Oregon Department of Environmental Quality

June 19, 2013
Oregon Environmental Quality Commission meeting
Temporary rulemaking, Action item: D
DEQ Item # 13-0110

Hazardous Waste F Listing of Demilitarization Residue - Temporary

DEQ recommendation to the EQC

DEQ recommends that the Oregon Environmental Quality Commission:

Amend the proposed TEMPORARY rules in Attachment A as part of chapter 340 of the Oregon Administrative Rules, to be effective upon filing with the Secretary of State July 31, 2013, through Jan. 31, 2014, and adopt the statement of findings in Attachment B necessary for the temporary rule.

Statement of need and justification ORS 183.335(5)

Short summary

DEQ proposes a temporary rule amendment to modify when the hazardous waste "F" listing applies to demilitarization residue that is determined to be free of blister and nerve agents, in accordance with the Umatilla facility permit.

Background

In 2000, EQC adopted rules related to the appropriate hazardous waste listing for chemical agents and residues from demilitarization, treatment and testing of chemical agents at the Umatilla Chemical Demilitarization Facility. Demilitarization residues include a substantial portion of the wastes generated during operations and closure of the Umatilla facility and depot. Examples of demilitarization residue include protective clothing, ash from furnaces and laboratory waste. The hazardous waste listing rule, which applies only in Oregon, stated that these waste streams would be considered a hazardous waste regardless of whether they actually contained chemical agent or exhibited any hazardous waste characteristics. The rule provided absolute protection of human health and the environment in absence of verified scientific data supporting a safe level of agent for non-hazardous materials. Since the time this rule went into place, scientific data has been developed that establishes safe levels of chemical agent. Adoption of this temporary rule would acknowledge that and would allow the facility to complete closure in a safe and efficient manner.

The facility has begun final closure and there are many activities that need to take place for DEQ to approve both the closure of all permitted units and facilty-wide corrective

action. One of those activities is the demolition of the Munitions Demilitarization Building and its associated pollution abatement system. The demolition of this building is required as part of the hazardous waste permit, and all other buildings will remain intact for reuse. Using the current rules, the demolition debris from this building is considered hazardous waste and must be immediately placed in a hazardous waste container as the building is demolished. In practical application, demolition debris is bulky and will not fit into the hazardous waste containers immediately after demolition. The facility will need to demolish the building and then further break down the materials to fit them into containment receptacles. The facility also intends to reuse some of the debris prior to its disposal to create ramps for easier access to the building for continued demolition. To complete these tasks, without a violaton of Oregon rule, the commission must temporarily amend the "F" listing rule approved in 2000.

The facility has conducted analytical testing of the Munitions Demilitarization Building and, based on these tests, DEQ has determined that the building and its components meet the definition of being "agent-free" under the facility permit. The facility's permit stipulates that materials must be under certain chemical thresholds to be considered agent-free and not harmful to human health and the environment. Analytical testing also confirmed that the building and its components are not considered hazardous for any other reason.

Consequences of not taking immediate action

Failure to act promptly to adopt the proposed temporary rules would result in burdensome and excessive regulation of the facility's demolition debris and would not result in any additional protection to human health and the environment. Further, it would negatively impact the efficiency of managing these wastes and drastically increase costs and slow down the final closure of the facility.

Affected parties

The schedule and cost of closing the facility would be affected if the rules are not amended. This would affect both the permittee and the public by drastically increasing costs and slowing down closure.

How temporary rule would avoid or mitigate consequences

If approved, the temporary rule would allow the facility to manage and reuse demolition wastes effectively and at lower cost, with no increased risk to human health or the environment. The hazardous waste lising would be effective once the material is containerized in either a dropbox or a truck. It would then be transported to a hazardous waste permitted treatment, storage and disposal facility.

Rules affected, authorities, supporting documents

Lead division	Program or activity
Land Quality	Eastern Region Hazardous Waste Program

Chapter 340 action

Amend OAR 340-102-0011

Statutory authority

ORS 466.020

Documents relied on for rulemaking - ORS 183.335(5)(d)

Document title	Document location
Munitions Demilitarization Building Concrete Chip Sample Results Report and results of Unventilated Monitoring Tests for the Munitions Demilitarization Building	Included as attachment C with this report

Housing costs - ORS 183.534

DEQ determined the proposed rules would have no effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel. The proposed rules only affect generators of demilitarization residue. The Umatilla Chemical Demilitarization Facility and the Umatilla Chemical Storage Depot are the only generators of that specific waste stream in the state.

Public notice OAR 183.355, OAR 137-001-0080

Advisory committee

DEQ did not convene an advisory committee. There are limited stakeholders interested in the closure activities at the facility. Key stakeholders, including the U.S. Environmental Protection Agency and the Confederated Tribes of the Umatilla Indian Reservation, have been informed of this temporary rulemaking and did not object to DEQ's proposal.

Public notice

- E-mailed notice to:
  - 2,082 interested parties through GovDelivery May 23, 2013.

Implementation

Notification

The proposed rules would become effective upon filing. DEQ will notify affected parties by emailing the interested parties on an established GovDelivery list and will post the adopted rules and this report on the agency's webpage: http://www.deq.state.or.us/regulations/proposedrules.htm

Compliance and enforcement

Affected parties – DEQ staff will review the rule with the Umatilla facility management to ensure that methods for complying with the rule are understood.

Proposed changes in bold

OAR 340-102-0011

* * *

(2) A person who generates a residue as defined in OAR 340-100-0010 must determine if that residue is a hazardous waste using the following method:

* * *

(c) Persons must then determine if the waste is listed under the following listings:

(A) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products or manufacturing chemical intermediates identified in 340-102-0011(2)(c)(A)(i) and (ii) are added to and made a part of the list in 40 CFR 261.33(e).

(i) P998...Blister agents (such as Mustard agent)

(ii) P999...Nerve agents (such as GB (Sarin) and VX); or

(B) Hazardous waste identified in 340-102-0011(2)(c)(B)(i) and (ii) are added to and made a part of the list in 40 CFR 261.31.

(i) F998...Residues from demilitarization, treatment, and testing of blister agents (such as Mustard agent).

(ii) F999...Residues from demilitarization, treatment, and testing of nerve agents (such as GB (Sarin) and VX).

NOTE: Even if the waste is listed, the generator still has an opportunity under OAR 340-100-0022 to demonstrate to the Commission that the waste from his/her particular facility or operation is not a hazardous waste.

(C) Notwithstanding OAR 340-100-0010(2)(g) and OAR 340-102-0011(2)(c)(B)(i) and (ii), debris, as defined in 40 CFR 268.2(g), generated from demolition during closure processes and activities at the Umatilla Chemical Agent Disposal Facility (ORQ 000009431) is not F998 or F999 hazardous waste until containerized, provided the following conditions are met:

(i) the debris is free of blister and nerve agent, as determined in accordance with the facility permit;

(ii) the debris does not contain hazardous constituents at levels above otherwise applicable treatment standards; and

(iii) the debris is containerized before leaving the facility.

* * *

Other agent related OARs

340-100-0010(2)

Definitions

(f) "Demilitarization" means all processes and activities at the Umatilla Chemical Depot (OR 6213820917) and Umatilla Chemical Agent Disposal Facility (ORQ 000009431) from February 12, 1997, through Department approval of the closure of all permitted treatment, storage and disposal units and facility-wide corrective action;

(g) "Demilitarization Residue" means any solid waste generated by demilitarization processes and activities as defined in 340-100-0010(2)(f), except for (A) waste streams generated from processes or activities prior to the introduction of nerve or blister agent into the treatment unit; and (B) waste steams generated from maintenance or operation of non-agent contaminated process utility systems;

340-101-0030

Chemical Agent Munitions and Chemical Agent Bulk Items

Notwithstanding any otherwise applicable provisions of 40 CFR 260 to 270, or other provisions of these rules, chemical agent munitions and chemical agent bulk items in storage as of the effective date of this rule are residues, and listed hazardous wastes assigned the appropriate waste codes in OAR 340-102-0011(2)(c)(A)(i) and (ii).

DEPARTMENT OF ENVIRONMENTAL QUALITY
STATEMENT OF NEED AND JUSTIFICATION
A Certificate and Order for Filing Temporary Administrative Rules accompanies this form.

Department of Environmental Quality — **OAR Chapter 340**
Agency and Division — Administrative Rules Chapter Number

Rule Caption: The proposed rule amendments would modify when the hazardous waste "F" listing applies to demilitarization residue that is determined to be free of blister and nerve agents as determined in accordance with the Umatilla facility permit.

In the Matter of: Temporary Rule Adoption: F listing of Demilitarization Residue, Division 102

Statutory Authority: ORS 466.020

Need for the Temporary Rule(s):

In 2000, the EQC adopted rules related to the appropriate hazardous waste listing for chemical agents and residues from demilitarization, treatment and testing of chemical agents. Demilitarization residues include a substantial portion of the wastes generated during operations and closure of the Umatilla Chemical Demilitarization Facility or Umatilla Chemical Storage Depot. The hazardous waste listing rule, which applies only in Oregon, ensured that these waste streams would be considered a hazardous waste regardless of whether they actually contained chemical agent or exhibited any hazardous waste characteristics. Since the time this rule went into place, scientific data has been developed that establishes safe levels of chemical agent. The facility has conducted analytical testing of the structure that is required by the permit to be demolished and DEQ has determined that these tests illustrate that the building and its components meet the definition of being "agent free" under the facility permit. Adoption of this temporary rule would allow demolition debris from the facility which has been determined to meet the definition of "agent free" under the facility permit and which is not otherwise considered to be hazardous waste to be managed on the ground as a solid waste prior to being placed in a container. This will allow the facility to size reduce the waste and utilize some of it to create ramps for easier access to the building for continued demolition prior to it being placed in a container. Once the waste is in a container it will be considered F listed hazardous waste and will be required to be transported and disposed of at a hazardous waste permitted treatment, storage, and disposal facility.

Documents Relied Upon: Documents relied upon are available by contacting DEQ or online as follows:

- Munitions Demilitarization Building Concrete Chip Sample Results Report and Results of Unventilated Monitoring Tests for the Munitions Demilitarization Building
    - June 19-20, 2013, EQC meeting, agenda item D, attachment C

Justification of Temporary Rule(s): The Commission finds that failure to promptly adopt the temporary rules will result in serious prejudice to the interests of the permittee and the public because it will have the following consequences:

Under the current rules, the permittee would be required to manage all demolition debris as hazardous waste. Requiring this type of management during the facility's demolition would be burdensome and excessive and would not result in any additional protection to human health and the environment. Further, it would negatively impact the efficiency of managing these wastes and drastically increase costs and slow down the final closure of the facility.

Housing Cost Impacts:
DEQ determined the proposed rules would have no effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel. The proposed rules only affect generators of demilitarization residue. The Umatilla Chemical Demilitarization Facility and the Umatilla Chemical Storage Depot are the only generators of that waste stream in the state.

_____ _____

Dick Pedersen, Director *Date Signed*
(On Behalf of the Commission)

13- 0108

DEPARTMENT OF THE ARMY
US ARMY CHEMICAL MATERIALS ACTIVITY
UMATILLA CHEMICAL AGENT DISPOSAL FACILITY
78072 ORDNANCE ROAD
HERMISTON, OREGON 97838

REPLY TO
ATTENTION OF:

Scanned

MAY 09 2013

FILE

US Army Chemical Materials Activity
UMCDF Field Office

ENV–13–0085

SUBJECT: Umatilla Chemical Agent Disposal Facility (UMCDF) Hazardous Waste Permit (ORQ 000 009 431-01) – Permit Condition I.M., Request for Information to Support Rulemaking

RECEIVED
MAY 09 2013
Dept. of Environmental Quality
Eastern Region The Dalles

Elizabeth Druback, Eastern Region Manager
Solid and Hazardous Waste Programs
Oregon Department of Environmental Quality
400 East Scenic Drive, Suite 307
The Dalles, Oregon 97058

Dear Ms. Druback:

Based on recent discussions with your office, the Permitees are submitting the enclosed summary of the Unventilated Monitoring Tests (UMTs) conducted in the Munitions Demilitarization Building (MDB), and a copy of the MDB Concrete Chip Sample Report for your review.

As reflected in the enclosures, all UMT's were successfully completed per the requirements of the Closure Plan. Additionally, all concrete chip samples were agent-free in accordance with the Waste Analysis Plan.

If you have any questions, please call our technical point of contact, Mr. Pat Mohondro, 541-564-7393.

Sincerely,

Date of Signature: 5/9/2013
Gary M. Anderson
UMCDF Site Project Manager
*CERTIFICATION STATEMENT

Date of Signature: 5/8/2013
Julia C. Hamrick
Washington Demilitarization Company, LLC
Project General Manager
*CERTIFICATION STATEMENT

Enclosures

*I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION ACCORDING TO A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

UMT AREA MONITORING RESULTS SUMMARY

	Area Description	Agent Monitored	Highest Reported UMT Result	Results Summary		UMT Success (PASS/FAIL)
				VSL	WPL	
UMT Area 1	LMC, BSA, TMA, TMA Decon (A/B) Area, 111A Airlock, & 123A Airlock	GB	0.01 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.22 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
		HD	0.64 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.003 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00027 mg/m^3)	PASS
UMT Area 2	LIC 1 Primary Room, LIC 2 Primary Room, & LIC A/B Airlock	GB	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.05 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
		HD	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.003 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00027 mg/m^3)	PASS
UMT Area 3	SDS Room & TOX	GB	0.08 VSL	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.47 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
		HD	0.61 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.003 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00027 mg/m^3)	PASS
UMT Area 4	UMC, ECV, 265A Airlock, & 255A Airlock	GB	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
		HD	0.06 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.003 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00027 mg/m^3)	PASS
UMT Area 5	MPB	GB	0.06 VSL	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.72 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
		HD	0.76 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.003 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00027 mg/m^3)	PASS
UMT Area 6	ECR A	GB	0.01 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.66 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
UMT Area 7	ECR B	GB	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.19 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
UMT Area 8	DFS Room	GB	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
UMT Area 9	HVAC Exhaust Ductwork	GB	0.06 VSL	< 1 VSL (< 0.0001 mg/m^3)	NA[1]	PASS
		VX	0.29 VSL	< 1 VSL (< 0.00001 mg/m^3)	NA[1]	PASS
		HD	0.02 VSL	< 1 VSL (< 0.003 mg/m^3)	NA[1]	PASS
UMT Area 10	MDB HVAC Exhaust Filters	GB	0.03 VSL	< 1 VSL (< 0.0001 mg/m^3)	NA[1]	PASS
		VX	0.32 VSL	< 1 VSL (< 0.00001 mg/m^3)	NA[1]	PASS
		HD	0.27 VSL	< 1 VSL (< 0.003 mg/m^3)	NA[1]	PASS
UMT Area 11	Phase I HD TC Glovebox & Phase II HD TC Glovebox Exhaust System	HD	0.03 VSL	< 1 VSL (< 0.003 mg/m^3)	NA[1]	PASS
UMT Area 12	MPF	GB	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.0001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00002 mg/m^3)	PASS
		VX	0.06 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.00001 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00000067 mg/m^3)	PASS
		HD	0.00 $WPL_{12\text{-}HR}$	< 1 VSL (< 0.003 mg/m^3)	< 1 $WPL_{12\text{-}HR}$ (< 0.00027 mg/m^3)	PASS

1. Area not designed for human occupancy; therefore, WPL monitoring is not necessary.

13- 0108

Munitions Demilitarization Building

Concrete Chip Sample Results

May 2013

Table of Contents

Introduction

During the discussions regarding the closure process of the Umatilla Chemical Agent Disposal Facility (UMCDF), Washington Demilitarization Company (WDC) agreed to sample the concrete floors in the Munitions Demilitarization Building (MDB). The Oregon Department of Environmental Quality (DEQ) approved the wording in the Waste Analysis Plan (WAP), Section 2.2.19, as follows:

Concrete will be sampled for chemical agent prior to demolition. A minimum of one judgmental concrete chip sample will be collected from the floor of each room designated as a category A or A/B area. Depending on the size of the room, additional samples would be collected based on the calculated square footage. As an example, one sample from a single ECR would be sufficient and the area equivalent to one ECR would be the basis for additional sampling in the other A or A/B area. The average size of the ECR's is approximately 700 square feet in size. Therefore, with the exception of the ECR's, all rooms in the MDB designated as category A or A/B, concrete chip sample will be collected at the rate of 1 sample per 700 square feet in each A or A/B area with a minimum of one sample per room. Sample locations will be biased to include areas around sumps and other low lying areas.

Chemical agent analysis on the concrete chip samples will be performed prior to shipment off site for disposal at a permitted Subtitle C TSDF, to verify the waste meets the agent free acceptance criteria listed in Section 8 of this plan. A representative sample will be collected from the waste or a biased sample will be collected if the materials are known to have a higher potential for agent contamination. Concrete will be analyzed for TCLP metals and TCLP organics at a frequency identified in Table 2 of the WAP. (excerpt from page 25 of 70).

The UMCDF Hazardous Waste Permit (ORQ 000 009 431-01) defines the ventilation categories in the MDB based on the cascade air flow system from least contaminated to most contaminated area. Categories A and A/B ventilation areas are defined in Permit Condition I.B.

Category A is defined as: *Toxic process area under negative pressure; routine contamination with either chemical agent liquid or vapor; a high-hazard area.*

Category A/B is defined as: *An A/B area meets all design criteria for an A area, but in typical service act as a B area (i.e., only a vapor chemical agent hazard is present), but under some circumstances, a liquid chemical agent hazard may be present, hence the need for design to meet A area requirements.*

Implementation

To meet the requirement to perform concrete chip sampling in the MDB, the first step was to have Engineering define all of the Category A and A/B rooms, and then to calculate the square footage of each area. Table 1 contains the listing of each room by category, room square footage, reference drawings, and minimum samples. The referenced drawings and sample locations are contained in Appendix 1. All appendices to this report are on the attached Compact Disc (CD).

The second step was to develop a procedure for concrete chip sampling that would be used in the evolution. The concrete chip sampling procedure is contained in Appendix 2. The procedure was submitted to the DEQ and a meeting was held. That meeting resulted in two additional sample locations in each Liquid Incinerator primary room where the agent gun was stored during outages. The total samples taken increased from 45 to 47 concrete chip samples.

The actual concrete chip sampling commenced on January 29, 2013 on the second floor of the MDB and concluded on February 21, 2013 on the first floor of the MDB. Per the concrete chip sampling procedure, if epoxy coating was encountered, that coating was removed prior to taking the chip sample of the concrete. A demolition hammer with a bushing bit was used to remove epoxy. A new/clean bushing bit was used to generate the chips. Each of the 47 chip sample areas had a dedicated sampling kit consisting of two bushing bits (one for epoxy removal; one for chips) and a number 4 sieve assembly stacked on a number 10 sieve assembly on top of a pan. The on site laboratory, where the concrete was analyzed for GB, VX and HD chemical agents, required a concrete chip from the top of the number 10 sieve. Sample bottles, spoon to remove chips from the number 10 sieve screen, dustpan, brushes to sweep chips to the dustpan to place on the number 4 sieve, and four sample bottles comprised a sample kit.

A description of each sample area, the container identification which ties the sample to a room in the MDB and to a location, laboratory sample number and the date sampled is included on Table 2 for Category A areas and Table 3 for Category A/B areas.

Results

Once the agent free status was determined, the remaining sample containers were shipped offsite to TestAmerica (Sacramento, CA) for Toxicity Characteristic Leachate Procedure (TCLP) organic and TCLP metals analyses as required by the WAP. The WAP required analytical results for TCLP metals and TCLP organics are presented on Table 4. The full laboratory reports for agent analyses are in Appendix 3. The full laboratory reports for TCLP metals and TCLP organics are in Appendix 4 on the attached CD.

For the TCLP analyses, results were reported by the laboratory that included several analyses from which results were taken from diluted analyses. For two WAP-required TCLP semivolatile organics, hexachlorobenzene and 2,4-dinitrotoluene, the diluted results for the six samples from the Munitions Processing Bay (MPB), one sample from the Toxic Cubicle (TOX), and one sample from the Spent Decontamination Solution (SDS) Room, yielded non-detect values where the dilution-adjusted reporting limit was above the regulatory limit. For the six samples from the MPB, the laboratory had analyzed the samples without dilution prior to performing the diluted analysis from which the original results were reported. As these undiluted analyses yielded usable results for hexachlorobenzene and 2,4-dinitrotoluene, the laboratory was able to report the results from the undiluted analyses for these two analytes in addition to the results from the diluted analyses. For the one sample from the TOX and one sample from the SDS Room, the samples were not initially analyzed at a lesser dilution. As the holding time from extraction to analysis had not expired, the laboratory reanalyzed these samples at a lesser dilution to provide results for hexachlorobenzene and 2,4-dinitrotoluene where the reporting limit

is less than the regulatory limit. The results from the lesser diluted analyses have been reported in addition to the results from the more diluted analyses.

On March 27 and March 28, WDC personnel re-sampled the eight locations discussed above regarding dilution. Samples from the re-sampled locations were analyzed for TCLP semivolatile organics. All WAP-required TCLP semivolatile organics were non-detect, including hexachlorobenzene and 2,4-dinitrotoluene. Both the original analytical result and the resample analytical results are included on Table 4 for the MPB, the TOX and SDS rooms.

Summary

All 47 samples were less than the permit compliance concentration (PCC) for GB, VX, and HD chemical agent. By the Hazardous Waste Permit, these samples are considered agent free. A waste determination can be made in accordance with 40 Code of Federal Regulations (CFR) 261.24. None of the results indicate any toxicity characteristics; thus, no Federal or Oregon waste codes for toxicity characteristics are applicable.

TABLE 1. LISTING OF EACH ROOM BY CATEGORY

Room Name	Room Number	Room Area, square feet	Reference Drawings	Required Samples
Category A				
Airlock (111A) - 1st Floor	06-164	200	UM-01-S-0002	1
Airlock (123A) - 1st Floor Mezzanine	06-169	182	UM-01-S-0063	1
Airlock (255A) - 2nd Floor Mezzanine	06-221	128	UM-01-S-0063	1
Airlock (265A) - 2nd Floor Mezzanine	06-217	200	UM-01-S-0063	1
Buffer Storage Area (BSA)	17-146	2313	UM-01-S-0004	4
Explosive Containment Room A (ECRA)	03-211	689	UM-01-S-0015	1
Explosive Containment Room B (ECRB)	03-212	770	UM-01-S-0015	2
Munitions Processing Bay (MPB)	10-205	4055	UM-01-S-0014 UM-01-S-0019	6
Spent Decontamination Solution (SDS)	21-140	832	UM-01-S-0005	2
Toxic Maintenance Area (TMA)	12-120	1263	UM-01-S-0004 UM-01-S-0009	2
Toxic Cubicle (TOX)	11-141	411	UM-01-S-0004 UM-01-S-0005	1
Category A/B				
ECR Vestibule (ECV)	04-213	2349	UM-01-S-0014 UM-01-S-0015 UM-01-S-0016	4
Liquid Incinerator (LIC) Airlock	13-154	203	UM-01-S-0002	1
Liquid Incinerator 1 (LIC1) Primary	13-155	626	UM-01-S-0002	1
Liquid Incinerator 2 (LIC2) Primary	13-158	626	UM-01-S-0002	1
Lower Munitions Corridor (LMC)	05-153	2352	UM-01-S-0003 UM-01-S-0004 UM-01-S-0005	4
Toxic Maintenance Area (TMA) Decontamination Area	12-118	672	UM-01-S-0004 UM-01-S-0009 UM-01-A-0010	1
Upper Munitions Corridor (UMC)	05-210	7510	UM-01-S-0014 UM-01-S-0015 UM-01-S-0016 UM-01-S-0017 UM-01-S-0018 UM-01-S-0019	11

TABLE 2. CATEGORY A
SAMPLE AREA, CONTAINER IDENTIFIER, LABORATORY SAMPLE IDENTIFIER, DATE SAMPLED, and DATE ANALYZED for AGENTS

Sample Area	Container Identifier	Laboratory Sample Identifier	Date Sampled	Date Analyzed for Agents
111-A Airlock by sump 134	06-164-001	5151302817-A	19 February 2013	19 February 2013
123-A Airlock by sump 125	06-169-001	5151302818-A	21 February 2013	21 February 2013
255-A Airlock by sump 124	06-221-001	5151302800-A	31 January 2013	1 February 2013
265-A Airlock bottom of sump 126	06-217-001	5151302801-A	31 January 2013	1 February 2013
Buffer Storage Area by North stairs	17-146-001	5151302819-A	18 February 2013	18 February 2013
Buffer Storage by sump 190	17-146-002	5151302821-A	18 February 2013	18 February 2013
Buffer Storage by sump 164	17-146-003	5151302823-A	18 February 2013	18 February 2013
Buffer Storage by south stairs	17-146-004	5151302824-A	18 February 2013	18 February 2013
Explosive Containment Room A near sump 107	03-211-001	4F61302800-A	29 January 2013	30 January 2013
Explosive Containment Room B near rocket punch and drain station	03-212-001	4F61302801-A	29 January 2013	30 January 2013
Explosive Containment Room B near sump 106	03-212-002	4F61302802-A	29 January 2013	30 January 2013
Munitions Processing Bay near MDM 101	10-205-001 10-205-101†	4F61302803-A 68B1308600-A	4 February 2013 28 March 2013	5 February 2013 Not Applicable
Munitions Processing Bay near MDM 102	10-205-002 10-205-102†	4F61302804-A 6611308600-A	4 February 2013 28 March 2013	5 February 2013 Not Applicable
Munitions Processing Bay near MDM 103	10-205-003 10-205-103†	4F61302805-A 6621308600-A	4 February 2013 28 March 2013	5 February 2013 Not Applicable
Munitions Processing Bay by HD spill on overfilled ton container	10-205-004 10-205-104†	4F61302806-A 6621308601-A	4-February 2013 28 March 2013	5 February 2013 Not Applicable
Munitions Processing Bay by BDS 101	10-205-005 10-205-105†	4F61302807-A 6621308603-A	4 February 2013 28 March 2013	5 February 2013 Not Applicable
Munitions Processing Bay by BDS 102	10-205-006 10-205-106†	4F61302808-A 6621308604-A	4 February 2013 28 March 2013	5 February 2013 Not Applicable
Spent Decontamination Solution by ACS-Tank-108	21-140-001 21-140-101†	5151302825-A 6621308605-A	19 February 2013 27 March 2013	19 February 2013 Not Applicable
Spent Decontamination Solution by sump 150	21-140-002	5151302826-A	19 February 2013	19 February 2013
Toxic Maintenance Area by sump 135	12-120-001	5151302827-A	21 February 2013	21 February 2013
Toxic Maintenance Area by sump 154	12-120-002	5151302828-A	21 February 2013	21 February 2013
Toxic Cubicle where agent tanks located	11-141-001 11-141-101†	5151302829-A 6621308606-A	19 February 2013 27 March 2013	19 February 2013 Not Applicable

† Location was resampled and analyzed for TCLP semivolatile organics only.

TABLE 3. CATEGORY A/B
SAMPLE AREA, CONTAINER IDENTIFIER, LABORATORY SAMPLE IDENTIFIER, DATE SAMPLED, and DATE ANALYZED for AGENTS

Sample Area	Container Identifier	Laboratory Sample Identifier	Date Sampled	Date Analyzed for Agents
Explosive Containment Vestibule by sump 109	04-213-001	5151302802-A	29 January 2013	30 January 2013
Explosive Containment Vestibule near strainers for Rinsate Collection System (RCS)	04-213-002	5151302803-A	29 January 2013	30 January 2013
Explosive Containment Vestibule near sump 108	04-213-003	5151302804-A	29 January 2013	30 January 2013
Explosive Containment Vestibule near sump 110	04-213-004	5151302805-A	29 January 2013	30 January 2013
Liquid Incinerators Plenum/Airlock near sump 154	13-154-001	5151302830-A	19 February 2013	19 February 2013
Liquid Incinerator # 1 Primary near sump 188	13-155-001	5151302831-A	19 February 2013	19 February 2013
Liquid Incinerator #1 Primary where agent gun stored*	13-155-002	5151302832-A	19 February 2013	19 February 2013
Liquid Incinerator # 2 Primary near sump 157	13-158-001	5151302833-A	19 February 2013	19 February 2013
Liquid Incinerator # 2 Primary where agent gun stored*	13-158-002	5151302834-A	19 February 2013	19 February 2013
Lower Munitions Corridor by sump 184	05-153-001	5151302835-A	18 February 2013	18 February 2013
Lower Munitions Corridor at decontamination station	05-153-002	5151302836-A	18 February 2013	18 February 2013
Lower Munitions Corridor in sump 179	05-153-003	5151302837-A	18 February 2013	18 February 2013
Lower Munitions Corridor at slope to sump 179	05-153-004	5151302838-A	18 February 2013	18 February 2013
Toxic Munitions Area Decontamination between scissor lift rails	12-118-001	5151302839-A	21 February 2013	21 February 2013
Upper Munitions Corridor by sump 189	05-210-001	5151302806-A	30 January 2013	30 January 2013
Upper Munitions Corridor by sump 112	05-210-002	5151302807-A	30 January 2013	30 January 2013
Upper Munitions Corridor by sump 116	05-210-003	5151302808-A	30 January 2013	30 January 2013
Upper Munitions Corridor by sump 115	05-210-004	5151302809-A	30 January 2013	30 January 2013
Upper Munitions Corridor by sump 118	05-210-005	5151302810-A	30 January 2013	30 January 2013
Upper Munitions Corridor by sump 174	05-210-006	5151302811-A	29 January 2013	30 January 2013
Upper Munitions Corridor by sump 114	05-210-007	5151302812-A	30 January 2013	30 January 2013
Upper Munitions Corridor by sump 169	05-210-008	5151302813-A	29 January 2013	30 January 2013
Upper Munitions Corridor by sump 113	05-210-009	5151302814-A	30 January 2013	30 January 2013
Upper Munitions Corridor by sump 117	05-210-010	5151302815-A	30 January 2013	30 January 2013
Upper Munitions Corridor by secondary waste drop zone 1	05-210-011	5151302816-A	30 January 2013	30 January 2013

- "*"samples added to the minimum stated on Table 1

TABLE 4. RESULTS SUMMARY

Analyte	CASRN	Regulated Level	320-1635-1 ECRA 03-211-001 4F61302800-A	320-1635-2 UMC 05-210-006 5151302811-A	320-1635-3 UMC 05-210-008 5151302813-A	320-1650-1 ECV 04-213-001 5151302802-A	320-1650-2 ECV 04-213-002 5151302803-A	320-1650-3 ECV 04-213-003 5151302804-A	320-1650-4 ECV 04-213-004 5151302805-A
Chemical Agent, ug/Kg (ppb)									
GB	107-44-8	16	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)
VX	50782-69-9	13	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)
HD	505-60-2	152	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)
TCLP Metals, mg/Kg (ppm)									
Arsenic	7440-38-2	5.0	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)
Barium	7440-39-3	100	0.45 J	0.78 J	1.3 J	1 J	0.52 J	0.62 J	0.86 J
Cadmium	7440-43-9	1.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Chromium	7440-47-3	5.0	0.056	0.042	0.039	0.027	0.048	0.06	0.051
Lead	7439-92-1	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Mercury	7439-97-6	0.2	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)
Selenium	7782-49-2	1.0	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	0.13	0.011 J	ND (<0.02)
Silver	7440-22-4	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
TCLP Volatile Organics, mg/L (ppm)									
Benzene	71-43-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Carbon tetrachloride	56-23-5	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chlorobenzene	108-90-7	100.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chloroform	67-66-3	6.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,4-Dichlorobenzene	106-46-7	7.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,2-Dichloroethane	107-06-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Trichloroethylene (Trichloroethene)	79-01-6	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Vinyl chloride	75-01-4	0.2	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
TCLP Semivolatile Organics, ug/L (ppb)									
Hexachlorobenzene	118-74-1	130	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<49)	ND (<50)	ND (<49)
Hexachlorobutadiene	87-68-3	500	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<49)	ND (<50)	ND (<49)
Hexachloroethane	67-72-1	3000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<49)	ND (<50)	ND (<49)
2,4-Dinitrotoluene	121-14-2	130	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<49)	ND (<50)	ND (<49)
Nitrobenzene	98-95-3	2000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<49)	ND (<50)	ND (<49)
Pentachlorophenol	87-86-5	100000	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<49)	ND (<50)	ND (<49)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<49)	ND (<50)	ND (<49)
TCLP Pesticides, ug/L (ppb)									
Chlordane	57-74-9	30	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Endrin	72-20-8	20	ND (<0.5)	ND (<0.49)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)
Heptachlor	76-44-8	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)
Heptachlor epoxide	1024-57-3	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)
Methoxychlor	72-43-5	10000	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Toxaphene	8001-35-2	500	ND (<10)	ND (<9.9)	ND (<9.9)	ND (<9.9)	ND (<10)	ND (<10)	ND (<10)

TABLE 4. RESULTS SUMMARY (continued)

Analyte	CASRN	Regulated Level	320-1650-5 ECRB 03-212-001 4F61302801-A	320-1650-6 ECRB 03-212-002 4F61302802-A	320-1678-2 Airlock 255A 06-221-001 5151302800-A	320-1678-3 Airlock 265A 06-217-001 5151302801-A	320-1678-4 UMC 05-210-001 5151302806-A	320-1678-5 UMC 05-210-002 5151302807-A	320-1678-6 UMC 05-210-003 5151302808-A
Chemical Agent, ug/Kg (ppb)									
GB	107-44-8	16	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)
VX	50782-69-9	13	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)
HD	505-60-2	152	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)
TCLP Metals, mg/Kg (ppm)									
Arsenic	7440-38-2	5.0	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)
Barium	7440-39-3	100	0.46 J	0.57 J	1.2 J	0.76 J	0.69 J	0.72 J	0.72 J
Cadmium	7440-43-9	1.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Chromium	7440-47-3	5.0	0.059	0.041	0.032	0.045	0.031	0.039	0.042
Lead	7439-92-1	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Mercury	7439-97-6	0.2	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)
Selenium	7782-49-2	1.0	ND (<0.02)	0.044	ND (<0.02)	0.11	ND (<0.02)	ND (<0.02)	ND (<0.02)
Silver	7440-22-4	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
TCLP Volatile Organics, mg/L (ppm)									
Benzene	71-43-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Carbon tetrachloride	56-23-5	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chlorobenzene	108-90-7	100.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chloroform	67-66-3	6.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,4-Dichlorobenzene	106-46-7	7.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,2-Dichloroethane	107-06-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Trichloroethylene (Trichloroethene)	79-01-6	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Vinyl chloride	75-01-4	0.2	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
TCLP Semivolatile Organics, ug/L (ppb)									
Hexachlorobenzene	118-74-1	130	ND (<50)	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Hexachlorobutadiene	87-68-3	500	ND (<50)	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Hexachloroethane	67-72-1	3000	ND (<50)	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4-Dinitrotoluene	121-14-2	130	ND (<50)	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Nitrobenzene	98-95-3	2000	ND (<50)	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Pentachlorophenol	87-86-5	100000	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<50)	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<50)	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
TCLP Pesticides, ug/L (ppb)									
Chlordane	57-74-9	30	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Endrin	72-20-8	20	ND (<0.5)	ND (<0.5)	ND (<0.49)	ND (<0.5)	ND (<0.49)	ND (<0.5)	ND (<0.5)
Heptachlor	76-44-8	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)
Heptachlor epoxide	1024-57-3	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)
Methoxychlor	72-43-5	10000	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Toxaphene	8001-35-2	500	ND (<10)	ND (<10)	ND (<9.8)	ND (<9.9)	ND (<9.9)	ND (<9.9)	ND (<10)

TABLE 4. RESULTS SUMMARY (continued)

Analyte	CASRN	Regulated Level	320-1678-7 UMC 05-210-004 5151302809-A	320-1678-8 UMC 05-210-005 5151302810-A	320-1678-9 UMC 05-210-007 5151302812-A	320-1678-10 UMC 05-210-009 5151302814-A	320-1678-11 UMC 05-210-010 5151302815-A	320-1678-12 UMC 05-210-011 5151302816-A	320-1711-1 MPB 10-205-001 4F61302803-A
Chemical Agent, ug/Kg (ppb)									
GB	107-44-8	16	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)
VX	50782-69-9	13	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)
HD	505-60-2	152	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)
TCLP Metals, mg/Kg (ppm)									
Arsenic	7440-38-2	5.0	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)
Barium	7440-39-3	100	1.2 J	1 J	0.77 J	0.94 J	0.49 J	1.4 J	1.1 J
Cadmium	7440-43-9	1.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Chromium	7440-47-3	5.0	0.033	0.039	0.028	0.027	0.055	0.028	0.059
Lead	7439-92-1	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Mercury	7439-97-6	0.2	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)
Selenium	7782-49-2	1.0	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	0.015 J
Silver	7440-22-4	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
TCLP Volatile Organics, mg/L (ppm)									
Benzene	71-43-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Carbon tetrachloride	56-23-5	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chlorobenzene	108-90-7	100.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chloroform	67-66-3	6.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,4-Dichlorobenzene	106-46-7	7.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,2-Dichloroethane	107-06-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Trichloroethylene (Trichloroethene)	79-01-6	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Vinyl chloride	75-01-4	0.2	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
TCLP Semivolatile Organics, ug/L (ppb)									
Hexachlorobenzene	118-74-1	130	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Hexachlorobutadiene	87-68-3	500	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<250)
Hexachloroethane	67-72-1	3000	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<250)
2,4-Dinitrotoluene	121-14-2	130	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Nitrobenzene	98-95-3	2000	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<250)
Pentachlorophenol	87-86-5	100000	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<1200)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<250)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<49)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<250)
TCLP Pesticides, ug/L (ppb)									
Chlordane	57-74-9	30	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Endrin	72-20-8	20	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)
Heptachlor	76-44-8	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	0.017 J
Heptachlor epoxide	1024-57-3	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)
Methoxychlor	72-43-5	10000	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Toxaphene	8001-35-2	500	ND (<9.9)	ND (<10)	ND (<9.9)	ND (<9.9)	ND (<10)	ND (<10)	ND (<9.9)

TABLE 4. RESULTS SUMMARY (continued)

Analyte	CASRN	Regulated Level	320-2120-3 MPB 10-205-101 68B1308600-A	320-1711-2 MPB 10-205-002 4F61302804-A	320-2120-4 MPB 10-205-102 6611308600-A	320-1711-3 MPB 10-205-003 4F61302805-A	320-2120-5 MPB 10-205-103 6621308600-A	320-1711-4 MPB 10-205-004 4F61302806-A	320-2120-6 MPB 10-205-104 6621308601-A
Chemical Agent, ug/Kg (ppb)									
GB	107-44-8	16	---	ND (<16)	---	ND (<16)	---	ND (<16)	---
VX	50782-69-9	13	---	ND (<13)	---	ND (<13)	---	ND (<13)	---
HD	505-60-2	152	---	ND (<152)	---	ND (<152)	---	ND (<152)	---
TCLP Metals, mg/Kg (ppm)									
Arsenic	7440-38-2	5.0	---	ND (<0.02)	---	ND (<0.02)	---	ND (<0.02)	---
Barium	7440-39-3	100	---	0.63 J	---	0.5 J	---	0.77 J	---
Cadmium	7440-43-9	1.0	---	ND (<0.01)	---	ND (<0.01)	---	ND (<0.01)	---
Chromium	7440-47-3	5.0	---	0.043	---	0.049	---	0.057	---
Lead	7439-92-1	5.0	---	ND (<0.01)	---	ND (<0.01)	---	ND (<0.01)	---
Mercury	7439-97-6	0.2	---	ND (<0.002)	---	ND (<0.002)	---	ND (<0.002)	---
Selenium	7782-49-2	1.0	---	ND (<0.02)	---	ND (<0.02)	---	ND (<0.02)	---
Silver	7440-22-4	5.0	---	ND (<0.01)	---	ND (<0.01)	---	ND (<0.01)	---
TCLP Volatile Organics, mg/L (ppm)									
Benzene	71-43-2	0.5	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
Carbon tetrachloride	56-23-5	0.5	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
Chlorobenzene	108-90-7	100.0	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
Chloroform	67-66-3	6.0	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
1,4-Dichlorobenzene	106-46-7	7.5	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
1,2-Dichloroethane	107-06-2	0.5	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
Trichloroethylene (Trichloroethene)	79-01-6	0.5	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
Vinyl chloride	75-01-4	0.2	---	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	---
TCLP Semivolatile Organics, ug/L (ppb)									
Hexachlorobenzene	118-74-1	130	ND (<10)	ND (<50)	ND (<10)	ND (<50)	ND (<10)	ND (<50)	ND (<10)
Hexachlorobutadiene	87-68-3	500	ND (<10)	ND (<250)	ND (<10)	ND (<250)	ND (<10)	ND (<250)	ND (<10)
Hexachloroethane	67-72-1	3000	ND (<50)	ND (<250)	ND (<50)	ND (<250)	ND (<50)	ND (<250)	ND (<50)
2,4-Dinitrotoluene	121-14-2	130	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Nitrobenzene	98-95-3	2000	ND (<100)	ND (<250)	ND (<100)	ND (<250)	ND (<100)	ND (<250)	ND (<100)
Pentachlorophenol	87-86-5	100000	ND (<50)	ND (<1200)	ND (<50)	ND (<1200)	ND (<50)	ND (<1200)	ND (<50)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<50)	ND (<250)	ND (<50)	ND (<250)	ND (<50)	ND (<250)	ND (<50)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<50)	ND (<250)	ND (<50)	ND (<250)	ND (<50)	ND (<250)	ND (<50)
TCLP Pesticides, ug/L (ppb)									
Chlordane	57-74-9	30	---	ND (<2.5)	---	ND (<2.5)	---	ND (<2.5)	---
Endrin	72-20-8	20	---	ND (<0.5)	---	ND (<0.5)	---	ND (<0.5)	---
Heptachlor	76-44-8	8	---	ND (<0.25)	---	ND (<0.25)	---	0.022 J	---
Heptachlor epoxide	1024-57-3	8	---	ND (<0.25)	---	0.02 J	---	ND (<0.25)	---
Methoxychlor	72-43-5	10000	---	ND (<2.5)	---	ND (<2.5)	---	ND (<2.5)	---
Toxaphene	8001-35-2	500	---	ND (<10)	---	ND (<9.9)	---	ND (<9.9)	---

TABLE 4. RESULTS SUMMARY (continued)

Analyte	CASRN	Regulated Level	320-1711-5 MPB 10-205-005 4F61302807-A	320-2120-7 MPB 10-205-105 6621308603-A	320-1711-6 MPB 10-205-006 4F61302808-A	320-2120-8 MPB 10-205-106 6621308604-A	320-1838-2 LMC 05-153-002 5151302836-A	320-1838-3 BSA 17-146-001 5151302819-A	320-1838-4 BSA 17-146-002 5151302821-A
Chemical Agent, ug/Kg (ppb)									
GB	107-44-8	16	ND (<16)	---	ND (<16)	---	ND (<16)	ND (<16)	ND (<16)
VX	50782-69-9	13	ND (<13)	---	ND (<13)	---	ND (<13)	ND (<13)	ND (<13)
HD	505-60-2	152	ND (<152)	---	ND (<152)	---	ND (<152)	ND (<152)	ND (<152)
TCLP Metals, mg/Kg (ppm)									
Arsenic	7440-38-2	5.0	ND (<0.02)	---	ND (<0.02)	---	ND (<0.02)	ND (<0.02)	ND (<0.02)
Barium	7440-39-3	100	0.83 J	---	0.67 J	---	0.96 J	1.6 J	1 J
Cadmium	7440-43-9	1.0	ND (<0.01)	---	ND (<0.01)	---	ND (<0.01)	ND (<0.01)	ND (<0.01)
Chromium	7440-47-3	5.0	0.051	---	0.055	---	0.027	0.025	0.038
Lead	7439-92-1	5.0	ND (<0.01)	---	ND (<0.01)	---	ND (<0.01)	ND (<0.01)	ND (<0.01)
Mercury	7439-97-6	0.2	ND (<0.002)	---	ND (<0.002)	---	0.00033 J	ND (<0.002)	ND (<0.002)
Selenium	7782-49-2	1.0	ND (<0.02)	---	ND (<0.02)	---	ND (<0.02)	ND (<0.02)	ND (<0.02)
Silver	7440-22-4	5.0	ND (<0.01)	---	ND (<0.01)	---	ND (<0.01)	ND (<0.01)	ND (<0.01)
TCLP Volatile Organics, mg/L (ppm)									
Benzene	71-43-2	0.5	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Carbon tetrachloride	56-23-5	0.5	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chlorobenzene	108-90-7	100.0	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chloroform	67-66-3	6.0	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,4-Dichlorobenzene	106-46-7	7.5	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,2-Dichloroethane	107-06-2	0.5	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Trichloroethylene (Trichloroethene)	79-01-6	0.5	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Vinyl chloride	75-01-4	0.2	ND (<0.2)	---	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
TCLP Semivolatile Organics, ug/L (ppb)									
Hexachlorobenzene	118-74-1	130	ND (<50)	ND (<10)	ND (<50)	ND (<10)	ND (<50)	ND (<50)	ND (<50)
Hexachlorobutadiene	87-68-3	500	ND (<250)	ND (<10)	ND (<250)	ND (<10)	ND (<50)	ND (<50)	ND (<50)
Hexachloroethane	67-72-1	3000	ND (<250)	ND (<50)	ND (<250)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4-Dinitrotoluene	121-14-2	130	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Nitrobenzene	98-95-3	2000	ND (<250)	ND (<100)	ND (<250)	ND (<100)	ND (<50)	ND (<50)	ND (<50)
Pentachlorophenol	87-86-5	100000	ND (<1200)	ND (<50)	ND (<1200)	ND (<50)	ND (<250)	ND (<250)	ND (<250)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<250)	ND (<50)	ND (<250)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<250)	ND (<50)	ND (<250)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
TCLP Pesticides, ug/L (ppb)									
Chlordane	57-74-9	30	ND (<2.5)	---	ND (<2.5)	---	ND (<2.5)	ND (<2.5)	ND (<2.5)
Endrin	72-20-8	20	0.087 J	---	ND (<0.5)	---	ND (<0.5)	ND (<0.5)	ND (<0.5)
Heptachlor	76-44-8	8	0.028 J	---	ND (<0.25)	---	ND (<0.25)	ND (<0.25)	ND (<0.25)
Heptachlor epoxide	1024-57-3	8	ND (<0.25)	---	ND (<0.25)	---	ND (<0.25)	ND (<0.25)	ND (<0.25)
Methoxychlor	72-43-5	10000	ND (<2.5)	---	ND (<2.5)	---	ND (<2.5)	ND (<2.5)	ND (<2.5)
Toxaphene	8001-35-2	500	ND (<9.9)	---	ND (<10)	---	ND (<10)	ND (<10)	ND (<9.9)

TABLE 4. RESULTS SUMMARY (continued)

Analyte	CASRN	Regulated Level	320-1838-5 LMC 05-153-003 5151302837-A	320-1839-2 BSA 17-146-003 5151302823-A	320-1839-3 BSA 17-146-004 5151302824-A	320-1839-4 LMC 05-153-004 5151302838-A	320-1839-5 LMC 05-153-001 5151302835-A	320-1845-1 Airlock 111A 06-164-001 5151302817-A	320-1845-2 SDS 21-140-001 5151302825-A
Chemical Agent, ug/Kg (ppb)									
GB	107-44-8	16	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)
VX	50782-69-9	13	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)
HD	505-60-2	152	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)
TCLP Metals, mg/Kg (ppm)									
Arsenic	7440-38-2	5.0	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)
Barium	7440-39-3	100	0.74 J	1.4 J	1.5 J	1.2 J	0.94 J	0.91 J	0.78 J
Cadmium	7440-43-9	1.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Chromium	7440-47-3	5.0	ND (<0.02)	0.038	0.044	0.023	0.039	0.059	0.059
Lead	7439-92-1	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Mercury	7439-97-6	0.2	ND (<0.002)	ND (<0.002)	ND (<0.002)	0.00032 J	0.00049 J	ND (<0.002)	ND (<0.002)
Selenium	7782-49-2	1.0	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)	ND (<0.02)
Silver	7440-22-4	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
TCLP Volatile Organics, mg/L (ppm)									
Benzene	71-43-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Carbon tetrachloride	56-23-5	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chlorobenzene	108-90-7	100.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chloroform	67-66-3	6.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,4-Dichlorobenzene	106-46-7	7.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,2-Dichloroethane	107-06-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Trichloroethylene (Trichloroethene)	79-01-6	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Vinyl chloride	75-01-4	0.2	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
TCLP Semivolatile Organics, ug/L (ppb)									
Hexachlorobenzene	118-74-1	130	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<100)
Hexachlorobutadiene	87-68-3	500	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<500)
Hexachloroethane	67-72-1	3000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<500)
2,4-Dinitrotoluene	121-14-2	130	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<100)
Nitrobenzene	98-95-3	2000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<500)
Pentachlorophenol	87-86-5	100000	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<250)	ND (<2500)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<500)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<500)
TCLP Pesticides, ug/L (ppb)									
Chlordane	57-74-9	30	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Endrin	72-20-8	20	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)
Heptachlor	76-44-8	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)
Heptachlor epoxide	1024-57-3	8	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)	ND (<0.25)
Methoxychlor	72-43-5	10000	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)	ND (<2.5)
Toxaphene	8001-35-2	500	ND (<10)	ND (<9.9)	ND (<10)	ND (<10)	ND (<10)	ND (<10)	ND (<10)

TABLE 4. RESULTS SUMMARY (continued)

Analyte	CASRN	Regulated Level	320-2120-2 SDS 21-140-101 6621308605-A	320-1845-3 SDS 21-140-002 5151302826-A	320-1845-4 TOX 11-141-001 5151302829-A	320-2120-1 TOX 11-141-101 6621308606-A	320-1845-5 LIC Airlock 13-154-001 5151302830-A	320-1845-6 LIC1 Primary 13-155-001 5151302831-A	320-1845-7 LIC1 Primary 13-155-002 5151302832-A
Chemical Agent, ug/Kg (ppb)									
GB	107-44-8	16	---	ND (<16)	ND (<16)	---	ND (<16)	ND (<16)	ND (<16)
VX	50782-69-9	13	---	ND (<13)	ND (<13)	---	ND (<13)	ND (<13)	ND (<13)
HD	505-60-2	152	---	ND (<152)	ND (<152)	---	ND (<152)	ND (<152)	ND (<152)
TCLP Metals, mg/Kg (ppm)									
Arsenic	7440-38-2	5.0	---	ND (<0.02)	ND (<0.02)	---	ND (<0.02)	ND (<0.02)	ND (<0.02)
Barium	7440-39-3	100	---	0.89 J	0.72 J	---	1 J	0.74 J	0.45 J
Cadmium	7440-43-9	1.0	---	ND (<0.01)	ND (<0.01)	---	ND (<0.01)	ND (<0.01)	ND (<0.01)
Chromium	7440-47-3	5.0	---	0.054	0.056	---	0.049	0.015 J	0.021
Lead	7439-92-1	5.0	---	ND (<0.01)	ND (<0.01)	---	ND (<0.01)	ND (<0.01)	ND (<0.01)
Mercury	7439-97-6	0.2	---	ND (<0.002)	ND (<0.002)	---	ND (<0.002)	ND (<0.002)	ND (<0.002)
Selenium	7782-49-2	1.0	---	ND (<0.02)	ND (<0.02)	---	ND (<0.02)	ND (<0.02)	ND (<0.02)
Silver	7440-22-4	5.0	---	ND (<0.01)	ND (<0.01)	---	ND (<0.01)	ND (<0.01)	ND (<0.01)
TCLP Volatile Organics, mg/L (ppm)									
Benzene	71-43-2	0.5	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Carbon tetrachloride	56-23-5	0.5	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chlorobenzene	108-90-7	100.0	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chloroform	67-66-3	6.0	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,4-Dichlorobenzene	106-46-7	7.5	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,2-Dichloroethane	107-06-2	0.5	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Trichloroethylene (Trichloroethene)	79-01-6	0.5	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
Vinyl chloride	75-01-4	0.2	---	ND (<0.2)	ND (<0.2)	---	ND (<0.2)	ND (<0.2)	ND (<0.2)
TCLP Semivolatile Organics, ug/L (ppb)									
Hexachlorobenzene	118-74-1	130	ND (<10)	ND (<50)	ND (<100)	ND (<10)	ND (<50)	ND (<50)	ND (<50)
Hexachlorobutadiene	87-68-3	500	ND (<10)	ND (<50)	ND (<500)	ND (<10)	ND (<50)	ND (<50)	ND (<50)
Hexachloroethane	67-72-1	3000	ND (<50)	ND (<50)	ND (<500)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4-Dinitrotoluene	121-14-2	130	ND (<50)	ND (<50)	ND (<100)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Nitrobenzene	98-95-3	2000	ND (<100)	ND (<50)	ND (<500)	ND (<100)	ND (<50)	ND (<50)	ND (<50)
Pentachlorophenol	87-86-5	100000	ND (<50)	ND (<250)	ND (<2500)	ND (<50)	ND (<250)	ND (<250)	ND (<250)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<50)	ND (<50)	ND (<500)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<50)	ND (<50)	ND (<500)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
TCLP Pesticides, ug/L (ppb)									
Chlordane	57-74-9	30	---	ND (<2.5)	ND (<2.5)	---	ND (<2.5)	ND (<2.5)	ND (<2.5)
Endrin	72-20-8	20	---	ND (<0.5)	ND (<0.5)	---	ND (<0.5)	ND (<0.5)	ND (<0.49)
Heptachlor	76-44-8	8	---	ND (<0.25)	ND (<0.25)	---	ND (<0.25)	ND (<0.25)	ND (<0.25)
Heptachlor epoxide	1024-57-3	8	---	ND (<0.25)	ND (<0.25)	---	ND (<0.25)	ND (<0.25)	ND (<0.25)
Methoxychlor	72-43-5	10000	---	ND (<2.5)	0.03 J	---	ND (<2.5)	ND (<2.5)	ND (<2.5)
Toxaphene	8001-35-2	500	---	ND (<9.9)	ND (<9.9)	---	ND (<10)	ND (<10)	ND (<9.9)

TABLE 4. RESULTS SUMMARY (continued)

Analyte	CASRN	Regulated Level	320-1845-8 LIC2 Primary 13-158-001 5151302833-A	320-1845-9 LIC2 Primary 13-158-002 5151302834-A	320-1873-1 Airlock 123A 06-169-001 5151302818-A	320-1873-2 TMA 12-120-001 5151302827-A	320-1873-3 TMA 12-120-002 5151302828-A	320-1873-4 TMA Decon 12-118-001 5151302839-A
Chemical Agent, ug/Kg (ppb)								
GB	107-44-8	16	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)	ND (<16)
VX	50782-69-9	13	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)	ND (<13)
HD	505-60-2	152	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)	ND (<152)
TCLP Metals, mg/Kg (ppm)								
Arsenic	7440-38-2	5.0	ND (<0.02)	ND (<0.02)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Barium	7440-39-3	100	1 J	0.53 J	0.52	0.48	0.61	0.64
Cadmium	7440-43-9	1.0	ND (<0.01)	ND (<0.01)	0.0022 J	ND (<0.01)	ND (<0.01)	ND (<0.01)
Chromium	7440-47-3	5.0	0.02	0.027	0.024	0.07	0.066	0.041
Lead	7439-92-1	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
Mercury	7439-97-6	0.2	ND (<0.002)	ND (<0.002)	ND (<0.0002)	ND (<0.0002)	ND (<0.0002)	ND (<0.0002)
Selenium	7782-49-2	1.0	ND (<0.02)	ND (<0.02)	ND (<0.05)	ND (<0.05)	ND (<0.05)	ND (<0.05)
Silver	7440-22-4	5.0	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)	ND (<0.01)
TCLP Volatile Organics, mg/L (ppm)								
Benzene	71-43-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Carbon tetrachloride	56-23-5	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chlorobenzene	108-90-7	100.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Chloroform	67-66-3	6.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,4-Dichlorobenzene	106-46-7	7.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,2-Dichloroethane	107-06-2	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
1,1-Dichloroethylene (1,1-Dichloroethene)	75-35-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Methyl ethyl ketone (2-Butanone, MEK)	78-93-3	200.0	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Tetrachloroethylene (Tetrachloroethene)	127-18-4	0.7	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Trichloroethylene (Trichloroethene)	79-01-6	0.5	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
Vinyl chloride	75-01-4	0.2	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)	ND (<0.2)
TCLP Semivolatile Organics, ug/L (ppb)								
Hexachlorobenzene	118-74-1	130	ND (<50)	ND (<50)	ND (<10)	ND (<10)	ND (<10)	ND (<10)
Hexachlorobutadiene	87-68-3	500	ND (<50)	ND (<50)	ND (<10)	ND (<10)	ND (<10)	ND (<10)
Hexachloroethane	67-72-1	3000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4-Dinitrotoluene	121-14-2	130	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
Nitrobenzene	98-95-3	2000	ND (<50)	ND (<50)	ND (<100)	ND (<100)	ND (<100)	ND (<100)
Pentachlorophenol	87-86-5	100000	ND (<250)	ND (<250)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4,5-Trichlorophenol	95-95-4	400000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
2,4,6-Trichlorophenol	88-06-2	2000	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)	ND (<50)
TCLP Pesticides, ug/L (ppb)								
Chlordane	57-74-9	30	ND (<2.5)	ND (<2.5)	ND (<5)	ND (<5)	ND (<5)	ND (<5)
Endrin	72-20-8	20	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)
Heptachlor	76-44-8	8	0.05 J	ND (<0.25)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)
Heptachlor epoxide	1024-57-3	8	ND (<0.25)	ND (<0.25)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)
Methoxychlor	72-43-5	10000	ND (<2.5)	ND (<2.5)	ND (<1)	ND (<1)	ND (<1)	ND (<1)
Toxaphene	8001-35-2	500	ND (<10)	ND (<9.9)	ND (<20)	ND (<20)	ND (<20)	ND (<20)

TABLE 4. RESULTS SUMMARY (continued)

Notes:

1. A "ND" indicates the analyte was not detected. For each "ND" the laboratory's reporting limit, adjusted for dilution as required, is provided parenthetically. The laboratory reporting limit is at, or below, the regulatory limit.
2. A "J" indicates the analyte was detected below the laboratory reporting limit. Such results are estimated quantities. The preceeding numerical value is the approximate concentration of the analyte in the sample.
3. For the TCLP semivolatile organics, the six samples from the MDB, one sample from the TOX, and one of two samples from the SDS exhibited poor recovery for one or more surrogates with the undiluted and/or lesser diluted analysis or were not able to be analyzed without dilution due to matrix effects. These sample locations were re-sampled and analyzed for TCLP semivolatile organics. Results for the re-sampled locations are reported in addition to the results of the original sample. In all instances, results for these samples are below the regulated level for each of the TCLP semivolatile organics identified in the WAP.

Abbreviations:

<.....less than	ND.....not detected
CASRN.....Chemical Abstracts Service Registry Numbers	ppb.....parts per billion
GB.....Sarin or Isopropyl Methylphosphonofluoridate	ppm.....parts per million
HD.....Bis (2-chloroethyl) Sulfide	TCLP.....Toxicity Characteristic Leaching Procedure
J.....estimated value that is less than the reporting limit	ug/Kg.....microgram(s) per kilogram
mg/Kg.....milligram(s) per kilogram	ug/L.....microgram(s) per liter
mg/L.....milligram(s) per liter	VX.....O-Ethyl S-(2-Diisopropylaminoethyl) Methylphosphonothiolate

DATA ASSESSMENT REPORT
UMCDF MDB CONCRETE CHIP SAMPLING

INTRODUCTION

This data assessment report has been prepared to present the results of the Stage 1 validation of the non-agent samples and analytes summarized below. All samples in these sample delivery groups (SDGs) were manually validated and should have the following label applied:

Stage_1_Validation_Manual (S1VM)

Laboratory(s): TestAmerica – West Sacramento, CA and Pittsburgh, PA

Sample Date	Sample Type	TestAmerica SDG	TestAmerica Sample Number	UMCDF Laboratory Sample ID	UMCDF Container ID	TCLP VOCs	TCLP SVOCs	TCLP Pesticides	TCLP Metals	TCLP Mercury
01/29/2013	Solid	320-1635-1	320-1635-1	4F61302800-A	03-211-001	X	X	X	X	X
01/29/2013	Solid	320-1635-1	320-1635-2	5151302811-A	05-210-006	X	X	X	X	X
01/29/2013	Solid	320-1635-1	320-1635-3	5151302813-A	05-210-008	X	X	X	X	X
01/29/2013	Solid	320-1650-1	320-1650-1	5151302802-A	04-213-001	X	X	X	X	X
01/29/2013	Solid	320-1650-1	320-1650-2	5151302803-A	04-213-002	X	X	X	X	X
01/29/2013	Solid	320-1650-1	320-1650-3	5151302804-A	04-213-003	X	X	X	X	X
01/29/2013	Solid	320-1650-1	320-1650-4	5151302805-A	04-213-004	X	X	X	X	X
01/29/2013	Solid	320-1650-1	320-1650-5	4F61302801-A	03-212-001	X	X	X	X	X
01/29/2013	Solid	320-1650-1	320-1650-6	4F61302802-A	03-212-002	X	X	X	X	X
01/31/2013	Solid	320-1678-1	320-1678-2	5151302800-A	06-221-001	X	X	X	X	X
01/31/2013	Solid	320-1678-1	320-1678-3	5151302801-A	06-217-001	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-4	5151302806-A	05-210-001	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-5	5151302807-A	05-210-002	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-6	5151302808-A	05-210-003	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-7	5151302809-A	05-210-004	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-8	5151302810-A	05-210-005	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-9	5151302812-A	05-210-007	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-10	5151302814-A	05-210-009	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-11	5151302815-A	05-210-010	X	X	X	X	X
01/30/2013	Solid	320-1678-1	320-1678-12	5151302816-A	05-210-011	X	X	X	X	X
02/04/2013	Solid	320-1711-1	320-1711-1	4F61302803-A	10-205-001	X	X	X	X	X
02/04/2013	Solid	320-1711-1	320-1711-2	4F61302804-A	10-205-002	X	X	X	X	X
02/04/2013	Solid	320-1711-1	320-1711-3	4F61302805-A	10-205-003	X	X	X	X	X
02/04/2013	Solid	320-1711-1	320-1711-4	4F61302806-A	10-205-004	X	X	X	X	X
02/04/2013	Solid	320-1711-1	320-1711-5	4F61302807-A	10-205-005	X	X	X	X	X
02/04/2013	Solid	320-1711-1	320-1711-6	4F61302808-A	10-205-006	X	X	X	X	X
02/18/2013	Solid	320-1838-1	320-1838-2	5151302836-A	05-153-002	X	X	X	X	X
02/18/2013	Solid	320-1838-1	320-1838-3	5151302819-A	17-146-001	X	X	X	X	X
02/18/2013	Solid	320-1838-1	320-1838-4	5151302821-A	17-146-002	X	X	X	X	X
02/18/2013	Solid	320-1838-1	320-1838-5	5151302837-A	05-153-003	X	X	X	X	X
02/18/2013	Solid	320-1839-1	320-1839-2	5151302823-A	17-146-003	X	X	X	X	X
02/18/2013	Solid	320-1839-1	320-1839-3	5151302824-A	17-146-004	X	X	X	X	X
02/18/2013	Solid	320-1839-1	320-1839-4	5151302838-A	05-153-004	X	X	X	X	X
02/18/2013	Solid	320-1839-1	320-1839-5	5151302835-A	05-153-001	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-1	5151302817-A	06-164-001	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-2	5151302825-A	21-140-001	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-3	5151302826-A	21-140-002	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-4	5151302829-A	11-141-001	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-5	5151302830-A	13-154-001	X	X	X	X	X

Sample Date	Sample Type	TestAmerica SDG	TestAmerica Sample Number	UMCDF Laboratory Sample ID	UMCDF Container ID	TCLP VOCs	TCLP SVOCs	TCLP Pesticides	TCLP Metals	TCLP Mercury
02/19/2013	Solid	320-1845-1	320-1845-6	5151302831-A	13-155-001	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-7	5151302832-A	13-155-002	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-8	5151302833-A	13-158-001	X	X	X	X	X
02/19/2013	Solid	320-1845-1	320-1845-9	5151302834-A	13-158-002	X	X	X	X	X
02/21/2013	Solid	320-1873-1	320-1873-1	5151302818-A	06-169-001	X	X	X	X	X
02/21/2013	Solid	320-1873-1	320-1873-2	5151302827-A	12-120-001	X	X	X	X	X
02/21/2013	Solid	320-1873-1	320-1873-3	5151302828-A	12-120-002	X	X	X	X	X
02/21/2013	Solid	320-1873-1	320-1873-4	5151302839-A	12-118-001	X	X	X	X	X
03/27/2013	Solid	320-2120-1	320-2120-1	6621308606-A	11-141-101		X			
03/27/2013	Solid	320-2120-1	320-2120-2	6621308605-A	21-140-101		X			
03/28/2013	Solid	320-2120-1	320-2120-3	68B1308600-A	10-205-101		X			
03/28/2013	Solid	320-2120-1	320-2120-4	6611308600-A	10-205-102		X			
03/28/2013	Solid	320-2120-1	320-2120-5	6621308600-A	10-205-103		X			
03/28/2013	Solid	320-2120-1	320-2120-6	6621308601-A	10-205-104		X			
03/28/2013	Solid	320-2120-1	320-2120-7	6621308603-A	10-205-105		X			
03/28/2013	Solid	320-2120-1	320-2120-8	6621308604-A	10-205-106		X			

I. STAGE 1 VALIDATION

Each laboratory analytical data package was subjected to a Stage 1 validation as described in the "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use" (EPA 2009). Stage 1 validation consists of verification and validation checks for the compliance of sample receipt conditions, sample characteristics, and analytical results. The following baseline checks were performed on each laboratory analytical data package:

- Documentation identifies the laboratory receiving and conducting analyses, and includes documentation for all samples submitted for analyses.
- Requested analytical methods were performed and the analysis dates are present.
- Requested target analyte results are reported along with the original laboratory data qualifiers and data qualifier definitions for each reported result.
- Requested target analyte result units are reported.
- Requested reporting limits for all samples are present and results at and below the requested reporting limits are clearly identified.
- Sampling dates and times, date and time of laboratory receipt of samples, and sample conditions upon receipt at the laboratory are documented.

The laboratory provided eight (8) Level 2 analytical reports that include the forty-seven (47) solid (concrete) samples collected on 01/29/2013, 01/30/2013, 01/31/2013, 02/04/2013, 02/18/2013, 02/19/2013, and 02/21/2013. An additional laboratory report was provided that includes the eight (8) resampled locations collected on 03/27/2013 and 03/28/2013. Several laboratory reports included samples submitted by the UMCDF that are not part of the MDB concrete sampling. These laboratory reports and the unassociated samples are listed below:

TestAmerica Job ID	TestAmerica Sample Number	Laboratory Sample Number
320-1678-1	320-1678-1	5311302900-A
320-1838-1	320-1838-1	C421304500-A
320-1839-1	320-1839-1	C421304501-A
320-2120-1	320-2120-9	6A71308700-A

Each Level 2 analytical report includes a Lab Chronicle that identifies the laboratories receiving and conducting analyses as TestAmerica – West Sacramento, CA (TCLP semivolatiles, TCLP pesticides, and TCLP metals, including mercury) and TestAmerica – Pittsburgh, PA (TCLP volatiles, TCLP semivolatiles, TCLP pesticides, and TCLP metals, including mercury). In addition, each laboratory report includes a Certification Summary that identifies the various certifications held by each laboratory, a Method Summary identifying which laboratory performed each method, copies of the chain-of-custody (COC) forms for samples received at each laboratory, and Login Sample Receipt Checklists to document sample receipt for each laboratory.

Requested analytical methods, as required by the UMCDF Hazardous Waste Permit, Attachment 2, Umatilla Chemical Agent Disposal Facility Waste Analysis Plan, January 2013 (DEQ 2013) and identified on the COC forms, were performed and reported on Client Sample Results forms along with the analysis dates. In addition, the sample preparation and analysis dates are provided on the Lab Chronicle.

The COC forms indicate analysis type (e.g., TCLP Volatiles) and do not specify individual target analytes (e.g., benzene or chlordane). The validator referred to the WAP and verified the analytes reported on the Client Sample Results forms include all required analytes identified in the WAP. It is noted that the laboratory has reported additional analytes for each sample that are not specified in the WAP. Table A provides a listing of the analytes reported by the laboratory for each sample and an indication if it is required by the WAP. The reported results for each analyte include the original laboratory data qualifiers. Each laboratory report provides laboratory qualifier definitions used for each analysis type.

For each reported analyte, the result units are reported on the Client Sample Results forms.

Required reporting limits are not specified on the COC or in the WAP. However, the validator ascertained that the intended use of the data was to demonstrate the waste was not characteristic for toxicity for the WAP-specific analytes listed in 40 CFR Part 261.24, Table 1 "Maximum Concentration of Contaminates for the Toxicity Characteristic." The laboratory reporting limits for all samples are present and results at and below the laboratory reporting limits are clearly identified. In some instances, dilutions were performed and the dilution-adjusted reporting limits are greater than the regulatory limit. The laboratory has also reported results for all such analytes where the undiluted, or lesser-diluted, analysis provides a reporting limit that is below the regulatory limit.

The date and time each sample was collected, date and time of laboratory receipt of samples, and sample conditions upon receipt at the laboratory are documented in each laboratory report.

II. PRELIMINARY ASSESSMENT

During the Stage 1 validation, the validator observed that not all quality control results were within control limits. In general, the observed failures are not expected to result in the rejection of the results. Typically, such results will yield a "use with caution" or no qualification in accordance with the site procedure, "Off-Site Waste Data Quality Reviews" (URS 2012). There are some instances where the quality control results are expected to yield unusable results as discussed below. This preliminary assessment is intended to provide the data user with a general indication if any results are likely to be rejected or deemed unusable. It is expected that each laboratory analytical data package will be subjected to a Stage 2A validation in accordance with the site procedure. The Stage 2A validation will assess the data usability and apply data qualifiers, where appropriate.

The preliminary assessment included the following items and conclusions listed below:

- Sample receipt
- Sample preservation
- Holding times
- Method blank
- Laboratory control sample (LCS) percent recovery
- Matrix spike (MS)/Matrix spike duplicate (MSD) percent recovery and relative percent difference (RPD)
- Surrogate percent recovery

Sample Receipt
No unresolvable sample receipt issues were reported by the laboratory. It is not expected that any of the reported results will be rejected or otherwise deemed unusable based on sample receipt conditions.

Sample Preservation
All samples were reported to have been received within the acceptable range for sample temperature upon receipt. No other preservation was required for these samples. It is not expected that any of the reported results will be rejected or otherwise deemed unusable based on sample preservation conditions.

Holding Times
For non-volatile TCLP parameters, holding times from sample collection to TCLP leaching, TCLP leaching to sample preparation, and sample preparation to analysis are evaluated. For TCLP volatiles, holding times from sample collection to leaching and leaching to analysis are evaluated. All samples were originally leached, prepared, as required, and analyzed within applicable holding times. Several samples were re-extracted for TCLP pesticides to confirm low surrogate recovery for the original analysis. The TCLP pesticides re-extractions for certain samples were performed beyond the seven (7) day holding time. Both the original results and re-extracted results are reported with the re-extractions having an "RE" suffix. It is not expected that any of the reported results will be rejected or otherwise deemed unusable based on holding times.

Method Blank
The laboratory prepared and reported method blanks (blanks associated with the sample preparation) and leachate blanks (blanks associated with the TCLP leaching process). While there were target analytes detected in both method blanks and leachate blanks, no gross contamination was observed and all but one of the detections were below the reporting limit. It is not expected that any of the reported results will be rejected or otherwise deemed unusable based on method blank or leachate blank results.

LCS Percent Recovery
There were instances where LCS percent recoveries were not within acceptance limits. In most instances, the LCS recoveries were above the upper acceptance limit. In a few instances, the LCS recoveries were below the lower acceptance limit but based on other quality control indicators the laboratory determined that corrective action was not indicated. In no instance was a recovery less than 10% observed. It is not expected that any of the reported results will be rejected or otherwise deemed unusable based on LCS percent recoveries.

MS/MSD Percent Recovery and RPD

There were instances where MS/MSD percent recoveries were not within acceptance limits. In several instances, percent recoveries less than 10% were observed. In such instances, it can be expected that the associated results for the failing analyte will be rejected or otherwise deemed unusable. It is not expected that any of the reported results will be rejected or otherwise deemed unusable based on RPD results. MS/MSDs with individual analyte recoveries less than 10% are listed below.

TestAmerica Sample ID	Associated TestAmerica Job IDs	Analyte	Recovery	Acceptance Limits
320-1635-1 MS	320-1635-1, 320-1650-1, 320-1678-1	3,3'-Dichlorobenzidine	0%	32 – 92%
320-1635-1 MSD	320-1635-1, 320-1650-1, 320-1678-1	3,3'-Dichlorobenzidine	6%	32 – 92%
320-1711-1 MS	320-1711-1	3,3'-Dichlorobenzidine	0%	32 – 92%
320-1711-1 MSD	320-1711-1	3,3'-Dichlorobenzidine	0%	32 – 92%
320-1839-1 MS	320-1839-1, 320-1838-1	3,3'-Dichlorobenzidine	0%	32 – 92%
320-1839-1 MS	320-1839-1, 320-1838-1	4-Nitrophenol	0%	24 – 64%
320-1839-1 MSD	320-1839-1, 320-1838-1	3,3'-Dichlorobenzidine	1%	32 – 92%
320-1839-1 MSD	320-1839-1, 320-1838-1	4-Nitrophenol	6%	24 – 64%

Surrogate Percent Recovery

There were instances where surrogate percent recoveries were not within acceptance limits. In some, but not all instances, samples were re-extracted to confirm low surrogate recoveries. In one instance, the calculated recovery is less than 10% (see below). For this sample, the extract was diluted prior to analysis and this may have resulted in the surrogate being diluted out of the extract. In instances where necessary dilutions result in one or more surrogates being diluted out of the extract, results may be deemed usable even when the calculated recovery is less than the lower acceptance limit.

TestAmerica Sample ID	Surrogate	Recovery	Acceptance Limits
320-1711-6-DL	Phenol-d6	0%	10 – 50%

The resampled locations provide usable TCLP semivolatile organic results without dilution and with all surrogate recoveries within acceptance limits.

III. OVERALL ASSESSMENT

The Stage 1 validation did not identify any deficiencies. The preliminary assessment indicates all WAP-required results, except as noted previously, are expected to be considered usable.

IV. REFERENCES

EPA 2009 Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response, January 13, 2009.

URS 2012 UM-LA-038, Off-Site Waste Data Quality Reviews, Change 1, February 20, 2012.

DEQ 2013 Umatilla Chemical Agent Disposal Facility, Permit No. ORQ 000 009 431-1, Attachment 2, Umatilla Chemical Agent Disposal Facility Waste Analysis Plan, January 17, 2013.

TABLE A. REPORTED ANALYTE LIST

Analyte	WAP	Analyte	WAP	Analyte	WAP
TCLP VOA		**TCLP SVOA (continued)**		**TCLP SVOA (continued)**	
1,1-Dichloroethene	Yes	2,6-Dinitrotoluene		Nitrobenzene	Yes
1,2-Dichloroethane	Yes	2-Chloronaphthalene		N-Nitrosodi-n-propylamine	
2-Butanone (MEK)	Yes	2-Chlorophenol		N-Nitrosodiphenylamine	
Benzene	Yes	2-Methylnaphthalene		Pentachlorophenol	Yes
Carbon tetrachloride	Yes	2-Methylphenol		Phenanthrene	
Chlorobenzene	Yes	2-Nitroaniline		Phenol	
Chloroform	Yes	2-Nitrophenol		Pyrene	
Chloromethane		3-Methylphenol & 4-		**TCLP Pesticides**	
Tetrachloroethene	Yes	3,3'-Dichlorobenzidine		Aldrin	
Trichloroethene	Yes	3-Nitroaniline		alpha-BHC	
Bromomethane		4,6-Dinitro-2-methylphenol		beta-BHC	
Vinyl chloride	Yes	4-Bromophenyl phenyl ether		gamma-BHC (Lindane)	
Chloroethane		4-Chloro-3-methylphenol		delta-BHC	
Trichlorofluoromethane		4-Chloroaniline		Chlordane (technical)	Yes
Dichlorodifluoromethane		4-Chlorophenyl phenyl ether		4,4'-DDD	
Acetone		4-Nitroaniline		4,4'-DDE	
Carbon disulfide		4-Nitrophenol		4,4'-DDT	
Methylene Chloride		Acenaphthene		Dieldrin	
trans-1,2-Dichloroethene		Acenaphthylene		Endosulfan I	
Methyl tert-butyl ether		Acetophenone		Endosulfan II	
1,1-Dichloroethane		Anthracene		Endosulfan sulfate	
cis-1,2-Dichloroethene		Benzaldehyde		Endrin	Yes
1,1,1-Trichloroethane		Benzo[a]anthracene		Endrin aldehyde	
1,2-Dichloropropane		Benzo[a]pyrene		Endrin ketone	
Dibromomethane		Benzo[b]fluoranthene		Heptachlor	Yes
Dichlorobromomethane		Benzo[g,h,i]perylene		Heptachlor epoxide	Yes
cis-1,3-Dichloropropene		Benzo[k]fluoranthene		Methoxychlor	Yes
4-Methyl-2-pentanone (MIBK)		Biphenyl		Toxaphene	Yes
Toluene		bis (2-chloroisopropyl) ether		**TCLP Metals**	
trans-1,3-Dichloropropene		Bis(2-chloroethoxy)methane		Silver	Yes
1,1,2-Trichloroethane		Bis(2-chloroethyl)ether		Antimony	
2-Hexanone		Bis(2-ethylhexyl) phthalate		Arsenic	Yes
Chlorodibromomethane		Butyl benzyl phthalate		Barium	Yes
1,2-Dibromoethane		Carbazole		Beryllium	
Ethylbenzene		Chrysene		Boron	
Xylenes, Total		Dibenz(a,h)anthracene		Cadmium	Yes
Styrene		Dibenzofuran		Chromium	Yes
Bromoform		Diethyl phthalate		Cobalt	
1,1,2,2-Tetrachloroethane		Dimethyl phthalate		Copper	
1,3-Dichlorobenzene		Di-n-butyl phthalate		Lead	Yes
1,4-Dichlorobenzene	Yes	Di-n-octyl phthalate		Manganese	
1,2-Dichlorobenzene		Fluoranthene		Nickel	
1,2-Dibromo-3-Chloropropane		Fluorene		Phosphorus	
TCLP SVOA		Hexachlorobenzene	Yes	Selenium	Yes
2,4,5-Trichlorophenol	Yes	Hexachlorobutadiene	Yes	Thallium	
2,4,6-Trichlorophenol	Yes	Hexachlorocyclopentadiene		Tin	
2,4-Dichlorophenol		Hexachloroethane	Yes	Vanadium	
2,4-Dimethylphenol		Indeno[1,2,3-cd]pyrene		Zinc	
2,4-Dinitrophenol		Isophorone		Mercury	Yes
2,4-Dinitrotoluene	Yes	Naphthalene			