphalt pavement with an underlying 6-inch-thick stabilized gravel base layer, or a 3-foot-thick low-permeability ($<10^{-7}$ cm/sec) clay layer with a 6-inch-thick topsoil cover. The

effectiveness of the capping alternative in protecting human health and the environment is good because the affected soils that exceed PRGs would be capped, and the cap would be maintained to prevent exposure to affected soils, and to prevent contact with surface water runoff.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases would be capped. The potential for leachate migration to groundwater would be reduced because the affected soils exceeding PRGs would be capped and sloped to prevent retention of storm water on the cap.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy involves only capping of the affected soils, and deed recordation. No wastes would be generated using this remedy.

- Long-Term Effectiveness and Permanence – This alternative would result in improvement in long-term effectiveness and permanence over the fencing alternative. The magnitude of risk is reduced by minimizing the potential for dermal contact and soil ingestion, but there would be a potential risk because the contaminants would remain on-site in untreated soils below the cap. Infiltrating surface water, although limited by the cap, could result in leaching of metals from the affected soils to the groundwater. Periodic inspection and maintenance of the cap would be required.

- Reduction of Toxicity, Mobility, or Volume – No reduction of contaminant toxicity or volume would occur. This alternative would reduce the mobility of the contaminants because the cap would prevent windblown and surface water erosion of the contaminants, and reduce the potential for leaching of metals to the groundwater.

- Short-Term Effectiveness – Short-term effectiveness considerations include worker exposure to COCs during cap construction. Exposure to COCs during CAP construction would be addressed using dust suppression techniques, PPE, and standard safety practices.

- Implementability – Implementability considerations are good because the remedy is easy to construct and local equipment, labor, and materials are readily available.

- Cost – The cost for the capping alternative is $129,772 as detailed on Table 17. The cost estimate is based on the assumption that the affected soils exceeding PRGs northeast corner of the 01Landfill (soil boring B-223 and B-237 area) would be capped with concrete or asphalt, and the affected soils exceeding PRGs directly northwest of the 01 Landfill (soil boring B-140 area) would be capped with low-permeability clay. The soil boring B-223 and B-237 area northeast of the 01 Landfill is located in a drainage ditch, and a 3-foot-thick clay cap would be impractical in this area because storm water would be retained in the drainage ditch upstream of the clay cap. Therefore, the cap in the soil boring B-223 and B-237 area would consist of concrete or asphalt pavement. As shown on Figure 16, the soil boring B-140 area is located immediately northwest of the 01 Landfill which has an existing 4-foot-thick clay cap. The affected soils exceeding PRGs at soil boring B-140 are located at a depth of 5 to 5.5 feet. Therefore, the existing 01 Landfill clay cap would be extended to the soil boring B-140 area.

2.6.2.3 Excavation and Offsite Disposal

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Northern Tract would be excavated, stockpiled, and sampled to classify the wastes, then disposed of offsite at an authorized landfill. Following receipt of confirmation soil samples from the excavation, floor and sidewalls showing soils exceeding PRGs have been excavated, the excavated areas will be backfilled with clean compacted soil. The magnitude of residual risk to human health and the environment using this alternative would be low due to the permanent removal of contaminated soil exceeding PRGs.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and permanently removed from the site.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation by qualified excavation contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910, and sampling of the excavated soils would be conducted prior to offsite disposal to properly classify the soils and obtain offsite landfill operator approval. The soils would be transported

to the offsite permitted landfill by licensed waste haulers, and each shipment would be properly manifested.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are good due to the permanent removal of the contaminated soils exceeding PRGs. The adequacy and reliability of controls at the offsite disposal facility are expected to be good, since TSD regulations stipulate extensive performance standards that owners and operators must achieve in order to minimize the releases of wastes from these permitted landfills into the environment.

- Reduction of Toxicity, Mobility, or Volume – No reduction of contaminant toxicity or volume would occur. Since the soils exceeding PRGs would be removed from the site and contained in an off-site permitted landfill. Therefore, the mobility of the contaminants at the offsite landfill is significantly reduced due to the design criteria of the landfill.

- Short-Term Effectiveness – Excavation of soils would be controlled using water and/or other wetting agents to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Excavation workers would wear PPE to prevent exposure to the COCs in the soils. Stockpiled soils exceeding PRGs would be placed on plastic in a paved and bermed area of the Encycle site, and covered with plastic (Visqueen). Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the excavated soils are disposed at the offsite landfill, and the excavated areas are backfilled with clean soil.

- Implementability – The affected soil areas are readily accessible to standard excavating equipment. The effectiveness of the remedy is easily monitored by collecting verification soil samples from the excavation floors and walls to ensure soils exceeding PRGs have been removed. Qualified contractors with excavating equipment and labor are readily available, thereby assuring competitive bidding. Two local commercial landfills are available for disposal of the soils, including the US Ecology Texas landfill in Robstown, Texas, for Class I hazardous, Class I non-hazardous, and Class II non-hazardous soils; and the Allied Waste/BFI El Centro landfill in Robstown, Texas, for disposal of Class II non-hazardous soils. Other permitted landfills are available in the San Antonio and Houston, Texas areas for competitive bidding. No construction difficulties are anticipated other than excavating in

close proximity to 01 Landfill directly southeast of the soil boring B-140 location. It is expected that the soil boring B-140 area excavation will encounter landfill materials to the southeast of soil boring B-140, which represents the northwest edge of the 01 Landfill. Therefore, if 01 Landfill materials are encountered during excavation to the southeast of soil boring B-140, the excavation options will be unfeasible in removing all soils exceeding PRGs in the soil boring B-140 area of the Northern Tract.

- Cost – The cost for the soil excavation and off-site disposal alternative on the Northern Tract is $190,009. A detailed cost breakdown is presented on Table 18.

2.6.2.4 Excavation, Stabilization, and Offsite Disposal

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Northern Tract *would* be excavated, stockpiled, and sampled to determine if TCLP metals concentrations in the excavated soil stockpiles exceed the Target Soil Stabilization Treatment Limits for disposal at a Class 2 non-hazardous landfill as shown on Table 10. If the TCLP concentrations of one or more metals exceed the Target Soil Stabilization Treatment Limits, those soil stockpiles *would* be treated by mixing of solidification/stabilization binding agents with the soils until confirmation soil samples from the treated soil stockpiles meet the Target Soil Stabilization Treatment Limits. The treated soils would then be disposed of offsite at an authorized Class 2 non-hazardous waste landfill. Following collection of verification soil samples from the excavation floor and sidewalls showing soils exceeding the PRGs have been excavated, the excavated areas would be backfilled with clean compacted soil. The magnitude of residual risk to human health and the environment using this alternative would be low due to the permanent removal of contaminated soil exceeding PRGs.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and permanently removed from the site.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation by qualified

excavation and soil stabilization contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910. Confirmation sampling of the excavated soils following soil stabilization would be conducted to verify the Target Soil Stabilization Treatment Limits have been prior to disposal at a Class 2 non-hazardous landfill. The soils would be transported to the offsite by licensed waste haulers, and each shipment would be properly manifested.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are good due to the permanent removal of the contaminated soils exceeding PRGs, and the soil stabilization binding agents would permanently reduce the mobility of the COCs. The adequacy and reliability of soil stabilization procedures are expected to be good because soil stabilization is a common treatment technology for metals-affected soils, and the soil treatability contractors that would bid on this work have been provided with site-specific soil samples during March 2005 for treatability evaluation. Controls at the offsite disposal facility are expected to be good, since TSD regulations stipulate extensive performance standards that owners and operators must achieve in order to minimize the releases of wastes from these permitted landfills into the environment.

- Reduction of Toxicity, Mobility, or Volume – Soil stabilization binding agents would reduce the mobility of metals in the excavated soils. Since the soils exceeding PRGs would be removed from the site and contained in an off-site permitted landfill. The mobility of the contaminants at the offsite landfill is reduced due to both the design criteria of the landfill and the binding agents that would be added to the excavated soils that exceeded the Target Soil Stabilization Treatment Limits. The volume of the affected soils would be increased due to the soil stabilization process. Soil stabilization would increase the volume of treated soils by approximately 33% based on application of this technology at other sites, and based on the site-specific treatability testing conducted by the soil treatability contractors during March 2005.

- Short-Term Effectiveness – Excavation of soils and mixing of soil stabilization binding agents would be controlled to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Excavation and soil stabilization workers would wear PPE to prevent exposure to the COCs in the soils. Soil stabilization

would be conducted on plastic sheeting in a paved and bermed area of the Southern Tract, which is surrounded by fencing to prevent trespassing. Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the soils are disposed at the offsite landfill, and the excavated areas are backfilled with clean soil.

- Implementability – The affected soil areas are readily accessible to standard excavating equipment, and soil stabilization binding additives/reagents are widely available and relatively inexpensive. The effectiveness of the remedy is easily monitored by collecting verification soil samples from the excavation floors and walls to ensure soils exceeding PRGs have been removed, and by collection of confirmation soil samples from the stabilized soil stockpiles to ensure the Target Soil Stabilization Treatment Limits have been met. Qualified soil stabilization contractors with excavating equipment, soil stabilization mixing equipment, and labor are readily available, thereby assuring competitive bidding. Two local commercial landfills are available for disposal of the soils that are stabilized to meet Class 2 non-hazardous disposal criteria (US Ecology Texas landfill in Robstown, Texas; and Allied Waste/BFI El Centro landfill in Robstown, Texas). Other Class 2 non-hazardous landfills are available in the Donna, Houston, and San Antonio areas for competitive bidding. No construction difficulties are anticipated other than excavating in close proximity to 01 Landfill directly southeast of the soil boring B-140 location. It is expected that the soil boring B-140 area excavation will encounter landfill materials to the southeast of soil boring B-140, which represents the northwest edge of the 01 Landfill. Therefore, if 01 Landfill materials are encountered during excavation to the southeast of soil boring B-140, the excavation options will be unfeasible in removing all soils exceeding PRGs in the soil boring B-140 area of the Northern Tract.

- Cost – The cost for the excavation, stabilization, and off-site disposal alternative is $182,940. A detailed cost breakdown is presented on Table 19.

2.6.2.5 Excavation and Disposal in a CAMU at the Encycle Facility

- Overall Protection of Human Health and the Environment – This alternative, which is discussed in detail above in Section 2.6.1.3, involves excavation of soils at the site exceeding PRGs, including soils on the Meaney Tract, Northern Tract, and Southern Tract, and disposing the soils in an on-site CAMU located at the southeast corner of the Southern Tract. Excavated soil

stockpiles that contain TCLP metals concentrations not exceeding the Alternate LDR Treatment Standards for Contaminated soils would be disposed of in the CAMU. Excavated soil stockpiles containing TCLP concentrations of one or more metals above the Alternate LDR Treatment Standards for Contaminated Soil would be treated by mixing of solidification/stabilization binding agents with the soils until confirmation soil samples from the treated soil stockpiles show the Alternate LDR Treatment Standards for Contaminated Soils have been meet. The treated soils would then be disposed of in the CAMU. Following collection of verification soil samples from the soil excavation floors and sidewalls on the Northern Tract showing soils exceeding the PRGs have been excavated, the excavated areas would be backfilled with clean soil from an offsite source. The magnitude of residual risk to human health and the environment would be low because the affected soil areas exceeding PRGs would be excavated and placed into a CAMU constructed with a composite bottom liner, a leachate collection system, a groundwater monitoring system, and a low-permeability clay cap to prevent releases from the CAMU.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and placed into a CAMU. The CAMU would include a leachate collection system to capture leachate generated in the CAMU. Depending upon metals concentrations in the leachate, the leachate would either be (1) pumped into the City of Corpus Christi sanitary sewer system in accordance with a City of Corpus Christi Wastewater Discharge Permit, or (2) disposed of at a permitted, commercial fluid disposal facility.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation and CAMU construction by qualified excavation and soil stabilization contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910. Sampling of the excavated soil stockpiles would be conducted to determine if soil treatment would be required to meet Alternate LDR Treatment Standards for Contaminated Soil prior to final disposal in the CAMU. The CAMU would be constructed in accordance with the requirements of 40 CFR Part 264.552. Any leachate generated in the CAMU would be collected and disposed of at an authorized facility.

- Long-Term Effectiveness and Permanence – This alternative would result in increased risk to the Encycle facility relative to the two offsite disposal options discussed above in Sections 2.6.2.3 and 2.6.2.4 because the soils exceeding PRGs would remain in the CAMU located at the southeastern end of the Southern Tract on Encycle-owned property. Long-term monitoring and operation and maintenance of the CAMU cap, groundwater monitoring system, and leachate collection system would be required. Although the potential for releases from the CAMU would be low due to the leachate collection system and composite liner, any releases from the CAMU to the underlying groundwater would require assessment and potentially remediation of soils and/or groundwater.

- Reduction of Toxicity, Mobility, or Volume – Soil stabilization binding agents would significantly reduce the mobility of metals in the excavated soils that exceed Alternate LDR Treatment Standards for Contaminated Soils. The mobility of the contaminants in the CAMU would also be reduced because of the design criteria of the CAMU. The volume of the affected soils would be increased due to the soil stabilization process. Soil stabilization would increase the volume of treated soils by approximately 33% based on application of this technology at other sites, and based on the site-specific treatability testing conducted by the soil treatability contractors during March 2005.

- Short-Term Effectiveness – This alternative would result in increased risk relative to the two offsite disposal options discussed above in Sections 2.6.2.3 and 2.6.2.4 because (1) the affected soils exceeding PRGs would not be excavated until construction of the CAMU composite liner system and leachate collection system has been completed (approximately 3 -4 months) and the Meaney Tract soils have been excavated (an additional 2-3 months) and (2) the final CAMU cap would not be constructed until all of the affected soils exceeding PRGs have been excavated and placed into the CAMU. Excavation of soils and mixing of soil stabilization binding agents would be controlled with water and/or other wetting agents to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Fugitive dust emissions from the affected soils in the CAMU prior to capping of the CAMU would be controlled by dust suppression (i.e., watering) and, if needed, intermediate cover (i.e., clean soil layers) placed above the affected soil layers. Excavation and soil stabilization workers would wear PPE to prevent exposure to the COCs in the soils. Soil

stabilization would be conducted on plastic sheeting in a paved and bermed area of the Southern Tract, which is surrounded by fencing to prevent trespassing. Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the affected soils exceeding PRGs are placed into the CAMU, and the CAMU is capped.

- Implementability – No problems are anticipated with regards to availability of necessary equipment, materials, and labor to construct the CAMU. The implementability of this alternative results in higher risk relative to the two offsite disposal options discussed above in Sections 2.6.2.3 and 2.6.2.4 because CAMU construction will require re-locating of overhead power lines currently present at the proposed CAMU location, and the potential for leachate generation, CAMU cap settlement, and CAMU cap erosion which would require maintenance. It is expected that the soil boring B-140 area excavation will encounter landfill materials to the southeast of soil boring B-140, which represents the northwest edge of the 01 Landfill. Therefore, if 01 Landfill materials are encountered during excavation to the southeast of soil boring B-140, the excavation options will be unfeasible in removing all soils exceeding PRGs in the soil boring B-140 area of the Northern Tract.

- Cost – The cost for the excavation of affected soils exceeding PRGs and disposal of affected soils in a CAMU at the Encycle facility is presented on Table 15. As shown on Table 15, the CAMU construction cost has been allocated proportionally to the Meaney Tract, Northern Tract, and Southern Tract based on the volume of soils exceeding PRGs on each of these tracts. As discussed above in Section 2.6.2.3, 11 percent of the CAMU construction costs are allocated to the Northern Tract. As shown on Table 15, the cost for the excavation, stabilization, and disposal in a CAMU alternative is $290,095 for the Northern Tract.

2.6.3 Southern Tract

The corrective measures alternatives retained for detailed evaluation on the Southern Tract are (1) fencing, (2) concrete cap, (3) asphalt cap, (4) clay cap, (5) excavation and offsite disposal, (6) excavation, stabilization and offsite disposal, and (7) excavation and disposal in a CAMU at the Encycle facility.

2.6.3.1 Access Restrictions (Fencing)

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Southern Tract would be enclosed inside a fence with signs that are labeled with a statement to contact Encycle prior to entry into the fenced area. The fenced areas also would be deed recorded. The effectiveness of this alternative in protecting human health and the environment is poor because the affected soils that exceed PRGs in unpaved surface soil areas would be in contact with surface water runoff. The affected surface soils that are unpaved also would be subject to airborne particulate releases.

- Control the Source of Releases – This remedy will not control the source of releases and prevent further releases because the source of the releases would not be removed, and the unpaved areas would be subject to water and wind erosion.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy involves only fencing, signs, and deed recordation. No wastes would be generated using this remedy.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are poor because the exposed surface soils in unpaved areas would be subject to surface water and wind erosion/dispersion.

- Reduction of Toxicity, Mobility, or Volume – No reduction of contaminant toxicity, mobility, or volume would occur.

- Short-Term Effectiveness – There are no short-term impacts associated with this alternative since no action is involved other than fence and sign installation.

- Implementability – Implementability considerations are good because the remedy is easy to construct and local equipment and labor are readily available.

- Cost – The cost for the fencing alternative on the Southern Tract is $103,171 as detailed on Table 20.

2.6.3.2 Capping (Concrete, Asphalt, or Clay Cap)

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Southern Tract would be capped using either 6-inch-thick rigid concrete pavement with an underlying 2-inch-thick sand layer, 2-inch-thick flexible asphalt pavement with an underlying 6-inch-thick stabilized gravel base layer, or a 3-foot-thick low-permeability ($<10^{-7}$ cm/sec) clay layer with a 6-inch-thick topsoil cover. The effectiveness of the capping alternative in protecting human health and the environment is good because the affected soils that exceed PRGs would be capped, and the cap would be maintained to prevent exposure to affected soils, and to prevent contact with surface water runoff.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases would be capped. The potential for leachate migration to groundwater would be reduced because the affected soils exceeding PRGs would be capped and sloped to prevent retention of storm water on the cap.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy involves only capping of the affected soils, and deed recordation. No wastes would be generated using this remedy.

- Long-Term Effectiveness and Permanence – This alternative would result in improvement in long-term effectiveness and permanence over the fencing alternative. The magnitude of risk is reduced by minimizing the potential for dermal contact and soil ingestion, but there would be a potential risk because the contaminants would remain on-site in untreated soils below the cap. Infiltrating surface water, although limited by the cap, could result in leaching of metals from the affected soils to the groundwater. Periodic inspection and maintenance of the cap would be required.

- Reduction of Toxicity, Mobility, or Volume – No reduction of contaminant toxicity or volume would occur. This alternative would reduce the mobility of the contaminants because the cap would prevent windblown and surface water erosion of the contaminants, and reduce the potential for leaching of metals to the groundwater.

- Short-Term Effectiveness – Short-term effectiveness considerations include

worker exposure to COCs during cap construction. Exposure to COCs during CAP construction would be addressed using dust suppression techniques, PPE, and standard safety practices.

- Implementability – Implementability considerations are good because the remedy is easy to construct and local equipment, labor, and materials are readily available.

- Cost – The cost for the capping alternative on the Southern Tract is $767,078 as detailed on Table 21. The cost estimate is based on the assumption that the affected soils exceeding PRGs that are currently located below concrete (Lettered Bins Building – Building C, Storm Sewer System Storm Drain 219 and soil boring B-111 area) would remain below the existing concrete that would be repaired (seal cracks and gaps, etc.). The cost estimate includes new concrete or asphalt pavement to cap soils exceeding PRGs in unpaved areas of the Southern Tract (Railroad Tracks area, Road Leading to the West of Building C area, Reactor/Clarifier boring B-42 area, Storm Sewer System boring B-100, B-113, and B-247 areas).

2.6.3.3 Excavation and Offsite Disposal

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Southern Tract would be excavated, stockpiled, and sampled to classify the wastes, then disposed of offsite at an authorized landfill. Following receipt of confirmation soil samples from the excavation floor and sidewalls showing soils exceeding PRGs have been excavated, the excavated areas will be backfilled with clean compacted soil. The magnitude of residual risk to human health and the environment using this alternative would be low due to the permanent removal of contaminated soil exceeding PRGs.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and permanently removed from the site.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation by qualified excavation contractors that are properly trained in accordance with applicable

OSHA regulations given in 29 CFR Part 1910, and sampling of the excavated soils would be conducted prior to offsite disposal to properly classify the soils and obtain offsite landfill operator approval. The soils would be transported to the offsite permitted landfill by licensed waste haulers, and each shipment would be properly manifested.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are good due to the permanent removal of the contaminated soils exceeding PRGs. The adequacy and reliability of controls at the offsite disposal facility are expected to be good, since TSD regulations stipulate extensive performance standards that owners and operators must achieve in order to minimize the releases of wastes from these permitted landfills into the environment.

- Reduction of Toxicity, Mobility, or Volume – No reduction of contaminant toxicity or volume would occur. Since the soils exceeding PRGs would be removed from the site and contained in an off-site permitted landfill. Therefore, the mobility of the contaminants at the offsite landfill is significantly reduced due to the design criteria of the landfill.

- Short-Term Effectiveness – Excavation of soils would be controlled using water and/or other wetting agents to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Excavation workers would wear PPE to prevent exposure to the COCs in the soils. Stockpiled soils exceeding PRGs would be placed on plastic in a paved and bermed area of the Encycle site, and covered with plastic (Visqueen). Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the excavated soils are disposed at the offsite landfill, and the excavated areas are backfilled with clean soil.

- Implementability – The affected soil areas are readily accessible to standard excavating equipment, including the affected soils currently located below concrete (Bins F, G, H, and P in the Lettered Bins Building; Storm Sewer System Storm Drain 219 and soil boring B-111 area). The effectiveness of the remedy is easily monitored by collecting verification soil samples from the excavation floors and walls to ensure soils exceeding PRGs have been removed. Qualified contractors with excavating equipment and labor are readily available, thereby assuring competitive bidding. Two local commercial landfills are available for disposal of the soils, including the US

Ecology Texas landfill in Robstown, Texas, for Class I hazardous, Class I non-hazardous, and Class II non-hazardous soils; and the Allied Waste/BFI El Centro landfill in Robstown, Texas, for disposal of Class II non-hazardous soils. Other permitted landfills are available in the San Antonio and Houston, Texas areas for competitive bidding. No construction difficulties are anticipated other than the need to remove concrete to assess soils exceeding PRGs in the Lettered Bins Building and Storm Drain 219/Soil Boring B-111 area. The concrete in these areas would be removed to access and excavate the affected soils.

- Cost – The cost for the soil excavation and off-site disposal alternative on the Southern Tract is $663,291. A detailed cost breakdown is presented on Table 22.

2.6.3.4 Excavation, Stabilization, and Offsite Disposal

- Overall Protection of Human Health and the Environment – Using this alternative, soils containing metals above the PRGs on the Southern Tract would be excavated, stockpiled, and sampled to determine if TCLP metals concentrations in the excavated soil stockpiles exceed the Target Soil Stabilization Treatment Limits for disposal at a Class 2 non-hazardous landfill as shown on Table 10. If the TCLP concentrations of one or more metals exceed the Target Soil Stabilization Treatment Limits, those soil stockpiles would be treated by mixing of solidification/stabilization binding agents with the soils until confirmation soil samples from the treated soil stockpiles meet the Target Soil Stabilization Treatment Limits. The treated soils would then be disposed of offsite at an authorized Class 2 non-hazardous waste landfill. Following collection of verification soil samples from the excavation floor and sidewalls showing soils exceeding the PRGs have been excavated, the excavated areas would be backfilled with clean compacted soil. The magnitude of residual risk to human health and the environment using this alternative would be low due to the permanent removal of contaminated soil exceeding PRGs.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and permanently removed from the site.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation by qualified excavation and soil stabilization contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910. Confirmation sampling of the excavated soils following soil stabilization would be conducted to verify the Target Soil Stabilization Treatment Limits have been prior to disposal at a Class 2 non-hazardous landfill. The soils would be transported to the offsite by licensed waste haulers, and each shipment would be properly manifested.

- Long-Term Effectiveness and Permanence – Long-term effectiveness considerations are good due to the permanent removal of the contaminated soils exceeding PRGs, and the soil stabilization binding agents would permanently reduce the mobility of the COCs. The adequacy and reliability of soil stabilization procedures are expected to be good because soil stabilization is a common treatment technology for metals-affected soils, and the soil treatability contractors that would bid on this work have been provided with site-specific soil samples during March 2005 for treatability evaluation. Controls at the offsite disposal facility are expected to be good, since TSD regulations stipulate extensive performance standards that owners and operators must achieve in order to minimize the releases of wastes from these permitted landfills into the environment.

- Reduction of Toxicity, Mobility, or Volume – Soil stabilization binding agents would reduce the mobility of metals in the excavated soils. Since the soils exceeding PRGs would be removed from the site and contained in an off-site permitted landfill. The mobility of the contaminants at the offsite landfill is reduced due to both the design criteria of the landfill and the binding agents that would be added to the excavated soils that exceeded the Target Soil Stabilization Treatment Limits. The volume of the affected soils would be increased due to the soil stabilization process. Soil stabilization would increase the volume of treated soils by approximately 33% based on application of this technology at other sites, and based on the site-specific treatability testing conducted by the soil treatability contractors during March 2005.

- Short-Term Effectiveness – Excavation of soils and mixing of soil stabilization binding agents would be controlled to prevent generation of fugitive dust which may pose short-term risk to the environment, the

community, or to workers. Excavation and soil stabilization workers would wear PPE to prevent exposure to the COCs in the soils. Soil stabilization would be conducted on plastic sheeting in a paved and bermed area of the Southern Tract, which is surrounded by fencing to prevent trespassing. Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the soils are disposed at the offsite landfill, and the excavated areas are backfilled with clean soil.

- Implementability – The affected soil areas are readily accessible to standard excavating equipment, including the affected soils currently located below concrete (Bins F, G, H, and P in the Lettered Bins Building; Storm Sewer System Storm Drain 219 and soil boring B-111 area). Soil stabilization binding additives/reagents are widely available and relatively inexpensive. The effectiveness of the remedy is easily monitored by collecting verification soil samples from the excavation floors and walls to ensure soils exceeding PRGs have been removed, and by collection of confirmation soil samples from the stabilized soil stockpiles to ensure the Target Soil Stabilization Treatment Limits have been met. Qualified soil stabilization contractors with excavating equipment, soil stabilization mixing equipment, and labor are readily available, thereby assuring competitive bidding. Two local commercial landfills are available for disposal of the soils that are stabilized to meet Class 2 non-hazardous disposal criteria (US Ecology Texas landfill in Robstown, Texas; and Allied Waste/BFI El Centro landfill in Robstown, Texas). Other Class 2 non-hazardous landfills are available in the Donna, Houston, and San Antonio areas for competitive bidding. No construction difficulties are anticipated other than the need to remove concrete to assess soils exceeding PRGs in the Lettered Bins Building and Storm Drain 219/Soil Boring B-111 area. The concrete in these areas would be removed to access and excavate the affected soils.

- Cost – The cost for the excavation, stabilization, and off-site disposal alternative is $595,866. A detailed cost breakdown is presented on Table 23.

2.6.3.5 Excavation and Disposal in a CAMU at the Encycle Facility

- Overall Protection of Human Health and the Environment – This alternative, which is discussed in detail above in Section 2.6.1.3, involves excavation of soils at the site exceeding PRGs, including soils on the Meaney Tract, Northern Tract, and Southern Tract, and disposing the soils in an on-site

CAMU located at the southeast corner of the Southern Tract. Excavated soil stockpiles that contain TCLP metals concentrations not exceeding the Alternate LDR Treatment Standards for Contaminated soils would be disposed of in the CAMU. Excavated soil stockpiles containing TCLP concentrations of one or more metals above the Alternate LDR Treatment Standards for Contaminated Soil would be treated by mixing of solidification/stabilization binding agents with the soils until confirmation soil samples from the treated soil stockpiles show the Alternate LDR Treatment Standards for Contaminated Soils have been meet. The treated soils would then be disposed of in the CAMU. Following collection of verification soil samples from the soil excavation floors and sidewalls on the Southern Tract showing soils exceeding the PRGs have been excavated, the excavated areas would be backfilled with clean soil from an offsite source. The magnitude of residual risk to human health and the environment would be low because the affected soil areas exceeding PRGs would be excavated and placed into a CAMU constructed with a composite bottom liner, a leachate collection system, a groundwater monitoring system, and a low-permeability clay cap to prevent releases from the CAMU.

- Control the Source of Releases – This remedy would control the source of releases and prevent further releases because the source of the releases (metals affected soils exceeding PRGs) would be excavated and placed into a CAMU. The CAMU would include a leachate collection system to capture leachate generated in the CAMU. Depending upon metals concentrations in the leachate, the leachate would either be (1) pumped into the City of Corpus Christi sanitary sewer system in accordance with a City of Corpus Christi Wastewater Discharge Permit, or (2) disposed of at a permitted, commercial fluid disposal facility.

- Compliance with Applicable Laws and Regulations – This criterion would be satisfied because the remedy would include soils excavation and CAMU construction by qualified excavation and soil stabilization contractors that are properly trained in accordance with applicable OSHA regulations given in 29 CFR Part 1910. Sampling of the excavated soil stockpiles would be conducted to determine if soil treatment would be required to meet Alternate LDR Treatment Standards for Contaminated Soil prior to final disposal in the CAMU. The CAMU would be constructed in accordance with the requirements of 40 CFR Part 264.552. Any leachate generated in the CAMU would be collected and disposed of at an authorized facility.

- Long-Term Effectiveness and Permanence – This alternative would result in increased risk to the Encycle facility relative to the two offsite disposal options discussed above in Sections 2.6.3.3 and 2.6.3.4 because the soils exceeding PRGs would remain in the CAMU located at the southeastern end of the Southern Tract on Encycle-owned property. Long-term monitoring and operation and maintenance of the CAMU cap, groundwater monitoring system, and leachate collection system would be required. Although the potential for releases from the CAMU would be low due to the leachate collection system and composite liner, any releases from the CAMU to the underlying groundwater would require assessment and potentially remediation of soils and/or groundwater.

- Reduction of Toxicity, Mobility, or Volume – Soil stabilization binding agents would significantly reduce the mobility of metals in the excavated soils that exceed Alternate LDR Treatment Standards for Contaminated Soils. The mobility of the contaminants in the CAMU would also be reduced because of the design criteria of the CAMU. The volume of the affected soils would be increased due to the soil stabilization process. Soil stabilization would increase the volume of treated soils by approximately 33% based on application of this technology at other sites, and based on the site-specific treatability testing conducted by the soil treatability contractors during March 2005.

- Short-Term Effectiveness – This alternative would result in increased risk relative to the two offsite disposal options discussed above in Sections 2.6.4.3 and 2.6.4.4 because (1) the affected soils exceeding PRGs would not be excavated until construction of the CAMU composite liner system and leachate collection system has been completed (approximately 3 -4 months) and the Meaney Tract soils have been excavated (an additional 2-3 months) and (2) the final CAMU cap would not be constructed until all of the affected soils exceeding PRGs have been excavated and placed into the CAMU. Excavation of soils and mixing of soil stabilization binding agents would be controlled using water and/or other wetting agents to prevent generation of fugitive dust which may pose short-term risk to the environment, the community, or to workers. Fugitive dust emissions from the affected soils in the CAMU prior to capping of the CAMU would be controlled by dust suppression (i.e., watering) and, if needed, intermediate cover (i.e., clean soil layers) placed above the affected soil layers. Excavation and soil stabilization workers would wear PPE to prevent exposure to the COCs in the soils. Soil

stabilization would be conducted on plastic sheeting in a paved and bermed area of the Southern Tract, which is surrounded by fencing to prevent trespassing. Soils transported to the landfill would be covered with tarpaulins. Protectiveness would be achieved once the affected soils exceeding PRGs are placed into the CAMU, and the CAMU is capped.

- Implementability – No problems are anticipated with regards to availability of necessary equipment, materials, and labor to construct the CAMU. The implementability of this alternative results in higher risk relative to the two offsite disposal options discussed above in Sections 2.6.3.3 and 2.6.3.4 because CAMU construction will require re-locating of overhead power lines currently present at the proposed CAMU location, and the potential for leachate generation, CAMU cap settlement, and CAMU cap erosion which would require maintenance.

- Cost – The cost for the excavation of affected soils exceeding PRGs and disposal of affected soils in a CAMU at the Encycle facility is presented on Table 15. As shown on Table 15, the CAMU construction cost has been allocated proportionally to the Meaney Tract, Northern Tract, and Southern Tract based on the volume of soils exceeding PRGs on each of these tracts. As discussed above in Section 2.6.2.3, 39 percent of the CAMU construction costs are allocated to the Southern Tract. As shown on Table 15, the cost for the excavation, stabilization, and disposal in a CAMU alternative is $1,053,542 for the Southern Tract.

2.7 Justification and Recommendation of the Corrective Measures Alternatives

The recommended corrective measures alternatives discussed below will all include deed recordation for commercial/industrial land use with a water well ban. These recommended alternatives are consistent with current commercial/industrial land use, and future commercial/industrial land use at the site.

2.7.1 Meaney Tract

Three corrective measures alternatives for the Meaney Tract were evaluated in detail in Section 2.6.1:

- Alternative 1: Soil Excavation and Offsite Disposal.
- Alternative 2: Soil Excavation, Stabilization, and Offsite Disposal.

- Alternative 3: Soil Excavation and Disposal in a CAMU at the Encycle Facility.

Alternative 3 was the least favorable due to increased short-term risks during the CAMU construction period; and increased long-term risks associated with CAMU cap maintenance, potential leachate generation, and potential groundwater impacts. Alternatives 1 and 2 provided the best protection of human health and the environment, and had no post-closure care requirements other than deed recordation. Alternative 2 is more cost effective relative to Alternative 1. Therefore, based on the detailed evaluation of alternatives, Alternative 2 (Soil Excavation, Stabilization, and Offsite Disposal) is recommended for the Meaney Tract.

Soil excavation, stabilization, and offsite disposal will be compatible with the current and future commercial/industrial use of the property, can be easily implemented, and will achieve the corrective action objectives for protecting human health and the environment. This alternative will meet the requirements specified in Exhibit A of the Confidential Compromise Settlement Agreement and Release between ASARCO LLC and Encycle/Texas, Inc. vs. Meaney-Walsh Properties No. 1, Ltd. Upon completion of this corrective measures alternative, no post-closure care for the Meaney Tract will be required other that deed recordation of the property for commercial/industrial land use with a water well ban. Detailed implementation procedures for this corrective measures alternative are provided below in Section 3.1.1.

2.7.2 Northern Tract

Five corrective measures alternatives for the Northern Tract were evaluated in detail in Section 2.6.2:

- Alternative 1: Access Restrictions
- Alternative 2: Capping
- Alternative 3: Soil Excavation and Offsite Disposal.
- Alternative 4: Soil Excavation, Stabilization, and Offsite Disposal.
- Alternative 5: Soil Excavation and Disposal in a CAMU at the Encycle Facility.

Alternative 1 (access restrictions) was the least favorable as it was not consistent with planned future commercial/industrial land use at the site, and it provided the poorest overall protection of human health and the environment. Alternative 5 (Soil

Excavation and Disposal in a CAMU at the Encycle Facility) also was unfavorable due to increased short-term risks during the CAMU construction period; and increased long-term risks associated with CAMU cap maintenance, potential leachate generation, and potential groundwater impacts.

As shown on Figure 16, soils in two areas of the Northern Tract exceed PRGs (Soil Boring B-140 area and Soil Boring B-223/B-237 area). Alternative 2 (capping) was unfavorable in the soil boring B-223/B-237 area because this area is in a low-lying drainage ditch, which increases to the potential for long-term risks due to storm water erosion and/or undercutting of the cap. Alternatives 3 (Soil Excavation and Offsite Disposal) and 4 (Soil Excavation, Stabilization, and Offsite Disposal) were comparable for the soil boring B-223/B-237 area, provided the best protection of human health and the environment, and had no post-closure care requirements other than deed recordation. Alternative 4 is more cost effective relative to Alternative 3 because the soil stabilization contractor mobilization costs would not be incurred if this alternative is conducted concurrently with stabilization of Southern Tract soils, which is planned as discussed below in Section 2.7.3. Therefore, Alternative 4 (Soil Excavation, Stabilization, and Offsite Disposal) is recommended for the soil boring B-223/B-237 area.

The Alternative 2 option of clay capping was favorable in the soil boring B-140 area because (1) the affected soils in this area are located at a depth of 5-5.5 feet, (2) the upper two feet of soil in this area currently consist of clayey soils, (3) this area is immediately adjacent to and similar in elevation to the closed 01 Landfill which has a clay cap, (4) the existing 01 Landfill clay cap can easily be extended over the adjacent soil boring B-140 area, and (5) post-closure care of the soil boring B-140 area soil cap can be conducted concurrently with the 01 Landfill clay cap. The soil excavation alternatives 3, 4, and 5 were not feasible in the soil boring B-140 area because it is expected that landfill materials associated with the closed 01 Landfill would be encountered during excavation directly southeast of soil boring B-140. Therefore, the Alternative 2 option of clay capping is recommended for the soil boring B-140 area.

2.7.3 Southern Tract

Five corrective measures alternatives for the Southern Tract were evaluated in detail in Section 2.6.3:

- Alternative 1: Access Restrictions
- Alternative 2: Capping

- Alternative 3: Soil Excavation and Offsite Disposal.
- Alternative 4: Soil Excavation, Stabilization, and Offsite Disposal.
- Alternative 5: Soil Excavation and Disposal in a CAMU at the Encycle Facility.

Alternative 1 (access restrictions) was the least favorable as it was not consistent with planned future commercial/industrial land use, and it provided the poorest overall protection of human health and the environment. Alternative 5 (Soil Excavation and Disposal in a CAMU at the Encycle Facility) also was unfavorable due to increased short-term risks during the CAMU construction period; and increased long-term risks associated with CAMU cap maintenance, potential leachate generation, and potential groundwater impacts. Alternative 2 (capping) was more cost effective relative to Alternatives 3 (Soil Excavation and Offsite Disposal) and 4 (Soil Excavation, Stabilization, and Offsite Disposal), but Alternative 2 had increased long-term risks because constituents exceeding PRGs on the Southern Tract would remain on-site in untreated soils below the cap.

Alternatives 3 and 4 were comparable, provided the best protection of human health and the environment on the Southern Tract, were consistent with planned future commercial/industrial land use, and had no post-closure care requirements other than deed recordation of the Southern Tract for commercial/industrial land use with a water well ban. Alterative 4 is more cost effective than Alternative 3. Therefore, based on the detailed evaluation of alternatives, Alternative 3 (Soil Excavation, Stabilization, and Offsite Disposal) is recommended for the Southern Tract. Detailed implementation procedures for this corrective measures alternative are provided below in Section 3.1.3.

3. CORRECTIVE MEASURES IMPLEMENTATION WORK PLAN

This Corrective Measures Implementation (CMI) Work Plan provides detailed proposed engineering design, monitoring plans, schedules, and financial assurance for implementation of the remedies selected in the CMS. As discussed above in Section 2.7.1, the remedy selected for the Meaney Tract is excavation, stabilization, and offsite disposal of soils exceeding the PRGs; and deed recordation of the Meaney Tract for commercial/industrial land use with a water well ban. As discussed above in Section 2.7.2, the remedies selected for the Northern Tract are clay capping in the soil boring

B-140 area adjacent to the 01 Landfill; excavation, stabilization, and offsite disposal of soils exceeding the PRGs in the soil boring B-223/B-237 area; and deed recordation of the Northern Tract for commercial/industrial land use with a water well ban. As discussed above in Section 2.7.3, the remedy selected for the Southern Tract is excavation, stabilization, and offsite disposal of soils exceeding the PRGs; and deed recordation of the Southern Tract for commercial/industrial land use with a water well ban.

The CMI verification soil sample collection and analysis procedures are provided in the Sampling and Analysis Plan in Appendix E. Quality assurance procedures to be implemented during soil sample collection and laboratory analyses are provided in Appendix F. The Health & Safety Plan to be implemented during field activities is provided in Appendix G.

3.1 Corrective Measures Implementation Procedures

3.1.1 Meaney Tract

3.1.1.1 General

Soil excavation, on-site stabilization, and offsite disposal of soils exceeding PRGs on the Meaney Tract will include the following activities:

- Excavation of soils from the Meaney Tract exceeding PRGs.
- Collection of post-excavation verification soil samples from the excavation floors and sidewalls to confirm soils exceeding PRGs have been excavated.
- Stockpiling of the excavated soils on a paved and bermed areas of the Encycle facility (Southern Tract), and sampling of the excavated soil stockpiles for waste classification purposes.
- Treatment (stabilization) of the excavated soil stockpiles containing TCLP metals concentrations above the Target Soil Stabilization Treatment Limits shown on Table 10.
- Disposal of the soils, following treatment if needed, at a permitted Class 2 non-hazardous landfill.

- Backfilling of the excavated areas to pre-existing grade using clean, select fill.
- Deed recordation of the Meaney Tract for commercial/industrial land use with a water well ban.

3.1.1.2 Soil Excavation

The objective of soil excavation is to excavate all soils on the Meaney Tract containing metals concentrations above the PRGs shown on Table 7. The areas to be excavated are shown on Figure 15. The approximate volume of soils to be excavated is estimated at 3,380 cubic yards in-situ volume as shown on Table 8.

Prior to soil excavation, the above-ground wooden railroad ties in the Boneyard (approximately 1,000 cubic yards) will be sampled for TCLP metals analyses (one sample for every 200 cubic yards) for waste characterization purposes. If the railroad tie sample analytical data shows the TCLP metals concentrations meet Class 2 non-hazardous disposal limits, the railroad ties will be transported offsite and disposed of at the BFI/Allied Waste El Centro Landfill in Robstown, Texas. If TCLP concentrations in the railroad tie samples exceed the Class 2 non-hazardous limits, the railroad ties will be disposed of as a Class 1 waste at an authorized landfill.

Prior to beginning soil excavation, underground utility line locate companies will be contacted, and underground utility locations will be marked. As shown on Figure 15, five below-grade petroleum pipelines are known to be present in the Boneyard area. Based on telephone conversations with the pipeline owner representatives, the El Paso Field Services Pipelines and Citgo Petroleum Pipeline (Pipeline Nos. 1, 2, and 3 on Figure 15) are inactive, and the Exxon Mobil Pipelines (Pipeline Nos. 4 and 5 on Figure 15) are active. Therefore, the soil excavation contractor will hand dig at both ends of the proposed soil excavation in the Boneyard area to locate and expose the petroleum pipelines at the ends of the excavation. During soil excavation activities in the Boneyard area, any soils to be excavated within two feet of the pipelines will be removed using hand-held shovels to avoid damaging the pipelines.

Soils not located within two feet of a petroleum pipeline will be excavated using trackhoes, backhoes, and/or front-end loaders. As soil excavation proceeds, a calibrated field instrument such as a Niton XRF analyzer may be used to obtain qualitative information regarding the metals concentrations in soils, and identify areas to be further excavated. The excavated soils will be placed into trucks, and stockpiled in paved and bermed areas of the Encycle Southern Tract.

Dust generation during soil excavation and soil stockpiling will be controlled by application of water or other wetting agents. The soil excavation contractor will excavate the soil using equipment that can easily maneuver within each work area and in a manner that minimizes generation of dust. Increased wetting agent application will be performed if visible dust levels are observed.

Following soil excavation, excavating equipment will be decontaminated within a paved and bermed area of the Encycle Southern Tract using a pressure washer or steam cleaner. The equipment cleaning water will be routed to the Encycle wastewater treatment system.

3.1.1.3 Verification Soil Sample Collection

Following initial excavation of soils on the Meaney Tract in the areas shown on Figure 15, verification soil samples will be collected from each excavation to confirm that the soils exceeding PRGs have been excavated. Verification samples will be grab samples collected on a 50-foot grid pattern from the excavation floors, and every 50 feet along the excavation sidewalls. Verification soil sample locations on the Meaney Tract are shown on Figure 20, and verification soil sample collection procedures are provided in Appendix E (Sampling and Analysis Plan).

As detailed in the Sampling and Analysis Plan in Appendix E, the initially collected verification soil samples will be analyzed for all constituents that exceeded PRGs in one or more soil samples on the Meaney Tract (antimony, arsenic, cadmium, lead, manganese, silver, zinc). If the concentration of one or more metals in a verification soil sample exceeds the PRGs, additional soils will be excavated in that area, and a verification sample will be collected following the additional excavation for analysis of the metal(s) that exceeded PRGs in the initially collected verification soil sample at that location. Excavation will continue until verification soil sample analytical results show metals concentrations do not exceed the PRGs.

Following completion of soil excavation activities on the Meaney Tract, and receipt of verification soil sample analytical laboratory reports showing that metal concentrations do not exceed PRGs, the excavated areas will be surveyed by a State of Texas Registered Land Surveyor. Following completion of the survey, the excavations will be backfilled with clean fill as discussed below in Section 3.1.1.7.

3.1.1.4 Soil Stockpiling and Soil Stockpile Sample Collection

The excavated soils will be placed into trucks and stockpiled in paved and bermed areas of the Encycle Southern Tract. The paved areas of the Encycle Southern Tract that may be used for soil stockpiling include the asphalt and concrete paved areas north and east of the Maintenance Shop, and the concrete paved area north of Facility No. 2. The stockpiled soils will be placed on a layer of plastic (Visqueen), and covered with Visqueen. A minimum 6-inch-high temporary earthen berm covered in plastic will be constructed around the perimeter of each soil stockpile.

One composite soil sample will be collected from every 200 cubic yards of excavated soils for waste characterization purposes. As detailed in the Sampling and Analysis Plan in Appendix E, the composite soil samples will be analyzed for TCLP metals. If TCLP metals concentrations are below the Alternate LDR Treatment Standards and Class 2 non-hazardous limits shown on Table 10, those stockpiled soils will be transported directly to a Class 2 non-hazardous landfill (Allied Waste/BFI El Centro Landfill), pending landfill operator approval. If, however, the TCLP metals concentrations exceed the Alternate LDR Treatment Standards or the Class 2 non-hazardous limits shown on Table 10, those soil stockpiles will be treated as discussed below in Section 3.1.1.5.

3.1.1.5 Excavated Soil Treatment using Soil Stabilization

Excavated soil stockpiles that contain TCLP metals concentrations above the Alternate LDR Treatment Standards or the Class 2 non-hazardous limits shown on Table 10 will be treated on the Encycle Southern Tract by a soil stabilization contractor. The soils will be treated by thoroughly mixing non-hazardous additives or reagents into the soils using conventional construction and/or mixing equipment. The additives and reagents may include water and phosphate, carbonate, or sulfide-based additives. The amount of additives or reagents to be mixed into each soil stockpile will be determined based on the TCLP metals concentrations in that stockpile. Dust generation during soil treatment will be controlled by application of water or other wetting agents.

Following soil treatment, confirmation samples will be collected from each treated soil stockpile (one confirmation sample from every 200 cubic yards of treated soils) to confirm the Treatment Limits have been met. Treatment of soil stockpiles will continue until the Target Soil Stabilization Treatment Limits shown on Table 10 have been met.

3.1.1.6 Soil Disposal

Following soil treatment, if needed, and receipt of confirmation sample analytical results showing the Target Soil Stabilization Treatment Limits have been achieved, the soils will be disposed of at the Allied Waste/BFI El Centro Class 2 non-hazardous landfill in Robstown, Texas. The soils will be transported to the landfill using end dump trucks or roll-off boxes that are lined with plastic (Visqueen) and covered with tarps. All soil shipments will be properly manifested.

3.1.1.7 Backfilling Excavated Areas

The excavated areas on the Meaney Tract will be backfilled using select clayey loam or sandy loam soil obtained from an uncontaminated offsite source such as a rural borrow pit. Prior to backfilling, a representative sample of the backfill material will be collected for laboratory analyses of total metals, volatile organic compounds (VOCs), and total petroleum hydrocarbons (TPH) to verify the offsite backfill materials are uncontaminated.

The backfill material shall be free of deleterious materials, rocks, and roots. The backfill material will be emplaced in 6 to 9 inch thick lifts and compacted to a density of at least 90% Standard Proctor Density. Density testing shall be conducted at a minimum of 8 randomly selected locations to ensure the backfill material has been adequately compacted. The excavated areas will be backfilled to original pre-excavation grade level.

3.1.1.8 Deed Recordation

Following completion of excavation backfilling on the Meaney Tract, the Meaney Tract will be deed recorded as commercial/industrial property with a water well ban. The metes and bounds survey and property plat for the Meaney Tract have already been completed, and deed recordation language for the Meaney Tract is provided in Appendix D. The deed notice will be signed by the landowner (Meaney-Walsh Properties No. 1 Ltd.) and filed at the Nueces County Deed Records office. Proof of filing of the deed notice will be provided to the TCEQ.

3.1.2 Northern Tract

3.1.2.1 General

As shown on Figure 21, soils in two areas of the Northern Tract exceed the PRG for arsenic: (1) the soil boring B-223/B-237 area at the northeast corner of the Northern Tract, and (2) the soil boring B-140 area adjacent to the 01 Landfill. Soils exceeding the arsenic PRG in the soil boring B-223/B-237 area will be removed by excavation, stabilization, and offsite disposal. Soils exceeding the arsenic PRG in the soil boring B-140 area will be capped with low-permeability clay.

3.1.2.2 Soil Boring B-223/B-237 Area

As shown on Table 8, an in-situ volume of approximately 85 cubic yards of soil in the soil boring B-223/B-237 area exceeds the PRG for arsenic. These soils will be excavated using a trackhoe, backhoe, or front-end loader. The excavated soils will be placed into trucks or roll-off boxes with plastic liners and tarps, and stockpiled in a paved and bermed area of the Encycle Southern Tract. Dust generation during soil excavation will be controlled by the application of water or other wetting agents. Following excavation, excavating equipment will be decontaminated within a paved and bermed area of the Encycle Southern Tract using a pressure washer or steam-cleaner. The equipment cleaning water will be routed to the Encycle wastewater treatment plant.

Following excavation, verification soil samples will be collected from the excavation floor and walls for total arsenic analysis to confirm that soils exceeding the arsenic PRG have been removed. Verification samples will be grab samples collected on a 50-foot grid pattern from the excavation floors, and every 50 feet along the excavation sidewalls. Verification soil sample locations on the Northern Tract are shown on Figure 21, and verification soil sample collection procedures are provided in Appendix E. If the arsenic concentration in a verification soil sample exceeds the arsenic PRG (200 mg/kg), additional soils will be excavated in that area until verification soil samples show the arsenic concentration does not exceed the PRG.

One composite soil sample will be collected from every 200 cubic yards of excavated soils on the Northern Tract for waste characterization purposes. As detailed in the Sampling and Analysis Plan in Appendix E, the composite soil samples will be analyzed for TCLP metals. If the TCLP metals concentrations are below the Alternate LDR Treatment Standards and Class 2 non-hazardous limits shown on Table 10, those

stockpiled soils will be transported directly to a Class 2 non-hazardous landfill (Allied Waste/BFI El Centro Landfill), pending landfill operator approval. If, however, the TCLP metals concentrations exceed the Alternate LDR Treatment Standards or the Class 2 non-hazardous limits shown on Table 10, those soil stockpiles will be treated using soil stabilization. The soils will be stabilized by thoroughly mixing non-hazardous additives or reagents into the soils using conventional construction and/or mixing equipment. The amount of additives or reagents to be mixed into each soil stockpile will be determined based on the TCLP metals concentrations in that stockpile. Dust generation during soil treatment will be controlled by application of water or other wetting agents.

Following soil treatment, confirmation samples will be collected from each treated soil stockpile (one confirmation sample from every 200 cubic yards of treated soils) to confirm the Treatment Limits have been met. Treatment of soil stockpiles will continue until the Target Soil Stabilization Treatment Limits shown on Table 10 have been met. Following receipt of confirmation sample analytical results showing the Target Soil Stabilization Treatment Limits have been achieved, the soils will be disposed of at the Allied Waste/BFI El Centro landfill in Robstown, Texas. The soils will be transported to the landfill using end dump trucks or roll-off boxes that are lined with plastic (Visqueen) and covered with tarps. All soil shipments will be properly manifested.

The excavated areas on the Northern Tract will be backfilled using the same procedures as described above in Section 3.1.1.7.

3.1.2.3 Soil Boring B-140 Area

As discussed above in Section 2.7.2, soils in the soil boring B-140 area will be capped with clay because (1) the affected soils in this area are located at a depth of 5-5.5 feet, (2) the upper two feet of soil in this area currently consist of clayey soils, (3) this area is immediately adjacent to and similar in elevation to the closed 01 Landfill which has a clay cap, (4) the existing 01 Landfill clay cap can easily be extended over the adjacent soil boring B-140 area, and (5) post-closure care of the soil boring B-140 area soil cap can be conducted concurrently with the existing 01 Landfill clay cap. As shown on Figure 21, the soil boring B-140 area to be capped with clay is bounded by soil boring B-12 to the north, soil boring B-153 to the west, and the existing 01 Landfill clay cap to the south and east. As shown on Table 8, the surface area to be capped with clay in the soil boring B-140 area is estimated at 3,173 square feet.

As shown on the soil boring log in Appendix H, the upper 2 feet of soil at the soil boring B-140 location consists of brown clay, sand, and silt. Prior to capping with clay, a 0-2 foot depth geotechnical soil sample will be collected at the soil boring B-140 location for permeability analysis (ASTM Method D-5084, or equivalent). If the permeability of the 0-2 foot soil sample is less than $1x10^{-7}$ centimeters per second (cm/sec), an additional one foot of low-permeability clay will be added to cap this area. If however, the permeability of the 0-2 foot soil sample is not less than $1x10^{-7}$ centimeters per second (cm/sec), an additional three feet of low-permeability clay will be added to cap this area. The clay cap will be sloped away from the 01 Landfill to drain storm water off of the cap.

The clay cap material will be obtained from an uncontaminated offsite source such as a rural borrow pit. Prior to capping, a representative sample of the clay cap material will be collected for laboratory analyses of total metals, VOCs, and TPH to verify the offsite cap material is uncontaminated.

The clay cap material shall be free of deleterious materials, rocks, and roots, and shall meet the following specifications:

- Permeability: Less than or equal to 1×10^{-7} cm/sec.
- Plasticity Index: Greater than or equal to 15.
- Liquid Limit: Greater than or equal to 30.
- Percent Passing No. 200 Sieve: Greater than or equal to 30.

The clay cap material will be emplaced in 6 to 9 inch thick lifts and compacted to a density of at least 90% Standard Proctor Density. Density testing shall be conducted at a minimum of 8 randomly selected locations to ensure the cap has been adequately compacted. Following compaction of the clay cap, six inches of select sandy loam topsoil will be placed above the cap, seeded with grass, fertilized, and watered to promote grass growth.

Post-closure care for the soil boring B-140 area clay cap and the adjacent existing 01 Landfill clay cap are discussed below in Section 3.2.

3.1.2.4 Deed Recordation

Following completion of excavation backfilling in the B-223/B-237 area, and clay capping in the B-140 area, the Northern Tract will be deed recorded as commercial/industrial property with a water well ban. A metes and bounds survey and property plat for the Northern Tract will be prepared by a State of Texas Registered Professional Land Surveyor. A metes and bounds survey and property plat of the clay cap above the 01 Landfill and the adjacent soil boring B-140 area clay cap also will be prepared by a State of Texas Registered Professional Land Surveyor, and the deed notice will include language that the clay cap will remain in place at the site to prevent exposure to constituents under the cap that exceed PRGs. The deed notice language will also describe the clay cap inspection and maintenance requirements, including language that removal or modification of the clay cap is prohibited unless approved by the TCEQ. The deed notice for the Northern Tract will be signed by the landowner (Encycle) and filed at the Nueces County Deed Records office. Proof of filing of the deed notice will be provided to the TCEQ.

3.1.3 Southern Tract

3.1.3.1 General

Procedures for excavation, on-site stabilization, and offsite disposal of soils exceeding PRGs on the Southern Tract will be similar to those described above in Section 3.1.1 for the Meaney Tract, and will include the following activities:

- Excavation of soils from the Southern Tract exceeding PRGs.
- Collection of post-excavation verification soil samples from the excavation floors and sidewalls to confirm soils exceeding PRGs have been excavated.
- Stockpiling of the excavated soils on a paved and bermed areas of the Encycle facility (Southern Tract), and sampling of the excavated soil stockpiles for waste classification purposes.
- Treatment (stabilization) of the excavated soil stockpiles containing TCLP metals concentrations above the Target Soil Stabilization Treatment Limits shown on Table 10.

- Disposal of the soils, following treatment if needed, at a permitted Class 2 non-hazardous landfill.
- Backfilling of the excavated areas to pre-existing grade using clean, select fill.
- Deed recordation of the Southern Tract for commercial/industrial land use with a water well ban.

3.1.3.2 Soil Excavation

The objective of soil excavation is to excavate all soils on the Southern Tract containing arsenic and lead concentrations above the PRGs shown on Table 7. The areas to be excavated on the Southern Tract are shown on Figure 16. The approximate volume of soils to be excavated on the Southern Tract is estimated at 2,606 cubic yards in-situ volume as shown on Table 8.

As shown on Figure 16, soils in several areas of the Southern Tract contain arsenic and/or lead concentrations above the PRGs. Affected soils in two of these areas (Lettered Bins Building C, Storm Drain 219/soil boring B-111 area) are located below concrete. Therefore, prior to soil excavation, the concrete that overlies the affected soils in the Lettered Bins Building and Storm Drain 219/soil boring B-111 area will be removed, stockpiled, and sampled (one composite sample for every 200 cubic yards) for waste characterization purposes. If the concrete sample analytical data shows TCLP metals concentrations meet Class 2 non-hazardous disposal limits, the concrete will be transported offsite and disposed of at the Allied Waste/BFI El Centro Landfill in Robstown, Texas, or at a local municipal landfill pending landfill operator approval. It is anticipated, based on previous concrete samples collected at the site during storm sewer repair and RCRA Final Facility Closure activities, that the concrete will meet Class 2 non-hazardous limits. If however, TCLP concentrations in the concrete samples exceed the Class 2 non-hazardous limits, the concrete will be disposed of as a Class 1 waste at an authorized landfill (i.e. U.S. Ecology Texas landfill in Robstown, Texas).

Steel railroad tracks and wooden railroad ties are located above affected soils in portions of the Railroad Tracks area. The steel railroad tracks in this area will be rinsed with water to remove any loose soil or debris on the tracks, then taken offsite for metal recycling. The wooden railroad ties will be sampled (one sample for every 200 cubic yards) for TCLP metals analyses. If the TCLP metals analyses show the wooden railroad ties meet Class 2 non-hazardous disposal limits, the railroad ties will be

transported offsite and disposed of at the Allied Waste/BFI El Centro Landfill in Robstown, Texas. If however, TCLP concentrations in the railroad ties exceed the Class 2 non-hazardous limits, the railroad ties will be disposed of as a Class 1 waste at an authorized landfill (i.e. U.S. Ecology Texas landfill in Robstown, Texas).

Following concrete, steel railroad track, and wooden railroad tie removal, affected soils on the Southern Tract exceeding the PRGs for arsenic and lead will be excavated using trackhoes, backhoes, and/or front-end loaders. As soil excavation proceeds, a calibrated field instrument such as a Niton XRF analyzer may be used to obtain qualitative information regarding the metals concentrations in soils, and identify areas to be further excavated. The excavated soils will be placed into trucks, and stockpiled in paved and bermed areas of the Encycle Southern Tract.

Dust generation during soil excavation and soil stockpiling will be controlled by application of water or other wetting agents. The soil excavation contractor will excavate the soil using equipment that can easily maneuver within each work area and in a manner that minimizes generation of dust. Increased wetting agent application will be performed if visible dust levels are observed.

Following soil excavation, excavating equipment will be decontaminated within a paved and bermed area of the Encycle Southern Tract using a pressure washer or steam cleaner. The equipment cleaning water will be routed to the Encycle wastewater treatment system.

3.1.3.3 Verification Soil Sample Collection

Following initial excavation of soils on the Southern Tract in the areas shown on Figure 16, verification soil samples will be collected from each excavation to confirm that the soils exceeding PRGs have been excavated. Verification samples will be grab samples collected on a 50-foot grid pattern from the excavation floors, and every 50 feet along the excavation sidewalls. Verification soil sample locations on the Southern Tract are shown on Figure 21, and verification soil sample collection procedures are provided in Appendix E (Sampling and Analysis Plan).

As detailed in the Sampling and Analysis Plan in Appendix E, the initially collected verification soil samples will be analyzed for all constituents that exceeded PRGs in one or more soil samples on the Southern Tract (arsenic, lead). If the concentration of one or more metals in a verification soil sample exceeds the PRGs, additional soils will be excavated in that area, and a verification sample will be collected following the

additional excavation for analysis of the metal(s) that exceeded PRGs in the initially collected verification soil sample at that location. Excavation will continue until verification soil sample analytical results show metals concentrations do not exceed the PRGs.

Following completion of soil excavation activities on the Southern Tract, and receipt of verification soil sample analytical laboratory reports showing that metal concentrations do not exceed PRGs, the excavated areas will be surveyed by a State of Texas Registered Land Surveyor. Following completion of the survey, the excavations will be backfilled with clean fill as discussed below in Section 3.1.3.7.

3.1.3.4 Soil Stockpiling and Soil Stockpile Sample Collection

The excavated soils will be placed into trucks and stockpiled in paved and bermed areas of the Encycle Southern Tract. The paved areas of the Encycle Southern Tract that may be used for soil stockpiling include the asphalt and concrete paved areas north and east of the Maintenance Shop, and the concrete paved area north of Facility No. 2. The stockpiled soils will be placed on a layer of plastic (Visqueen), and covered with Visqueen. A minimum 6-inch-high temporary earthen berm covered in plastic will be constructed around the perimeter of each soil stockpile.

One composite soil sample will be collected from every 200 cubic yards of excavated soils for waste characterization purposes. As detailed in the Sampling and Analysis Plan in Appendix E, the composite soil samples will be analyzed for TCLP metals. If TCLP metals concentrations are below the Alternate LDR Treatment Standards and Class 2 non-hazardous limits shown on Table 10, those stockpiled soils will be transported directly to a Class 2 non-hazardous landfill (Allied Waste/BFI El Centro Landfill), pending landfill operator approval. If, however, the TCLP metals concentrations exceed the Alternate LDR Treatment Standards or the Class 2 non-hazardous limits shown on Table 10, those soil stockpiles will be treated as discussed below in Section 3.1.3.5.

3.1.3.5 Excavated Soil Treatment using Soil Stabilization

Excavated soil stockpiles that contain TCLP metals concentrations above the Alternate LDR Treatment Standards or the Class 2 non-hazardous limits shown on Table 10 will be treated on the Encycle Southern Tract by a soil stabilization contractor. The soils will be treated by thoroughly mixing non-hazardous additives or reagents into the soils using conventional construction and/or mixing equipment. The additives and reagents

may include water and phosphate, carbonate, or sulfide-based additives. The amount of additives or reagents to be mixed into each soil stockpile will be determined based on the TCLP metals concentrations in that stockpile. Dust generation during soil treatment will be controlled by application of water or other wetting agents.

Following soil treatment, confirmation samples will be collected from each treated soil stockpile (one confirmation sample from every 200 cubic yards of treated soils) to confirm the Treatment Limits have been met. Treatment of soil stockpiles will continue until the Target Soil Stabilization Treatment Limits shown on Table 10 have been met.

3.1.3.6 Soil Disposal

Following soil treatment, if needed, and receipt of confirmation sample analytical results showing the Target Soil Stabilization Treatment Limits have been achieved, the soils will be disposed of at the Allied Waste/BFI El Centro Class 2 non-hazardous landfill in Robstown, Texas. The soils will be transported to the landfill using end dump trucks or roll-off boxes that are lined with plastic (Visqueen) and covered with tarps. All soil shipments will be properly manifested.

3.1.3.7 Backfilling Excavated Areas

The excavated areas on the Southern Tract will be backfilled using the same procedures as described above in Section 3.1.1.7.

3.1.3.8 Deed Recordation

Following completion of excavation backfilling, the Southern Tract will be deed recorded as commercial/industrial property with a water well ban. A metes and bounds survey and property plat for the Southern Tract will be prepared by a State of Texas Registered Professional Land Surveyor. The deed notice for the Southern Tract will be signed by the landowner (Encycle) and filed at the Nueces County Deed Records office. Proof of filing of the deed notice will be provided to the TCEQ.

3.2 Corrective Measures Implementation Reporting

Corrective measures implementation (CMI) reporting will include preparation of quarterly CMI Progress Reports, a CMI Completion Report for the Meaney Tract, and a CMI Completion Report for the Northern and Southern Tracts. The quarterly CMI

Progress Reports will include (1) a summary of CMI activities conducted during the quarter, (2) tabular summaries of soil sample analytical data obtained during the quarter, (3) volumes of soil excavated and treated (stabilized) during the quarter, (4) waste disposal documentation for wastes disposed of during the quarter, (5) a chronological comparison of the actual completion dates for CMI activities versus the proposed schedule for CMI activities shown on Table 27 of this CMI Work Plan, and (6) projected work for the next reporting period. The CMI Progress Reports will be submitted to the TCEQ within 30 days following the end of each calendar quarter (i.e., the CMI Progress Report for the 4th Quarter of 2005 would be submitted to the TCEQ by January 30, 2006, etc.).

As specified in the Confidential Compromise Settlement Agreement and Release between ASARCO LLC and Encycle/Texas, Inc. vs. Meaney-Walsh Properties No. 1, Ltd., corrective measures on the Meaney Tract will be completed prior to completion of corrective measures on the Encycle-owned property. Therefore, a CMI Completion Report for the Meaney Tract will be prepared and submitted to the TCEQ within 60 days following completion of corrective measures on the Meaney Tract. A separate CMI Completion Report will be prepared at a later date for the Northern and Southern Tracts, and submitted to the TCEQ within 60 days following completion of corrective measures on the Northern and Southern Tracts.

The CMI Completion Reports will include the following:

- Certification by a corporate office of Encycle and ASARCO, and by an independent Texas-registered Professional Engineer that the CMI was completed in accordance with the CMI Work Plan as approved with modifications, if any, from the TCEQ.

- A written description of methods used to achieve remediation of soils exceeding PRGs, including soil excavation, treatment, and disposal procedures; the results of all verification soil samples; field and laboratory quality control/quality assurance data; and a tabular comparison of verification soil sample analytical results to the PRGs.

- A written description of the methods used to complete characterization of the waste materials generated during the CMI (i.e., excavated soils, concrete, wooden railroad ties, etc.), the results of all waste determination samples, and copies of all waste disposal manifests.

- Maps showing all verification soil sample locations and soil excavation areas, and survey data of the final soil excavations prior to backfilling. A map showing the location of the clay cap on the Northern Tract also will be provided.

- A copy of the deed recordation pursuant to Risk Reduction Standard No. 3 as required by 30 TAC Chapter 335, Subchapter S.

The CMI Completion Report for the Northern Tract also will include a Post-Closure Plan for soils exceeding PRGs in the soil boring B-140 area that will be capped with clay. Post-closure care monitoring of the soil boring B-140 area and adjacent 01 Landfill clay cap will include annual inspections of the cap by a Texas-registered Professional Engineer, repair of any eroded or damaged areas of the cap identified during the inspections, and submittal of annual post-closure care reports to the TCEQ. The annual post-closure care reports will include a written summary of the findings of the annual inspection, a description of the cap condition, photographs of the cap, and a description of cap maintenance and repair activities conducted during the reporting period.

3.3 Public Involvement Plan

Within two weeks following receipt of TCEQ approval of this CMS/CMI Work Plan report, public notice will be published in the local newspaper of general circulation (Corpus Christi Caller-Times). The public notice will provide the public the opportunity to comment on the proposed corrective actions at the Encycle facility. The public notice will be located in the Legal Notices of the Classified Section of the newspaper. The notice will be printed in 7.5 font, one column wide, and the text of the public notice will state the following: *NOTICE OF CORRECTIVE ACTION: Encycle/Texas, Inc. will be implementing corrective actions at the Encycle/Texas, Inc., facility located at 5500 Up River Road in Corpus Christi, Texas. The proposed corrective actions will include remediation of soils exceeding preliminary remediation goals (PRGs) approved by the Texas Commission on Environmental Quality (TCEQ). The facility's TCEQ Solid Waste Registration Number is 30003, and the facility's TCEQ Hazardous Waste Permit Number is HW-50221. The RCRA Facility Investigation report, Baseline Risk Assessment report, and Corrective Measures Study/Corrective Measures Implementation Work Plan for the Encycle/Texas, Inc. facility are available for viewing and copying at the TCEQ Region 14 office located at the NRC Building, Suite 1200, 6300 Ocean Drive, Corpus Christi, Texas 78412. Written public comments should be submitted to the Corrective Action Section,*

Remediation Division, MC-127, TCEQ, P.O. Box 13087, Austin, Texas 78711-3087 within 30 days of the date of newspaper publication of the notice.

As specified in Section VII.B of the August 13, 2004 Consent Decree, the TCEQ shall collect all public comments and furnish all public comments to Encycle for response. Within 10 working days of receipt of the public comments from the TCEQ, Encycle will submit to the TCEQ a Responsiveness Summary Report appropriately addressing all public comments. Following TCEQ approval of the Responsiveness Summary Report, Encycle shall implement the CMI Work Plan as modified, if necessary, in the Responsiveness Summary Report.

3.4 Financial Assurance

The financial assurance mechanism for implementation of the CMI Work Plan is the "Trust Agreement" by and between Encycle and J.P. Morgan Trust Company, in which the TCEQ is the beneficiary for the costs of closure, post-closure and corrective action at the Facility. As discussed in Section 7.2 of the August 13, 2004 Stipulation and Order Modifying Consent Decree, the Trust Funds may be used to satisfy financial assurance requirements for corrective action. As shown on Table 26, the current total Reimbursement Fund balance of the Trust Agreement as of May 27, 2005 is $1,473,241. This total Reimbursement Fund balance includes $300,000 for the Post-Closure Care Fund as described in Section 7.9 of the August 13, 2004 Stipulation and Order Modifying Consent Decree.

As shown on Table 26, the estimated total CMI implementation capital costs for the Meaney Tract, Northern Tract, and Southern Tract are $1,345,812; and the estimated total post-closure care costs for the Meaney Tract, Northern Tract, and Southern Tract are $49,584. The combined CMI implementation capital costs and post-closure costs are $1,395,396, which is $77,845 less than the current Reimbursement Fund balance of the Trust Agreement.

Actual post-closure care costs are anticipated to be less than $50,000 because with the exception of only one area (the soil boring B-140/01 Landfill area on the Northern Tract), soils exceeding PRGs will be removed from the site, and the site will be deed recorded for commercial/industrial use with a water well ban. Therefore, it is requested that the TCEQ reduce the Post-Closure Care Fund balance of the Trust Agreement from $300,000 to $50,000, and transfer $250,000 from the Post-Closure Care Fund balance to the Reimbusement Fund balance to be used for CMI implementation.

3.5 Corrective Measures Implementation Schedule

The CMI schedule is summarized on Table 27. The CMI schedule will initially involve publishing the public notice in the local newspaper of general circulation (Corpus Christi Caller-Times) as discussed above in Section 3.3. Concurrently with publishing public notice, bid documentation preparation, selection of the soil excavation and soil stabilization contractors, and sampling and offsite disposal of the wooden railroad ties in the Borneyard will be conducted.

Following TCEQ approval of the Responsiveness Summary Report that addresses public comments, excavation of soils exceeding the PRGs will commence. As shown on Table 27, excavation of soils on the Meaney Tract will be conducted first, and will be completed prior to completion of corrective measures on the Encycle-owned property (Northern and Southern Tracts).

During CMI activities, quarterly CMI Progress Reports will be submitted to the TCEQ. Each progress report will include a chronological comparison of the actual completion dates for CMI activities versus the proposed schedule for CMI activities shown on Table 27. As shown on Table 27, following TCEQ approval of the Responsiveness Summary Report, is it estimated that six months will be required to complete CMI activities on the Meaney Tract and submit the Meaney Tract CMI Completion Report to the TCEQ. It is estimated that an additional five months will be required to complete CMI activities on the Northern and Southern Tracts and submit the CMI Completion Report for the Northern and Southern Tracts to the TCEQ.

The TCEQ Region 14 office in Corpus Christi will be notified in writing via facsimile or by mail at least 10 working days prior to initiation of CMS field activities. The TCEQ also will be notified promptly in writing via facsimile or by mail of any unforeseen delays (prolonged inclement weather such as hurricanes or tropical storms that prevent entry of excavating equipment into the excavations, etc.) that will affect the CMI implementation schedule.

4. References

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U.S. Environmental Protection Agency, "Results-Based Approaches and Tailored Oversight Guidance for Facilities Subject to Corrective Action Under Subtitle C of the Resource Conservation and Recovery Act", EPA 530-R-03-012, September 2003.

TABLES

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Boneyard Area Soil Samples																						
B-105	06/23/00	0-0.5	(u)	**404**	**1310**	95	**75**	**1077**	**33**	**13**	**1151**	**0.56**	**13160**	**2294**	**6.2**	11	**4**	**182**	<1	**75**	<5	**239900**
	(SPLP)	*0-0.5*	*(u)*	*<0.1*	*<0.1*	*0.11*	*<0.1*	*5.3*	*<0.1*	*<0.1*	*<0.1*	---	*0.83*	*13*	---	*<0.1*	*<0.1*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*750*
		2-2.5	(u)	**3**	<5	87	<4	**48**	13	6	**29**	**0.16**	27	**1490**	<0.05	12	<0.8	<0.5	<1	<5	14	6434
		5.5	(u)	**2**	<5	508	<4	<1	10	<5	10	<0.04	11	274	<0.05	8	<0.8	<0.5	<1	<5	29	124
		8.5	(u)	**2**	5	355	<4	<1	11	<5	10	---	10	265	---	7	<0.8	<0.5	**6**	<5	34	89
		10.5-11	(s)	**2**	<5	246	<4	<1	8	<5	7	---	9	314	---	7	<0.8	<0.5	**2**	<5	22	45
B-106	06/23/00	0-0.5	(u)	**8**	**42**	159	<4	**99**	**29**	**10**	**321**	0.18	**391**	**911**	**0.19**	18	<0.8	**5**	<1	**9**	13	7268
	Duplicate 26	0-0.5	(u)	**10**	**51**	163	<4	**106**	**22**	**10**	**372**	0.14	**445**	**1100**	**0.54**	19	**1**	**6**	**4**	**10**	18	7541
		2-2.5	(u)	**2**	<5	101	<4	**22**	**16**	6	**18**	---	16	**392**	<0.05	12	<0.8	<0.5	<1	<5	18	864
		5.5	(u)	**2**	<5	235	<4	4	12	<5	9	---	9	308	<0.05	8	<0.8	<0.5	<1	<5	25	159
		8.5	(u)	**2**	5	373	<4	2	11	<5	7	---	8	287	---	7	<0.8	<0.5	<1	<5	32	139
		10-11	(s)	**2**	<5	220	<4	2	8	<5	5	---	8	222	---	6	<0.8	<0.5	<1	<5	20	134
B-107	06/23/00	0-0.5	(u)	**13**	**44**	155	<4	**99**	**18**	7	**346**	0.11	**685**	**812**	**0.24**	12	**2**	**13**	<1	6	19	7579
	Duplicate 27	0-0.5	(u)	**6**	**19**	171	<4	**109**	12	8	**184**	0.04	**350**	**764**	**0.58**	10	**2**	**6**	**4**	7	16	6467
		2-2.5	(u)	**2**	<5	134	<4	1	12	5	14	---	13	331	<0.05	10	<0.8	<0.5	<1	<5	18	137
		5.5	(u)	**2**	5	521	<4	<1	14	5	8	---	8	283	<0.05	9	<0.8	<0.5	1	7	**45**	45
		8.5	(u)	**3**	<5	275	<4	<1	10	<5	8	---	8	290	---	7	<0.8	<0.5	<1	<5	28	39
		10-11	(s)	**2**	<5	230	<4	<1	10	<5	10	---	7	246	---	6	<0.8	<0.5	<1	<5	22	35
B-188	11/06/01	0-0.5	(u)	**7**	**80**	---	<5	**126**	**945**	**12**	**451**	0.09	**1758**	**427**	**4.36**	---	**6.7**	**17**	<1	**28**	28	---
	Duplicate B-188	0-0.5	(u)	**8.6**	**113**	---	<5	**156**	**1202**	**15**	**574**	0.16	**2745**	**544**	**3.24**	---	**7.6**	**21**	<1	**40**	27	---
		2-2.5	(u)	<0.8	---	---	---	**244**	**37**	---	**29**	---	---	**1207**	---	---	---	---	---	---	---	---
		5.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		10.5-11	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-188a	02/11/03	5.5	(u)	---	5.7	---	---	<1	14	5.2	7.5	---	<5	322	<0.05	---	<0.8	<0.5	---	<5	---	---
	Duplicate-1	5.5	(u)	---	<5	---	---	<1	13	5.3	7.3	---	6.8	298	---	---	<0.8	<0.5	---	<5	---	---
B-189	11/06/01	0-0.5	(u)	**19**	**170**	---	---	**371**	**18**	**10**	**687**	---	**3510**	**1008**	**1.69**	---	**7.3**	**73**	---	**76**	---	---
		2-2.5	(u)	---	---	---	---	<1	12	---	13	---	---	**387**	---	---	---	---	---	---	---	---
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		10.5-11	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-190	11/07/01	0-0.5	(u)	<0.8	5.3	---	<5	**292**	14	7.2	19	0.07	61	**621**	<0.05	---	<0.8	<0.5	<1	6.1	19	---
		2-2.5	(u)	<0.8	---	---	---	**90**	14	---	14	---	---	**438**	---	---	---	---	---	---	---	---
		5.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		10.5-11	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-191	11/07/01	0-0.5	(u)	---	---	---	---	**149**	---	---	---	---	---	**454**	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	**5**	---	---	---	---	---	**397**	---	---	---	---	---	---	---	---
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		10.5-11	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-192	11/07/01	0-0.5	(u)	<0.8	12	---	<5	**94**	11	6.1	**60**	0.08	**110**	**537**	**0.43**	---	<0.8	**1.6**	<1	5.7	13	---
	Duplicate B-192	0-0.5	(u)	<0.8	9.9	---	<5	**99**	11	6.1	**46**	<0.05	**62**	**585**	**0.21**	---	<0.8	**1.1**	<1	5.2	14	---
		2-2.5	(u)	<0.8	---	---	---	**24**	12	---	16	---	---	305	---	---	---	---	---	---	---	---
		5.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		10.5-11	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-193	11/07/01	0-0.5	(u)	---	---	---	---	**73**	---	---	**142**	---	**270**	**596**	**4.13**	---	---	**3.7**	---	---	---	---
		2-2.5	(u)	---	---	---	---	1.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		10.5-11	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-225	02/28/05	0-0.5	(u)	<1	<1	---	---	<1	---	---	---	---	6	100	---	---	---	<0.5	---	---	---	67
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-226	02/28/05	0-0.5	(u)	<1	**86**	---	---	**331**	---	---	---	---	**1,150**	<1	---	---	---	15.9	---	---	---	<1
		1-1.5	(u)	---	---	---	---	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-227	02/28/05	0-0.5	(u)	---	---	---	---	3	---	---	---	---	11	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-228	02/28/05	0-0.5	(u)	---	---	---	---	**96**	---	---	---	---	**932**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-229	02/28/05	0-0.5	(u)	---	---	---	---	**1,400**	---	---	---	---	**339**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	62	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-230	02/28/05	0-0.5	(u)	---	---	---	---	2	---	---	---	---	4	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-231	02/28/05	0-0.5	(u)	---	---	---	---	**644**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	**424**	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Waste Pile Area Soil Samples																						
B-18	05/20/93	0-0.5	(u)	---	16	---	---	**57**	---	---	29	---	45	**341**	---	11	---	---	---	---	---	2798
		2-2.5	(u)	---	**12**	---	---	2.6	---	---	8.7	---	11	259	---	9.7	---	---	---	---	---	163
		5.5-6	(u)	---	11	---	---	<2.5	---	---	8	---	8.4	374	---	9.1	---	---	---	---	---	58
		9-9.5	(u)	---	11	---	---	<2.5	---	---	13	---	11	359	---	12	---	---	---	---	---	67
		12.5-13	(u)	---	9.1	---	---	<2.5	---	---	8.6	---	11	476	---	8.8	---	---	---	---	---	51
		16-16.5	(u)	---	<5	---	---	<2.5	---	---	15	---	11	485	---	12	---	---	---	---	---	63
		20-20.5	(u)	---	15	---	---	<2.5	---	---	13	---	12	246	---	13	---	---	---	---	---	60
		21.5-22	(s)	---	9.2	---	---	<2.5	---	---	<5	---	6	138	---	<5	---	---	---	---	---	31
B-19	05/20/93	0-0.5	(u)	---	16	---	---	**41**	---	---	20	---	53	316	---	8.6	---	---	---	---	---	2367
		2-2.5	(u)	---	**12**	---	---	<2.5	---	---	8.5	---	8.6	343	---	10	---	---	---	---	---	68
		5.5-6	(u)	---	7.5	---	---	<2.5	---	---	8.7	---	10	290	---	12	---	---	---	---	---	56
		9-9.5	(u)	---	10	---	---	<2.5	---	---	6.6	---	11	365	---	11	---	---	---	---	---	53
		12.5-13	(u)	---	12	---	---	<2.5	---	---	7.8	---	7.9	430	---	12	---	---	---	---	---	50
		16-16.5	(u)	---	19	---	---	<2.5	---	---	11	---	12	229	---	13	---	---	---	---	---	95
		19.5-20	(u)	---	<5	---	---	<2.5	---	---	12	---	9.5	247	---	11	---	---	---	---	---	58
		21-21.5	(s)	---	<5	---	---	<2.5	---	---	<5	---	6.5	140	---	5.7	---	---	---	---	---	44
B-20	05/20/93	0-0.5	(u)	---	**30**	---	---	**226**	---	---	**84**	---	**298**	**636**	---	12	---	---	---	---	---	10340
		2-2.5	(u)	---	7.4	---	---	<2.5	---	---	14	---	13	302	---	12	---	---	---	---	---	94
		5.5-6	(u)	---	10	---	---	<2.5	---	---	7.7	---	10	349	---	10	---	---	---	---	---	75
		9-9.5	(u)	---	<5	---	---	<2.5	---	---	8.1	---	7.8	198	---	11	---	---	---	---	---	58
		12.5-13	(u)	---	14	---	---	<2.5	---	---	8.4	---	9	464	---	12	---	---	---	---	---	56
		16-16.5	(u)	---	<5	---	---	<2.5	---	---	13	---	12	**617**	---	14	---	---	---	---	---	123
		19-19.5	(u)	---	13	---	---	<2.5	---	---	12	---	11	195	---	12	---	---	---	---	---	92
		22-22.5	(s)	---	6	---	---	<2.5	---	---	<5	---	<5	138	---	<5	---	---	---	---	---	22
B-21	05/20/93	0-0.5	(u)	---	**115**	---	---	**1113**	---	---	**374**	---	**1504**	**1678**	---	16	---	---	---	---	---	**71000**
		2-2.5	(u)	---	**8.8**	---	---	**30**	---	---	**19**	---	**68**	276	---	9.7	---	---	---	---	---	1152
		5.5-6	(u)	---	12	---	---	<2.5	---	---	9.2	---	12	284	---	8.5	---	---	---	---	---	79
		9-9.5	(u)	---	13	---	---	<2.5	---	---	12	---	8.6	307	---	10	---	---	---	---	---	69
		12.5-13	(u)	---	<5	---	---	<2.5	---	---	11	---	11	169	---	10	---	---	---	---	---	78
		16-16.5	(u)	---	<5	---	---	<2.5	---	---	12	---	16	476	---	14	---	---	---	---	---	93
		19.5-20	(u)	---	8.3	---	---	<2.5	---	---	10	---	9.1	186	---	12	---	---	---	---	---	55
		21-21.5	(s)	---	<5	---	---	<2.5	---	---	<5	---	5.3	126	---	5.3	---	---	---	---	---	29
B-21a	02/28/05	1-1.5	(u)	---	---	---	---	**1,140**	---	---	---	---	---	**977**	---	---	---	---	---	---	---	<1

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-22	05/21/93	0-0.5	(u)	---	8.5	---	---	7	---	---	13	---	22	**463**	---	11	---	---	---	---	---	1596
		2-2.5	(u)	---	**39**	---	---	**203**	---	---	**117**	---	**439**	**586**	---	11	---	---	---	---	---	21600
		5.5-6	(u)	---	<5	---	---	3.3	---	---	8.5	---	14	317	---	9.9	---	---	---	---	---	342
		9-9.5	(u)	---	7.6	---	---	<2.5	---	---	5.5	---	7.4	245	---	7.9	---	---	---	---	---	52
		12.5-13	(u)	---	10	---	---	<2.5	---	---	10	---	11	411	---	12	---	---	---	---	---	61
		16-16.5	(u)	---	13	---	---	<2.5	---	---	11	---	10	**1331**	---	17	---	---	---	---	---	66
		19.5-20	(u)	---	<5	---	---	<2.5	---	---	7.2	---	7.1	153	---	6.3	---	---	---	---	---	29
		21-21.5	(s)	---	<5	---	---	<2.5	---	---	<5	---	5.9	151	---	5	---	---	---	---	---	35
B-23	05/21/93	0-0.5	(u)	---	7.4	---	---	**13**	---	---	22	---	45	238	---	9.8	---	---	---	---	---	701
		2-2.5	(u)	---	7.5	---	---	<2.5	---	---	8.2	---	7.1	277	---	9.8	---	---	---	---	---	43
		5.5-6	(u)	---	<5	---	---	<2.5	---	---	6.3	---	8.6	285	---	8.8	---	---	---	---	---	41
		9-9.5	(u)	---	16	---	---	<2.5	---	---	9	---	**53**	319	---	13	---	---	---	---	---	54
		12.5-13	(u)	---	9.1	---	---	<2.5	---	---	9	---	11	361	---	12	---	---	---	---	---	52
		16-16.5	(u)	---	6.9	---	---	<2.5	---	---	10	---	10	**862**	---	15	---	---	---	---	---	68
		19.5-20	(u)	---	<5	---	---	<2.5	---	---	9.6	---	9.9	186	---	11	---	---	---	---	---	57
		23-23.5	(s)	---	<5	---	---	<2.5	---	---	6.1	---	7.3	167	---	7.3	---	---	---	---	---	44
B-118	06/27/00	0-0.5	(u)	**3**	8	155	<4	**33**	**15**	7	**41**	<0.04	102	**556**	**0.63**	---	**2**	**1**	<1	6	15	3855
		2-2.5	(u)	**3**	5	508	<4	**9**	13	5	**19**	<0.04	42	**379**	0.06	---	<0.8	**1**	<1	<5	20	953
		5.5	(u)	**2**	<5	259	<4	1	12	6	8	<0.04	11	259	<0.05	---	<0.8	<0.5	<1	<5	26	86
		8.5	(u)	**2**	5	254	<4	4	12	<5	12	<0.04	16	432	<0.05	---	<0.8	<0.5	<1	<5	29	184
		11.5	(u)	**3**	7	311	<4	<1	11	7	12	<0.04	12	434	<0.05	---	<0.8	<0.5	<1	<5	25	57
		14.5	(u)	**3**	6	307	<4	<1	12	7	13	<0.04	12	**716**	<0.05	---	<0.8	<0.5	<1	<5	27	60
		17.5	(u)	**3**	7	122	<4	1	14	8	13	<0.04	14	500	<0.05	---	<0.8	<0.5	<1	<5	29	78
		18-18.5	(s)	**2**	<5	185	<4	<1	9	6	13	<0.04	9	205	<0.05	---	<0.8	<0.5	<1	<5	19	36
B-119	06/27/00	0-0.5	(u)	**2.9**	---	---	---	10	12	---	23	---	---	178	**0.12**	---	<0.8	**0.8**	---	---	---	784
		2-2.5	(u)	**2.9**	---	---	---	<1	---	---	11	---	---	321	<0.05	---	---	<0.5	---	---	---	40
		5.5	(u)	**2.9**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	105
		8.5	(u)	**3.9**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	53
		11.5	(u)	**3.6**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	54
		14.5	(u)	**3.4**	---	---	---	---	---	---	---	---	---	**798**	---	---	---	---	---	---	---	59
		17.5	(u)	**2.7**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	538
		19.7-20	(s)	**2.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	46
B-120	06/28/00	0-0.5	(u)	**1.7**	---	---	---	---	---	---	---	---	---	---	**0.28**	---	---	**1.2**	---	---	---	353
		2-2.5	(u)	**1.8**	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---	42
		5.5	(u)	**2.1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	55
		8.5	(u)	**2.1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
		11.5	(u)	**2.0**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	45
		14.5	(u)	**1.1**	---	---	---	---	---	---	---	---	---	**683**	---	---	---	---	---	---	---	64
		17.5	(u)	**1.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
		20.3-21	(s)	**1.3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	25

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-121	06/30/00	0-0.5	(u)	**4**	**18**	282	<4	**98**	**35**	8	**89**	<0.04	**167**	**691**	**8.8**	---	**18**	**5**	<1	**10**	29	6973
		2-2.5	(u)	**5**	<5	206	<4	**12**	**20**	9	**19**	<0.04	26	**563**	**0.21**	---	<0.8	<0.5	<1	<5	**42**	720
		5.5	(u)	**3**	<5	166	<4	**6**	**17**	6	14	<0.04	17	299	**0.15**	---	<0.8	<0.5	<1	<5	34	418
		8.5	(u)	**3**	<5	265	<4	3	14	8	14	<0.04	16	431	<0.05	---	<0.8	<0.5	<1	<5	29	224
	Duplicate 40	8.5	(u)	**4**	<5	266	<4	2	13	6	11	<0.04	12	284	<0.05	---	<0.8	<0.5	<1	<5	27	156
		11.5	(u)	**4**	6	326	<4	1	14	**12**	14	<0.04	17	**996**	<0.05	---	<0.8	<0.5	<1	<5	30	100
		14.5	(u)	**3**	8	397	<4	2	13	8	13	<0.04	15	548	<0.05	---	<0.8	<0.5	**7**	6	30	114
		17.5	(u)	**3**	9	48	<4	<1	13	7	13	<0.04	12	301	<0.05	---	<0.8	<0.5	**3**	<5	30	61
	Duplicate 41	17.5	(u)	**4**	8	43	<4	<1	14	8	14	<0.04	14	295	<0.05	---	<0.8	<0.5	<1	<5	30	68
		19.7-20	(s)	**3**	<5	192	<4	<1	14	5	9	<0.04	11	265	<0.05	---	<0.8	<0.5	<1	<5	25	65
B-122	06/30/00	0-0.5	(u)	**4**	<5	---	---	**23**	**16**	---	**56**	---	**118**	**442**	**0.38**	---	**1**	**1**	---	5	---	1560
		2-2.5	(u)	**3**	---	---	---	1	**16**	---	14	---	---	**385**	<0.05	---	---	---	---	---	18	71
		5.5	(u)	**3**	---	---	---	<1	**17**	---	---	---	---	---	<0.05	---	---	---	---	---	---	54
		8.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		11.5	(u)	**3**	---	---	---	---	---	9	---	---	---	464	---	---	---	---	---	---	---	61
		14.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	56
		17.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	62
		20.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	47
		23-23.5	(s)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	29
B-123	06/30/00	0-0.5	(u)	**4**	---	---	---	**27**	**15**	---	**86**	---	**189**	319	**0.74**	---	<0.8	**1**	---	---	---	1750
		2-2.5	(u)	**3**	---	---	---	---	14	---	---	---	---	**407**	<0.05	---	---	---	---	---	---	70
		5.5	(u)	**3**	---	---	---	---	**17**	---	---	---	---	---	<0.05	---	---	---	---	---	---	52
		8.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		11.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	60
		14.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	61
		17.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		19.7-20	(s)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	34
B-124	06/29/00	0-0.5	(u)	**3**	6	298	<4	**24**	**16**	6	22	<0.04	39	**450**	**0.33**	---	<0.8	<0.5	<1	<5	24	1500
		2-2.5	(u)	**2**	<5	294	<4	2	**16**	7	11	<0.04	12	**432**	<0.05	---	<0.8	<0.5	<1	<5	33	122
	Duplicate 37	2-2.5	(u)	<0.8	<5	310	<4	2	**21**	7	11	<0.04	11	**408**	<0.05	15	<0.8	<0.5	**2**	<5	**41**	141
		5.5	(u)	**2**	5	258	<4	2	9	5	7	<0.04	10	320	<0.05	---	<0.8	<0.5	<1	<5	24	132
	Duplicate 38	5.5	(u)	**1**	<5	288	<4	3	**18**	7	9	<0.04	11	369	<0.05	16	<0.8	<0.5	**3**	<5	**37**	210
		8.5	(u)	**2**	7	313	<4	<1	**15**	8	13	<0.04	13	507	<0.05	---	<0.8	<0.5	<1	<5	34	76
		11.5	(u)	**3**	6	309	<4	2	**16**	8	14	<0.04	14	390	<0.05	---	<0.8	<0.5	<1	<5	32	118
		14.5	(u)	**2**	<5	250	<4	<1	14	7	12	<0.04	10	485	<0.05	---	<0.8	<0.5	<1	<5	26	64
		17.5	(u)	**2**	7	204	<4	<1	**15**	7	15	<0.04	13	353	<0.05	---	<0.8	<0.5	<1	<5	31	62
		20.5	(u)	**2**	<5	455	<4	<1	13	7	15	<0.04	12	266	<0.05	---	<0.8	<0.5	**6**	<5	28	64
		23.5-24	(s)	**2**	<5	**888**	<4	<1	8	5	8	<0.04	8	221	<0.05	---	<0.8	<0.5	**2**	<5	18	36

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-125	06/29/00	0-0.5	(u)	**2.4**	---	---	---	6	**16**	---	---	---	---	**437**	**0.19**	---	---	---	---	---	---	508
		2-2.5	(u)	**3.4**	---	---	---	---	14	---	---	---	---	**399**	<0.05	---	---	---	1	---	**41**	68
		5.5	(u)	**2.8**	---	---	---	---	11	---	---	---	---	---	---	---	---	---	1	---	31	39
		8.5	(u)	**3**	---	---	---	---	14	---	---	---	---	---	---	---	---	---	---	---	---	61
		11.5	(u)	**2.5**	---	---	---	---	**18**	---	---	---	---	---	---	---	---	---	---	---	---	88
		14.5	(u)	**1.9**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
		17.5	(u)	**1.9**	---	---	---	---	**15**	---	---	---	---	---	---	---	---	---	---	---	---	58
		20.5	(u)	**1.9**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2**	---	---	54
		23.5-24	(s)	**1.8**	---	178	---	---	---	---	---	---	---	---	---	---	---	---	**9**	---	---	49
B-126	06/29/00	0-0.5	(u)	**2.8**	---	---	---	---	**20**	---	---	---	---	**460**	**0.66**	---	---	---	---	---	---	1720
		2-2.5	(u)	**2.4**	---	---	---	---	---	---	---	---	---	**395**	<0.05	---	---	---	---	---	**42**	61
		5.5	(u)	**2.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		8.5	(u)	**2.8**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	56
		11.5	(u)	**2.1**	---	---	---	---	14	---	---	---	---	---	---	---	---	---	---	---	---	54
		14.5	(u)	**2.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	61
		17.5	(u)	**2.6**	---	---	---	---	13	---	---	---	---	---	---	---	---	---	---	---	---	51
		20.5	(u)	**2.6**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	59
		23.5-24	(s)	**3.1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	51
B-127	06/28/00	0-0.5	(u)	**3**	13	325	<4	**55**	**15**	6	38	<0.04	82	**397**	**0.31**	---	**2**	**1**	<1	6	**41**	3193
		2-2.5	(u)	**2**	<5	350	<4	2	10	<5	8	<0.04	10	256	**0.31**	---	<0.8	<0.5	<1	<5	30	110
		5.5	(u)	**2**	7	272	<4	3	11	7	11	<0.04	13	437	<0.05	---	<0.8	<0.5	**7**	<5	29	172
		8.5	(u)	**3**	7	320	<4	2	12	7	12	<0.04	13	451	<0.05	---	<0.8	<0.5	1	<5	28	104
	Duplicate 35	8.5	(u)	**1**	7	307	<4	**18**	**20**	**11**	12	<0.04	13	528	<0.05	15	<0.8	<0.5	<1	<5	**41**	132
		11.5	(u)	**3**	6	261	<4	1	**17**	8	13	<0.04	12	**794**	<0.05	---	<0.8	<0.5	<1	<5	33	76
	Duplicate 36	11.5	(u)	**1**	6	255	<4	3	**15**	8	11	<0.04	11	**777**	<0.05	14	<0.8	<0.5	**8**	<5	30	73
		14.5	(u)	**3**	7	355	<4	<1	14	6	13	<0.04	11	274	<0.05	---	<0.8	<0.5	<1	<5	29	59
		17.2-18	(s)	**3**	<5	270	<4	<1	12	<5	10	<0.04	11	231	<0.05	---	<0.8	<0.5	<1	<5	20	41
B-128	06/28/00	0-0.5	(u)	**3.5**	---	---	---	**19**	**16**	---	---	---	---	**445**	**0.58**	---	**2.4**	**1.1**	---	---	16	1560
		2-2.5	(u)	**2.8**	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---	49
		5.5	(u)	**2.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	128
		8.5	(u)	**2.6**	---	---	---	<1	13	8	---	---	---	---	---	---	---	---	---	---	33	53
		11.5	(u)	**2.8**	---	---	---	---	14	---	---	---	---	453	---	---	---	---	1	---	---	58
		14.5	(u)	**2.2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		17.5	(u)	**3.5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	64
		20.5	(u)	**2.8**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	47
		23.7-24	(s)	**2.4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	45

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-129	06/29/00	0-0.5	(u)	**1.3**	---	---	---	**141**	**15**	---	---	---	---	**523**	**0.21**	---	**1.3**	**2.4**	---	---	---	5747
		2-2.5	(u)	**1.1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	72
		5.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	46
		8.5	(u)	**1.8**	---	---	---	---	11	---	---	---	---	---	---	---	---	---	---	---	---	47
		11.5	(u)	**2**	---	---	---	---	13	---	---	---	---	---	---	---	---	---	---	---	---	53
		14-14.5	(s)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	42
B-206	02/11/03	0-0.5	(u)	<0.8	---	---	---	<1	**18**	---	14	---	11	---	<0.05	---	---	<0.5	---	---	---	---
		2-2.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	**441**	---	---	---	---	---	---	---	---
		5.5	(u)	<0.8	---	---	---	---	**22**	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	<0.8	---	---	---	---	**17**	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	<0.8	---	---	---	---	**18**	---	---	---	---	---	---	---	---	---	---	---	---	---
		14.5	(u)	<0.8	---	---	---	---	**17**	---	---	---	---	---	---	---	---	---	---	---	---	---
		17-17.5	(s)	<0.8	---	---	---	---	8.8	---	---	---	---	---	---	---	---	---	---	---	---	---
B-207	02/11/03	0-0.5	(u)	---	---	---	---	---	**18**	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	**396**	---	---	---	---	---	---	---	---
		5.5	(u)	---	---	---	---	---	**18**	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	**20**	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	---	---	---	---	---	**26**	---	---	---	---	---	---	---	---	---	---	---	---	---
		14.5	(u)	---	---	---	---	---	**15**	---	---	---	---	---	---	---	---	---	---	---	---	---
B-208	02/11/03	0-0.5	(u)	---	---	---	---	---	**22**	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	**458**	---	---	---	---	---	---	---	---
		5.5	(u)	---	---	---	---	---	**20**	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	**18**	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	---	---	---	---	---	**23**	---	---	---	---	---	---	---	---	---	---	---	---	---
		14.5	(u)	---	---	---	---	---	10	---	---	---	---	---	---	---	---	---	---	---	---	---
B-232	2/28/05	0-0.5	(u)	---	---	---	---	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-233	2/28/05	0-0.5	(u)	---	---	---	---	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-234	2/28/05	0-0.5	(u)	---	---	---	---	7	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-235	2/28/05	0-0.5	(u)	---	---	---	---	**68**	---	---	---	---	---	**226**	---	---	---	---	---	---	---	4,770
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1. Meaney Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Soil Samples North of Boneyard Area																						
B-211	02/12/03	0-0.5	(s)	---	---	---	---	**70**	---	---	---	---	**328**	---	**0.37**	---	**3.5**	---	---	---	---	---
B-212	02/12/03	0-0.5	(u)	---	---	---	---	**31**	---	---	---	---	45	---	0.054	---	<0.8	---	---	---	---	---
		0.5-1	(s)	---	---	---	---	3.0	---	---	---	---	6.1	---	<0.05	---	<0.8	---	---	---	---	---
B-215	02/12/03	0-0.5	(s)	---	---	---	---	**51**	---	---	---	---	**401**	---	**1.9**	---	<0.8	---	---	---	---	---
B-216	02/12/03	0-0.5	(s)	---	---	---	---	**15**	---	---	---	---	96	---	**0.46**	---	**0.93**	---	---	---	---	---
Soil Background Concentrations																						
		0-0.5':			16.65		4.9	11.70		9.72	40.33	0.24	109.16	333.73	0.09	25.80	0.89			7.65		a
		2-2.5':			8.01			4.47			17.20		54.36	360.83		27.21						
		unsaturated below 2.5':	(u)		21.86			4.97			16.15		38.96	592.50		29.74						
		saturated soil sample:	(s)		9.8			3.64			18.26		30.92	686.68		25.86						
		clay/silt strata:		0.77		720			14.9									0.54	1.02		35.6	
		clean sand strata (SP/SW):		0.80		202			35.9									0.50	1.0		15.7	
Preliminary Remediation Goals[b]																						
		PRG (mg/kg):		54	200	b	b	160	b	b	b	b	1,600	1,400	b	b	b	160	b	b	b	45,000

mg/kg Milligrams per kilogram
mg/L Milligrams per liter
--- Not analyzed
(u) Unsaturated soil sample.
(s) Saturated soil sample.
(dup) Duplicate soil sample.
(SPLP) Synthetic Precipitation Leaching Procedure. Units in mg/L - analytical results shown in *italics*.
PRG Preliminary Remediation Goal

a April 28, 1997 TNRCC letter stated zinc would not be a good release indicator for a unit at the site. Therefore, zinc background level not given.

b Preliminary Remediation Goals (PRGs) given in Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum. Maximum detected concentration for barium, bismuth, chromium, cobalt, copper, cyanide, mercury, nickel, selenium, thallium, tin, and vanadium in soil on the Meaney Tract did not exceed PRGs for commercial/industrial land use with a water well ban.

Notes: 1) Numbers in **bold** exceed TCEQ-approved background concentrations established for the site.
2) Numbers **boxed** in red exceed both background and the Preliminary Remediation Goals (PRGs) given in Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum.

Table 2. Northern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
01 Landfill Area Soil Samples																						
B-9	05/18/93	0-0.5	(u)	---	8.4	---	---	<2.5	---	---	9.8	---	9.3	180	---	6	---	---	---	---	---	48
		2-2.5	(u)	---	**9.9**	---	---	<2.5	---	---	11	---	12	213	---	7.6	---	---	---	---	---	262
		5-5.5	(u)	---	<5.0	---	---	**8.7**	---	---	**1199**	---	14	**869**	---	28	---	---	---	---	---	4802
		6.5-7	(s)	---	<5.0	---	---	**52**	---	---	**841**	---	14	**1689**	---	6.6	---	---	---	---	---	4070
B-10	05/18/93	0-0.5	(u)	---	8.1	---	---	<2.5	---	---	15	---	6.8	126	---	<5.0	---	---	---	---	---	29
		2-2.5	(u)	---	<5.0	---	---	<2.5	---	---	11	---	15	295	---	7.3	---	---	---	---	---	25
		6-6.5	(s)	---	<5.0	---	---	**93**	---	---	**22**	---	18	456	---	<5.0	---	---	---	---	---	2116
B-11	05/18/93	0-0.5	(u)	---	<5.0	---	---	<2.5	---	---	11	---	9.3	168	---	<5.0	---	---	---	---	---	36
		2-2.5	(u)	---	7.9	---	---	<2.5	---	---	9.5	---	19	284	---	7.3	---	---	---	---	---	33
		5.5-6	(u)	---	7.7	---	---	**8.1**	---	---	14	---	14	384	---	5.5	---	---	---	---	---	298
		8-8.5	(s)	---	**30**	---	---	**9.7**	---	---	**304**	---	**936**	**5455**	---	<5.0	---	---	---	---	---	962
B-12	05/18/93	0-0.5	(u)	---	14	---	---	**20**	---	---	**42**	---	101	**476**	---	7	---	---	---	---	---	1758
		2-2.5	(u)	---	**42**	---	---	**40**	---	---	**454**	---	**394**	**806**	---	14	---	---	---	---	---	3922
		5-5.5	(s)	---	**36**	---	---	**60**	---	---	**280**	---	**477**	**2087**	---	14	---	---	---	---	---	9195
B-30	06/09/93	0-0.5	(u)	---	5.7	---	---	**44**	---	---	**183**	---	**331**	**757**	---	16	---	---	---	---	---	2128
		2-2.5	(u)	---	**8.1**	---	---	**47**	---	---	**120**	---	**431**	**698**	---	6.1	---	---	---	---	---	2287
		5.5-6	(u)	---	11	---	---	**22**	---	---	**77**	---	**220**	561	---	6.1	---	---	---	---	---	1550
		6.5-7	(s)	---	**25**	---	---	**42**	---	---	**137**	---	**276**	521	---	6.6	---	---	---	---	---	1864
B-31	06/09/93	0-0.5	(u)	---	7.6	---	---	**23**	---	---	**111**	---	**213**	**1023**	---	14	---	---	---	---	---	1392
		2-2.5	(u)	---	**12**	---	---	**15**	---	---	**185**	---	**261**	**665**	---	<5.0	---	---	---	---	---	1357
		4.5-5	(s)	---	6.4	---	---	**24**	---	---	**59**	---	**319**	**2450**	---	<5.0	---	---	---	---	---	24245
B-32	06/09/93	0-0.5	(u)	---	<5.0	---	---	**83**	---	---	**94**	---	60	**9305**	---	**29**	---	---	---	---	---	14990
		2-2.5	(u)	---	<5.0	---	---	**24**	---	---	**55**	---	**72**	**1336**	---	6.1	---	---	---	---	---	3452
		5.5-6	(u)	---	5.1	---	---	**6**	---	---	**19**	---	22	303	---	15	---	---	---	---	---	422
		6-6.5	(s)	---	<5.0	---	---	**4.1**	---	---	15	---	13	380	---	6.1	---	---	---	---	---	598
B-140	06/29/00	0-0.5	(u)	**6**	---	210	<4	**38**	**15**	6	---	<0.04	---	---	**2.6**	---	**3**	**2**	<4	**12**	17	---
	(SPLP)	*0-0.5*	*(u)*	---	---	---	---	*<0.05*	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	**9**	**30**	248	<4	**28**	**61**	**22**	**266**	<0.04	**371**	---	**2.2**	---	**3**	**2**	<10	**31**	13	7989
	(SPLP)	*2-2.5*	*(u)*	---	*<0.10*	---	---	*<0.05*	---	---	*<0.10*	---	*<0.10*	---	---	---	---	---	---	---	---	*0.19*
		5-5.5	(s)	**87**	253	603	**10**	**42**	**32**	**16**	**2350**	<0.04	**4212**	**10990**	**1.3**	---	**31**	**21**	<10	**516**	16	74690
	(SPLP)	*5-5.5*	*(s)*	---	*<0.10*	---	---	*<0.05*	---	---	*<0.10*	---	*<0.10*	*0.47*	---	---	---	---	---	---	---	*0.27*

Table 2. Northern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-141	06/29/00	0-0.5	(u)	**3**	---	156	<4	---	**16**	5	---	<0.04	---	---	<0.05	---	<0.8	<0.5	<1	<5	12	---
	(SPLP)	*0-0.5*	*(u)*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	**3**	---	623	<4	---	**15**	6	---	<0.04	---	---	<0.05	---	<0.8	<0.5	<2	<5	25	---
	(SPLP)	*2-2.5*	*(u)*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		5-5.6	(u)	**3**	---	234	<4	2	11	<5	---	<0.04	---	---	<0.05	---	<0.8	<0.5	<2	<5	20	---
	(SPLP)	*5-5.6*	*(u)*	---	---	---	---	*<0.05*	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8-8.5	(s)	**2**	9	86	<4	**16**	**24**	**11**	**195**	<0.04	12	**787**	0.068	---	<0.8	<0.5	<4	<5	6	---
	(SPLP)	*8-8.5*	*(s)*	---	*<0.10*	---	---	*<0.05*	---	---	*<0.10*	---	*<0.10*	*2.0*	---	---	---	---	---	---	---	---
B-142	06/29/00	0-0.5	(u)	**2**	---	151	<4	---	10	<5	---	<0.04	---	---	<0.05	---	<0.8	<0.5	**8**	<5	10	---
	(SPLP)	0-0.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	**3**	---	229	<4	---	**16**	7	---	<0.04	---	---	<0.05	---	<0.8	<0.5	**2**	<5	28	---
	(SPLP)	2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		6-6.5	(s)	**10**	---	181	<4	**97**	**21**	10	---	0.08	---	---	**0.74**	---	**11**	**11**	<40	**38**	6	---
	(SPLP)	6-6.5	(s)	---	---	---	---	*0.15*	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-143	06/29/00	0-0.5	(u)	**28**	---	480	**6**	---	**48**	**46**	---	**0.3**	---	---	**1.9**	---	**6**	**35**	<20	**50**	7	---
	Duplicate 39	0-0.5	(u)	**15**	**56**	241	**5**	**447**	**23**	**53**	**626**	0.13	**1070**	**14270**	**0.31**	**41**	**1**	**15**	<1	**42**	9	44310
	(SPLP)	*0-0.5*	*(u)*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	**3**	<5	181	<4	---	**25**	6	---	<0.04	---	---	0.052	---	<0.8	<0.5	<1	<5	21	---
	(SPLP)	*2-2.5*	*(u)*	---	*<0.10*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		5-5.5	(u)	**3**	---	117	<4	**9**	**18**	7	**20**	<0.04	---	---	**0.28**	---	<0.8	<0.5	<15	<5	14	1400
	(SPLP)	*5-5.5*	*(u)*	---	---	---	---	*<0.05*	---	---	*<0.10*	---	---	---	---	---	---	---	---	---	---	*0.16*
		6-6.5	(s)	**3**	---	58	<4	**209**	**19**	**38**	14	<0.04	---	**15240**	**0.2**	---	**4**	**4**	<5	<5	8	34500
	(SPLP)	*6-6.5*	*(s)*	---	---	---	---	*0.062*	---	---	*<0.10*	---	---	*28*	---	---	---	---	---	---	---	*19.0*
B-144	07/11/00	0-0.5	(u)	**1**	7	303	<4	4	**16**	8	23	<0.04	55	**472**	0.072	12	<0.8	<0.5	**<5**	<5	29	519
		2-2.5	(u)	**1**	5	289	<4	2	13	<5	**21**	<0.04	53	286	<0.05	9	<0.8	**1**	<1	<5	25	159
		5.2-6	(s)	**1**	<5	211	<4	3	**16**	5	**20**	<0.04	23	180	<0.05	13	<0.8	<0.5	**4**	<5	**36**	203
	Duplicate 46	5.2-6	(u)	**1**	6	309	<4	4	**15**	6	**34**	<0.04	29	205	<0.05	12	<0.8	<0.5	**2**	<5	34	323
B-145	07/11/00	0-0.5	(u)	**1**	---	---	---	---	15	---	---	---	---	**357**	---	---	---	---	**<5**	---	---	654
		2-2.5	(u)	**1**	---	---	---	---	---	---	**43**	---	---	---	---	---	---	**4**	---	---	---	508
		5.2-6	(s)	**3**	---	---	---	---	15	---	**351**	---	---	---	---	---	---	---	**<5**	---	15	7965
B-146	07/11/00	0-0.5	(u)	**1**	---	---	---	---	12	---	---	---	---	**349**	---	---	---	---	<1	---	---	394
		2-2.5	(u)	**1**	---	---	---	---	---	---	**83**	---	---	---	---	---	---	**9**	---	---	---	2030
		5.2-6	(s)	**1**	---	---	---	---	15	---	**57**	---	---	---	---	---	---	---	**<5**	---	---	1010
B-147	07/11/00	0-0.5	(u)	**1**	14	198	<4	10	**21**	6	**174**	<0.04	94	**664**	**0.22**	11	**1**	**2**	<5	<5	24	754
		2-2.5	(u)	**1**	**12**	292	<4	**17**	**17**	5	**103**	<0.04	**292**	**569**	**2**	12	**10**	**2**	<5	**75**	19	1230
		3.7-4	(s)	**4**	**33**	148	<4	**78**	11	<5	**362**	<0.04	**831**	549	**363**	10	**641**	**46**	<5	5	12	9900

Table 2. Northern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-148	07/11/00	0-0.5	(u)	<0.8	---	---	---	---	13	---	**42**	---	---	**510**	**0.41[a]**	---	<0.8	**1**	<5	---	---	337
		2-2.5	(u)	**2**	**24**	---	---	**69**	13	---	**218**	---	**219**	**1270**	**13[a]**	---	**18**	**4**	<5	**8**	---	4594
		5-5.5	(s)	<0.8	**11**	---	---	**18**	---	---	**50**	---	**105**	---	**34[a]**	---	**35**	**3**	<5	---	---	3000
B-149	07/11/00	0-0.5	(u)	---	---	---	---	---	---	---	**42**	---	---	**351**	**0.096[a]**	---	---	**2**	<5	---	---	326
		2-2.5	(u)	<0.8	5	---	---	**10**	---	---	14	---	23	216	**0.64[a]**	---	**2**	<0.5	<5	<5	---	272
		5-5.5	(s)	---	<5	---	---	2	---	---	10	---	11	---	**0.37[a]**	---	<0.8	<0.5	<1	---	---	76
B-150	11/05/01	0-0.5	(u)	<0.8	<5.0	87	<4.0	6.6	7.6	<5.0	20	<0.05	19	195	0.07	6.4	<0.8	<0.5	<1	<5.0	14	268
	Duplicate B-150	0-0.5	(u)	<0.8	7	192	4	**23**	11	7.5	**50**	0.08	51	368	**0.41**	9.4	0.89	**0.7**	<1	6	17	909
		2-2.5	(u)	<0.8	5.9	236	**6.9**	**28**	**18**	**12**	**29**	<0.05	38	951	**0.8**	15	<0.8	<0.5	<1	5.5	35	791
		2.5-3	(s)	**3.1**	**39**	**753**	**12**	**443**	13	**92**	**386**	0.18	**1390**	**9498**	**56**	**45**	**28**	**17**	<1	**11**	21	23820
B-151	11/05/01	0-0.5	(u)	---	---	---	---	**87**	---	---	**153**	---	---	---	**1.6**	---	---	**4.7**	---	---	---	4341
		1.5-2	(s)	**0.91**	**48**	526	**10**	**281**	**23**	**76**	**612**	---	**531**	**2176**	**5.1**	**39**	**4.3**	**15**	---	**34**	---	12140
B-152	11/05/01	0-0.5	(u)	---	---	---	---	**171**	---	---	**464**	---	---	---	**0.25**	---	---	**20**	---	---	---	27200
		1.5-2	(s)	<0.8	<5.0	---	<4.0	1.5	12	<5.0	8.8	---	18	225	<0.05	8	<0.8	<0.5	---	5.5	---	192
B-153	07/10/00	0-0.5	(u)	**0.9**	<5	625	<4	7	9	<5	15	<0.04	11	259	<0.05	6	**1.1**	**0.6**	<1	<5	18	184
		2-2.5	(u)	**3.3**	**26**	293	<4	**39**	13	6	**245**	<0.04	**283**	**803**	**1.5**	10	**2.6**	**2.8**	**<5**	7	24	3126
		5.5-6	(s)	**11.6**	**82**	313	<4	**253**	**18**	**66**	**2584**	0.11	**1040**	**7285**	**23**	**56**	**2.9**	**9.2**	**<5**	**29**	21	17320
	Duplicate 42	5.5-6	(s)	**32**	**165**	280	**6**	**153**	**31**	**51**	**5872**	0.17	**1570**	**5084**	**7.5**	**68**	**7**	**11**	<1	**45**	14	19580
B-154	07/10/00	0-0.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	**2.7**	**3.5**	---	---	---	618
		2-2.5	(u)	**3.1**	**12**	---	---	**13**	---	---	**163**	---	**411**	**562**	**2.3**	---	**23.5**	**3.3**	**<5**	---	---	2470
		4.7-5.5	(s)	**95.9**	**86**	---	<4	**15**	**30**	8	**796**	---	**2920**	**4915**	**7.5**	10	**11.3**	**7.6**	**<5**	**526**	---	34140
B-155	07/10/00	0-0.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	**3.2**	**3.1**	---	---	---	4350
		2-2.5	(u)	<0.8	**11**	---	---	4	---	---	**323**	---	**1890**	**705**	**8.7**	---	**50.2**	**4.5**	**2**	---	---	382
		3-3.5	(s)	**<1.5**	<5	---	---	1	---	---	12	---	28	134	**0.16**	---	**1.2**	<0.5	**8**	<5	---	300
B-217	02/11/03	0-0.5	(u)	**1.2**	---	---	---	**23**	14	---	**91**	---	---	**702**	**10**	---	**1.6**	**2.0**	---	6.7	---	---
		2-2.5	(u)	**0.83**	**18**	---	---	**28**	13	8.0	**83**	---	**118**	**511**	**0.4**	---	**2.9**	**2.1**	<1	<5	---	---
		3-3.5	(s)	**14**	**23**	---	---	**177**	12	**28**	**453**	---	**524**	**2827**	**0.28**	---	**0.9**	**2.0**	**4**	**78**	---	---
B-218	02/11/03	0-0.5	(s)	**4.3**	14	---	---	**94**	---	**41**	**252**	---	**303**	**3818**	**0.21**	---	**0.92**	**0.8**	**2**	**9.1**	---	---
B-219	02/11/03	0-0.5	(u)	<0.8	6.9	---	---	<1	13	5.6	5.9	---	13	**367**	---	---	---	---	---	---	---	---
	Duplicate-2	0-0.5	(u)	<0.8	<5	---	---	<1	13	5.6	9.9	---	10	333	---	---	---	---	---	---	---	---
		2-2.5	(u)	<0.8	<5	---	---	<1	14	5.7	7.0	---	11	325	---	---	---	---	---	---	---	---
		4-4.5	(s)	<0.8	**12**	---	---	**130**	12	9.2	**1176**	---	11	**6203**	---	---	---	---	---	---	---	---

Table 2. Northern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-220	02/11/03	0-0.5	(u)	---	---	---	---	---	---	---	---	---	---	**384**	---	---	---	---	---	---	---	---
		4.5-5	(s)	---	<5	---	---	**82**	---	---	**315**	---	---	**7863**	---	---	---	---	---	---	---	---
B-221	02/11/03	0-0.5	(u)	**1.1**	---	---	---	**21**	**16**	---	**205**	---	---	---	**0.38**	---	<0.8	<0.5	<1	5.2	---	---
		2-2.5	(u)	**1.5**	---	---	---	<1	**17**	---	8.7	---	---	---	<0.05	---	<0.8	<0.5	<1	<5	---	---
		4.7-5	(s)	**1.4**	---	---	---	**327**	10	---	**260**	---	---	---	**0.17**	---	<0.8	**2.6**	<1	6.1	---	---
B-222	02/11/03	0-0.5	(u)	**2.9**	---	---	---	**26**	**32**	---	**522**	---	---	---	<0.05	---	---	---	---	---	---	---
		2-2.5	(u)	<0.8	---	---	---	---	**40**	---	---	---	---	---	<0.05	---	---	---	---	---	---	---
		4.7-5	(s)	**0.84**	---	---	---	**181**	---	---	**80**	---	---	---	**2.3**	---	---	**0.58**	---	---	---	---
B-223	02/11/03	0-0.5	(u)	**24**	**553**	---	<10	**343**	**27**	**53**	**9588**	<0.1	**5184**	**37520**	**1.1**	**49**	**1.0**	**37**	---	**215**	---	---
		0.9-1.2	(s)	**82**	**4443**	---	<50	**364**	**18**	**65**	**53520**	**0.26**	**9904**	**11320**	**0.56**	**82**	**23**	**30**	---	**130**	---	---
B-224	02/11/03	0-0.4	(u)	**3.0**	**23**	---	<4	**30**	**31**	9.0	**471**	<0.1	**370**	**1941**	**0.28**	17	<0.8	**1.6**	---	**14**	---	---
		0.4-0.9	(s)	**0.84**	11	---	<4	**26**	**19**	6.7	**131**	<0.1	57	**353**	**0.28**	12	<0.8	<0.5	---	<5	---	---
B-236	03/01/05	0-0.5	(u)	---	**38**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		0.5-1	(s)	---	**36**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-237	03/01/05	0-0.5	(u)	---	**106**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		0.5-1	(s)	---	**618**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
East and West Lagoon Area Soil Samples - Northern Tract																						
B-13	05/18/93	0-0.5	(u)	---	**24**	---	---	**39**	---	---	**168**	---	**200**	**909**	---	9.6	---	---	---	---	---	4486
		2-2.5	(u)	---	**28**	---	---	**26**	---	---	**202**	---	**267**	**635**	---	6.8	---	---	---	---	---	3190
		5.5-6	(u)	---	<5.0	---	---	<2.5	---	---	14	---	13	310	---	9.2	---	---	---	---	---	167
		6-6.5	(s)	---	<5.0	---	---	**4.5**	---	---	**37**	---	24	135	---	13	---	---	---	---	---	450
B-14	05/09/93	0-0.5	(u)	---	**26**	---	---	**65**	---	---	**266**	---	**740**	**530**	---	**30**	---	---	---	---	---	4736
		2.0-2.5	(u)	---	**24**	---	---	**4.7**	---	---	**115**	---	45	**642**	---	11	---	---	---	---	---	532
		4.5-5	(s)	---	7.7	---	---	**16**	---	---	30	---	**68**	447	---	7.2	---	---	---	---	---	1198
B-15	05/09/93	0-0.5	(u)	---	**31**	---	---	**77**	---	---	**246**	---	**359**	**373**	---	7.4	---	---	---	---	---	7720
		2-2.5	(u)	---	**58**	---	---	**13**	---	---	**740**	---	**148**	**441**	---	17	---	---	---	---	---	1180
		6-6.5	(s)	---	5.3	---	---	<2.5	---	---	13	---	15	66	---	<5	---	---	---	---	---	147
B-16	05/19/93	0-0.5	(u)	---	**25**	---	---	**48**	---	---	**154**	---	**273**	**452**	---	7	---	---	---	---	---	3008
		2-2.5	(u)	---	**14**	---	---	**10**	---	---	**87**	---	**94**	332	---	9.3	---	---	---	---	---	1139
		4-4.5	(s)	---	<5	---	---	**14**	---	---	**84**	---	**74**	98	---	8.5	---	---	---	---	---	1184

Table 2. Northern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-17	05/19/93	0-0.5	(u)	---	**21**	---	---	**31**	---	---	**131**	---	**235**	**470**	---	8.4	---	---	---	---	---	3196
		2-2.5	(u)	---	**13**	---	---	**15**	---	---	**260**	---	**66**	**464**	---	13	---	---	---	---	---	974
		4-4.5	(s)	---	7.6	---	---	**7.7**	---	---	**74**	---	**58**	174	---	<5	---	---	---	---	---	1429
B-156	07/10/00	0-0.5	(u)	**2.8**	**30**	182	<4	**23**	13	8	**520**	<0.04	**157**	**487**	**0.1**	12	**1**	**2.3**	**<5**	<5	22	2200
		2.3-3	(s)	<0.8	<5	99	<4	1	15	6	**8**	<0.04	6	191	<0.05	8	**1.3**	<0.5	**<5**	<5	7	51
	Duplicate 43	2.3-3	(s)	**2**	<5	68	<4	2	18	8	**27**	<0.04	9	86	<0.05	9	<0.8	<0.5	**4**	<5	<5	98
B-157	07/10/00	0-0.5	(u)	<0.8	5	---	---	2	---	---	25	---	57	291	**0.51**	---	<0.8	<0.5	**4**	---	---	285
		2.3-3	(s)	**0.9**	---	---	---	---	---	---	<5	---	---	---	---	---	**0.9**	---	**<5**	---	---	35
B-158	07/10/00	0-0.5	(u)	---	---	---	---	---	---	---	---	---	---	---	**4.5**	---	---	---	**<5**	---	---	5255
		2.3-3	(s)	**0.8**	---	---	---	---	---	---	---	---	---	---	---	---	**1**	---	**<5**	---	---	58
B-159	07/11/00	0-0.5	(u)	**3**	**21**	285	<4	**35**	**17**	6	**169**	<0.04	**250**	**558**	**4**	11	**2**	**3**	<5	**13**	18	3762
		2-2.5	(s)	**1**	<5	255	<4	1	**28**	7	8	<0.04	13	110	**0.27**	16	<0.8	<0.5	<5	<5	15	129
	Duplicate 45	2-2.5	(s)	**<0.8**	<5	135	<4	2	**38**	8	8	<0.04	13	83	<0.05	20	**1**	<0.5	<5	<5	13	107
B-160	07/11/00	0-0.5	(u)	**3**	11	---	---	**94**	14	---	**315**	---	**787**	**423**	**39**[a]	---	**168**	**14**	<5	7	---	4379
		2-2.5	(s)	<0.8	---	---	---	---	12	---	---	---	---	---	**1.2**[a]	---	**21**	---	<5	---	---	980
B-161	07/11/00	0-0.5	(u)	**19**	---	---	---	**166**	---	---	**1640**	---	**9746**	**442**	**213**[a]	---	**1620**	**211**	<5	---	---	4993
		2-2.5	(s)	---	---	---	---	---	---	---	---	---	---	---	**2.5**[a]	---	**363**	---	<5	---	---	1150
B-162	11/05/01	0-0.5	(u)	**0.82**	**23**	580	**7.3**	**74**	**18**	**10**	**135**	<0.05	**349**	**470**	**0.56**	15	**1**	**5**	<1	**15**	35	6653
		1-1.2	(s)	<0.8	**11**	653	**5.4**	**23**	14	7.3	**32**	<0.05	**135**	345	**0.75**	11	<0.8	**1.3**	<1	**8**	**37**	1495
B-163	11/05/01	0-0.5	(u)	<0.8	9.3	---	<4.0	**19**	11	7.8	31	---	100	**762**	0.07	---	<0.8	**0.81**	---	7.1	---	1178
		1-1.2	(s)	---	**12**	---	<4.0	**31**	---	---	**59**	---	**136**	---	**0.32**	---	---	**2.8**	---	7.2	27	2091
B-164	11/05/01	0-0.5	(u)	---	---	---	---	**262**	---	---	---	---	---	**710**	---	---	---	**11**	---	---	---	10740
		1-1.2	(s)	---	6.4	---	---	**20**	---	---	**24**	---	**57**	---	0.09	---	---	0.52	---	---	---	769
B-165	11/05/01	0-0.5	(u)	**1.3**	**32**	269	**8**	**55**	**15**	7.4	**337**	<0.05	**260**	**742**	**2.9**	10	**3.7**	**2.2**	<1	**15**	25	6764
	Duplicate B-165	0-0.5	(u)	**0.96**	**31**	295	**8.6**	**45**	14	7.6	**248**	<0.05	**248**	**766**	**3.2**	11	**3.5**	**1.8**	<1	**13**	26	5304
		2-2.5	(s)	<0.8	8.9	256	**7.9**	1.4	**18**	8.9	**21**	<0.05	17	431	<0.05	14	<0.8	<0.5	<1	6	**43**	137
B-166	11/05/01	0-0.5	(u)	**1.3**	**22**	---	**7.2**	**29**	13	---	**170**	---	**285**	**559**	**1.4**	---	**1.6**	**2.2**	---	**14**	---	2621
		2-2.3	(s)	---	---	---	**6.4**	---	**18**	---	**353**	---	---	---	---	---	---	---	---	---	21	3173
B-167	11/05/01	0-0.5	(u)	**2.2**	**39**	---	**7.9**	**120**	---	---	**220**	---	**634**	**937**	**1.2**	---	**1**	**7.1**	---	**33**	---	11010
		2-2.3	(s)	---	---	---	**6.7**	---	14	---	**144**	---	---	---	---	---	---	---	---	---	---	10260

Table 2. Northern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-168	11/05/01	0-0.5	(u)	<0.8	<5	75	**11**	5.5	12	7.7	**57**	<0.05	44	257	<0.05	9.7	<0.8	<0.5	<1	6.5	11	388
		2-2.5	(u)	<0.8	**27**	273	**8.4**	**6.3**	**18**	8.6	**34**	0.09	40	**448**	<0.05	15	<0.8	**0.960**	<1	6.1	**40**	492
		2.5-3.1	(s)	<0.8	**16**	344	**11**	**4.4**	**21**	8.8	**110**	<0.05	**58**	387	0.09	15	<0.8	<0.5	<1	**8.8**	**46**	653
B-169	11/05/01	0-0.5	(u)	---	---	---	<4.0	---	---	---	19	---	---	---	---	---	---	---	---	---	---	953
		1-1.5	(s)	---	**16**	---	<4.0	**29**	13	---	**60**	---	**173**	**1091**	---	---	---	**5.8**	---	**13**	21	2677
B-170	11/05/01	0-0.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3349
		2-2.5	(u)	---	8.2	---	---	5.9	---	---	**57**	---	**68**	326	---	---	---	<0.5	---	**8.5**	---	805
		2.7-3	(s)	---	8.9	---	---	8.8	---	---	**19**	---	**48**	451	---	---	---	<0.5	---	6.4	---	781
B-171	11/05/01	0-0.5	(u)	<0.8	9.1	283	**11**	3.4	**20**	8.5	**46**	<0.05	57	**480**	0.07	14	<0.8	<0.5	<1	**8.6**	**40**	496
		2-2.5	(u)	<0.8	7.2	277	**10**	<1.0	**22**	9	11	<0.05	13	**569**	<0.05	15	<0.8	<0.5	<1	5.6	**46**	67
		3.8-4.2	(s)	<0.8	8.5	280	**12**	<1.0	**20**	8.8	16	<0.05	18	448	<0.05	14	<0.8	<0.5	<1	5.7	**45**	108
B-172	11/05/01	0-0.5	(u)	---	---	---	**6.3**	---	**23**	---	**155**	---	---	**679**	---	---	---	---	---	**15**	20	3096
		1.8-2.3	(s)	---	---	---	**10**	---	**21**	---	---	---	---	**796**	---	---	---	---	---	---	25	4305
B-173	11/05/01	0-0.5	(u)	---	---	---	**6.3**	---	13	---	**64**	---	---	**476**	---	---	---	---	---	**22**	---	3234
		2-2.5	(u)	---	---	---	**6.7**	---	14	---	---	---	---	**373**	---	---	---	---	---	---	---	233
		2.8-3	(s)	---	---	---	**5.4**	---	12	---	---	---	---	**1279**	---	---	---	---	---	---	---	2195
B-209	02/12/03	0-0.5	(u)	---	---	---	---	**73**	---	---	---	---	**420**	---	**4.5**	---	**6.4**	---	---	---	---	---
	Duplicate-3	0-0.5	(u)	---	---	---	---	**55**	---	---	---	---	**244**	---	**2.5**	---	**3.1**	---	---	---	---	---
		1.2-1.6	(s)	---	---	---	---	**70**	---	---	---	---	**288**	---	**10**	---	**4.3**	---	---	---	---	---
B-210	02/12/03	0-0.5	(s)	---	---	---	---	9.4	---	---	---	---	57	---	**0.78**	---	**2.5**	---	---	---	---	---
B-213	02/12/03	0-0.5	(u)	---	---	---	---	**88**	---	---	---	---	**733**	---	**94**	---	**43**	---	---	---	---	---
		1.2-1.6	(s)	---	---	---	---	**62**	---	---	---	---	**233**	---	**1.5**	---	**28**	---	---	---	---	---
B-214	02/12/03	0-0.5	(s)	---	---	---	---	2.6	---	---	---	---	66	---	**2.1**	---	**1.7**	---	---	---	---	---
Soil Below Tears in West Lagoon HDPE Liner																						
W Lagoon Tear 1																						
	11/13/03	0-0.5	(s)	<5	14	**896**	<6	**66**	**17**	**27**	**205**	0.1	**211**	**351**	**2.5**	20	<5	<2	<5	**8**	27	2,890
W Lagoon Tear 2																						
	11/13/03	0-0.5	(s)	<5	**20**	208	<6	**70**	**18**	8	**104**	<0.1	**182**	**541**	<0.5	12	<5	<2	<5	**13**	32	8,030
W Lagoon Tear 3																						
	11/14/03	0-0.5	(s)	<5	10	156	<6	**36**	**18**	**27**	**78**	<0.1	**192**	276	**0.9**	21	<5	<2	<5	**9**	22	2,450

Table 2. Northern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Soil Background Concentrations																						
		0-0.5':			16.65		4.9	11.70		9.72	40.33	0.24	109.16	333.73	0.09	25.80	0.89			7.65		b
		2-2.5':			8.01			4.47			17.20		54.36	360.83		27.21						
		unsaturated below 2.5':	(u)		21.86			4.97			16.15		38.96	592.50		29.74						
		saturated soil sample:	(s)		9.8			3.64			18.26		30.92	686.68		25.86						
		clay/silt strata:		0.77		720			14.9									0.54	1.02		35.6	
		clean sand strata (SP/SW):		0.80		202			35.9									0.50	1.0		15.7	
Preliminary Remediation Goals[c]																						
		PRG (mg/kg):		d	200	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d

mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
---	Not analyzed
(u)	Unsaturated soil sample.
(s)	Saturated soil sample.
(dup)	Duplicate soil sample.
(SPLP)	Synthetic Precipitation Leaching Procedure. Units in mg/L - analytical results shown in *italics*.
PRG	Preliminary Remediation Goal

a Sample re-collected and re-analyzed within EPA-specified holding time. Initially collected sample not analyzed within EPA-specified holding time.

b April 28, 1997 TNRCC letter stated zinc would not be a good release indicator for a unit at the site. Therefore, zinc background level not given.

c Preliminary Remediation Goals (PRGs) given in Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum. Exposure point concentration for arsenic in surface soils on Northern Tract exceeded the human health commercial/industrial land use PRG (200 mg/kg) given in Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum.

d No PRG is required for this constituent on the Northern Tract as detailed in the August 27, 2004 Baseline Risk Assessment Addendum.

Notes: 1) Numbers in **bold** exceed TCEQ-approved background concentrations established for the site.

2) Numbers **boxed** in red exceed both background and the Preliminary Remediation Goals (PRGs) given in Table A of the August 27, 2004 Baseline Risk Assessment Addendum.

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
BACKGROUND SOIL BORINGS																						
B-1	11/23/92	0-0.5	---	1.9	11.6	170	---	44.1	14.7	6.4	72	---	211	561	0.22	13.4	0.97	2.3	0.11	<12	11	354.1
		2-2.5	---	---	3.89	---	---	3.4	---	---	11.1	---	35	247.1	---	20.5	---	---	---	---	---	45
		7-8	---	---	17.24	---	---	3.1	---	---	9.6	---	29	242.8	---	19.8	---	---	---	---	---	44.7
		11-12	---	---	6.15	---	---	2	---	---	5.5	---	15	234.9	---	8.2	---	---	---	---	---	24
B-2	11/23/92	0-0.5	---	1.09	12.19	40	---	66.1	12.6	3.8	74.6	---	278	378.2	0.24	7.5	1.58	1.3	0.05	6	25	354.4
		2-2.5	---	---	4.8	---	---	1.3	---	---	12.1	---	18	187.5	---	11.4	---	---	---	---	---	35.7
		7-8	---	---	4.51	---	---	2.4	---	---	8.6	---	23	379.9	---	14.5	---	---	---	---	---	37.3
		11-12	---	---	4.86	---	---	1.5	---	---	10.1	---	18	322	---	13.4	---	---	---	---	---	40.8
B2-R*	09/24/94	0-0.5	---	---	<5	---	---	45	---	---	38	---	94	198	---	11	---	---	---	---	---	1,490
B-3	11/24/92	0-0.5	---	0.98	11.21	190	---	6.5	13.2	6.9	27.1	---	87	390.1	0.01	14.9	0.8	0.8	0.05	6	15	342.9
		2-2.5	---	---	3.13	---	---	1.5	---	---	8.8	---	16	253.5	---	6.6	---	---	---	---	---	29.2
		7-8	---	---	5.86	---	---	1.5	---	---	9	---	24	405.2	---	13.8	---	---	---	---	---	64.5
		10-11	---	---	3.54	---	---	1.3	---	---	3.3	---	7	279.5	---	6.2	---	---	---	---	---	17
B-4	11/24/92	0-0.5	---	1.08	35.54	240	---	25.7	18	6.8	110	---	866	689.3	0.48	13.7	1.49	3.9	0.28	98	19	355.6
		2-2.5	---	---	4.88	---	---	2	---	---	10.4	---	39	273.7	---	15.2	---	---	---	---	---	59.6
		7-8	---	---	8.49	---	---	3.1	---	---	9.2	---	17	267.7	---	14.5	---	---	---	---	---	65.6
		10-11	---	---	5.26	---	---	1.9	---	---	6.3	---	10	233.5	---	10.2	---	---	---	---	---	22.8
B4-R*	09/24/94	0-0.5	---	---	<5	---	---	34	---	---	111	---	274	470	---	9	---	---	---	---	---	6,690
B-5	11/25/92	0-0.5	---	2.45	21.77	160	---	39.3	17.8	5.6	99.2	---	391	613.5	0.87	16.9	4.45	5.5	0.05	19	9	357.1
		2-2.5	---	---	4.39	---	---	1.6	---	---	4.6	---	12	161.9	---	4.9	---	---	---	---	---	16.3
		7-8	---	---	5.22	---	---	0.26	---	---	3.7	---	16	177.6	---	8.1	---	---	---	---	---	38.2
		13-14	---	---	3.14	---	---	2.4	---	---	2.3	---	9	33.3	---	2.1	---	---	---	---	---	122.4
B5-R*	09/24/94	0-0.5	---	---	<5	---	---	<5	---	---	10	---	19	158	---	<5	---	---	---	---	---	623
B-6	11/25/92	0-0.5	---	1.6	3.48	260	---	6.3	13.6	5.1	12.9	---	54	193.4	0.01	20.8	1.89	4.7	0.23	6	20	228.5
		2-2.5	---	---	5.41	---	---	1	---	---	6.7	---	10	153.6	---	8.9	---	---	---	---	---	20.1
		9-10	---	---	3.31	---	---	1.8	---	---	3.9	---	9	183.2	---	3	---	---	---	---	---	12.6
B-7	11/25/92	0-0.5	---	0.78	8.61	100	---	3.8	10.8	3.9	19	---	75	220.4	0.06	8.3	0.63	0.7	0.18	6	11	286.2
		2-2.5	---	---	1.66	---	---	0.49	---	---	5.9	---	19	177.5	---	9	---	---	---	---	---	26.9
		5-6	---	---	2.68	---	---	2	---	---	4.6	---	15	138.2	---	4.4	---	---	---	---	---	8.4
B-8	11/25/92	0-0.5	---	0.15	10.59	120	---	2.9	11.6	4.1	13.9	---	47	222.5	0.12	12.9	1.17	1.6	0.15	6	14	191.3
		2-2.5	---	---	2.4	---	---	0.5	---	---	5.5	---	16	144.8	---	13	---	---	---	---	---	14.2
		12-13	---	---	1.84	---	---	1.3	---	---	1.9	---	20	88.8	---	5.1	---	---	---	---	---	6.1

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
RS-5	7/22/96	0-0.5	u	0.62	6.4	96.4	---	8.3	5.1	5.3	36	<0.25	10.1	236	<0.1	2.6	<0.5	0.49	1.1	5.1	4.4	2,280
RS-6	7/22/96	0-0.5	u	0.67	4.8	76.6	---	4.6	4.7	3.1	20.4	<0.25	66.8	286	<0.1	2.3	0.54	0.33	<1	4	3.7	1,480
RS-9	7/22/96	0-0.5	u	<0.5	11.9	86.2	---	5.8	2.9	2.6	14	<0.25	43.6	200	<0.1	2.7	0.73	<0.2	<1	3	4.6	1,820
RS-10	7/22/96	0-0.5	u	<0.5	8.4	100	---	1.5	3.7	3.6	13.5	<0.25	31.8	174	<0.1	3.9	<0.5	<0.2	<1	2.2	5.2	270
RS-11	7/22/96	0-0.5	u	<0.5	5.1	122	---	1.5	5	6.3	17	<0.25	39.6	185	<0.1	4.4	<0.5	0.23	<1	3.4	7	296
RS-12	7/22/96	0-0.5	u	<0.5	2.4	90	---	0.58	1.8	2.4	11.6	<0.25	12	137	<0.1	4.2	0.51	<0.2	<1	<2	4.7	58.1
B-174	01/15/01	2.5-3.5	u	<0.8	---	245	---	---	7.8	---	---	---	---	---	---	---	---	<0.5	<1	---	17	---
		6-7	u	<0.8	---	87	---	---	11	---	---	---	---	---	---	---	---	<0.5	<1	---	7.7	---
B-175	01/15/01	3-4	u	<0.8	---	132	---	---	7.5	---	---	---	---	---	---	---	---	<0.5	<1	---	16	---
		6-7	u	<0.8	---	134	---	---	6.4	---	---	---	---	---	---	---	---	<0.5	<1	---	9.3	---
B-176	01/15/01	2.5-3.5	u	<0.8	---	307	---	---	10	---	---	---	---	---	---	---	---	<0.5	<1	---	16	---
		5-6	u	<0.8	---	81	---	---	17	---	---	---	---	---	---	---	---	<0.5	<1	---	9.9	---
B-177	01/15/01	2.5-3.5	u	<0.8	---	639	---	---	9.4	---	---	---	---	---	---	---	---	<0.5	<1	---	25	---
		5-6	u	<0.8	---	57	---	---	14	---	---	---	---	---	---	---	---	<0.5	<1	---	12	---
B-178	01/15/01	2.5-3.5	u	<0.8	---	241	---	---	11	---	---	---	---	---	---	---	---	<0.5	<1	---	28	---
		5-6	u	<0.8	---	45	---	---	19	---	---	---	---	---	---	---	---	<0.5	<1	---	7.4	---
B-179	01/15/01	2.5-3.5	u	<0.8	---	504	---	---	9.5	---	---	---	---	---	---	---	---	<0.5	<1	---	16	---
		7-8	u	<0.8	---	43	---	---	22	---	---	---	---	---	---	---	---	<0.5	<1	---	7.4	---
RFI, CMS, AND RCRA FINAL FACILITY CLOSURE SOIL BORINGS																						
Railroad Tracks																						
B-96	06/12/00	0-0.5	(u)	**128**	**3353**	**1665**	**92**	**2795**	**351**	**363**	**30530**	**1.6**	**28300**	**8209**	**11**	**457**	**39**	**345**	**<20**	**332**	21	117600
		2-2.5	(u)	**0.8**	6.8	403	<4	2.9	**21**	7.2	12	<0.04	15	**366**	<0.05	13	<5	**4.3**	**1.4**	<5	---	125
		5.5	(u)	**1.9**	---	---	---	---	**24**	---	---	---	---	372	---	---	<5	**12**	**1.8**	---	---	147
		8.5	(u)	<0.8	---	---	---	---	**27**	---	---	---	---	---	---	---	<5	**6.3**	<1	---	---	33
		11.5	(u)	---	---	---	---	---	**56**	---	---	---	---	---	---	---	<5	**2.2**	---	---	---	24
		14.5	(u)	---	---	---	---	---	**20**	---	---	---	---	---	---	---	<5	**42**	---	---	---	54
		16-16.5	(s)	---	---	---	---	---	17	---	---	---	---	---	---	---	<5	**1.8**	---	---	---	55
B-96a	3/1/05	1-1.5	(u)	---	**137**	---	---	---	---	---	---	---	**1,990**	---	---	---	---	---	---	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-97	06/12/00	0-0.5	(u)	**336**	**3197**	**759**	**129**	**3051**	**2471**	**5568**	**22470**	**21.0**	**65760**	**17930**	**11**	**3562**	**21**	**320**	**<20**	**1342**	28	149300
	Duplicate 1	(0-0.5)	(u)	**163**	**1794**	**1065**	**142**	**3911**	**4691**	**14450**	**44110**	**14.0**	**40450**	**22500**	**6.5**	**18280**	**28**	**287**	**<20**	**2073**	**88**	111400
		2-2.5	(u)	**2.5**	**8.1**	432	<4	**2,165**	**26**	**204**	**56**	<0.04	**90**	**1,656**	<0.05	**56**	<5	**9.1**	<1	<5	**45**	20,000
	(SPLP)	*2-2.5*	*(u)*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*15.0*	*<0.1*	*0.53*	*<0.1*	---	*<0.1*	*1.4*	---	*0.24*	*<0.1*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*64*
		5.5	(u)	**1.1**	<5	---	---	**976**	**17**	**59**	**35**	---	37	450	---	**31**	---	**1.9**	---	<5	33	6285
		8.5	(u)	**2.5**	---	---	---	**13**	13	**12**	14	---	---	---	---	10	---	**13**	---	<5	---	175
		11.5	(u)	**9**	---	---	---	**7.2**	---	6.3	---	---	---	---	---	---	---	**11**	---	<5	---	108
		14.5	(u)	<0.8	---	---	---	**11**	---	---	---	---	---	---	---	---	---	**21**	---	<5	---	92
		15.5-16	(s)	---	---	---	---	**4.8**	---	---	---	---	---	---	---	---	---	**3.7**	---	<5	---	57
B-97a	3/1/05	1-1.5	(u)	---	**4630**	---	---	---	---	---	---	---	**66200**	---	---	---	---	---	---	---	---	---
B-98	06/12/00	0-0.5	(u)	**79**	**1542**	**1536**	**90**	**2046**	**717**	**517**	**12230**	**0.83**	**20870**	**9205**	**2.2**	**963**	**31**	**352**	**<20**	**271**	24	87900
		2-2.5	(u)	<0.8	5.3	416	<4	1.1	**19**	6.6	11	<0.04	14	327	<0.05	13	<5	**2.9**	**2.6**	<5	---	82
		5.5	(u)	---	---	---	---	---	**24**	---	---	---	---	---	---	---	<5	**21**	**1.6**	---	---	76
		8.5	(u)	---	---	---	---	---	**25**	---	---	---	---	---	---	---	<5	**2.4**	**2**	---	---	93
		11.5	(u)	---	---	---	---	---	**15**	---	---	---	---	---	---	---	<5	**1.9**	<1	---	---	49
		14-14.5	(s)	---	---	---	---	---	**16**	---	---	---	---	---	---	---	<5	**9**	---	---	---	52
B-98a	3/1/05	1-1.5	(u)	---	7	---	---	---	---	---	---	---	30	---	---	---	---	---	---	---	---	---
B-99	06/12/00	0-0.5	(u)	**139**	**8018**	**1181**	**82**	**2970**	**930**	**1209**	**104400**	**7.0**	**25130**	**11910**	**16**	**1369**	**83**	**321**	**<20**	**472**	20	145500
		2-2.5	(u)	**1.5**	**15**	370	<4	**27**	**19**	**41**	**165**	<0.04	45	311	0.08	18	<5	**1.8**	**1.1**	<5	---	2,900
		5.5	(u)	**1.1**	**25**	---	---	**85**	**20**	**37**	**274**	---	---	---	---	---	---	**2.2**	**1.9**	---	---	2,045
		8.5	(u)	**1.6**	7.9	---	---	1.9	**24**	**10**	**18**	---	---	---	---	---	---	**0.96**	**2**	---	---	130
		11.5	(u)	**1.6**	---	---	---	---	**32**	**13**	**124**	---	---	---	---	---	---	**1.6**	**2.3**	---	---	281
		14-14.5	(s)	**1.5**	---	---	---	---	13	5.2	16	---	---	---	---	---	---	**1.9**	**1.5**	---	---	51
B-99a	3/1/05	1-1.5	(u)	---	**325**	---	---	---	---	---	---	---	**4,310**	---	---	---	---	---	---	---	---	---
B-100	06/13/00	0-0.5	(u)	<0.8	<5	134	<4	**13**	14	<5	17	<0.04	27	185	**0.29**	10	<0.8	**5**	**2**	<5	19	516
		2-2.5	(u)	---	---	---	---	1	---	---	---	---	---	---	<0.05	---	---	<0.5	**3**	---	---	65
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2**	---	---	223
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2**	---	---	587
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	30
		14.5-15	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	27
B-101	06/12/00	0-0.5	(u)	**21**	**359**	448	**12**	**334**	**23**	**12**	**2334**	<0.04	**5451**	**1083**	**11**	22	**20**	**120**	**<20**	**36**	13	66230
	Duplicate 3	(0-0.5)	(u)	**20**	**298**	348	**12**	**436**	**28**	**52**	**2554**	**0.31**	**4048**	**1132**	**22**	**71**	**14**	**81**	**<20**	**51**	16	62730
		2-2.5	(u)	<0.8	6	---	<4	3	9	<5	11	<0.04[a]	16	222	<0.05	7	<0.8	<0.5	**2**	<5	---	495
		5.5	(u)	---	---	---	---	---	---	---	---	<0.04[a]	---	---	---	---	---	---	**2**	---	---	56
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	81

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	99
		14.5-15	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30
B-101a	3/1/05	1-1.5	(u)	---	3	---	---	---	---	---	---	---	6	---	---	---	---	---	---	---	---	---
B-102	06/12/00	0-0.5	(u)	**2.1**	**24**	237	<4	**236**	13	**11**	**187**	<0.04	**338**	**349**	**0.46**	19	**0.96**	**4.4**	**<20**	6.6	20	16260
	Duplicate 2	(0-0.5)	(u)	**1.7**	**23**	273	<4	**81**	**43**	**117**	**414**	<0.04	**467**	**433**	**23**	**136**	<0.8	**4.7**	**<20**	**27**	24	3045
		2-2.5	(u)	<0.8	<5	---	---	3	10	<5	10	---	13	254	<0.05	7	<0.8	<0.5	1	<5	---	217
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	102
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	60
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	34
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	39
		14.8-15.3	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	20
B-103	06/12/00	0-0.5	(u)	**2.1**	**46**	311	<4	**157**	**19**	**12**	**415**	<0.04	**680**	**404**	**1.5**	18	**1.7**	**11**	**<20**	**13**	27	16600
		2-2.5	(u)	<0.8	5	---	---	**5**	12	<5	11	---	18	253	<0.05	---	<0.8	<0.5	1	<5	---	333
		5.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	57
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	199
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	65
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	79
		15-15.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	35
B-104	06/13/00	0-0.5	(u)	**64**	**603**	**990**	**18**	**566**	**102**	**93**	**6961**	**0.88**	**5971**	**2665**	**3.4**	**110**	**6**	**74**	<1	**128**	23	130200
		2-2.5	(u)	<0.8	<5	114	<4	3	11	<5	**26**	<0.04	19	260	<0.05[a]	9	<0.8	<0.5	---	<5	---	315
		5.5	(u)	---	---	---	---	---	---	---	12	---	---	---	<0.05[a]	---	---	---	---	---	---	60
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	481
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	39
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30
		15.5-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	22
B-104a	3/1/05	1-1.5	(u)	---	7	---	---	---	---	---	---	---	**123**	---	---	---	---	---	---	---	---	---
B-238	3/1/05	0-0.5	(u)	---	**382**	---	---	---	---	---	---	---	**9960**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	5	---	---	---	---	---	---	---	39	---	---	---	---	---	---	---	---	---
B-239	3/1/05	0-0.5	(u)	---	**432**	---	---	---	---	---	---	---	**7720**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	**92**	---	---	---	---	---	---	---	**1740**	---	---	---	---	---	---	---	---	---
B-246	3/1/05	0-0.5	(u)	---	**407**	---	---	---	---	---	---	---	**8100**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	16	---	---	---	---	---	---	---	256	---	---	---	---	---	---	---	---	---
Feed Tank 1																						
B-61	06/20/00	0-0.5	(u)	**3**	**61**	87	<4	**48**	**60**	**19**	**232**	<0.04	**317**	149	**18**	**28**	**9**	**4**	<1	7	26	3,288
	(SPLP)	*0-0.5*	*(u)*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*1.5*	*<0.1*	*<0.1*	*<0.1*	---	*<0.1*	*0.58*	---	*<0.1*	*<0.1*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*29*
		2-2.5	(u)	<0.8	6	596	<4	<1	**20**	6	15	<0.04	13	333	0.05	13	<0.8	<0.5	**2**	<5	24	85
		5.5	(u)	<0.8	6	362	<4	<1	9	5	7	<0.04	9	295	<0.05	8	<0.8	<0.5	1	<5	35	44

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
	Duplicate 19	5.5	(u)	<0.8	6	302	<4	<1	**17**	6	14	<0.04	10	313	<0.05	11	<0.8	<0.5	**2**	<5	**39**	70
		8.5	(u)	**1**	<5	189	<4	<1	12	6	7	<0.04	9	307	<0.05	8	**1**	<0.5	**7**	<5	28	42
		11.5	(u)	<0.8	<5	58	<4	<1	**49**	8	<5	<0.04	<5	205	<0.05	24	<0.8	<0.5	**3**	<5	8	22
		14.5	(u)	<0.8	<5	67	<4	<1	**73**	**12**	<5	<0.04	<5	370	<0.05	**34**	**1**	<0.5	**2**	<5	7	11
		15-16	(s)	<0.8	<5	67	<4	<1	**60**	**12**	<5	<0.04	<5	274	<0.05	**28**	**1**	<0.5	1	<5	5	11
B-62	06/20/00	0-0.5	(u)	**1**	<5	---	---	4	**34**	6	8	---	11	---	<0.05	18	<0.8	<0.5	---	---	---	385
(feedtank No.1)		2-2.5	(u)	---	---	---	---	---	**15**	---	---	---	---	---	---	---	---	---	**2**	---	---	36
(step out boring)		5.5	(u)	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---	**2**	---	34	38
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	<0.8	---	<1	---	---	26
		11.5	(u)	---	---	---	---	---	27	---	---	---	---	---	---	---	---	---	<1	---	---	20
		14.5	(u)	---	---	---	---	---	26	6	---	---	---	---	---	12	<0.8	---	<1	---	---	8
		15-16	(s)	---	---	---	---	---	**54**	**10**	---	---	---	---	---	**26**	**1**	---	---	---	---	8
B-63	06/20/00	0-0.5	(u)	<0.8	---	---	---	---	**18**	---	---	---	---	---	---	---	---	---	---	---	---	59
(feedtank No.1)		2-2.5	(u)	---	---	---	---	---	14	---	---	---	---	---	---	---	---	---	**2**	---	---	66
(step out boring)		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2**	---	---	64
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	34
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	14
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9
		15-16	(s)	---	---	---	---	---	**45**	**10**	---	---	---	---	---	21	<0.8	---	---	---	---	6
B-64	06/20/00	0-0.5	(u)	<0.8	7	305	<4	**623**	**16**	7	13	<0.04	39	**1725**	<0.05	22	<0.8	0.54	**2**	6	27	9393
		2-2.5	(u)	**2**	7	282	<4	**193**	**27**	**30**	**540**	0.08	**60**	**4188**	0.08	**47**	<0.8	**2**	<1	**9**	26	59140
	(SPLP)	*2-2.5*	*(u)*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*1.0*	*<0.1*	*<0.1*	*<0.1*	---	*<0.1*	*0.36*	---	*<0.1*	*<0.1*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*16*
		5.5	(u)	**1**	<5	203	<4	3	10	<5	11	<0.04	14	**2305**	<0.05	11	<0.8	**1**	<1	<5	25	62460
		8.5	(u)	**1**	6	292	<4	<1	**15**	7	9	<0.04	24	415	<0.05	11	<0.8	<0.5	**2**	**10**	**36**	757
		11.5	(u)	<0.8	<5	51	<4	1	29	7	<5	<0.04	<5	139	<0.05	14	**1**	<0.5	<1	<5	8	671
		14.5	(u)	<0.8	<5	51	<4	<1	**62**	**13**	<5	<0.04	<5	283	<0.05	29	**1**	<0.5	<1	<5	6	143
		15-15.5	(s)	<0.8	<5	71	<4	<1	**82**	**16**	6	<0.04	<5	176	<0.05	**38**	**1**	**0.52**	<1	<5	5	64
B-65	06/20/00	0-0.5	(u)	---	---	---	---	10	**21**	---	---	---	---	**419**	---	---	---	---	**2**	---	---	1110
(feedtank No.1)		2-2.5	(u)	**3**	---	---	---	2	**28**	6	**30**	---	**1570**	**386**	---	9	---	**1**	---	**518**	---	684
(step out boring)		5.5	(u)	**1**	---	---	---	---	---	---	---	---	---	349	---	---	---	<0.5	---	---	---	1750
		8.5	(u)	**1**	---	---	---	---	**16**	---	---	---	---	---	---	---	---	---	**2**	**11**	**38**	57
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.8	---	---	---	---	39
		14.5	(u)	---	---	---	---	---	23	7	---	---	---	---	---	---	**1**	---	---	---	---	17
		15.3-16	(s)	---	---	---	---	---	**39**	9	---	---	---	---	---	18	**1**	<0.5	---	---	---	18
B-66	06/20/00	0-0.5	(u)	---	---	---	---	---	**93**	---	---	---	---	**532**	---	---	---	---	<1	---	---	4176
	Duplicate 18	0-0.5	(u)	**4**	9	123	<4	**74**	**222**	**60**	**1380**	<0.04	**427**	**559**	0.08	**69**	<0.8	1	**3**	**30**	10	2200
(feedtank No.1)		2-2.5	(u)	**1**	---	---	---	---	12	---	**29**	---	29	257	---	---	---	<0.5	---	6	---	99
(step out boring)		5.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	110

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		8.5	(u)	**1**	---	---	---	---	11	---	---	---	---	---	---	---	---	---	**6**	5	25	72
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	37
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.8	---	---	---	---	13
		15.7-16	(s)	---	---	---	---	---	**49**	---	---	---	---	---	---	---	**1**	---	---	---	---	11
Feed Tank 2																						
B-79	06/21/00	0-0.5	(u)	**3**	<5	101	<4	**12**	**28**	**13**	11	<0.04	14	**665**	<0.05	15	<0.8	<0.5	<1	<5	14	2867
		2-2.5	(u)	**3**	<5	142	<4	<1	14	5	10	<0.04	9	**367**	<0.05	10	<0.8	<0.5	<1	<5	25	74
		5.5	(u)	**3**	8	303	<4	<1	**21**	7	11	<0.04	11	373	<0.05	12	<0.8	<0.5	<1	<5	**61**	69
	Duplicate 21	5.5	(u)	**2**	8	389	<4	<1	12	6	8	<0.04	9	**629**	<0.05	9	<0.8	<0.5	<1	<5	**39**	43
		8.5	(u)	**2**	6	193	<4	<1	9	6	7	<0.04	9	372	<0.05	9	<0.8	<0.5	<1	<5	27	36
		11.5	(u)	**2**	7	312	<4	<1	12	6	7	<0.04	9	337	<0.05	8	<0.8	<0.5	<1	<5	30	41
		14.5	(u)	**2**	7	337	<4	<1	**15**	7	10	<0.04	11	325	<0.05	16	<0.8	<0.5	1	<5	34	56
		17.5	(u)	**2**	6	357	<4	<1	12	8	10	<0.04	13	**690**	<0.05	13	<0.8	<0.5	<1	<5	31	51
		18-18.5	(s)	**2**	<5	375	<4	<1	**16**	7	9	<0.04	10	389	<0.05	12	<0.8	<0.5	<1	<5	33	73
B-80	06/21/00	0-0.5	(u)	<0.8	---	---	---	**82**	**16**	8	---	---	---	**652**	---	---	---	---	---	---	---	6729
(feedtank #2)		2-2.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	**406**	---	---	---	---	---	---	---	86
(step out boring)		5.5	(u)	<0.8	---	---	---	---	12	---	---	---	---	375	---	---	---	---	---	---	32	52
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	59
		11.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	63
		14.5	(u)	<0.8	---	---	---	---	12	---	---	---	---	---	---	---	---	---	---	---	---	51
		17.5-18	(s)	<0.8	---	---	---	---	7	---	---	---	---	566	---	---	---	---	---	---	---	31
B-81	06/21/00	0-0.5	(u)	---	---	---	---	6	**15**	---	---	---	---	210	---	---	---	---	---	---	---	623
(feedtank #2)		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	293	---	---	---	---	---	---	---	56
(step out boring)		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	42
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	48
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	48
		17.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	59
		20.7-21	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
B-82	06/21/00	0-0.5	(u)	**4**	7	86	**5**	**133**	**59**	**15**	**1130**	0.05	57	**956**	0.07	**250**	<0.8	**1**	**7**	7	15	16920
		2-2.5	(u)	**2**	<5	103	<4	**159**	**27**	7	14	<0.04	<5	**445**	<0.05	**37**	<0.8	<0.5	**4**	<5	9	4204
		5.5	(u)	**2**	<5	50	<4	**410**	**17**	7	5	<0.04	<5	**3615**	<0.05	17	<0.8	**1**	<1	<5	11	26850
	(SPLP)	*5.5*	*(u)*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*1.7*	*<0.1*	*<0.1*	*<0.1*	---	*<0.1*	*2.6*	---	*<0.1*	*<0.1*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*20*
		8.5	(u)	**1**	<5	63	<4	**261**	**34**	9	6	<0.04	7	**1651**	<0.05	25	<0.8	<0.5	<1	<5	12	12400
		11.5	(u)	**2**	7	387	<4	4	**15**	9	12	<0.04	12	515	<0.05	13	<0.8	<0.5	<1	<5	**37**	210
		14.5	(u)	**2**	6	339	<4	3	14	9	12	<0.04	13	**794**	<0.05	14	<0.8	<0.5	1	<5	33	170
		17.5	(u)	**3**	10	224	<4	2	**21**	9	12	<0.04	12	399	<0.05	15	<0.8	<0.5	1	<5	**44**	144
	Duplicate 22	17.5	(u)	**2**	8	179	<4	1	11	6	9	<0.04	10	267	<0.05	10	<0.8	<0.5	1	<5	30	86
		19-20	(s)	**3**	<5	224	<4	**167**	**15**	6	10	<0.04	13	**918**	<0.05	19	<0.8	<0.5	<1	<5	26	3902

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-83	06/21/00	0-0.5	(u)	**2.3**	---	---	<4	**273**	**25**	**11**	**359**	---	---	**3384**	---	**30**	---	**3.8**	<5	---	---	38770
(feedtank #2)		2-2.5	(u)	<0.8	---	---	---	**21**	**19**	---	---	---	---	**517**	---	17	---	---	<5	---	---	2829
(step out boring)		5.5	(u)	<0.8	---	---	---	1	13	---	---	---	---	378	---	---	---	<0.5	---	---	---	151
		8.5	(u)	<0.8	---	---	---	2	13	---	---	---	---	348	---	---	---	---	---	---	---	190
		11.5	(u)	<0.8	---	---	---	---	12	---	---	---	---	---	---	---	---	---	---	---	31	64
		14.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	397	---	---	---	---	---	---	---	57
		17.5	(u)	<0.8	---	---	---	---	12	---	---	---	---	---	---	---	---	---	---	---	32	68
		20.5	(u)	<0.8	---	---	---	<1	**15**	---	---	---	---	360	---	---	---	---	---	---	---	62
		23.5-24	(s)	<0.8	---	---	---	<1	13	---	---	---	---	254	---	---	---	---	---	---	---	77
B-84	06/22/00	0-0.5	(u)	**5.8**	---	---	---	**92**	**45**	**12**	**646**	---	---	**4274**	---	**39**	---	**11.3**	<5	---	---	22850
(feedtank #2)		2-2.5	(u)	---	---	---	---	3	**15**	---	---	---	---	**476**	---	---	---	---	**2**	---	---	211
(step out boring)		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	58
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	75
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	58
		17.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	54
		20.5	(u)	---	---	---	---	---	12	---	---	---	---	---	---	---	---	---	---	---	---	51
		23.5-24	(s)	---	---	---	---	---	9	---	---	---	---	---	---	---	---	---	---	---	---	39
Road Leading to the West of Building C																						
B-35	06/13/00	0-0.5	(u)	**28**	**110**	665	**41**	**785**	**235**	**64**	**2272**	**1.2**	**12260**	234	**1.5**	**403**	**10**	**31**	**15**	**116**	23	4283
	Duplicate 4	0-0.5	(u)	**93**	**428**	418	**87**	**1668**	**311**	**272**	**11060**	**0.6**	**42850**	276	**7.8**	**1600**	**24**	**47**	**20**	**317**	20	8811
		2-2.5	(u)	**1**	**12**	---	<4	**177**	8	9	**141**	<0.04[a]	**272**	---	<0.05	12	<0.8	**2**	<1	<5	---	25570
		5.5	(u)	<0.8	7	---	---	**17**	---	---	13	<0.04[a]	20	---	---	---	---	<0.5	---	---	---	602
	Duplicate 50	5.5	(u)	---	---	---	---	---	---	---	---	<0.04[a]	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	**39**	---	---	---	---	---	---	---	---	---	---	---	---	---	487
		11.5	(u)	---	---	---	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	61
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	57
		16.5-17	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	97
B-36	06/13/00	0-0.5	(u)	**2**	12	170	<4	**31**	**47**	6	**126**	<0.04	**160**	235	**1.7**	**26**	<0.8	**5**	**2**	6	19	2490
		2-2.5	(u)	**1**	---	---	---	**11**	7	---	**162**	---	**74**	---	**0.3**	6	---	**1**	<1	---	---	1370
		5.5	(u)	<0.8	---	---	---	<1	---	---	6	---	7	---	<0.05	---	---	<0.5	---	---	---	53
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	407
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	132
		12.5-13	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	86
B-37	06/13/00	0-0.5	(u)	**11**	**44**	310	4	**155**	**61**	**16**	**393**	<0.04	**985**	**640**	**7.2**	**42**	**6**	**14**	<1	**27**	17	18660
	(SPLP)	*0-0.5*	*(u)*	*<0.1*	*<0.1*	*0.13*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	---	*<0.1*	*<0.1*	---	*<0.1*	*<0.1*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*1.3*
		2-2.5	(u)	**1**	6	---	---	**13**	**18**	6	**35**	---	52	330	---	11	<0.8	**1**	---	<5	---	1700

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		5.5	(u)	<0.8	---	---	---	1	10	---	8	---	---	---	<0.05	---	---	<0.5	---	---	---	137
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	45
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	53
		13-14	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
B-38	06/13/00	0-0.5	(u)	**8**	**43**	222	<4	**100**	**53**	**12**	**405**	<0.04	**1020**	**939**	**0.35**	**32**	**1**	**9**	<1	**19**	24	13540
	Duplicate 5	0-0.5	(u)	**20**	**77**	294	**9**	**369**	**38**	**20**	**887**	<0.04	**2170**	**1000**	**0.92**	**38**	**1**	**23**	<1	**46**	11	34130
		2-2.5	(u)	<0.8	<5	---	<4	<1	10	<5	12	---	15	233	---	9	<0.8	<0.5	---	<5	---	57
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---	1210
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	487
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	45
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16
		17.5-18	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16
B-39	06/13/00	0-0.5	(u)	**3**	6	233	<4	3	**24**	7	28	<0.04	60	**371**	**1.1**	16	<0.8	**2**	1	**9**	28	1700
		2-2.5	(u)	<0.8	---	---	---	---	9	---	---	---	---	248	<0.05	---	---	<0.5	---	<5	---	172
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	25
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	25
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	28
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8
		16-16.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	114
B-40	06/13/00	0-0.5	(u)	**96**	**140**	546	**5**	**53**	**40**	**21**	**1050**	<0.04	**2420**	**3786**	**0.26**	**178**	<0.8	**11**	<1	**253**	27	29800
	Duplicate 6	0-0.5	(u)	**7**	13	261	<4	**14**	**22**	7	**132**	<0.04	**274**	309	<0.05	**39**	<0.8	**4**	**8**	**22**	23	3195
		2-2.5	(u)	**2**	**11**	---	<4	**8**	**17**	**10**	**508**	---	**267**	355	<0.05	**69**	---	**1**	**2**	**21**	---	867
		5.5	(u)	**2**	12	---	---	**5**	13	7	**164**	---	**196**	---	---	**40**	---	**1**	**2**	**17**	---	788
		8.5	(u)	**1**	---	---	---	1	---	---	**54**	---	**70**	---	---	13	---	<0.5	1	**9**	---	395
		11.5	(u)	<0.8	---	---	---	---	---	---	9	---	11	---	---	---	---	---	---	<5	---	93
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9559
		17-17.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	944
B-240	3/1/05	0-0.5	(u)	---	---	---	---	---	---	---	---	---	**8030**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	23	---	---	---	---	---	---	---	---	---
B-241	3/1/05	0-0.5	(u)	---	**32**	---	---	---	---	---	---	---	**2140**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	**114**	---	---	---	---	---	---	---	---	---
B-242	3/1/05	0-0.5	(u)	---	**64**	---	---	---	---	---	---	---	**2350**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	24	---	---	---	---	---	---	---	---	---
B-243	3/1/05	0-0.5	(u)	---	---	---	---	---	---	---	---	---	**587**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-244	3/1/05	0-0.5	(u)	---	---	---	---	---	---	---	---	---	**2650**	---	---	---	---	---	---	---	---	---
		1-1.5	(u)	---	---	---	---	---	---	---	---	---	14	---	---	---	---	---	---	---	---	---
B-245	3/1/05	0-0.5	(u)	---	---	---	---	---	---	---	---	---	**4880**	---	---	---	---	---	---	---	---	---
Former Sludge Drying Beds																						
B-46	06/22/00	0-0.5	(u)	**3**	<5	165	<4	9	12	<5	10	<0.04	12	258	**0.13**	9	<0.8	<0.5	<1	<5	17	551
	Duplicate 25	0-0.5	(u)	**3**	<5	164	<4	**23**	9	<5	11	<0.04	14	272	<0.05	8	<0.8	<0.5	**2**	<5	14	915
		2-2.5	(u)	<0.8	---	---	---	**7**	---	---	---	---	---	---	<0.05	---	---	---	1	---	---	55
		5.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	37
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	38
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	26
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	26
		16-16.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	18
B-47	06/22/00	0-0.5	(u)	**4**	6	168	<4	**12**	**19**	8	26	<0.04	53	321	<0.05	12	<0.8	<0.5	<1	7	16	1650
		2-2.5	(u)	<0.8	---	---	---	<1	**15**	---	---	---	---	---	---	---	---	---	---	---	---	41
		5.5	(u)	---	---	---	---	---	10	---	---	---	---	---	---	---	---	---	---	---	---	35
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	35
		11.5-12	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	27
B-48	06/23/00	0-0.5	(u)	**3**	<5	561	<4	**27**	**25**	6	16	<0.04	20	**361**	<0.05	14	<0.8	**1**	<1	<5	34	1560
		2-2.5	(u)	**3**	---	---	---	<1	14	---	---	---	---	295	---	---	---	<0.5	---	---	---	88
		5.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	50
		8.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	38
		11.5-12	(s)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	25
Reactor Clarifier																						
B-41	06/19/00	0-0.5	(u)	**7**	**23**	245	<4	**72**	**75**	**9**	**138**	<0.04	**425**	**504**	**1.4**	**32**	**1**	**6**	<1	**26**	18	8,745
	Duplicate 17	0-0.5	(u)	**11**	**36**	245	<4	**120**	**73**	**11**	**208**	<0.04	**492**	**576**	**0.22**	**29**	<0.8	**6**	<1	**35**	30	10,610
		2-2.5	(u)	**1**	<5	---	---	2	**18**	<5	6	---	12	190	<0.05	10	<0.8	<0.5	---	<5	---	185
		5.5	(u)	**1**	---	---	---	---	**29**	---	---	---	---	---	---	---	---	---	---	---	---	204
		8.5	(u)	**2**	---	---	---	---	**24**	---	---	---	---	---	---	---	---	---	---	---	---	1760
		11.5	(u)	**2**	---	---	---	---	35	---	---	---	---	---	---	---	---	---	---	---	---	531
		14.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	829
		15.5-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	745
B-42	06/19/00	0-0.5	(u)	**38**	**129**	341	<4	**93**	**40**	**11**	**433**	0.07	**1,730**	**933**	**1.9**	21	**2**	**13**	<1	**156**	15	15,580
	Duplicate 15	0-0.5	(u)	**40**	**61**	149	<4	**89**	**19**	<5	**181**	0.06	**921**	**637**	**2.7**	12	<0.8	**12**	<1	**81**	11	9,184
		2-2.5	(u)	**1**	6	---	---	<1	**16**	5	10	---	11	**362**	<0.05	---	<0.8	<0.5	---	<5	---	66
		5.5	(u)	**1**	---	---	---	---	**16**	---	---	---	---	302	---	---	---	---	---	---	---	52
		8.5	(u)	**2**	---	---	---	---	**16**	---	---	---	---	---	---	---	---	---	---	---	---	106

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		11.5	(u)	**2**	---	---	---	---	7	---	---	---	---	---	---	---	---	---	---	---	---	21
		14.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10
		15.5-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	14
B-43	06/19/00	0-0.5	(u)	<0.8	<5	449	<4	6	**16**	7	**80**	<0.04	97	155	**0.15**	**27**	**1**	**2**	**2**	5	19	354
	Duplicate 16	0-0.5	(u)	<0.8	<5	444	<4	5	**23**	5	**54**	<0.04	32	203	**<0.05**	14	**<0.8**	**1**	**2**	<5	24	320
		2-2.5	(u)	---	---	---	---	---	**44**	---	**66**	---	---	---	**0.09**	17	**1**	**1**	**2**	---	---	2260
		5.5	(u)	---	---	---	---	---	14	---	7	---	---	---	<0.05	---	<0.8	<0.5	1	---	---	78
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	28
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	21
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16
		17-17.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	15
B-44	06/15/00	0-0.5	(u)	**5**	**28**	369	<4	**99**	**60**	**60**	**287**	0.16	**431**	**917**	**2.1**	**35**	**5**	**4**	**3**	**36**	20	7725
		2-2.5	(u)	**3**	**10**	---	---	**17**	**20**	7	**55**	---	**95**	256	**0.3**	10	**2**	**1**	1	**12**	---	1810
		5.5	(u)	**3**	9	---	---	**8**	14	---	**39**	---	**77**	---	**0.19**	---	<0.8	**1**	---	**12**	---	2280
		8.5	(u)	**2**	---	---	---	2	---	---	**18**	---	21	---	<0.05	---	---	<0.5	---	<5	---	433
		11.5	(u)	**1**	---	---	---	---	---	---	<5	---	---	---	---	---	---	---	---	---	---	32
		14.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	18
		15-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	22
B-45	06/15/00	0-0.5	(u)	<0.8	**22**	185	<4	**31**	**204**	**36**	**269**	**0.59**	59	193	**0.3**	**74**	**5**	<0.5	**8**	**8**	27	1588
		2-2.5	(u)	---	8	---	---	**36**	**19**	**11**	**37**	<0.04	---	---	**0.11**	**35**	<0.8	---	**8**	<5	---	965
		5.5	(u)	---	---	---	---	<1	12	<5	**56**	---	---	---	**1.8**	8	---	---	**4**	---	---	197
		8.5	(u)	---	---	---	---	---	---	---	**50**	---	---	---	**0.17**	---	---	---	**3**	---	---	434
		11.5	(u)	---	---	---	---	---	---	---	<5	---	---	---	<0.05	---	---	---	1	---	---	186
		13-14	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	228
Facility No. 1 Exterior (RFI) Soil Borings																						
B-67	06/15/00	0-0.5	(u)	<0.8	<5	161	**12**	**326**	**17**	8	**407**	<0.04	56	**1297**	**0.1**	16	<0.8	**2**	<1	**12**	18	52100
		2-2.5	(u)	---	---	---	<4	<1	---	---	8	----	---	349	<0.05[a]	---	---	<0.5	---	<5	---	103
		5.5	(u)	---	---	---	---	---	---	---	---	----	---	---	<0.05[a]	---	---	---	---	---	---	180
		8.5	(u)	---	---	---	---	---	---	---	---	----	---	---	---	---	---	---	---	---	---	138
		11.5-12.5	(s)	---	---	---	---	---	---	---	---	----	---	---	---	---	---	---	---	---	---	73
B-68	06/27/00	0-0.5	(u)	**2**	<5	134	<4	**129**	13	**11**	25	<0.04	9	**1528**	<0.05	20	<0.8	<0.5	<1	<5	18	40160
		2-2.5	(u)	**4**	---	---	---	**302**	---	**10**	---	---	---	**1560**	---	---	---	---	---	---	---	14400
		5.5	(u)	**3**	---	---	---	2	---	7	---	---	---	445	---	---	---	---	---	---	---	247
		8.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	71
		11.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	71
		14.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	35
		15.7-16	(s)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-69	06/15/00	0-0.5	(u)	<0.8	<5	132	**6**	**512**	**67**	**68**	**295**	<0.04	14	**746**	<0.05	**149**	**3**	<0.5	<1	6	15	25520
		2-2.5	(u)	---	---	---	<4	**27**	11	7	**51**	---	---	**872**	---	11	<0.8	---	---	---	---	29520
		5.5	(u)	---	---	---	---	**54**	---	---	16	---	---	**2200**	---	---	---	---	---	---	---	74080
		8.5	(u)	---	---	---	---	2	---	---	---	---	---	269	---	---	---	---	---	---	---	779
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	273
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2340
		15.6-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	26790
B-70	06/19/00	0-0.5	(u)	<0.8	<5	131	<4	**875**	**16**	8	13	0.11	10	**545**	<0.05	11	<0.8	<0.5	**5**	<5	17	6,289
(Facility No. 1)		2-2.5	(u)	---	---	---	---	**13**	**16**	---	---	---	---	311	---	---	---	---	**2**	---	---	296
		5.5	(u)	---	---	---	---	**16**	**15**	---	---	---	---	---	---	---	---	---	**2**	---	---	342
		8.5	(u)	---	---	---	---	4	11	---	---	---	---	---	---	---	---	---	**7**	---	---	101
		11.5-12	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3**	---	---	20
B-182	11/06/01	0-0.5	(u)	---	---	---	4.7	<1.0	14	---	9.9	---	---	309	<0.05	---	---	<0.5	---	<5	---	---
(Facility NO. 1)		2-2.5	(u)	---	---	---	---	---	**17**	---	---	---	---	---	---	---	---	---	---	---	---	---
(Step out from B-67)																						
B-183	11/06/01	0-0.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Facility NO. 1)		2-2.5	(u)	---	---	---	---	---	**16**	---	---	---	---	---	---	---	---	---	---	---	---	---
(Step out from B-182)																						
Facility No. 1 Interior (RCRA Final Facility Closure) Soil Borings below Cracks in Concrete Floor[e]																						
Facility 1, Crack 1																						
	8/31/04	0-0.5	(u)	<1	**17**	37	<4.3	**74**	7	7	10	<1	9.6	**2,300**	<0.2	7	<1	<0.5	<1	<2	10	34,800
		2-2.5	(u)	---	8	---	---	**404**	---	---	---	---	---	<1	---	---	---	---	---	---	---	<1
Facility 1, Crack 2																						
	8/31/04	0-0.5	(u)	<1	**18**	109	<2.8	**72**	5	3	**73**	<1	86.8	**1,630**	**0.8**	5	**6**	<0.5	<1	<2	13	27,300
		2-2.5	(u)	---	8	---	---	**96**	---	---	4	---	---	<1	<0.2	---	<1	---	---	---	---	<1
Facility 1, Crack 3																						
	8/31/04	0-0.5	(u)	<1	**17**	123	<3.8	**147**	6	4	37	<1	18.8	**690**	<0.2	8	<1	<0.5	<1	<2	13	25,300
		2-2.5	(u)	---	7	---	---	**210**	---	---	---	---	---	<1	---	---	---	---	---	---	---	<1

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Facility No. 2 Exterior (RFI) Soil Borings																						
B-85	06/22/00	0-0.5	(u)	**3**	**13**	232	<4	**62**	**15**	**7**	**74**	0.22	**178**	**584**	**0.13**	**15**	<0.8	**1**	<1	**6**	19	3925
	Duplicate 23	0-0.5	(u)	**7**	**36**	430	<4	**185**	**35**	**13**	**237**	<0.04	**375**	**1170**	**0.14**	**40**	**1**	**4**	1	**11**	22	10940
		2-2.5	(u)	**1**	<5	---	---	2	11	5	9	<0.04	23	327	<0.05[a]	10	<0.8	<0.5	---	<5	---	149
		5.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	<0.05[a]	---	---	---	---	---	---	2480
	Duplicate 51	5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	<0.05[a]	---	---	---	---	---	---	---
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	745
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1040
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	31
		17.5-18	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	24
B-86	06/28/00	0-0.5	(u)	**1**	6	222	<4	10	11	**10**	27	<0.04	27	276	0.051	8	<0.8	<0.5	**2**	<5	21	658
		2-2.5	(u)	**2**	---	---	---	---	---	7	---	---	---	---	---	---	---	---	<1	---	---	132
		5.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	49
		8.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	42
		11.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
		14.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30
		16-16.5	(s)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	24
B-87	06/22/00	0-0.5	(u)	**2**	<5	84	<4	**345**	**19**	**13**	17	0.17	22	**1210**	<0.05	12	<0.8	**2**	<1	<5	12	30480
		2-2.5	(u)	**1**	---	---	---	**39**	12	6	---	---	---	**805**	---	---	---	**1**	---	---	---	3500
		5.5	(u)	<0.8	---	---	---	1	---	---	---	---	---	312	---	---	---	<0.5	---	---	---	134
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	93
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	27
		16-16.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	29
B-88	06/28/00	0-0.5	(u)	<0.8	10	488	<4	**1255**	**102**	**31**	**178**	<0.04	30	**357**	<0.05	**51**	<0.8	<0.5	<1	<5	13	2440
	Duplicate 34	0-0.5	(u)	<0.8	10	221	<4	**2440**	**59**	**43**	**188**	0.15	26	**529**	<0.05	**36**	<0.8	<0.5	<1	<5	12	5292
		2-2.5	(u)	---	---	---	---	**12**	**17**	8	**20**	---	---	**502**	---	12.8	---	---	---	---	---	93
		5.5	(u)	---	---	---	---	**10**	13	---	13	---	---	346	---	---	---	---	---	---	---	74
		8.5	(u)	---	---	---	---	**11**	---	---	---	---	---	---	---	---	---	---	---	---	---	183
		11.5	(u)	---	---	---	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	75
		17-17.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	28
Facility No. 2 Interior (RCRA Final Facility Closure) Soil Borings below Cracks in Concrete Floor[f]																						
Facility 2, Crack 1																						
	9/16/04	0-0.5	(u)	<1	8	22	<2.5	**264**	3	4	**44**	<1	**148**	155	<0.2	20	<1	<0.5	<1	<2	2	2,130
		2-2.5	(u)	---	---	---	---	**612**	---	---	8	---	14	---	---	---	---	---	---	---	---	29800

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Facility 2, Crack 2																						
	9/16/04	0-0.5	(u)	<1	3	11	<3.6	**69**	2	4	13	<1	7	138	<0.2	9	<1	<0.5	<1	<2	5	1,910
		2-2.5	(u)	---	---	---	---	**983**	---	---	---	---	---	---	---	---	---	---	---	---	---	28200
Facility 2, Crack 3																						
	9/16/04	0-0.5	(u)	<1	7	137	<3.6	**312**	3	**23**	3	<1	5	<1	<0.2	15	<1	<0.5	<1	<2	8	<1
		2-2.5	(u)	---	---	---	---	**544**	---	**11**	---	---	---	---	---	---	---	---	---	---	---	---
Facility 2, Crack 4																						
	9/16/04	0-0.5	(u)	<1	8	222	<3.5	**784**	5	**26**	**152**	<1	**161**	<1	<0.2	**27**	<1	<0.5	<1	<2	10	<1
	SPLP	0-0.5	(u)	---	---	---	---	*(1.56)*	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	3	---	3	5	---	6	---	---	6	---	---	---	---	---	---
Facility 2, Crack 5																						
	9/16/04	0-0.5	(u)	<1	4	50	<3.7	**27**	2	1	8	<1	12	96	<0.2	2	<1	<0.5	<1	<2	9	1,780
		2-2.5	(u)	---	---	---	---	**332**	---	---	---	---	---	---	---	---	---	---	---	---	---	55800
Facility 2, Crack 6																						
	9/29/04	0-0.5	(u)	<1	6	33	<4	**112**	8	2	**45**	<1	18	128	<0.2	**55**	<1	<0.5	<1	<2	8	13,100
	DUP	0-0.5	(u)	<1	9	141	<3.5	**378**	4	6	**144**	<1	17	<1	<0.2	23	<1	<0.5	<1	<2	14	65,000
	9/29/04	2-2.5	(u)	---	---	---	---	**279**	---	---	**187**	---	---	---	---	**39**	---	---	---	---	---	39,200
	DUP	2-2.5	(u)	---	---	---	---	**312**	---	---	**108**	---	---	---	---	---	---	---	---	---	---	50,500
Facility 2, Crack 7																						
	9/16/04	0-0.5	(u)	<1	2	222	<3.9	3	3	2	5	<1	9	153	<0.2	4	<1	<0.5	<1	<2	9	94
Facility 2, Crack 8																						
	9/16/04	0-0.5	(u)	<1	8	27	<3.4	**295**	2	5	6	<1	5	<1	<0.2	3	<1	<0.5	<1	<2	7	<1
		2-2.5	(u)	---	---	---	---	**225**	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Facility 2, Crack 9																						
	9/16/04	0-0.5	(u)	<1	2	83	<3.8	9	2	2	9	<1	14	149	<0.2	3	<1	<0.5	<1	<2	8	801
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1830
Facility 2,Crack 10																						
	9/7/04	0-0.5	(u)	<1	6	114	<4.4	**72**	6	3	16	<1	15	247	**0.1**	5	<1	<0.5	**2**	<2	11	2,490
		2-2.5	(u)	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	<1	---	---	40
Facility 2,Crack 11																						
	9/7/04	0-0.5	(u)	<1	16	65	<4.4	**682**	5	5	**160**	<1	5	**572**	<0.2	5	<1	<0.5	<1	<2	11	11,000

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Facility 2,Crack 12		2-2.5	(u)	---	---	---	---	1	---	---	8	---	---	255	---	---	---	---	---	---	---	3
	9/7/04	0-0.5	(u)	<1	3	98	<3.6	7	4	2	**54**	<1	30	122	**0.2**	4	<1	<0.5	**2**	<2	9	499
		2-2.5	(u)	---	---	---	---	---	---	---	3	---	---	---	---	---	---	---	<1	---	---	3
Facility 2,Crack 13																						
	9/7/04	0-0.5	(u)	<1	14	47	<3.8	**314**	8	**17**	**92**	<1	31	**1,080**	0.06	**35**	<1	<0.5	<1	<2	8	9,320
		2-2.5	(u)	---	---	---	---	**408**	---	3	**21**	---	---	<1	---	6	---	---	---	---	---	44300
Facility 2,Crack 14																						
	9/7/04	0-0.5	(u)	<1	14	42	<4.3	**533**	3	9	31	<1	2	**531**	0.02	9	<1	<0.5	**2**	<2	8	9,180
		2-2.5	(u)	---	---	---	---	**360**	---	---	---	---	---	<1	---	---	---	---	<1	---	---	3
Facility 2,Crack 15																						
	9/7/04	0-0.5	(u)	<1	15	53	<4	**574**	**19**	7	**63**	<1	12	**449**	0.05	**26**	<1	<0.5	1	<2	10	8,810
		2-2.5	(u)	---	---	---	---	**250**	6	---	6	---	---	280	---	20	---	---	---	---	---	4
Facility 2 Sump																						
	9/29/04	0-0.5	(u)	<1	14	57	<4.5	**449**	8	3	**282**	<1	37	325	<0.2	**53**	<1	<0.5	<1	<2	8	40,600
		2-2.5	(u)	---	---	---	---	**255**	---	---	**83**	---	---	---	---	**62**	---	---	---	---	---	20,100
Facility No. 3 Exterior (RFI) Soil Borings																						
B-92	06/29/00	0-0.5	(u)	**1**	<5	162	<4	5	**25**	**63**	17	<0.04	17	**340**	**0.2**	22	<0.8	**1**	**2**	<5	23	290
		2-2.5	(u)	**2**	---	---	---	---	**16**	6	---	---	---	**394**	<0.05	---	---	<0.5	<1	---	---	108
		5.5	(u)	**2**	---	---	---	---	11	---	---	---	---	322	---	---	---	---	---	---	---	38
		8.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	38
		11.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	54
		14-14.5	(s)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	28
B-93	06/27/00	0-0.5	(u)	<0.8	6	154	<4	**105**	**23**	9	**78**	<0.04	**168**	**343**	**10**	22	**18**	**3**	**2**	5	16	1430
		2-2.5	(u)	---	---	---	---	1	14	---	13	---	10	344	**0.6**	---	<0.8	<0.5	<1	---	---	242
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---	85
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	49
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	56
		15.5-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	26
B-94	06/27/00	0-0.5	(u)	**1**	6	86	<4	**53**	**24**	6	**69**	<0.04	**192**	147	**0.4**	12	**1**	**4**	1	<5	10	3712
		2-2.5	(u)	**4**	---	---	---	**12**	12	---	**25**	---	28	---	0.055	---	<0.8	<0.5	---	---	---	789
		5.5	(u)	**4**	---	---	---	<1	---	---	11	---	---	---	---	---	---	---	---	---	---	55
		8.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	48
		11.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		11.7-12.5	(s)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	166

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-95	06/23/00	0-0.5	(u)	**4**	<5	88	<4	**22**	12	8	30	0.06	61	310	0.07	25	<0.8	**1**	**1**	<5	9	722
		2-2.5	(u)	**2**	---	---	---	<1	---	---	---	---	---	---	---	---	---	<0.5	<1	---	---	58
		5.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	49
		8.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		11.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		14.3-15	(s)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
B-186	11/06/01	0-0.5	(u)	<0.8	---	---	---	1.7	<5	---	14	---	7.6	---	<0.05	---	<0.8	<0.5	---	---	---	---
(Step out from B-94)		2-2.5	(u)	<0.8	---	---	---	<1	---	---	14	---	---	---	---	---	---	---	---	---	---	---
		5.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.7-12.5	(s)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-187	11/06/01	0-0.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Step out from B-186)		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.7-12.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Facility No. 3 Interior (RCRA Final Facility Closure) Soil Borings below Cracks in Concrete Floor[9]																						
Facility 3, Crack 1																						
	1/21/04	0-0.5	(u)	<0.48	5	24	<5	**334**	4	4	6	<1	7	188	**1.1**	**2,060**	<1	<0.5	**2.6**	<2	10	4,060
	(SPLP)	0-0.5	(u)	---	---	---	---	*(0.02)*	---	---	---	---	---	---	---	*(0.62)*	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	**23.8**	---	---	---	---	---	---	<0.1	**230**	---	---	<0.4	---	---	1,400
Facility 3, Crack 2																						
	1/21/04	0-0.5	(u)	<0.47	<1	27	<5	**72**	5	3	4	<1	4	123	<0.1	**2,340**	<1	<0.5	**1.3**	<2	11	338
	(SPLP)	0-0.5	(u)	---	---	---	---	*(0.03)*	---	---	---	---	---	---	---	*(0.93)*	---	---	---	---	---	---
		1.5-2*	(u)	---	---	---	---	**28.4**	---	---	---	---	---	---	---	**2,220**	---	---	<0.36	---	---	---
Facility 3, Crack 3																						
	1/21/04	0-0.5	(u)	**3.0**	11	104	<5	**1,030**	5	6	7	<1	4	257	<0.1	**3,050**	<1	<0.5	**1.3**	<2	14	7,590
	(SPLP)	0-0.5	(u)	---	---	---	---	***(0.77)***	---	---	---	---	---	---	---	*(36.9)*	---	---	---	---	---	---
		2-2.5	(u)	0.62	---	---	---	**78.2**	---	---	---	---	---	---	---	**1,500**	---	---	0.39	---	---	2,770

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
West Cell House																						
B-71	06/14/00	0-0.5	(u)	<0.8	<5	65	<4	3	**28**	**20**	**178**	<0.04	31	**2356**	<0.05	17	<0.8	**1**	**3**	<5	13	983
		2-2.5	(u)	---	---	---	---	---	11	5	**20**	---	---	284	---	---	---	<0.5	<1	---	---	130
		5.5	(u)	---	---	---	---	---	---	---	11	---	---	---	---	---	---	---	---	---	---	118
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	34
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	24
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	20
		17.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	48
		20.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		22.5-23	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	24
B-72	06/14/00	0-0.5	(u)	**2**	<5	66	<4	3	11	<5	**74**	<0.04	42	**1484**	<0.05	6	<0.8	<0.5	<1	<5	13	19120
		2-2.5	(u)	<0.8	---	---	---	---	---	---	10	---	---	93	---	---	---	---	---	---	---	836
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	616
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	676
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	56
		17-17.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	42
B-73	07/11/00	0-0.5	(u)	**0.9**	<5	80	<4	2	12	**13**	8	<0.04	15	201	<0.05	11	<0.8	<0.5	<1	**9**	15	251
		2-2.5	(u)	<0.8	---	---	---	---	---	7	---	---	---	---	---	---	---	---	---	<5	---	220
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		17.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		20.5-21	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-74	06/14/00	0-0.5	(u)	<0.8	<5	79	<4	<1	**22**	6	10	<0.04	13	204	<0.05	16	<0.8	<0.5	**2**	<5	17	399
		2-2.5	(u)	---	---	---	---	---	8	---	---	---	---	---	---	---	---	---	**2**	---	---	318
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3**	---	---	53
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2**	---	---	41
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3**	---	---	31
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**3**	---	---	45
		17.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2**	---	---	42
		20.5-21	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2**	---	---	41
NOR 43 Building																						
B-75	06/26/00	0-0.5	(u)	**3**	<5	56	<4	2	10	<5	6	<0.04	6	159	<0.05	6	<0.8	<0.5	**2**	<5	16	83
		2-2.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	58
		5.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	48
		8.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	49

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		11.5	(u)	**5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	58
		14.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	62
		17.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	54
		20.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	41
		23.5	(u)	**5**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	57
		26-26.5	(s)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	63
B-76	06/26/00	0-0.5	(u)	**4**	<5	215	<4	**23**	**32**	6	30	<0.04	27	**466**	0.09	18	<0.8	<0.5	<1	<5	21	1040
		2-2.5	(u)	**2**	---	---	---	<1	**16**	---	---	---	---	**491**	<0.05	---	---	---	---	---	---	60
		5.5	(u)	**3**	---	---	---	---	13	---	---	---	---	370	---	---	---	---	---	---	---	47
		8.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	52
		11.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	61
		14.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	63
		17.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	51
		20.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	62
		23.4-24	(s)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	14
B-77	06/27/00	0-0.5	(u)	<0.8	<5	67	<4	<1	9	<5	6	<0.04	16	171	<0.05	6	<0.8	<0.5	**3**	<5	13	121
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	45
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	43
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	48
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	62
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	57
		17.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	55
		19.7-20	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	15
B-78	06/27/00	0-0.5	(u)	<0.8	<5	122	<4	<1	13	6	7	<0.04	19	198	<0.05	8	<0.8	<0.5	**2**	<5	14	155
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	43
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	46
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	39
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	40
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	65
		17.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		19.5-20	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	36
Product Storage Building C (Lettered Bins) Exterior (RFI) Soil Borings																						
B-33	06/26/00	0-0.5	(u)	**2**	6	**228**	<4	**166**	**19**	**22**	10	<0.04	22	**1440**	<0.05	16	<0.8	**1**	<1	<5	**25**	18820
	Duplicate 29	0-0.5	(u)	**6**	**19**	**441**	**7**	**263**	**15**	**14**	**77**	<0.04	**201**	**1934**	<0.05	13	<0.8	**3**	<1	<5	**18**	47720
		2-2.5	(u)	**3**	<5	**755**	<4	2	11	<5	7	---	9	**531**	---	---	---	<0.5	---	---	29	304
	Duplicate 30	2-2.5	(u)	<0.8	<5	701	<4	3	12	6	7	<0.04	9	**573**	<0.05	9	<0.8	<0.5	<1	<5	31	581
(Building C)		5.5	(u)	**3**	---	304	---	---	---	---	---	---	---	400	---	---	---	---	---	---	---	389
		8.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	28

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		11.5	(u)	**4**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	47
		13-14	(s)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	20
B-34	06/26/00	0-0.5	(u)	**3**	<5	**249**	<4	**426**	**77**	**28**	**490**	<0.04	16	**1490**	**0.13**	**40**	<0.8	**2**	<1	<5	13	16750
(Building C)		2-2.5	(u)	**2**	---	292	---	**53**	14	6	**66**	---	---	**392**	---	10	---	<0.5	---	---	---	1690
		5.5	(u)	**3**	---	---	---	**8**	---	---	**25**	---	---	481	<0.05	---	---	---	---	---	---	404
		8.5	(u)	**2**	---	---	---	3	---	---	8	---	---	---	---	---	---	---	---	---	---	99
		11.5	(u)	**3**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	70
		14-14.5	(s)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	33
B-194	11/08/01	0-0.5	(u)	<0.8	<5	513	4.7	3.8	14	**13**	12	---	8.6	208	---	---	---	<0.5	---	---	32	---
(Step out from B-33)		2-2.5	(u)	<0.8	---	321	---	---	---	---	---	---	---	272	---	---	---	---	---	---	---	---
		5.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		13-14	(s)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-195	11/07/01	0-0.5	(u)	---	---	---	---	---	---	**26**	---	---	---	---	---	---	---	---	---	---	---	---
Duplicate B-195		0-0.5	(u)	---	---	---	---	---	---	**22**	---	---	---	---	---	---	---	---	---	---	---	---
(Step out from B-194)		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		13-14	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Product Storage Building C (Lettered Bins) Interior (RCRA Final Facility Closure) Soil Borings below Cracks in Concrete Floor[h]																						
Bin A, Crack 1																						
	9/3/04	0-0.5	(u)	<1	4	283	<3	**881**	6	6	5	<1	5	245	<0.2	**3,790**	<1	<0.5	**52**	<2	20	1,620
		2-2.5	(u)	---	---	---	---	**26**	---	---	---	---	---	---	---	**109**	---	---	<1	---	---	300
Bin A, Crack 2																						
	9/3/04	0-0.5	(u)	<1	16	136	<3.4	**523**	6	**15**	**5,480**	<1	**219**	<1	**0.4**	**3,170**	**2**	**3.6**	**40**	<2	13	52,300
		2-2.5	(u)	---	---	---	---	3	---	3	**51**	---	12	---	---	**36**	<1	<0.5	<1	---	---	83
Bin A, Crack 3																						
	9/3/04	0-0.5	(u)	<1	5	132	<3.1	**2,140**	6	7	**70**	<1	8	275	<0.2	**4,210**	<1	<0.5	**15**	<2	21	2,900
		2-2.5	(u)	---	---	---	---	2	---	---	5	---	---	---	---	**209**	---	---	<1	---	---	41
Bin A, Crack 4																						
	9/3/04	0-0.5	(u)	<1	6	299	<3.4	**2,970**	7	5	6	<1	5	231	<0.2	**2,870**	<1	<0.5	**4**	<2	27	2,060
	SPLP	0-0.5	(u)	---	---	---	---	***(9.4)***	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	**11**	---	---	---	---	---	---	---	**214**	---	---	<1	---	---	62
Bin B, Crack 1																						
	9/3/04	0-0.5	(u)	<1	7	300	<3.8	**78**	8	4	4	<1	6	**441**	<0.2	7	<1	<0.5	**39**	<2	26	3,270
		2-2.5	(u)	---	---	---	---	<1	---	---	---	---	---	201	---	---	---	---	<1	---	---	18

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Bin B, Crack 2																						
	9/3/04	0-0.5	(u)	<1	4	338	<4	2	8	4	39	<1	18	185	<0.2	11	<1	<0.5	**2**	<2	21	78
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	---
Bin B, Crack 3																						
	9/3/04	0-0.5	(u)	<1	11	214	<4.2	**206**	7	7	**112**	<1	7	**674**	<0.2	11	**2**	**1.3**	**58**	<2	29	4,960
		2-2.5	(u)	---	---	---	---	<1	---	---	4	---	---	195	---	---	<1	<0.5	<1	---	---	16
Bin B, Crack 4																						
	9/3/04	0-0.5	(u)	<1	3	361	<3.4	1	7	4	4	<1	6	208	<0.2	7	<1	<0.5	**4**	<2	21	64
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	15
Bin B, Crack 5																						
	9/3/04	0-0.5	(u)	<1	3	400	<3.4	**59**	8	4	5	<1	6	**363**	<0.2	**474**	<1	<0.5	**4**	<2	20	503
		2-2.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	4	---	---	<1	---	---	---
Bin B, Crack 6																						
	9/3/04	0-0.5	(u)	<1	2	342	<3.2	2	7	4	6	<1	6	216	<0.2	10	<1	<0.5	1	<2	17	117
	Duplicate	0-0.5	(u)	<1	2	205	---	2	8	4	6	<1	6	210	<0.2	11	**1**	<0.5	**2**	<2	19	<1
	9/3/04	2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	<1	---	---	---
Bin C, Crack 1																						
	9/3/04	0-0.5	(u)	<1	3	181	<4	**72**	6	2	6	<1	6	95	<0.2	6	<1	<0.5	**4**	<2	17	140
		2-2.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	---	---	---	<1	---	---	---
Bin C, Crack 2																						
	9/3/04	0-0.5	(u)	<1	4	335	<4.8	<1	7	4	4	<1	6	198	<0.2	6	<1	<0.5	1	<2	20	35
Bin C, Crack 3																						
	9/2/04	0-0.5	(u)	<1	11	293	<3.9	**1,850**	8	**17**	**534**	<1	64.3	**1,070**	<0.2	**126**	**3**	**7.5**	**68**	<2	20	6,710
		2-2.5	(u)	---	---	---	---	**788**	---	6	**199**	---	---	<1	---	**72**	**2**	**1.1**	**34**	---	---	7,140
Bin C, Crack 4																						
	9/2/04	0-0.5	(u)	<1	**44**	187	<3.3	**1,230**	14	**14**	**379**	<1	**780**	**1,810**	**0.2**	**98**	<1	**8.3**	**2**	2	17	8,390
		2-2.5	(u)	---	4	---	---	**31**	---	4	13	---	25	214	---	9	<1	<0.5	<1	---	---	413
Bin C, Crack 5																						
	9/2/04	0-0.5	(u)	<1	6	130	<3.8	**362**	8	8	25	<1	7.8	**1,070**	<0.2	**292**	<1	<0.5	<1	<2	17	3,450
		2-2.5	(u)	---	---	---	---	**16**	---	---	---	---	---	220	---	**80**	---	---	---	---	---	569
Bin C, Crack 6																						
	9/2/04	0-0.5	(u)	<1	4	290	<4.2	7	7	3	5	<1	5.7	122	**0.3**	11	<1	<0.5	**2**	<2	16	587
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	56
Bin C, Crack 7																						
	9/2/04	0-0.5	(u)	<1	3	244	<4.3	2	8	4	7	<1	6.1	175	**0.3**	8	<1	<0.5	**2**	<2	14	49
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	---
Bin D, Crack 1																						
	9/1/04	0-0.5	(u)	<1	**23**	279	<3.2	2	7	3	7	<1	20.4	161	<0.2	14	<1	<0.5	**9**	<2	19	46
		2-2.5	(u)	---	**16**	---	---	---	---	---	---	---	---	---	---	---	---	---	2	---	---	---
Bin D, Crack 2																						
	9/1/04	0-0.5	(u)	<1	**34**	314	<4.2	7	7	4	8	<1	53.3	172	<0.2	**63**	<1	<0.5	**7**	<2	18	154
		2-2.5	(u)	---	3	---	---	---	---	---	---	---	---	---	---	6	---	---	<1	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Bin D, Crack 3																						
	9/1/04	0-0.5	(u)	<1	10	85	<4.2	**797**	**35**	**11**	**71**	<1	**180**	322	<0.2	**2,140**	**1**	**2.6**	**32**	<2	14	5,140
		2-2.5	(u)	---	---	---	---	**8**	6	4	4	---	7	---	---	25	<1	<0.5	<1	---	---	4
Bin D, Crack 4																						
	9/1/04	0-0.5	(u)	<1	8	192	<4.2	**463**	**222**	**11**	**242**	<1	**157**	215	<0.2	**8,850**	**14**	**1.8**	**22**	<2	21	2,120
		2-2.5	(u)	---	---	---	---	1	13	4	3	---	8	---	---	7	<1	<0.5	<1	---	---	4
Bin E, Crack 1																						
	9/1/04	0-0.5	(u)	<1	6	174	<4.4	**419**	**20**	8	25	<1	7.3	157	<0.2	**531**	**2**	<0.5	**4**	<2	14	2,160
		2-2.5	(u)	---	---	---	---	1	5	---	---	---	---	---	---	6	<1	---	<1	---	---	4
Bin E, Crack 2																						
	9/1/04	0-0.5	(u)	<1	4	239	<4	**23**	6	4	6	<1	10.2	195	**0.3**	12	<1	<0.5	**2**	<2	19	145
		2-2.5	(u)	---	---	---	---	**215**	---	---	---	---	---	---	---	---	---	---	<1	---	---	---
Bin E, Crack 3																						
	9/1/04	0-0.5	(u)	<1	**20**	205	<3.2	**1,240**	**70**	7	**585**	<1	7	184	**0.4**	**100**	<1	<0.5	1	<2	14	1,520
		2-2.5	(u)	---	4	---	---	2	5	---	5	---	---	---	---	8	---	---	---	---	---	40
Bin E, Crack 4																						
	9/1/04	0-0.5	(u)	<1	**50**	45	<4.3	**114**	8	4	**154**	<1	6.4	130	**0.3**	**88**	<1	<0.5	1	<2	11	37
		2-2.5	(u)	---	4	---	---	2	---	---	3	---	---	---	---	8	---	---	---	---	---	---
Bin F, Crack 1																						
	9/15/04	0-0.5	(u)	<1	**245**	149	<3.2	**246**	6	**12**	**455**	<1	47	<1	<0.2	**255**	**1**	<0.5	<1	4	14	16,100
		2-2.5	(u)	---	3	---	---	<1	---	4	7	---	---	---	---	4	<1	<0.5	---	---	---	28
Bin F, Crack 2																						
	9/15/04	0-0.5	(u)	<1	**1450**	177	<4.2	**348**	4	**45**	**133**	<1	**151**	<1	<0.2	**94**	**1**	<0.5	<1	4	12	59,900
	SPLP	0-0.5	(u)	---	***(0.14)***	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	**31**	---	---	<1	---	2	4	---	6	---	---	3	<1	---	---	---	---	32
Bin F, Crack 3																						
	9/15/04	0-0.5	(u)	<1	**126**	171	<4	**19**	4	4	**135**	<1	8	**361**	<0.2	6	<1	<0.5	<1	<2	10	3,100
		2-2.5	(u)	---	2	---	---	<1	---	---	2	---	---	226	---	---	---	---	---	---	---	20
Bin G, Crack 1																						
	9/15/04	0-0.5	(u)	<1	4	254	<3.4	**111**	**48**	4	21	<1	5	161	<0.2	9	<1	<0.5	<1	<2	20	267
		2-2.5	(u)	---	---	---	---	5	7	---	---	---	---	---	---	---	---	---	---	---	---	---
Bin G, Crack 2																						
	9/15/04	0-0.5	(u)	<1	5	145	<3.8	**327**	**20**	**12**	**108**	<1	22	160	<0.2	13	<1	<0.5	<1	<2	13	1,410
		2-2.5	(u)	---	---	---	---	8	5	5	8	---	---	---	---	---	---	---	---	---	---	44
Bin G, Crack 3																						
	9/15/04	0-0.5	(u)	<1	**41**	166	<3.4	**1,980**	**143**	**12**	**646**	<1	**6,890**	223	<0.2	**112**	<1	<0.5	<1	**84**	8	4,650
	SPLP	0-0.5	(u)	---	---	---	---	***(15)***	---	---	---	---	***(16.3)***	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	11	---	---	5	3	3	**66**	---	22	---	---	4	---	---	---	<2	---	23
Bin G, Crack 4																						
	9/15/04	0-0.5	(u)	<1	3	155	<3.4	4	10	3	5	<1	5	222	<0.2	10	<1	<0.5	<1	<2	14	93
Bin GG, Crack 1																						
	9/15/04	0-0.5	(u)	<1	9	158	<4	**1,140**	6	**17**	31	<1	8	**356**	<0.2	**88**	<1	<0.5	**34**	<2	17	4,350
		2-2.5	(u)	---	---	---	---	4	---	3	---	---	---	163	---	4	---	---	<1	---	---	25

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Bin GG, Crack 2																						
	9/15/04	0-0.5	(u)	<1	2	154	<4.2	**565**	<1	**38**	**1,730**	<1	7	311	<0.2	**43**	<1	<0.5	<1	<2	6	1,590
		2-2.5	(u)	---	---	---	---	<1	---	3	4	---	---	---	---	3	---	---	---	---	---	17
Bin H, Crack 1																						
	9/15/04	0-0.5	(u)	<1	**86**	296	<4	**486**	6	**20**	**95**	<1	**131**	289	<0.2	**30**	<1	<0.5	**50**	4	13	4,000
		2-2.5	(u)	---	5	---	---	3	---	6	9	---	26	---	---	5	---	---	<1	---	---	89
Bin H, Crack 2																						
	9/15/04	0-0.5	(u)	<1	**204**	183	<3.8	**1,250**	11	**39**	**65**	<1	**1,010**	**360**	<0.2	**133**	**2**	<0.5	**40**	**47**	15	4,610
		2-2.5	(u)	---	7	---	---	6	---	2	3	---	23	114	---	4	<1	---	<1	<2	---	75
Bin H, Crack 3																						
	9/15/04	0-0.5	(u)	<1	**98**	158	<3.5	**244**	6	**29**	**1,230**	<1	**439**	187	<0.2	**135**	<1	**0.9**	**6**	**169**	14	1,870
		2-2.5	(u)	---	**49**	---	---	<1	---	2	13	---	5	---	---	3	---	<0.5	<1	<2	---	<1
Bin H, Crack 4																						
	9/15/04	0-0.5	(u)	<1	**38**	392	<4.3	**30**	5	**10**	33	<1	7	233	<0.2	13	<1	<0.5	**5**	<2	12	713
		2-2.5	(u)	---	6	---	---	1	---	2	---	---	---	---	---	---	---	---	<1	---	---	34
Bin H, Crack 5																						
	9/15/04	0-0.5	(u)	<1	**56**	226	<3.8	4	5	3	28	<1	13	140	<0.2	6	<1	<0.5	<1	<2	17	24
		2-2.5	(u)	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bin H, Crack 6																						
	9/15/04	0-0.5	(u)	<1	9	204	<3.2	2	5	3	18	<1	8	108	<0.2	7	<1	<0.5	<1	<2	19	22
Bin K, Crack 1																						
	9/15/04	0-0.5	(u)	<1	**22**	237	<3.9	4	4	**10**	**61**	<1	16	218	<0.2	8	<1	<0.5	<1	<2	23	806
	Duplicate	0-0.5	(u)	<1	**29**	301	<4.7	10	5	**19**	**114**	<1	29	260	<0.2	11	<1	<0.5	<1	<2	22	1,920
	Duplicate	2-2.5	(u)	---	2	---	---	---	---	3	4	---	---	---	---	---	---	---	---	---	---	19
Bin K, Crack 2																						
	9/15/04	0-0.5	(u)	<1	10	253	<3.9	**111**	5	**10**	**132**	<1	6	234	<0.2	23	**3**	<0.5	<1	<2	18	4,260
		2-2.5	(u)	---	---	---	---	<1	---	2	3	---	---	---	---	---	<1	---	---	---	---	87
Bin K, Crack 3																						
	9/14/04	0-0.5	(u)	<1	**23**	196	<3.8	**403**	4	**16**	**197**	<1	39	<1	<0.2	**66**	<1	<0.5	<1	<2	17	<1
		2-2.5	(u)	---	2	---	---	<1	---	3	2	---	---	---	---	4	---	---	---	---	---	---
Bin K, Crack 4																						
	9/15/04	0-0.5	(u)	<1	6	387	<4.2	**31**	6	**23**	7	<1	7	266	<0.2	**45**	**4**	<0.5	<1	<2	22	1,180
		2-2.5	(u)	---	---	---	---	<1	---	2	---	---	---	---	---	3	<1	---	---	---	---	26
Bin L, Crack 1																						
	9/14/04	0-0.5	(u)	<1	6	285	<4.8	**319**	4	**14**	5	<1	6	168	<0.2	**52**	<1	<0.5	**57**	<2	19	2,400
		2-2.5	(u)	---	---	---	---	<1	---	3	---	---	---	---	---	4	---	---	<1	---	---	13
Bin L, Crack 2																						
	9/14/04	0-0.5	(u)	<1	15	174	<4.2	7	4	4	5	<1	6	184	<0.2	9	<1	<0.5	**20**	<2	16	36
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Bin L, Crack 3																						
	9/14/04	0-0.5	(u)	<1	**36**	336	<3.8	**180**	5	**25**	**399**	<1	**238**	195	<0.2	**58**	<1	<0.5	**10**	7	17	428
		2-2.5	(u)	---	3	---	---	4	---	3	13	---	17	---	---	5	---	---	<1	---	---	24
Bin M, Crack 1																						
	9/14/04	0-0.5	(u)	<1	5	489	<4.9	**475**	4	7	4	<1	7	173	<0.2	**68**	<1	<0.5	<1	<2	16	2,930
		2-2.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	4	---	---	---	---	---	24
Bin M, Crack 2																						
	9/14/04	0-0.5	(u)	<1	3	376	<3.9	<1	3	5	7	<1	5	166	<0.2	5	<1	<0.5	<1	<2	16	43
Bin M, Crack 3																						
	9/14/04	0-0.5	(u)	<1	3	259	<3.8	**22**	4	3	13	<1	7	209	<0.2	6	**2**	<0.5	<1	<2	16	34
		2-2.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	---	<1	---	---	---	---	---
Bin N, Crack 1																						
	9/9/04	0-0.5	(u)	<1	15	376	2.6	<1	9	4	3	<1	7	244	<0.2	8	<1	<0.5	**9**	<2	24	39
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	---
Bin N, Crack 2																						
	9/9/04	0-0.5	(u)	<1	**32**	376	<4	<1	7	3	20	<1	6	159	<0.2	6	<1	<0.5	<1	<2	24	35
		2-2.5	(u)	---	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bin N, Crack 3																						
	9/9/04	0-0.5	(u)	<1	**99**	388	<3.8	<1	7	4	13	<1	6	189	<0.2	6	<1	<0.5	<1	<2	26	27
		2-2.5	(u)	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bin N, Crack 4																						
	9/9/04	0-0.5	(u)	<1	14	271	<4.2	**26**	7	4	33	<1	9	224	<0.2	7	**15**	<0.5	**4**	<2	14	422
		2-2.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	---	<1	---	<1	---	---	10
Bin P, Crack 1																						
	9/8/04	0-0.5	(u)	<1	**177**	266	<4.7	2	6	3	**106**	<1	40	179	<0.2	6	<1	<0.5	1	<2	14	50
		2-2.5	(u)	---	**12**	---	---	---	---	---	**19**	---	---	---	---	---	---	---	---	---	---	---
Bin P, Crack 2																						
	9/8/04	0-0.5	(u)	<1	**114**	190	<3.8	**20**	9	**14**	**423**	<1	**188**	**519**	<0.2	**37**	<1	<0.5	1	**12**	20	1420
		2-2.5	(u)	---	**98**	---	---	**25**	---	**11**	**205**	---	**311**	221	---	**41**	---	---	---	---	---	1740
Bin P, Crack 3																						
	9/8/04	0-0.5	(u)	**2**	**530**	153	**5.6**	**229**	**19**	**59**	**1,750**	<1	**3,730**	183	**0.2**	**241**	**3**	**1.6**	**3**	**168**	16	5,460
		2-2.5	(u)	<1	**31**	---	---	**10**	6	5	**52**	---	**187**	---	---	13	<1	<0.5	<1	---	---	662
Bin P, Crack 4																						
	9/8/04	0-0.5	(u)	<1	**64**	217	<3.4	**20**	6	6	**460**	<1	**140**	116	<0.2	23	<1	<0.5	**2**	5	21	232
		2-2.5	(u)	---	**25**	---	---	**17**	---	---	**77**	---	**202**	---	---	---	---	---	<1	---	---	---
Bin P, Crack 5																						
	9/8/04	0-0.5	(u)	<1	**56**	224	<4	**21**	7	8	**359**	<1	**209**	105	<0.2	**28**	<1	<0.5	**4**	**20**	11	286
		2-2.5	(u)	---	**30**	---	---	**31**	---	---	**190**	---	**256**	---	---	**33**	---	---	<1	---	---	---
Bin R, Crack 1																						
	9/8/04	0-0.5	(u)	<1	3	256	<4.8	<1	7	3	4	<1	4	167	<0.2	6	<1	<0.5	**2**	<2	20	22
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Bin R, Crack 2																						
	9/8/04	0-0.5	(u)	<1	4	392	<4	<1	7	4	4	<1	5	175	<0.2	6	<1	<0.5	1	<2	21	32
Bin R, Crack 3																						
	9/8/04	0-0.5	(u)	<1	5	261	<3.4	**12**	8	4	7	<1	6	152	<0.2	8	<1	<0.5	**3**	<2	27	219
		2-2.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	---	---	---	<1	---	---	---
Bin R, Crack 4																						
	9/8/04	0-0.5	(u)	<1	4	289	<3.9	**14**	**766**	2	36	<1	11	150	<0.2	7	<1	<0.5	**2**	<2	20	335
	Duplicate	0-0.5	(u)	<1	10	235	<3.6	**16**	**4680**	**12**	20	<1	16	**439**	<0.2	11	**9**	**4.1**	**12**	**17**	21	124
	Duplicate	2-2.5	(u)	---	---	---	---	<1	7	5	---	---	---	285	---	---	<1	<0.5	<1	---	---	---
Bin S, Crack 1																						
	9/8/04	0-0.5	(u)	<1	14	327	<2.6	2	**69**	4	**68**	<1	15	155	<0.2	6	<1	<0.5	1	<2	16	78
		2-2.5	(u)	---	---	---	---	---	**26**	---	**26**	---	---	---	---	---	---	---	---	---	---	---
Bin S, Crack 2																						
	9/8/04	0-0.5	(u)	<1	**149**	302	<3.4	**114**	**372**	4	**197**	<1	16	229	<0.2	7	<1	<0.5	**2**	<2	29	1,100
		2-2.5	(u)	---	**17**	---	---	2	8	---	5	---	---	---	---	---	---	---	<1	---	---	70
Bin S, Crack 3																						
	9/8/04	0-0.5	(u)	<1	**62**	226	<2.8	**81**	**136**	3	27	<1	56	170	<0.2	7	<1	<0.5	**2**	<2	18	1,560
		2-2.5	(u)	---	5	---	---	<1	7	---	---	---	---	---	---	---	---	---	<1	---	---	18
Product Storage Bins (Numbered Bins) Exterior (RFI) Soil Borings																						
B-53	06/22/00	0-0.5	(u)	**7**	9	209	<4	**1214**	**15**	**32**	**52**	0.13	**195**	**721**	**0.22**	13	<0.8	**1**	<1	**20**	17	15810
		2-2.5	(u)	**2**	---	---	---	**1055**	12	6	12	---	13	**430**	<0.05[a]	---	---	<0.5	---	<5	---	15330
		5.5	(u)	**1**	---	---	---	**16**	---	---	---	---	---	232	<0.05[a]	---	---	---	---	---	---	172
	Duplicate 49	5.5	(u)	**---**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		8.5	(u)	**1**	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	36
		11.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	29
		14.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	29
		17.5-18	(s)	<0.8	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	12
B-54	06/22/00	0-0.5	(u)	**2**	<5	323	<4	9	10	6	7	<0.04	11	**400**	<0.05	9	**1**	<0.5	1	<5	27	134
		2-2.5	(u)	**2**	---	---	---	---	---	---	---	---	---	**401**	---	---	<0.8	---	---	---	---	42
		5.5	(u)	**1**	---	---	---	---	---	---	---	---	---	155	---	---	---	---	---	---	---	50
		8.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	20
		11.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	18
		14-15	(s)	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	11
B-55		0-0.5	(u)	**1**	<5	224	<4	<1	14	6	9	<0.04	8	**415**	<0.05	9	<0.8	<0.5	<1	<5	21	28
		2-2.5	(u)	**2.2**	---	---	---	---	---	---	---	---	---	**524**	---	---	---	---	---	---	---	---
		5.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	232	---	---	---	---	---	---	---	---
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		12-12.5	(s)	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-56	06/28/00	0-0.5	(u)	**1**	<5	211	<4	6	**16**	**36**	10	<0.04	10	**385**	<0.05	11	<0.8	**4**	1	<5	20	215
		2-2.5	(u)	**1**	---	---	---	---	12	7	---	---	---	260	---	---	---	<0.5	---	---	---	95
		5.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	34
		8.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	37
		11.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	33
		14-15.5	(s)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	37
B-184	11/06/01	0-0.5	(u)	**571**	---	---	---	---	---	---	---	---	---	**9576**	---	---	---	---	---	---	---	---
Duplicate B-184		0-0.5	(u)	**606**	---	---	---	---	---	---	---	---	---	**10340**		---	---	---	---	---	---	---
(Step out from B-55)		2-2.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	323		---	---	---	---	---	---	---
B-185	11/06/01	0-0.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	265		---	---	---	---	---	---	---
(Step out from B-184)		2-2.5	(u)	<0.8	---	---	---	---	---	---	---	---	---	204		---	---	---	---	---	---	---
Product Storage Bins (Numbered Bins) Interior (RCRA Final Facility Closure) Soil Borings below Cracks in Concrete Floor[i]																						
Bin 1, Crack 1																						
	12/8/03	0-0.5	(u)	<1	2.71	129	<2	<0.2	4.35	3.66	4.46	<0.2	7.45	217	<0.04	**68.5**	<1	**1.74**	<1	<1	17.3	20.1
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	6.21	---	**1.19**	---	---	---	---
Bin 1, Crack 2																						
	12/8/03	0-0.5	(u)	<1	3.07	182	<2	0.931	4.48	3.87	11.7	<0.2	8.71	287	<0.04	**26.5**	<1	**2.01**	<1	1.23	18.2	58.4
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	7.01	---	**1.52**	---	---	---	---
Bin 1, Crack 3																						
	12/8/03	0-0.5	(u)	<1	2.07	176	<2	0.359	4.55	3.61	6.97	<0.2	15.40	260	<0.04	9.31	<1	**2.14**	<1	<1	16.8	30.7
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.14**	---	---	---	---
Bin 1, Crack 4																						
	12/8/03	0-0.5	(u)	<1	3.49	138	<2	0.593	4.20	4.44	5.64	<0.2	8.48	**359**	<0.04	6.55	<1	**1.47**	<1	<1	15.5	23.6
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	**366**	---	---	---	**1.03**	---	---	---	---
Bin 2, Crack 1																						
	12/8/03	0-0.5	(u)	<1	2.13	113	<2	0.434	4.40	3.5	6.30	<0.2	7.60	227	<0.04	5.62	<1	**1.46**	<1	<1	14.2	20.8
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.83**	---	---	---	---
Bin 2, Crack 2																						
	12/8/03	0-0.5	(u)	<1	1.99	163	<2	<0.2	4.60	5.44	5.26	<0.2	9.06	309	<0.04	5.97	<1	**1.74**	<1	<1	15.2	20.5
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.55**	---	---	---	---
Bin 2, Crack 3																						
	12/8/03	0-0.5	(u)	<1	2	130	<2	<0.2	3.57	3.11	6.15	<0.2	6.57	235	<0.04	6.31	<1	**1.50**	<1	<1	12.4	20.0
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.77**	---	---	---	---
Bin 2, Crack 4																						
(duplicate)	12/8/03	0-0.5	(u)	<1	2.97	141	<2	<0.2	7.27	5.45	5.57	<0.2	11.30	**383**	<0.04	7.37	<1	**2.10**	<1	<1	18.4	24.2
		0-0.5	(u)	<1	2.45	101	<2	<0.2	5.61	3.73	4.71	<0.2	7.61	217	<0.04	5.87	<1	**1.99**	<1	<1	14.3	22.0
(duplicate)		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	266	---	---	---	**0.95**	---	---	---	---
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.29**	---	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Bin 3, Crack 1																						
	12/9/03	0-0.5	(u)	<1	2.72	144	<2	<0.2	4.27	4.01	5.32	<0.2	8.21	281	<0.04	7.49	<1	**1.78**	<1	<1	14.8	21.6
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.52**	---	---	---	---
Bin 3, Crack 2																						
	12/8/03	0-0.5	(u)	<1	2.5	178	<2	<0.2	4.34	4.02	4.61	<0.2	7.83	248	<0.04	5.55	<1	**1.64**	<1	<1	19.7	28.0
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.56**	---	---	---	---
Bin 3, Crack 3																						
	12/9/03	0-0.5	(u)	<1	3.02	115	<2	<0.2	5.06	4.4	5.65	<0.2	9.30	299	<0.04	6.45	<1	**2.56**	<1	<1	16	24.5
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.17**	---	---	---	---
Bin 3, Crack 4																						
	12/9/03	0-0.5	(u)	<1	2.49	161	<2	0.288	5.03	4.02	16.50	<0.2	8.65	244	<0.04	6.44	<1	**1.47**	<1	<1	19	38.8
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.58**	---	---	---	---
Bin 4, Crack 1																						
	12/9/03	0-0.5	(u)	<1	2.78	151.0	<2	0.308	4.58	4.8	4.86	<0.2	9.95	310	<0.04	6.38	<1	**2.33**	<1	<1	16.7	22.1
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.23**	---	---	---	---
Bin 4, Crack 2																						
	12/9/03	0-0.5	(u)	<1	13.5	98.2	<2	7.90	4.24	3.69	4.83	<0.2	7.77	244	<0.04	5.63	<1	**1.84**	<1	<1	15.6	340
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.49**	---	---	---	---
Bin 4, Crack 3																						
	12/9/03	0-0.5	(u)	<1	2.35	98.8	<2	8.72	4.26	6.8	5.45	<0.2	8.26	**340**	<0.04	8.81	<1	**1.57**	<1	<1	15.3	1,160
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	277	---	---	---	<0.5	---	---	---	63.3
Bin 4, Crack 4																						
	12/9/03	0-0.5	(u)	<1	2.49	122	<2	2.55	4.11	3.26	5.20	<0.2	**551**	171	<0.04	5.3	<1	**1.64**	**11.4**	<1	16.2	336
	(SPLP)	0-0.5	(u)	---	---	---	---	---	---	---	---	---	*(0.177)*	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	9.93	---	---	---	---	**1.00**	**1.12**	---	---	---
Bin 5, Crack 1																						
	12/9/03	0-0.5	(u)	<1	1.65	86.7	<2	**416**	6.62	**11.9**	**53.2**	<0.2	86.5	**844**	<0.04	13.7	<1	**1.01**	**1.08**	<1	11.9	9,840
	(SPLP)	0-0.5	(u)	---	---	---	---	*(0.156)*	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	0.923	---	4.07	6.01	---	---	**406**	---	---	---	**1.14**	<1	---	---	53.5
Bin 5, Crack 2																						
	12/9/03	0-0.5	(u)	<1	**126**	108	<2	**332**	4.40	4.19	20.40	<0.2	8.23	306	<0.04	19.3	<1	**1.70**	<1	<1	15.5	1,830
	(SPLP)	0-0.5	(u)	---	***(1.41)***	---	---	***(0.59)***	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	6.47	---	---	<0.2	---	---	---	---	---	---	---	---	---	**1.79**	---	---	---	25.4
Bin 5, Crack 3																						
(duplicate)	12/9/03	0-0.5	(u)	<1	4.71	196	<2	<0.2	5.17	4.91	6.89	<0.2	13	**422**	<0.04	7.36	<1	**2.4**	<1	<1	19.8	28.8
		0-0.5	(u)	<1	1.74	145	<2	<0.2	4.07	4.81	5.18	<0.2	7.95	257	<0.04	5.21	<1	**1.51**	<1	<1	15.7	40.5
(duplicate)		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	<0.5	---	---	---	**1.72**	---	---	---	---
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	305	---	---	---	**1.82**	---	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Bin 6, Crack 1																						
	12/10/03	0-0.5	(u)	<1	1.76	99.4	<2	2.81	3.08	2.72	4	<0.2	**467**	167	<0.04	4.52	<1	**0.8**	**1.78**	<1	11.5	957
	(SPLP)	0-0.5	(u)	---	---	---	---	---	---	---	---	---	*(0.0359)*	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	9.42	---	---	---	---	**1.81**	<1	---	---	270
Bin 6, Crack 2																						
	12/9/03	0-0.5	(u)	<1	2.58	79	<2	**639**	4.07	8.19	5.77	<0.2	**1380**	**832**	<0.04	6.34	<1	**1.38**	**4.57**	<1	12.9	8,930
	(SPLP)	0-0.5	(u)	---	---	---	---	*(0.0602)*	---	---	---	---	*(0.0205)*	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	**7.36**	---	---	---	---	31.9	324	---	---	---	**1.65**	<1	---	---	620
Bin 6, Crack 3																						
	12/10/03	0-0.5	(u)	**289**	<100	<100	<2	**327**	<50	<100	<100	<0.2	**842**	**792**	<0.04	<100	<100	**<50**	<100	<100	<100	21100
	(SPLP)	0-0.5	(u)	*(0.0478)*	---	---	---	*(0.113)*	---	---	---	---	*(<0.01)*	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	<1	6.86	---	---	**14**	5.43	4.45	8.42	---	28.8	247	---	6.9	<1	**2.72**	**1.04**	<1	---	1,520
Bin 11, Crack 1																						
	12/9/03	0-0.5	(u)	<1	3.5	303	<2	3.27	4.32	6.76	17.5	<0.2	**207**	**410**	<0.04	10.4	<1	**1.76**	**3.1**	<1	14.1	9,410
	(SPLP)	0-0.5	(u)	---	---	---	---	---	---	---	---	---	*(<0.01)*	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	17	258	---	---	---	**1.52**	**1.57**	---	---	382
Bin 12, Crack 1																						
	12/9/03	0-0.5	(u)	<1	2.24	123	<2	**93.3**	4.54	5.53	10.8	<0.2	18.7	211	<0.04	9.31	<1	**1.39**	<1	<1	11.8	1,410
	(SPLP)	0-0.5	(u)	---	---	---	---	*(0.0381)*	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		2-2.5	(u)	---	---	---	---	0.692	---	---	---	---	---	---	---	---	---	**1.28**	---	---	---	35.2
Bin 12, Crack 2																						
	12/9/03	0-0.5	(u)	<1	2.13	136	<2	1.26	4.74	4.66	10.4	<0.2	11.7	245	<0.04	6.91	<1	**1.17**	<1	<1	14.1	152
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**1.23**	---	---	---	---
Building North of Facility No. 2 (3-Sided Bin)																						
B-89	07/10/00	0-0.5	(u)	**3**	11	114	<4	**749**	12	**50**	**876**	<0.04	27	**251**	<0.05	**31**	<0.8	<0.5	**5**	<5	14	11430
	Duplicate 44	0-0.5	(u)	**3**	**24**	117	<4	***800***	**15**	**95**	**898**	<0.04	29	**482**	*<0.05*	**30**	<0.8	<0.5	**4**	<5	16	16490
		2-2.5	(u)	<0.8	6	---	---	**86**	11	**70**	12	---	---	**577**	---	**36**	---	---	**<5**	---	---	2490
		5.5	(u)	---	---	---	---	**6**	---	8	---	---	---	347	---	11	---	---	<1	---	---	178
		8.5	(u)	---	---	---	---	3	---	---	---	---	---	---	---	---	---	---	---	---	---	102
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	69
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		15.8-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
B-90	07/10/00	0-0.5	(u)	**4**	**38**	100	<4	**731**	**15**	**81**	**914**	<0.04	47	**381**	<0.05	**68**	<0.8	<0.5	**3**	<5	12	14890
		2-2.5	(u)	<0.8	6	---	---	**116**	**23**	**54**	**22**	---	---	**623**	---	**117**	---	---	**<5**	---	---	3390
		5.5	(u)	---	---	---	---	**45**	12	**13**	10	---	---	281	---	17	---	---	<1	---	---	1120
		8.5	(u)	---	---	---	---	**8**	---	7	---	---	---	---	---	---	---	---	---	---	---	222
		11.5	(u)	---	---	---	---	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	37
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		17-18	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-91	07/10/00	0-0.5	(u)	**3**	7	110	<4	**781**	**64**	**49**	**401**	0.12	40	283	<0.05	**466**	<0.8	<0.5	3	5	15	8794
		2-2.5	(u)	<0.8	---	---	---	**1971**	10	**523**	12	---	---	---	---	**55**	---	---	<1	---	---	63510
		5.5	(u)	---	---	---	---	**17**	---	**11**	---	---	---	---	---	11	---	---	---	---	---	401
		8.5	(u)	---	---	---	---	1	---	6	---	---	---	---	---	---	---	---	---	---	---	63
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		16.16.5	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Old Casting Building																						
B-57	06/19/00	0-0.5	(u)	<0.8	6	210	<4	<1	11	6	22	<0.04	15	318	0.052	23	<0.8	<0.5	<1	<5	21	56
		2-2.5	(u)	---	---	---	---	---	---	---	---	---	---	---	<0.05	---	---	---	---	---	---	36
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	37
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	27
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	26
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9
		15.6-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7
B-58	06/19/00	0-0.5	(u)	<0.8	5	198	<4	<1	**17**	7	9	<0.04	9	254	<0.05	12	<0.8	<0.5	<1	<5	20	55
		2-2.5	(u)	---	---	---	---	---	**17**	---	---	---	---	---	---	---	---	---	---	---	---	46
		5.5	(u)	---	---	---	---	---	12	---	---	---	---	---	---	---	---	---	---	---	---	34
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7
		15.7-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9
B-59	06/19/00	0-0.5	(u)	<0.8	5	221	<4	3	**18**	**11**	12	<0.04	22	309	<0.05	**40**	<0.8	<0.5	<1	<5	16	577
		2-2.5	(u)	---	---	---	---	---	11	6	---	---	---	---	---	10	---	---	---	---	---	48
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	65
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	33
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	26
		14.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	18
		15.5-16	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10
B-60	06/19/00	0-0.5	(u)	**1**	10	244	<4	2	**18**	9	**74**	<0.04	27	**464**	**0.11**	14	<0.8	<0.5	**7**	<5	35	407
		2-2.5	(u)	**2**	---	---	---	---	**20**	---	**53**	---	---	238	**0.26**[a]	---	---	---	1	---	---	619
		5.5	(u)	**1**	---	---	---	---	9	---	6	---	---	---	<0.05[a]	---	---	---	---	---	---	34
		8.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	36
		10-11	(s)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	40
B-180 (Step out from B-59)	11/07/01	0-0.5	(u)	---	---	---	---	---	**16**	5.3	---	---	---	---	---	11	---	---	---	---	---	---

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-181 (Step out from B-180)	11/07/01	0-0.5	(u)	---	---	---	---	---	8.3	5.6	---	---	---	---	---	5.2	---	---	---	---	---	---
North and South Demin Tanks																						
B-49	06/15/00	0-0.5	(u)	**2**	**13**	409	<4	**37**	**63**	**34**	**254**	<0.04	**423**	**462**	**0.43**	**42**	<0.8	**2**	1	**23**	30	3715
	Duplicate 10	0-0.5	(u)	**5**	**31**	409	<4	**54**	**99**	**24**	**271**	0.14	**722**	**645**	**0.62**	**48**	<0.8	**2**	1	**33**	25	7562
		2-2.5	(u)	**2**	6	---	---	2	**15**	<5	**24**	---	**64**	255	**0.12**[a]	8	---	<0.5	---	**8**	---	775
		5.5	(u)	**2**	---	---	---	---	**15**	---	7	---	10	---	<0.05[a]	---	---	---	---	<5	---	54
		8.5	(u)	**2**	---	---	---	---	14	---	---	---	---	---	---	---	---	---	---	---	---	73
		11.5	(u)	**1**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	50
		14-14.5	(s)	<0.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	39
B-50	06/15/00	0-0.5	(u)	**3**	**17**	339	<4	**36**	**73**	9	**165**	**2.8**	**424**	**651**	**0.51**	**29**	<0.8	**2**	<1	**32**	29	6892
	Duplicate 9	0-0.5	(u)	**3**	**18**	674	<4	**6**	**60**	8	**99**	**2.2**	**301**	**586**	**0.23**	19	<0.8	**1**	**2**	**34**	29	4347
		2-2.5	(u)	**3**	6	---	---	<1	**17**	---	12	<0.04[a]	16	**373**	0.05[a]	13	---	<0.5	**2**	<5	---	160
		5.5	(u)	**2**	---	---	---	---	**15**	---	---	<0.04[a]	---	334	<0.05[a]	---	---	---	1	---	---	48
		8.5	(u)	**1**	---	---	---	---	11	---	---	<0.04[a]	---	---	---	---	---	---	---	---	---	58
		11.5	(u)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	30
		12.5-13	(s)	**2**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	486
B-51	06/15/00	0-0.5	(u)	**3**	**14**	299	<4	**24**	**165**	**17**	**291**	**2.6**	**675**	**372**	**0.4**	**48**	<0.8	**3**	<1	**22**	16	5798
	Duplicate 11	0-0.5	(u)	**3**	**18**	242	<4	**20**	**169**	**12**	**294**	**1.6**	**495**	**447**	**0.16**	**54**	<0.8	**2**	<1	**23**	18	5508
		2-2.5	(u)	**11**	**32**	---	---	**24**	**104**	6	**477**	**4.2**[a]	**647**	**682**	**1.3**[a]	15	---	**3**	---	**54**	---	11940
		5.5	(u)	<0.8	6	---	---	<1	**16**	---	13	<0.04[a]	14	344	<0.05[a]	---	---	<0.5	---	<5	---	138
		8.5	(u)	---	---	---	---	---	13	---	---	<0.04[a]	---	---	---	---	---	---	---	---	---	57
	Duplicate 48	8.5	(u)	---	---	---	---	---	---	---	---	<0.04[a]	---	---	<0.05	---	---	---	---	---	---	---
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	54
		12.5-13	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	327
B-52	06/15/00	0-0.5	(u)	<0.8	<5	181	<4	4	**46**	7	23	<0.04	66	312	0.07	25	<0.8	**1**	<1	<5	22	707
		2-2.5	(u)	---	---	---	---	---	13	---	---	---	---	---	---	---	---	<0.5	---	---	---	70
		5.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	44
		8.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	57
		11.5	(u)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	59
		14.5-15	(s)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	25
Storm Sewer System RFI/CMS Soil Borings																						
B-108 (storm sewer system)	06/20/00	0-0.5	(u)	**4**	12	296	<4	**160**	**16**	7	**60**	0.07	**133**	**602**	<0.05	12	<0.8	<0.5	1	**17**	22	6933
		2-2.5	(u)	**2**	6	209	<4	**49**	14	6	**30**	<0.04	52	**420**	<0.05	11	<0.8	<0.5	**2**	**8**	22	3234
		5.5	(u)	**1**	<5	384	<4	2	12	5	9	<0.04	11	308	<0.05	10	<0.8	<0.5	**3**	<5	29	143
		8.5	(u)	<0.8	<5	328	<4	<1	14	6	7	<0.04	10	355	<0.05	10	<0.8	<0.5	**2**	<5	32	53

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		11.5	(u)	<0.8	<5	284	<4	<1	6	<5	<5	<0.04	5	218	<0.05	<5	<0.8	<0.5	2	<5	15	26
		14.5	(u)	<0.8	<5	68	<4	<1	91	13	<5	<0.04	<5	159	<0.05	43	<0.8	<0.5	<1	<5	6	25
		16.3-17	(s)	<0.8	<5	46	<4	<1	71	14	<5	<0.04	<5	142	<0.05	33	1	<0.5	1	<5	6	19
B-109	06/20/00	0-0.5	(u)	<0.8	<5	184	<4	240	66	18	16	<0.04	18	376	<0.05	36	<0.8	<0.5	2	<5	20	15900
(storm sewer		2-2.5	(u)	<0.8	<5	185	<4	4	12	5	10	<0.04	8	303	<0.05	10	<0.8	<0.5	2	<5	19	246
system)		5.5	(u)	<0.8	6	321	<4	<1	13	6	12	<0.04	9	401	<0.05	10	<0.8	3	1	<5	34	110
		8.5	(u)	<0.8	<5	125	<4	<1	11	<5	9	<0.04	7	269	<0.05	9	<0.8	<0.5	2	<5	16	37
	Duplicate 20	8.5	(u)	<0.8	<5	170	<4	<1	16	5	12	<0.04	8	228	<0.05	12	<0.8	<0.5	2	<5	16	40
		11.5	(u)	<0.8	<5	116	<4	<1	46	8	<5	<0.04	<5	271	<0.05	23	<0.8	<0.5	7	<5	10	56
		14-14.5	(s)	<0.8	<5	49	<4	<1	85	14	<5	<0.04	<5	112	<0.05	40	2	<0.5	3	<5	6	22
B-110	06/14/00	0-0.5	(u)	7	30	441	<4	109	60	16	443	<0.04	2150	727	0.24	45	2	19	2	25	20	8113
	Duplicate 8	0-0.5	(u)	22	104	444	7	374	82	52	1380	0.66	4214	1370	1.4	93	3	31	<1	58	14	27130
(storm sewer		2-2.5	(u)	<0.8	5	273	<4	1	22	<5	16	<0.04	25	280	<0.05	13	<0.8	2	7	<5	25	147
system)		5.5	(u)	<0.8	6	226	<4	<1	13	6	9	<0.04	13	372	<0.05	10	<0.8	1	5	<5	33	62
		8.5	(u)	<0.8	<5	212	<4	2	17	<5	16	<0.04	32	237	<0.05	10	<0.8	<0.5	2	<5	20	353
		11.5	(u)	<0.8	9	56	<4	<1	22	7	12	<0.04	11	436	<0.05	15	<0.8	<0.5	4	<5	43	81
		14.5	(u)	<0.8	11	267	<4	<1	18	10	11	<0.04	11	1480	<0.05	15	<0.8	<0.5	2	<5	37	57
		15.5-16	(s)	<0.8	<5	240	<4	<1	16	<5	5	<0.04	7	294	<0.05	9	<0.8	<0.5	2	<5	12	26
B-111	06/14/00	0-0.5	(u)	61	412	886	20	545	183	383	3785	2.2	11970	24850	3.7	288	6	73	<1	154	31	48330
	Duplicate 7	0-0.5	(u)	112	698	1329	18	696	215	291	5575	5.5	18730	37330	2.8	234	11	144	<1	234	43	78920
(storm sewer		2-2.5	(u)	6	24	207	<4	24	52	17	282	<0.04	1490	6229	0.47	34	<0.8	12	<1	10	23	12900
system)		5.5	(u)	2	10	384	<4	3	18	8	32	<0.04	70	1040	0.26	13	<0.8	<0.5	2	5	51	2250
		8.5	(u)	<0.8	<5	227	<4	<1	12	<5	12	<0.04	13	301	<0.05	9	<0.8	2	2	<5	40	88
		11.5	(u)	1	6	254	<4	<1	14	7	11	<0.04	13	354	<0.05	11	<0.8	<0.5	2	<5	31	61
		14.5	(u)	1	6	223	<4	<1	12	7	18	<0.04	34	430	<0.05	10	<0.8	1	2	<5	25	118
		17.5	(u)	2	7	269	<4	<1	16	9	15	<0.04	38	439	<0.05	13	<0.8	<0.5	2	<5	34	84
		20-20.5	(s)	2	9	371	<4	<1	18	9	25	<0.04	93	649	<0.05	14	1	3	2	<5	40	150
B-112	06/27/00	0-0.5	(u)	<0.8	<5	100	<4	4	81	5	15	<0.04	35	190	0.16	36	<0.8	2	<1	<5	8	584
(storm sewer		2-2.5	(u)	<0.8	<5	449	<4	<1	17	6	11	<0.04	9	367	<0.05	12	<0.8	<0.5	1	<5	36	55
system)		5.5	(u)	<0.8	<5	384	<4	<1	12	6	9	<0.04	10	321	<0.05	9	<0.8	<0.5	2	<5	34	71
	Duplicate 33	5.5	(u)	1	<5	370	<4	<1	18	7	9	<0.04	11	373	<0.05	11	<0.8	<0.5	3	<5	47	118
		8.5	(u)	<0.8	<5	311	<4	<1	12	6	9	<0.04	15	341	<0.05	9	<0.8	<0.5	1	<5	27	116
		11.5	(u)	<0.8	7	298	<4	<1	14	8	10	<0.04	11	420	<0.05	12	<0.8	<0.5	1	<5	32	58
		14.5	(u)	1	8	569	<4	<1	15	9	12	<0.04	13	751	<0.05	14	<0.8	<0.5	<1	<5	33	75
		17.5	(u)	1	7	314	<4	<1	15	7	10	<0.04	11	424	<0.05	13	<0.8	<0.5	<1	<5	29	57
		18.5-19	(s)	<0.8	<5	111	<4	<1	24	8	<5	<0.04	<5	171	<0.05	15	<0.8	<0.5	<1	<5	6	15

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
B-113	06/22/00	0-0.5	(u)	**19**	**415**	712	**7**	**1548**	**45**	**44**	**1670**	**0.75**	**2150**	**3080**	**0.5**	**107**	**2**	**11**	<1	**24**	20	32860
	(SPLP)	*0-0.5*	*(u)*	*<0.1*	*<0.1*	*0.14*	*<0.1*	*2.1*	*<0.1*	*<0.1*	*<0.1*	---	*<0.1*	*<0.1*	---	*<0.1*	*<0.1*	*<0.05*	*<0.1*	*<0.1*	*<0.1*	*14*
(storm sewer		2-2.5	(u)	**3**	6	125	<4	**411**	14	6	**26**	<0.04	20	**414**	<0.05	11	<0.8	<0.5	<1	<5	13	2825
system)		5.5	(u)	**3**	<5	329	<4	3	14	6	10	<0.04	10	378	<0.05	10	<0.8	<0.5	<1	<5	33	76
	Duplicate 24	5.5	(u)	**3**	<5	362	<4	2	**18**	7	12	<0.04	12	387	<0.05	11	<0.8	<0.5	**2**	<5	**37**	120
		8.5	(u)	**3**	<5	267	<4	1	13	7	7	<0.04	11	372	<0.05	11	<0.8	<0.5	**6**	<5	32	62
		11.5	(u)	**3**	7	438	<4	<1	11	8	9	<0.04	12	469	<0.05	11	<0.8	<0.5	**4**	<5	29	53
		14.5	(u)	**3**	8	189	<4	1	8	7	5	<0.04	10	**1679**	<0.05	5	<0.8	<0.5	<1	<5	16	37
		17.3-18	(s)	**2**	<5	145	<4	**480**	12	<5	6	<0.04	5	**962**	<0.05	7	<0.8	<0.5	<1	<5	11	1500
B-114	07/10/00	0-0.5	(u)	<0.8	<5	88	<4	9	11	**14**	21	<0.04	37	228	**8.1**	8	**1.4**	**1.3**	<1	<5	16	589
(storm sewer		2-2.5	(u)	**1.9**	11	208	<4	**94**	13	**10**	**82**	<0.04	**150**	**553**	**15**	14	**1.8**	**2.4**	**9**	<5	32	2170
system)		5.5	(u)	**1.1**	6	268	<4	5	12	6	**17**	<0.04	19	318	<0.05	10	0.8	<0.5	**3**	<5	33	320
		8.5	(u)	**1.2**	6	300	<4	3	10	6	10	<0.04	13	368	0.08	9	<0.8	<0.5	**2**	<5	30	144
		11.5	(u)	**0.9**	<5	257	<4	<1	9	5	7	<0.04	8	291	<0.05	7	<0.8	<0.5	**2**	<5	24	41
		14-14.5	(s)	**0.9**	<5	177	<4	<1	5	<5	<5	<0.04	<5	193	<0.05	<5	<0.8	<0.5	**2**	<5	14	24
B-115	06/26/00	0-0.5	(u)	<0.8	<5	147	<4	2	15	6	7	<0.04	9	273	<0.05	9	<0.8	<0.5	1	<5	21	358
(storm sewer		2-2.5	(u)	<0.8	<5	314	<4	<1	12	6	7	<0.04	9	277	<0.05	9	<0.8	<0.5	1	<5	26	85
system)		5.5	(u)	<0.8	5	360	<4	<1	14	6	7	<0.04	8	294	<0.05	9	<0.8	<0.5	1	<5	**41**	57
		8.5	(u)	<0.8	<5	200	<4	<1	**16**	7	8	<0.04	9	361	<0.05	13	<0.8	<0.5	<1	<5	35	53
		11.5	(u)	<0.8	<5	274	<4	<1	8	<5	6	<0.04	6	261	<0.05	6	<0.8	<0.5	<1	<5	20	32
		14-14.5	(s)	<0.8	<5	201	<4	<1	5	<5	<5	<0.04	6	327	<0.05	6	<0.8	<0.5	<1	<5	14	29
B-116	06/27/00	0-0.5	(u)	<0.8	<5	140	<4	6	18	6	8	<0.04	12	229	<0.05	11	<0.8	<0.5	<1	<5	**17**	178
(storm sewer		2-2.5	(u)	<0.8	<5	278	<4	<1	9	<5	6	<0.04	7	237	<0.05	7	<0.8	<0.5	**3**	<5	18	32
system)		5.5	(u)	**1**	6	435	<4	<1	13	5	9	<0.04	8	289	<0.05	9	<0.8	<0.5	**8**	<5	**47**	41
		8.5	(u)	<0.8	<5	301	<4	<1	**17**	8	8	<0.04	9	366	<0.05	12	<0.8	<0.5	**3**	<5	**39**	55
	Duplicate 31	8.5	(u)	**2**	<5	281	<4	1	**15**	8	9	<0.04	10	374	<0.05	11	<0.8	<0.5	**2**	<5	34	309
		11.5	(u)	**1**	8	320	<4	<1	**19**	**10**	11	<0.04	12	520	<0.05	14	<0.8	<0.5	**3**	<5	**41**	67
	Duplicate 32	11.5	(u)	**2**	7	288	<4	<1	**18**	8	10	<0.04	11	410	<0.05	13	<0.8	<0.5	**7**	<5	**36**	111
		14.5	(u)	<0.8	10	698	<4	<1	11	8	8	<0.04	9	**792**	<0.05	10	<0.8	<0.5	**2**	<5	25	40
		16.5-17	(s)	<0.8	<5	169	<4	<1	8	<5	<5	<0.04	5	183	<0.05	6	<0.8	<0.5	1	<5	15	22
B-117	06/23/00	0-0.5	(u)	**4**	<5	236	<4	9	**15**	<5	**41**	<0.04	100	153	<0.05	8	<0.8	**3**	<1	<5	22	731
	Duplicate 28	0-0.5	(u)	**3**	<5	274	<4	1	11	<5	8	<0.04	11	302	<0.05	7	<0.8	<0.5	**2**	<5	25	95
(storm sewer		2-2.5	(u)	**4**	7	219	<4	**35**	**19**	7	**46**	0.11	**73**	**450**	**0.19**	12	**2**	**1**	<1	<5	24	5054
system)		5.5	(u)	**3**	5	473	<4	<1	**19**	6	11	<0.04	12	333	<0.05	17	<0.8	<0.5	<1	<5	**44**	125

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
		8.5	(u)	**3**	6	374	<4	<1	**16**	7	8	<0.04	10	353	<0.05	10	<0.8	<0.5	<1	<5	**40**	57
		11.5	(u)	**3**	8	273	<4	<1	**18**	9	11	<0.04	12	511	<0.05	14	<0.8	<0.5	<1	<5	**39**	66
		14-15	(s)	**3**	<5	292	<4	<1	9	6	7	<0.04	9	334	<0.05	7	<0.8	<0.5	<1	<5	22	37
B-247 (step-out from B-113)	03/01/05	0-0.5	(u)	---	**145**	---	---	---	---	---	---	---	**2470**	---	---	---	---	---	---	---	---	---
Storm Sewer System Excavated Soil (Storm Sewer System Repair) Soil Borings[j]																						
Storm Drain 38a																						
	6/20/01	0-5	(u)	**21**	**50**	336	**7.4**	**55**	**35**	**14**	**360**	**1.0**	**1,263**	**930**	**6.1**	19	**16**	**6.2**	<1	**129**	32	13,330
Storm Drain 78a																						
	7/2/01	0-5	(u)	<0.8	6	265	<4	4.5	**15**	6.7	**75**	0.11	65	**467**	<0.05	13	<0.8	<0.5	<1	<5	25	800
Storm Drain 219																						
	7/6/01	0-5	(u)	**3.1**	**20**	440	<4	**33**	**35**	**18**	**350**	<0.04	**4,094**	**8,108**	**0.14**	**27**	**1.3**	**28**	**1.1**	**14**	25	15,930
Storm Drain 102																						
	7/31/01	0-5	(u)	<0.8	15	196	<4	**21**	**15**	7.9	**89**	<0.04	105	**471**	**0.15**	16	<0.8	**1.1**	<1	<5	18	1,166
Soil Background Concentrations																						
	0-0.5':				16.65		4.9	11.70		9.72	40.33	0.24	109.16	333.73	0.09	25.80	0.89			7.65		b
	2-2.5':				8.01			4.47			17.20		54.36	360.83		27.21						
	unsaturated below 2.5':		(u)		21.86			4.97			16.15		38.96	592.50		29.74						
	saturated soil sample:		(s)		9.8			3.64			18.26		30.92	686.68		25.86						
	clay/silt strata:			0.77		720			14.9									0.54	1.02		35.6	
	clean sand strata (SP/SW):			0.80		202			35.9									0.50	1.0		15.7	
Preliminary Remediation Goals[c]																						
	PRG (mg/kg):			d	200	d	d	d	d	d	d	d	1,600	d	d	d	d	d	d	d	d	d

Table 3. Southern Tract Soil Sample Analytical Results Summary (mg/kg), Updated April 2005, Encycle/Texas, Inc., Corpus Christi, Texas

Boring ID	Date Sampled	Sample Depth (ft)	u/s	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc

mg/kg Milligrams per kilogram
mg/L Milligrams per liter
--- Not analyzed
(u) Unsaturated soil sample.
(s) Saturated soil sample.
(dup) Duplicate soil sample.
(SPLP) Synthetic Precipitation Leaching Procedure. Units in mg/L - analytical results shown in *italics*.
PRG Preliminary Remediation Goal
* Surface soil sample adjacent to previously constructed background soil boring.
a Sample re-collected and re-analyzed within EPA-specified holding time. Initially collected sample not analyzed within EPA-specified holding time.
b April 28, 1997 TNRCC letter stated zinc would not be a good release indicator for a unit at the site. Therefore, zinc background level not given.
c Preliminary Remediation Goals (PRGs) given in Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum. Exposure point concentrations for arsenic and lead in surface soils on Southern Tract exceeded the human health commercial/industrial land use PRGs given in Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum.
d *No PRG is required for this constituent on the Southern Tract as detailed in the August 27, 2004 Baseline Risk Assessment Addendum.*
e Additional details given in "Final Closure Certification Report - Facility No. 1 Non-Permitted Units" dated September 23, 2004.
f Additional details given in "Final Closure Certification Report - Facility No. 2 Non-Permitted Units" dated November 9, 2004.
g Additional details given in "Final Closure Certification Report - Facility No. 3 Non-Permitted Units" dated April 20, 2004.
h Additional details given in "Final Closure Certification Report - Lettered Bins Building (Building C)" dated November 5, 2004.
i Additional details given in "Final Closure Certification Report - Containment Building (Numbered Bins)" dated February 2, 2004.
j Data taken from Table 31 of August 13, 2002 RCRA Facility Investigation Report. Additional details given in October 14, 2004 ARCADIS report entitled "Final Closure Certification Report-East and West Lagoons".

Notes: 1) Numbers in **bold** exceed TCEQ-approved background concentrations established for the site.
2) Numbers **boxed** in red exceed both background and the Preliminary Remediation Goals (PRGs) given in Table A of the August 27, 2004 Baseline Risk Assessment Addendum.

Table 4. Summary of Soil Samples Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

SWMU	Sample ID	Sample Depth (feet)	Constituent(s) Exceeding PRGs[a]	Surface Cover at Sample Location
Meaney Tract				
Boneyard	B-105	0-0.5	antimony, arsenic, cadmium, lead, manganese, silver, zinc	Earthen
		2-2.5	manganese	
	B-188	0-0.5	lead	Earthen
		2-2.5	cadmium	
	B-189	0-0.5	cadmium, lead	Earthen
	B-190	0-0.5	cadmium	Earthen
	B-226	0-0.5	cadmium	Earthen
	B-229	0-0.5	cadmium	Earthen
	B-231	0-0.5	cadmium	Earthen
		1-1.5	cadmium	
Waste Pile	B-20	0-0.5	cadmium	Earthen
	B-21	0-0.5	cadmium, manganese, zinc	Earthen
	B-21a	1-1.5	cadmium	Earthen
	B-22	2-2.5	cadmium	Earthen
Northern Tract				
01 Landfill	B-140	5-5.5	arsenic	Earthen
	B-223	0-0.5	arsenic	Gravel
		0.9-1.2	arsenic	
	B-237	0.5-1	arsenic	Gravel
East and West Lagoons	(none)	(none)	(none)	NA
Southern Tract				
Railroad Tracks	B-96	0-0.5	arsenic, lead	Gravel
	B-96a	1-1.5	lead	Gravel
	B-97	0-0.5	arsenic, lead	Gravel
	B-97a	1-1.5	arsenic, lead	Gravel
	B-98	0-0.5	arsenic, lead	Gravel
	B-99	0-0.5	arsenic, lead	Gravel
	B-99a	1-1.5	arsenic, lead	Gravel
	B-101	0-0.5	arsenic, lead	Gravel
	B-104	0-0.5	arsenic, lead	Gravel
	B-238	0-0.5	arsenic, lead	Gravel
	B-239	0-0.5	arsenic, lead	Gravel
		1-1.5	lead	
	B-246	0-0.5	arsenic, lead	Gravel
Feed Tank 1	(none)	(none)	(none)	NA
Feed Tank 2	(none)	(none)	(none)	NA
Road Leading to the West of Building C	B-35	0-0.5	arsenic, lead	Gravel
	B-38	0-0.5	lead	Gravel
	B-40	0-0.5	lead	Grass
	B-240	0-0.5	lead	Gravel
	B-241	0-0.5	lead	Gravel
	B-242	0-0.5	lead	Gravel
	B-244	0-0.5	lead	Gravel
	B-245	0-0.5	lead	Grass

Table 4. Summary of Soil Samples Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

SWMU	Sample ID	Sample Depth (feet)	Constituent(s) Exceeding PRGs[a]	Surface Cover at Sample Location
Former Sludge Drying Beds	(none)	(none)	(none)	NA
Reactor Clarifier	B-42	0-0.5	lead	Gravel
Facility No. 1	(none)	(none)	(none)	NA
Facility No. 2	(none)	(none)	(none)	NA
Facility No. 3	(none)	(none)	(none)	NA
West Cell House	(none)	(none)	(none)	NA
NOR 43 Building	(none)	(none)	(none)	NA
Product Storage Building C (Lettered Bins Building)	Bin F, Crack 1	0-0.5	arsenic	Concrete (inside building)
	Bin F, Crack 2	0-0.5	arsenic	Concrete (inside building)
	Bin G, Crack 3	0-0.5	lead	Concrete (inside building)
	Bin H, Crack 2	0-0.5	arsenic	Concrete (inside building)
	Bin P, Crack 3	0-0.5	arsenic, lead	Concrete (inside building)
Product Storage Bins (Numbered Bins Building)	(none)	(none)	(none)	NA
Building North of Facility No. 2 (3-Sided Bin)	(none)	(none)	(none)	NA
Old Casting Building	(none)	(none)	(none)	NA
North and South Demin Tanks[c]	(none)	(none)	(none)	NA
Storm Sewer System	B-110	0-0.5	lead	Gravel
	B-111	0-0.5	arsenic, lead	Concrete
	B-113	0-0.5	arsenic, lead	Gravel
	B-247	0-0.5	lead	Gravel
	Storm Drain 219	0-5[b]	lead	Concrete

NA Not applicable
PRGs Preliminary Remediation Goals
SWMU Solid Waste Management Unit

a PRGs given in Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum.
b Storm sewer system excavated soil during repair of storm drain piping located below a concrete driveway between Storm Drains 80, 218, and 219. Soils excavated to a depth up to 5 feet during storm drain repair activities were returned to the excavation and resurfaced with concrete.
c The North and South Demin Tanks, located on the Southern Tract, were closed as part of the East and West Lagoons SWMU.

Table 5. Analytical Results Summary - Groundwater (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Well	Sample Date	TDS	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Fill/Alluvium Upgradient Monitor Wells																					
MW-3	01/30/86	---	---	0.007	---	---	---	---	---	0.01	---	<0.001	---	---	---	---	---	---	---	---	0.06
	01/30/87	---	---	0.009	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	0.02
	02/01/88	---	---	0.014	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	0.01
	01/27/89	---	---	0.012	---	---	---	---	---	<0.01	---	0.003	---	---	---	---	---	---	---	---	0.06
	01/23/90	---	---	0.010	---	---	---	---	---	<0.01	---	0.001	---	---	---	---	---	---	---	---	0.03
	01/09/91	---	---	0.006	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	0.03
	01/17/92	---	---	0.015	---	---	---	---	---	0.03	---	<0.001	---	---	---	---	---	---	---	---	<0.01
	02/14/94	---	---	0.014	---	---	---	---	---	<0.01	---	0.001	---	---	---	---	---	---	---	---	0.01
	01/30/95	---	---	0.013	---	---	---	---	---	<0.01	---	0.001	---	---	---	---	---	---	---	---	0.03
	02/20/98	11,200*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02/20/98	14,800**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	07/23/99	---	---	0.016	0.037	---	<0.01	<0.01	---	---	---	0.007	1.8	<0.0005	---	0.007	<0.005	---	---	---	---
	10/20/99	---	---	0.016	0.037	---	<0.01	<0.01	---	---	---	<0.01	2.5	<0.0005	---	<0.01	<0.005	---	---	---	---
	01/27/00	---	---	0.011	0.043	---	0.008	<0.01	---	---	---	<0.02	1.3	<0.0005	---	0.012	<0.005	---	---	---	---
(dup-1)	01/27/00	---	---	0.008	0.051	---	0.005	<0.01	---	---	---	0.02	2.4	<0.0005	---	<0.01	<0.005	---	---	---	---
	04/25/00	14,870	---	0.016	0.043	---	<0.005	<0.01	---	---	---	0.009	1.8	<0.0005	---	<0.01	<0.005	---	---	---	---
	06/30/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	1.7	---	<0.05	<0.01	---	<0.002	<0.05	0.065	0.18
	07/28/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	1.8	---	<0.05	0.015	---	<0.002	<0.05	0.063	0.073
	08/17/00	---	<0.05	---	---	<0.05	---	<0.01	<0.05	<0.05	<0.004	---	3.1	---	<0.05	0.015	---	<0.002	<0.05	0.066	0.12
	12/11/00	---	---	0.016	<0.05	---	<0.01	<0.01	---	---	---	<0.02	2.3	<0.0005	---	<0.01	<0.01	---	---	---	---
	06/14/01	---	---	0.016	<0.05	---	<0.01	0.028	---	---	---	<0.02	1.4	<0.0005	---	0.012	<0.005	---	---	---	---
	12/12/01	---	---	0.015	0.036	---	<0.01	<0.01	---	---	---	<0.01	1.6	<0.0005	---	<0.01	<0.005	---	---	---	---
	06/11/02	---	---	0.015	<0.05	---	<0.01	<0.01	---	---	---	<0.01	1.7	<0.0005	---	<0.01	<0.005	---	---	---	---
	12/05/02	---	---	0.010	0.022	---	<0.005	<0.01	---	---	---	<0.005	0.17	<0.0005	---	<0.005	<0.008	---	---	---	---
	06/05/03	---	---	0.022	0.066	---	<0.005	<0.01	---	---	---	0.013	2.6	<0.0005	---	<0.005	<0.005	---	---	---	---
	12/05/03	---	---	0.016	0.048	---	0.002	<0.02	---	---	---	<0.005	1.6	<0.0006	---	<0.005	<0.005	---	---	---	---
	06/22/04	---	---	0.01	0.03	---	<0.01	<0.01	---	---	---	<0.01	1.55	<0.002	---	0.01	<0.005	---	---	---	---
MW-10	04/29/99	9,238	---	0.026	0.55	---	0.018	0.08	---	---	---	0.11	1.9	0.00058	---	0.25	<0.005	---	---	---	---
	07/23/99	---	---	0.016	0.15	---	<0.01	0.028	---	---	---	0.03	1.2	<0.0005	---	0.16	<0.005	---	---	---	---
	10/20/99	---	---	0.025	0.074	---	<0.01	<0.01	---	---	---	0.013	6.6	0.00057	---	0.049	<0.005	---	---	---	---
	01/27/00	---	---	0.007	0.14	---	<0.01	0.021	---	---	---	0.032	3.6	<0.0005	---	0.12	<0.005	---	---	---	---
	06/30/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	1.9	---	<0.05	0.14	---	<0.002	<0.05	<0.05	0.62
	07/28/00	---	0.087	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	1.0	---	<0.05	0.22	---	<0.002	<0.05	<0.05	0.11
	08/17/00	---	<0.05	---	---	<0.05	---	0.02	<0.05	<0.05	<0.004	---	0.9	---	<0.05	0.21	---	<0.002	<0.05	0.056	0.36
	12/11/00	---	---	0.013	0.078	---	<0.01	<0.01	---	---	---	<0.02	0.34	<0.0005	---	0.17	<0.01	---	---	---	---
	06/14/01	---	---	0.03	0.054	---	0.01	<0.01	---	---	---	<0.02	1.1	<0.0005	---	0.28	<0.005	---	---	---	---
	12/12/01	---	---	0.02	0.028	---	<0.01	<0.01	---	---	---	<0.01	2.3	<0.0005	---	0.045	<0.005	---	---	---	---

Table 5. Analytical Results Summary - Groundwater (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Well	Sample Date	TDS	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
MW-10	06/11/02	---	---	0.018	<0.05	---	<0.01	<0.01	---	---	---	<0.01	0.34	<0.0005	---	0.23	<0.005	---	---	---	---
(cont.)	12/05/02	---	---	0.028	0.033	---	0.006	<0.01	---	---	---	<0.005	3.7	<0.0005	---	0.16	<0.008	---	---	---	---
	06/05/03	---	---	**0.044**	0.048	---	0.017	<0.01	---	---	---	0.032	**14**	<0.0005	---	0.032	**0.007**	---	---	---	---
	12/05/03	---	---	**0.047**	0.043	---	0.009	<0.02	---	---	---	0.008	**16**	<0.0006	---	0.007	<0.005	---	---	---	---
	06/22/04	---	---	**0.05**	0.03	---	<0.01	<0.01	---	---	---	0.01	<0.01	<0.002	---	0.04	<0.005	---	---	---	---
Background Mean (x)[a]:			0.035	0.0157	0.125	0.05	0.0065	0.0177	0.05	0.05	0.004	0.0262	2.57	0.00032	0.05	0.068	0.0025	0.002	0.05	0.05	0.240
Background Standard Deviation (S):			0.025	0.0066	0.165	0	0.0045	0.0249	0	0	0	0.0329	1.68	0.00014	0	0.089	0	0	0	0.02	0.210
Background Upper Tolerance Interval (x = KS)[b]:			0.127[d]	0.036[c]	0.62[c]	0.05[d]	0.02[c]	0.093[c]	0.05[d]	0.05[d]	0.004[d]	0.126[c]	7.6[c]	0.0007[c]	0.05[d]	0.34[c]	0.0025[c]	0.002[d]	0.05[d]	0.12[d]	1.02[d]
Fill/Alluvium Downgradient Wells																					
MW-2	01/30/86	---	---	0.011	---	---	---	---	---	0.01	---	0.006	---	---	---	---	---	---	---	---	0.06
	01/30/87	---	---	0.002	---	---	---	---	---	<0.01	---	0.005	---	---	---	---	---	---	---	---	0.03
	02/01/88	---	---	0.001	---	---	---	---	---	<0.01	---	0.002	---	---	---	---	---	---	---	---	0.02
	01/27/89	---	---	0.002	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	<0.01
	01/23/90	---	---	0.003	---	---	---	---	---	<0.01	---	0.001	---	---	---	---	---	---	---	---	<0.01
	01/09/91	---	---	0.004	---	---	---	---	---	<0.01	---	0.006	---	---	---	---	---	---	---	---	0.02
	01/17/92	---	---	0.005	---	---	---	---	---	**0.10**	---	0.006	---	---	---	---	---	---	---	---	0.05
	02/14/94	---	---	0.004	---	---	---	---	---	<0.01	---	0.002	---	---	---	---	---	---	---	---	0.01
	01/30/95	---	---	0.004	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	0.01
	02/20/98	66,400	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06/30/00	---	<0.05	<0.005	0.081	<0.05	<0.005	<0.01	<0.05	<0.05	<0.004	<0.02	2.9	<0.0005	<0.05	0.027	<0.01	<0.002	<0.05	<0.05	0.079
	07/28/00	---	<0.05	<0.009	0.069	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	2.6	<0.0005	<0.05	0.027	**0.02**	<0.002	<0.05	<0.05	<0.05
(dup)	07/28/00	---	<0.05	<0.009	0.072	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	2.6	<0.0005	<0.05	0.017	<0.005	**0.005**	<0.05	<0.05	<0.05
	08/17/00	---	<0.05	<0.008	0.072	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	3.1	<0.0005	<0.05	0.024	<0.005	<0.002	<0.05	<0.05	<0.05
MW-4	01/30/86	---	---	0.009	---	---	---	---	---	0.01	---	<0.001	---	---	---	---	---	---	---	---	0.08
	01/30/87	---	---	0.003	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	<0.01
	02/01/88	---	---	0.003	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	0.01
	01/27/89	---	---	0.001	---	---	---	---	---	<0.01	---	0.001	---	---	---	---	---	---	---	---	<0.01
	01/23/90	---	---	0.002	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	<0.01
	01/09/91	---	---	0.001	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	0.02
	01/17/92	---	---	0.009	---	---	---	---	---	**0.09**	---	0.002	---	---	---	---	---	---	---	---	0.11
	02/14/94	---	---	0.002	---	---	---	---	---	<0.01	---	0.001	---	---	---	---	---	---	---	---	<0.01
	01/30/95	---	---	0.001	---	---	---	---	---	0.01	---	0.001	---	---	---	---	---	---	---	---	0.01
	02/20/98	57,700*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 5. Analytical Results Summary - Groundwater (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Well	Sample Date	TDS	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
MW-4	02/20/98	62,200**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(cont.)	06/30/00	---	<0.05	<0.005	<0.05	<0.05	<0.005	<0.01	<0.05	<0.05	<0.004	<0.02	1.4	<0.0005	<0.05	0.016	<0.005	<0.002	<0.05	<0.05	0.063
(dup)	06/30/00	---	<0.05	<0.005	<0.05	<0.05	<0.005	<0.01	<0.05	<0.05	<0.004	0.02	1.4	<0.0005	<0.05	0.016	<0.005	<0.002	**0.10**	<0.05	0.061
	07/28/00	---	<0.05	<0.009	<0.05	<0.05	0.02	<0.01	<0.05	<0.05	<0.004	<0.02	1.1	<0.0005	<0.05	0.03	<0.005	**0.011**	<0.05	<0.05	<0.05
	08/17/00	---	<0.05	<0.008	0.054	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	1.2	<0.0005	<0.05	0.022	<0.005	**0.007**	<0.05	<0.05	<0.05
MW-5	01/30/87	---	---	0.006	---	---	---	---	---	0.02	---	0.004	---	---	---	---	---	---	---	---	0.24
	02/01/88	---	---	0.011	---	---	---	---	---	<0.01	---	0.001	---	---	---	---	---	---	---	---	**1.6**
	01/27/89	---	---	0.003	---	---	---	---	---	<0.01	---	0.002	---	---	---	---	---	---	---	---	<0.01
	01/23/90	---	---	0.021	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	**9.5**
	02/16/90	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.3**
	01/09/91	---	---	0.009	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	0.03
	01/17/92	---	---	0.004	---	---	---	---	---	**0.08**	---	<0.001	---	---	---	---	---	---	---	---	0.27
	02/14/94	---	---	0.016	---	---	---	---	---	<0.01	---	<0.001	---	---	---	---	---	---	---	---	**6.4**
	01/30/95	---	---	0.017	---	---	---	---	---	<0.01	---	0.032	---	---	---	---	---	---	---	---	**10**
	06/30/00	---	<0.05	0.023	<0.05	<0.05	0.006	<0.01	<0.05	<0.05	<0.004	<0.02	**19**	<0.0005	<0.05	<0.01	**0.019**	<0.002	<0.05	<0.05	**6.6**
	07/28/00	---	<0.05	<0.009	<0.05	<0.05	**0.1**	<0.01	<0.05	<0.05	<0.004	<0.02	**20**	<0.0005	**0.08**	0.039	<0.005	**0.003**	<0.05	<0.05	**7.1**
	08/17/00	---	<0.05	<0.008	0.051	<0.05	**0.023**	<0.01	<0.05	<0.05	<0.004	<0.02	**12**	<0.0005	<0.05	0.03	<0.005	**0.004**	<0.05	<0.05	<0.05
MW-6	06/07/93	32,954	---	<0.02	---	---	0.005	---	---	<0.008	---	<0.02	0.48	---	<0.02	---	---	---	---	---	0.064
(dup)	06/07/93	---	---	<0.02	---	---	0.006	---	---	<0.008	---	<0.02	0.45	---	<0.02	---	---	---	---	---	0.075
	06/17/93	10,654	---	<0.02	---	---	**0.027**	---	---	0.035	---	0.028	0.5	---	<0.02	---	---	---	---	---	0.11
	06/24/93	9,717	---	<0.02	---	---	<0.008	---	---	<0.02	---	<0.02	0.8	---	<0.02	---	---	---	---	---	0.043
	02/20/98	22,000*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02/20/98	32,000**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	04/29/99	---	---	<0.005	0.065	---	<0.01	<0.01	---	---	---	<0.02	0.52	<0.0005	---	<0.01	<0.005	---	---	---	---
	07/23/99	---	---	<0.005	0.024	---	<0.01	<0.01	---	---	---	<0.005	0.43	<0.0005	---	0.006	<0.005	---	---	---	---
	10/20/99	---	---	0.008	0.041	---	<0.01	<0.01	---	---	---	<0.01	0.50	<0.0005	---	<0.01	<0.005	---	---	---	---
	01/27/00	---	---	<0.005	0.11	---	<0.01	<0.01	---	---	---	0.036	0.61	<0.0005	---	<0.01	<0.005	---	---	---	---
	06/30/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	0.46	---	<0.05	0.014	---	<0.002	<0.05	<0.05	0.065
	07/28/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	0.46	---	<0.05	0.017	---	<0.002	<0.05	<0.05	<0.05
	08/17/00	---	<0.05	---	---	<0.05	---	<0.01	<0.05	<0.05	<0.004	---	0.43	---	<0.05	0.034	---	<0.002	<0.05	<0.05	<0.05
(dup)	08/17/00	---	<0.05	---	---	<0.05	---	<0.01	<0.05	<0.05	<0.004	---	0.44	---	<0.05	0.026	---	<0.002	<0.05	<0.05	<0.05
	12/11/00	---	---	0.012	<0.05	---	<0.01	<0.01	---	---	---	<0.02	0.27	<0.0005	---	0.023	<0.01	---	---	---	---
	06/14/01	---	---	0.008	<0.05	---	<0.01	0.013	---	---	---	<0.02	0.34	<0.0005	---	0.014	<0.005	---	---	---	---
	12/12/01	---	---	0.01	0.045	---	<0.01	<0.01	---	---	---	<0.01	0.28	<0.0005	---	<0.01	<0.005	---	---	---	---
	06/11/02	---	---	<0.005	0.054	---	<0.01	<0.01	---	---	---	<0.01	0.39	<0.0005	---	0.015	<0.005	---	---	---	---
(dup)	06/11/02	---	---	0.009	<0.05	---	<0.01	<0.01	---	---	---	<0.01	0.39	<0.0005	---	0.032	<0.005	---	---	---	---
	12/05/02	---	---	0.012	0.041	---	<0.005	<0.01	---	---	---	<0.005	0.33	<0.0005	---	<0.005	<0.008	---	---	---	---

Table 5. Analytical Results Summary - Groundwater (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Well	Sample Date	TDS	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
MW-6	06/05/03	---	---	0.012	0.038	---	<0.005	<0.01	---	---	---	<0.003	0.56	<0.0005	---	<0.005	<0.005	---	---	---	---
(cont.)	12/05/03	---	---	0.015	0.055	---	<0.002	<0.02	---	---	---	<0.005	0.57	<0.0006	---	0.005	<0.005	---	---	---	---
	06/22/04	---	---	0.01	0.04	---	<0.01	<0.01	---	---	---	<0.01	0.43	<0.002	---	0.01	<0.005	---	---	---	---
(dup)	06/22/04	---	---	0.01	0.08	---	<0.01	<0.01	---	---	---	<0.01	0.42	<0.002	---	<0.01	<0.005	---	---	---	---
MW-8	04/29/99	---	---	0.006	0.16	---	<0.01	<0.01	---	---	---	<0.02	0.45	<0.0005	---	0.011	<0.005	---	---	---	---
	07/23/99	---	---	0.012	0.12	---	<0.01	<0.01	---	---	---	0.006	0.27	**0.00082**	---	0.17	<0.005	---	---	---	---
	10/20/99	---	---	0.007	0.076	---	<0.01	<0.01	---	---	---	<0.01	0.48	<0.0005	---	0.13	<0.005	---	---	---	---
	01/27/00	---	---	<0.005	0.049	---	<0.01	<0.01	---	---	---	<0.02	0.62	<0.0005	---	0.02	<0.005	---	---	---	---
	06/30/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	0.77	---	<0.05	<0.01	---	<0.002	**0.84**	<0.05	0.17
	07/28/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	0.48	---	<0.05	0.031	---	<0.002	<0.05	<0.05	0.059
	08/17/00	---	<0.05	---	---	<0.05	---	<0.01	<0.05	<0.05	<0.004	---	0.62	---	<0.05	0.025	---	<0.002	<0.05	<0.05	0.097
	12/11/00	---	---	<0.005	0.10	---	<0.01	<0.01	---	---	---	0.032	0.61	**0.00082**	---	<0.01	<0.01	---	---	---	---
	06/14/01	---	---	0.011	0.075	---	<0.01	<0.01	---	---	---	<0.02	0.63	<0.0005	---	0.024	<0.005	---	---	---	---
(dup)	06/14/01	---	---	0.013	0.051	---	<0.01	<0.01	---	---	---	<0.02	0.62	<0.0005	---	0.021	<0.005	---	---	---	---
	12/12/01	---	---	0.015	0.037	---	<0.01	<0.01	---	---	---	<0.01	0.14	<0.0005	---	0.28	<0.005	---	---	---	---
	06/11/02	---	---	0.013	<0.05	---	<0.01	<0.01	---	---	---	<0.01	0.45	<0.0005	---	0.035	<0.005	---	---	---	---
	12/05/02	---	---	0.011	0.055	---	<0.005	<0.01	---	---	---	0.006	0.31	<0.0005	---	0.12	<0.008	---	---	---	---
	06/05/03	---	---	0.010	0.070	---	<0.005	<0.01	---	---	---	0.007	0.44	<0.0005	---	0.041	<0.005	---	---	---	---
	12/05/03	---	---	0.023	0.063	---	<0.002	<0.02	---	---	---	<0.005	0.22	<0.0006	---	0.16	<0.005	---	---	---	---
(dup)	12/05/03	---	---	0.022	0.064	---	<0.002	<0.02	---	---	---	<0.005	0.24	<0.0006	---	0.15	<0.005	---	---	---	---
	06/22/04	---	---	<0.01	0.18	---	**0.06**	<0.01	---	---	---	0.03	0.17	<0.002	---	0.06	<0.005	---	---	---	---
MW-9	04/29/99	---	---	0.02	0.5	---	<0.01	0.063	---	---	---	0.053	1.8	0.00044	---	<0.01	<0.005	---	---	---	---
	07/23/99	---	---	0.015	0.039	---	<0.01	<0.01	---	---	---	<0.005	0.62	<0.0005	---	<0.005	<0.005	---	---	---	---
	10/20/99	---	---	0.017	0.029	---	<0.01	<0.01	---	---	---	<0.01	1.1	<0.0005	---	<0.01	<0.005	---	---	---	---
	01/27/00	---	---	<0.005	0.045	---	<0.01	<0.01	---	---	---	<0.02	0.56	<0.0005	---	<0.01	<0.005	---	---	---	---
	06/30/00	---	<0.05	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	0.57	---	<0.05	<0.01	---	<0.002	**0.27**	0.058	0.3
	07/28/00	---	**0.18**	---	---	<0.05	---	---	<0.05	<0.05	<0.004	---	0.33	---	<0.05	0.02	---	<0.002	<0.05	<0.05	<0.05
	08/17/00	---	0.052	---	---	<0.05	---	0.017	<0.05	<0.05	<0.004	---	0.49	---	<0.05	0.029	---	<0.002	<0.05	0.057	0.26
	12/11/00	---	---	0.012	<0.05	---	<0.01	<0.01	---	---	---	<0.02	0.21	<0.0005	---	0.011	<0.01	---	---	---	---
(dup)	12/11/00	---	---	0.014	<0.05	---	<0.01	<0.01	---	---	---	<0.02	0.2	<0.0005	---	0.011	<0.01	---	---	---	---
	06/14/01	---	---	0.017	0.057	---	0.01	<0.01	---	---	---	<0.02	0.43	<0.0005	---	0.016	<0.005	---	---	---	---
	12/12/01	---	---	0.025	0.043	---	<0.01	<0.01	---	---	---	<0.01	0.77	<0.0005	---	<0.01	<0.005	---	---	---	---
(dup)	12/12/01	---	---	0.025	0.05	---	<0.01	<0.01	---	---	---	<0.01	0.81	<0.0005	---	<0.01	<0.005	---	---	---	---
	06/11/02	---	---	0.014	<0.05	---	<0.01	<0.01	---	---	---	<0.01	0.35	<0.0005	---	0.018	<0.005	---	---	---	---
	12/05/02	---	---	0.017	0.041	---	<0.005	<0.01	---	---	---	<0.005	2.0	<0.0005	---	<0.005	<0.008	---	---	---	---
(dup)	12/05/02	---	---	0.023	0.036	---	<0.005	<0.01	---	---	---	<0.005	1.7	<0.0005	---	<0.005	<0.008	---	---	---	---

Table 5. Analytical Results Summary - Groundwater (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Well	Sample Date	TDS	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
MW-9	06/05/03	---	---	0.012	0.044	---	<0.005	<0.01	---	---	---	<0.003	0.45	<0.0005	---	<0.005	<0.005	---	---	---	---
(dup)	06/05/03	---	---	0.019	0.042	---	<0.005	<0.01	---	---	---	0.003	0.60	<0.0005	---	<0.005	<0.005	---	---	---	---
	12/05/03	---	---	0.009	0.075	---	<0.002	<0.02	---	---	---	<0.005	0.81	<0.0006	---	<0.005	<0.005	---	---	---	---
	06/22/04	---	---	0.01	0.04	---	<0.01	<0.01	---	---	---	<0.01	1.02	<0.002	---	<0.01	<0.005	---	---	---	---
Beaumont Formation Monitor Wells																					
MW-7	06/07/93	6,646	---	0.033	---	---	<0.003	---	---	0.008	---	<0.02	0.44	---	<0.02	---	---	---	---	---	0.026
	06/17/93	7,026	---	0.022	---	---	**0.056**	---	---	0.01	---	<0.02	0.3	---	<0.02	---	---	---	---	---	0.26
	06/24/93	7,068	---	0.02	---	---	<0.008	---	---	<0.02	---	<0.02	0.35	---	<0.02	---	---	---	---	---	0.013
(dup)	06/24/93	7,101	---	0.024	---	---	<0.008	---	---	<0.02	---	<0.02	0.38	---	<0.02	---	---	---	---	---	0.014
	02/20/98	7,680*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02/20/98	8,540**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12/11/01	---	<0.05	**0.044**	0.085	<0.05	<0.01	<0.1	<0.05	<0.05	<0.004	<0.02	0.16	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	01/16/02	---	<0.05	**0.051**	0.062	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.17	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	02/12/02	---	<0.05	**0.063**	0.07	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.019	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
MW-11	12/11/01	---	<0.05	<0.005	0.12	**0.059**	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	**7.7**	<0.0005	<0.05	0.015	<0.005	<0.002	<0.05	<0.05	0.18
	01/16/02	---	<0.05	0.006	0.066	<0.05	<0.01	<0.01	<0.05	<0.05	**0.039**	<0.02	6.2	<0.0005	**0.053**	<0.01	<0.005	<0.002	<0.05	<0.05	0.06
	02/12/02	---	<0.05	<0.005	0.066	<0.05	<0.01	<0.01	<0.05	**0.061**	<0.004	<0.02	7.3	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
MW-12	12/27/01	---	<0.05	0.023	0.11	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.13	<0.0005	<0.05	0.27	<0.005	<0.002	<0.05	<0.05	0.092
	01/16/02	---	<0.05	0.032	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.071	<0.0005	<0.05	**0.40**	<0.005	<0.002	<0.05	<0.05	0.062
(dup)	01/16/02	---	<0.05	0.029	0.16	<0.05	<0.01	0.01	<0.05	<0.05	<0.004	<0.02	0.21	<0.0005	<0.05	0.31	<0.005	<0.002	<0.05	0.054	0.19
	02/12/02	---	<0.05	0.035	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.064	<0.0005	<0.05	**0.38**	<0.005	<0.002	<0.05	<0.05	<0.05
MW-13	12/11/01	---	<0.05	0.006	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	**0.14**	<0.02	0.2	<0.0005	<0.05	0.28	<0.005	<0.002	<0.05	<0.05	<0.05
	01/16/02	---	<0.05	0.012	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.065	<0.0005	<0.05	**0.49**	<0.005	<0.002	<0.05	<0.05	<0.05
	02/12/02	---	<0.05	0.016	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.037	<0.0005	<0.05	**0.42**	<0.005	<0.002	<0.05	<0.05	<0.05
(dup)	02/12/02	---	<0.05	0.017	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.043	<0.0005	<0.05	**0.44**	<0.005	<0.002	<0.05	<0.05	<0.05
MW-14	12/11/01	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.18	<0.0005	<0.05	0.067	<0.005	<0.002	<0.05	<0.05	0.06
	01/16/02	---	<0.05	0.009	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.077	<0.0005	<0.05	0.12	<0.005	<0.002	<0.05	<0.05	0.089
	02/12/02	---	<0.05	0.009	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.034	<0.0005	<0.05	0.11	<0.005	<0.002	<0.05	<0.05	0.053
MW-15	12/11/01	---	<0.05	0.012	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	**0.23**	<0.02	2.0	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	01/16/02	---	<0.05	0.027	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	2.7	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	02/12/02	---	<0.05	0.018	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	3.1	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05

Table 5. Analytical Results Summary - Groundwater (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Well	Sample Date	TDS	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
MW-16	12/11/01	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.05	0.00056	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	01/16/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	0.012	<0.005	<0.002	<0.05	<0.05	<0.05
	02/12/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
MW-17	12/11/01	---	<0.05	<0.005	0.11	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.17	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	0.081
(dup)	12/11/01	---	<0.05	0.013	0.13	<0.05	<0.01	0.01	<0.05	<0.05	<0.004	<0.02	0.83	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	0.084
	01/16/02	---	<0.05	0.026	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.50	<0.0005	<0.05	0.011	<0.005	<0.002	<0.05	<0.05	0.069
	02/12/02	---	<0.05	0.024	<0.05	<0.05	<0.01	0.01	<0.05	<0.05	<0.004	<0.02	0.46	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	0.160
MW-18	12/11/01	---	<0.05	<0.005	0.24	<0.05	<0.01	0.041	<0.05	**0.056**	<0.004	0.039	0.55	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	0.086	0.71
	01/16/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	0.064	<0.005	<0.002	<0.05	<0.05	0.36
	02/12/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.021	<0.0005	<0.05	0.043	<0.005	<0.002	<0.05	<0.05	0.36
	7/19/02***	---	<0.05	0.006	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	0.037	<0.005	<0.002	<0.05	<0.05	0.42
MW-19	12/11/01	---	<0.05	<0.005	0.2	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.83	<0.0005	<0.05	0.022	<0.005	<0.002	<0.05	0.086	0.11
	01/16/02	---	<0.05	0.005	0.064	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.55	<0.0005	<0.05	0.050	<0.005	<0.002	<0.05	0.069	<0.05
	02/12/02	---	<0.05	<0.005	0.068	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.44	<0.0005	<0.05	0.032	<0.005	<0.002	<0.05	0.071	<0.05
MW-20	12/11/01	---	<0.05	<0.005	0.069	<0.05	<0.01	0.029	<0.05	<0.05	<0.004	<0.02	0.36	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	01/16/02	---	<0.05	<0.005	0.056	<0.05	<0.01	0.012	<0.05	<0.05	<0.004	<0.02	0.13	<0.0005	<0.05	0.020	<0.005	<0.002	<0.05	<0.05	<0.05
	02/12/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	0.010	<0.05	<0.05	<0.004	<0.02	0.036	<0.0005	<0.05	0.014	<0.005	<0.002	<0.05	<0.05	<0.05
MW-21	12/11/01	---	<0.05	<0.005	0.07	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.51	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	0.062	<0.05
	01/16/02	---	<0.05	0.010	0.087	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.39	<0.0005	<0.05	0.011	<0.005	<0.002	<0.05	0.11	<0.05
	02/12/02	---	<0.05	0.011	0.084	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	0.24	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	0.11	<0.05
Field	04/29/99	---	---	<0.005	<0.05	---	<0.01	<0.01	---	---	---	<0.02	<0.015	<0.0005	---	<0.01	<0.005	---	---	---	---
Blank	06/30/00	---	<0.05	<0.005	<0.05	<0.05	<0.005	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	0.077
	07/28/00	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	08/17/00	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	**0.006**	<0.05	<0.05	<0.05
	12/11/00	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12/11/01	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.05	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	12/12/01	---	---	<0.005	<0.01	---	<0.01	<0.01	---	---	---	<0.01	<0.015	<0.0005	---	<0.01	<0.005	---	---	---	---
	12/27/01	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	01/16/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	02/12/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
	07/19/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05

Table 5. Analytical Results Summary - Groundwater (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Well	Sample Date	TDS	Antimony	Arsenic	Barium	Bismuth	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
Trip	07/23/99	---	---	<0.005	<0.01	---	<0.01	<0.01	---	---	---	<0.005	<0.015	<0.0005	---	<0.005	<0.005	---	---	---	---
Blank	10/20/99	---	---	<0.005	<0.01	---	<0.01	<0.01	---	---	---	<0.01	<0.01	<0.0005	---	<0.01	<0.005	---	---	---	---
	01/27/00	---	---	<0.005	<0.05	---	<0.01	<0.01	---	---	---	<0.02	0.02	<0.0005	---	<0.01	<0.005	---	---	---	---
	04/25/00	---	---	<0.005	<0.01	---	<0.005	<0.01	---	---	---	<0.005	<0.015	<0.0005	---	<0.01	<0.005	---	---	---	---
	12/11/00	---	---	<0.005	<0.05	---	<0.01	<0.01	---	---	---	<0.02	<0.015	<0.0005	---	<0.01	<0.01	---	---	---	---
	06/14/01	---	---	<0.005	<0.05	---	<0.01	<0.01	---	---	---	<0.02	<0.015	<0.0005	---	<0.01	<0.005	---	---	---	---
	12/12/01	---	---	<0.005	<0.01	---	<0.01	<0.01	---	---	---	<0.01	<0.015	<0.0005	---	<0.01	<0.005	---	---	---	---
	02/12/02	---	<0.05	<0.005	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.004	<0.02	<0.015	<0.0005	<0.05	<0.01	<0.005	<0.002	<0.05	<0.05	<0.05
TCEQ RRS2 MSCs[e]																					
Adjusted GW (mg/L):			0.6	1	200		0.5	10	610	130	20	1.5	1400	0.2	200	5	51	0.2	6100	72	3100

* Sample collected with Teflon bailer from top of water column in well bore.

** Sample collected with bottom-filling Teflon bailer from base of well bore.

*** Sample collected on July 19, 2002 following a release of stormwater from a broken PVC pipe near the South Demin Tank. Stormwater flowed to the monitor well MW-18 area.

--- Not analyzed

dup Duplicate

TDS Total dissolved solids

a Non-detects were assigned a value of one-half the detection limit, except when all observations were non-detectable the detection limit was used as the constituent concentration.

b K=Tolerance factor for one-sided normal tolerance interval with 0.95 probability level (U.S. EPA, Feb. 1989)

c Background data for arsenic, barium, cadmium, chromium, lead, maganese, mercury, selenium, and silver taken from monitor wells MW-3 and MW-10 during the first year of quarterly groundwater monitoring (April 1999 - April 2000) as part of the East and West Lagoons groundwater monitoring program.

d Background data for antimony, bismuth, cobalt, copper, cyanide, manganese, nickel, selenium, thallium, tin, vanadium, and zinc taken from monitor wells MW-3 and MW-10 during the RFI monthly groundwater sampling events conducted during June, July, and August 2000.

e Adjusted Risk Reduction Standard No. 2 (RRS2) medium specific concentration (MSC) for groundwater (adjusted for saline groundwater).

Note: Numbers in **bold** indicate concentrations above the background upper tolerance limit.

Table 6. Corrective Action Objectives, Encycle/Texas, Inc., Corpus Christi, Texas

Environmental Media	Constituents of Concern	Potential Exposure Routes	CORRECTIVE ACTION OBJECTIVES	
			Northern Tract and Southern Tract[a]	Meaney Tract[b]
Surface Soils	Metals	Direct Contact by Site Workers -Inhalation of particulates -Incidental ingestion of soil -Dermal contact with soil	Exposure prevention. Prevent incidental ingestion, inhalation or dermal contact with soils that exceed PRGs.	Remediate soils exceeding PRGs.
		Direct Contact by Construction Workers -Inhalation of particulates -Incidental ingestion of soil -Dermal contact with soil	Exposure prevention. Prevent incidental ingestion, inhalation or dermal contact with soils that exceed PRGs.	Remediate soils exceeding PRGs.
		Soil Contact with Storm Water	Reduce or eliminate contact between affected surface soils and storm water.	Remediate soils exceeding PRGs. Backfill remediated areas with clean soils.
Subsurface Soils	Metals	Ingestion of Groundwater Contaminated by Soil Leachate	Prevent exposure to affected shallow groundwater.	Remediate soils exceeding PRGs.
		Direct Contact by Construction Workers -Inhalation of particulates -Incidental ingestion of soil -Dermal contact with soil	Exposure prevention. Prevent incidental ingestion, inhalation or dermal contact with soils that exceed PRGs.	Remediate soils exceeding PRGs.
Groundwater	Metals	Ingestion of Groundwater under Industrial/Commercial Land Use	Prevent ingestion of affected shallow groundwater.	Prevent ingestion of affected shallow groundwater.

PRGs Preliminary Remediation Goals.
a Encycle/Texas, Inc. owned property.
b Property leased to Encycle/Texas, Inc. by Meaney-Walsh Properties No. 1., Ltd
Notes: (1) Current land use at the site is industrial. The site will be deed recorded for commercial/industrial land use with a water well ban.
(2) PRGs for commercial/industrial soil were developed for the Meaney, Northern, and Southern Tracts in the August 27, 2004 BLRA Addendum.

Table 7. Surface Soil PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

CONSTITUENT	SURFACE SOIL PRG (mg/kg)[a]
Meaney Tract[b]	
Antimony	54
Arsenic	200
Cadmium	160
Lead	1,600
Manganese	1,400
Silver	160
Zinc	45,000
Northern Tract[c]	
Arsenic	200
Southern Tract[d]	
Arsenic	200
Lead	1,600

mg/kg Milligrams per kilogram.
PRG Preliminary remediation goal.
a PRG taken from Attachment 3, Table A of the August 27, 2004 Baseline Risk Assessment Addendum.
b Maximum detected concentrations were used as the exposure point concentrations in the risk calculations for the Meaney Tract.
c The calculated 95% Upper Confidence Limit for each COC was used as exposure point concentration in the risk calculations for the Northern Tract.
d The calculated 95% Upper Confidence Limit for each COC was used as exposure point concentration in the risk calculations for the Southern Tract.

Table 8. Affected Soil Volume Calculations - Soils Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

SWMU	Affected Area Location	Affected Area Size (square feet)[a]	Affected Area Depth (feet)[b]	Affected Soil Volume (cubic feet)	Affected Soil Volume (cubic yards)[c]
Meaney Tract					
Boneyard	B-105/B-188 Area	10,163	2.5	25408	941
	B-231 Area	5,800	1.5	8700	322
	B-189/B-190/B-226/B-229 Area	26,850	0.5	13425	497
Waste Pile	B-20 Area	10,700	0.5	5350	198
	B-21/B-21a Area	10,148	1.5	15222	564
	B-22 Area	9,257	2.5	23143	857
				Meaney Tract Total:	3380
Northern Tract					
01 Landfill	B-140 SPLP Boring Area	3,173	5.5	17452	646
	B-223/B-237 Area	1,534	1.5	2301	85
				Northern Tract Total:	732
Southern Tract					
Railroad Tracks	B-96, B-96a, B-97, B-97a Area	10,412	1.5	15618	578
	B-98, B-98a Area	3,427	0.5	1714	63
	B-99, B-99a Area	4,602	1.5	6903	256
	B-101, B-101a Area	6,535	0.5	3268	121
	B-104, B-104a, B-35, B-241, B-242 Area	17,774	0.5	8887	329
	B-238 Area	3,562	0.5	1781	66
	B-239 Area	6,200	1.5	9300	344
	B-246 Area	9,737	0.5	4869	180
Road Leading to the West of Building C	B-110 Area	3,328	0.5	1664	62
	B-38, B-244 Area	5,467	0.5	2734	101
	B-240 Area	2,305	0.5	1153	43
	B-40, B-245 Area	2,149	0.5	1075	40
Reactor Clarifier	B-42 Area	3,733	0.5	1867	69

Table 8. Affected Soil Volume Calculations - Soils Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

SWMU	Affected Area Location	Affected Area Size (square feet)[a]	Affected Area Depth (feet)[b]	Affected Soil Volume (cubic feet)	Affected Soil Volume (cubic yards)[c]
Building C (Lettered Bins)	Bin F, Cracks 1 and 2[d]	200	1.0	200	7
	Bin G, Crack 3[d]	100	1.0	100	4
	Bin H, Crack 2[d]	100	1.0	100	4
	Bin P, Crack 3[d]	100	1.0	100	4
Storm Sewer System[e]	B-111, Storm Drain 219 Area	5,620	1.5	8430	312
	B-113, B-247 Area	1,200	0.5	600	22
				Southern Tract Total:	2606
				Grand Total (In-situ Volume):	**6,718 yd^3**
				Grand Total (Excavated/loose Volume):[c]	**8,062 yd^3**

mg/kg Milligrams per kilogram.
PRG Preliminary remediation goal.
a See Figure 15 for affected area on Meaney Tract, and Figure 16 for affected area on Northern and Southern Tracts. Surface areas calculated using AutoCAD-2005 Inquiry Area Function of colored areas shown on Figures 15 and 16.
b See Figures 15 and 16 for affected area depths shown in color. Affected area depths based on soil sample analytical results.
c Volume calculations shown are in-situ volumes. Excavated (loose) volumes for clayey soils will be higher by a factor of approximately 1.2.
d Soil samples collected directly below cracks in concrete floor. Affected soil area under each crack estimated at 20 feet in length and 5 feet in width, and 0.5-1.0 feet in depth (i.e., 50 - 100 ft^3).
e Affected soil volume in storm sewer soil boring B-110 area included in Road Leading to the West of Building C Area. Average affected soil thickness in soil boring B-111 and Storm Drain 219 Area is approximately 1.5 feet.

Table 9. Screening of Technologies for Soils Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

Technology	Description	Screening Comments	Status (Retained/Eliminated) Northern Tract & Southern Tract	Status (Retained/Eliminated) Meaney Tract
No Action	This alternative of no action serves as a baseline against which other remedial alternatives can be compared.	The August 27, 2004 BLRA Addendum shows that soils in portions of the Meaney Tract, Northern Tract, and Southern Tract exceed preliminary remediation goals (PRGs). Also, as detailed in the November 19, 2004 Revised BLRA Addendum, ingestion of groundwater by commercial/industrial workers could result in unacceptable risk and/or hazard calculation if the workers ingested, on a chronic basis, groundwater produced by the Beaumont Formation at the site. Therefore, the no action alternative does not meet the corrective action objectives summarized on Table 6.	Eliminated	Eliminated
Institutional Controls				
Deed Notice	A deed notice is a legal document that is recorded in the county deed records to provide a permanent notice to subsequent owners/operators that chemicals of concern are present above the PRGs, and/or impose conditions on the future use of the property in order to ensure protective use of the property.	The deed notice, including designation of the property for commercial/industrial land use with a water well ban, will assist in meeting the corrective action objectives of exposure prevention to soils exceeding PRGs on the Northern and Southern Tracts, and exposure prevention to affected shallow groundwater throughout the site and Meaney Tract.	Retained	Retained
Containment Technologies				
Fencing	Fencing is a physical control to restrict access to affected media that exceed PRGs. Thic technology involves installation of a six foot high perimeter fence and signs to prevent accidential human exposure to soils exceeding PRGs.	No exposure pathways would be eliminated under this alternative. Fencing will assist in meeting the corrective action objectives of exposure prevention on the Northern and Southern Tracts. Fencing currently exists around the perimeter of the Southern Tract, and the eastern end of the Northern Tract. Fencing is easily implemented. Fencing does not meet the corrective action objective of remediating COCs in soil that exceed PRGs on the Meaney Tract.[a]	Retained	Eliminated
Concrete Cap	A concrete cap is a physical control consisting of rigid pavement over affected soils exceeding PRGs using 6-inch-thick, 3,000-psi, reinforced concrete.	A concrete cap will meet the corrective action objectives of exposure prevention on the Northern and Southern Tracts. A concrete cap also will eliminate contact between affected surface soils and storm water runoff. Concrete is easily implemented, and portions of the affected soils that exceed PRGs on the Southern Tract are currently located below concrete (see Table 4). A concrete cap does not meet the corrective action objective of remediating COCs in soil that exceed PRGs on the Meaney Tract.[a]	Retained	Eliminated

Table 9. Screening of Technologies for Soils Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

Technology	Description	Screening Comments	Status (Retained/Eliminated) Northern Tract & Southern Tract	Status (Retained/Eliminated) Meaney Tract
Asphalt Cap	An asphalt cap is a physical control consisting of flexible pavement over affected soils exceeding PRGs using 3-inch-thick, asphalt underlain by 6 inches of compacted, lime-stabilized base material.	An asphalt cap will meet the corrective action objectives of exposure prevention on the Northern and Southern Tracts. An asphalt cap also will eliminate contact between affected surface soils and storm water runoff. Asphalt capping is easily implemented. An asphalt cap does not meet the corrective action objective of remediating COCs in soil that exceed PRGs on the Meaney Tract.[a]	Retained	Eliminated
Clay Cap	A clay cap is a physical control consisting of 3+ feet of compacted, low-permeability ($<10^{-7}$ cm/sec) clayey soil covered with 6 inches of topsoil seeded with grass.	A clay cap will meet the corrective action objectives of exposure prevention on the Northern and Southern Tracts. A clay cap also will eliminate contact between afffected surface soils and storm water runoff. A clay cap, because of its thickness, would not be practical inside buildings (i.e., Building C), roadways, or parking areas, but a clay cap would be practical and promote drainage above the 01 Landfill where a clay cap currently exists. A clay cap does not meet the corrective action objective of remediating COCs in soil that exceed PRGs on the Meaney Tract.[a]	Retained	Eliminated
Treatment Technologies				
Soil Washing	Soil washing involves chemical and physical separation and extraction to solubilize and remove COCs from excavated soils. Utilizes surfactants and solvents. Solvents may include water, acids or bases, and chelating agents.	Site characteristics limit the applicability of soil washing. The affected soils are non-homogeneous, and portions of the affected soils in the Southern Tract are located under concrete pavement or inside buildings that will require concrete removal prior to soil excavation. Soil washing is more applicable to permeable soils, and the affected soils consist primarily of low-permeability clay and silt. Non-homogenous soils and COC concentrations may cause difficulty in implementing washing procedues and in tailoring extractant solutions to remove COCs.	Eliminated	Eliminated
Bioremediation	Bioremediation involves in-situ or ex-situ stimulation of indigenous microbial populations using nutrients, moisture, oxygen, and/or tilling of soil to degrade and transform COCs into compounds of reduced toxicity and/or availability.	COC characteristics (metals) are unsuitable for bioremediation. Metals do not respond significantly to biodegredation. Site characteristics on Southern Tract (concrete pavement, buildings) are not preferable for excavation or tilling of soils.	Eliminated	Eliminated

Table 9. Screening of Technologies for Soils Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

Technology	Description	Screening Comments	Status (Retained/Eliminated) Northern Tract & Southern Tract	Status (Retained/Eliminated) Meaney Tract
Thermal Treatment	Thermal treatments processes employ indirect or direct heat exchanges to desorb, vaporize or separate COCs from solid media. Technologies include incineration and thermal desorption.	COC characteristics (metals) are poorly suited for thermal treatment because the volatility of metals are low (low Henry's Law Constants), resulting in high temperature requirements. Site Characteristics on Southern Tract (concrete pavement, buildings) are not preferable for excavation and thermal treatment. Air emissions and/or residual ash may require treatment.	Eliminated	Eliminated
Vapor Extraction	Vapor extraction involves using vacuum pumps or blowers to produce a negative pressure gradient, which induces air flow through the soils and causes movement of vapors containing COCs to extraction wells. May require air treatment.	COC characteristics (metals) are unsuitable for vapor extraction because the volatility of metals are low (low Henry's Law Constants). Site characteristics are poorly suited to vapor extraction due to the low permeability of the affected soils (predominantly clay and silt).	Eliminated	Eliminated
In-situ Solidification/ Stabilization	In-situ solidification/stabilization is an in-place soil treatment process involving mixing of additives or reagents with the soil to reduce physically or chemically the solubility or mobility of COCs. Solidification/stabilization binding agents are mixed with water in-situ and the treated soils remain on-site. Phosphates, sulfides, carbonates, etc. can be used as treatment reagent. Fugitive dust control likely would be required during mixing.	Bench-scale studies conducted by selected contractors during 2005 showed stablized soil would have low metal leaching characteristics. Leachable (TCLP) metals concentrations could be reduced to Class I or Class II non-hazardous concentrations, depending on the type and amount of reagent added. Although leachable metal concentrations are reduced, total metal concentrations are not reduced significantly. Therefore, in-situ solidification/stabilization will not meet the corrective action objectives of exposure prevention to soils exceeding PRGs on the Northern and Southern Tracts, and remediation of soils exceeding the PRGs on the Meaney Tract.	Eliminated	Eliminated
Ex-situ Solidification/ Stabilization	Ex-situ solidification/stabilization is a soil treatment process involving excavation of the soil, placing into stockpiles, then mixing of additives or reagents with the soil to reduce physically or chemically the solubility or mobility of COCs. Solidification/stabilization binding agents are mixed with water ex-situ and the **treated soils remain on-site**. Phosphates, sulfides, carbonates, etc. can be used as treatment reagent. Fugitive dust control likely would be required during mixing.	Bench-scale studies conducted by selected contractors during 2005 showed stablized soil would have low metal leaching characteristics. Leachable (TCLP) metals concentrations could be reduced to Class I or Class II non-hazardous concentrations, depending on the type and amount of reagent added. Although leachable metal concentrations are reduced, total metal concentrations are not reduced significantly. Therefore, ex-situ solidification/stabilization will not meet the corrective action objectives of exposure prevention to soils exceeding PRGs on the Northern and Southern Tracts, and remediation of soils exceeding the PRGs on the Meaney Tract if the treated soils remain onsite. This treatment technology is retained as part of soil excavation, stabilization, and offsite disposal as detailed below under Removal/Disposal technologies.	Eliminated[b]	Eliminated[b]

Table 9. Screening of Technologies for Soils Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

Technology	Description	Screening Comments	Status (Retained/Eliminated)	
			Northern Tract & Southern Tract	Meaney Tract
Removal/Disposal Soil Recycling	Soil recycling technologies applicable to metals-affected soils include metals recovery using chemcial and/or physical extraction methods, and incorporation of the affected soils into road pavements such as concrete aggregate or asphalt-stabilized road base.	The metals concentrations in the affected soils are generally too low for metals recovery to be economical (percent-range metals concentrations are preferred). The affected soil types (primarily silty and sandy clays) do not have sufficient structural strength for concrete aggregate. The affected soils do not have oils/ organic compounds preferred for asphalt-stabilized road base, and the metals-affected soils would require treatment/stabilization to reduce TCLP concentrations prior to use as road base material.	Eliminated	Eliminated
Excavation and Offsite Disposal	Excavation and offsite disposal involves excavating the soils exceeding PRGs, transporting the excavated soils to an authorized landfill, and backfilling the excavated area with clean soil.	Excavation and offsite disposal of soils exceeding PRGs would meet the corrective action objectives. Based on the February and March 2005 laboratory analysis of affected soils for TCLP metals, the concentrations of cadmium, lead, and/or zinc exceed characteristically hazardous levels and Alternate LDR Treatment Standards for Contaminated Soils (40 CFR 268.49(c)(1)(C).	Retained	Retained
Excavation, Stabilization, and Offsite Disposal	Excavation, stabilization, and offsite disposal involves excavating the soils exceeding PRGs, mixing the soils with binding agents using phosphates, sulfides, carbonates, etc. as the treatment reagent, collecting confirmation soil samples to ensure stabilization goals were achieved (Class II or Class I non-hazardous levels), transportation to an authorized landfill, and backfilling the excavated area with clean soil.	Excavation, stabilization, and offsite disposal of soils exceeding PRGs would meet the corrective action objectives. Relative to the Excavation and Offsite Disposal option above, stabilization could be more cost effective if TCLP metals concentrations in the stabilized soil are reduced to Class I or Class II non-hazardous levels.	Retained	Retained

Table 9. Screening of Technologies for Soils Exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

Technology	Description	Screening Comments	Status (Retained/Eliminated)	
			Northern Tract & Southern Tract	Meaney Tract
Excavation and Disposal in a Corrective Action Management Unit (CAMU) at the Encycle facility.	A CAMU is a RCRA unit specifically intended for treatment, storage and disposal of hazardous remediation waste. Waste can be treated ex-situ and then placed in a CAMU, and wastes may be consolidated in CAMU from areas that are not contiguously contaminated. A CAMU must be approved by the EPA or an authorized state and designated in a permit or corrective action order. A CAMU must be documented in an institutional control (deed notice).	The southeast corner of the Encycle faclity (approx. 300' x 300') is undeveloped and soil concentrations do not exceed PRGs in this area. Boring logs show a clay layer extends from the surface to a depth ranging from approximately 4 to 12 feet. A CAMU potentially could be constructed in this area for disposal of non-liquid remediation wastes (i.e., soils, dewatered sediments). In accordance with 40 CFR Part 264.552(e), a CAMU should include a composite liner and leachate collection system. In accordance with 40 CFR Part 264.552(e)(4)(iv)(B), treatment of metals exceeding LDRs will be required prior to final disposal in the CAMU. A groundwater monitoring system and post-closure care will be required. A CAMU will meet the corrective action objective of remediating COCs in soil that exceed PRGs on the Meaney Tract, exposure prevention to soils exceeding PRGs on the Northern and Southern tracts.	Retained	Retained

a Exhibit A of the Confidential Compromise Settlement Agreement and Release between ASARCO LLC and Encycle/Texas, Inc. and Meaney-Walsh Properties No. 1, Ltd., states affected soils will be removed from the Meaney Tract and replaced with uncontaminated dirt.

b Ex-situ solidification/stabilization is not retained if the solidified/stabilized soils are returned to the excavation. However, this technology is retained for more detailed evaluation as part of the Excavation, Stabilization, and Offsite Disposal technology.

Table 10. Target Soil Stabilization Treatment Limits for Affected Soils exceeding PRGs, Encycle/Texas, Inc., Corpus Christi, Texas

Constituent	Alternate LDR Treatment Standards for Contaminated Soils[a]	Class 2 Nonhazardous Limits for Soil[b]	Encycle CMS Target Soil Stabilization Treatment Limits
Antimony	11.5 mg/L TCLP	<1 mg/L TCLP	<1 mg/L TCLP
Arsenic	50 mg/L TCLP	<1.8 mg/L TCLP	<1.8 mg/L TCLP
Barium	210 mg/L TCLP	<100 mg/L TCLP	<100 mg/L TCLP
Bismuth		(none)	
Cadmium	1.1 mg/L TCLP	<0.5 mg/L TCLP	<0.5 mg/L TCLP
Chromium	6 mg/L TCLP	<5 mg/L TCLP	<5 mg/L TCLP
Cobalt	(not given)	(none)	
Copper	(not given)	(none)	
Cyanide	5,900 mg/kg total cyanide	Total recoverable cyanide <20 mg/kg[c]	
Lead	7.5 mg/L TCLP	<1.5 mg/L TCLP	<1.5 mg/L TCLP
Manganese	(not given)	(none)	
Mercury	0.25 mg/L TCLP	<0.2 mg/L TCLP	<0.2 mg/L TCLP
Nickel	110 mg/L TCLP	<70 mg/L TCLP	<70 mg/L TCLP
Selenium	57 mg/L TCLP	<1 mg/L TCLP	<1 mg/L TCLP
Silver	1.4 mg/L TCLP	<5 mg/L TCLP	1.4 mg/L TCLP
Thallium	2 mg/L TCLP	(none)	2 mg/L TCLP
Tin	(not given)	(none)	
Vanadium	16 mg/L TCLP	(none)	16 mg/L TCLP
Zinc	43 mg/L TCLP	(none)	43 mg/L TCLP

mg/L Milligrams per liter
mg/kg Milligrams per kilogram
TCLP Toxicity Characteristic Leaching Procedure
a 40 Code of Federal Regulations (FR), Part 268.49(c)(1)(C); 40 CFR Part 268.48.
b 30 Texas Administrative Code (TAC), Chapter 335.505 -335.506; 30 TAC Chapter 335.521(a).
c 30 Texas Administrative Code (TAC), Chapter 335.505(4).

Table 11. TCLP Metal Concentrations in Soil Samples (mg/L), Encycle/Texas, Inc., Corpus Christi, Texas

Sample ID	Sample Location	Date Sampled	Sample Depth (feet)	TCLP Metals Concentrations (mg/L)												Total Cyanide (mg/kg)
				Ag	As	Ba	Cd	Cr	Hg	Ni	Pb	Sb	Se	Tl	V	Zn	
Boneyard Composite	Boneyard	2/28/05	0-0.5	<0.05	0.21	0.13	**3.76**	<0.05	<0.002	0.06	1.17	<0.05	0.06	<0.05	<0.05	<0.05	<1
Waste Pile Composite	Waste Pile	2/28/05	0-0.5	<0.05	0.27	0.2	**25.1**	0.1	<0.002	0.27	**2.79**	<0.05	0.15	<0.05	<0.05	<0.05	<1
RR Tracks South Composite	Railroad Tracks - S. side Bldg C	3/1/05	0-0.5	<0.05	0.25	0.17	**17.5**	<0.05	<0.002	11.1	**17.6**	<0.05	0.05	<0.05	<0.05	**971**	2.7
RR Tracks North Composite	Railroad Tracks - N. side Bldg C	3/1/05	0-0.5	<0.05	0.27	0.34	**5.49**	<0.05	<0.002	0.59	**11.1**	<0.05	<0.05	<0.05	<0.05	**1040**	1.4
B-236/B-237 Composite	01 Landfill - NE corner	3/1/05	0-0.5	<0.05	<0.05	0.25	**1.26**	<0.05	<0.002	0.11	0.09	<0.05	0.07	<0.05	<0.05	**136**	<1
Target Soil Treatment Standards:				1.4[a]	<1.8[b]	<100[b]	<0.5[b]	<5[b]	<0.2[b]	<70[b]	<1.5[b]	<1[b]	<1[b]	2[a]	16[a]	43[a]	c

TCLP Toxicity Characteristic Leaching Procedure
mg/L Milligrams per liter
mg/kg Milligrams per kilogram
a Alternate LDR Treatment Standard for Contaminated Soils
b Class 2 Non-Hazardous Limits
c 5,900 mg/kg total cyanide and < 20 mg/kg total recoverable cyanide.

Table 12. CAMU Capacity Calculations, Encycle/Texas, Inc., Corpus Christi, Texas

Assumptions

CAMU Affected Soil Base Dimensions:	300' x 300'
CAMU Side Slope:	1 vertical/5 horizontal (11.3°)
Affected Soil Maximum Thickness:	10 feet
CAMU Affected Soil Top Dimensions:	200' x 200'

Volume Calculations

CAMU Affected Soil Maximum Capacity = length (ft) x width (ft) x thickness (ft) = ((300 + 200)/2) x ((300 + 200)/2) x 10
= 250' x 250' x 10' = 625,000 ft^3 = 23,148 yd^3

Table 13. Preliminary Cost Estimate - Meaney Tract Soil Excavation and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Direct Capital Costs				
Excavation contractor mobilization/demobilization	LS	$5,000	1	$5,000
Site preparation, equipment setup, contractor H&S plan	LS	$5,000	1	$5,000
TCLP analysis of samples from wooden railroad ties[a]	sample	$200	5	$1,000
Wooden railroad tie loading and transport to landfill[a]	CY	$20	1,000	$20,000
Railroad tie disposal cost at Class II non-hazardous landfill[b]	CY	$11.50	1,000	$11,500
Excavation and on-site stockpiling (in-situ soil volume)	CY	$9	3,380	$30,420
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	22	$4,400
Verification soil samples from excavation analyses (total metals)[c]	sample	$77.50	80	$6,200
Loading and transport to disposal facility[d]	CY	$20	4,056	$81,120
Excavated soil disposal at Class I hazardous waste landfill[e]	ton	$60	4,867	$292,020
Imported select sandy loam backfill, transport to site	CY	$25	4,056	$101,400
Backfill soil compaction, grading, grass seeding	CY	$9	4,056	$36,504
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[f]	Estimate			$59,856
			Subtotal:	$658,420
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$98,763	1	$98,763
Communications, status report and final certification report	Estimate	$15,000	1	$15,000
			Subtotal:	$113,763
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[g]	Estimate	$2,000	1	$2,000
			Subtotal:	$2,000
			TOTAL COST:	**$774,183**

LS Lump sum
CY Cubic yard

a Allied Waste/BFI requested re-sampling of railroad ties to obtain current TCLP data. Transportation cost estimated $400 per load, 20 cubic yards per load (i.e., $20/yard) to Allied Waste/BFI El Centro Landfill.

b Disposal cost provided by Allied Waste/BFI for disposal at the El Centro landfill near Robstown, Texas.

c Verification soil samples on a 50 foot grid from the excavation floor, and every 50 feet along the walls.

d Cost estimate based on soil disposal at an authorized landfill in Robstown, Texas. Estimated $400 per load, 20 cubic yards per load (i.e., $20/yard) transportation. Ex-situ (loose) volume est. 1.2X in-situ volume = 3,380 CY x 1.2 = 4,056 CY.

e Cost estimate of $60/ton provided by US Ecology Texas. One cubic yard loose soil estimated to weigh 1.2 tons. Class I hazardous soil volume=4,056 CY x 1.2 tons/CY = 4,867 tons.

f Contingencies include additional soils excavation assuming some of the floor and/or wall verification soil samples following initial excavation activities exceed the PRGs for one or more metals.

g Metes and bounds description and property plat of Meaney Tract has already been prepared by a Texas-registered professional land surveyor (see Appendix D).

Table 14. Preliminary Cost Estimate - Meaney Tract Soil Excavation, Stabilization, and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Direct Capital Costs				
Excavation/stabilization contractor mobilization/demobilization	LS	$5,000	1	$5,000
Site preparation, equipment setup, contractor H&S plan	LS	$15,000	1	$15,000
TCLP analysis of samples from wooden railroad ties[a]	sample	$200	5	$1,000
Wooden railroad tie loading and transport to landfill[a]	CY	$20	1,000	$20,000
Railroad tie disposal cost at Class II non-hazardous landfill[b]	CY	$11.50	1,000	$11,500
Excavation and on-site stockpiling (in-situ soil volume)	CY	$9	3,380	$30,420
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	22	$4,400
Verification soil samples from excavation analyses (total metals)[c]	sample	$77.50	80	$6,200
Soil stabilization cost[d]	CY	$30	4,056	$121,680
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	30	$6,000
Loading and transport to disposal facility[e]	CY	$20	5,395	$107,900
Disposal at Class 2 non-hazardous waste landfill[f]	CY	$11.50	5,395	$62,043
Imported select sandy loam backfill, transport to site	CY	$25	4,056	$101,400
Backfill soil compaction, grading, grass seeding	CY	$9	4,056	$36,504
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[g]	Estimate			$53,305
			Subtotal:	$586,351
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$87,953	1	$87,953
Communications, status report and final certification report	Estimate	$15,000	1	$15,000
			Subtotal:	$102,953
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[h]	Estimate	$2,000	1	$2,000
			Subtotal:	$2,000
			TOTAL COST:	**$691,304**

LS Lump sum
CY Cubic yard

a Allied Waste/BFI requested re-sampling of railroad ties for current TCLP data. Transportation cost estimated $400 per load, 20 cubic yards per load (i.e., $20/yard) to Allied Waste/BFI El Centro Landfill.

b Disposal cost provided by Allied Waste/BFI for disposal at the El Centro landfill near Robstown, Texas.

c Verification soil samples on a 50 foot grid from the excavation floor, and every 50 feet along the walls.

d Preliminary soil stabilization costs provided by soil stabilization contractors that received site-specific soil samples during March 2005 for soil stabilization treatability testing. Ex-situ (loose) volume est. 1.2X in-situ volume = 3,380 CY x 1.2 = 4,056 CY.

e Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 10 to 33%. 4,056 CY x 1.33 = 5,395 CY.
Estimated $400 per load round-trip to Robstown, TX, 20 cubic yards per load (i.e., $20/yard).

Table 14. Preliminary Cost Estimate - Meaney Tract Soil Excavation, Stabilization, and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

f Cost estimate provided by Allied Waste/BFI El Centro landfill near in Robstown, Texas.
g Contigencies include additional soils excavation assuming some of the floor and/or wall verification soil samples following initial excavation activities exceed the PRGs for one or more metals.
h Metes and bounds description and property plat of Meaney Tract has already been prepared by a Texas-registered professional land surveyor (see Appendix D).

Table 15. Preliminary Cost Estimate - Soil Excavation and Disposal in a CAMU at the Encycle Facility, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
CAMU Construction and Post-Closure Care Costs				
Direct Capital Costs				
CAMU contractor mobilization/demobilization	LS	$5,000	1	$5,000
Site preparation, equipment setup, contractor H&S plan[a]	LS	$25,000	1	$25,000
Excavate upper 2 feet of soil and stockpile on-site for later use as CAMU intermediate cover[b]	CY	$9	6667	$60,003
In-situ soil permeability analysis[c]	sample	$250	10	$2,500
CAMU subgrade preparation, leveling, anchor trench for liner	LS	$10,000	1	$10,000
60-mil HDPE liner[d]	ft^2	$0.469	90,000	$42,210
16-oz non-woven geotextile liner protection layer[d]	ft^2	$0.253	90,000	$22,770
8-oz single-sided high flow composite leachate collection fabric above composite liner[d]	ft^2	$0.519	90,000	$46,710
1-foot-thick leachate collection sand layer above leachate collection fabric[e]	CY	$25	3,333	$83,325
CAMU clay cap material, transport to site[f]	CY	$25	10,000	$250,000
CAMU topsoil layer, transport to site[g]	CY	$25	1,667	$41,675
Backfill clay compaction, topsoil emplacement and seeding	CY	$9	11,667	$105,003
Surveying during CAMU construction	LS	$2,000	5	$10,000
Groundwater monitoring well installation[h]	well	$2,000	4	$8,000
Leachate collection sump and sump pump installation[i]	LS	$15,000	1	$15,000
Contingency @ 10%	Estimate			$72,720
			Subtotal:	$799,916
Indirect Capital Costs				
Engineering design, construction management (est. 15% of Direct Capital Costs)	Estimate	$119,988	1	$119,988
Communiciations, as-built drawings, final certification report	Estimate	$10,000	1	$10,000
			Subtotal:	$129,988
Annual Post-Closure Care Costs				
Leachate collection system pump electrical fees and maintenance	LS	$5,000	1	$5,000
Leachate discharge waste water discharge fee[j]	gallon	$0.0023	52,560	$121
Weekly leachate sample collection and analyses (est. $250/week)	week	$250	52	$13,000
Semi-annual groundwater sampling, analyses, and reporting	LS	$5,000	2	$10,000
CAMU cap maintenance/repair (est. 2% cap installation cost/year)	LS	$8,000	1	$8,000
Project management/data reporting	LS	$5,000	1	$5,000
			Annual Subtotal:	$41,121
Post-Closure Care Net Present Worth for 30 Years @ 4% interest rate:[k]				$711,064
TOTAL CAMU CONSTRUCTION AND CAMU POST-CLOSURE CARE COST:				$1,640,968
Proportional CAMU cost for excavated Meaney Tract soils (50% of $1,640,968):[k]				$820,484
Proportional CAMU cost for excavated Northern Tract soils (11% of $1,640,968):[k]				$180,506
Proportional CAMU cost for excavated Southern Tract soils (39% of $1,640,968):[k]				$639,978

Table 15. Preliminary Cost Estimate - Soil Excavation and Disposal in a CAMU at the Encycle Facility, Encycle/Texas, Inc., Corpus Christi, Texas

Meaney Tract Total Costs for CAMU Alternative, including Affected Soils Excavation and Backfilling				
Direct Capital Costs				
Wooden railroad tie loading and transport to CAMU	CY	$3	1,000	$3,000
Affected soil excavation and on-site stockpiling (in-situ soil volume)[l]	CY	$9	3,380	$30,420
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	22	$4,400
Verification soil samples from excavation analyses (total metals)[m]	sample	$77.50	80	$6,200
Soil stabilization cost[n]	CY	$30	3,651	$109,530
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	30	$6,000
Loading and transport to CAMU[o]	CY	$3	5,261	$15,783
Imported select sandy loam backfill, transport to site	CY	$25	4,056	$101,400
Backfill soil compaction, grading, grass seeding	CY	$9	4,056	$36,504
Meaney Tract pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%	Estimate			$31,724
			Subtotal:	$348,961
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$52,344	1	$52,344
Communications, status report and final certification report	Estimate	$15,000	1	$15,000
			Subtotal:	$67,344
Proportional CAMU Capital and Post-Closure Care Costs				
Proportional CAMU Costs for Meaney Tract[k]	Estimate	$820,484	1	$820,484
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban	Estimate	$2,000	1	$2,000
			Subtotal:	$822,484
MEANEY TRACT PROPORTIONAL CAMU COST:				**$1,238,789**
Northern Tract Total Costs for CAMU Alternative, including Affected Soils Excavation and Backfilling				
Direct Capital Costs				
Excavation and on-site stockpiling (in-situ soil volume)[l]	CY	$9	732	$6,588
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	6	$1,200
Verification soil samples from excavation analyses (total metals)[m]	sample	$77.50	16	$1,300
Soil stabilization cost[p]	CY	$30	878	$26,340
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	6	$1,200
Loading and transport to CAMU[p]	CY	$3	1,168	$3,504
Imported clay backfill, transport to site	CY	$25	878	$21,950
Backfill soil compaction, grading, grass seeding	CY	$9	878	$7,902
Northern Tract pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%	Estimate			$7,398
			Subtotal:	$81,382
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$12,207	1	$12,207
Communications, status report and final certification report	Estimate	$10,000	1	$10,000
			Subtotal:	$22,207

Table 15. Preliminary Cost Estimate - Soil Excavation and Disposal in a CAMU at the Encycle Facility, Encycle/Texas, Inc., Corpus Christi, Texas

Proportional CAMU Capital and Post-Closure Care Costs				
Proportional CAMU Costs for Northern Tract[k]	Estimate	$180,506	1	$180,506
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban	Estimate	$6,000	1	$6,000
			Subtotal:	$186,506
NORTHERN TRACT PROPORTIONAL CAMU COST:				**$290,095**

Southern Tract Total Costs for CAMU Alternative, including Affected Soils Excavation and Backfilling				
Direct Capital Costs				
Break out existing concrete[q]	LS	$5,000	1	$5,000
Excavation and on-site stockpiling (in-situ soil volume)[r]	CY	$9	2,606	$23,454
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	17	$3,400
Verification soil samples from excavation analyses (total metals)[m]	sample	$77.50	188	$14,600
Soil stabilization cost[s]	CY	$30	3,127	$93,810
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	17	$3,400
Loading and transport to CAMU[t]	CY	$3	4,159	$12,477
Imported clay backfill, transport to site	CY	$25	3,127	$78,175
Backfill soil compaction, grading, grass seeding	CY	$9	3,127	$28,143
Resurface with concrete in areas with concrete pavement[q]	SF	$6.50	6,620	$43,030
Southern Tract pre-excavation and post-excavation surveys	LS	$4,000	2	$8,000
Contingency @ 10%	Estimate			$31,349
			Subtotal:	$344,838
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$51,726	1	$51,726
Communications, status report and final certification report	Estimate	$10,000	1	$10,000
			Subtotal:	$61,726
Proportional CAMU Capital and Post-Closure Care Costs				
Proportional CAMU Costs for Southern Tract[k]	Estimate	$639,978	1	$639,978
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban	Estimate	$7,000	1	$7,000
			Subtotal:	$646,978
SOUTHERN TRACT PROPORTIONAL CAMU COST:				**$1,053,542**

LS Lump sum
CY Cubic yard
SF Square Foot
a Includes re-location of existing overhead power lines at proposed CAMU location.
b Soil excavation volume = 300' x 300' x 2' = 180,000 cubic feet = 6,667 cubic yards.
c Cost estimate assumes a 2-foot-thick layer of in-situ soils directly below the upper 2 feet of excavated soils will have sufficiently low permeability (<10-7 cm/sec) to use as the basal 2-foot of the CAMU composite liner system. Soil samples will be collected for permeability analysis to confirm in-situ soil permeability.
d Costs provided by EnviroCon Systems, Inc., Houston, Texas. Includes materials and labor to install.

Table 15. Preliminary Cost Estimate - Soil Excavation and Disposal in a CAMU at the Encycle Facility, Encycle/Texas, Inc., Corpus Christi, Texas

e Includes sand cost (clean coarse silica sand), transport to site, and placement in CAMU (est. $25/yard). Sand volume = 300' x 300' x 1' = 90,000 cubic feet = 3,333 cubic yards.

f Clay cap volume = 300' x 300' x 3' = 270,000 cubic feet = 10,000 cubic yards

g Topsoil volume = 300' x 300' x 0.5' = 45,000 cubic feet = 1,667 cubic yards

h Costs for one upgradient and three downgradient monitor wells completed in shallow water-bearing unit.

i Includes electrical power to pump, discharge piping tie-in to City of Corpus Christi Sanitary Sewer.

j City of Corpus Christi discharge fee for discharge of fluids that meet City of Corpus Christi waste water discharge permit requirements is $2.30 per 1,000 gallons. Estimated leachate discharge 0.1 gpm. 0.1 gpm = 144 gallons per day = 52,560 gallons per year.

k The cost for construction of the CAMU is allocated proportionally to the Meaney Tract, Northern Tract, and Southern Tract based on the volume of soils exceeding PRGs on each of these tracts. As shown on Table 8, the in-situ volume of soils on the Meaney Tract (3,380 cubic yards) is approximately 50 percent of the total in-situ volume of soils exceeding PRGs (6,718 cubic yards). Therefore, 50 percent of the CAMU construction costs are allocated to the Meaney Tract. Correspondingly, 11 percent of the CAMU construction costs are allocated to the Northern Tract, and 39 percent of the CAMU construction costs are allocated to the Southern Tract. The CAMU costs include capital costs and post-closure care costs for a 30-year post-closure care period. The net present value of annual post-closure care costs has been calculated as specified in 30 TAC Chapter 37.131, using an annual inflation factor of 4 percent (US Dept. of Commerce, April 2005).

l Excavated soils will be stockpiled and sampled for TCLP metals to determine if Alternate LDR Treatment Standards for Contaminated Soils have been exceeded. If one or more metals exceed the Alternate LDR Treatment Standards for Contaminated Soils, those soil stockpiles will be treated using soil stabilization prior to final disposal in the CAMU.

m Verification soil samples on a 50 foot grid from the excavation floor, and every 50 feet along the walls.

n Preliminary soil stabilization costs provided by soil stabilization contractors that received site-specific soil samples during March 2005 for soil stabilization treatability testing.
Ex-situ (loose) volume est. 1.2X in-situ volume = 3,380 CY x 1.2 = 4,056 CY for Meaney Tract soils.
Estimated 90% of excavated soils on the Meaney Tract will require stabilization. 4,056x0.9 = 3,651 CY.

o Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 10% to 33%. 3,651 CY x 1.33 = 4,856 CY stabilized + 406 CY not stabilized = 5,261 CY total stabilized and non-stabilized soils on Meaney Tract disposed of in CAMU.

p Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 33%. 732 CY in-situ volume x 1.2 compaction factor = 878 CY loose excavated volume. 878 CY x 1.33 = 1,168 CY.

q Affected soils are located under concrete pavement in Building C (Lettered Bins Building) Bins F, G, H, and P; and below Storm Drain 219 and soil boring B-111 area.

r As shown on Table 8, the estimated in-situ soil volume exceeding PRGs on the Southern Tract is 2,606 CY.

s Preliminary soil stabilization costs provided by soil stabilization contractors that received site-specific soil samples during March 2005 for soil stabilization treatability testing.
Ex-situ (loose) volume est. 1.2X in-situ volume = 2,606 CY x 1.2 = 3,127 CY.

t Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 33%. 3,127 CY loose soil volume x 1.33 = 4,159 CY.

Table 16. Preliminary Cost Estimate - Northern Tract Fencing, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Direct Capital Costs				
Fencing contractor mobilization	LS	$1,000	1	$1,000
Fence installation around affected soils[a]	LF	$12	600	$7,200
Signs, gates, locks	LS	$2,000	1	$2,000
			Subtotal:	$10,200
Indirect Capital Costs				
Engineering design, construction management,	Estimate	$3,000	1	$3,000
Communications, status report and final certification report	Estimate	$3,000	1	$3,000
			Subtotal:	$6,000
Post-Closure Care Costs				
Fence repair (est. 2% capital installation cost per year = $204/yr)				
Net present worth for 30 years @ 4% interest rate[b]	Year	$204	30 years	$3,528
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[c]	Estimate	$6,000	1	$6,000
			Subtotal:	$9,528
			TOTAL COST:	**$25,728**

LS Lump sum
LF Linear foot
a 6-foot-high chain-link fence with #9 gauge zinc-coated wire and 3-strand barbed wire on top. Cost estimate provided by Fencing, Inc., Corpus Christi, Texas.
b Post-closure care for a 30-year period using an annual inflation factor of 4 % (U.S. Dept. of Commerce, April 2005).
c Includes costs for a metes and bounds description and property plat of Northern Tract by a Texas-registered professional land surveyor. Each area of affected soils exceeding PRGs would have a metes and bounds description, and these areas would be shown on the Property Plat map.

Table 17. Preliminary Cost Estimate - Northern Tract Soil Capping, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Soil Boring B-140 Area Clay Capping Costs[a]				
Direct Capital Costs				
Mobilization, grading, remove surface vegetation	LS	$5,000	1	$5,000
Imported low-permeability clay fill, transport to site[b]	CY	$25	118	$2,950
Clay backfill emplacement and compaction	CY	$9	118	$1,062
Imported select sandy loam topsoil, transport to site[b]	CY	$25	59	$1,475
Topsoil emplacement and seeding	LS	$2,000	2	$2,000
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%	Estimate			$1,649
			Subtotal:	$18,136
Indirect Capital Costs				
Engineering design, construction management	Estimate	$5,000	1	$5,000
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$10,000
Post-Closure Care Costs				
Clay cap inspection,maintenance and repair (est. $2,000/year)				
Net present worth for 30 years @ 4% interest rate	Year	$2,000	30 years	$34,584[c]
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[d]	Estimate	$6,000	1	$6,000
			Subtotal:	$40,584
			Soil Boring B-140 Area Clay Capping Subtotal:	$68,720
Soil Boring B-223/B-237 Area Concrete or Asphalt Capping Costs[d]				
Direct Capital Costs				
Mobilization, grading	LS	$5,000	1	$5,000
Asphalt or concrete pavement[e]	SF	$6.50	1534	$9,971
Contingency @ 10%	Estimate			$1,497
			Subtotal:	$16,468
Indirect Capital Costs				
Engineering design, construction management	Estimate	$5,000	1	$5,000
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$10,000
Post-Closure Care Costs				
Cap inspection, maintenance and repair (est. $2,000/year)				
Net present worth for 30 years @ 4% interest rate	Year	$2,000	30 years	$34,584[c]
			Subtotal:	$34,584
			Soil Boring B-223/B-237 Area Capping Subtotal:	$61,052
			Northern Tract Capping Total Cost:	**$129,772**

LS Lump sum
SF Square foot

Table 17. Preliminary Cost Estimate - Northern Tract Soil Capping, Encycle/Texas, Inc., Corpus Christi, Texas

CY Cubic Yard

a This area (approximately 3,173 square feet as shown on Table 8) is immediately adjacent to the 01 Landfill northwest corner, and the affected soils exceeding PRGs are located at a depth of 5-5.5 feet. The soil boring B-140 log shows 2 feet of clay is already present at the surface in this area. Therefore, one additional foot of low-permeability (<10-7 cm/sec) clay will be added, then covered with 6 inches of sandy loam topsoil.

b Clay volume = 3,173 square feet x 1-foot-thick = 3,173 cubic feet = 118 cubic yards. Topsoil volume = 3,173 square feet x 0.5-foot-thick = 1,587 cubic feet = 59 cubic yards.

c Post-closure care costs for a 30-year post closure care period using an annual inflation factor of 4 percent (US Dept. of Commerce, April 2005).

d Includes costs for a metes and bounds description and property plat of Northern Tract by a Texas-registered professional land surveyor. Total deed recordation cost for Northern Tract is $6,000.

e Costs for 6-inch-thick reinforced concrete with a 2-inch-thick sand base, or 2-inch-thick asphalt with a 6-inch-thick lime-stabilized gravel base are similar. Costs provided by Southwest Contractors, Inc., Corpus Christi, Texas.

Table 18. Preliminary Cost Estimate - Northern Tract Soil Excavation and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Soil Boring B-140 Area Excavation and Disposal Costs				
Direct Capital Costs				
Excavation contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$2,500	1	$2,500
Excavate affected soils, stockpiling (in-situ soil volume)[a]	CY	$9	646	$5,814
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	5	$1,000
Verification soil samples from excavation analyses (total metals)[b]	sample	$77.50	10	$800
Loading and transport to disposal facility[c]	CY	$20	775	$15,500
Disposal at Class I hazardous waste landfill[d]	ton	$60	930	$55,800
Imported select clay backfill, transport to site	CY	$25	775	$19,375
Imported clay soil compaction, grading, grass seeding	CY	$9	775	$6,975
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[e]	Estimate			$11,426
			Subtotal:	$125,690
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$18,854	1	$18,854
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$23,854
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[f]	Estimate	$3,000	1	$3,000
			Subtotal:	$3,000
		Soil Boring B-140 Area Soil Excavation Subtotal:		$152,544
Soil Boring B-223/B-237Area Excavation and Disposal Costs				
Direct Capital Costs				
Excavation contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$2,500	1	$2,500
Excavate affected soils, stockpiling (in-situ soil volume)[g]	CY	$9	85	$765
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	1	$200
Verification soil samples from excavation analyses (total metals)[b]	sample	$77.50	6	$500
Loading and transport to disposal facility[h]	CY	$20	102	$2,040
Disposal at Class I hazardous waste landfill[i]	ton	$60	122	$7,320
Imported select clay backfill, transport to site	CY	$25	102	$2,550
Imported clay soil compaction, grading, grass seeding	CY	$9	102	$918
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[e]	Estimate			$2,329
			Subtotal:	$25,622
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$3,843	1	$3,843
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$8,843

Table 18. Preliminary Cost Estimate - Northern Tract Soil Excavation and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[f]	Estimate	$3,000	1	$3,000
			Subtotal:	$3,000
			Soil Boring B-223/B-237 Area Soil Excavation Subtotal:	$37,465
			Northern Tract Soil Excavation and Offsite Disposal Total:	**$190,009**

LS Lump sum
CY Cubic yard

a Affected soils exceeding PRGs are located at a depth of 5-5.5 feet. Analytical data from soil boring B-140 indicates soils at depths of 0-0.5 feet and 2-2.5 feet do not exceed PRGs. Therefore the upper 2.5 feet of soils may be left on-site, and confirmation samples collected to ensure these soils do not exceed PRGs. These soils would then be returned to the base of the excavation as backfill material.

b Verification soil samples on a 50 foot grid from the excavation floor, and every 50 feet along the walls.

c The arsenic concentration in the 5-5.5 foot depth sample from soil boring B-140 exceeds the PRG of 200 mg/kg. This sample depth represents the top of the saturated zone. For cost estimating purposes, it is assumed that the affected soil volume is 646 cubic yards (see Table 8). Verification soil samples will be collected to confirm the soils exceeding PRGs have been excavated. Cost estimate based on disposal at US Ecology Texas Landfill in Robstown, Texas. Estimated $400 per load, 20 cubic yards per load (i.e., $20/yard) transportation. Ex-situ (loose) volume est. 1.2X in-situ volume = 646 CY x 1.2 = 775 CY.

d Cost estimate of $60/ton provided by US Ecology Texas. One cubic yard loose soil estimated to weigh 1.2 tons. 775 CY loose x 1.2 tons/CY = 930 tons.

e Contingencies include additional soils excavation assuming some of the floor and/or wall verification soil samples following initial excavation activities exceed the PRGs for one or more metals.

f Metes and bounds description and property plat of Northern Tract prepared by a Texas-registered professional land surveyor.

g Affected soil volume exceeding PRGs estimated at 85 cubic yards (see Table 8).

h Ex-situ (loose) volume est. 1.2X in-situ volume = 85 CY x 1.2 = 102 CY.

i One cubic yard loose soil estimated to weigh 1.2 tons. 102 CY loose x 1.2 tons/CY = 122 tons.

Table 19. Preliminary Cost Estimate - Northern Tract Soil Excavation, Stabilization, and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Soil Boring B-140 Area Excavation and Stabilization Costs				
Direct Capital Costs				
Excavation/stabilization contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$7,500	1	$7,500
Excavate affected soils, stockpiling (in-situ soil volume)[a]	CY	$9	646	$5,814
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	5	$1,000
Verification soil samples from excavation analyses (total metals)[b]	sample	$100	8	$800
Soil stabilization cost[c]	CY	$30	775	$23,250
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	5	$1,000
Loading and transport to Class 2 non-hazardous disposal facility[d]	CY	$20	1,031	$20,620
Disposal at Class 2 non-hazardous landfill[e]	CY	$11.50	1,031	$11,857
Imported select clay backfill, transport to site	CY	$25	775	$19,375
Imported clay soil compaction, grading, grass seeding	CY	$9	775	$6,975
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[f]	Estimate			$10,469
			Subtotal:	$115,160
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$17,274	1	$17,274
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$22,274
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[g]	Estimate	$6,000	1	$6,000
			Subtotal:	$6,000
Soil Boring B-140 Area Soil Excavation and Stabilization Subtotal:				$143,434
Soil Boring B-223/B-237Area Excavation and Stabilization Costs				
Direct Capital Costs				
Excavation/stabilization contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$7,500	1	$7,500
Excavate affected soils, stockpiling (in-situ soil volume)[h]	CY	$9	85	$765
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	1	$200
Verification soil samples from excavation analyses (total metals)[b]	sample	$100	5	$500
Soil stabilization cost[i]	CY	$30	102	$3,060
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	1	$1,000
Loading and transport to Class 2 Non-hazardous disposal facility[j]	CY	$20	136	$2,720
Disposal at Class 2 non-hazardous landfill[e]	CY	$11.50	136	$1,564
Imported select clay backfill, transport to site	CY	$25	102	$2,550
Imported clay soil compaction, grading, grass seeding	CY	$9	102	$918
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[f]	Estimate			$2,728
			Subtotal:	$30,005

Table 19. Preliminary Cost Estimate - Northern Tract Soil Excavation, Stabilization, and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$4,501	1	$4,501
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$9,501
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[g]	Estimate	$0	1	$0
			Subtotal:	$0
Soil Boring B-223/B-237 Area Soil Excavation and Stabilization Subtotal:				$39,506
Northern Tract Soil Excavation, Stabilization, and Offsite Disposal Total:				**$182,940**

LS Lump sum
CY Cubic yard

a Affected soils exceeding PRGs are located at a depth of 5-5.5 feet. Analytical data from soil boring B-140 indicates soils at depths of 0-0.5 feet and 2-2.5 feet do not exceed PRGs. Therefore the upper 2.5 feet of soils may be left on-site, and confirmation samples collected to ensure these soils do not exceed PRGs. These soils would then be returned to the base of the excavation as backfill material.

b Verification soil samples on a 50 foot grid from the excavation floor, and every 50 feet along the walls.

c Preliminary soil stabilization costs provided by soil stabilization contractors that received site-specific soil samples during March 2005 for soil stabilization treatability testing. Ex-situ (loose) volume est. 1.2X in-situ volume = 646 CY x 1.2 = 775 CY.

d Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 10% to 33%. 775 CY loose x 1.33 = 1,031 CY. Transportation to Robstown, TX est. $20/CY.

e Cost estimate provided by Allied Waste/BFI El Centro Landfill near Robstown, Texas.

f Contingencies include additional soils excavation assuming some of the floor and/or wall verification soil samples following initial excavation activities exceed the PRGs for one or more metals.

g Metes and bounds description and property plat of Northern Tract prepared by a Texas-registered professional land surveyor. Total deed recordation cost for the Northern Tract is $6,000.

h Affected soil volume exceeding PRGs estimated at 85 cubic yards (see Table 8).

i Ex-situ (loose) volume est. 1.2X in-situ volume = 85 CY x 1.2 = 102 CY.

j Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 10% to 33%. 102 CY loose x 1.33 = 136 CY.

Table 20. Preliminary Cost Estimate - Southern Tract Fencing, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Direct Capital Costs				
Fencing contractor mobilization	LS	$1,000	1	$1,000
Fence installation around affected soils[a]	LF	$12	4500	$54,000
Signs, gates, locks	LS	$12,000	1	$12,000
			Subtotal:	$67,000
Indirect Capital Costs				
Engineering design, construction management,	Estimate	$3,000	1	$3,000
Communications, status report and final certification report	Estimate	$3,000	1	$3,000
			Subtotal:	$6,000
Post-Closure Care Costs				
Fence repair (est. 2% capital installation cost per year = $1,340/yr)				
Net present worth for 30 years @ 4% interest rate[b]	Year	$1,340	30 years	$23,171
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[c]	Estimate	$7,000	1	$7,000
			Subtotal:	$30,171
			TOTAL COST:	**$103,171**

LS Lump sum
LF Linear foot
a 6-foot-high chain-link fence with #9 gauge zinc-coated wire and 3-strand barbed wire on top. Cost estimate provided by Fencing, Inc., Corpus Christi, Texas.
b Post-closure care for a 30-year period using an annual inflation factor of 4 % (U.S. Dept. of Commerce, April 2005).
c Includes costs for a metes and bounds description and property plat of Southern Tract by a Texas-registered professional land surveyor. Each area of affected soils exceeding PRGs would have a metes and bounds description, and these areas would be shown on the Property Plat map.

Note: An existing 6-foot-high chain-link fence is located around the perimeter of the Southern Tract. This remedy would include fencing around each area of the Southern Tract containing COCs in soil that exceed the PRGs (i.e., fencing around the railroad tracks area, road leading to the west of Building C, reactor/clarifier, and storm sewer system affected soil areas). Affected soils in Building C (Lettered Bins Building) are located inside a building, and signs would be posted in each concrete bin containing COCs that exceed PRGs in soils below the concrete floor.

Table 21. Preliminary Cost Estimate - Southern Tract Soil Capping, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Existing Concrete Paved Areas Capping Costs[a]				
Direct Capital Costs				
Concrete repair contractor mobilization	LS	$1,000	1	$1,000
Repair existing damaged concrete pavement - est. 40 hours	Hour	$40	40	$1,600
labor and $1,000 materials.	LS	$1,000	1	$1,000
Contingency @ 10%	Estimate			$360
			Subtotal:	$3,960
Indirect Capital Costs				
Engineering design, construction management	Estimate	$2,000	1	$2,000
Communications, status report and final certification report	Estimate	$2,000	1	$2,000
			Subtotal:	$4,000
Post-Closure Care Costs				
Concrete cap inspection,maintenance and repair of existing concrete paved areas on Southern Tract with underlying soils exceeding PRGs (est. $2,000/year)				
Net present worth for 30 years @ 4% interest rate	Year	$2,000	30 years	$34,584[b]
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[c]	Estimate	$7,000	1	$7,000
			Subtotal:	$41,584
		Existing Concrete Paved Areas Subtotal:		$49,544
New Concrete or Asphalt Capping Costs of Currently Unpaved Areas[d]				
Direct Capital Costs				
Mobilization, pavement area preparation/grading[e]	LS	$17,000	1	$17,000
Asphalt or concrete pavement[f]	SF	$6.50	80,431	$522,802
Contingency @ 10%	Estimate			$53,980
			Subtotal:	$593,782
Indirect Capital Costs				
Engineering design, construction management	Estimate	$15,000	1	$15,000
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$20,000
Post-Closure Care Costs				
Cap inspection, maintenance and repair (est. $6,000 per year - 1% installation capital cost per year)				
Net present worth for 30 years @ 4% interest rate	Year	$6,000	30 years	$103,752[b]
			Subtotal:	$103,752
		Currently Unpaved Areas on Southern Tract Subtotal:		$717,534
			Southern Tract Capping Total Cost:	**$767,078**

LS Lump sum
SF Square foot

Table 21. Preliminary Cost Estimate - Southern Tract Soil Capping, Encycle/Texas, Inc., Corpus Christi, Texas

a Includes costs to repair existing concrete pavement in areas where underlying soils exceed PRGs. As shown in Appendix A and on Table 4, Bins F, G, H, and P; and the affected soils below Storm Drain 219 and soil boring B-111 are currently located below an existing concrete slab. Concrete cores for the soil samples in these areas showed the existing concrete was at least six inches thick. Cracks, gaps, and chipped concrete will be repaired by removing loose debris, applying a concrete bonding agent, and emplacing neat cement in the cracks and gaps, and new 3,000 PSI concrete in the chipped areas.

b Post-closure care costs for a 30-year post closure care period using an annual inflation factor of 4 percent (US Dept. of Commerce, April 2005).

c Includes costs for a metes and bounds description and property plat of Southern Tract by a Texas-registered professional land surveyor. Total deed recordation cost for Southern Tract is $7,000.

d Costs for 6-inch-thick reinforced concrete with a 2-inch-thick sand base, or 2-inch-thick asphalt with a 6-inch-thick lime-stabilized gravel base are similar. Costs provided by Southwest Contractors, Inc., Corpus Christi, Texas.

e Existing railroad tracks may need to be removed in areas to be paved. Lone Star Railroad Company stated in an April 14, 2005 telephone conversation that rail removal labor costs would likely be offsite by steel rail scrap metal salvage value. Mobilization costs include $15,000 for pavement contractor mobilization and grading, and $2,000 for rail removal contractor mobilization.

f Square footage of unpaved areas on Southern Tract with soils exceeding PRGs taken from Table 8.

Table 22. Preliminary Cost Estimate - Southern Tract Soil Excavation and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Existing Concrete Paved Areas Soil Excavation and Offsite Disposal Costs[a]				
Direct Capital Costs				
Excavation contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$2,500	1	$2,500
Break out existing concrete[b]	LS	$5,000	1	$5,000
Excavate affected soils, stockpiling (in-situ soil volume)[c]	CY	$9	331	$2,979
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	2	$400
Verification soil samples from excavation analyses (total metals)[d]	sample	$77.50	46	$3,600
Loading and transport to disposal facility[e]	CY	$20	397	$7,940
Disposal at Class I hazardous waste landfill[f]	ton	$60	477	$28,620
Imported select clay backfill, transport to site	CY	$25	397	$9,925
Resurface above clay backfill using reinforced concrete	SF	$6.50	6,620	$43,030
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[g]	Estimate			$11,049
			Subtotal:	$121,543
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$18,232	1	$18,232
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$23,232
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[h]	Estimate	$3,000	1	$3,000
			Subtotal:	$3,000
		Existing Concrete Paved Areas Soil Excavation Subtotal:		$147,775
Southern Tract Unpaved Areas Soil Excavation and Disposal Costs				
Direct Capital Costs				
Excavation contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$7,500	1	$7,500
Excavate affected soils, stockpiling (in-situ soil volume)[i]	CY	$9	2,275	$20,475
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	15	$3,000
Verification soil samples from excavation analyses (total metals)[d]	sample	$77.50	142	$11,000
Loading and transport to disposal facility[j]	CY	$20	2,730	$54,600
Disposal at Class I hazardous waste landfill[k]	ton	$60	3,276	$196,560
Imported select clay backfill, transport to site	CY	$25	2,730	$68,250
Imported clay soil compaction, grading, grass seeding	CY	$9	2,730	$24,570
Pre-excavation and post-excavation surveys	LS	$4,000	2	$8,000
Contingency @ 10%[g]	Estimate			$39,646
			Subtotal:	$436,101

Table 22. Preliminary Cost Estimate - Southern Tract Soil Excavation and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$65,415	1	$65,415
Communications, status report and final certification report	Estimate	$10,000	1	$10,000
			Subtotal:	$75,415
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[h]	Estimate	$4,000	1	$4,000
			Subtotal:	$4,000
			Southern Tract Unpaved Areas Soil Excavation Subtotal:	$515,516
			Southern Tract Soil Excavation and Offsite Disposal Total:	**$663,291**

LS Lump sum
CY Cubic yard
SF Square foot

a Affected soils exceeding PRGs are located below existing concrete paved areas in the Lettered Bins Building (Bins F, G, H and P) and below Storm Drain 219 and soil boring B-111. The concrete in these areas would be removed to expose the affected soils which would be excavated. Following receipt of verification soil samples showing the affected soils have been excavated, these areas would be backfilled using clean fill, then resurfaced with concrete to match surrounding grade.

b TCLP lead was not detected in a concrete core sample from Lettered Bins Building as part of RCRA final facility closure activities. Unaffected concrete would either be left on-site or disposed of at a local landfill as demolition debris.

c As shown on Table 8, the affected soil volume exceeding PRGs in Building C (Lettered Bins Building) is estimated at 19 cubic yards, and the affected soil volume under concrete in the Storm Drain 219 and soil boring B-111 area is estimated at 312 cubic yards.

d Verification soil samples on a 50 foot grid from the excavation floor, and every 50 feet along the walls.

e Ex-situ (loose) volume est 1.2X in-situ volume =331 CY x 1.2 = 397 CY. Cost estimate based on disposal at US Ecology Texas Landfill in Robstown, Texas. Estimated $400 per load, 20 cubic yards per load (i.e., $20/yard) transportation.

f Cost estimate of $60/ton provided by US Ecology Texas. One cubic yard loose soil estimated to weigh 1.2 tons. 397 CY loose x 1.2 tons/CY = 477 tons.

g Contingencies include additional soils excavation assuming some of the floor and/or wall verification soil samples following initial excavation activities exceed the PRGs for one or more metals.

h Metes and bounds description and property plat of Southern Tract prepared by a Texas-registered professional land surveyor. $7,000 total surveying and deed recordation cost.

i Affected soil volume exceeding PRGs in unpaved areas of Southern Tract estimated at 2,275 cubic yards (see Table 8).

j Ex-situ (loose) volume est. 1.2X in-situ volume = 2,275 CY x 1.2 = 2,730 CY.

k One cubic yard loose soil estimated to weigh 1.2 tons. 2,730 CY loose x 1.2 tons/CY = 3,276 tons.

Table 23. Preliminary Cost Estimate - Southern Tract Soil Excavation, Stabilization, and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

ITEM	UNIT	COST PER UNIT	QUANTITY	TOTAL
Existing Concrete Paved Areas Soil Excavation and Stabilization Costs[a]				
Direct Capital Costs				
Excavation/stabilization contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$7,500	1	$7,500
Break out existing concrete[b]	LS	$5,000	1	$5,000
Excavate affected soils, stockpiling (in-situ soil volume)[c]	CY	$9	331	$2,979
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	2	$400
Verification soil samples from excavation analyses (total metals)[d]	sample	$77.50	46	$3,600
Soil stabilization cost[e]	CY	$30	397	$11,910
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	3	$600
Loading and transport to Class 2 non-hazardous disposal facility[f]	CY	$20	528	$10,560
Disposal at Class 2 non-hazardous landfill[f]	CY	$11.50	528	$6,072
Imported select clay backfill, soil compaction	CY	$25	397	$9,925
Resurface above clay backfill using reinforced concrete	SF	$6.50	6,620	$43,030
Pre-excavation and post-excavation surveys	LS	$2,000	2	$4,000
Contingency @ 10%[g]	Estimate			$10,808
			Subtotal:	$118,884
Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$17,833	1	$17,833
Communications, status report and final certification report	Estimate	$5,000	1	$5,000
			Subtotal:	$22,833
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[h]	Estimate	$3,000	1	$3,000
			Subtotal:	$3,000
		Existing Concrete Paved Areas Soil Stabilization Subtotal:		$144,717
Southern Tract Unpaved Areas Soil Excavation and Stabilization Costs				
Direct Capital Costs				
Excavation/stabilization contractor mobilization/demobilization	LS	$2,500	1	$2,500
Site preparation, equipment setup, contractor H&S plan	LS	$7,500	1	$7,500
Excavate affected soils, stockpiling (in-situ soil volume)[i]	CY	$9	2,275	$20,475
Excavated soil stockpile analyses (TCLP Metals)	sample	$200	15	$3,000
Verification soil samples from excavation analyses (total metals)[d]	sample	$77.50	142	$11,000
Soil stabilization cost[j]	CY	$30	2,730	$81,900
Post-stabilization TCLP confirmation analyses of treated soil	sample	$200	20	$4,000
Loading and transport to Class 2 non-hazardous disposal facility[k]	CY	$20	3,631	$72,620
Disposal at Class 2 non-hazardous landfill[k]	CY	$11.50	3,631	$41,757
Imported select clay backfill, transport to site	CY	$25	2,730	$68,250
Imported clay soil compaction, grading, grass seeding	CY	$9	2,730	$24,570
Pre-excavation and post-excavation surveys	LS	$4,000	2	$8,000
Contingency @ 10%[g]	Estimate			$34,557
			Subtotal:	$380,129

Table 23. Preliminary Cost Estimate - Southern Tract Soil Excavation, Stabilization, and Offsite Disposal, Encycle/Texas, Inc., Corpus Christi, Texas

Indirect Capital Costs				
Engineering design, construction management, confirmation soil sampling (est. 15% of Direct Capital Costs)	Estimate	$57,020	1	$57,020
Communications, status report and final certification report	Estimate	$10,000	1	$10,000
			Subtotal:	$67,020
Post-Closure Care Costs				
Prepare and file deed recordation of property for commercial/ industrial land use with water well ban[h]	Estimate	$4,000	1	$4,000
			Subtotal:	$4,000
			Southern Tract Unpaved Areas Soil Stabilization Subtotal:	$451,149
			Southern Tract Soil Excavation, Stabilization, and Offsite Disposal Total:	**$595,866**

LS Lump sum
CY Cubic yard
SF Square foot

a Affected soils exceeding PRGs are located below existing concrete paved areas in the Lettered Bins Building (Bins F, G, H and P) and below Storm Drain 219 and soil boring B-111. The concrete in these areas would be removed to expose the affected soils which would be excavated. Following receipt of verification soil samples showing the affected soils have been excavated, these areas would be backfilled using clean fill, then resurfaced with concrete to match surrounding grade.

b TCLP lead was not detected in a concrete core sample from Lettered Bins Building as part of RCRA final facility closure activities. Unaffected concrete would either be left on-site or disposed of at a local landfill as demolition debris.

c As shown on Table 8, the affected soil volume exceeding PRGs in Building C (Lettered Bins Building) is estimated at 19 cubic yards, and the affected soil volume under concrete in the Storm Drain 219 and soil boring B-111 area is estimated at 312 cubic yards.

d Verification soil samples on a 50 foot grid from the excavation floor, and every 50 feet along the walls.

e Ex-situ (loose) volume est. 1.2X in-situ volume =331 CY x 1.2 = 397 CY. Preliminary soil stabilization costs provided by soil stabilization contractors that received site-specific soil samples during March 2005 for soil stabilization treatability testing.

f Estimated $400 per load, 20 cubic yards per load (i.e., $20/yard) transportation. Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 10% to 33%. 397 CY loose x 1.33 = 528 CY. Disposal cost provided by Allied Waste/BFI El Centro Landfill near Robstown, Texas.

g Contingencies include additional soils excavation assuming some of the floor and/or wall verification soil samples following initial excavation activities exceed the PRGs for one or more metals.

h Metes and bounds description and property plat of Southern Tract prepared by a Texas-registered professional land surveyor. $7,000 total surveying and deed recordation cost.

i Affected soil volume exceeding PRGs in unpaved areas of Southern Tract estimated at 2,275 cubic yards (see Table 8).

j Ex-situ (loose) volume est. 1.2X in-situ volume = 2,275 CY x 1.2 = 2,730 CY.

k Soil stabilization binding agents will increase the volume of loose excavated soils by approximately 10% to 33%. 2,730 CY x 1.33 = 3,631 CY. Disposal cost provided by Allied Waste/BFI.

Table 24. Soil Analytical Test Methods - Post-Excavation Verification Soil Samples, Encycle/Texas, Inc., Corpus Christi, Texas

Constituent	Analytical Test Method	Holding Time (days)	Sample Container	Estimated Sample Quantitiation Limit (mg/kg)
Meaney Tract				
Total Antimony	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	1.0
Total Arsenic	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	1.0
Total Cadmium	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	1.0
Total Lead	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	5.0
Total Manganense	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	5.0
Total Silver	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	1.0
Total Zinc	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	5.0
Northern Tract				
Total Arsenic	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	1.0
Southern Tract				
Total Arsenic	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	1.0
Total Lead	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	5.0

mg/kg Milligrams per kilogram
Note: Analytical test methods taken from the EPA document "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)"

Table 25. Soil Analytical Test Methods - Excavated Soil Stockpile Confirmation Soil Samples, Encycle/Texas, Inc., Corpus Christi, Texas

Constituent	Analytical Test Method		Holding Time (days)	Sample Container	Estimated Sample Quantitiation Limit (mg/L)
	Extraction/Digestion	Analysis			
TCLP Arsenic	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	0.1
TCLP Barium	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	0.1
TCLP Cadmium	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	0.1
TCLP Chromium	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	0.1
TCLP Lead	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	0.1
TCLP Mercury	EPA 1311/3010	EPA 7470 or 7471	28	8 ounce glass w/Teflon-lined lid	0.01
TCLP Selenium	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	0.1
TCLP Silver	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	0.1
TCLP Zinc	EPA 1311/3010	EPA 6010 or 6020	180	8 ounce glass w/Teflon-lined lid	1.0

mg/L Milligrams per liter

Notes: (1) Analytical test methods taken from the EPA document "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)".

(2) Wooden railroad tie and concrete samples will be placed into 32-ounce widemouth glass jars with Teflon-lined lids.

Table 26. CMI Implementation and Post Closure Cost Estimate Summary, Encycle/Texas, Inc., Corpus Christi, Texas

Remedial Alternative	Capital Cost (Reimbursement Fund)	Post-Closure Cost (Post-Closure Fund)	Total Capital and Post-Closure Costs
Meaney Tract			
Soil Excavation, Stabilization, and Offsite Disposal[a]	$689,304	$2,000	$691,304
Northern Tract			
Soil Boring B-140 Area Clay Capping[b]	$28,136	$40,584	$68,720
Soil Boring B-223/B-237 Area Soil Excavation, Stabilization, and Offsite Disposal[c]	$39,506	$0	$39,506
Southern Tract			
Soil Excavation, Stabilization, and Offsite Disposal[d]	$588,866	$7,000	$595,866
CMI Implementation Total Costs:	$1,345,812	$49,584	$1,395,396
Current Trust Fund Balance (as of May 27, 2005):[e]	$1,173,241	$300,000	$1,473,241

a See Table 14 for cost breakdown. Post-closure cost for Meaney Tract ($2,000) is for deed recordation (metes & bounds survey and property plat already completed).
b See Table 17 for cost breakdown of soil boring B-140 area clay capping costs. Post-closure costs include deed recordation of Northern Tract and clay cap inspections, maintenance, and repair costs.
c See Table 19 for cost breakdown of soil boring B-223/B-237 area soil excavation, stabilization, and offsite disposal costs.
d See Table 23 for cost breakdown. Post-closure cost for Southern Tract ($7,000) is for deed recordation.
e Current Trust Fund Balance data provided by Encycle/Texas, Inc. as of May 27, 2005.

Table 27. Corrective Measures Implementation Schedule, Encycle/Texas, Inc., Corpus Christi, Texas

Task	Time (months) following TCEQ approval of CMI Work Plan																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Publish public notice.	■																	
Public notice comment period.		■																
Encycle receipt of public comments from TCEQ, prepare Responsiveness Summary Report and submit to TCEQ.			■															
TCEQ review of Responsiveness Summary Report.				■														
Sample wooden railroad ties in Boneyard, obtain landfill operator approval, and dispose of railroad ties.	■	■	■															
Prepare soil excavation and soil stabilization contractor bid packages, pre-bid meetings, contractor selection.	■	■	■	■														
Excavate soils on Meaney Tract exceeding PRGs, collect verification soil samples from excavations.					■	■	■											
Treat excavated Meaney Tract soils using soil stabilization, sample treated soil stockpiles.					■	■	■	■										
Dispose excavated Meaney Tract soils at offsite permitted Class 2 non-hazardous landfill.						■	■	■										
Post-excavation survey on Meaney Tract, backfill excavations.								■	■									
Prepare CMI Completion Report for Meaney Tract and submit to TCEQ.									■	■								
File deed recordation for Meaney Tract at Nueces County Deed Records office following TCEQ approval of CMI.													■					

Table 27. Corrective Measures Implementation Schedule, Encycle/Texas, Inc., Corpus Christi, Texas

Task	Time (months) following TCEQ approval of CMI Work Plan																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Collect geotechnical soil sample from Northern Tract Soil Boring B-140 area for permeability analysis.					■													
Install clay cap on Northern Tract Soil Boring B-140 area. Install topsoil over clay cap.						■	■	■										
Excavate soils on Southern Tract that exceed PRGs and on Northern Tract Soil Boring B-223/B-237 Area exceeding PRGs.							■	■	■	■	■							
Collect verification soil samples from exavations following soil excavation on Northern and Southern Tracts.							■	■	■	■	■							
Treat excavated Northern and Southern Tract soils using soil stabilization, sample treated soil stockpiles.								■	■	■	■	■	■					
Dispose excavated Northern and Southern Tract soils at offsite permitted Class 2 non-hazardous landfill.								■	■	■	■	■	■	■				
Post-excavation surveys on Northern and Southern Tracts, backfill excavations.													■	■				
Prepare CMI Completion Report for Northern and Southern Tracts and submit to TCEQ.														■	■			
File Northern and Southern Tract Deed Recordation at Nueces County Deed Records office following TCEQ approval of CMI.																	■	
Submit Quarterly CMI Progress Report to TCEQ.				*			*			*			*			*		

FIGURES

DRAFTER:

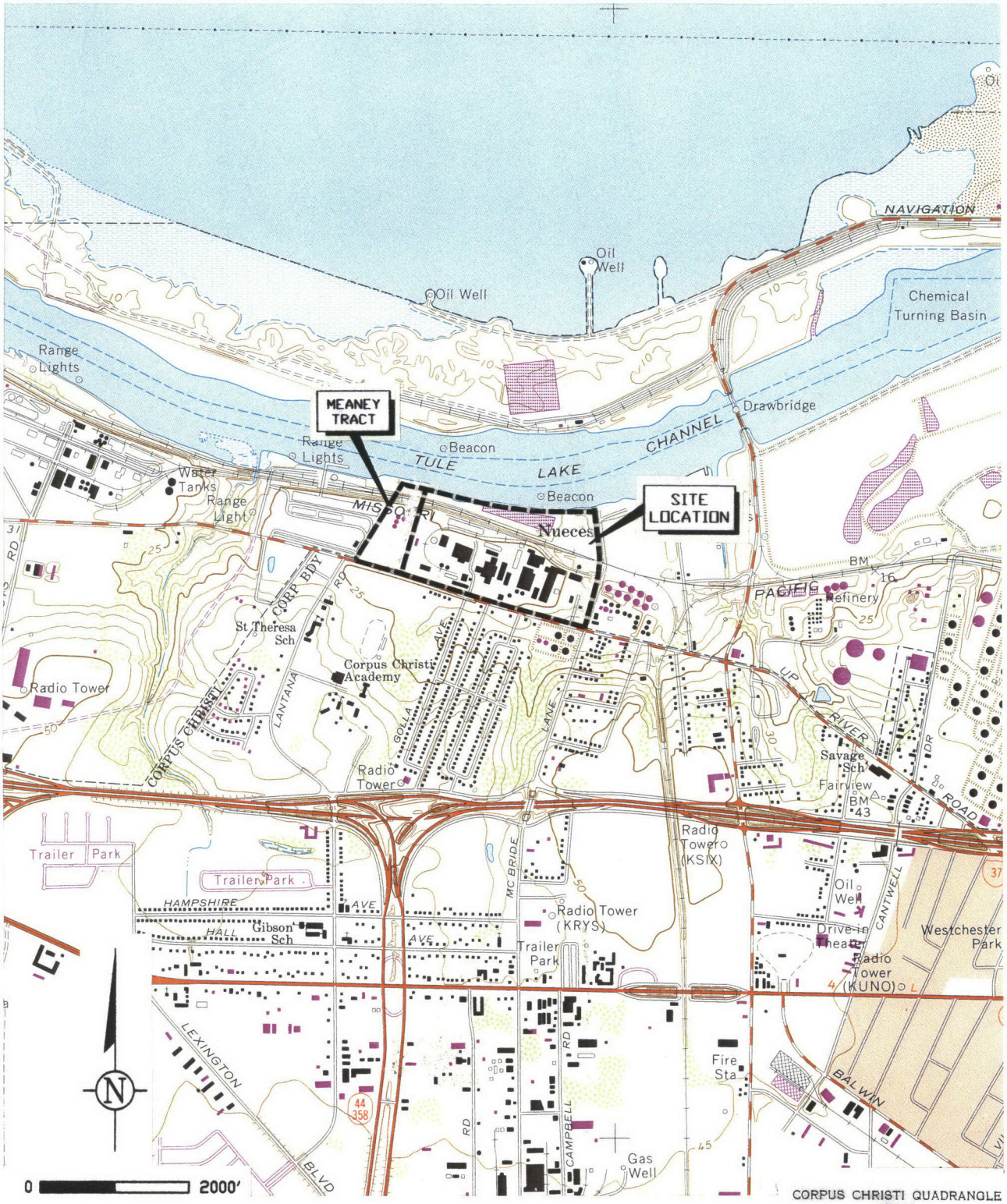
APPROVED:

CHECKED:

DRAWING:

PRJCT NO.: CC00642.001 | FILE:

DWG DATE:



CORPUS CHRISTI QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 CORPUS CHRISTI 15' QUADRANGLE

ARCADIS

SITE LOCATION MAP

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
1

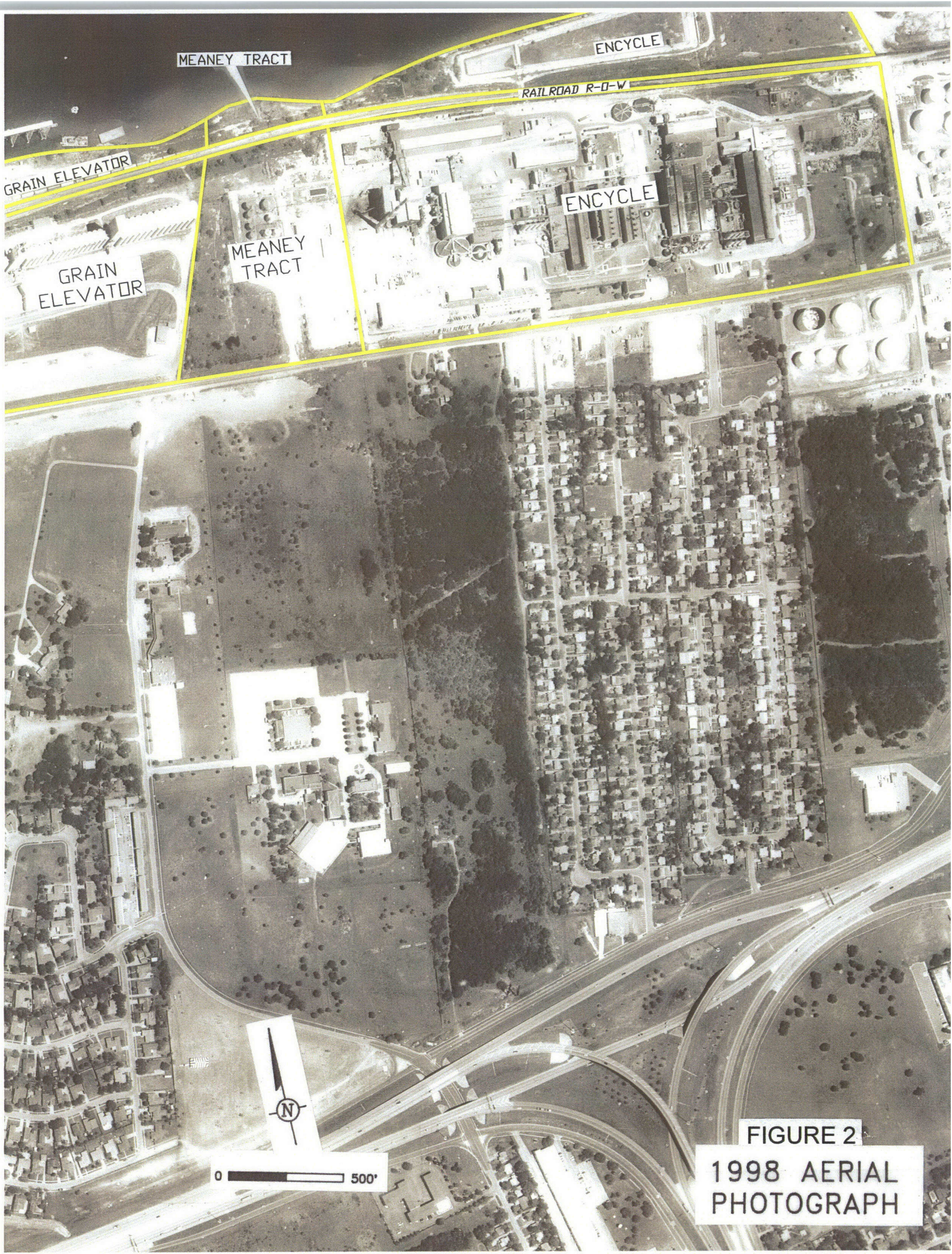
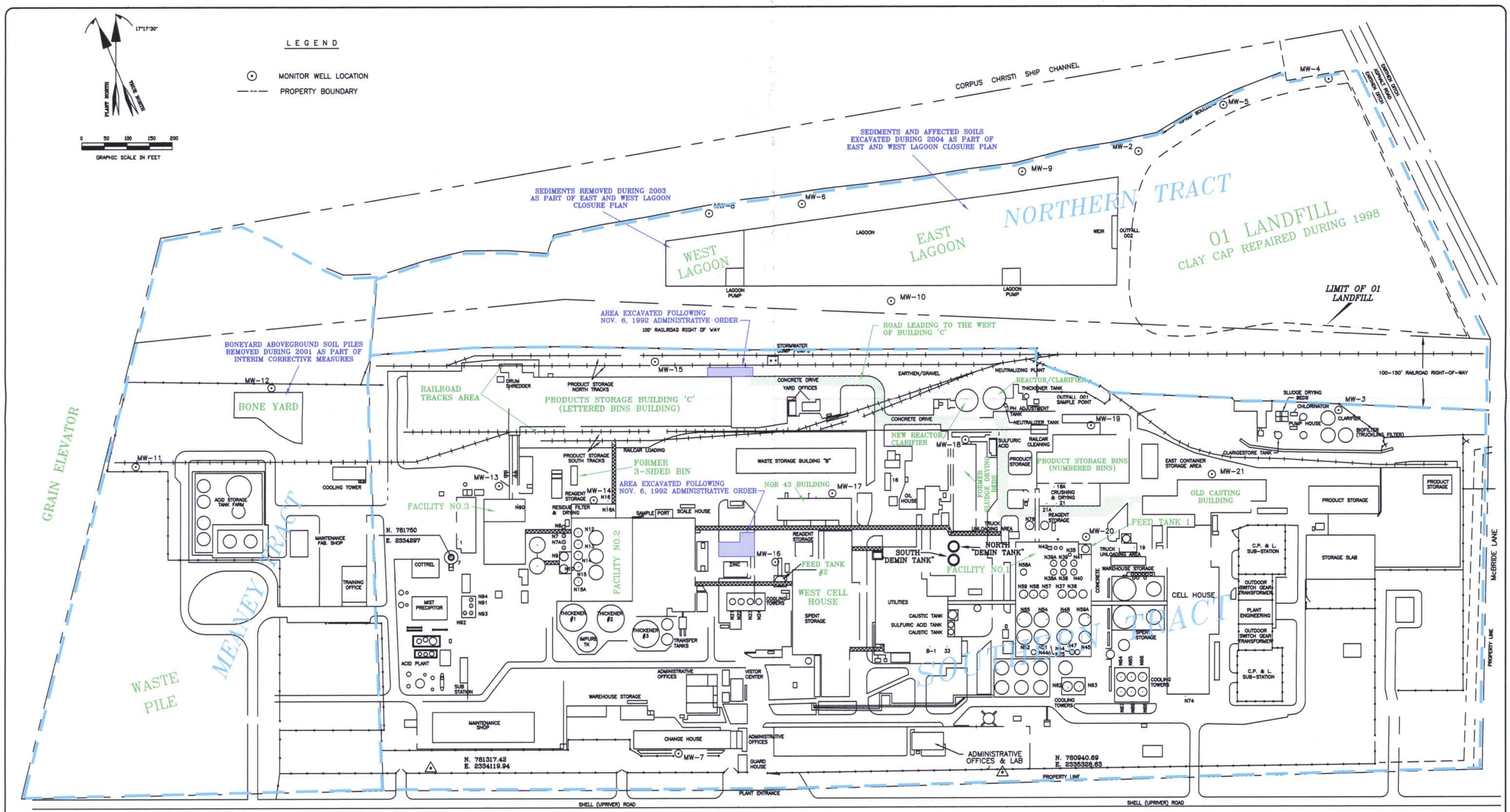


FIGURE 2

1998 AERIAL PHOTOGRAPH



ARCADIS

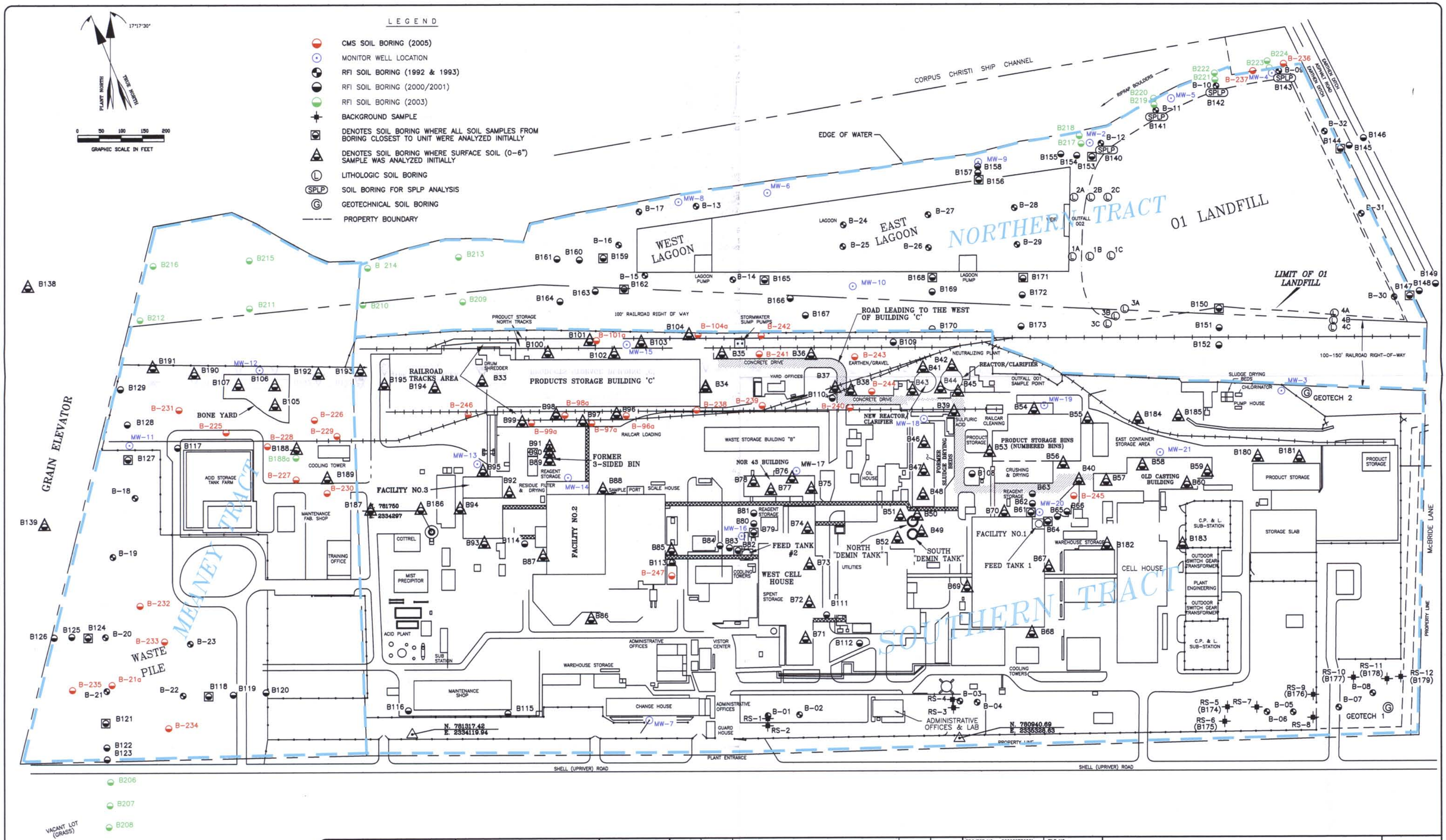
SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.:	CC000878.0001	FILE NO:	
DRAWING:	SWMU-LDC	PLOT SIZE:	1=1200
DRAFTED BY:		DATE:	01APR05
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	

SOILD WASTE MANAGEMENT UNIT LOCATION MAP

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
4



ARCADIS

SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

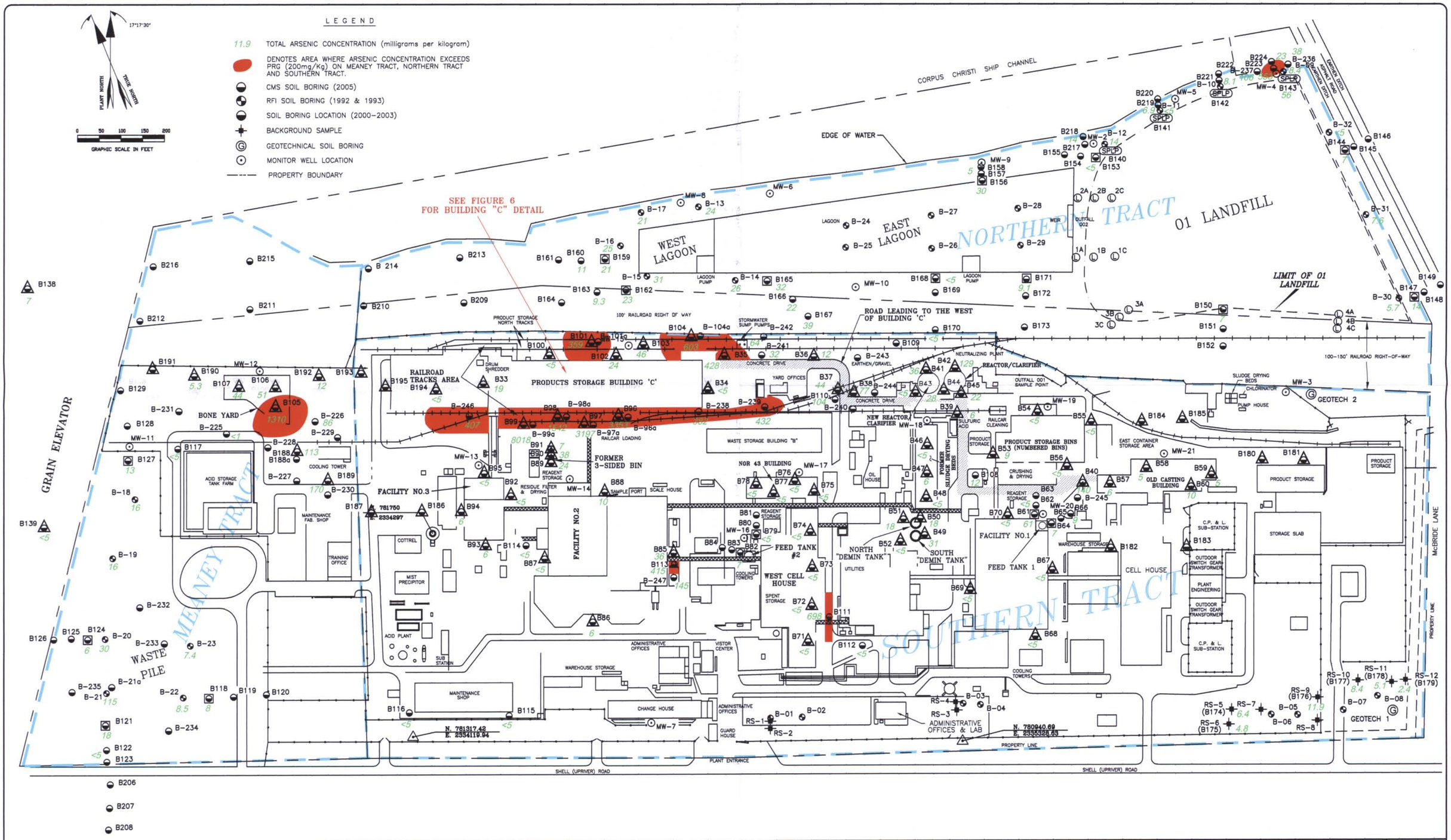
REV. NO.	DATE	DESCRIPTION	BY	APPR.

PROJECT NO.: CC0008780001 | FILE NO:
DRAWING: CSI-BOR-SITE4-05 | PLOT SIZE: 1=1200
DRAFTED BY: | DATE: 01APR05
CHECKED BY: | DATE:
APPROVED BY: | DATE:

SITE MAP
UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 3



SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

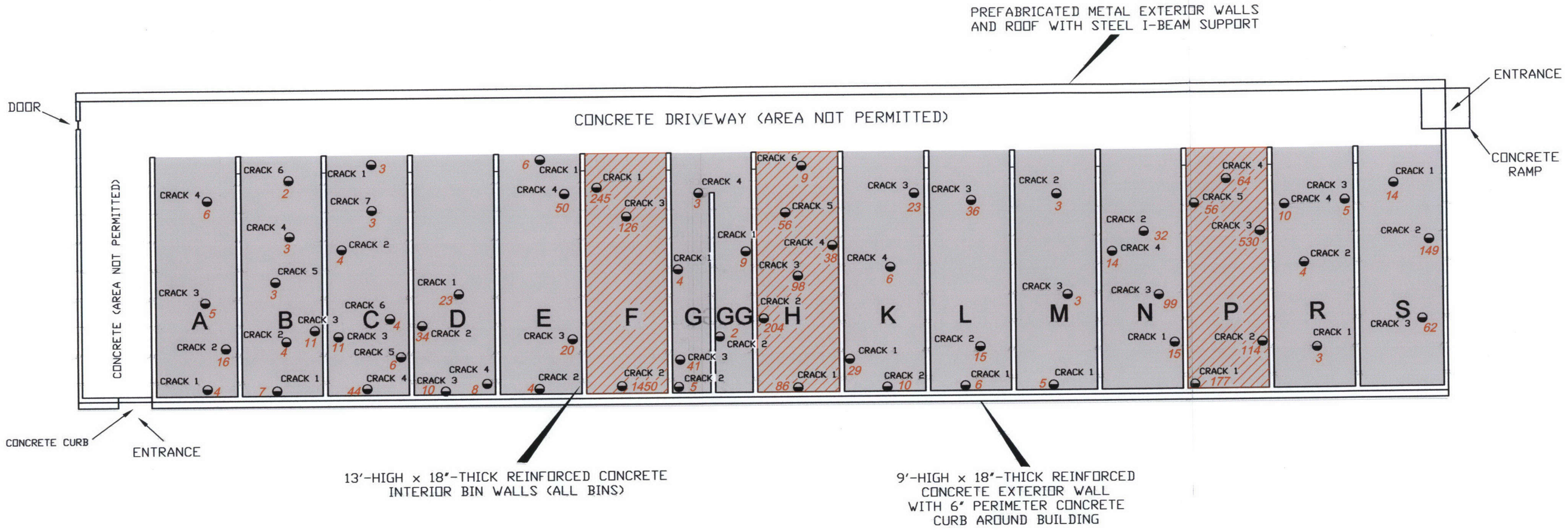
PROJECT NO.:	CC000878.0001	FILE NO:	
DRAWING:	TDT-AS-0-0.5(4-03)	PLOT SIZE:	1=1200
DRAFTED BY:		DATE:	04APR05
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	

TOTAL ARSENIC CONCENTRATION IN SOIL (mg/Kg) 0 - 0.5'

UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 5



L E G E N D

- CONTAINER STORAGE AREA
- SOIL BORING BELOW CRACK IN CONCRETE (SEPTEMBER 2004)
- 16 ARSENIC CONCENTRATION IN SOIL (mg/Kg)
- DENOTES BIN WHERE ARSENIC PRG (200mg/Kg) EXCEEDED IN AT LEAST ONE SAMPLE

N

0 40'

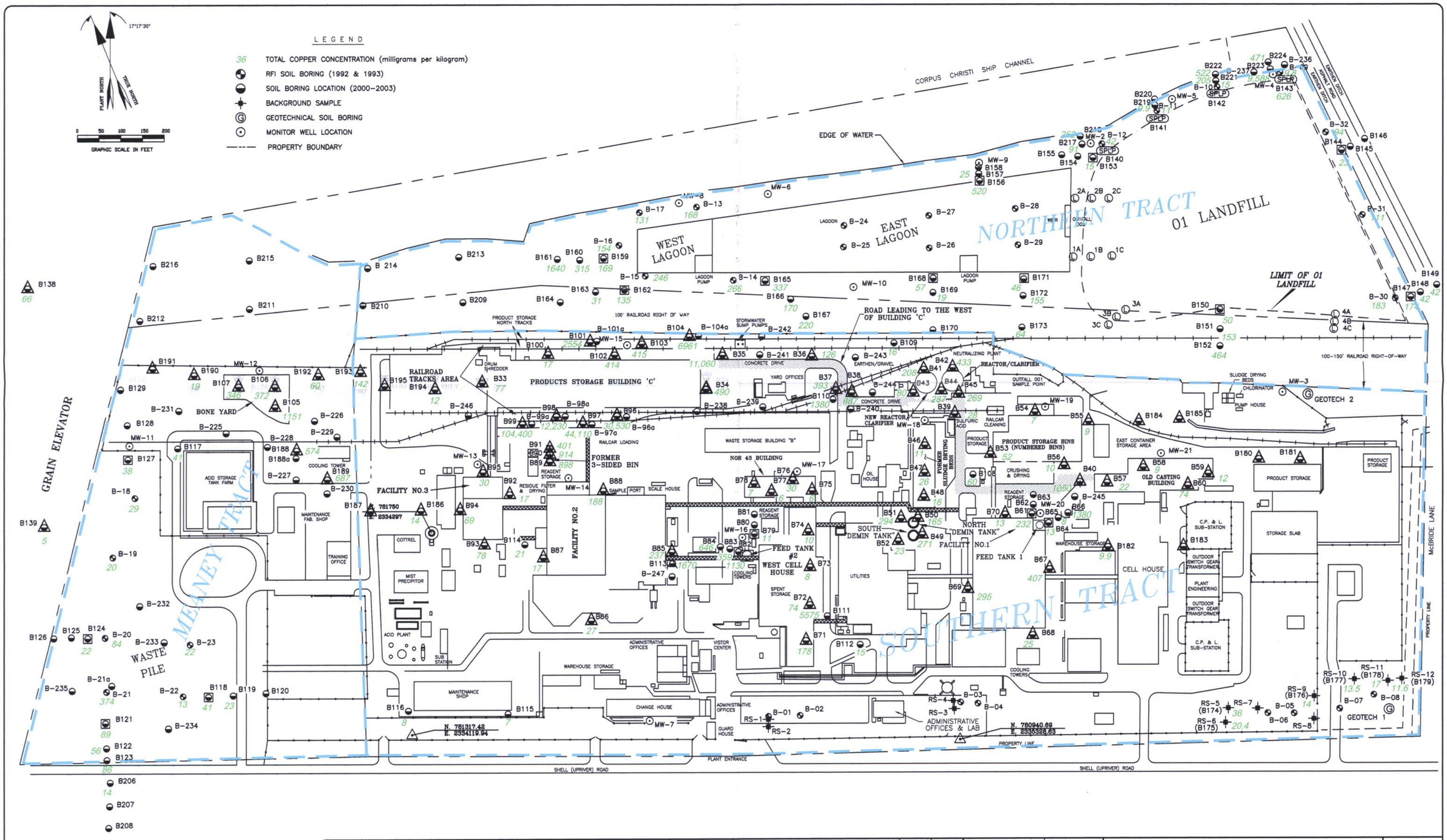
ARCADIS

TOTAL ARSENIC CONCENTRATIONS IN SOIL (mg/Kg) 0-0.5' LETTERED BINS (BUILDING C) DETAIL

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 6

DRAFTER: LGF | APPROVED: K. BRANDNER | CHECKED: K. BRANDNER | DRAWING: LETTER BINS | FILE: | PRJCT NO.: | DWG DATE: 07OCT04



ARCADIS

SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.: CC000878.0001 FILE NO:
DRAWING: TOT-CU-0-05'(4-05) PLOT SIZE: 1=1200
DRAFTED BY: DATE: 05APR05
CHECKED BY: DATE:
APPROVED BY: DATE:

TOTAL COPPER CONCENTRATION IN SOIL (mg/Kg) 0 - 0.5'

UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 9

LEGEND

3.7 TOTAL CHROMIUM CONCENTRATION (milligrams per kilogram)
CMS SOIL BORING (2005)
RFI SOIL BORING (1992 & 1993)
SOIL BORING LOCATION (2000–2003)
BACKGROUND SAMPLE
GEOTECHNICAL SOIL BORING
MONITOR WELL LOCATION
PROPERTY BOUNDARY

17°17'30"
PLANT NORTH
TRUE NORTH
0 50 100 150 200
GRAPHIC SCALE IN FEET

CORPUS CHRISTI SHIP CHANNEL
EDGE OF WATER
NORTHERN TRACT
SOUTHERN TRACT
MCKINNEY TRACT
01 LANDFILL
LIMIT OF 01 LANDFILL
WEST LAGOON
EAST LAGOON
LAGOON PUMP
WEIR
OUTFALL 002
100' RAILROAD RIGHT OF WAY
100–150' RAILROAD RIGHT-OF-WAY
PRODUCT STORAGE NORTH TRACKS
STORMWATER SUMP PUMPS
ROAD LEADING TO THE WEST OF BUILDING 'C'
RAILROAD TRACKS AREA
DRUM SHREDDER
PRODUCTS STORAGE BUILDING 'C'
CONCRETE DRIVE
YARD OFFICES
EARTHEN/GRAVEL
PRETREATMENT PLANT
REACTOR/CLARIFIER
OUTFALL 001 SAMPLE POINT
SLUDGE DRYING BEDS
CHLORINATOR
PUMP HOUSE
GEOTECH 2
BONE YARD
NEW REACTOR/ CLARIFIER
SULFURIC ACID
RAILCAR CLEANING
PRODUCT STORAGE
PRODUCT STORAGE BINS (NUMBERED BINS)
EAST CONTAINER STORAGE AREA
OLD CASTING BUILDING
PRODUCT STORAGE
STORAGE SLAB
WASTE STORAGE BUILDING "B"
RAILCAR LOADING
FORMER 3-SIDED BIN
REAGENT STORAGE
NOR 43 BUILDING
OIL HOUSE
FORMER SLUDGE DRYING BEDS
CRUSHING & DRYING
FACILITY NO.3
RESIDUE FILTER & DRYING
SAMPLE PORT
SCALE HOUSE
FACILITY NO.2
FACILITY NO.1
FEED TANK #2
WEST CELL HOUSE
SPENT STORAGE
COOLING TOWERS
UTILITIES
SOUTH DEMIN TANK
NORTH "DEMIN TANK"
FEED TANK 1
CELL HOUSE
WAREHOUSE STORAGE
C.P. & L. SUB-STATION
OUTDOOR SWITCH GEAR TRANSFORMER
PLANT ENGINEERING
ACID STORAGE TANK FARM
COOLING TOWER
MAINTENANCE FAB. SHOP
TRAINING OFFICE
COTTREL
MIST PRECIPITOR
ACID PLANT
SUB STATION
WASTE PILE
GRAIN ELEVATOR
ADMINISTRATIVE OFFICES
VISITOR CENTER
WAREHOUSE STORAGE
MAINTENANCE SHOP
CHANGE HOUSE
GUARD HOUSE
ADMINISTRATIVE OFFICES & LAB
PLANT ENTRANCE
EARTHEN DITCH
ASPHALT ROAD
MCBRIDE LANE
PROPERTY LINE
SHELL (UPRIVER) ROAD
N. 781317.42 E. 2334119.94
N. 781750 E. 2334297
N. 780940.69 E. 2335326.63
GEOTECH 1

SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.: CO000878.0001	FILE NO:
DRAWING: Tot-CR-0-05'(4-05)	PLOT SIZE: 1=1200
DRAFTED BY:	DATE: 05APR05
CHECKED BY:	DATE:
APPROVED BY:	DATE:

TOTAL CHROMIUM CONCENTRATION IN SOIL (mg/Kg) 0 - 0.5'
UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 8

LEGEND

11.9 TOTAL ARSENIC CONCENTRATION (milligrams per kilogram)

DENOTES AREA WHERE CADMIUM CONCENTRATION ON MEANEY TRACT EXCEEDS PRG (160mg/Kg). AS DETAILED IN BLRA ADDENDUM, NO PRG IS REQUIRED FOR THIS CONSTITUENT ON NORTHERN TRACT OR SOUTHERN TRACT.

CMS SOIL BORING (2005)

RFI SOIL BORING (1992 & 1993)

SOIL BORING LOCATION (2000–2003)

BACKGROUND SAMPLE

GEOTECHNICAL SOIL BORING

MONITOR WELL LOCATION

PROPERTY BOUNDARY

17°17'30"

PLANT NORTH

TRUE NORTH

0 50 100 150 200

GRAPHIC SCALE IN FEET

CORPUS CHRISTI SHIP CHANNEL

EDGE OF WATER

NORTHERN TRACT

SOUTHERN TRACT

MEANEY TRACT

01 LANDFILL

LIMIT OF 01 LANDFILL

WEST LAGOON

EAST LAGOON

LAGOON PUMP

WEIR

OUTFALL 002

100' RAILROAD RIGHT OF WAY

100–150' RAILROAD RIGHT-OF-WAY

ROAD LEADING TO THE WEST OF BUILDING 'C'

PRODUCT STORAGE NORTH TRACKS

STORM/WATER SUMP PUMPS

RAILROAD TRACKS AREA

DRUM SHREDDER

PRODUCTS STORAGE BUILDING 'C'

CONCRETE DRIVE

EARTHEN/GRAVEL

NEUTRALIZING PLANT

REACTOR/CLARIFIER

OUTFALL 001 SAMPLE POINT

YARD OFFICES

NEW REACTOR/CLARIFIER

RAILCAR CLEANING

RAILCAR LOADING

WASTE STORAGE BUILDING "B"

NOR 43 BUILDING

OIL HOUSE

FORMER SLUDGE DRYING BEDS

PRODUCT STORAGE BINS (NUMBERED BINS)

CRUSHING & DRYING

REAGENT STORAGE

EAST CONTAINER STORAGE AREA

OLD CASTING BUILDING

PRODUCT STORAGE

STORAGE SLAB

WAREHOUSE STORAGE

CELL HOUSE

C.P. & L. SUB-STATION

OUTDOOR SWITCH GEAR TRANSFORMER

PLANT ENGINEERING

FACILITY NO.1

FEED TANK 1

FEED TANK #2

NORTH "DEMIN TANK"

SOUTH "DEMIN TANK"

UTILITIES

WEST CELL HOUSE

SPENT STORAGE

COOLING TOWERS

FACILITY NO.2

FACILITY NO.3

FORMER 3-SIDED BIN

REAGENT STORAGE

RESIDUE FILTER & DRYING

SAMPLE PORT

SCALE HOUSE

N. 781750
E. 2334297

N. 781317.42
E. 2334119.94

N. 780940.69
E. 2335328.63

BONE YARD

WASTE PILE

ACID STORAGE TANK FARM

COOLING TOWER

MAINTENANCE FAB. SHOP

TRAINING OFFICE

COTTREL

MIST PRECIPITOR

ACID PLANT

SUB STATION

ADMINISTRATIVE OFFICES

VISITOR CENTER

WAREHOUSE STORAGE

MAINTENANCE SHOP

CHANGE HOUSE

GUARD HOUSE

ADMINISTRATIVE OFFICES & LAB

SLUDGE DRYING BEDS

CHLORINATOR

PUMP HOUSE

GEOTECH 1

GEOTECH 2

EARTHEN DITCH

ASPHALT ROAD

EARTHEN DITCH

McBRIDE LANE

PROPERTY LINE

PLANT ENTRANCE

SHELL (UPRIVER) ROAD

SHELL (UPRIVER) ROAD

GRAIN ELEVATOR

SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.: CD000878.0001	FILE NO:
DRAWING: TOT-Cd-0-05'(4-05)	PLOT SIZE: 1=1200
DRAFTED BY:	DATE: 05APR05
CHECKED BY:	DATE:
APPROVED BY:	DATE:

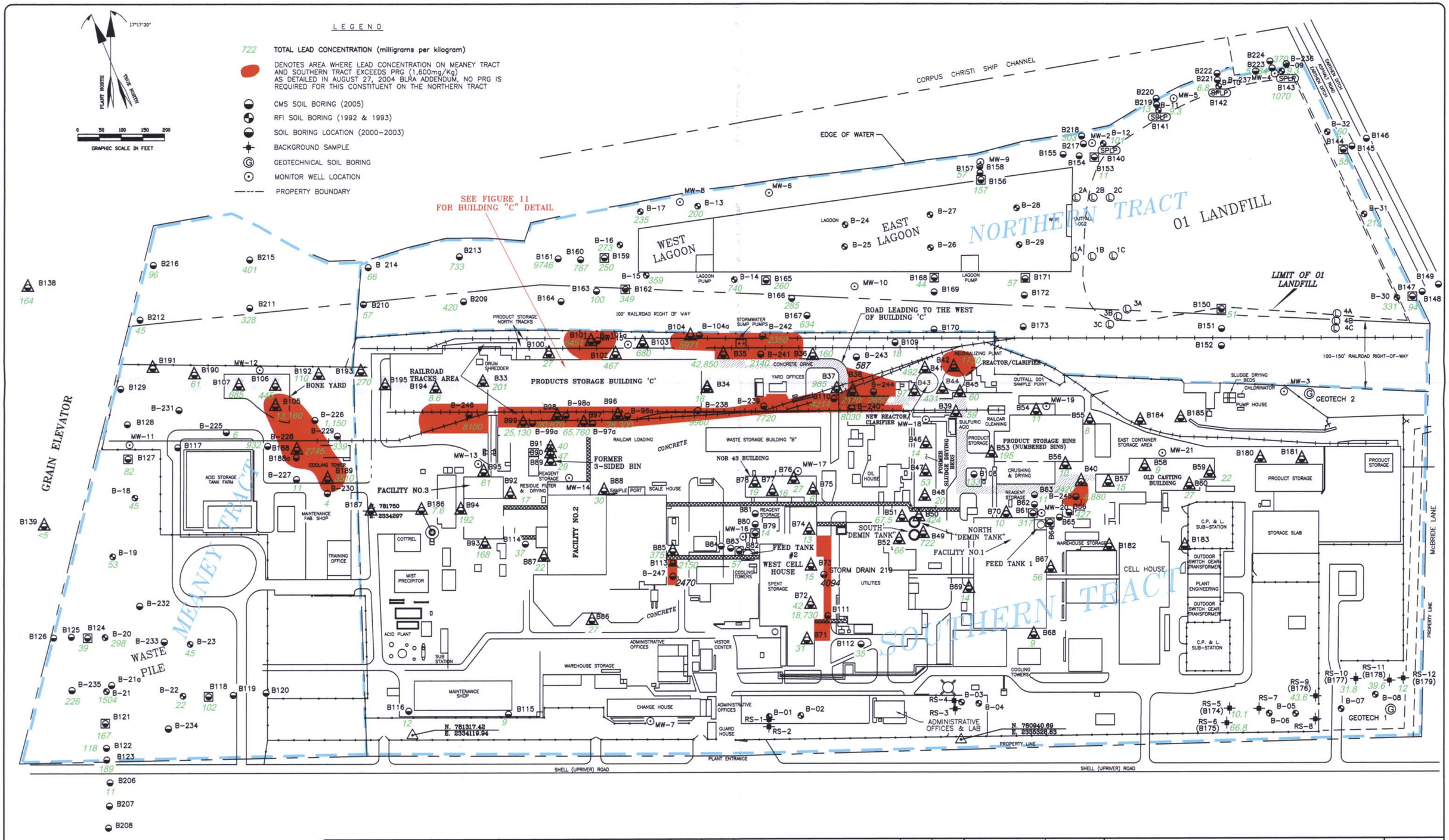
ARCADIS

TOTAL CADMIUM CONCENTRATION IN SOIL (mg/Kg) 0 - 0.5'

UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 7



SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
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USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.: CC000642.0001	FILE NO:
DRAWING: TDT-PB-0-05(14-05)	PLOT SIZE: 1=1200
DRAFTED BY:	DATE: 05APR05
CHECKED BY:	DATE:
APPROVED BY:	DATE:

ARCADIS

TOTAL LEAD CONCENTRATION IN SOIL (mg/Kg) 0 - 0.5'

UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 10

DRAWING: LETTER BINS-OUTLINED | APPROVED: K. BRANDNER | DRAFTER: LGF

DWG DATE: 07OCT04 | PRJCT NO.: | FILE:

PREFABRICATED METAL EXTERIOR WALLS AND ROOF WITH STEEL I-BEAM SUPPORT

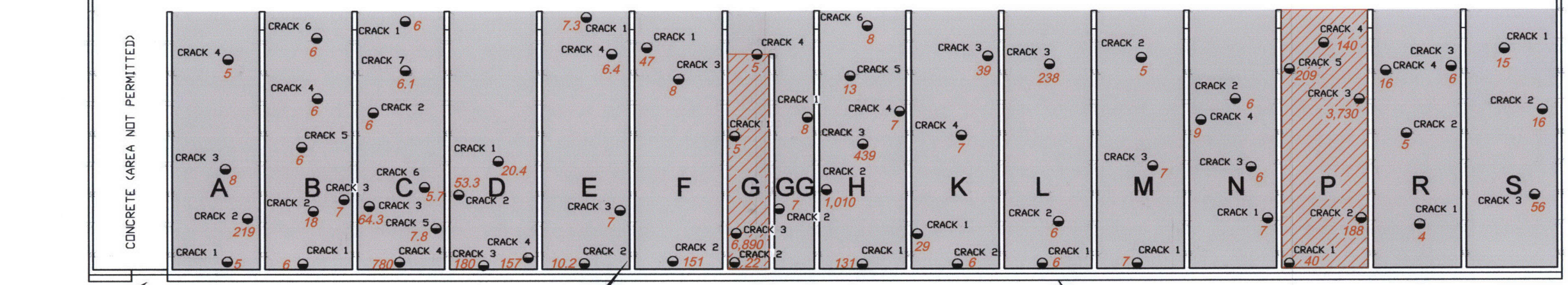
DOOR

ENTRANCE

CONCRETE RAMP

CONCRETE DRIVEWAY (AREA NOT PERMITTED)

CONCRETE (AREA NOT PERMITTED)



CONCRETE CURB

ENTRANCE

13'-HIGH x 18"-THICK REINFORCED CONCRETE INTERIOR BIN WALLS (ALL BINS)

9'-HIGH x 18"-THICK REINFORCED CONCRETE EXTERIOR WALL WITH 6" PERIMETER CONCRETE CURB AROUND BUILDING

LEGEND

- CONTAINER STORAGE AREA
- SOIL BORING BELOW CRACK IN CONCRETE (SEPTEMBER 2004)
- *219* LEAD CONCENTRATION IN SOIL (mg/Kg)
- DENOTES BIN WHERE LEAD PRG (1,600mg/Kg) EXCEEDED IN AT LEAST ONE SAMPLE

N

0 40'

ARCADIS

TOTAL LEAD CONCENTRATIONS IN SOIL (mg/Kg) 0-0.5' LETTERED BINS (BUILDING C) DETAIL

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 11

LEGEND

288 TOTAL NICKEL CONCENTRATION (milligrams per kilogram)
CMS SOIL BORING (2005)
RFI SOIL BORING (1992 & 1993)
SOIL BORING LOCATION (2000–2003)
BACKGROUND SAMPLE
GEOTECHNICAL SOIL BORING
MONITOR WELL LOCATION
PROPERTY BOUNDARY

17°17'30"
PLANT NORTH
TRUE NORTH
0 50 100 150 200
GRAPHIC SCALE IN FEET

CORPUS CHRISTI SHIP CHANNEL
EDGE OF WATER
NORTHERN TRACT
SOUTHERN TRACT
01 LANDFILL
LIMIT OF 01 LANDFILL
WEST LAGOON
EAST LAGOON
LAGOON PUMP
OUTFALL 002
MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-10 MW-11 MW-12 MW-13 MW-14 MW-15 MW-16 MW-17 MW-18 MW-19 MW-20 MW-21
GEOTECH 1
GEOTECH 2
SPLP
B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-101a B-104a B-96a B-97a B-98a B-99a
B100 B101 B102 B103 B104 B105 B106 B107 B109 B110 B111 B112 B114 B115 B116 B117 B118 B119 B120 B121 B122 B123 B126 B127 B128 B129 B130 B131 B132 B133 B134 B135 B136 B137 B138 B139 B140 B141 B142 B143 B144 B145 B146 B147 B148 B149 B150 B151 B152 B153 B154 B155 B156 B157 B158 B159 B160 B161 B162 B163 B164 B165 B166 B167 B168 B169 B170 B171 B172 B173 B174 B175 B176 B177 B178 B179 B180 B181 B182 B183 B184 B185 B186 B187 B188 B188a B189 B190 B191 B192 B193 B194 B195 B198 B199 B200 B201 B202 B203 B204 B205 B206 B207 B208 B209 B210 B211 B212 B213 B214 B215 B216 B217 B219 B220 B221 B222 B223 B224 B227 B228 B229 B230 B231 B232 B233 B234 B235 B236 B237 B238 B239 B240 B241 B242 B243 B244 B245 B246 B247
1A 1B 1C 2A 2B 2C 3A 3B 3C 4A 4B 4C
RS-1 RS-2 RS-3 RS-4 RS-5 (B174) RS-6 (B175) RS-7 RS-8 RS-9 (B176) RS-10 (B177) RS-11 (B178) RS-12 (B179)
B33 B34 B35 B36 B37 B38 B39 B40 B41 B42 B43 B44 B45 B46 B47 B48 B49 B50 B51 B52 B53 B54 B55 B56 B57 B58 B59 B60 B61 B62 B63 B64 B65 B66 B67 B68 B69 B70 B71 B72 B73 B74 B75 B76 B77 B78 B79 B80 B81 B82 B83 B84 B85 B86 B87 B88 B89 B90 B91 B92 B93 B94 B95 B96 B97 B98 B99
FACILITY NO.1
FACILITY NO.2
FACILITY NO.3
FORMER 3-SIDED BIN
PRODUCTS STORAGE BUILDING 'C'
WASTE STORAGE BUILDING "B"
NOR 43 BUILDING
NEW REACTOR/ CLARIFIER
REACTOR/CLARIFIER
NEUTRALIZING PLANT
PRODUCT STORAGE BINS (NUMBERED BINS)
PRODUCT STORAGE
EAST CONTAINER STORAGE AREA
OLD CASTING BUILDING
CELL HOUSE
STORAGE SLAB
WAREHOUSE STORAGE
FEED TANK #2
FEED TANK 1
WEST CELL HOUSE
SOUTH "DEMIN TANK"
NORTH "DEMIN TANK"
ROAD LEADING TO THE WEST OF BUILDING 'C'
100' RAILROAD RIGHT OF WAY
100–150' RAILROAD RIGHT–OF–WAY
RAILROAD TRACKS AREA
PRODUCT STORAGE NORTH TRACKS
STORMWATER SUMP PUMPS
CONCRETE DRIVE
EARTHEN/GRAVEL
YARD OFFICES
OUTFALL 001 SAMPLE POINT
SLUDGE DRYING BEDS
CHLORINATOR
PUMP HOUSE
SULFURIC ACID
RAILCAR CLEANING
RAILCAR LOADING
DRUM SHREDDER
BONE YARD
ACID STORAGE TANK FARM
COOLING TOWER
MAINTENANCE FAB. SHOP
TRAINING OFFICE
COTTRELL
MIST PRECIPITOR
ACID PLANT
SUB STATION
SCALE HOUSE
SAMPLE PORT
RESIDUE FILTER & DRYING
REAGENT STORAGE
OIL HOUSE
POWDER SLUDGE DRYING BEDS
CRUSHING & DRYING
UTILITIES
SPENT STORAGE
COOLING TOWERS
ADMINISTRATIVE OFFICES
VISTOR CENTER
MAINTENANCE SHOP
CHANGE HOUSE
GUARD HOUSE
ADMINISTRATIVE OFFICES & LAB
C.P. & L. SUB–STATION
PLANT ENGINEERING
OUTDOOR SWITCH GEAR/ TRANSFORMER
PROPERTY LINE
PLANT ENTRANCE
SHELL (UPRIVER) ROAD
GRAIN ELEVATOR
MEANEY TRACT
WASTE PILE
McBRIDE LANE
EARTHEN DITCH
ASPHALT ROAD
N. 781750 E. 2334297
N. 781317.42 E. 2334119.94
N. 780940.69 E. 2335338.63
PROPERTY LINE

ARCADIS

SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.: CC000878.0001	FILE NO:
DRAWING: TDT-NE-0-05Y4-05	PLOT SIZE: 1=1200
DRAFTED BY:	DATE: 05APR05
CHECKED BY:	DATE:
APPROVED BY:	DATE:

TOTAL NICKEL CONCENTRATION IN SOIL (mg/Kg) 0 - 0.5'

UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 13

LEGEND

185 TOTAL MANGANESE CONCENTRATION (milligrams per kilogram)

DENOTES AREA WHERE MANGANESE CONCENTRATION ON MEANEY TRACT EXCEEDS PRG (1,400mg/Kg). AS DETAILED IN AUGUST 27, 2004 BLRA ADDENDUM. NO PRG IS REQUIRED FOR THIS CONSTITUENT ON NORTHERN TRACT OR SOUTHERN TRACT.

CMS SOIL BORING (2005)

RFI SOIL BORING (1992 & 1993)

SOIL BORING LOCATION (2000–2003)

BACKGROUND SAMPLE

GEOTECHNICAL SOIL BORING

MONITOR WELL LOCATION

PROPERTY BOUNDARY

17°17'30"

PLANT NORTH

TRUE NORTH

0 50 100 150 200

GRAPHIC SCALE IN FEET

NORTHERN TRACT

SOUTHERN TRACT

MEANEY TRACT

01 LANDFILL

LIMIT OF 01 LANDFILL

CORPUS CHRISTI SHIP CHANNEL

EDGE OF WATER

WEST LAGOON

EAST LAGOON

PRODUCTS STORAGE BUILDING 'C'

ROAD LEADING TO THE WEST OF BUILDING 'C'

100' RAILROAD RIGHT OF WAY

100–150' RAILROAD RIGHT-OF-WAY

RAILROAD TRACKS AREA

PRODUCT STORAGE NORTH TRACKS

DRUM SHREDDER

STORMWATER SUMP PUMPS

CONCRETE DRIVE

EARTHEN/GRAVEL

YARD OFFICES

NEUTRALIZING PLANT

REACTOR/CLARIFIER

OUTFALL 001 SAMPLE POINT

SLUDGE DRYING BEDS

CHLORINATOR

PUMP HOUSE

GEOTECH 2

GEOTECH 1

NEW REACTOR/ CLARIFIER

SULFURIC ACID

RAILCAR CLEANING

PRODUCT STORAGE

PRODUCT STORAGE BINS (NUMBERED BINS)

CRUSHING & DRYING

FORMER SLUDGE DRYING BEDS

EAST CONTAINER STORAGE AREA

OLD CASTING BUILDING

PRODUCT STORAGE

STORAGE SLAB

WASTE STORAGE BUILDING "B"

NOR 43 BUILDING

OIL HOUSE

RAILCAR LOADING

FORMER 3-SIDED BIN

REAGENT STORAGE

RESIDUE FILTER & DRYING

SAMPLE PORT

SCALE HOUSE

FACILITY NO.3

FACILITY NO.2

FACILITY NO.1

COOLING TOWER

ACID STORAGE TANK FARM

MAINTENANCE FAB. SHOP

TRAINING OFFICE

COTTREL

MIST PRECIPITOR

ACID PLANT

SUB STATION

WEST CELL HOUSE

SPENT STORAGE

FEED TANK #2

FEED TANK 1

"DEMIN TANK"

SOUTH "DEMIN TANK"

NORTH "DEMIN TANK"

UTILITIES

CELL HOUSE

WAREHOUSE STORAGE

ADMINISTRATIVE OFFICES

VISTOR CENTER

MAINTENANCE SHOP

CHANGE HOUSE

GUARD HOUSE

ADMINISTRATIVE OFFICES & LAB

PLANT ENTRANCE

C.P. & L. SUB-STATION

OUTDOOR SWITCH GEAR-TRANSFORMER

PLANT ENGINEERING

BONE YARD

WASTE PILE

GRAIN ELEVATOR

McBRIDE LANE

PROPERTY LINE

SHELL (UPRIVER) ROAD

EARTHEN DITCH

ASPHALT ROAD

LAGOON PUMP

OUTFALL 002

N. 781317.42 E. 2334119.84

N. 781750 E. 2334297

N. 780940.69 E. 2333328.85

B138 204
B139 151
B126 460
B125 437
B124 450
B20 636
B233
B23 238
B235
B21 1678
B21a 226
B22 463
B118 556
B119 178
B120
B121 691
B234
B122 442
B123 319
B206
B207
B208
B212
B216
B215
B214
B213
B211
B210
B209
B212
B191 454
B190 621
B107 812
B106 1105
B105 2294
B192 585
B193 596
B129 523
B231
B128 445
B225 100
B226 <1
B229 544
B188 B188a
B189 1008
B227
B230
B187
B186 147
B94 343
B93
B114 228
B87 1210
B18 341
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B195 B194 208
B33 1934
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B101 1132
B101a
B102 433
B103 404
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B98 B98a
B99 11,910
B99a 9205
B97 B97a 22,500
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B37 640
B38 B244 203
B43 B44 B45 193
B42 933
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B240 4000
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B184 10,340
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MW-21
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B50 651
B49 645
B52 312
B70 149
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MW-20
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B64 419
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B75 159
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B82 B83 B84 4274
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B113 3080
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SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.:	C0000878.00001	FILE NO:	
DRAWING:	TDT-HN-0-05\14-00	PLOT SIZE:	1=1200
DRAFTED BY:		DATE:	05APR05
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	

ARCADIS

TOTAL MANGANESE CONCENTRATION IN SOIL (mg/Kg) 0-0.5'

UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 12

LEGEND

270 TOTAL ZINC CONCENTRATION (milligrams per kilogram)

DENOTES AREA WHERE ZINC CONCENTRATION ON MEANEY TRACT EXCEEDS PRG (45,000mg/Kg). AS DETAILED IN AUGUST 27, 2004 BLRA ADDENDUM, NO PRG IS REQUIRED FOR THIS CONSTITUENT ON NORTHERN TRACT OR SOUTHERN TRACT.

CMS SOIL BORING (2005)

RFI SOIL BORING (1992 & 1993)

SOIL BORING LOCATION (2000–2003)

BACKGROUND SAMPLE

GEOTECHNICAL SOIL BORING

MONITOR WELL LOCATION

PROPERTY BOUNDARY

17°17'30"

PLANT NORTH

TRUE NORTH

0 50 100 150 200

GRAPHIC SCALE IN FEET

CORPUS CHRISTI SHIP CHANNEL

EDGE OF WATER

NORTHERN TRACT

01 LANDFILL

LIMIT OF 01 LANDFILL

WEST LAGOON

EAST LAGOON

LAGOON PUMP

OUTFALL 002

MEANEY TRACT

SOUTHERN TRACT

WASTE PILE

RAILROAD TRACKS AREA

100' RAILROAD RIGHT OF WAY

100–150' RAILROAD RIGHT–OF–WAY

PRODUCTS STORAGE BUILDING 'C'

PRODUCT STORAGE NORTH TRACKS

DRUM SHREDDER

BONE YARD

STORMWATER SUMP PUMPS

ROAD LEADING TO THE WEST OF BUILDING 'C'

CONCRETE DRIVE

EARTHEN/GRAVEL

YARD OFFICES

REACTOR/CLARIFIER

OUTFALL 001 SAMPLE POINT

SLUDGE DRYING BEDS

CHLORINATOR

PUMP HOUSE

GEOTECH 2

NEW REACTOR/ CLARIFIER MW–18

SULFURIC ACID

RAILCAR CLEANING

PRODUCT STORAGE

PRODUCT STORAGE BINS (NUMBERED BINS)

EAST CONTAINER STORAGE AREA

OLD CASTING BUILDING

PRODUCT STORAGE

RAILCAR LOADING

WASTE STORAGE BUILDING "B"

NOR 43 BUILDING

FORMER 3–SIDED BIN

REAGENT STORAGE

RESIDUE FILTER & DRYING

FORMER SLUDGE DRYING BEDS

OIL HOUSE

CRUSHING & DRYING

REAGENT STORAGE

FACILITY NO.3

FACILITY NO.2

FACILITY NO.1

SAMPLE PORT

SCALE HOUSE

GRAIN ELEVATOR

ACID STORAGE TANK FARM

COOLING TOWER

MAINTENANCE FAB. SHOP

TRAINING OFFICE

COTTREL

MIST PRECIPITOR

ACID PLANT

SUB STATION

MAINTENANCE SHOP

CHANGE HOUSE

GUARD HOUSE

ADMINISTRATIVE OFFICES

VISTOR CENTER

WAREHOUSE STORAGE

ADMINISTRATIVE OFFICES & LAB

SOUTH DEMIN TANK

NORTH DEMIN TANK

FEED TANK #2

FEED TANK 1

WEST CELL HOUSE

CELL HOUSE

SPENT STORAGE

UTILITIES

COOLING TOWERS

WAREHOUSE STORAGE

C.P. & L. SUB–STATION

OUTDOOR SWITCH GEAR TRANSFORMER

PLANT ENGINEERING

STORAGE SLAB

PROPERTY LINE

McBRIDE LANE

SHELL (UPRIVER) ROAD

PLANT ENTRANCE

N. 781317.42
E. 2334119.94

N. 780940.69
E. 2335328.69

B138 1750
B139 45
B126 1720
B125 508
B124 1500
B20 10,340
B233
B23 701
B235 4,770
B21 71,000
B21a
B22 1596
B118 3855
B119 784
B120 353
B121 6973
B122 1560
B123 1750
B234
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B209
B191 B190 MW–12 B106 B192 B193
B129 5747
B107 7579
B105 299,900
B128 1560
B231
B225 67
B226 <1
B229
B228
B188 B188a
B227
B189
B230
MW–11
B127 3193
B18 2798
B19 2367
B232
B117 731
B187 B186 B94 3712
781750 E. 2334297
B92 722
B95
MW–13
B91 8794
B90 14,890
B89 16,490
MW–14
B88 5292
B93 1430
B114 589
B87 30,480
B85 10,940
B113 32,860
B247
B86 658
B116 178
B115 358
MW–7
B161 4993
B160 4379
B16 3008
B159 3762
B17 3196
MW–8
B13 4486
MW–6
B15 7720
B162 6653
B163 1178
B164 10,740
B14 4736
B165 6764
MW–10
B166 2621
B167 11,010
B168 388
B169 953
B158 MW–9 5255
285
B157 2200
B156
B171 496
B172 3096
B173 3234
B170
B218 B217 MW–2 618
B155 4350
B154
B12 1758
B153 184
B140
B220 B219 MW–5
B-1 36
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B222 B221 B-10 29
B142
B224 B223 48
B-237
B-236
B-09
MW–4
B143 44,310
B-32
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B146 394
B145 519 654
B-31 1302
B149 326
B147 937
B148 754
B-30 2128
B150 909
B151 4341
B152 27,200
3A
3B
3C
4A
4B
4C
B101 B-101a 66,230
B100 516
B102 16,260
MW–15
B103 16,600
B104 B-104a 130,200
B-242
B36 2490
B35 8811
B-241
B-243 15,900
B109 3349
B-246
B-98 B-98a B-96a
B-99 B-99a 87,900
B97 149,300
B-97a 117,600
B-246
B-238
B-239
B-240
B34 16,750
B37 18,660
B110 27,130
B-244 354
B38
B43 7728
B44
B45 1588
B41 10,610
B42 15,580
B39 1700
B54 MW–19 134
B55 28
B184
B185
B46 915
B47
B48 1560
B50 6892
B51 5798
B52 7562
B49
B78 156
B77 1040
B76 MW–17
B75 83
B74 399
B81 623
B80 6729
B79
B82 B83 B84 22,820
MW–16
B73 251
B72 19,120
B111 78,920
B71 983
B112 584
B69 25,520
B68 40,160
B108 8933
B53 15,810
B56 215
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B57 1650
B58 55
B59 577
B60 407
B180 B181
B63 59
B62 385
B61 B70 6289 3286
MW–20
B65 B66 B64 9393
B67 52,100
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B-245 176
B-03 B-04 355.6
RS–4 343.9
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RS–10 (B177) 270
RS–12 (B179) 581
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RS–5 (B174) 2280
RS–7
RS–6 (B175) 1480

SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.:	CO000878.00001
FILE NO:	
DRAWING:	TOT-ZN-0-05'(4-05).DWG
PLOT SIZE:	1=1200
DRAFTED BY:	
DATE:	05APR05
CHECKED BY:	
DATE:	
APPROVED BY:	
DATE:	

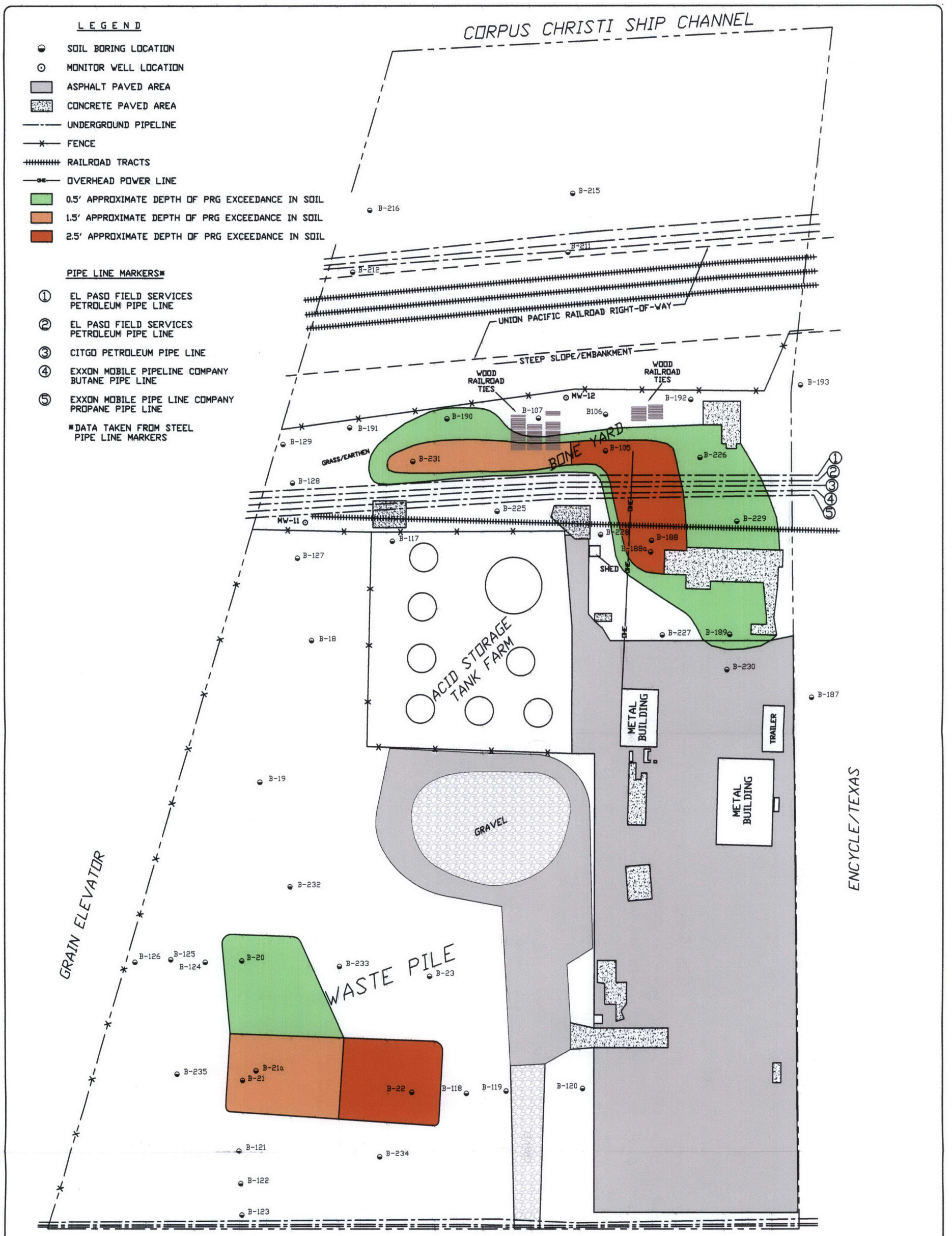
ARCADIS

TOTAL ZINC CONCENTRATIONS IN SOIL (mg/Kg) 0 - 0.5'

UPDATED APRIL 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 14



NOTES:

1) BASE MAP SURVEYED BY REGISTERED PUBLIC SURVEYOR (SHINER, MOSLEY AND ASSOCIATES, INC.) DURING SEPTEMBER 2004.

2) EXTENT AND DEPTH OF AFFECTED SOILS EXCEEDING PRGs TAKEN FROM SOIL SAMPLE ANALYTICAL RESULTS SHOWN ON TABLE 1. SEE TABLE 4 FOR SUMMARY OF CONSTITUENTS IN SOIL EXCEEDING PRGs ON THE MEANEY TRACT.

ARCADIS

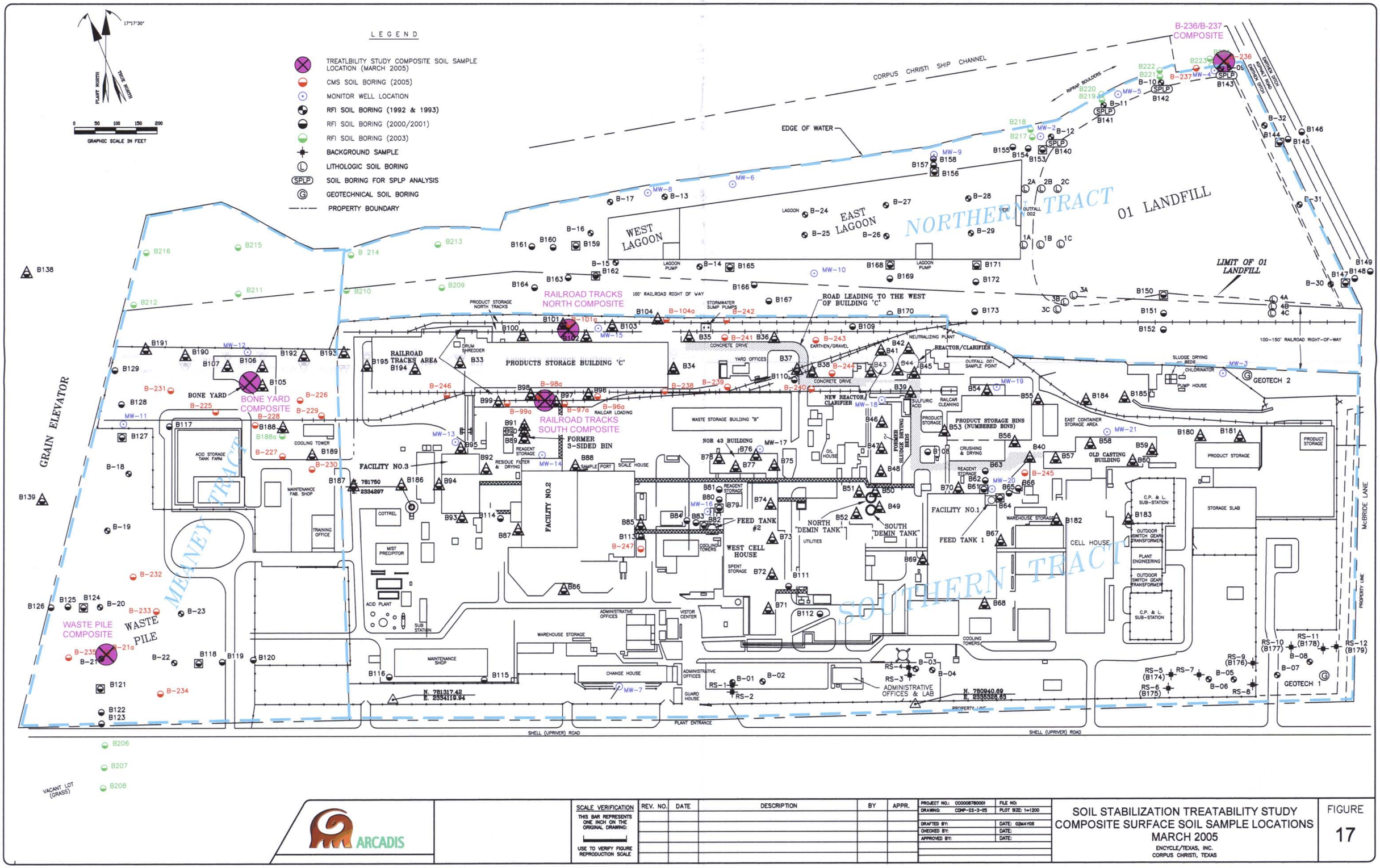
SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

PROJECT NO.:	00000678.0001.0001	FILE NO:	
DRAWING:	MEANEY TRACT	PLOT SIZE:	1=80'
DRAFTED BY:	LOF	DATE:	10MAR05
CHECKED BY:	K. BRANDNER	DATE:	
APPROVED BY:	K. BRANDNER	DATE:	

MEANEY TRACT
APPROXIMATE EXTENT AND DEPTH OF AFFECTED SOILS EXCEEDING PRGs

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
15



ARCADIS

SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

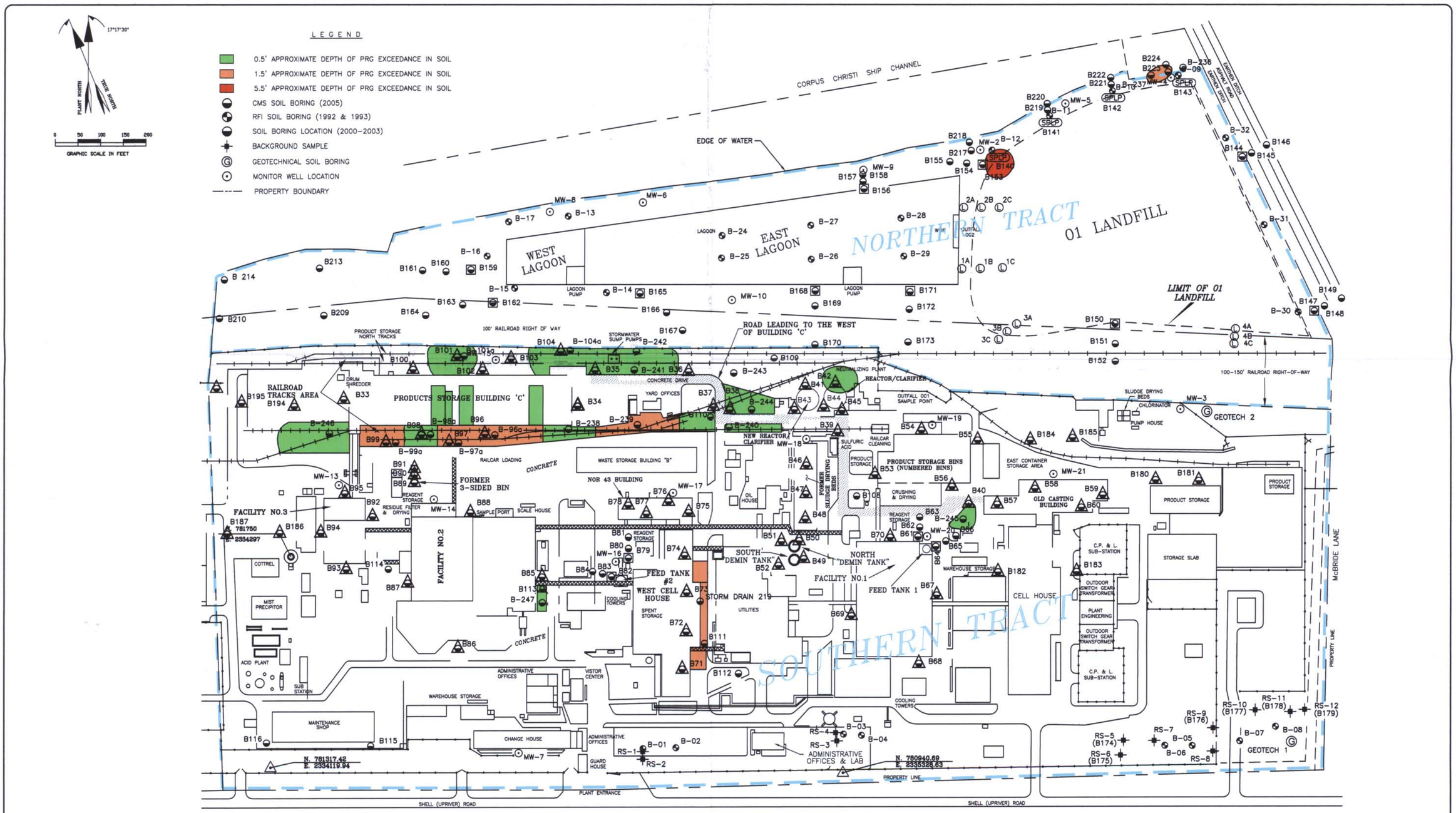
REV. NO.	DATE	DESCRIPTION	BY	APPR.

PROJECT NO.:	CO000078O001	FILE NO:	
DRAWING:	COMP-SS-3-05	PLOT SIZE:	1=1200
DRAFTED BY:		DATE:	02MAY05
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	

SOIL STABILIZATION TREATABILITY STUDY
COMPOSITE SURFACE SOIL SAMPLE LOCATIONS
MARCH 2005

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
17



ARCADIS

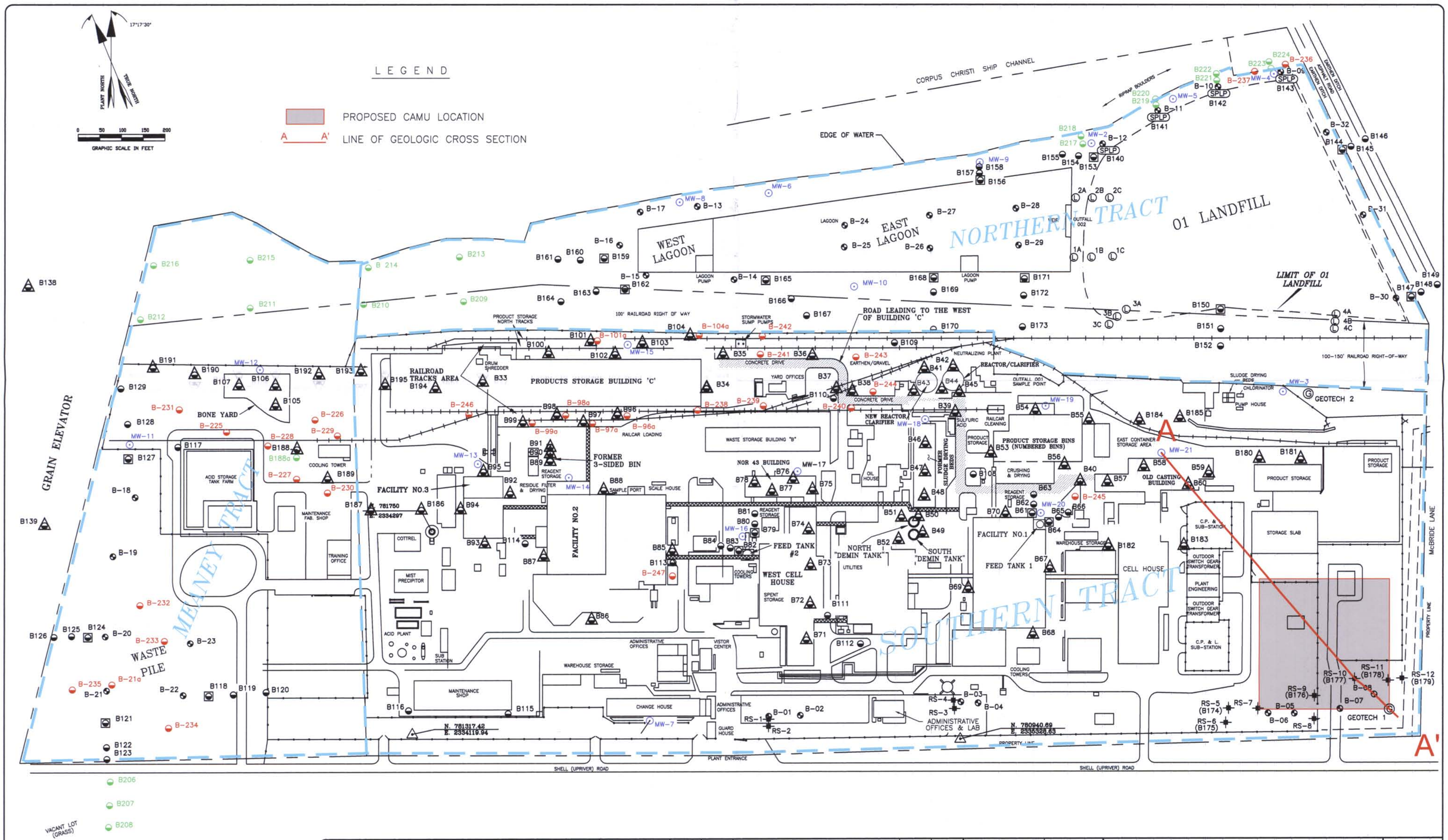
SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.: CC000878.0001		FILE NO:	
DRAWING:	COMPOSITE-PRG-EXCEEDANCE	SIZE: 1=1200	
DRAFTED BY:		DATE: 20APR05	
CHECKED BY:		DATE:	
APPROVED BY:		DATE:	

NORTHERN AND SOUTHERN TRACTS
APPROXIMATE EXTENT AND DEPTH OF
AFFECTED SOILS EXCEEDING PRGs

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
16



SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:					
USE TO VERIFY FIGURE REPRODUCTION SCALE					

PROJECT NO.: CCOOOB780001	FILE NO:
DRAWING: CAMU-SITE(4-05)	PLOT SIZE: 1=1200
DRAFTED BY:	DATE: 01APR05
CHECKED BY:	DATE:
APPROVED BY:	DATE:

ARCADIS

PROPOSED CAMU LOCATION

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
18

DRAFTER: LGF | APPROVED: K. BRANDNER | CHECKED: K. BRANDNER | DRAWING: CAMU-Xsec | PRJCT NO.: CC000878.000 FILE: | DWG DATE: 25APR05

CAMU NW CORNER

CAMU CAP - 3' MIN. COMPACTED CLAY (<10^{-7} cm/sec) LAYER

6" TOPSOIL LAYER SEEDED WITH GRASS

CAMU SE CORNER

LEACHATE COLLECTION SUMP

0.5'

3'min.

10' max

TAN, PALE OLIVE TO BROWN, SILTY CLAY

B-60

COMPACTED LOW-PERMEABILITY (<10^{-7} cm/sec) CLAY BASE OF CAMU

60-mil HDPE LINER AND 16-oz NON-WOVEN GEOTEXTILE LINER PROTECTOR

PERMEABLE LEACHATE COLLECTION COARSE SAND LAYER (12" THICK) WITH BASAL 8-oz SINGLE-SIDED HIGH-FLOW GEOCOMPOSITE LEACHATE COLLECTION FABRIC

B-177

Geotech 1

TAN TO GRAY, SILTY, VERY FINE GRAINED SAND

MW-21

YELLOW-TAN TO TAN CLAY

B-08

ELEVATION (FEET- MSL)

30
20
10
0
-10
-20

0 100'
HORIZONTAL SCALE

LEGEND

▽ DEPTH GROUNDWATER ENCOUNTERED DURING DRILLING

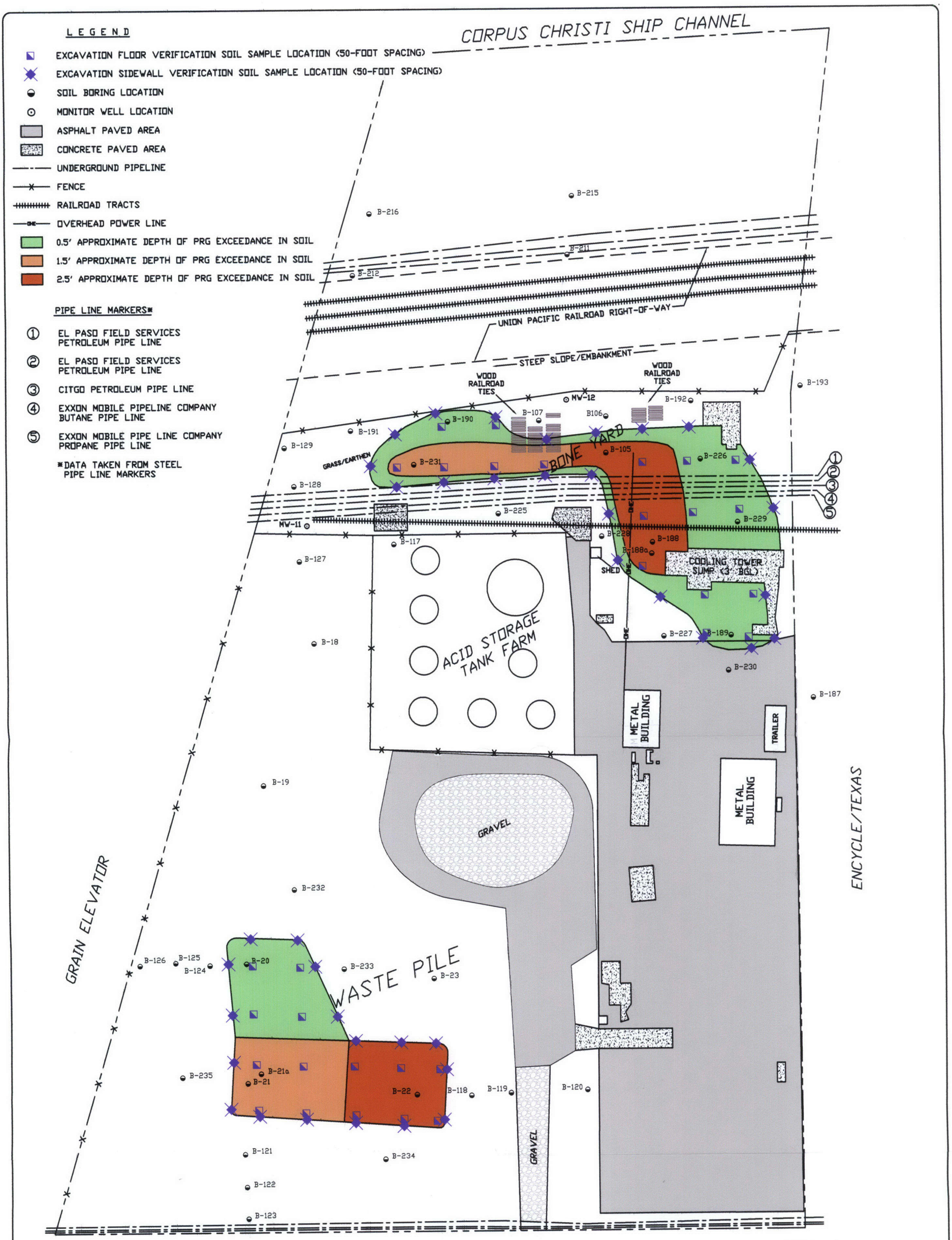
GEOTECHNICAL SOIL SAMPLE "GEOTECH I UNSATURATED"; INTRINSIC PERMEABILITY = 2.99 x 10^{-5} cm/sec.

ARCADIS

SCHEMATIC CAMU DRAWING SECTION VIEW

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
19



NOTES:

1) BASE MAP SURVEYED BY REGISTERED PUBLIC SURVEYOR (SHINER, MOSLEY AND ASSOCIATES, INC.) DURING SEPTEMBER 2004.

2) EXTENT AND DEPTH OF AFFECTED SOILS EXCEEDING PRGs TAKEN FROM SOIL SAMPLE ANALYTICAL RESULTS SHOWN ON TABLE 1. SEE TABLE 4 FOR SUMMARY OF CONSTITUENTS IN SOIL EXCEEDING PRGs ON THE MEANEY TRACT.

3) THE COOLING TOWER CONCRETE SUMP EXTENDES 3-FEET BELOW GROUND LEVEL, AND THE CONCRETE SUMP WILL NOT BE EXCAVATED.

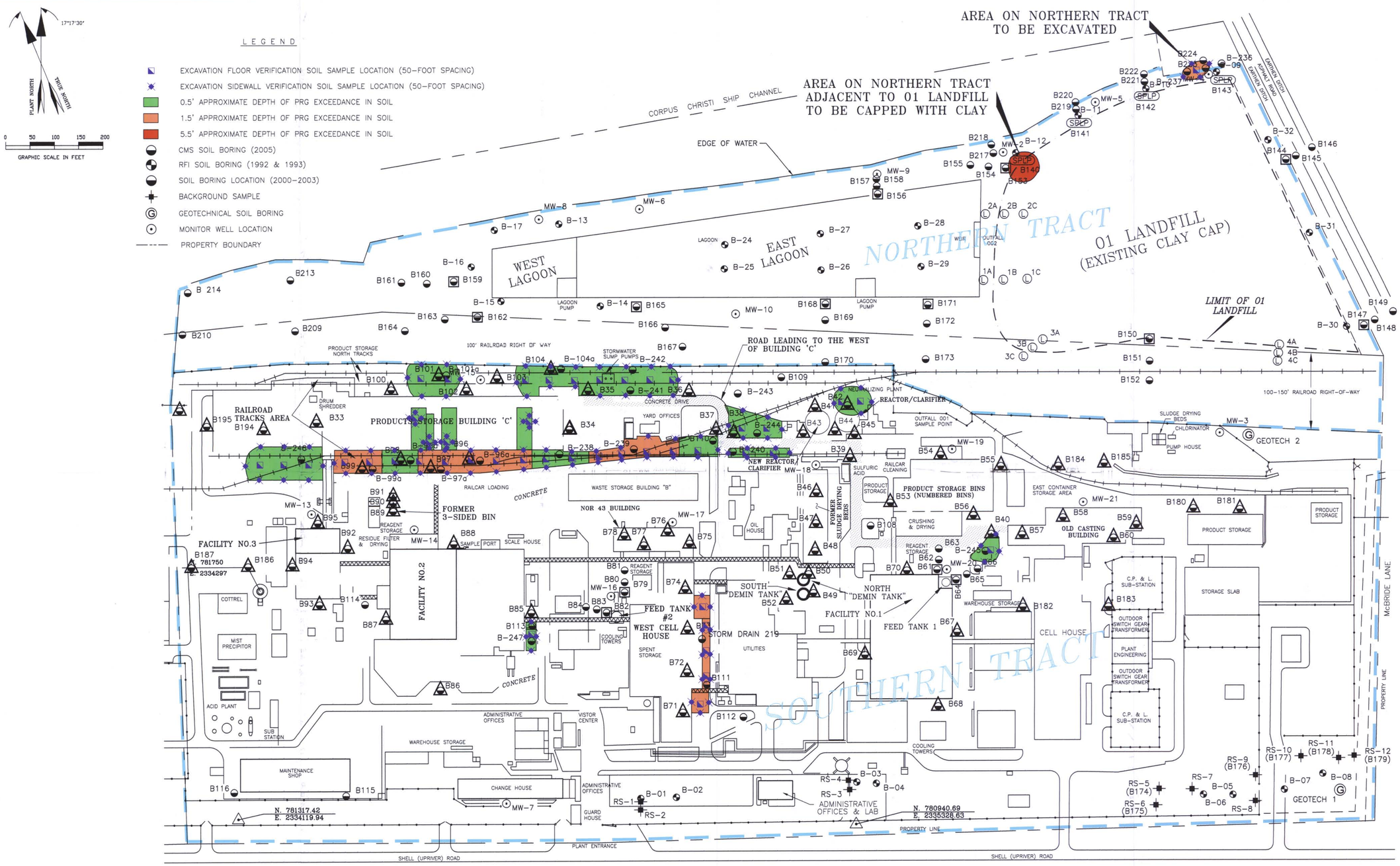
ARCADIS

SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

PROJECT NO.: CC000678.0001.000	FILE NO:	
DRAWING: MEANEY TRACT	PLOT SIZE: 1=50'	
DRAFTED BY: LOF	DATE: 10MAR06	
CHECKED BY: K. BRANDNER	DATE:	
APPROVED BY: K. BRANDNER	DATE:	

MEANEY TRACT
POST EXCAVATION VERIFICATION SOIL SAMPLE LOCATIONS
ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
20



ARCADIS

SCALE VERIFICATION
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:
USE TO VERIFY FIGURE REPRODUCTION SCALE

REV. NO.	DATE	DESCRIPTION	BY	APPR.

PROJECT NO.: CC000878.0001 FILE NO:
DRAWING: CDMP-PRG-EXCEED[illegible]
DRAFTED BY: DATE: 18MAY05
CHECKED BY: DATE:
APPROVED BY: DATE:

NORTHERN AND SOUTHERN TRACTS
POST EXCAVATION VERIFICATION
SOIL SAMPLE LOCATIONS

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE
21

APPENDICES

APPENDIX A

Appendix A

Site Photographs

Photograph No. 1
Boneyard on Meaney Tract, view facing west-northwest from soil boring B-229.
Photograph taken by C. Scheffler, February 28, 2005.

Photograph No. 2
Boneyard area on Meaney Tract, view facing northwest from top of Facility No. 4.
Corpus Christi Ship Channel in background.
Photograph taken by C. Scheffler, February 28, 2005.

Photograph No. 3
Waste Pile area on Meaney Tract, view facing southwest from soil boring B-23.
Photograph taken by C. Scheffler, February 28, 2005.

Photograph No. 4
Soil boring B-236 and B-237 area on Northern Tract directly northeast of 01 Landfill, view facing west. Monitor well MW-4 and Corpus Christi Ship Channel in background.
Photograph taken by C. Scheffler, March 1, 2005.

Photograph No. 5
Railroad Tracks area south of Building C on Southern Tract, view facing west from soil boring B-238.
Photograph taken by C. Scheffler, March 1, 2005.

Photograph No. 6
Railroad Tracks area south of Building C on Southern Tract, view facing east from soil boring B-238. New Reactor Clarifier (blue tank) in background.
Photograph taken by C. Scheffler, March 1, 2005.

Photograph No. 7

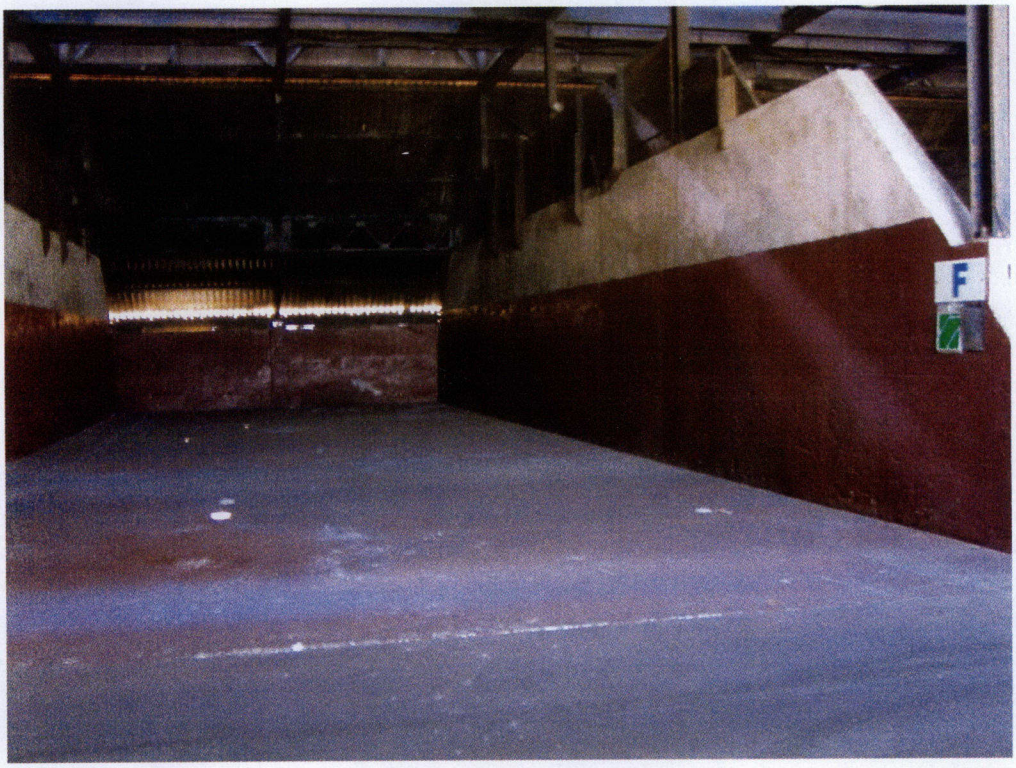
Railroad Tracks area north of Building C on Southern Tract, view facing east from monitor well MW-15. New Reactor Clarifier (blue tank) in background. Photograph taken by C. Scheffler, March 1, 2005.

Photograph No. 8

Eastern end of Road Leading to the West of Building C in Southern Tract. Soil boring B-40 and B-245 area, view facing southwest. Facility No. 1 building in background. Photograph taken by K. Brandner, April 20, 2005.

Photograph No. 9
Storm Drain 218 and soil boring B-111area (foreground) in Southern Tract. Storm drain 219 repair area (concrete patch) shown on left side of photograph parallel to eastern exterior wall of West Cell House.
Photograph taken by K. Brandner, April 20, 2005.

Photograph No. 10
Storm Drain 114, soil boring B-113, and soil boring B-247 gravel-covered area directly east of Facility No. 2 building on Southern Tract, view facing north.
Photograph taken by K. Brandner, April 20, 2005.



Photograph No. 11
Bin F in Building C (Lettered Bins Building) on Southern Tract, view facing south.
Photograph taken by C. Sheffler, April 14, 2005.

Photograph No. 12
Bin G in Building C (Lettered Bins Building) on Southern Tract, view facing south.
Photograph taken by C. Sheffler, April 14, 2005.

Photograph No. 13

Bin P in Building C (Lettered Bins Building) on Southern Tract, view facing south. Photograph taken by C. Sheffler, April 14, 2005.

APPENDIX B

ARCADIS

Appendix B

Analytical Laboratory Reports – 2005
CMS Soil Samples

SEVERN TRENT STL

ANALYTICAL REPORT

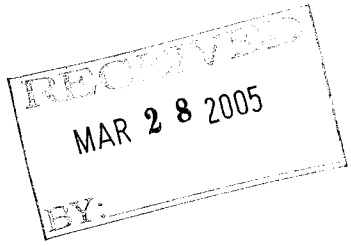
JOB NUMBER: 229167

Prepared For:

ARCADIS / G&M
711 North Carancahua, Suite 1700
Corpus Christi, TX 78475-1801

Attention: Ken Brandner

Date: 03/23/2005



Signature

3/24/05
Date

Name: Chip Meador

Title: Laboratory Director

E-Mail: cmeador@stl-inc.com

Severn Trent Laboratories
1733 N. Padre Island Drive
Corpus Christi, TX 78408

PHONE: 361/289-2673
FAX..: 361/289-2471

TOTAL # OF PAGES 38

SEVERN TRENT STL

SAMPLE INFORMATION
Date: 03/23/2005

Job Number.: 229167
Customer...: Encycle Texas, Inc.
Attn.....: Richard Marcus

Project Number.....: 98000084
Customer Project ID....: ENCYCLE RCRA CORRECTIVE
Project Description....: Project - OVM

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229167-1	B-225 0-6 in.	Soil	02/28/2005	11:20	02/28/2005	16:50
229167-2	B-225 1-1.5 ft.	Soil	02/28/2005	11:25	02/28/2005	16:50
229167-3	B-226 0-6 in.	Soil	02/28/2005	10:00	02/28/2005	16:50
229167-4	B-226 1-1.5 ft.	Soil	02/28/2005	10:05	02/28/2005	16:50
229167-5	B-227 0-6 in.	Soil	02/28/2005	10:35	02/28/2005	16:50
229167-6	B-227 1-1.5 ft.	Soil	02/28/2005	10:40	02/28/2005	16:50
229167-7	B-228 0-6 in.	Soil	02/28/2005	10:55	02/28/2005	16:50
229167-8	B-228 1-1.5 ft.	Soil	02/28/2005	11:00	02/28/2005	16:50
229167-9	B-229 0-6 in.	Soil	02/28/2005	10:15	02/28/2005	16:50
229167-10	B-229 1-1.5 ft.	Soil	02/28/2005	10:20	02/28/2005	16:50
229167-11	B-230 0-6 in.	Soil	02/28/2005	10:25	02/28/2005	16:50
229167-12	B-230 1-1.5 ft.	Soil	02/28/2005	10:30	02/28/2005	16:50
229167-13	B-231 0-6 in.	Soil	02/28/2005	11:55	02/28/2005	16:50
229167-14	B-231 1-1.5 ft.	Soil	02/28/2005	12:00	02/28/2005	16:50
229167-15	FIELD BLANK	Water	02/28/2005	12:05	02/28/2005	16:50
229167-16	B-21A 1-1.5 ft.	Soil	02/28/2005	14:50	02/28/2005	16:50
229167-17	B-232 0-6 in.	Soil	02/28/2005	15:00	02/28/2005	16:50
229167-18	B-232 1-1.5 ft.	Soil	02/28/2005	15:05	02/28/2005	16:50
229167-19	B-233 0-6 in.	Soil	02/28/2005	15:20	02/28/2005	16:50
229167-20	B-233 1-1.5 ft.	Soil	02/28/2005	15:25	02/28/2005	16:50
229167-21	B-234 0-6 in.	Soil	02/28/2005	15:40	02/28/2005	16:50
229167-22	B-234 1-1.5 ft.	Soil	02/28/2005	15:45	02/28/2005	16:50
229167-23	B-235 0-6 in.	Soil	02/28/2005	16:00	02/28/2005	16:50
229167-24	B-235 1-1.5 ft.	Soil	02/28/2005	16:05	02/28/2005	16:50

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167

Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-225 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 11:20
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-1
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Antimony (Sb), Solid	<1	1	mg/Kg	03/09/05	jem
SW-846 6010B	Arsenic (As), Solid	<1	1	mg/Kg	03/09/05	jem
SW-846 6010B	Cadmium (Cd), Solid	<1	1	mg/Kg	03/09/05	jem
SW-846 6010B	Lead (Pb), Solid	6	1	mg/Kg	03/09/05	jem
SW-846 6010B	Manganese (Mn), Solid	100	1	mg/Kg	03/09/05	jem
SW-846 6010B	Silver (Ag), Solid	<0.5	0.5	mg/Kg	03/09/05	jem
SW-846 6010B	Zinc (Zn), Solid	67	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-226 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 10:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-3
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Antimony (Sb), Solid	<1	1	mg/Kg	03/09/05	jem
SW-846 6010B	Arsenic (As), Solid	86	1	mg/Kg	03/09/05	jem
SW-846 6010B	Cadmium (Cd), Solid	331	1	mg/Kg	03/09/05	jem
SW-846 6010B	Lead (Pb), Solid	1150	1	mg/Kg	03/09/05	jem
SW-846 6010B	Manganese (Mn), Solid	<1	1	mg/Kg	03/09/05	jem
SW-846 6010B	Silver (Ag), Solid	15.9	0.5	mg/Kg	03/09/05	jem
SW-846 6010B	Zinc (Zn), Solid	<1	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-226 1-1.5 ft.
Date Sampled.....: 02/28/2005
Time Sampled.....: 10:05
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-4
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	3	1	mg/Kg	03/17/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/16/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-227 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 10:35
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-5
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	3	1	mg/Kg	03/09/05	jem
SW-846 6010B	Lead (Pb), Solid	11	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-228 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 10:55
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-7
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	96	1	mg/Kg	03/09/05	jem
SW-846 6010B	Lead (Pb), Solid	932	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-229 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 10:15
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-9
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	1400	1	mg/Kg	03/09/05	jem
SW-846 6010B	Lead (Pb), Solid	339	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-229 1-1.5 ft.
Date Sampled.....: 02/28/2005
Time Sampled.....: 10:20
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-10
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	62	1	mg/Kg	03/17/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/16/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-230 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 10:25
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-11
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	2	1	mg/Kg	03/09/05	jem
SW-846 6010B	Lead (Pb), Solid	4	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167

Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-231 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 11:55
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-13
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	644	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-231 1-1.5 ft.
Date Sampled.....: 02/28/2005
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-14
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	424	1	mg/Kg	03/17/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/16/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: FIELD BLANK
Date Sampled.....: 02/28/2005
Time Sampled.....: 12:05
Sample Matrix.....: Water

Laboratory Sample ID: 229167-15
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Antimony (Sb)	<0.01	0.01	mg/L	03/09/05	jem
SW-846 6010B	Arsenic (As)	<0.01	0.01	mg/L	03/09/05	jem
SW-846 6010B	Cadmium (Cd)	<0.01	0.01	mg/L	03/09/05	jem
SW-846 6010B	Lead (Pb)	<0.01	0.01	mg/L	03/09/05	jem
SW-846 6010B	Manganese (Mn)	<0.01	0.01	mg/L	03/09/05	jem
SW-846 6010B	Silver (Ag)	<0.005	0.005	mg/L	03/09/05	jem
SW-846 6010B	Zinc (Zn)	<0.01	0.01	mg/L	03/09/05	jem
SW-846 3010A	Acid Dig., Total Metals, 2X Concentrate	Complete			03/07/05	hmz

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-21A 1-1.5 ft.
Date Sampled.....: 02/28/2005
Time Sampled.....: 14:50
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-16
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	1140	1	mg/Kg	03/09/05	jem
SW-846 6010B	Manganese (Mn), Solid	977	1	mg/Kg	03/09/05	jem
SW-846 6010B	Zinc (Zn), Solid	<1	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-232 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 15:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-17
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	11	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-233 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 15:20
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-19
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	17	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-234 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 15:40
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-21
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	7	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-235 0-6 in.
Date Sampled.....: 02/28/2005
Time Sampled.....: 16:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229167-23
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	68	1	mg/Kg	03/09/05	jem
SW-846 6010B	Manganese (Mn), Solid	226	1	mg/Kg	03/09/05	jem
SW-846 6010B	Zinc (Zn), Solid	4770	1	mg/Kg	03/09/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/08/05	tjo

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: SB
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0371	1.02391192		1.00		102.4	%	90-110	03/09/2005	0910
ICV		M0395	1.03522561		1.00		103.5	%	90-110	03/09/2005	0915
ICV		M0410	1.06116030		1.00		106.1	%	90-110	03/09/2005	0924
ICV		M0403	1.03723122		1.00		103.7	%	90-110	03/09/2005	0930
ICB			-0.0040707							03/09/2005	0938
ICB			-0.0125961							03/09/2005	0951
ICV		M0393	0.50412007		0.500		100.8	%	90-110	03/09/2005	0954
CCV		M0404	0.98573249		1.00		98.6	%	90-110	03/09/2005	1000
CCB			0.00944808							03/09/2005	1006
MB		3010.	-0.0078660							03/09/2005	1122
LCS		M352	0.49173263		0.500		98.3	%	80-120	03/09/2005	1125
CCV		M0404	0.94004219		1.00		94.0	%	90-110	03/09/2005	1152
CCB			-0.0037946							03/09/2005	1204
CCV		M0404	0.92507031		1.00		92.5	%	90-110	03/09/2005	1243
CCB			0.00263062							03/09/2005	1252
MS	229125-1	M352	0.45177901		0.500	-0.0725974	104.9	%	75-125	03/09/2005	1313
SD	229125-1	M352	0.45778227	0.45177901	0.500	-0.0725974	106.1	%	75-125	03/09/2005	1318
							1.3	R	20		
MB		3010	-0.0039773							03/09/2005	1327
LCS		M352	0.51006810		0.500		102.0	%	80-120	03/09/2005	1334
CCV		M0404	0.96100523		1.00		96.1	%	90-110	03/09/2005	1339
CCB			-0.0075060							03/09/2005	1348
CCV		M0404	1.02457997		1.00		102.5	%	90-110	03/09/2005	1430
CCB			-0.0044129							03/09/2005	1439
MS	229167-15	M352	0.52337333		0.500	-0.0106439	106.8	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.50189099	0.52337333	0.500	-0.0106439	102.5	%	75-125	03/09/2005	1514
							4.2	R	20		
CCV		M0404	0.94861622		1.00		94.9	%	90-110	03/09/2005	1533
CCB			0.01094627							03/09/2005	1542
MB		3050	-0.0180197							03/09/2005	1545
LCS		M352	0.51749880		0.500		103.5	%	1-335	03/09/2005	1552
LCS		M409D	0.41806611		0.583		71.7	%	1-335	03/09/2005	1557
MS	229080-1	M352	-0.1378378		0.500	-0.1601167	4.5	%	75-125	03/09/2005	1609
MSD	229080-1	M352	-0.0776801	-0.1378378	0.500	-0.1601167	16.5	%	75-125	03/09/2005	1612
							-55.8	R	20		
CCV		M0404	0.97402430		1.00		97.4	%	90-110	03/09/2005	1624
CCB			-0.0086881							03/09/2005	1637
CCV		M0404	1.00792578		1.00		100.8	%	90-110	03/09/2005	1716
CCB			-0.0030708							03/09/2005	1725
MB		3050	-0.0046957							03/09/2005	1800
LCS		M352	0.52970139		0.500		105.9	%	1-335	03/09/2005	1807
CCV		M0404	0.99213251		1.00		99.2	%	90-110	03/09/2005	1812
CCB			-0.0135587							03/09/2005	1825
LCS		M409D	0.48077786		0.583		82.5	%	1-335	03/09/2005	1829
PDS	229153-2	M352D	1.86041941		2.00	-0.1159124	98.8	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	1.88089594	1.86041941	2.00	-0.1159124	99.8	%	75-125	03/09/2005	1901
							1.1	R	20		
CCV		M0404	1.00730409		1.00		100.7	%	90-110	03/09/2005	1905
CCB			0.00358849							03/09/2005	1914
CCB			-0.0085570							03/09/2005	1918
B		3050.	-0.0146673							03/09/2005	1925
CS		M352	0.46376885		0.500		92.8	%	1-335	03/09/2005	1928
LCS		M409D	0.43636878		0.583		74.8	%	1-335	03/09/2005	1934

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: SB
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MS	229154-1	M352	0.13230136		0.500	-0.0133226	29.1	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.13174004	0.13230136	0.500	-0.0133226	29.0	%	75-125	03/09/2005	1955
							0.4	R	20		
CCV		M0404	1.00298236		1.00		100.3	%	90-110	03/09/2005	2011
CCB			-0.0062208							03/09/2005	2023
CCV		M0404	1.01159677		1.00		101.2	%	90-110	03/09/2005	2114
CCB			-0.0002473							03/09/2005	2126
CCV		M0404	1.01781894		1.00		101.8	%	90-110	03/09/2005	2215
CCB			0.00713952							03/09/2005	2227
CCV		M0404	1.04062403		1.00		104.1	%	90-110	03/09/2005	2309
CCB			-0.0062427							03/09/2005	2318
MB		3010	-0.0105970							03/10/2005	0819
LCS		M352	0.45878904		0.500		91.8	%	80-120	03/10/2005	0826
CCV		M0404	0.95158106		1.00		95.2	%	90-110	03/10/2005	0831
CCB			-0.0010759							03/10/2005	0844
MS	229230-1	M352	0.52161178		0.500	-0.0164367	107.6	%	75-125	03/10/2005	0912
'SD	229230-1	M352	0.52253437	0.52161178	0.500	-0.0164367	107.8	%	75-125	03/10/2005	0917
							0.2	R	20		
CCV		M0404	0.94806100		1.00		94.8	%	90-110	03/10/2005	0930
CCB			-0.0056486							03/10/2005	0942
MS	229188-15	M352	0.52410369		0.500	-0.0016949	105.2	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.50097370	0.52410369	0.500	-0.0016949	100.5	%	75-125	03/10/2005	0950
							4.5	R	20		
CCV		M0404	0.94509726		1.00		94.5	%	90-110	03/10/2005	1024
CCB			-0.0010887							03/10/2005	1037
CCV		M0404	1.01478516		1.00		101.5	%	90-110	03/10/2005	1113
CCB			0.00560914							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98963733		2.00		99.5	%	90-110	03/09/2005	0907
ICV		M0395	1.00257037		1.00		100.3	%	90-110	03/09/2005	0915
ICV		M0410	1.00755551		1.00		100.8	%	90-110	03/09/2005	0924
ICB			0.01007148							03/09/2005	0938
ICB			0.01397938							03/09/2005	0951
ICV		M0393	0.51404852		0.500		102.8	%	90-110	03/09/2005	0954
CCV		M0404	0.97234533		1.00		97.2	%	90-110	03/09/2005	1000
CCB			0.00476734							03/09/2005	1006
MB		3010.	0.00271553							03/09/2005	1122
LCS		M352	0.48874799		0.500		97.7	%	80-120	03/09/2005	1125
CCV		M0404	0.94589013		1.00		94.6	%	90-110	03/09/2005	1152
CCB			-0.0040642							03/09/2005	1204
CCV		M0404	0.93018838		1.00		93.0	%	90-110	03/09/2005	1243
CCB			-0.0041780							03/09/2005	1255
MS	229125-1	M352	0.49534153		0.500	-0.0373653	106.5	%	75-125	03/09/2005	1313
'SD	229125-1	M352	0.48771502	0.49534153	0.500	-0.0373653	105.0	%	75-125	03/09/2005	1318
							1.6	R	20		
MB		3010	-0.0038101							03/09/2005	1327

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
LCS		M352	0.50532390		0.500		101.1	%	80-120	03/09/2005	1334
CCV		M0404	0.97767604		1.00		97.8	%	90-110	03/09/2005	1339
CCB			-0.0001251							03/09/2005	1348
CCV		M0404	1.03227940		1.00		103.2	%	90-110	03/09/2005	1430
CCB			0.00198442							03/09/2005	1439
MS	229167-15	M352	0.49146663		0.500	-0.0051944	99.3	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51675465	0.49146663	0.500	-0.0051944	104.4	%	75-125	03/09/2005	1514
							5.0	R	20		
CCV		M0404	0.94435622		1.00		94.4	%	90-110	03/09/2005	1533
CCB			-0.0038617							03/09/2005	1542
MB		3050	0.00254602							03/09/2005	1545
LCS		M352	0.49837532		0.500		99.7	%	66-134	03/09/2005	1552
LCS		M409D	2.02535218		2.16		93.8	%	66-134	03/09/2005	1557
MS	229080-1	M352	0.42999963		0.500	0.00927011	84.1	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.46281406	0.42999963	0.500	0.00927011	90.7	%	75-125	03/09/2005	1612
							7.4	R	20		
CCV		M0404	1.00224323		1.00		100.2	%	90-110	03/09/2005	1624
CCB			0.00519571							03/09/2005	1637
CCV		M0404	1.01536486		1.00		101.5	%	90-110	03/09/2005	1716
CCB			-0.0035956							03/09/2005	1725
MB		3050	0.00853843							03/09/2005	1800
LCS		M352	0.51062885		0.500		102.1	%	66-134	03/09/2005	1807
CCV		M0404	1.00289377		1.00		100.3	%	90-110	03/09/2005	1812
CCB			0.00824986							03/09/2005	1825
LCS		M409D	2.17301309		2.16		100.6	%	66-134	03/09/2005	1829
PDS	229153-2	M352D	2.07558269		2.00	0.02557677	102.5	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.07554608	2.07558269	2.00	0.02557677	102.5	%	75-125	03/09/2005	1901
							0.0	R	20		
CCV		M0404	1.00958379		1.00		101.0	%	90-110	03/09/2005	1905
CCB			0.00993208							03/09/2005	1914
CCB			0.00741570							03/09/2005	1918
MB		3050.	0.00794929							03/09/2005	1925
LCS		M352	0.50718698		0.500		101.4	%	66-134	03/09/2005	1928
LCS		M409D	2.19496182		2.16		101.6	%	66-134	03/09/2005	1934
MS	229154-1	M352	0.51524386		0.500	0.01217682	100.6	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.51941495	0.51524386	0.500	0.01217682	101.4	%	75-125	03/09/2005	1955
							0.8	R	20		
CCV		M0404	1.02633326		1.00		102.6	%	90-110	03/09/2005	2011
CCB			-0.0016432							03/09/2005	2023
CCV		M0404	1.03098079		1.00		103.1	%	90-110	03/09/2005	2114
CCB			0.00320548							03/09/2005	2126
CCV		M0404	1.04805923		1.00		104.8	%	90-110	03/09/2005	2215
CCB			-0.0040687							03/09/2005	2227
CCV		M0404	1.06452334		1.00		106.5	%	90-110	03/09/2005	2309
CCB			-0.0023979							03/09/2005	2318
MB		3010	0.00824471							03/10/2005	0819
LCS		M352	0.43370071		0.500		86.7	%	80-120	03/10/2005	0826
CCV		M0404	0.93678478		1.00		93.7	%	90-110	03/10/2005	0831
CCB			0.00709594							03/10/2005	0844
MS	229230-1	M352	0.49197668		0.500	-0.0016487	98.7	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.50234606	0.49197668	0.500	-0.0016487	100.8	%	75-125	03/10/2005	0917
							2.1	R	20		
CCV		M0404	0.95492627		1.00		95.5	%	90-110	03/10/2005	0930

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			-0.0081363							03/10/2005	0942
MS	229188-15	M352	0.49536741		0.500	-0.0029296	99.7	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.47080713	0.49536741	0.500	-0.0029296	94.7	%	75-125	03/10/2005	0950
							5.1	R	20		
CCV		M0404	0.96431411		1.00		96.4	%	90-110	03/10/2005	1024
CCB			0.00226253							03/10/2005	1037
CCV		M0404	1.01072221		1.00		101.1	%	90-110	03/10/2005	1113
CCB			0.00126423							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
S		M0407	1.98923652		2.00		99.5	%	90-110	03/09/2005	0907
CV		M0395	0.99674312		1.00		99.7	%	90-110	03/09/2005	0915
ICV		M0410	1.00587322		1.00		100.6	%	90-110	03/09/2005	0924
ICB			-0.0004112							03/09/2005	0938
ICB			-0.0003357							03/09/2005	0951
ICV		M0393	0.49942933		0.500		99.9	%	90-110	03/09/2005	0954
CCV		M0404	0.97317380		1.00		97.3	%	90-110	03/09/2005	1000
CCB			-0.0006690							03/09/2005	1006
MB		3010.	-0.0004845							03/09/2005	1122
LCS		M352	0.48626513		0.500		97.3	%	80-120	03/09/2005	1125
CCV		M0404	0.96140881		1.00		96.1	%	90-110	03/09/2005	1152
CCB			-0.0009810							03/09/2005	1204
CCV		M0404	0.96776796		1.00		96.8	%	90-110	03/09/2005	1243
CCB			-0.0011030							03/09/2005	1252
MS	229125-1	M352	0.47858709		0.500	-0.0007822	95.9	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.46778979	0.47858709	0.500	-0.0007822	93.7	%	75-125	03/09/2005	1318
							2.3	R	20		
MB		3010	-0.0012191							03/09/2005	1327
LCS		M352	0.50335694		0.500		100.7	%	80-120	03/09/2005	1334
CCV		M0404	0.97304424		1.00		97.3	%	90-110	03/09/2005	1339
CCB			-0.0012460							03/09/2005	1348
CCV		M0404	1.02905090		1.00		102.9	%	90-110	03/09/2005	1430
CCB			-0.0010552							03/09/2005	1439
MS	229167-15	M352	0.49302603		0.500	-0.0011615	98.8	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51463831	0.49302603	0.500	-0.0011615	103.2	%	75-125	03/09/2005	1514
							4.3	R	20		
CCV		M0404	0.96405599		1.00		96.4	%	90-110	03/09/2005	1533
CCB			-0.0004499							03/09/2005	1542
MB		3050	-0.0009671							03/09/2005	1545
LCS		M352	0.49496555		0.500		99.0	%	73-127	03/09/2005	1552
LCS		M409D	0.76681527		0.837		91.6	%	73-127	03/09/2005	1557
MS	229080-1	M352	0.50417170		0.500	0.02504192	95.8	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.50466792	0.50417170	0.500	0.02504192	95.9	%	75-125	03/09/2005	1612
							0.1	R	20		
CV		M0404	1.01755329		1.00		101.8	%	90-110	03/09/2005	1624
CB			-0.0012829							03/09/2005	1637
CCV		M0404	1.00861804		1.00		100.9	%	90-110	03/09/2005	1716

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			-0.0008582							03/09/2005	1725
MB		3050	-0.0009524							03/09/2005	1800
LCS		M352	0.51447555		0.500		102.9	%	73-127	03/09/2005	1807
CCV		M0404	1.00135813		1.00		100.1	%	90-110	03/09/2005	1812
CCB			-0.0010210							03/09/2005	1825
LCS		M409D	0.82531208		0.837		98.6	%	73-127	03/09/2005	1829
PDS	229153-2	M352D	1.98545932		2.00	0.01438035	98.6	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	1.98303968	1.98545932	2.00	0.01438035	98.4	%	75-125	03/09/2005	1901
							0.1	R	20		
CCV		M0404	1.00094979		1.00		100.1	%	90-110	03/09/2005	1905
CCB			-0.0008399							03/09/2005	1914
CCB			-0.0009386							03/09/2005	1918
MB		3050.	-0.0007373							03/09/2005	1925
LCS		M352	0.49291817		0.500		98.6	%	73-127	03/09/2005	1928
LCS		M409D	0.82678537		0.837		98.8	%	73-127	03/09/2005	1934
MS	229154-1	M352	0.50726748		0.500	0.00027477	101.4	%	75-125	03/09/2005	1949
SD	229154-1	M352	0.51470284	0.50726748	0.500	0.00027477	102.9	%	75-125	03/09/2005	1955
							1.5	R	20		
CCV		M0404	1.02093425		1.00		102.1	%	90-110	03/09/2005	2011
CCB			-0.0010931							03/09/2005	2023
CCV		M0404	1.02597970		1.00		102.6	%	90-110	03/09/2005	2114
CCB			-0.0013596							03/09/2005	2126
CCV		M0404	1.02979110		1.00		103.0	%	90-110	03/09/2005	2215
CCB			-0.0009941							03/09/2005	2227
CCV		M0404	1.04495679		1.00		104.5	%	90-110	03/09/2005	2309
CCB			-0.0012154							03/09/2005	2318
MB		3010	-0.0005943							03/10/2005	0819
LCS		M352	0.43856896		0.500		87.7	%	80-120	03/10/2005	0826
CCV		M0404	0.95044050		1.00		95.0	%	90-110	03/10/2005	0831
CCB			-0.0004839							03/10/2005	0844
MS	229230-1	M352	0.51007962		0.500	0.00031971	102.0	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.51003923	0.51007962	0.500	0.00031971	101.9	%	75-125	03/10/2005	0917
							0.0	R	20		
CCV		M0404	0.99151077		1.00		99.2	%	90-110	03/10/2005	0930
CCB			-0.0009454							03/10/2005	0942
MS	229188-15	M352	0.49566613		0.500	-0.0006416	99.3	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.48351563	0.49566613	0.500	-0.0006416	96.8	%	75-125	03/10/2005	0950
							2.5	R	20		
CCV		M0404	0.98982121		1.00		99.0	%	90-110	03/10/2005	1024
CCB			-0.0008655							03/10/2005	1037
CCV		M0404	1.03446222		1.00		103.4	%	90-110	03/10/2005	1113
CCB			-0.0009147							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104339 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
S		M0407	1.93372724		2.00		96.7	%	90-110	03/17/2005	1013
V		M0395	1.03758202		1.00		103.8	%	90-110	03/17/2005	1022
ICV		M0410	0.99280550		1.00		99.3	%	90-110	03/17/2005	1031

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104339 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICB			0.00022445							03/17/2005	1045
ICV		M0393	0.49445757		0.500		98.9	%	90-110	03/17/2005	1101
CCV		M0404	0.97579959		1.00		97.6	%	90-110	03/17/2005	1107
CCB			0.00016317							03/17/2005	1119
CCV		M0404	1.00575940		1.00		100.6	%	90-110	03/17/2005	1231
CCB			0.00042173							03/17/2005	1243
CCV		M0404	1.00483114		1.00		100.5	%	90-110	03/17/2005	1309
CCB			-0.0000237							03/17/2005	1318
MB		3010.	-0.0000021							03/17/2005	1328
LCS		M352	0.50509532		0.500		101.0	%	80-120	03/17/2005	1332
CCV		M0404	0.99629175		1.00		99.6	%	90-110	03/17/2005	1405
CCB			-0.0001390							03/17/2005	1417
MS	229376-1	M352	0.45990236		0.500	0.00019240	91.9	%	75-125	03/17/2005	1452
MSD	229376-1	M352	0.47032925	0.45990236	0.500	0.00019240	94.0	%	75-125	03/17/2005	1457
							2.2	R	20		
CCV		M0404	0.95142861		1.00		95.1	%	90-110	03/17/2005	1517
CB			0.00023915							03/17/2005	1536
CV		M0404	0.96208469		1.00		96.2	%	90-110	03/17/2005	1621
CCB			0.00007012							03/17/2005	1630
MB		3050.	0.00032473							03/17/2005	1650
LCS		M352	0.43425624		0.500		86.9	%	73-127	03/17/2005	1654
LCS		M409D	0.73814269		0.837		88.2	%	73-127	03/17/2005	1700
CCV		M0404	0.96502601		1.00		96.5	%	90-110	03/17/2005	1717
CCB			0.00008691							03/17/2005	1729
B			0.00025389							03/17/2005	1803
CCV		M0404	0.95462731		1.00		95.5	%	90-110	03/17/2005	1812
CCB			0.00013328							03/17/2005	1824
LCS		M352	0.43830144		0.500		87.7	%	80-120	03/17/2005	1834
MS	229145-1	M352	0.43821504		0.500	0.00175324	87.3	%	75-125	03/17/2005	1847
MSD	229145-1	M352	0.44246254	0.43821504	0.500	0.00175324	88.1	%	75-125	03/17/2005	1852
							1.0	R	20		
CCV		M0404	0.96327993		1.00		96.3	%	90-110	03/17/2005	1909
CCB			0.00008256							03/17/2005	1914
MS	229435-1	M352	0.47584777		0.500	0.00107440	95.0	%	75-125	03/17/2005	1950
MSD	229435-1	M352	0.45063595	0.47584777	0.500	0.00107440	89.9	%	75-125	03/17/2005	1955
							5.4	R	20		
CCV		M0404	0.98761952		1.00		98.8	%	90-110	03/17/2005	2005
CCB			0.00048185							03/17/2005	2017
CCV		M0404	0.99268680		1.00		99.3	%	90-110	03/17/2005	2057
CCB			0.00028140							03/17/2005	2110

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98993777		2.00		99.5	%	90-110	03/09/2005	0907
ICV		M0395	1.02356267		1.00		102.4	%	90-110	03/09/2005	0915
CV		M0410	1.01689298		1.00		101.7	%	90-110	03/09/2005	0924
CB			-0.0000178							03/09/2005	0938
ICB			0.00212140							03/09/2005	0951

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		M0393	0.50777120		0.500		101.6	%	90-110	03/09/2005	0954
CCV		M0404	0.98488712		1.00		98.5	%	90-110	03/09/2005	1000
CCB			0.00372664							03/09/2005	1006
MB		3010.	-0.0002556							03/09/2005	1122
LCS		M352	0.49779002		0.500		99.6	%	80-120	03/09/2005	1125
CCV		M0404	0.98662109		1.00		98.7	%	90-110	03/09/2005	1152
CCB			0.00313999							03/09/2005	1204
CCV		M0404	0.98351325		1.00		98.4	%	90-110	03/09/2005	1243
CCB			0.00505557							03/09/2005	1252
MS	229125-1	M352	0.46855739		0.500	-0.0069922	95.1	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.46051139	0.46855739	0.500	-0.0069922	93.5	%	75-125	03/09/2005	1318
							1.7	R	20		
MB		3010	0.00519626							03/09/2005	1327
LCS		M352	0.52783890		0.500		105.6	%	80-120	03/09/2005	1334
CCV		M0404	1.02125148		1.00		102.1	%	90-110	03/09/2005	1339
CCB			0.00682475							03/09/2005	1348
CV		M0404	1.03765922		1.00		103.8	%	90-110	03/09/2005	1430
CB			0.00587195							03/09/2005	1439
MS	229167-15	M352	0.50862967		0.500	0.00407692	100.9	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51983729	0.50862967	0.500	0.00407692	103.2	%	75-125	03/09/2005	1514
							2.2	R	20		
CCV		M0404	0.98065873		1.00		98.1	%	90-110	03/09/2005	1533
CCB			0.00554912							03/09/2005	1542
MB		3050	0.00149237							03/09/2005	1545
LCS		M352	0.52516179		0.500		105.0	%	71-129	03/09/2005	1552
LCS		M409D	0.56934506		0.623		91.4	%	71-129	03/09/2005	1557
MS	229080-1	M352	0.75348227		0.500	0.17987388	114.7	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.67788358	0.75348227	0.500	0.17987388	99.6	%	75-125	03/09/2005	1612
							10.6	R	20		
CCV		M0404	1.01651977		1.00		101.7	%	90-110	03/09/2005	1624
CCB			0.00368145							03/09/2005	1637
CCV		M0404	1.03042195		1.00		103.0	%	90-110	03/09/2005	1716
CCB			0.00577079							03/09/2005	1725
MB		3050	0.00337420							03/09/2005	1800
LCS		M352	0.53556060		0.500		107.1	%	71-129	03/09/2005	1807
CCV		M0404	1.02254201		1.00		102.3	%	90-110	03/09/2005	1812
CCB			0.00563745							03/09/2005	1825
LCS		M409D	0.63270936		0.623		101.6	%	71-129	03/09/2005	1829
PDS	229153-2	M352D	2.04842813		2.00	0.05933739	99.5	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.06172046	2.04842813	2.00	0.05933739	100.1	%	75-125	03/09/2005	1901
							0.6	R	20		
CCV		M0404	1.02722502		1.00		102.7	%	90-110	03/09/2005	1905
CCB			0.00430605							03/09/2005	1914
CCB			0.00432134							03/09/2005	1918
MB		3050.	0.00278163							03/09/2005	1925
LCS		M352	0.51324153		0.500		102.6	%	71-129	03/09/2005	1928
LCS		M409D	0.63523500		0.623		102.0	%	71-129	03/09/2005	1934
MS	229154-1	M352	0.62006528		0.500	0.09318133	105.4	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.61809433	0.62006528	0.500	0.09318133	105.0	%	75-125	03/09/2005	1955
							0.3	R	20		
CV		M0404	1.04747217		1.00		104.7	%	90-110	03/09/2005	2011
CB			0.00278944							03/09/2005	2023
CCV		M0404	1.06621199		1.00		106.6	%	90-110	03/09/2005	2114

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			0.00191403							03/09/2005	2126
CCV		M0404	1.07104592		1.00		107.1	%	90-110	03/09/2005	2215
CCB			0.00087397							03/09/2005	2227
CCV		M0404	1.09137522		1.00		109.1	%	90-110	03/09/2005	2309
CCB			0.00231277							03/09/2005	2318
MB		3010	0.00231618							03/10/2005	0819
LCS		M352	0.44454734		0.500		88.9	%	80-120	03/10/2005	0826
CCV		M0404	0.95997892		1.00		96.0	%	90-110	03/10/2005	0831
CCB			-0.0000724							03/10/2005	0844
MS	229230-1	M352	2.18119662		0.500	1.46408651	143.4	%	75-125	03/10/2005	0912
MSD	229230-1	M352	2.18166021	2.18119662	0.500	1.46408651	143.5	%	75-125	03/10/2005	0917
							0.0	R	20		
CCV		M0404	0.99706501		1.00		99.7	%	90-110	03/10/2005	0930
CCB			0.00309030							03/10/2005	0942
MS	229188-15	M352	0.51683600		0.500	0.00402243	102.6	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.49666764	0.51683600	0.500	0.00402243	98.5	%	75-125	03/10/2005	0950
							4.0	R	20		
CV		M0404	0.99789106		1.00		99.8	%	90-110	03/10/2005	1024
CCB			0.00232240							03/10/2005	1037
CCV		M0404	1.04260146		1.00		104.3	%	90-110	03/10/2005	1113
CCB			0.00641382							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: MN
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98202830		2.00		99.1	%	90-110	03/09/2005	0907
ICV		M0395	1.00633707		1.00		100.6	%	90-110	03/09/2005	0915
ICV		M0410	0.98066954		1.00		98.1	%	90-110	03/09/2005	0924
ICB			-0.0004397							03/09/2005	0938
ICB			-0.0003142							03/09/2005	0951
ICV		M0393	0.50640504		0.500		101.3	%	90-110	03/09/2005	0954
CCV		M0404	0.98605487		1.00		98.6	%	90-110	03/09/2005	1000
CCB			-0.0002527							03/09/2005	1006
MB		3010.	0.00002196							03/09/2005	1122
LCS		M352	0.50404310		0.500		100.8	%	80-120	03/09/2005	1125
CCV		M0404	0.99803465		1.00		99.8	%	90-110	03/09/2005	1152
CCB			-0.0000862							03/09/2005	1204
CCV		M0404	1.00063753		1.00		100.1	%	90-110	03/09/2005	1243
CCB			0.00008554							03/09/2005	1252
MS	229125-1	M352	0.48588239		0.500	0.02008938	93.2	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.48730522	0.48588239	0.500	0.02008938	93.4	%	75-125	03/09/2005	1318
							0.3	R	20		
MB		3010	-0.0000281							03/09/2005	1327
LCS		M352	0.51953089		0.500		103.9	%	80-120	03/09/2005	1334
CCV		M0404	0.99986656		1.00		100.0	%	90-110	03/09/2005	1339
CCB			0.00005001							03/09/2005	1348
CV		M0404	1.00130715		1.00		100.1	%	90-110	03/09/2005	1430
CB			-0.0001808							03/09/2005	1439
MS	229167-15	M352	0.49453171		0.500	0.00056704	98.8	%	75-125	03/09/2005	1509

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: MN
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MSD	229167-15	M352	0.50848952	0.49453171	0.500	0.00056704	101.6	%	75-125	03/09/2005	1514
							2.8	R	20		
CCV		M0404	0.99554597		1.00		99.6	%	90-110	03/09/2005	1533
CCB			-0.0001522							03/09/2005	1542
MB		3050	-0.0001539							03/09/2005	1545
LCS		M352	0.54350816		0.500		108.7	%	75-125	03/09/2005	1552
LCS		M409D	5.88717204		6.74		87.3	%	75-125	03/09/2005	1557
MS	229080-1	M352	1.18528798		0.500	1.00529288	36.0	%	75-125	03/09/2005	1609
MSD	229080-1	M352	1.14736469	1.18528798	0.500	1.00529288	28.4	%	75-125	03/09/2005	1612
							3.3	R	20		
CCV		M0404	1.00389313		1.00		100.4	%	90-110	03/09/2005	1624
CCB			-0.0001482							03/09/2005	1637
CCV		M0404	0.99840312		1.00		99.8	%	90-110	03/09/2005	1716
CCB			-0.0000775							03/09/2005	1725
MB		3050	0.00018189							03/09/2005	1800
LCS		M352	0.52657073		0.500		105.3	%	75-125	03/09/2005	1807
CV		M0404	0.99415530		1.00		99.4	%	90-110	03/09/2005	1812
CB			-0.0000616							03/09/2005	1825
LCS		M409D	6.27367300		6.74		93.1	%	75-125	03/09/2005	1829
PDS	229153-2	M352D	3.38035047		2.00	1.47368899	95.3	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	3.37873580	3.38035047	2.00	1.47368899	95.3	%	75-125	03/09/2005	1901
							0.0	R	20		
CCV		M0404	0.99773964		1.00		99.8	%	90-110	03/09/2005	1905
CCB			0.00001237							03/09/2005	1914
CCB			-0.0000694							03/09/2005	1918
MB		3050.	0.00045245							03/09/2005	1925
LCS		M352	0.51561816		0.500		103.1	%	75-125	03/09/2005	1928
LCS		M409D	6.43862929		6.74		95.5	%	75-125	03/09/2005	1934
MS	229154-1	M352	0.82774159		0.500	0.27120470	111.3	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.79554281	0.82774159	0.500	0.27120470	104.9	%	75-125	03/09/2005	1955
							4.0	R	20		
CCV		M0404	1.00601267		1.00		100.6	%	90-110	03/09/2005	2011
CCB			-0.0000573							03/09/2005	2023
CCV		M0404	1.00983727		1.00		101.0	%	90-110	03/09/2005	2114
CCB			-0.0000070							03/09/2005	2126
CCV		M0404	1.01371590		1.00		101.4	%	90-110	03/09/2005	2215
CCB			0.00006860							03/09/2005	2227
CCV		M0404	1.01639512		1.00		101.6	%	90-110	03/09/2005	2309
CCB			0.00008249							03/09/2005	2318
MB		3010	-0.0003609							03/10/2005	0819
LCS		M352	0.47251550		0.500		94.5	%	80-120	03/10/2005	0826
CCV		M0404	1.00230206		1.00		100.2	%	90-110	03/10/2005	0831
CCB			-0.0001457							03/10/2005	0844
MS	229230-1	M352	0.49759536		0.500	0.01088574	97.3	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.49661849	0.49759536	0.500	0.01088574	97.1	%	75-125	03/10/2005	0917
							0.2	R	20		
CCV		M0404	1.02485545		1.00		102.5	%	90-110	03/10/2005	0930
CCB			-0.0000726							03/10/2005	0942
MS	229188-15	M352	0.52230216		0.500	0.00051784	104.4	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.50807715	0.52230216	0.500	0.00051784	101.5	%	75-125	03/10/2005	0950
							2.8	R	20		
CV		M0404	1.02456279		1.00		102.5	%	90-110	03/10/2005	1024
CCB			-0.0002075							03/10/2005	1037

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: MN
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.03370833		1.00		103.4	%	90-110	03/10/2005	1113
CCB			-0.0001586							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	0.99755854		1.0		99.8	%	90-110	03/09/2005	0907
ICV		M0396	1.02090053		1.00		102.1	%	90-110	03/09/2005	0921
ICB			0.00082552							03/09/2005	0938
ICB			0.00293825							03/09/2005	0951
ICV		M0393	0.50555284		0.500		101.1	%	90-110	03/09/2005	0954
CCV		M0404	0.48702769		0.50		97.4	%	90-110	03/09/2005	1000
?B			0.00373302							03/09/2005	1006
3		3010.	0.00271255							03/09/2005	1122
LCS		M352	0.25117889		0.25		100.5	%	80-120	03/09/2005	1125
CCV		M0404	0.49070873		0.50		98.1	%	90-110	03/09/2005	1152
CCB			0.00336978							03/09/2005	1204
CCV		M0404	0.48812886		0.50		97.6	%	90-110	03/09/2005	1243
CCB			0.00207157							03/09/2005	1252
MS	229125-1	M352	0.27304790		0.25	-0.0074390	112.2	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.26848856	0.27304790	0.25	-0.0074390	110.4	%	75-125	03/09/2005	1318
							1.7	R	20		
MB		3010	0.00223029							03/09/2005	1327
LCS		M352	0.25637015		0.25		102.5	%	80-120	03/09/2005	1334
CCV		M0404	0.48803651		0.50		97.6	%	90-110	03/09/2005	1339
CCB			0.00224688							03/09/2005	1348
CCV		M0404	0.50644983		0.50		101.3	%	90-110	03/09/2005	1430
CCB			0.00604634							03/09/2005	1439
MS	229167-15	M352	0.24553107		0.25	0.00545337	96.0	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.25444798	0.24553107	0.25	0.00545337	99.6	%	75-125	03/09/2005	1514
							3.6	R	20		
CCV		M0404	0.48716256		0.50		97.4	%	90-110	03/09/2005	1533
CCB			0.00416211							03/09/2005	1542
MB		3050	0.00360499							03/09/2005	1545
LCS		M352	0.25456041		0.25		101.8	%	11-189	03/09/2005	1552
LCS		M409D	0.98233031		1.01		97.3	%	11-189	03/09/2005	1557
MS	229080-1	M352	0.24668473		0.25	-0.0061251	101.1	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.24698006	0.24668473	0.25	-0.0061251	101.2	%	75-125	03/09/2005	1612
							0.1	R	20		
CCV		M0404	0.49884723		0.50		99.8	%	90-110	03/09/2005	1624
CCB			0.00306300							03/09/2005	1637
CCV		M0404	0.49782966		0.50		99.6	%	90-110	03/09/2005	1716
CCB			0.00180251							03/09/2005	1725
MB		3050	-0.0000662							03/09/2005	1800
LCS		M352	0.25462604		0.25		101.9	%	11-189	03/09/2005	1807
CCV		M0404	0.49333212		0.50		98.7	%	90-110	03/09/2005	1812
?CB			0.00471775							03/09/2005	1825
CS		M409D	1.13823682		1.01		112.7	%	11-189	03/09/2005	1829
PDS	229153-2	M352D	1.06491997		1.0	-0.0059738	107.1	%	75-125	03/09/2005	1856

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
PSD	229153-2	M352D	1.06680813	1.06491997	1.0	-0.0059738	107.3	%	75-125	03/09/2005	1901
							0.2	R	20		
CCV		M0404	0.49387091		0.50		98.8	%	90-110	03/09/2005	1905
CCB			0.00236604							03/09/2005	1914
CCB			0.00706697							03/09/2005	1918
MB		3050.	0.00231825							03/09/2005	1925
LCS		M352	0.24214213		0.25		96.9	%	11-189	03/09/2005	1928
LCS		M409D	1.13290769		1.01		112.2	%	11-189	03/09/2005	1934
MS	229154-1	M352	0.25239382		0.25	0.00505670	98.9	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.25611945	0.25239382	0.25	0.00505670	100.4	%	75-125	03/09/2005	1955
							1.5	R	20		
CCV		M0404	0.50081577		0.50		100.2	%	90-110	03/09/2005	2011
CCB			0.00390762							03/09/2005	2016
CCV		M0404	0.50749552		0.50		101.5	%	90-110	03/09/2005	2114
CCB			0.00516489							03/09/2005	2126
CCV		M0404	0.51250294		0.50		102.5	%	90-110	03/09/2005	2215
CB			0.00154672							03/09/2005	2227
CV		M0404	0.51781169		0.50		103.6	%	90-110	03/09/2005	2309
CCB			0.00311508							03/09/2005	2318
MB		3010	0.00117077							03/10/2005	0819
LCS		M352	0.22181010		0.25		88.7	%	80-120	03/10/2005	0826
CCV		M0404	0.47734497		0.50		95.5	%	90-110	03/10/2005	0831
CCB			0.00289775							03/10/2005	0844
MS	229230-1	M352	0.26362189		0.25	0.00458572	103.6	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.26708455	0.26362189	0.25	0.00458572	105.0	%	75-125	03/10/2005	0917
							1.3	R	20		
CCV		M0404	0.49290567		0.50		98.6	%	90-110	03/10/2005	0930
CCB			0.00109132							03/10/2005	0942
MS	229188-15	M352	0.25150603		0.25	0.00287020	99.5	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.24603068	0.25150603	0.25	0.00287020	97.3	%	75-125	03/10/2005	0950
							2.2	R	20		
CCV		M0404	0.49810301		0.50		99.6	%	90-110	03/10/2005	1024
CCB			0.00440143							03/10/2005	1037
CCV		M0404	0.51031529		0.50		102.1	%	90-110	03/10/2005	1113
CCB			0.00461979							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98907024		2.00		99.5	%	90-110	03/09/2005	0907
ICV		M0395	1.02131211		1.00		102.1	%	90-110	03/09/2005	0915
ICV		M0410	1.00211261		1.00		100.2	%	90-110	03/09/2005	0924
ICB			-0.0030165							03/09/2005	0938
ICB			-0.0036912							03/09/2005	0951
ICV		M0393	0.49526166		0.500		99.1	%	90-110	03/09/2005	0954
CCV		M0404	0.97494141		1.00		97.5	%	90-110	03/09/2005	1000
CB			-0.0023279							03/09/2005	1006
IB		3010.	-0.0009003							03/09/2005	1122
LCS		M352	0.48341493		0.500		96.7	%	80-120	03/09/2005	1125

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	0.96972228		1.00		97.0	%	90-110	03/09/2005	1152
CCB			-0.0019038							03/09/2005	1204
CCV		M0404	0.96758099		1.00		96.8	%	90-110	03/09/2005	1243
CCB			-0.0015918							03/09/2005	1252
MS	229125-1	M352	0.51291119		0.500	0.03683884	95.2	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.50377292	0.51291119	0.500	0.03683884	93.4	%	75-125	03/09/2005	1318
							1.8	R	20		
MB		3010	-0.0034746							03/09/2005	1327
LCS		M352	0.49362499		0.500		98.7	%	80-120	03/09/2005	1334
CCV		M0404	0.97562193		1.00		97.6	%	90-110	03/09/2005	1339
CCB			-0.0018513							03/09/2005	1348
CCV		M0404	1.02708317		1.00		102.7	%	90-110	03/09/2005	1430
CCB			-0.0025492							03/09/2005	1439
MS	229167-15	M352	0.48109008		0.500	-0.0011844	96.5	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.50911918	0.48109008	0.500	-0.0011844	102.1	%	75-125	03/09/2005	1514
							5.7	R	20		
CCV		M0404	0.96807182		1.00		96.8	%	90-110	03/09/2005	1533
CCB			-0.0022951							03/09/2005	1542
MB		3050	-0.0034599							03/09/2005	1545
LCS		M352	0.49269728		0.500		98.5	%	69-131	03/09/2005	1552
LCS		M409D	1.25424615		1.46		85.9	%	69-131	03/09/2005	1557
MS	229080-1	M352	1.18271356		0.500	0.60822418	114.9	%	75-125	03/09/2005	1609
MSD	229080-1	M352	1.05839732	1.18271356	0.500	0.60822418	90.0	%	75-125	03/09/2005	1612
							11.1	R	20		
CCV		M0404	1.01136590		1.00		101.1	%	90-110	03/09/2005	1624
CCB			-0.0010376							03/09/2005	1637
CCV		M0404	1.00157465		1.00		100.2	%	90-110	03/09/2005	1716
CCB			-0.0026309							03/09/2005	1725
MB		3050	-0.0027677							03/09/2005	1800
LCS		M352	0.50560340		0.500		101.1	%	69-131	03/09/2005	1807
CCV		M0404	0.99034306		1.00		99.0	%	90-110	03/09/2005	1812
CCB			-0.0016440							03/09/2005	1825
LCS		M409D	1.34635713		1.46		92.2	%	69-131	03/09/2005	1829
PDS	229153-2	M352D	2.59930979		2.00	0.63663621	98.1	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.59445048	2.59930979	2.00	0.63663621	97.9	%	75-125	03/09/2005	1901
							0.2	R	20		
CCV		M0404	0.99269310		1.00		99.3	%	90-110	03/09/2005	1905
CCB			-0.0031651							03/09/2005	1914
CCB			-0.0014646							03/09/2005	1918
MB		3050.	0.00200969							03/09/2005	1925
LCS		M352	0.48468958		0.500		96.9	%	69-131	03/09/2005	1928
LCS		M409D	1.37930018		1.46		94.5	%	69-131	03/09/2005	1934
MS	229154-1	M352	0.60543244		0.500	0.08089975	104.9	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.61617869	0.60543244	0.500	0.08089975	107.1	%	75-125	03/09/2005	1955
							1.8	R	20		
CCV		M0404	1.00927049		1.00		100.9	%	90-110	03/09/2005	2011
CCB			-0.0012531							03/09/2005	2023
CCV		M0404	1.02132886		1.00		102.1	%	90-110	03/09/2005	2114
CCB			0.00066304							03/09/2005	2126
CCV		M0404	1.02832621		1.00		102.8	%	90-110	03/09/2005	2215
CCB			0.00041816							03/09/2005	2227
CCV		M0404	1.03672426		1.00		103.7	%	90-110	03/09/2005	2309
CCB			-0.0016996							03/09/2005	2318

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229167 Report Date.: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		3010	-0.0025456							03/10/2005	0819
LCS		M352	0.43094904		0.500		86.2	%	80-120	03/10/2005	0826
CCV		M0404	0.94029659		1.00		94.0	%	90-110	03/10/2005	0831
CCB			-0.0012961							03/10/2005	0844
CCV		M0404	0.98982578		1.00		99.0	%	90-110	03/10/2005	0930
CCB			0.00246558							03/10/2005	0942
MS	229188-15	M352	0.49611795		0.500	0.02119503	95.0	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.47792895	0.49611795	0.500	0.02119503	91.3	%	75-125	03/10/2005	0950
							3.7	R	20		
CCV		M0404	0.97643400		1.00		97.6	%	90-110	03/10/2005	1024
CCB			-0.0007415							03/10/2005	1037
CCV		M0404	1.02134529		1.00		102.1	%	90-110	03/10/2005	1113
CCB			-0.0015496							03/10/2005	1125

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229167-1 Client ID: B-225 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2046	

Lab ID: 229167-3 Client ID: B-226 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2050	

Lab ID: 229167-4 Client ID: B-226 1-1.5 ft. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104233		03/16/2005 1050	
SW-846 6010B	Metals Analysis (ICAP)	1	104339		03/17/2005 1705	

Lab ID: 229167-5 Client ID: B-227 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2056	

Lab ID: 229167-7 Client ID: B-228 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2059	

Lab ID: 229167-9 Client ID: B-229 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2105	

Lab ID: 229167-10 Client ID: B-229 1-1.5 ft. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104233		03/16/2005 1050	
SW-846 6010B	Metals Analysis (ICAP)	1	104339		03/17/2005 1709	

Lab ID: 229167-11 Client ID: B-230 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2111	

Lab ID: 229167-13 Client ID: B-231 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2130	

Lab ID: 229167-14 Client ID: B-231 1-1.5 ft. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104233		03/16/2005 1050	
SW-846 6010B	Metals Analysis (ICAP)	1	104339		03/17/2005 1713	

Lab ID: 229167-15 Client ID: FIELD BLANK Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3010A	Acid Digestion, Total Metals	1	103889		03/07/2005 1100	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 1502	

Lab ID: 229167-16 Client ID: B-21A 1-1.5 ft. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 229167 Date: 03/23/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229167-16 Client ID: B-21A 1-1.5 ft. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2136	

Lab ID: 229167-17 Client ID: B-232 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2141	

Lab ID: 229167-19 Client ID: B-233 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2145	

Lab ID: 229167-21 Client ID: B-234 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2149	

Lab ID: 229167-23 Client ID: B-235 0-6 in. Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	103985		03/08/2005 1600	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/09/2005 2152	

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 03/23/2005

(1) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
(2) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III
(3) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
(4) Methods of Organic Chemical Analysis of Municipal and Industrial Wastewater, Federal Register, Vol. 49, No. 209, October 1984 and 40 CFR Part 136 amendments
(5) EPA 600/2-78-054, Field and Laboratory Methods Applicable to Overburdens and Minesoils
(6) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965
(7) ASTM, Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991
(8) American Society for Testing and Materials, Petroleum Products, Lubricants, and Fossil Fuels, Section 5, Volumes 05.01 - 05.05
(9) Hach Handbook of Water Analysis, 1979

Comments:

The test results in this report meet all NELAP requirements for parameters for which accreditation is held. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

According to 40CFR Part 136.3, pH, total residual chlorine, dissolved oxygen, sulfite, and temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH, Client Provided), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Data in the QC report may differ from final results due to digestion and/or dilution of sample into analytical ranges. The "Time Analyzed" may not be the actual time of analysis. The "Date Analyzed" is the actual date of analysis. Sludge samples are reported on a wet weight basis (i.e., not corrected for percent moisture) unless otherwise indicated.

Quality Control acceptance criteria are based either on limits specified in the referenced method or on actual laboratory performance.

All data is reported on sample "as received" unless noted.

Sample IDs with a "-00" at the end indicate a blank spike or blank spike duplicate associated with the numbered sample.

SAMPLE RESULT IDENTIFICATION

ND = Not detected at a value greater than the reporting limit
TNTC = Too numerous to count

BLANK QC SAMPLE IDENTIFICATION

MB Method Blank
ICB Initial Calibration Blank
CCB Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS Method (Matrix) Spike
MSD Method (Matrix) Spike Duplicate
PDS Post Digestion/Distillation Spike
SB Spiked Blank
SBD Spiked Blank Duplicate

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 03/23/2005

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interference Check Sample
DSC	Distilled Standard Check

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
DD	Digestion Duplicate
PDD	Post Digestion Duplicate
PSD	Post Digestion/Distillation Spike Duplicate

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "technician" using the following codes:

SUBCONTRACT LABORATORIES

Severn Trent Laboratories:

Los Angeles, CA	*la	Houston, TX	*he
Aurora, CO	*au	North Canton, OH	*nc
Tampa, FL	*ta	Valparaiso, IN	*vp
Sacramento, CA	*sa	Chicago, IL	*ch
Pensacola, FL	*pe	Tallahassee, FL	*tl

Other:

Client provided data	*cp	Non-STL Subcontract Lab	*xx

EXPLANATION OF DATA FLAGS

- B - This flag is used to indicate that an analyte is present in the method blank as well as in the sample. It indicates that the client should consider this when evaluating the results.
- D - This flag indicates that surrogates were diluted out of calibration range and cannot be quantified.
- E - Indicates that a sample result is an estimate because the concentration exceeded the calibration range of the instrument.
- I - Used to indicate matrix interference.
- X - Indicates that a surrogate recovery is outside the specified quality control limits.
- Y - Used to identify a spike or spike duplicate recovery is outside the specified quality control limits.
- * - Indicates a relative percent difference for a duplicate analysis is outside the specified quality control limits.
- ^ - Used to indicate that a standard is outside specified quality control limits.

EXPLANATION OF DATA QUALIFIERS

- B - Indicates that a value for an inorganic analysis is an estimate. It is used when a compound is determined to be present but at a concentration less than the quantitation limit of the method.
- J - Indicates that a value for an organic analysis is an estimate. It is used when a compound is determined to be present based on chromatographic pattern or mass spectral data, but at a concentration less than the quantitation limit of the method. This flag is also used when estimating the concentration of a tentatively identified compound.
- U - Indicates that a value is less than the MDL or was not detected.

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ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Project Number/Name: Encycle RCRA Corrective Action

Project Location: Encycle, Corpus Christi, TX

Laboratory: STL

Project Manager: Ken Brandner

Sampler(s)/Affiliation: Chris Scheffler, Ken Brandner / ARCADIS

0.5°C

291167

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	Total As, Pb, Sb, Cd, Mn, Ag, Zn (8oz glass)	HOLD (8oz glass)	Total As, Pb, Sb, Cd, Mn, Ag, Zn (8oz glass)	Total Cd, Pb (8oz glass)	Total Cd (8oz glass)	Remarks	Total
B-225, 0-6"	S	2/28/05 11:20		1					As, Pb, Sb, Cd, Mn, Ag, Zn	1
B-225, 1-1.5'		11:25			<HOLD>				<HOLD>	1
B-226, 0-6"		10:00				1			As, Pb, Sb, Cd, Mn, Ag, Zn	1
B-226, 1-1.5'		10:05			<HOLD>				<HOLD>	1
B-227, 0-6"		10:35					1		Cd, Pb	1
B-227, 1-1.5'		10:40			<HOLD>				<HOLD>	1
B-228, 0-6"		10:55					1		Cd, Pb	1
B-228, 1-1.5'		11:00			<HOLD>				<HOLD>	1
B-229, 0-6"		10:15					1		Cd, Pb	1
B-229, 1-1.5'		10:20			<HOLD>				<HOLD>	1
B-230, 0-6"		10:25					1		Cd, Pb	1
B-230, 1-1.5'		10:30			<HOLD>				<HOLD>	1
B-231, 0-6"		11:55						1	Cd	1
B-231, 1-1.5'		12:00			<HOLD>				<HOLD>	1
Field Blank	L	12:05		1					As, Pb, Sb, Cd, Mn, Ag, Zn	1
									Total No. of Bottles/ Containers	15

Sample Matrix: L = Liquid; S = Solid; A = Air

					Seal Intact?
Relinquished by: Ken Brandner	Organization: ARCADIS	Date 2/28/05	Time 16:50		
Received by: Olga Veronica Miranda	Organization: STL	Date 2/28/05	Time 16:50		Yes No (N/A)
Relinquished by: _____	Organization: _____	Date / /	Time _____		Seal Intact?
Received by: _____	Organization: _____	Date / /	Time _____		Yes No N/A

Special Instructions/Remarks: Normal turnaround, Results to Ken Brandner & Rich Marcus.
Invoice to Rich Marcus for Encycle RCRA Corrective Action

Delivery Method: ☒ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____ of 2

Project Number/Name: Encycle RCRA Corrective Action

Project Location: Encycle, Corpus Christi, TX

Laboratory: STL

Project Manager: Ken Brandner

Sampler(s)/Affiliation: Chris Schefflen/Ken Brandner ARCADIS

0.5°C

229167

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	Total Cd, Mn, Zn (8029 loss)	Total Cd (8015 loss)	HOLD (8015 loss)				Remarks	Total
B-231, 1-1.5'	S	2/28/05 2:50		1						Cd, Mn, Zn	1
B-232, 0-6"		3:00			1					Total Cd	1
(B-232) B-232, 1-1.5'		3:05				1				Hold	1
B-233, 0-6"		3:20			1					Total Cd	1
B-233, 1-1.5'		3:25				1				Hold	1
B-234, 0-6"		3:40								Total Cd	1
B-234 1-1.5'		3:45				1				Hold	1
B-235, 0-6"		4:00		1						Cd, Mn, Zn	1
B-235, 1-1.5'		4:05				1				Hold	1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 9

Relinquished by: Ken Brandner	Organization: ARCADIS	Date 2/28/05	Time 1650	Seal Intact?	
Received by: Olga Veronica Mendoza	Organization: STL	Date 2/28/05	Time 1650	Yes No N/A	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☐ Common Carrier _____ (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

AG 05-12/01

SEVERN TRENT STL

ANALYTICAL REPORT

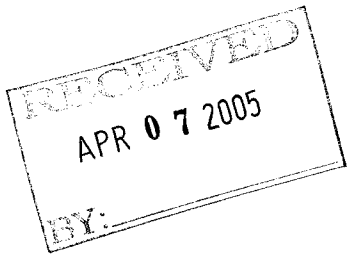
JOB NUMBER: 229188

Prepared For:

ARCADIS / G&M
711 North Carancahua, Suite 1700
Corpus Christi, TX 78475-1801

Attention: Ken Brandner

Date: 03/31/2005



Signature

3/31/05
Date

Name: Chip Meador

Title: Laboratory Director

E-Mail: cmeador@stl-inc.com

Severn Trent Laboratories
1733 N. Padre Island Drive
Corpus Christi, TX 78408

PHONE: 361/289-2673
FAX..: 361/289-2471

TOTAL # OF PAGES 70

SEVERN TRENT STL

CASE NARRATIVE

Job Number 229188

March 31, 2005

Total Metals Analysis

Samples 229188-1 and 30 were analyzed for total metals using EPA Method 6010B. The percent recovery results for arsenic and lead in the matrix spikes associated with sample 1 and for manganese in the matrix spikes associated with sample 30 were outside the acceptance criteria due to the high concentration of these metals in the sample. The percent recovery results for antimony and nickel in the matrix spikes associated with sample 30 were outside the acceptance criteria due to matrix interferences. The associated LCS was within acceptable limits and the data are therefore reported.

Please contact me at 361-289-2673 or omcdonald@stl-inc.com if you have any questions regarding this report or if we can be of further assistance.

Olga Verónica McDonald
Project Manager

SEVERN TRENT STL

SAMPLE INFORMATION
Date: 03/31/2005

Job Number.: 229188
Customer...: Encycle Texas, Inc.
Attn.....: Richard Marcus

Project Number.....: 98000084
Customer Project ID....: ENCYCLE RCRA CORRECTIVE
Project Description....: Project - OVM

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229188-1	B-96A 1-1.5 ft.	Soil	03/01/2005	08:00	03/02/2005	07:55
229188-2	B-97A 1-1.5 ft.	Soil	03/01/2005	08:10	03/02/2005	07:55
229188-3	B-98A 1-1.5 ft.	Soil	03/01/2005	08:20	03/02/2005	07:55
229188-4	B-99A 1-1.5 ft.	Soil	03/01/2005	08:30	03/02/2005	07:55
229188-5	B-101A 1-1.5 ft.	Soil	03/01/2005	08:50	03/02/2005	07:55
229188-6	B-104A 1-1.5 ft.	Soil	03/01/2005	09:10	03/02/2005	07:55
229188-7	B-246 0-6 in.	Soil	03/01/2005	09:20	03/02/2005	07:55
229188-8	B-246 1-1.5 ft.	Soil	03/01/2005	09:25	03/02/2005	07:55
229188-9	B-238 0-6 in.	Soil	03/01/2005	09:35	03/02/2005	07:55
229188-10	B-238 1-1.5 ft.	Soil	03/01/2005	09:40	03/02/2005	07:55
229188-11	B-239 0-6 in.	Soil	03/01/2005	09:50	03/02/2005	07:55
229188-12	B-239 1-1.5 ft.	Soil	03/01/2005	09:55	03/02/2005	07:55
229188-13	B-240 0-6 in.	Soil	03/01/2005	10:10	03/02/2005	07:55
229188-14	B-240 1-1.5 ft.	Soil	03/01/2005	10:15	03/02/2005	07:55
229188-15	FIELD BLANK	Water	03/01/2005	10:20	03/02/2005	07:55
229188-16	B-241 0-6 in.	Soil	03/01/2005	10:30	03/02/2005	07:55
229188-17	B-241 1-1.5 ft.	Soil	03/01/2005	10:35	03/02/2005	07:55
229188-18	B-242 0-6 in.	Soil	03/01/2005	10:45	03/02/2005	07:55
229188-19	B-242 1-1.5 ft.	Soil	03/01/2005	10:50	03/02/2005	07:55
229188-20	B-243 0-6 in.	Soil	03/01/2005	11:05	03/02/2005	07:55
229188-21	B-243 1-1.5 ft.	Soil	03/01/2005	11:10	03/02/2005	07:55
229188-22	B-244 0-6 in.	Soil	03/01/2005	11:25	03/02/2005	07:55
229188-23	B-244 1-1.5 ft.	Soil	03/01/2005	11:30	03/02/2005	07:55
229188-24	B-245 0-6 in.	Soil	03/01/2005	12:00	03/02/2005	07:55
229188-25	B-247 0-6 in.	Soil	03/01/2005	12:20	03/02/2005	07:55
229188-26	B-236 0-6 in.	Soil	03/01/2005	14:50	03/02/2005	07:55

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SEVERN TRENT STL

SAMPLE INFORMATION
Date:

Job Number.: 229188
Customer...: Encycle Texas, Inc.
Attn.....: Richard Marcus

Project Number.....: 98000084
Customer Project ID....: ENCYCLE RCRA CORRECTIVE
Project Description....: Project - OVM

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229188-27	B-236 6-12 in.	Soil	03/01/2005	14:55	03/02/2005	07:55
229188-28	B-237 0-6 in.	Soil	03/01/2005	15:05	03/02/2005	07:55
229188-29	B-237 6-12 in.	Soil	03/01/2005	15:10	03/02/2005	07:55
229188-30	SED 1A 2 ft.	Soil	03/01/2005	15:30	03/02/2005	07:55
229188-31	SED 1A 3 ft.	Soil	03/01/2005	15:40	03/02/2005	07:55
229188-32	SED 2A 2 ft.	Soil	03/01/2005	15:50	03/02/2005	07:55
229188-33	SED 2A 3 ft.	Soil	03/01/2005	16:00	03/02/2005	07:55
229188-34	SED 10A 2 ft.	Soil	03/01/2005	16:20	03/02/2005	07:55
229188-35	SED 10A 3 ft.	Soil	03/01/2005	16:30	03/02/2005	07:55
229188-36	SED 11A 2 ft.	Soil	03/01/2005	16:50	03/02/2005	07:55
229188-37	SED 11A 3 ft.	Soil	03/01/2005	17:00	03/02/2005	07:55

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-96A 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 08:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-1
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	137	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	1990	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-97A 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 08:10
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-2
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	4630	10	mg/Kg	03/15/05	jem
SW-846 6010B	Lead (Pb), Solid	66200	10	mg/Kg	03/15/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-98A 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 08:20
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-3
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	7	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	30	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-99A 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 08:30
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-4
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	325	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	4310	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-101A 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 08:50
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-5
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	3	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	6	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-104A 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:10
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-6
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	7	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	123	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-246 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:20
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-7
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	407	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	8100	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-246 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:25
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-8
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	16	1	mg/Kg	03/24/05	jem
SW-846 6010B	Lead (Pb), Solid	256	1	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-238 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:35
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-9
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	382	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	9960	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-238 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:40
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-10
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	5	1	mg/Kg	03/24/05	jem
SW-846 6010B	Lead (Pb), Solid	39	1	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-239 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:50
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-11
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	432	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	7720	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-239 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:55
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-12
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	92	1	mg/Kg	03/24/05	jem
SW-846 6010B	Lead (Pb), Solid	1740	1	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-240 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 10:10
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-13
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	8030	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-240 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 10:15
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-14
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	23	1	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: FIELD BLANK
Date Sampled.....: 03/01/2005
Time Sampled.....: 10:20
Sample Matrix.....: Water

Laboratory Sample ID: 229188-15
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Total	<0.01	0.01	mg/L	03/10/05	jem
SW-846 6010B	Lead (Pb), Total	<0.01	0.01	mg/L	03/10/05	jem
SW-846 3010A	Acid Dig., Total Metals, 2X Concentrate, Total	Complete			03/09/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-241 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 10:30
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-16
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	32	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	2140	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-241 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 10:35
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-17
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	114	1	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-242 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 10:45
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-18
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	64	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	2350	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-242 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 10:50
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-19
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	24	1	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-243 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 11:05
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-20
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	587	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-244 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 11:25
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-22
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	2650	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-244 1-1.5 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 11:30
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-23
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	14	1	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-245 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-24
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Lead (Pb), Solid	4880	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-247 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 12:20
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-25
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	145	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	2470	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-236 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 14:50
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-26
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	38	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-236 6-12 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 14:55
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-27
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	36	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-237 0-6 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 15:05
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-28
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	106	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-237 6-12 in.
Date Sampled.....: 03/01/2005
Time Sampled.....: 15:10
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-29
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Arsenic (As), Solid	618	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 1A 2 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 15:30
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-30
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 7471A	Mercury (Hg), Solid	<0.2	0.2	mg/Kg	03/07/05	hmz
SW-846 6010B	Antimony (Sb), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Arsenic (As), Solid	3	1	mg/Kg	03/10/05	jem
SW-846 6010B	Cadmium (Cd), Solid	14	1	mg/Kg	03/10/05	jem
SW-846 6010B	Copper (Cu), Solid	3	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	10	1	mg/Kg	03/10/05	jem
SW-846 6010B	Manganese (Mn), Solid	215	1	mg/Kg	03/10/05	jem
SW-846 6010B	Selenium (Se), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Silver (Ag), Solid	<0.5	0.5	mg/Kg	03/10/05	jem
SW-846 6010B	Tin (Sn), Solid	53	2	mg/Kg	03/10/05	jem
SW-846 6010B	Zinc (Zn), Solid	1880	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 1A 3 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 15:40
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-31
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Cadmium (Cd), Solid	<1	1	mg/Kg	03/24/05	jem
SW-846 6010B	Tin (Sn), Solid	60	2	mg/Kg	03/24/05	jem
SW-846 6010B	Zinc (Zn), Solid	518	1	mg/Kg	03/28/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 2A 2 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 15:50
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-32
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 7471A	Mercury (Hg), Solid	<0.2	0.2	mg/Kg	03/07/05	hmz
SW-846 6010B	Arsenic (As), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Cadmium (Cd), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Copper (Cu), Solid	2	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	3	1	mg/Kg	03/10/05	jem
SW-846 6010B	Manganese (Mn), Solid	500	1	mg/Kg	03/10/05	jem
SW-846 6010B	Selenium (Se), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Tin (Sn), Solid	48	2	mg/Kg	03/10/05	jem
SW-846 6010B	Zinc (Zn), Solid	611	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 2A 3 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 16:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-33
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Manganese (Mn), Solid	<1	1	mg/Kg	03/24/05	jem
SW-846 6010B	Tin (Sn), Solid	59	2	mg/Kg	03/24/05	jem
SW-846 6010B	Zinc (Zn), Solid	2760	10	mg/Kg	03/29/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 10A 2 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 16:20
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-34
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 7471A	Mercury (Hg), Solid	<0.2	0.2	mg/Kg	03/07/05	hmz
SW-846 6010B	Antimony (Sb), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Arsenic (As), Solid	2	1	mg/Kg	03/10/05	jem
SW-846 6010B	Cadmium (Cd), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Cobalt (Co), Solid	2	1	mg/Kg	03/10/05	jem
SW-846 6010B	Copper (Cu), Solid	1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	4	1	mg/Kg	03/10/05	jem
SW-846 6010B	Manganese (Mn), Solid	29	1	mg/Kg	03/10/05	jem
SW-846 6010B	Nickel (Ni), Solid	3	1	mg/Kg	03/10/05	jem
SW-846 6010B	Selenium (Se), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Silver (Ag), Solid	<0.5	0.5	mg/Kg	03/10/05	jem
SW-846 6010B	Tin (Sn), Solid	53	2	mg/Kg	03/10/05	jem
SW-846 6010B	Zinc (Zn), Solid	14	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 10A 3 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 16:30
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-35
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Tin (Sn), Solid	62	2	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188

Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 11A 2 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 16:50
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-36
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 7471A	Mercury (Hg), Solid	<0.2	0.2	mg/Kg	03/07/05	hmz
SW-846 6010B	Antimony (Sb), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Arsenic (As), Solid	2	1	mg/Kg	03/10/05	jem
SW-846 6010B	Cadmium (Cd), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Copper (Cu), Solid	1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Lead (Pb), Solid	3	1	mg/Kg	03/10/05	jem
SW-846 6010B	Manganese (Mn), Solid	48	1	mg/Kg	03/10/05	jem
SW-846 6010B	Selenium (Se), Solid	<1	1	mg/Kg	03/10/05	jem
SW-846 6010B	Silver (Ag), Solid	<0.5	0.5	mg/Kg	03/10/05	jem
SW-846 6010B	Tin (Sn), Solid	51	2	mg/Kg	03/10/05	jem
SW-846 6010B	Zinc (Zn), Solid	8	1	mg/Kg	03/10/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/10/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: SED 11A 3 ft.
Date Sampled.....: 03/01/2005
Time Sampled.....: 17:00
Sample Matrix.....: Soil

Laboratory Sample ID: 229188-37
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 6010B	Tin (Sn), Solid	58	2	mg/Kg	03/24/05	jem
SW-846 3050B	Acid Dig., 2X Conc., Solids & Sludges, Solid	Complete			03/24/05	tjo

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 7471A Batch.....: 103916 Analyst...: hmz
Method Description.: Mercury (CVAA) Units.....: mg/L Test Code.: HG
Parameter.....: Mercury (Hg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		M50307HG	0.00513		0.00500		102.6	%	90-110	03/07/2005	1520
ICB			-0.000094							03/07/2005	1523
LCS		M50307LG	0.00521		0.0050		104.2	%	82-115	03/07/2005	1527
MB			-0.000066							03/07/2005	1530
CCV		M50307HG	0.00499		0.00500		99.8	%	80-120	03/07/2005	1636
CCB			-0.000039							03/07/2005	1640
SB		M0409HG	0.00388		0.0352		11.0	%	82-115	03/07/2005	1643
MB			-0.000129							03/07/2005	1647
MS	229188-30	M50307HG	0.00579		0.00500	0.000087	114.1	%	75-125	03/07/2005	1654
MSD	229188-30	M50307HG	0.00560	0.00579	0.00500	0.000087	110.3	%	75-125	03/07/2005	1657
							3.3	R	20		
CCV		M50307HG	0.00510		0.00500		102.0	%	80-120	03/07/2005	1732
CCB			-0.000003							03/07/2005	1736
CCV		M50307HG	0.00509		0.00500		101.8	%	80-120	03/07/2005	1743
CCB			-0.000055							03/07/2005	1746

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: SB
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0371	0.94591379		1.00		94.6	%	90-110	03/10/2005	1203
ICV		M0395	0.96524570		1.00		96.5	%	90-110	03/10/2005	1209
ICB			0.00156007							03/10/2005	1232
ICV		M0393	0.50289797		0.500		100.6	%	90-110	03/10/2005	1247
CCV		M0404	0.92319055		1.00		92.3	%	90-110	03/10/2005	1253
CCB			0.00347768							03/10/2005	1302
CCV		M0404	0.90847474		1.00		90.8	%	90-110	03/10/2005	1905
CCB			-0.0024657							03/10/2005	1917
MB		3050.	-0.0074589							03/10/2005	2000
LCS		M352	0.40692184		0.500		81.4	%	1-335	03/10/2005	2004
CCV		M0404	0.90820139		1.00		90.8	%	90-110	03/10/2005	2009
CCB			0.00054397							03/10/2005	2018
LCS		M409D	0.43746424		0.583		75.0	%	0-137	03/10/2005	2021
MS	229188-30	M352	0.14341024		0.500	-0.0135369	31.4	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.15293246	0.14341024	0.500	-0.0135369	33.3	%	75-125	03/10/2005	2039
							6.4	R	20		
CCV		M0404	0.90971999		1.00		91.0	%	90-110	03/10/2005	2102
CCB			0.00211635							03/10/2005	2115

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98963733		2.00		99.5	%	90-110	03/09/2005	0907
CV		M0395	1.00257037		1.00		100.3	%	90-110	03/09/2005	0915
CV		M0410	1.00755551		1.00		100.8	%	90-110	03/09/2005	0924
ICB			0.01007148							03/09/2005	0938

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICB			0.01397938							03/09/2005	0951
ICV		M0393	0.51404852		0.500		102.8	%	90-110	03/09/2005	0954
CCV		M0404	0.97234533		1.00		97.2	%	90-110	03/09/2005	1000
CCB			0.00476734							03/09/2005	1006
MB		3010.	0.00271553							03/09/2005	1122
LCS		M352	0.48874799		0.500		97.7	%	80-120	03/09/2005	1125
CCV		M0404	0.94589013		1.00		94.6	%	90-110	03/09/2005	1152
CCB			-0.0040642							03/09/2005	1204
CCV		M0404	0.93018838		1.00		93.0	%	90-110	03/09/2005	1243
CCB			-0.0041780							03/09/2005	1255
MS	229125-1	M352	0.49534153		0.500	-0.0373653	106.5	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.48771502	0.49534153	0.500	-0.0373653	105.0	%	75-125	03/09/2005	1318
							1.6	R	20		
MB		3010	-0.0038101							03/09/2005	1327
LCS		M352	0.50532390		0.500		101.1	%	80-120	03/09/2005	1334
CCV		M0404	0.97767604		1.00		97.8	%	90-110	03/09/2005	1339
CB			-0.0001251							03/09/2005	1348
CV		M0404	1.03227940		1.00		103.2	%	90-110	03/09/2005	1430
CCB			0.00198442							03/09/2005	1439
MS	229167-15	M352	0.49146663		0.500	-0.0051944	99.3	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51675465	0.49146663	0.500	-0.0051944	104.4	%	75-125	03/09/2005	1514
							5.0	R	20		
CCV		M0404	0.94435622		1.00		94.4	%	90-110	03/09/2005	1533
CCB			-0.0038617							03/09/2005	1542
MB		3050	0.00254602							03/09/2005	1545
LCS		M352	0.49837532		0.500		99.7	%	66-134	03/09/2005	1552
LCS		M409D	2.02535218		2.16		93.8	%	66-134	03/09/2005	1557
MS	229080-1	M352	0.42999963		0.500	0.00927011	84.1	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.46281406	0.42999963	0.500	0.00927011	90.7	%	75-125	03/09/2005	1612
							7.4	R	20		
CCV		M0404	1.00224323		1.00		100.2	%	90-110	03/09/2005	1624
CCB			0.00519571							03/09/2005	1637
CCV		M0404	1.01536486		1.00		101.5	%	90-110	03/09/2005	1716
CCB			-0.0035956							03/09/2005	1725
MB		3050	0.00853843							03/09/2005	1800
LCS		M352	0.51062885		0.500		102.1	%	66-134	03/09/2005	1807
CCV		M0404	1.00289377		1.00		100.3	%	90-110	03/09/2005	1812
CCB			0.00824986							03/09/2005	1825
LCS		M409D	2.17301309		2.16		100.6	%	66-134	03/09/2005	1829
PDS	229153-2	M352D	2.07558269		2.00	0.02557677	102.5	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.07554608	2.07558269	2.00	0.02557677	102.5	%	75-125	03/09/2005	1901
							0.0	R	20		
CCV		M0404	1.00958379		1.00		101.0	%	90-110	03/09/2005	1905
CCB			0.00993208							03/09/2005	1914
CCB			0.00741570							03/09/2005	1918
MB		3050.	0.00794929							03/09/2005	1925
LCS		M352	0.50718698		0.500		101.4	%	66-134	03/09/2005	1928
LCS		M409D	2.19496182		2.16		101.6	%	66-134	03/09/2005	1934
MS	229154-1	M352	0.51524386		0.500	0.01217682	100.6	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.51941495	0.51524386	0.500	0.01217682	101.4	%	75-125	03/09/2005	1955
							0.8	R	20		
CV		M0404	1.02633326		1.00		102.6	%	90-110	03/09/2005	2011
CCB			-0.0016432							03/09/2005	2023

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.03098079		1.00		103.1	%	90-110	03/09/2005	2114
CCB			0.00320548							03/09/2005	2126
CCV		M0404	1.04805923		1.00		104.8	%	90-110	03/09/2005	2215
CCB			-0.0040687							03/09/2005	2227
CCV		M0404	1.06452334		1.00		106.5	%	90-110	03/09/2005	2309
CCB			-0.0023979							03/09/2005	2318
MB		3010	0.00824471							03/10/2005	0819
LCS		M352	0.43370071		0.500		86.7	%	80-120	03/10/2005	0826
CCV		M0404	0.93678478		1.00		93.7	%	90-110	03/10/2005	0831
CCB			0.00709594							03/10/2005	0844
MS	229230-1	M352	0.49197668		0.500	-0.0016487	98.7	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.50234606	0.49197668	0.500	-0.0016487	100.8	%	75-125	03/10/2005	0917
							2.1	R	20		
CCV		M0404	0.95492627		1.00		95.5	%	90-110	03/10/2005	0930
CCB			-0.0081363							03/10/2005	0942
MS	229188-15	M352	0.49536741		0.500	-0.0029296	99.7	%	75-125	03/10/2005	0945
SD	229188-15	M352	0.47080713	0.49536741	0.500	-0.0029296	94.7	%	75-125	03/10/2005	0950
							5.1	R	20		
CCV		M0404	0.96431411		1.00		96.4	%	90-110	03/10/2005	1024
CCB			0.00226253							03/10/2005	1037
CCV		M0404	1.01072221		1.00		101.1	%	90-110	03/10/2005	1113
CCB			0.00126423							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98383431		2.00		99.2	%	90-110	03/10/2005	1200
ICV		M0395	0.98057035		1.00		98.1	%	90-110	03/10/2005	1209
ICV		M0410	1.01866762		1.00		101.9	%	90-110	03/10/2005	1218
ICB			-0.0033249							03/10/2005	1232
ICV		M0393	0.50047909		0.500		100.1	%	90-110	03/10/2005	1247
CCV		M0404	0.97476023		1.00		97.5	%	90-110	03/10/2005	1253
CCB			-0.0016420							03/10/2005	1302
CCV		M0404	0.94805494		1.00		94.8	%	90-110	03/10/2005	1356
CCB			-0.0012011							03/10/2005	1408
CCV		M0404	0.96933496		1.00		96.9	%	90-110	03/10/2005	1444
CCB			0.00535160							03/10/2005	1456
CCV		M0404	0.95809494		1.00		95.8	%	90-110	03/10/2005	1600
CCB			-0.0094139							03/10/2005	1612
CCV		M0404	0.97802387		1.00		97.8	%	90-110	03/10/2005	1652
CCB			0.00843882							03/10/2005	1704
MB		3050	0.00178193							03/10/2005	1707
LCS		M352	0.47616700		0.500		95.2	%	66-134	03/10/2005	1714
LCS		M409D	2.06106255		2.16		95.4	%	66-134	03/10/2005	1720
MS	229188-1	M352	2.22088407		0.500	1.51777919	140.6	%	75-125	03/10/2005	1737
MSD	229188-1	M352	2.09565066	2.22088407	0.500	1.51777919	115.6	%	75-125	03/10/2005	1742
							5.8	R	20		
CCB			-0.0021174							03/10/2005	1745
CCV		M0404	0.96290364		1.00		96.3	%	90-110	03/10/2005	1800

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			0.00780038							03/10/2005	1808
CCV		M0404	0.98929378		1.00		98.9	%	90-110	03/10/2005	1905
CCB			0.00381099							03/10/2005	1917
MB		3050.	-0.0032214							03/10/2005	2000
LCS		M352	0.48793319		0.500		97.6	%	66-134	03/10/2005	2004
CCV		M0404	0.99176074		1.00		99.2	%	90-110	03/10/2005	2009
CCB			0.00260093							03/10/2005	2018
LCS		M409D	2.07643471		2.16		96.1	%	80-120	03/10/2005	2021
MS	229188-30	M352	0.49751984		0.500	0.02130863	95.2	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.50370075	0.49751984	0.500	0.02130863	96.5	%	75-125	03/10/2005	2039
							1.2	R	20		
CCV		M0404	0.97585363		1.00		97.6	%	90-110	03/10/2005	2102
CCB			-0.0084370							03/10/2005	2115
CCV		M0404	0.99895624		1.00		99.9	%	90-110	03/10/2005	2159
CCB			-0.0028419							03/10/2005	2207
CCV		M0404	1.03126820		1.00		103.1	%	90-110	03/10/2005	2251
CB			-0.0081531							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104264 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0405	10.3019		10.0		103.0	%	90-110	03/15/2005	1322
ICV		M0395	1.0529		1.00		105.3	%	90-110	03/15/2005	1345
ICV		M0410	1.0977		1.00		109.8	%	90-110	03/15/2005	1351
ICB			-0.0109							03/15/2005	1357
CCV		M0408	5.0998		5.00		102.0	%	90-110	03/15/2005	1407
CCB			-0.0222							03/15/2005	1410
MB		3010	-0.0108							03/15/2005	1412
LCS		M352	0.5018		0.500		100.4	%	80-120	03/15/2005	1419
PDS	229190-3	M352D	2.0210		2.00	0.0184	100.1	%	75-125	03/15/2005	1511
PSD	229190-3	M352D	2.0293	2.0210	2.00	0.0184	100.5	%	75-125	03/15/2005	1517
							0.4	R	20		
MB		3050	-0.0104							03/15/2005	1524
LCS		M352	0.4830		0.500		96.6	%	66-134	03/15/2005	1530
LCS		M409D	1.8465		2.16		85.5	%	66-134	03/15/2005	1537
PDS	229188-1	M352D	2.0596		2.00	0.0025	102.9	%	75-125	03/15/2005	1554
PSD	229188-1	M352D	2.0624	2.0596	2.00	0.0025	103.0	%	75-125	03/15/2005	1556
							0.1	R	20		
MB		3010	0.0134							03/15/2005	1651
LCS		M352	0.5548		0.500		111.0	%	80-120	03/15/2005	1654
CCV		M0408	5.3947		5.00		107.9	%	90-110	03/15/2005	1745
CCB			0.0179							03/15/2005	1749

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104615 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.03987207		2.00		102.0	%	90-110	03/24/2005	1047
ICV		M0395	0.94921555		1.00		94.9	%	90-110	03/24/2005	1056
ICV		M0410	1.02604253		1.00		102.6	%	90-110	03/24/2005	1105
ICB			0.00020544							03/24/2005	1119
ICV		M0393	0.51163275		0.500		102.3	%	90-110	03/24/2005	1135
CCV		M0404	1.00010058		1.00		100.0	%	90-110	03/24/2005	1140
CCB			0.00145875							03/24/2005	1153
MB		3051.	-0.0008041							03/24/2005	1205
LCS		M352	0.49556316		0.500		99.1	%	80-120	03/24/2005	1209
MS	229442-2	M352	0.38463564		0.500	-0.0278717	82.5	%	75-125	03/24/2005	1221
MSD	229442-2	M352	0.43164277	0.38463564	0.500	-0.0278717	91.9	%	75-125	03/24/2005	1227
							11.5	R	20		
CCV		M0404	0.96763669		1.00		96.8	%	90-110	03/24/2005	1242
CCB			0.00128223							03/24/2005	1255
MB		3050	0.00240024							03/24/2005	1258
MB		3050.	0.00076391							03/24/2005	1302
?S		M352	0.46852775		0.500		93.7	%	66-134	03/24/2005	1305
?S		M409D	1.88301325		2.16		87.2	%	66-134	03/24/2005	1311
MS	229539-1	M352	0.53860214		0.500	0.09849255	88.0	%	75-125	03/24/2005	1327
MSD	229539-1	M352	0.55849843	0.53860214	0.500	0.09849255	92.0	%	75-125	03/24/2005	1330
							3.6	R	20		
CCV		M0404	0.97850935		1.00		97.9	%	90-110	03/24/2005	1341
CCB			-0.0013860							03/24/2005	1353
CCV		M0404	0.99392593		1.00		99.4	%	90-110	03/24/2005	1434
CCB			0.00685793							03/24/2005	1446
CCV		M0404	0.96931803		1.00		96.9	%	90-110	03/24/2005	1505
CCB			0.00381622							03/24/2005	1514
MB		3050.	0.00372673							03/24/2005	1618
LCS		M352	0.44757242		0.500		89.5	%	66-134	03/24/2005	1622
LCS		M409D	1.96905685		2.16		91.2	%	66-134	03/24/2005	1627
CCV		M0404	0.94007493		1.00		94.0	%	90-110	03/24/2005	1700
CCB			0.00376770							03/24/2005	1713
CCV		M0404	0.92851495		1.00		92.9	%	90-110	03/24/2005	1753
CCB			0.00216077							03/24/2005	1807

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99244043		2.00		99.6	%	90-110	03/10/2005	1200
ICV		M0395	1.00068286		1.00		100.1	%	90-110	03/10/2005	1209
ICV		M0410	1.02430729		1.00		102.4	%	90-110	03/10/2005	1218
ICB			0.00032889							03/10/2005	1232
ICV		M0393	0.50693730		0.500		101.4	%	90-110	03/10/2005	1247
CCV		M0404	0.98164967		1.00		98.2	%	90-110	03/10/2005	1253
CCB			-0.0002156							03/10/2005	1302
CCV		M0404	0.96832826		1.00		96.8	%	90-110	03/10/2005	1356
CB			-0.0002449							03/10/2005	1408
CV		M0404	0.96879310		1.00		96.9	%	90-110	03/10/2005	1444
CCB			-0.0003394							03/10/2005	1456

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	0.94859651		1.00		94.9	%	90-110	03/10/2005	1600
CCB			-0.0005192							03/10/2005	1612
CCV		M0404	0.96960615		1.00		97.0	%	90-110	03/10/2005	1652
CCB			-0.0004471							03/10/2005	1704
MB		3050	-0.0001800							03/10/2005	1707
LCS		M352	0.46421548		0.500		92.8	%	73-127	03/10/2005	1714
LCS		M409D	0.76046474		0.837		90.9	%	73-127	03/10/2005	1720
CCB			-0.0003161							03/10/2005	1745
CCV		M0404	0.96319489		1.00		96.3	%	90-110	03/10/2005	1800
CCB			0.00002564							03/10/2005	1808
CCV		M0404	0.97137257		1.00		97.1	%	90-110	03/10/2005	1905
CCB			-0.0002011							03/10/2005	1917
MB		3050.	-0.0001503							03/10/2005	2000
LCS		M352	0.48816757		0.500		97.6	%	73-127	03/10/2005	2004
CCV		M0404	0.97636668		1.00		97.6	%	90-110	03/10/2005	2009
CCB			-0.0003622							03/10/2005	2018
LCS		M409D	0.77393385		0.837		92.5	%	80-120	03/10/2005	2021
MS	229188-30	M352	0.60326285		0.500	0.12556711	95.5	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.61551939	0.60326285	0.500	0.12556711	98.0	%	75-125	03/10/2005	2039
							2.0	R	20		
CCV		M0404	0.98120267		1.00		98.1	%	90-110	03/10/2005	2102
CCB			-0.0009530							03/10/2005	2115
CCV		M0404	0.99598915		1.00		99.6	%	90-110	03/10/2005	2159
CCB			-0.0001808							03/10/2005	2207
CCV		M0404	1.00761004		1.00		100.8	%	90-110	03/10/2005	2251
CCB			-0.0007159							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104615 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.01656341		2.00		100.8	%	90-110	03/24/2005	1047
ICV		M0395	1.00854089		1.00		100.9	%	90-110	03/24/2005	1056
ICV		M0410	1.02454750		1.00		102.5	%	90-110	03/24/2005	1105
ICB			-0.0001207							03/24/2005	1119
ICV		M0393	0.51625746		0.500		103.3	%	90-110	03/24/2005	1135
CCV		M0404	0.99124850		1.00		99.1	%	90-110	03/24/2005	1140
CCB			-0.0000696							03/24/2005	1153
MB		3051.	-0.0005123							03/24/2005	1205
LCS		M352	0.50885902		0.500		101.8	%	80-120	03/24/2005	1209
MS	229442-2	M352	0.47499801		0.500	-0.0000140	95.0	%	75-125	03/24/2005	1221
MSD	229442-2	M352	0.50334603	0.47499801	0.500	-0.0000140	100.7	%	75-125	03/24/2005	1227
							5.8	R	20		
CCV		M0404	0.95632209		1.00		95.6	%	90-110	03/24/2005	1242
CCB			0.00009178							03/24/2005	1255
MB		3050	-0.0001183							03/24/2005	1258
MB		3050.	-0.0001193							03/24/2005	1302
LCS		M352	0.46144070		0.500		92.3	%	73-127	03/24/2005	1305
LCS		M409D	0.71537474		0.837		85.5	%	73-127	03/24/2005	1311
MS	229539-1	M352	0.42441400		0.500	0.01267711	82.3	%	75-125	03/24/2005	1327

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104615 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MSD	229539-1	M352	0.42009594	0.42441400	0.500	0.01267711	81.5	%	75-125	03/24/2005	1330
							1.0	R	20		
CCV		M0404	0.96201128		1.00		96.2	%	90-110	03/24/2005	1341
CCB			-0.0001598							03/24/2005	1353
CCV		M0404	0.96702497		1.00		96.7	%	90-110	03/24/2005	1434
CCB			-0.0000357							03/24/2005	1446
CCV		M0404	0.96385743		1.00		96.4	%	90-110	03/24/2005	1505
CCB			-0.0000647							03/24/2005	1514
MB		3050.	-0.0001948							03/24/2005	1618
LCS		M352	0.43728493		0.500		87.5	%	73-127	03/24/2005	1622
LCS		M409D	0.73120886		0.837		87.4	%	73-127	03/24/2005	1627
CCV		M0404	0.91359276		1.00		91.4	%	90-110	03/24/2005	1700
CCB			-0.0000987							03/24/2005	1713
CCV		M0404	0.90150372		1.00		90.2	%	90-110	03/24/2005	1753
CCB			-0.0000063							03/24/2005	1807

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CO
Parameter.....: Cobalt (Co)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00887967		2.00		100.4	%	90-110	03/10/2005	1200
ICV		M0395	1.01114757		1.00		101.1	%	90-110	03/10/2005	1209
ICV		M0410	1.08108798		1.00		108.1	%	90-110	03/10/2005	1218
ICB			-0.0005721							03/10/2005	1232
ICV		M0393	0.50855917		0.500		101.7	%	90-110	03/10/2005	1247
CCV		M0404	0.99103167		1.00		99.1	%	90-110	03/10/2005	1253
CCB			-0.0002891							03/10/2005	1302
CCV		M0404	0.97508000		1.00		97.5	%	90-110	03/10/2005	1356
CCB			-0.0001485							03/10/2005	1408
CCV		M0404	0.97577576		1.00		97.6	%	90-110	03/10/2005	1444
CCB			-0.0015343							03/10/2005	1456
CCV		M0404	0.95737932		1.00		95.7	%	90-110	03/10/2005	1600
CCB			-0.0008532							03/10/2005	1612
CCV		M0404	0.96226323		1.00		96.2	%	90-110	03/10/2005	1652
CCB			-0.0015242							03/10/2005	1704
MB		3050	-0.0005477							03/10/2005	1707
LCS		M352	0.46351714		0.500		92.7	%	72-128	03/10/2005	1714
LCS		M409D	0.91059892		1.00		91.1	%	72-128	03/10/2005	1720
CCB			-0.0007732							03/10/2005	1745
CCV		M0404	0.95562167		1.00		95.6	%	90-110	03/10/2005	1800
CCB			-0.0010922							03/10/2005	1808
CCV		M0404	0.96485157		1.00		96.5	%	90-110	03/10/2005	1905
CCB			-0.0010199							03/10/2005	1917
MB		3050.	-0.0009309							03/10/2005	2000
LCS		M352	0.48082584		0.500		96.2	%	72-128	03/10/2005	2004
CCV		M0404	0.96743524		1.00		96.7	%	90-110	03/10/2005	2009
CCB			-0.0015026							03/10/2005	2018
LCS		M409D	0.92245684		1.00		92.2	%	80-120	03/10/2005	2021
MS	229188-30	M352	0.48308906		0.500	0.01926635	92.8	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.47867527	0.48308906	0.500	0.01926635	91.9	%	75-125	03/10/2005	2039
							0.9	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CO
Parameter.....: Cobalt (Co)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	0.97233196		1.00		97.2	%	90-110	03/10/2005	2102
CCB			-0.0008689							03/10/2005	2115
CCV		M0404	0.98579786		1.00		98.6	%	90-110	03/10/2005	2159
CCB			-0.0019086							03/10/2005	2207
CCV		M0404	0.98000681		1.00		98.0	%	90-110	03/10/2005	2251
CCB			-0.0014621							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: CU
Parameter.....: Copper (Cu)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99059525		2.00		99.5	%	90-110	03/10/2005	1200
ICV		M0395	1.00674396		1.00		100.7	%	90-110	03/10/2005	1209
CV		M0410	1.02351660		1.00		102.4	%	90-110	03/10/2005	1218
CB			-0.0011417							03/10/2005	1232
ICV		M0393	0.51514184		0.500		103.0	%	90-110	03/10/2005	1247
CCV		M0404	0.99347024		1.00		99.3	%	90-110	03/10/2005	1253
CCB			-0.0000731							03/10/2005	1302
CCV		M0404	0.97318704		1.00		97.3	%	90-110	03/10/2005	1356
CCB			-0.0054089							03/10/2005	1408
CCV		M0404	0.97356840		1.00		97.4	%	90-110	03/10/2005	1444
CCB			-0.0050734							03/10/2005	1456
CCV		M0404	0.95323449		1.00		95.3	%	90-110	03/10/2005	1600
CCB			-0.0055231							03/10/2005	1612
CCV		M0404	0.96779239		1.00		96.8	%	90-110	03/10/2005	1652
CCB			-0.0013353							03/10/2005	1704
MB		3050	-0.0022421							03/10/2005	1707
LCS		M352	0.46593317		0.500		93.2	%	67-133	03/10/2005	1714
LCS		M409D	1.45488287		1.58		92.1	%	67-133	03/10/2005	1720
CCB			-0.0002575							03/10/2005	1745
CCV		M0404	0.96191432		1.00		96.2	%	90-110	03/10/2005	1800
CCB			-0.0040617							03/10/2005	1808
CCV		M0404	0.98061209		1.00		98.1	%	90-110	03/10/2005	1905
CCB			-0.0032081							03/10/2005	1917
MB		3050.	0.00080076							03/10/2005	2000
LCS		M352	0.49853430		0.500		99.7	%	67-133	03/10/2005	2004
CCV		M0404	0.98508764		1.00		98.5	%	90-110	03/10/2005	2009
CCB			-0.0012961							03/10/2005	2018
LCS		M409D	1.47842755		1.58		93.6	%	80-120	03/10/2005	2021
MS	229188-30	M352	0.49499029		0.500	0.01059932	96.9	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.49494704	0.49499029	0.500	0.01059932	96.9	%	75-125	03/10/2005	2039
							0.0	R	20		
CCV		M0404	0.99105327		1.00		99.1	%	90-110	03/10/2005	2102
CCB			0.00026156							03/10/2005	2115
CCV		M0404	1.01011049		1.00		101.0	%	90-110	03/10/2005	2159
CCB			0.00021680							03/10/2005	2207
CCV		M0404	1.00824983		1.00		100.8	%	90-110	03/10/2005	2251
CB			-0.0005966							03/10/2005	2259

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98993777		2.00		99.5	%	90-110	03/09/2005	0907
ICV		M0395	1.02356267		1.00		102.4	%	90-110	03/09/2005	0915
ICV		M0410	1.01689298		1.00		101.7	%	90-110	03/09/2005	0924
ICB			-0.0000178							03/09/2005	0938
ICB			0.00212140							03/09/2005	0951
ICV		M0393	0.50777120		0.500		101.6	%	90-110	03/09/2005	0954
CCV		M0404	0.98488712		1.00		98.5	%	90-110	03/09/2005	1000
CCB			0.00372664							03/09/2005	1006
MB		3010.	-0.0002556							03/09/2005	1122
LCS		M352	0.49779002		0.500		99.6	%	80-120	03/09/2005	1125
CCV		M0404	0.98662109		1.00		98.7	%	90-110	03/09/2005	1152
CCB			0.00313999							03/09/2005	1204
CCV		M0404	0.98351325		1.00		98.4	%	90-110	03/09/2005	1243
CCB			0.00505557							03/09/2005	1252
MS	229125-1	M352	0.46855739		0.500	-0.0069922	95.1	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.46051139	0.46855739	0.500	-0.0069922	93.5	%	75-125	03/09/2005	1318
							1.7	R	20		
.B		3010	0.00519626							03/09/2005	1327
LCS		M352	0.52783890		0.500		105.6	%	80-120	03/09/2005	1334
CCV		M0404	1.02125148		1.00		102.1	%	90-110	03/09/2005	1339
CCB			0.00682475							03/09/2005	1348
CCV		M0404	1.03765922		1.00		103.8	%	90-110	03/09/2005	1430
CCB			0.00587195							03/09/2005	1439
MS	229167-15	M352	0.50862967		0.500	0.00407692	100.9	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51983729	0.50862967	0.500	0.00407692	103.2	%	75-125	03/09/2005	1514
							2.2	R	20		
CCV		M0404	0.98065873		1.00		98.1	%	90-110	03/09/2005	1533
CCB			0.00554912							03/09/2005	1542
MB		3050	0.00149237							03/09/2005	1545
LCS		M352	0.52516179		0.500		105.0	%	71-129	03/09/2005	1552
LCS		M409D	0.56934506		0.623		91.4	%	71-129	03/09/2005	1557
MS	229080-1	M352	0.75348227		0.500	0.17987388	114.7	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.67788358	0.75348227	0.500	0.17987388	99.6	%	75-125	03/09/2005	1612
							10.6	R	20		
CCV		M0404	1.01651977		1.00		101.7	%	90-110	03/09/2005	1624
CCB			0.00368145							03/09/2005	1637
CCV		M0404	1.03042195		1.00		103.0	%	90-110	03/09/2005	1716
CCB			0.00577079							03/09/2005	1725
MB		3050	0.00337420							03/09/2005	1800
LCS		M352	0.53556060		0.500		107.1	%	71-129	03/09/2005	1807
CCV		M0404	1.02254201		1.00		102.3	%	90-110	03/09/2005	1812
CCB			0.00563745							03/09/2005	1825
LCS		M409D	0.63270936		0.623		101.6	%	71-129	03/09/2005	1829
PDS	229153-2	M352D	2.04842813		2.00	0.05933739	99.5	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.06172046	2.04842813	2.00	0.05933739	100.1	%	75-125	03/09/2005	1901
							0.6	R	20		
CCV		M0404	1.02722502		1.00		102.7	%	90-110	03/09/2005	1905
CCB			0.00430605							03/09/2005	1914
CCB			0.00432134							03/09/2005	1918
MB		3050.	0.00278163							03/09/2005	1925
CS		M352	0.51324153		0.500		102.6	%	71-129	03/09/2005	1928
CS		M409D	0.63523500		0.623		102.0	%	71-129	03/09/2005	1934
MS	229154-1	M352	0.62006528		0.500	0.09318133	105.4	%	75-125	03/09/2005	1949

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MSD	229154-1	M352	0.61809433	0.62006528	0.500	0.09318133	105.0	%	75-125	03/09/2005	1955
							0.3	R	20		
CCV		M0404	1.04747217		1.00		104.7	%	90-110	03/09/2005	2011
CCB			0.00278944							03/09/2005	2023
CCV		M0404	1.06621199		1.00		106.6	%	90-110	03/09/2005	2114
CCB			0.00191403							03/09/2005	2126
CCV		M0404	1.07104592		1.00		107.1	%	90-110	03/09/2005	2215
CCB			0.00087397							03/09/2005	2227
CCV		M0404	1.09137522		1.00		109.1	%	90-110	03/09/2005	2309
CCB			0.00231277							03/09/2005	2318
MB		3010	0.00231618							03/10/2005	0819
LCS		M352	0.44454734		0.500		88.9	%	80-120	03/10/2005	0826
CCV		M0404	0.95997892		1.00		96.0	%	90-110	03/10/2005	0831
CCB			-0.0000724							03/10/2005	0844
MS	229230-1	M352	2.18119662		0.500	1.46408651	143.4	%	75-125	03/10/2005	0912
MSD	229230-1	M352	2.18166021	2.18119662	0.500	1.46408651	143.5	%	75-125	03/10/2005	0917
							0.0	R	20		
CV		M0404	0.99706501		1.00		99.7	%	90-110	03/10/2005	0930
CCB			0.00309030							03/10/2005	0942
MS	229188-15	M352	0.51683600		0.500	0.00402243	102.6	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.49666764	0.51683600	0.500	0.00402243	98.5	%	75-125	03/10/2005	0950
							4.0	R	20		
CCV		M0404	0.99789106		1.00		99.8	%	90-110	03/10/2005	1024
CCB			0.00232240							03/10/2005	1037
CCV		M0404	1.04260146		1.00		104.3	%	90-110	03/10/2005	1113
CCB			0.00641382							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00037804		2.00		100.0	%	90-110	03/10/2005	1200
ICV		M0395	1.03090813		1.00		103.1	%	90-110	03/10/2005	1209
ICV		M0410	1.04546931		1.00		104.5	%	90-110	03/10/2005	1218
ICB			0.00073509							03/10/2005	1232
ICV		M0393	0.52336087		0.500		104.7	%	90-110	03/10/2005	1247
CCV		M0404	0.98123950		1.00		98.1	%	90-110	03/10/2005	1253
CCB			0.00556410							03/10/2005	1302
CCV		M0404	0.96269060		1.00		96.3	%	90-110	03/10/2005	1356
CCB			0.00096520							03/10/2005	1408
CCV		M0404	0.97197303		1.00		97.2	%	90-110	03/10/2005	1444
CCB			0.00540726							03/10/2005	1456
CCV		M0404	0.96274648		1.00		96.3	%	90-110	03/10/2005	1600
CCB			0.00715967							03/10/2005	1612
CCV		M0404	0.97926773		1.00		97.9	%	90-110	03/10/2005	1652
CCB			0.00364018							03/10/2005	1704
MB		3050	0.00606892							03/10/2005	1707
CS		M352	0.47521734		0.500		95.0	%	71-129	03/10/2005	1714
CS		M409D	0.58706373		0.623		94.2	%	71-129	03/10/2005	1720
CCB			0.00889638							03/10/2005	1745

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	0.96458848		1.00		96.5	%	90-110	03/10/2005	1800
CCB			0.00887298							03/10/2005	1808
CCV		M0404	0.98304215		1.00		98.3	%	90-110	03/10/2005	1905
CCB			0.00876600							03/10/2005	1917
MB		3050.	0.01185940							03/10/2005	2000
LCS		M352	0.50779906		0.500		101.6	%	71-129	03/10/2005	2004
CCV		M0404	0.98800026		1.00		98.8	%	90-110	03/10/2005	2009
CCB			0.00901696							03/10/2005	2018
LCS		M409D	0.60365660		0.623		96.9	%	80-120	03/10/2005	2021
MS	229188-30	M352	0.52326552		0.500	0.03975271	96.7	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.51742488	0.52326552	0.500	0.03975271	95.5	%	75-125	03/10/2005	2039
							1.1	R	20		
CCV		M0404	0.99047108		1.00		99.0	%	90-110	03/10/2005	2102
CCB			0.00669750							03/10/2005	2115
CCV		M0404	1.00816190		1.00		100.8	%	90-110	03/10/2005	2159
CCB			0.00736444							03/10/2005	2207
CV		M0404	1.03045007		1.00		103.0	%	90-110	03/10/2005	2251
CB			0.00592966							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104264 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0405	10.3180		10.0		103.2	%	90-110	03/15/2005	1322
ICV		M0395	1.0549		1.00		105.5	%	90-110	03/15/2005	1345
ICB			-0.0154							03/15/2005	1357
CCV		M0408	5.1110		5.00		102.2	%	90-110	03/15/2005	1407
CCB			-0.0041							03/15/2005	1410
MB		3010	-0.0065							03/15/2005	1412
LCS		M352	0.5227		0.500		104.5	%	80-120	03/15/2005	1419
PDS	229190-3	M352D	2.0311		2.00	-0.0086	102.0	%	75-125	03/15/2005	1511
PSD	229190-3	M352D	2.0872	2.0311	2.00	-0.0086	104.8	%	75-125	03/15/2005	1517
							2.7	R	20		
MB		3050	0.0044							03/15/2005	1524
LCS		M352	0.4886		0.500		97.7	%	71-129	03/15/2005	1530
LCS		M409D	0.6432		0.623		103.2	%	71-129	03/15/2005	1537
PDS	229188-1	M352D	2.4144		2.00	0.2721	107.1	%	75-125	03/15/2005	1554
PSD	229188-1	M352D	2.4076	2.4144	2.00	0.2721	106.8	%	75-125	03/15/2005	1556
							0.3	R	20		
MB		3010	-0.0066							03/15/2005	1651
LCS		M352	0.5117		0.500		102.3	%	80-120	03/15/2005	1654
CCV		M0408	5.1830		5.00		103.7	%	90-110	03/15/2005	1745
CCB			-0.0217							03/15/2005	1749

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104615 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.02808132		2.00		101.4	%	90-110	03/24/2005	1047
ICV		M0395	1.03722065		1.00		103.7	%	90-110	03/24/2005	1056
ICV		M0410	1.02867469		1.00		102.9	%	90-110	03/24/2005	1105
ICB			0.00245199							03/24/2005	1119
ICV		M0393	0.52571906		0.500		105.1	%	90-110	03/24/2005	1135
CCV		M0404	0.99016650		1.00		99.0	%	90-110	03/24/2005	1140
CCB			0.00243701							03/24/2005	1153
MB		3051.	0.00116417							03/24/2005	1205
LCS		M352	0.52326622		0.500		104.7	%	80-120	03/24/2005	1209
MS	229442-2	M352	0.49149922		0.500	0.00502409	97.3	%	75-125	03/24/2005	1221
MSD	229442-2	M352	0.52848408	0.49149922	0.500	0.00502409	104.7	%	75-125	03/24/2005	1227
							7.3	R	20		
CCV		M0404	0.96031433		1.00		96.0	%	90-110	03/24/2005	1242
CCB			-0.0009089							03/24/2005	1255
MB		3050	0.00047642							03/24/2005	1258
MB		3050.	-0.0011409							03/24/2005	1302
?S		M352	0.47776115		0.500		95.6	%	71-129	03/24/2005	1305
?S		M409D	0.52375567		0.623		84.1	%	71-129	03/24/2005	1311
MS	229539-1	M352	0.45797174		0.500	0.04360160	82.9	%	75-125	03/24/2005	1327
MSD	229539-1	M352	0.45752362	0.45797174	0.500	0.04360160	82.8	%	75-125	03/24/2005	1330
							0.1	R	20		
CCV		M0404	0.96328770		1.00		96.3	%	90-110	03/24/2005	1341
CCB			0.00115610							03/24/2005	1353
CCV		M0404	0.97502492		1.00		97.5	%	90-110	03/24/2005	1434
CCB			0.00001572							03/24/2005	1446
CCV		M0404	0.96160135		1.00		96.2	%	90-110	03/24/2005	1505
CCB			0.00100666							03/24/2005	1514
MB		3050.	0.00017878							03/24/2005	1618
LCS		M352	0.45052441		0.500		90.1	%	71-129	03/24/2005	1622
LCS		M409D	0.58513496		0.623		93.9	%	71-129	03/24/2005	1627
CCV		M0404	0.93109312		1.00		93.1	%	90-110	03/24/2005	1700
CCB			0.00215505							03/24/2005	1713
CCV		M0404	0.91883377		1.00		91.9	%	90-110	03/24/2005	1753
CCB			-0.0002545							03/24/2005	1807

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: MN
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99748494		2.00		99.9	%	90-110	03/10/2005	1200
ICV		M0395	1.00982217		1.00		101.0	%	90-110	03/10/2005	1209
ICV		M0410	1.00072902		1.00		100.1	%	90-110	03/10/2005	1218
ICB			-0.0004560							03/10/2005	1232
ICV		M0393	0.51169652		0.500		102.3	%	90-110	03/10/2005	1247
CCV		M0404	0.98895305		1.00		98.9	%	90-110	03/10/2005	1253
CCB			-0.0004929							03/10/2005	1302
CCV		M0404	0.97867854		1.00		97.9	%	90-110	03/10/2005	1356
?B			-0.0004812							03/10/2005	1408
?V		M0404	0.97965612		1.00		98.0	%	90-110	03/10/2005	1444
CCB			-0.0004116							03/10/2005	1456

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: MN
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	0.96790661		1.00		96.8	%	90-110	03/10/2005	1600
CCB			-0.0005644							03/10/2005	1612
CCV		M0404	0.96710334		1.00		96.7	%	90-110	03/10/2005	1652
CCB			-0.0004312							03/10/2005	1704
MB		3050	0.00019973							03/10/2005	1707
LCS		M352	0.49391246		0.500		98.8	%	75-125	03/10/2005	1714
LCS		M409D	5.92849272		6.74		88.0	%	75-125	03/10/2005	1720
CCB			0.00009003							03/10/2005	1745
CCV		M0404	0.95833006		1.00		95.8	%	90-110	03/10/2005	1800
CCB			-0.0002685							03/10/2005	1808
CCV		M0404	0.96473682		1.00		96.5	%	90-110	03/10/2005	1905
CCB			-0.0001038							03/10/2005	1917
MB		3050.	0.00298681							03/10/2005	2000
LCS		M352	0.50819644		0.500		101.6	%	75-125	03/10/2005	2004
CCV		M0404	0.96727408		1.00		96.7	%	90-110	03/10/2005	2009
CCB			0.00000850							03/10/2005	2018
CS		M409D	5.93967833		6.74		88.1	%	80-120	03/10/2005	2021
S	229188-30	M352	2.89657806		0.500	2.12031129	155.3	%	75-125	03/10/2005	2034
MSD	229188-30	M352	2.85604390	2.89657806	0.500	2.12031129	147.1	%	75-125	03/10/2005	2039
							1.4	R	20		
CCV		M0404	0.97072618		1.00		97.1	%	90-110	03/10/2005	2102
CCB			-0.0001495							03/10/2005	2115
CCV		M0404	0.98387257		1.00		98.4	%	90-110	03/10/2005	2159
CCB			0.00012099							03/10/2005	2207
CCV		M0404	0.97169960		1.00		97.2	%	90-110	03/10/2005	2251
CCB			0.00021214							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104615 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: MN
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00711047		2.00		100.4	%	90-110	03/24/2005	1047
ICV		M0395	0.99207840		1.00		99.2	%	90-110	03/24/2005	1056
ICV		M0410	1.00429520		1.00		100.4	%	90-110	03/24/2005	1105
ICB			0.00023317							03/24/2005	1119
ICV		M0393	0.51450112		0.500		102.9	%	90-110	03/24/2005	1135
CCV		M0404	0.99972078		1.00		100.0	%	90-110	03/24/2005	1140
CCB			-0.0000154							03/24/2005	1153
MB		3051.	0.00047179							03/24/2005	1205
LCS		M352	0.52147082		0.500		104.3	%	80-120	03/24/2005	1209
MS	229442-2	M352	0.48126450		0.500	0.00391301	95.5	%	75-125	03/24/2005	1221
MSD	229442-2	M352	0.50725505	0.48126450	0.500	0.00391301	100.7	%	75-125	03/24/2005	1227
							5.3	R	20		
CCV		M0404	0.97045948		1.00		97.0	%	90-110	03/24/2005	1242
CCB			-0.0003071							03/24/2005	1255
MB		3050	-0.0003497							03/24/2005	1258
MB		3050.	0.00049014							03/24/2005	1302
CS		M352	0.48657138		0.500		97.3	%	75-125	03/24/2005	1305
CS		M409D	5.48563430		6.74		81.4	%	75-125	03/24/2005	1311
MS	229539-1	M352	1.90797175		0.500	1.52694914	76.2	%	75-125	03/24/2005	1327

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104615 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: MN
Parameter.....: Manganese (Mn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MSD	229539-1	M352	2.15972838	1.90797175	0.500	1.52694914	126.6	%	75-125	03/24/2005	1330
							12.4	R	20		
CCV		M0404	0.97451878		1.00		97.5	%	90-110	03/24/2005	1341
CCB			0.00023089							03/24/2005	1353
CCV		M0404	0.97649920		1.00		97.6	%	90-110	03/24/2005	1434
CCB			0.00020163							03/24/2005	1446
CCV		M0404	0.97585460		1.00		97.6	%	90-110	03/24/2005	1505
CCB			0.00017725							03/24/2005	1514
MB		3050.	0.00190402							03/24/2005	1618
LCS		M352	0.46287281		0.500		92.6	%	75-125	03/24/2005	1622
LCS		M409D	6.71738034		6.74		99.7	%	75-125	03/24/2005	1627
CCV		M0404	0.92267273		1.00		92.3	%	90-110	03/24/2005	1700
CCB			0.00107855							03/24/2005	1713
CCV		M0404	0.90679318		1.00		90.7	%	90-110	03/24/2005	1753
CCB			0.00107746							03/24/2005	1807

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: NI
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99859008		2.00		99.9	%	90-110	03/10/2005	1200
ICV		M0395	1.01140116		1.00		101.1	%	90-110	03/10/2005	1209
ICV		M0410	1.02516302		1.00		102.5	%	90-110	03/10/2005	1218
ICB			-0.0000412							03/10/2005	1232
ICV		M0393	0.51173440		0.500		102.3	%	90-110	03/10/2005	1247
CCV		M0404	0.98645309		1.00		98.6	%	90-110	03/10/2005	1253
CCB			0.00028558							03/10/2005	1302
CCV		M0404	0.97056990		1.00		97.1	%	90-110	03/10/2005	1356
CCB			0.00006348							03/10/2005	1408
CCV		M0404	0.97479434		1.00		97.5	%	90-110	03/10/2005	1444
CCB			0.00000517							03/10/2005	1456
CCV		M0404	0.97105004		1.00		97.1	%	90-110	03/10/2005	1600
CCB			-0.0000767							03/10/2005	1612
CCV		M0404	0.98075954		1.00		98.1	%	90-110	03/10/2005	1652
CCB			-0.0003252							03/10/2005	1704
MB		3050	0.00145287							03/10/2005	1707
LCS		M352	0.57418867		0.500		114.8	%	72-128	03/10/2005	1714
LCS		M409D	1.68765611		1.83		92.2	%	72-128	03/10/2005	1720
CCB			-0.0005687							03/10/2005	1745
CCV		M0404	0.95874880		1.00		95.9	%	90-110	03/10/2005	1800
CCB			0.00006394							03/10/2005	1808
CCV		M0404	0.96846060		1.00		96.8	%	90-110	03/10/2005	1905
CCB			0.00013147							03/10/2005	1917
MB		3050.	0.00220195							03/10/2005	2000
LCS		M352	0.49384665		0.500		98.8	%	72-128	03/10/2005	2004
CCV		M0404	0.97452415		1.00		97.5	%	90-110	03/10/2005	2009
CCB			0.00049167							03/10/2005	2018
CS		M409D	1.71985390		1.83		94.0	%	80-120	03/10/2005	2021
S	229188-30	M352	0.97000695		0.500	0.03739659	186.5	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.51578006	0.97000695	0.500	0.03739659	95.7	%	75-125	03/10/2005	2039
							61.1	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: NI
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	0.97405015		1.00		97.4	%	90-110	03/10/2005	2102
CCB			-0.0002505							03/10/2005	2115
CCV		M0404	0.99387703		1.00		99.4	%	90-110	03/10/2005	2159
CCB			-0.0002589							03/10/2005	2207
CCV		M0404	1.00056148		1.00		100.1	%	90-110	03/10/2005	2251
CCB			-0.0006734							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: SE
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00456597		2.00		100.2	%	90-110	03/10/2005	1200
ICV		M0395	0.99244059		1.00		99.2	%	90-110	03/10/2005	1209
CV		M0410	1.02530993		1.00		102.5	%	90-110	03/10/2005	1218
CB			-0.0001632							03/10/2005	1232
ICV		M0393	0.49674035		0.500		99.3	%	90-110	03/10/2005	1247
CCV		M0404	0.95791080		1.00		95.8	%	90-110	03/10/2005	1253
CCB			0.00126624							03/10/2005	1302
CCV		M0404	0.94043981		1.00		94.0	%	90-110	03/10/2005	1356
CCB			0.00182350							03/10/2005	1408
CCV		M0404	0.92962080		1.00		93.0	%	90-110	03/10/2005	1444
CCB			0.00022537							03/10/2005	1456
CCV		M0404	0.92460884		1.00		92.5	%	90-110	03/10/2005	1600
CCB			0.00017779							03/10/2005	1612
CCV		M0404	0.94595689		1.00		94.6	%	90-110	03/10/2005	1652
CCB			0.00615607							03/10/2005	1704
MB		3050	0.00112290							03/10/2005	1707
LCS		M352	0.43807981		0.500		87.6	%	59-141	03/10/2005	1714
LCS		M409D	1.54073350		1.78		86.6	%	59-141	03/10/2005	1720
CCB			0.01216497							03/10/2005	1745
CCV		M0404	0.93969636		1.00		94.0	%	90-110	03/10/2005	1800
CCB			-0.0001790							03/10/2005	1808
CCV		M0404	0.93967176		1.00		94.0	%	90-110	03/10/2005	1905
CCB			0.00585628							03/10/2005	1917
MB		3050.	-0.0024068							03/10/2005	2000
LCS		M352	0.47494990		0.500		95.0	%	59-141	03/10/2005	2004
CCV		M0404	0.94576372		1.00		94.6	%	90-110	03/10/2005	2009
CCB			0.00476507							03/10/2005	2018
LCS		M409D	1.54275789		1.78		86.7	%	80-120	03/10/2005	2021
MS	229188-30	M352	0.44005844		0.500	-0.0177006	91.6	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.44321734	0.44005844	0.500	-0.0177006	92.2	%	75-125	03/10/2005	2039
							0.7	R	20		
CCV		M0404	0.97660182		1.00		97.7	%	90-110	03/10/2005	2102
CCB			0.00464013							03/10/2005	2115
CCV		M0404	1.00641212		1.00		100.6	%	90-110	03/10/2005	2159
CCB			0.00421715							03/10/2005	2207
CCV		M0404	1.00416005		1.00		100.4	%	90-110	03/10/2005	2251
CB			0.00093121							03/10/2005	2259

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	0.99587553		1.0		99.6	%	90-110	03/10/2005	1200
ICV		M0396	1.02717814		1.00		102.7	%	90-110	03/10/2005	1214
ICB			0.00091251							03/10/2005	1232
ICV		M0393	0.50841939		0.500		101.7	%	90-110	03/10/2005	1247
CCV		M0404	0.48438107		0.50		96.9	%	90-110	03/10/2005	1253
CCB			-0.0011688							03/10/2005	1302
CCV		M0404	0.47736043		0.50		95.5	%	90-110	03/10/2005	1356
CCB			-0.0035798							03/10/2005	1408
CCV		M0404	0.47341694		0.50		94.7	%	90-110	03/10/2005	1444
CCB			0.00210807							03/10/2005	1456
CCV		M0404	0.46442743		0.50		92.9	%	90-110	03/10/2005	1600
CCB			-0.0007362							03/10/2005	1612
CCV		M0404	0.46890875		0.50		93.8	%	90-110	03/10/2005	1652
CCB			0.00095292							03/10/2005	1704
MB		3050	0.00057194							03/10/2005	1707
LCS		M352	0.22630133		0.25		90.5	%	11-189	03/10/2005	1714
:S		M409D	0.99149802		1.01		98.2	%	11-189	03/10/2005	1720
.CB			0.00158211							03/10/2005	1745
CCV		M0404	0.46488404		0.50		93.0	%	90-110	03/10/2005	1800
CCB			-0.0007960							03/10/2005	1808
CCV		M0404	0.47559974		0.50		95.1	%	90-110	03/10/2005	1905
CCB			0.00157700							03/10/2005	1917
MB		3050.	-0.0003159							03/10/2005	2000
LCS		M352	0.23586842		0.25		94.3	%	11-189	03/10/2005	2004
CCV		M0404	0.48019249		0.50		96.0	%	90-110	03/10/2005	2009
CCB			-0.0005988							03/10/2005	2018
LCS		M409D	1.04986586		1.01		103.9	%	80-120	03/10/2005	2021
MS	229188-30	M352	0.23055228		0.25	0.00104828	91.8	%	75-125	03/10/2005	2034
MSD	229188-30	M352	0.22863335	0.23055228	0.25	0.00104828	91.0	%	75-125	03/10/2005	2039
							0.8	R	20		
CCV		M0404	0.48316001		0.50		96.6	%	90-110	03/10/2005	2102
CCB			0.00423485							03/10/2005	2115
CCV		M0404	0.48578458		0.50		97.2	%	90-110	03/10/2005	2159
CCB			-0.0006408							03/10/2005	2207
CCV		M0404	0.48771821		0.50		97.5	%	90-110	03/10/2005	2251
CCB			0.00353903							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: SN
Parameter.....: Tin (Sn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0371	1.99657208		2.00		99.8	%	90-110	03/10/2005	1203
ICV		M0403	1.01654112		1.00		101.7	%	90-110	03/10/2005	1223
ICB			0.00004721							03/10/2005	1232
CCV		M0404	1.99926393		2.00		100.0	%	90-110	03/10/2005	1253
CCB			0.00129673							03/10/2005	1302
CCV		M0404	1.98567861		2.00		99.3	%	90-110	03/10/2005	1356
CB			0.00366125							03/10/2005	1408
CV		M0404	2.02960832		2.00		101.5	%	90-110	03/10/2005	1444
CCB			-0.0022459							03/10/2005	1456

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: SN
Parameter.....: Tin (Sn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	2.01837365		2.00		100.9	%	90-110	03/10/2005	1600
CCB			-0.0032780							03/10/2005	1612
CCV		M0404	2.07898327		2.00		103.9	%	90-110	03/10/2005	1652
CCB			-0.0033293							03/10/2005	1704
MB		3050	-0.0009454							03/10/2005	1707
LCS		M352	1.41649079		1.00		141.6	%	11-189	03/10/2005	1714
LCS		M409D	1.63789797		1.09		150.3	%	11-189	03/10/2005	1720
CCB			0.00404080							03/10/2005	1745
CCV		M0404	2.01299579		2.00		100.6	%	90-110	03/10/2005	1800
CCB			0.00394230							03/10/2005	1808
CCV		M0404	2.03944423		2.00		102.0	%	90-110	03/10/2005	1905
CCB			-0.0028582							03/10/2005	1917
MB		3050.	0.55408267							03/10/2005	2000
LCS		M352	1.52160474		1.00		152.2	%	11-189	03/10/2005	2004
CCV		M0404	2.04523467		2.00		102.3	%	90-110	03/10/2005	2009
CCB			0.00416733							03/10/2005	2018
S	229188-30	M352	1.41169567		1.00	0.54499638	86.7	%	75-125	03/10/2005	2034
SD	229188-30	M352	1.40932751	1.41169567	1.00	0.54499638	86.4	%	75-125	03/10/2005	2039
							0.2	R	20		
CCV		M0404	2.02584797		2.00		101.3	%	90-110	03/10/2005	2102
CCB			0.00557147							03/10/2005	2115
CCV		M0404	2.06495501		2.00		103.2	%	90-110	03/10/2005	2159
CCB			0.00164431							03/10/2005	2207
CCV		M0404	2.10968110		2.00		105.5	%	90-110	03/10/2005	2251
CCB			0.00654935							03/10/2005	2259

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00472783		2.00		100.2	%	90-110	03/10/2005	1200
ICV		M0395	1.02103316		1.00		102.1	%	90-110	03/10/2005	1209
ICV		M0410	1.02654471		1.00		102.7	%	90-110	03/10/2005	1218
ICB			-0.0027595							03/10/2005	1232
ICV		M0393	0.50643963		0.500		101.3	%	90-110	03/10/2005	1247
CCV		M0404	0.97751374		1.00		97.8	%	90-110	03/10/2005	1253
CCB			-0.0029434							03/10/2005	1302
CCV		M0404	0.95768538		1.00		95.8	%	90-110	03/10/2005	1356
CCB			-0.0030439							03/10/2005	1408
CCV		M0404	0.96174331		1.00		96.2	%	90-110	03/10/2005	1444
CCB			-0.0019840							03/10/2005	1456
CCV		M0404	0.94424924		1.00		94.4	%	90-110	03/10/2005	1600
CCB			-0.0020121							03/10/2005	1612
CCV		M0404	0.95631074		1.00		95.6	%	90-110	03/10/2005	1652
CCB			-0.0023916							03/10/2005	1704
MB		3050	0.01014652							03/10/2005	1707
LCS		M352	0.46248060		0.500		92.5	%	69-131	03/10/2005	1714
CS		M409D	1.27428852		1.46		87.3	%	69-131	03/10/2005	1720
CB			0.01348934							03/10/2005	1745
CCV		M0404	0.95571221		1.00		95.6	%	90-110	03/10/2005	1800

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104077 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			0.00152457							03/10/2005	1808
CCV		M0404	0.97369006		1.00		97.4	%	90-110	03/10/2005	1905
CCB			0.01125474							03/10/2005	1917
MB		3050.	0.03545120							03/10/2005	2000
LCS		M352	0.51253156		0.500		102.5	%	69-131	03/10/2005	2004
CCV		M0404	0.97753879		1.00		97.8	%	90-110	03/10/2005	2009
CCB			0.00776243							03/10/2005	2018
LCS		M409D	1.32160416		1.46		90.5	%	80-120	03/10/2005	2021
CCV		M0404	0.97860003		1.00		97.9	%	90-110	03/10/2005	2102
CCB			0.00388105							03/10/2005	2115
CCV		M0404	0.99159105		1.00		99.2	%	90-110	03/10/2005	2159
CCB			0.00177129							03/10/2005	2207
CCV		M0404	1.00542275		1.00		100.5	%	90-110	03/10/2005	2251
CCB			0.00167558							03/10/2005	2259

est Method.....: SW-846 6010B Batch.....: 104737 Analyst...: jem
ethod Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0405	9.9727		10.0		99.7	%	90-110	03/28/2005	1552
ICV		M0395	1.0660		1.00		106.6	%	90-110	03/28/2005	1559
ICB			-0.0015							03/28/2005	1617
CCV		M0408	5.0972		5.00		101.9	%	90-110	03/28/2005	1649
CCB			0.0023							03/28/2005	1657
MB		200.7	0.0035							03/28/2005	1659
LCS		M352	0.5508		0.500		110.2	%	80-120	03/28/2005	1702
PDS	229449-1	M352D	2.1474		2.00	0.0107	106.8	%	75-125	03/28/2005	1712
PSD	229449-1	M352D	2.2488	2.1474	2.00	0.0107	111.9	%	75-125	03/28/2005	1715
							4.6	R	20		
MB		3050	0.0083							03/28/2005	1719
LCS		M352	0.4960		0.500		99.2	%	69-131	03/28/2005	1722
LCS		M0409D	1.4422		1.46		98.8	%	69-131	03/28/2005	1725
PDS	229188-8	M352D	8.6488		2.00	6.6886	98.0	%	75-125	03/28/2005	1741
PSD	229188-8	M352D	8.7048	8.6488	2.00	6.6886	100.8	%	75-125	03/28/2005	1743
							0.6	R	20		
CCV		M0408	5.1639		5.00		103.3	%	90-110	03/28/2005	1813
CCB			0.0060							03/28/2005	1816
CCV		M0408	5.1663		5.00		103.3	%	90-110	03/28/2005	1826
CCB			0.0047							03/28/2005	1828

Test Method.....: SW-846 6010B Batch.....: 104802 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
?		M0405	9.9424		10.0		99.4	%	90-110	03/29/2005	1428
.V		M0395	0.9892		1.00		98.9	%	90-110	03/29/2005	1437
ICV		M0410	1.0099		1.00		101.0	%	90-110	03/29/2005	1456

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229188 Report Date.: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104802 Analyst...: jem
Method Description.: Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICB			0.0000							03/29/2005	1504
CCV		M0408	4.7757		5.00		95.5	%	90-110	03/29/2005	1519
CCB			0.0011							03/29/2005	1526
MB		3050	0.0011							03/29/2005	1541
LCS		M352	0.5418		0.500		108.4	%	80-120	03/29/2005	1547
MB		3050	0.0115							03/29/2005	1553
LCS		M352	0.5372		0.500		107.4	%	69-131	03/29/2005	1604
LCS		M409D	1.4444		1.46		98.9	%	69-131	03/29/2005	1608
PDS	229570-7	M352D	2.3248		2.00	0.0080	115.8	%	75-125	03/29/2005	1702
PSD	229570-7	M352D	2.2972	2.3248	2.00	0.0080	114.5	%	75-125	03/29/2005	1714
							1.2	R	20		
CCV		M0408	5.3100		5.00		106.2	%	90-110	03/29/2005	1716
CCB			-0.0011							03/29/2005	1723

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229188-1 Client ID: B-96A 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1726	

Lab ID: 229188-2 Client ID: B-97A 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104264		03/15/2005 1543	10

Lab ID: 229188-3 Client ID: B-98A 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1754	

Lab ID: 229188-4 Client ID: B-99A 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1816	

Lab ID: 229188-5 Client ID: B-101A 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1821	

Lab ID: 229188-6 Client ID: B-104A 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1825	

Lab ID: 229188-7 Client ID: B-246 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1828	

Lab ID: 229188-8 Client ID: B-246 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1633	

Lab ID: 229188-9 Client ID: B-238 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1833	

Lab ID: 229188-10 Client ID: B-238 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1651	

Lab ID: 229188-11 Client ID: B-239 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1838	

Lab ID: 229188-12 Client ID: B-239 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229188-12 Client ID: B-239 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1655	

Lab ID: 229188-13 Client ID: B-240 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1843	

Lab ID: 229188-14 Client ID: B-240 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1716	

Lab ID: 229188-15 Client ID: FIELD BLANK Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3010A	Acid Digestion, Total Metals	1	103995		03/09/2005 1130	
SW-846 6010B	Metals Analysis (ICAP)	1	104038		03/10/2005 0923	

Lab ID: 229188-16 Client ID: B-241 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1848	

ab ID: 229188-17 Client ID: B-241 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1720	

Lab ID: 229188-18 Client ID: B-242 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1854	

Lab ID: 229188-19 Client ID: B-242 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1724	

Lab ID: 229188-20 Client ID: B-243 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1900	

Lab ID: 229188-22 Client ID: B-244 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1920	

Lab ID: 229188-23 Client ID: B-244 1-1.5 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1728	

Lab ID: 229188-24 Client ID: B-245 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	

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LABORATORY CHRONICLE

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229188-24 Client ID: B-245 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1926	

Lab ID: 229188-25 Client ID: B-247 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1931	

Lab ID: 229188-26 Client ID: B-236 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1937	

Lab ID: 229188-27 Client ID: B-236 6-12 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1940	

Lab ID: 229188-28 Client ID: B-237 0-6 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1946	

.ab ID: 229188-29 Client ID: B-237 6-12 in. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 1951	

Lab ID: 229188-30 Client ID: SED 1A 2 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 7471A	Mercury (CVAA)	1	103916		03/07/2005 1650	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 2027	

Lab ID: 229188-31 Client ID: SED 1A 3 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1731	
SW-846 6010B	Metals Analysis (ICAP)	1	104737		03/28/2005 1728	

Lab ID: 229188-32 Client ID: SED 2A 2 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 7471A	Mercury (CVAA)	1	103916		03/07/2005 1701	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 2045	

Lab ID: 229188-33 Client ID: SED 2A 3 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1735	
SW-846 6010B	Metals Analysis (ICAP)	1	104802		03/29/2005 1550	10

Lab ID: 229188-34 Client ID: SED 10A 2 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 7471A	Mercury (CVAA)	1	103916		03/07/2005 1704	

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 229188 Date: 03/31/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229188-34 Client ID: SED 10A 2 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 2048	

Lab ID: 229188-35 Client ID: SED 10A 3 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1739	

Lab ID: 229188-36 Client ID: SED 11A 2 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104016		03/10/2005 0800	
SW-846 7471A	Mercury (CVAA)	1	103916		03/07/2005 1708	
SW-846 6010B	Metals Analysis (ICAP)	1	104077		03/10/2005 2052	

Lab ID: 229188-37 Client ID: SED 11A 3 ft. Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
SW-846 3050B	Acid Digestion, Solids and Sludges	1	104559		03/24/2005 0940	
SW-846 6010B	Metals Analysis (ICAP)	1	104615		03/24/2005 1742	

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 03/31/2005

(1) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
(2) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III
(3) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
(4) Methods of Organic Chemical Analysis of Municipal and Industrial Wastewater, Federal Register, Vol. 49, No. 209, October 1984 and 40 CFR Part 136 amendments
(5) EPA 600/2-78-054, Field and Laboratory Methods Applicable to Overburdens and Minesoils
(6) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965
(7) ASTM, Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991
(8) American Society for Testing and Materials, Petroleum Products, Lubricants, and Fossil Fuels, Section 5, Volumes 05.01 - 05.05
(9) Hach Handbook of Water Analysis, 1979

Comments:

The test results in this report meet all NELAP requirements for parameters for which accreditation is held. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

According to 40CFR Part 136.3, pH, total residual chlorine, dissolved oxygen, sulfite, and temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH, Client Provided), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Data in the QC report may differ from final results due to digestion and/or dilution of sample into analytical ranges. The "Time Analyzed" may not be the actual time of analysis. The "Date Analyzed" is the actual date of analysis. Sludge samples are reported on a wet weight basis (i.e., not corrected for percent moisture) unless otherwise indicated.

Quality Control acceptance criteria are based either on limits specified in the referenced method or on actual laboratory performance.

All data is reported on sample "as received" unless noted.

Sample IDs with a "-00" at the end indicate a blank spike or blank spike duplicate associated with the numbered sample.

SAMPLE RESULT IDENTIFICATION

ND	= Not detected at a value greater than the reporting limit
TNTC	= Too numerous to count

BLANK QC SAMPLE IDENTIFICATION

MB	Method Blank
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS	Method (Matrix) Spike
MSD	Method (Matrix) Spike Duplicate
PDS	Post Digestion/Distillation Spike
SB	Spiked Blank
SBD	Spiked Blank Duplicate

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 03/31/2005

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interference Check Sample
DSC	Distilled Standard Check

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
DD	Digestion Duplicate
PDD	Post Digestion Duplicate
PSD	Post Digestion/Distillation Spike Duplicate

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "technician" using the following codes:

SUBCONTRACT LABORATORIES

Severn Trent Laboratories:

Los Angeles, CA	*la	Houston, TX	*he
Aurora, CO	*au	North Canton, OH	*nc
Tampa, FL	*ta	Valparaiso, IN	*vp
Sacramento, CA	*sa	Chicago, IL	*ch
Pensacola, FL	*pe	Tallahassee, FL	*tl

Other:

Client provided data	*cp	Non-STL Subcontract Lab	*xx

EXPLANATION OF DATA FLAGS

B - This flag is used to indicate that an analyte is present in the method blank as well as in the sample. It indicates that the client should consider this when evaluating the results.
D - This flag indicates that surrogates were diluted out of calibration range and cannot be quantified.
E - Indicates that a sample result is an estimate because the concentration exceeded the calibration range of the instrument.
I - Used to indicate matrix interference.
X - Indicates that a surrogate recovery is outside the specified quality control limits.
Y - Used to identify a spike or spike duplicate recovery is outside the specified quality control limits.
* - Indicates a relative percent difference for a duplicate analysis is outside the specified quality control limits.
^ - Used to indicate that a standard is outside specified quality control limits.

EXPLANATION OF DATA QUALIFIERS

B - Indicates that a value for an inorganic analysis is an estimate. It is used when a compound is determined to be present but at a concentration less than the quantitation limit of the method.
J - Indicates that a value for an organic analysis is an estimate. It is used when a compound is determined to be present based on chromatographic pattern or mass spectral data, but at a concentration less than the quantitation limit of the method. This flag is also used when estimating the concentration of a tentatively identified compound.
U - Indicates that a value is less than the MDL or was not detected.

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ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name Encycle RCRA Corrective Action

Project Location Encycle, Corpus Christi, TX

Laboratory STL

Project Manager Ken Brandner

Sampler(s)/Affiliation Chris Schieffler, Ken Brandner ARCADIS

0.9°C
0.7°C

229188

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	Total (As, Total Pb (802 glass)	Hold (802 glass)	Total (As, Pb (1pt poly w/ HNO3)	Total Pb (802 glass)			Remarks	Total
B-96a, 1-1.5'	S	3/1/05 8:00		1						As, Pb	1
B-97a, 1-1.5'		8:10		1						As, Pb	1
B-98a, 1-1.5'		8:20		1						As, Pb	1
B-99a, 1-1.5'		8:30		1						As, Pb	1
B-101a, 1-1.5'		8:50		1						As, Pb	1
B-104a, 1-1.5'		9:10		1						As, Pb	1
B-246, 0-6"		9:20		1						As, Pb	1
B-246, 1-1.5'		9:25			1					~~As, Pb~~ Hold	1
B-238, 0-6"		9:35		1						As, Pb	1
B-238, 1-1.5'		9:40			1					Hold	1
B-239, 0-6"		9:50		1						As, Pb	1
B-239, 1-1.5'		9:55			1					Hold	1
B-240, 0-6"		10:10				1				Pb	1
B-240, 1-1.5'		10:15			1					Hold	1
Field Blank	L	10:20				1				As, Pb	1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 15

Relinquished by: Kenneth J Brandner	Organization: ARCADIS	Date 3/2/05	Time 07:55	Seal Intact?	
Received by: Veronica Mcdonald	Organization: STL	Date 3/2/05	Time 07:55	Yes No (N/A)	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks: Normal turnaround. Results to Ken Brandner & Rich Marcus of Encycle.
Invoice to Rich Marcus for Encycle RCRA Corrective Action.

Delivery Method: ☒ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

No. 30273

SEVERN TRENT **STL**

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	Encycle / ARCADIS	PROJECT NAME/NUMBER:	Encycle RCRA Corrective Action
SEND REPORT TO:	Rich Marcus / Ken Brandes	BILLING INFORMATION	
ADDRESS:		BILL TO:	Rich Marcus
	711 N. Carancahua	ADDRESS:	Encycle
	Corpus Christi, TX		
PHONE:	361-883-1353	PHONE:	(Invoice to Rich Marcus
FAX:	361-883-7565	FAX:	PO NO: for RCRA Corrective Action)

0.9°C
0.7°C

LAB JOB NO. 229188

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	ANALYSIS/METHOD REQUEST: Pb, As	<Hold>	Pb	REMARKS/PRECAUTIONS
B-241,0-6"	B-241,0-6"	3-1-05	10:30	S	8oz glass	—	1	X			Pb, As
B-241,1-1.5'	B-241, 1-1.5'		10:35			—	1		X		<Hold>
B-242,0-6"	B-242, 0-6"		10:45			—	1	X			Pb, As
B-242,1-1.5'	B-242, 1-1.5' (B-242)		10:50			—	1		X		<Hold>
B-243,0-6"	B-243, 0-6"		11:05			—	1			X	Pb
B-243,1-1.5'	B-243, 1-1.5'		11:10			—	1		X		<Hold>
B-244,0-6"	B-244, 0-6"		11:25			—	1			X	Pb
B-244,1-1.5'	B-244, 1-1.5'		11:30			—	1				<Hold>
B-245,0-6"	B-245, 0-6"		12:00			—	1			X	Pb
B-247,0-6"	B-247, 0-6"		12:20			—	1	X			Pb, As

SAMPLER: Chris Schaffer, Ken Brandes / ARCADIS

SHIPMENT METHOD: In Person

AIRBILL NO.: NA

REQUIRED TURNAROUND* ☐ SAME DAY ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☒ ROUTINE ☐ OTHER

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Kenneth Brandes	3/2/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Ken Brandes / ARCADIS	TIME 07:55	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: Olga Veronica McDonald	3/2/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: STL	TIME 09:15	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

*RUSH TURNAROUND MAY REQUIRE SURCHARGE

STL8222-560 (12/02)

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Corpus Christi, TX 78408
Phone: (361) 289-2673 / Fax: (361) 289-2471

SEVERN TRENT **STL**

No. 30276

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: Encycle / ARCADIS	PROJECT NAME/NUMBER: Encycle RCRA Corrective Action
SEND REPORT TO: Rich Marcus / Ken Brandon	**BILLING INFORMATION**
ADDRESS: 711 N. Carancahua Corpus Christi, TX	BILL TO: Rich Marcus
	ADDRESS: Encycle
PHONE: 361-883-1353	PHONE: (Invoice to Rich Marcus
FAX: 361-883-7565	FAX: for RCRA Corrective Action) PO NO.:

LAB JOB NO.: 229188

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	ANALYSIS/METHOD REQUEST: Total As	Total Sb, As, Cd, Cu, Pb, Mn, Hg, Se, Ag, Sn, Zn	<HOLD>	Total As, Cd, Cu, Pb, Mn, Hg, Se, Sn, Zn	REMARKS/PRECAUTIONS
B-236, 0-6"	B-236, 0-6"	3-1-05	2:50	S	~~8oz glass~~	~~HNO3~~	1	X				As
B-236, 6-12"	B-236, 6-12"		2:55		8oz glass	None (Ice)	1	X				As
B-237, 0-6"	B-237, 0-6"		3:05				1	X				As
B-237, 6-12"	B-237, 6-12"		3:10				1	X				As
SED-1a, 2'	Sed-1a, 2'		3:30	SED			1		X			Sb, As, Cd, Cu, Pb, Mn, Hg, Se, Ag, Sn, Zn
SED-1a, 3'	Sed-1a, 3'		3:40				1			X		<Hold>
SED-2a, 2'	Sed-2a, 2'		3:50				1					As, Cd, Cu, Pb, Mn, Hg, Se, Sn, Zn
SED-2a, 3'	Sed-2a, 3'		4:00				1			X		<Hold>

SAMPLER: Ken Brandon, Chris Scheffler / ARCADIS

SHIPMENT METHOD: In Person

AIRBILL NO.: —

REQUIRED TURNAROUND* ☐ SAME DAY ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☒ ROUTINE ☐ OTHER

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	3-2-05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Ken Brandon ARCADIS	TIME 7:55	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE:	3/2/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY:	TIME 8:17	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

*RUSH TURNAROUND MAY REQUIRE SURCHARGE

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Corpus Christi, TX 78408
Phone: (361) 289-2673 / Fax: (361) 289-2471

SEVERN TRENT **STL**

No. 30272

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: Encycle / ARCADIS	PROJECT NAME/NUMBER: Encycle RCRA Corrective Action
SEND REPORT TO: Rich Marcus / Ken Brandner	**BILLING INFORMATION**
ADDRESS: 711 N. Carancahua Corpus Christi, TX	BILL TO: Rich Marcus
	ADDRESS: Encycle
PHONE: 361-883-1353	PHONE: (Invoice to Rich Marcus
FAX: 361-883-7565	FAX: for RCRA Corrective Action) PO NO:

0.9°C
0.7°C

LAB JOB NO. 229188

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	ANALYSIS/METHOD REQUEST: Sb, As, Cd, Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Sn, Zn	< Hold >	Sb, As, Cd, Cu, Pb, Mn, Hg, Se, Ag, Sn, Zn	REMARKS/PRECAUTIONS
SED-10a,2'	SED-10a, 2'	3-1-05	4:20	Sediment	8oz glass	Ice	1	X			Sb, As, Cd, Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Sn, Zn
SED-10a,3'	SED-10a, 3'	↓	4:30	↓	↓	↓	1		X		< HOLD >
SED-11a,2'	SED-11a, 2'		4:50				1			X	Sb, As, Cd, Cu, Pb, Mn, Hg, Se, Ag, Sn, Zn
SED-11a,3'	SED-11a, 3'		5:00				1		X		< HOLD >

SAMPLER: Ken Brandner / ARCADIS

SHIPMENT METHOD: In Person

AIRBILL NO.: NA

REQUIRED TURNAROUND* ☐ SAME DAY ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☒ ROUTINE ☐ OTHER _____

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Ken Brandner	3/2/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Ken Brandner / ARCADIS	TIME 7:50	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: Veronica McDonald	3/2/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY:	TIME 9:15	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

*RUSH TURNAROUND MAY REQUIRE SURCHARGE

STL8222-560 (12/02)

SEVERN TRENT LABORATORIES, INC.
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Phone: (361) 289-2673 / Fax: (361) 289-2471

APPENDIX C

Appendix C

Analytical Laboratory Reports – Composite Soil Sample TCLP Analyses

SEVERN TRENT STL

ANALYTICAL REPORT

JOB NUMBER: 229168

Prepared For:

ARCADIS / G&M
711 North Carancahua, Suite 1700
Corpus Christi, TX 78475-1801

Attention: Ken Brandner

Date: 04/08/2005

REVISED REPORT

RECEIVED
APR 12 2005
BY:

Signature

Name: Chip Meador

Title: Laboratory Director

E-Mail: cmeador@stl-inc.com

4/8/05
Date

Severn Trent Laboratories
1733 N. Padre Island Drive
Corpus Christi, TX 78408

PHONE: 361/289-2673
FAX..: 361/289-2471

TOTAL # OF PAGES 19

SEVERN TRENT STL

CASE NARRATIVE

Job Number 229168

April 08, 2005

Cyanide Analysis

Samples 229168-1 and 2 were extracted and analyzed for cyanide using EPA Method 9010B/9013/9012. These samples were collected on 02/28/05 and received at the laboratory on the same day. The samples were extracted on 03/04/05 within the method specified holding time. However, due to instrument problems, the samples were not analyzed until 03/17/05 out of the method specified holding time. The associated LCS and other quality control analyses were within acceptable limits. Results from these samples should be flagged and used at the client's discretion.

Please call if you have any questions regarding this report or if we can be of further assistance.

Anh Tran
QA Manager

SEVERN TRENT STL

SAMPLE INFORMATION Date: 04/08/2005	
Job Number.: 229168	Project Number.....: 98000084
Customer...: Encycle Texas, Inc.	Customer Project ID....: ENCYCLE RCRA CORRECTIVE
Attn.....: Richard Marcus	Project Description....: Project - OVM

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229168-1	BONEYARD COMPOSITE	Soil	02/28/2005	09:30	02/28/2005	16:50
229168-2	WASTE PILE COMPOSITE	Soil	02/28/2005	14:40	02/28/2005	16:50

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229168 Date: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: BONEYARD COMPOSITE
Date Sampled.....: 02/28/2005
Time Sampled.....: 09:30
Sample Matrix.....: Soil

Laboratory Sample ID: 229168-1
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 9010B/9012	Cyanide, Total, Solid	<1.0	1.0	mg/Kg	03/17/05	ac
EPA 9013	Cyanide Extraction for Solids & Oils	Complete			03/04/05	ac
SW-846 3010A	Acid Digestion, Total Metals, TCLP	Complete			03/07/05	hmz
SW-846 7470A	TCLP Mercury by CVAA					
	Mercury (Hg)	<0.002	0.002	mg/L	03/03/05	hmz
SW-846 6010B	TCLP Metals Analysis (ICAP)					
	Antimony (Sb), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Arsenic (As), TCLP	0.21	0.05	mg/L	03/08/05	jem
	Barium (Ba), TCLP	0.13	0.05	mg/L	03/08/05	jem
	Cadmium (Cd), TCLP	3.76	0.05	mg/L	03/08/05	jem
	Chromium (Cr), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Lead (Pb), TCLP	1.17	0.05	mg/L	03/08/05	jem
	Selenium (Se), TCLP	0.06	0.05	mg/L	03/08/05	jem
	Silver (Ag), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Nickel (Ni), TCLP	0.06	0.05	mg/L	03/08/05	jem
	Thallium (Tl), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Zinc (Zn), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Vanadium (V), TCLP	<0.05	0.05	mg/L	03/08/05	jem
SW-846 1311	TCLP Physical Characterization					
	% Solids	100	0.5	%	03/02/05	tjo
	% Liquid	<0.5	0.5	%	03/02/05	tjo
	% Aqueous - Extract	100	0.5	%	03/02/05	tjo
	% Non-aqueous - Extract	<0.5	0.5	%	03/02/05	tjo
SW-846 1311	Toxic Characteristic Leaching Procedure					
	Glass Jar Extraction	Complete			03/02/05	tjo
	Metals Analysis	Complete			03/02/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229168 Date: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: WASTE PILE COMPOSITE
Date Sampled.....: 02/28/2005
Time Sampled.....: 14:40
Sample Matrix.....: Soil

Laboratory Sample ID: 229168-2
Date Received.....: 02/28/2005
Time Received.....: 16:50

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 9010B/9012	Cyanide, Total, Solid	<1.0	1.0	mg/Kg	03/17/05	ac
EPA 9013	Cyanide Extraction for Solids & Oils	Complete			03/04/05	ac
SW-846 3010A	Acid Digestion, Total Metals, TCLP	Complete			03/07/05	hmz
SW-846 7470A	TCLP Mercury by CVAA					
	Mercury (Hg)	<0.002	0.002	mg/L	03/03/05	hmz
SW-846 6010B	TCLP Metals Analysis (ICAP)					
	Antimony (Sb), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Arsenic (As), TCLP	0.27	0.05	mg/L	03/08/05	jem
	Barium (Ba), TCLP	0.20	0.05	mg/L	03/08/05	jem
	Cadmium (Cd), TCLP	25.1	0.05	mg/L	03/08/05	jem
	Chromium (Cr), TCLP	0.1	0.05	mg/L	03/08/05	jem
	Lead (Pb), TCLP	2.79	0.05	mg/L	03/08/05	jem
	Selenium (Se), TCLP	0.15	0.05	mg/L	03/08/05	jem
	Silver (Ag), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Nickel (Ni), TCLP	0.27	0.05	mg/L	03/08/05	jem
	Thallium (Tl), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Zinc (Zn), TCLP	<0.05	0.05	mg/L	03/08/05	jem
	Vanadium (V), TCLP	<0.05	0.05	mg/L	03/08/05	jem
SW-846 1311	TCLP Physical Characterization					
	% Solids	100	0.5	%	03/02/05	tjo
	% Liquid	<0.5	0.5	%	03/02/05	tjo
	% Aqueous - Extract	100	0.5	%	03/02/05	tjo
	% Non-aqueous - Extract	<0.5	0.5	%	03/02/05	tjo
SW-846 1311	Toxic Characteristic Leaching Procedure					
	Glass Jar Extraction	Complete			03/02/05	tjo
	Metals Analysis	Complete			03/02/05	tjo

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 7470A Batch.....: 103811 Analyst...: hmz
Method Description.: TCLP Mercury by CVAA Units.....: mg/L Test Code.: HG
Parameter.....: Mercury (Hg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		M50303HG	0.00522		0.00500		104.4	%	90-110	03/03/2005	1540
ICB			-0.000126							03/03/2005	1543
LCS		M50303LG	0.00520		0.0050		104.0	%	83-114	03/03/2005	1545
MB			-0.000200							03/03/2005	1548
CCV		M50303HG	0.00486		0.00500		97.2	%	90-110	03/03/2005	1623
CCB			-0.000068							03/03/2005	1626
CCV		M50303HG	0.00494		0.00500		98.8	%	90-110	03/03/2005	1634
CCB			0.000013							03/03/2005	1637
LCS		M50303LG	0.00523		0.0050		104.6	%	83-114	03/03/2005	1639
MB			-0.000093							03/03/2005	1642
MB			-0.000175							03/03/2005	1645
MS	229122-1	M50303HG	0.00505		0.00500	-0.000060	102.2	%	75-125	03/03/2005	1650
MSD	229122-1	M50303HG	0.00503	0.00505	0.00500	-0.000060	101.8	%	75-125	03/03/2005	1653
							0.4	R	20		
MB			-0.000190							03/03/2005	1656
MS	229127-1	M50303HG	0.00508		0.00500	-0.000157	104.7	%	75-125	03/03/2005	1701
SD	229127-1	M50303HG	0.00492	0.00508	0.00500	-0.000157	101.5	%	75-125	03/03/2005	1704
							3.2	R	20		
CCV		M50303HG	0.00476		0.00500		95.2	%	90-110	03/03/2005	1723
CCB			-0.000087							03/03/2005	1725
CCV		M50303HG	0.00499		0.00500		99.8	%	90-110	03/03/2005	1752
CCB			-0.000098							03/03/2005	1755

Test Method.....: EPA 9010B/9012A Batch.....: 104338 Analyst...: ac
Method Description.: Cyanide (Colorimetric, Automated) Units.....: mg/L Test Code.: CNT
Parameter.....: Cyanide, Total

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICB		031805	0.0130							03/17/2005	1500
ICV		CN050317A	0.4103		0.40112		102.3	%	90-110	03/17/2005	1506
CCV		CN050317B	0.6016		0.578		104.1	%	80-120	03/17/2005	1508
MB		031705	0.0173							03/17/2005	1511
LCS		CN050317C	0.0510		0.050140		101.8	%	77-121	03/17/2005	1517
LCS		CN050317D	0.0810		0.100		81.0	%	77-121	03/17/2005	1519
LCS		CN050317E	0.1309		0.200		65.5	%	77-121	03/17/2005	1522
MS	229310-1	CN050317H	0.0646		0.050140	0.0203	88.4	%	75-125	03/17/2005	1533
MSD	229310-1	CN050317H	0.0616	0.0646	0.050140	0.0203	82.4	%	75-125	03/17/2005	1536
							4.8	R	20		
CCB		031705	0.0140							03/17/2005	1539
CCB		031705	0.0138							03/17/2005	1541
CCV		CN050317B	0.6033		0.578		104.4	%	80-120	03/17/2005	1544
CCB		031705	0.0139							03/17/2005	1547
CCB		031705	0.0140							03/17/2005	1550
CCV		CN050317B	0.5958		0.578		103.1	%	80-120	03/17/2005	1552
MB			0.0175							03/17/2005	1555
MB			0.0173							03/17/2005	1558
LCS		CN050317F	0.1512		0.15		100.8	%	77-121	03/17/2005	1601
LCD		CN050317F	0.1550		0.15		103.3	%	77-121	03/17/2005	1604
MS	229190-1	CN050317G	0.0695		0.050140	0.0544	30.1	%	75-125	03/17/2005	1628
MD	229190-1	CN050317G	0.0699	0.0695	0.050140	0.0544	30.9	%	75-125	03/17/2005	1631
							0.6	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: EPA 9010B/9012A Batch.....: 104338 Analyst...: ac
Method Description.: Cyanide (Colorimetric, Automated) Units.....: mg/L Test Code.: CNT
Parameter.....: Cyanide, Total

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			0.01							03/17/2005	1639
CCB			0.01							03/17/2005	1642
CCV		CN050317B	0.6090		0.578		105.4	%	80-120	03/17/2005	1645

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: SB
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0371	0.99007163		1.00		99.0	%	90-110	03/08/2005	1744
ICV		M0395	1.01443037		1.00		101.4	%	90-110	03/08/2005	1750
ICV		M0410	1.10202562		1.00		110.2	%	90-110	03/08/2005	1759
ICV		M0403	1.10057736		1.00		110.1	%	90-110	03/08/2005	1804
ICB			-0.0046919							03/08/2005	1813
CB			-0.0051575							03/08/2005	1825
V		M0393	0.53524577		0.500		107.0	%	90-110	03/08/2005	1829
CCV		M0404	0.96436162		1.00		96.4	%	90-110	03/08/2005	1834
CCB			-0.0038159							03/08/2005	1843
CCV		M0404	0.97189860		1.00		97.2	%	90-110	03/08/2005	1923
CCB			-0.0021113							03/08/2005	1932
CCV		M0404	0.98820133		1.00		98.8	%	90-110	03/08/2005	2004
CCB			0.00243742							03/08/2005	2012
MB		3010	-0.0106861							03/08/2005	2019
LCS		M352	0.53960939		0.500		107.9	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.42404243		0.500	-0.0874900	102.3	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.44374298	0.42404243	0.500	-0.0874900	106.2	%	75-125	03/08/2005	2040
							4.5	R	20		
CCV		M0404	0.96604463		1.00		96.6	%	90-110	03/08/2005	2055
CCB			-0.0003791							03/08/2005	2103
CCV		M0404	1.03408107		1.00		103.4	%	90-110	03/08/2005	2149
CCB			-0.0075656							03/08/2005	2201
CCV		M0404	1.05856321		1.00		105.9	%	90-110	03/08/2005	2244
CCB			-0.0020906							03/08/2005	2256

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.01243955		2.00		100.6	%	90-110	03/08/2005	1741
ICV		M0395	0.92436332		1.00		92.4	%	90-110	03/08/2005	1750
ICV		M0410	1.00177486		1.00		100.2	%	90-110	03/08/2005	1759
ICB			0.00606548							03/08/2005	1813
ICB			-0.0062568							03/08/2005	1825
ICV		M0393	0.51008627		0.500		102.0	%	90-110	03/08/2005	1829
CCV		M0404	0.98068553		1.00		98.1	%	90-110	03/08/2005	1834
CB			-0.0029902							03/08/2005	1843
V		M0404	0.98673068		1.00		98.7	%	90-110	03/08/2005	1923
CCB			-0.0068336							03/08/2005	1932

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.00087676		1.00		100.1	%	90-110	03/08/2005	2004
CCB			0.00008408							03/08/2005	2012
MB		3010	-0.0035956							03/08/2005	2019
LCS		M352	0.51650986		0.500		103.3	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.45385261		0.500	-0.0477746	100.3	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.43989038	0.45385261	0.500	-0.0477746	97.5	%	75-125	03/08/2005	2040
							3.1	R	20		
CCV		M0404	0.98982436		1.00		99.0	%	90-110	03/08/2005	2055
CCB			0.00299890							03/08/2005	2103
CCV		M0404	1.06067348		1.00		106.1	%	90-110	03/08/2005	2149
CCB			-0.0030554							03/08/2005	2201
CCV		M0404	1.07581293		1.00		107.6	%	90-110	03/08/2005	2244
CCB			-0.0080939							03/08/2005	2256

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: BA
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00412867		2.00		100.2	%	90-110	03/08/2005	1741
ICV		M0396	1.01718904		1.00		101.7	%	90-110	03/08/2005	1755
ICB			-0.0002274							03/08/2005	1813
ICB			0.00029525							03/08/2005	1825
ICV		M0393	0.50783855		0.500		101.6	%	90-110	03/08/2005	1829
CCV		M0404	0.98942417		1.00		98.9	%	90-110	03/08/2005	1834
CCB			0.00018513							03/08/2005	1843
CCV		M0404	0.99606672		1.00		99.6	%	90-110	03/08/2005	1923
CCB			0.00032345							03/08/2005	1932
CCV		M0404	1.00160377		1.00		100.2	%	90-110	03/08/2005	2004
CCB			-0.0000094							03/08/2005	2012
MB		3010	-0.0000153							03/08/2005	2019
LCS		M352	0.52448276		0.500		104.9	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.52371619		0.500	0.04212817	96.3	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.51172625	0.52371619	0.500	0.04212817	93.9	%	75-125	03/08/2005	2040
							2.3	R	20		
CCV		M0404	0.99743661		1.00		99.7	%	90-110	03/08/2005	2055
CCB			0.00026643							03/08/2005	2103
CCV		M0404	1.03055636		1.00		103.1	%	90-110	03/08/2005	2149
CCB			0.00109250							03/08/2005	2201
CCV		M0404	1.03720235		1.00		103.7	%	90-110	03/08/2005	2244
CCB			0.00002909							03/08/2005	2256

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00196404		2.00		100.1	%	90-110	03/08/2005	1741
ICV		M0395	0.99356043		1.00		99.4	%	90-110	03/08/2005	1750
ICV		M0410	1.00695892		1.00		100.7	%	90-110	03/08/2005	1759
ICB			0.00011377							03/08/2005	1813
ICB			-0.0002668							03/08/2005	1825
ICV		M0393	0.51304502		0.500		102.6	%	90-110	03/08/2005	1829
CCV		M0404	0.97371527		1.00		97.4	%	90-110	03/08/2005	1834
CCB			-0.0002229							03/08/2005	1843
CCV		M0404	0.98169548		1.00		98.2	%	90-110	03/08/2005	1923
CCB			-0.0004676							03/08/2005	1932
CCV		M0404	0.99085328		1.00		99.1	%	90-110	03/08/2005	2004
CCB			-0.0001770							03/08/2005	2012
MB		3010	-0.0005298							03/08/2005	2019
LCS		M352	0.52087765		0.500		104.2	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.48281770		0.500	0.00036790	96.5	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.46000834	0.48281770	0.500	0.00036790	91.9	%	75-125	03/08/2005	2040
							4.8	R	20		
CV		M0404	0.98820546		1.00		98.8	%	90-110	03/08/2005	2055
CCB			-0.0002598							03/08/2005	2103
CCV		M0404	1.05384475		1.00		105.4	%	90-110	03/08/2005	2149
CCB			-0.0000498							03/08/2005	2201
CCV		M0404	1.07395580		1.00		107.4	%	90-110	03/08/2005	2244
CCB			-0.0001177							03/08/2005	2256

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CR
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00974467		2.00		100.5	%	90-110	03/08/2005	1741
ICV		M0395	0.99277973		1.00		99.3	%	90-110	03/08/2005	1750
ICV		M0410	1.00259785		1.00		100.3	%	90-110	03/08/2005	1759
ICB			-0.0003350							03/08/2005	1813
ICB			-0.0004386							03/08/2005	1825
ICV		M0393	0.50359208		0.500		100.7	%	90-110	03/08/2005	1829
CCV		M0404	0.98357848		1.00		98.4	%	90-110	03/08/2005	1834
CCB			0.00022310							03/08/2005	1843
CCV		M0404	0.99067293		1.00		99.1	%	90-110	03/08/2005	1923
CCB			0.00000837							03/08/2005	1932
CCV		M0404	0.99557549		1.00		99.6	%	90-110	03/08/2005	2004
CCB			0.00059340							03/08/2005	2012
MB		3010	-0.0001962							03/08/2005	2019
LCS		M352	0.52303718		0.500		104.6	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.48390297		0.500	0.00190556	96.4	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.46296420	0.48390297	0.500	0.00190556	92.2	%	75-125	03/08/2005	2040
							4.4	R	20		
CCV		M0404	0.99118494		1.00		99.1	%	90-110	03/08/2005	2055
CCB			0.00068046							03/08/2005	2103
CV		M0404	1.03398465		1.00		103.4	%	90-110	03/08/2005	2149
CB			0.00054885							03/08/2005	2201
CCV		M0404	1.04453850		1.00		104.5	%	90-110	03/08/2005	2244

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CR
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			0.00017779							03/08/2005	2256

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99922809		2.00		100.0	%	90-110	03/08/2005	1741
ICV		M0395	1.01542635		1.00		101.5	%	90-110	03/08/2005	1750
ICV		M0410	1.02722984		1.00		102.7	%	90-110	03/08/2005	1759
ICB			0.00141455							03/08/2005	1813
ICB			0.00163640							03/08/2005	1825
ICV		M0393	0.52124397		0.500		104.2	%	90-110	03/08/2005	1829
CCV		M0404	0.97869809		1.00		97.9	%	90-110	03/08/2005	1834
`B			-0.0011108							03/08/2005	1843
:V		M0404	0.99475194		1.00		99.5	%	90-110	03/08/2005	1923
CCB			0.00033659							03/08/2005	1932
CCV		M0404	1.00750111		1.00		100.8	%	90-110	03/08/2005	2004
CCB			0.00190963							03/08/2005	2012
MB		3010	-0.0035742							03/08/2005	2019
LCS		M352	0.51743912		0.500		103.5	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.45798451		0.500	-0.0224083	96.1	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.43894743	0.45798451	0.500	-0.0224083	92.3	%	75-125	03/08/2005	2040
							4.2	R	20		
CCV		M0404	1.00027654		1.00		100.0	%	90-110	03/08/2005	2055
CCB			-0.0007709							03/08/2005	2103
CCV		M0404	1.06908639		1.00		106.9	%	90-110	03/08/2005	2149
CCB			-0.0026061							03/08/2005	2201
CCV		M0404	1.08505608		1.00		108.5	%	90-110	03/08/2005	2244
CCB			-0.0029876							03/08/2005	2252

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: NI
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99286771		2.00		99.6	%	90-110	03/08/2005	1741
ICV		M0395	0.99730875		1.00		99.7	%	90-110	03/08/2005	1750
ICV		M0410	1.00426116		1.00		100.4	%	90-110	03/08/2005	1759
ICB			0.00093051							03/08/2005	1813
ICB			-0.0001529							03/08/2005	1825
ICV		M0393	0.50862912		0.500		101.7	%	90-110	03/08/2005	1829
CCV		M0404	0.98076443		1.00		98.1	%	90-110	03/08/2005	1834
CCB			0.00089327							03/08/2005	1843
CCV		M0404	0.99643999		1.00		99.6	%	90-110	03/08/2005	1923
CCB			0.00035119							03/08/2005	1932
:V		M0404	1.00520660		1.00		100.5	%	90-110	03/08/2005	2004
:B			0.00123697							03/08/2005	2012
MB		3010	-0.0007577							03/08/2005	2019

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: NI
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
LCS		M352	0.51296445		0.500		102.6	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.48107423		0.500	0.00780276	94.7	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.45880190	0.48107423	0.500	0.00780276	90.2	%	75-125	03/08/2005	2040
							4.7	R	20		
CCV		M0404	0.99647148		1.00		99.6	%	90-110	03/08/2005	2055
CCB			0.00123831							03/08/2005	2103
CCV		M0404	1.04335183		1.00		104.3	%	90-110	03/08/2005	2149
CCB			-0.0002513							03/08/2005	2201
CCV		M0404	1.06555453		1.00		106.6	%	90-110	03/08/2005	2244
CCB			0.00098489							03/08/2005	2256

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: SE
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99331601		2.00		99.7	%	90-110	03/08/2005	1741
ICV		M0395	0.96209947		1.00		96.2	%	90-110	03/08/2005	1750
ICV		M0410	0.98400832		1.00		98.4	%	90-110	03/08/2005	1759
ICB			0.00808517							03/08/2005	1813
ICB			0.01175501							03/08/2005	1825
ICV		M0393	0.49375654		0.500		98.8	%	90-110	03/08/2005	1829
CCV		M0404	0.95273759		1.00		95.3	%	90-110	03/08/2005	1834
CCB			0.00234753							03/08/2005	1843
CCV		M0404	0.97876669		1.00		97.9	%	90-110	03/08/2005	1923
CCB			0.00314353							03/08/2005	1932
CCV		M0404	0.98302337		1.00		98.3	%	90-110	03/08/2005	2004
CCB			0.00079288							03/08/2005	2012
MB		3010	0.00008658							03/08/2005	2019
LCS		M352	0.49726210		0.500		99.5	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.59565412		0.500	0.09471998	100.2	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.56501922	0.59565412	0.500	0.09471998	94.1	%	75-125	03/08/2005	2040
							5.3	R	20		
CCV		M0404	0.98058592		1.00		98.1	%	90-110	03/08/2005	2055
CCB			0.00024889							03/08/2005	2103
CCV		M0404	1.03299980		1.00		103.3	%	90-110	03/08/2005	2149
CCB			0.01371190							03/08/2005	2201
CCV		M0404	1.06641966		1.00		106.6	%	90-110	03/08/2005	2244
CCB			0.00433565							03/08/2005	2252

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.00407519		1.0		100.4	%	90-110	03/08/2005	1741
CV		M0396	1.03124478		1.00		103.1	%	90-110	03/08/2005	1755
CB			-0.0010076							03/08/2005	1813
ICB			-0.0037015							03/08/2005	1825

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		M0393	0.51136458		0.500		102.3	%	90-110	03/08/2005	1829
CCV		M0404	0.49139627		0.50		98.3	%	90-110	03/08/2005	1834
CCB			-0.0004144							03/08/2005	1843
CCV		M0404	0.49280126		0.50		98.6	%	90-110	03/08/2005	1923
CCB			-0.0001654							03/08/2005	1932
CCV		M0404	0.49847927		0.50		99.7	%	90-110	03/08/2005	2004
CCB			-0.0024315							03/08/2005	2012
MB		3010	-0.0035406							03/08/2005	2019
LCS		M352	0.26052361		0.25		104.2	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.23825155		0.25	-0.0278659	106.4	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.23606764	0.23825155	0.25	-0.0278659	105.6	%	75-125	03/08/2005	2040
							0.9	R	20		
CCV		M0404	0.49506714		0.50		99.0	%	90-110	03/08/2005	2055
CCB			-0.0012058							03/08/2005	2103
CCV		M0404	0.51824689		0.50		103.6	%	90-110	03/08/2005	2149
CCB			-0.0011045							03/08/2005	2201
CV		M0404	0.52799484		0.50		105.6	%	90-110	03/08/2005	2244
CB			-0.0015203							03/08/2005	2256

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: TL
Parameter.....: Thallium (Tl)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00368274		2.00		100.2	%	90-110	03/08/2005	1741
ICV		M0395	1.00223860		1.00		100.2	%	90-110	03/08/2005	1750
ICV		M0410	1.00585834		1.00		100.6	%	90-110	03/08/2005	1759
ICB			-0.0029155							03/08/2005	1813
ICB			0.00936344							03/08/2005	1825
ICV		M0393	0.50636268		0.500		101.3	%	90-110	03/08/2005	1829
CCV		M0404	0.99384981		1.00		99.4	%	90-110	03/08/2005	1834
CCB			0.00451045							03/08/2005	1843
CCV		M0404	0.99240796		1.00		99.2	%	90-110	03/08/2005	1923
CCB			0.01536066							03/08/2005	1932
CCV		M0404	1.00508131		1.00		100.5	%	90-110	03/08/2005	2004
CCB			-0.0030557							03/08/2005	2012
MB		3010	-0.0047602							03/08/2005	2019
LCS		M352	0.50693971		0.500		101.4	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.43345030		0.500	-0.0367615	94.0	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.40681734	0.43345030	0.500	-0.0367615	88.7	%	75-125	03/08/2005	2040
							6.3	R	20		
CCV		M0404	0.98758001		1.00		98.8	%	90-110	03/08/2005	2055
CCB			0.00195253							03/08/2005	2103
CCV		M0404	1.04499116		1.00		104.5	%	90-110	03/08/2005	2149
CCB			0.00454469							03/08/2005	2201
CCV		M0404	1.07030246		1.00		107.0	%	90-110	03/08/2005	2244
CCB			0.00447640							03/08/2005	2256

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: V
Parameter.....: Vanadium (V)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99903685		2.00		100.0	%	90-110	03/08/2005	1741
ICV		M0395	0.97894738		1.00		97.9	%	90-110	03/08/2005	1750
ICV		M0410	0.98114898		1.00		98.1	%	90-110	03/08/2005	1759
ICB			-0.0015741							03/08/2005	1813
ICB			0.00153414							03/08/2005	1825
ICV		M0393	0.49918150		0.500		99.8	%	90-110	03/08/2005	1829
CCV		M0404	0.96239025		1.00		96.2	%	90-110	03/08/2005	1834
CCB			0.00052961							03/08/2005	1843
CCV		M0404	0.96270519		1.00		96.3	%	90-110	03/08/2005	1923
CCB			-0.0018857							03/08/2005	1932
CCV		M0404	0.96671573		1.00		96.7	%	90-110	03/08/2005	2004
CCB			-0.0024003							03/08/2005	2012
MB		3010	-0.0030511							03/08/2005	2019
LCS		M352	0.50149862		0.500		100.3	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.49020472		0.500	-0.0010631	98.3	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.47552213	0.49020472	0.500	-0.0010631	95.3	%	75-125	03/08/2005	2040
							3.0	R	20		
CV		M0404	0.95565509		1.00		95.6	%	90-110	03/08/2005	2055
CCB			-0.0026436							03/08/2005	2103
CCV		M0404	0.98511003		1.00		98.5	%	90-110	03/08/2005	2149
CCB			-0.0031920							03/08/2005	2201
CCV		M0404	0.99521475		1.00		99.5	%	90-110	03/08/2005	2244
CCB			-0.0004994							03/08/2005	2256

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	2.00367908		2.00		100.2	%	90-110	03/08/2005	1741
ICV		M0395	1.01409169		1.00		101.4	%	90-110	03/08/2005	1750
ICV		M0410	0.99866205		1.00		99.9	%	90-110	03/08/2005	1759
ICB			-0.0020296							03/08/2005	1813
ICB			0.00737955							03/08/2005	1825
ICV		M0393	0.51216981		0.500		102.4	%	90-110	03/08/2005	1829
CCV		M0404	0.97888933		1.00		97.9	%	90-110	03/08/2005	1834
CCB			-0.0015813							03/08/2005	1843
CCV		M0404	0.98599775		1.00		98.6	%	90-110	03/08/2005	1923
CCB			0.00721615							03/08/2005	1932
CCV		M0404	0.99116314		1.00		99.1	%	90-110	03/08/2005	2004
CCB			0.00744261							03/08/2005	2012
MB		3010	-0.0052581							03/08/2005	2019
LCS		M352	0.53753762		0.500		107.5	%	80-120	03/08/2005	2026
MS	229149-1	M352	0.50314076		0.500	0.01732415	97.2	%	75-125	03/08/2005	2035
MSD	229149-1	M352	0.49307563	0.50314076	0.500	0.01732415	95.2	%	75-125	03/08/2005	2040
							2.0	R	20		
CCV		M0404	0.98840599		1.00		98.8	%	90-110	03/08/2005	2055
CCB			0.00769324							03/08/2005	2103
CV		M0404	1.09970079		1.00		110.0	%	90-110	03/08/2005	2149
CB			0.00668221							03/08/2005	2201
CCV		M0404	1.07028482		1.00		107.0	%	90-110	03/08/2005	2244

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229168 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 103958 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			0.00104064							03/08/2005	2256

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 229168 Date: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229168-1 Client ID: BONEYARD COMPOSITE Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3010A	Acid Digestion, Total Metals	1	103908		03/07/2005	1700	
EPA 9010B/9012	Cyanide (Colorimetric, Automated)	1	104338		03/17/2005	1620	
EPA 9013	Cyanide Extraction for Solids & Oils	1	104113		03/04/2005	1600	
SW-846 7470A	TCLP Mercury by CVAA	1	103811		03/03/2005	1747	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	103958		03/08/2005	2145	
SW-846 1311	TCLP Physical Characterization	1	103797		03/02/2005	1700	
SW-846 1311	Toxic Characteristic Leaching Procedure	1	103752		03/02/2005	1700	

Lab ID: 229168-2 Client ID: WASTE PILE COMPOSITE Date Recvd: 02/28/2005 Sample Date: 02/28/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3010A	Acid Digestion, Total Metals	1	103908		03/07/2005	1700	
EPA 9010B/9012	Cyanide (Colorimetric, Automated)	1	104338		03/17/2005	1623	
EPA 9013	Cyanide Extraction for Solids & Oils	1	104113		03/04/2005	1600	
SW-846 7470A	TCLP Mercury by CVAA	1	103811		03/03/2005	1750	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	103958		03/08/2005	2205	
SW-846 1311	TCLP Physical Characterization	1	103797		03/02/2005	1700	
SW-846 1311	Toxic Characteristic Leaching Procedure	1	103752		03/02/2005	1700	

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SEVERN TRENT STL

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/08/2005

(1) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
(2) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III
(3) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
(4) Methods of Organic Chemical Analysis of Municipal and Industrial Wastewater, Federal Register, Vol. 49, No. 209, October 1984 and 40 CFR Part 136 amendments
(5) EPA 600/2-78-054, Field and Laboratory Methods Applicable to Overburdens and Minesoils
(6) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965
(7) ASTM, Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991
(8) American Society for Testing and Materials, Petroleum Products, Lubricants, and Fossil Fuels, Section 5, Volumes 05.01 - 05.05
(9) Hach Handbook of Water Analysis, 1979

Comments:

The test results in this report meet all NELAP requirements for parameters for which accreditation is held. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

According to 40CFR Part 136.3, pH, total residual chlorine, dissolved oxygen, sulfite, and temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH, Client Provided), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Data in the QC report may differ from final results due to digestion and/or dilution of sample into analytical ranges. The "Time Analyzed" may not be the actual time of analysis. The "Date Analyzed" is the actual date of analysis. Sludge samples are reported on a wet weight basis (i.e., not corrected for percent moisture) unless otherwise indicated.

Quality Control acceptance criteria are based either on limits specified in the referenced method or on actual laboratory performance.

All data is reported on sample "as received" unless noted.

Sample IDs with a "-00" at the end indicate a blank spike or blank spike duplicate associated with the numbered sample.

SAMPLE RESULT IDENTIFICATION

ND	= Not detected at a value greater than the reporting limit
TNTC	= Too numerous to count

BLANK QC SAMPLE IDENTIFICATION

MB	Method Blank
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS	Method (Matrix) Spike
MSD	Method (Matrix) Spike Duplicate
PDS	Post Digestion/Distillation Spike
SB	Spiked Blank
SBD	Spiked Blank Duplicate

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SEVERN TRENT STL

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/08/2005

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interference Check Sample
DSC	Distilled Standard Check

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
DD	Digestion Duplicate
PDD	Post Digestion Duplicate
PSD	Post Digestion/Distillation Spike Duplicate

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "technician" using the following codes:

SUBCONTRACT LABORATORIES

Severn Trent Laboratories:

Los Angeles, CA	*la	Houston, TX	*he
Aurora, CO	*au	North Canton, OH	*nc
Tampa, FL	*ta	Valparaiso, IN	*vp
Sacramento, CA	*sa	Chicago, IL	*ch
Pensacola, FL	*pe	Tallahassee, FL	*tl

Other:

Client provided data	*cp	Non-STL Subcontract Lab	*xx

EXPLANATION OF DATA FLAGS

B - This flag is used to indicate that an analyte is present in the method blank as well as in the sample. It indicates that the client should consider this when evaluating the results.
D - This flag indicates that surrogates were diluted out of calibration range and cannot be quantified.
E - Indicates that a sample result is an estimate because the concentration exceeded the calibration range of the instrument.
I - Used to indicate matrix interference.
X - Indicates that a surrogate recovery is outside the specified quality control limits.
Y - Used to identify a spike or spike duplicate recovery is outside the specified quality control limits.
* - Indicates a relative percent difference for a duplicate analysis is outside the specified quality control limits.
^ - Used to indicate that a standard is outside specified quality control limits.

EXPLANATION OF DATA QUALIFIERS

B - Indicates that a value for an inorganic analysis is an estimate. It is used when a compound is determined to be present but at a concentration less than the quantitation limit of the method.
J - Indicates that a value for an organic analysis is an estimate. It is used when a compound is determined to be present based on chromatographic pattern or mass spectral data, but at a concentration less than the quantitation limit of the method. This flag is also used when estimating the concentration of a tentatively identified compound.
U - Indicates that a value is less than the MDL or was not detected.

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ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name: Encycle RCRA Corrective Action

Project Location: Encycle, Corpus Christi, TX

Laboratory: STL

Project Manager: Ken Brandner

Sampler(s)/Affiliation: Chris Scheffler, Ken Brandner

0.) NC

229168

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	TCLP Sb, As, Ba, Cd, Cr, Pb, Hg, Ni, Se, Ag, Thallium, Vanadium, Zinc.	Total cyanide (8oz glass jar)					Remarks	Total
Boneyard Composite	S	2/28/05 9:30		X						TCLP Metals & Total Cyanide (all samples)	1
Waste Pile Composite	S	2/28/05 2:40		X							1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 2

Relinquished by: Ken Brandner	Organization: ARCADIS	Date 2/28/05	Time 16:50	Seal Intact?	
Received by: Olga Veronica Donald	Organization: STL	Date 2/28/05	Time 16:50	Yes No (N/A)	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: Normal Turnaround. Results to Ken Brandner & Rich Marcus of Encycle. Invoice to Rich Marcus for Encycle RCRA Corrective Action.

Delivery Method: ☒ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

SEVERN TRENT STL

ANALYTICAL REPORT

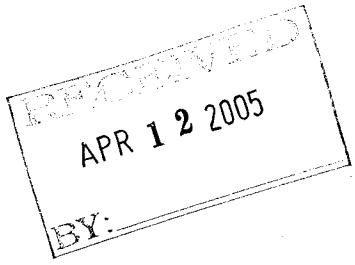
JOB NUMBER: 229190

Prepared For:

ARCADIS / G&M
711 North Carancahua, Suite 1700
Corpus Christi, TX 78475-1801

Attention: Ken Brandner

Date: 04/08/2005



Signature

4/11/05
Date

Name: Chip Meador

Title: Laboratory Director

E-Mail: cmeador@stl-inc.com

Severn Trent Laboratories
1733 N. Padre Island Drive
Corpus Christi, TX 78408

PHONE: 361/289-2673
FAX..: 361/289-2471

TOTAL # OF PAGES 31

SEVERN TRENT STL

CASE NARRATIVE

Job Number 229190

April 8, 2005

Cyanide Analysis

Samples 229190-1 through 3 were analyzed for cyanide using EPA Methods 9010B/9012/9013. The percent recovery result for the matrix spikes associated with sample 1 was below the acceptance criteria at 30.1% and 30.9%. The method blank and LCS were within acceptable limits and the data are therefore reported. In addition, due to instrument problems that we experienced recently with cyanide analysis, samples 1 through 3 were analyzed out of the method specified holding time. Results for samples 1 through 3 should be flagged accordingly and used at the client's discretion.

Please call if you have any questions regarding this report or if we can be of further assistance.

Julie Darrow
QA Assistant

SEVERN TRENT STL

SAMPLE INFORMATION
Date: 04/08/2005

Job Number.: 229190
Customer...: Encycle Texas, Inc.
Attn.....: Richard Marcus

Project Number.....: 98000084
Customer Project ID....: ENCYCLE RCRA CORRECTIVE
Project Description....: Project - OVM

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229190-1	RR TRACKS SOUTH COMPOSITE	Soil	03/01/2005	08:40	03/02/2005	07:55
229190-2	RR TRACKS NORTH COMPOSITE	Soil	03/01/2005	09:10	03/02/2005	07:55
229190-3	B-236/B-237 COMPOSITE	Soil	03/01/2005	15:15	03/02/2005	07:55

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229190 Date: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: RR TRACKS SOUTH COMPOSITE
Date Sampled.....: 03/01/2005
Time Sampled.....: 08:40
Sample Matrix.....: Soil

Laboratory Sample ID: 229190-1
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 9010B/9012	Cyanide, Total, Solid	2.7	1.0	mg/Kg	03/17/05	ac
EPA 9013	Cyanide Extraction for Solids & Oils	Complete			03/07/05	ac
SW-846 3010A	Acid Digestion, Total Metals, TCLP	Complete			03/09/05	tjo
SW-846 7470A	TCLP Mercury by CVAA					
	Mercury (Hg)	<0.002	0.002	mg/L	03/10/05	hmz
SW-846 6010B	TCLP Metals Analysis (ICAP)					
	Antimony (Sb), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Arsenic (As), TCLP	0.25	0.05	mg/L	03/10/05	jem
	Barium (Ba), TCLP	0.17	0.05	mg/L	03/10/05	jem
	Cadmium (Cd), TCLP	17.5	0.05	mg/L	03/10/05	jem
	Chromium (Cr), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Lead (Pb), TCLP	17.6	0.05	mg/L	03/10/05	jem
	Selenium (Se), TCLP	0.05	0.05	mg/L	03/10/05	jem
	Silver (Ag), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Nickel (Ni), TCLP	11.1	0.05	mg/L	03/10/05	jem
	Thallium (Tl), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Zinc (Zn), TCLP	971	0.5	mg/L	03/15/05	jem
	Vanadium (V), TCLP	<0.05	0.05	mg/L	03/10/05	jem
SW-846 1311	TCLP Physical Characterization					
	% Solids	100	0.5	%	03/07/05	tjo
	% Liquid	<0.5	0.5	%	03/07/05	tjo
	% Aqueous - Extract	100	0.5	%	03/07/05	tjo
	% Non-aqueous - Extract	<0.5	0.5	%	03/07/05	tjo
SW-846 1311	Toxic Characteristic Leaching Procedure					
	Glass Jar Extraction	Complete			03/07/05	tjo
	Metals Analysis	Complete			03/07/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229190 Date: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: RR TRACKS NORTH COMPOSITE
Date Sampled.....: 03/01/2005
Time Sampled.....: 09:10
Sample Matrix.....: Soil

Laboratory Sample ID: 229190-2
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 9010B/9012	Cyanide, Total, Solid	1.4	1.0	mg/Kg	03/17/05	ac
EPA 9013	Cyanide Extraction for Solids & Oils	Complete			03/07/05	ac
SW-846 3010A	Acid Digestion, Total Metals, TCLP	Complete			03/09/05	tjo
SW-846 7470A	TCLP Mercury by CVAA					
	Mercury (Hg)	<0.002	0.002	mg/L	03/10/05	hmz
SW-846 6010B	TCLP Metals Analysis (ICAP)					
	Antimony (Sb), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Arsenic (As), TCLP	0.27	0.05	mg/L	03/10/05	jem
	Barium (Ba), TCLP	0.34	0.05	mg/L	03/10/05	jem
	Cadmium (Cd), TCLP	5.49	0.05	mg/L	03/10/05	jem
	Chromium (Cr), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Lead (Pb), TCLP	11.1	0.05	mg/L	03/10/05	jem
	Selenium (Se), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Silver (Ag), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Nickel (Ni), TCLP	0.59	0.05	mg/L	03/10/05	jem
	Thallium (Tl), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Zinc (Zn), TCLP	1040	0.5	mg/L	03/15/05	jem
	Vanadium (V), TCLP	<0.05	0.05	mg/L	03/10/05	jem
SW-846 1311	TCLP Physical Characterization					
	% Solids	100	0.5	%	03/07/05	tjo
	% Liquid	<0.5	0.5	%	03/07/05	tjo
	% Aqueous - Extract	100	0.5	%	03/07/05	tjo
	% Non-aqueous - Extract	<0.5	0.5	%	03/07/05	tjo
SW-846 1311	Toxic Characteristic Leaching Procedure					
	Glass Jar Extraction	Complete			03/07/05	tjo
	Metals Analysis	Complete			03/07/05	tjo

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 229190 Date: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Customer Sample ID: B-236/B-237 COMPOSITE
Date Sampled.....: 03/01/2005
Time Sampled.....: 15:15
Sample Matrix.....: Soil

Laboratory Sample ID: 229190-3
Date Received.....: 03/02/2005
Time Received.....: 07:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 9010B/9012	Cyanide, Total, Solid	<1.0	1.0	mg/Kg	03/17/05	ac
EPA 9013	Cyanide Extraction for Solids & Oils	Complete			03/07/05	ac
SW-846 3010A	Acid Digestion, Total Metals, TCLP	Complete			03/09/05	tjo
SW-846 7470A	TCLP Mercury by CVAA					
	Mercury (Hg)	<0.002	0.002	mg/L	03/10/05	hmz
SW-846 6010B	TCLP Metals Analysis (ICAP)					
	Antimony (Sb), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Arsenic (As), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Barium (Ba), TCLP	0.25	0.05	mg/L	03/10/05	jem
	Cadmium (Cd), TCLP	1.26	0.05	mg/L	03/10/05	jem
	Chromium (Cr), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Lead (Pb), TCLP	0.09	0.05	mg/L	03/10/05	jem
	Selenium (Se), TCLP	0.07	0.05	mg/L	03/10/05	jem
	Silver (Ag), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Nickel (Ni), TCLP	0.11	0.05	mg/L	03/10/05	jem
	Thallium (Tl), TCLP	<0.05	0.05	mg/L	03/10/05	jem
	Zinc (Zn), TCLP	136	0.5	mg/L	03/15/05	jem
	Vanadium (V), TCLP	<0.05	0.05	mg/L	03/10/05	jem
SW-846 1311	TCLP Physical Characterization					
	% Solids	100	0.5	%	03/07/05	tjo
	% Liquid	<0.5	0.5	%	03/07/05	tjo
	% Aqueous - Extract	100	0.5	%	03/07/05	tjo
	% Non-aqueous - Extract	<0.5	0.5	%	03/07/05	tjo
SW-846 1311	Toxic Characteristic Leaching Procedure					
	Glass Jar Extraction	Complete			03/07/05	tjo
	Metals Analysis	Complete			03/07/05	tjo

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 7470A Batch.....: 104081 Analyst...: hmz
Method Description.: TCLP Mercury by CVAA Units.....: mg/L Test Code.: HG
Parameter.....: Mercury (Hg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		M50310HG	0.00520		0.00500		104.0	%	90-110	03/10/2005	1518
ICB			-0.000092							03/10/2005	1522
LCS		M50310LG	0.00528		0.0050		105.6	%	85-115	03/10/2005	1525
MB			-0.000060							03/10/2005	1529
CCV		M50310HG	0.00510		0.00500		102.0	%	80-120	03/10/2005	1554
CCB			-0.000079							03/10/2005	1557
MB			-0.000012							03/10/2005	1601
MS	229190-3	M50310HG	0.00537		0.00500	0.000046	106.5	%	75-130	03/10/2005	1615
MSD	229190-3	M50310HG	0.00552	0.00537	0.00500	0.000046	109.5	%	75-130	03/10/2005	1619
							2.8	R	20		
CCV		M50310HG	0.00510		0.00500		102.0	%	80-120	03/10/2005	1636
CCB			0.000043							03/10/2005	1640
MB			0.000114							03/10/2005	1647
CCV		M50310HG	0.00509		0.00500		101.8	%	80-120	03/10/2005	1701
CCB			-0.000024							03/10/2005	1705

Test Method.....: EPA 9010B/9012A Batch.....: 104338 Analyst...: ac
Method Description.: Cyanide (Colorimetric, Automated) Units.....: mg/L Test Code.: CNT
Parameter.....: Cyanide, Total

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICB		031805	0.0130							03/17/2005	1500
ICV		CN050317A	0.4103		0.40112		102.3	%	90-110	03/17/2005	1506
CCV		CN050317B	0.6016		0.578		104.1	%	80-120	03/17/2005	1508
MB		031705	0.0173							03/17/2005	1511
LCS		CN050317C	0.0510		0.050140		101.8	%	77-121	03/17/2005	1517
LCS		CN050317D	0.0810		0.100		81.0	%	77-121	03/17/2005	1519
LCS		CN050317E	0.1309		0.200		65.5	%	77-121	03/17/2005	1522
MS	229310-1	CN050317H	0.0646		0.050140	0.0203	88.4	%	75-125	03/17/2005	1533
MSD	229310-1	CN050317H	0.0616	0.0646	0.050140	0.0203	82.4	%	75-125	03/17/2005	1536
							4.8	R	20		
CCB		031705	0.0140							03/17/2005	1539
CCB		031705	0.0138							03/17/2005	1541
CCV		CN050317B	0.6033		0.578		104.4	%	80-120	03/17/2005	1544
CCB		031705	0.0139							03/17/2005	1547
CCB		031705	0.0140							03/17/2005	1550
CCV		CN050317B	0.5958		0.578		103.1	%	80-120	03/17/2005	1552
MB			0.0175							03/17/2005	1555
MB			0.0173							03/17/2005	1558
LCS		CN050317F	0.1512		0.15		100.8	%	77-121	03/17/2005	1601
LCD		CN050317F	0.1550		0.15		103.3	%	77-121	03/17/2005	1604
MS	229190-1	CN050317G	0.0695		0.050140	0.0544	30.1	%	75-125	03/17/2005	1628
MSD	229190-1	CN050317G	0.0699	0.0695	0.050140	0.0544	30.9	%	75-125	03/17/2005	1631
							0.6	R	20		
CCB			0.01							03/17/2005	1639
CCB			0.01							03/17/2005	1642
CCV		CN050317B	0.6090		0.578		105.4	%	80-120	03/17/2005	1645

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: SB
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0371	1.02391192		1.00		102.4	%	90-110	03/09/2005	0910
ICV		M0395	1.03522561		1.00		103.5	%	90-110	03/09/2005	0915
ICV		M0410	1.06116030		1.00		106.1	%	90-110	03/09/2005	0924
ICV		M0403	1.03723122		1.00		103.7	%	90-110	03/09/2005	0930
ICB			-0.0040707							03/09/2005	0938
ICB			-0.0125961							03/09/2005	0951
ICV		M0393	0.50412007		0.500		100.8	%	90-110	03/09/2005	0954
CCV		M0404	0.98573249		1.00		98.6	%	90-110	03/09/2005	1000
CCB			0.00944808							03/09/2005	1006
MB		3010.	-0.0078660							03/09/2005	1122
LCS		M352	0.49173263		0.500		98.3	%	80-120	03/09/2005	1125
CCV		M0404	0.94004219		1.00		94.0	%	90-110	03/09/2005	1152
CCB			-0.0037946							03/09/2005	1204
CCV		M0404	0.92507031		1.00		92.5	%	90-110	03/09/2005	1243
CCB			0.00263062							03/09/2005	1252
MS	229125-1	M352	0.45177901		0.500	-0.0725974	104.9	%	75-125	03/09/2005	1313
SD	229125-1	M352	0.45778227	0.45177901	0.500	-0.0725974	106.1	%	75-125	03/09/2005	1318
							1.3	R	20		
MB		3010	-0.0039773							03/09/2005	1327
LCS		M352	0.51006810		0.500		102.0	%	80-120	03/09/2005	1334
CCV		M0404	0.96100523		1.00		96.1	%	90-110	03/09/2005	1339
CCB			-0.0075060							03/09/2005	1348
CCV		M0404	1.02457997		1.00		102.5	%	90-110	03/09/2005	1430
CCB			-0.0044129							03/09/2005	1439
MS	229167-15	M352	0.52337333		0.500	-0.0106439	106.8	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.50189099	0.52337333	0.500	-0.0106439	102.5	%	75-125	03/09/2005	1514
							4.2	R	20		
CCV		M0404	0.94861622		1.00		94.9	%	90-110	03/09/2005	1533
CCB			0.01094627							03/09/2005	1542
MB		3050	-0.0180197							03/09/2005	1545
LCS		M352	0.51749880		0.500		103.5	%	1-335	03/09/2005	1552
LCS		M409D	0.41806611		0.583		71.7	%	1-335	03/09/2005	1557
MS	229080-1	M352	-0.1378378		0.500	-0.1601167	4.5	%	75-125	03/09/2005	1609
MSD	229080-1	M352	-0.0776801	-0.1378378	0.500	-0.1601167	16.5	%	75-125	03/09/2005	1612
							-55.8	R	20		
CCV		M0404	0.97402430		1.00		97.4	%	90-110	03/09/2005	1624
CCB			-0.0086881							03/09/2005	1637
CCV		M0404	1.00792578		1.00		100.8	%	90-110	03/09/2005	1716
CCB			-0.0030708							03/09/2005	1725
MB		3050	-0.0046957							03/09/2005	1800
LCS		M352	0.52970139		0.500		105.9	%	1-335	03/09/2005	1807
CCV		M0404	0.99213251		1.00		99.2	%	90-110	03/09/2005	1812
CCB			-0.0135587							03/09/2005	1825
LCS		M409D	0.48077786		0.583		82.5	%	1-335	03/09/2005	1829
PDS	229153-2	M352D	1.86041941		2.00	-0.1159124	98.8	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	1.88089594	1.86041941	2.00	-0.1159124	99.8	%	75-125	03/09/2005	1901
							1.1	R	20		
CCV		M0404	1.00730409		1.00		100.7	%	90-110	03/09/2005	1905
CCB			0.00358849							03/09/2005	1914
CCB			-0.0085570							03/09/2005	1918
[illegible]		3050.	-0.0146673							03/09/2005	1925
[illegible]S		M352	0.46376885		0.500		92.8	%	1-335	03/09/2005	1928
LCS		M409D	0.43636878		0.583		74.8	%	1-335	03/09/2005	1934

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: SB
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.00298236		1.00		100.3	%	90-110	03/09/2005	2011
CCB			-0.0062208							03/09/2005	2023
CCV		M0404	1.01159677		1.00		101.2	%	90-110	03/09/2005	2114
CCB			-0.0002473							03/09/2005	2126
CCV		M0404	1.01781894		1.00		101.8	%	90-110	03/09/2005	2215
CCB			0.00713952							03/09/2005	2227
CCV		M0404	1.04062403		1.00		104.1	%	90-110	03/09/2005	2309
CCB			-0.0062427							03/09/2005	2318
MB		3010	-0.0105970							03/10/2005	0819
LCS		M352	0.45878904		0.500		91.8	%	80-120	03/10/2005	0826
CCV		M0404	0.95158106		1.00		95.2	%	90-110	03/10/2005	0831
CCB			-0.0010759							03/10/2005	0844
MS	229230-1	M352	0.52161178		0.500	-0.0164367	107.6	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.52253437	0.52161178	0.500	-0.0164367	107.8	%	75-125	03/10/2005	0917
							0.2	R	20		
CCV		M0404	0.94806100		1.00		94.8	%	90-110	03/10/2005	0930
CB			-0.0056486							03/10/2005	0942
S	229188-15	M352	0.52410369		0.500	-0.0016949	105.2	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.50097370	0.52410369	0.500	-0.0016949	100.5	%	75-125	03/10/2005	0950
							4.5	R	20		
CCV		M0404	0.94509726		1.00		94.5	%	90-110	03/10/2005	1024
CCB			-0.0010887							03/10/2005	1037
CCV		M0404	1.01478516		1.00		101.5	%	90-110	03/10/2005	1113
CCB			0.00560914							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98963733		2.00		99.5	%	90-110	03/09/2005	0907
ICV		M0395	1.00257037		1.00		100.3	%	90-110	03/09/2005	0915
ICV		M0410	1.00755551		1.00		100.8	%	90-110	03/09/2005	0924
ICB			0.01007148							03/09/2005	0938
ICB			0.01397938							03/09/2005	0951
ICV		M0393	0.51404852		0.500		102.8	%	90-110	03/09/2005	0954
CCV		M0404	0.97234533		1.00		97.2	%	90-110	03/09/2005	1000
CCB			0.00476734							03/09/2005	1006
MB		3010.	0.00271553							03/09/2005	1122
LCS		M352	0.48874799		0.500		97.7	%	80-120	03/09/2005	1125
CCV		M0404	0.94589013		1.00		94.6	%	90-110	03/09/2005	1152
CCB			-0.0040642							03/09/2005	1204
CCV		M0404	0.93018838		1.00		93.0	%	90-110	03/09/2005	1243
CCB			-0.0041780							03/09/2005	1255
MS	229125-1	M352	0.49534153		0.500	-0.0373653	106.5	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.48771502	0.49534153	0.500	-0.0373653	105.0	%	75-125	03/09/2005	1318
							1.6	R	20		
MB		3010	-0.0038101							03/09/2005	1327
CS		M352	0.50532390		0.500		101.1	%	80-120	03/09/2005	1334
CV		M0404	0.97767604		1.00		97.8	%	90-110	03/09/2005	1339
CCB			-0.0001251							03/09/2005	1348

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.03227940		1.00		103.2	%	90-110	03/09/2005	1430
CCB			0.00198442							03/09/2005	1439
MS	229167-15	M352	0.49146663		0.500	-0.0051944	99.3	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51675465	0.49146663	0.500	-0.0051944	104.4	%	75-125	03/09/2005	1514
							5.0	R	20		
CCV		M0404	0.94435622		1.00		94.4	%	90-110	03/09/2005	1533
CCB			-0.0038617							03/09/2005	1542
MB		3050	0.00254602							03/09/2005	1545
LCS		M352	0.49837532		0.500		99.7	%	66-134	03/09/2005	1552
LCS		M409D	2.02535218		2.16		93.8	%	66-134	03/09/2005	1557
MS	229080-1	M352	0.42999963		0.500	0.00927011	84.1	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.46281406	0.42999963	0.500	0.00927011	90.7	%	75-125	03/09/2005	1612
							7.4	R	20		
CCV		M0404	1.00224323		1.00		100.2	%	90-110	03/09/2005	1624
CCB			0.00519571							03/09/2005	1637
CCV		M0404	1.01536486		1.00		101.5	%	90-110	03/09/2005	1716
CB			-0.0035956							03/09/2005	1725
3		3050	0.00853843							03/09/2005	1800
LCS		M352	0.51062885		0.500		102.1	%	66-134	03/09/2005	1807
CCV		M0404	1.00289377		1.00		100.3	%	90-110	03/09/2005	1812
CCB			0.00824986							03/09/2005	1825
LCS		M409D	2.17301309		2.16		100.6	%	66-134	03/09/2005	1829
PDS	229153-2	M352D	2.07558269		2.00	0.02557677	102.5	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.07554608	2.07558269	2.00	0.02557677	102.5	%	75-125	03/09/2005	1901
							0.0	R	20		
CCV		M0404	1.00958379		1.00		101.0	%	90-110	03/09/2005	1905
CCB			0.00993208							03/09/2005	1914
CCB			0.00741570							03/09/2005	1918
MB		3050.	0.00794929							03/09/2005	1925
LCS		M352	0.50718698		0.500		101.4	%	66-134	03/09/2005	1928
LCS		M409D	2.19496182		2.16		101.6	%	66-134	03/09/2005	1934
MS	229154-1	M352	0.51524386		0.500	0.01217682	100.6	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.51941495	0.51524386	0.500	0.01217682	101.4	%	75-125	03/09/2005	1955
							0.8	R	20		
CCV		M0404	1.02633326		1.00		102.6	%	90-110	03/09/2005	2011
CCB			-0.0016432							03/09/2005	2023
CCV		M0404	1.03098079		1.00		103.1	%	90-110	03/09/2005	2114
CCB			0.00320548							03/09/2005	2126
CCV		M0404	1.04805923		1.00		104.8	%	90-110	03/09/2005	2215
CCB			-0.0040687							03/09/2005	2227
CCV		M0404	1.06452334		1.00		106.5	%	90-110	03/09/2005	2309
CCB			-0.0023979							03/09/2005	2318
MB		3010	0.00824471							03/10/2005	0819
LCS		M352	0.43370071		0.500		86.7	%	80-120	03/10/2005	0826
CCV		M0404	0.93678478		1.00		93.7	%	90-110	03/10/2005	0831
CCB			0.00709594							03/10/2005	0844
MS	229230-1	M352	0.49197668		0.500	-0.0016487	98.7	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.50234606	0.49197668	0.500	-0.0016487	100.8	%	75-125	03/10/2005	0917
							2.1	R	20		
CCV		M0404	0.95492627		1.00		95.5	%	90-110	03/10/2005	0930
CB			-0.0081363							03/10/2005	0942
S	229188-15	M352	0.49536741		0.500	-0.0029296	99.7	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.47080713	0.49536741	0.500	-0.0029296	94.7	%	75-125	03/10/2005	0950
							5.1	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AS
Parameter.....: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	0.96431411		1.00		96.4	%	90-110	03/10/2005	1024
CCB			0.00226253							03/10/2005	1037
CCV		M0404	1.01072221		1.00		101.1	%	90-110	03/10/2005	1113
CCB			0.00126423							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: BA
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98286382		2.00		99.1	%	90-110	03/09/2005	0907
ICV		M0396	1.01530192		1.00		101.5	%	90-110	03/09/2005	0921
ICB			0.00027559							03/09/2005	0938
ICB			0.00036773							03/09/2005	0951
CV		M0393	0.50232404		0.500		100.5	%	90-110	03/09/2005	0954
CV		M0404	0.98986044		1.00		99.0	%	90-110	03/09/2005	1000
CCB			0.00038137							03/09/2005	1006
MB		3010.	0.00056748							03/09/2005	1122
LCS		M352	0.50698600		0.500		101.4	%	80-120	03/09/2005	1125
CCV		M0404	1.00425529		1.00		100.4	%	90-110	03/09/2005	1152
CCB			-0.0000262							03/09/2005	1204
CCV		M0404	1.00354701		1.00		100.4	%	90-110	03/09/2005	1243
CCB			-0.0001265							03/09/2005	1252
MS	229125-1	M352	0.51958359		0.500	0.04703448	94.5	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.52311904	0.51958359	0.500	0.04703448	95.2	%	75-125	03/09/2005	1318
							0.7	R	20		
MB		3010	-0.0000209							03/09/2005	1327
LCS		M352	0.52199229		0.500		104.4	%	80-120	03/09/2005	1334
CCV		M0404	1.00526828		1.00		100.5	%	90-110	03/09/2005	1339
CCB			0.00026515							03/09/2005	1348
CCV		M0404	1.01020814		1.00		101.0	%	90-110	03/09/2005	1430
CCB			0.00054440							03/09/2005	1439
MS	229167-15	M352	0.49746614		0.500	0.00134381	99.2	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51332664	0.49746614	0.500	0.00134381	102.4	%	75-125	03/09/2005	1514
							3.1	R	20		
CCV		M0404	0.99824934		1.00		99.8	%	90-110	03/09/2005	1533
CCB			0.00040676							03/09/2005	1542
MB		3050	0.00052470							03/09/2005	1545
LCS		M352	0.52954380		0.500		105.9	%	58-142	03/09/2005	1552
LCS		M409D	1.09873617		1.24		88.6	%	58-142	03/09/2005	1557
MS	229080-1	M352	0.61875048		0.500	0.11988798	99.8	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.58816578	0.61875048	0.500	0.11988798	93.7	%	75-125	03/09/2005	1612
							5.1	R	20		
CCV		M0404	1.00790986		1.00		100.8	%	90-110	03/09/2005	1624
CCB			0.00062272							03/09/2005	1637
CCV		M0404	1.00088736		1.00		100.1	%	90-110	03/09/2005	1716
CCB			0.00058358							03/09/2005	1725
MB		3050	0.00070559							03/09/2005	1800
LCS		M352	0.52011946		0.500		104.0	%	58-142	03/09/2005	1807
CCV		M0404	0.99688500		1.00		99.7	%	90-110	03/09/2005	1812
CCB			0.00055058							03/09/2005	1825

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: BA
Parameter.....: Barium (Ba)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
LCS		M409D	1.13088025		1.24		91.2	%	58-142	03/09/2005	1829
PDS	229153-2	M352D	2.20496736		2.00	0.25854341	97.3	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.20016354	2.20496736	2.00	0.25854341	97.1	%	75-125	03/09/2005	1901
							0.2	R	20		
CCV		M0404	1.00133114		1.00		100.1	%	90-110	03/09/2005	1905
CCB			0.00014627							03/09/2005	1914
CCB			-0.0000729							03/09/2005	1918
MB		3050.	0.00163114							03/09/2005	1925
LCS		M352	0.50603433		0.500		101.2	%	58-142	03/09/2005	1928
LCS		M409D	1.21995557		1.24		98.4	%	58-142	03/09/2005	1934
MS	229154-1	M352	0.69961450		0.500	0.18132297	103.7	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.71135810	0.69961450	0.500	0.18132297	106.0	%	75-125	03/09/2005	1955
							1.7	R	20		
CCV		M0404	1.01672367		1.00		101.7	%	90-110	03/09/2005	2011
CCB			0.00042481							03/09/2005	2023
CCV		M0404	1.01700654		1.00		101.7	%	90-110	03/09/2005	2114
CB			0.00037104							03/09/2005	2126
CV		M0404	1.02528051		1.00		102.5	%	90-110	03/09/2005	2215
CCB			0.00000593							03/09/2005	2227
CCV		M0404	1.02762911		1.00		102.8	%	90-110	03/09/2005	2309
CCB			0.00034602							03/09/2005	2318
MB		3010	0.00020726							03/10/2005	0819
LCS		M352	0.47444836		0.500		94.9	%	80-120	03/10/2005	0826
CCV		M0404	1.00958451		1.00		101.0	%	90-110	03/10/2005	0831
CCB			0.00013663							03/10/2005	0844
MS	229230-1	M352	0.60491160		0.500	0.08755051	103.5	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.60072395	0.60491160	0.500	0.08755051	102.6	%	75-125	03/10/2005	0917
							0.7	R	20		
CCV		M0404	1.03563370		1.00		103.6	%	90-110	03/10/2005	0930
CCB			0.00011883							03/10/2005	0942
MS	229188-15	M352	0.53150251		0.500	0.00096401	106.1	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.51150893	0.53150251	0.500	0.00096401	102.1	%	75-125	03/10/2005	0950
							3.8	R	20		
CCV		M0404	1.03771542		1.00		103.8	%	90-110	03/10/2005	1024
CCB			0.00014303							03/10/2005	1037
CCV		M0404	1.04214251		1.00		104.2	%	90-110	03/10/2005	1113
CCB			0.00024908							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98923652		2.00		99.5	%	90-110	03/09/2005	0907
ICV		M0395	0.99674312		1.00		99.7	%	90-110	03/09/2005	0915
ICV		M0410	1.00587322		1.00		100.6	%	90-110	03/09/2005	0924
ICB			-0.0004112							03/09/2005	0938
ICB			-0.0003357							03/09/2005	0951
CV		M0393	0.49942933		0.500		99.9	%	90-110	03/09/2005	0954
CV		M0404	0.97317380		1.00		97.3	%	90-110	03/09/2005	1000
CCB			-0.0006690							03/09/2005	1006

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		3010.	-0.0004845							03/09/2005	1122
LCS		M352	0.48626513		0.500		97.3	%	80-120	03/09/2005	1125
CCV		M0404	0.96140881		1.00		96.1	%	90-110	03/09/2005	1152
CCB			-0.0009810							03/09/2005	1204
CCV		M0404	0.96776796		1.00		96.8	%	90-110	03/09/2005	1243
CCB			-0.0011030							03/09/2005	1252
MS	229125-1	M352	0.47858709		0.500	-0.0007822	95.9	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.46778979	0.47858709	0.500	-0.0007822	93.7	%	75-125	03/09/2005	1318
							2.3	R	20		
MB		3010	-0.0012191							03/09/2005	1327
LCS		M352	0.50335694		0.500		100.7	%	80-120	03/09/2005	1334
CCV		M0404	0.97304424		1.00		97.3	%	90-110	03/09/2005	1339
CCB			-0.0012460							03/09/2005	1348
CCV		M0404	1.02905090		1.00		102.9	%	90-110	03/09/2005	1430
CCB			-0.0010552							03/09/2005	1439
MS	229167-15	M352	0.49302603		0.500	-0.0011615	98.8	%	75-125	03/09/2005	1509
SD	229167-15	M352	0.51463831	0.49302603	0.500	-0.0011615	103.2	%	75-125	03/09/2005	1514
							4.3	R	20		
CCV		M0404	0.96405599		1.00		96.4	%	90-110	03/09/2005	1533
CCB			-0.0004499							03/09/2005	1542
MB		3050	-0.0009671							03/09/2005	1545
LCS		M352	0.49496555		0.500		99.0	%	73-127	03/09/2005	1552
LCS		M409D	0.76681527		0.837		91.6	%	73-127	03/09/2005	1557
MS	229080-1	M352	0.50417170		0.500	0.02504192	95.8	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.50466792	0.50417170	0.500	0.02504192	95.9	%	75-125	03/09/2005	1612
							0.1	R	20		
CCV		M0404	1.01755329		1.00		101.8	%	90-110	03/09/2005	1624
CCB			-0.0012829							03/09/2005	1637
CCV		M0404	1.00861804		1.00		100.9	%	90-110	03/09/2005	1716
CCB			-0.0008582							03/09/2005	1725
MB		3050	-0.0009524							03/09/2005	1800
LCS		M352	0.51447555		0.500		102.9	%	73-127	03/09/2005	1807
CCV		M0404	1.00135813		1.00		100.1	%	90-110	03/09/2005	1812
CCB			-0.0010210							03/09/2005	1825
LCS		M409D	0.82531208		0.837		98.6	%	73-127	03/09/2005	1829
PDS	229153-2	M352D	1.98545932		2.00	0.01438035	98.6	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	1.98303968	1.98545932	2.00	0.01438035	98.4	%	75-125	03/09/2005	1901
							0.1	R	20		
CCV		M0404	1.00094979		1.00		100.1	%	90-110	03/09/2005	1905
CCB			-0.0008399							03/09/2005	1914
CCB			-0.0009386							03/09/2005	1918
MB		3050.	-0.0007373							03/09/2005	1925
LCS		M352	0.49291817		0.500		98.6	%	73-127	03/09/2005	1928
LCS		M409D	0.82678537		0.837		98.8	%	73-127	03/09/2005	1934
MS	229154-1	M352	0.50726748		0.500	0.00027477	101.4	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.51470284	0.50726748	0.500	0.00027477	102.9	%	75-125	03/09/2005	1955
							1.5	R	20		
CCV		M0404	1.02093425		1.00		102.1	%	90-110	03/09/2005	2011
CCB			-0.0010931							03/09/2005	2023
CCV		M0404	1.02597970		1.00		102.6	%	90-110	03/09/2005	2114
CCB			-0.0013596							03/09/2005	2126
CCV		M0404	1.02979110		1.00		103.0	%	90-110	03/09/2005	2215
CCB			-0.0009941							03/09/2005	2227

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CD
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.04495679		1.00		104.5	%	90-110	03/09/2005	2309
CCB			-0.0012154							03/09/2005	2318
MB		3010	-0.0005943							03/10/2005	0819
LCS		M352	0.43856896		0.500		87.7	%	80-120	03/10/2005	0826
CCV		M0404	0.95044050		1.00		95.0	%	90-110	03/10/2005	0831
CCB			-0.0004839							03/10/2005	0844
MS	229230-1	M352	0.51007962		0.500	0.00031971	102.0	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.51003923	0.51007962	0.500	0.00031971	101.9	%	75-125	03/10/2005	0917
							0.0	R	20		
CCV		M0404	0.99151077		1.00		99.2	%	90-110	03/10/2005	0930
CCB			-0.0009454							03/10/2005	0942
MS	229188-15	M352	0.49566613		0.500	-0.0006416	99.3	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.48351563	0.49566613	0.500	-0.0006416	96.8	%	75-125	03/10/2005	0950
							2.5	R	20		
CCV		M0404	0.98982121		1.00		99.0	%	90-110	03/10/2005	1024
CCB			-0.0008655							03/10/2005	1037
CV		M0404	1.03446222		1.00		103.4	%	90-110	03/10/2005	1113
CB			-0.0009147							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CR
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98454443		2.00		99.2	%	90-110	03/09/2005	0907
ICV		M0395	0.98496445		1.00		98.5	%	90-110	03/09/2005	0915
ICV		M0410	0.98955184		1.00		99.0	%	90-110	03/09/2005	0924
ICB			-0.0029529							03/09/2005	0938
ICB			-0.0025867							03/09/2005	0951
ICV		M0393	0.49081430		0.500		98.2	%	90-110	03/09/2005	0954
CCV		M0404	0.97571213		1.00		97.6	%	90-110	03/09/2005	1000
CCB			-0.0023885							03/09/2005	1006
MB		3010.	-0.0032832							03/09/2005	1122
LCS		M352	0.49456212		0.500		98.9	%	80-120	03/09/2005	1125
CCV		M0404	0.98672497		1.00		98.7	%	90-110	03/09/2005	1152
CCB			-0.0032197							03/09/2005	1204
CCV		M0404	0.99077406		1.00		99.1	%	90-110	03/09/2005	1243
CCB			-0.0025344							03/09/2005	1252
MS	229125-1	M352	0.47746828		0.500	0.00206625	95.1	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.47244514	0.47746828	0.500	0.00206625	94.1	%	75-125	03/09/2005	1318
							1.1	R	20		
MB		3010	-0.0041100							03/09/2005	1327
LCS		M352	0.51804780		0.500		103.6	%	80-120	03/09/2005	1334
CCV		M0404	0.99059911		1.00		99.1	%	90-110	03/09/2005	1339
CCB			-0.0038916							03/09/2005	1348
CCV		M0404	0.99843965		1.00		99.8	%	90-110	03/09/2005	1430
CCB			-0.0031261							03/09/2005	1439
MS	229167-15	M352	0.48587021		0.500	-0.0019680	97.6	%	75-125	03/09/2005	1509
SD	229167-15	M352	0.50871681	0.48587021	0.500	-0.0019680	102.1	%	75-125	03/09/2005	1514
							4.6	R	20		
CCV		M0404	0.98862905		1.00		98.9	%	90-110	03/09/2005	1533

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: CR
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			-0.0030105							03/09/2005	1542
MB		3050	-0.0038333							03/09/2005	1545
LCS		M352	0.52256736		0.500		104.5	%	72-127	03/09/2005	1552
LCS		M409D	1.09400629		1.21		90.4	%	72-127	03/09/2005	1557
MS	229080-1	M352	0.56938851		0.500	0.05370058	103.1	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.54297564	0.56938851	0.500	0.05370058	97.9	%	75-125	03/09/2005	1612
							4.7	R	20		
CCV		M0404	0.99730547		1.00		99.7	%	90-110	03/09/2005	1624
CCB			-0.0040100							03/09/2005	1637
CCV		M0404	0.99566447		1.00		99.6	%	90-110	03/09/2005	1716
CCB			-0.0036970							03/09/2005	1725
MB		3050	-0.0024917							03/09/2005	1800
LCS		M352	0.51848927		0.500		103.7	%	72-127	03/09/2005	1807
CCV		M0404	0.98995202		1.00		99.0	%	90-110	03/09/2005	1812
CCB			-0.0028018							03/09/2005	1825
LCS		M409D	1.14912118		1.21		95.0	%	72-127	03/09/2005	1829
`S	229153-2	M352D	2.12627126		2.00	0.14872184	98.9	%	75-125	03/09/2005	1856
,D	229153-2	M352D	2.13115278	2.12627126	2.00	0.14872184	99.1	%	75-125	03/09/2005	1901
							0.2	R	20		
CCV		M0404	0.99635319		1.00		99.6	%	90-110	03/09/2005	1905
CCB			-0.0035827							03/09/2005	1914
CCB			-0.0026989							03/09/2005	1918
MB		3050.	-0.0006026							03/09/2005	1925
LCS		M352	0.49823617		0.500		99.6	%	72-127	03/09/2005	1928
LCS		M409D	1.14891729		1.21		95.0	%	72-127	03/09/2005	1934
MS	229154-1	M352	0.55134801		0.500	0.02702852	104.9	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.55991789	0.55134801	0.500	0.02702852	106.6	%	75-125	03/09/2005	1955
							1.5	R	20		
CCV		M0404	1.00948321		1.00		100.9	%	90-110	03/09/2005	2011
CCB			-0.0034041							03/09/2005	2023
CCV		M0404	1.01473230		1.00		101.5	%	90-110	03/09/2005	2114
CCB			-0.0030136							03/09/2005	2126
CCV		M0404	1.01399726		1.00		101.4	%	90-110	03/09/2005	2215
CCB			-0.0032492							03/09/2005	2227
CCV		M0404	1.02741902		1.00		102.7	%	90-110	03/09/2005	2309
CCB			-0.0030709							03/09/2005	2318
MB		3010	-0.0027636							03/10/2005	0819
LCS		M352	0.45724778		0.500		91.4	%	80-120	03/10/2005	0826
CCV		M0404	0.98346476		1.00		98.3	%	90-110	03/10/2005	0831
CCB			-0.0030231							03/10/2005	0844
MS	229230-1	M352	0.84128116		0.500	0.30356467	107.5	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.84361529	0.84128116	0.500	0.30356467	108.0	%	75-125	03/10/2005	0917
							0.3	R	20		
CCV		M0404	1.00617762		1.00		100.6	%	90-110	03/10/2005	0930
CCB			-0.0037472							03/10/2005	0942
MS	229188-15	M352	0.50476001		0.500	-0.0021153	101.4	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.49241300	0.50476001	0.500	-0.0021153	98.9	%	75-125	03/10/2005	0950
							2.5	R	20		
CCV		M0404	1.01242030		1.00		101.2	%	90-110	03/10/2005	1024
CCB			-0.0028942							03/10/2005	1037
CV		M0404	1.02142941		1.00		102.1	%	90-110	03/10/2005	1113
CB			-0.0032852							03/10/2005	1125

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98993777		2.00		99.5	%	90-110	03/09/2005	0907
ICV		M0395	1.02356267		1.00		102.4	%	90-110	03/09/2005	0915
ICV		M0410	1.01689298		1.00		101.7	%	90-110	03/09/2005	0924
ICB			-0.0000178							03/09/2005	0938
ICB			0.00212140							03/09/2005	0951
ICV		M0393	0.50777120		0.500		101.6	%	90-110	03/09/2005	0954
CCV		M0404	0.98488712		1.00		98.5	%	90-110	03/09/2005	1000
CCB			0.00372664							03/09/2005	1006
MB		3010.	-0.0002556							03/09/2005	1122
LCS		M352	0.49779002		0.500		99.6	%	80-120	03/09/2005	1125
CCV		M0404	0.98662109		1.00		98.7	%	90-110	03/09/2005	1152
CCB			0.00313999							03/09/2005	1204
CCV		M0404	0.98351325		1.00		98.4	%	90-110	03/09/2005	1243
CCB			0.00505557							03/09/2005	1252
MS	229125-1	M352	0.46855739		0.500	-0.0069922	95.1	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.46051139	0.46855739	0.500	-0.0069922	93.5	%	75-125	03/09/2005	1318
							1.7	R	20		
		3010	0.00519626							03/09/2005	1327
LCS		M352	0.52783890		0.500		105.6	%	80-120	03/09/2005	1334
CCV		M0404	1.02125148		1.00		102.1	%	90-110	03/09/2005	1339
CCB			0.00682475							03/09/2005	1348
CCV		M0404	1.03765922		1.00		103.8	%	90-110	03/09/2005	1430
CCB			0.00587195							03/09/2005	1439
MS	229167-15	M352	0.50862967		0.500	0.00407692	100.9	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51983729	0.50862967	0.500	0.00407692	103.2	%	75-125	03/09/2005	1514
							2.2	R	20		
CCV		M0404	0.98065873		1.00		98.1	%	90-110	03/09/2005	1533
CCB			0.00554912							03/09/2005	1542
MB		3050	0.00149237							03/09/2005	1545
LCS		M352	0.52516179		0.500		105.0	%	71-129	03/09/2005	1552
LCS		M409D	0.56934506		0.623		91.4	%	71-129	03/09/2005	1557
MS	229080-1	M352	0.75348227		0.500	0.17987388	114.7	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.67788358	0.75348227	0.500	0.17987388	99.6	%	75-125	03/09/2005	1612
							10.6	R	20		
CCV		M0404	1.01651977		1.00		101.7	%	90-110	03/09/2005	1624
CCB			0.00368145							03/09/2005	1637
CCV		M0404	1.03042195		1.00		103.0	%	90-110	03/09/2005	1716
CCB			0.00577079							03/09/2005	1725
MB		3050	0.00337420							03/09/2005	1800
LCS		M352	0.53556060		0.500		107.1	%	71-129	03/09/2005	1807
CCV		M0404	1.02254201		1.00		102.3	%	90-110	03/09/2005	1812
CCB			0.00563745							03/09/2005	1825
LCS		M409D	0.63270936		0.623		101.6	%	71-129	03/09/2005	1829
PDS	229153-2	M352D	2.04842813		2.00	0.05933739	99.5	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.06172046	2.04842813	2.00	0.05933739	100.1	%	75-125	03/09/2005	1901
							0.6	R	20		
CCV		M0404	1.02722502		1.00		102.7	%	90-110	03/09/2005	1905
CCB			0.00430605							03/09/2005	1914
CCB			0.00432134							03/09/2005	1918
MB		3050.	0.00278163							03/09/2005	1925
LCS		M352	0.51324153		0.500		102.6	%	71-129	03/09/2005	1928
LCS		M409D	0.63523500		0.623		102.0	%	71-129	03/09/2005	1934
MS	229154-1	M352	0.62006528		0.500	0.09318133	105.4	%	75-125	03/09/2005	1949

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: PB
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MSD	229154-1	M352	0.61809433	0.62006528	0.500	0.09318133	105.0	%	75-125	03/09/2005	1955
							0.3	R	20		
CCV		M0404	1.04747217		1.00		104.7	%	90-110	03/09/2005	2011
CCB			0.00278944							03/09/2005	2023
CCV		M0404	1.06621199		1.00		106.6	%	90-110	03/09/2005	2114
CCB			0.00191403							03/09/2005	2126
CCV		M0404	1.07104592		1.00		107.1	%	90-110	03/09/2005	2215
CCB			0.00087397							03/09/2005	2227
CCV		M0404	1.09137522		1.00		109.1	%	90-110	03/09/2005	2309
CCB			0.00231277							03/09/2005	2318
MB		3010	0.00231618							03/10/2005	0819
LCS		M352	0.44454734		0.500		88.9	%	80-120	03/10/2005	0826
CCV		M0404	0.95997892		1.00		96.0	%	90-110	03/10/2005	0831
CCB			-0.0000724							03/10/2005	0844
MS	229230-1	M352	2.18119662		0.500	1.46408651	143.4	%	75-125	03/10/2005	0912
MSD	229230-1	M352	2.18166021	2.18119662	0.500	1.46408651	143.5	%	75-125	03/10/2005	0917
							0.0	R	20		
CCV		M0404	0.99706501		1.00		99.7	%	90-110	03/10/2005	0930
CCB			0.00309030							03/10/2005	0942
MS	229188-15	M352	0.51683600		0.500	0.00402243	102.6	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.49666764	0.51683600	0.500	0.00402243	98.5	%	75-125	03/10/2005	0950
							4.0	R	20		
CCV		M0404	0.99789106		1.00		99.8	%	90-110	03/10/2005	1024
CCB			0.00232240							03/10/2005	1037
CCV		M0404	1.04260146		1.00		104.3	%	90-110	03/10/2005	1113
CCB			0.00641382							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: NI
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99714189		2.00		99.9	%	90-110	03/09/2005	0907
ICV		M0395	1.01142183		1.00		101.1	%	90-110	03/09/2005	0915
ICV		M0410	1.00753896		1.00		100.8	%	90-110	03/09/2005	0924
ICB			-0.0006782							03/09/2005	0938
ICB			-0.0018116							03/09/2005	0951
ICV		M0393	0.50112910		0.500		100.2	%	90-110	03/09/2005	0954
CCV		M0404	0.98690603		1.00		98.7	%	90-110	03/09/2005	1000
CCB			-0.0011433							03/09/2005	1006
MB		3010.	-0.0005594							03/09/2005	1122
LCS		M352	0.49607857		0.500		99.2	%	80-120	03/09/2005	1125
CCV		M0404	0.98611364		1.00		98.6	%	90-110	03/09/2005	1152
CCB			-0.0019264							03/09/2005	1204
CCV		M0404	0.98023701		1.00		98.0	%	90-110	03/09/2005	1243
CCB			-0.0018785							03/09/2005	1252
MS	229125-1	M352	0.51183028		0.500	0.02252003	97.9	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.50372527	0.51183028	0.500	0.02252003	96.2	%	75-125	03/09/2005	1318
							1.6	R	20		
MB		3010	-0.0025740							03/09/2005	1327
LCS		M352	0.51158431		0.500		102.3	%	80-120	03/09/2005	1334

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: NI
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.00643842		1.00		100.6	%	90-110	03/09/2005	1339
CCB			-0.0022046							03/09/2005	1348
CCV		M0404	1.01588113		1.00		101.6	%	90-110	03/09/2005	1430
CCB			-0.0025506							03/09/2005	1439
MS	229167-15	M352	0.49732406		0.500	-0.0001504	99.5	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51084308	0.49732406	0.500	-0.0001504	102.2	%	75-125	03/09/2005	1514
							2.7	R	20		
CCV		M0404	0.98047369		1.00		98.0	%	90-110	03/09/2005	1533
CCB			-0.0019429							03/09/2005	1542
MB		3050	-0.0021377							03/09/2005	1545
LCS		M352	0.54508803		0.500		109.0	%	72-128	03/09/2005	1552
LCS		M409D	1.74352110		1.83		95.3	%	72-128	03/09/2005	1557
MS	229080-1	M352	0.66487676		0.500	0.17857624	97.3	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.65270921	0.66487676	0.500	0.17857624	94.8	%	75-125	03/09/2005	1612
							1.8	R	20		
CCV		M0404	1.00028452		1.00		100.0	%	90-110	03/09/2005	1624
~B			-0.0011767							03/09/2005	1637
V		M0404	1.01351296		1.00		101.4	%	90-110	03/09/2005	1716
CCB			-0.0015520							03/09/2005	1725
MB		3050	0.00663233							03/09/2005	1800
LCS		M352	0.54064156		0.500		108.1	%	72-128	03/09/2005	1807
CCV		M0404	1.00661910		1.00		100.7	%	90-110	03/09/2005	1812
CCB			-0.0003986							03/09/2005	1825
LCS		M409D	1.87259329		1.83		102.3	%	72-128	03/09/2005	1829
PDS	229153-2	M352D	2.42202315		2.00	0.41451060	100.4	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.44264241	2.42202315	2.00	0.41451060	101.4	%	75-125	03/09/2005	1901
							0.8	R	20		
CCV		M0404	1.01473910		1.00		101.5	%	90-110	03/09/2005	1905
CCB			-0.0013075							03/09/2005	1914
CCB			-0.0025441							03/09/2005	1918
MB		3050.	0.00030343							03/09/2005	1925
LCS		M352	0.51007337		0.500		102.0	%	72-128	03/09/2005	1928
LCS		M409D	1.87399968		1.83		102.4	%	72-128	03/09/2005	1934
MS	229154-1	M352	0.54417353		0.500	0.01354508	106.1	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.54762338	0.54417353	0.500	0.01354508	106.8	%	75-125	03/09/2005	1955
							0.6	R	20		
CCV		M0404	1.02008222		1.00		102.0	%	90-110	03/09/2005	2011
CCB			-0.0026256							03/09/2005	2023
CCV		M0404	1.03266033		1.00		103.3	%	90-110	03/09/2005	2114
CCB			-0.0000575							03/09/2005	2126
CCV		M0404	1.04078487		1.00		104.1	%	90-110	03/09/2005	2215
CCB			-0.0014775							03/09/2005	2227
CCV		M0404	1.05509610		1.00		105.5	%	90-110	03/09/2005	2309
CCB			-0.0021626							03/09/2005	2318
MB		3010	-0.0013358							03/10/2005	0819
LCS		M352	0.45147591		0.500		90.3	%	80-120	03/10/2005	0826
CCV		M0404	0.98304648		1.00		98.3	%	90-110	03/10/2005	0831
CCB			-0.0026333							03/10/2005	0844
MS	229230-1	M352	0.50094651		0.500	0.00466890	99.3	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.49950192	0.50094651	0.500	0.00466890	99.0	%	75-125	03/10/2005	0917
							0.3	R	20		
CV		M0404	1.00064616		1.00		100.1	%	90-110	03/10/2005	0930
CCB			-0.0017235							03/10/2005	0942

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: NI
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MS	229188-15	M352	0.51480067		0.500	-0.0018989	103.3	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.49014014	0.51480067	0.500	-0.0018989	98.4	%	75-125	03/10/2005	0950
							4.9	R	20		
CCV		M0404	0.99648347		1.00		99.6	%	90-110	03/10/2005	1024
CCB			-0.0020420							03/10/2005	1037
CCV		M0404	1.02958041		1.00		103.0	%	90-110	03/10/2005	1113
CCB			-0.0011152							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: SE
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98720878		2.00		99.4	%	90-110	03/09/2005	0907
CV		M0395	0.99138720		1.00		99.1	%	90-110	03/09/2005	0915
CV		M0410	0.98833421		1.00		98.8	%	90-110	03/09/2005	0924
ICB			-0.0053090							03/09/2005	0938
ICB			0.01260075							03/09/2005	0951
ICV		M0393	0.48530919		0.500		97.1	%	90-110	03/09/2005	0954
CCV		M0404	0.96441608		1.00		96.4	%	90-110	03/09/2005	1000
CCB			0.01304623							03/09/2005	1006
MB		3010.	0.00014021							03/09/2005	1122
LCS		M352	0.48374055		0.500		96.7	%	80-120	03/09/2005	1125
CCV		M0404	0.97040000		1.00		97.0	%	90-110	03/09/2005	1152
CCB			0.00179401							03/09/2005	1204
CCV		M0404	0.94929896		1.00		94.9	%	90-110	03/09/2005	1243
CCB			0.00566988							03/09/2005	1252
MS	229125-1	M352	0.53048427		0.500	0.03916910	98.3	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.53031416	0.53048427	0.500	0.03916910	98.2	%	75-125	03/09/2005	1318
							0.0	R	20		
MB		3010	-0.0049560							03/09/2005	1327
LCS		M352	0.49519496		0.500		99.0	%	80-120	03/09/2005	1334
CCV		M0404	0.97994622		1.00		98.0	%	90-110	03/09/2005	1339
CCB			-0.0083384							03/09/2005	1348
CCV		M0404	1.02507053		1.00		102.5	%	90-110	03/09/2005	1430
CCB			-0.0027621							03/09/2005	1439
MS	229167-15	M352	0.48690636		0.500	0.00961223	95.5	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.51037255	0.48690636	0.500	0.00961223	100.2	%	75-125	03/09/2005	1514
							4.7	R	20		
CCV		M0404	0.94021710		1.00		94.0	%	90-110	03/09/2005	1533
CCB			-0.0046062							03/09/2005	1542
MB		3050	0.00147144							03/09/2005	1545
LCS		M352	0.47504689		0.500		95.0	%	59-141	03/09/2005	1552
LCS		M409D	1.47575244		1.78		82.9	%	59-141	03/09/2005	1557
MS	229080-1	M352	0.10867669		0.500	-0.2327285	68.3	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.12748848	0.10867669	0.500	-0.2327285	72.0	%	75-125	03/09/2005	1612
							15.9	R	20		
CCV		M0404	0.98786863		1.00		98.8	%	90-110	03/09/2005	1624
CB			-0.0002594							03/09/2005	1637
CV		M0404	1.02311192		1.00		102.3	%	90-110	03/09/2005	1716
CCB			0.01333941							03/09/2005	1725

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: SE
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		3050	0.00052913							03/09/2005	1800
LCS		M352	0.48679575		0.500		97.4	%	59-141	03/09/2005	1807
CCV		M0404	0.99848322		1.00		99.8	%	90-110	03/09/2005	1812
CCB			-0.0082926							03/09/2005	1825
LCS		M409D	1.63917513		1.78		92.1	%	59-141	03/09/2005	1829
PDS	229153-2	M352D	1.84329389		2.00	-0.1118006	97.8	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	1.84851382	1.84329389	2.00	-0.1118006	98.0	%	75-125	03/09/2005	1901
							0.3	R	20		
CCV		M0404	0.98992132		1.00		99.0	%	90-110	03/09/2005	1905
CCB			-0.0098685							03/09/2005	1914
CCB			0.00734838							03/09/2005	1918
MB		3050.	0.00724067							03/09/2005	1925
LCS		M352	0.48089223		0.500		96.2	%	59-141	03/09/2005	1928
LCS		M409D	1.69466148		1.78		95.2	%	59-141	03/09/2005	1934
MS	229154-1	M352	0.44956688		0.500	-0.0091623	91.7	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.45870885	0.44956688	0.500	-0.0091623	93.6	%	75-125	03/09/2005	1955
							2.0	R	20		
CV		M0404	1.03298476		1.00		103.3	%	90-110	03/09/2005	2011
CCB			-0.0015492							03/09/2005	2023
CCV		M0404	1.04960932		1.00		105.0	%	90-110	03/09/2005	2114
CCB			0.00435770							03/09/2005	2126
CCV		M0404	1.06008651		1.00		106.0	%	90-110	03/09/2005	2215
CCB			0.00604663							03/09/2005	2227
CCV		M0404	1.07258255		1.00		107.3	%	90-110	03/09/2005	2309
CCB			0.00229539							03/09/2005	2318
MB		3010	0.00327104							03/10/2005	0819
LCS		M352	0.42839754		0.500		85.7	%	80-120	03/10/2005	0826
CCV		M0404	0.92239177		1.00		92.2	%	90-110	03/10/2005	0831
CCB			0.00886591							03/10/2005	0844
MS	229230-1	M352	0.51147538		0.500	0.02073434	98.1	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.50994558	0.51147538	0.500	0.02073434	97.8	%	75-125	03/10/2005	0917
							0.3	R	20		
CCV		M0404	0.97541214		1.00		97.5	%	90-110	03/10/2005	0930
CCB			0.00864322							03/10/2005	0942
MS	229188-15	M352	0.49777167		0.500	0.01670666	96.2	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.48295738	0.49777167	0.500	0.01670666	93.3	%	75-125	03/10/2005	0950
							3.0	R	20		
CCV		M0404	0.96894070		1.00		96.9	%	90-110	03/10/2005	1024
CCB			0.00585281							03/10/2005	1030
CCV		M0404	1.03538089		1.00		103.5	%	90-110	03/10/2005	1113
CCB			0.00483684							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	0.99755854		1.0		99.8	%	90-110	03/09/2005	0907
CV		M0396	1.02090053		1.00		102.1	%	90-110	03/09/2005	0921
CB			0.00082552							03/09/2005	0938
ICB			0.00293825							03/09/2005	0951

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		M0393	0.50555284		0.500		101.1	%	90-110	03/09/2005	0954
CCV		M0404	0.48702769		0.50		97.4	%	90-110	03/09/2005	1000
CCB			0.00373302							03/09/2005	1006
MB		3010.	0.00271255							03/09/2005	1122
LCS		M352	0.25117889		0.25		100.5	%	80-120	03/09/2005	1125
CCV		M0404	0.49070873		0.50		98.1	%	90-110	03/09/2005	1152
CCB			0.00336978							03/09/2005	1204
CCV		M0404	0.48812886		0.50		97.6	%	90-110	03/09/2005	1243
CCB			0.00207157							03/09/2005	1252
MS	229125-1	M352	0.27304790		0.25	-0.0074390	112.2	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.26848856	0.27304790	0.25	-0.0074390	110.4	%	75-125	03/09/2005	1318
							1.7	R	20		
MB		3010	0.00223029							03/09/2005	1327
LCS		M352	0.25637015		0.25		102.5	%	80-120	03/09/2005	1334
CCV		M0404	0.48803651		0.50		97.6	%	90-110	03/09/2005	1339
CCB			0.00224688							03/09/2005	1348
CCV		M0404	0.50644983		0.50		101.3	%	90-110	03/09/2005	1430
CCB			0.00604634							03/09/2005	1439
MS	229167-15	M352	0.24553107		0.25	0.00545337	96.0	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.25444798	0.24553107	0.25	0.00545337	99.6	%	75-125	03/09/2005	1514
							3.6	R	20		
CCV		M0404	0.48716256		0.50		97.4	%	90-110	03/09/2005	1533
CCB			0.00416211							03/09/2005	1542
MB		3050	0.00360499							03/09/2005	1545
LCS		M352	0.25456041		0.25		101.8	%	11-189	03/09/2005	1552
LCS		M409D	0.98233031		1.01		97.3	%	11-189	03/09/2005	1557
MS	229080-1	M352	0.24668473		0.25	-0.0061251	101.1	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.24698006	0.24668473	0.25	-0.0061251	101.2	%	75-125	03/09/2005	1612
							0.1	R	20		
CCV		M0404	0.49884723		0.50		99.8	%	90-110	03/09/2005	1624
CCB			0.00306300							03/09/2005	1637
CCV		M0404	0.49782966		0.50		99.6	%	90-110	03/09/2005	1716
CCB			0.00180251							03/09/2005	1725
MB		3050	-0.0000662							03/09/2005	1800
LCS		M352	0.25462604		0.25		101.9	%	11-189	03/09/2005	1807
CCV		M0404	0.49333212		0.50		98.7	%	90-110	03/09/2005	1812
CCB			0.00471775							03/09/2005	1825
LCS		M409D	1.13823682		1.01		112.7	%	11-189	03/09/2005	1829
PDS	229153-2	M352D	1.06491997		1.0	-0.0059738	107.1	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	1.06680813	1.06491997	1.0	-0.0059738	107.3	%	75-125	03/09/2005	1901
							0.2	R	20		
CCV		M0404	0.49387091		0.50		98.8	%	90-110	03/09/2005	1905
CCB			0.00236604							03/09/2005	1914
CCB			0.00706697							03/09/2005	1918
MB		3050.	0.00231825							03/09/2005	1925
LCS		M352	0.24214213		0.25		96.9	%	11-189	03/09/2005	1928
LCS		M409D	1.13290769		1.01		112.2	%	11-189	03/09/2005	1934
MS	229154-1	M352	0.25239382		0.25	0.00505670	98.9	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.25611945	0.25239382	0.25	0.00505670	100.4	%	75-125	03/09/2005	1955
							1.5	R	20		
CCV		M0404	0.50081577		0.50		100.2	%	90-110	03/09/2005	2011
CCB			0.00390762							03/09/2005	2016
CCV		M0404	0.50749552		0.50		101.5	%	90-110	03/09/2005	2114

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: AG
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB			0.00516489							03/09/2005	2126
CCV		M0404	0.51250294		0.50		102.5	%	90-110	03/09/2005	2215
CCB			0.00154672							03/09/2005	2227
CCV		M0404	0.51781169		0.50		103.6	%	90-110	03/09/2005	2309
CCB			0.00311508							03/09/2005	2318
MB		3010	0.00117077							03/10/2005	0819
LCS		M352	0.22181010		0.25		88.7	%	80-120	03/10/2005	0826
CCV		M0404	0.47734497		0.50		95.5	%	90-110	03/10/2005	0831
CCB			0.00289775							03/10/2005	0844
MS	229230-1	M352	0.26362189		0.25	0.00458572	103.6	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.26708455	0.26362189	0.25	0.00458572	105.0	%	75-125	03/10/2005	0917
							1.3	R	20		
CCV		M0404	0.49290567		0.50		98.6	%	90-110	03/10/2005	0930
CCB			0.00109132							03/10/2005	0942
MS	229188-15	M352	0.25150603		0.25	0.00287020	99.5	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.24603068	0.25150603	0.25	0.00287020	97.3	%	75-125	03/10/2005	0950
							2.2	R	20		
CV		M0404	0.49810301		0.50		99.6	%	90-110	03/10/2005	1024
CCB			0.00440143							03/10/2005	1037
CCV		M0404	0.51031529		0.50		102.1	%	90-110	03/10/2005	1113
CCB			0.00461979							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: TL
Parameter.....: Thallium (Tl)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.99109573		2.00		99.6	%	90-110	03/09/2005	0907
ICV		M0395	1.00485221		1.00		100.5	%	90-110	03/09/2005	0915
ICV		M0410	0.98852935		1.00		98.9	%	90-110	03/09/2005	0924
ICB			0.00174130							03/09/2005	0938
ICB			-0.0001218							03/09/2005	0951
ICV		M0393	0.48362326		0.500		96.7	%	90-110	03/09/2005	0954
CCV		M0404	0.97307223		1.00		97.3	%	90-110	03/09/2005	1000
CCB			-0.0002880							03/09/2005	1006
MB		3010.	-0.0027886							03/09/2005	1122
LCS		M352	0.49051221		0.500		98.1	%	80-120	03/09/2005	1125
CCV		M0404	0.94598783		1.00		94.6	%	90-110	03/09/2005	1152
CCB			-0.0098609							03/09/2005	1204
CCV		M0404	0.94167325		1.00		94.2	%	90-110	03/09/2005	1243
CCB			-0.0059664							03/09/2005	1252
MS	229125-1	M352	0.36347568		0.500	-0.0671333	86.1	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.35504854	0.36347568	0.500	-0.0671333	84.4	%	75-125	03/09/2005	1318
							2.3	R	20		
MB		3010	-0.0074688							03/09/2005	1327
LCS		M352	0.50352450		0.500		100.7	%	80-120	03/09/2005	1334
CCV		M0404	0.97916788		1.00		97.9	%	90-110	03/09/2005	1339
CCB			-0.0150315							03/09/2005	1348
CV		M0404	1.01970980		1.00		102.0	%	90-110	03/09/2005	1430
CB			-0.0110368							03/09/2005	1439
MS	229167-15	M352	0.48224324		0.500	-0.0117090	98.8	%	75-125	03/09/2005	1509

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: TL
Parameter.....: Thallium (Tl)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MSD	229167-15	M352	0.49458286	0.48224324	0.500	-0.0117090	101.3	%	75-125	03/09/2005	1514
							2.5	R	20		
CCV		M0404	0.95295678		1.00		95.3	%	90-110	03/09/2005	1533
CCB			-0.0112412							03/09/2005	1542
MB		3050	0.00047785							03/09/2005	1545
LCS		M352	0.50872843		0.500		101.7	%	56-144	03/09/2005	1552
LCS		M409D	1.31277012		1.44		91.2	%	56-144	03/09/2005	1557
MS	229080-1	M352	0.43576515		0.500	-0.0454398	96.2	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.38042272	0.43576515	0.500	-0.0454398	85.2	%	75-125	03/09/2005	1612
							13.6	R	20		
CCV		M0404	1.00396546		1.00		100.4	%	90-110	03/09/2005	1624
CCB			-0.0102729							03/09/2005	1637
CCV		M0404	1.00961512		1.00		101.0	%	90-110	03/09/2005	1716
CCB			-0.0139267							03/09/2005	1725
MB		3050	-0.0028893							03/09/2005	1800
LCS		M352	0.51291027		0.500		102.6	%	56-144	03/09/2005	1807
~V		M0404	1.00031122		1.00		100.0	%	90-110	03/09/2005	1812
.B			-0.0080155							03/09/2005	1825
LCS		M409D	1.35444501		1.44		94.1	%	56-144	03/09/2005	1829
PDS	229153-2	M352D	1.86287035		2.00	-0.0442473	95.4	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	1.87829451	1.86287035	2.00	-0.0442473	96.1	%	75-125	03/09/2005	1901
							0.8	R	20		
CCV		M0404	1.01108870		1.00		101.1	%	90-110	03/09/2005	1905
CCB			-0.0070138							03/09/2005	1914
CCB			-0.0065882							03/09/2005	1918
MB		3050.	-0.0092562							03/09/2005	1925
LCS		M352	0.48841966		0.500		97.7	%	56-144	03/09/2005	1928
LCS		M409D	1.39063320		1.44		96.6	%	56-144	03/09/2005	1934
MS	229154-1	M352	0.49673695		0.500	-0.0095189	101.3	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.50457703	0.49673695	0.500	-0.0095189	102.8	%	75-125	03/09/2005	1955
							1.6	R	20		
CCV		M0404	1.00785514		1.00		100.8	%	90-110	03/09/2005	2011
CCB			-0.0136659							03/09/2005	2023
CCV		M0404	1.02429521		1.00		102.4	%	90-110	03/09/2005	2114
CCB			-0.0230961							03/09/2005	2126
CCV		M0404	1.02712370		1.00		102.7	%	90-110	03/09/2005	2215
CCB			-0.0149320							03/09/2005	2227
CCV		M0404	1.04803750		1.00		104.8	%	90-110	03/09/2005	2309
CCB			0.00308303							03/09/2005	2318
MB		3010	0.00669967							03/10/2005	0819
LCS		M352	0.43890404		0.500		87.8	%	80-120	03/10/2005	0826
CCV		M0404	0.96343457		1.00		96.3	%	90-110	03/10/2005	0831
CCB			-0.0023216							03/10/2005	0844
MS	229230-1	M352	0.43463380		0.500	-0.0060120	88.1	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.44283427	0.43463380	0.500	-0.0060120	89.8	%	75-125	03/10/2005	0917
							1.9	R	20		
CCV		M0404	0.97606407		1.00		97.6	%	90-110	03/10/2005	0930
CCB			-0.0084032							03/10/2005	0942
MS	229188-15	M352	0.50297580		0.500	0.00105441	100.4	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.47752993	0.50297580	0.500	0.00105441	95.3	%	75-125	03/10/2005	0950
							5.2	R	20		
.V		M0404	0.98398454		1.00		98.4	%	90-110	03/10/2005	1024
CCB			-0.0114519							03/10/2005	1037

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: TL
Parameter.....: Thallium (Tl)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		M0404	1.02550800		1.00		102.6	%	90-110	03/10/2005	1113
CCB			-0.0066367							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: V
Parameter.....: Vanadium (V)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0407	1.98122612		2.00		99.1	%	90-110	03/09/2005	0907
ICV		M0395	0.98795107		1.00		98.8	%	90-110	03/09/2005	0915
ICV		M0410	0.98790522		1.00		98.8	%	90-110	03/09/2005	0924
ICB			-0.0001591							03/09/2005	0938
ICB			-0.0001097							03/09/2005	0951
ICV		M0393	0.49312925		0.500		98.6	%	90-110	03/09/2005	0954
CV		M0404	0.95856852		1.00		95.9	%	90-110	03/09/2005	1000
CB			0.00088329							03/09/2005	1006
MB		3010.	-0.0033777							03/09/2005	1122
LCS		M352	0.47870282		0.500		95.7	%	80-120	03/09/2005	1125
CCV		M0404	0.94986153		1.00		95.0	%	90-110	03/09/2005	1152
CCB			-0.0014827							03/09/2005	1204
CCV		M0404	0.95477332		1.00		95.5	%	90-110	03/09/2005	1243
CCB			-0.0028926							03/09/2005	1252
MS	229125-1	M352	0.48219361		0.500	0.00467654	95.5	%	75-125	03/09/2005	1313
MSD	229125-1	M352	0.49279581	0.48219361	0.500	0.00467654	97.6	%	75-125	03/09/2005	1318
							2.2	R	20		
MB		3010	-0.0024731							03/09/2005	1327
LCS		M352	0.49190069		0.500		98.4	%	80-120	03/09/2005	1334
CCV		M0404	0.95620324		1.00		95.6	%	90-110	03/09/2005	1339
CCB			-0.0016866							03/09/2005	1348
CCV		M0404	0.98516494		1.00		98.5	%	90-110	03/09/2005	1430
CCB			-0.0033521							03/09/2005	1439
MS	229167-15	M352	0.47113227		0.500	-0.0031565	94.9	%	75-125	03/09/2005	1509
MSD	229167-15	M352	0.50442213	0.47113227	0.500	-0.0031565	101.5	%	75-125	03/09/2005	1514
							6.8	R	20		
CCV		M0404	0.95961472		1.00		96.0	%	90-110	03/09/2005	1533
CCB			-0.0029863							03/09/2005	1542
MB		3050	0.00093187							03/09/2005	1545
LCS		M352	0.49741221		0.500		99.5	%	65-135	03/09/2005	1552
LCS		M409D	1.62079029		1.87		86.7	%	65-135	03/09/2005	1557
MS	229080-1	M352	0.48435591		0.500	0.02371060	92.1	%	75-125	03/09/2005	1609
MSD	229080-1	M352	0.47146292	0.48435591	0.500	0.02371060	89.6	%	75-125	03/09/2005	1612
							2.7	R	20		
CCV		M0404	0.98294710		1.00		98.3	%	90-110	03/09/2005	1624
CCB			-0.0012059							03/09/2005	1637
CCV		M0404	0.98081535		1.00		98.1	%	90-110	03/09/2005	1716
CCB			-0.0015793							03/09/2005	1725
MB		3050	-0.0025891							03/09/2005	1800
LCS		M352	0.49961436		0.500		99.9	%	65-135	03/09/2005	1807
CV		M0404	0.97402752		1.00		97.4	%	90-110	03/09/2005	1812
CB			-0.0063451							03/09/2005	1825
LCS		M409D	1.71996165		1.87		92.0	%	65-135	03/09/2005	1829

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104038 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: V
Parameter.....: Vanadium (V)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
PDS	229153-2	M352D	2.07300275		2.00	0.11986160	97.7	%	75-125	03/09/2005	1856
PSD	229153-2	M352D	2.06294248	2.07300275	2.00	0.11986160	97.2	%	75-125	03/09/2005	1901
							0.5	R	20		
CCV		M0404	0.97364484		1.00		97.4	%	90-110	03/09/2005	1905
CCB			-0.0040181							03/09/2005	1914
CCB			-0.0052775							03/09/2005	1918
MB		3050.	-0.0036970							03/09/2005	1925
LCS		M352	0.48574699		0.500		97.1	%	65-135	03/09/2005	1928
LCS		M409D	1.78513216		1.87		95.5	%	65-135	03/09/2005	1934
MS	229154-1	M352	0.58712858		0.500	0.07473706	102.5	%	75-125	03/09/2005	1949
MSD	229154-1	M352	0.59463495	0.58712858	0.500	0.07473706	104.0	%	75-125	03/09/2005	1955
							1.3	R	20		
CCV		M0404	0.97426516		1.00		97.4	%	90-110	03/09/2005	2011
CCB			-0.0068631							03/09/2005	2023
CCV		M0404	0.97281517		1.00		97.3	%	90-110	03/09/2005	2114
CCB			-0.0032556							03/09/2005	2126
[illegible]V		M0404	0.96989983		1.00		97.0	%	90-110	03/09/2005	2215
[illegible]B			-0.0047046							03/09/2005	2227
CCV		M0404	0.97365331		1.00		97.4	%	90-110	03/09/2005	2309
CCB			-0.0029725							03/09/2005	2318
MB		3010	0.00067343							03/10/2005	0819
LCS		M352	0.45585961		0.500		91.2	%	80-120	03/10/2005	0826
CCV		M0404	0.97567294		1.00		97.6	%	90-110	03/10/2005	0831
CCB			-0.0028939							03/10/2005	0844
MS	229230-1	M352	0.49788730		0.500	-0.0019177	100.0	%	75-125	03/10/2005	0912
MSD	229230-1	M352	0.49977622	0.49788730	0.500	-0.0019177	100.3	%	75-125	03/10/2005	0917
							0.4	R	20		
CCV		M0404	0.97448025		1.00		97.4	%	90-110	03/10/2005	0930
CCB			-0.0014620							03/10/2005	0942
MS	229188-15	M352	0.49193418		0.500	-0.0012201	98.6	%	75-125	03/10/2005	0945
MSD	229188-15	M352	0.47605092	0.49193418	0.500	-0.0012201	95.5	%	75-125	03/10/2005	0950
							3.3	R	20		
CCV		M0404	0.97359975		1.00		97.4	%	90-110	03/10/2005	1024
CCB			-0.0027448							03/10/2005	1037
CCV		M0404	0.98929047		1.00		98.9	%	90-110	03/10/2005	1113
CCB			-0.0018453							03/10/2005	1125

Test Method.....: SW-846 6010B Batch.....: 104264 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
RS		M0405	10.3473		10.0		103.5	%	90-110	03/15/2005	1322
ICV		M0395	1.0501		1.00		105.0	%	90-110	03/15/2005	1345
ICV		M0410	1.0806		1.00		108.1	%	90-110	03/15/2005	1351
ICB			0.0035							03/15/2005	1357
CCV		M0408	5.1343		5.00		102.7	%	90-110	03/15/2005	1407
CCB			0.0070							03/15/2005	1410
[illegible]		3010	0.0058							03/15/2005	1412
[illegible]S		M352	0.5316		0.500		106.3	%	80-120	03/15/2005	1419
PDS	229190-3	M352D	3.4744		2.00	1.2764	109.9	%	75-125	03/15/2005	1511

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 229190 Report Date.: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECTIVE ATTN: Richard Marcus

Test Method.....: SW-846 6010B Batch.....: 104264 Analyst...: jem
Method Description.: TCLP Metals Analysis (ICAP) Units.....: mg/L Test Code.: ZN
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
PSD	229190-3	M352D	3.4534	3.4744	2.00	1.2764	108.8	%	75-125	03/15/2005	1517
							0.6	R	20		
CCV		M0408	5.1567		5.00		103.1	%	90-110	03/15/2005	1745
CCB			0.0023							03/15/2005	1749

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 229190 Date: 04/08/2005

CUSTOMER: Encycle Texas, Inc. PROJECT: ENCYCLE RCRA CORRECT ATTN: Richard Marcus

Lab ID: 229190-1 Client ID: RR TRACKS SOUTH COMPOSITE Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3010A	Acid Digestion, Total Metals	1	103992		03/09/2005	1130	
EPA 9010B/9012	Cyanide (Colorimetric, Automated)	1	104338		03/17/2005	1626	
EPA 9013	Cyanide Extraction for Solids & Oils	1	104390		03/07/2005	1600	
SW-846 7470A	TCLP Mercury by CVAA	1	104081		03/10/2005	1604	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	104038		03/10/2005	0851	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	104264		03/15/2005	1426	10
SW-846 1311	TCLP Physical Characterization	1	103920		03/07/2005	1600	
SW-846 1311	Toxic Characteristic Leaching Procedure	1	103919		03/07/2005	1600	

Lab ID: 229190-2 Client ID: RR TRACKS NORTH COMPOSITE Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3010A	Acid Digestion, Total Metals	1	103992		03/09/2005	1130	
EPA 9010B/9012	Cyanide (Colorimetric, Automated)	1	104338		03/17/2005	1634	
EPA 9013	Cyanide Extraction for Solids & Oils	1	104390		03/07/2005	1600	
SW-846 7470A	TCLP Mercury by CVAA	1	104081		03/10/2005	1608	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	104038		03/10/2005	0856	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	104264		03/15/2005	1439	10
SW-846 1311	TCLP Physical Characterization	1	103920		03/07/2005	1600	
SW-846 1311	Toxic Characteristic Leaching Procedure	1	103919		03/07/2005	1600	

Lab ID: 229190-3 Client ID: B-236/B-237 COMPOSITE Date Recvd: 03/02/2005 Sample Date: 03/01/2005

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED		DILUTION
SW-846 3010A	Acid Digestion, Total Metals	1	103992		03/09/2005	1130	
EPA 9010B/9012	Cyanide (Colorimetric, Automated)	1	104338		03/17/2005	1637	
EPA 9013	Cyanide Extraction for Solids & Oils	1	104390		03/07/2005	1600	
SW-846 7470A	TCLP Mercury by CVAA	1	104081		03/10/2005	1611	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	104038		03/10/2005	0902	
SW-846 6010B	TCLP Metals Analysis (ICAP)	1	104264		03/15/2005	1504	10
SW-846 1311	TCLP Physical Characterization	1	103920		03/07/2005	1600	
SW-846 1311	Toxic Characteristic Leaching Procedure	1	103919		03/07/2005	1600	

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/08/2005

(1) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
(2) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III
(3) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
(4) Methods of Organic Chemical Analysis of Municipal and Industrial Wastewater, Federal Register, Vol. 49, No. 209, October 1984 and 40 CFR Part 136 amendments
(5) EPA 600/2-78-054, Field and Laboratory Methods Applicable to Overburdens and Minesoils
(6) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965
(7) ASTM, Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991
(8) American Society for Testing and Materials, Petroleum Products, Lubricants, and Fossil Fuels, Section 5, Volumes 05.01 - 05.05
(9) Hach Handbook of Water Analysis, 1979

Comments:

The test results in this report meet all NELAP requirements for parameters for which accreditation is held. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

According to 40CFR Part 136.3, pH, total residual chlorine, dissolved oxygen, sulfite, and temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH, Client Provided), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Data in the QC report may differ from final results due to digestion and/or dilution of sample into analytical ranges. The "Time Analyzed" may not be the actual time of analysis. The "Date Analyzed" is the actual date of analysis. Sludge samples are reported on a wet weight basis (i.e., not corrected for percent moisture) unless otherwise indicated.

Quality Control acceptance criteria are based either on limits specified in the referenced method or on actual laboratory performance.

All data is reported on sample "as received" unless noted.

Sample IDs with a "-00" at the end indicate a blank spike or blank spike duplicate associated with the numbered sample.

SAMPLE RESULT IDENTIFICATION

ND = Not detected at a value greater than the reporting limit
TNTC = Too numerous to count

BLANK QC SAMPLE IDENTIFICATION

MB Method Blank
ICB Initial Calibration Blank
CCB Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS Method (Matrix) Spike
MSD Method (Matrix) Spike Duplicate
PDS Post Digestion/Distillation Spike
SB Spiked Blank
SBD Spiked Blank Duplicate

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/08/2005

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interference Check Sample
DSC	Distilled Standard Check

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
DD	Digestion Duplicate
PDD	Post Digestion Duplicate
PSD	Post Digestion/Distillation Spike Duplicate

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "technician" using the following codes:

SUBCONTRACT LABORATORIES

Severn Trent Laboratories:

Los Angeles, CA	*la	Houston, TX	*he
Aurora, CO	*au	North Canton, OH	*nc
Tampa, FL	*ta	Valparaiso, IN	*vp
Sacramento, CA	*sa	Chicago, IL	*ch
Pensacola, FL	*pe	Tallahassee, FL	*tl

Other:

Client provided data	*cp	Non-STL Subcontract Lab	*xx

EXPLANATION OF DATA FLAGS

B - This flag is used to indicate that an analyte is present in the method blank as well as in the sample. It indicates that the client should consider this when evaluating the results.

D - This flag indicates that surrogates were diluted out of calibration range and cannot be quantified.

E - Indicates that a sample result is an estimate because the concentration exceeded the calibration range of the instrument.

I - Used to indicate matrix interference.

X - Indicates that a surrogate recovery is outside the specified quality control limits.

Y - Used to identify a spike or spike duplicate recovery is outside the specified quality control limits.

* - Indicates a relative percent difference for a duplicate analysis is outside the specified quality control limits.

^ - Used to indicate that a standard is outside specified quality control limits.

EXPLANATION OF DATA QUALIFIERS

B - Indicates that a value for an inorganic analysis is an estimate. It is used when a compound is determined to be present but at a concentration less than the quantitation limit of the method.

J - Indicates that a value for an organic analysis is an estimate. It is used when a compound is determined to be present based on chromatographic pattern or mass spectral data, but at a concentration less than the quantitation limit of the method. This flag is also used when estimating the concentration of a tentatively identified compound.

U - Indicates that a value is less than the MDL or was not detected.

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ARCADIS

Laboratory Task Order No./P.O. No. _____ **CHAIN-OF-CUSTODY RECORD** Page 1 of 1

Project Number/Name: Encycle RCRA Corrective Action
Project Location: Encycle, Corpus Christi, TX
Laboratory: STL
Project Manager: Ken Brandner
Sampler(s)/Affiliation: Chris Schieffler, Ken Brandner / ARCADIS

0.9°C
0.7°C
22990

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: TCLP Sb, As, Ba, Cd, Cr, Pb, Hg, Ni, Se, Ag, Thallium, Vanadium, Zinc.	Total Cyanide	(8 oz glass Jar)				Remarks	Total
RR Tracks South Composite	S	3/1/05 8:40		1						TCLP Metals, Total CN	1
RR Tracks North Composite	↓	↓ 9:10		1						TCLP Metals, Total CN	1
B-236/B-237 Composite	↓	↓ 3:15		1						TCLP Metals, Total CN	1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 3

Relinquished by: Ken Brandner	Organization: ARCADIS	Date 3/2/05	Time 07:55	Seal Intact?		
Received by: Olga Veronica McDonald	Organization: STL	Date 3/2/05	Time 07:55	Yes	No	N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A

Special Instructions/Remarks: Normal turnaround. Results to Ken Brandner & Rich Marcus.
Invoice to Rich Marcus for Encycle RCRA Corrective Action.

Delivery Method: ☒ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

APPENDIX D

Appendix D

Exhibit A of the Confidential Compromise Settlement Agreement and Release and Draft Deed Notice for Meaney Tract

Brown McCarroll L.L.P.

111 Congress Avenue, Suite 1400, Austin, Texas 78701-4043
512-472-5456 fax 512-479-1101

direct (512) 479-9735 khopson@mailbmc.com

May 25, 2005

Via Hand Delivery

Mr. Brad Wilkinson
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building D
Room 227
Austin, Texas 78753

Re: Encycle/Texas, Inc. (TCEQ Hazardous Waste Permit No. HW-50221, EPA ID No. TXD008117186)

Dear Brad:

In connection with the ongoing corrective action/remediation at the Encycle/Texas, Inc. (Encycle) facility in Corpus Christi, Texas, attached please find a document identified as Exhibit A to a Confidential Compromise Settlement Agreement and Release between ASARCO LLC and Encycle/Texas, Inc. and Meaney-Walsh Properties No. 1, Ltd. By way of this document signed by the managers of Meaney-Walsh Management No. 1, LLC, the owners of the leased property utilized by Encycle agree that their property is to be remediated to a non-residential standard (as set forth in 30 TAC § 335.552) and/or commercial/industrial standard [as set forth in 30 TAC § 350.4(13)]. By way of this document the property owners also agree to place a restriction acceptable to the Texas Commission on Environmental Quality in the deed records for the leased property prohibiting the construction of water wells on the property.

We appreciate your taking these commitments into consideration in your future review of Encycle submissions relative to the corrective action/remediation at the facility.

As always, should you have any questions, please do not hesitate to call.

Very truly yours,

R. Keith Hopson

2567328.1
370.93314

cc: John Ott

bcc: Tom Aldrich
Scott Thomas
Rich Marcus
Ken Brandner

EXHIBIT A

April 15, 2005

Executive Director
Texas Commission on Environmental Quality
P.O. Box 113087
Austin, Texas 78711-3087
Attn: Brad Wilkinson

Re: Characterization of the Meaney Lease Property in Conjunction with Encycle/Texas, Inc. Corrective Action/Remediation

Dear Mr. Wilkinson:

By way of this letter on behalf of Meaney-Walsh Properties No. 1, Ltd., the successor and/or assign of all the rights of Mary Dunn Meaney under an October 4, 1957 lease agreement between Mary Dunn Meaney and American Smelting and Refining Company [now ASARCO LLC, a Delaware limited liability company, successor to ASARCO Incorporated], we hereby confirm that Meaney-Walsh Properties No. 1, Ltd. has agreed to allow the property covered by the above referenced lease to be remediated to a non-residential standard (as set forth in 30 T.A.C. § 335.552) and/or commercial/industrial standard [as set forth in 30 T.A.C. § 350.4(13)] by removing all contaminated dirt, properly disposing of the same, and replacing the contaminated dirt with uncontaminated dirt. Meaney-Walsh Properties No. 1, Ltd. also agrees to place a restriction acceptable to the Texas Commission on Environmental Quality in the deed records for the leased property prohibiting the construction of water wells on the leased property.

By our signatures below, we represent that we are authorized to bind Meaney-Walsh Properties No. 1, Ltd..

Very truly yours,

Meaney-Walsh Properties No. 1, Ltd.,

By: Meaney-Walsh Management No. 1, L.L.C.,
General Partner

Bernadette Meaney, Manager

Michael Meaney, Manager

EXHIBIT A

April 15, 2005

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By our signatures below, we represent that we are authorized to bind Meaney-Walsh Properties No. 1, Ltd..

Very truly yours,

Meaney-Walsh Properties No. 1, Ltd.,

By: Meaney-Walsh Management No. 1, L.L.C.,
General Partner

Bernadette Meaney, Manager

Michael Meaney, Manager

Michael Meaney, Manager

Thomas J. Meaney, Manager

William Meaney, Manager

Michael Walsh, Manager

cc: John Ott
Keith Hopson

AUS:2555415.1
370.93314

Thomas J. Meaney, Manager

William Meaney

William Meaney, Manager

Michael Walsh, Manager

cc: John Ott
Keith Hopson

AUS:2555415.1
370.93314

Thomas J. Meaney, Manager

William Meaney, Manager

Michael Walsh

Michael Walsh, Manager

cc: John Ott
Keith Hopson

AUS:2555415.1
370.93314

DRAFT

Deed Certification of Remediation

STATE OF TEXAS
NUECES COUNTY

INDUSTRIAL SOLID WASTE
CERTIFICATION OF REMEDIATION

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Commission on Environmental Quality pertaining to Industrial Solid Waste Management, this document is hereby filed in the Deed Records of Nueces County, Texas in compliance with the recordation requirements of said rules:

I

Encycle/Texas, Inc. has performed a remediation of the land described herein. A copy of the Notice of Registration No. 30003, including a description of the facility, is attached hereto (Exhibit A) and is made part of this filing. A list of the known waste constituents, including known concentrations (i.e., soil and groundwater), which have been left in place is attached hereto (Exhibit B) and is made part of this filing. Further information concerning this matter may be found by an examination of company records or in the Notice of Registration No. 30003 files, which are available for inspection upon request at the central office of the Texas Commission on Environmental Quality in Austin, Texas.

The Texas Commission on Environmental Quality derives its authority to review the remediation of this tract of land from Texas Health and Safety Code, §361.002, which enables the Texas Commission on Environmental Quality to promulgate closure and remediation standards to safeguard the health, welfare and physical property of the people of the State and to protect the environment by controlling the management of solid waste. In addition, pursuant to the Texas Water Code, §5.012 and §5.013, Texas Water Code, Annotated, Chapter 5, the Texas Commission on Environmental Quality is given primary responsibility for implementing the laws of the State of Texas relating to water and shall adopt any rules necessary to carry out its powers and duties under the Texas Water Code. In accordance with this authority, the Texas Commission on Environmental Quality requires certain persons to provide certification and/or recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This deed certification is not a representation or warranty by the Texas Commission on Environmental Quality of the suitability of this land for any purpose, nor does it constitute any guarantee by the Texas Commission on Environmental Quality that the remediation standards specified in this certification have been met by Encycle/Texas, Inc.

II

Being a 17.80 acre tract, more or less, of land and submerged land referred to as 18 acres in Special Warranty Deed recorded in Document No. 2004009560, Official Public Record of Nueces County, Texas, this 17.80 acre tract bordered on the west by a 54.00 acre tract recorded in Document No. 1996025009, Official Public Records of Nueces County, Texas, and bordered on the east by an Encycle tract recorded in

DRAFT

Volume 2131, Page 465, Deed Records of Nueces County, Texas, and this 17.80 acre tract being more particularly described as follows:

Beginning at a found concrete monument in the north boundary line of Up River Road, a public highway, also known as Shell Road, said monument being the southwest corner of said Encycle tract, and the southeast corner of this tract;

Thence N 74°35'33" W with the south boundary line of this 17.80 acre tract and said north right-of-way line of Up River Road, 551.50 feet, to a set 5/8-inch rod for a corner of this tract;

Thence N 74°31'03" W and continuing with the south boundary line of this 17.80 acre tract, the same being the north right-of-way line of said Up River Road, 248.50 feet, to a set 5/8-inch rod for the southwest corner of this tract, the same being the southeast corner of said 54.00 acre tract;

Thence N 31°49'47" E with the west boundary of this tract and the east boundary of said 54.00 acre tract, at 940.98 feet pass a set 5/8-inch rod on the south right-of-way line of the 100 foot right-of-way of Union Pacific Railroad, at 1048.99 feet pass a set 5/8-inch rod on the north right-of-way line of said railroad, in all a distance of 1300.88 feet to the Port of Corpus Christi's south bulkhead line, being located parallel with and 300.00 feet southwesterly, measured at right angles, from a line established as the center line of the Corpus Christi Ship Channel, authorized to be 200 feet wide, for the northwest corner of this tract;

Thence S 77°38'15" E with the north boundary of this tract and along said Port of Corpus Christi's south bulkhead line, 468.77 feet, to the northwest corner of said Encycle tract, the same being the northeast corner of this tract;

Thence S 21°56'27" W with the east boundary of this tract and the west boundary of said Encycle tract, at 225.62 feet pass a set 5/8-inch iron rod on the north right-of-way line of said Union Pacific Railroad, at 327.25 pass a 5/8-inch iron rod set on the south right-of-way line of said railroad, in all, 390.00 feet, to a set 5/8-inch iron rod for a corner of this tract;

Thence S 14°51'27" W and continuing with the east boundary of this tract, the same being the west boundary of said Encycle tract, 885.60 feet to the point of beginning and containing 17.80 acres of land, more or less, of which 1.21 acres, more or less, is embraced within the 100 foot right-of-way for Union Pacific Railroad, leaving a net acreage of 16.59 acres of land, more or less.

Exhibit C attached hereto and incorporated herein by reference is the metes and bounds description and plat map demarcating this 17.80 acre tract, and Exhibit D attached hereto is a legal description of this tract.

Contaminants deposited hereon have been remediated to meet non-residential (i.e., commercial/industrial) soil criteria in accordance with a plan designed to meet the requirements of 30 Texas Administrative Code, §335.561 (Risk Reduction Standard Number 3), which mandates that the remedy be designed to eliminate or reduce to the maximum extent practicable, substantial present or future risk. The remediation plan does not require continued post-closure care or engineering, or institutional controls other than (1) the property is not to be used for residential purposes, and (2) installation of a water well on the property is prohibited. Future use of the property is considered appropriate for non-residential (i.e., commercial/industrial) land use with no water wells on the property in accordance with the risk reduction standards at the time of this filing. Institutional or legal controls placed on the property to ensure appropriate future use include filing of this

DRAFT

Deed Certification of Remediation in the Deed Records of Nueces County. The current or future owner must undertake actions as necessary to protect human health or the environment in accordance with the rules of the Texas Commission on Environmental Quality.

III

The owner of the site is Meaney-Walsh Properties No. 1. Ltd., and its address is _____.

For additional information, contact:

Texas Commission on Environmental Quality
Central Records
12100 Park 35 Circle, Building E
Austin, Texas 78753

Mail: TCEQ – MC 199
P.O. Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: TCEQ Solid Waste Registration Number 30003.

EXECUTED this _____day of _____, 200_.

Meaney-Walsh Properties No. 1. Ltd

By:_____

Name: _____

Title: _____

STATE OF TEXAS
NUECES COUNTY

BEFORE ME, on this the ___ day of _____, 200_, personally appeared _____ of the Meaney-Walsh Properties No. 1. Ltd, known to me to be the person or agent of the Meaney-Walsh Properties No. 1. Ltd whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity herein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the ___ day of _____, 200_.

_____
Notary Public in and for the State of Texas

County of Nueces
My Commission Expires:_____

APPENDIX E

ARCADIS

Appendix E

Sampling and Analysis Plan

APPENDIX E

SAMPLING AND ANALYSIS PLAN

GENERAL

This sampling and analysis plan (SAP) presents the sample collection and analysis procedures to be used during corrective measures implementation at the Encycle/Texas, Inc. facility. The objectives of the SAP are to establish sample collection locations and procedures that allow the samples collected to be representative of the media sampled, and establish analytical procedures to accurately and precisely determine the identity and concentration of constituents to be analyzed. The scope of the SAP will include the following tasks:

- Collect wooden railroad tie samples for waste classification and disposal purposes. The wooden railroad ties area located in above-ground piles in the Boneyard, and along the active railroad tracks adjacent to the north and south sides of Lettered Bins Building C.
- Collect composite concrete samples for waste classification and disposal purposes. The concrete is located above soils exceeding PRGs in the Southern Tract Lettered Bins Building C, and the Storm Sewer System Storm Drain 219/soil boring B-111 area.
- Collect post-excavation verification soil samples from the soil excavation floors and walls to verify that soils exceeding the PRGs have been excavated.
- Collect samples of offsite backfill materials to be used to backfill excavated areas.
- Collect composite soil samples from the excavated soil stockpiles for waste classification and disposal purposes.
- Collect post-treatment confirmation soil samples from the stabilized soil stockpiles to ensure the Target Soil Stabilization Treatment Limits shown on Table 10 have been achieved.

WOODEN RAILROAD TIE SAMPLE COLLECTION

As discussed in Section 3.1.1.2 of the CMI Work Plan, approximately 1,000 cubic yards of wooden railroad ties are located in above-ground piles in the Boneyard area of the Meaney Tract. Also, several hundred cubic yards of wooden railroad ties are located above soils exceeding PRGs in the Railroad Tracks area on the Southern Tract.

One wooden railroad tie core sample will be collected from every 200 cubic yards of railroad ties. The core samples will be collected by advancing a 2-inch-diameter, diamond-tipped, stainless-steel core barrel through the center of the railroad ties. Prior to collection of each sample, the core barrel will be cleaned using a non-phosphate detergent wash, water rinse, and distilled water final rinse. Each railroad tie sample will be removed from the core barrel and placed into a laboratory-provided, 32-ounce, widemouth glass jar. The jars will be labeled, placed into a cooler with ice, and submitted with chain of custody documentation to the analytical laboratory (STL Laboratory, Corpus Christi, Texas).

The wooden railroad tie samples will be analyzed for TCLP arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and zinc. Analytical test methods, holding times, and sample quantitation limits are shown on Table 25. Equipment blank and duplicate samples also will be collected during wooden railroad tie sampling as specified in the Quality Assurance Plan (Appendix F).

CONCRETE SAMPLE COLLECTION

As discussed in Section 3.1.3.2 of the CMI Work Plan, affected soils in two areas on the Southern Tract (soils exceeding PRGs below cracks in Bins F, G, H and P in Lettered Bins Building C; and the Storm Drain 219/soil boring B-111 area) are located below concrete. Therefore, prior to soil excavation, the overlying concrete in these areas will be removed, stockpiled, and sampled prior to disposal.

The concrete will be removed using jackhammers and/or steel breaker bars attached to excavating equipment. The broken concrete will then be placed into stockpiles that are segregated from the excavated soil stockpiles. One composite concrete sample will be collected from every 200 cubic yards of concrete. Each composite sample will consist of four grab samples, with one grab sample from each quadrant of the stockpile. The four grab samples will be placed directly into a laboratory-provided, 32-ounce, widemouth glass jar. Each jar will be labeled, placed into a cooler with ice, and submitted with chain of custody documentation to the analytical laboratory (STL Laboratory, Corpus Christi, Texas).

The concrete samples will be analyzed for TCLP arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and zinc. Analytical test methods, holding times, and sample quantitation limits are shown on Table 25. Equipment blank and duplicate samples also will be collected during concrete sampling as specified in the Quality Assurance Plan (Appendix F).

POST-EXCAVATION VERIFICATION SOIL SAMPLE COLLECTION

As discussed in Sections 3.1.1.3, 3.1.2.2, and 3.1.3.3 of the CMI Work Plan, verification soil samples will be collected following excavation of soils exceeding PRGs on the Meaney Tract, Northern Tract, and Southern Tract, respectively. The verification samples from the floors of the excavations will be collected on a 50-foot square grid pattern, and the verification samples from the walls of the excavations (excavation sidewalls) will be collected on a 50-foot spacing. Verification soil sample locations on the Meaney Tract are shown on Figure 20, and verification soil sample locations on the Northern and Southern Tracts are shown on Figure 21.

The verification soil samples from the floors of the excavations will be collected on a 50-foot square grid pattern using a stainless steel trowel. Prior to collection of each sample, the trowel will be cleaned using a non-phosphate detergent wash, water rinse, and distilled water final rinse. The verification samples from the excavation floors will be collected from the upper six inches of soil using the trowel, and transferred into laboratory-provided, 8-ounce, widemouth glass jars with Teflon-lined lids. The jars will be labeled, placed into a cooler with ice, and submitted with chain of custody documentation to the analytical laboratory (STL Laboratory, Corpus Christi, Texas).

The verification soil samples from the walls of the excavations will be collected every 50 feet at a depth of 0-6 inches, which represents the most contaminated depth interval based of previous soil samples collected at the site during the RCRA Facility Investigation (RFI). Therefore, each verification soil sample from the excavation sidewalls will be a grab sample collected at a depth of 0-6 inches, and the excavation sidewall samples will be spaced 50 feet apart. The sidewall samples will be collected using a clean, stainless steel trowel, and transferred into laboratory-provided, 8-ounce, widemouth glass jars with Teflon-lined lids. The jars will be labeled, placed into a cooler with ice, and submitted with chain of custody documentation to the analytical laboratory (STL Laboratory, Corpus Christi, Texas).

The verification soil samples collected following initial soil excavation on the Meaney Tract will be analyzed for all constituents on the Meaney Tract that exceeded PRGs (total antimony, arsenic, cadmium, lead, manganese, silver, and zinc) as shown on Table 7. The verification soil samples collected following initial soil excavation on the Northern Tract will be analyzed for total arsenic, which as detailed in the August 27, 2004 BLRA Addendum, is the constituent in soil to exceed PRGs on the Northern Tract (see Table 7). The verification soil samples collected following initial soil excavation on the Southern Tract will be analyzed for total arsenic and total lead, which are the constituents in soil that exceeded PRGs on the Southern Tract as shown on Table 7. Analytical test methods, holding times, and sample quantitation limits are shown on Table 24. Equipment blank and duplicate samples also will be collected during verification soil sampling as specified in the Quality Assurance Plan (Appendix F).

Following receipt of the initial verification soil sample results, additional soils will be excavated in areas, if any, that exceeded the PRGs in the initially collected verification soil samples. Following additional soil excavation in these areas, additional verification soil samples will be collected and analyzed for the constituent(s) that exceeded the PRGs in the initially collected verification soil sample at that location. Excavation will continue until verification soil sample analytical results show that metals concentrations do not exceed the PRGs shown on Table 7.

OFFSITE BACKFILL MATERIAL SAMPLE COLLECTION

As discussed in Sections 3.1.1.7, 3.1.2.2, and 3.1.3.7 of the CMI Work Plan, the excavated areas will be backfilled using select clayey or sandy loam obtained from an uncontaminated offsite source such as a rural borrow pit. Also, as discussed in Section 3.1.2.3 of the CMI Work Plan, the soil boring B-140 area on the Northern Tract will be capped using low-permeability clay from an uncontaminated offsite source. Prior to backfilling, a composite soil sample will be collected from each backfill material source (clayey or sandy loam source, low-permeability clay source) to confirm the offsite backfill materials are not contaminated.

The composite samples will each consist of four grab samples collected from backfill source area. The grab samples will be collected using a clean stainless steel trowel and composited in laboratory-provided widemouth glass jars. The jars will be labeled, placed into a cooler with ice, and submitted with chain of custody documentation to the analytical laboratory (STL Laboratory, Corpus Christi, Texas). Each composite sample will be analyzed for TPH using Method TX 1005, VOCs using EPA Method 8260, and total metals using the EPA test methods shown on Table 24.

If the analytical results show detectable concentrations of TPH or VOCs, these soils will not be used for backfilling and an alternate offsite backfill source will be selected for sampling. Also, if the concentrations of one or more metals exceed site-specific background concentrations, Texas-specific background concentrations given in 30 TAC Chapter 350.51, and Risk Reduction Standard No. 2 medium specific concentrations (MSCs) for residential land use, these soils will not be used for backfilling and an alternate offsite backfill source will be selected for sampling.

EXCAVATED SOIL STOCKPILE SAMPLE COLLECTION

As discussed in Sections 3.1.1.4, 3.1.2.2, and 3.1.3.4 of the CMI Work Plan, the excavated soils exceeding PRGs on the Meaney Tract, Northern Tract, and Southern Tract will be stockpiled in a paved and bermed area of the Encycle facility. One composite sample will be collected from every 200 cubic yards of excavated soil for waste characterization purposes. The samples will be collected using a stainless steel

trowel that will be cleaned prior to each sample using a non-phosphate detergent wash, water rinse, and distilled water final rinse. Each composite sample will consist of four grab samples, with one grab sample from each quadrant of the stockpile. The four grab samples will be composited in a laboratory-provided, widemouth glass jar. Each jar will be labeled, placed into a cooler with ice, and submitted with chain of custody documentation to the analytical laboratory (STL Laboratory, Corpus Christi, Texas).

The excavated soil stockpile samples will be analyzed for TCLP arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and zinc. Analytical test methods, holding times, and sample quantitation limits are shown on Table 25. Equipment blank and duplicate samples also will be collected during excavated soil stockpile sampling as specified in the Quality Assurance Plan (Appendix F).

TREATED SOIL STOCKPILE SAMPLE COLLECTION

As discussed in Sections 3.1.1.5, 3.1.2.2, and 3.1.3.5 of the CMI Work Plan, the excavated soils exceeding the Target Soil Stabilization Treatment Limits shown on Table 10 will be treated on-site using soil stabilization. Following soil stabilization, confirmation soil samples will be collected from the treated soil stockpiles to confirm the Target Soil Stabilization Treatment Limits have been met prior to disposal of the soils at an offsite, permitted Class 2 non-hazardous landfill. One confirmation soil sample will be collected from every 200 cubic yards of treated (stabilized) soil. The samples will be collected using a stainless steel trowel that will be cleaned prior to each sample using a non-phosphate detergent wash, water rinse, and distilled water final rinse. Each composite sample will consist of four grab samples, with one grab sample from each quadrant of the stockpile. The four grab samples will be composited in a laboratory-provided, widemouth glass jar. Each jar will be labeled, placed into a cooler with ice, and submitted with chain of custody documentation to the analytical laboratory (STL Laboratory, Corpus Christi, Texas).

The treated soil stockpile samples will be analyzed for TCLP arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and zinc. Analytical test methods, holding times, and sample quantitation limits are shown on Table 25. Equipment blank and duplicate samples also will be collected during treated soil stockpile sampling as specified in the Quality Assurance Plan (Appendix F).

APPENDIX F

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Appendix F

Quality Assurance Plan

APPENDIX F

QUALITY ASSURANCE PLAN

GENERAL

The quality assurance/quality control (QA/QC) procedures described in this quality assurance plan have been prepared to document and report precision, accuracy and completeness of Corrective Measures Implementation (CMI) activities, including field and laboratory activities that generate data. These procedures provide direction for maintaining quality of work and will be used by project personnel during performance of CMI activities.

During all sampling activities, specific QA/QC procedures will be implemented to ensure the data collected accurately represents the materials sampled. Materials to be sampled as part of CMI activities include soils from excavation floors and sidewalls, and waste materials including wooden railroad ties, concrete, and excavated soils. Detailed field and laboratory QA/QC procedures are discussed in the following subsections.

PROJECT ORGANIZATION

A project officer, project manager, and project quality assurance manager will be selected and will be involved in the sampling programs, quality assurance program, field and laboratory analyses, and report preparation. The project officer will be the manager/associate who has full authority to commit the necessary resources to the project, and will oversee implementation of the QA/QC plan. The project manager will be responsible for coordinating and managing the subcontractors, supervising field operations, receiving and reviewing field and laboratory data, and report preparation. The project manager will also be responsible for maintaining project files and communicating with the project officer, quality assurance manager, field personnel, and Encycle. The project quality assurance manager will be responsible for monitoring and verification that the analytical work is performed in accordance with this quality assurance plan, analytical data validation, and communicating with the project manager and analytical laboratory. The field operations, including sampling, construction oversight, and field note documentation, will be accomplished by one or more qualified environmental technical/professional staff members (field operations personnel). A project organization chart is provided on attached Figure F-1.

PROCUREMENT/CONTROL OF SUBCONTRACTORS

For field operations that require procurement of subcontractors (soil excavation, soil stabilization, waste transportation, waste disposal, surveyor), Encycle personnel or their designated representative will provide supervision of subcontractors. Additionally, the project manager shall perform quality control inspections of all subcontractors. The intention of the subcontractor supervision and inspections is to verify that the subcontractor has fulfilled the requirements necessary to perform the requested activities. The inspections shall include the type and condition of equipment, calibration of equipment (if applicable), and qualifications of personnel. If requirements are not met, sufficient grounds for suspension of activities exist. Equipment which does not meet project requirements shall not be used without repair or replacement to the satisfaction of Encycle, the project officer, and the project manager. The results of the inspections shall be documented in a field notebook and placed into the project file.

FIELD QUALITY CONTROL

Field QA/QC procedures include proper collection, labeling, preservation, and shipment of samples; the implementation of strict sample custody procedures; the preparation of detailed documentation of all field activities; and the collection of field QA/QC samples for laboratory analyses.

Field QA/QC Samples

Trip blank, equipment blank, and duplicate samples will be collected and submitted for analyses to ensure that sample collection and handling procedures are properly implemented. If unusual or erratic data are reported regarding a particular sample, the data can be compared with the data reported for the QA/QC samples to determine if the sample may have been influenced by outside factors not related to the actual quality of the source media.

Trip Blanks

Trip blank samples will be prepared to ensure that sample shipment procedures do not impact the quality of the samples collected. Deionized water will be placed into appropriate sample containers by the analytical laboratory. Because the constituents of concern are non-volatile metals, one set of trip blanks will be prepared for each day that samples are collected for laboratory analyses. The trip blanks will be placed into the same sample cooler as the sample containers shipped or delivered to the site. The trip blanks will remain unopened in the sample cooler during field sample collection activities, and will accompany the samples during shipment back to the analytical laboratory. The trip blanks will be analyzed for the same compounds as the field-collected samples.

Equipment Blanks

Equipment blank samples will be collected during sampling events when field equipment is used to collect samples from more than one sample location (i.e., stainless steel trowels, etc.). The equipment blanks will be collected by taking distilled or deionized water and placing it in contact with the field sampling equipment after the equipment has been cleaned using normal cleaning procedures as described in the Sampling and Analysis Plan (Appendix E). The distilled or deionized water will be poured over the sampling equipment and collected directly into the appropriate sample containers. The equipment blanks will be analyzed for the same compounds as the field-collected samples. Equipment blanks will be prepared and analyzed at a frequency of one equipment blank per day that samples are collected using field equipment (trowels, etc.).

Duplicate Samples

Duplicate samples will be collected to ensure that sample collection and handling procedures are implemented consistently. Each duplicate sample will consist of a representative aliquot of the sample being collected. The duplicate samples will be placed into a second container set identical to the initial container set and analyzed for the same parameters as the initial sample. The resulting data can be compared to evaluate sample matrix homogeneity and general laboratory reproducibility. Duplicate samples will be collected and analyzed at a frequency of one per 20 samples for each media sampled, with a minimum of one duplicate sample per day that samples are collected for laboratory analyses.

SAMPLE LABELING, PRESERVATION, AND SHIPMENT

The following sample labeling, preservation, and shipment procedures will be implemented during all field sampling activities.

Sample Labeling

All sample labels will be completed in waterproof ink and attached to the appropriate sample containers. Each sample label will be completed with the facility name; location; the date and time of sample collection; a unique sample identification number; sample depth; sample container preservative; the requested analyses; and the initials of the person collecting the sample. An example sample label is provided in attached Figure F-2.

Sample Preservation

Appropriate preservatives will be provided by the laboratory prior to taking the bottle sets to the sampling locations. After each container is labeled, it will be placed immediately into an ice chest (cooler) and cooled to an approximate temperature of 4 degrees C using ice.

Sample Shipment

Samples will be delivered daily to Severn Trent Laboratories (STL) in Corpus Christi, Texas. The samples will be packed in a cooler with sufficient amounts of ice and a temperature blank. Adequate amounts of packaging materials (bubble pack, etc.) will be placed around the glass sample containers to protect them from breakage during transport. The sample coolers will be accompanied by a chain of custody form completed as described in the following section.

Sample Custody

Sample custody will be documented through the use of chain of custody forms and custody seals. Implementation of detailed sample custody procedures will enable the project personnel to document each phase of sample shipment from the site to receipt by the laboratory.

Custody seals will be signed and dated by the field personnel when packaging samples for shipment to the analytical laboratory by personnel other than the person collecting the sample (common carriers, etc.). The custody seal will be placed on each sample cooler in a location that will preclude opening the sample cooler without breaking the custody seal. The custody seal should remain intact until the samples are received by the analytical laboratory. Laboratory personnel will inspect each sample cooler upon receipt. If the custody seal is broken, the project officer or project manager will be notified immediately and appropriate measures will be implemented to investigate the potential impact on the associated samples. An example custody seal is provided on attached Figure F-3.

Each time samples are prepared for transport to the laboratory, a chain of custody form will be completed and will accompany the samples. Whenever custody of the samples is transferred, the individuals relinquishing sample custody will retain one carbon copy of the form. The original record will accompany the samples to the laboratory and, upon laboratory receipt, will be returned to the project manager to document that the custody chain was unbroken. The chain of custody form will be completed with the following information:

- Project identification and location;
- Sample identification numbers;
- Signature of sample collector(s);
- Date and time of sample collection;
- Sample matrix (i.e., soil, etc.);
- Number and type of sample containers;
- Analyses requested and analytical methods;
- Sample preservation;
- Remarks;
- Signatures of the individuals relinquishing and assuming custody; and
- Date(s) and time(s) when sample custody was relinquished/assumed.

An example chain of custody form is provided on attached Figure F-4.

FIELD DOCUMENTATION

A bound weatherproof notebook will be maintained by the field operations personnel to document all field activities conducted during CMI implementation. The notebook will provide documentation of the sampling procedures, soil excavation procedures, soil treatment procedures, soil loading and transport procedures, excavation backfilling procedures, and other field observations. All entries will be completed with an indelible ink pen or indelible marker and will be signed and dated. The field notebook will document soil and waste sampling procedures and, at a minimum, will include the following:

- Site location;
- Date of the sampling event;
- The purpose of the sampling event;
- Weather conditions at the time of sampling;
- Sample location and identification;
- Sample collection procedures;
- Sample preservation, handling, and transport procedures;
- Names of sampling personnel;
- Time of sample collection;
- Sample equipment cleaning procedures; and
- Other appropriate comments and observations.

Upon completion of field activities, the field notebook will be relinquished to the project manager, who will maintain the notebook as a permanent record in the project file.

LABORATORY QUALITY CONTROL

General

The Severn Trent Laboratory in Corpus Christi, Texas will be utilized as the primary analytical laboratory to conduct the chemical analyses associated with CMI activities. Geotechnical sample analyses (soil permeability, etc.) may be subcontracted to a geotechnical laboratory. All laboratories to be utilized shall adhere to the laboratory quality assurance/quality control procedures described herein to ensure the

reliability of the data. The following subsections specify the minimum QA/QC procedures with which the laboratories shall comply.

Analytical Procedures

The analytical procedures to be utilized during CMI activities are listed in Tables 24 and 25. Analysis of the samples will be performed by the analytical laboratory in accordance with the protocols and QA procedures specified in "Test Methods for Evaluating Solid Waste, Physical/Chemcial Methods (SW-846)."

Laboratory Quality Assurance Plan

The laboratory quality assurance plan (QAP) will detail standard laboratory practices including the following:

- Internal sample custody;
- Equipment calibration procedures and frequency;
- Analytical methodologies;
- Data reduction, validation, and reporting;
- Internal quality control checks and frequency;
- Preventive maintenance;
- Assessment of data quality;
- Corrective action; and
- Laboratory project team and responsibilities.

The laboratory QAP for Severn Trent Laboratories is provided in Attachment F-1.

Calibration Procedures and Frequency

In all cases where analyses are conducted in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)", laboratory instrument calibration procedures and frequencies specified in the document shall be followed. Laboratory instruments used to perform metals analyses will be calibrated according to the laboratory QAP. The atomic adsorption spectrophotometer instruments will be calibrated by use of a minimum of three calibration standards prepared by dilution of certified stock solutions and an analysis blank. The standards bracket the concentration range of the samples. Inductively Coupled Plasma Emission Spectrophotometer (ICP) methods are anticipated for most metals analyses. The ICP instruments shall be calibrated by use of a two-point calibration using an analysis blank and one calibration standard, prepared by dilution of certified stock solutions. A continuing calibration standard, prepared from a different stock solution that used for preparation of the calibration standards, shall be prepared and analyzed after every ten samples. For the ICP, linearity near the quantitation limit will be verified with a standard prepared at a concentration of approximately two to five times the quantitation limit.

Laboratory QA/QC Samples

Internal laboratory QA/QC samples including blanks, sample spikes, duplicates, and reference samples will be prepared and analyzed along with each batch of samples submitted for analysis during CMI activities. A description of the required laboratory QA/QC samples is provided below. Method-specific QA/QC samples may also be specified in each analytical method and shall be prepared and analyzed at the frequencies specified by the method.

Method Blanks

A method blank will be prepared and analyzed with each batch of samples, at a frequency not to exceed one per 20 samples. Each method blank will be carried through the entire sample preparation and analytical process. The detection of contaminants in a method blank is indicative of analytical equipment or procedural contamination.

Matrix Spikes

A matrix spike will be prepared and analyzed with each batch of samples, at a frequency not to exceed one per 20 samples. The matrix spike will assess the ability of the method to recover a known quantity of a constituent from a typical sample matrix. Matrix spikes are prepared by "spiking" a sample with a known quantity of the analyte. A low matrix spike recovery indicates that sample matrix interference may be inhibiting the ability of the analytical procedure to recover the constituent of concern.

Matrix Spike Duplicates

A matrix spike duplicate will also be prepared and analyzed with each batch of samples, at a frequency not to exceed one per 20 samples. The analytical data reported from the matrix spike duplicate will be compared to the data reported for the matrix spike so that the precision of the analytical method may be evaluated.

Reference Samples

Reference samples (also called laboratory control samples) composed of certified standard solutions or blank matrices spiked with constituents of concern will also be analyzed with each batch of samples, at a frequency not to exceed one per 20 samples. The analytical results reported for the reference samples will be used to evaluate the ability of the method to produce data within an acceptable range of the known concentrations.

Sample Holding Times

All samples will be analyzed within the allowable holding times specified by the analytical methods. The allowable holding times for samples collected during CMI activities are shown on Tables 24 and 25.

Sample Quantitation Limits

The sample quantitation limits (SQLs) are the method detection limits (MDLs) adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes than prescribed in the analytical method, and takes into account sample characteristics, sample preparation, and analytical adjustments. Sample characteristics that may affect the SQL include the moisture content in the sample (for solids), the matrix of the sample, and/or the concentration of constituents in the sample. Because the SQL is sample-specific, the SQL in one sample may be higher than, lower than, or equal to the SQL value for the same constituent in another sample. Therefore, the SQLs shown on Tables 24 and 25 are estimated values.

Proper application of the analytical method includes the use of instrument calibration that brackets the values reported. When the concentration of a compound in a sample exceeds the calibration range, the laboratory shall dilute the sample. Since the SQL is a function of the MDL, this dilution raises the SQL to a value equal to the MDL multiplied by the dilution factor.

Laboratory Documentation

The laboratory will provide detailed documentation of the results of the analyses conducted during the CMI to the project manager. The laboratory will also maintain internal records of the results of analyses for a period of at least three years. At a minimum, the following information will be reported in the data package for each sample that is provided to the project manager:

- The results of the sample analysis;
- The method of analysis;
- The sample quantitation limit of analysis;
- The sample collection and receipt dates;
- The sample preparation/extraction and analysis dates;
- The results of the corresponding laboratory QA/QC sample analyses;
- A copy of the chain of custody form; and
- A case narrative identifying QA or sample problems encountered, sample dilutions required, etc.

DATA REDUCTION, VALIDATION, AND REPORTING

Data Reduction

Raw data from field measurements and sample collection activities will be appropriately recorded in the field notebook. If the data are to be used in the project reports, they may be reproduced into text, figures, tables, and/or graphs, and the method of reduction will be documented in the report. All analytical data generated by the laboratory will be checked for accuracy and completeness. The analyst who generates the analytical data and the laboratory quality assurance officer have the prime responsibility for the correctness and completeness of the data. All data shall be generated and reduced following protocols specified in the laboratory QAP.

Data Validation

Data validation is a systematic process for reviewing a body of assembled analytical results against a set of criteria to provide assurance that the data are adequate for the intended use. The data validation procedures shall include an evaluation of the field data package and the laboratory analytical package.

The field data package will be reviewed by the project manager or his designee for completeness and accuracy. The field data package includes all of the field records and measurements developed by the field operations personnel. Failure in any of these areas may result in the data being invalidated. The field data package validation procedure will include the following:

- A review of field data contained in the field notebook and applicable forms for accuracy and completeness.
- A verification that the samples, trip blanks, equipment blanks, and duplicate samples were properly prepared, preserved, and identified.
- A review of field analyses and field instrument calibration data.
- A review of chain of custody documents for proper completion, signatures of field sampling personnel and the laboratory sample custodian, and dates.

The project quality assurance manager shall conduct data validation to verify that the analytical laboratory has performed in accordance with the requirements specified in this QA/QC plan. Therefore, the analytical laboratory shall be required to submit data that are supported by sufficient QA backup information and data to enable data reviewers to conclusively evaluate the quality of the data. The QA reporting will include sample holding times, SQLs, and the results of laboratory QA/QC samples (method blanks, matrix spikes, matrix spike duplicates, reference samples). The laboratory data evaluation will include a systematic review of the data for compliance with the established QC criteria, including the following:

- Comparison of the data package deliverables to the requirements specified in this QA/QC plan.
- Comparison of sample collection dates, sample extraction dates, and analysis dates to determine if the samples were extracted and analyzed within proper holding times.
- Review of the analytical methods and required detection limits to verify that they agree with the requirements specified in this QA/QC plan.
- Review of trip blanks, equipment blanks, and laboratory method blanks in accordance with the EPA Functional Guidelines for Validation of Laboratory Data.
- Review of field duplicates to check the precision of chemical analyses and field sample collection techniques.
- Comparison of matrix spike and matrix spike duplicate recoveries to applicable control limits specified for the method, and for the presence of matrix interferences that may be affecting recovery of a particular analyte.

The data review will identify any out-of-control data points and data omissions and will allow the project manager or project officer to interact with the laboratory to correct data deficiencies. Decisions to repeat sample collection or analyses may be made by the project manager or project officer based on the extent of the deficiencies.

Data Reporting

The laboratory QA reporting required for this project consists of sample analytical results, general information, and additional specific QA support data that allow for an evaluation of laboratory accuracy and precision. The project quality assurance manager will conduct a systematic review of the data for compliance with the established QC criteria based on the data provided by the laboratory. An evaluation of data accuracy, precision, sensitivity, and completeness of all analytical results will be performed. The laboratory data will be evaluated and appropriate qualifier codes (R, J, U, UJ) will be applied to the analytical data as necessary. These codes are adopted from EPA data qualifier codes and are defined as follows:

- R Code: Data flagged with an "R" has not met the required analytical QA requirements. These data are unusable.
- J Code: Data flagged with a "J" has not met some of the analytical QA requirements; however, the problem was not of sufficient magnitude to warrant classifying the data as unusable. The associated numerical value is an estimated quantity.
- U Code: Data flagged with a "U" indicates the constituent was analyzed for but not detected in the sample. The associated numerical value is the sample quantitation limit.
- UJ Code: Data flagged with a "UJ" indicates the constituent was analyzed for but not detected in the sample. The associated sample quantitation limit is an estimated value.

SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY, AND COMPLETENESS

Field data will be reviewed by the project manager and evaluated for compliance with the QA/QC plan. Accuracy of field sample collection documentation will include a comparison of field sample collection data to the associated chain of custody form, and a comparison of field QA/QC samples collected to those specified in this QA/QC plan. Precision, accuracy, and completeness of laboratory analysis will be assessed by evaluating the QA/QC data as specified in this QA/QC plan, including the attached laboratory QAP.

CORRECTIVE ACTIONS

Corrective actions may be required for two classes of problems: (1) analytical and equipment problems, and (2) noncompliance problems. Analytical and equipment problems may occur during sampling, sample handling, sample preparation, laboratory analysis, and data review. For noncompliance problems, a formal corrective action program will be determined and implemented at the time the problem is identified. The person who identifies the problem is responsible for notifying the project manager and Encycle. Implementation of corrective action will be confirmed in writing. Any nonconformance with the established field QA/QC procedures during implementation of the CMI will be identified and corrected in accordance with this QA/QC plan.

During the course of the field activities associated with the CMI, the project manager and field operations personnel are responsible for ensuring that field equipment and field instruments are functioning properly and that work progresses satisfactorily. If a problem is detected by the field personnel, the project manager shall be notified immediately, at which time the problem will be investigated further and corrective action taken to ensure the field activities are performed in accordance with the CMI Work Plan. Any problems which cannot be properly corrected by the field personnel or project manager will be brought to the immediate attention of the project officer and Encycle.

Laboratory corrective actions for analytical or equipment problems are specified in the attached laboratory QAP. In instances where the applicable sample(s) needs to be re-analyzed, the sample will be re-analyzed provided sufficient sample volume remains and provided the sample can be reanalyzed within the specified holding time. If the remaining sample volume is insufficient or the holding time has been exceeded, resampling may be required.

PROJECT ORGANIZATION CHART

Quality Assurance Plan
Encycle/Texas, Inc.
Corpus Christi, Texas

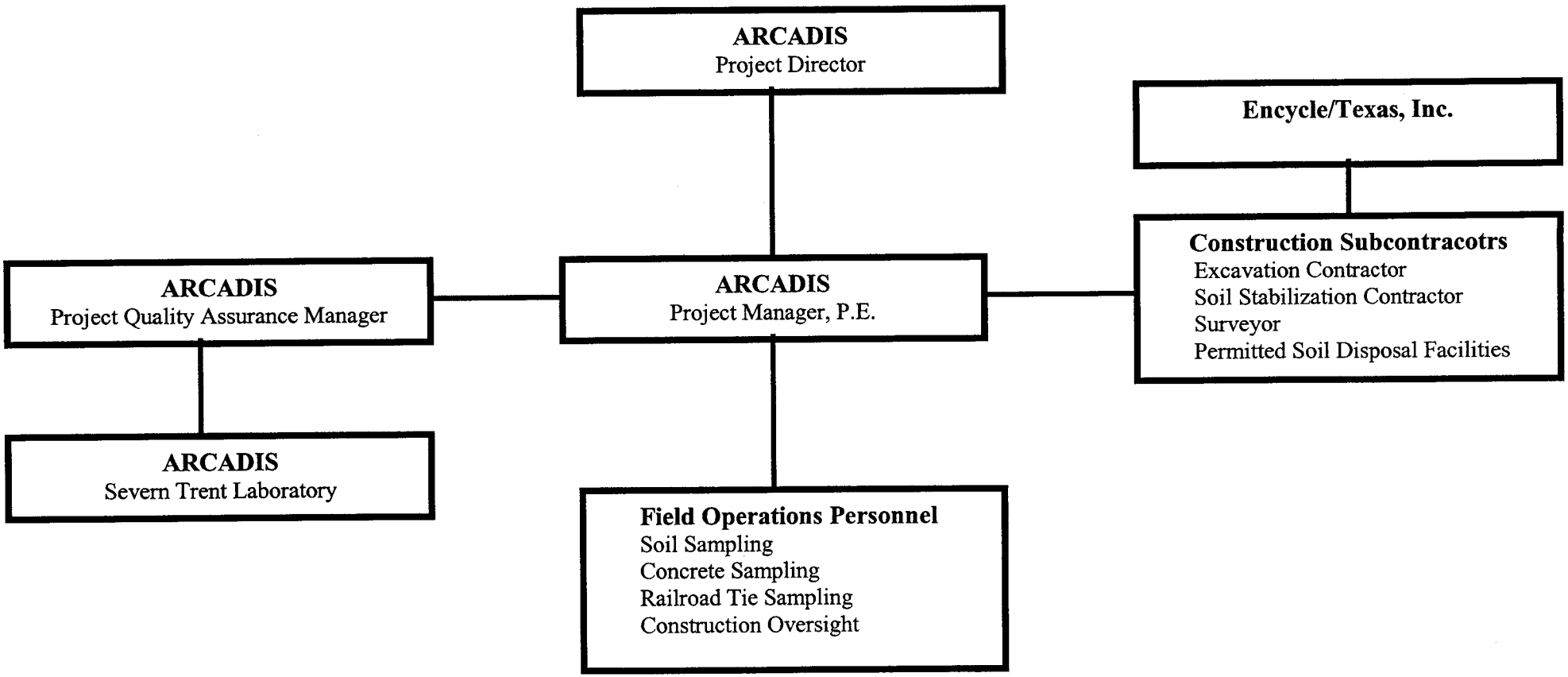

FIGURE F-1

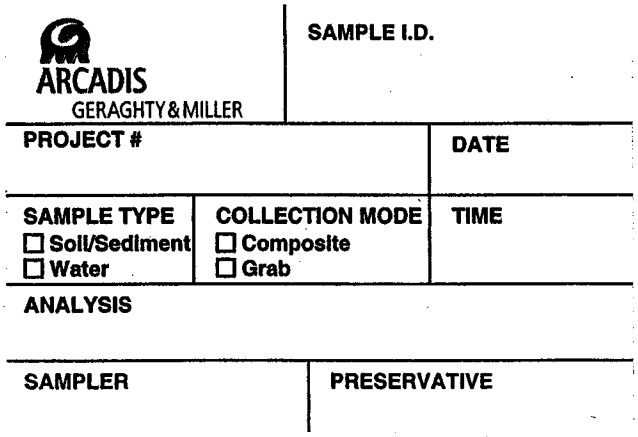

FIGURE F-2. SAMPLE LABEL

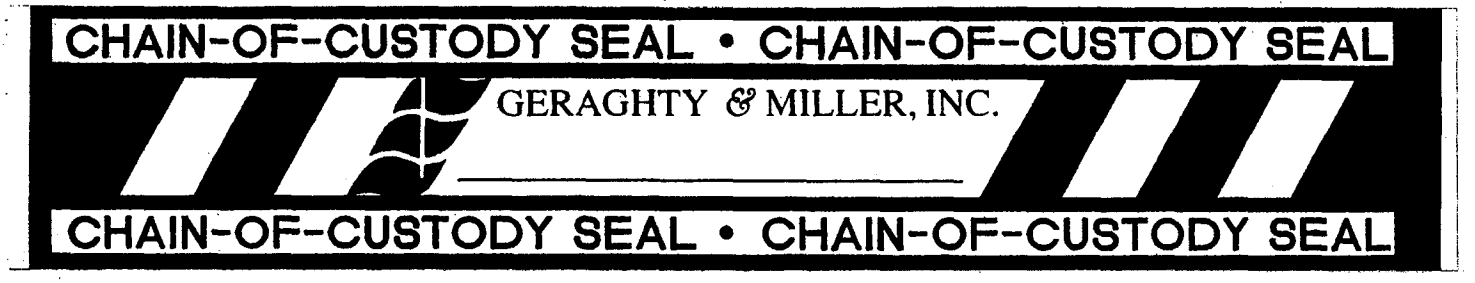

FIGURE F-3. CHAIN OF CUSTODY SEAL

ARCADIS

Laboratory Task Order No./P.O. No._____ **CHAIN-OF-CUSTODY RECORD** Page ____ of ____

Project Number/Name _____

Project Location _____

Laboratory _____

Project Manager _____

Sampler(s)/Affiliation _____

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE						Remarks	Total
										Total No. of Bottles/ Containers	

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: _____	Organization: _____	Date __/__/__	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date __/__/__	Time _____	Yes	No N/A
Relinquished by: _____	Organization: _____	Date __/__/__	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date __/__/__	Time _____	Yes	No N/A

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☐ Common Carrier _____ SPECIFY ☐ Lab Courier ☐ Other _____ SPECIFY

AG 05-12/01

FIGURE F-4. CHAIN OF CUSTODY FORM

ATTACHMENT F-1

Severn Trent Laboratories (STL) Laboratory Quality Assurance Manual

STL Corpus Christi

Laboratory Quality Manual

(SUPERCEDES: LQM-001 Rev 1)

Laboratory Director:	Chip Meador	Date: 10/12/04
QA Manager:	Anh Tran	Date: 10/12/04
Organics Supervisor:	Qingchu Peng	Date: 10-12-04
Inorganics Supervisor:	John E. Mathewson	Date: 10/12/04
Wet Chemistry Group Leader:	Delma Villarreal / Julie R. Darrow	Date: 10/12/04 / 10/12/04
Prepared By:	Anh Tran	Date: 10/12/04

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1.0 INTRODUCTION, PURPOSE, AND SCOPE

1.1 STL Corpus Christi Overview

STL Corpus Christi is a part of Severn Trent Laboratories; a major group of U.S. based companies. Severn Trent Laboratories (STL) has established a reputation for providing high quality, responsive analytical services. Severn Trent Laboratories offers chemical, physical, and biological analyses of a variety of matrices, including aqueous, solid, drinking water, waste, tissue, air and saline/estuarine samples. Specialty capabilities include air toxics, radiological testing, geotechnical testing, tissue preparation and analysis, aquatic toxicology, asbestos, microscopy services, and on-site technologies including mobile laboratories.

The Corpus Christi laboratory has been in the same location since 1981 and under the same management since 1988. STL Corpus Christi offers inorganic and organic analyses.

1.2 Quality Assurance Policy

It is STL Corpus Christi' policy, as stated in the STL Quality Management Plan (QMP), to:

- *provide high quality, consistent, and objective environmental testing services that meet all federal, state, and municipal regulatory requirements.*
- *generate data that are scientifically sound, legally defensible, meet project objectives, and are appropriate for their intended use.*
- *provide STL Corpus Christi clients with the highest level of professionalism and the best service practices in the industry.*
- *build continuous improvement mechanisms into all laboratory, administrative, and managerial activities.*
- *maintain a working environment that fosters open communication with both clients and staff.*

1.3 Management Commitment to Quality Assurance

STL Corpus Christi's management is committed to providing the highest quality data and the best service in the environmental testing industry. STL maintains a Quality System that is clear, effective, well communicated, and supported at all levels in the company. This ensures that the data produced and

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reported by STL meet the requirements of its clients and comply with the letter and spirit of municipal, state and federal regulations.

STL Mission Statement

We enable our customers to create safe and environmentally favorable policies and practices by leading the market in scientific and consulting services. We provide this support within a customer service framework that sets the standard to which others aspire. This is achieved by people whose professionalism and development is valued as the key to success and through continued investments in science and technology.

1.4 Purpose

The purpose of the Laboratory Quality Manual (LQM) is to describe the laboratory specific Quality System and outline how that system enables all employees to meet the Quality Assurance (QA) Policy. The LQM describes the quality system that has been established and is in operation for all sample-related activities including sample handling, receipt, preparation, analysis and documentation. Roles and responsibilities of management and laboratory in support of the Quality System are also defined in the LQM.

1.5 Scope

The STL Quality Management Plan (QMP) is the basis and outline for STL Quality System and contains requirements and general guidelines under which all STL facilities shall conduct their operations. The LQM is a continuation of the QMP. It further outlines the STL Corpus Christi Quality System and contains requirements and general guidelines under which STL Corpus Christi shall conduct its operations. STL Corpus Christi QA Directives and SOPs are the implementation of the LQM's Quality System and cannot be presented independent of the STL QMP or STL Corpus Christi LQM.

The requirements set forth in this document are applicable to all STL Corpus Christi employees. Where the document used the terms "must" and "shall", this denotes required activities. Where a practice is described, this denotes guidelines as to how those activities are performed.

STL Corpus Christi has the responsibility and authority to operate in compliance with regulatory requirements in which the work is performed. STL Corpus Christi has the responsibility and authority to operate in compliance with documented client requirements, where they do not conflict with regulatory requirements. STL Corpus Christi shall not enter any client agreements that conflicts with

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regulatory requirements in which the work is performed. Where documented client agreement specifications conflict with the LQM, but meet with the regulatory requirements, the client agreements specifications shall supercede requirements in the LQM.

The STL Corpus Christi (LQM) undergoes on annual review by the QA Manager, the Laboratory Director, and or their designees. It is a joint responsibility of the QA Manager, the Laboratory Director, and the Section Supervisors to ensure that all associates have a working knowledge of the LQM and its supporting documentation.

1.6 Servicing

Project Managers (PM) are the direct client contact and they ensure resources are available to meet project requirements. Although Project Managers do not have direct reports or staff in production, they coordinate opportunities and work with laboratory management and supervisory staff to ensure available resources are sufficient to perform work for the client's project. Project Managers provide a link between the client and laboratory resources.

2.0 REFERENCES

The references used in preparation of the STL QMP, this LQM, and the basis of STL Corpus Christi's Quality System, are provided in the STL QMP, Section 2.

National Environmental Laboratory Accreditation Conference, Constitution, Bylaws, and Standards, EPA600/R-00/084, US EPA Office of Research and Development, June 2000.

EPA Guidance for Preparing Standard Operating Procedures (SOPs), EPA QA/G-6, US EPA, Office of Environmental Information, EPA/240/B-01/004, March 2001.

EPA Requirements for Quality Management Plans, EPA Qa/R-2, US EPA, Office of Environmental Information, EPA/240, B-01/002 March 2001.

EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5, US EPA, Office of Environmental Information, EPA/240/B-01/003, March 2001.

EPA Quality Manual for Environmental Programs, 5360 A1, US EPA Office of Research and Development, National Center for Environmental Research and Quality Assurance, Quality Assurance Division, May 2000.

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General Requirements for the Competence of Testing and Calibration Laboratories, ISO/IEC 17025, December 1999.

Good Automated Laboratory Practices, EPA 2185, August 1995.

Quality Assurance Project Plan, HQ Air Force Center for Environmental Excellence, Version 3.1, August 2001.

Navy Installation Restoration Laboratory Quality Assurance Guide, Interim Guidance Document, Naval Facilities Engineering Service center, February 1996.

Navy Installation Restoration Chemical Data Quality Manual, Navy IR CDQM, September 1999.

Quality Systems Manual for Environmental Laboratories, Department of Defense, Version 1, October 2000.

Shell for Analytical Chemical Requirements, US Army Corps of Engineers, December 1998.

This LQM was written to comply with the National Environmental Laboratory Accreditation Conference (NELAC) standards. Refer to Table 1 for a cross-section comparison of this LQM to the NELAC standards.

Table 1.

Correlation of QAPP Sections with NELAC 5.5.2 Quality Manual requirements

Chapter 5.5.2 Quality Manual	Laboratory Quality Manual Section
a. Quality policy statement, including objectives and commitments	1.2 Quality assurance Policy 4.2.1 Objectives of the Quality System
b. Organization and Management Structure	4.1 Organization and Management
c. Relationship between management, technician operations, support services and the quality systems	4.1.2 Roles and Responsibilities 4.2 Quality System
d. Records retention Procedures; document procedures	4.3 Document Control 4.12.2 Record Retention
e. Job descriptions of key staff and references to fob description of other staff	4.1.2 Roles and Responsibilities
f. Identification of laboratory approved signatories	4.1 Organization and Management
g. Procedures for achieving traceability of measurements	5.5 Measurement Traceability
h. List of all test methods under which the laboratory performs its accredited testing	5.3.1 Method Selection

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i. Mechanism for assuring the laboratory review all new work to ensure that it has the appropriate facilities and resources before commencing such work	4.4.2 Project Specific Quality Planning
j. Reference to the calibration and/or verification test procedures used	5.4.3 Equipment Verification and Calibration 5.3.2 Data Review
k. Procedures for handling submitted samples	4.7.1 Sample Acceptance Policy 5.7 Sample handling, Transport, and Storage
l. Reference to the major equipment and reference measurement standards used as well as the facilities and services used in conducting tests	1.6 Servicing 5.2 Facilities 5.4.2 Equipment Maintenance 5.4.3 Equipment Verification and Calibration
m. Reference to procedures for calibration, verification and maintenance of equipment	5.4.2 Equipment Maintenance 5.4.3 Equipment Verification and Calibration
n. Reference to verification practices including inter-laboratory comparisons, proficiency testing programs, use of reference materials and internal QC schemes	5.8.1 Proficiency Testing 5.8.2 Control Sample
o. Procedures for feedback and corrective action whenever testing discrepancies are detected, or departures from documented procedures occur	4.9 Control of Non-conformances 4.10 Corrective Action 4.11 Preventive Action 5.8.4 Permitting Departures from Documented Procedures
p. Laboratory management arrangements for exceptionally permitting departures from documented policies and procedures	4.4.2 Project Specific Quality Planning 5.8.4 Permitting Departures from Documented Procedures
q. Procedures for dealing with Complaints	4.8 Complaints
r. Procedures for protecting confidentiality and proprietary rights	4.7.2 Client Confidentiality and Proprietary Rights
s. Procedures for Audits and data review	4.13 Internal Audits 4.14 External Audits 5.3.2 Data Review
t. Process/procedures for establishing that personnel are adequately experienced in duties they are expected to carry out and are receiving any needed training	5.1.2 Training
u. Ethic Policy Statement developed by the laboratory and training personnel in their ethical & legal responsibilities	5.1.3 Ethics Policy
v. Reference to procedures for reporting analytical results	5.3.2 Data Review 5.9 Project Report
w. Table of contents, listing reference, glossaries and appendices	TOC Table of Contents Appendix Listed of Cited SOPs and Work Instructions

3.0 TERMS AND DEFINITIONS

The following is a subset of the comprehensive list provided in the STL QMP, Section 3. Additional information or slight changes in definitions are noted in Italics.

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Accuracy: the degree of agreement between a measurement and true or expected value or between the average of a number of measurements and the true or expected value. *It reflects the total error associated with a measurement.*

Audit: a systematic evaluation to determine the conformance to specifications of an operational function or activity.

Batch: environmental samples, which are prepared and/or analyzed together with the same process, using the same lot(s) of reagents. A preparation batch is composed of one to 20 environmental samples of the same matrix, meeting the above mentioned criteria. Where no preparation method exists (example, volatile organics, water) the batch is defined as environmental samples that are analyzed together with the same process and personnel, using the same lots of reagents, not to exceed 20 environmental samples. An analytical batch is composed of prepared environmental samples, extracts, digestates or concentrates that are analyzed together as a group. An analytical batch can include prepared samples originating from various environmental matrices and can exceed 20 samples.

Chain of Custody (COC): an unbroken trail of accountability that ensures the physical security of samples, data and records.

Compromised Sample: a sample received in a condition that jeopardizes the integrity of the results.

Confirmation: verification of the presence of a component using an additional analytical technique. These may include second column confirmation, alternate wavelength, derivatization, mass spectral interpretation, alternative detectors, or additional cleanup procedures.

Corrective Action: action taken to eliminate the causes of an existing non-conformance, defect or other undesirable situation in order to prevent recurrence.

Data Audit: a qualitative and quantitative evaluation of the documentation and procedures associated with environmental measurements to verify that the resulting data are of acceptable quality.

Demonstration of Capability (DOC): procedure to establish the ability to generate acceptable accuracy and precision.

Document Control: the act of ensuring that documents (electronic or hardcopy and revisions thereto) are proposed, reviewed for accuracy, approved for release by authorized personnel, distributed properly and controlled to ensure use of the correct version at the location where the prescribed activity is performed.

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Equipment Blank: a portion of the final rinse water used after decontamination of field equipment; also referred to as Rinsate Blank and Equipment Rinsate. *This is a field QC parameter and thus the choice of terminology (equipment blank, rinsate blank, etc.) is determined by the client.*

Field Blank: a blank matrix brought to the field and exposed to field environmental conditions.

Field of Testing (FOT): A field of testing is based on NELAC's categorization of accreditation based on program, matrix, and analyte.

Holding Time: the maximum time that a sample may be held before preparation and/or analysis as promulgated by regulation or as specified in a test method.

Instrument Blank: a blank matrix that is the same as the processed sample matrix (i.e. extract, digestate, and condensate) and introduced onto the instrument for analysis.

Instrument Detection Limit (IDL): the minimum amount of a substance that can be measured on a specific instrument, with a specified degree of confidence that the amount is greater than zero. The IDL is associated with the instrumental portion of a specific method only, and sample preparation steps are not considered in its derivation. The IDL is a Statistical estimation at a specified confidence interval of the concentration at which the relative uncertainty is ±100%. The IDL thus represents a range where qualitative detection occurs on a specific instrument. Quantitative results are not produced in this range.

Internal Chain of Custody: an unbroken trail of accountability that ensures the physical security of samples, data and records. Internal Chain of Custody refers to additional documentation procedures implemented within the laboratory that includes special sample storage requirements, and documentation of all signatures and/or initials, dates, and times of personnel handling specific samples or sample aliquots.

Laboratory Control Sample (LCS): a blank matrix spiked with a known amount of analyte(s), processed simultaneously with, and under the same conditions as, samples through all steps of the analytical procedure. *For aqueous samples, the blank matrix consists of DI water. For solid samples, the blank matrix may consist of sand, glass beads or another inert solid material. If an inert material is not easily identified, the laboratory will use DI water that is taken through the solid sample preparation.*

Laboratory Quality Manual (LQM): a document stating the quality policy, quality system and quality practices of the laboratory. The LQM may include by reference other documentation relating to the laboratory's quality system.

Limit of Detection (LOD): the minimum amount of a substance that an analytical process can reliably detect. *STL Corpus Christi does not use the term LOD in its' SOPs or reports.*

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Matrix: The substrate of a test sample. *STL Corpus Christi classifies samples as water, solid, wipes or filters. By definition, water samples are aqueous which are prepared by volume; solid samples are non-aqueous materials which are prepared by weight.*

Table 2. Matrix Description

Matrix	Description
Air	Air samples as analyzed directly or as adsorbed into a solution or absorption matrix and desorbed.
Aqueous	Aqueous sample excluded from the definition of Drinking Water or Saline/Estuarine source. Includes surface water, groundwater and effluents.
Drinking Water	Aqueous sample that has been designated a potable water source.
Saline	Aqueous sample from an ocean or estuary, or other salt-water source such as the Great Salt Lake.
Liquid	Liquid with <15% settleable solids.
Solid	Soil, sediment, sludge or other matrices with ≥15% settleable solids.
Waste	A product or by-product of an industrial process that results in a matrix not previously defined.
Tissue	Sample of a biological origin such as fish tissue, shellfish, or plant material. Such samples shall be grouped according to origin.

Matrix Duplicate (MD): duplicate aliquot of a sample processed and analyzed independently; under the same laboratory conditions; also referred to as Sample Duplicate; Laboratory Duplicate.

Matrix Spike (MS): field sample to which a known amount of target analyte(s) is added.

Matrix Spike Duplicate (MSD): a replicate matrix spike.

Method Blank: a blank matrix processed simultaneously with, and under the same conditions as, samples through all steps of the analytical procedure. *For aqueous samples, the blank matrix consists of DI water. For solid samples, the blank matrix may consist of sand, glass beads or another inert solid material. If an inert material is not easily identified, the laboratory will use DI water that is taken through the solid sample preparation.*

Method Detection Limit (MDL): the minimum amount of a substance that can be measured with a specified degree of confidence that the amount is greater than zero using a specific method. The MDL is a statistical estimation at a specified confidence interval of the concentration at which the relative

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uncertainty is ±100%. The MDL thus represents a range where qualitative detection occurs using a specific method. Quantitative results are not produced in this range. Also referred to as Limit of Detection (LOD).

Non-conformance: an indication, judgment, or state of not having met the requirements of the relevant specifications, contract, or regulation. *A deviation from an established protocol or plan. The deviation may be the result of laboratory or client actions, or related to the behavior of the sample.*

Precision: an estimate of variability. It is an estimate of agreement among individual measurements of the same physical or chemical property, under prescribed similar conditions. *Precision is expressed either as Relative Standard Deviation (RSD) for greater than two measurements or as Relative Percent Difference (RPD) for two measurements. Precision is determined, in part, by analyzing data from aggregate LCS results, MS, MSD, and MD.*

Preservation: refrigeration and/or reagents added at the time of sample collection to maintain the chemical, physical and/or biological integrity of the sample.

Proficiency Testing: determination of the laboratory calibration or testing performance by means of inter-laboratory comparisons.

Proficiency Test (PT) Sample: a sample, the composition of which is unknown to the analyst, that is provided to test whether the analyst/laboratory can produce analytical results within specified performance limits.

Proprietary: belonging to a private person or company.

Quality Assurance (QA): an integrated system of activities involving planning, quality control, quality assessment, reporting and quality improvement to ensure that a product or service meets defined standards of quality with a stated level of confidence.

Quality Assurance Project Plan (QAPP): a formal document describing the detailed quality control procedures by which the quality requirements defined for the data and decisions pertaining to a specific project are to be achieved.

Quality Control (QC): the overall system of technical activities, the purpose of which is to measure and control the quality of a product or service. Quality Control Sample: A control sample, generated at the laboratory or in the field, to monitor a specific portion of the sample and/or testing process.

Quality Control Sample: A control sample, generated at the laboratory or in the field, or obtained from an independent source, used to monitor a specific element in the sampling and/or testing process.

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Quality Management Plan (QMP): a formal document describing the management policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an agency, organization or laboratory to ensure the quality of its product and the utility of the product to its users.

Quality System: a structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring quality in its work processes, products (items), and services. The quality system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required QA/QC.

Quantitation Limit (QL): the minimum amount a substance that can be quantitatively measured with a specified degree of confidence and within accuracy and precision guidelines of a specific measurement system. The QL can be based on the MDL, and is generally calculated as 3-5 times the MDL, however, there are analytical techniques and methods where this relationship is not applicable. Also referred to as Practical Quantitation Level (PQL), Estimated Quantitation Level (EQL), Limit of Quantitation (LOQ). *STL Corpus Christi equates the Quantitation Limit to the Reporting Limit. Please see "Reporting Limit" definition.*

Raw Data: any original information from a measurement activity or study recorded in laboratory notebooks, worksheets, records, memoranda, notes, or exact copies thereof and that are necessary for the reconstruction and evaluation of the report of the activity or study. Raw data may include photography, microfilm or microfiche copies, computer printouts, magnetic/optical media, including dictated observations, and recorded data from automated instruments. Reports specifying inclusion of "raw data" do not need all of the above included, but sufficient information to create the reported data.

Record Retention: the systematic collection, indexing and storing of documented information under secure conditions.

Reference Standard: a standard, generally of the highest metrological quality available at a given location, from which measurements made at that location are derived.

Reporting Limit (RL): The level to which data is reported for a specific test method and/or sample. The RL is generally related to the QL. The RL must be minimally at or above the MDL. *The Reporting Limit takes into consideration: 3-5 times the MDL value, technical judgment and publications of analyte performance. For multi-point calibration methodologies, the reporting limit must be substantiated by analyzing a low level standard which is approximately equal to the reporting limit.*

Resource Conservation and Recovery Act (RCRA): legislation under 42 USC 321 et seq. (1976).

Safe Drinking Water Act (SDWA): legislation under 42 USC 300f et seq. (1974).

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Sampling and Analysis Plan: a formal document describing the detailed sampling and analysis procedures for a specific project.

Selectivity: The capability of a method or instrument to respond to a target substance or constituent in the presence of non-target substances.

Sensitivity: the capability of a method or instrument to discriminate between measurement responses representing different levels (e.g., concentrations) of a variable of interest.

Spike: a known amount of an analyte added to a blank, sample or sub-sample.

Standard Operating Procedure (SOP): a written document which details the method of an operation, analysis or action whose techniques and procedures are thoroughly prescribed and which is accepted as the method for performing certain routine or repetitive tasks.

Storage Blank: a blank matrix stored (2-weeks) with field samples of a similar matrix (volatiles only) that measures storage contribution to any source of contamination. OR A blank matrix stored with field samples of a similar matrix. *STL Corpus Christi uses DI water for all storage blanks.*

Surveillance: *Monitors compliance with STL Corpus Christi quality system as defined in laboratory or Corporate Standard Operating Procedures, the STL Quality Management Plan (QMP), the STL Corpus Christi Laboratory Quality Manual (LQM) and other associated official policies and procedures, including any client-specific requirements. These spot assessments of Corpus Christi' systems are performed at least quarterly.*

Systems Audit: a thorough, systematic, on-site, qualitative review of the facilities, equipment, personnel, training, procedures, record keeping, data validation, data management, and reporting aspects of a total measurement system.

Test Method: defined technical procedure for performing a test.

Toxic Substances Control Act (TSCA): Legislation under 15 U.S.C. 2601 et seq., (1976).

Traceability: the property of a result of a measurement that can be related to appropriate international or national standards through an unbroken chain of comparisons.

Trip Blank: a blank matrix placed in a sealed container at the laboratory that is shipped, held unopened in the field, and returned to the laboratory in the shipping container with the field samples. *STL Corpus Christi uses DI water for all Trip Blanks.*

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Verification: confirmation by examination and provision of evidence that specified requirements have been met.

4.0 MANAGEMENT REQUIREMENTS

4.1 Organization and Management

4.1.1 Organization

STL's corporate organizational structure is presented in the STL Quality Management Plan (QMP). Corporate employees are located at various STL facilities in the organizational structure. The STL Corpus Christi QA Manager has an indirect reporting relationship to the QA Director. STL Corpus Christi's organizational chart can be found in **Appendix I**.

4.1.2 Roles and Responsibilities

The specific duties and responsibilities of the Laboratory Director, Quality Assurance Manager, Project Managers, Technical Managers, Sample Custodian, Quality Assurance Specialist, Health and Safety Coordinator/Waste Management, Information Technology Manager, and analysts are as follows.

In the absence of any one individual, the staff within each department is professionally skilled in the ability to administer the function of the administrator or support personnel. This will allow for the continuance of the day-to-day operations of the laboratory.

4.1.2.1 Laboratory Director:

The laboratory director is responsible for maintaining positive operating margin to the company at the laboratory level and for meeting and exceeding the annual budget. He/she supervised all laboratory personnel and provided guidance and direction as needed. He/she is responsible for ensuring compliance and integration of facility operation with corporate and regulatory policies and procedures. The Laboratory Director has the ultimate responsibility for the generation of reliable laboratory data. The Laboratory Director, with the assistance of the Quality Assurance Manager, has the overall responsibility for establishing policies to ensure that the quality of analytical services meet our clients expectations.

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4.1.2.2 Quality Assurance (QA) Manager:

The QA Manager is responsible for developing and implementing the laboratory quality system. The QA Manager is responsible for providing Quality Systems training to all new personnel; maintaining the LQM, ensuring that the laboratory's quality system and LQM meet the requirements set forth in the STL QMP; arranging and managing PT samples; and performing systems, data, special, and external audits with both clients and regulatory officials. The QA Manager oversees the maintenance of QC records; maintains certifications; approves, develops, and maintains Standard Operating Procedures (SOP); submits monthly QA Reports; and assists in reviewing new work as needed. The QA Manager has the final authority to accept or reject data and to stop work in progress in the event that procedures or practices compromise the validity and integrity of analytical data. The QA Manager is available to any employee at the facility to resolve data or ethical issues. The QA Manager is independent of laboratory operations and has an indirect reporting relationship to the Corporate QA Director.

4.1.2.3 Office Administrator

The Office Administrator is responsible for daily requirements of supplies, including stockroom and services required for efficient operation of the laboratory; responsible for purchasing and accounts payable; responsible for the Human Resources (HR) functions at the laboratory; and responsible for general facility maintenance and repairs. The Office administrator reports direcly to the Laboratory Director.

4.1.2.4 Project Manager:

The Project Manager (PM) is responsible for coordinating and managing customers' projects through all phases of laboratory operations, ensuring efficient management of that work. The PM is responsible for preparing a project file that summarizes QA/QC requirements for the project, maintaining the laboratory schedule, ensuring that technical requirements are understood by the laboratory, and advising the Laboratory and QA Managers of all variances. Provided technical guidance and the necessary laboratory-related information to the preparer of project-specific QAPPs and provides peer review of the final document to ensure accuracy of the laboratory information. Maintains communications with clients and Account Executives and serves as a liaison between clients and laboratory operations to meet clients' needs. Works closely with business unit personnel to manage quotations and changes to existing scopes of work. Monitors compliance with industry regulations, contractual agreements, program management processes, and program specifications. Works toward achieving goals for revenue and profit through the effective utilization of laboratory capacity and definition of customer requirements.

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4.2.1.5 Technical Managers

The Technical Managers are the Laboratory Director, Project Managers, Laboratory Section Supervisors, and the QA Manager. They are as follows:

- Chip Meador, Laboratory Director, BS Botany, MS Ecology
  23 years laboratory experience
- Tim Kellogg, Project Manager, BS Geology
  17 years laboratory experience
- Charlie Sassine, Project Manager, BS Biology/Chemistry
  17 years laboratory experience
- Olga McDonald, Project Manager, BS Medical Technology
  21 years laboratory experience
- Lindy Maingot, Project Manager, BA Finance
  11 years laboratory experience
- Qingchu Peng, Organics Supervisor, MS Chemistry
  24 years laboratory experience
- Gayland Fisher, Organics Extraction Supervisor, AS Science
  27 years laboratory experience
- Kevin Michalk, Lead Organics Analyst, BS Chemistry
  10 years laboratory experience
- John Mathewson, Inorganic Supervisor, BS Geology/Chemistry
  23 years laboratory experience
- Julie Darrow, WetChemistry Group Leader, BS Chemistry
  16 years laboratory experience
- Delma Villarreal, WetChemistry Group Leader, BS Chemistry
  14 years laboratory experience
- Anh Tran, Quality Manager, BS Chemistry
  16 years laboratory experience

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4.1.2.6 Environmental Health and Safety Coordinator:

The Environmental Health and Safety Coordinator (EHSC) is responsible for administering the EH&S program that provides a safe, healthy working environment for all employees and the environment. Monitors all areas for unsafe conditions, acts, and potential hazards. Enforces environmental, health, and safety policies and procedures. Chairs the Laboratory Safety Committee and makes safety and health recommendations to laboratory management.

The EHSC responsibilities additionally include waste management of laboratory generated hazardous waste in accordance with appropriate regulations. This includes maintenance of required documentation, such as waste manifests, segregation of waste in accordance with requirements, and training of personnel in proper segregation of waste.

4.1.2.7 Information Technology Manager

The overall role of the Information Technology (IT) Manager is to enhance laboratory productivity through improve information access, flow, and security. For information to be of greatest value, it must be readily accessible and reliable. It is the responsibility of the IT Manager to provide software tools that allow quick and user friendly access to that information, while at the same time controlling access to that information to those that have the need and proper authority.

The IT Manager is responsible for providing data security by controlling access, as mentioned above, and for providing for disaster recovery. Data stored on the Laboratory Information Management System (LIMS) is the direct responsibility of the IT Manager. Data stored electronically in other departments is the direct responsibility of those departments. However, the IT Manager is responsible for providing procedures and training to all laboratory operations, as appropriate, to assist in making backup copies of local data.

4.1.2.8 Section Supervisor/Group Leader:

The Section Supervisor/Group Leader is responsible for the overall operations of a specific laboratory area. These responsibilities include but are not limited to meeting client satisfaction goals, managing the human resources within the department, and ensuring health and safety and quality assurance plan compliance. Serves as a technical resource to department employees, as well as Project Managers, sales personnel, QA personnel, and clients. Makes process improvement recommendations to laboratory management.

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4.1.2.9 Chemist/Analyst:

Laboratory analysts are responsible for the generation of data by preparing and analyzing samples according to written SOPs and client requirements. They are responsible for understanding the requirements in the LQM and the SOPs associated with their specific function. They perform the initial technical review of sample preparation/analytical information, calculations, qualitative and quantitative identifications, and review of raw data. Each analyst has the authority to stop, accept, or reject data based on compliance with self-defined QC criteria. The analyst also provides prompt documentation and notification to the Section Supervisor/Group Leader or QA Manager of problems or anomalies detected. They also monitor, calibrate, and maintain standard laboratory support equipment such as refrigerators, ovens, water systems, balances, and pipettes as necessary.

For details regarding the roles and responsibilities listed, refer to the STL Quality System Job descriptions in the Human Resources files for all STL Corpus Christi personnel.

4.2 Quality System

Support for implementing the quality system and achieving the quality objectives is derived from this LQM and SOPs. Management ensures that the quality policy is understood, implemented, and maintained at all levels of the organization. Organizational positions are clearly defined to assure that the quality policies and procedures are appropriately implemented.

4.2.1 Objectives of the Quality System

The goal of the Quality System is to ensure that laboratory operations are conducted with the highest standards of professionalism in the industry. A well-structured and well-communicated Quality System is essential in meeting the goal of providing our clients with scientifically sound, well documented, and regulatory compliant data. The Quality System is designed to minimize systematic error, encourage constructive, documented problem solving, and provide a basis for continuous improvement within the organization.

The QA Manager is responsible for implementing and monitoring the Quality System. The QA Manager reports to the Laboratory Director on the performance of the quality system for review and continuous improvement. The QA Manager has sufficient authority, access to work areas, and organizational freedom (including sufficient independence from cost and schedule considerations) to:

- Initiate action to prevent the occurrence of any nonconformities related to product, process and quality system,

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- Identify and record any problems affecting the product, process and quality system,
- Initiate, recommend, or provide solutions to problems through designated channels,
- Verify implementation of solutions, and
- Assure that further work is stopped or controlled until proper resolution of a nonconformance, deficiency, or unsatisfactory condition has occurred and the deficiency or unsatisfactory condition has been corrected.

Should a situation arise where acceptable resolution of identified problems cannot be agreed upon at the laboratory level, direct access to STL's Corporate Quality Director is available. This provides laboratory QA personnel non-laboratory management support, if needed, to ensure that QA policies and procedures are enforced.

4.3 Document Control

A document control system is used to ensure that all staff has access to current policies and procedures at all times.

4.3.1 Document Type

Documents which are managed by this system include the Laboratory Quality Manual (LQM), STL Corporate Quality Management Plan (QMP), STL Corporate Safety Manual, and STL Corpus Christi Standard Operating Procedures (SOP). The system consists of a document review, revision and approval system, document control and distribution.

Note that documents released to clients are confidential and may not be edited, photo copied, or separated without the consent of STL Corpus Christi. STL Corpus Christi is not required to supply revised or update releases for these documents unless requested.

4.3.2 Document Control Procedure

Security and control documents are necessary to ensure that confidential information is not distributed and that all current copies of a given document are from the latest applicable revision. Unambiguous identification of a controlled document is maintained by identification of the following items in the document header: Document Name, Document Number, Revision Number, Effective Date, Number of Pages. Controlled Documents are marked as such and records of their distribution are kept by the QA Department.

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Controlled documents shall be available electronically or by hard copy. The electronic versions of SOPs are located at **\\ccsvr01\anh_qa\SOPs**. The hardcopy versions are located in the Conference room.

Electronic versions of SOPs may be printed out for laboratory use. If printed, the employee must verify that the SOP revision is the most current each time it is used.

4.3.3 Document Revision

Biennially, the QA Manager, or designee, reviews the LQM and laboratory SOPs. Changes to documents occur when a procedural warrants a revision of the document. When an approved revision of a controlled document is ready for distribution the previous revision is archived. Notification of procedure changes will be e-mail to all applicable STL Corpus Christi employees. Their reply to this e-mail documents their acknowledge of the revision.

4.3.4 Official Documents

The STL Corporate Manuals, Standard Operating Procedures, and Policies are collectively termed "Official Documents" and encompass the Policies and Procedures that all STL facilities are required to employ. Biennially, the QA Director, or designee, will review the QMP and corporate documents. A detailed description of the procedure fir issuing, authorizing, controlling, distributing, and Archiving Official Documents is found in STL Corporate SOP: S-Q-001.

4.4 Request, Tender, and Contract Review

4.4.1 Contract Review

To ensure project success, technical staff shall perform a through review of technical and QC requirements contained in the contracts. Contracts are reviewed for adequately defined requirements and STL Corpus Christi's capability to meet those requirements.

Contract review shall include a review of the client's requirements in terms of compounds lists, test methodology requested, sensitivity, accuracy, and precision requirements. STL Corpus Christi ensures that the laboratory's test methods are suitable to achieve these requirements and must ensure that the laboratory holds the appropriate certifications and approvals to perform the work. The review also include the laboratory's capabilities in terms of turnaround time, capacity, and resources to provide services requested, as well the laboratory's ability to provide the documentation, whether hardcopy or

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electronic. If the laboratory cannot provide all services but intends to subcontract such services, whether to another STL facility or to an outside firm, this must be documented and discussed with the client prior to contract approval.

All contracts entered into by STL Corpus Christi shall be reviewed and approved by the appropriate personnel at the facility or facilities performing the work. Any contract requirement or amendment to a contract communicated to STL Corpus Christi verbally must be documented and confirmed with the client in writing (e.g., letter, contract, e-mail, etc.) Any discrepancy between the client's requirement and STL Corpus Christi's capability to meet those requirements is resolved in writing before acceptance of the contract. Contract amendments, initiated by the client/or STL Corpus Christi, are documented in writing for the benefit of both the client and STL.

All Contracts, Quality Assurance Project Plans (QAPPs), Sampling and Analysis Plans (SAPa), contract amendments, and documented communications become part of the permanent project record.

4.4.2 Project Specific Quality Planning

Communication of contract specific technical and QC criteria is an essential activity in ensuing the success of site specific testing programs. To achieve this goal, STL Corpus Christi assigns a Project Manager (PM) to each client. The PM is the first point of contact for the client. It is the PM's responsibility to ensure that project specific technical and QC requirements are effectively evaluated and communicated to the laboratory personnel before and during the project. QA department involvement may be needed to assist in the evaluation of custom QC requirements.

Prior to Project Manager accepting new work, information will be disseminated in order to initiate discussion regarding facility and resource requirements, schedules and unique aspects of the project. Items to be discussed may include the project specific QC requirements, turn around times, holding times, methods, analyte lists, reporting limits, deliverables samples hazards or other special requirements. The project Manager, Lab Director, QA Manager and appropriate lab staff meet to discuss how to maximize production and client satisfaction, while maintaining quality.

Any change that may occur within an active project is agreed upon between the client/regulatory agency and the Project Manger/laboratory. These changes, e.g., use of a non-standard method or modification of a method, must be documented prior to implementation. Documentation pertains to any document, e.g., letter, variance, contract addendum, which has been signed by both parties.

STL Corpus Christi strongly encourages out client to visit the laboratories and hold formal or informal sessions with employees in order to effectively communicate ongoing client needs as well as project specific details for customized testing programs.

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4.4.3 Data Quality Objectives

Data quality objectives (DQO) are qualitative and quantitative statements used to ensure the generation of the type, quantity, and quality of environmental data that will be appropriate for the intended application. Typically, DQOs are identified before project initiation and during the development of a QAPPs and SAPs. The analytical DQOs addressed in this section are precision, accuracy, representative ness, completeness, and comparability.

The components of analytical variability (uncertainty) can be estimated when QC samples of the right types and at the appropriate frequency are incorporated into the measurement process of the laboratory. STL Corpus Christi incorporates numerous QC samples to obtain data for comparison with the analytical DQOs and to ensure that the measurement system is functioning properly. The QC samples and their applications are selected based on regulatory, method-or client-specific requirements. Analytical laboratory QC samples for inorganic and organic may include calibration blanks, instrument blanks, method blanks, LCS, calibration standards, MS, MSD, surrogate spikes, and yield monitors.

The DQOs discussed below ensure that the data are gather and presented in accordance with procedures appropriate for its intended use, that the data is of known and documented quality and are able to withstand scientific scrutiny.

4.4.3.1 Precision

Precision is an estimate of variability. It is an estimate of agreement among individual measurement of the same physical or chemical property, under prescribed similar conditions. Precision is expressed either as Relative Standard Deviation (RSD) for greater than two measurements or as Relative Percent Difference (RPD) for two measurements. Precision is determined, in part, by analyzing data from LCSs, MS, MSD, and MD.

Precision also refers to the measurement of the variability associated with the entire process, from sampling to analysis. Total precision of the process can be determined by analysis of duplicate or replicate field samples and measures variability introduced by both the laboratory and field operations.

4.4.3.2 Accuracy

Accuracy is the degree of agreement between a measurement and the true or expected value, or between the average of a number of measurements and the true or expected value. It reflects the total error associated with a measurement.

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Both random and systematic errors can affect accuracy. For chemical properties, accuracy is expressed either as percent recovery (R) or as percent bias (R-100). Accuracy is determined, in part, by analyzing data from LCSs, MS, and MSD.

4.4.3.3 Representativeness

Representativeness is the degree to which data accurately and precisely represent a characteristic of a population, a variation in a physical or chemical property at a sampling point, or an environmental condition. Data representativeness is primarily a function of sampling strategy; therefore, the sampling scheme must be designed to maximize representativeness. Representativeness also relates to ensuring that, through sample homogeneity, the sample analysis result is representative of the constituent concentration in the sample matrix. STL makes every effort to analyze an aliquot that is representative of the original sample, and to ensure the homogeneity of the sample before sub-sampling.

4.4.3.4 Completeness

Completeness is defined as the percentage of measurements that are judged valid or useable. Factors negatively affecting completeness include the following: sample leakage or breakage in transit or during handling, loss of sample during laboratory analysis through accident or improper handling, improper documentation such that traceability is compromised, or sample result is rejected due to failure to conform to QC specifications.

4.4.3.5 Comparability

Comparability is a measure of the confidence with which one data set can be compared to another. To ensure comparability, all laboratory analysts are required to use uniform procedures (e.g. SOPs) and a uniform set of units and calculations for analyzing and reporting environmental data.

4.5 Subcontracting

Subcontracting must be arranged upon documented consent of the client, in a timely response which shall not be unreasonably refused. All QC guidelines specific to the client's analytical program are transmitted to the subcontractor and agreed upon before sending the samples to the subcontract facility. The originating laboratory shall obtain proof of certification from the subcontract facility, and retain in STL records. Where applicable, specific QC guidelines, QAPPs, and/or SAPs are transmitted to the subcontract laboratory. Samples are subcontracted under formal Chain of Custody (COC).

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Subcontract laboratories may receive an on-site audit by a representative of STL Corpus Christi' QA staff if it is deemed appropriate by the QA Manager. The audit involves a measure of compliance with the required test method, QC requirements, as well as any special client requirements. The originating laboratory may also perform a paper audit of the subcontractor, which would entail reviewing the LQM, the last two PT studies, and a copy of any recent regulatory audits with the laboratory's responses.

Intra-company subcontracting may also occur. Intra-company subcontracting is sharing between STL facilities. Intra-company subcontracting within STL must be arranged with the documented consent of the client, in a timely response which shall not be unreasonably refused. The originating laboratory is responsible for communicating all technical, quality, and deliverable requirements as well as other contract needs. Intra-company subcontracting does not require an on-site or paper audit of the STL facility; however, the QA Manager may request information to be kept on file as specified by the project's requirements.

4.6 Purchasing Services and Supplies

Evaluation and selection of suppliers and vendors is done, in part, on the basis of the quality of their products, their ability to meet the demand for their products on a continuous and short term basis, the overall quality of their services, their past history, and competitive pricing. This is achieved through evaluation of objective evidence of quality furnished by the supplier, which can include certificates of analysis, recommendations, and proof of historical compliance with similar programs for other clients. To ensure that quality critical consumables and equipment conform to specified requirements, all purchases from specific vendors are approved by a member of the supervisory or management staff.

Chemical reagents, solvents, glassware, and general supplies are ordered as needed to maintain sufficient quantities on hand. Purchasing guidelines for equipment and reagents meet with the requirements of the specific method and testing procedures for which they are being purchased.

4.7 Service to the Client

Sample representativeness and integrity are the foundation upon which meaningful analytical results rely. A documented and approved sampling plan reflecting data quality objectives should be in place at the sampling site. The integrity of the sample should be maintained though the use of preservation techniques specific to relevant protocols. Samples should be submitted to STL Corpus Christi under standard Chain of Custody (COC) procedures.

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4.7.1 Sample Acceptance Policy

STL Corpus Christi sample acceptance policy is stated in STL Corpus Christi SOP: CC-QA-008. A copy of this policy statement is included in the information provided in sample bottle kits as well as the terms and conditions of quotation.

Samples shall be considered "compromised" if the following conditions are observed upon sample receipt:

- Cooler and/or samples are received outside of temperature specification.
- Samples are received broken or leaking.
- Samples are received beyond holding time.
- Samples are received without appropriate preservative.
- Samples are received in inappropriate containers.
- COC does not match samples received.
- COC is not properly completed or not received.
- Breakage of any Custody Seal.
- Apparent tampering with cooler and/or samples.
- Headspace in volatiles samples.
- Seepage of extraneous water or materials into samples.
- Inadequate sample volume.
- Illegible, impermanent, or non-unique sample labeling.

When "compromised" samples are received, it must be documented on a Sample Condition Check List for the project records and the client should be contacted for instructions. If the client decides to proceed with analysis, the project report shall clearly indicate any of the above conditions and the resolution. See CC-QA-008 for further details of this procedure.

4.7.2 Client Confidentiality and Proprietary Rights

Data and sample materials provided by the client or at the client's request, and the results obtained by STL Corpus Christi, shall be held in confidence (unless such information is generally available to the public or is in the public domain or client has failed to pay STL Corpus Christi for all services rendered or is otherwise in breach of the terms and conditions set forth in the STL Corpus Christi and client contract) subject to any disclosure required by law or legal process. STL Corpus Christi's reports, and the data and information provided therein, are for the exclusive use and benefit of client, and are not released to a third party without written consent from the client.

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The audit reports supplied by federal, state, and local regulator agencies are considered public information and can be released without the written consent of those agencies. However, special project audits are confidential and must be approved by the client before release to a third party.

4.8 Client Inquiries

Client inquiries, requests or complaints shall be documented, communicated to management, and addressed promptly and thoroughly. Client issues are documented by the employee receiving the complaint. Client inquiries or complaints are documented through the Validation database. The Laboratory Director, PM, and QA Manager are informed of all client inquires or complaints, and assist in resolving the issue.

The nature of the concern is identified, documented, and investigated, and an appropriate action is determined and taken. In cases where a client inquiry indicates that an established policy or procedure was not followed, the QA department is required to conduct an investigation to assist in resolving the issue and preventing future occurrence. A written confirmation, or letter to the client, outlining the issue and response taken may be required as part of the overall action taken.

The number and nature of client complaints shall be reported to the QA Director in the QA Monthly report submitted by each facility. The overall number of complaints received per facility is tracked and the appropriateness of the response to client complaints is assessed. Monitoring and addressing the overall level and nature of client complaints and the effectiveness of the solutions is part of the Management Systems Review.

4.9 Control of Non-conformances

Non-conformances include any out of control occurrence. Non-conformances may relate to client specific requirements, procedural requirements, or equipment issues. All non-conformances in the laboratory are documented at the time of their occurrence.

All non-conformances that affect a sample and/or sample data become part of the affected project's permanent record. When appropriate, reanalysis is performed where QC data falls outside of specifications, or where data appears anomalous. If the reanalysis comes back within established tolerances, the results are approved. If the reanalysis is still outside tolerances, further reanalysis or consultation with the Supervisor, Manager, PM, Laboratory Director, or QA Manager for direction may be required. All records of reanalysis are kept with the project files.

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Where non-conformances specifically affect a client's sample and/or data, the client shall be informed and action must be taken. Action can take the form of reporting and flagging the data, and including a description of the non-conformance in the project narrative or cover letter.

Where non-conformances are found after a report has been issued, such as, instrument calibration failure, data should be evaluated and if deemed compromised clients should be informed.

4.10 Corrective Action

4.10.1 General

Corrective actions are measures taken to rectify conditions adverse to quality and, where possible, to prevent their reoccurrence.
Any employee in STL can initiate a corrective action. The initial source of correction can also be external to STL (i.e., corrective action due to client complaint, regulatory audit, or PT(s)). When a problem that requires corrective action is identified, the following are identified by the initiator on the corrective action report: the nature of the problem, the name of the initiator, and the date. If the problem affects a specific client project, the PM is informed immediately.
Depending on the nature of the problem, the corrective action employed may be formal or informal. In either case, occurrence of the problem, the corrective action employed, and verification that the problem has been eliminated must be documented properly. On-the-spot-actions are used to correct minor problems, such as recalibration, retuning, or a minor repair (e.g., replacement of a minor part) of a malfunctioning instrument or the correction of poor analytical technique being used by an analyst. These occurrences are documented in the appropriate logbooks or on an out of control event report (OCER).

4.10.2 Monitoring Corrective Action

All non-conformance memos and OCERs are forwarded to the QA department. The QA department reviews all corrective actions. Corrective action follow up may be included in QA's surveillances, data or system audits, and/or special audits. The purpose of inclusion of the corrective action process in both routine and special audits is to monitor the implementation of the corrective action and to determine whether the action taken has been effective in overcoming the issue identified.

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4.11 Preventative Action

Preventative action is defined as noting and correcting a problem before it happens, because of a weakness in a system, method, or procedure. Preventative action includes analysis of the quality system to detect, analyze, and eliminate potential causes of non-conformances. When potential problems are identified, preventative action is initiated to effectively address the problem to eliminate or reduce the risk identified. The preventative action process takes the same format as the corrective action process.

In order to prevent system down time, minimize corrective maintenance costs and ensure data validity, the laboratory employs a system of preventative maintenance. General preventative maintenance procedures, many of which are unique to particular instruments are outlined in each instruments' operation manual. All routine maintenance is performed as recommended by the manufacturer. It is the group leader's responsibility to make sure the most current version of the operator's manual is available in the laboratory. Routine maintenance is performed by the analyst, while an external technician may be called for major repairs.

A bound maintenance logbook is kept with each instrument to record all routine and non-routine maintenance. Notation of the data and maintenance activity is recorded every time service procedures are performed. This includes routine service checks by laboratory personnel, as well as, factory service calls. The return to analytical control following instrument repair is also noted in laboratory maintenance logbooks.

4.12 Records

STL Corpus Christi procedures on data reporting, packaging, and record maintenance are located in the following STL Corpus Christi SOPs:

- CC-QA-001, Rev 0 or later revisions "General Document Procedures for Logbook
- CC-QA-004, Rev 0 or later revisions " Quality Assurance Records Maintenance"
- CC-QA-007, Rev 0 or later revisions " Preparation and Management of Standard operating Procedures"
- CC-QA-010, Rev 0 or later revisions "Data Review, Verification, and Reporting"

4.12.1 Record types

Record types are described in Table 3

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Table 3 STL Record Types

Raw Data	Controlled Documents	QC Records	Project Records	Administrative Records
See Section 3.0 Terms and Definitions	LQM	Audits/ Responses	COC Documentation	Accounting
	QMP	Certifications	Contracts and Amendments	EH&S Manual, Permits, Disposal Records
	SOPs	Corrective Action	Correspondence	Employee Handbook
		Logbooks*	QAPP	Personnel files, Employee Signature & Initials, Training Records
		Method & Software Validation, Verification	SAP	
		Standards Certificates	Telephone Logbooks	Technical and Administrative Policies

*Example of Logbook types: Maintenance, Injection logs, Extraction/Digestion logs, Analysis logs, Balance Calibration Log, Temperature log.....

4.12.2 Record Retention

For raw data and project records, record retention shall be calculated from the date the project report is issued. For other records, such as Controlled Documents, QC, or Administrative Records, the retention time is calculated from the date the record is formally retired.

Table 4. STL Record Retention

Record Type		Archival Requirement
Raw Data	All*	5 years from project completion
Controlled Documents	All*	5 years from document retirement date
QC	All*	5 years from archival
Project	All*	5 years from project completion
Administrative	Personnel/Training	7 years
	Accounting	See Accounting and Control Procedures Manual

*Exception listed in Table 4.

4.12.3 Programs with Longer Retention Requirements

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Some regulatory programs have longer record retention requirements than the STL's standard record retention time. In these cases, the longer retention requirement must be implemented and noted in the archive. Special instructions as to length of retention client data cannot be destroyed prior to notification of the client are addressed in the client required sheet.

Table 5. Special Record Retention Requirements

Program	Retention Requirement
Colorado – Drinking Water	10 years
Commonwealth of MA – All environmental data 310 CMR 42.14	10 years
FIFRA – 40 CFR Part 160	Retain for life of research or marketing permit for pesticides regulated by EPA
Massachusetts – Drinking Water	10 years
Michigan Deparment of Environmental Quality – all environmental	10 years
Minnesota – Dinking Water	10 years
Navy Facilities Engineering Service Center (NFESC)	10 years
OSHA – 40 CFR Part 1910	30 years
Pennsylvia – Drinking Water	10 years
TSCA – 40 CFR Part 792	10 years after publication of final test rule or negotiated test agreement

4.12.4 Archives and Record Transfer

Archives must be indexed such that records are accessible on either a project or temporal basis. Archives are protected against fire, theft, loss, deterioration, and vermin. Electronic records are protected from deterioration caused by magnetic fields and/or electronic deterioration. Removal of archived records is controlled and documented. On-site and/or off-site facilities may be used.

STL Corpus Christi ensures that all records are maintained as required by the regulatory guidelines and per the QMP and LQM upon facility location change or ownership transfer. Upon STL Corpus Christi facility location change, all archives are retained by STL Corpus Christi in accordance with the QMP and LQM. Upon ownership transfer, record retention requirements shall be addressed in the ownership transfer agreement and the responsibility for maintaining archives is clearly established.

In the event that the laboratory is closed, all final test reports generated by the laboratory will be submitted to the client if previously provided. All records will then be transfer to STL's corporated

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record storage location. All boxes and contents will be appropriately labeled with the dates of destruction (Refer to Tables 4 and 5) and managed in accordance their policies.

4.13 Laboratory Audits

4.13.1 Internal Audit Types and Frequency

A number of types of audits shall be performed at STL Corpus Christi. Audit type and frequency are categorized in Table 6.

Table 6. Audit types and Frequency

Audit Type	Performed by	Frequency
System	QA Department or Designee	Annual
Data	QA Department or Designee	**Data Report Review:** As necessary to ensure an effective secondary review process
		Analyst Data Audits: 100% of all analyst annually
		Electronic Data Audits: 100% of all organic instrument
Spot (Monitoring / Surveillance)	QA Department or Designee	As least Quarterly
Special	QA Department or Designee	As Needed

4.13.2 System Audits

System audits are technical in nature and are conducted by the various regulatory agencies (external) and annual by the QA Manager (internal) at each facility. System audits cover all departments of the facility, both operational and support.

The audit report is issued by the auditor or internal auditor within 30 calendar days of the audit. The audit report is addressed to the Laboratory Director, and copied to the General Manager. If the internal audit is performed by someone other than the facility's QA Manager, the report must also be addressed to the QA manager.

Written audit responses are required within 30 calendar days of the audit report issue. The audit response follows the format of the audit report, and corrective actions and time frames for their

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implementation are included for each deficiency. The audit response is directed to all individual copied on the audit report. Where a corrective action requires longer than 30 days to complete, the target date for the corrective action implementation is stated and evidence of the corrective action is submitted to the QA Department in the agreed upon time frame.

4.13.3 Data Audits

Data audits are focused to access the level of customer service, method compliance, regulatory compliance, accuracy and completeness of test results and reports, documentation, and adherence to established QC criteria, laboratory SOPs, technical policy, and project specific QC criteria.
The QA department provides feedback and/or corrective actions and revisions to project reports where necessary. In performing data audits, it is essential that data be accessed in terms of differentiating between systematic and isolated errors. Upon noting anomalous data or occurrences in the data audits, the QA Department is responsible for seeking clarifications from the appropriate personnel, ascertaining whether the error is systematic or an isolated error, and overseeing correction and/or revision of the project report if necessary. Errors found in client project reports are revised and the revisions are sent to the client (Section 4.9).

The frequency of data auditing may also be dependent upon specific clients and regulatory programs. All active laboratory logbooks and QC files are subjects to periodic audits/surveillances by the QA personnel.

4.13.3.1 Data Authenticity Audits

Data authenticity audits are performed on 100% of all analysts by the QA department or a designee independent from the operators. Performing data authenticity checks will typically include verifying raw data, evaluating calculation tools and independently reproducing the final results and comparing it to the hardcopy on randomly selected batches of data. The QA manager will report the percentage of analyst reviewed (for the year) in the monthly QA report and should average about 8% per month.

4.13.3.2 Electronic Data Audits

Electronic data audits performed on 100% of all organic instruments by the QA department or a designee independent from the operations. This may include Mint Miner® scanning of randomly selected batches of electronic data followed by a chromatography review. The QA manager will report the percentage of instruments reviewed (for the year) in the monthly QA report and should average about 8% of instruments per month. Electronic data audits include spot-checking of manual integrations

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by QA personnel in order to determined that the manual integration is appropriated and documented according to Section 5.3.6.1

4.13.4 Spot Assessment (Monitoring/Surveillances)

Facility system audits are technical in nature and are conducted on an going basis by the QA Manager or designee. System reviews can be in the forms of SOP compliance audits or general audits of functional areas. See STL Corpus Christi SOP: CC-QA-006 "Internal QA Monitoring" for additional information on this procedure.

Errors identified are addressed in QA memorandums/meetings and/or procedural changes.

4.13.5 Special Audits

Special audits are conducted on an as needed basis, generally as a follow up to specific issues such as client complaints, corrective actions, proficiency testing results, data audits, systems audits, validation comments, or regulatory audits. Special audits are focused on a specific issue, and report format, distribution, and timeframes are designed to address the nature of the issue.

4.14 External Audits

STL Corpus Christi is routinely audited by clients and external regulatory authorities – both government and non-government. STL Corpus Christi is available for these audits and makes every effort to provide the auditors with the personnel, documentation, and assistance required by the auditors. STL Corpus Christi recommended that the audits be scheduled with the QA Department so that all necessary personnel are available on the day of the audit.

4.15 Management Review

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4.15.1 QA Report to Management

A monthly QA report and metrics shall be prepared by the third of each month by the QA Manager and forwarded to the Laboratory Director and the QA Director. The reports include statistical results that are used to assess the effectiveness of the Quality System. At a minimum, the report content contains the items listed below (Figure 1). During the course of the year, the Laboratory Director, QA Director or General Manger may request that additional information be added to the report.

Figure 1. Monthly QA Report Format

1	Audits
	Internal System Audits Internal System Audits External System Audits
2	Revised Report / Client Feedback
	Revised Reports Client Complaints Client Compliment
3	Certification Changes
	Changes Losses / Revocations
4	Proficiency Testing
	Study Participation and Scores Combined PT scores
5	SOP Status
	Report the percentage of SOPs that have been revised or reviewed within the last 24 months.
6	Miscellaneous QA ad Operational Issues
Appended	Metric spreadsheet
	Summarize metrics in template provided by the Corporate Quality Director.

4.15.2 Quality Systems Management Review

A quality systems management review is performed annually, each January, by the QA Manager and/or by Laboratory Director. This review ensures that the laboratory's quality system is adequate to satisfy

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the laboratory's policies and practices, regulatory requirements, certification, accreditation, approval requirements, and client expectations. The Annual Management QA Assessment template is provided in **Appendix II** of the LQM. Quality systems management reviews are accomplished through the evaluation and revision of this LQM, monthly quality assurance reporting and goal setting.

Management reviews of specific quality system elements may be performed through continuous improvement activities, monthly QA reports, process changes, SOP revisions, and/or audit reports/responses.

5.0 TECHNICAL REQUIREMENTS

5.1 Personnel

5.1.1 General

STL Corpus Christi management believes that its highly qualified and professional staff is the single most important aspect in assuring the highest level of data quality and service in the industry. The staff consists of professionals and support personnel that include the following positions:

- Laboratory Director
- QA Manager
- Health & Safety Coordinator / Waste Management
- Project Manager
- Information Technology Manager
- Section Supervisors
- Analyst
- Sample Custodian
- Technician

In order to ensure that employees have sufficient education and experience to perform a particular task, job descriptions are developed for all personnel. Job Descriptions are located on the STL Intranet Site's Human Resources Web page:

http:// stlnet.stl-inc.com/Corporate/HR/JobDescriptions/JobDescrip_index.htm.

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5.1.2 Training

STL Corpus Christi is committed to furthering the professional and technical development of employees at all levels. Selection of qualified candidates for laboratory employment begins with document of minimum education, training, and experience prerequisites needed to perform the prescribed task. Minimum education and training requirements for STL Corpus Christi employees are outlines in Job Descriptions.:

STL Corpus Christi customizes its training to fit the employee's job requirements. When a person is employed by STL Corpus Christi, a new employee checklist is generated. The new employee checklist is provided in **Appendix III**.

Technical training is accomplished within each laboratory by the Group Leader or their designee to ensure method comprehension.

While working under the direct supervision of the trainer, new personnel will undertake their responsibilities and be identified on all documentation generated and recorded in the LIMS. All new personnel shall be required to demonstrate competency in performing a particular method by successfully completing a Demonstration of Capability (DOC) before conducting analysis independently on client samples.

DOCs are performed by analysis of four replicate QC samples. Results of successive LCS analyses can be used to fulfill the DOC requirement. The accuracy and precision, measured as average recovery and standard deviation (using n-1 as the population), of the 4 replicate results are calculated and compared to those in the test method (where available). If the test method does not include accuracy and precision requirements, the results are compared to target criteria set by the laboratory. The laboratory sets the target criteria such that they reflect the DQOs of the specific test method or project. A DOC Certification Statement is recorded and maintained in the employee's training or personnel file.

The following evidence must be on file at the laboratory for each employee:

- Ethics Training documentation
- Ethics agreement (signed)
- Confidentiality agreement (signed)
- NELAC statement of qualification
- Copy of college degree or resumes, if applicable
- New Employee Orientation /Safety Orientation checklist
-

The following evidence must be on file at the laboratory for each technical employee:

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- Demonstration of Capability (DOC)
- Manual integration training, if applicable.
- Annual evidence of continued DOC that may include successful analysis of a blind sample on the specific test method, or a similar test method, or an annual DOC, or four successive, successful LCS.
- Specialty training, if applicable

5.1.3 Ethics Policy

Establishing and maintaining a high ethical standard is an important element of a Quality System. In order to ensure that all personnel understand the importance the company places on maintaining high ethical standards at all times; STL has established an Ethics Agreement for all its' facilities. Each employee shall sign the Ethics Agreement, signifying agreed compliance with its stated purpose.

Employee ethics agreements are documented in each employee's training file.

Ethics is also a major component of the STL Corpus Christi QA training program. Each employee must be trained in ethics within three months of hire in a standardized QA training program that includes an overview of regulatory programs and program goals, a review of the ethics statement, and group discussions about data integrity and data misrepresentation. Employees must be trained as to the legal and environmental repercussions that result from data misrepresentation. A data integrity hotline is maintained by STL and administered by the QA Director.

5.2 Facilities

5.2.1 General

The design of the laboratory ensures data quality, safety, efficiency, automation, and security. Instrument laboratories are separate from the sample preparation laboratories to eliminate the potential for cross contamination. Ventilation of the instrument laboratory for volatile organic constituents (VOC) analyses is setup to prevent solvent contamination. The reagent water system provides water of the required quality for standard and QC sample preparations and laboratory operations.

Environmental conditions in the facilities, such as hood flow, are routinely monitored and documented.

STL Corpus Christi is equipped with structural safety features. Each employee is familiar with the location, use, and capabilities of general and specialized safety features associated with their workplace.

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STL Corpus Christi also provides and requires the use of protective equipment including safety glasses, protective clothing, gloves, etc.

STL Corpus Christi must be secure and access must be controlled and documented. Access is controlled by various measures including locked doors, passwords, electronic access cards, security codes, and staffed reception areas. All visitors sign in and are escorted by STL Corpus Christi personnel while at an STL Corpus Christi facility.

5.2.2 Contingency Planning

An effective QA Program must emphasize contingency planning, actions to prevent problems from recurring, and to ensure timely and effective completion of a measurement effort. The following are considered relative to contingency planning:

Staffing – A primary objective is to ensure that qualified staffs are always available to perform the necessary analytical work, regardless of employee turnover, vacation, illness, or other absence.

Redundant Instrument or Equivalent Methods – In certain areas of the laboratory, redundant instrumentation is available to ensure uninterrupted workflow. In circumstances where a catastrophic instrument failure occurs, alternative but equivalent methods may be recommended to the client approval and implementation.

Preventative Maintenance – Preventative maintenance program is designed to minimize analytical instrument malfunctions, permit simple adjustments, and to ensure fewer and shorter breakdowns of critical analytical equipment.

Network Laboratories & Subcontractor Laboratories – To support the laboratory during peak periods or in the event of a critical malfunction, STL has the capability to arrange the use of other network laboratories or qualified analytical laboratories as subcontractors for short-term backup analytical support. Any use of a subcontractor laboratory is approved by the client prior to award of a contract or sample shipment for existing contracts.

Uninterruptable Power Supply - Unexpected power surges and power outages can lead to loss of data or even catastrophic failure of computer systems. To prevent such an occurrence, data on network servers are protected by an uninterruptable power supply (UPS) system. A UPS system contains batteries that maintain a constant charge to be used as a backup power supply in the event of power failure. When a power failure occurs, power to critical computer systems is maintained until normal electrical current is restored. If it appears that the duration of the power outage may exceed the expected life of the UPS system's energy stores, all affected computer systems are shut down gracefully before the backup power

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supply is depleted. To ensure the integrity of the UPS system, scheduled maintenance is performed by a third party vendor.

5.3 Test Methods

5.3.1 Method Selection

Most of the test methods performed at STL Corpus Christi originate from test methods published by a regulatory agency such as the US EPA and other state and federal regulatory agencies. These methods are specifically reference in the applicable SOPs. A listing of STL Corpus Christi SOPs in found in **Appendix IV**.

5.3.2 SOPs

STL Corpus Christi maintains a SOP master listing for both Method and Process SOPs. Method SOPs are maintained to describe a specific test method. Process SOPs are maintained to describe function and processed not related to an analytical testing (e.g., administrative procedures). A listing of STL Corpus Christi SOPs in found in **Appendix IV**.

5.3.3 Method Validation

Laboratory developed methods are validated and documented according to the procedure described in Section 5.3.5.

5.3.4 Method Verification

Method verification is required when a validated standard test method or a method modification is implemented. The level of activity required for a method verification is dependent on the type of method being implemented, or on the level of method modification and its affect on a method's robustness. Method modification often takes advantage of a method robustness, or the ability to make minor changes in a method without affecting the method's outcome.

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5.3.5 Method Validation and Verification Activities

Before analyzing samples by a particular method, method validation and/or method verification must occur. A complete validation of the method is required for laboratory developed methods. While method validation can take various courses, the following activities can be required as part of method validation. Method validation records are designated QC records and are archived accordingly.

Determination of Method Selectivity
Method selectivity is demonstrated for the analyte(s) in the specific matrix or matrices. In some cases, to achieve the required selectivity for an analyte, a confirmation analysis is required as part of the method.

Determination of Method Sensitivity
Sensitivity can be both estimated and demonstrated. Whether a study is required to estimate sensitivity depends on the level of method required when applying a particular measurement system to a specific set of samples. Where estimations and/or demonstrations of sensitivity are required by regulation or client agreement, such as the procedure in 40 CFR Part 136 Appendix B, under Clean Water Act, these shall followed. The laboratory determines the MDLs are described in the SOP "CC-QA-013" and the corporate procedure S-Q-003.

Relationship of Limit of Detection (LOD) to the Quantitation Limit (QL)
An important characteristic of expression of sensitivity is the difference in the LOD and the QL. The LOD is the minimum level at which the presence of an analyte can be reliably concluded. The QL is the minimum level at which both the presence of analyte and its concentration can be reliably determined. For most instrumental measurement systems, there is a region where semi-quantitative data is generated around the LOD (both above and below the estimated MDL or LOD) and below the QL. In this region, detection of an analyte may be confirmed but quantitation of the analyte is unreliable within the accuracy and precision guidelines of the measurement system. When an analyte is detected below the QL, and the presence of the analyte is confirmed by meeting the qualitative identification criteria for the analyte, the analyte can be reliably reported but the amount of the analyte can only be estimated. If data is to be reported in this region, it must be done so with a qualification that denotes the semi-qualitative nature of the result.

Determination of Interferences
A determination that the method is free from interferences in a blank matrix is performed.

Determination of Range
Where appropriate, a determination of the applicable range of the method may be performed. In most cases, range is determined and demonstrated by comparison of the response of an analyte in a curve to

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established or targeted criteria. The curve is used to establish the range of quantitation and the lower and upper values of the curve represent upper and lower quantitation limits. Curves are not limited to linear relationship.

Demonstration of Capability
DOCs are performed prior to method performance.

Determination of Accuracy and Precision
Accuracy and precision are generally performed using replicate analyses, with a resulting percent recovery and measure of reproducibility (Standard deviation, relative standard deviation) calculated and measured against a set of target criteria.

Documentation of Method
The method is formally documented in an SOP. If the method is a minor modification of a standard laboratory method that is already documented in an SOP, an SOP Appendix describing the specific differences in the new method is acceptable in place of a separated SOP.

Continued Demonstration of Method Performance
Continued demonstration of Method Performed is addressed in the SOP. Continued demonstration of method performance is generally accomplished by batch specific QC samples such as LCS and Method Blanks.

5.3.6 Data review

All data, regardless of regulatory program or level of reporting, shall be subject to a thorough review which involves a primary, secondary, and completeness review process. All levels of the review must be documented. Data review procedures are defined in STL Corpus Christi SOP: CC-QA-010.

Any anomalous results and/or non-conformances noted during the Primary Review are communicated to the Supervisor and QA for resolution. Resolution can require sample reanalysis, or it may require that data be reported with a qualification. Non-conformances are documented using the OCER form (green sheet).

5.3.6.1 Primary Review

The primary review is often referred to as a "bench-level" review. In most case, the analyst who generates the data (prepares and/or analyzes the samples) is the primary reviewer.

Once an analysis is complete =, the primary reviewer ensures, where applicable, that:

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- Sample preparation is complete, accurate, and documented.
- Calculations/Quantitations have been performed correctly and accurately.
- Qualitative identifications are accurate.
- Manual integrations are appropriate.
- Data flags to indicate manual integrations are recorded.
- Client specific requirements have been followed.
- QC criteria have been met.
- Method and Process SOP have been followed.
- Dilution factors are corrected recorded and applied.
- Non-conformances and/or anomalous data have been properly documented and appropriately communicated.
- COC Procedures have been followed
- Primary review is documented by date and initial/signature of primary analyst.

Any anomalous results and/or non-conformances noted during the Primary Review are documented on the Data Review Checklist and are communicated to the Section Supervisor, the Project Manager, and the QA Manager for resolution. Resolution may require the sample to be re-extracted/re-analysis or it may require that the data be reported with a qualification.

5.3.6.2 Secondary Review

The secondary review shall be a complete technical review of a data set. The secondary review must be documented and the secondary reviewer identified. The following items are reviewed:

- Qualitative identification
- Quantitative accuracy
- Calibration
- QC Samples
- Method Samples
- Method QC criteria
- Adhere to method and Process SOPs
- Accuracy of Final Client Reporting Forms
- Manual Integrations – Minimal requirement is to spot check raw data files for manual integration.
- Completeness
- Special Requirements/Instructions

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If problems are found during the secondary review, the reviewer must work with the appropriate personnel to resolve them. If changes are made to the data, such as alternate qualitative identifications, identifications of additional target analytes, re-quantitation, or re-integration, the secondary reviewer must contact the laboratory analyst and/or primary reviewer of the data so that the primary analyst and/or reviewer is aware of the appropriate reporting procedures.

5.3.6.3 Completeness Review

The completeness review shall include the generation of a project narrative and/or cover letter which outlines anomalous data and non-compliances using project narrative notes and non-compliance reports generated during the primary and secondary review. The completeness review addresses the following items:

- Is the project report complete?
- Does the data meet with the client's expectations?
- Were the data quality objectives of the project met?
- Are QC outages and/or non-conformances approved and appropriately explained in the narrative notes?

5.3.6.4 Logbook Review

Logbooks for routine monitoring are reviewed monthly to ensure accuracy and compliance with its SOP and this policy. This review is performed by a Group Leader or a designee. At a minimum, the review is documented by a signature or initials and the date reviewed.

Preventative maintenance logs are reviewed annually by the Quality Assurance Department to verify that logs are available for each instrument and that they are being completed appropriately.

5.3.7 Data Integrity and Security

This section details those procedures that are relevant to computer systems that collect, analyze, and process raw instrumental data, and those that manage and report data. The importance of maintaining time and data integrity is addressed in Corporate SOP: S-Q-004.

Security and Traceability

Access to computer systems that collect, analyze, and process raw instrumental data, and those that manage and report data must be both controlled and recorded. There are various systems at STL Corpus

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Christi to which this applies, which include the Laboratory Information Management System (LIMS), as well as specific systems such as chromatography data systems (e.g., Target, Chemstation...)

Control of the system is accomplished through limitation of access to the system by users with the education, training and experience to perform the task knowledgeably and accurately. System users are granted privileges that are commensurate with their experience and responsibilities.

Computer access is tracked by using unique login names and passwords for all employees that have access to the computer system. "General" or "multi-user" account access to computer systems that collect, analyze and process raw instrumental data, and those that manage and report data shall not be permitted. Entries and changes are documented with the identity of the individual making the entry, and the time and date. Where a computer system is processing raw instrumental data, the instrument identification number as described in Section 5.4.1 is recorded. Many of these systems, such as Target, have the capability of maintaining audit trails to track entries and changes to the data.

Auditing
The QA Department systems audit includes review of the control, security, and tracking of IT systems and software.

Version Control
The laboratory shall maintain copies of outdated versions of software and associated manuals for all software in use at the laboratory for a period of five years from its retirement date. The associated hardware, required to operate the software, must also be retained for the same time period.

5.4 Equipment

5.4.1 Equipment Operation

STL Corpus Christi is committed to routinely updating and automating instrumentation. STL Corpus Christi maintains state of the art instrumentation to perform the analyses within the QC specifications of the test methods. STL Corpus Christi maintains an equipment list that includes the following information:

- Identity
- Date Installed
- Manufacturer's Name, Model Number, Serial Number
- Current Location

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A list of major equipments is provided in **Appendix V**.

All equipment is subject to rigorous checks upon its receipt, upgrade, or modification to establish that the equipment meets with the selectivity, accuracy, and precision required by the test method for which it is to be used. All manufacturer's operations and maintenance manuals are kept up to date and accessible for the use of the equipment operator. Documentation of equipment usage is maintained using analytical run and maintenance logbooks.

5.4.2 Equipment Maintenance

STL Corpus Christi employs a system of preventative maintenance in order to ensure system up time, minimize corrective maintenance costs and ensure data validity.

All routine maintenance is performed as recommended by the manufacturer and may be performed by an analyst, instrument specialist or outside technician. Maintenance logbooks are kept on all major pieces of equipment in which both routine and non-routine maintenance is recorded. Notation of the date and maintenance activity is recorded each time service procedures are performed. Maintenance logbooks are retained as QC records. Section Supervisor/Group Leaders are responsible for the review of the maintenance records.

Maintenance contracts are held on specific pieces of equipment where outside service is efficient, cost-effective, and necessary for effective operation of the laboratory.

5.4.3 Equipment Verification and Calibration

All equipment shall be tested upon receipt to establish its ability to meet the QC guidelines contained in the test method for which the instrumentation is to be used. This testing shall be documented. Specific instrumentation verification and calibration procedures are described in the respective department/method SOPs.

Once an instrument is placed in routine service, ongoing instrument calibration is demonstrated at the appropriate frequency as defined in the test method. Any instrument that is deemed to be malfunctioning is clearly marked and taken out of service.

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5.5 Measurement Traceability

5.5.1 General

Traceability of measurements shall be assured using a system of documentation, calibration, and analysis of reference standards. Laboratory equipment that are peripheral to analysis and whose calibration is not necessarily documented in a test method analysis or by analysis of a reference standard shall be subject to ongoing certifications of accuracy. For specifics regarding measurement traceability, please reference the listed procedures.

Measurement traceability procedures are described in following STL Corpus Christi SOPs:

- CC-QA-009 "Monitoring Refrigerator, Freezer, Incubator, and Oven Temperatures"
- CC-QA-003 "Reagent Monitoring"
- CC-QA-014 "Maintenance and Calibration of Balances and Class I Weights"
- CC-QA-015 " Thermometer Calibration"
- Cc-QA-016 "Calibration and Verification of Pipettes and Dispenser"

5.5.2 Reference Standards and Reagents

The receipt of all reference standards and reagents must be documented through the LIMS system. References standards are labeled with a unique Standard Identification Number, date received, and the expiration date. All documentation received with the reference standard is retained as a QC record and references the Standard Identification Number. See STL Corpus Christi SOP: CC-QA-011 "Receipt, Preparation, Storage of Standards and Reagents" for additional information on this procedure and policy.

All standards should be purchased with an accompanying Certificate of Analysis that documents the standard purity. If a standard cannot be purchased from a vendor that supplies a Certificate of Analysis, the purity of the standard is documented by analysis. All efforts are made to purchase standards that are $\geq$ 97.0% purity. If this is not possible, the purity is used in performing standards calculations.

The accuracy of calibration standards is checked by comparison with a standard from a second source. In cases where a second standard manufacturer is not available, a different lot is acceptable for use as a second source. The appropriate Quality Control (QC) criteria for specific standards are defined in laboratory SOPs. In most cases, the analysis of an Initial Calibration Verification (ICV) or Laboratory Control Sample (LCS) is used as the second source confirmation.

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Solvents and acids are verified either by one of the STL Network Laboratories prior to receipt at the laboratory or after receipt by STL Corpus Christi.

5.6 Sampling

Sample representativeness and integrity are the foundations upon which meaningful analytical results rely. Where documented and approved SAPs and/or QAPPs are in place, they must be made available to the laboratory before sample receipt, and approved by laboratory management before sample receipt.

5.7 Sample Handling, Transport, and Storage

5.7.1 General

Chain of Custody (COC) can be established either when bottles are sent to the field, or at the time of sampling. STL Corpus Christi can provide all of the necessary coolers, reagent water, sample containers, preservatives, sample labels, custody seals, COC forms, ice, and packing materials required to properly preserve, pack, and ship samples to the laboratory.

Samples are received at the laboratory by sample control personnel or designates. The following information is recorded for each sample shipment: client/project name, date and time of laboratory receipt, and signature or initials of the personnel receiving the cooler and making the entries.

Upon inspection of the cooler and custody seals, sample control personnel opens and inspects the contents of the cooler, and records the cooler temperature. If the cooler arrival temperature exceeds the required or method specified temperature range by $\pm 2^{\circ}C$ (for samples with a temperature requirement of $4^{\circ}C$, a cooler temperature of just above the water freezing temperature to $6^{\circ}C$ is acceptable), sample receipt is considered "compromised". The Project Manager is notified of the deviation so that the client can be notified. All documents are immediately inspected to assure agreement between the test samples received and the COC.

Any non-conformance, irregularity, or compromised sample receipt must be documented on the Sample Receipt Checklist and brought to the immediate attention of the client. The COC, shipping documents, documentation of any non-conformance, irregularity, or compromised sample receipt, record of client contact, and resulting instructions become part of the permanent project record.

Samples that are being tested at another STL facility or by an external subcontractor shall be appropriately packaged, and sent out under COC.

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Following sample labeling, the sample is placed in storage. Sample storage is required to be access controlled. All samples are stored according to the requirements outlined in the test method and in a manner such that they are not subject to cross contamination or contamination from their environment. Unless specified by method or state regulation, a tolerance range of 4 ± 2°C is used. Sample storage temperatures are monitored daily.

5.7.2 Sample Identification and Traceability

Each sample container shall be assigned a unique Sample Identification Number that is cross-referenced to the client identification number such that traceability of test samples is unambiguous and documented. Each sample container is affixed with a sample identification label. Access to samples is documented, identifying the identity of the sample handler, date, and time of sample access.

The laboratory utilizes a custom designed LIMS to uniquely identify and track samples and analytical data throughout the facility. The following information is entered into the LIMS:

- Quote number (unique to the job or set of samples)
- Sample number (a unique LIMS generated number)
- Date received
- Date analytical results are due
- Sample description
- Client's name and address
- Client's job number (if available)
- Billing information – purchase order numbers
- Analyses requested
- Notation of special handling information

This information then becomes the Project Receipt Records. Once these records are generated, method-specific analytical worksheets from LIMS are generated for distribution to the appropriate analysts along with the sample receiving information. A secondary review of the project receipt records is carried out by the PM to ensure compliance with project requirements.

All unused portions of samples, including empty sample containers, are returned to the sample control area.

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5.7.3 Sample Preparation

Holding times for every analysis are established in the method SOPs or on a project specific basis. Holding times are tracked throughout the facility using the LIMS. Work is scheduled by Group Leaders to avoid expiration of any sample prior to analysis. If any holding times are not met, the laboratory informs the QA and the PM, as soon as possible. The PM contacts the client to discuss the excursion and courses of corrective actions

Sample preparations are performed in accordance with prescribed methods. In the event there is not a prescribed sample preparation method, the laboratory, in consultation with the client, will modify an existing technique or develop a procedure. These modifications or developments will be noted in the report narrative.

Preparation specifics are given in the laboratory SOPs which are listed in **Appendix IV**.

5.7.4 Sample Storage and Disposal

Samples are stored according to preservation protocols and per method or manufacture's guidelines. Samples are stored away from standards, reagents, and potentially contaminating sources in such a manner as to prevent cross contamination.

Samples should be retained in STL storage facilities for a minimum of 30 days after the project report is sent, however, provisions may be made for earlier disposal of samples once the holding time is exceeded. Some samples are required to be held for longer periods based on regulatory or client requirements. The laboratory must follow the longer sample retention requirements where required by regulation or client agreement. Samples may be returned to the client per written request. Unused portions of samples found or suspected to be hazardous according to state or federal guidelines may be returned to the client upon completion of the analytical work.

Samples shall be disposed of in accordance with federal, state and local regulations.

5.8 Assuring the Quality of Test Results

5.8.1 Performance Evaluation Samples

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5.8.1.1 Proficiency Testing

STL Corpus Christi analyzes Proficiency Test (PT) samples as required for accreditation. As required by NELAC, STL Corpus Christi participates in the PT program semi-annually for each PT field of testing for which it is accredited; according to the NELAC PT field of testing published guidelines. Under SDWA, the laboratory also analyzes a PT sample by each method once per year, if the laboratory uses more than one method for the analyte.

In addition to the PT program required for NELAC accreditation, STL participates in a number of additional PT programs, as appropriate for the specific facility.

PT samples must be handled and tested in the same manner (procedural, equipment, staff) as environmental samples. PT test sample data is archived using the requirements for project and raw data record retention.

Unacceptable PT results are documented by QA and directed to the applicable department(s). Laboratory evaluations and proposed corrective actions are to be submitted to QA within two weeks.

5.8.1.2 Double Blind Performance Evaluation

STL Corpus Christi also participates in a double blind performance evaluation annually. An external vendor is contracted to submit double blind samples to the STL Corpus Christi. Both the level of customer service and the accuracy of the test results are assessed objectively by the external contractor, who provides a detailed report to the QA Director and to each of the STL facilities. This is administered as a double blind program in order to assess all facets of STL operations.

Unacceptable PT results are documented by QA and directed to the applicable department(s). Laboratory evaluations and proposed corrective actions are to be submitted to QA within two weeks.

5.8.2 Control Samples

Control samples are analyzed with each batch of samples to monitor laboratory performance in terms of accuracy, precision, sensitivity, selectivity, and interferences. Each regulatory program and each method within those programs specify the control samples that are prepared and/or analyzed with a specific batch. Control samples must be uniquely identified and correlated to unique batches. There are also a number of QC sample types that monitor field sampling accuracy, precision, representativeness, interferences, and the effect of the matrix on the method performed. Control sample types and typical frequency of their application are outlines in Table 7. Note that frequency and use of control samples vary with specific regulatory, methodology and project specific criteria.

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Table 7. Control Samples

Control Sample Type	Details	
Method Blank (MB)	Use	Monitors for potential contamination introduces during the sample preparation and analytical processes.
	Typical Frequency	1 per batch of 20 or less per matrix type per sample extraction or preparation process.
	Description	Organics: laboratory pure water for water samples or a purified solid matrix for soil or solid samples (when available or when requested); solid matrices commonly include sodium sulfate, vendor or agency supplied soil or solid, or purchased sand Inorganics: Laboratory pure water for both water and soil or sediment samples
Laboratory Control Sample (LCS)	Use	Measures accuracy of method in blank matrix.
	Typical Frequency	1 per batch of 20 or less per matrix type per sample extraction or preparation process For multi-analyte method, the LCS may consist of surrogates in the blank matrix, and or a representative selection of target analytes/internal standards.
	Description	Prepared from a reference source of known concentration and processed through the preparation and analysis steps concurrently with the field samples. Aqueous LCS's may be processed for solid matrices unless a solid LCS is requested; final results may be calculated as mg/Kg or ug/Kg, assuming 100% solids and a weight equivalent to the aliquot used for the corresponding field samples, to facilitate comparison with the actual sample.
Matrix Duplicate (MD)	Use	Monitors the effect of site matrix on the precision of the method; and of the reproducibility of laboratory preparation and measurement techniques.
	Typical Frequency	1 per 20 samples per matrix per SAP/QAPP.
	Description	Performed by analyzing two aliquots of the same field sample independently; analyzed for each associated sample matrix (e g., when requested by the client or the analytical method).
Matrix Spike (MS)	Use	Measures the effect of site sample matrix on the accuracy of the method.
	Typical Frequency	1 per 20 samples per matrix per SAP/QAPP.
	Description	Aliquot of a field sample which is spiked with the analytes or compounds of interest; analyzed for each associated sample matrix (when requested by the client or analytical method). The determination of MS percent recovery (% R) requires an analysis of a fortified sample and a non-fortified sample under the same procedural conditions (e g, sample volumes, dilutions procedural conditions etc...). The concentration determined in the non-fortified sample is subtracted from the fortified sample concentration before determining the % R. The degree of homogeneity of the sample, particularly in the case on non-aqueous samples or samples with particulates, may affect the ability to obtain representative recoveries
Matrix Spike Duplicate (MSD)	Use	Measures the effect of site sample matrix on the accuracy of the method.
	Typical Frequency	1 per 20 samples per matrix per SAP/QAPP.
	Description	Alternative to sample duplicate. Generally, inorganic protocols specify and MD/MSD and organic protocols specify an MS/MSD.

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Surrogate Spike	Use	Measures method performance to sample matrix (organics only).
	Typical Frequency	Every QC and analytical sample.
	Description	Compounds similar to the target analytes in structure, composition and chromatography, but not typically found in the environment, are added to each QC and analytical sample, prior to preparation (e.g., extraction). If the surrogates in an analytical batch do not all conform to established control limits, the pattern of conformance in investigative is examined to determine the presence of matrix interference of the need for corrective action.
Internal Standards	Use	Monitor the qualitative aspect of organic and inorganic analytical measurements.
	Typical Frequency	All organic and ICP methods as required by the analytical method.
	Description	Used to correct for matrix effects and to help troubleshoot variability in analytical response and are assessed after data acquisition. Possible sources of poor internal standard response are sample matrix, poor analytical technique or instrument performance.

5.8.3 Establishing QC Acceptance Limits

For new procedures, published method limits or guidance limits are used until sufficient QC data are acquired (minimum of 20 to 30 data points recommended).

For existing procedures, data collected over time can be used. Annually, control charts are used with the calculated mean and standard deviation to determine if the data set is considered free of trends and are representative. If it appears that data include gross outliers, outlier tests such as the Grubbs Test, can be used to justify eliminating individual data points.

See STL Corpus Christi SOP: CC-QA-012 "Calculation of Control Limits".

5.8.4 Calibration

Calibration of instrumentation is required to ensure that the analytical system is operating correctly and functioning at the proper sensitivity to meet established reporting limits. Each instrument is calibrated with standard solutions appropriate to the type of instrument and the calibration range established for the analytical method.

Method-specific SOPs discuss in detail how each instrument is calibrated, including frequency for calibration and re-calibration, and the source or grade of the calibration materials for environmental analyses.

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5.8.5 Permitting Departures from Documented Procedure

Where a departure from a documented SOP, test method, or policy is determined to be necessary, or unavoidable, the departure is documented in an out of control event report (OCER) and reported in a case narrative. In most case, these departures is authorized the Section Supervisor, Project Manager, and the client. Issues of serious concern, as determined by Section Supervisor or Project Manager, will be bought to the attention of the Laboratory Director and/or QA Manager. In some instances, it is appropriate to inform the client before permitting a departure. The Project Manager, in consultation with the QA Manager, will make the determination as to the degree of notification required by the client. A copy of the out of control event report (OCER) is files with the job report.

5.8.6 Development of QC Criteria, Non-Specified in Method/Regulation

Where a method or regulation does not specify acceptance and/or rejection criteria, the laboratory must examine the data user's needs and the demonstrated sensitivity, accuracy and precision of the available test methods in determining appropriate QC criteria.

Data users often need the laboratory's best possible sensitivity, accuracy, and precision using a routine offered test method, or are unsure of their objectives for the data. For routine test methods that are offered as part of STL's standard services, the laboratory bases the QC criteria on statistical information such as determination of sensitivity, historical accuracy and precision data, and method verification data. The method SOP includes QC criteria for on going demonstration that the established criteria are met (i.e., acceptable LCS ranges, precision requirements, method blank requirements, initial and continuing calibration criteria, etc.).

In some cases, a routine test method may be far more stringent than a specific data user's needs for a project. The laboratory may either use the routinely offered test method, or may opt to develop an alternate method based on the data user's objectives for sensitivity, accuracy, and precision. In this case, it can be appropriate to base the QC criteria on the data user's objectives, and demonstrate through method verification and ongoing QC samples that these objectives are met.

For example, a client may require that the laboratory test for a single analyte with specific DQOS for sensitivity, accuracy, and precision as follows: Reporting Limit of 10ppm, accuracy ±25%, and RSD of less than 30%. The laboratory may opt to develop a method that meets these criteria and document through the Method Blank results, MDL study, and replicate LCS results that the method satisfies those objectives. In this case, both the method and the embedded QC criteria have been base on the client's DQOs.

In some cases, the data user needs more stringent sensitivity, accuracy, and/or precision than the laboratory can provide using s routine test method. In this case, it is appropriate that the laboratory

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provide documentation of the sensitivity, accuracy, and precision obtainable to the data user and let the data user determine whether to use the best available method offered by the laboratory, or determine whether method development or further research is required.

5.9 Project Reports

5.9.1 General

All STL Corpus Christi Project reports that are generated under NELAC requirements must contain the content as described in Section 5.9.2. The criteria described in Section 5.9.3 and 5.9.4 apply to all Project Reports.

5.9.2 Project Report Content

- Title
- Laboratory name, address, telephone number, contact person
- Unique Laboratory Project Number
- Total Number of Pages (report must be paginated)
- Name and address of Client
- Client Project Name (if applicable)
- Laboratory Sample Identification
- Client Sample Identification
- Matrix and/or Description of Sample
- Dates: Sample Receipt, Collection, Preparation and/or Analysis Date
- Definition of Data Qualifiers
- Reporting Units
- Test Method

The following are required where applicable to the specific test method or matrix:

- Solid Samples: Indicate Dry or Wet Weight
- Whole Effluent Toxicity: Statistical package used
- Indication by flagging where results are reported below the quantitation limit.

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5.9.3 Project Narrative

A Project Narrative and/or Cover Letter shall be included with each project report and at a minimum includes an explanation of any and all of the following occurrences:

- Non-conformances
- "Compromised" sample receipt
- Method Deviations
- QC criteria failures
- Statement that test results meet all requirements of the NELAC Standards.

Project Release

The Laboratory Director or his/her designee must authorize the release of the project report with a signature.

Where amendments to project reports are required after issue, these shall be in the form of a separate document and/or electronic data deliverable. The revised report is clearly identified as revised with the date of revision and the initials of the person making the revision. Specific pages of a project report may be revised using the above procedure with an accompanying cover letter indicating the page numbers of the project revised. The original version of the project report must be kept intact and the revisions and cover letter included in the project files.

5.9.4 Subcontractor Test Results

Project reports from external subcontract shall not be altered, and shall be included in original form in the final project report provided by STL Corpus Christi. Data from subcontractors' reports may be added to an STL Corpus Christi electronic deliverable.

Subcontracted data shall be clearly identified as such, and the name, address, and telephone number for the laboratory performing the test is included in the project report. If the report is being generated under NELAC requirements, all information outlined in Section 5.9.2 are required for both the originating laboratory and the subcontracting laboratory.

Data subcontracted within STL may be reported on the originating laboratory's report forms provided the following mandatory requirements are met:

- The name, address, and telephone number of the facility are provided.

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- Analytical results produced by the STL intra-company subcontractor are clearly identified as being produced by the subcontractor facility.
- The intra-company subcontractor's original report, including the chain of custody is retained by the originating laboratory.
- Proof of certification is retained by the originating laboratory.
- All information as outlined in Section 5.9.2 is included in the final report where the report is required to be compliant with NELAC, for both the originating and subcontracting laboratory.

5.9.5 Electronic Data Deliverables

Electronic Data Deliverables (EDD) are routinely offered as part of STL Corpus Christi' services. EDD specifications are submitted to the IS department by the PM for review and undergo the contract review process in Section 3. Once the facility has committed to providing diskettes in a specific format, the coding of the format may need to be performed. This coding is documented and validated. The validation of the code is retained as a QC record.

5.9.6 Project Report Format

STL Corpus Christi offers a wide range of project reporting formats, including EDDs, short report formats, J-flag report format and TRRP report format. Regardless of the level of reporting, all projects must undergo the levels of review as described in Section 5.3.2.

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STL Corpus Christi

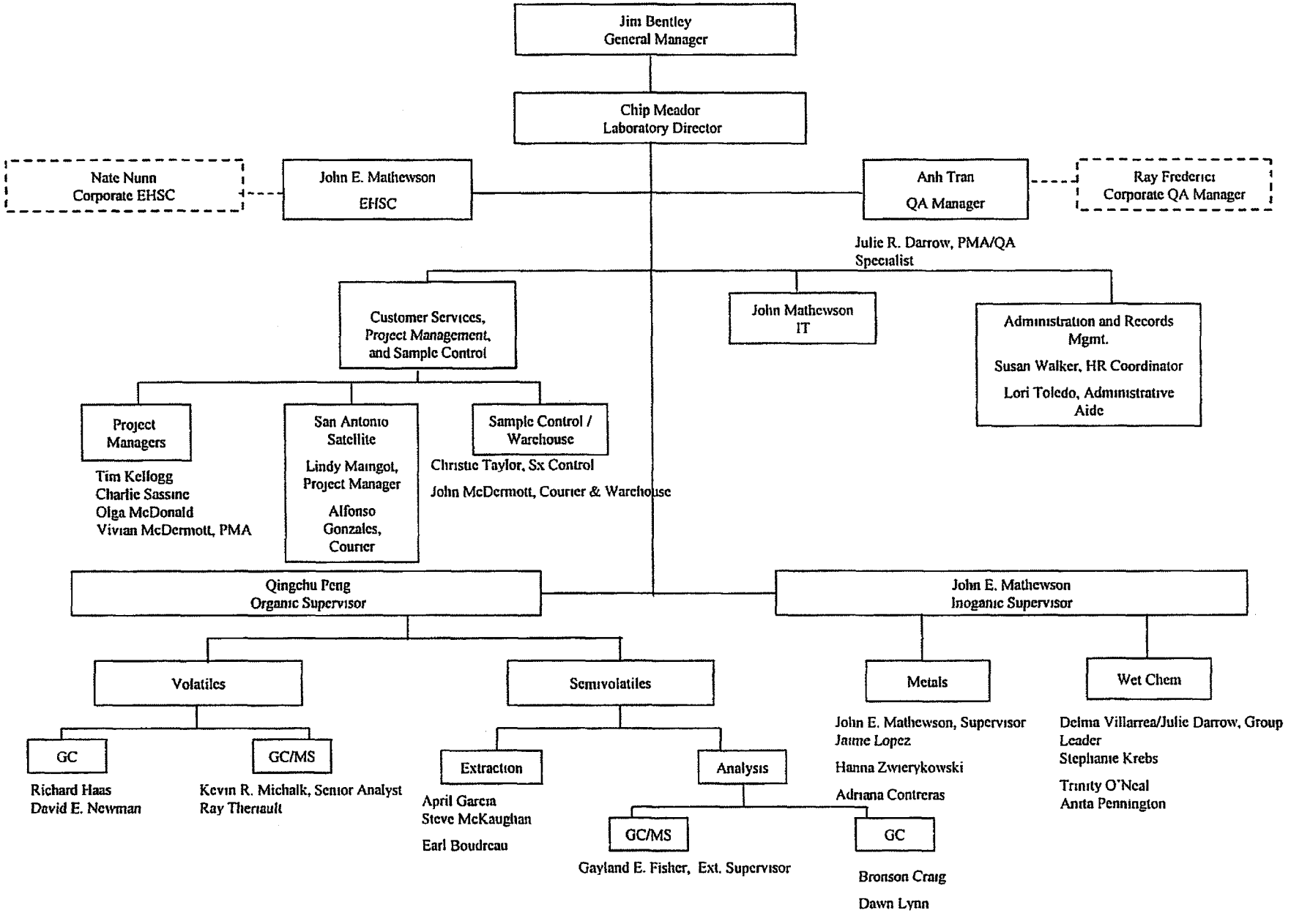
Laboratory Quality Manual (LQM)

Appendix I

Organizational Chart

This Chart is for general guidance regarding STL Corpus Christi organizational structure.
An up to data organizational chart is located:
\\CCSVR01\Anh_QA\QAfiles\CC Org Chart.ppt

STL Corpus Christi Laboratory Organization



STL Corpus Christi

Laboratory Quality Manual (LQM)

Appendix II

Annual Management Review Assessment

SEVERN TRENT STL

Annual Management Review of QA Systems
STL Corpus Christi

Review Conducted By: Chip Meador , ***Laboratory Director***
Date:

The purpose of this management review is to assess the overall health of the quality systems at the STL Corpus Christi laboratory. The laboratory quality systems are described in the Laboratory Quality Manual (LQM) as the set of management objectives, responsibilities, and implementation plans at both organizational and project-specific levels. This review is to determine the suitability and effectiveness of current systems, and to initiate any necessary improvements. This is done in accordance with the requirements in the Laboratory Quality Manual (LQM), Section 4.15.2, and the NELAC Quality Systems, Section 5.5.3.2.

	Score 0 = Unsatisfactory 1 = Mostly meets (60-70%) 2 = Completely meets	**Comments**
QA Reports to Management		
1. Are QA reports to Management prepared monthly?		
2. Are written and verbal communications from QA to Management timely & effective?		
External Assessments		
3. Have recent audit results been acceptable?		
4. Have corrective actions to address the problems found by auditors been defined, implemented and, as appropriate, cleared with the auditor?		
Internal Audits		
5. Are annual systems audits conducted by QA as required by the LQM?		
6. Are spot assessments performed regularly by QA?		
7. Are internal data audits being conducted by QA on a regular basis as required by the LQM?		
8. For unacceptable results, have corrective actions been defined and implemented?		
Corrective Actions		

9.Are corrective action plans well documented, properly communicated internally, and generally completed within 30-60 days?		
10.Do QA staff properly exercise their authority to reject data and/or stop work per LQM?		
Trending & Preventative Actions		
11.Does QA regularly monitor data quality to anticipate performance problems?		
12.Are corrective actions initiated as a result of these monitoring activities?		
Client Feedback & Complaints		
13.Are systems in place to track and resolve customer complaints?		
14.Are all revisions to reported results controlled?		
15.Are QA staff involved in investigating and responding to all significant data quality concerns raised by clients?		
16.Are QA communications to clients appropriate and effective?		
Certifications		
17.Are required governmental certifications and approvals readily available, current, and acceptable?		
Proficiency Testing		
18.Have recent PT results been acceptable?		
19.For unacceptable results, have corrective actions been defined and implemented (e.g., internal investigation and/or follow-up blind PTs)?		
Policies and Procedures		
20.Are QA documents developed & revised as required by the LQM (includes LQM, QA policies, QA SOPs)?		
21.Are there written SOPs for all routine chemical procedures & are they based on methods approved by national authoritative bodies?		
22.Are method modifications acceptable?		

23.Are SOPs necessary to perform required analyses up to date?		
24.Does QA staff effectively coordinate annual review and revision of operational SOPs?		
25.Are the sets of controlled documents in the working areas well maintained?		
Staff Training		
26.Are training files in good order?		
27.Is orientation and periodic training in QA policies and procedures conducted per LQM		
28.Are the NELAC required Demonstrations of Proficiency (DOCs) completed for all analysts and methods?		
29.Does QA staff effectively assist Operations in addressing QA/QC issues?		
Procurement Control		
34.Are newly purchased instruments subject to an acceptance testing plan before beginning production work?		
35.Does QA effectively coordinate the procurement of quality critical solvents & acids?		
36.Are all non-STL subcontract laboratories subject to QA audits?		
Project Review and Planning		
30.Are reviews of QA related requirements of RFPs, SOWs, QAPjPs, etc. regularly performed on a timely basis as meets project needs?		
31. Do project planning activities of CSMs, PMs, and Operations Managers adequately address lab certifications, lab capacity, and capabilities as outlined in the LQM?		
Quality Control Activities		
32.Does QA regularly monitor data quality via statistical methods to verify that quality goals are being met ?		
33.Are control limits updated periodically by QA?		
34.Does QA effectively coordinate annual review and approval of MDLs and RLs?		

35.Are MDLs current?		
36.Is the annual certification of weights, balances, and thermometers current?		
37.Does QA staff effectively participate in and contribute to disciplinary actions/investigations?		
Ruggedness of QA Systems		
38.Are tools for communicating special project requirements (i.e., SACs, Client Requirements Checklist, Quality Assurance Summaries, & Kickoff Meetings) actively and effectively used?		
39.Are analytical data subject to a second-level technical review by qualified personnel, even in times of peak volume?		
40.Are temporary and cross-trained workers subject to the same training and demonstration of proficiency requirements as regular workers?		
41.Is the message consistently conveyed throughout the lab that financial pressures can never be allowed to compromise quality of work.		
Continuous Quality Improvements		
42. Are the planned quality initiatives for the coming year consistent with the needs of the lab?		

Total Score = % (100 points maximum)

Summary Comments

Notable Practices:

Areas Needing Improvement:

Report Prepared by _____ _____

Chip Meador, Laboratory Director Date

STL Corpus Christi

Laboratory Quality Manual (LQM)

Appendix III

New Employee Checklist

STL Corpus Christi
New Employee Checklist

Employee: _____

Hire Date: _____

Safety:

Items	Check	Date
Safety Orientation training		
Safety Manual - identified		
Corporate Safety materials – identified		
Extinguisher training – scheduled		
STL New Employee Training Checklist – initiated		
Safety Committee representative - introduction		
Lab Tour		

Safety Representative signature: _____ *Employee:* _____

Quality Assurance:

Items	Check	Date
QA Orientation training		
Ethics Policy Statement - signed		
STL Corporate QAP – identified		
STL Corpus Christi LQM – identified		
Corporate SOPs and Policies - identified		
STL Corpus Christi SOPs – identified		
Department specific training checklists - initiated		
Manual Integration policy – given		
New Employee checklist - verified and completed		
Organizational Chart – updated		
Signature List – updated		
Other		

QA Representative Signature: _____ *Employee:* _____

This completed checklist is to be placed in the employee's training file.

STL Corpus Christi

Laboratory Quality Manual (LQM)

Appendix IV

SOP Listing

This listing is for general reference regarding STL Corpus Christi's Standard Operating Procedure. SOP indexes are located, along with their SOPs, in:
\\Ccsvr01\anh_qa\Sops\(applicable laboratory area)

STL Corpus Christi SOP Index Organic Preparations (OP)			
SOP Number	**Rev #**	**Title**	**Eff. Date**
CC-ATM-EX001	1	Extracting Semivolatile Organic Compounds by Continuous Liquid-Liquid Extraction Using SW-846 Method 3520C	10/05/04
CC-ATM-EX002	3	Extracting Organic Compounds from Solid Samples by Sonication Using SW-846 Method 3550B	10/05/04
CC-ATM-EX003	1	Preparing Waste Samples for Organic Analysis by Waste Dilution using SW-846 Method 3580A	09/13/04
CC-ATM-EX004	1	Methanol Extraction of Purge and Trap for Aqueous Samples, Soils and Wastes Using SW-846 Method 5030B	09/09/04
CC-ATM-EX005	1	Closed-System Purge and Trap and Extraction for Volatile Organics in Soil and Waste Samples Using SW-846 Method 5035	09/09/04

STL Corpus Christi SOP Index Gas Chromatography (GC)			
SOP Number	**Revision**	**Title**	**Eff. Date**
CC-ATM-EGC001	1	Total Petroleum Hydrocarbons (TPH) Using TCEQ Method 1005	2/17/04
CC-ATM-GC002	1	Organochlorine Pesticides Using SW-846 Method 8081A	09/28/04
CC-ATM-GC003	1	Polychlorinated Biphenyls Using SW-846 Method 8082	09/28/04
CC-ATM-EGC004	0	Characterization of nC6 to nC35 Petroleum Hydrocarbons in Environmental Samples TPH) using TCEQ Method 1006	2/16/04
CC-ATM-GC005	0	Alcohol/Glycol by GC/FID (8015B Modified)	2/18/04
CC-ATM-GC006	0	Organochlorine Pesticides and PCBs by GC using EPA Method 608	04/07/04
CC-ATM-GC007	2	GC Determination of BTEX and Gasoline by EPA Methods 602, 8021B, and 8015D using photo-ionization Detector/Flame-Ionization Detector (GC/FID/PID)	07/15/04
CC-ATM-GC008	0	Analysis of Diesel Range Organics (DRO) by SW-846 Method 8015D	08/11/04

STL Corpus Christi SOP Index GC/MS (Volatiles and Semivolatiles)			
SOP Number	**Revision**	**Title**	**Eff. Date**
CC-ATM-SV001	1	Analyzing Semivolatile Organic Compounds by GC/MS Using SW-846 Method 8270C	9/03/04
CC-ATM-SV002	0	Analyzing Semivolatile Organic Compounds by GC/MS Using EPA Method 625	03/22/04
CC-ATM-SV003	0	Polynuclear Aromatic Hydrocarbon (PAH) by Gas Chromatography / Mass Spectrometry (GC/MS) using Selective Ion Monitoring (SIM)	09/03/04
CC-ATM-V001	3	Analyzing Volatile Organic Compounds by GC/MS Using SW-846 Methods 8000C/8260B	09/28/04
CC-ATM-V002	0	Determination of volatile organic compounds by GC/MS using EPA Method 624	04/13/04

STL Corpus Christi SOP Index GC/MS (Volatiles and Semivolatiles)			
SOP Number	**Revision**	**Title**	**Eff. Date**
CC-ATM-SV001	1	Analyzing Semivolatile Organic Compounds by GC/MS Using SW-846 Method 8270C	9/03/04
CC-ATM-SV002	0	Analyzing Semivolatile Organic Compounds by GC/MS Using EPA Method 625	03/22/04
CC-ATM-SV003	0	Polynuclear Aromatic Hydrocarbon (PAH) by Gas Chromatography / Mass Spectrometry (GC/MS) using Selective Ion Monitoring (SIM)	09/03/04
CC-ATM-V001	3	Analyzing Volatile Organic Compounds by GC/MS Using SW-846 Methods 8000C/8260B	09/28/04
CC-ATM-V002	0	Determination of volatile organic compounds by GC/MS using EPA Method 624	04/13/04

STL Corpus Christi SOP Index Metals			
SOP Number	**Revision**	**Title**	**Eff. Date**
CC-ATM-M001	2	Analyzing Mercury in Aqueous Samples by Automated Cold Vapor Atomic Absorption using EPA Method 245.2 and SW-846 7470A	04/19/04
CC-ATM-M003	3	Analyzing Mercury In Solid or Semisolid Waste Samples by Cold Vapor Absorption using SW-846 7471A	06/30/04
CC-ATM-M004 Obsolete	0 Obsolete	Analyzing Total Organic Halides (TOX) in Drinking and Ground Water Using EPA Method 9020B Modified	10/18/02
CC-ATM-M005	1	Trace Metals Analysis by ICP for Water, Waste, Soil, Sludge, and TCLP Extracts by SW-846 Method 6010B	09/09/04
CC-ATM-M006 Obselete	0 Obsolete	Determination of Extractable Organic Halides (EOX) in Solid Samples Using SW-846 Method 9023 Modified	10/18/02
CC-ATM-M007 Obselete	0 Obsolete	Determination of Total Chlorine in Oils Using SW-846 Method 9076	10/18/02
CC-ATM-M008	1	Toxicity Characteristic Leaching Procedure (TCLP) for Hazardous Waste Characterization of Waste Samples	09/28/04
CC-ATM-M009	1	Acid Digestion of Aqueous Samples and Extracts Using SW-846 Method 3010A	06/16/04
CC-ATM-M010	1	Acid Digestion of Sediments, Sludges and Soils for Metals Analysis Using SW-846 Method 3050B	09/28/04
CC-ATM-M011	1	Microwave Digestion of Solid or Oil Matrices for Metals Analysis Using SW-846 Method 3051	09/28/04
CC-ATM-M012	0	Analyzing Dissolved Hexavalent Chromium by Chelation-Extraction and FLAA in Aqueous Samples Using EPA Method 218.4 and 7197	04/15/04
CC-ATM-M013	1	Analyzing Hexavalent Chromium in Aqueous Samples and Alkaline Digestates of Soils Using SW-846 Method 7196A	04/15/04
CC-ATM-M014	0	Alkaline Digestion for Hexavalent Chromium in Solid Matrices Using SW-846 Method 3060A	2/18/04
CC-ATM-M015	0	Acid Digestion of Aqueous Samples and Extracts for Total Metals by ICP-AES using EPA Method 200.7	04/15/04
CC-ATM-M016	0	Determination of Metals and Trace Elements in Water and Wastes by ICP-AES using EPA Method 200.7	04/16/04
CC-ATM-M017	0	Hardness by calculation Using SM 2340 B	05/13/04
CC-ATM-M018	0	Acid Digestion of Aqueous Samples and Extracts for Total Metals by SW-3020A for GFAA	05/24/04
CC-ATM-M019	0	Graphite Furnace Analysis by SW-846 Method 7000A	09/16/04
CC-ATM-M020	0	Cation-Exchange Capacity of Soils (Sodium Acetate) by SW-846 Method 9081	05/25/04
CC-ATM-M021	0	Coulometric Karl Fischer Titration by ASTM D 4928-00	07/14/04
CC-ATM-M022	0	Synthetic Precipitation Leaching Procedure (SPLP) by SW-846 1312	08/10/04

CC-ATM-M023	0	TCEQ 7-day Distilled Water Leachate Test	08/11/04
CC-ATM-M024	0	Water and Sediment in Fuel Oils by the Centrifuge Method	10/12/04

STL Corpus Christi SOP Index Wet Chemistry			
SOP Number	**Revision**	**Title**	**Eff. Date**
CC-ATM-WC001	1	Biochemical Oxygen Demand (BOD), Carbonaceous Biochemical Oxygen Demand (CBOD), and Dissolved Oxygen (DO) by EPA Method 405.1, SM 5210 B, and EPA Method 360.1	09/28/04
CC-ATM-WC002	0	Total and Fecal Coliform by Membrane Filtration by SM 9222 B and SM 9222 D	04/07/04
CC-ATM-WC003	1	Alkalinity and Free Carbon Dioxide by Potentiometric Titration by EPA Method 310.1, SM 2320 B, and 4500-CO_2 D	06/15/04
CC-ATM-WC004	1	Nitrite-Nitrogen by spectrophotometric for Water and Wastewater by EPA Method 354.1	10/04/04
CC-ATM-WC005	0	Surfactants as Methylene Blue Activated Substances for Water and Waste Water by EPA Method 425.1 and SM 5540 C	03/25/04
CC-ATM-WC006	1	Color by Platinum-Cobalt for Water by EPA Method 110.2 and SM 2120 B	10/04/04
CC-ATM-WC007	0	Sulfite for Water, Waste Water, and Waste by EPA Method 377.1 and SM 4500-SO_3^{2-} B	03/24/04
CC-ATM-WC008	0	Determination of Moisture, Total Solids, Total Volatile Solids, and Fraction Organic Carbon (FOC) in solids, Sludges by Gravimetric methods	05/26/04
CC-ATM-WC009	1	Orthophosphate by Spectrophotometric by EPA Method 365.3	10/05/04
CC-ATM-WC010	1	Specific Conductance by EPA Method 120.1, SW-846 Method 9050A, SM 2510 B, and Agronomy 62-2	06/14/04
CC-ATM-WC011	1	Residual Chlorine by EPA Method 330.4 and SM 4500-Cl F	04/02/04
CC-ATM-WC012	0	Turbidity for Water and Wastewater by EPA Method 180.1	06/02/04
CC-ATM-WC013	0	Total Dissolved Solids (TDS) by Gravimetry for Water by EPA Method 160.1 and SM 2540 C	03/25/04
CC-ATM-WC014	1	N-Hexane Extractable Material (HEM) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM) by Extraction and Gravimetry for Water and Wastewater by EPA Method 1664A	04/16/04
CC-ATM-WC015	0	Total and Volatile Suspended Solids (TSS and TVSS) by EPA Methods 160.2, 160.4, and SM 2540 D, 2540 E	03/29/04
CC-ATM-WC016	0	Fluoride by ion selective electrode by EPA Method 340.2	03/31/04
CC-ATM-WC017	0	N-Hexane Extractable Material (HEM;Oil And Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM;TPH) by Sonication and Gravimetry for Soil, Sludge, and Solid Waste by EPA Method 1664A Modified.	5/25/04
CC-ATM-WC018	0	Total, Amenable, Weak Acid Dissociable Cyanide by EPA Methods 335.1, 335.3, 9010B, 9012A, and SM 4500-CN	04/22/04
CC-ATM-WC019	0	Corrosivity Toward Steel	06/01/04
CC-ATM-WC020	0	Chemical Oxygen Demand (COD) for Water and Wastewater by Hach Method 8000	2/24/04
CC-ATM-WC021	0	Distillation Procedure for Ammonia as Nitrogen using Ion Selective Electrode by EPA Method 350.2	04/07/04
CC-ATM-WC022	0	Analysis of Ammonia as Nitrogen using Ion Selective Electrode by EPA Method 350.3	04/16/04
CC-ATM-WC023	1	Phenols by Spectrophotometry for Water Using SW-846 Method 9065A and 420.1	05/25/04
CC-ATM-WC024	0	Sulfide by Colorimetry using EPA Method 376.2 and SM 4500-S^{2-} D	04/08/04

CC-ATM-WC025	1	Flammability Potential Screening (ASTM D4982) and Ignitability/Flash Point Using Pensky-Martens Closed Cup by SW-846 1010 and ASTM D93	06/14/04
CC-ATM-WC026	1	Total Organic Carbon (TOC) in Water, Wastewater, and Waste by EPA Method 415.1, SW-846 Method 9060, and SM 5310 B	04/08/04
CC-ATM-WC027	1	Acid-Soluble and Acid-Insoluble Sulfides by Distillation and Titration Using SW-846 Methods 9030B and 9034	09/28/04
CC-ATM-WC028	0	Determination of Specific Gravity by ASTM D 1429-86	04/16/04
CC-ATM-WC029 Deleted	0 Obsolete	Total, Extractable and Amenable Cyanide by Distillation and Manual Spectrophotometric Determination Using SW-846 Methods 9010A and 9014	08/29/03 Obsolete
CC-ATM-WC030	0	Acidity by Titrimetry using EPA Method 305.1 and SM 2310B	03/12/04
CC-ATM-WC031	0	Reactive cyanide (RxCN) Using SW-846 Chapter 7, Section 7.3.3	02/17/04
CC-ATM-WC032	0	Reactive Sulfide (RxS) Using SW-846 Chapter 7, Section 7.3.4	02/13/04
CC-ATM-WC033	1	pH in Liquids Using SW-846 Methods 9040B, 9041A, and EPA Method 150.1	06/11/04
CC-ATM-WC034	1	Soil and Waste pH	09/08/04
CC-ATM-WC035	2	Analysis of Anions by Ion Chromatography (IC) Using SW-846 9056 and EPA Method 300.0	6/11/04
CC-ATM-WC036	0	Determination of Ash Content by ASTM D482-80	04/16/04
CC-ATM-WC037	0	Determination of total solids (TS) in water and Wastewater EPA 160.3 and SM 2540 B	06/02/04
CC-ATM-WC038	0	Paint Filter Test by EPA Method 9095A	05/28/04
CC-ATM-WC039	0	Soil Extraction Procedures by Agronomy Part 2 Method 62-1	06/11/04
CC-ATM-WC040	0	Total Organic Carbon (TOC) Analysis in Soil using Walkley-Black Method by Agronomy Part 2 Method 90-3.2	06/14/04
CC-ATM-WC041	0	Qualitative Determination of Sulfides (Hydrogen Sulfide Test)	06/11/04
CC-ATM-WC042	0	Measurement of Ammonia by Distillation Using Ion Selective Electrode by SM 4500-NH3 B & D.	06/14/04
CC-ATM-WC043	0	Sulfate by Turbidimetry by EPA 375.4, SW-846 9038, and SM 4500-SO_4 E.	06/14/04
CC-ATM-WC044	0	Threshold Odor Test by EPA 140.1 AND SM 2150B	06/29/04
CC-ATM-WC045	0	Chloride Argentometric Method By SM 4500-CL⁻ B	07/08/04

STL Corpus Christi SOP Index *Quality Assurance / General Laboratory Operation*			
SOP Number	**Revision**	**Title**	**Eff. Date**
CC-QA-001	0	General Document Procedures for Logbooks	2/11/04
CC-GLO-G001 (formerly CC-GLO-S001)	1	General Glassware Cleaning	11/24/03
CC-QA-003	0	Reagent Water Monitoring	03/04/04
CC-QA-004	0	Quality Assurance Records Maintenance	03/24/04
CC-QA-005	0	Laboratory Security Systems	03/24/04
CC-QA-006	0	Internal QA Monitoring	04/08/04
CC-QA-007	0	Preparation and Management of Standard Operating Procedures	04/08/04
CC-QA-008	0	Bottle Order Preparation and Receipt, Login, Storage and Disposition of Environtmental Samples	04/15/04
CC-QA-009	0	Monitoring Refrigerator, Freezer, Incubator, and Oven Temperatures	05/13/04
CC-QA-010	0	Data Review, Verification, and Reporting	07/15/04
CC-QA-011	0	Receipt, Preparation, and Storage of Standards and Reagents	09/02/04
CC-QA-012	1	Calculation of control limits	09/28/04
CC-QA-013	1	MDL Determination	09/28/04
CC-QA-014	0	Maintenance and Calibration of Balances and Class 1 Weights	10/01/04
CC-QA-015	0	Thermometer Calibration	
CC-QA-016	0	Calibration and Verification of Pipettes and Dispenser	
		Procedures to Address Customer Complain and Erroneous Report	
		Definitions and Procedures for Determination of Matrices, Phases, Compositing, and Subsampling	

STL Corpus Christi

Laboratory Quality Manual (LQM)

Appendix V

Major Equipments list

STL CORPUS CHRISTI LABORATORY
Instrument List

Instrument Type	Manufacturer	Model	STL Asset No.	Purchase Date	Autosampler	Method Performed
GC/MS #4 Volatiles	GC Agilent S/N US00034878	6890A	222711	2002		8260B, 624 Water and Soil
	MSD Agilent S/N US10452058	5973N	222712			
	P&T Tekmar S/N US0129009	3100	222713			
	Autosampler Varian S/N 13654	ARCHON	222714		Yes	
GC MS #5 Volatiles	GC Agilent S/N CN10337021	6890A	222706	Aug 2003		8260B, 624 Water
	MSD Agilent S/N US33220037	5973 Inert				
	P&T Eclipse S/N 342466247P	4660				
	Autosampler Varian S/N 13349	ARCHON	222732		Yes	
GC MS #6 Volatiles	GC Agilent S/N CN10416057	6890N		May 2004		8260B, 624 Soil
	MSD Agilent S/N US40620581	5973N Inert	225437			
	P&T Eclipse S/N B418466453P	4660				
	Autosampler O-I Analytical S/N 14174	4552			Yes	
GC MS #2 Volatiles	GC HP S/N 2728A14524	5890A	222708	1992		8260B-Screening
	MSD HP S/N 3118A02244	5971				
	P&T Tekmar S/N S9129012	LSC 2000	222709			
	Autosampler Varian S/N 12982	Archon	222710			
BTEX #4 GC/PID	GC Agilent S/N US10342064	6890N	224925	Prior 2000		8021 BTEX(Air, Water, Soil), GRO
	P&T Tekmar S/N 00228003	14-3100-OEL	222707			
	Autosampler O-I Analytical S/N 14000	4552	224926		Yes	
BTEX #3 GC/PID	GC Hewlette-Packard S/N 2916A22130	HP 5890	22716	Prior 2000		8021 BTEX(Water, Soil), DP
	P&T Tekmar S/N 89109010	14-2000-000 LSC2000	22715			
	Autosampler Varian S/N 13063	ARCHON	222678		Yes	
BTEX #2 GC/PID	GC Hewlette-Packard S/N 2541A06328	HP 5890	222676	Prior 2000		8021 BTEX(Water, Soil), DP
	P&T Tekmar S/N 8809902	14-2000-000 LSC2000				
	Autosampler Varian S/N 13416	ARCHON	222677	OCT 2000	Yes	

STL CORPUS CHRISTI LABORATORY
Instrument List

Instrument Type	Manufacturer	Model	STL Asset No.	Purchase Date	Autosampler	Method Performed
BTEX #1 GC/PID	GC Hewlette-Packard S/N 2541A06327	HP 5890	222679	Prior 2000		8021 BTEX(Water, Soil), DP
	P&T Tekmar S/N 88225010	14-2000-000 LSC2000	222717			
	Autosampler Varian S/N 13941	ARCHON	222737	April 2003	Yes	
Semi GC/MS01	GC Hewlette-Packard S/N US00030641	HP 6890	222702	2000		8270C SIM (Water), SVTRRP (Water, Soil)
	MSD S/N US92511938	HP 5973				
	Autosampler HP S/N US93706015	HP 7683			Yes	
Semi GC/MS02	GC Agilent S/N US10129101	HP 6890	222703	2001		8270C (Water, Soil) 625 (Water, Soil)
	MSD Agilent S/N US10440994	Agilent 5973	222704			
	Autosampler S/N US12419334	Agilent 7683			Yes	
Semi GC/MS03	GC Agilent S/N US10150135	6890N	222705	2003		8270C (Water, Soil) 625 (Water, Soil
	MSD Agilent S/N US01140186	5973N	222706			
	Autosampler S/N CN3353260	Agilent 7683		OCT 2003	Yes	
Pest #5 GC/ECD	GC Agilent S/N US10247073	6890N	222718	Prior 2000		8081A Pest (Water, Soil), 608
	Autosampler S/N CN23927392	Agilent 7683			Yes	
Pest #3 GC/ECD	GC HP S/N 2443A04394	HP5890	222699	Prior 2000		8082 PCBs (Water, Soil, Oil)
	Autosampler S/N 3009A20915	HP7673 18593B				
Pest #4 GC/ECD	GC HP Series II S/N 3235A45584	HP5890	222722	Prior 2000		8082 PCBs (Oil)
	Autosampler S/N 2843A11869	HP7673A 18593A			Yes	
TPH #1 Flash GC/FID	GC HP S/N US00022129	HP6890		Prior 2000		TX1005 (Water, Soil), TX 1006 (Water, Soil), 8015mod. DRO (Water, Soil)
	Autosampler S/N US81901277	HP7683			Yes	
TPH #2 GC/FID	GC HP S/N 2643A10361	HP5890	222696	Prior 2000		TX1005 (Water, Soil), TX 1006 (Water, Soil)
	Autosampler S/N US81205629	HP7683			Yes	
TPH #4 Flash GC/FID	GC HP S/N 2950A27290	HP5890	222701	Prior 2000		TX1005 (Water, Soil), TX 1006 (Water, Soil), 8015 mod. DRO (Water, Soil)

STL CORPUS CHRISTI LABORATORY
Instrument List

Instrument Type	Manufacturer	Model	STL Asset No.	Purchase Date	Autosampler	Method Performed
TOX	Autosampler S/N US2704A06357	HP7673A 18593A			Yes	
	Mitsubishi TOX-10	TOX-10	222686	1997	NO	9023, 9076
	Analyzer S/N					
	Controller S/N 43C32241					
	Furnace S/N Y3F32241					
	Titrator Unit S/N 43D32247					
TOX	Mitsubishi TOX-10 Σ S/N 75R10837	TOX-10 Σ			No	9023, 9076
	Mitsubishi controller S/N 75C10837		207531			
GC/FID #2	GC HP 5890 S/N 2843A20657		222698	Prior 2000	Yes	8015B Alcohol/Glycol
	Autosampler S/N 3244A32900	HP 7673 18593B				
GC FID #1	GC HP 5890A S/N 2631A08725		222723	Prior 2000		Not in Service
TOC	Tekmar/Dohrman S/N 99132003	Apollo 9000 Analyzer 14-9000-OHO	201904	2000		415.1, 9060
	Autosampler				Yes	
IC	Dionex DX-120 S/N 01031381	DX-120	201897	June 2001		300.0, 9056
	Autosampler Dionex S/N0101569	AS-40			Yes	
Seal AQ2	SEAL S/N 090362	AQ2	224837	Nov 2003	Yes	Cyanide (9010, 9013, 9014, 335.1, 335.3)
ICP	Thermo Jarrell Ash S/N 92090	61E	222693	1991		6010B, 200.7
ICP	Perkin Elmer S/N 069N7120201	Optima 3300DV	222694	1998	Yes	6010B. 200.7
AA (Hex. Chromium)	Perkin Elmer S/N 141958	3100AA	201896		Yes	
AA (Mercury)	Leeman Hydra AA Hg Analyzer S/N HA-1041	010-00073-1	222691	2002	Yes	245.1, 7470A, 7471
GFAA	Varian S/N 621391	400 plus	222692	1996	Yes	GFAA 7000 Series
pH meter	Fisher S/N C0006465	Fisher Accumet pH meter 50			No	9040B, 9041, 9045, 150.1, 340.2, 350.3, 4500NH
pH meter	Orion S/N 004682	720A			No	
COD Reactor	Hach S/N 910905688	P/N 45600-00			No	Hach 8000
COD Reactor	Hach S/N 910905705	P/N 45600-00			No	Hach 8000
Spectrometer	Hach S/N 960200038924	P/N 44800-600			No	Hach 8000

STL CORPUS CHRISTI LABORATORY
Instrument List

Instrument Type	Manufacturer	Model	STL Asset No.	Purchase Date	Autosampler	Method Performed
UV/VIS	Milton Roy S/N 3727031002	Spectronic 1201	222689	1995	No	180.1, 110.2, SM2120B, 354.1, 376.2, 365.3
	Milton Roy S/N 3158353001	Spectronic 21D		1991	No	425.1, SM5540C, 9065, 420.1, 7196
Conductance	Orion S/N 64369013	Model 135		1995	No	120.1, 9050A, SM2510B
	Orion S/N 62372050	Model 135		1995	No	120.1, 9050A, SM2510B
DO meter (BOD, CBOD, DO)	Orion S/N 99240005	862		1995	No	405.1, SM8210B, 360.1
Flashpoint Tester	Koehler S/N R02291023	K16200	222727	2003	No	1010, D93

STL Corpus Christi

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Appendix VI

Certification Listing

SEVERN TRENT STL

STL Corpus Christi

Agency	Matrix / Category	Cert.	ID No.	Exp Date
Florida	Non-Potable water	Direct	E87831	6/30/05
	Solids and Chemical Materials	Direct	E87831	6/30/05
Kansas	Hazardous Waste	Reciprocal (FL)	E-10362	10/31/05
	Solid Waste	Reciprocal (FL)	E-10362	10/31/05
Louisiana	Non-Potable water	Reciprocal (FL)	3034	6/30/05
	Solids and Chemical Materials	Reciprocal (FL)	3034	6/30/05

STL Corpus Christi

Laboratory Quality Manual (LQM)

Appendix VII

Test Method Capabilities

This list is for general reference regarding STL Corpus Christi's test method capabilities since technology and methods are frequently changing.

STL Analytical Capabilities List

STL Corpus Christi

Program	Technique	Analyte Group	Method ▲	Source	Description
Solid & Hazardous Waste	Waste Characterization	Waste Characterization	1010	SW-846	Ignitability (Pensky-Martens)
Solid & Hazardous Waste	Waste Characterization	Waste Characterization	1010	SW-846	Flashpoint (Pensky-Martens)
Solid & Hazardous Waste	Waste Characterization	Waste Characterization	1030	SW-846	Ignitability of Solids
Solid & Hazardous Waste	Waste Characterization	Waste Characterization	1030	SW-846	Flashpoint of Solids
Non-potable Water	Colorimetric	General Chemistry	110.2	EPA	Color
Solid & Hazardous Waste	Waste Characterization	Waste Characterization	1110	SW-846	Corrosivity (NACE) Toward Steel
Non-potable Water	Electrometric	General Chemistry	120.1	EPA	Conductance, Specific
Solid & Hazardous Waste	TCLP	Leach	1311	SW-846	Toxicity Characteristic Leachate Procedure
Solid & Hazardous Waste	SPLP	Leach	1312	SW-846	Synthetic Precipitate Leachate Procedure
Non-potable Water	General Chemistry	General Chemistry	140.1	EPA	Odor
Non-potable Water	Electrometric	General Chemistry	150.1	EPA	pH
Non-potable Water	Gravimetric	Residue Testing, solids	160.1	EPA	Solids, Total Dissolved
Non-potable Water	Gravimetric	Residue Testing, solids	160.2	EPA	Solids, Total Suspended
Non-potable Water	Gravimetric	Residue Testing, solids	160.3	EPA	Solids, Total
Non-potable Water	Gravimetric	Residue Testing, solids	160.3	EPA	Moisture, Percent (%)
Non-potable Water	Gravimetric	Residue Testing, solids	160.4	EPA	Solids, Volatile Suspended
Non-potable Water	Gravimetric	Residue Testing, solids	160.4	EPA	Solids, Total Volatile
Non-potable Water	Gravimetric	Hydrocarbons	1664A	EPA	Petroleum Hydrocarbons
Non-potable Water	Gravimetric	Hydrocarbons	1664A	EPA	Oil & Grease
Non-potable Water	Turbidimetric	General Chemistry	180.1	EPA	Turbidity
Non-potable Water	GFAA	Metals	200 Series	EPA	Furnace Metals
Non-potable Water	ICP	Metals	200.7	EPA	ICP Metals
Non-potable Water	General Chemistry	General Chemistry	2120B	SM	Color
Non-potable Water	Titrimetric	General Chemistry	2320 B	SM	Alkalinity, Total
Non-potable Water	Titrimetric	General Chemistry	2320 B	SM	Alkalinity, Bicarbonate
Non-potable Water	Titrimetric	General Chemistry	2320 B	SM	Alkalinity, Carbonate
Non-potable Water	Titrimetric	General Chemistry	2320 B	SM	Alkalinity, Hydroxide
Non-potable Water	Calculation	General Chemistry	2340B	SM	Hardness
Non-potable					

Water	CVAA	Metals	245.1	EPA	Mercury-Hg (cold vapor)
Non-potable Water	Gravimetric	Residue Testing, Solids	2540 C	SM	Solids, Total Dissolved
Non-potable Water	Gravimetric	Residue Testing, Solids	2540 D	SM	Solids, Total Suspended
Non-potable Water	Gravimetric	Residue Testing, solids	2540 E	SM	Solids, Volatile Suspended
Non-potable Water	Gravimetric	Residue Testing, solids	2540 E	SM	Solids, Total Volatile
Non-potable Water	Gravimetric	Residue Testing, Solids	2540 G	SM	Solids, Total Fixed & Volatile
Other	General Chemistry	General Chemistry	2540G	SM	Solids, Percent
Non-potable Water	Gravimetric	Residue Testing, Solids	2540G	SM	Solids, Total Fixed & Volatile
Non-potable Water	Ion Chromatography	Anions	300	EPA	Nitrate-Nitrogen
Non-potable Water	Ion Chromatography	Anions	300	EPA	Sulfate, as SO4
Non-potable Water	Ion Chromatography	Anions	300	EPA	Nitrate/Nitrite
Non-potable Water	Ion Chromatography	Anions	300	EPA	Chloride
Non-potable Water	Ion Chromatography	Anions	300	EPA	Bromide
Solid & Hazardous Waste	Digestion	Metals	3010A	SW-846	Acid Digest of Aqueous Samples for Total Metals FLAA& ICP
Solid & Hazardous Waste	Digestion	Metals	3020A	SW-846	Acid Digest for Total Metals (GFAA)
Solid & Hazardous Waste	Digestion	Metals	3050B	SW-846	Acid Digest of Sediments, Sludges & Soils
Solid & Hazardous Waste	Digestion	General Chemistry	3060A	SW-846	Alkaline Digestion for Hexavalent Chromium
Non-potable Water	Titrimetric	General Chemistry	310.1	EPA	Alkalinity, Hydroxide
Non-potable Water	Colorimetric	General Chemistry	330.4	EPA	Chlorine Residual, DPD-FAS
Non-potable Water	Spectrophotometric	Cyanides	335.1	EPA	Cyanide, Amenable to Chlorination
Non-potable Water	Spectrophotometric	Cyanides	335.2	EPA	Cyanide, Total
Non-potable Water	Potentiometric	Anions	340.2	EPA	Fluoride
Non-potable Water	Spectrophotometric	Nitrogen Series	350.2	EPA	Ammonia, Nitrogen (w. distillation)
Non-potable Water	Potentiometric	Nitrogen Series	350.3	EPA	Ammonia, Nitrogen (w. distillation)
Solid & Hazardous Waste	Extraction	Organics	3510C	SW-846	Separatory Funnel Liquid-Liquid
Solid & Hazardous Waste	Extraction	Organics	3520C	SW-846	Continuous Liquid-Liquid
Non-potable Water	Spectrophotometric	Nitrogen Series	354.1	EPA	Nitrite-Nitrogen
Solid & Hazardous Waste	Extraction	Organics	3550B	SW-846	Ultrasonic Extraction
Solid & Hazardous Waste	Extraction	Organics	3580A	SW-846	Waste Dilution
Non-potable Water	Potentiometric	General Chemistry	360.1	EPA	Oxygen, Dissolved
Non-potable Water	Spectrophotometric	Nutrients	365.3	EPA	Phosphate (Ortho)
Non-potable Water	Spectrophotometric	Sulfide Species	376.2	EPA	Sulfide, as S
Non-potable					

Water	Titrimetric	Sulfide Species	377.1	EPA	Sulfite, as SO3
Non-potable Water	Potentiometric	Demand Series	405.1	EPA	BOD5
Non-potable Water	Infrared Spectrophotometric	Carbon	415.1	EPA	Dissolved Organic Carbon
Non-potable Water	Infrared Spectrophotometric	Carbon	415.1	EPA	Total Organic Carbon (TOC)
Non-potable Water	Spectrophotometric	Phenols	420.1	EPA	Phenols, Total
Non-potable Water	Spectrophotometric	General Chemistry	425.1	EPA	MBAS, Surfactants
Non-potable Water	Spectrophotometric	Cyanides	4500-CN C E	SM	Cyanide, Total
Non-potable Water	Spectrophotometric	Cyanides	4500-CN G	SM	Cyanide, Amenable to Chlorination
Non-potable Water	Spectrophotometric	Cyanides	4500-CN I	SM	Cyanide, Free (Weak Acid Dissociable)
Solid & Hazardous Waste	Purge and Trap	Volatile Organics	5030B	SW-846	Purge and Trap for Aqueous Samples
Solid & Hazardous Waste	Purge and Trap	Volatile Organics	5035	SW-846	Closed System Purge and Trap for Soils and Waste
Non-potable Water	Potentiometric	Demand Series	5210 B	SM	CBOD5
Non-potable Water	Infrared Spectrophotometric	Carbon	5310 B	SM	Total Organic Carbon (TOC), Combustion
Solid & Hazardous Waste	ICP	Metals	6010B	SW-846	Metals
Non-potable Water	GC/PID	Volatile Organics	602	EPA	VOC Purgeable Aromatics
Non-potable Water	GC/ECD	Pesticides	608	EPA	Organochlorine Pesticides
Non-potable Water	GC/MS	Volatile Organics	624	EPA	Volatiles
Non-potable Water	GC/MS	Semivolatile Organics	625	EPA	Semivolatiles
Solid & Hazardous Waste	GFAA	Metals	7000 Series	SW-846	Furnace Metals
Solid & Hazardous Waste	Colorimetric	Metals	7196A	SW-846	Chromium (Hexavalent)
Solid & Hazardous Waste	CVAA	Metals	7470A	SW-846	Mercury in Liquid Waste
Solid & Hazardous Waste	CVAA	Metals	7471A	SW-846	Mercury in Solid or Semisolid Waste
Non-potable Water	Spectrophotometric	Demand Series	8000	Hach	COD
Solid & Hazardous Waste	GC/FID	Hydrocarbons	8015B	SW-846	Diesel Range Organics
Solid & Hazardous Waste	GC/FID	Volatile Organics	8015B	SW-846	Alcohols
Solid & Hazardous Waste	GC/FID	Volatile Organics	8021B	SW-846	BTEX (Plus MTBE)
Solid & Hazardous Waste	GC/ECD	Pesticides	8081A	SW-846	Organochlorine Pesticides
Solid & Hazardous Waste	GC/ECD	PCBs	8082	SW-846	PCBs
Solid & Hazardous Waste	GC/FID	Semivolatile Organics	8100	SW-846	Polynuclear Aromatic Hydrocarbons
Solid & Hazardous Waste	GC/MS	Volatile Organics	8260B	SW-846	Volatile Organic Compounds
Solid & Hazardous Waste	GC/MS	Semivolatile Organics	8270C	SW-846	PAHs GC/MS Scan Low Level
Solid & Hazardous Waste	GC/MS	Semivolatile Organics	8270C	SW-846	Semivolatiles

Solid & Hazardous Waste	GC/MS	Semivolatile Organics	8270C SIM	SW-846	PAHs GC/MS SIM Low Level
Solid & Hazardous Waste	Spectrophotometric	Cyanides	9010B	SW-846	Cyanide, Total (prep only)
Solid & Hazardous Waste	Spectrophotometric	Cyanides	9013	SW-846	Cyanide, Extraction for Solids and Oils
Solid & Hazardous Waste	Spectrophotometric	Cyanides	9014	SW-846	Cyanide, Amenable to Chlorination
Solid & Hazardous Waste	Spectrophotometric	Cyanides	9014	SW-846	Cyanide, Total
Solid & Hazardous Waste	General Chemistry	Sulfide Species	9030B	SW-846	Sulfide, as S (Distillation)
Solid & Hazardous Waste	Titrimetric	Sulfide Species	9034	SW-846	Sulfide, Acid Insoluble
Solid & Hazardous Waste	Electrometric	General Chemistry	9040B	SW-846	Corrosivity, as pH
Solid & Hazardous Waste	General Chemistry	General Chemistry	9041A	SW-846	pH (paper method)
Solid & Hazardous Waste	Electrometric	General Chemistry	9045C	SW-846	pH, Solid & Waste
Solid & Hazardous Waste	Ion Chromatography	Nutrients	9056	SW-846	Nitrate-Nitrogen
Solid & Hazardous Waste	Ion Chromatography	Anions	9056	SW-846	Chloride
Solid & Hazardous Waste	Ion Chromatography	Nutrients	9056	SW-846	Nitrate/Nitrite
Solid & Hazardous Waste	Ion Chromatography	Anions	9056	SW-846	Bromide
Solid & Hazardous Waste	Ion Chromatography	Anions	9056	SW-846	Sulfate, as SO4
Solid & Hazardous Waste	Infrared Spectrophotometric	Carbon	9060	SW-846	Total Organic Carbon (TOC)
Solid & Hazardous Waste	Spectrophotometric	Phenols	9065	SW-846	Phenols, Total
Solid & Hazardous Waste	Gravimetric	Hydrocarbons	9071A	SW-846	Oil & Grease (Gravimetric)
Solid & Hazardous Waste	Spectrophotometric	Physical Properties	9081	SW-846	Cation Exchange Capacity (Sodium Acetate)
Solid & Hazardous Waste	General Chemistry	Physical Properties	9095A	SW-846	Paint Filter Test
Non-potable Water	Microbiology	Bacteriological	9222 B	SM	Coliform, Total
Non-potable Water	Microbiology	Bacteriological	9222 D	SM	Coliform, Fecal
Other	General Chemistry	Physical Properties	D-1429	ASTM	Specific Gravity
Non-potable Water	Titrimetric	Carbon	Lloyd Kahn	Region II	Total Organic Carbon (TOC)
Solid & Hazardous Waste	Waste Characterization	Waste Characterization	SW846,Chapter7	SW-846	Cyanide (Reactive)
Solid & Hazardous Waste	Waste Characterization	Waste Characterization	SW846,Chapter7	SW-846	Sulfide (Reactive)
Non-potable Water	GC/FID	Hydrocarbons	TNRCC Method 1005	TX	Texas Total Petroleum Hydrocarbons
Solid & Hazardous Waste	GC/FID	Hydrocarbons	TNRCC Method 1005	SW-846	Texas Total Petroleum Hydrocarbons

Submit Query

APPENDIX G

ARCADIS

Appendix G

Health & Safety Plan

ENCYCLE / TEXAS, INC. SITE SPECIFIC HEALTH AND SAFETY PLAN

CLIENT: ENCYCLE / TEXAS, INC.

DATE: MAY 27, 2005

ARCADIS
Infrastructure, environment, buildings

ARCADIS

Review and Approval

Site Name: **Encycle/Texas, Inc., 5500 Up River Road, Corpus Christi, Texas**

Construction, Site, or Task Manager	Signature	Date
Site Health and Safety Officer	Signature	Date
Project Health and Safety Manager	Signature	Date

ARCADIS

Employee Acknowledgement

The employee's signature below indicates his/her understanding, acceptance, and compliance with the requirement of this Health and Safety Plan (HASP).

Site Name: Encycle / Texas, Inc., 5500 Up River Road, Corpus Christi, Texas

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date

ARCADIS

Subcontractor Acknowledgement of receipt of this Health and Safety Plan

ARCADIS claims no responsibility for the use of this HASP by others although subcontractors working at the Site may use this HASP as a guidance document. Soil excavation, soil stabilization, clay capping, and excavation backfilling contractors to be selected to work on this project shall prepare a HASP for use by their employees and subcontractors working at the Site. In any event, ARCADIS does not guarantee the health and/or safety of any person entering this Site. Strict adherence to the health and safety guidelines provided herein will reduce, but not eliminate, the potential for injury at this Site. To this end, health and safety becomes the inherent responsibility of personnel working at the Site.

Subcontractor Name and Representative	Signature	Date
Subcontractor Name and Representative	Signature	Date
Subcontractor Name and Representative	Signature	Date
Subcontractor Name and Representative	Signature	Date
Subcontractor Name and Representative	Signature	Date
Subcontractor Name and Representative	Signature	Date
Subcontractor Name and Representative	Signature	Date
Subcontractor Name and Representative	Signature	Date

ARCADIS

Health and Safety Plan Addendum Log

Changes in the scope of the project or introduction of new hazards to the project shall require revision of the Health and Safety Plan (HASP) by the HASP writer and reviewer, and approval by the Project Manager. The HASP Addendum Form is included as Appendix A. Addendums are to be added to every copy of the HASP, and logged in the following table to verify that all copies of the HASP are current:

Addendum Number	Date of Addendum	Reason for Addendum	Person Completing Addendum
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

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Introduction

The provisions of this Site HASP are mandatory for all ARCADIS personnel involved in the Project. This HASP also provides the specification for the minimum acceptable requirements for all subcontractor organizations, and notification of the chemical and physical hazards known to be associated with the project activities addressed in this document. Definitions are included in Appendix B.

Operational changes to this HASP that could affect the health or safety of personnel, the community, or the environment will not be made without prior approval of the ARCADIS Project Manager and the ARCADIS Project Health and Safety Manager (PHSM). This plan meets the requirements for health and safety protection and planning as required by Occupational Safety and Health Administration (OSHA) requirements in Title 29 Code of Federal Regulation, Part 1910 and 1926 as applicable.

The excavation, soil stabilization, clay capping, and excavation backfilling contractors to be selected for this project will be given copies of this plan and will be required, at a minimum, to follow the procedures described herein. The excavation, soil stabilization, clay capping, and excavation backfilling contractors to be selected for this project will be required to develop more extensive HASPs for the activities for which they are responsible. All excavation, soil stabilization, clay capping, and excavation backfilling contractors selected for this project that are in contact with affected soils shall be trained as required by OSHA in Title 29 Code of Federal Regulation, Part 1910 and 1926 as applicable.

ARCADIS claims no responsibility for the use of this HASP by others although other subcontractors working at the Site may use this HASP as a guidance document. In any event, ARCADIS does not guarantee the health and/or safety of any person entering this Site. Strict adherence to the health and safety guidelines provided herein will reduce, but not eliminate, the potential for injury at this Site. To this end, health and safety becomes the inherent responsibility of personnel working at the Site.

ARCADIS Policy

As a company, we will operate in compliance with all federal, state, and local regulations regarding health and safety. Senior management is responsible for ensuring that adequate resources are available to comply with health and safety regulations. Senior management is responsible for developing health and safety programs that comply with health and safety regulations.

Regional and local management is responsible for implementing and fostering a positive and proactive regard for company health and safety programs and policies. Employees are responsible for complying with company health and safety policies and programs to ensure their own safety as well as the safety of their coworkers.

1. Project Description

1.1 Project Type and Activities

X	Type	Start Date	X	Activities	Start Date
X	Remediation			Geophysical Survey	
	Site Assessment/Investigation		X	Site Visit	
	Phase I Site Assessment			Drum Sampling	
	Regulatory Compliance Audit		X	Surveying	
	Compliance Program		X	Excavation	
	Property Decommission		X	Soil Sampling	
	Demolition			Groundwater Sampling	
	Decontamination			Surface Water Sampling	
	Industrial Hygiene Study			Sediment Sampling	
X	Construction			Air Sampling	
	Phase 2 Site Assessment			Drilling	
	Risk Assessment			Other	
X	Site Observations and Inspections				

1.2 Site Background

The site is located at 5500 Up River Road in Nueces, County, Corpus Christi, Texas. The facility began operation in 1942 and produced high grade zinc from sulfide ore concentrates. Encycle operated the facility from 1988 through 2002 as a commercial waste management facility treating primarily inorganic hazardous and nonhazardous materials for the purpose of recycling, reclamation, and reduction in volume. Facility operations ceased in 2003, and the wastewater treatment system at the site is currently operative.

1.3 Description of Project Tasks and Scope of Work

The description of project tasks and scope of work are detailed in Section 3 of the Corrective Measures Study and Corrective Measures Implementation Work Plan. The major project tasks are soil excavation, excavated soil stockpiling, treatment of excavated soil stockpiles using soil stabilization, transport and disposal of the soil stockpiles to a permitted offsite landfill, and backfilling the excavations with clean offsite fill. Clay capping also will be conducted in the soil boring B-140 area adjacent to the 01 Landfill on the Northern Tract.

2. Site Information

Site Name: Encycle/Texas, Inc.

Client Safety and Health Contact: Richard Marcus

Site Contact Name: Richard Marcus

Operational Description of Site: (see Figure 3 of CMS Report for Site Map) Facility operations ceased in 2003. Wastewater treatment system is operative.

Current Site Status:	___	Active	X	Inactive	X	Industrial
(check all that apply)	___	Commercial	___	Retail	___	Undeveloped
	___	Other (describe)				

Topography and General Environmental Setting: Site slopes gently to the north with a steep bluff at the northern end of the Southern Tract.

Accessible by:	___	Major Highway	___	Main Road	X	2-Lane Road	___ Dirt Road

Description of the Work Area:

As shown on Figures 20 and 21 of the CMS Report, work areas (soil excavation) are located in portions of the Meaney Tract, Northern Tract, and Southern Tract. Clay capping in soil boring B-140 area is located on the Northern Tract.

3. Hazard Evaluation and Control

3.1 Project Hazard Analysis

The Project Hazard Analysis below identifies the hazards that are anticipated to be encountered by the project team.

Physical Hazards Present: ☐ None	☒ Heat ☐ Cold ☒ Noise ☒ Walking/working surfaces (includes slip/trip/fall & floor/wall openings) ☒ Visible Dust ☐ LASER ☐ Other:	☒ Holes/Pits ☐ Ionizing radiation ☐ Non-Ionizing radiation ☒ Electricity ☒ Severe Weather ☐ Poor lighting ☒ Overhead Hazards ☐ Other:
Environmental/Equipment Hazards Present: ☐ None	☒ Heavy machinery ☒ Trenching/excavation ☐ Docks – marine operations ☐ Docks – loading ☐ Diving operations ☐ Drilling ☐ Forklifts ☐ Water operations work ☐ Elevated heights (includes fall protection) ☒ Overhead/Underground utilities ☐ Confined spaces ☐ Power tools	☐ Cranes/Hoists/Rigging ☐ Ladders ☐ Scaffolding ☐ Man lifts ☐ Welding ☐ Gas cylinders ☐ Roadway work ☐ Railroad work ☐ Energized equipment (LO/TO) ☐ Pressurized equipment (LO/TO) ☒ Drums and containers ☐ Other:
Biological Hazards Present: ☐ None	☐ Animal/human fluids or blood ☐ Animal/human tissue(s) ☒ Poisonous/irritating plants ☐ Other:	☐ Contaminated needles ☐ Live bacterial cultures ☒ Insects/rodents/snakes ☐ Other:
Ergonomic Hazards Present: ☐ None	☐ Repetitive motion ☐ Awkward position ☒ Heavy lifting ☒ Frequent lifting ☐ Other:	☐ Limited movement ☐ Forceful exertions ☐ Vibration ☐ Other: ☐ Other:
Personal Safety/Security: ☐ None	☐ Personal safety ☐ Security issue ☐ Project site in isolated area ☐ Employees working alone ☐ Other:	☐ Employees working early/late ☐ Potentially dangerous wildlife ☐ Guard or stray dogs in area ☐ No/limited cell phone service ☐ Other:
Driving Safety ☐ None	☒ Driving early/late ☐ Driving long trip ☒ Driving off-road	☒ City driving ☐ Pulling trailer ☐ Other:

Training Required: ☐ None	☒ 40-hour HAZWOPER ☐ 24-hour HAZWOPER ☒ HAZWOPER site supervisor ☐ OSHA 30-hour Construction ☐ OSHA 10-hour Construction ☐ PPE ☒ Respiratory protection ☐ Chemical hygiene ☒ Hazard communication ☐ Hazardous waste ☐ First-aid/CPR ☐ DOT/IATA hazmat transportation ☐ Diving ☐ Other:	☐ Bloodborne pathogens ☐ Confined space ☐ Lockout/tagout ☐ Electricity ☐ Fire extinguishers ☐ Fall protection ☒ Noise exposure ☐ Forklifts ☐ Asbestos ☐ Lead ☐ Cadmium ☐ SPCC ☐ Radiation safety ☐ Client specific
Medical Screening	☒ Medical Surveillance Exam (HAZWOPER) ☐ Client required drug and/or alcohol Testing	☐ Blood and/or urine screening for other hazardous substances

3.2 Chemical Hazard Information

Chemical	Hazards [1]	TLV/PEL [2] 8-hr TWA (mg/m^3)	Ionization Potential	Symptoms of Overexposure [1]	Special Precautions [3]
Antimony	Irritant; toxic	0.5	Not applicable	Irritation eyes, skin, nose, throat, mouth; cough; dizziness; headache; nausea, vomiting, diarrhea; stomach cramps; insomnia; anorexia; unable to smell properly	
Arsenic	Irritant; toxic; potential carcinogen; neurotoxin	0.01	Not applicable	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin, [potential occupational carcinogen]	
Barium	Irritant, toxic [4]	0.5	Not applicable	Limited information on insoluble forms. Occupational poisoning from barium is uncommon. [4]	
Bismuth	Irritant [5]	10	Not applicable	Low toxicity [5]	
Cadmium	Toxic; respiratory effects; potential carcinogen	0.005 OSHA	Not applicable	Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	

Chromium	Irritant	0.5	Not applicable	Irritation eyes; sensitization dermatitis	
Cobalt	Toxic; irritant; respiratory effects	0.02	Not applicable	Cough, dyspnea (breathing difficulty), wheezing, decreased pulmonary function; weight loss; dermatitis; diffuse nodular fibrosis; respiratory hypersensitivity, asthma	
Copper	Irritant; toxic; respiratory effects; potential carcinogen	1	Not applicable	Irritation eyes, respiratory system; cough, dyspnea (breathing difficulty), wheezing; [potential occupational carcinogen	
Cyanide	Irritant [6]	5 OSHA	Not applicable	Low toxicity in form that occurs on site [6]	
Lead	Irritant; toxic; adverse effects on the blood; nervous system effects	0.05	Not applicable	Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypotension	
Manganese	Toxic; neurological effects; respiratory effects	0.2	Not applicable	Parkinson's; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest tightness, dyspnea (breathing difficulty), rales, flu-like fever; low-back pain; vomiting; malaise (vague feeling of discomfort); lassitude (weakness, exhaustion); kidney damage	
Mercury	Toxic; irritant; respiratory, nervous system, and gastrointestinal effects	0.025	Not applicable	Irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria	
Nickel	Toxic; irritant; respiratory effects; potential carcinogen	0.2 (insoluble cmpds)	Not applicable	Sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	
Selenium	Irritant; toxic; respiratory effects; gastrointestinal effects	0.2	Not applicable	Irritation eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage	
Silver	Irritant; gastrointestinal upper respiratory effects	0.01 OSHA	Not applicable	Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance	

Chemical	Hazards [1]	TLV/REL [2] 8-hr TWA (mg/m³)	Ionization Potential	Symptoms of Overexposure [4]	Special Precautions [3]
Thallium	Irritant[7]	0.1	Not applicable	Acute: skin/eye irritation or inflammation. Skin absorption, irritation of mucous membranes. Chronic: none. [7]	
Tin	Irritant	2	Not applicable	Irritation eyes, skin, respiratory system; in animals: vomiting, diarrhea, paralysis with muscle twitching	
Vanadium	Irritant; toxic; respiratory effects	NE	Not applicable	Irritation eyes, skin, throat; green tongue, metallic taste, eczema; cough; fine rales, wheezing, bronchitis, dyspnea (breathing difficulty)	
Zinc	Irritant	NE	Not applicable	Acute: Irritation possible to skin, eyes, lungs, mucous membranes, and GI tract. Chronic: None known.	

Notes:
[1] Source: Unless otherwise noted, http://www.cdc.gov/niosh/npg/npg.html
[2] The TLV (Threshold Limit Value) from the American Conference of Governmental Industrial Hygienists is listed unless the PEL (Permissible Exposure Limit), designated by OSHA, is lower.
[3] There are extensive data available for review for this site. Employees should refer to the available data for areas in which they are working to familiarize themselves with the range of metals detected previously in soils and groundwater in that area.
[4] Source: http://physchem.ox.ac.uk/MSDS/BA/barium.html
[5] Source: http://www.hps.net/msds/Bi_10006-1.pdf
[6] Source: http://www.ilpi.com/msds/ref/cyanide.html
[7] Source: http://www.hps.net/msds/Tl_100058-1.pdf
[8] Source: http://www.sciencestuff.com/msds/C2980.html

3.3 Task Hazard Analysis

Each hazard is evaluated and rated for the level of risk based on the task of the project. A thorough task hazard analysis is completed for each respective task using the following Relative Hazard Rating Scale:

Hazard is/has...	Minimal health effects	Moderate health effects	Severe health effects
Rarely present	LOW	LOW	MED
Sometimes present	LOW	MED	HIGH
Constantly present	MED	HIGH	HIGH

Administrative and engineering controls for each hazard are evaluated for hazard abatement. Personal protective equipment (PPE) required to protect employees from the hazard are indicated, and a summary checklist is provided in Section 4.0. Prior to initiating field work, a tailgate safety briefing must be conducted with all field staff to review the hazards with the project team. Tailgate safety briefings should be conducted daily, or as tasks/hazards change. The tailgate safety briefing form is included in Appendix C.

This section also specifies the monitoring equipment to be used on Site for each task. If air monitoring levels reach and/or approach the action levels, work should be suspended and the project manager contacted to determine if the HASP should be amended to upgrade PPE requirements. All monitoring equipment will be maintained and calibrated in accordance with manufacturer recommendations. All pertinent monitoring data will be logged on the Real Time Air Monitoring Data Form (Appendix D) or in the field log book, and maintained on Site for the duration of project activities. Calibration of all monitoring equipment will be conducted daily during use and logged on the same form or in the field log book.

3.3.1 Task 1 –Soil, Wooden Railroad Tie, and Concrete Sampling

HAZARD	Heat	Level of Risk:	MED	Module Appendix	F1
Source of Hazard	Ambient Environment				
Admin. & Eng. Controls	Take frequent breaks in cool or shady area; drink plenty of water and/or drinks with metabolites	PPE:	Level D		
HAZARD	**Walking/Working Surfaces**	**Level of Risk:**	**MED**	**Module Appendix**	**F2**
Source of Hazard	Uneven surfaces within facility				
Admin. & Eng. Controls	Clear path before proceeding. To the extent possible clear vegetation to improve visibility along route. Do not jump out of the back of pickup truck or use the tires as steps to access the back of the truck. Wear appropriate footwear	PPE:	Level D		
HAZARD	**Severe Weather**	**Level of Risk:**	**MED**	**Module Appendix**	**F3**
Source of Hazard	Ambient Environment				
Admin. & Eng. Controls	Stop and evaluate site conditions during extreme wind and precipitation conditions. Stop outdoor work when lightning occurs. Monitor local meteorological conditions. Evaluate stop criteria with contractors during daily tailgate safety meetings.	PPE:	Level D		
HAZARD	**Driving Safety**	**Level of Risk:**	**HIGH**	**Module Appendix**	**F4**
Source of Hazard	Driving to and from site; driving on site				

Admin. & Eng. Controls	Adhere to ARCADIS Vehicle Safety Program To the extent possible, avoid traveling on public roadways during rush hour Use flashing lights on fleet trucks at all times Practice defensive driving techniques Wear reflective traffic vests when working along roadways and/or in parking lots Use traffic cones, flares, or barriers to alert traffic of roadside operations Assign an employee to direct traffic if needed Wear seatbelts at all times Pull as far off of the road as possible when conducting roadside operations Inspect vehicles and trailers before each use and on maintenance schedule in Vehicle Safety Program Inspect routes if transporting trailer or low to the ground vehicles/equipment to ensure that vehicles clear rail grade crossings or other roadway conditions	PPE:	Level D		
HAZARD	**Biological Hazards**	**Level of Risk:**	**MED**	**Module Appendix**	**F5**
Source of Hazard	Animals, poisonous plants, snakes, insects, spiders, ticks, wasps				
HAZARD	**Material handling**	**Level of Risk:**	**High**	**Module Appendix**	**F6**
Source of Hazard	Heavy and frequent lifting of sampling equipment and coolers				
Admin. & Eng. Controls	Work in teams when handling heavy loads and always use material handling devices (e.g., hoist, forklift, drum dolly, pallet jack, etc.) when practicable. Lighten loads whenever possible. Practice good lifting technique for all types of load handling.	PPE:	Level D		
Is air monitoring required for this task? ☐ YES ☒ NO					

3.3.2 Task 2 – Monitor Shallow Soil Excavation (less than 4 ft. deep), Soil Stabilization, Soil Loading for Transport, Excavation Backfilling, Soil Capping (B-140 Area).

HAZARD	Heat	Level of Risk:	MED	Module Appendix	F1
Source of Hazard	Ambient Environment				
Admin. & Eng. Controls	Take frequent breaks in cool or shady area; drink plenty of water and/or drinks with metabolites	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		
HAZARD	**Walking/Working Surfaces**	**Level of Risk:**	**MED**	**Module Appendix**	**F2**
Source of Hazard	Uneven surfaces within facility				
Admin. & Eng. Controls	Clear path before proceeding. To the extent possible clear vegetation to improve visibility along route. Do not jump out of the back of pickup truck or use the tires as steps to access the back of the truck. Wear appropriate footwear. Ensure that excavations are closed or clearly marked and properly barricaded when not attended.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		
HAZARD	**Severe Weather**	**Level of Risk:**	**MED**	**Module Appendix**	**F3**
Source of Hazard	Ambient Environment				
Admin. & Eng. Controls	Stop and evaluate site conditions during extreme wind and precipitation conditions. Stop outdoor work when lightning occurs. Monitor local meteorological conditions. Evaluate stop criteria with contractors during daily tailgate safety meetings.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		

HAZARD	Driving Safety	Level of Risk:	HIGH	Module Appendix	F4
Source of Hazard	Driving to and from site; driving on site				
Admin. & Eng. Controls	Adhere to ARCADIS Vehicle Safety Program To the extent possible, avoid traveling on public roadways during rush hour Use flashing lights on fleet trucks at all times Practice defensive driving techniques Wear reflective traffic vests when working along roadways and/or in parking lots Use traffic cones, flares, or barriers to alert traffic of roadside operations Assign an employee to direct traffic if needed Wear seatbelts at all times Pull as far off of the road as possible when conducting roadside operations Inspect vehicles and trailers before each use and on maintenance schedule in Vehicle Safety Program Inspect routes if transporting trailer or low to the ground vehicles/equipment to ensure that vehicles clear rail grade crossings or other roadway conditions	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		

HAZARD	Biological Hazards	Level of Risk:	MED	Module Appendix	F5
Source of Hazard	Animals, poisonous plants, snakes, insects, spiders, ticks, wasps				

HAZARD	Material handling	Level of Risk:	High	Module Appendix	F6
Source of Hazard	Heavy and frequent lifting of sampling equipment and coolers				
Admin. & Eng. Controls	Work in teams when handling heavy loads and always use material handling devices (e.g., hoist, forklift, drum dolly, pallet jack, etc.) when practicable. Lighten loads whenever possible. Practice good lifting technique for all types of load handling.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		

HAZARD	Noise	Level of Risk:	High	Module Appendix	F7
Source of Hazard	Heavy equipment used during excavation and backfilling				
Admin. & Eng. Controls	Use earplugs or earmuffs when noise prevents conversation in a normal voice at a distance of 3 feet. (This is a "rule of thumb" that indicates noise levels are exceeding 85 decibels). Double protection (e.g., earplugs and muffs) must be used for noises exceeding 104 decibels. Contact the SSO for a noise survey, as needed. Post appropriate signs in areas of hazardous noise.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		
HAZARD	**Overhead and Underground Utilities**	**Level of Risk:**	**HIGH**	**Module Appendix**	**F8**
Source of Hazard	Facility utilities, including electrical, sewer, water				
Admin. & Eng. Controls	Maintain at least a 20-foot clearance from overhead power lines. (Note, the OSHA regulations require that for energized lines that exceed 50,000 volts, minimum distance between energized lines and equipment shall be at least 10 feet plus 0.4 inch for each 1,000 volts over 50,000 volts.) If unavoidably close to power lines, have utility provider isolate the energy source using lock out/tag out procedures, and have the local utility company mark the wires. Use a spotter to assist during operations. Contact DIG TESS, ONE CALL, and client contact to clear utilities prior to conducting intrusive groundwork (e.g., drilling, excavation, etc.). Use private utility locator as needed. Consider all wires live until locked and tagged out. Protect all live equipment cords with ground fault circuit interrupters. Electrical cords cannot be repaired with tape. Faulty electrical cords must be removed from site. Be familiar with specific operating instructions for each piece of equipment. Follow energy control program, including proper lockout tag out procedures before performing maintenance on energized equipment. Consult the SSO if other hazards exist.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		

HAZARD	Working around excavation	Level of Risk:	HIGH	Module Appendix	F9
Source of Hazard	Soil will be removed from various areas of the facility. Depths of excavations will be less than 4 ft. Excavations will be backfilled after confirmation samples have been analyzed.				
Admin. & Eng. Controls	General Guidelines ▪ Do not stand or walk, under elevated loads. ▪ Verify daily that all equipment and associated tools are in good condition. ▪ Immediately remove defective equipment from the work site for subsequent repair. ▪ Do not repair equipment while it is in operation. ▪ Remove soil cuttings from bins with tools, not by hand. ▪ Do not wear loose clothing near operating equipment. Tie back long hair. Consult the SSO if other mechanical hazards exist. Construction Guidelines: ▪ Excavated materials will be stored and retained at least 2 feet from the edge of the excavation (Note: this procedure must be observed even when excavation/trench entry will not occur). ▪ Trees, boulders, and other surface encumbrances that create a hazard will be removed or made safe before excavation is begun. ▪ Special precautions will be taken in sloping or shoring the sides of excavations adjacent to a previously backfilled excavation. ▪ Except in hard rock, excavations below the level of the base of the footing of any foundation or retaining wall will not be permitted unless the wall is underpinned and all other precautions have been taken to ensure the stability of the adjacent walls. ▪ All ladders used in excavation operations will be in accordance with the requirements of 29 CFR 1926 Subpart L.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		

HAZARD	Working around excavation (continued)	Level of Risk:	HIGH	Module Appendix	F9
Admin. & Eng. Controls	Construction Guidelines: ▪ Excavations will be inspected at least daily, or more often as conditions warrant, by a competent person to ensure that changes in temperature, precipitation, shallow groundwater, overburden, nearby building weight, vibrations, or nearby equipment operation has not caused weakening of sides, faces, and flows. The SSO will accompany the competent person and document this inspection in the daily safety log. ▪ Diversion ditches, dikes, or other suitable means will be used to prevent water from entering an excavation and for drainage of the excavation as appropriate and sensible. ▪ When mobile equipment is used or allowed adjacent to excavations, stop logs or barricades will be installed. The grade will always be away from the excavation. ▪ Dust conditions during excavation will be kept to a minimum. Wetting agents shall be used upon the direction of the SSO. ▪ Field personnel shall not enter any excavation, without specific direction, for any reason except to rescue injured individuals who have fallen into the excavated area. ▪ All excavations will be marked and protected at all times to ensure site personnel, visitors, or unauthorized personnel do not enter without permission or fall into the trench.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		
Source of Hazard	Soil will be removed from various areas of the facility. Depths of excavations will be less than 4 ft. Excavations will be backfilled after confirmation samples have been analyzed.				

Admin. & Eng. Controls	Trench Entry Requirements: The following requirements must be met before any personnel are permitted to enter any excavation. ▪ Expected hazardous ground movement areas and banks more than 4 feet high (or less if soil is deemed unstable by the competent person) shall be shored, lain back to a stable slope, shielded, or equivalent. ▪ Sides of trenches or excavations in unstable or soft material 4 feet or more in depth (or less if soil is deemed unstable by the competent person) shall be shored, sheeted, braced, sloped, or equivalent. ▪ Sides of excavations in hard compact soil, including embankments, are shored or otherwise supported when the trench is 4 feet or more in depth (less if soil is deemed unstable by the competent person). ▪ Materials used for sheeting, sheet piling, bracing, shoring, and underpinning shall be in good, serviceable condition. ▪ A means of egress (ladder, ramps, stairways, etc.) shall be accessible at any location inside the excavation without requiring more than 25 feet of lateral travel distance. ▪ Additional precautions by way of shoring and bracing shall be taken to prevent slides or cave-ins when excavations are subjected to vibrations as deemed necessary by the competent person. Before an employee enters an excavation greater than 4 feet in depth (or less if soil is deemed unstable by the competent person), the atmosphere must tested to ensure that an oxygen deficient or hazardous atmosphere does not exist. If the concentration of any airborne contaminant exceeds one-half its permissible exposure limit (PEL) or other applicable occupational exposure limit (OEL), the airborne oxygen concentration is less than 19.5 percent, or explosivity exceeds ten percent of the lower explosive limit (LEL), then no personnel shall be permitted to enter the excavation until such engineering controls or other hazard controls are instituted to eliminate or control hazard.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones

HAZARD	Work Around Excavation (continued)	Level of Risk:	HIGH	Module Appendix	F9
Source of Hazard	Soil will be removed from various areas of the facility. Depths of excavations will be less than 4 ft. Excavations will be backfilled after confirmation samples have been analyzed.				

HAZARD	Heavy machinery	Level of Risk:	HIGH	Module Appendix	F10
Source of Hazard	Backhoes, front end loaders, graders, etc. used for excavation and backfilling activities				
Admin. & Eng. Controls	▪ Do not stand or walk, under elevated loads. ▪ Verify daily that all equipment and associated tools are in good condition. ▪ Immediately remove defective equipment from the work site for subsequent repair. ▪ Do not repair equipment while it is in operation. ▪ Remove soil cuttings from bins with tools, not by hand. ▪ Do not wear loose clothing near operating equipment. Tie back long hair. ▪ Consult the SSO if other mechanical hazards exist.	PPE:	Level D; wear dust masks during excavation activities; upgrade to Level C if airborne particulate levels exceed 1 mg/m^3 in the employees' breathing zones		

Is air monitoring required for this task? ☒ YES ☐ NO If yes, complete the following:

Monitoring Equipment	Monitoring Frequency	Action Level
Mini Ram	Continuously while soil is being excavated, moved, and stockpiled during the first week. If airborne particulates are not detected above the action level, frequency of monitoring can be reduced with Project H&S and Project Manager approval.	1 mg/m^3

3.4 Personal Protective Equipment

This section lists the equipment that must be present on the Site and used during the specified protection level. This checklist is used when preparing for the field, and is completed with the type of equipment to be worn based on the hazards present. **R** = Equipment required to be present on the Site. **O** = Optional equipment. Subcontractors must have the same equipment listed here as a minimum. Level B is not anticipated on this project.

Description (Put Specific Material or Type in Box)	Level Of Protection		
	D	C	B
Body			
Chemical Protective Suit (include type in cell, e.g., Tyvek, Saranex, PVC, etc.)	R if contact with contaminated soil anticipated – Tyvek or Polyethylene Suit	R if contact with contaminated soil anticipated – Tyvek or Polyethylene Suit	
Splash Apron (based on hazard)			
Rain Suit (based on hazard)			
Traffic Safety Vest (reflective)			
Head			
Hard Hat (if does not create other hazard)	R	R	
Head Warmer (depends on temperature)			
Eyes & Face			
Safety Glasses (incorporate sun protection as necessary)	R	R	
Goggles (based on hazard)			
Splash Guard (based on hazard)			
Ears			
Ear Plugs	R when heavy machinery operating.	R when heavy machinery operating.	
Hands and Arms			
Outer Chemical Resistant Gloves	R-PVC or Nitrile	R-PVC or Nitrile	
Inner Chemical Resistant Gloves			
Work Gloves			

Description (Put Specific Material or Type in Box)	Level Of Protection		
	D	C	B
Foot			
Safety Boots (steel toe and shank)			
Chemical Resistant Boots with steel toe and shank or Safety Boots with chemical resistant disposable boot covers	R	R	
Rubber Boots			
Disposable Boot Covers			
Respiratory Protection (indicate cartridge type where applicable)			
1/2 Mask APR		R with particulate filter mask or HEPA respirator cartridge during soil excavation, stabilization, and stockpiling.	
Full Face APR			
Dust Protection	R	R	
Full Face Canister APR			
Powered APR			
Air Line/SCBA			
Other Supplies			
First Aid Kit	R	R	
Fire Extinguisher	R during excavation & stockpiling activities	R during excavation & stockpiling activities	
Mobile Phone	R	R	
Walkie Talkies			
Traffic Cones	R, as needed	R, as needed	
Water or Other Fluid Replenishment	R	R	
Eye Wash Station			
Eye Wash Bottle	R	R	
Wash and Dry Towelettes			
Sunscreen (SPF 15 or higher)	R	R	
Insect Repellant	O	O	

4. Decontamination Procedures

Personnel and equipment leaving the Exclusion Zone will be decontaminated. Level D or C decontamination protocol will be used with the following decontamination stations:

Level C Decontamination Steps		Level D Decontamination Steps	
1	Equipment Drop	1	Equipment Drop
2	Outer Garment, Boots, and Glove Wash and Rinse	2	Glove and Boot Wash and Rinse
3	Disposable Garment, Boots, and Glove Removal	3	Disposable Garment, Outer Boot, and Glove Removal
4	Cartridge Change (if necessary)	4	Field Wash
5	Remove Respiratory Protection		
6	Field Wash		

Place an X by all decontamination equipment that is required at the Site.

Decontamination Equipment Checklist			
X	Scrub Brushes	X	Garbage Bags
X	Waste Containers	X	Paper Towels
X	Soap		Isopropyl Alcohol
	Plastic Tubs		Pump Spray Bottles
	Plastic Drop Cloths		Pump Spray Bottles (water)

4.1 Emergency and Project Telephone Numbers

In the event of a situation or unplanned occurrence requiring assistance, the appropriate contact(s) should be made from the list on the following pages. The SSO will post the Emergency Contact page at the project as a ready reference. Where mobile telephones are used for emergency communications, active cellular service will be confirmed from the Site before the initiation of daily work activities.

In the event of any emergency situation, Site personnel will immediately notify the SSO who will initiate emergency response actions. The SSO will determine the need

for off-site emergency response assistance. If the SSO determines that on-site personnel can adequately respond and control the situation, the SSO will oversee the response and ensure Site personnel are properly protected and use proper procedures. If not, the SSO will contact appropriate emergency response personnel per the phone list and other personnel as required by the client for assistance. Personal injury or heat/cold exposure requiring immediate medical help, personal medical emergency, or hazardous chemical exposure situations will require the SSO to immediately call the appropriate emergency number for medical assistance (See the emergency phone list).

Potential emergencies may include

- Excavation cave-ins
- Personal injury
- Personal exposure
- Fire
- Vehicle accidents
- Disturbance of utilities
- Severe weather

The SSO will conduct regular site inspections to identify any potential emergency situations for the purposes of avoiding those emergency situations.

4.2 First Aid Kits

The Site will have first-aid kits that are protected from the weather, available at the Site at all times, and inspected and restocked weekly, as necessary.

4.3 Eyewash Bottles

Eyewash bottles offer a short-term, immediate rinse for personnel who get contamination in their eyes, specifically particulates. Once the eyewash bottle has been used though, personnel should find a plumbed eyewash station or other device (such as a garden hose) to provide continuous flushing to the eyes. Eyewash bottles

should be stored protected from direct sunlight and high temperatures. Additionally, eyewash bottles should be checked frequently to ensure that the liquid has not expired.

4.4 Fire Extinguisher

At a minimum, a 10-pound fire extinguisher capable of extinguishing Class A, B, and C fires will be available for use at the Site at all times. The actual number, size, and type of fire extinguishers will be determined by the SSO. Project personnel will be readily aware of the location of the fire extinguisher and will be trained on when and how to use a fire extinguisher. On project Sites where electrical equipment and components may be vulnerable to corrosive ABC extinguishing agents, extinguishers with non-corrosive agents such as carbon dioxide, may be located in the vicinity of this equipment for use in emergencies.

The Site Safety Officer will coordinate the entry and exit of response personnel during an emergency and make emergency contacts as necessary from the following list. After immediate notifications are made, the SSO will contact the Project Manager.

Local Police	911
Local Ambulance	911
Local Fire Department	911
Local Hospital – Christus Spohn Memorial Hospital, 2606 Hospital Blvd, Corpus Christi	361-902-4000
Poison Control	1-800-764-7661
National Response Center (all spills in reportable	1-800-424-8802
U.S. Coast Guard (spills to water)	804-441-3516
Project Manager – Ken Brandner	361-883-1353
Client Contact – Richard Marcus	361-289-6526

Hospital Route ***(See Figure 1 for map)***

Hospital Name: Christus Spohn Memorial Hospital, 2606 Hospital Blvd, Corpus Christi. **See Map to Hospital – Figure 1**

From the site, take Up River road to McBride Street. Turn right (east) onto McBride Street and go about 3 blocks to IH-37. Turn left (toward Downtown Corpus Christi) onto IH-37. Take IH-37 about 3 miles and turn right onto Crosstown Expressway. Take Crosstown Expressway about 1 mile to Morgan Street. Turn right on Morgan Street and go about 2 blocks to Christus Spohn Memorial Hospital, 2606 Hospital Blvd, on right. (see Map on Figure 1).

First Aid, Fire Protection, and Response Equipment Locations (List all Locations)

First Aid Kit: In ARCADIS vehicle

Eye Wash (Bottle): In ARCADIS vehicle

Eye Wash Station: NA

Safety Shower: NA

Fire Extinguisher: On subcontractor's heavy equipment

The Project Manager will make the following notifications:

Corporate Health & Safety Director – Mike Thomas	720-344-3835 (O) 720-308-2147 (C)
Corporate Health & Safety Manager – Pat Vollertsen	720-344-3779 (O)
Regional Health & Safety Manager – Michael Ramer	720-344-3500 (O) 303-638-0626 (C)
Area Health & Safety Representative – Kim Golden	512-451-1188 (O) 512-775-1400 (C)
Project Physician or Local Physician (if required or requested by client or project contract)	NA
Subcontractor's Office	To Be Determined
Phone Number at Project Site	(361) 289-6526

The following authorities were contacted and briefed about our activities and the potential hazards:

Name: _____

Agency: _____

Date: _____

Name: _____

Agency: _____

Date: _____

Name: _____

Agency: _____

5. Organization and Responsibilities

5.1 ARCADIS Personnel

The following personnel are designated to carry out H&S job functions on the Site. Their responsibilities and the tasks they will be carrying out on the Site are listed below. The same person may fill more than one role.

ARCADIS Project Team	Responsibility and Tasks
(To be determined)	**Project or Task Manager** ▪ Initiates HASP development, and reviews and signs the HASP. ▪ Obtains Site-specific health and safety information. ▪ Communicates with the Site Safety Officer (SSO) on Site health and safety issues. ▪ Allocates resources for correction of identified unsafe work conditions. ▪ Communicates with the client on health and safety issues. ▪ Ensures ARCADIS Site workers have all training necessary for the project (see Appendix G for training & Site specific safety orientation information). ▪ Finalizes PM Checklist. ▪ Reports all injuries, illnesses and near-misses to the Corporate H&S Manager and Area H&S Representative, assists with incident investigation, and ensures that any recommendations made are implemented. ▪ Communicates H&S program and a copy of the ARCADIS H&S Plan to all subcontractors and receives their acknowledgement of the receipt of such information.
(To be determined)	**Site Safety Officer (SSO)** ▪ Reviews and works in accordance with the components of this HASP. ▪ Ensures that the HASP is available to and reviewed by all Site personnel and reviews that subcontractors have appropriately communicated H&S information. ▪ Ensures that necessary Site-specific training is performed (both initial and "tailgate" safety briefings – Use tailgate form in Appendix D.) ▪ Ensures that site visitors have been informed of the hazards related to ARCADIS work and precautions to take, and have signed the Site Visitors Log found in Appendix H. ▪ Ensures that work is performed in a safe manner and has authority to stop work when necessary to protect workers and/or the public. ▪ Coordinates activities during emergency situations.

ARCADIS Project Team	Responsibility and Tasks
	▪ Ensures that all necessary permits and safety information provided by the client is disseminated to other Site personnel and is maintained in an organized manner. ▪ Communicates with the PHSM and the PM on health and safety issues. ▪ Report all injuries, illnesses and near-misses to the PM and PHSM. ▪ Maintains injury/illness reports and other H&S data as required by the client or regulatory agency (e.g., MSHA Quarterly Report). ▪ Ensures that necessary safety equipment is maintained and used at the Site.
(To be determined)	**Site Workers** ▪ Read and work in accordance with the components of this HASP. ▪ Report all unsafe working conditions to the SSO. ▪ Report all injuries, no matter how trivial, to the SSO. ▪ Work in a safe manner. ▪ Sign the acceptance log at the beginning of this HASP.
(To be determined)	**Project Health and Safety Manager (PHSM)** The designated PHSM is responsible for overseeing all aspects of the Site safety program, and preparing any Site-specific health and safety guidance documents or addenda to this plan. The PHSM does not report to the Project Manager, and is separately accountable to the ARCADIS project team senior management for Site health and safety. The PHSM acts as the sole contact to regulatory agencies on matters of safety and health. Other responsibilities include: ▪ Overall authority for Health and Safety compliance and HASP conformance for the project. ▪ General health and safety program administration. ▪ Conducts project health and safety audits as warranted. ▪ Determines the level of personnel protection required. ▪ Updates equipment or procedures based on information obtained during Site operations. ▪ Establishes air-monitoring parameters based on expected contaminants. ▪ Assists in injury, illness and near-miss investigation and follow-up.

5.2 Subcontractors

All ARCADIS subcontractors are responsible for assigning specific work tasks to their employees, providing qualified employees, allocating sufficient time, materials and equipment to safely complete assigned tasks, and equipping its personnel with any required personnel protective equipment.

ARCADIS considers each subcontractor to be an expert in all aspects of the work operations for which they are tasked to provide, and each subcontractor is responsible for compliance with those regulatory requirements which pertain to those services. While the ARCADIS H&S Plan will be the minimum H&S requirements for the work completed by ARCADIS and its subcontractors, each subcontractor, in coordination with ARCADIS H&S personnel, is expected to perform its operations in accordance with its own H&S plans, policies and procedures unique to the subcontractor's work to ensure that hazards associated with the performance of the work activities are properly controlled. Copies of any required safety documentation for a subcontractor's work activities will be provided to ARCADIS for review by the PHSM and SSO prior to the start of on-site activities. Operators of heavy equipment will be required to complete a Heavy Equipment Certification form or similar document.

In the event that the subcontractor's procedures/requirements conflict with requirements specified in this HASP, the more stringent guidance will be adopted after discussion and agreement between the subcontractor and ARCADIS project H&S personnel. Hazards not listed in this HASP, but known to the subcontractor or known to be associated with the subcontractor's services, must be identified and addressed to the ARCADIS Project or Task Manager and SSO prior to beginning work operations.

The Task or Project Manager (or authorized representative) has the authority to halt the subcontractor's operations and to remove the subcontractor or subcontractor employee from the Site for failure to comply with established health and safety procedures or for operating in an unsafe manner.

6. General Site Safety

The following general requirements apply to all on-site activities.

6.1 Site Access and Control

The SSO will coordinate access and control security at the work Site. The SSO will establish a work area perimeter. Only authorized personnel will be allowed beyond the perimeter. Other site workers and visitors to the Site should be kept out of the work Site. If visitors need access to the Site, the SSO, or his/her designee, will escort the visitor at all times.

If Level C PPE or greater is required on-site, the SSO will establish control boundaries for the Exclusion Zone, Contamination Reduction Zone, and the Support Zone. The zones will be designated by traffic cones, barricades, signs, caution tape, or other means effective in identifying the different areas. The zones will be identified by the SSO during tailgate meetings. Entrance and exit to the Exclusion Zone will only be through controlled access points established for each work area.

6.2 Hazard Communication (HazCom)

All project required chemicals will be handled in accordance with OSHA 29 CFR 1910.1200 and ARCADIS-required procedures. The SSO will act as the HazCom Program Coordinator for the Site and will maintain the Master Inventory List (MIL) of hazardous chemicals kept on the job Site. The SSO will maintain Material Safety Data Sheets (MSDS) on Site for all chemicals. The SSO will communicate the location of the MSDS and the hazards associated with these chemicals to all project Site ARCADIS employees and subcontractors during the safety orientation. This information will be reviewed during tailgate briefings, especially if new chemicals or materials are introduced on Site.

The SSO will ensure that all containers of chemicals (including drums, bags, pails, tanks, vessels, etc.), are labeled appropriately: The contents of the container, the proper name of the chemical, associated hazards and appropriate hazard warnings, and the name and address of the manufacturer/importer. Chemicals will not be accepted or allowed on Site that are not properly labeled. If transferred to a secondary container, the new container will be labeled as described.

The SSO will ensure that the PPE necessary for work around the particular chemical is available and that project Site employee have been trained in its use.

The Project Manager will ensure that all project personnel have received Hazard Communication training as required in OSHA 29 CFR 1910.1200 (h).

6.3 Personal Hygiene

Field personnel should avoid contact with potentially contaminated substances, such as puddles, pools, mud, etc. Monitoring equipment should not be placed on a potentially contaminated surface, including the ground surface.

Smoking, eating and drinking will not be permitted within any controlled work area at any time. Field workers will wash their hands and face after leaving any controlled work area prior to eating or drinking. Consumption of alcoholic beverages is prohibited at the Site.

6.4 Site Awareness

All field crewmembers should remain alert for any indications of potentially dangerous situations, (e.g., strong, irritating, or nauseating odors; heavy equipment; conditions of an excavation; etc.).

Field crew members will be familiar with the physical characteristics and requirements of the work Site, including:

- Accessibility to equipment and vehicles
- Communication (i.e., methods, restrictions, or limitations)
- Hot zones (areas of known or suspected contamination)
- Site access
- Emergency procedures and evacuation assembly points
- Activities of other contractors and personnel on Site that may affect or be affected by tasks being performed
- Location of protective and emergency equipment and relevant first-aid procedures.

The number of personnel and equipment in controlled work areas should be minimized, consistent with Site operations. The SSO will review this information during the Site orientation and periodically during the tailgate meetings.

6.5 Buddy System

All on-site personnel will operate using the buddy system whenever possible. During Site activities, work areas will be continuously policed for identification of excess trash and unnecessary debris. Excess debris and trash will be collected and stored in an appropriate container (e.g., plastic trash bags, garbage can, roll-off bin) prior to disposal. At no time will debris or trash be intermingled with waste PPE or contaminated materials. Additionally, project equipment and supplies will be kept in an orderly manner so as not to create a trip hazard.

6.6 Housekeeping

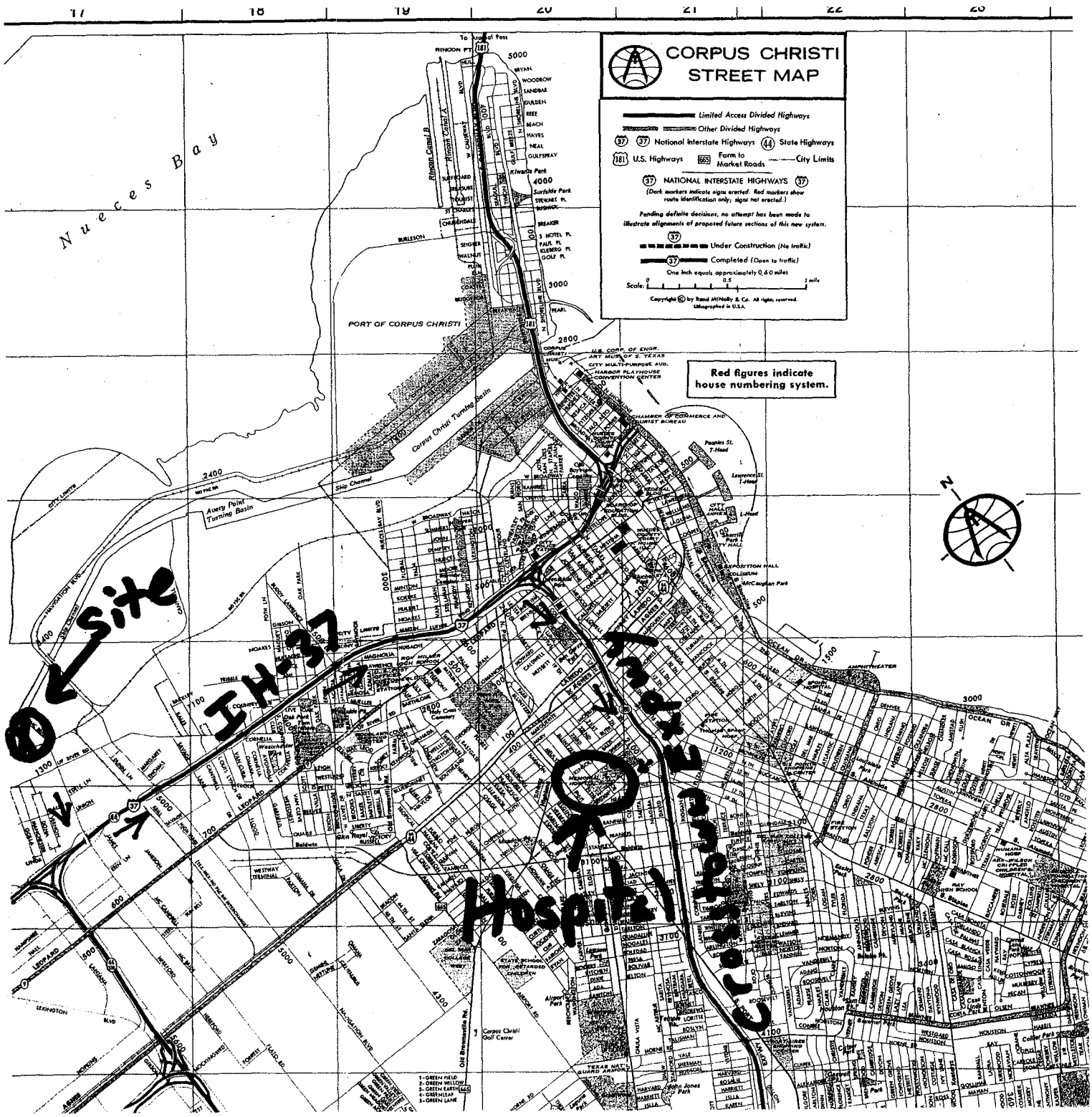
During Site activities work areas will be continuously policed for identification of excess trash and unnecessary debris. Excess debris and trash will be collected and stored in an appropriate container (e.g., plastic trash bags, garbage can, roll-off bin) prior to disposal. At no time will debris or trash be intermingled with waste PPE or contaminated materials. Additionally, project equipment and supplies will be kept in an orderly manner so as not to create a trip hazard.

6.7 Communication

Effective communication is essential to safe working conditions and the successful completion of field projects. During on-site activities, cellular phones will be used by ARCADIS Site personnel to maximize communications with emergency response units. Active cellular telephone service will be confirmed from the Site prior to the initiation of work activities. In the event of a catastrophic event, any notice to evacuate will be given verbally by the SSO and via air horn or radio as appropriate. Communication details will be provided at the Site safety orientation.

Personnel in the project work area will attempt to remain in communication or within sight of the ARCADIS SSO or designee. The ARCADIS SSO will indicate the need to evacuate the Site by verbal command or through radio or telephone communication.

Figure 1. Map to Hospital/Emergency Care



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Appendix A

Addendum Page

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Addendum Page

This form should be used to document any changes required to this HASP. These changes may be a result of changes to the scope of services, changes in field conditions, new hazards identified on the Site, higher or lower hazards than anticipated, etc. Please complete this form prior to the next work day once the changes have been identified. Review the modifications with all Site staff, including subcontractors, during the daily tailgate briefing, and complete the tailgate briefing form as required. Attach a copy of the addendum to all copies of the HASP including the Site copy, and log in the Addendum Log in Section 1.0.

Addendum Number: _____ Project Number: _____
Date of Changed Conditions: _____ Date of Addendum: _____

Description of Change that Results in Modifications to HASP:

Hazard Analysis for Change in Work:

HAZARD		Level of Risk:	
Source of Hazard			
Admin. & Eng. Controls		PPE:	
HAZARD		Level of Risk:	
Source of Hazard			
Admin. & Eng. Controls		PPE:	

Signed: _____ Signed: _____
Project Manager Site Safety Officer

Signed: _____ Signed: _____
H&S Plan Writer H&S Plan Reviewer

Make additional copies of this form as necessary.

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Appendix B

Definitions

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Term or Acronym	Definition
Confined space	Any enclosed area not designed for human occupancy that has a limited means of entry and egress.
DOT	Department of Transportation – specifies the proper and legal methods of shipping and transporting hazardous materials by highway, railway, and by sea in the USA.
HASP	Health and Safety Plan
IATA	International Air Transportation Association - specifies the proper shipment of hazardous materials by air internationally. Many of these regulations are incorporated by reference in the US DOT regulations.
Ionizing radiation	Any one of several types of particles and rays given off by radioactive material, high-voltage equipment, and nuclear reactions. The types that are normally important to your health are alpha particles, beta particles, x rays, and gamma rays.
Level B	A level of protection that requires personal protective equipment including chemically resistant body coverings and supplied air respiratory protective equipment
Level C	A higher level of protection than Level D, requiring some sort of air purifying respirator
Level D	The minimum amount of personal protective equipment ensemble to be worn on a project Site. It does not include respiratory protection.
LO/TO	Lockout/Tagout – a procedure which isolates equipment from energy sources, such as electricity or stored pneumatic energy, by locking and tagging out energy isolating devices.
Mutagen	A chemical that causes changes in the genetic material of living cells.
Nonionizing Radiation	Electromagnetic energy such as ultraviolet, laser, infrared, microwave, and radio.
Oxidizer	A material that releases oxygen and supports combustion.
PEL	Permissible Exposure Limit – an airborne exposure limit set by the U.S. Occupational Safety and Health Administration
PHSM	Project Health and Safety Manager
PPE	Personal Protective Equipment
Sensitizer	A material which, upon exposure, causes a bodily response (i.e. irritation) that increases in severity upon each subsequent exposure.
SPCC	Spill Prevention, Control, and Countermeasures – EPA rule that attempts to prevent oil from entering the national waterways.
SSO	Site Safety Officer
TLV	Threshold Limit Value – an airborne exposure limit set by the American Conference of Governmental Industrial Hygienists

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Appendix C

Site Activities Tailgate Safety Briefing
Sign-in Log

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ARCADIS			
Site Activities Tailgate Safety Briefing Sign-in Log			
Project Number:		**Project Name:**	
Date:		**Time:**	
Briefing Conducted by:	**Signature:**	**Company:**	

This sign-in log documents the tailgate briefing conducted in accordance with the HASP. Personnel who perform work operations on Site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

☐ General PPE Usage	☐ Confined Space	☐ Excavation Safety
☐ Hearing Conservation	☐ Slips, Trips, Falls	☐ Confined Space
☐ Respiratory Protection	☐ Heat Stress	☐ Traffic Safety
☐ Personal Hygiene	☐ Thermal Stresses	☐ Changes to the HASP
☐ Exposure Guidelines	☐ Site Control	☐ Initial Review of Hazard Evaluation
☐ Decon Procedures	☐ Work Zones	☐ Other (specify):
☐ Emergency Procedures (include route to hospital)	☐ Lockout/Tagout	☐ Other (specify):

Personnel Sign-in List

Printed Name	Signature	Company Name

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Appendix D

Real Time Air Monitoring Data
Collection Form

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Real Time Air Monitoring Data Collection Forms

Document all air monitoring conducted on the Site below based on Section E of the HASP. Keep this form with the project files.

Site Name: _____ Date: _____

Instrument: _____ Model: _____ Serial #: _____

Calibration Method: (material used, settings, etc.)	
Calibration Results:	
Calibrated By:	

Activity Being Monitored	Compounds Monitored	Time	Reading	Action Required? Y/N

Describe Any Actions Taken as a Result of this Air Monitoring and Why:

_____

_____

_____

_____

_____

Signed: _____

Site Safety Officer

Make additional copies of this form as necessary.

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Appendix E

Safety Modules

Underground and Above Ground Utilities

Various forms of underground and aboveground utility lines or pipes (carrying water, wastewater, gas and or electricity) may be encountered during work activities. Prior to the start of intrusive operations activities, all utilities must be located and measures must be instituted to avoid contact with these structures. All utility line and or piping will be identified and rendered controlled (through lockout/tagout procedures) or protected from damage.

Should any operations cause equipment to come into contact with utility lines, the SSO and the PHSM will be notified immediately and an Incident Report will be completed. Work will be suspended until the appropriate actions for the particular situations can be taken.

Work involving machinery with high extensions (backhoes, etc.) in vicinity of overhead power lines shall not be conducted within the limits prescribed in the table below. The distance may be lengthened if directed by the client or the electric company and any specified distances will be strictly followed.

Safe distances from overhead power lines are as follows:

TABLE

Voltage range (phase to phase, RMS)	**Approach distance (inches)**
300 V and less	Avoid contact
Over 300V, not over 750V	12
Over 750V not over 2 kV	18
Over 2 kV, not over 15 kV	24
Over 15 kV, not over 37 kV	36
Over 37 kV, not over 87.5 kV	42
Over 87.5 kV, not over 121 kV	48
Over 121 kV, not over 140 kV	54

From 1910.238(b)(7)(iii)

A utilities location checklist is attached and may be used to verify that all utilities have been marked.

UTILITIES AND STRUCTURES CHECKLIST

Project:	**Prepared By:**
Location:	**Date:**

Instructions. This checklist may be used as a safety measure to insure that all underground utility lines, other underground structures as well as above-ground power lines are clearly marked out in the area selected for boring or excavation. **DRILLING OR EXCAVATION WORK MAY NOT PROCEED UNTIL LINES ARE MARKED AND THIS CHECKLIST HAS BEEN COMPLETED.**

Arrangements for underground utility markouts are best made at the time of the preliminary site visit to allow client and/or utility company sufficient time. Keep completed checklist and maps on site; send copy to Project Manager.

Assignment of Responsibility. Client is responsible for having underground utilities and structures located and marked. Preferably, the utilities themselves should mark out the lines.

Drilling or Excavation Sites. Attach a map of the property showing the proposed drilling or excavation site (or if sites are widely separated, several maps) clearly indicating the area(s) checked for underground utilities or underground structures and the location of above-ground power lines.

Utilities and Structures

Type	Not Present	Present	How Marked (flags, paint, wooden stakes, etc.)
Petroleum products line			
Natural gas line			
Steam line			
Water line			
Sewer line			
Storm drain			
Telephone cable			
Electric power line			
Product tank			
Septic tank/drain field			
Overhead power line			

Name and affiliation of person who marked out underground lines or structures

Name	Organization	Phone

Trenching and Excavation Safety

All trenching and excavation operations will be accomplished in accordance with requirements of 29 CFR 1926.650. The following safe operating guidelines apply to open trenches or excavations exceeding four (4) feet in depth **or** of any depth if in unstable soil conditions, as required by 29 CFR 1926.650. An excavation is any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal; a trench is a narrow excavation (in relation to its length) made below the surface of the ground.

Excavation Construction Guidelines

The following requirements are minimum requirements and must be met before any personnel are permitted to enter any excavation.

- Excavated materials will be stored and retained at least 2 feet from the edge of the excavation (Note: This procedure must be observed even when excavation/trench entry will not occur).
- Trees, boulders, and other surface encumbrances that create a hazard will be removed or made safe before excavation is begun.
- Special precautions will be taken in sloping or shoring the sides of excavations adjacent to a previously backfilled excavation.
- Except in hard rock, excavations below the level of the base of the footing of any foundation or retaining wall will not be permitted unless the wall is underpinned and all other precautions have been taken to ensure the stability of the adjacent walls.
- All ladders used in excavation operations will be in accordance with the requirements of 29 CFR 1926 Subpart L.
- Excavations will be inspected at least daily, or more often as conditions warrant, by a competent person to ensure that changes in temperature, precipitation, shallow groundwater, overburden, nearby building weight, vibrations, or nearby equipment operation has not caused weakening of sides, faces, and flows. The SSO will accompany the competent person and document this inspection in the daily safety log.
- Diversion ditches, dikes, or other suitable means will be used to prevent water from entering an excavation and for drainage of the excavation.
- When mobile equipment is used or allowed adjacent to excavations, stop logs or barricades will be installed. The grade will always be away from the excavation.
- Dust conditions during excavation will be kept to a minimum. Wetting agents shall be used upon the direction of the SSO.
- Field personnel shall not enter any excavation, without specific direction, for any reason except to rescue injured individuals who have fallen into the excavated area.
- All excavations will be marked and protected at all times to ensure site personnel, visitors, or unauthorized personnel do not enter without permission or fall into the trench.
- Personnel will work in pairs when working around an excavation of 2' or more.

Trench Entry Requirements

The following requirements must be met before any personnel are permitted to enter any excavation.

- Expected hazardous ground movement areas and banks more than four (4) feet high (or less if soil is deemed unstable by the competent person) shall be shored, laid back to a stable slope, shielded, or equivalent.

- Sides of trenches or excavations in unstable or soft material four (4) feet or more in depth (or less if soil is deemed unstable by the competent person) shall be shored, sheeted, braced, sloped, or equivalent.

- Sides of excavations in hard compact soil, including embankments, are shored or otherwise supported when the trench is four (4) feet or more in depth (less if soil is deemed unstable by the qualified person).

- Materials used for sheeting, sheet piling, bracing, shoring, and underpinning shall be in good, serviceable condition.

- A means of egress (ladder, ramps, stairways, etc.) shall be accessible at any location inside the excavation without requiring more than 25 feet of lateral travel distance.

- Additional precautions by way of shoring and bracing shall be taken to prevent slides or cave-ins when the competent person subjects excavations to vibrations as deemed necessary.

Atmosphere & Testing

Also, before an employee enters an excavation greater than four (4) feet in depth (or less if soil is deemed unstable by the competent person), the atmosphere must be tested to ensure that an oxygen deficient or hazardous atmosphere does not exist. If the concentration of any airborne contaminant exceeds one-half its permissible exposure limit (PEL) or other applicable occupational exposure limit (OEL), the airborne oxygen concentration is less than 19.5 percent, or explosivity exceeds ten percent of the lower explosive limit (LEL), then no personnel shall be permitted to enter the excavation until such engineering controls or other hazard controls are instituted to eliminate or control hazard.

Heat Stress

Heat stress can be a significant hazard, especially for workers wearing protective clothing. Depending on the ambient conditions and the work being performed, heat stress can occur very rapidly, within as little as 15 minutes. Site personnel will be instructed in the identification of a heat stress victim, the first-aid treatment procedures for the victim and the prevention of heat stress incidents. Workers will be encouraged to immediately report any heat-related problems that they experience or observe in fellow workers.

During breaks, workers should be encouraged to drink plenty of water or other liquids to replace lost fluids and to help cool off.

Any worker exhibiting signs of heat stress and exhaustion should be made to rest in a cool location and drink plenty of water. Emergency help by a medical professional is required immediately for anyone exhibiting symptoms of heat stroke, such as red, dry skin, confusion, delirium or unconsciousness. Heat stroke is a life threatening condition that must be treated by competent medical authority.

Prevention

Whenever possible or within the control of ARCADIS, engineering controls should be utilized to protect workers from heat related hazards. For example, isolation from the heat source, ventilation such as open windows, fans or other methods of creating air flow, and heat shielding such as awnings or umbrellas.

Appropriate work practices can also lessen the chances of heat related hazards. Some of these include:

- Water intake should be about equal to the amount of sweat produced (i.e., drinking 5-7 ounces of water every 15-20 minutes).
  - Electrolyte fluids may also be necessary.
- Whenever possible, gradual exposure to heat is preferred.
- Whenever possible, adjust the work schedule. For example, postpone nonessential or heavier work to another day or a cooler part of the day.
- Whenever possible, rotate personnel.
- Increase the number and/or duration of rest breaks, but do not increase individual work periods when longer and/or more rest breaks periods are given.
  - Whenever possible, rest break areas should be in a cool area and as close to the work Area as is feasible.

PPE is available, such as thermally conditioned clothing including self-contained air conditioning in a backpack and plastic jackets/vests with pockets that can be filled with dry ice or ice. However, the type of work being done, other required PPE, and where the work is being done may prohibit or make the use of this PPE impossible or impractical.

Heat-Related Illnesses

The following guidance can be used in the identification and treatment of heat related illness.

Heat Stress: This is the mildest heat-related illness, but prompt action may prevent a more severe heat-related illness. Symptoms include irritability, lethargy, significant sweating, headache or nausea.

First Aid:

- Take the victim to a protected (e.g., shaded) area, remove any excess protective clothing, and provide cool fluids.

- If an air-conditioned spot is available, this is an ideal break location.

- Once the victim shows improvement he/she may resume working, however the work pace and practices (e.g., does fluid intake need to be increased) should be moderated to prevent recurrence of the symptoms.

Heat Exhaustion: Usually begins with muscular weakness, dizziness, nausea, and a staggering gait. Symptoms include pale, clammy skin, and profuse sweating, vomiting, and the bowels may move involuntarily. The pulse is weak and fast, breathing is shallow. Fainting can occur.

First Aid:

- Immediately remove the victim from the work area to a shady or cool area with good air circulation (avoid drafts or sudden chilling – you do not want the victim to shiver).

- Call a physician or emergency service, or transport the victim to medical care.

- Remove all protective outerwear.

- If the victim is conscious, it may be helpful to give him/her sips of water.

Heat Stroke: Heat stoke is a severe medical condition requiring first aid and emergency treatment by a medical professional as death can occur without appropriate care. Heat Stroke represents the collapse of the body's cooling mechanisms. As a result, body temperatures often rise to between 105°-110°F. As the victim progresses toward heat stroke symptoms include hot and usually dry, red and spotted skin, headache, dizziness, nausea, mental confusion, delirium, possible convulsions and loss of consciousness.

First Aid:

- Immediately remove the victim from the work area to a shady or cool area with good air circulation (avoid drafts or sudden chilling - you do not want the victim to shiver).

- Summon emergency medical help to provide on-site treatment and transportation to a medical facility.

- Remove all protective outerwear and loosen personal clothing.

- Give no stimulants or hot drinks.

- Apply cool wet towels, ice bags, etc. to the head, armpits, and thighs. Sponge off the bare skin with cool water or rubbing alcohol, if available, or even place the victim in a tub of cool water.
  - The main objective is to cool without chilling the victim or causing him/her to shiver.

Skin Hazards

Sunburn and prickly heat are both symptoms of skin irritation/damage produced through exposure to sunlight and operating in hot work environments.

- Protect exposed skin with an appropriate sunscreen. A sunscreen with a sun protection factor (SPF) of 15 or greater is required for work in the sun with reapplication at breaks and lunch.

- Heat rash, also known as prickly heat, can be prevented by the application of a hydrophobic, water repellent barrier cream such as Kerodex 71.

Heat Stress Monitoring

The prevention of heat stress-related illnesses is best performed through continuous observation of employees and routine heat stress awareness training. Although heat stress monitoring can be accomplished using one of the techniques discussed below, any results obtained from monitoring techniques should be used as guidance only.

To properly mitigate the effects of heat stress, it is necessary to establish a work routine that incorporates adequate rest periods to allow workers to remove protective clothing, drink fluids (vital when extreme sweating is occurring), rest, and recover. The frequency and length of such work breaks must be determined by the Task Manager and SSO based upon factors such as the ambient temperature and sunshine, the amount of physical labor being performed, the physical condition of the workers, and protective clothing being used. Breaks must be sufficient to prevent workers from manifesting symptoms of heat stress regardless of monitoring results.

Evaluation of heat stress using the methods below, to determine appropriate work/rest cycles, is performed, at the discretion of the SSO and PHSM whenever fieldwork activities are occurring.

Basic Instrument Measurements Method: Used at the discretion of the SSO and/or PHSM to monitor heat stress where workers **are not** using chemically protective clothing. The Wet Bulb Globe Temperature (WBGT) value will be determined using a WBGT meter (Reuter-Stokes 214 DL or equivalent), and compared with the values shown in Table 1 to determine appropriate work/rest cycles.

Table 1 WBGT Values for Level D Work/Rest Cycles*

Work-Rest Regimen	°F –WBGT		
	Light Work	Moderate Work	Heavy Work
Continuous Work	86	80	77
75% Work – 25% Rest	87	82	78
50% Work – 50% Rest	89	85	82
25% Work – 75% Rest	90	88	86

*Re-printed from ACGIH's 1999 Threshold Limit Values for Chemical Substances and Physical Agents

Modified Instrument Measurements Method: This method will be used whenever personnel use chemically protective clothing. The WBGT value will be determined as above with the measured value then be compared with the values shown in Table 2 to determine the appropriate work/rest cycle.

Table 2 WBGT Values for CPC Work/Rest Cycles*

Work-Rest Regimen	°F –WBGT		
	Light Work	Moderate Work	Heavy Work
Continuous Work	75	69	66
75% Work – 25% Rest	76	71	67
50% Work – 50% Rest	78	74	71
25% Work – 75% Rest	79	77	75

Modified from ACGIH's 1999 Threshold Limit Values for Chemical Substances and Physical Agents

Direct Observation: This method can be used as a substitute for the Modified Instrument Measurements Method and can be used whenever personnel use chemically protective clothing. At the start of the workday, each

worker's baseline pulse will be determined by counting the number of beats per minute (bpm) and then pulses taken at the beginning and end of each break period.

- Start of Break: As recommended by the ACGIH, each worker's maximum heart rate at the start of any break should be less than 180 minus workers age bpm (e.g., a worker is 40 so their pulse should be less than 120bpm). If this value is exceeded for any worker, the duration of the following work period will be decreased by at least 10 minutes.

- End of Break: At the end of each break, all workers heart rates must have returned to within +10% of the baseline pulse rate. If any worker's pulse rate exceeds this value, the break period will be extended for at least 5 minutes with the pulse rates will be re-measured and the end-of-break criteria again applied.

Noise Exposure

OSHA generally considers any environmental condition where a person must shout to be heard from a distance of 3 feet, a hazardous noise environment. Under these conditions, personnel must be protected through the use of appropriate hearing protective devices.

Hearing protection shall be worn:

- In any situation where normal conversation cannot be heard at a distance of 3 feet regardless of the source of the noise or where noise levels as measured with approved noise monitoring equipment is above 85 dBA.

- When operating gasoline or electric powered machinery.

- When working within 25 feet of operating heavy equipment (earth working equipment, etc.) as working around this type of equipment can result in exposure to hazardous levels of noise (levels greater than 90 dBA).

    - Earplugs or earmuffs will be worn.

The PHSM may also choose to monitor employee exposure to potentially hazardous noise levels.

APPENDIX H

ARCADIS

Appendix H

B-140 Soil Boring Log

BORING LOG

DEPTH	SAMPLE	ANALYZED	SAMPLE DESCRIPTION
			0-2' Brown clay and sand and silt (CL, SM), with shells, dry, hard.
			2-6' Gray, black, brown sand and silt (SM), saturated at 2.7', soft.
5			TD = 6 feet.
10			
15			
20			

B-140
BORING

Encycle, Tx
CLIENT

CC000642.0002
PROJECT

Corpus Christi, Texas
LOCATION

6/29/2000
DATE

Push-probe
DRILLING

Bryan Haney, ARCADIS
LOGGED BY

Best
CONTRACT

COMMENTS:

CT - CUTTINGS
SB - SPLIT BARREL (5')
SS - SPLIT SPOON (2')

▽ HC LEVEL
▼ WATER LEVEL

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ARCADIS GERAGHTY & MILLER