SUPERFUND SITE DISCOVERY AND ASSESSMENT PROGRAM

FIELD SAMPLING PLAN

FOR THE

Organic Compound Screening of Soils, Groundwater, Surface Water, Sediments, and Wastes, And Smelter Stack Source Characterization Of ASARCO/Encycle

Former ASARCO/Encycle of Texas Facility

Corpus Christi
NUECES COUNTY, TEXAS

Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg D
Austin, Texas 78753

April 2011

Table 1: FSP Approval, Distribution, and Key Participants

Name	Responsibility	Phone Number Email Address	Organization	FSP Approval Signature	Approval Date
Omar Valdez	TCEQ Project Manager	512-239-6858 Omar.Valdez@tceq.texas.gov	TCEQ Superfund Section		4/12/11
Ann Strahl	TCEQ Project QA Specialist	512-239-2500 Ann.Strahl@tceq.texas.gov	TCEQ Remediation Division		04/12/11
Phil Bredfelt, P.E., P.G.	CONTRACTOR Project Manager	See Figure 1	Weston Solutions	See page 3	
Nan Toole	CONTRACTOR QA Specialist	See Figure 1	ECS	See page 3	
John Dupont	CONTRACTOR Laboratory Manager	See Figure 1	DHL	See page 4	

Contractor Acknowledgement

I am responsible for the activities specified in the applicable work order conducted under this Field Sampling Plan (FSP). I have reviewed this FSP and the TCEQ Quality Assurance Project Plan for the Superfund Program (Document No. 200919.7) (QAPP). I understand this FSP and the QAPP together constitute the Sampling and Analysis Plan (SAP) for the site, and I understand that the terms of the current Assessment Investigation and Remedial Services Contract (AIRS insert contract number) apply. I understand the project objectives and acknowledge receipt of the FSP.

[signature]	Weston Solutions	4/12/11
Contractor Project Manager	Company Name	Date
Nancy K. Toole	ECS Environmental Chemistry Services	4-12-11
Contractor Quality Assurance Specialist	Company Name	Date

Laboratory Acknowledgement

I am responsible for the laboratory activities specified in this Field Sampling Plan (FSP). I have reviewed this FSP and the TCEQ Quality Assurance Project Plan for the Superfund Program (Document No. 200919.7) (QAPP). I understand this FSP and the QAPP together constitute the Sampling and Analysis Plan (SAP) for the site. I understand the project objectives, the laboratory's responsibilities, and acknowledge receipt of the FSP.

	DHL Analytical, Inc.	04/12/11
Laboratory Manager	Company Name	Date

TABLE OF CONTENTS

FIGURES

TABLES

Appendices

1.0 Introduction

The Texas Commission on Environmental Quality (TCEQ) Superfund Site Discovery and Assessment Program (SSDAP) has prepared this Field Sampling Plan (FSP) for sampling activities at the former ASARCO/Encycle of Texas Site (the Site) in Corpus Christi, Nueces County, Texas. This site-specific FSP, containing Superfund Program standard operating procedures (Superfund SOPs), and the TCEQ Quality Assurance Project Plan for the Superfund Program (Document No. 200919.7) (QAPP) comprise the Sampling and Analysis Plan (SAP) for the Site. A separate Health and Safety Plan (HASP) describes the safety procedures all field personnel will follow during field implementation of the FSP.

SSDAP personnel will direct and oversee the implementation of this SAP. Weston Solutions, Inc. (CONTRACTOR) will implement this FSP under the current Assessment Investigation and Remediation Services (AIRS) Contract No. 582-10-91050.

This FSP presents the requirements and procedures for conducting field operations and other data collection efforts. This FSP has been prepared to ensure that the data quality objectives for the field and laboratory are satisfied, the field sampling methods are implemented in an appropriate manner, and the data collected are scientifically valid and defensible. The CONTRACTOR, subcontractor, and TCEQ staff conducting work associated with this SAP will review this SAP prior to initiating work in the field. The field teams will have a copy of the SAP at all times while conducting field activities. All CONTRACTOR, subcontractor, and TCEQ staff performing activities under this SAP will have access to this FSP and will comply with the procedures documented in this FSP.

All TCEQ, CONTRACTOR, and subcontractor staff performing activities under this FSP will update their copy of the FSP by incorporating revisions and/or addenda to the FSP received from the TCEQ PM or CONTRACTOR. To ensure project personnel are using the current FSP, the TCEQ Project Manager (PM) and the CONTRACTOR PM will verify respective staff have updated copies of the FSP that include any revisions and/or addenda and will document this verification in the field log book.

1.1 Purpose and Data Quality Objectives

The purpose of this sampling event is to 1) screen environmental media and Encycle process wastes at the Site for the presence of organic hazardous substances and 2) characterize the wastes within the former ASARCO zinc smelter stack.

Surface and subsurface soils, sediments, groundwater, surface water, and solid and liquid wastes attributable to Encycle operations will be sampled and analyzed to determine if organic hazardous substances and cyanide are present at concentrations significantly above background levels as described in Section 3.6.

Wastes within the smelter stack attributable to ASARCO zinc smelter operations will be characterized for the purpose of source attribution relative to the Dona Park Neighborhood Assessment of the neighborhoods adjacent to the Site.

This sampling event shall not constitute an exhaustive nature and extent determination of organic hazardous substances at the Site. It does, however, use available process knowledge as well as compliance and enforcement investigation findings made by the Environmental Protection Agency (EPA) and the TCEQ and predecessor agencies. Environmental media selected for sampling, sample types, sample locations, and analytical methods were selected in consultation with EPA in an effort to collect data from areas with a high likelihood of release.

The sampling objectives for each planned activity are identified in Section 3.6 of this FSP.

1.2 Project Organization

The project team for the Site is presented in Table 1. Individuals on the project team are responsible for communicating and planning to ensure all data obtained can be used for the intended purpose and that decisions are technically sound. Lines of communication and authority for the project are shown in Figure 1 (Project Organization Chart).

In addition to the roles and responsibilities listed in Element A.4 of the QAPP, the following additional responsibilities are assigned:

The TCEQ Project Manager is responsible for:

- Reviewing the Site files, scoping the field event with the project team, and establishing the project objectives;
- reviewing and approving the FSP for the project;
- maintaining the project schedule, distributing the schedule and any subsequent changes to the project team listed in Table 1, and making the schedule available to auditors upon request;
- directing the activities of the CONTRACTOR;
- distributing the approved FSP, and any revision and/or addenda to the FSP, to the CONTRACTOR and to all TCEQ staff performing activities under this FSP or directing the CONTRACTOR to distribute the approved FSP as described, and

- verifying CONTRACTOR and TCEQ staff have the current approved FSP, including revisions and/or addenda.

The EPA Project Manager is responsible for:

- assisting with the selection of sample locations
- assisting with the selection of analytical methods
- selecting split sample frequency, types, and locations
- reviewing the FSP

The TCEQ Project QA Specialist is responsible for:

- participating in the project scoping session(s), and
- reviewing and approving the FSP,
- reviewing laboratory data packages submitted by the TCEQ PM.
- review of Site deliverables associated with analytical data to verify the measurement quality objectives for the project were met by the CONTRACTOR and laboratory.

The CONTRACTOR PM is responsible for:

- distributing the approved FSP and any revision and/or addenda of the FSP to all CONTRACTOR and subcontractor staff performing activities under this FSP;
- verifying CONTRACTOR staff and subcontractor staff have the current approved FSP, including revisions and/or addenda;
- securing the laboratory signature documenting the laboratory has reviewed the analytical specifications in the SAP and the laboratory can meet the analytical project objectives;
- performing and reviewing work, including work performed by subcontracted laboratories and all other subcontractors, to verify the work meets the requirements of the applicable contract, work order, and SAP;

- communicating with the TCEQ PM and following instructions issued by the TCEQ PM in accordance with the applicable contract;
- identifying on the custody documentation, used to transfer the samples to laboratory, the project samples as "TCEQ SSDAP" samples to enforce the laboratory reporting requirements specified in Section 3.2.1, and
- oversight of and communication with subcontractors.

2.0 Site Description and Project Summary

The defunct Encycle of Texas, Inc. (Encycle) facility, a wholly owned subsidiary of the American Smelting and Refining Company (ASARCO), is located at 5500 Upriver Road on the southern bank of the inner harbor ship channel in Corpus Christi, Nueces County, Texas. The facility is situated on 106 acres and is adjacent to a public grain elevator to the west, a Valero refinery to the east, and the Dona Park and Manchester Heights residential neighborhoods to the south (Dona Park).

The facility began operations in 1941 as a zinc smelter under ASARCO. The ownership of the facility transferred from ASARCO to Encycle in 1988. Encycle managed a commercial waste-management facility at the Site, treating inorganic hazardous and non-hazardous materials for recycling, reclamation, and volume reduction.

In an abundance of caution, TCEQ, in consultation with EPA, will screen the Site for organic hazardous substances to determine if the nature of contamination at site includes organic chemicals of concern.

TCEQ also will characterize the wastes within the smelter stack at the facility to establish the zinc smelter as the source of lead, cadmium, mercury, and zinc observed in some soils of the adjacent neighborhood to the south of the Site as part of the Dona Park Neighborhood Assessment.

2.1 Previous Investigations

As both the ASARCO and Encycle operations were permitted to manage inorganic materials exclusively, previous environmental investigations have focused on inorganic constituents and largely do not serve the objectives of this FSP. The most recent and most comprehensive investigation at the Site, is the May 2005 Corrective Measures Study (CMS). That study assessed the environmental threats of the site and proposed measures to mitigate those threats to acceptable levels and does have a bearing on the project objectives set forth in this FSP. Although the CMS does not constitute an exhaustive nature and extent assessment of the site, the study does identify process details and known areas of contamination and that information was used to select sample locations. The CMS map of the affected areas is in Appendix B.

The January 1997 RCRA Compliance Investigation Report by EPA also serves the design of this FSP. Encycle's documented routine non-compliance with RCRA regulations as well as documented infractions of permitting requirements in that report assisted in the determination of some of the analytical methods. Primary and secondary waste codes of incoming wastes and materials received by Encycle provided in the June 30, 1997 Case Development Inspection for Encycle/TI Report also facilitated the selection of some of the analytes for the analytical methods employed in this FSP.

2.2 Chemicals of Concern

Although metals are the chemicals of concern (COCs) at the Site due to the types of operations conducted and the permit specifications of the facilities when they were active, inorganic constituents will not be considered COCs for this organic hazardous substance screening of the Site. Organic analyte laboratory methods will be used to analyze for several suites of organic compounds as described in Section 3.0 and every analyte listed in Table 2 will be reported by the laboratories.

For the purpose of the waste source characterization of the smelter stack, the COCs will be lead, cadmium, mercury, and zinc.

2.3 Schedule of Activities

The TCEQ PM is responsible for maintaining the project schedule, distributing the schedule and any subsequent changes to the project team listed in Table 1, and providing the updated schedule to auditors upon request.

Prior to initiating field activities each day during the sampling event, the Health and Safety Officer (HSO) will conduct a safety briefing on the following:

- potential chemical and/or physical hazards;
- routes of egress from potentially contaminated areas and the site in general;
- routes to the hospital;
- telephone numbers for TCEQ managers, local emergency workers, and other local contacts; and
- emergency assignments and procedures.

Following the safety briefing and prior to initiating field activities each day, the TCEQ or CONTRACTOR PM will discuss the following in preparation for the day's activities:

- team roles, responsibilities, and assignments;
- sample locations and sampling procedures;
- decontamination procedures;
- any planned deviations from the SAP;
- verifying field team has current FSP as revised by any amendment or change;

- QA/QC activities; and
- the schedule for the day.

3.0 Analytical Requirements and Data Quality Objectives

3.1 Analytical Requirements

The laboratory providing analytical services for this project will be accredited for the National Environmental Laboratory Accreditation Conference (NELAC) standards under the Texas Laboratory Accreditation Program. The most recent updated versions of EPA methods from SW-846 manual, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, will be used for sample analyses. Requirements for these analytical methods are briefly described in the QAPP. Any site-specific exceptions, additions, or changes to the requirements of the QAPP are described in Section 8 of this FSP. The analytical methods for this sampling event are listed in Section 4.2.

3.2 Analytical Sensitivity

The laboratory will use an analytical method with a method quantitation limit (MQL) below the level of required performance (LORP) for each COC and/or analyte. The LORP is the concentration against which the sample data will be compared. Tables 3- 20 present the list of analytes for each method with the LORP identified for the COCs being analyzed by the method. Each table is annotated to include the source for each LORP. The LORPs for this sampling event are derived from the following sources:

- the Texas Risk Reduction Program (TRRP) Protective Concentration Levels (PCLs) listed in the TRRP PCL tables, dated March 2010 which may be used to determine if remediation or other actions are warranted under TRRP; and/or

The CONTRACTOR will verify that the laboratory MQLs support the project DQOs and meet the sensitivity requirements. If the method selected is not capable of quantifying a COC or analyte below the designated LORP, the CONTRACTOR will advise the TCEQ PM who will decide if a standard available method that provides the lowest possible MQL for that COC will be used.

3.2.1 Data Reporting

The laboratory will report the data following the specifications in the QAPP with one exception. The exception is:

- Analytical responses less than the method detection limit (MDL) will be reported as the **MQL** adjusted for sample-specific factors and flagged with a "U" or a "<" to advise the data user of the value of the sample quantitation limit (SQL) and that the chemical was not detected in the sample. For example, if the MQL for the COC is 5 ug/L, the MDL is 1 ug/L, and the analytical response is below the 1 ug/L, the nondetected result would be reported as "<5 ug/L" to advise the data user the COC is not detected in the sample and the SQL is 5 ug/L. If the sample used for this analysis was diluted by ten, that sample specific factor would result in an SQL of 50 ug/L and the nondetected result would be reported as "<50 ug/L."

3.3 Data Review and Validation

The laboratory will provide the CONTRACTOR with an electronic data deliverable (EDD) that contains all pertinent information per contract specifications.

The laboratory will submit the data package as specified in QAPP Element A.9.2 and will review the data as specified in QAPP Element D.2.1.1. The independent data review and data validation will be completed as specified in QAPP Elements D. 2.1.2 and D.2..1.3, respectively.

The data review and/or data validation memorandum will be completed pursuant to the contract requirements.

3.4 Data Usability Summary

If specified in the Work Order, the data usability summary (DUS) will be completed as specified in QAPP Element D. 2.3.1.

3.5 Reporting of Analytical Data

The CONTRACTOR will submit a data package in accordance with QAPP Element A.9.2.

3.6 Data Quality Objectives (DQOs)

Significance above background:

The COC concentration data will be evaluated to determine if the COC is present at concentrations significantly above background. A COC is present at concentrations significantly above background when the COC concentration is greater than the SQL in the release sample and:

- If the COC is detected in the background and the background concentration is greater than the SQL of the background sample, the COC concentration in the release sample is three times greater than the highest COC concentration in the background sample(s), or

- If the COC is not detected in the background sample or is detected but the concentration is less than SQL of the background sample, the COC concentration in the release sample is equal to or greater than the lowest background SQL.

The general project DQOs for the Site are indicated below:

VISUAL SURVEY

☒ Visually examine the site to determine the presence of source material, wastes, releases, or threatened releases to environmental media.

☒ Visually examine the site to determine topography, overland flow pathways, surface well casing, and other features which may affect the mobility and migration of COCs.

☒ Visually examine the site to evaluate and determine the potential for releases from the site to affect receptors or targets.

RELEASE OF HAZARDOUS SUBSTANCE

☒ Determine whether hazardous substances are present in environmental media, or whether a release of hazardous substances to environmental media has occurred.

BACKGROUND ESTIMATION

☒ Estimate anthropogenic and/or naturally occurring site-specific background concentrations for specified COCs and/or analytes in soil.

☒ Estimate anthropogenic, naturally occurring, and/or up-gradient site-specific background concentrations of specified COCs in groundwater.

☒ Estimate anthropogenic, naturally occurring, and/or up-gradient site-specific background concentrations of specified COCs in surface water and/or sediment.

SOIL

☒ Determine the potential for exposure to COCs in surface soils on commercial/industrial property.

☒ Determine the potential for contaminated soils to leach COCs to groundwater.

GROUNDWATER

☒ Determine the presence of COCs in Groundwater Bearing Units (GWBUs) (i.e., not in drinking water wells).

SURFACE WATER AND SEDIMENT

☒ Determine whether a release of COCs to surface water and/or sediment has occurred or has the potential to occur.

☒ Determine the actual or potential migration pathway of COCs in surface water and/or sediment.

☒ Determine whether there is the potential for exposure to COCs in drinking water intakes or other surface water and/or sediment receptors.

SOURCE MATERIALS OR WASTES

☒ Determine whether hazardous substances are present in source materials or wastes.

☒ Determine concentrations of COCs and/or analytes in source materials or wastes.

☒ Determine the potential for source materials or wastes to leach COCs to groundwater.

ATTRIBUTION

☒ Determine whether a release is attributable to the Site and/or a specific source area within the Site.

DISPOSAL OPTIONS

☒ Determine whether wastes, source material, and/or environmental media meet the definition of hazardous waste.

☒ Evaluate disposal options for Investigation Derived Wastes (IDW).

4.0 Sampling Plan Design

The sampling design is judgmental, i.e. not statistical. Sample locations are selected to determine concentrations of the COCs and/or analytes in background areas, areas of

known or suspected releases, known or suspected migration pathways, and/or in known or suspected sources.

4.1 Sampling Locations and Rationale

The planned sample locations are indicated in Figure 4, Sample Location Map. The rationale for each sample location is presented in Table 2, Sample Location and Rationale. Because the sampling plan is based on judgment, all of the samples listed in Table 2 are critical by location.

4.2 Sample Analysis

Table 2 also identifies the sample locations for the collection of field QC samples and presents the analysis(es) to be performed on each sample.

4.3 Field Quality Control Samples

The types of field QC samples and the frequency of collection for each type of QC samples is presented in Table 4.2. Field QC samples will be collected in accordance with Superfund SOP 6.5 (Collection of QA/QC Samples).

Table 4.2 Frequency of Collection of Field Quality Control Samples

Type of QC Sample	Frequency of Collection
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	1 per 20 project samples of each matrix.
Field Blank (FB)	1 per day per 20 samples of each matrix when analyzing for VOCs or other suspected airborne COCs.
Equipment Rinsate Blank (ER)	One at the start of sample collection on the first day of the sampling event, and one at the end of each day for each matrix are required when nondedicated sampling equipment is used.
Trip Blank (TB)	1 for each cooler containing VOC samples. The sample vials will be filled with reagent grade water before sample containers are transported to the field. If the containers are coming from the laboratory, the trip blanks are to be prepared by the laboratory.
Field Duplicates (FD)	1 per day per 10 project samples of each matrix.
Temperature Blank	1 per cooler.
Split	At the discretion of EPA as listed in Table 2.

5.0 Sampling Methods and Sample Handling

5.1 Sample Collection

All samples will be collected in accordance with this FSP. Sample collection techniques are described in the Superfund SOPs listed below and included in Appendix A. VOC samples will be collected in accordance with Superfund SOP No. 6.3 (Collection of VOC Samples) with the following exception: Groundwater and surface water samples for VOC analysis that are not acid preserved will be cooled in the field for transport and storage and analyzed within seven days of collection.

Samples will be collected in order from the lowest to highest suspected concentration of contaminants when possible. As applicable to the planned analyses, samples will be collected in the order described in the sampling SOP used to collect the samples.

Field sampling personnel will wear non-lubricated nitrile disposable gloves, or other suitable disposable gloves, during the handling of samples and sampling equipment and during sampling. The disposable gloves will be changed between each sample location. Prior to sampling activities, sampling equipment will be handled and decontaminated in accordance with Superfund SOP 1.5 (Decontamination), as described in Section 7.2 of this FSP.

5.1.2 Collection of Soil Samples

Vertical intervals for homogenizing and combining into a sample will be limited to six inches or less. Under no circumstance will visually contaminated soil be combined with visually uncontaminated soils.

Soil samples will be collected and processed in accordance with the Superfund SOPs indicated below.

☒ Superfund SOP No. 10.1 (Soil Sampling Using a Trowel)

☒ Superfund SOP No. 10.3 (Soil Sampling Using a Hand Auger)

☒ Superfund SOP No. 6.3 (Collection of VOC Samples)

5.1.3 Collection of Groundwater Samples

5.1.3.1 Collection of Groundwater Samples from a Monitoring Well

Monitor wells will be purged and developed in accordance with the Superfund SOPs indicated below.

☒ Superfund SOP 7.3 (Purging a Monitoring Well with a Pump)

☒ Superfund SOP 7.4 (Micro Purging a Monitoring Well)

☒ Superfund SOP 7.5 (Measurement of Field Parameters)

After purging, development, and measurement of field parameters, each monitor well will be sampled in accordance with the Superfund SOPs indicated below:

☒ Superfund SOP 7.7 (Groundwater Sampling Using a Pump)

☒ Superfund SOP 7.8 (Groundwater Sampling Using a Low-flow Technique)

If a monitor well is pumped or bailed dry, it will be allowed to recover to 85 percent of the original water volume before sample collection. If the monitor well does not recover to within 85 percent of the original water volume within 24 hours, but a sufficient volume of water is present to collect a sample, the sample will be collected from the available water and the volume of water will be recorded in the field logbook.

5.1.4 Collection of Surface Water Samples

Surface water samples will be collected in accordance with the Superfund SOPs indicated below:

☒ Superfund SOP No. 8.1 (Surface Water Sampling Using the Direct Method)

5.1.5 Collection of Sediment Samples

Sediment samples will be collected in accordance with the Superfund SOP No. 9.1 (Sediment Sampling) (*If a push core sampler is used, then a dedicated nose-cone will be used for each sample location, or the nose-cone will be decontaminated prior to each use. If a coring device is used and insufficient sample volume are collected with a single push, additional cores will be collected immediately adjacent to the original core until sufficient sample volume is obtained. The number of cores collected will be recorded in the field logbook.*)

5.1.6 Collection of Waste Samples

Waste will be collected from the Facilities 1 and 2. The samples will be collected by accessing the tanks within these facilities. The collection procedure will be the RCRA liquid waste sampling procedures and solid waste sampling procedures.

The stack will be entered using confined space entry procedures specified in SOP FLD08-1110 in Appendix A.

5.2 Sample Containers, Sample Preservation, and Holding Time

Sample containers, sample preservation requirements, sample volumes, and holding times are specified in Table B2-1 of the QAPP. The specifications for nonstandard analytical methods are listed in Table 21, if nonstandard analytical methods are used. Soil samples analyzed for VOCs will be collected and shipped in appropriate sample collection devices in accordance with Method SW-846 5035. Blank samples will be properly preserved according to the analysis. Upon collection, each sample will be placed in an ice chest and maintained at a temperature $\leq$ 6 C°.

5.3 Chain-of-Custody Procedures

Custody procedures to track all samples collected and shipped to laboratories will be conducted in accordance with Superfund SOP 6.4 (Sample Handling and Control).

6.0 Field Survey and Measurements

6.1 Global Positioning System (GPS) Data

All GPS data will be collected pursuant to Superfund SOP 17.1 (GPS Data Collection and Submission). GPS coordinates will be obtained for all sample locations, source or waste locations, well locations, and other important site features using appropriately certified GPS equipment operated by appropriately certified GPS technicians.

7.0 Additional Field Activities

7.1 Sample Identification and Documentation

All sample locations will be visually inspected, described in the field logbook, and photographed. Information regarding sample collection and all measurements and calculations performed relating to the sample location will be entered into the field logbook in accordance with Superfund SOP 6.1 (Field Activity Documentation and Reporting). The following information will be recorded in the field logbook:

- date and time of sample collection;
- environmental matrix and sample type (*e.g.*, soil composite or groundwater grab);
- sample collection method;
- sample preservation method;

- name of the person who collected the sample;
- sample identification number and depth measured from surface of the environmental medium sampled;
- field measurements made on the sample during and at the time of collection, *e.g.*, field parameters as described in SOP 7.5;
- when low-flow technology used, the flow rate (*e.g.*, mL/min) as the sample was collected;
- GPS file number;
- photograph number;
- date and time of photograph with a description of the purpose of the photograph (*e.g.* "This photo documents the sample collected at location X of material released to soil from the corroded and leaking drums in the drum storage area observed and documented in photos 2 & 3.");
- name of the person who took the photograph and direction the person was facing when the photograph was taken;
- relevant observations such as soil color, obvious staining, and weather conditions; and
- deviations from the QAPP, FSP, or Superfund SOPs.

Sample bottles may be temporarily labeled on the container surface prior to or immediately after sample collection. Sample bottles will be permanently labeled as soon as possible after collection and decontamination. Sample labels will include:

- field sample ID,
- project name and number,
- sampling date and time,
- name of the sample collector,
- method of sample preservation, and
- laboratory analyses required.

The field sample ID number will consist of the following identifications depending on the type of sample.

- Source or waste material samples will be identified using the prefix "XX" followed by a sequential number.

- Soil Samples will be identified using the prefix "SO" followed by a sequential number.

- Sediment Samples will be identified using the prefix "SE" followed by a sequential number.

- Surface Water Samples will be identified using the prefix "SW" followed by a sequential number.

- Groundwater Samples will be identified using the prefix "GW" followed by a sequential number.

- Field Duplicate Samples will have a sample number randomly selected by the TCEQ or CONTRACTOR PM. Collection times will be a random increment of time after the collection time of the primary sample. The identification of duplicate samples will not include any information the laboratory could use to identify the samples as duplicates. The parent sample of each duplicate sample and the actual time of collection will be identified in the field logbook.

- Field Blanks and Equipment Rinsate Blanks will be identified either as groundwater ("GW") or surface water ("SW") samples followed by a random number. The TCEQ or CONTRACTOR PM will record the actual identification of these samples in the field logbook and will include associated "GW" or "SW" designation assigned to the sample and the actual time of collection.

- Trip Blanks will be identified using the prefix "TB" followed by a sequential number.

- Split samples will be identified using the prefix "SS" followed by the matrix prefix such as "GW" for a groundwater sample followed by a sequential number.

7.2 Decontamination

All equipment potentially coming into contact with contaminated media will be decontaminated in accordance with Superfund SOP 1.5 (Decontamination), with the following exception for media affected with metals as COCs:

Following Step 4 for large equipment and following Step 2 for small equipment:

1. rinse all equipment with potable water;
2. clean equipment with a brush in a solution of laboratory grade detergent (Liquinox, Alconox, or equivalent);
3. rinse with potable water;
4. if samples are for metals/cyanide analysis, rinse with 10% nitric acid solution (trace metals grade);
5. rinse with distilled or deionized water;
6. rinse with reagent grade isopropanol if also analyzing for organic compounds;
7. rinse with deionized water;
8. Allow equipment to completely dry, then collect an equipment rinsate sample using ASTM Type II reagent grade water, seal the rinsate sample container with a custody seal, and place the sample in the shipment cooler;
9. Place the equipment on clean plastic sheeting and allow to air dry; and
10. If the equipment is not to be used immediately, place small equipment in plastic sealable bag and place a custody seal across the sealed opening of the bag.

Disposable Personal Protective Equipment (PPE) will be decontaminated such that it can be disposed as Class 3 waste. Equipment rinsate samples will be collected in accordance with Superfund SOP 6.5 (Collection of QA/QC Samples). Nondedicated sampling equipment and tools will be decontaminated prior to use and between sample locations. The TCEQ PM may modify the decontamination frequency, as appropriate.

7.3 Investigation Derived Waste

Investigative Derived Waste (IDW) will be handled in accordance with Superfund SOP No. 1.4 (Management of Investigative Derived Waste).

7.4 Site Restoration

The work site and sample locations will be restored to their original condition in accordance with Superfund SOP 1.3 (Site Restoration). Efforts will be made to minimize impacts to work sites and sample locations, particularly residential properties and properties in or near sensitive environments.

7.5 Health and Safety Plan

All personnel involved in the sampling event will comply with the site-specific HASP. The designated TCEQ or CONTRACTOR HSO will conduct a daily safety meeting prior to initiating field work each day and, if necessary, throughout the day to advise workers present on the site of ongoing and new health and safety concerns. The topics for this safety meeting are discussed in the HASP.

7.6 Property Access

Formal access agreements documenting landowners permission for the TCEQ and CONTRACTOR to investigate and sample their properties will be obtained, when possible, using Form TCEQ-10452 prior to the initiation of sample collection activities. When the TCEQ or CONTRACTOR PM is unable to secure a written access agreement from a property owner, verbal agreement for access will be obtained whenever possible and documented in the field logbook. If the property is abandoned, or the owner cannot be determined or contacted, the TCEQ or CONTRACTOR PM will determine further courses of action as directed by TCEQ management.

7.7 Deviations and/or Departures from the FSP or QAPP

Each deviation and departure from the FSP or QAPP will be approved by the TCEQ PM and recorded, with the associated rationale or justification, in the field logbook.

8.0 Exceptions, Additions, and Changes to the TCEQ Superfund PROGRAM QAPP

The following are exceptions, additions and changes to the QAPP:
The following are exceptions, additions and changes to the QAPP:

Exceptions, additions, and changes to the TCEQ Program QAPP (TCEQ QAPP Document # 200919.7) are presented below. The changes are listed by method per sample matrix and reference the specific elements and tables of the QAPP (200919.7).

8.1 Changes to Group B (Measurements/Data Acquisition)

The major sections listed in this group are in B.2, Sampling Methods Requirements, and B.5, Quality Control Requirements. The requested changes are listed below:

8.1.1 General Exceptions

8.1.1.1 Method Detection Limits

The Element B.5.1 tables entitled ***QC Acceptance Criteria*** specify that a method detection limit (MDL) study be performed "Once per 12 month period". The following phrase will be added: "or perform detectability check standards (DCS) on a quarterly basis throughout the year to verify the MDL". In addition; the acceptance criteria in these tables will be changed from "Detection limits shall be $\leq$ ½ the MQLs in Table B5.1.x-3 to "Detection limits shall be $\leq$ ½ the MQLs listed in Table B5.1.x-3 unless discussed in Section 8.1 of the project FSP. (Note; x corresponds to the TCEQ subsection. For example, The QC acceptance criteria for VOCs by EPA Method SW8260C are presented in TCEQ QAPP Table B.5.1.9-3 so x = 9 for VOCs.)

8.1.2 Volatile Organic Compounds by EPA Method SW8260B/C

1. MQLs. Laboratory MQLs are to be used for this project. The laboratory MQLs for the target analytes are below the critical PCLs as demonstrated in Table below. The laboratory MQLs for some compounds as noted in the table exceed the critical PCLs, but are below the TCEQ QAPP-required MQLs. The TCEQ QAPP MQLs (Table B.5.1.9-1), laboratory MQLs and screening criteria for VOCs are presented in Table below.

2. Analyte List. DHL is National Environmental Laboratory Accreditation Conference (NELAC)-accredited under the Texas Laboratory Accreditation Program (TLAP) certified for EPA Method SW8260. However, DHL is not certified for cyclohexane. However, since the TLAP does not currently offer accreditation for this SW8260 compound, the cyclohexane data are exempt from accreditation under 30 TAC §25.6.

8.1.3 Semivolatile Organic Compounds by EPA Method SW8270C/D

1. MQLs. The laboratory MQLs for some compounds as noted in the table exceed the critical PCLs, but are below the TCEQ QAPP-required MQLs. The TCEQ QAPP MQLs (Table B5.1.10-1), laboratory MQLs, and screening criteria for SVOCs in soil are presented in Table below.

2. Analyte List. DHL is NELAC-TLAP certified for EPA Method SW8270. However, DHL is not certified for benzaldehyde. However, since the TLAP does not currently offer accreditation for this SW8270 compound, the benzaldehyde data are exempt from accreditation under 30 TAC §25.6.

3. QC acceptance criteria for LCS and MS/MSD recoveries. The accuracy and precision criteria for acetophenone, atrazine, benzaldehyde, 1,1-biphenyl, caprolactam, and carbazole analyzed using EPA Method SW8270C/D are not specified in TCEQ QAPP Table B.5.1.10-2. Laboratory acceptance criteria are to be used for this project.

8.1.4 Metals by EPA Method SW6020/A

MQLs. Laboratory MQLs are to be used for this project. The laboratory MQLs are below the critical PCLs for metals. The TCEQ QAPP MQLs (Table B.5.1.16-1), laboratory MQLs, and screening criteria for metals are presented in Table below.

8.1.5 Mercury by EPA Method SW7471A/B

1. MQL. Laboratory MQL is to be used for this project. The laboratory MQL is above the critical PCL but less than the TCEQ QAPP MQL for mercury in the backfill soil. The TCEQ QAPP MQL (Table B.5.1.19-1), laboratory MQL, and screening criteria for mercury in soil is presented in Table below.

2. QC acceptance criteria for LCS and MS/MSD recoveries. Laboratory acceptance criteria are to be used for this project. The TCEQ QAPP MQL (Table 5.1.19-2) and laboratory acceptance criteria for LCS and MS/MSD recoveries in soil samples are presented in Table below.

8.1.6 Pesticides by EPA Method SW8270C/D

1. DHL Analytical will analyze for organo-chlorine pesticides in the water and soil samples using EPA Method SW8270C/D. These compounds are included in DHL's NELAC-TLAP certification. A copy of the applicable NELP certification (T104704211-11-5-TX) is attached.

2. MQLs. Laboratory MQLs are to be used for this project. The laboratory MQLs for some compounds as noted in the table exceed the critical PCLs,

but are below the TCEQ QAPP-required MQLs. The TCEQ QAPP MQLs for pesticides by EPA Method SW8081A in Table B.5.1.5-1 (are included for comparison purposes, laboratory MQLs and screening criteria are presented in Table.

3. QC acceptance criteria for LCS and MS/MSD recoveries. Laboratory acceptance criteria are to be used for this project. The TCEQ QAPP (using TCEQ QAPP Table B.5.1.5-2 for pesticides) and laboratory acceptance criteria for LCS and MS/MSD recoveries in aqueous samples are presented in Table.

8.1.7 Polychlorinated Biphenyls by EPA Method SW8082A

MQLs. Laboratory MQLs are to be used for this project. The laboratory MQLs for the samples are below the action levels. The TCEQ QAPP MQLs (Table B.5.1.6-1), laboratory MQLs and screening criteria for PCBs in soil are presented in Table.

8.1.8 Herbicides by EPA Method SW8321B

1. DHL Analytical will analyze for herbicides in the water and soil samples using EPA Method SW8321B. This method is not included in the TCEQ QAPP, but is included in DHL's NELAC-TLAP certification. A copy of the applicable NELP certification (T104704211-11-5-TX) is attached.

2. MQLs. Laboratory MQLs are to be used for this project. The laboratory MQLs for the water and soil samples are below the action levels with two exceptions. The TCEQ QAPP MQLs (for herbicides by EPA Method SW8151A in Table B.5.1.8-1 (included for comparison purposes), laboratory MQLs and screening criteria for herbicides in aqueous samples are presented in Table.

3. QC acceptance criteria for LCS and MS/MSD recoveries. Laboratory acceptance criteria are to be used for this project. The TCEQ QAPP (using TCEQ QAPP Table B.5.1.8-2 for herbicides) and laboratory acceptance criteria for LCS and MS/MSD recoveries in aqueous samples are presented in Table.

8.1.9 Organo-Phos Pesticides by EPA Method SW8270C/D

1. DHL Analytical will analyze for organo-phosphorus pesticides in the water and soil samples using EPA Method SW8270C/D. These compounds are included in DHL's NELAC-TLAP certification. A copy of the applicable NELP certification (T104704211-11-5-TX) is attached. However, DHL is not certified for a few of the O-P pesticides. However, since the TLAP does not currently offer accreditation for these SW8270 compounds, the data are exempt from accreditation under 30 TAC §25.6.

2. MQLs. Laboratory MQLs are to be used for this project. The laboratory MQLs for the water and soil samples are below the action levels for most of the pesticides.. The TCEQ QAPP MQLs for pesticides by EPA Method SW8141A in Table B.5.1.5-1 (are included for comparison purposes, laboratory MQLs and screening criteria for pesticides in aqueous samples are presented in Table.

3. QC acceptance criteria for LCS and MS/MSD recoveries. Laboratory acceptance criteria are to be used for this project. The TCEQ QAPP (using TCEQ QAPP Table B.5.1.7-2 for O-P pesticides) and laboratory acceptance criteria for LCS and MS/MSD recoveries in aqueous samples are presented in Table.

Figure 1: Project Organization Chart

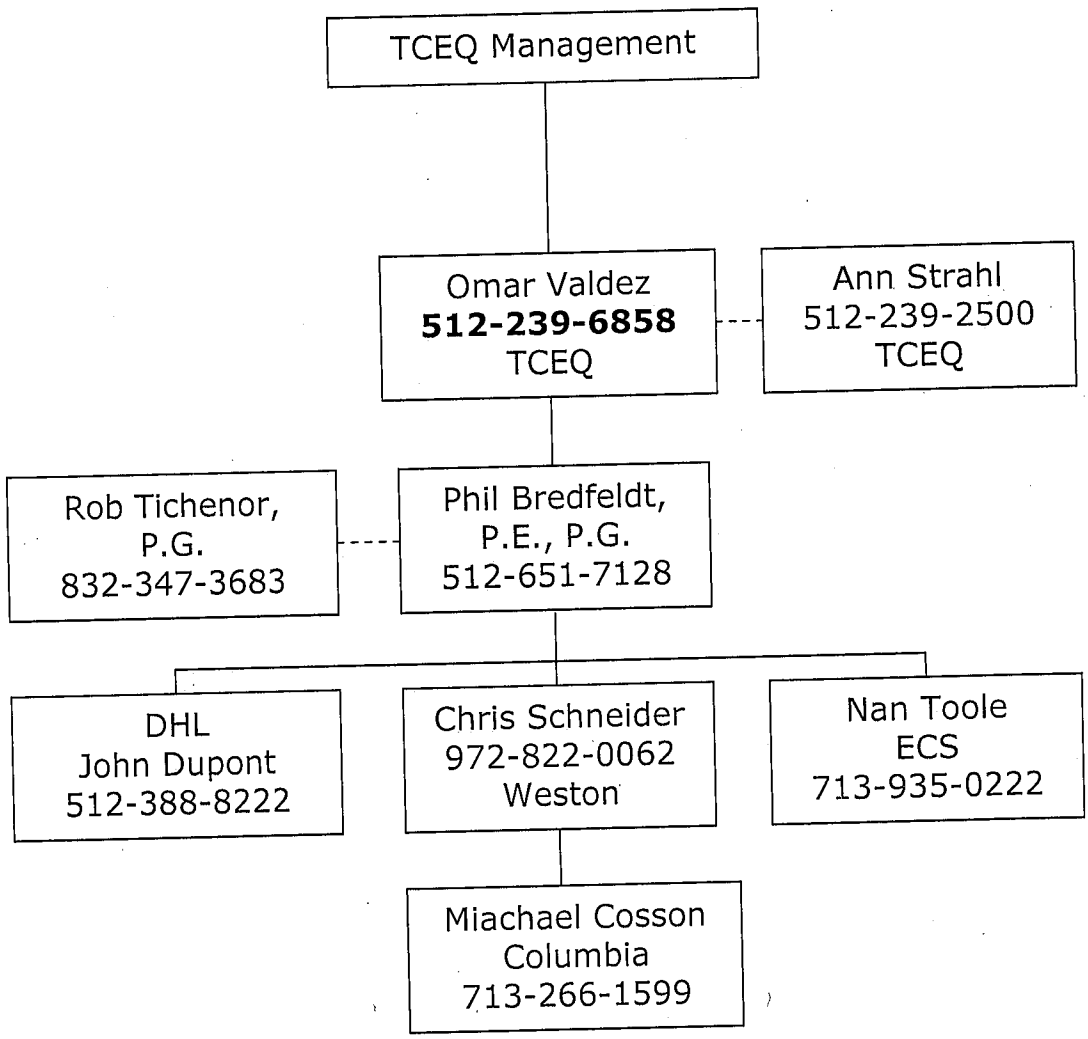
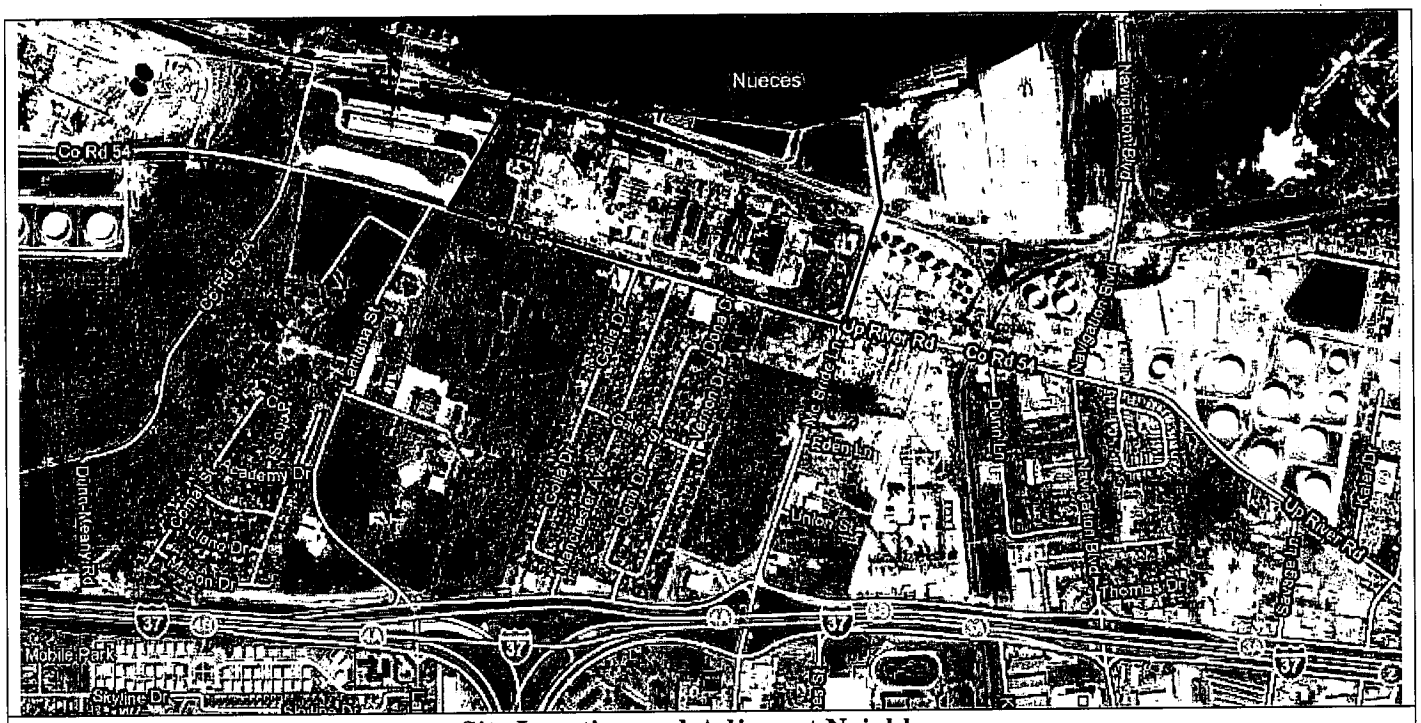
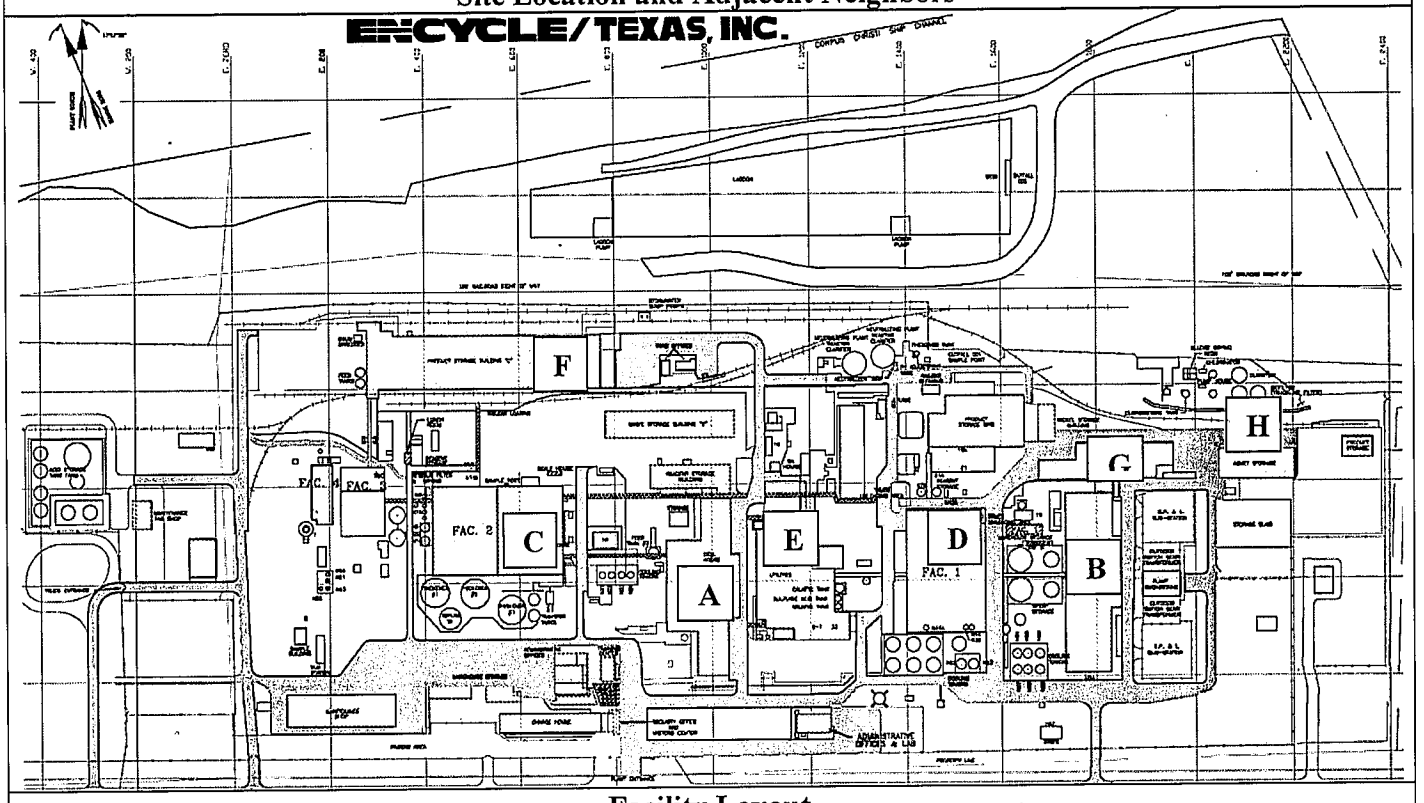


Figure 2: Site Location Map

ENCYCLE

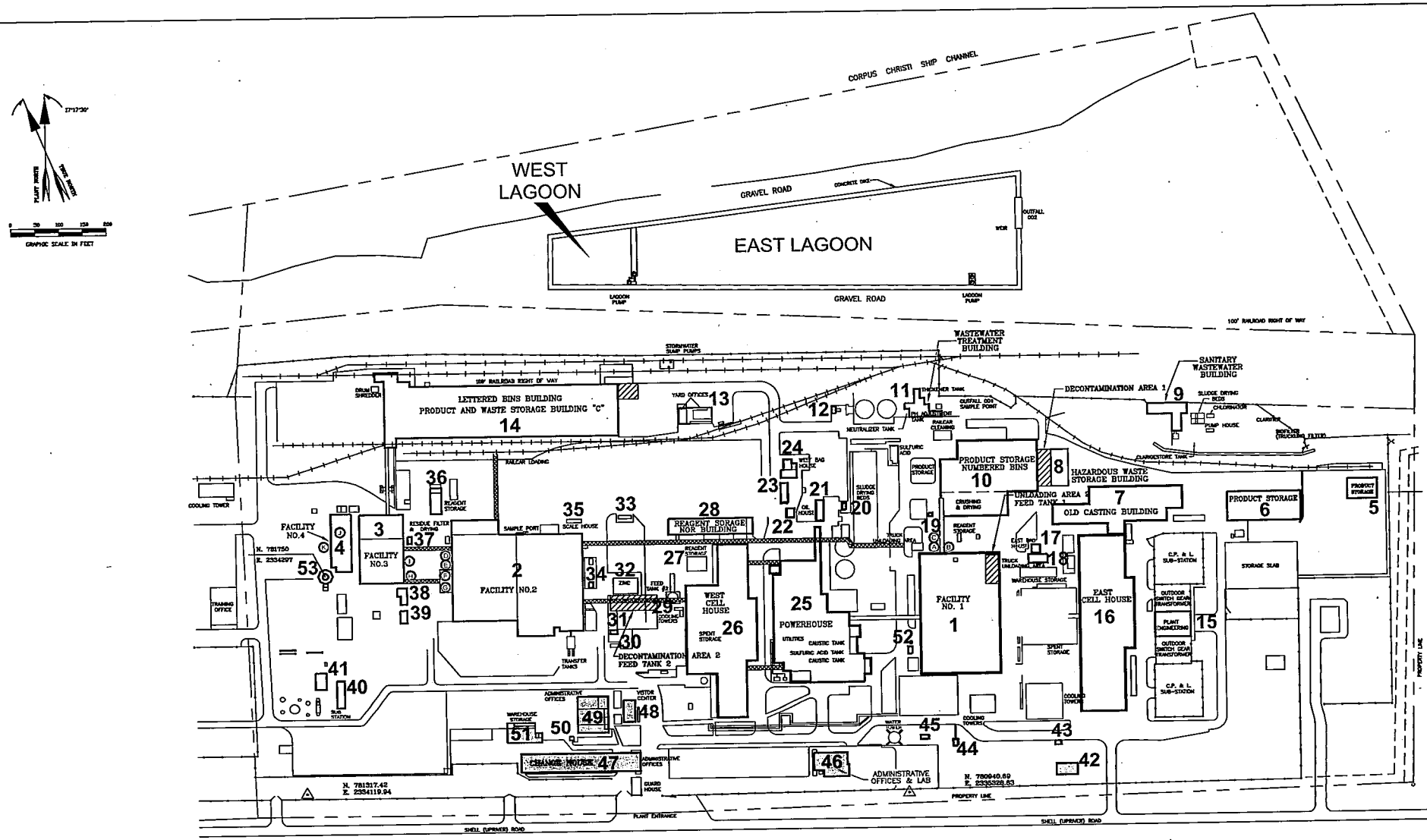


Site Location and Adjacent Neighbors



Facility Layout

Figure 3: Site Features Map



LEGEND

1 BUILDING ID NUMBER

Ⓐ METAL SILOS

APPR. DENOTES BUILDING NOT TO BE DEMOLISHED

ARCADIS

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

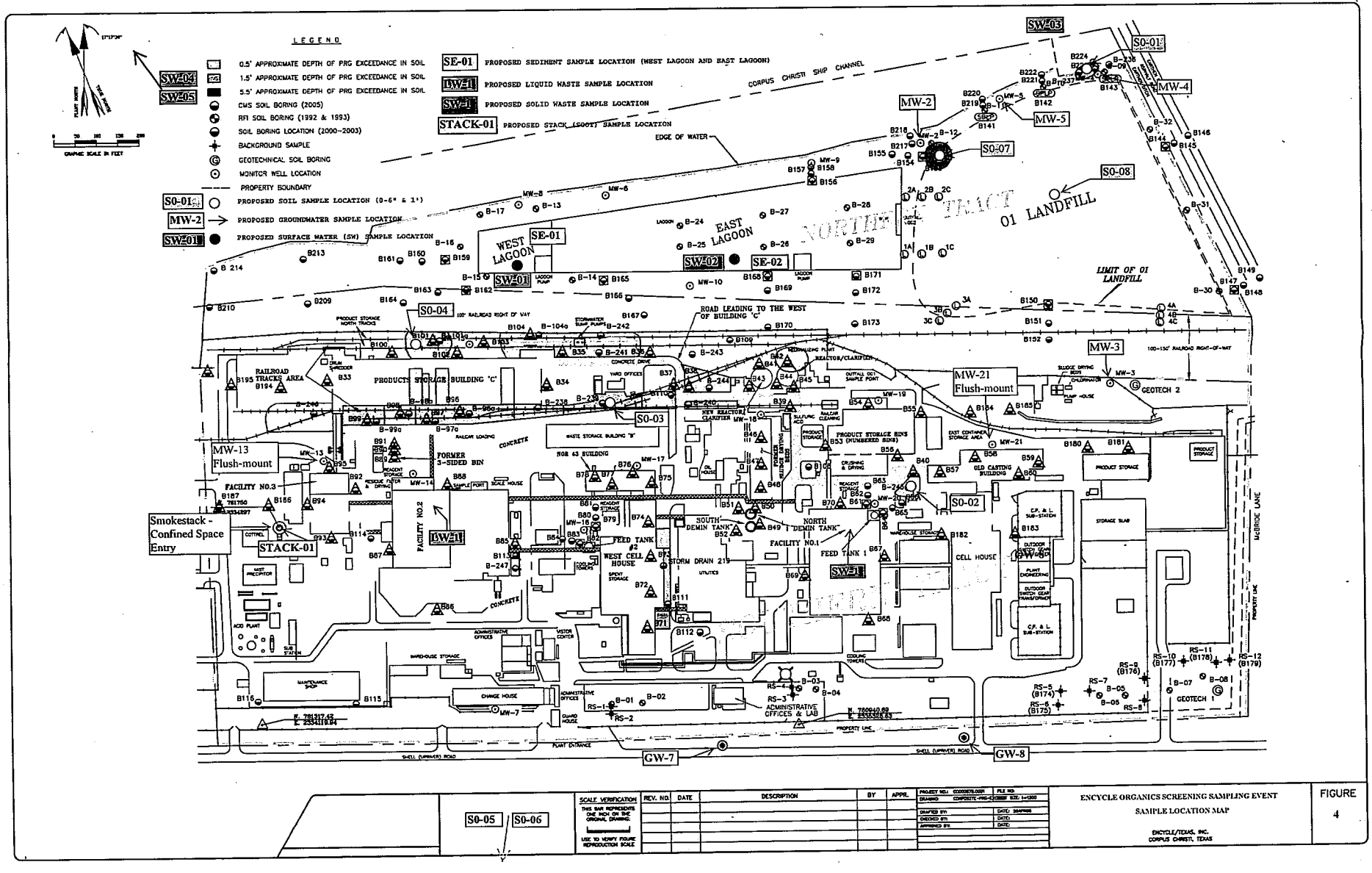
PROJECT NO.: CC001065.1 FILE NO:
DRAWING: BLDG LOC PLOT SCALE: 1=100
DRAFTED BY: DPL DATE: 11/8/09
CHECKED BY: K. BRAEMER DATE:
APPROVED BY: K. BRAEMER DATE:

BUILDING LOCATION MAP

CORPUS CHRISTI, TEXAS
ENCYCLE/TEXAS, INC.

FIGURE
A-1

Figure 4: Sample Locations Map



REV. NO.	DATE	DESCRIPTION	BY	APPR.

ENCYCLE ORGANICS SCREENING SAMPLING EVENT

SAMPLE LOCATION MAP

ENCYCLE/TEXAS, INC.
CORPUS CHRISTI, TEXAS

FIGURE 4

Table 2: Sample Locations and Rationale

Matrix	Sample ID	Sample Location (depth)	Sample Rationale (including associated field QC samples)	Method (SW)
Groundwater	GW-01	Monitor well #2	Assess groundwater for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	GW-02	Monitor well #3	Assess groundwater for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	GW-03	Monitor well #4	Assess groundwater for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	GW-99	Monitor well #4	Duplicate of GW-03	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	SS-GW-03	Monitor well #4	Assess groundwater for organic contaminants (EPA Split Sample)	8082A 8270 C/D 8260C 335.4
Groundwater	GW-04	Monitor well #5	Assess groundwater for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	SS-GW-04	Monitor well #5	Assess groundwater for organic contaminants (EPA Split Sample)	8082A 8270 C/D 8260C 335.4
Groundwater	GW-05	Monitor well #13	Assess groundwater for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	GW-06	Monitor well #21	Assess groundwater for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	GW-07	Off-site Monitor Well #1	Determine background analyte concentrations	8082A 8290M 8260C 9010C 8270 C/D
Groundwater	GW-08	Off-site Monitor Well #2	Determine background analyte concentrations	8082A 8290M 8260C 9010C 8270 C/D
Surface Water	SW-01	West Lagoon	Assess surface water for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Surface Water	SW-02	East Lagoon	Assess surface water for organic contaminants	8082A 8290M 8260C 9010C 8270 C/D
Surface Water	SS-SW-02	East Lagoon	Assess surface water for organic contaminants (EPA Split Sample)	8082A 8270 C/D 8260C 335.4

Matrix	Sample ID	Sample Location (depth)	Sample Rationale (including associated field QC samples)	Method (SW)
Surface Water	SW-03	Potential Point of Entry to Ship Channel	Assess migration of organic contaminants from the Site	8082A 8290M 8260C 9010C 8270 C/D
Surface Water	SW-99	Duplicate of SW-09	Assess migration of organic contaminants from the Site	8082A 8290M 8260C 9010C 8270 C/D
Surface Water	SW-04	Ship Channel	Determine background concentrations of analytes	8082A 8290M 8260C 9010C 8270 C/D
Surface Water	SW-05	Ship Channel	Determine background concentrations of analytes	8082A 8290M 8260C 9010C 8270 C/D
Soil	SO-01	CMS Known Affected Area	Assess organic contaminants in soil	8082A 8290M 8260C 9010C 8270 C/D
Soil	SO-01D	CMS Known Affected Area	Assess organic contaminants in subsurface soil	8082A 8290M 8260C 9010C 8270 C/D
Soil	SS-S0-01D	CMS Known Affected Area	Assess organic contaminants in subsurface soil (EPA Split Sample)	8082A 8270 C/D 8260C 335.4
Soil	SO-02	CMS Known Affected Area	Assess organic contaminants in soil	8082A 8290M 8260C 9010C 8270 C/D
Soil	SO-02D	CMS Known Affected Area	Assess organic contaminants in subsurface soil	8082A 8290M 8260C 9010C 8270 C/D
Soil	SO-99	CMS Known Affected Area	Duplicate of SO-02	8082A 8290M 8260C 9010C 8270 C/D
Soil	SO-99D	CMS Known Affected Area	Duplicate of SO-02D	8082A 8290M 8260C 9010C 8270 C/D
Soil	SO-03	CMS Known Affected Area	Assess organic contaminants in soil	8082A 8290M 8260C 9010C 8270 C/D
Soil	SO-03D	CMS Known Affected Area	Assess organic contaminants in subsurface soil	8082A 8290M 8260C 9010C 8270 C/D
Soil	SS-SO-03D	CMS Known Affected Area	Assess organic contaminants in subsurface soil (EPA Split Sample)	8082A 8270 C/D 8260C 335.4

Matrix	Sample ID	Sample Location (depth)	Sample Rationale (including associated field QC samples)	Method (SW)
Soil	SO-04	CMS Known Affected Area	Assess organic contaminants in soil	8082A 8260C 8270 C/D 8290M 9010C
Soil	SO-04D	CMS Known Affected Area	Assess organic contaminants in subsurface soil	8082A 8260C 8270 C/D 8290M 9010C
Soil	SO-05	Off-site	Determine background concentrations of analytes	8082A 8260C 8270 C/D 8290M 9010C
Soil	S0-05D	Off-site	Determine background concentrations of analytes	8082A 8260C 8270 C/D 8290M 9010C
Soil	SO-06	Off-site	Determine background concentrations of analytes	8082A 8260C 8270 C/D 8290M 9010C
Soil	SO-06D	Off-site	Determine background concentrations of analytes	8082A 8260C 8270 C/D 8290M 9010C
Soil	SO-07	Landfill	Assess organic and cyanide contaminants in surface soil	8082A 8260C 8270 C/D 8290M 9010C
Soil	SS-SO-07	Landfill	Assess organic and cyanide contaminants in surface soil (EPA Split)	8082A 8260C 8270 C/D 335.4
Soil	SO-08	Landfill	Assess organic and cyanide contaminants in surface soil	8082A 8260C 8270 C/D 8290M 9010C
Soil	SS-SO-08	Landfill	Assess organic and cyanide contaminants in surface soil (EPA Split)	8082A 8260C 8270 C/D 335.4
Sediment	SE-01	West Lagoon	Assess sediments for organic contaminants	8082A 8260C 8270 C/D 8290M 9010C
Sediment	SE-02	East Lagoon	Assess sediments for organic contaminants	8082A 8260C 8270 C/D 8290M 9010C

Matrix	Sample ID	Sample Location (depth)	Sample Rationale (including associated field QC samples)	Method (SW)	
Sediment	SS-SE-02	East Lagoon	Assess sediments for organic contaminants (EPA Split Sample)	8082A 8260C	8270 C/D 335.4
Sediment	SE-99	East Lagoon	Split of SE-02	8082A 8260C 8270 C/D	8290M 9010C
Waste	SW-01	Tank #XXX	Characterize organic content of sludge in waste tank	8082A 8260C 8270 C/D	8290M 9010C
Waste	SS-SW-01	Tank #XXX	Characterize organic content of sludge in waste tank (EPA Split Sample)	8082A 8260C	8270 C/D 335.4
Waste	LW-01	Tank #YYY	Characterize organic content of liquid in waste tank	8082A 8260C 8270 C/D	8290M 9010C
Waste	SS-LW-01	Tank #YYY	Characterize organic content of liquid in waste tank (EPA Split Sample)	8082A 8260C	8270 C/D 335.4
Waste	Stack-01	Smelter Stack Soot	Characterize the wastes in the stack	6020A 7471B	8270 8290M
Waste	SS-Stack-01	Smelter Stack Soot	Characterize the wastes in the stack (EPA Split Sample)	8082A 8260C	8270 C/D 335.4
IDW	IDW-1	Purge water Drum	Characterize Monitor Well Purgewater for Disposal Purposes	8082A 8260C 8270 C/D	8290M 9010C

SW6020A Metals in soil, water, or waste
SW7471B Mercury in soil
SW8082A Polychlorinated Biphenyls (PCBs) in soil, water, or waste SW
SW 8260C Volatile Organic Compounds (VOCs) in soil and water
SW8270 C/D Organochlorine Pesticides (OC Pest) in soil, water, or waste by gas chromatography/mass spectrometry (GC/MS)
SW8270 C/D Organophosphorus Pesticides (OP Pest) in soil, water, or waste by GC/MS
SW8270 C/D Semivolatile Organic Compounds (SVOCs) in soil, water, or waste by GC/MS
SW8290 Dioxins/Furans in soil, water, or waste
SW9010 C Cyanide in soil, water, or waste
EPA 335.4 Cyanide for soil, water, or waste

Table 3: Method SW6020A for Soil – Metals

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Texas Specific Median Background (mg/kg)	Lab MQL (mg/kg)	Is Lab MQL <LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)			
☐	Aluminum	7429-90-5	**64000**	86000	30,000	12.5	Y
☐	Antimony	7440-36-0	15	**2.7**	1	1	Y
☐	Arsenic	7440-38-2	24	**2.5**	5.9	1	Y
☐	Barium	7440-39-3	7800	**220**	300	2	Y
☐	Beryllium	7440-41-7	38	**0.92**	1.5	0.3	Y
☒	Cadmium	7440-43-9	52	**0.75**	---	0.3	Y
☐	Chromium (total)	7440-47-3	27000	**1200**	30	2	Y
☐	Cobalt	7440-48-4	21	**3.3**	7	2	Y
☐	Copper	7440-50-8	550	**520**	15	2	Y
☒	Lead (inorganic)	7439-92-1	500	**1.5**	15	0.3	Y
☐	Manganese	7439-96-5	3400	**580**	300	2	Y
☒	Mercury (pH = 4.9)	7439-97-6	2.1	**0.0039**	0.04	0.04	N
☐	Nickel and compounds	7440-02-0	830	**79**	10	2	Y
☐	Selenium	7782-49-2	310	**1.1**	0.3	0.5	Y
☐	Silver	7440-22-4	95	**0.24**	---	0.2	Y
☐	Thallium and compounds (as thallium chloride)	7791-12-0	6.3	**0.87**	9.3	1	Y
☒	Zinc	7440-66-6	9900	**1200**	30	2.5	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 4: Method SW7471B for Soil – Mercury

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Texas Specific Median Background (mg/kg)	Lab MQL (mg/kg)	Is Lab MQL <LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)			
☒	Mercury (pH = 4.9)	7439-97-6	2.1	**0.0039**	0.04	0.04	N

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 5: Method SW8270 C/D for Soil – Organochlorine Pesticides

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL< LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Aldrin	309-00-2	0.050	**0.051**	0.006	Y
☐	Chlordane, cis- (alpha chlordane)	5103-71-9	**13**	370	0.006	Y
☐	Chlordane, gamma	57-74-9	**7.3**	21	0.006	Y
☐	DDD	72-54-8	14	**6.5**	0.006	Y
☐	DDE	72-55-9	10	**5.9**	0.006	Y
☐	DDT	50-29-3	5.4	**7.4**	0.006	Y
☐	Dieldrin	60-57-1	0.15	**0.024**	0.006	Y
☐	Endosulfan I	959-98-8	47	**15**	0.006	Y
☐	Endosulfan II	33213-65-9	270	**46**	0.006	Y
☐	Endosulfan sulfate	1031-07-8	**380**	2300	0.006	Y
☐	Endrin	72-20-8	8.7	**0.38**	0.006	Y
☐	Endrin aldehyde	7421-93-4	**19**	310	0.006	Y
☐	Heptachlor	76-44-8	0.13	**0.094**	0.006	Y
☐	Heptachlor epoxide	1024-57-3	0.24	**0.029**	0.006	Y
☐	Hexachlorocyclohexane, alpha (alpha-BHC)	319-84-6	0.25	**0.0040**	0.006	N
☐	Hexachlorocyclohexane, beta (beta-BHC)	319-85-7	0.92	**0.014**	0.006	Y
☐	Hexachlorocyclohexane, delta (delta-BHC)	319-86-8	2.9	**0.087**	0.006	Y
☐	Hexachlorocyclohexane, gamma (lindane; gamma-BHC)	58-89-9	1.1	**0.0046**	0.006	N
☐	Methoxychlor	72-43-5	270	**62**	0.05	Y
☐	Toxaphene	8001-35-2	**1.2**	5.8	0.25	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 6: Method SW8082A for Soil – Polychlorinated Biphenyls (PCBs)

COC	Analyte	CAS No.	QAPP MQL (mg/kg)	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL< LORP? (Y/N)
				$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Polychlorinated biphenyls (PCBs)	1336-36-3	0.05	**1.1**	5.3	0.1	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 7: Method SW8270 C/D for Soil – Organophosphorus Pesticides

COC	Analyte	CAS No.	QAPP MQL (mg/kg)	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL< LORP? (Y/N)
				$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Azinphos-methyl (guthion)	86-50-0	0.05	100	**0.22**	0.006	Y
☐	Chlorpyrifos	2921-88-2	0.05	74	**7.4**	0.006	Y
☐	Coumaphos	56-72-4	0.1	430	**55**	0.006	Y
☐	Demeton	8065-48-3	0.06	2.7	**0.0062**	0.006	Y
☐	Diazinon	333-41-5	0.1	21	**0.079**	0.006	Y
☐	Dichlorvos	62-73-7	0.04	**16**	240000	0.006	Y
☐	Disulfoton	298-04-4	0.04	2.6	**0.18**	0.006	Y
☐	Ethoprop	13194-48-4	0.1	6.7	**0.062**	0.006	Y
☐	Fensulfothion	115-90-2	0.04	67	**0.18**	0.006	Y
☐	Fenthion	55-38-9	0.05	4.7	**0.039**	0.006	Y
☐	Merphos	150-50-5	0.1	**2.0**	3.2	0.006	Y
☐	Methyl parathion	298-00-0	0.06	14	**0.085**	0.006	Y
☐	Naled	300-76-5	0.25	66	**0.18**	0.006	Y
☐	Phorate	298-02-2	0.02	8.4	**0.54**	0.006	Y
☐	Phosdrin (mevinphos)	7786-34-7	0.25	1.7	**0.00059**	0.006	N
☐	Prothiofos (Tokuthion)	34643-46-4	0.06	**6.6**	1200	0.006	Y
☐	Ronnel	299-84-3	0.04	2300	**210**	0.006	Y
☐	Sulprofos (Bolstar)	35400-43-2	0.04	**190**	3800	0.006	Y
☐	Tetrachlorvinphos (Stirophos)	22248-79-9	0.04	2500	**120**	0.006	Y
☐	Trichloronate	327-98-0	0.4	140	**62**	0.006	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 8: Method SW8260C for Soil – Volatile Organics

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL< LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Acetone (2-propanone)	67-64-1	5400	**21**	0.05	Y
☐	Benzene	71-43-2	48	**0.013**	0.005	Y
☐	Bromobenzene	108-86-1	280	**1.2**	0.005	Y
☐	Bromodichloromethane	75-27-4	98	**0.033**	0.005	Y
☐	Bromoform	75-25-2	280	**0.32**	0.005	Y
☐	Bromomethane (methyl bromide)	74-83-9	29	**0.065**	0.005	Y
☐	Butylbenzene, n-	104-51-8	1500	**61**	0.005	Y
☐	Butylbenzene, sec-	135-98-8	1600	**42**	0.005	Y
☐	Butylbenzene, tert-	98-06-6	1400	**50**	0.005	Y
☐	Carbon disulfide	75-15-0	3300	**6.8**	0.005	Y
☐	Carbon tetrachloride	56-23-5	9.7	**0.031**	0.005	Y
☐	Chlorobenzene	108-90-7	320	**0.55**	0.005	Y
☐	Chlorobromomethane (bromochloromethane)	74-97-5	350	**1.5**	0.005	Y
☐	Chloroethane (ethyl chloride)	75-00-3	23000	**15**	0.005	Y
☐	Chloroform	67-66-3	8.0	**0.51**	0.005	Y
☐	Chlorohexane, 1-	544-10-5	2300	**20**	0.005	Y
☐	Chloromethane (methyl chloride)	74-87-3	84	**0.20**	0.005	Y
☐	Chlorotoluene, o- (2-chlorotoluene)	95-49-8	830	**4.5**	0.005	Y
☐	Chlorotoluene, p- (4-chlorotoluene)	106-43-4	**2.5**	19	0.005	Y
☐	Cumene (isopropylbenzene)	98-82-8	3000	**170**	0.005	Y
☐	Cyclohexane	110-82-7	42000	**2900**	0.015	Y
☐	Cymene (isopropyltoluene)	99-87-6	2500	**120**	0.005	Y
☐	Dibromo-3-chloropropane, 1,2-	96-12-8	0.080	**0.00087**	0.005	N
☐	Dibromochloromethane (chlorodibromomethane)	124-48-1	72	**0.025**	0.005	Y
☐	Dichlorobenzene, 1,2-	95-50-1	390	**8.9**	0.005	Y
☐	Dichlorobenzene, 1,3-	541-73-1	62	**3.4**	0.005	Y

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL< LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Dichlorobenzene, 1,4-	106-46-7	250	**1.1**	0.005	Y
☐	Dichlorodifluoromethane	75-71-8	12000	**120**	0.005	Y
☐	Dichloroethane, 1,1-	75-34-3	2600	**9.2**	0.005	Y
☐	Dichloroethane, 1,2-	107-06-2	6.4	**0.0069**	0.005	Y
☐	Dichloroethylene, 1,1-	75-35-4	1600	**0.025**	0.005	Y
☐	Dichloroethylene, cis-1,2-	156-59-2	720	**0.12**	0.005	Y
☐	Dichloroethylene, trans-1,2	156-60-5	370	**0.25**	0.005	Y
☐	Dichloropropane, 1,2-	78-87-5	31	**0.011**	0.005	Y
☐	Dichloropropane, 1,3-	142-28-9	26	**0.032**	0.005	Y
☐	Dichloropropane, 2,2-	594-20-7	31	**0.060**	0.005	Y
☐	Dichloropropene, 1,1-	563-58-6	26	**0.067**	0.005	Y
☐	Dichloropropene, cis 1,3-	10061-01-5	7.1	**0.0033**	0.005	N
☐	Dichloropropene, trans 1,3-	10061-02-6	26	**0.018**	0.005	Y
☐	Ethyl benzene	100-41-4	4000	**3.8**	0.005	Y
☐	Ethylene dibromide (dibromoethane, 1,2-)	106-93-4	0.43	**0.00010**	0.005	N
☐	Hexachlorobutadiene	87-68-3	12	**1.6**	0.005	Y
☐	Hexanone, 2-	591-78-6	210	**0.16**	0.015	Y
☐	Methyl acetate (acetic acid, methyl ester)	79-20-9	4500	**24**	0.015	Y
☐	Methyl cyclohexane	108-87-2	22000	**7800**	0.015	Y
☐	Methyl ethyl ketone (2-butanone)	78-93-3	27000	**15**	0.015	Y
☐	Methyl isobutyl ketone (4-methyl-2-pentanone)	108-10-1	5400	**2.5**	0.015	Y
☐	Methylene bromide (dibromomethane)	74-95-3	140	**0.56**	0.005	Y
☐	Methylene chloride (dichloromethane)	75-09-2	260	**0.0065**	0.005	Y
☐	MTBE (methyl tert-butyl ether)	1634-04-4	590	**0.31**	0.005	Y
☐	Naphthalene	91-20-3	120	**16**	0.015	Y
☐	Propylbenzene, n-	103-65-1	1600	**22**	0.005	Y
☐	Styrene	100-42-5	4300	**1.6**	0.005	Y

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL< LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Tetrachloroethane, 1,1,1,2-	630-20-6	39	**0.71**	0.005	Y
☐	Tetrachloroethane, 1,1,2,2-	79-34-5	4.0	**0.012**	0.005	Y
☐	Tetrachloroethylene (perchlorethylene)	127-18-4	94	**0.025**	0.005	Y
☐	Toluene	108-88-3	5400	**4.1**	0.005	Y
☐	Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	220000	**40000**	0.015	Y
☐	Trichlorobenzene, 1,2,3-	87-61-6	190	**13**	0.005	Y
☐	Trichlorobenzene, 1,2,4-	120-82-1	70	**2.4**	0.005	Y
☐	Trichloroethane, 1,1,1-	71-55-6	32000	**0.81**	0.005	Y
☐	Trichloroethane, 1,1,2-	79-00-5	10	**0.010**	0.005	Y
☐	Trichloroethylene	79-01-6	68	**0.017**	0.005	Y
☐	Trichlorofluoromethane	75-69-4	12000	**64**	0.015	Y
☐	Trichloropropane, 1,2,3-	96-18-4	0.20	**0.00027**	0.005	N
☐	Trimethylbenzene, 1,2,4-	95-63-6	73	**4.9**	0.005	Y
☐	Trimethylbenzene, 1,3,5-	108-67-8	59	**27**	0.005	Y
☐	Vinyl chloride	75-01-4	1500	**27**	0.005	Y
☐	Xylene, m-	108-38-3	3.4	**0.011**	0.005	Y
☐	Xylene, o-	95-47-6	29000	**35**	0.005	Y
☐	Xylene, p-	106-42-3	4700	**75**	0.005	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 9: Method SW8270 for Soil – Semivolatile Organics

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL <LORP? (Y/N)
			$^{Tot}Soil_{Com}$ [b] (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Acenaphthene	83-32-9	3000	**120**	0.03	Y
☐	Acenaphthylene	208-96-8	3800	**200**	0.03	Y
☐	Acetophenone	98-86-2	1800	**4.1**	0.03	Y
☐	Anthracene	120-12-7	18000	**3400**	0.03	Y
☐	Atrazine	1912-24-9	21	**0.012**	0.03	N
☐	Benz-a-anthracene	56-55-3	**5.6**	8.9	0.03	Y
☐	Benzaldehyde	100-52-7	240	**5.3**	0.03	Y
☐	Benzo-a-pyrene	50-32-8	**0.56**	3.8	0.03	Y
☐	Benzo-b-fluoranthene	205-99-2	**5.7**	30	0.03	Y
☐	Benzo-g,h,i-perylene	191-24-2	**1800**	23000	0.03	Y
☐	Benzoic acid	65-85-0	350	**95**	0.13	Y
☐	Benzo-k-fluoranthene	207-08-9	**57**	310	0.03	Y
☐	Benzyl alcohol	100-51-6	2700	**2.9**	0.07	Y
☐	Biphenyl, 1,1-	92-52-4	130	**130**	0.03	Y
☐	Bis (2-chloroethoxy) methane	111-91-1	2.5	**0.0059**	0.03	N
☐	Bis (2-chloroethyl) ether	111-44-4	1.4	**0.0011**	0.03	N
☐	Bis (2-chloroisopropyl) ether	108-60-1	41	**0.095**	0.03	Y
☐	Bis (2-ethyl-hexyl) phthalate	117-81-7	**43**	82	0.07	Y
☐	Bromophenyl phenylether, 4-	101-55-3	0.27	**0.18**	0.03	Y
☐	Butyl benzyl phthalate	85-68-7	1600	**130**	0.03	Y
☐	Caprolactam	105-60-2	170	**23**	0.03	Y
☐	Carbazole	86-74-8	240	**2.3**	0.03	Y
☐	Chloro-3-methylphenol, 4-	59-50-7	330	**2.3**	0.03	Y

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL <LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Chloroaniline, p-	106-47-8	23	**0.010**	0.07	N
☐	Chloronaphthalene, 2-(chloronaphthalene, beta)	91-58-7	5000	**340**	0.03	Y
☐	Chlorophenol, 2-	95-57-8	360	**0.82**	0.03	Y
☐	Chlorophenyl phenylether, 4-	7005-72-3	0.15	**0.016**	0.03	N
☐	Chrysene	218-01-9	**560**	770	0.03	Y
☐	Cresol, o- (2-methylphenol)	95-48-7	1000	**3.6**	0.03	Y
☐	Cresol, p- (4-methylphenol)	106-44-5	270	**0.32**	0.03	Y
☐	Dibenz-a,h-anthracene	53-70-3	0.55	**7.6**	0.03	Y
☐	Dibenzofuran	132-64-9	270	**17**	0.03	Y
☐	Dichlorobenzidine, 3,3-	91-94-1	10	**0.031**	0.03	Y
☐	Dichlorophenol, 2,4-	120-83-2	190	**0.18**	0.03	Y
☐	Diethyl phthalate	84-66-2	1400	**78**	0.07	Y
☐	Dimethyl phenol, 2,4-	105-67-9	880	**1.6**	0.03	Y
☐	Dimethylphthalate	131-11-3	660	**31**	0.07	Y
☐	Di-n-butyl phthalate	84-74-2	4400	**1700**	0.07	Y
☐	Dinitro-2-methylphenol, 4,6- (dinitro-o-cresol, 4, 6-)	534-52-1	5.2	**0.0023**	0.07	N
☐	Dinitrophenol, 2,4-	51-28-5	130	**0.047**	0.13	N
☐	Dinitrotoluene, 2,4-	121-14-2	6.9	**0.0027**	0.03	N
☐	Dinitrotoluene, 2,6-	606-20-2	6.9	**0.0024**	0.03	N
☐	Di-n-octyl phthalate	117-84-0	**1300**	810000	0.07	Y
☐	Fluoranthene	206-44-0	2300	**960**	0.03	Y
☐	Fluorene	86-73-7	2300	**150**	0.03	Y

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/kg)	Is Lab MQL <LORP? (Y/N)
			$^{Tot}Soil_{Com}$ [b] (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Hexachlorobenzene	118-74-1	1.0	**0.56**	0.03	Y
☐	Hexachlorobutadiene	87-68-3	12	**1.6**	0.03	Y
☐	Hexachlorocyclopentadiene (HCCPD)	77-47-4	**7.2**	9.6	0.07	Y
☐	Hexachloroethane	67-72-1	67	**0.92**	0.03	Y
☐	Indeno-1,2,3-cd-pyrene	193-39-5	**5.7**	87	0.03	Y
☐	Isophorone	78-59-1	1200	**1.5**	0.03	Y
☐	Methylnaphthalene, 2-	91-57-6	250	**8.5**	0.03	Y
☐	Naphthalene	91-20-3	120	**16**	0.03	Y
☐	Nitroaniline, 2-	88-74-4	11	**0.011**	0.03	N
☐	Nitroaniline, 3-	99-09-2	19	**0.013**	0.03	N
☐	Nitroaniline, 4-	100-01-6	190	**0.054**	0.03	Y
☐	Nitrobenzene	98-95-3	34	**0.18**	0.03	Y
☐	Nitrophenol, 2-	88-75-5	100	**0.067**	0.03	Y
☐	Nitrophenol, 4-	100-02-7	51	**0.050**	0.13	N
☐	Nitrosodi-n-propylamine, N-	621-64-7	0.40	**0.00018**	0.03	N
☐	Nitrosodiphenylamine, N-	86-30-6	570	**1.4**	0.03	Y
☐	Pentachlorophenol	87-86-5	2.4	**0.0092**	0.03	N
☐	Phenanthrene	85-01-8	1700	**210**	0.03	Y
☐	Phenol	108-95-2	1600	**9.6**	0.03	Y
☐	Pyrene	129-00-0	1700	**560**	0.03	Y
☐	Trichlorophenol, 2,4,5-	95-95-4	4100	**17**	0.03	Y
☐	Trichlorophenol, 2,4,6-	88-06-2	67	**0.087**	0.03	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 10: Method 8290M for Soils - Dioxins/Furans

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/L)	Is Lab MQL <LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD)	1746-01-6	0.005*	**0.0085***	1.0E-06	Y
☐	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin (PeCDD)	40321-76-4	*	*	2.5E-06	*
☐	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin (HxCDD)	39227-28-6	*	*	2.5E-06	*
☐	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin (HxCDD)	57653-85-7	*	*	2.5E-06	*
☐	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin (HxCDD)	19408-74-3	*	*	2.5E-06	*
☐	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin (HpCDD)	35822-46-9	*	*	2.5E-06	*
☐	1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin (OCDD)	3268-87-9	*	*	5.0E-06	*
☐	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	*	*	1.0E-06	*
☐	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	*	*	2.5E-06	*
☐	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	*	*	2.5E-06	*
☐	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	*	*	2.5E-06	*
☐	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	*	*	2.5E-06	*
☐	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	*	*	2.5E-06	*
☐	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	*	*	2.5E-06	*
☐	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	*	*	2.5E-06	*
☐	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	*	*	2.5E-06	*
☐	1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	*	*	5.0E-06	*

COC = Chemical of Concern TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
MQL = Method quantitation limit **LORP = Level of required performance (bolded value)**
* = LORP for dioxin is the 2,3,7,8-TCDD toxicity equivalent concentrations calculated using the concentration of the 17 congeners adjusted by the toxicity equivalent factors in §350.76(d)

Table 11: Method SW6020A for Water – Metals

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Aluminum	7429-90-5	**24**	0.03	Y
☐	Antimony	7440-36-0	**0.006**	0.002	Y
☐	Arsenic	7440-38-2	**0.01**	0.005	Y
☐	Barium	7440-39-3	**2.0**	0.01	Y
☐	Beryllium	7440-41-7	**0.004**	0.001	Y
☐	Cadmium	7440-43-9	**0.005**	0.001	Y
☐	Chromium (total)	7440-47-3	**0.1**	0.005	Y
☐	Cobalt	7440-48-4	**0.0073**	0.006	Y
☐	Copper	7440-50-8	**1.3**	0.01	Y
☐	Lead (inorganic)	7439-92-1	**0.015**	0.001	Y
☐	Manganese	7439-96-5	**1.1**	0.01	Y
☐	Mercury (pH = 4.9)	7439-97-6	**0.002**	0.0002	Y
☐	Nickel and compounds	7440-02-0	**0.49**	0.01	Y
☐	Selenium	7782-49-2	**0.05**	0.006	Y
☐	Silver	7440-22-4	**0.12**	0.002	Y
☐	Thallium and compounds (as thallium chloride)	7791-12-0	**0.002**	0.001	Y
☐	Zinc	7440-66-6	**7.3**	0.005	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 12: Method SW7470A for Water – Mercury

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Mercury (pH = 4.9)	7439-97-6	**0.002**	0.0002	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 13: Method SW8270 C/D for Water – Organochlorine Pesticides

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Aldrin	309-00-2	**0.000054**	0.00003	Y
☐	Chlordane, cis- (alpha chlordane)	5103-71-9	**0.0026**	0.00003	Y
☐	Chlordane, gamma	57-74-9	**0.0026**	0.00003	Y
☐	DDD	72-54-8	**0.0038**	0.00003	Y
☐	DDE	72-55-9	**0.0027**	0.00003	Y
☐	DDT	50-29-3	**0.0027**	0.00003	Y
☐	Dieldrin	60-57-1	**0.000057**	0.00003	Y
☐	Endosulfan I	959-98-8	**0.049**	0.00003	Y
☐	Endosulfan II	33213-65-9	**0.15**	0.00003	Y
☐	Endosulfan sulfate	1031-07-8	**0.15**	0.00003	Y
☐	Endrin	72-20-8	**0.002**	0.00003	Y
☐	Endrin aldehyde	7421-93-4	**0.0073**	0.00003	Y
☐	Heptachlor	76-44-8	**0.0004**	0.00003	Y
☐	Heptachlor epoxide	1024-57-3	**0.0002**	0.00003	Y
☐	Hexachlorocyclohexane, alpha (alpha-BHC)	319-84-6	**0.00014**	0.00003	Y
☐	Hexachlorocyclohexane, beta (beta-BHC)	319-85-7	**0.00051**	0.00003	Y
☐	Hexachlorocyclohexane, delta (delta-BHC)	319-86-8	**0.00051**	0.00003	Y
☐	Hexachlorocyclohexane, gamma (lindane; gamma-BHC)	58-89-9	**0.0002**	0.00003	Y
☐	Methoxychlor	72-43-5	**0.04**	0.00005	Y
☐	Toxaphene	8001-35-2	**0.003**	0.0025	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 14: Method SW8082A for Water – Polychlorinated Biphenyls (PCBs)

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Polychlorinated biphenyls (PCBs)	1336-36-3	**0.0005**	0.00025	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 15: Method SW8270 C/D for Water – Organophosphorus Pesticides

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Azinphos-methyl (guthion)	86-50-0	**0.037**	0.00003	Y
☐	Chlorpyrifos	2921-88-2	**0.073**	0.00003	Y
☐	Coumaphos	56-72-4	**0.17**	0.00003	Y
☐	Demeton	8065-48-3	**0.00098**	0.00003	Y
☐	Diazinon	333-41-5	**0.022**	0.00003	Y
☐	Dichlorvos	62-73-7	**0.0031**	0.00003	Y
☐	Disulfoton	298-04-4	**0.00098**	0.00003	Y
☐	Ethoprop	13194-48-4	**0.0024**	0.00003	Y
☐	Fensulfothion	115-90-2	**0.024**	0.00003	Y
☐	Fenthion	55-38-9	**0.0017**	0.00003	Y
☐	Merphos	150-50-5	**0.00073**	0.00003	Y
☐	Methyl parathion	298-00-0	**0.0061**	0.00003	Y
☐	Naled	300-76-5	**0.049**	0.00003	Y
☐	Phorate	298-02-2	**0.0049**	0.00003	Y
☐	Phosdrin (mevinphos)	7786-34-7	**0.00061**	0.00003	Y
☐	Prothiofos (Tokuthion)	34643-46-4	**0.0024**	0.00003	Y
☐	Ronnel	299-84-3	**1.2**	0.00003	Y
☐	Sulprofos (Bolstar)	35400-43-2	**0.073**	0.00003	Y
☐	Tetrachlorvinphos (Stirophos)	22248-79-9	**1.0**	0.00003	Y
☐	Trichloronate	327-98-0	**0.073**	0.00003	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 16: Method SW8260C for Water – Volatile Organics

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Acetone (2-propanone)	67-64-1	**22**	0.015	Y
☐	Benzene	71-43-2	**0.005**	0.001	Y
☐	Bromobenzene	108-86-1	**0.20**	0.001	Y
☐	Bromodichloromethane	75-27-4	**0.015**	0.001	Y
☐	Bromoform	75-25-2	**0.12**	0.001	Y
☐	Bromomethane (methyl bromide)	74-83-9	**0.034**	0.001	Y
☐	Butylbenzene, n-	104-51-8	**0.98**	0.001	Y
☐	Butylbenzene, sec-	135-98-8	**0.98**	0.001	Y
☐	Butylbenzene, tert-	98-06-6	**0.98**	0.001	Y
☐	Carbon disulfide	75-15-0	**2.4**	0.015	Y
☐	Carbon tetrachloride	56-23-5	**0.005**	0.001	Y
☐	Chlorobenzene	108-90-7	**0.1**	0.001	Y
☐	Chlorobromomethane (bromochloromethane)	74-97-5	**0.98**	0.001	Y
☐	Chloroethane (ethyl chloride)	75-00-3	**9.8**	0.001	Y
☐	Chloroform	67-66-3	**0.24**	0.001	Y
☐	Chlorohexane, 1-	544-10-5	**0.98**	0.005	Y
☐	Chloromethane (methyl chloride)	74-87-3	**0.07**	0.001	Y
☐	Chlorotoluene, o- (2-chlorotoluene)	95-49-8	**0.49**	0.001	Y
☐	Chlorotoluene, p- (4-chlorotoluene)	106-43-4	**1.7**	0.001	Y
☐	Cumene (isopropylbenzene)	98-82-8	**2.4**	0.001	Y
☐	Cyclohexane	110-82-7	**120**	0.001	Y
☐	Cymene (isopropyltoluene)	99-87-6	**2.4**	0.001	Y
☐	Dibromo-3-chloropropane, 1,2-	96-12-8	**0.0002**	0.010	N
☐	Dibromochloromethane	124-48-1	**0.011**	0.001	Y

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
	(chlorodibromomethane)				
☐	Dichlorobenzene, 1,2-	95-50-1	**0.6**	0.001	Y
☐	Dichlorobenzene, 1,3-	541-73-1	**0.73**	0.001	Y
☐	Dichlorobenzene, 1,4-	106-46-7	**0.075**	0.001	Y
☐	Dichlorodifluoromethane	75-71-8	**4.9**	0.001	Y
☐	Dichloroethane, 1,1-	75-34-3	**4.9**	0.001	Y
☐	Dichloroethane, 1,2-	107-06-2	**0.005**	0.001	Y
☐	Dichloroethylene, 1,1-	75-35-4	**0.007**	0.001	Y
☐	Dichloroethylene, cis-1,2-	156-59-2	**0.07**	0.001	Y
☐	Dichloroethylene, trans-1,2	156-60-5	**0.1**	0.001	Y
☐	Dichloropropane, 1,2-	78-87-5	**0.005**	0.001	Y
☐	Dichloropropane, 1,3-	142-28-9	**0.0091**	0.001	Y
☐	Dichloropropane, 2,2-	594-20-7	**0.013**	0.001	Y
☐	Dichloropropene, 1,1-	563-58-6	**0.0091**	0.001	Y
☐	Dichloropropene, cis 1,3-	10061-01-5	**0.0017**	0.001	Y
☐	Dichloropropene, trans 1,3-	10061-02-6	**0.0091**	0.001	Y
☐	Ethyl benzene	100-41-4	**0.7**	0.001	Y
☐	Ethylene dibromide (dibromoethane, 1,2-)	106-93-4	**0.00005**	0.001	N
☐	Hexachlorobutadiene	87-68-3	**0.012**	0.003	N
☐	Hexanone, 2-	591-78-6	**0.12**	0.015	Y
☐	Methyl acetate (acetic acid, methyl ester)	79-20-9	**24**	0.015	Y
☐	Methyl cyclohexane	108-87-2	**120**	0.015	Y
☐	Methyl ethyl ketone (2-butanone)	78-93-3	**15**	0.015	Y
☐	Methyl isobutyl ketone (4-methyl-2-pentanone)	108-10-1	**2.0**	0.015	Y
☐	Methylene bromide (dibromomethane)	74-95-3	**0.12**	0.001	Y
☐	Methylene chloride (dichloromethane)	75-09-2	**0.005**	0.002	Y

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
				5	
☐	MTBE (methyl tert-butyl ether)	1634-04-4	**0.24**	0.001	Y
☐	Naphthalene	91-20-3	**0.49**	0.015	Y
☐	Propylbenzene, n-	103-65-1	**0.98**	0.001	Y
☐	Styrene	100-42-5	**0.1**	0.001	Y
☐	Tetrachloroethane, 1,1,1,2-	630-20-6	**0.035**	0.001	Y
☐	Tetrachloroethane, 1,1,2,2-	79-34-5	**0.0046**	0.001	Y
☐	Tetrachloroethylene (perchlorethylene)	127-18-4	**0.005**	0.002	Y
☐	Toluene	108-88-3	**1.0**	0.002	Y
☐	Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	**730**	0.015	Y
☐	Trichlorobenzene, 1,2,3-	87-61-6	**0.073**	0.005	Y
☐	Trichlorobenzene, 1,2,4-	120-82-1	**0.07**	0.005	Y
☐	Trichloroethane, 1,1,1-	71-55-6	**0.20**	0.001	Y
☐	Trichloroethane, 1,1,2-	79-00-5	**0.005**	0.001	Y
☐	Trichloroethylene	79-01-6	**0.005**	0.002	Y
☐	Trichlorofluoromethane	75-69-4	**7.3**	0.001	Y
☐	Trichloropropane, 1,2,3-	96-18-4	**0.00003**	0.001	N
☐	Trimethylbenzene, 1,2,4-	95-63-6	**0.24**	0.005	Y
☐	Trimethylbenzene, 1,3,5-	108-67-8	**1.2**	0.005	Y
☐	Vinyl chloride	75-01-4	**0.002**	0.001	Y
☐	Xylene, m-	108-38-3	**10**	0.001	Y
☐	Xylene, o-	95-47-6	**10**	0.001	Y
☐	Xylene, p-	106-42-3	**10**	0.001	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 17: Method SW8270 for Water – Semivolatile Organics

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Acenaphthene	83-32-9	**1.5**	0.0008	Y
☐	Acenaphthylene	208-96-8	**1.5**	0.0008	Y
☐	Acetophenone	98-86-2	**2.4**	0.0008	Y
☐	Anthracene	120-12-7	**7.3**	0.0008	Y
☐	Atrazine	1912-24-9	**0.003**	0.0008	Y
☐	Benz-a-anthracene	56-55-3	**0.0013**	0.0008	Y
☐	Benzaldehyde	100-52-7	**2.4**	0.0008	Y
☐	Benzo-a-pyrene	50-32-8	**0.0002**	0.0008	N
☐	Benzo-b-fluoranthene	205-99-2	**0.0013**	0.0008	Y
☐	Benzo-g,h,i-perylene	191-24-2	**0.73**	0.0008	Y
☐	Benzoic acid	65-85-0	**98**	0.006	Y
☐	Benzo-k-fluoranthene	207-08-9	**0.013**	0.0008	Y
☐	Benzyl alcohol	100-51-6	**2.4**	0.002	Y
☐	Biphenyl, 1,1-	92-52-4	**1.2**	0.0008	Y
☐	Bis (2-chloroethoxy) methane	111-91-1	**0.00083**	0.0008	Y
☐	Bis (2-chloroethyl) ether	111-44-4	**0.00083**	0.0008	Y
☐	Bis (2-chloroisopropyl) ether	108-60-1	**0.013**	0.0008	Y
☐	Bis (2-ethyl-hexyl) phthalate	117-81-7	**0.006**	0.003	Y
☐	Bromophenyl phenylether, 4-	101-55-3	**0.000061**	0.0008	N
☐	Butyl benzyl phthalate	85-68-7	**0.48**	0.006	Y
☐	Caprolactam	105-60-2	**12**	0.0008	Y
☐	Carbazole	86-74-8	**0.046**	0.0008	Y
☐	Chloro-3-methylphenol, 4-	59-50-7	**0.12**	0.0008	Y
☐	Chloroaniline, p-	106-47-8	**0.0046**	0.002	Y
☐	Chloronaphthalene, 2- (chloronaphthalene, beta)	91-58-7	**2.0**	0.0008	Y

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Chlorophenol, 2-	95-57-8	**0.12**	0.0008	Y
☐	Chlorophenyl phenylether, 4-	7005-72-3	**0.000061**	0.0008	N
☐	Chrysene	218-01-9	**0.13**	0.0008	Y
☐	Cresol, o- (2-methylphenol)	95-48-7	**1.2**	0.0008	Y
☐	Cresol, p- (4-methylphenol)	106-44-5	**0.12**	0.0008	Y
☐	Dibenz-a,h-anthracene	53-70-3	**0.0002**	0.0008	N
☐	Dibenzofuran	132-64-9	**0.098**	0.0008	Y
☐	Dichlorobenzidine, 3,3-	91-94-1	**0.002**	0.0008	Y
☐	Dichlorophenol, 2,4-	120-83-2	**0.073**	0.0008	Y
☐	Diethyl phthalate	84-66-2	**20**	0.006	Y
☐	Dimethyl phenol, 2,4-	105-67-9	**0.49**	0.0008	Y
☐	Dimethylphthalate	131-11-3	**20**	0.006	Y
☐	Di-n-butyl phthalate	84-74-2	**2.4**	0.006	Y
☐	Dinitro-2-methylphenol, 4,6- (dinitro-o-cresol, 4, 6-)	534-52-1	**0.0024**	0.002	Y
☐	Dinitrophenol, 2,4-	51-28-5	**0.049**	0.004	Y
☐	Dinitrotoluene, 2,4-	121-14-2	**0.0013**	0.0008	Y
☐	Dinitrotoluene, 2,6-	606-20-2	**0.0013**	0.0008	Y
☐	Di-n-octyl phthalate	117-84-0	**0.49**	0.006	Y
☐	Fluoranthene	206-44-0	**0.98**	0.0008	Y
☐	Fluorene	86-73-7	**0.98**	0.0008	Y
☐	Hexachlorobenzene	118-74-1	**0.001**	0.0008	Y
☐	Hexachlorobutadiene	87-68-3	**0.012**	0.0008	Y
☐	Hexachlorocyclopentadiene (HCCPD)	77-47-4	**0.05**	0.002	Y
☐	Hexachloroethane	67-72-1	**0.024**	0.0008	Y
☐	Indeno-1,2,3-cd-pyrene	193-39-5	**0.0013**	0.0008	Y
☐	Isophorone	78-59-1	**0.96**	0.0008	Y
☐	Methylnaphthalene, 2-	91-57-6	**0.098**	0.0008	Y

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL ≤ LORP? (Y/N)
☐	Naphthalene	91-20-3	**0.49**	0.0008	Y
☐	Nitroaniline, 2-	88-74-4	**0.0073**	0.0008	Y
☐	Nitroaniline, 3-	99-09-2	**0.0073**	0.0008	Y
☐	Nitroaniline, 4-	100-01-6	**0.046**	0.0008	Y
☐	Nitrobenzene	98-95-3	**0.049**	0.0008	Y
☐	Nitrophenol, 2-	88-75-5	**0.049**	0.0008	Y
☐	Nitrophenol, 4-	100-02-7	**0.049**	0.004	Y
☐	Nitrosodi-n-propylamine, N-	621-64-7	**0.00013**	0.0008	N
☐	Nitrosodiphenylamine, N-	86-30-6	**0.19**	0.0008	Y
☐	Pentachlorophenol	87-86-5	**0.001**	0.0008	Y
☐	Phenanthrene	85-01-8	**0.73**	0.0008	Y
☐	Phenol	108-95-2	**7.3**	0.0008	Y
☐	Pyrene	129-00-0	**0.73**	0.0008	Y
☐	Trichlorophenol, 2,4,5-	95-95-4	**2.4**	0.0008	Y
☐	Trichlorophenol, 2,4,6-	88-06-2	**0.024**	0.0008	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 18: Method 8290M for Water- Dioxins/Furans

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL <LORP? (Y/N)
☐	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD)	1746-01-6	**3.0E-8***	1.0E-8	Y
☐	1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin (PeCDD)	40321-76-4	*	2.5E-08	*
☐	1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	39227-28-6	*	2.5E-08	*
☐	1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	57653-85-7	*	2.5E-08	*
☐	1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	19408-74-3	*	2.5E-08	*
☐	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	35822-46-9	*	2.5E-08	*
☐	1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin	3268-87-9	*	5.0E-08	*
☐	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	*	1.0E-08	*
☐	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	*	2.5E-08	*
☐	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	*	2.5E-08	*
☐	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	*	2.5E-08	*
☐	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	*	2.5E-08	*
☐	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	*	2.5E-08	*
☐	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	*	2.5E-08	*
☐	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	*	2.5E-08	*
☐	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	*	2.5E-08	*
☐	1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	*	5.0E-08	*

COC = Chemical of Concern
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
MQL = Method quantitation limit
LORP = Level of required performance (bolded value)
* = LORP for dioxin is the 2,3,7,8-TCDD toxicity equivalent concentrations calculated using the concentration of the 17 congeners adjusted by the toxicity equivalent factors in §350.76(d)

Table 19: Method 9010C for Soils- Cyanide

COC	Analyte	CAS No.	TRRP Residential PCL 30 Acre Source		Lab MQL (mg/L)	Is Lab MQL <LORP? (Y/N)
			$^{Tot}Soil_{Comb}$ (mg/kg)	$^{GW}Soil_{ING}$ (mg/kg)		
☐	Cyanide	74-90-8	19000	**2.0**	0.5	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 20: Method 9010C for Water- Cyanide

COC	Analyte	CAS No.	TRRP Residential PCL $^{GW}GW_{Ing}$ (mg/L)	Lab MQL (mg/L)	Is Lab MQL <LORP? (Y/N)
☐	Cyanide	74-90-8	**2.0**	0.02	Y

COC = Chemical of Concern
MQL = Method quantitation limit
TRRP PCL = Texas Risk Reduction Program Protective Concentration Limit (last revised March 31, 2010)
LORP = Level of required performance (bolded value)

Table 21: Nonstandard Analytical Methods

Analytical Method	Container	Preservation	Minimum Sample Volume or Mass	Maximum Holding Time
8290M Dioxins/Furans	glass	ice	1 L aqueous 8 ounces solids	30 days
Cyanide	HDPE/glass	NaOH	500 mL aqueous 4 ounces solids	14 days

Appendix A: Standard Operating Procedures