



**Removal Action Report for
Double H Pesticide Burial Site
July 1, 2009, through January 10, 2011
Grandview, Yakima County, Washington**

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List of Abbreviations

%	percent
%R	%R
µg/L	micrograms per liter
AMPA	amintomethylphosphonic acid
AOC	Administrative Settlement Agreement and Order on Consent
BS	blank spike
BSD	blank spike duplicate
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESI	Columbia Environmental Services, Inc.
CWMNW	Chemical Waste Management of the Northwest
DQO	data quality objectives
E & E	Ecology and Environment, Inc.
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
GPR	ground penetrating radar
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
J	estimated concentration
MCL	Maximum Contaminant Level
MS	matrix spike
MSD	matrix spike duplicate
NCP	National Contingency Plan
OSC	On-Scene Coordinator
PPE	personal protective equipment
PRP	potentially responsible party
QA	Quality Assurance
QC	Quality Control
RA	removal action
RPD	relative percent difference
SSSP	site-specific sampling plan
START	Superfund Technical Assessment and Response Team
TDD	Technical Direction Document
TPH	total petroleum hydrocarbons
UJ	not detected (estimated reporting limit)
VOCs	volatile organic compounds
WSDA	Washington State Department of Agriculture

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Executive Summary

Double H Farms conducted a removal action of pesticide containers that had been discovered in March 2009 during an investigation and emergency response by the United States Environmental Protection Agency (EPA) at a site (Site A) in Grandview, Washington. Double H Farms, the potentially responsible party (PRP), lead the cleanup in accordance with an Administrative Settlement Agreement and Order on Consent (AOC). The AOC also called for the PRP to investigate a second suspected burial site nearby (Site B) and to conduct groundwater investigations at both sites.

The PRP removed 273 pesticide containers of varying sizes, 40 cubic yards of contaminated soil and debris, and bulked liquid waste from both sites. Site A predominately held pesticide containers while site B predominately held oil containers and automobile batteries.

The types of pesticides that were in many of the containers were not known as most were missing labels. However, during the emergency response phase, the containers with labels were sampled, analyzed, and some were confirmed to contain the products associated with the labels. The containers with contents that were not labeled were evaluated by hazard characterization and sampled and analyzed if determined to be hazardous.

Nor is it known the quantities of pesticides that were in the containers at the time of burial. Most containers were crushed and/or punctured and submerged in groundwater. The containers which held solid forms of pesticides only held remnant amounts. However, some samples of groundwater in pits with containers showed pesticides were released into the groundwater.

The pesticide containers and bulked liquids were taken to a hazardous waste landfill. Garbage was taken to a county landfill. Batteries were taken to a recycling center.

Samples taken from groundwater monitoring wells around Site A did not show pesticide contamination of concern. Nor did groundwater samples at Site B show petroleum products of concern. Sites A and B did show arsenic but likely the arsenic is a background contaminant. Site B did show some metals but, with the exception of arsenic, they were below concentration levels of concern.

Oil containers were left on site. EPA had no authority to address oil contamination due to the petroleum exclusion under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and because there was no threat to waters of the United States as needed to respond under the Clean Water Act. However, Washington State Department of Ecology has authority under Washington State regulations to address oil contamination. As such, Ecology has requested the PRP to not dispose of oil containers until Ecology can complete an investigation of the burial.

EPA tested drinking wells of three residences near Site A because of public concern that groundwater had been contaminated. The nearest residence was half a mile away. None of the samples showed contamination of concern.

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1 Introduction

The United States Environmental Protection Agency (EPA) policy requires a removal action (RA) report to document removal operations and actions taken. This RA report can also serve as the On-Scene Coordinator (OSC) Report should one be requested by the National Response Team or Regional Response Team as described in 40 CFR 300.165 of the National Contingency Plan (NCP).

This report provides background to the RA and describes the site, the actions taken, final disposition of waste, and post removal site control issues. Supporting information is provided on environmental sampling and analysis along with associated quality assurance (QA) and quality control (QC).

EPA's response to the Double H Pesticide Burial Site began as an investigation and emergency response in March 2009 which is documented in the *Double H Pesticide Burial Emergency Response Trip Report* dated March 2, 2011 (E & E 2011). This RA report describes activities that took place subsequent to the emergency response.

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2 Site Description and Background

2.1 Site Location

Site Name	Double H Pesticide Burial
Owner	Double H Farms LP (George and Edith Higgins, proprietors)
SSID #	10HA
CERCLIS #	WAN001002790
Location	1501 Bethany Road (Site A) and 47 Bethany Road (Site B), Grandview, Yakima County, Washington
Latitude	Site A: 46.2908°
Longitude	Site A: -119.9269°

Both RA investigation sites are shown in Figure 2-1. Site A is located near 1501 Bethany Road, in Grandview, Washington (Figure 2-2), one-quarter mile north of Woodworth Road. The site elevation is 780 feet (Google Earth 2009). Site B, which includes two discrete disposal locations (B1 and B2), is located 1.2 miles south of Site A at 47 Bethany Road, in Grandview, Washington (Figure 2-3).

2.2 Site Layout

Site A is part of an irregularly-shaped property covering 109 acres denoted as Parcel #23090341001 in Yakima County Assessor's records (2009). The portion of interest for Site A is located east of Bethany Road and south of the access road and drainage ditch that run west to east from Bethany Road.

Site B is part of an irregularly-shaped property covering 67 acres denoted as Parcel #23091041003 in Yakima County Assessor's records (2009). The portion of interest for Site B is located just north and east of the main structure, which is bound by a grape orchard to the north and a drainage ditch to the southeast.

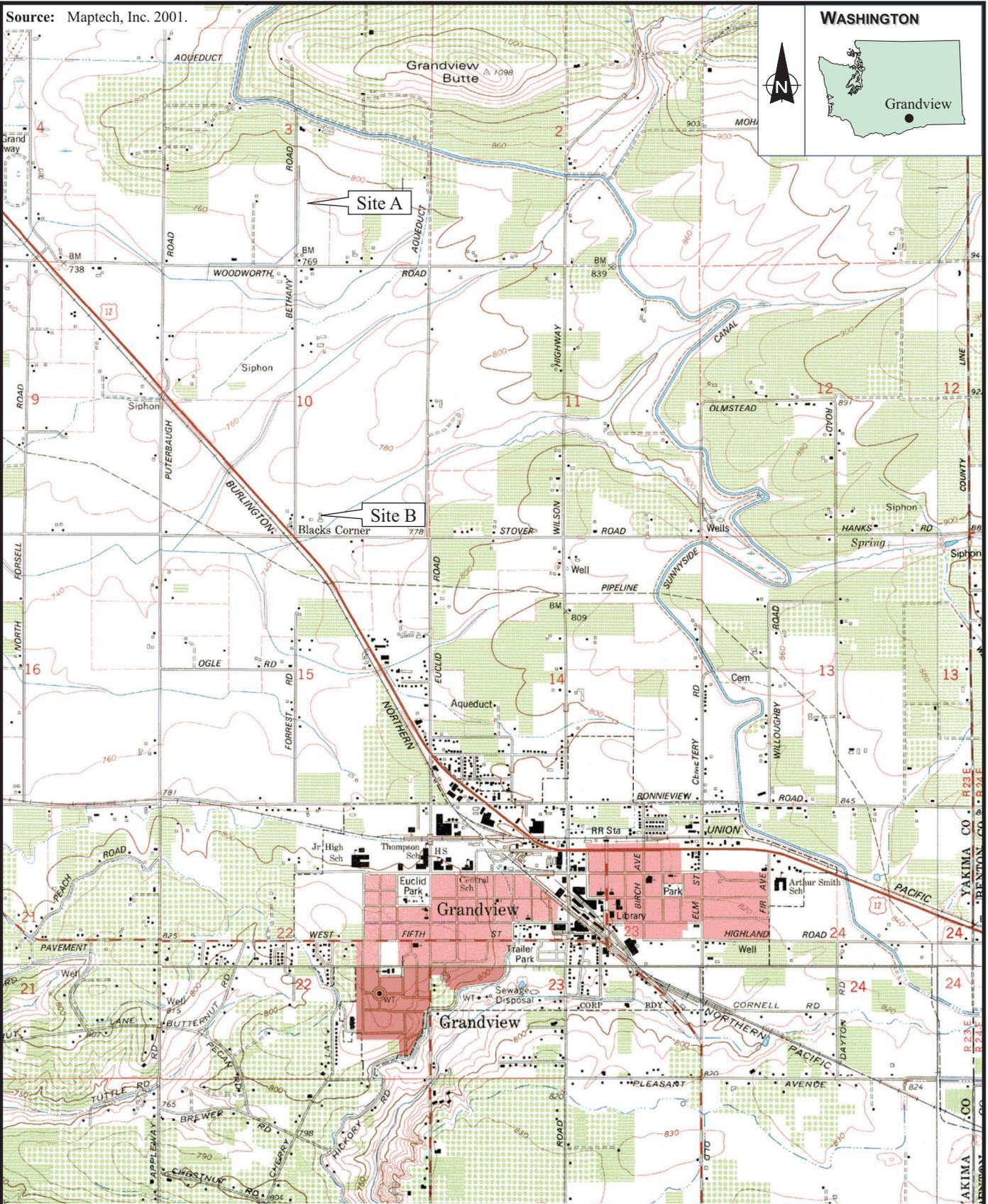
2.3 Surrounding Land Uses

The land surrounding the sites is a mixture of agriculture, residential, and industrial properties. There are 10 private residences located within one-half mile to the south of Site A, and five private residences located within one-quarter mile to the west of Site B. There is a large industrial distribution center to the north of Site B. The remaining surrounding land is used for agricultural cultivation.

2.4 Site History, Operations, and Ownership

Site A and Site B parcels of land are listed by the Yakima County Assessors office as owned by Double "H" LP. The land use is designated agricultural. George and Edith Higgins are proprietors of the Double H Farms LP, with Jim and Linda Hansen as the property managers.

Source: Maptech, Inc. 2001.



WASHINGTON



Site A

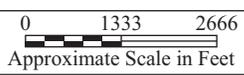
Site B



DOUBLE H PESTICIDE BURIAL
Grandview, Washington

Figure 2-1

SITE A AND SITE B LOCATION MAP

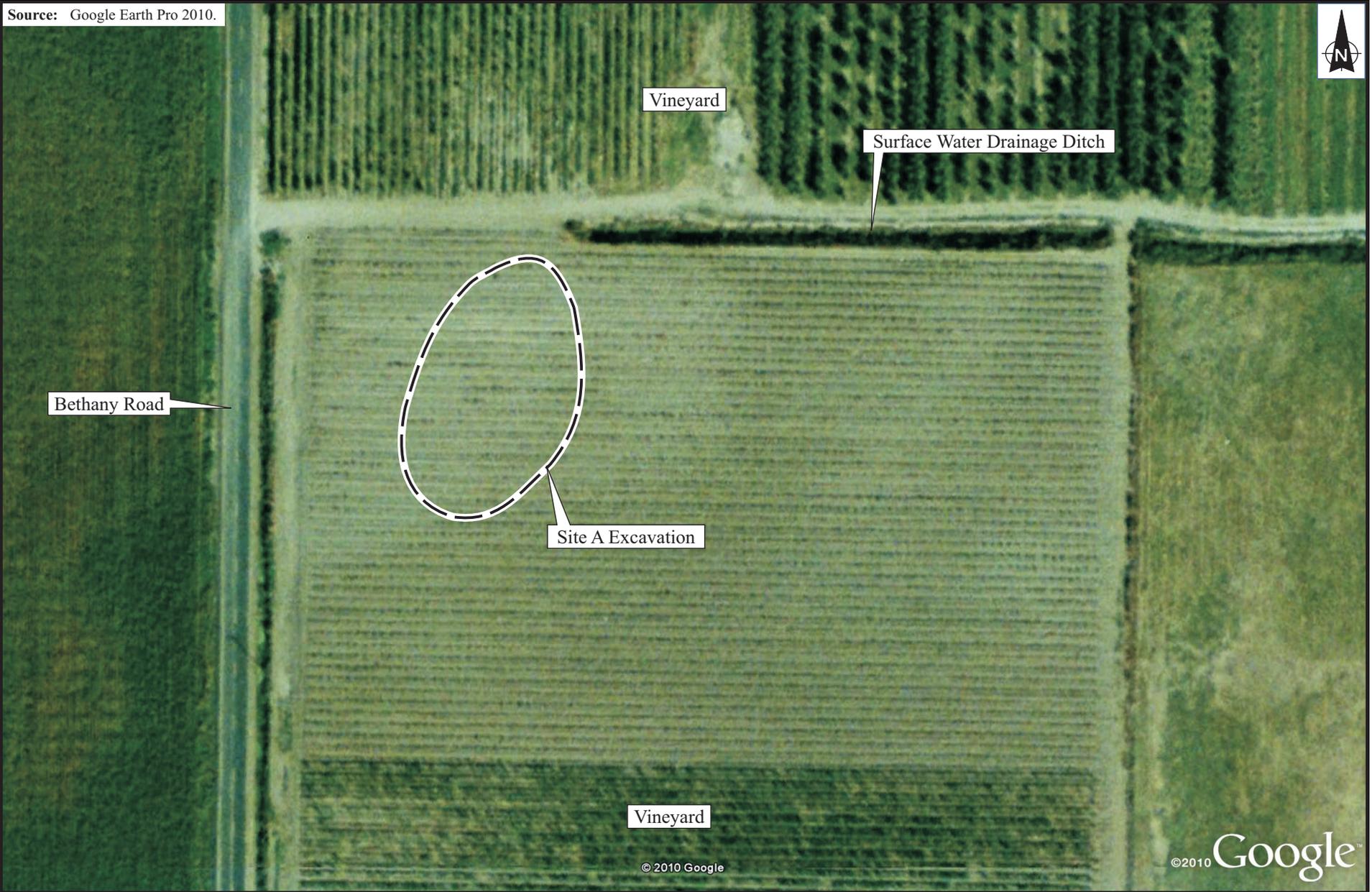


Date:
11-24-10

Drawn by:
AES

10:START-3\09030008\fig 2-1

Source: Google Earth Pro 2010.



2-3

 <p>ecology and environment, inc. International Specialists in the Environment Seattle, Washington</p>	<p>DOUBLE H PESTICIDE BURIAL SITE Grandview, Washington</p>	<p>Figure 2-2 SITE A LAYOUT</p>		
	<p>0 65 130 Approximate Scale in Feet</p>	<p>Date: 11/29/10</p>	<p>Drawn by: AES</p>	<p>10:START-3\09050008\fig 2-2</p>

Source: Google Earth Pro 2010.



2-4

 <p>ecology and environment, inc. International Specialists in the Environment Seattle, Washington</p>	<p>DOUBLE H PESTICIDE BURIAL SITE Grandview, Washington</p>		<p>Figure 2-3 SITE B LAYOUT</p>	
	<p>0 70 140 Approximate Scale in Feet</p>		<p>Date: 11/24/10</p>	<p>Drawn by: AES</p>

3 Removal Action Description

The RA began on July 1, 2009, the effective date of an Administrative Settlement Agreement and Order on Consent (AOC). The AOC called for the PRPs to further investigate Site A, initiate an investigation at Site B, install groundwater monitoring wells, and properly dispose of all hazardous waste found.

Concerns were raised by the public and the news media about possible contamination of drinking water in nearby wells. EPA offered to nearby residents to test their drinking water for the contaminants of concern that were found at Double H. This sampling activity was conducted unilaterally by EPA and prior to signing the AOC. Three residences accepted EPA's offer. The residences ranged from $\frac{1}{4}$ mile to a mile away from Site A.

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4 Project Organization, Cost, and Schedule

This section describes the participating organizations, their roles, and the project schedule during the RA in July and August 2009.

4.1 Key Organizations and Roles

The roles of the key organizations during the RA are described below.

EPA: Provided federal oversight of the cleanup with an OSC.

Ecology and Environment (E & E): Supported the OSC by observing and documenting site activities, providing technical advice, collecting environmental samples, and reviewing technical documents produced by lead consultant to the PRPs. E & E supports EPA under a 7-year Superfund Technical Assessment and Response Team (START) contract.

Washington State Department of Ecology (Ecology): Ecology's Central Regional office requested EPA assistance in the initial investigation and emergency response. Ecology then referred this site to EPA to manage the RA. However, Ecology supported EPA with technical, regulatory, news media, and community outreach advice. In addition, the geographic proximity of the Central Regional Office in Yakima made it more practicable for Ecology to provide auxiliary oversight and check on the site for EPA. Ecology had a stakeholder interest since any further work or issues after the RA was completed would be handled by Ecology under Post Removal Site Control.

Riverside Associates: Lead consultant to PRPs which planned and supervised the clean up and investigations of Sites A and B. EPA and Riverside Associates were in close communication with each other throughout the project.

Columbia Environmental Sciences, Inc. (CESI): Contracted by Riverside Associates to act as the environmental sampling experts for the clean up and investigations of Sites A and B.

Tri-Valley Construction: Contracted by Riverside Associates to be the heavy equipment operators for the investigation and clean up of Sites A and B.

Cascade Drilling: Contracted by Riverside Associates to install groundwater monitoring wells.

Washington State Department of Agriculture (WSDA): Provided technical advice regarding pesticides. WSDA has regulatory responsibility for pesticides in the state of Washington.

4.2 Project Costs

EPA costs for the Double H Pesticide Burial Site RA included E & E. The total costs for E & E through March 5, 2011, were \$109,000.

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5 Removal Activities

The activities performed during the RA included removal of buried pesticide and oil containers, automotive and household related wastes and debris, as well as contaminated soil. During major removal events, the OSC and/or E & E personnel were present for oversight. The major events related to the investigations and removal of hazardous substances at Sites A and B are included in Table 5-1.

5.1 Project Activities

The RA was performed from March 2009 through October 2010. The dates of major project activities are summarized in Table 5-1. Unless otherwise noted, all EPA oversight activities was supported by E & E:

Table 5-1 Project Schedule

Activity	Date
EPA conducts initial site investigation and emergency response with Ecology and WSDA.	March 16-27, 2009
EPA holds a media availability conference in morning at Best Western, Grandview. In the afternoon, EPA conducts initial site visit for RA with Ecology and Riverside Associates.	April 30, 2009
EPA conducts residential well sampling.	June 11-12, 2009
Riverside Associates conducts contamination delineation sampling at Site A with CESI. EPA was not present.	July 20-22, 2009
Riverside Associates conducts a geological survey at Site B with Geophysical Survey, LLC, CESI, and Tri-Valley Construction. EPA and Ecology are present.	July 30, 2009
Riverside Associates excavates and segregates hazardous materials at Sites A and B with Tri-Valley Construction and CESI. E & E and Ecology are present. EPA is not present.	August 3 – September 8, 2009
Riverside Associates installs monitoring wells at Sites A and B with Cascade Drilling and CESI. E & E is present for EPA.	September 30 - October 2, 2009
Riverside Associates samples groundwater from monitoring wells with CESI. EPA is not present.	October 10, 2009
EPA, Ecology, Riverside Associates, and CESI meet in Yakima to discuss hazardous waste profiles.	December 1, 2009
Riverside Associates segregates the pesticide containers from the oil containers with CESI. E & E and Ecology are present. EPA is not present.	March 1, 2010
Riverside Associates and CESI segregate the different pesticide containers based on label and/or container shape. EPA, Ecology, and WSDA are present.	July 6, 2010
Roll-off with soil and debris shipped to Waste Management in Arlington, Oregon for disposal. EPA not present.	September 20, 2010
Assorted containers, a tote with liquid, and six containers in overpack drums shipped to Waste Management in Arlington, Oregon for disposal. E & E and CESI are present. EPA and Riverside Associates are not present.	October 1, 2010
Roll-off with soil and debris shipped to Waste Management in Arlington, Oregon for disposal. EPA not present.	October 4, 2010

5.2 Domestic Well Water Testing

On May 15, 2009, a letter (see Section 10 and Appendix B) offering to sample well water was sent to seven property owners. This sampling was voluntary and offered as a courtesy and at no cost to a select number of residents at locations closest to Site A. The water samples were to be

analyzed for a select number of contaminants found at Site A out of concern by the public that the buried pesticides may have contaminated drinking water. The sampling effort was intended to alleviate concern with potential contaminated well water and not to prove groundwater migration of contaminants from Site A.

On June 11 and 12, 2009, well water samples were collected by EPA from three residences located near Site A. The samples were analyzed for: volatile organic compounds (VOCs), diesel and motor oil total petroleum hydrocarbons (TPH), priority pollutant metals, the organophosphorus pesticide dimethoate, the carbamate carbaryl, and glyphosate.

The analytical results indicated that none of the contaminants of concern from the Double H Pesticide Burial site were detected in the water well samples (Table 8-1). Note that arsenic was found in the groundwater at the Double H Pesticide Burial site at 45 micrograms per liter ($\mu\text{g/L}$). The presence of arsenic is thought to be due to background contamination as there were no pesticide containers on site containing arsenic. Arsenic is commonly found in groundwater throughout Washington. Nevertheless, EPA analyzed for and discovered arsenic in the three drinking wells. Arsenic was found in one of the wells to be at 15 $\mu\text{g/L}$, which is above 10 $\mu\text{g/L}$, the Safe Drinking Water Act Maximum Contaminant Level (MCL) for arsenic in drinking water.

The property owners were provided the results of the tests as well as a brochure, *Arsenic and Your Private Well*, from Washington State Department of Health.

See Section 8 for additional details about the sampling and analytical testing activities.

5.3 Removal Activities

On April 30, 2009, EPA did a walk-through of Site A with Riverside Associates to discuss ideas and approach to conducting the removal. Before demobilizing from the site after the emergency response, EPA “buttoned up” the site by covering the materials that had been removed from the ground with plastic sheeting and securing the site by installing a chain-linked fence and contracting with a security company to have a guard remain on site. All the containers were either crushed or punctured or both. A pit created during the initial investigation and emergency response still remained there but the groundwater level had dropped below the floor of the pit, so the pit was dry. During the emergency response the groundwater was high enough that the containers were submerged in the water table. Containers that had been removed were stacked near the pit. The containers were segregated into two groups, those that had contents and those that were empty, and both container groups were protected under plastic sheeting.

An AOC between EPA and the PRPs was signed with an effective date of July 1, 2009. The AOC called on the PRPs to complete the cleanup at Site A (the initial site), investigate the nearby and related Site B and clean up if needed, and investigate groundwater for potential impacts from the buried containers.

As agreed to in the AOC, Riverside Associates submitted in June 2009 the following documents to EPA for review and approval:

- Removal Action Work Plan
- Quality Assurance Project Plan
- Health & Safety Plan

EPA approved the documents on July 28, 2009, by E-mail.

Riverside Associates through CESI began delineation work at Site A using a GeoProbe the week of July 20, 2009. Because most of the pesticide containers had been found submerged in the groundwater, there was concern that contamination could have been transported by the groundwater laterally in the soil. The GeoProbe provided core soil samples at eight locations set at 5 feet distance from the edge of the pits. Two samples were collected from each core sample: the first between one to three feet and the second between four to six feet depth. To perform the delineation efficiently with limited sampling and analysis, the core sample locations were placed at a conservative distance from the known disposal locations. If the sample results indicated that those samples locations were not contaminated, then they would be used as the limits of the excavation area, with the area inside designated for excavation and off-site disposal.

CESI also collected composite soil samples from the soil and debris piles that were generated by the initial investigation conducted by EPA. The results indicated that the stockpiles of overburden soil could be used as backfill. The results also indicated that soil from the debris pile, segregated by sifting the debris, could also be used as backfill. Two small soil piles were determined to be contaminated and were segregated for off-site disposal.

Riverside Associates contracted Geophysical Survey, LLC to survey Site B with ground penetrating radar (GPR) for locating potential burial spots.

On July 30, 2009, EPA met with Riverside Associates and Geophysical Survey to go over GPR results at Site B that had been conducted earlier. During that meeting, EPA requested Riverside Associates to investigate another location at Site B. New information had been brought to the attention of EPA subsequent to the Work Plan approval of a second potential burial spot at Site B. This new site, identified as Site B2, was surveyed by Geophysical Survey the following week. The survey for both Sites B1 and B2 turned up anomalies that required excavation.

Tri-Valley Construction began excavations at Site A in August 2009. The process involved excavating using a front-end loader and segregating using a combination of hand-picking items and a shaker screen. Materials were segregated into a variety of stockpiles: soil, stained soil, trash, pesticide containers, oil containers, automobile batteries, and liquid bulking. If a container contained content of some sort, the contents were emptied into a 350-gallon bulk liquid container. The soil samples were sent for analysis to a laboratory.

Because the laboratory results showed that contaminants in the soil were either not present or below actionable levels, Riverside Associates did limit excavation to the 5-foot delineations at Site A. Soil samples taken from the walls of the pits excavated to the 5-foot offset were sent to laboratories for analysis to serve as further confirmation that contaminated soil had been removed. GPR also indicated that no material was buried beyond the delineation points.

Based on the analytical results from the stockpiled soil samples, most of the soil could then be backfilled into the excavations. The pesticide containers and oil containers that remained to be disposed of from site A were placed into a plastic-lined trailer and moved to Site B. The stained soil remained at site A and was placed upon and covered by plastic sheeting.

Site B work was investigated for improper disposal of CERCLA-related items. It was determined that Site B generally did not contain pesticide containers like Site A but instead contained mostly oil containers. Site B also contained a large amount of automobile-related debris and other trash. Automobile batteries were buried there which contain lead, a CERCLA hazardous substance.

After the excavations had been backfilled at Site A and Site B, Riverside Associates hired Cascade Drilling to install monitoring wells. Cascade Drilling began installing wells on September 31, 2009, and completed the installation October 2, 2009. Four monitoring wells were installed around Site A, and five monitoring wells were installed around Site B. One monitoring well near Site B (B5) was installed as a background well, based on its distance and apparent upgradient location. After allowing time for the wells to develop, CESI drew samples on October 10, 2009, for laboratory analysis. See Section 5.4 Monitoring Wells below for more information.

Site A can be characterized as containing a notable number of pesticide containers and pesticide-type containers missing labels and generally lacked oil containers. Site B can be characterized as containing a notable number of oil containers and generally lacked pesticide containers. While both contained trash, Site B also contained a significant amount of automobile-related trash.

The segregated debris was disposed of at the local Yakima County landfill. The automotive batteries were transported to a local battery recycler.

On December 1, 2009, EPA, E & E, Ecology, Riverside Associates, and CESI met in Yakima at Ecology's Central Washington Office to discuss the sample results and the disposal of the hazardous waste streams. It was determined that Riverside Associates needed to get a hazardous waste generator identification number. It was also decided that the oil-related containers would be segregated from the pesticide containers since they are not regulated by CERCLA.

On March 1, 2010, EPA, Ecology, E & E, Riverside Associates, and CESI met at Site B. The oil-related containers were segregated from the pesticide containers. The oil-related containers were placed inside the large storage area in the back of the main building at Site B on plastic sheeting, and the pesticide containers remained in the trailer.

On July 6, 2010, EPA, Ecology, E & E, Riverside Associates, and CESI met again at Site B. The appropriate waste codes were applied to the pesticide containers by CESI.

On September 20, 2010, one roll-off container with soil and debris was sent to the Chemical Waste Management of the Northwest, Inc. (CWMNW) hazardous waste facility in Arlington, Oregon.

On October 1, 2010, the bulked liquid and pesticide containers were sent to the CWMNW hazardous waste facility in Arlington, Oregon. The oil containers were moved from the trailer and left inside a building at Site B. Petroleum products were not covered by the AOC, due to petroleum exclusion provisions in CERCLA. However, Ecology has regulatory authority to address improper disposal of petroleum products and intended to do so at a later time. Ecology requested that EPA and Double H not dispose of oil containers until Ecology could complete their own investigation.

On October 4, 2010, one roll-off container with soil and debris was sent to the CWMNW hazardous waste facility in Arlington, Oregon.

Following these removal activities, the PRPs submitted a report to EPA that documented the removal work (Riverside Associates 2010). Following the receipt of this report, EPA prepared a completion letter dated January 10, 2011, and mailed it to the PRPs.

5.4 Monitoring Well Results

The purpose of the monitoring wells was to determine if contaminants of concern were migrating off site through the groundwater. This would be a likely scenario should a source of contamination feeding into the groundwater remain on site. Site groundwater can be quite high depending on the season; as noted earlier, the containers were originally found submerged in water. The groundwater fluctuates as at a later visit the groundwater had disappeared from the pit. All wells were drilled to a depth of 20 feet.

Site A

The main contaminants of concern at Site A were dimethoate, carbaryl, glyphosate, and aminomethylphosphonic acid (AMPA) associated with the pesticides found on site. Arsenic was a contaminant of interest because of historical association with pesticides. However, complicating the interpretation of any result would be the fact that arsenic is a background contaminant commonly found in groundwater throughout Washington.

The monitoring well waters for Site A were also analyzed for diesel, lube oil, and benzene, toluene, ethylbenzene, and xylenes (BTEX) that are associated with petroleum products.

Arsenic was the only contaminant detected at Site A. Arsenic was measured at concentrations ranging from 11 to 28 µg/L. To provide context to these values, the MCL for arsenic in drinking water is 10 µg/L. None were high enough to suspect contamination was due to anything more than background levels.

All other contaminants were non-detect.

Site B

The main contaminants of concern at Site B were diesel, lube oil, and BTEX because oil containers were found as well as oily water in the pits. Lead was of concern because of lead-acid batteries found in the pits. Other metals such as barium, cadmium, chromium, mercury,

selenium, and silver were other possible contaminants of concern for which the well waters were analyzed.

The background monitoring well near Site B found arsenic at 6.2 µg/L (MCL = 10 µg/L), barium at 120 µg/L (MCL = 2000 µg/L), and lead at 2.6 µg/L (MCL = 15 µg/L). No other contaminants (diesel, lube oil, BTEX, cadmium, chromium, mercury, or silver) were detected.

The results for the four monitoring wells at Site B did not show diesel, lube oil, or BTEX.

Arsenic was found in all four monitoring samples ranging in concentration from 12 µg/L to 77 µg/L and all above the MCL of 10 µg/L. None were high enough to suspect contamination was due to anything more than background levels.

The rest of the metals were either non-detect or below MCLs. Barium was found in all four wells at concentrations ranging from 74 µg/L to 290 µg/L (MCL = 2000 µg/L). Selenium was in three wells at similar concentrations of 6 µg/L (MCL = 50 µg/L). None of the remaining metals (lead, cadmium, chromium, mercury, or silver) were detected in the Site B monitoring wells.

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6 Post-Removal Site Controls

The site is currently being investigated by Ecology and WSDA for potential violations of state environmental regulations. In addition, the disposal of oil at Site B can be addressed under State of Washington regulations that otherwise cannot be addressed under the Federal Clean Water Act. For this reason, the oil containers found at Site B were left on site.

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7 Waste Management, Transportation, and Disposal Activities

The wastes generated from the Double H Pesticide RA included state-regulated wastes, hazardous wastes (both liquid and solid), contaminated soil and debris, and non-hazardous materials.

Table 7-1 Waste Stream Disposal

Waste Stream	Quantity	Disposal Facility/Method
State Regulated Waste (Non-RCRA Hazardous)	273 Drums/ Containers	CWMNW Arlington, Oregon
Hazardous Waste (Solids/Liquids)	6 Drums	CWMNW Arlington, Oregon
Hazardous Waste (Liquid)	1 - 350 Gallon Tote (Approx Half Full)	CWMNW Arlington, Oregon
Contaminated Soil and Debris	20 Tons	CWMNW Arlington, Oregon
Non-Hazardous Materials	6 x 10-Yard Roll-Off Containers (Estimated)	Yakima County Landfill Yakima, Washington

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8 Sampling Activities

E & E collected residential drinking water samples from three residences located within a mile from the Double H Pesticide Burial Site. The residences were located near the corner of Woodworth and Bethany Roads approximately one-quarter mile south of Site A and approximately one mile north of Site B. The sample locations are presented in Figure 8-1.

A summary of the samples and analyses are provided below, with additional details presented in Table 8-1.

- Water samples collected by E & E were analyzed for the presence of dimethoate, glyphosate, carbaryl, priority pollutant metals, VOCs, and diesel-range organics in accordance with EPA methods 531.1, 547, 8141, 200.6, 200.7, 245.1, 524.2, and Ecology's NWTPH–Dx method.

All E & E samples were collected and analyzed in accordance with the E & E site-specific sampling plans (SSSPs) for the listed analytes (E & E 2009a and 2009b). Off-site analyses were performed by Test America, Inc., of Tacoma, Washington; Savannah, Georgia; and Arvada, Colorado, as a subcontractor to E & E. Analytical data reports and QA memos are presented in Appendix A.

The results of the water sample analyses are presented in Table 8-1. The residential water samples collected by E & E did not contain any contaminants of concern related to the investigations at Site A and Site B. Arsenic was detected above Washington State Model Toxic Control Act Method B and Method C cleanup levels in all four samples and above the MCL in one sample. However, arsenic may be naturally elevated in the area (i.e., a common background contaminant), and it is not clear that the presence of arsenic in site groundwater was caused by site activities.

CESI collected soil, water, and product samples from Site A and Site B excavations. The results from the samples collected by CESI are located in the Removal Completion Report completed by Riverside Associates (2010). The samples were collected to determine the extent of contamination and to profile the solid and liquid wastes that were disposed at the hazardous waste facility. Based on those results, Riverside Associates concluded that the Site A and Site B excavations were completed and the wastes were disposed of properly.

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Table 8-1

Summary of Domestic Well Sample Results
Double H Pesticide Burial Site
Grandview, Washington

Sample ID:	9060801	9060802	9060803	9060805	Screening Levels			
Sample Location:	DW01GW01	DW02GW01	DW03GW01	DW11GW01	MTCA Method B Unrestricted Use Groundwater (µg/L) ⁽¹⁾	MTCA Method C Conditional Use Groundwater (µg/L) ⁽¹⁾	EPA Drinking Water MCL (µg/L) ⁽³⁾	EPA RSL Tap Water (µg/L) ⁽²⁾
VOCs (mg/L)								
1,2,4-Trimethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	400	880	n.a.	15
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	3.4	34	n.a.	1.8
Xylene Totals	0.5 U	0.5 U	0.5 U	0.5 U	1,600	3,500	10,000	200
Methylene Chloride	0.5 U	0.5 U	0.5 U	0.5 U	5,800	58,000	5.0	4.8
1,2-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	720	1,600	600	370
1,4-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	1.8	18	75	0.43
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.029	0.29	2.0	0.016
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	400	880	7.0	340
(trans) 1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.48	4.8	100	110
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.48	4.8	5.0	0.15
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	7,200	16,000	200	9,100
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.34	3.4	5.0	0.20
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.64	6.4	5.0	0.39
Trichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.49	5.0	5.0	1.7
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.77	7.7	5.0	0.24
Tetrachloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.081	0.81	5.0	0.11
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	160	350	100	91
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.80	8.0	5.0	0.41
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	640	1,400	1,000	2,300
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	800	1,800	700	1.5
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	1.5	15	100	1,600
Pesticides (µg/L)								
Glyphosate	25 U	25 U	25 U	25 U	n.a.	n.a.	700	3700
Dimethoate	0.45 U	0.45 U	0.45 U	0.45 U	3.2	7	n.a.	7.3
Carbaryl	2.50 U	2.50 U	2.50 U	2.50 U	1600	3,500	n.a.	3,700
Priority Pollutant Metals (µg/L)								
Beryllium	5 U	5 U	5 U	5 U	32	70	4	73
Chromium ⁽⁴⁾	25 U	5.4 J	25 U	25 U	24,000	53,000	100	55,000
Copper	20 UJ	20 UJ	20 UJ	20 UJ	590	1,300	1,300	1,500
Nickel	20 U	2.7 J	20 U	20 U	320	700	100	730
Silver	20 U	20 U	20 U	20 U	80	180	n.a.	180
Zinc	40 U	14 J	1.7 J	40 U	4,800	11,000	n.a.	11,000
Arsenic	4	15	7.4	4	0.058	0.58	10	0.045
Lead	2 U	2.6	2 U	2 U	n.a.	n.a.	15	n.a.
Antimony	2 U	0.57 J	2 U	2 U	6.4	14	6	15
Cadmium	2 U	2 U	2 U	2 U	8	18	5	18
Selenium	0.65 J	1.2 J	0.94 J	0.75 J	80	180	50	180
Thallium	4 UJ	4 UJ	4 UJ	4 UJ	1.1	2.5	2	2.4
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	4.8	11	2	11
NWTPH-Dx (µg/L)								
					Washington MTCA Method A (1)	EPA RSL Residential Soil ⁽²⁾	EPA RSL Industrial Soil ⁽²⁾	
Diesel-Range Organics	120 U	120 U	120 U	120 U	500 µg/liter	n.a.	n.a.	
Oil-Range Organics	240 U	240 U	240 U	240 U	500 µg/liter	n.a.	n.a.	

Notes: Bold type indicates that the compound exceeds the Washington MTCA Method B Residential Clean Up Level.
 Italic type indicates that the compound exceeds the Washington MTCA Method C Restricted/Commercial Clean Up Level.
 Underline type indicates that the compound exceeds the EPA Residential RSLs or EPA RSL for tap water.
 Highlighted type indicates that the compound exceeds the EPA Industrial RSLs or EPA MCL for drinking water.
 (1) Washington State MTCA Cleanup Levels (2007).
 (2) EPA Regional Screening Levels (EPA 2008).
 (3) EPA Drinking Water Maximum Contaminant Level.

Key:
 EPA = Environmental Protection Agency
 J = estimated value
 µg/L = microgram per liter
 VOC = volatile organic compound
 U = not detected (at the indicated reporting limit)
 UJ = not detected (estimated reporting limit)
 RSL = Regional Screening Level
 MTCA = Model Toxics Control Act

Source: Google Earth Pro 2010.



8-4



DOUBLE H PESTICIDE BURIAL SITE
Grandview, Washington



Figure 8-1
WATER SAMPLE LOCATION MAP

Date:
11/29/10

Drawn by:
AES

10:START-3\09050008\fig 8-1

9 Quality Assurance/Quality Control

QA/ QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of sampling equipment, glassware, and reagents. Specific QC requirements for laboratory analyses are incorporated in *Contract Laboratory Program Statement of Work for Inorganic Analyses* (EPA 2007a) and *Contract Laboratory Program Statement of Work for Organics Analyses* (EPA 2007b). These QC requirements or equivalent requirements found in the analytical methods were followed for analytical work done for the project. This section describes the QA/QC measures taken for the samples collected by EPA and evaluates the usability of data presented in this report. Results for samples collected on behalf of the PRPs are not included in this QA/QC review.

EPA samples were collected following the guidance of the SSSPs (E & E 2009a and 2009b) and the Sample Plan Alteration Forms for field activities. NWTPH-Dx, VOCs (EPA 524.2), carbamate pesticides (EPA 531.1), priority pollutant metals (EPA 2007), and the organophosphorus pesticide dimethoate (EPA SW-846 method 8141a) analyses were performed at Test America, Inc. Seattle, Washington; Savannah, Georgia; and Arvada, Colorado.

Data from the commercial laboratories were reviewed and validated by a E & E chemist. Data qualifiers were applied as necessary according to the following guidance:

- EPA (1990) Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures;
- EPA (2004) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; and
- EPA (2008) USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.

In the absence of other QC guidance, method-specific and/or Standard Operating Procedure - specific QC limits were also used to apply qualifiers to the data.

9.1 Satisfaction of Data Quality Objectives

The following EPA (2000) guidance document was used to establish data quality objectives (DQOs) for this project:

- Guidance for the Data Quality Objectives Process (EPA QA/G-4), EPA/600/R-96/055.

The OSC decided that definitive data without error and bias determination would be used for the sampling and analyses conducted during the field activities. The data quality achieved during the field work produced sufficient data that met the data quality objectives (DQOs) stated in the SSSPs (E & E 2009a and 2009b). A detailed discussion of accomplished objectives is presented in the following sections.

9.2 Quality Assurance/Quality Control Samples

A QA sample for organic analyses (trip blank) was collected. A trip blank sample was required as four VOC water samples were submitted. Rinsate blank samples were not required as all samples were collected with dedicated sampling equipment. QC samples for organic and inorganic analyses included matrix spike (MS)/MS duplicate (MSD) and/or blank spike (BS)/BS duplicate (BSD) samples for organic analyses at a rate of one MS/MSD and/or BS/BSD per 20 samples per matrix and MS/duplicate samples for inorganic analyses at a rate of one MS/duplicate per 20 samples per matrix.

9.3 Project-Specific Data Quality Objectives

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' abilities to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratories and the field team were able to meet DQOs for the project.

9.3.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate, MS/MSD, or BS/BSD samples measure the precision of the analytical method. The RPD values were reviewed for all commercial laboratory samples. A maximum of seven analytes were qualified as estimated quantities (J or UJ) based on laboratory duplicate QC outliers. The project DQO for precision of 90 percent (%) was met.

9.3.2 Accuracy

Accuracy indicates the conformity of the measurements to fact. Laboratory accuracy is defined as the surrogate spike percent recovery (%R) or the spike %Rs for all laboratory analyses. The surrogate %R values were reviewed for all appropriate sample analyses. A total of seven sample results (approximately 1.1% of the data) were qualified as estimated quantities (J or UJ) based on surrogate QC outliers. All surrogate results were within QC limits.

The MS %R values were reviewed for all MS/MSD and BS/BSD analyses. A total of 12 sample results (approximately 1.9% of the data) were qualified as estimated quantities (J or UJ) based on spike QC outliers. The project DQO for accuracy of 90% was met.

9.3.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by the total possible data). All laboratory data were reviewed for data validation and usability. A total of six sample results (approximately 1.0% of the data) were rejected; therefore, the project DQO for completeness of 90% was met. Additionally, one air filter sample was received in damaged condition at the laboratory and was not analyzed.

9.3.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to

account accurately for site variations and sample matrices. The DQO for representativeness was met.

9.3.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQO for comparability was met.

9.4 Laboratory Quality Assurance/Quality Control Parameters

The laboratory data were also reviewed for holding times/temperatures, laboratory blank samples, field blank samples, serial dilution analyses, interference check sample analyses, and internal standards. These QA/QC parameters are summarized below. In general, the laboratory and field QA/QC parameters were acceptable.

9.4.1 Holding Times/Temperatures

All holding times were met. All samples were maintained within QC temperature limits.

9.4.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. No potential contaminants of concern were detected in the laboratory blanks.

9.4.3 Field Blanks

Field blanks were collected at the appropriate frequency.

9.4.4 Serial Dilution

Serial dilution analyses were performed at a frequency of one per 20 samples per matrix, meeting QC frequency criteria. All serial dilution results were within QC limits.

9.4.5 Interference Check Samples

Interference check sample analyses were performed at a frequency of one per 20 samples per matrix, meeting QC frequency criteria. All interference check sample results were within QC limits.

9.4.6 Internal Standards

Internal standards were added to analyses at the appropriate frequency. A total of four sample results (approximately 1.0% of the data) were qualified as estimated quantities (J or UJ) based on spike internal standard outliers.

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10 Community Relations

The OSC held a media availability conference on April 30, 2009, at the Best Western Hotel in Sunnyvale, Washington. A reporter from the Yakima Herald Republic and the Daily Sun News attended. The OSC granted interviews to TV reporters for KAPP News and KNDO News on other occasions.

EPA offered well water testing to nearby residents. See discussion above. An example of the letter that EPA sent to the residents with this offer is included in Appendix B.

EPA designated a Community Involvement Coordinator for the site. The OSC established a website with information about the site and the ongoing investigation at:
https://www.epaosc.org/site/site_profile.aspx?site_id=4851.

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11 Health and Safety

The OSC has overall responsibility for worker health and safety at a removal site. Under the NCP at 40 CFR 300.135(l), “The OSC/RPM is responsible for addressing worker health and safety concerns at a response scene, in accordance with section 300.150.” Section 300.150(a) states that, “Response actions under the NCP will comply with the provisions for response action worker safety and health in 29 CFR 1910.120.” 29 CFR 1910.120 is the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations promulgated by the Occupational Safety and Health Administration.

This overall responsibility the OSC has for worker health and safety under the NCP does not preclude contractors and other agencies working at the site from meeting their responsibilities under HAZWOPER for their employees’ health and safety. As such, Riverside Associates developed a health and safety plan (HASP) for the site which the OSC reviewed. EPA oversight of removal operations included the implementation of the health and safety procedures for the site.

Before initiating removal work, the OSC and Riverside Associates conducted a general site safety meeting to establish the health and safety procedures for the site. A brief safety meeting was conducted at the beginning of each day of site work. During the daily safety meetings, the on-site crew discussed the planned activities for that day and any task-specific health and safety issues. The daily safety meeting also included a review of any health and safety issue from the previous day.

The physical hazards at the site included uneven terrain, debris piles, heavy equipment (e.g., front-end loaders, excavators, and water trucks), open excavations, and wildlife (rodents and insects). The minimum level of personal protective equipment (PPE) for the site was Level D, including safety glasses and steel-toed safety shoes. For work around heavy equipment, a hard hat also was required.

The primary chemical hazards associated with the site were pesticides/herbicides. Level D PPE was modified to include splash protection and an air purifying respiratory when container contents were being bulked.

No accidents or near-misses occurred during the removal.

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12 Conclusions

The PRPs, through Riverside Associates, have satisfactorily investigated and removed both hazardous and non-hazardous waste at Site A and Site B in accordance with the AOC. The EPA does not know how much hazardous materials were released to the environment. The PRP recovered 273 containers some of which had pesticide labels and many of similar size and shape which did not have labels and were presumed to have contained pesticides. Almost all the containers had been crushed or punctured.

Motor oil containers were also recovered and were left at Site B for further investigation by Ecology.

Environmental samples were taken and analyzed to help ensure all contaminated media had been removed. Soil samples were taken at walls of pits and groundwater monitor wells beyond the burial sites allowed for sampling of groundwater. Laboratory analysis of the samples show that clean soil remained and contamination was not migrating off site.

The stained soil which was treated as hazardous waste, the pesticide containers, six containers in overpacks, and a tote with recovered liquid were all sent to a hazardous waste land fill in Arlington, Oregon for disposal.

Non-hazardous debris was sent to a county sanitary landfill.

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13 References

- Ecology and Environment, March 2, 2011, Double H Pesticide Burial Response Trip Report, prepared for the United States Environmental Protection Agency, Seattle, Washington, under Contract No. EP-S7-06-02, Technical Direction Document (TDD) No. 09-03-0008.
- Ecology and Environment, March 25, 2009a, Site-Specific Sampling Plan for Pesticides/Herbicides and Other Analyses, prepared for the United States Environmental Protection Agency, Seattle, Washington, under Contract No. EP-S7-06-02, TDD No. 09-05-0008.
- Ecology and Environment, June 2, 2009b, Site-Specific Sampling Plan for Domestic Well Sampling Event, prepared for the United States Environmental Protection Agency, Seattle, Washington, under Contract No. EP-S7-06-02, TDD No. 09-03-0008
- Google Earth 2009 Image Date August 31, 2005
- Riverside Associates, October 2010, Removal Completion Report, Double H Farms, Grandview, Washington.
- United States Environmental Protection Agency (EPA), 2008, USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.
- _____, 2007a, Contract Laboratory Program Statement of Work for Inorganic Analyses.
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- _____, 2004, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.
- _____, 2000, Guidance for the Data Quality Objectives Process (EPA QA/G-4), EPA/600/R-96/055.
- _____, 1990, Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures.
- Yakima County, 2009, tax assessor's records,
<http://yes.co.yakima.wa.us/assessor/Default.aspx?AspxAutoDetectCookieSupport=1>.

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Appendix A EPA Analytical Results

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MEMORANDUM

DATE: July 6, 2009

TO: Eric Nuchims, Project Manager, E & E, Seattle, Washington

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Double H Pesticide Burial Site, Yakima, Washington**

REF: TDD: 09-05-0008 PAN: 002233.0461.01RA

The data quality assurance review of four water samples collected from the Double H Pesticide Burial site located near Yakima, Washington, has been completed. Dimethoate analyses (EPA Method 8141) were performed by TestAmerica Denver, Arvada, Colorado.

The samples were numbered: 09060801 09060802 09060803 09060804

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at 4°C ($\pm 2^{\circ}\text{C}$). The samples were collected on June 11, 2009, extracted on June 17, 2009, and were analyzed by June 18, 2009, therefore meeting QC criteria of less than 7 days between collection and water sample extraction and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was $\leq 0.3\%$ for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration correlation coefficients were within QC limits. All continuing calibration % differences (% D) were less than 15% and were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and for each concentration level, or every 20 samples, whichever is greater, and for each analytical system. No target analytes were detected in any blanks.

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

All recoveries of the SMCs were within the established control limits.

8. Blank and Matrix Spikes: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits.

9. Duplicates: Acceptable.

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits.

10. Compound Identification: Acceptable.

All compound identifications were acceptable.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The overall usefulness of the data is based on the criteria outlined in the site-specific sampling plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

TestAmerica Tacoma

Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9F160272
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 8141A
Unit: ug/L
QC Batch ID: 9168137
Sample Aliquot: 1030 mL
Dilution Factor: 1

Client Sample ID: 09060805-DW11GW01 (580-1397)
Lab Sample ID: D9F160272-001
Lab WorkOrder: LE2LNIAA
Date/Time Collected: 06/12/09 09:15
Date/Time Received: 06/16/09 09:15
Date Leached:
Date/Time Extracted: 06/17/09 10:00
Date/Time Analyzed: 06/18/09 13:31
Instrument ID: D2

CAS No.	Analyte	Conc.	MDL	RL	Q
60-51-5	Dimethoate	0.45	0.45	1.5	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
115-86-6	Triphenyl phosphate	71	60	154	
24934-91-6	Chlormefos	54	49	171	

MW
760g

TestAmerica Tacoma

Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9F160272
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 8141A
Unit: ug/L
QC Batch ID: 9168137
Sample Aliquot: 1043 mL
Dilution Factor: 1

Client Sample ID: 09060803-DW03GW01 (580-1397)
Lab Sample ID: D9F160272-002
Lab WorkOrder: LE2L21AA
Date/Time Collected: 06/11/09 15:50
Date/Time Received: 06/16/09 09:15
Date Leached:
Date/Time Extracted: 06/17/09 10:00
Date/Time Analyzed: 06/18/09 13:59
Instrument ID: D2

CAS No.	Analyte	Conc.	MDL	RL	Q
60-51-5	Dimethoate	0.45	0.45	1.5	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
115-86-6	Triphenyl phosphate	78	60	154	
24934-91-6	Chlormefos	62	49	171	

MW
7609

TestAmerica Tacoma

Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9F160272
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 8141A
Unit: ug/L
QC Batch ID: 9168137
Sample Aliquot: 1044 mL
Dilution Factor: 1

Client Sample ID: 09060802-DW02GW01 (580-1397)
Lab Sample ID: D9F160272-003
Lab WorkOrder: LE2L61AA
Date/Time Collected: 06/11/09 15:36
Date/Time Received: 06/16/09 09:15
Date Leached:
Date/Time Extracted: 06/17/09 10:00
Date/Time Analyzed: 06/18/09 15:21
Instrument ID: D2

CAS No.	Analyte	Conc.	MDL	RL	Q
60-51-5	Dimethoate	0.45	0.45	1.5	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
115-86-6	Triphenyl phosphate	76	60	154	
24934-91-6	Chlormefos	57	49	171	

Handwritten signature and initials:
 MW
 F609

TestAmerica Tacoma

Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9F160272
Matrix: WATER
% Moisture: N/A
Basis: Wet
Analysis Method: 8141A
Unit: ug/L
QC Batch ID: 9168137
Sample Aliquot: 1054 mL
Dilution Factor: 1

Client Sample ID: 09060801-DW01GW01 (580-1397)
Lab Sample ID: D9F160272-004
Lab WorkOrder: LE2MA1AA
Date/Time Collected: 06/11/09 14:36
Date/Time Received: 06/16/09 09:15
Date Leached:
Date/Time Extracted: 06/17/09 10:00
Date/Time Analyzed: 06/18/09 15:49
Instrument ID: D2

CAS No.	Analyte	Conc.	MDL	RL	Q
60-51-5	Dimethoate	0.45	0.45	1.5	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
115-86-6	Triphenyl phosphate	73	60	154	
24934-91-6	Chlormefos	53	49	171	

MW
7-609



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MEMORANDUM

DATE: July 6, 2009

TO: Eric Nuchims, Project Manager, E & E, Seattle, Washington

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Double H Pesticide Burial Site, Yakima, Washington**

REF: TDD: 09-05-0008 PAN: 002233.0461.01RA

The data quality assurance review of four water samples collected from the Double H Pesticide Burial site located near Yakima, Washington, has been completed. Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) were performed by TestAmerica Tacoma, Tacoma, Washington.

The samples were numbered: 09060801 09060802 09060803 09060804

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were collected on June 11, 2009, extracted on June 23, 2009, and analyzed on June 24, 2009, therefore meeting QC criteria of less than 14 days between collection and extraction for preserved water samples, and less than 40 days between extraction and analysis.

2. Initial Calibration: Acceptable.

Calculations were verified as correct. All relative percent differences (RPDs) were less than or equal to the laboratory control limits.

3. Continuing Calibration: Acceptable.

Calculations were verified as correct. All percent differences (%Ds) were \leq the laboratory control limits of 15%.

4. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Satisfactory.

A method blank was analyzed for each extraction batch for each matrix and analysis system. Motor oil-range TPHs were detected at a concentration of 0.1 milligrams per liter in the method blank. Associated positive sample results less than five times the method blank results were qualified as not detected (U).

6. System Monitoring Compounds (SMC): Acceptable.

All recoveries of the SMCs were greater than 10% and within QC criteria.

7. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

8. Matrix and Blank Spikes: Acceptable.

Matrix and blank spike results were within QC limits.

9. Duplicates: Acceptable.

Duplicate results were acceptable.

10. Quantitation and Quantitation Limits: Acceptable.

Sample concentrations were correctly calculated.

11. Laboratory Contact: Not Required.

No laboratory contact was required.

12. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA/540/G-90/004) and the analytical method. Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060805 - DW11GW01

Lab Sample ID: 580-13976-1
Client Matrix: Water

Date Sampled: 06/12/2009 0915
Date Received: 06/12/2009 1630

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Method: NWTPH-Dx
Preparation: 3510C
Dilution: 1.0
Date Analyzed: 06/24/2009 0449
Date Prepared: 06/23/2009 1115

Analysis Batch: 580-45277
Prep Batch: 580-45252

Instrument ID: TAC015
Lab File ID: PL22018.D
Initial Weight/Volume: 1032 mL
Final Weight/Volume: 5 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
#2 Diesel (C10-C24)	ND		0.071	0.12 U
Motor Oil (>C24-C36)	0.12	JFW	0.047	0.24 U
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	113		50 - 150	

MW
7609

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060803 - DW03GW01

Lab Sample ID: 580-13976-2

Client Matrix: Water

Date Sampled: 06/11/2009 1550

Date Received: 06/12/2009 1630

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Method: NWTPH-Dx
Preparation: 3510C
Dilution: 1.0
Date Analyzed: 06/24/2009 0509
Date Prepared: 06/23/2009 1115

Analysis Batch: 580-45277
Prep Batch: 580-45252

Instrument ID: TAC015
Lab File ID: PL22019.D
Initial Weight/Volume: 1029 mL
Final Weight/Volume: 5 mL
Injection Volume: 1 µL
Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
#2 Diesel (C10-C24)	ND		0.071	0.12 U
Motor Oil (>C24-C36)	0.14	J Am	0.047	0.24 U
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	113		50 - 150	

MW
7609

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060802 - DW02GW01

Lab Sample ID: 580-13976-3

Client Matrix: Water

Date Sampled: 06/11/2009 1536

Date Received: 06/12/2009 1630

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Method: NWTPH-Dx

Preparation: 3510C

Dilution: 1.0

Date Analyzed: 06/24/2009 0608

Date Prepared: 06/23/2009 1115

Analysis Batch: 580-45277

Prep Batch: 580-45252

Instrument ID: TAC015

Lab File ID: PL22022.D

Initial Weight/Volume: 1017 mL

Final Weight/Volume: 5 mL

Injection Volume: 1 uL

Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
#2 Diesel (C10-C24)	ND		0.072	0.120
Motor Oil (>C24-C36)	0.14	J-B/W	0.047	0.250
Surrogate	%Rec			Acceptance Limits
o-Terphenyl	106			50 - 150

MW
7609

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060801 - DW01GW01

Lab Sample ID: 580-13976-4
Client Matrix: Water

Date Sampled: 06/11/2009 1436
Date Received: 06/12/2009 1630

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Method: NWTPH-Dx Analysis Batch: 580-45277 Instrument ID: TAC015
Preparation: 3510C Prep Batch: 580-45252 Lab File ID: PL22023.D
Dilution: 1.0 Initial Weight/Volume: 1053 mL
Date Analyzed: 06/24/2009 0628 Final Weight/Volume: 5 mL
Date Prepared: 06/23/2009 1115 Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
#2 Diesel (C10-C24)	ND		0.069	0.12 U
Motor Oil (>C24-C36)	0.068	<i>JLW</i>	0.046	0.24 U
Surrogate	%Rec		Acceptance Limits	
o-Terphenyl	114		50 - 150	

MW
7609



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MEMORANDUM

DATE: July 6, 2009

TO: Eric Nuchims, Project Manager, E & E, Seattle, Washington

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Double H Pesticide Burial Site, Yakima, Washington**

REF: TDD: 09-05-0008 PAN: 002233.0461.01RA

The data quality assurance review of four water samples collected from the Double H Pesticide Burial site located near Yakima, Washington, has been completed. Carbaryl and Glyphosate analyses (EPA Methods 531.1 and 547) were performed by TestAmerica Savannah, Savannah, Georgia.

The samples were numbered: 09060801 09060802 09060803 09060804

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained within the QC limits of 4°C ($\pm 2^{\circ}\text{C}$). The samples were collected on June 11, 2009, and were analyzed by June 23, 2009, therefore meeting QC criteria of less than 14 days between collection and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was $\leq 0.3\%$ for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial and continuing calibration results were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

A method blank was prepared at the required frequency of one per 20 samples and for each analytical system. No target analytes were detected in any blanks.

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. Blank and Matrix Spikes: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits.

8. Duplicates: Acceptable.

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits.

9. Compound Identification: Acceptable.

All compound identification results were within QC limits.

10. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

11. Laboratory Contact

No laboratory contact was required.

12. Overall Assessment

The overall usefulness of the data is based on the criteria outlined in the site-specific sampling plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060805 - DW11GW01

Lab Sample ID: 580-13976-1

Date Sampled: 06/12/2009 0915

Client Matrix: Water

Date Received: 06/12/2009 1630

531.1 Carbamate Pesticides (HPLC)

Method: 531.1
Preparation: N/A
Dilution: 1.0
Date Analyzed: 06/23/2009 0019
Date Prepared: N/A

Analysis Batch: 680-141119

Instrument ID: HPLC - N
Lab File ID: 1N062217.D
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL
Injection Volume: 4 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Carbaryl	ND		0.31	2.5U

MW
7/6/09

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060803 - DW03GW01

Lab Sample ID: 580-13976-2

Client Matrix: Water

Date Sampled: 06/11/2009 1550

Date Received: 06/12/2009 1630

531.1 Carbamate Pesticides (HPLC)

Method: 531.1

Analysis Batch: 680-141119

Instrument ID: HPLC - N

Preparation: N/A

Lab File ID: 1N062218.D

Dilution: 1.0

Initial Weight/Volume: 1.0 mL

Date Analyzed: 06/23/2009 0044

Final Weight/Volume: 1.0 mL

Date Prepared: N/A

Injection Volume: 4 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Carbaryl	ND		0.31	2.5 U

MW
7609

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060802 - DW02GW01

Lab Sample ID: 580-13976-3

Date Sampled: 06/11/2009 1536

Client Matrix: Water

Date Received: 06/12/2009 1630

531.1 Carbamate Pesticides (HPLC)

Method: 531.1
Preparation: N/A
Dilution: 1.0
Date Analyzed: 06/23/2009 0201
Date Prepared: N/A

Analysis Batch: 680-141119

Instrument ID: HPLC - N
Lab File ID: 1N062221.D
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL
Injection Volume: 4 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Carbaryl	ND		0.31	2.5 U

MW
7-609

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060801 - DW01GW01

Lab Sample ID: 580-13976-4

Client Matrix: Water

Date Sampled: 06/11/2009 1436

Date Received: 06/12/2009 1630

531.1 Carbamate Pesticides (HPLC)

Method: 531.1
Preparation: N/A
Dilution: 1.0
Date Analyzed: 06/23/2009 0226
Date Prepared: N/A

Analysis Batch: 680-141119

Instrument ID: HPLC - N
Lab File ID: 1N062222.D
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL
Injection Volume: 4 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Carbaryl	ND		0.31	2.5

MW
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Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060805 - DW11GW01

Lab Sample ID: 580-13976-1
Client Matrix: Water

Date Sampled: 06/12/2009 0915
Date Received: 06/12/2009 1630

547 Glyphosate (DAI HPLC)

Method: 547
Preparation: N/A
Dilution: 1.0
Date Analyzed: 06/19/2009 2031
Date Prepared: N/A

Analysis Batch: 680-141003

Instrument ID: HPLC - K
Lab File ID: 2K061919.D
Initial Weight/Volume:
Final Weight/Volume: 1 mL
Injection Volume: 100 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Glyphosate	ND		2.5	25 U

MW
7-600

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060803 - DW03GW01

Lab Sample ID: 580-13976-2

Date Sampled: 06/11/2009 1550

Client Matrix: Water

Date Received: 06/12/2009 1630

547 Glyphosate (DAI HPLC)

Method: 547

Analysis Batch: 680-141003

Instrument ID: HPLC - K

Preparation: N/A

Lab File ID: 2K061923.D

Dilution: 1.0

Initial Weight/Volume:

Date Analyzed: 06/19/2009 2144

Final Weight/Volume: 1 mL

Date Prepared: N/A

Injection Volume: 100 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Glyphosate	ND		2.5	25 U

MV
7/6/09

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060802 - DW02GW01

Lab Sample ID: 580-13976-3

Date Sampled: 06/11/2009 1536

Client Matrix: Water

Date Received: 06/12/2009 1630

547 Glyphosate (DAI HPLC)

Method: 547
Preparation: N/A
Dilution: 1.0
Date Analyzed: 06/19/2009 2126
Date Prepared: N/A

Analysis Batch: 680-141003

Instrument ID: HPLC - K
Lab File ID: 2K061922.D
Initial Weight/Volume:
Final Weight/Volume: 1 mL
Injection Volume: 100 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Glyphosate	ND		2.5	25 U

MW
7600

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060801 - DW01GW01

Lab Sample ID: 580-13976-4

Client Matrix: Water

Date Sampled: 06/11/2009 1436

Date Received: 06/12/2009 1630

547 Glyphosate (DAI HPLC)

Method: 547
Preparation: N/A
Dilution: 1.0
Date Analyzed: 06/19/2009 2049
Date Prepared: N/A

Analysis Batch: 680-141003

Instrument ID: HPLC - K
Lab File ID: 2K061920.D
Initial Weight/Volume:
Final Weight/Volume: 1 mL
Injection Volume: 100 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Glyphosate	ND		2.5	25

*MW
7609*



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MEMORANDUM

DATE: July 6, 2009

TO: Eric Nuchims, Project Manager, E & E, Seattle, Washington

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Double H Pesticide Burial Site, Yakima, Washington**

REF: TDD: 09-05-0008 PAN: 002233.0461.01RA

The data quality assurance review of five water samples collected from the Double H Pesticide Burial site located near Yakima, Washington, has been completed. Volatile Organic Compound (VOC) analyses (EPA Method 524.2) were performed by TestAmerica Savannah, Savannah, Georgia.

The samples were numbered:

09060801 09060802 09060803 09060804 09060805

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were collected on June 11, 2009, and were analyzed on June 18, 2009, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All water Relative Standard Deviations (RSDs) were less than the QC limits of 30%.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25%.

5. **Blanks: Acceptable.**

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike(BS)/BS Duplicate Analysis: Acceptable.

MS, MSD, BS, and BSD analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits.

8. Duplicate Analysis: Acceptable.

Laboratory spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits.

9. Internal Standards: Acceptable.

All internal standards were within ± 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the site-specific sampling plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.

R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060805 - DW11GW01

Lab Sample ID: 580-13976-1

Date Sampled: 06/12/2009 0915

Client Matrix: Water

Date Received: 06/12/2009 1630

524.2 Volatile Organic Compounds (GC/MS)

Method:	524.2	Analysis Batch: 680-140824	Instrument ID: GC/MS Volatiles - U
Preparation:	N/A		Lab File ID: u0393.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	06/18/2009 1256		Final Weight/Volume: 5 mL
Date Prepared:	N/A		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2,4-Trichlorobenzene	ND		0.18	0.50
cis-1,2-Dichloroethene	ND		0.37	0.50
Xylenes, Total	ND		0.27	0.50
Methylene Chloride	ND		0.36	0.50
1,2-Dichlorobenzene	ND		0.17	0.50
1,4-Dichlorobenzene	ND		0.18	0.50
Vinyl chloride	ND		0.33	0.50
1,1-Dichloroethene	ND		0.32	0.50
trans-1,2-Dichloroethene	ND		0.24	0.50
1,2-Dichloroethane	ND		0.17	0.50
1,1,1-Trichloroethane	ND		0.27	0.50
Carbon tetrachloride	ND		0.22	0.50
1,2-Dichloropropane	ND		0.45	0.50
Trichloroethene	ND		0.37	0.50
1,1,2-Trichloroethane	ND		0.22	0.50
Tetrachloroethene	ND		0.30	0.50
Chlorobenzene	ND		0.27	0.50
Benzene	ND		0.18	0.50
Toluene	ND		0.23	0.50
Ethylbenzene	ND		0.12	0.50
Styrene	ND		0.28	0.50

Surrogate	%Rec	Acceptance Limits
1,2-Dichlorobenzene-d4	86	70 - 130
4-Bromofluorobenzene	97	70 - 130

MW
7600

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060803 - DW03GW01

Lab Sample ID: 580-13976-2

Date Sampled: 06/11/2009 1550

Client Matrix: Water

Date Received: 06/12/2009 1630

524.2 Volatile Organic Compounds (GC/MS)

Method:	524.2	Analysis Batch: 680-140824	Instrument ID:	GC/MS Volatiles - U
Preparation:	N/A		Lab File ID:	u0394.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	06/18/2009 1315		Final Weight/Volume:	5 mL
Date Prepared:	N/A			

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2,4-Trichlorobenzene	ND		0.18	0.50
cis-1,2-Dichloroethene	ND		0.37	0.50
Xylenes, Total	ND		0.27	0.50
Methylene Chloride	ND		0.36	0.50
1,2-Dichlorobenzene	ND		0.17	0.50
1,4-Dichlorobenzene	ND		0.18	0.50
Vinyl chloride	ND		0.33	0.50
1,1-Dichloroethene	ND		0.32	0.50
trans-1,2-Dichloroethene	ND		0.24	0.50
1,2-Dichloroethane	ND		0.17	0.50
1,1,1-Trichloroethane	ND		0.27	0.50
Carbon tetrachloride	ND		0.22	0.50
1,2-Dichloropropane	ND		0.45	0.50
Trichloroethene	ND		0.37	0.50
1,1,2-Trichloroethane	ND		0.22	0.50
Tetrachloroethene	ND		0.30	0.50
Chlorobenzene	ND		0.27	0.50
Benzene	ND		0.18	0.50
Toluene	ND		0.23	0.50
Ethylbenzene	ND		0.12	0.50
Styrene	ND		0.28	0.50

Surrogate	%Rec	Acceptance Limits
1,2-Dichlorobenzene-d4	89	70 - 130
4-Bromofluorobenzene	96	70 - 130

Mu
7-6-09

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060802 - DW02GW01

Lab Sample ID: 580-13976-3

Date Sampled: 06/11/2009 1536

Client Matrix: Water

Date Received: 06/12/2009 1630

524.2 Volatile Organic Compounds (GC/MS)

Method: 524.2
 Preparation: N/A
 Dilution: 1.0
 Date Analyzed: 06/18/2009 1335
 Date Prepared: N/A

Analysis Batch: 680-140824

Instrument ID: GC/MS Volatiles - U
 Lab File ID: u0395.d
 Initial Weight/Volume: 5 mL
 Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2,4-Trichlorobenzene	ND		0.18	0.50
cis-1,2-Dichloroethene	ND		0.37	0.50
Xylenes, Total	ND		0.27	0.50
Methylene Chloride	ND		0.36	0.50
1,2-Dichlorobenzene	ND		0.17	0.50
1,4-Dichlorobenzene	ND		0.18	0.50
Vinyl chloride	ND		0.33	0.50
1,1-Dichloroethene	ND		0.32	0.50
trans-1,2-Dichloroethene	ND		0.24	0.50
1,2-Dichloroethane	ND		0.17	0.50
1,1,1-Trichloroethane	ND		0.27	0.50
Carbon tetrachloride	ND		0.22	0.50
1,2-Dichloropropane	ND		0.45	0.50
Trichloroethene	ND		0.37	0.50
1,1,2-Trichloroethane	ND		0.22	0.50
Tetrachloroethene	ND		0.30	0.50
Chlorobenzene	ND		0.27	0.50
Benzene	ND		0.18	0.50
Toluene	ND		0.23	0.50
Ethylbenzene	ND		0.12	0.50
Styrene	ND		0.28	0.50
Surrogate	%Rec	Acceptance Limits		
1,2-Dichlorobenzene-d4	89	70 - 130		
4-Bromofluorobenzene	96	70 - 130		

MW
7609

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060801 - DW01GW01

Lab Sample ID: 580-13976-4

Date Sampled: 06/11/2009 1436

Client Matrix: Water

Date Received: 06/12/2009 1630

524.2 Volatile Organic Compounds (GC/MS)

Method:	524.2	Analysis Batch: 680-140824	Instrument ID: GC/MS Volatiles - U
Preparation:	N/A		Lab File ID: u0396.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	06/18/2009 1355		Final Weight/Volume: 5 mL
Date Prepared:	N/A		

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2,4-Trichlorobenzene	ND		0.18	0.50
cis-1,2-Dichloroethene	ND		0.37	0.50
Xylenes, Total	ND		0.27	0.50
Methylene Chloride	ND		0.36	0.50
1,2-Dichlorobenzene	ND		0.17	0.50
1,4-Dichlorobenzene	ND		0.18	0.50
Vinyl chloride	ND		0.33	0.50
1,1-Dichloroethene	ND		0.32	0.50
trans-1,2-Dichloroethene	ND		0.24	0.50
1,2-Dichloroethane	ND		0.17	0.50
1,1,1-Trichloroethane	ND		0.27	0.50
Carbon tetrachloride	ND		0.22	0.50
1,2-Dichloropropane	ND		0.45	0.50
Trichloroethene	ND		0.37	0.50
1,1,2-Trichloroethane	ND		0.22	0.50
Tetrachloroethene	ND		0.30	0.50
Chlorobenzene	ND		0.27	0.50
Benzene	ND		0.18	0.50
Toluene	ND		0.23	0.50
Ethylbenzene	ND		0.12	0.50
Styrene	ND		0.28	0.50
Surrogate	%Rec		Acceptance Limits	
1,2-Dichlorobenzene-d4	86		70 - 130	
4-Bromofluorobenzene	97		70 - 130	

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Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060804 - TB01

Lab Sample ID: 580-13976-5

Date Sampled: 06/11/2009 1400

Client Matrix: Water

Date Received: 06/12/2009 1630

524.2 Volatile Organic Compounds (GC/MS)

Method: 524.2
 Preparation: N/A
 Dilution: 1.0
 Date Analyzed: 06/18/2009 1414
 Date Prepared: N/A

Analysis Batch: 680-140824

Instrument ID: GC/MS Volatiles - U
 Lab File ID: u0397.d
 Initial Weight/Volume: 5 mL
 Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,2,4-Trichlorobenzene	ND		0.18	0.50
cis-1,2-Dichloroethene	ND		0.37	0.50
Xylenes, Total	ND		0.27	0.50
Methylene Chloride	ND		0.36	0.50
1,2-Dichlorobenzene	ND		0.17	0.50
1,4-Dichlorobenzene	ND		0.18	0.50
Vinyl chloride	ND		0.33	0.50
1,1-Dichloroethene	ND		0.32	0.50
trans-1,2-Dichloroethene	ND		0.24	0.50
1,2-Dichloroethane	ND		0.17	0.50
1,1,1-Trichloroethane	ND		0.27	0.50
Carbon tetrachloride	ND		0.22	0.50
1,2-Dichloropropane	ND		0.45	0.50
Trichloroethene	ND		0.37	0.50
1,1,2-Trichloroethane	ND		0.22	0.50
Tetrachloroethene	ND		0.30	0.50
Chlorobenzene	ND		0.27	0.50
Benzene	ND		0.18	0.50
Toluene	ND		0.23	0.50
Ethylbenzene	ND		0.12	0.50
Styrene	ND		0.28	0.50

Surrogate	%Rec	Acceptance Limits
1,2-Dichlorobenzene-d4	88	70 - 130
4-Bromofluorobenzene	101	70 - 130

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ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104

Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 6, 2009

TO: Eric Nuchims, Project Manager, E & E, Seattle, Washington

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Inorganic Data Quality Assurance Review, Double H Pesticide Burial Site, Yakima, Washington**

REF: TDD: 09-05-0008 PAN: 002233.0461.01RA

The data quality assurance review of four water samples collected from the Double H Pesticide Burial site located near Yakima, Washington, has been completed. Target Analyte List (TAL) metals analyses (EPA Methods 200.6, 200.7, and 245.1) were performed by TestAmerica Tacoma, Tacoma, Washington.

The samples were numbered: 09060801 09060802 09060803 09060804

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The samples were maintained at 4°C (± 2°C). The samples were collected on June 11, 2009, and were analyzed by June 17, 2009, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis (28 days for mercury).

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%. All AA recoveries were within QC limits of 80% to 120%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. The following elements were detected in the applicable calibration and/or preparation blanks:

Blank	Element	Concentration (mg/L)
Initial Calibration Blank (ICB)	Beryllium	0.000032

Blank	Element	Concentration (mg/L)
	Copper	0.0049
	Mercury	0.000061
Continuing Calibration Blank (CCB) 1	Beryllium	0.000061
	Copper	0.0072
CCB 2	Beryllium	0.000029
	Copper	0.0085
CCB 3	Copper	0.0083
Preparation Blank	Beryllium	0.000054
	Copper	0.0046
	Thallium	0.00051

Associated sample results were qualified as not detected (U) if the sample result was less than five times the positive blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

A matrix spike analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. Spike and spike duplicate recoveries were within the QC limits.

9. Duplicate Analysis: Satisfactory.

A laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits except copper and thallium. Associated sample results were qualified as estimated quantities (J or UJ).

10. Laboratory Control Sample Analysis: Acceptable.

A Laboratory Control Sample (LCS) was analyzed per SDG per matrix. All LCS results were within the established control limits.

11. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical methods, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample detection limits but greater than the instrument detection limits or because quality control criteria limits were not met.
- R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060805 - DW11GW01

Lab Sample ID: 580-13976-1
 Client Matrix: Water

Date Sampled: 06/12/2009 0915
 Date Received: 06/12/2009 1630

200.7 PP Metals

Method: 200.7
 Preparation: 200.7
 Dilution: 1.0
 Date Analyzed: 06/17/2009 1737
 Date Prepared: 06/17/2009 0953

Analysis Batch: 580-45051
 Prep Batch: 580-45004

Instrument ID: SEA027
 Lab File ID: N/A
 Initial Weight/Volume: 50 mL
 Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Beryllium	ND		0.00022	0.0050
Chromium	ND		0.0033	0.025
Copper	0.0096	J	0.0033	0.020
Nickel	ND		0.00095	0.020
Silver	ND		0.00085	0.020
Zinc	ND		0.0093	0.040

200.8 Metals (ICP/MS)

Method: 200.8
 Preparation: 200.8
 Dilution: 5.0
 Date Analyzed: 06/17/2009 1539
 Date Prepared: 06/17/2009 0953

Analysis Batch: 580-45043
 Prep Batch: 580-45004

Instrument ID: SEA044
 Lab File ID: N/A
 Initial Weight/Volume: 50 mL
 Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	0.0040		0.00024	0.0020
Lead	ND		0.00017	0.0020
Antimony	ND		0.00040	0.0020
Cadmium	ND		0.00014	0.0020
Selenium	0.00075	J	0.00034	0.0020
Thallium	0.0010	J	0.000060	0.0040

245.1 Mercury (CVAA)

Method: 245.1
 Preparation: 245.1
 Dilution: 1.0
 Date Analyzed: 06/16/2009 1332
 Date Prepared: 06/16/2009 1044

Analysis Batch: 580-44957
 Prep Batch: 580-44937

Instrument ID: SEA029
 Lab File ID: N/A
 Initial Weight/Volume: 50 mL
 Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	ND		0.000041	0.00020

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Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060803 - DW03GW01

Lab Sample ID: 580-13976-2
Client Matrix: Water

Date Sampled: 06/11/2009 1550
Date Received: 06/12/2009 1630

200.7 PP Metals

Method:	200.7	Analysis Batch: 580-45051	Instrument ID: SEA027
Preparation:	200.7	Prep Batch: 580-45004	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 50 mL
Date Analyzed:	06/17/2009 1651		Final Weight/Volume: 50 mL
Date Prepared:	06/17/2009 0953		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Beryllium	0.000029	J-B	0.00022	0.0050
Chromium	ND		0.0033	0.025
Copper	0.0072	J-B	0.0033	0.020
Nickel	ND		0.00095	0.020
Silver	ND		0.00085	0.020
Zinc	0.017	J	0.0093	0.040

200.8 Metals (ICP/MS)

Method:	200.8	Analysis Batch: 580-45043	Instrument ID: SEA044
Preparation:	200.8	Prep Batch: 580-45004	Lab File ID: N/A
Dilution:	5.0		Initial Weight/Volume: 50 mL
Date Analyzed:	06/17/2009 1431		Final Weight/Volume: 50 mL
Date Prepared:	06/17/2009 0953		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	0.0074		0.00024	0.0020
Lead	ND		0.00017	0.0020
Antimony	ND		0.00040	0.0020
Cadmium	ND		0.00014	0.0020
Selenium	0.00094	J	0.00034	0.0020
Thallium	0.00024	J-B	0.000060	0.0040

245.1 Mercury (CVAA)

Method:	245.1	Analysis Batch: 580-44957	Instrument ID: SEA029
Preparation:	245.1	Prep Batch: 580-44937	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 50 mL
Date Analyzed:	06/16/2009 1336		Final Weight/Volume: 50 mL
Date Prepared:	06/16/2009 1044		

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	0.000061	J-M	0.000041	0.00020

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Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-13976-1

Client Sample ID: 09060802 - DW02GW01

Lab Sample ID: 580-13976-3
Client Matrix: Water

Date Sampled: 06/11/2009 1536
Date Received: 06/12/2009 1630

200.7 PP Metals

Method: 200.7	Analysis Batch: 580-45051	Instrument ID: SEA027	
Preparation: 200.7	Prep Batch: 580-45004	Lab File ID: N/A	
Dilution: 1.0		Initial Weight/Volume: 50 mL	
Date Analyzed: 06/17/2009 1742		Final Weight/Volume: 50 mL	
Date Prepared: 06/17/2009 0953			

Analyte	Result (mg/L)	Qualifier	MDL	RL
Beryllium	0.00044	J B	0.00022	0.0050 U
Chromium	0.0054	J	0.0033	0.025
Copper	0.014	J B	0.0033	0.020 UJ
Nickel	0.0027	J	0.00095	0.020
Silver	ND		0.00085	0.020 U
Zinc	0.014	J	0.0093	0.040

200.8 Metals (ICP/MS)

Method: 200.8	Analysis Batch: 580-45043	Instrument ID: SEA044	
Preparation: 200.8	Prep Batch: 580-45004	Lab File ID: N/A	
Dilution: 5.0		Initial Weight/Volume: 50 mL	
Date Analyzed: 06/17/2009 1546		Final Weight/Volume: 50 mL	
Date Prepared: 06/17/2009 0953			

Analyte	Result (mg/L)	Qualifier	MDL	RL
Arsenic	0.015		0.00024	0.0020
Lead	0.0026		0.00017	0.0020
Antimony	0.00057	J	0.00040	0.0020
Cadmium	ND		0.00014	0.0020 U
Selenium	0.0012	J	0.00034	0.0020
Thallium	0.00071	J B	0.00060	0.0040 UJ

245.1 Mercury (CVAA)

Method: 245.1	Analysis Batch: 580-44957	Instrument ID: SEA029	
Preparation: 245.1	Prep Batch: 580-44937	Lab File ID: N/A	
Dilution: 1.0		Initial Weight/Volume: 50 mL	
Date Analyzed: 06/16/2009 1354		Final Weight/Volume: 50 mL	
Date Prepared: 06/16/2009 1044			

Analyte	Result (mg/L)	Qualifier	MDL	RL
Mercury	ND		0.000041	0.00020 U

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Appendix B Community Involvement Documents

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 Emergency Response Unit
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

May 15, 2009

RE: Well testing

Dear:

You may or may not be aware that over the past month, EPA has been investigating a dumpsite on Bethany Road. Excavations revealed numerous empty and partially filled containers, many of which had no labels. The excavated material, including the containers, has been consolidated and placed onto plastic liners and covered to prevent further site contamination or threats to groundwater. All excavated soils have been placed on heavy plastic and securely covered. Fences have been installed for safety and to prevent access to the open pits and other potentially contaminated areas.

During the excavation, EPA uncovered over 100 containers of different sizes. We suspect that the containers were not properly rinsed and contained remnant amounts of pesticides or oil products. Samples from groundwater, soil and containers were sent to a laboratory for analysis revealing four main chemicals of concern:

Dimethoate –a pesticide/miticide

Carbaryl – a carbamate insecticide

Glyphosate - an herbicide

Arsenic - occurs naturally in the environment and as a by-product of some agricultural and industrial activities

Groundwater from four pits on the site was tested. Some pits had elevated levels of contaminants and some had very low levels or no contaminants at all. This suggests that the contamination may be limited to "hot spots" on the site and that the contamination may not be widespread. However, this finding can only be confirmed through further groundwater sampling near the site. This sampling will be done in the next two months.

At this moment we do not consider your well at high risk for contamination from the dumpsite, but based on the proximity of your home to the site, we are offering to test your drinking water well for these substances.

As you consider whether to have EPA test your well, there are a few things we would like you to know:

- EPA needs your response by Friday, May 22, 2009.
- The testing will be done at no cost to you.

- Because of the Freedom of Information Act laws that govern the work that we do, any data we collect, as well as the location where we collect it will become part of the public record.
- We will only test your well for the chemicals found in the dumpsite.
- The Washington State Department of Health will evaluate the data collected from your well and let you know if there is a health concern based on the results.
- If you prefer, you can have your well tested yourself. If you choose to do the testing yourself, you will have to cover the cost of the testing. However, EPA can provide you with the name of a lab and help you determine what tests would be appropriate.

Things you should know if the chemicals of concern listed above are found when EPA tests your well:

- The tests will provide you with information that will help your decision making regarding the safety of your drinking water as we gather more information on the extent of groundwater contamination from the dumpsite.
- The site owners, under EPA oversight, will need to determine whether the disposal area is the source of any of the site-related chemicals found in private wells. This will be done by drilling some test wells outside the dumpsite. The test wells will help us understand where groundwater is moving and whether any contaminated groundwater could reach private wells.
- Until the dumpsite is found to be the source of the chemicals in your well, neither EPA nor the site owners will provide you with a new well, install any treatment systems, or provide you with bottled water. However, if the dumpsite is found to be the source of the chemicals in your well, these options will be reconsidered.

We at the U.S. Environmental Protection Agency are committed to protecting human health and the environment. This investigation of possible contamination and how far it may have spread is part of that commitment.

Please let me know by Friday, May 22, 2009 if you would like to have your well tested by EPA at no charge.

You may also contact me with questions, concerns or if you need more information about testing your own well: (206)553-1750 or smith.andy@epa.gov

Sincerely,

Andy Smith,
EPA On Scene Coordinator



Double H Pesticide Burial Site

Grandview, WA - EPA Region X



Site Contact:
Andy Smith
 On-Scene Coordinator
smith.andy@epa.gov

1501 Bethany Road
 Grandview, WA 98930
www.epaosc.org/DoubleHPesticideBurial
 Latitude: 46.2908000
 Longitude: -119.9269000

[KML](#) |
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Over a 100 containers of assorted sizes that appeared to have once contained or still contained some amounts of pesticides and oil were found buried on private agricultural property adjacent to a Concord grape vineyard. Washington State Departments of Ecology and Agriculture requested EPA assistance in investigating the site. Using a magnetometer and ground penetrating radar, the containers were discovered and removed. The containers had been crushed or punctured and many were submerged in the shallow groundwater (6 to 8 feet below surface). These containers had been buried along with an assortment of household hazardous wastes and other non-hazardous debris.

ACTIVITIES

July 1 -

- * Administrative Order on Consent takes affect.
- * Uploaded 5 documents to Document Section.
- + Action Memorandum
- + Action Memorandum Ammendment
- + AOC
- + Site Map
- + Statement of Work
- * New PolRep
- * News Release

July 17 -

- * Summary of well testing to Document Section
- * Quality Assurance Project Plan, Health and Safety Plan, and Work Plan are being finalized.
- * Field work to begin on July 20
- * Arsenic and Your Private Well brochure to Document Section.

August 18

- * Quality Assurance Project Plan, Health and Safety Plan, and Work Plan are in Documents Section
- * New Photos added
- * PolRep #5

September 4

- * PolRep #7

Bulletins

None for this site.

Images



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Documents

[Action Memorandum... September 2009 Progress Report...](#)
[October 2009 Progress Report...](#)
[June 2009 Progress Report...](#)

[List All...](#)

POLREPs

[POLREP - 8](#)
[POLREP - 7](#)
[POLREP - 6](#)

[List All...](#)

Contacts

On-Scene Coordinator
Smith.Andy@epa.gov
 Public Information Officer
macintyre.mark@epa.gov
 Community Involvement Coordinator

October 9
* PolRep #8

klaff.caryn@epa.gov

For additional information, visit the **Pollution Report** ([POLREPS](#)) section.

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