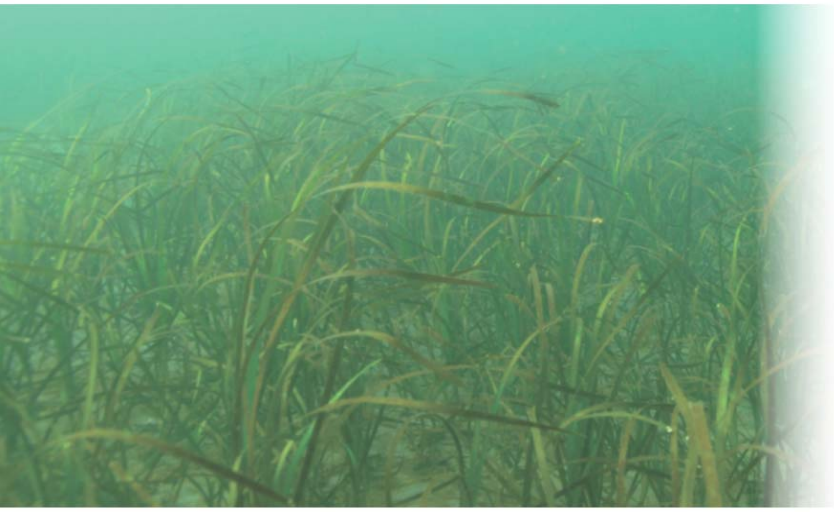

ADDENDUM TO THE SWINOMISH INDIAN TRIBAL COMMUNITY U.S. EPA BROWNSFIELDS ASSESSMENT GRANT SAMPLING QUALITY ASSURANCE PLAN

SOIL CONFIRMATION SAMPLING LIME STORAGE AREA ZONE AREA 1 SWINOMISH INDIAN RESERVATION WASHINGTON

PREPARED FOR
SWINOMISH INDIAN TRIBAL COMMUNITY

May 18, 2011
12737-01

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Addendum to the Swinomish Indian Tribal Community U.S. EPA Brownsfields Assessment Grant Sampling Quality Assurance Plan

Soil Confirmation Sampling Lime Storage Area Zone Area 1 Swinomish Indian Reservation Washington

Prepared for
Swinomish Indian Tribal Community

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Prepared by
Hart Crowser, Inc.

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ADDENDUM TO THE
SWINOMISH INDIAN TRIBAL COMMUNITY
U.S. EPA BROWNFIELDS ASSESSMENT GRANT
SAMPLING QUALITY ASSURANCE PLAN

SOIL CONFIRMATION SAMPLING
LIME STORAGE AREA
TRIBAL ECONOMIC ZONE AREA 1
SWINOMISH INDIAN RESERVATION
WASHINGTON

1.0 INTRODUCTION

Hart Crowser, Inc. prepared this Addendum to the EPA-approved Sampling and Quality Assurance Plan (SQAP) of the U.S. EPA Brownfields Assessment Grant to the Swinomish Indian Tribal Community (SITC) (Environmental International 2008). This Addendum discusses confirmational environmental soil sampling at the Lime Storage Area within the Tribal Economic Zone (TEZ) Area 1 located on SITC property (Figure A-1).

This Addendum references the SQAP with regards to field and laboratory methods, requirements, and Quality Assurance/ Quality Control (QA/QC) procedures. This Addendum only addresses the confirmation soil sampling activities at the Lime Storage Area, following excavation and removal of impacted materials as discussed in the remedial plan for this project (Hart Crowser 2011a).

2.0 PURPOSE AND OBJECTIVES OF CONFIRMATIONAL SOIL SAMPLING

The purpose of this Addendum is to describe the additional field sampling and analytical protocols designed to confirm the successful removal of impacted soils at the Lime Storage Area. Sampling activities addressed in this Addendum include:

- Collection of four discrete soil samples and one field duplicate sample from beneath the west pile (Figure A-1, Area A) and chemical analysis of these five samples for arsenic, cadmium, and lead; and characterization of one of these samples for dioxins/furans;

- Collection of four discrete soil samples and one field duplicate sample from beneath the central stockpile (Figure A-1, Area B) and chemical analysis of these five samples for arsenic, cadmium, and lead; and

- Collection of four discrete soil samples and one field duplicate sample from beneath the area immediately east of the on-grade concrete slab (Figure A-1, Area C) and chemical analysis of these five samples for arsenic, cadmium, and lead.

3.0 SITE BACKGROUND

Details regarding the geology and hydrogeology of the Lime Storage Area are provided in the SQAP. Results from the 2009 sampling activities as described in the Phase II Environmental Site Assessment (Environmental International, 2009), confirmed the presence of priority contaminant concentrations in soil above unrestricted use cleanup levels in the Washington State Model Toxics Control Act (MTCA) regulations (Chapter 173-340 WAC) at three tested locations around the Lime Storage Area (Figure A-1). The cleanup levels in the MTCA meet or exceed the minimum U.S. EPA developed criteria, and are being used in this cleanup in lieu of specific Swinomish guidance, per the EPA approved workplan for this site. The three areas of concern at the Lime Storage Area include:

- Area A - This small stockpile to the west consists of sand and gravel with an assortment of charred wood debris. This pile had documented MTCA exceedances of dioxins/furans and cadmium.

- Area B - This central stockpile consists of debris remaining from the building demolition and includes solid chemical material and soils (sand/gravel). This pile had documented exceedances of arsenic, cadmium, and lead.

- Area C - This area is located immediately east of the on-grade concrete slab where the former conveyor belt operated. The surface soil is composed of sand and gravel and is lightly vegetated. A granular yellow material (suspected to be sulfur based) is found on the surface of this area between the slab and the bulkhead along the Swinomish Channel. This area had documented exceedances of arsenic, cadmium, and lead.

4.0 PROJECT PERSONNEL AND RESPONSIBILITIES

4.1 Personnel Assignments

Key Hart Crowser personnel for this project are listed below with their project functions:

- Will Abercrombie, Principal in Charge;
- Brandon Jensen, Project Manager;
- Phil Cordell, Geologist, SWPP, Field team leader;
- Anne Conrad, MS, Geochemist, Laboratory Coordination/Oversight, and Data Validation and Review;

Subcontractors will include Spyderman Excavation LLC for excavation of contaminated soil and debris and backfilling excavated areas. Chemical analysis will be performed by TestAmerica Laboratories, Inc. of Tacoma, Washington and West Sacramento, California.

4.2 Schedule

The project began with a kickoff meeting on April 14, 2011. Hart Crowser proposes to develop and obtain approval of this SQAP Addendum and a Site Health and Safety Plan (HASP) in time to perform excavation and disposal of the contaminated materials by mid-June, 2011. Confirmational sampling will be conducted following the excavation, and analytical laboratory results are expected within 10 to 14 days from receipt of the samples by the laboratory. Laboratory results will be sent to Jon Boe by email (jboe@swinomish.nsn.us).

Following the receipt of confirmation sample results from the laboratory confirming that the excavation efforts have met the cleanup goals, Swinomish Environmental Management officials will approve the backfilling of the excavated areas. It is estimated that the backfill effort will take two days and should be accomplished within two weeks of receipt of the final laboratory data.

Preparation of a draft report is scheduled to be completed within three weeks of the backfilling effort. If the analytical results from the confirmation sampling indicate that impacted materials remain on site, additional excavation, disposal, and sampling will be required prior to producing the draft report. A final report will be prepared and submitted within two weeks following receipt of client review comments.

5.0 PROJECT DESCRIPTION

The areas of concern will be excavated and the impacted materials removed. Areas A and B will be excavated to a level of approximately one foot below the burn/debris piles. Area C will be excavated to one foot below the ground surface (bgs).

Confirmation samples will be collected following excavation of each area. Soil grab sample collection procedures are described in detail in the SQAP. This Addendum will follow the procedures described in the SQAP with the following modifications:

- The location of the samples will be determined in the field. As impacted material is being excavated and removed, no visual signs of contamination are expected. Samples will be collected to best characterize the soils remaining under the excavated areas.

- Samples will be collected from the surface of the soil remaining in place after excavation, using a pre-cleaned stainless steel spoon.

- A photoionization detector (PID) will not be used to screen samples, as volatile organic compounds are not expected in these areas.

Tables A-1 through A-3 depict Data Quality Objectives (DQOs), and locations of the confirmational soil samples.

6.0 DQOS AND CRITERIA FOR MEASUREMENT DATA

DQOs and criteria for measurement data are described in detail in the SQAP. This Addendum will follow the procedures described in the SQAP.

7.0 ON-SITE HEALTH AND SAFETY

All staff conducting site investigations will have up-to-date HAZWOPER certifications consistent with OSHA requirements and will comply with the site-specific Heath and Safety Plan (Hart Crowser 2011b).

8.0 SAMPLING METHODS REQUIREMENTS

Sampling method requirements are described in detail in the SQAP. This Addendum will follow the procedures described in the SQAP with the following exception:

- Hart Crowser chains-of-custody or laboratory chains-of-custody will be used, rather than the EPA Forms II Lite chains-of-custody.

9.0 ANALYTICAL METHODS REQUIREMENTS

The procedures used for sample analysis are presented in Table A-1. The laboratory shall follow the standard methods throughout this sampling event.

Analytical methods requirements are described in detail in the SQAP. This Addendum will follow the procedures described in the SQAP with these exceptions:

- One field duplicate sample for metals will be collected at each area of concern, rather than 10% of the total samples (three field duplicate samples total).
- No field duplicate sample will be collected for dioxins
- No rinse blanks will be collected.

10.0 DATA MANAGEMENT

Data management is described in detail in the SQAP. This Addendum will follow the procedures described in the SQAP with the following exceptions:

- Hart Crowser chains-of-custody or laboratory chains-of-custody will be used, rather than the EPA Forms II Lite chains-of-custody.
- Field duplicate samples will be assigned a unique sample identifier and submitted blind to the laboratory, and will not be identified with the suffix "-FD".

11.0 ASSESSMENT/OVERSIGHT

Assessment/oversight is described in detail in the SQAP. This Addendum will follow the procedures described in the SQAP with the replacement of Hart Crowser for Environmental International (EI) to perform the internal assessment of data and results.

12.0 DATA VALIDATION AND USABILITY

Data validation and usability is described in detail in the SQAP. This Addendum will follow the procedures described in the SQAP with the following exception:

- Data will not be generated through EPA's Contract Laboratory Program (CLP).

13.0 REFERENCES

Environmental International 2008. Swinomish Indian Tribal Community U.S. EPA Brownfields Assessment Grant Sampling Quality Assurance Plan. Prepared for the Swinomish Indian Tribal Community. September 19, 2008.

Environmental International 2009. Swinomish Indian Tribal Community Phase II Environmental Site Assessment Report. Prepared for the Swinomish Indian Tribal Community. September 16, 2009.

Hart Crowser 2011a. Work Plan for Lime Storage Site Cleanup Swinomish Reservation Anacortes, Washington. Prepared by Hart Crowser, Inc. April 29, 2011.

Hart Crowser 2011b. Health and Safety Plan Lime Storage Cleanup Area Swinomish Reservation Anacortes, Washington. Prepared by Hart Crowser, Inc. April 29, 2011.

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TABLES

Table A-1 – Sample Locations and DQO for Soil Samples

Analyte	Analysis Method	QA/QC Samples	Detection Limits	Accuracy	Precision (RPD)	Completeness	Sample Type	Sample Location	# of Samples
Metals - arsenic, cadmium, lead	EPA 6010C	Field duplicate samples at one from each area	See Table A-3	75-125%	35%	100%	Post-Excavation Surface Soil	5 from Area A; 5 from Area B; 5 from Area C	15
Dioxins	EPA 8290	No field duplicate sample	1 ng/kg	50-150%	35%	100%	Post-Excavation Surface Soil	1 from Area A	1

Table A-2 – Sample Analytical Methods and Handling Protocols for Soil Samples

Analyte	Analysis Method	Matrix	Container Size/ Type	Preservative	Maximum Holding Time (Not Frozen)	Maximum Holding Time (Frozen)	MCTA Screening Levels
Metals - arsenic, cadmium, lead	EPA 6010C	Soil	4 ounce jar	Cool, 4 degrees Centigrade	180 Days	1 year	See Table A-3
Dioxins	EPA 8290	Soil	8 ounce jar	Cool, 4 degrees Centigrade	14 Days (Extraction), 40 Day (Analyze)	1 year	11 ng/kg [a]

Notes:

ng/kg = nanograms/kilogram

a) No screening level for dioxins is currently available, as no data is available for the Oral Cancer Potency Factor. The value listed is the 2,3,7,8-TCDD Toxic Equivalency (TEQ) from the 2010 Ecology CLARC database.

Table A-3 – MTCA Screening Levels and Detection Limits for TAL Metals

Metal	Screening Level (ppm)	Detection Limits (ppm)
Arsenic	7.3[a]	2.0
Cadmium	2.0[b]	2.0
Lead	250[b]	2.0

a) Screening level is based on direct contact and protection of groundwater for drinking water use using the procedures in WAC 173-340-747(4), adjusted for Puget Sound Basin background.
b) Screening levels based on MTCA Method A for unrestricted land uses.

FIGURES

Source: Swinomish Tribe

A - West Burn Pile

B - Central Stockpile

C - East Area of Surface Contamination

Lime Storage Cleanup Site
Anacortes, Washington

Location of Areas Above Cleanup Levels

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Figure

A-1

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