

AGENCY FINAL

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## **Appendix 12**

### **Waste Analysis Plan**

### **RCRA Part B Permit Renewal Application**

### **Edwards Air Force Base**



*Prepared for:*

412<sup>th</sup> Civil Engineer Group  
Environmental Management Division  
120 North Rosamond Blvd., Building 3735  
Edwards AFB, CA 93524-8600

XXX 2017

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## LIST OF ACRONYMS

ACCS	Accumulation Site
AFFF	Aqueous Firefighting Foam
AP	Accumulation Point
AFB	Air Force Base
AFI	Air Force Instruction
ASTM	American Society for Testing and Materials
BTU/lb	British thermal units per pound
CAM	California Metals
CEV	Environmental Management
CCR	California Code of Regulations
CFR	Code of Federal Regulations
COC	Chain Of Custody
cm	centimeter
DOT	Department of Transportation
DRMO	Defence Reutilization and Marketing Office
DRMS	Defense Reutilization and Marketing Services
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
EESOHMIS	Enterprise Environmental Safety Occupational Health Management Information System
ERP	Environmental Restoration Program
FOB	found on base
H2O	Hydrogen Dioxide (Water)
H2O2	Hydrogen Peroxide
HCL	Hydrochloric Acid
HM	Hazardous Material
HW	Hazardous Waste
HWAS	Hazardous Waste Accumulation Site
HWMP	Hazardous Waste Management Plan
HWPS	Hazardous Waste Profile Sheet
HWSF	Hazardous Waste Support Facility
HWSI	Hazardous Wastestream Inventory
HWSMDB	Hazardous Wastestream Management Database
IAP	Initial Accumulation Point
IDW	Investigation Derived Waste

l	liter
Max	maximum
MEK	Methyl Ethyl Ketone
mg/L	milligrams per liter
mL	milliliter
N/A	Not Applicable
NACE	National Association of Corrosion Engineers
QA/QC	Quality Assurance/Quality Control
PCBs	Polychlorinated Biphenyls
pH	Hydrogen Ion Concentration
POC	point of contact
ppb	parts per billion
PPE	Personal Protective Equipment
ppm	parts per million
PQL	Practical Quantitation Limit
PTFE	Polytetrafluoroethylene (Teflon)
RC	Reaction Code
RCRA	Resource Conservation and Recovery Act
RGN	Reactivity Group Number
SDS	Safety Data Sheet
S/L	solid/liquid
SRF	Sample Request Form
STLC	State Toxicity Leaching Procedure
SVOC	Semivolatile Organic Compound
Spec	Specification
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TEB	Triethyl Borane
TPH	Total Petroleum Hydrocarbons
TSS	Total Soluble Solids
TTLC	Toxicity Threshold Limit Concentration
TOX	Total Organic Halide
USAF	United States Air Force

VOC	Volatile Organic Compound
WAP	Waste Analysis Plan
WET	Wet Extraction Test
WTID	Waste Turn-In Document

## 1.0 INTRODUCTION

### 1.1 REGULATORY BACKGROUND

The Waste Analysis Plan (WAP) for Edwards Air Force Base (AFB) is required by Title 40 Code of Federal Regulations (CFR) 264.13(a), (b) and (c); California Code of Regulations (CCR) 66264.13; and Air Force Instruction (AFI) 32-7042 – *Waste Management, Section 2.3 Waste Characterization and Identification*.

The WAP applies to all Edwards AFB hazardous waste (HW) that are transferred to the permitted Hazardous Waste Support Facility (HWSF). Edwards AFB does not dispose of or treat HW at the HWSF, so compliance with the waste analysis requirements of 40 CFR 268.7 (a)(4) are not currently required.

Air Force Instruction 32-7042 requires the WAP to include the following:

- Procedures to sample each wastestream
- Identification of all wastestreams that are evaluated and analyzed
- Descriptions of testing and analytical methods
- Location of samples
- Sampling/analysis frequency
- Documentation
- Sample quality assurance
- Quality control
- Sample request procedures
- Hazardous Wastestream Inventory (HWSI) to include:
  - All HW generated
  - Generating activity identification (organization)
  - Location (building number)
  - Wastestream identification number (profile number)
  - United States Environmental Protection Agency (U.S. EPA) codes
  - State codes.

### 1.2 PLAN PURPOSE

The WAP provides procedures for identifying and evaluating HW in order to complete a Hazardous Waste Profile Sheet (HWPS), or equivalent Defense Reutilization and Marketing Services (DRMS) form, for each HW. It also contains detailed procedures for conducting visual wastestream evaluations, sampling, and physical and chemical analyses of waste-generating activities at Edwards AFB, including



procedures for selecting waste parameters for analysis, selecting waste sample methods, documenting samples, identifying and requesting analytical methods, and reevaluating/recertifying HW.

The WAP is not intended to replace plans, instructions, or guidance pertaining to sampling, analysis and characterization of noncontainerized waste from the following sources; investigation derived waste (IDW), Environmental Restoration Program (ERP) site soil, monitoring wells, retention ponds, or waste piles. However, if waste from these sources has been containerized in bulk or nonbulk containers, the guidance of the WAP will apply.

### 1.3 PLAN USAGE

The Edwards AFB WAP is divided into three main categories for wastestream identification/characterization

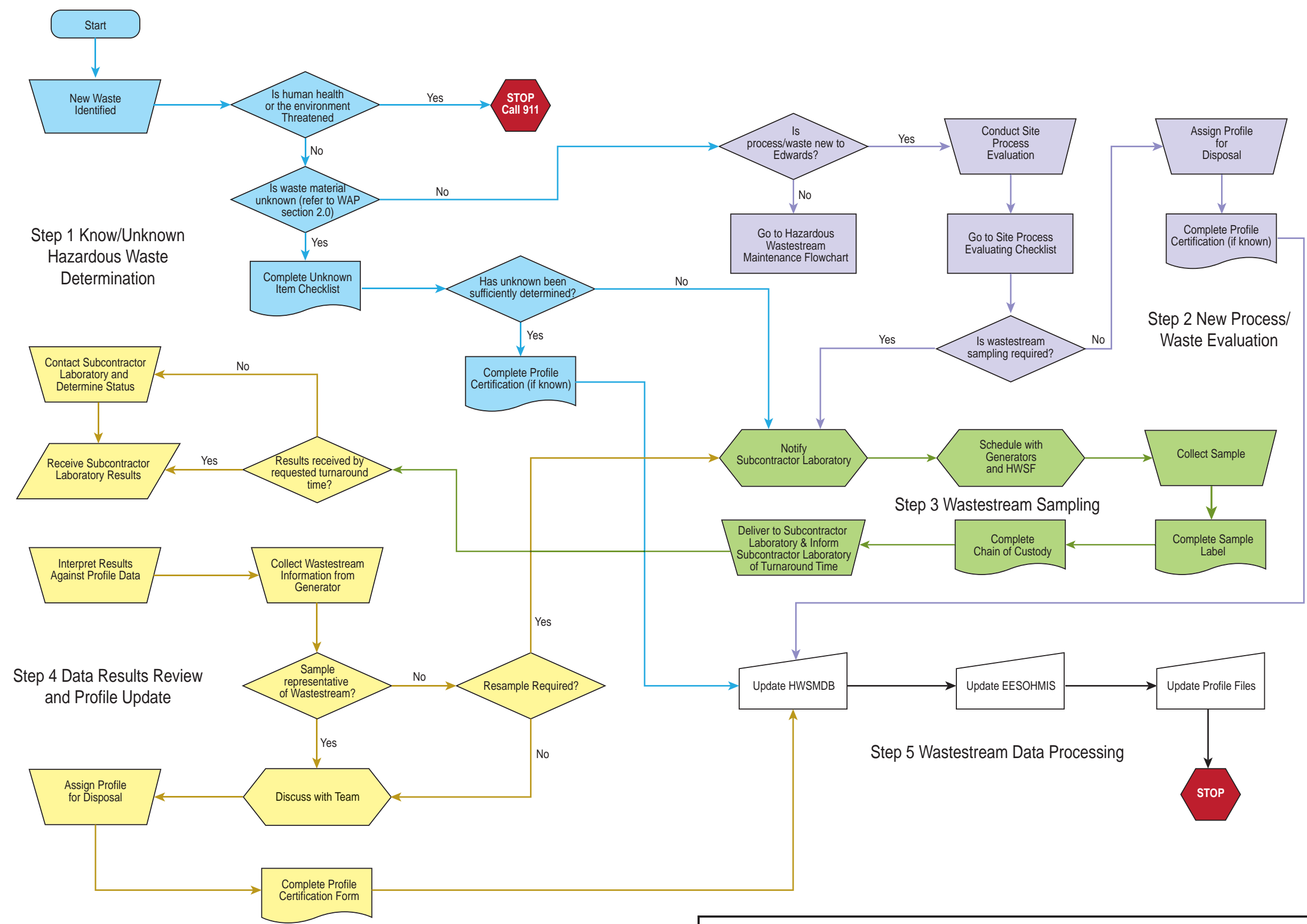
- New Material/Process Wastestream Identification,
- Unknown HW Determination and Identification, and
- Hazardous Wastestream and Profile Maintenance.

Two procedural flowcharts (Figures 1-1 and 1-2) detail the steps required for each category. Figure 1-1 provides the plan user with critical decision making steps and procedures for identification/characterization of both new wastestreams generated by new processes or existing processes for which the process or raw materials for the process have changed, and known and unknown hazardous materials (HM)/HW found on base. Figure 1-2 provides the plan user with critical decision making steps and procedures for reevaluating and recertifying profiled routine and nonroutine wastestreams.

The last step for each flowchart is Wastestream Data Processing. This last step involves the filing of data/documentation, sending approved forms and documentation to waste generators, and updating tracking spreadsheets and the United States Air Force (USAF) Enterprise Environmental Safety Occupational Health Management Information System (EESOHMIS) (Edwards AFB web-based hazardous materials and hazardous waste tracking database, which includes Wastestream profile sheets and generator information). If either flowchart instructs the user to go to Step 5 prior to the other four steps being completed, it indicates that there are no further steps required and all necessary identification/characterization data have been collected and is sufficient.

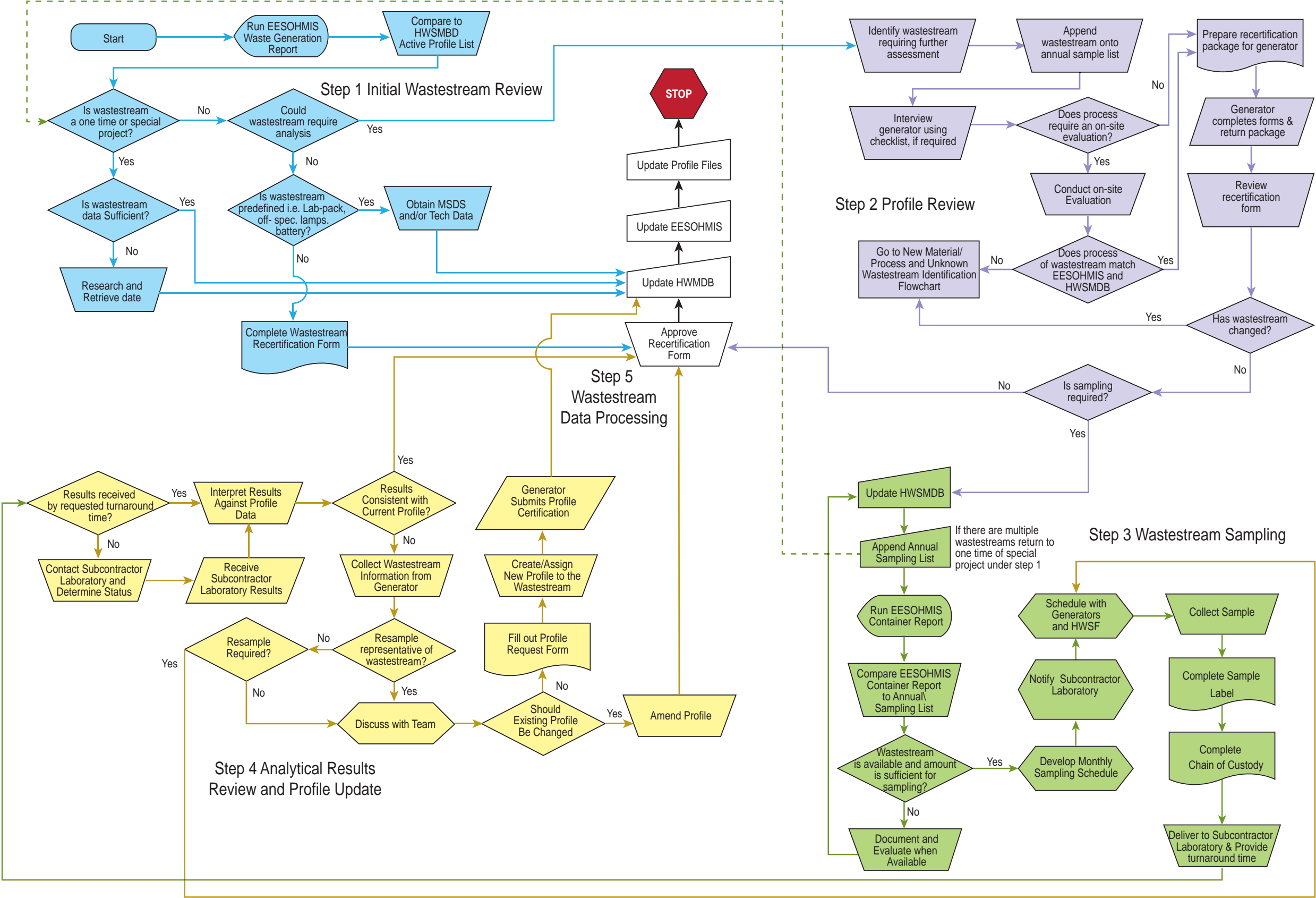
HW characterization involves three sequential steps: waste identification; waste evaluation; and results interpretation and documentation. Each of these steps is detailed in the WAP. Other sections of the plan provide the user with specific information and quick references on the subcategories of: sample frequency; sample equipment selection; sample quality assurance; wastestream identification number (profile number); United States Environmental Protection Agency (EPA) codes; and state codes.

**Figure 1-1. New Material Process and Unknown Wastestream Identification**



NEW MATERIAL PROCESS AND UNKNOWN WASTESTREAM IDENTIFICATION

**Figure 1-2. Hazardous Wastestream and Profile Maintenance**



HAZARDOUS WASTESTREAM AND PROFILE MAINTENANCE

Project No.: 29875499

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Project:

RCRA PART B PERMIT RENEWAL APPLICATION  
EDWARDS AIR FORCE BASE

Figure 1-2

## 2.0 NEW MATERIALS/PROCESS AND UNKNOWN WASTESTREAM IDENTIFICATION

### 2.1 STEP 1 – KNOWN/UNKNOWN WASTE DETERMINATION PROCESS

Waste found on base that is not easily identified because it is abandoned and not labeled or mislabeled is considered unknown wastes. Usually, unknown wastes found-on-base (FOB) is of two types; dump sites and abandoned materials. Edwards AFB has been in operation since before World War II, 30+ years before RCRA was enacted. There is always the possibility that abandoned chemicals or wastes from before the enactment of RCRA may be found, typically discovered when buildings are renovated or demolished, or during construction work that uncovers long buried dump sites.

There are occasions when ‘unknown’ waste is found on Edwards AFB by individuals who may not know what it is, but enough information may be available upon research by 412<sup>th</sup> Test Wing Civil Engineer Group Environmental Management Division (CEV) to either characterize the waste as is, or to sample and request appropriate analysis to make a characterization. These unknown items will no longer be considered unknowns. Known wastestreams are considered to be those for which a generating process and hazardous constituents can be identified and if necessary, appropriate analysis can be requested.

If there is no source of information for an item found on base or information that can be gathered through site observations is nonexistent or insufficient to make an effective identification, the item will be considered an ‘unknown.’ All unknown or unidentified waste found on base will be handled on a case-by-case basis.

#### 2.1.1 Unknown or Unidentified Waste Identification Procedures (Immediate Danger)

If nothing is known about the wastestream and there is an immediate or perceived danger or threat to human life, call 911 using a base cable phone or (661) 277-4540 from cellular phones. Quick response by trained staff can often prevent an accident from turning into a disaster.

If actions may be required, but there is no immediate danger and it is uncertain as to who should respond and how, call the Command Post at (661) 277-3040. The Command Post will use its resources to contact appropriate base staff agencies by observing the following:

If an emergency response occurs, sampling and analysis will be performed as part of the response and be coordinated by CEV, the Edwards AFB Fire Department, and Bio Environmental Engineering.

#### 2.1.2 Unknown or Unidentified Waste Identification Procedures (No Immediate Danger)

If there is no immediate or perceived danger or threat to human life, person or persons discovering the dump site or abandoned item will notify CEV.

The CEV staff will complete the Unknown Item Checklist (Figure 2-1). This checklist allows the user to identify potential generators of the waste, important facts regarding potential sources and wastestream types through questioning on-site or nearby base staff (e.g., there are two partially empty unlabeled poly

drums found behind a hanger and adjacent to water treatment building. By completing the unknown item checklist, it is discovered that hanger occupants had observed base water treatment staff filling the treatment unit a couple of months prior. A call is made to the base Civil Engineering Water Shop to confirm and a safety data sheet (SDS) is provided for the contents of the drums. The waste product is characterized by using the SDS and performing a field pH test to confirm. The drums are assigned a profile and disposed of by CEV).

If sufficient information is available for waste identification and characterization after the completion of the checklist, the waste can be profiled and then a Waste Material Profile Sheet Certification Form (Figure 2-2) can be completed. The Waste Material Profile Sheet Certification Form for FOB waste will be filled out by CEV staff, unless during the research and checklist completion activities the owner of the FOB waste is identified and located. This form is formal documentation of the process or source of the waste, description of the waste, location of the waste, technical contact, profile number assigned, and if a sample was or is required. The completed form is signed by both the waste generator/owner or CEV staff characterizing the waste and CEV profile approval staff.

If there is not sufficient information to properly characterize the waste, then samples must be taken. The unidentified wastestream FOB will be left in place and sampled to determine the waste's hazardous characteristics.

Once the waste has been properly identified, it shall be moved to the HWSF, properly labeled based on sampling identification and arrangements made for the proper disposal.

## 2.2 STEP 2 – NEW PROCESS/WASTE EVALUATION

For the purpose of this WAP, a 'new process' will be defined as a physical operation or activity generating or producing waste material not reused in a closed loop recycling system that has either not been performed at Edwards AFB or has been performed on base, but will now be performed by a new process owner. In order to effectively identify and characterize a wastestream, including the selection of appropriate analysis, the process producing the waste must be thoroughly understood.

### 2.2.1 Process Evaluation

The Process Evaluation is performed by interviewing the process owner. A checklist, such as the Example Process Evaluation Checklist (Figure 2-3) can be used, allowing CEV staff to collect and document critical information about the process and the waste it generates from the generator and/or process owner, including, but not limited to:

- Hazardous and nonhazardous materials (chemicals) being used in the process;
- Quantity and type of waste;
- Process location;
- Duration of the process; and
- How wastestream is containerized, and HW accumulation site receiving the process waste.

This information will be used to either assign the wastestream an existing profile or make a new profile based on generator knowledge and technical data. The information will also allow the correct analytes to be selected if a sample is needed.

### 2.2.2 No Sample Required

If after completion and review of the process evaluation results and the Waste-stream Generator Profile Request Form (Figure 2-4), the CEV concludes that there is enough technical and generator knowledge to effectively characterize and profile the waste without sampling and analysis, the following actions are required:

- Assign a profile by comparing the process-waste characterization to other similar Edwards AFB wastestream profiles with the same process category (e.g., aircraft maintenance, process changeout, parts washing, painting and coating, paint removal, and structure maintenance) and selecting the best profile.
- Instruct the generator to complete and sign a Waste Material Profile Certification Form (see Figure 4) which will be approved by CEV.
- If no existing profile matches the wastestream, CEV will use a Wastestream Generator Profile Request Form to create a new profile or modify an existing profile and assign the new or modified profile to the wastestream.

The purpose of the Wastestream Generator Profile Request Form is to allow CEV wastestream profiling staff to justify and track reasons new waste profiles are created or existing profiles are modified. This also allows the profiling staff to track profiles that will need to be resubmitted to the Defense Reutilization Management Office (DRMO) or disposal facilities.

It should be noted, that modifying an existing profile can only be performed by the authorized CEV profiling staff and only after the HW profiling team agrees there will be no impact to historical items shipped under this profile by the modification.

## 2.3 STEP 3 – WASTESTREAM SAMPLING

Sampling will be performed in accordance with Section 6.0, Waste Analysis Parameters and Rational, of this report, and the Hazardous Wastestream Sample and Analysis Parameters Spreadsheet (Table A-2).

Prior to sampling of any wastestream, notification to the designated analytical laboratory will be made. This is intended to serve two purposes: allows laboratory personnel to schedule workload depending on the priority rating given to the sample and allows sampling personnel to receive information on sample containers and preservation required for the wastestream.

Larger scale sampling projects may require a site specific sampling plan to document procedures for conducting sampling activities.



## 2.4 STEP 4 – DATA RESULTS REVIEW AND PROFILE UPDATE

The interpretation of data for the purpose of making a HW determination, classification of HW, or to verify that a wastestream continues to meet the profile parameters can only be performed by designated CEV. New profile development and profile updates resulting from the interpretation of data will also be performed by qualified CEV. More information on data interpretation and profile update are presented in Section 8.0, Data Interpretation, of this report.

## 2.5 STEP 5 – WASTESTREAM DATA PROCESSING

Any change to a wastestream and/or wastestream profile prompts an action to update the tracking data base HW Profile Sheet in the Hazardous Wastestream Management Database (HWSMDB), which includes the HWSI and the Hazardous Wastestream Sample and Analysis Parameters Spreadsheet, and to update the physical profile files.

Figure 2-1. Unknown Item Checklist



## UNKNOWN ITEM CHECKLIST

Date Item/Site Discovered: \_\_\_\_\_

Description of item's/site: \_\_\_\_\_

Describe other items in the area: \_\_\_\_\_

Are there any identifying markings on the items? \_\_\_\_\_

Is the item upright? YES \_\_\_\_\_ NO \_\_\_\_\_ (if no, specify the position) \_\_\_\_\_

Is the item leaking? YES \_\_\_\_\_ NO \_\_\_\_\_ (If no, does the container show signs of degradation)

Is the item closed (lids, bungs to prevent water exposure)? YES \_\_\_\_\_ NO \_\_\_\_\_

Location item(s) discovered: \_\_\_\_\_

Does the Site appear to be a dumping area? YES \_\_\_\_\_ NO \_\_\_\_\_  
(If Yes, contact Environmental Restoration Program and Geographic Information System)

Describe how the item/site was discovered: \_\_\_\_\_

Nearest buildings, facilities, or tanks: \_\_\_\_\_

Question nearby personnel on activities/operations/projects in the area (past and present):

\_\_\_\_\_  
\_\_\_\_\_

Name of POCs: \_\_\_\_\_

Contact No. for POCs: \_\_\_\_\_

Identify other possible knowledgeable parties identified from previous research: \_\_\_\_\_

\_\_\_\_\_  
Describe outcome of research: \_\_\_\_\_

Sample required? YES \_\_\_ NO \_\_\_

Will Sampling be completed through CEV emergency services? \_\_\_\_\_

Sample Date: \_\_\_\_\_

Profile Number: \_\_\_\_\_

**Figure 2-2. Waste Material Profile Sheet Certification Form**

**412 CEG/CEVC Environmental Management – Hazardous Waste  
Waste Material Profile Sheet Certification Form**

<b>Building #</b> _____	<b>Cert. Date</b> _____
<b>ACCS / IAP #</b> _____	<b>Contact</b> _____
<b>Organization</b> _____	<b>Sample # (if applicable)</b> _____
<b>Phone</b> _____	<b>Projected Annual Volume</b> _____
<b>Edwards AFB Profile #</b> _____	<b>MSDS#</b> _____
<b>Waste Stream Name</b> _____	
<b>Process (source) Generating Waste Stream:</b> _____	
_____	
_____	
_____	
_____	

*Is this waste stream expected to be reoccurring or one-time generation?*

**Reoccurring** \_\_\_\_\_ **One Time** \_\_\_\_\_

**If waste will be One-time, please explain:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**“I certify that all the information submitted in this and attached documents are correct to the best of my knowledge.”**

<b>Signature</b> _____	<b>Title</b> _____
<b>Print Name</b> _____	<b>Date</b> _____

<b>412 TW/CEVC Approval Status:</b> _____	<b>Date:</b> _____
<b>Sampling Required:</b> _____	<b>Comments:</b> _____

Questions or comments, please call Maung Thein at 277-1436 or Cat McDonald at 277-3681.  
Return completed form to HWSF via E-mail or FAX to 277-1460, or deliver to Bldg. 4904,  
446 N. Rosamond Blvd. Edwards AFB

Figure 2-3. Process Evaluation Checklist



## PROCESS EVALUATION CHECKLIST

Date of Review: \_\_\_\_\_ Process Location Site/Building#: \_\_\_\_\_

POC Name/No.: \_\_\_\_\_ Org/Office Symbol: \_\_\_\_\_

Associated IAP/HWAS: \_\_\_\_\_ Associated HAZMART/Shop: \_\_\_\_\_

Description of process: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Is this a new process? ☐ YES ☐ NO

If NO, is this an existing process that is being modified? ☐ YES ☐ NO

If YES, please explain how the process and waste-stream/s will change)

\_\_\_\_\_  
\_\_\_\_\_

Expected process duration (How long will this happen at this location?): \_\_\_\_\_

Hazardous materials used in process (list all and provide MSDS for each):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Non-hazardous materials used in process (list all and specify percentage of the total)

_____	Percentage: <u>0%</u>
_____	Percentage: <u>0%</u>
_____	Percentage: <u>0%</u>
_____	Percentage: <u>0%</u>
_____	Percentage: <u>0%</u>

Will the type of waste generated be Off-spec or Expired product only? ☐ YES ☐ NO

**Figure 2-4. Wastestream Generator Profile Request Form**





## WASTE STREAM GENERATOR PROFILE REQUEST FORM

Date: \_\_\_\_\_ Date Profile Needed: \_\_\_\_\_

(Please allow five days if possible)

Building # or Location: \_\_\_\_\_ IAP/HWAS#: \_\_\_\_\_

How was this waste stream generated? \_\_\_\_\_

What are the constituents of the waste stream and the estimated % of each constituent? \_\_\_\_\_

Is the waste stream new and unused product? \_\_\_\_\_

If waste stream is a new and unused product, has the container been opened? \_\_\_\_\_

If waste is off-spec material, has the waste stream been mixed with anything? \_\_\_\_\_

If so, what has the waste stream been mixed with? \_\_\_\_\_

What is the size of the material/waste container and how much total waste? \_\_\_\_\_

Has a current manufacture's MSDS of all components of the waste stream been obtained (less than five years old)? \_\_\_\_\_

What are the characteristics of the waste stream? \_\_\_\_\_

Is this waste stream expected to be reoccurring or one-time generation? \_\_\_\_\_

What is the projected annual volume and frequency of generation? (i.e. 1 gallon a week) \_\_\_\_\_

Has the waste stream been sampled? \_\_\_\_\_

If so, what are the analytical results? \_\_\_\_\_

Comments: \_\_\_\_\_

### TO BE COMPLETED BY 412 TW/CEVC STAFF

Is a new profile needed? YES/NO (If yes, give reason) \_\_\_\_\_

Will sampling be required before first turn into HWSF? \_\_\_\_\_

Does the waste stream fit any existing profiles? \_\_\_\_\_

Can an existing profile be modified to include this waste stream? YES/NO (If an existing expired profile is reactivated, record last date of activation) \_\_\_\_\_

Questions or comments, please call Maung Thein at 277-1436 or Cat McDonald at 277-3681  
Return completed scanned form to HWSF via E-mail or FAX to 277-1460 or deliver to Bldg. 4904, 446 N.  
Rosamond Blvd. Edwards AFB

### 3.0 HAZARDOUS WASTESTREAM AND PROFILE MAINTENANCE

The hazardous wastestream and profile maintenance process includes final steps that CEV completes to ensure that HW profiles are current on certification and changes to wastestreams have been thoroughly reviewed and documented. Wastestream and profile maintenance is the daily responsibility of CEV profiling staff. The following five steps will address procedures for the annual review required for all wastestreams that are shipped off-site for recycling or disposal. The result of these steps is the recertification of the wastestreams and authorization for the generators to continue to use the applicable profile.

#### 3.1 STEP 1 – INITIAL WASTESTREAM REVIEW

The initial review of the Edwards AFB wastestreams for the purpose of annual update and evaluation for change, deactivation of profiles, and sampling requirements follow a set procedures

First, authorized CEV personnel run an EESOHMIS HW generation report. This report shows all active profiles used by base HW generators within the year (the report can be run for calendar or fiscal year depending on when the wastestream review begins and what will render the most accurate representation). This report provides the following: which wastestreams were generated by each generator, quantity of each wastestream generated, whether the waste was collected and shipped in bulk or nonbulk containers, and frequency of the waste generation.

Second, the data gathered from the EESOHMIS generated report is evaluated against current HWSMDB spreadsheets to determine which wastestreams from which generators will automatically be sampled and analyzed based on quantity generated and the wastestream type requiring annual analysis. In addition, during the evaluation, the following wastestreams are eliminated from the report: off-specification/expired HM wastestreams, consisting of all wastestreams classified solely from MSDS and technical data, manufactured article waste, including, but not limited to, batteries, lamps, cylinders, and decontamination kits, and one-time generation waste. Once these wastestreams have been eliminated from the review, the remaining wastestreams are those routine wastestreams for which recertification is dependent on knowledge of the generating process and/or analysis.

#### 3.2 STEP 2 – PROFILE REVIEW/RECERTIFICATION

The CEV profiling staff prepares and sends each Edwards AFB HW generator a package consisting of a cover letter listing all wastestreams generated and designating those wastestreams that will require recertification. The package also includes a Waste Material Profile Sheet Annual Recertification Form (Figure 3-1) for each applicable wastestream. Each HW generator will complete and sign the forms and return them to the CEV profiling staff. This wastestream and process information allows CEV to determine if there have been significant process and wastestream changes requiring either further consultation with the generator or sampling and analysis.

### 3.3 STEP 3 – WASTESTREAM SAMPLING

After determining which wastestreams will require sampling and analysis, and those wastestreams that do not require analysis, but require other modifications to the wastestream profile, the Hazardous Wastestream Sample and Analysis Parameters spreadsheet will be updated, so that sampling and site visits (if necessary) can be scheduled with the generator. Note that there may be situations that require waste to be sampled at the point of generation; however, most waste will be sampled at the HWSF prior to being prepared for off-site shipment.

Wastestreams that are scheduled to be sampled, but have either not been generated or generated in insufficient quantities during the evaluation period must be documented as a carryover sample for the next evaluation period.

### 3.4 STEP 4 – ANALYTICAL RESULTS REVIEW AND PROFILE UPDATE

The interpretation of data for the purpose of making a HW determination, classification of HW, or to verify that a wastestream continues to meet the profile parameters can only be performed by designated CEV. New profile development and profile updates resulting from the interpretation of data will also be performed by qualified CEV. More information on data interpretation and profile update is presented in Section 8.0 of this report.

### 3.5 STEP 5 – WASTE DATA PROCESSING

Any change to a wastestream and/or wastestream profile prompts an action to update EESOHMIS and the HWSMDB, which includes the HWSI and the Hazardous Wastestream Sample and Analysis Parameters Spreadsheet, and to update the physical profile files.

**Figure 3-1. Waste Material Profile Sheet Annual Re-Certification Form**

## 412 TW/CEVC Environmental Management - Hazardous Waste

Organization \_\_\_\_\_

Recertification Date \_\_\_\_\_

Building # \_\_\_\_\_

Edwards AFB Profile # \_\_\_\_\_

ACCS / IAP # \_\_\_\_\_

POC \_\_\_\_\_

Phone \_\_\_\_\_

Waste Stream Name: \_\_\_\_\_

Process (source) Generating Waste Stream: \_\_\_\_\_

- |   | Yes                      | No                       |
|---|--------------------------|--------------------------|
| 1. Do you still generate this waste stream? If no, skip the following questions, explain in the comments, and sign and return this form to CH2MHILL Environmental, Hazardous Waste. | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Has the process generating the waste changed?  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Have any of the characteristics of the waste changed, such as a change in physical state, chemical composition/concentration?  | <input type="checkbox"/> | <input type="checkbox"/> |

*If 'yes' was selected for questions 2 and 3, please explain below. Also, utilize this space to indicate any changes or updates. Changes may necessitate submission of a new profile and sample of the waste- stream.*

\_\_\_\_\_  
\_\_\_\_\_

"I certify that all the information submitted in this and attached documents are correct to the best of my knowledge."

Generator's Signature \_\_\_\_\_ Title \_\_\_\_\_

Printer's Signature \_\_\_\_\_ Date \_\_\_\_\_

Printer's Signature \_\_\_\_\_ Date \_\_\_\_\_

### FOR OFFICE USE ONLY

Sample Needed: ☐ yes ☐ no

Comment: \_\_\_\_\_

Questions or comments, please call Maung Thein at 277-1436 or Cat McDonald at 277-3681  
Return completed scanned form to HWSF via E-mail or FAX to 277-1460 or deliver to Bldg. 4904,  
72 E. Forbes Ave. Edwards AFB.

## 4.0 WASTE IDENTIFICATION AND EVALUATION

### 4.1 WASTE DETERMINATION

In order to determine if a wastestream needs to be evaluated, the following questions need to be addressed:

- Is it a waste? If the answer to any of the following four questions is yes, the material is a waste.
  - Is the material no longer useful for its intended purpose (e.g., because it is dirty, out of specification or a spill residue)?
  - Is it an unintended or usable byproduct?
  - Does the base intend to discard the material for eventual treatment, storage, recycling, or disposal? Is it produced by cleanup at a previously uncontrolled waste site?
  - Is it a solid waste? A solid waste is generally defined as any discarded material (including solids, semisolids, liquids, and gases), which is abandoned, recycled, or considered inherently waste-like. These terms are fully defined in 22 CCR 66261.2, and examples illustrating use of the terms during waste evaluation are provided in the Air Force Hazardous Waste Management Guide, Section 4-1, dated 13 November 1992.
- Is it a hazardous waste? If the material is a solid waste, the solid waste should be evaluated to determine if it is HW. As defined in 22 CCR 66261.3, a material is an HW if it has not been excluded from regulation and is a characteristic HW (e.g., ignitable, corrosive, reactive, or toxic), a listed HW, or a mixture of a listed HW and solid waste. In addition, any waste generated from the treatment, storage, or disposal of HW, including any sludge, spill residue, ash, emission control dust, or leachate including precipitation runoff is an HW per 22 CCR 66261.3(c)(1). Sampling and analysis may be required to determine whether a waste is hazardous or nonhazardous, which will be discussed in the following sections.

### 4.2 WASTE EVALUATION

Waste evaluation is the process of determining which identified solid wastes may be classified as HWs. This process can be conducted by either using the waste generator's knowledge of the waste, or by analytical testing per 40 CFR 261, 22 CCR 66262.20, and 22 CCR 66264.13. The composition of each waste must be adequately evaluated to allow for proper identification of hazardous characteristics, labeling of drums, on-site storage, packaging for transportation, and off-site disposal.

In general, CEV determines the composition of each wastestream by using:

- Generator knowledge;
- MSDSs provided by the generators to characterize off-specification containers, and virgin products;
- Previous analytical results; and
- Analytical tests.

## 5.0 SAMPLING METHODOLOGY, FREQUENCY, AND DOCUMENTATION

### 5.1 SAMPLING METHODS

The methods to be used for sampling waste materials vary with the form and consistency of the material. Waste materials often vary significantly in state (e.g., liquid, solid, and semisolid) and consistency, and require combinations of methods be utilized. The sampling methods are presented in Table 5-1.

#### 5.1.1 Sampling Equipment

Sampling equipment selection is dependent on the type of waste and the source of the waste being sampled. Sample equipment might include a combination of two or more collection tools if the waste media is not consistent. For example, a drum of paint-related waste may have 12 inches of liquid or semiliquid media on top, but the remainder of the waste may be solid. This would require the selection of at least two sample equipment types. It is Edwards AFB procedure that sampling equipment selection is made on a case-by-case basis, with knowledge of the actual waste item being sampled. The following sections provide a list of sampling equipment commonly used at Edwards AFB.

##### 5.1.1.1 Composite Liquid Waste Sampler (Coliwasa)

The Coliwasa is a device employed to sample free-flowing liquids and slurries contained in drums, shallow tanks, pits, and similar containers. It is especially useful for sampling wastes that consists of several immiscible liquid phases. The Coliwasa consists of glass, plastic, or metal tube equipped with an end closure that can be opened and closed while the tube is submerged in the material to be sampled.

##### 5.1.1.2 Weighted Bottle

This sampler consists of a glass or plastic bottle, sinker, stopper, and a line that is used to lower, raise, and open the bottle. The weighted bottle can be used for liquids and free-flowing slurries. A weighted bottle with a line is built to the specifications in the ASTM Methods D270 and E300.

##### 5.1.1.3 Dipper

The dipper consists of a glass beaker clamped to the end of a two or three-piece telescoping aluminum or fiberglass pole that serves as the handle. Dippers sample liquids and free flowing slurries. Dippers are not available commercially and must be fabricated.

##### 5.1.1.4 Thief

A thief consists of the two slotted concentric tubes, usually made of stainless steel or brass. The outer tube has a conical pointed tip that permits the sampler to penetrate the material being sampled. The inner tube is rotated to open and close the sampler. A thief is used to sample dry granules or powdered wastes whose particle diameter is less than one-third the width of the slots. A thief is available at laboratory supply stores.

#### 5.1.1.5 Trier

A trier consists of a tube cut in half lengthwise with a sharpened tip that allows the sampler to cut into sticky solids and to loosen soil. A trier samples moist or sticky solids with a particle diameter less than one-half the diameter of the trier.

Triers 61- to 100-cm long and 1.27 to 2.54 cm in diameter are available at laboratory supply stores. A large trier can be fabricated.

#### 5.1.1.6 Auger

An auger consists of sharpened spiral blades attached to a hard metal central shaft. An auger samples hard or packed solid wastes or soil. Augers are available at hardware and laboratory supply stores.

#### 5.1.1.7 Scoops and Shovels

Scoops and shovels are used to sample granular or powdered material in bins, shallow containers, and conveyor belts. Scoops are available at laboratory supply stores. Flat-nosed shovels are available at hardware stores.

### 5.1.2 Sample Containers

Prior to performing sampling, CEV contacts the laboratory to schedule and to receive any special sample requirements that might apply. Sample container selection is based not only on the waste type, but on test methods and amount of sample required to be representative. In addition, holding times and preservatives are contingent on test methods. The requirements for sample equipment are presented in Table 5-2. The requirements for sample containers, preservation, and holding times for liquids and solids are presented in Tables 5-3 and 5-4, respectively. The data presented in Tables 5-3 and 5-4 are for methods that are typically used to characterize wastes at Edwards AFB, or provide additional information about a waste. For those situations requiring methods not given in Tables 5-3 and 5-4, the HWSF personnel will coordinate with the testing laboratory to establish the proper sample containers, preservation, and holding times.

### 5.1.3 Sample Selection and Collection

Determining how many samples and which waste containers to sample is dependent on an understanding of the process generating the waste. The site or group of wastestream containers is always assessed prior to determining the number of samples required. If the waste is contained in several containers and the waste is generated from research or other variable processes, every container should be sampled. However, if there are a large number of containers from a consistent process, a subset of containers, randomly selected, will be sampled.

To obtain a representative sample from a container, one useful strategy is to divide the container into an imaginary grid, and collect incremental samples at random into a single sample. The homogeneity of the waste will impact the number of incremental samples composing a grab or combined sample. The less homogeneous the wastestream, the more samples it will take to result in a representative sample of the



waste population. Only authorized wastestreams will be incrementally sampled from multiple generators of the same wastestream.

All Volatile Organic Compounds (VOC) samples should be introduced into the sample container in a manner that minimizes loss of volatiles due to agitation and entrained air. After the lid has been tightened on water samples, the vial should be inverted and tapped to check for air bubbles. If there are any air bubbles present, the sample must be discarded and another collected.

#### 5.1.4 Decontamination

Whenever possible, samples should be collected directly into the sample bottle. Any reusable sampling equipment must be decontaminated prior to each use. See Table 5-5 for examples of decontamination procedures. Most equipment decontamination should be accomplished by washing the equipment in a nonphosphate detergent solution and rinsing. Alternatively, disposable equipment can be used and disposed of after each sample is collected. At times, it may be preferable to employ a more thorough chemical decontamination (i.e., if high concentrations of volatiles were detected in the preceding sample).

#### 5.1.5 Personal Protective Equipment

Personnel collecting HW samples must wear Personal Protective Equipment (PPE), including impervious gloves, chemical safety goggles, coveralls, and suitable boots. Knowledge of the wastestream and/or site conditions will always be the deciding factor in the selection of PPE.

Sampling of unknown waste will always be accomplished in Level A or modified Level B PPE, and only properly trained staff will take samples of unknown wastestreams.

#### 5.1.6 Quality Assurance/Quality Control

Edwards AFB employs a basic Quality Assurance/Quality Control (QA/QC) program that reflects the fact that the vast majority of wastestreams generated by Edwards AFB operations are already well characterized and supported by decades of institutional generator knowledge. The QA/QC program relies on a limited QA/QC sampling protocol and QA/QC processes in place with testing laboratories that are certified by the California Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board, for the treatment and disposal of HW.

The basis for a limited QA/QC program is that nearly all HW samples submitted for testing are either: (1) one-time samplings of individual containers of waste for the purposes of characterization, storage, manifesting for disposal, and identification of any land disposal restrictions; or (2) are verifications and updates of existing wastestream characterizations. The result is a large number of that sampling events characterized by very small sample sets taken across a large number of wastestreams.

##### 5.1.6.1 QA/QC Samples

A limited QA/QC sampling protocol will be employed.

The QA/QC sampling procedures that are used to measure the accuracy and precision of sampling include:

- Trip blanks are prepared before sampling occurs. The trip blank accompanies the sampling equipment into the sampling area. Once the sampling is completed, the trip blanks accompany the samples to the laboratory for analysis. Trip blanks are designed to detect VOC contamination or cross-contamination during the handling and transportation of samples. Except as noted, trip blanks are prepared for all HW sampling events. Trip blanks are not used with soil samples.
- Field blanks are prepared during the sampling process using analyte-free water. The field blanks are then sent with the samples to the laboratory for analysis. Field blanks are used to ensure samples are not contaminated during the sampling process. Field blanks are used at Edwards AFB for HW samples only when the environment during sampling cannot be controlled or if a past analysis detects the presence of compounds not expected in the wastestream.
- Field duplicates measure precision by determining variance due to waste composition, sampling technique, or analytical technique. Field duplicates are taken in conjunction with field blanks, or when sampling a new wastestream that cannot be otherwise characterized based on generator knowledge.
- Equipment blanks are collected after completion of sampling equipment decontamination and prior to their next use in a sampling event. This is done to ensure equipment is clean before sampling. If one-time use disposal sampling equipment is used, no equipment blank is collected.
- Temperature blanks are not collected as the testing laboratories used by Edwards AFB measure the interior temperature of the cooler upon receipt, and report the results in their analytical reports.

#### 5.1.6.2 Laboratory QA/QC Requirements

Edwards AFB only uses testing laboratories certified by California. As such, we rely on the testing laboratory to implement all required QA/QC processes and procedures as given in each SW-846 analytical method. Given the types of sampling events previously described, Edwards AFB has not established any specific data quality objectives for testing laboratories, other than testing laboratories follow their internal QA/QC processes and procedures.

The testing laboratories used by Edwards AFB routinely include as part of their internal QA/QC processes: method blanks; laboratory control samples/duplicates; matrix spikes/duplicates; and required instrument checks and calibrations. The results of method blanks, laboratory control samples/duplicates, and matrix spikes/duplicates QA/QC activities are included in the test reports provided by the testing laboratories. QA/QC activities involving specifics on instrument checks and calibrations are not included in the test reports provided by the testing laboratories. An example of a typical test report is provided in Attachment B.

## 5.2 SAMPLING FREQUENCY

### 5.2.1 Frequency of High-Volume Wastestreams

Each high-volume wastestream (defined as one that generates four or more 55-gallon drums of waste per year) will be recertified annually (unless there has been a process change that would dictate a more frequent evaluation). If samples are required, they will be collected in order to update the HWPS (example provided in Figure 5-1) and ensure that the initial HW determinations are accurate and up-to-

date. The parameters analyzed will be determined by CEV. A HWPS, along with a recertification form will be submitted annually to the HWSF manager for high-volume wastestreams.

### 5.2.2 Frequency of Low-Volume Wastestreams

Low-volume wastestreams generated by Edwards AFB (those that generate three 55-gallon drums or less per year) will be sampled and analyzed once every 3 years after the initial analysis and technical data are obtained and characterized, unless there has been a process change that would dictate a more frequent evaluation or if the low-volume wastestream becomes a routine wastestream. An updated HWPS along with a recertification form must be submitted annually to the HWSF manager for low-volume wastestreams; for the years when sampling is not required, this recertification may be based on process knowledge.

### 5.2.3 Frequency Changes for Sampling and Analysis

Wastestreams found to be in discrepancy with the description of the HW profile will be sampled immediately.

## 5.3 SAMPLING DOCUMENTATION

The possession and handling of samples must be traceable from collection through analysis and final disposition. The documentation of the sample history is called COC. Edwards AFB uses sample labels, COC forms, and sample analysis request forms for all waste sample shipments to ensure the integrity of samples from collection to data reporting. These records will be maintained by CEV.

### 5.3.1 Sample Label

The sample label (example provided in Figure 5-2) must be attached to the jar or container; the sample label will be placed on the jar or container before the sample is collected. Permanent ink must be used when writing the required identification information on the sample label. The following information is required for the sample label including the sample identification (usually includes the profile number, date, or other identifying information), current date, time the sample was taken, the location where the sample was taken, the name of the person who took the sample, and the preservative if applicable.

### 5.3.2 Chain of Custody

A completed COC form (example provided in Figure 5-3) will accompany every sample as prescribed by EPA Method SW-846 requirements. The COC form should contain the sample number, signature of collector, date and time of collection, place and address of collection, waste type, signature of staff involved in the COC, and inclusive dates of possession.

**Table 5-1. Sampling Methods for Waste Materials**

Type of Waste	Guide Reference
Extremely viscous liquid	ASTM Standard D140-01 (2007) "Standard Practice for Sampling Bituminous Materials"
Crushed or powdered material	ASTM D346 - 04e1 "Standard Practice for Collection and Preparation of Coke Samples for Laboratory Analysis"
Soil- or rock-like material	ASTM D420 - 98(2003) "Standard Guide to Site Characterization for Engineering, Design, and Construction Purposes"
Soil-like material	ASTM D1452 - 07a "Standard Practice for Soil Investigation and Sampling by Auger Borings"
Fly ash-like material	ASTM D2234 / D2234M - 07 "Standard Practice for Collection of a Gross Sample of Coal"
Containerized liquid waste	Coliwas, described in Test Methods for the Evaluation of Solid Waste; Physical/Chemical Methods. EPA Samplers and Sampling Procedures for Hazardous Wastestreams, EPA 600/2-80-018.
Liquid waste in pits, ponds, lagoons, and similar Reservoirs	Pond sampler, described in Test Methods for the Evaluation of Solid Waste; Physical/Chemical Methods. EPA Samplers and Sampling Procedures For Hazardous Wastestreams, EPA 600/2-80-018.

**Table 5-2. Examples of Sample Equipment for Waste Types and Waste Containers**

Waste Type and Location/Container						
Waste Type	Drum	Sacks and Bags	Open-Bed Truck or Bins	Closed-Bed Truck	Storage Tank	Waste Piles
Free-flowing liquids and slurries	Coliwas	N/A	N/A	Coliwas	Weighted bottle	N/A
Sludge	Trier	N/A	Trier	Trier	Trier	Case-by-Case Equipment Selection <sup>a</sup>
Moist powders or granules	Trier	Trier	Trier	Trier	Trier	Trier
Dry powders or granules	Thief	Thief	Thief	Thief	Case-by-Case Equipment Selection <sup>a</sup>	Thief
Sand or packed powders and granules	Auger	Auger	Auger	Auger	Thief	Thief
Large grained solids	Large Trier	Large Trier	Large Trier	Large Trier	Large Trier	Large Trier

N/A – not applicable

<sup>a</sup> This type of sampling situation can present a significant logistical sampling problem, and sampling equipment must be specifically selected or designed based on-site and waste conditions. No general statement about appropriate sampling equipment can be made.

Table 5-3. Sample Containers, Preservatives, and Holding Times for Liquids

Analytes	Test Method(s) <sup>a</sup>	Minimum Sample Size <sup>b</sup>	Container <sup>c</sup>	Preservation Method <sup>d</sup>	Holding Times
General and Inorganics					
pH	9040	125 ml	Poly / NA	NA	As soon as possible
Flash Point	1010 <sup>e</sup>	125 ml	Poly / NA	None	None
Specific Gravity	2710F <sup>f</sup>	60 ml	Glass / NA	None	None
Total Dissolved Solids for Nonhazardous Water	2540C <sup>f</sup>	100 ml	Poly / NA	0 to ≤6 °C	7 Days
Total Suspended Solids	2540D <sup>f</sup>	100 ml	Poly / NA	0 to ≤6 °C	7 Days
Total Solids	2540B <sup>f</sup>	1 L	Glass (amber) / NA	0 to ≤6 °C	7 Days
Water	E203 <sup>g</sup>	125 ml	Poly, glass / PTFE	0 to ≤6 °C	28 Days
Organic Peroxide, Hydrogen Peroxide	-- <sup>h</sup>	NA	NA	NA	NA
Perchlorates	6850	125 ml	Poly / NA	0 to ≤6 °C	Extract and analyze 28 days after collection
Fish Bioassay	-- <sup>i</sup>	2 L	Glass (amber) / NA	0 to ≤6 °C	72 Hours
Metals					
Metals (except Mercury and Chromium VI)	6010, 6020	500 ml	Poly / NA	HNO <sub>3</sub> to pH<2	6 Months
Metals for TCLP or CAM WET (except Mercury)	-- <sup>j</sup>	500 ml	Poly / NA	None	Extract 180 days from collection; analyze 180 days after extraction
Mercury for TCLP or CAM WET		1 L ml	Glass (amber) / NA	None	Extract 28 days from collection; analyze 28 days after extraction
Chromium VI	7196	400 ml	Poly / NA	0 to ≤6 °C	24 Hours
Mercury	7470	400 ml	Poly / NA	HNO <sub>3</sub> to pH<2	28 Days
Organics					
VOC (concentrated waste)	8260	100 ml	Glass / PTFE	0 to ≤6 °C	7 Days
VOC (aqueous with no residual Chlorine)		3 x 40 ml	Vial – glass / PTFE	0 to ≤6 °C HCl to pH<2	14 Days
SVOC (concentrated waste)	8270	1 L	Glass (amber) / PTFE	0 to ≤6 °C	Extract 14 days from collection; analyze 40 days after extraction
SVOC (aqueous with no residual Chlorine)		2 L			Extract 7 days from collection; analyze 40 days after extraction
Hydrazine/Mono and Dimethylhydrazine					
Total Nonhalogenated Extractable Hydrocarbons	8015	1 L	Glass (amber) / PTFE	0 to ≤6 °C	Extract 7 days from collection; analyze 40 days after extraction
Glycol Screening	Modified 8015	125 ml	Poly / PTFE	0 to ≤6 °C	14 Days
JP-4 and JP-8	8015	2 L	Glass (amber) / PTFE	0 to ≤6 °C	Extract 7 days from collection; analyze 40 days after extraction
Benzene for TCLP	-- <sup>j</sup>	3 x 40 ml	Vial – glass / PTFE	0 to ≤6 °C HCl to pH<2	Extract 14 days from collection; analyze 14 days after extraction
Polychlorinated Biphenyls (aqueous with no residual Chlorine)	8082	1 L	Glass (amber) / PTFE	0 to ≤6 °C	Extract 365 days from collection; analyze 40 days after extraction
Total Organic Halides	9020	250 ml	Poly / PTFE	0 to ≤6 °C H <sub>2</sub> SO <sub>4</sub> to pH<2	28 Days
Explosive/Propellant Residue (nitroaromatics and nitramines)	8330	1 L	Glass (amber) / PTFE	0 to ≤6 °C	Extract 14 days from collection; analyze 40 days after extraction

## Notes for Table 5-3

- <sup>a</sup> Unless otherwise noted, methods referenced are from EPA, Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, EPA Office of Solid Waste, EPA Publication SW-846 and 40 CFR 261, latest version, <https://www.epa.gov/hw-sw846/sw-846-compendium>. Method number(s) are current as of date of this WAP. The latest approved methods will always be used – changes to sample sizes, containers, preservation methods and holding times due to method revisions will not constitute a WAP modification. Constituent-specific analyses must also be conducted if it is suspected that the material may qualify as a listed hazardous waste (i.e., listed in 22 CCR 66262.30).
- <sup>b</sup> Sample size given based on historical use and testing laboratory requirements. Otherwise, size given is per method guidance. ml = milliliters; L = liters; NA = not applicable or not specified.
- <sup>c</sup> Container type – material (color) / lid-liner material given based on historical use and testing laboratory requirements, and in accordance with method guidance (as applicable). Other container materials may be used consistent with method guidance. If no container type given, container is a bottle or jar with a size appropriate to the minimum sample size given. If no color given, assume white/opaque for Poly containers and clear for glass containers. PTFE = Polytetrafluoroethylene (Teflon); Poly = Polyethylene; NA = not applicable or not specified.
- <sup>d</sup> Preservation methods include chemical to adjust pH and/or temperature per method guidance (as applicable). Only preservation method for initial sample is given. °C = Degrees Centigrade; HNO<sub>3</sub> = Nitric Acid; HCl = Hydrochloric Acid; H<sub>2</sub>SO<sub>4</sub> = Sulfuric Acid; NA = not applicable or not specified.
- <sup>e</sup> EPA method references American Society for Testing and Materials (ASTM) Standard D-93-9/79 or D-93-80 (Pensky-Martens), or ASTM Standard D-3278-78 (Setaflash).
- <sup>f</sup> EPA Standard Method for water and wastewater analyses.
- <sup>g</sup> Equivalent to EPA Method 9000.
- <sup>h</sup> Indicator paper test.
- <sup>i</sup> California Department Of Fish And Game, Static Acute Bioassay Procedures for Hazardous Waste Samples, Water Pollution Control Laboratory, November 1988, [http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP\\_bioassay\\_report.pdf](http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP_bioassay_report.pdf).
- <sup>j</sup> The TCLP and CAM WET methods are not an analyte-specific methods – these are extraction methods (EPA Method 1311 for TCLP, 22 CCR 26261 Appendix II for CAM WET). These are included in this table as these are principle methods used to characterize waste toxicity.

Table 5-4. Sample Containers, Preservatives, and Holding Times for Solids

Analytes	Test Method(s) <sup>a</sup>	Minimum Sample Size <sup>b</sup>	Container <sup>c</sup>	Preservation Method <sup>d</sup>	Holding Times
<b>General and Inorganics</b>					
pH	9045	50 g	Poly, glass / NA	NA	as soon as possible
Specific Gravity	2710F <sup>e</sup>	100 g	Glass / NA	None	None
% Water	E203 <sup>f</sup>	50 g	Poly, glass / NA	None	28 days
Oxidizing Solids	1040	200 g	Glass / PTFE	None	None
Perchlorates	6850	125 g	Glass (amber) / NA	0 to ≤6 °C	Extract 28 days from collection; analyze 28 days after extraction
Fish Bioassay	-- <sup>g</sup>	200 g	Glass / NA	0 to ≤6 °C	72 Hours
<b>Metals</b>					
Metals (except Mercury and Chromium VI)	6010, 6020	200 g	Glass / NA	None	6 Months
Metals for TCLP or CAM WET (except Mercury)	-- <sup>h</sup>	50 g	Poly, glass / NA	None	Extract 180 days from collection; analyze 180 days after extraction
Mercury for TCLP or CAM WET		50 g	Poly, glass / NA	None	Extract 28 days from collection; analyze 28 days after extraction
Chromium VI	7196	50 g	Poly, glass / NA	0 to ≤6 °C	Extract 30 days from collection; analyze 7 days after extraction
Mercury	7471	50 g	Poly, glass / NA	0 to ≤6 °C	28 Days
<b>Organics</b>					
VOC	8260	50 g	Poly, glass / PTFE	0 to ≤6 °C	14 Days
SVOC	8270	50 g	Poly, glass / PTFE	0 to ≤6 °C	Extract 14 days from collection; analyze 40 days after extraction
Hydrazine/Mono and Dimethylhydrazine					
Total Nonhalogenated Extractable Hydrocarbons	8015	50 g	Poly, glass / PTFE	0 to ≤6 °C	Extract 14 days from collection; analyze 40 days after extraction
Glycol Screening	Modified 8015	200 g	Glass / PTFE	0 to ≤6 °C	14 Days
Polychlorinated Biphenyls	8082	200 g	Glass / PTFE	0 to ≤6 °C	Extract 365 days from collection; analyze 40 days after extraction
Explosive/Propellant Residue (Nitroaromatics and Nitramines)	8330	1 L	Glass (amber) / PTFE	0 to ≤6 °C	Extract 14 days from collection; analyze 40 days after extraction

<sup>a</sup> Unless otherwise noted, methods referenced are from EPA, Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, EPA Office of Solid Waste, EPA Publication SW-846 and 40 CFR 261, latest version, <https://www.epa.gov/hw-sw846/sw-846-compendium>. Method number(s) are current as of date of this WAP. The latest approved methods will always be used – changes to sample sizes, containers, preservation methods and holding times due to method revisions will not constitute a WAP modification. Constituent-specific analyses must also be conducted if it is suspected that the material may qualify as a listed hazardous waste (i.e., listed in 22 CCR 66262.30).

<sup>b</sup> Sample size given based on historical use and testing laboratory requirements. Otherwise, size given is per method guidance. g = grams ; NA = not applicable or not specified.

<sup>c</sup> Container type – material (color) / lid-liner material given based on historical use and testing laboratory requirements, and in accordance with method guidance (as applicable). Other container materials may be used consistent with method guidance. If no container type given, container is a bottle or jar with a size appropriate to the minimum sample size given. If no color given, assume white/opaque for Poly containers and clear for glass containers. PTFE = Polytetrafluoroethylene (Teflon); Poly = Polyethylene; NA = not applicable or not specified.

<sup>d</sup> Preservation methods include chemical to adjust pH and/or temperature per method guidance (as applicable). Only preservation method for initial sample is given. °C = Degrees Centigrade; HNO<sub>3</sub> = Nitric Acid; HCl = Hydrochloric Acid; H<sub>2</sub>SO<sub>4</sub> = Sulfuric Acid; NA = not applicable or not specified.

<sup>e</sup> EPA Standard Method for water and wastewater analyses and is used when applicable for solid wastes with significant liquid content (e.g., sludges, soil/water and soil/fuel mixtures).

<sup>f</sup> Equivalent to EPA Method 9000.

<sup>g</sup> California Department Of Fish And Game, Static Acute Bioassay Procedures for Hazardous Waste Samples, Water Pollution Control Laboratory, November 1988, [http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP\\_bioassay\\_report.pdf](http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP_bioassay_report.pdf).

<sup>h</sup> The TCLP and CAM WET methods are not an analyte-specific methods – these are extraction methods (EPA Method 1311 for TCLP, 22 CCR 26261 Appendix II for CAM WET). These are included in this table as these are principle methods used to characterize waste toxicity.

**Table 5-5. Sample Equipment Decontamination Procedures**

Procedure
Scrub with tap water <sup>1</sup> and nonphosphate detergent
Rinse with tap water <sup>a</sup>
Rinse with 10 percent HNO <sub>3</sub> , ultrapure <sup>b</sup>
Rinse with tap water
Rinse with methanol <sup>c</sup>
Rinse with acetone <sup>c</sup>
Rinse with methanol <sup>c</sup>
Rinse with deionized water (demonstrated analyte-free water)
Air dry
Wrap in aluminum foil

<sup>a</sup> Tap water may be used from any municipal water treatment system. The use of an untreated potable water supply is not an acceptable substitute unless the aquifer is known to be uncontaminated.

<sup>b</sup> Omit this step if metals are not being analyzed. For carbon steel equipment, a 1 percent rather than 10 percent HNO<sub>3</sub> rinse should be performed.

<sup>c</sup> The solvent rinse can be omitted if organics are not being analyzed. The series is propanol, hexane, and isopropanol, may be substituted for 5, 6, or 7, above if acetone is a constituent of concern.



Figure 5-1. Hazardous Waste Profile Sheet

HAZARDOUS WASTE PROFILE SHEET			
NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO Contact your DRMO for further guidance if your waste meets any of these categories.			
Part I			
A. GENERAL INFORMATION			WASTE PROFILE NO.
1. GENERATORS NAME EDWARDS AIR FORCE BASE			EDL016 v1
2. FACILITY ADDRESS 446 N ROSAMOND BLVD BUILDING 4922			4. GENERATOR USEPA ID CA1570024504
3. ZIP CODE 93524			5. GENERATOR STATE ID HYHQ38001119
EDWARDS CA United States			
ORGANIZATION NAME 412 MXS/MXMG	SHOP NAME 010A: AGE FLIGHT	OFFICE SYMBOL	
6. TECHNICAL CONTACT Joseph Dunwoody		7. TITLE Environmental Contact	8. PHONE 661-277-9252
B. WASTE INFORMATION			
1. NAME OF WASTE: WASH-RACK/OIL WATER SEPARATOR/TANKS SLUDGE LIQUID			
2A. USEPA WASTE CODE			
2B. STATE/LOCAL/HOST-NATION WASTE CODES 223			
3. PROCESS GENERATING WASTE * MISC CHEMICAL SPECIALTIES (ED010A - 010A: AGE FLIGHT)			
4. PROJECTED ANNUAL VOL 50000		5. MODE OF COLLECTION DMS, TT	
6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN CFR 261.31?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? (40 CFR 268)		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
HAS AN EXEMPTION BEEN GRANTED?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
(If yes, Enter Reference Standards in Part 3, Block 6)			
Part II			
1. MATERIAL CHARACTERIZATION (Optional - Not Required Data)			
COLOR: VARIES	DENSITY: = 1.2	BTU/LB: = 1500	
TOTAL SOLIDS: = 70.0		ASH CONTENT: = 0.0	
LAYERING	<input checked="" type="checkbox"/> MULTILAYERED	<input type="checkbox"/> BILAYERED	<input type="checkbox"/> SINGLE
2. RCRA CHARACTERISTICS			
PHYSICAL STATE <input type="checkbox"/> SOLID <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> SEMI-SOLID <input type="checkbox"/> GAS <input type="checkbox"/> OTHER			
OTHER CHARACTERISTICS			
<input type="checkbox"/> IGNITABLE <input type="checkbox"/> CORROSIVE (D002) <input type="checkbox"/> REACTIVE(D003) <input type="checkbox"/> WATER REACTIVE <input type="checkbox"/> CYANIDE REACTIVE <input type="checkbox"/> SULFIDE REACTIVE			
Flash Point: = 200.0 FAHRENHEIT ph:			
<input type="checkbox"/> HIGH TOC (≥ 10%) <input checked="" type="checkbox"/> LOW TOC (<10%) TREATMENT GROUP: <input type="checkbox"/> WASTEWATER <input checked="" type="checkbox"/> NON-WASTEWATER			

HAZARDOUS WASTE PROFILE SHEET (Continued)			WASTE PROFILE NO. EDL016 v1	
3. CHEMICAL/MATERIAL COMPOSITION      List all components and contaminants, including PCB's, and any applicable F-Listed and underlying Hazardous Constituents.				
CAS #	COMPONENT <small>(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable)</small>	CONCENTRATION	RANGE	
	DEBRIS, TRASH	= 100000 PPM	1.0 %	to 10.0 %
68334305	FUEL, DIESEL	= 20000 PPM	.0 %	to 2.0 %
	SLUDGE/SOLIDS	= 900000 PPM	40.0 %	to 90.0 %
7732185	WATER	= 400000 PPM	5.0 %	to 40.0 %
	SOLVENTS	= 10000 PPM	.0 %	to 1.0 %
8002059	OIL	= 700000 PPM	5.0 %	to 70.0 %
8002059	PETROLEUM	= 250000 PPM	1.0 %	to 25.0 %
9016459	SURFACTANTS	= 50000 PPM	1.0 %	to 5.0 %
RANGE TOTAL MUST EQUAL AT LEAST 100%				
4. SHIPPING INFORMATION				
DOT HAZARDOUS MATERIAL? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
PROPER SHIPPING NAME				
HAZARD CLASS		U.N. or N.A. NO.		PACKING GROUP
ADDITIONAL DESCRIPTION NON-RCRA HAZARDOUS WASTE LIQUID [PETROLEUM SLUDGE & WATER]				
METHOD OF SHIPMENT <input type="checkbox"/> BULK <input checked="" type="checkbox"/> DRUM <input type="checkbox"/> OTHER				
EMERGENCY RESPONSE GUIDE EDITION (YR)      EMERGENCY RESPONSE NUMBER 2008				
5. SPECIAL HANDLING INFORMATION				
6. GENERATOR CERTIFICATION				
<input checked="" type="checkbox"/> CHEMICAL ANALYSIS (ATTACH TEST RESULTS) <input type="checkbox"/> USER KNOWLEDGE (ATTACH SUPPORTING DOCUMENTS) EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIREMENTS				
CERTIFICATION  I, _____ HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.				
Signature of Generator's Representative _____				Date _____

Figure 5-2. Sample Label

**SAMPLE ID**

SAMPLED BY	DATE
	TIME
LOCATION	PRESERVATIVE
ANALYSIS	CLIENT

**LOT#**



**(800) 233-8425    [www.essvial.com](http://www.essvial.com)**

Figure 5-3. Chain of Custody Record

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

[illegible]

## 6.0 WASTE ANALYSIS PARAMETERS AND RATIONALE

If the generator's knowledge is determined by CEV to be insufficient to characterize the waste, and no other HM or waste data are available, then laboratory analyses are required. The parameters to be analyzed will be determined by CEV. These parameters should be evaluated in accordance with the EPA analytical methods published in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA publication SW-846. Test methods are also identified in 22 CCR, Chapter 11, Appendix III, and 40 CFR Part 261. Additional test methods can include EPA Standard Methods used for water and wastewater, and American Society for Testing and Materials (ASTM) methods.

These methods satisfy the regulatory requirements for determining the reactivity, corrosivity, ignitability, and composition of the waste and the mobility of toxic species present in the waste. Specifically, analysis is performed to determine whether or not the sample meets the definition of HW, and then to determine its characteristics for proper handling, manifesting, and disposal. The CEV will annually review the HWPS of each HW and follow sampling frequency in accordance with Section 5.0, Sampling Methodology, Frequency, and Documentation, of the report, to ensure accuracy of wastestream characteristics.

Sufficient parameters must be analyzed in order to complete the HWPS and determine the regulatory classification of the waste. Parameters that may need to be analyzed include physical state of the waste, density, flash point and pH for liquids, British thermal units per pound (BTU/lb) and ash content for materials used as fuels, total solids, and presence of layers. Depending on the wastestream and source, the concentrations of metals and other components, such as cyanides, sulfides, and polychlorinated biphenyls (PCBs), must also be determined. The concentrations of all organic and inorganic constituents of the waste present over 10,000 parts per million (1 percent) should also be identified. Toxicity Characteristic Leaching Procedure (TCLP) and the California Metals (CAM)-17 testing to determine toxicity characteristics, must also be included if toxic constituents could be present. Constituent-specific analyses must also be conducted if it is suspected that the material may qualify as a listed HW (i.e., listed in 22 CCR 66261.30).

The Hazardous Wastestream Sample and Analysis Parameters spreadsheet (Table A-2) describes waste-analysis parameters for the major wastestreams at Edwards AFB. Only wastes for which the characteristics or origins are completely unknown are tested for all possible waste characteristics. Unknown wastes are not accepted at the HWSF. Wastestream analyses are performed at the point of generation and waste drums are not received until they have been properly identified. Figure 6-1 illustrates the decision flow diagram for determining whether a waste meets the HW criterion for toxic metals.

### 6.1 TEST METHODS

Table 6-1 identifies analytical methods routinely used for characterizing HW at Edwards AFB. Sample preparation methods are not detailed in this WAP as these methods will vary depending on the sample



matrix and analytes. Edwards AFB routinely depends on the testing laboratory to apply the correct sample preparation methods.

Practical quantitation limits (PQLs) will be set to the method reporting limits established by the testing laboratory. A PQL is the lowest concentration of an analyte that can be reliably determined within specified limits of precision and accuracy by indicated methods under routine laboratory operating conditions. Analysis for miscellaneous components may be necessary in the following situations:

- To determine if the waste meets the requirements for land disposal, or if the waste must be treated before being disposed of at a land disposal facility (40 CFR, Part 268);
- To determine levels of arsenic, cadmium, chromium, lead, flashpoint, BTU value, and total organic halide (if halogenated hydrocarbons could be present) in waste oil to be burned for energy recovery; and
- To determine whether the material is a solid or liquid and whether the material is land disposal restricted (if the material is restricted), a paint-filter test should be conducted as described in EPA Methods SW-846 and 9095.

All HW analysis for wastestreams at Edwards AFB are currently conducted by testing laboratories certified by DTSC and the Regional Water Quality Control Board for the treatment and disposal of HW. They are also audited periodically by DRMO for compliance and approval.

The determination of HW toxicity contributed to wastestreams by the presence of metals is made by first testing for total metals and utilizing the Metals Analyses Decision Flow Diagram (Figure 6-1) and the RCRA and CAM-17 Concentration Limits (State Toxicity Leaching Procedure (STLC), Toxicity Threshold Limit Concentration (TTLC), Toxicity Characteristic Leaching Procedure (TCLP)) to identify further testing requirements. These limits are shown in Table 6-2.

## 6.2 OTHER SPECIAL ANALYSIS AND TESTING CONSIDERATIONS

If source of wastestreams, regulatory requirements, and/or disposal/recycling considerations influence testing parameters, analysis will be requested accordingly.

Table 6-1. Analytical Methods for Characterizing Hazardous Waste

Analytes	Test Method(s) <sup>a</sup>
<i>General and Inorganics</i>	
pH	9040, 9045
Flash Point	1010 <sup>b</sup>
Specific Gravity	2710F <sup>c</sup>
Total Dissolved Solids for Nonhazardous Water	2540C <sup>c</sup>
Total Suspended Solids	2540D <sup>c</sup>
Total Solids	2540B <sup>c</sup>
% Water	E203 <sup>d</sup>
Oxidizing Solids	1040
Organic Peroxide, Hydrogen Peroxide	-- <sup>e</sup>
Perchlorates	6850
Fish Bioassay	-- <sup>f</sup>
<i>Metals</i>	
Metals (except Mercury and Chromium VI)	6010, 6020
Metals for TCLP or CAM WET	-- <sup>g</sup>
Chromium VI	7196
Mercury	7470, 7041
<i>Organics</i>	
VOC	8260
SVOC	8270
Hydrazine/Mono and Dimethylhydrazine	
Total Nonhalogenated Extractable Hydrocarbons	8015
Glycol Screening	Modified 8015
JP-4 and JP-8	8015
Benzene for TLCP	-- <sup>g</sup>
Polychlorinated Biphenyls	8082
Total Organic Halides	9020
Explosive/propellant residue (nitroaromatics and nitramines)	8330

<sup>a</sup> Unless otherwise noted, methods referenced are from EPA, Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, EPA Office of Solid Waste, EPA Publication SW-846 and 40 CFR 261, latest version, <https://www.epa.gov/hw-sw846/sw-846-compendium>. Method number(s) are current as of date of this WAP. The latest approved methods will always be used. Constituent-specific analyses must also be conducted if it is suspected that the material may qualify as a listed hazardous waste (i.e., listed in 22 CCR 66262.30).

<sup>b</sup> EPA method references American Society for Testing and Materials (ASTM) Standard D-93-9/79 or D-93-80 (Pensky-Martens), or ASTM Standard D-3278-78 (Setaflash).

<sup>c</sup> EPA Standard Method for water and wastewater analyses.

<sup>d</sup> Equivalent to EPA Method 9000.

<sup>e</sup> Indicator paper test.

<sup>f</sup> California Department Of Fish And Game, Static Acute Bioassay Procedures for Hazardous Waste Samples, Water Pollution Control Laboratory, November 1988, [http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP\\_bioassay\\_report.pdf](http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP_bioassay_report.pdf).

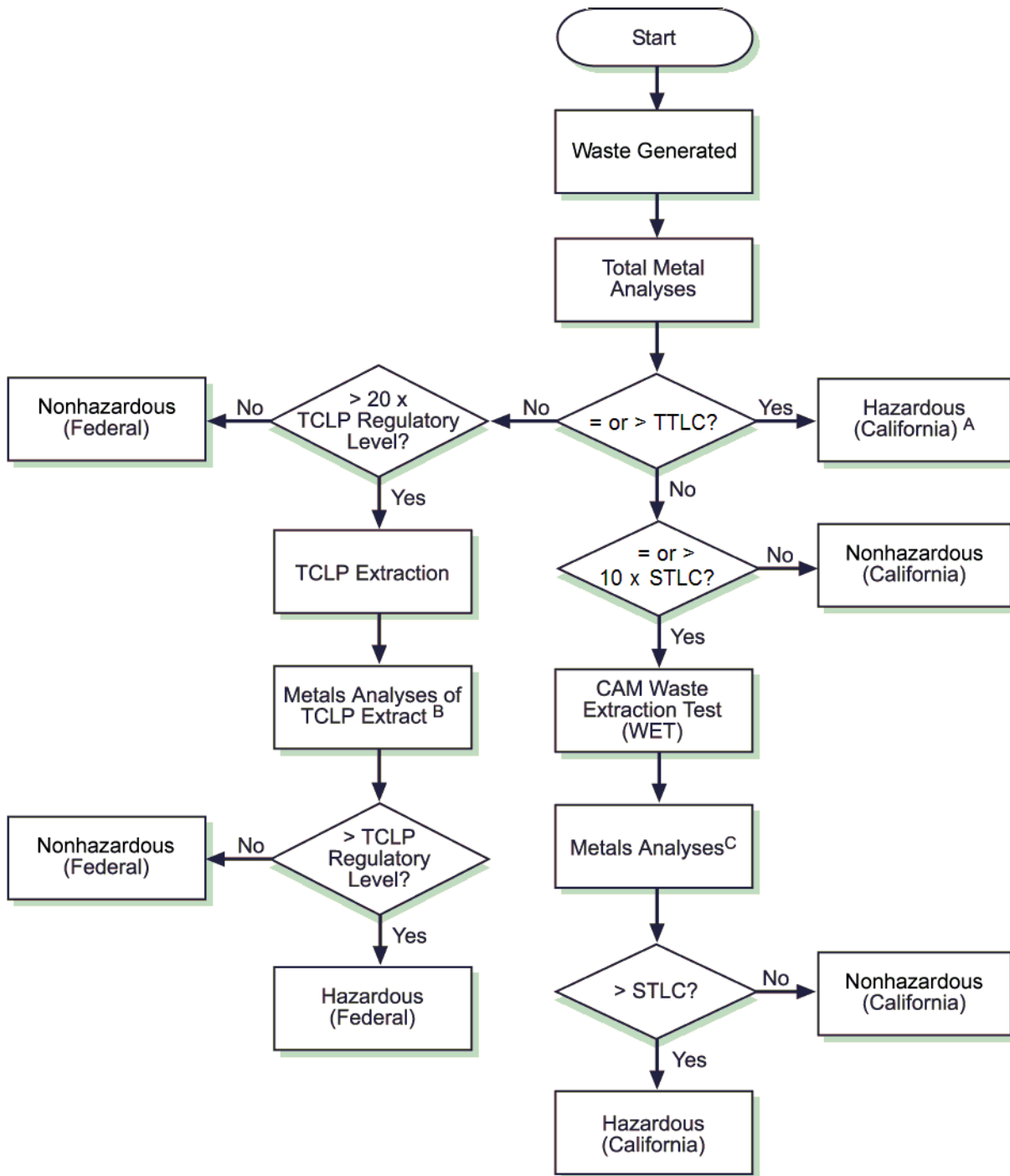
<sup>g</sup> The TCLP and CAM WET methods are not an analyte-specific methods – these are extraction methods (EPA Method 1311 for TCLP, 22 CCR 26261 Appendix II for CAM WET). These are included in this table as these are principle methods used to characterize waste toxicity.

Table 6-2. RCRA 8 and CAM 17 Metals (STLC, TTLC, TCLP) Concentration Limits

Substance	STLC Max. Limit mg/L (ppm)	TTLC Max Limit mg/kg (ppm)	TCLP Max Limit mg/L (ppm)
Antimony	15.00	500	
Arsenic	5.00	500	5.00
Barium	100.00	10,000	100.00
Beryllium	0.75	75	
Cadmium	1.00	100	1.00
Chromium, Total	5.00	2,500	5.00
Cobalt	80.00	8,000	
Copper	25.00	2,500	
Lead	5.00	1,000	5.00
Mercury	0.20	20	0.20
Molybdenum	350.00	3,500	
Nickel	20.00	2,000	
Selenium	1.00	100	1.00
Silver	5.00	500	5.00
Thallium	7.00	700	
Vanadium	24.00	2,400	
Zinc	250.00	5,000	

ppm – parts per million

**Figure 6-1. Metal Analyses Decision Flow Diagram**



A) If any **one** of the metals equals/exceeds its TTLC, do not perform TCLP or WET CAM for **any** of the metals if the waste has an existing profile and can be classified as a RCRA HW based on generator knowledge. If a new waste with no existing profile, and there is not enough generator knowledge available, then perform TCLP to determine RCRA HW status.

B) Only analyze for those metals below TTLC and exceeding the TCLP regulatory level.

C) Only analyze for those metals below TTLC and exceeding 10 times the STLC. Analyze for Cr VI if Cr > 50 mg/L (10 x STLC for Cr VI).

## 7.0 TRACKING AND REPORTING

### 7.1 WASTESTREAM TRACKING DATABASES

As described previously, Edwards AFB utilizes both the web-based EESOHMIS and locally managed spreadsheets for HW recordkeeping, tracking, and reporting tools. Both are updated with changes to generators, processes, profiles, sample schedules, and other information critical to tracking and authorizing the certification and off-site shipment of HW.

#### 7.1.1 Enterprise Environmental Safety Occupational Health Management Information System

The USAF EESOHMIS is the HW database is used installation wide to track the usage of HM, the down-grade of HM to HW, transfer of HW to the HWSF, and the manifesting and transport of HW to off-site recycling and disposal facilities. All profiles assigned to wastestreams are maintained in the EESOHMIS. The EESOHMIS is the only tracking tool with which reports can be created to represent current status of waste. These reports include, but are not limited to, the following:

- Waste Generation Report;
- One-time and Special Waste Report;
- Active Profile Report;
- Profile Codes and Proper Shipping Name Report; and
- EPA Annual/Biannual Report.

#### 7.1.2 Hazardous Wastestream Management Data Base

The HMSMDB represents the locally operated tools and spreadsheets used by CEV profiling staff to internally track changes to wastestreams, required analysis, and scheduled sampling. The two main tracking spreadsheets are:

- Hazardous Waste Stream Inventories; and
- Hazardous Waste Stream Sample and Analysis Parameters Spreadsheet.

## 8.0 DATA INTERPRETATION

After analytical results in the form of a sample analysis summary package have been received from the laboratory, the data must be evaluated to determine if the material is a HW and/or if it meets the criteria for an existing wastestream profile.

### 8.1 HW CLASSIFICATION

RCRA and CCR regulations require all appropriate waste codes be applied to a HW, and as such can be classified as a characteristic HW and/or a listed HW.

Table 8-1 provides the criteria and code designations used for classifying a characteristic HW. Appendix 11 to the HWSF Volume of this application provides the federal and state HW code designations (characteristic and listed) currently in use at Edwards AFB.

If an existing or new waste can be classified based on generator knowledge, then analytical testing is generally not required and waste codes are applied according to the applicable profile given in Attachment A-1. Most listed HWs can be classified using generator knowledge as the generating process makes apparent the waste's characteristics (e.g., use of MEK for surface cleaning generates waste that would be coded as F005).

If an existing or new waste cannot be classified based on generator knowledge, then analytical testing is required in order to properly classify the waste. This is discussed in Section 8.2. If testing shows that the waste is consistent with an existing profile, then waste codes are applied according to the applicable profile given in Attachment A-1.

Once a waste is determined to be hazardous, no further testing is required, and the waste is managed until manifested for disposal. On occasion, waste haulers and TSDFs may require additional analysis/characterization – these situations are handled on a case-by-case basis.

As appropriate, HWSF staff will prepare new HWPS for newly classified HWs and update existing HWPS relevant data. Subsequent turn-ins of the same waste does not require that the HWPS accompany the waste; the generating activity need only reference the waste profile number on the Waste Turn-In Document as shown in Figure 8-1.

### 8.2 ANALYTICAL DATA REVIEW

CEV will only accept test reports from certified testing laboratories. CEV has determined that a Level 2 data package is sufficient to provide the information needed to properly classify wastes generated at Edwards AFB. An example of a typical test report is provided in Attachment B. Analytical test report results are interpreted by CEV and copies of test reports are kept on file for at least 3 years from the date that the waste was last shipped off site. Test results are reviewed against the criteria described in the following paragraphs.

### 8.2.1 Comparison of Test Results to Criteria

Any test result that is at or above the PQL, as defined in Section 6.1, is considered a valid result. QA/QC exceptions noted by the testing laboratory are discussed in Section 8.2.3.

Any test result that is at or above an applicable HW threshold or concentration limit is taken to mean that the waste is a HW. Test results that are below all applicable HW thresholds or concentration limits are taken to mean that the waste is not a HW.

Any waste subjected to analysis is rarely analyzed for a single characteristic. As shown in Attachment A-2 for recurring profile analyses, wastes are subjected to a suite of tests. The same applies for un-profiled wastes. This approach minimizes the possibility that a waste can be mistakenly classified as non-hazardous due to analytical errors. Whenever there is a doubt in an analytical result, particularly when a result is inconsistent with the process that generated the waste (e.g., low metal results in a waste from a plating process), HWSF personnel will always resample the waste and have another analysis accomplished.

Ignitability results are directly comparable to the standard in 22 CCR 66261.21. Corrosivity results are directly comparable to the standard in 22 CCR 66261.22. Reactivity results are directly comparable to the standard in 22 CCR 66261.23. Table 8-1 includes the criteria by which characteristic waste classifications can be accomplished. Toxicity results are directly comparable to the standard in 22 CCR 66261.24, and are further delineated according to TCLP, TTLC and STLC results. Figure 8-2 provides a flowchart that details how waste are to be classified based on TCLP, TTLC and STLC results for metals. Table 8-2 provides a comparison of TCLP, TTLC and STLC criteria for classifying a waste as toxic due to metals. Table 8-3 provides the TCLP criteria and federal codes for classifying a waste as toxic for metals and other substances. Tables 8-4 and 8-5 provide the TTLC and STLC criteria for classifying a waste as toxic for persistent and bioaccumulative substances.

### 8.2.2 Test Results for Atypical Substances

The vast majority of HWs generated by Edwards AFB operations can be readily classified based on generator knowledge, and the analytical tests outlined in Table 6-1 and discussed in Section 8.2.1. There are a number of analytical tests included in Table 6-1 that are atypical and reflect the military mission of Edwards AFB. These tests include perchlorates, hydrazine compounds and explosive residue, and may be used for characterizing wastes from rocket propellant research activities, open burn/open detonation and special aircraft fuels:

- Hydrazine/Mono and Dimethylhydrazine – these are EPA listed HW;
- Explosive Residues – there are several compounds analyzed by this method that are EPA listed HWs; and
- Perchlorates – there is one state HW category for perchlorate wastes that can apply to Edwards AFB.



For each of the above substances, its presence in a waste is confirmed when an analytical result is at or above the establish PQL. The use of any of the above tests is highly situational and not routine. The processes that generate wastes with any of the above substances are well known and understood. These tests are generally used for characterization of a waste when there is not enough generator knowledge.

### 8.2.3 QC Test Exceptions

As previously noted, testing laboratories provide CEV with a level 2 data package test report. This report includes the result of QC sample activities accomplished by the testing laboratory as part of their internal QA/QC processes: method blanks; laboratory control samples/duplicates; and matrix spikes/duplicates. QA/QC activities involving specifics on instrument checks and calibrations are not included in the test reports provided by the testing laboratories.

Testing laboratories routinely establish their own QC limits based on historical data. Edwards AFB accepts these limits for the purposes QC testing. When a QC test provides a result outside of the established testing laboratory historical control limits, the testing laboratory notes the result as an exception or qualifier in the test report. In most instances, the testing laboratory will re-accomplish the QC test (if there is sufficient sample remaining) without any direction from HWSF personnel. Very often, the testing laboratory's past experience with similar samples provides the answers to out-of-range QC results (e.g., matrix interferences) and notes this in their qualifier statement.

If there is not enough of the original sample remaining, or the re-accomplished test continues to produce out-of-range results, then HWSF personnel may re-sample the waste for a new analysis. As previously noted, new wastes without a profile will be subjected to a whole suite of tests, usually based on historical data regarding the process that generated the waste. If the results of other analytical tests are within QC limits, coupled with knowledge of the process that generated the waste, is enough to properly classify the waste, then a re-sample may not be needed. These occurrences are highly situational, and are evaluated on a case-by-case basis. If there is ever any doubt about test results such that a proper classification cannot be made, HWSF personnel will re-sample the waste.

In the *rare instance* where the testing laboratory has no historical data to establish QC limits, Edwards AFB will engage with the testing laboratory to develop QC limits. Such limits will be based on historical test data from Edwards AFB, and comparisons with similar test methods where applicable.

Table 8-1. Characteristic Hazardous Waste Designations

Characteristic	Criteria	EPA HW Code
Ignitability	<ul style="list-style-type: none"> <li>Liquid with a flashpoint less than 60°C (140°F).<sup>a</sup></li> <li>Non-liquid capable under standard temperature and pressure of causing fire through friction, absorption of moisture, or spontaneous chemical changes and which, when ignited, burns so vigorously and persistently that it creates a hazard.</li> <li>An ignitable compressed gas (as defined in 49 CFR 173.300).</li> <li>An oxidizer (as defined in 49 CFR 173.151)</li> </ul>	D001
Corrosivity	<ul style="list-style-type: none"> <li>Aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5.</li> <li>A liquid that corrodes steel at a rate greater than 6.35 millimeters (0.25 inch) per year at a test temperature of 55°C (130°F).</li> </ul>	D002
Reactivity	<ul style="list-style-type: none"> <li>Is normally unstable and readily undergoes violent change without detonating.</li> <li>Reacts violently with water.</li> <li>Forms potentially explosive mixtures with water.</li> <li>When mixed with water, generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.</li> <li>Is a cyanide- or sulfide-bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.</li> <li>Is capable of detonation or explosive reaction if subjected to a strong initiation source or heated under confinement.</li> <li>Is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.</li> <li>Is a forbidden explosive, Class A explosive, or Class B explosive (as defined in 49 CFR 173.53).</li> </ul>	D003
Toxicity	<ul style="list-style-type: none"> <li>A solid waste for which the Toxicity Characteristic Leaching Procedure (TCLP) extract contains a concentration of a specified contaminant above its regulatory threshold.</li> </ul>	D004 through D043

<sup>a</sup> Liquids other than an aqueous solution containing less than 24 percent ethyl alcohol by volume.

Table 8-2. RCRA 8 and CAM 17 Metals (STLC, TTLC, TCLP) Concentration Limits

Substance	STLC Max. Limit mg/L (ppm)	TTLC Max Limit mg/kg (ppm)	TCLP Max Limit mg/L (ppm)
Antimony	15.00	500	
Arsenic	5.00	500	5.00
Barium	100.00	10,000	100.00
Beryllium	0.75	75	
Cadmium	1.00	100	1.00
Chromium, Total	5.00	2,500	5.00
Cobalt	80.00	8,000	
Copper	25.00	2,500	
Lead	5.00	1,000	5.00
Mercury	0.20	20	0.20
Molybdenum	350.00	3,500	
Nickel	20.00	2,000	
Selenium	1.00	100	1.00
Silver	5.00	500	5.00
Thallium	7.00	700	
Vanadium	24.00	2,400	
Zinc	250.00	5,000	

Table 8-3. TCLP Criteria for Toxicity Characteristics

Substance	Regulatory Level (mg/L)	EPA Hazardous Waste Code
Arsenic	5.0	D004
Barium	100.0	D005
Benzene	0.5	D018
Cadmium	1.0	D006
Carbon Tetrachloride	0.5	D019
Chlordane	0.03	D020
Chlorobenzene	100.0	D021
Chloroform	6.0	D022
Chromium	5.0	D007
o-Cresol	200.0 <sup>a</sup>	D023
m-Cresol	200.0 <sup>a</sup>	D024
p-Cresol	200.0 <sup>a</sup>	D025
Cresol (total)	200.0 <sup>a</sup>	D026
2,4-D	10.0	D016
1,4-Dichlorobenzene	7.5	D027
1,2-Dichloroethane	0.5	D028
1,1-Dichloroethylene	0.7	D029
2,4-Dinitrotoluene	0.13 <sup>b</sup>	D030
Endrin	0.02	D012
Heptachlor (and its hydroxide)	0.008	D031
Hexachlorobenzene	0.13 <sup>b</sup>	D032
Hexachlorobutadiene	0.5	D033
Hexachlorethane	3.0	D034
Lead	5.0	D008
Lindane	0.4	D013
Mercury	0.2	D009
Methoxychlor	10.0	D014
Methyl ethyl ketone	200.0	D035
Nitrobenzene	2.0	D036
Pentachlorophenol	100.0	D037
Pyridine	5.0 <sup>2</sup>	D038
Selenium	1.0	D010
Silver	5.0	D011
Tetrachloroethylene	0.7	D039
Toxaphene	0.5	D015
Trichloroethylene	0.5	D040
2,4,5-Trichlorophenol	400.0	D041
2,4,6-Trichlorophenol	2.0	D042
2,4,5-TP (Silvex)	1.0	D017
Vinyl chloride	0.2	D043

mg/L – milligrams/liter

<sup>a</sup> If o-, m-, and p-Cresol concentrations cannot be differentiated; the total cresol (D026) concentration is used. The regulatory level of cresol is 200mg/l.<sup>b</sup> Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

**Table 8-4. STLC/TTLC Criteria for Inorganic Persistent and Bioaccumulative Toxic Substances**

Substance <sup>a,b</sup>	STLC (mg/L)	TTLC Wet-Weight (mg/kg)
Antimony and/or antimony compounds	15.0	500
Arsenic and/or arsenic compounds	5.0	500
Asbestos		1.0 (as percent)
Barium and/or barium compounds (excluding barite)	100.0	10,000 <sup>c</sup>
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5.0	500
Chromium and/or chromium (III) compounds	5.0 <sup>d</sup>	2,500
Cobalt and/or cobalt compounds	80.0	8,000
Copper and/or copper compounds	25.0	2,500
Fluoride salts	180.0	18,000
Lead and/or lead compounds	5.0	1,000
Mercury and/or mercury compounds	0.2	20
Molybdenum and/or molybdenum compounds	350.0	3,500 <sup>e</sup>
Nickel and/or nickel compounds	20.0	2,000
Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5.0	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	24.0	2,400
Zinc and/or zinc compounds	250.0	5,000

<sup>a</sup> STLC and TTLC values are calculated on the concentrations of the elements, not the compounds.

<sup>b</sup> In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. In the case of asbestos and elemental metals, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

<sup>c</sup> excluding barium sulfate.

<sup>d</sup> If the soluble chromium, as determined by the TCLP set forth in Appendix I of chapter 18 of this division, is less than 5 mg/l, and the soluble chromium, as determined by the procedures set forth in Appendix II of chapter 11, equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 66261.100, then the waste is a non-RCRA hazardous waste.

<sup>e</sup> Excluding molybdenum disulfide.

Table 8-5. STLC/TTLC Criteria for Organic Persistent and Bioaccumulative Toxic Substances

Substance	STLC (mg/L)	TTLC Wet-Weight (mg/kg)
Aldrin	0.14	1.4
Chlordane	0.25	2.5
DDT, DDE, DDD	0.1	1.0
2,4-Dichlorophenoxyacetic acid	10	100
Dieldrin	0.8	8.0
Dioxin (2,3,7,8-TCDD)	0.001	0.01
Endrin	0.02	0.2
Heptachlor	0.47	4.7
Kepone	2.1	21
Lead compounds, organic		13
Lindane	0.4	4.0
Methoxychlor	10	100
Mirex	2.1	21
Pentachlorophenol	1.7	17
Polychlorinated biphenyls (PCBs)	5.0	50
Toxaphene	0.5	5
Trichloroethylene	204	2,040
2,4,5-Trichlorophenoxypropionic acid	1.0	10

Figure 8-1. Waste Turn-In Document

**WASTE TURN-IN DOCUMENT**  
**GENERATOR INFORMATION**

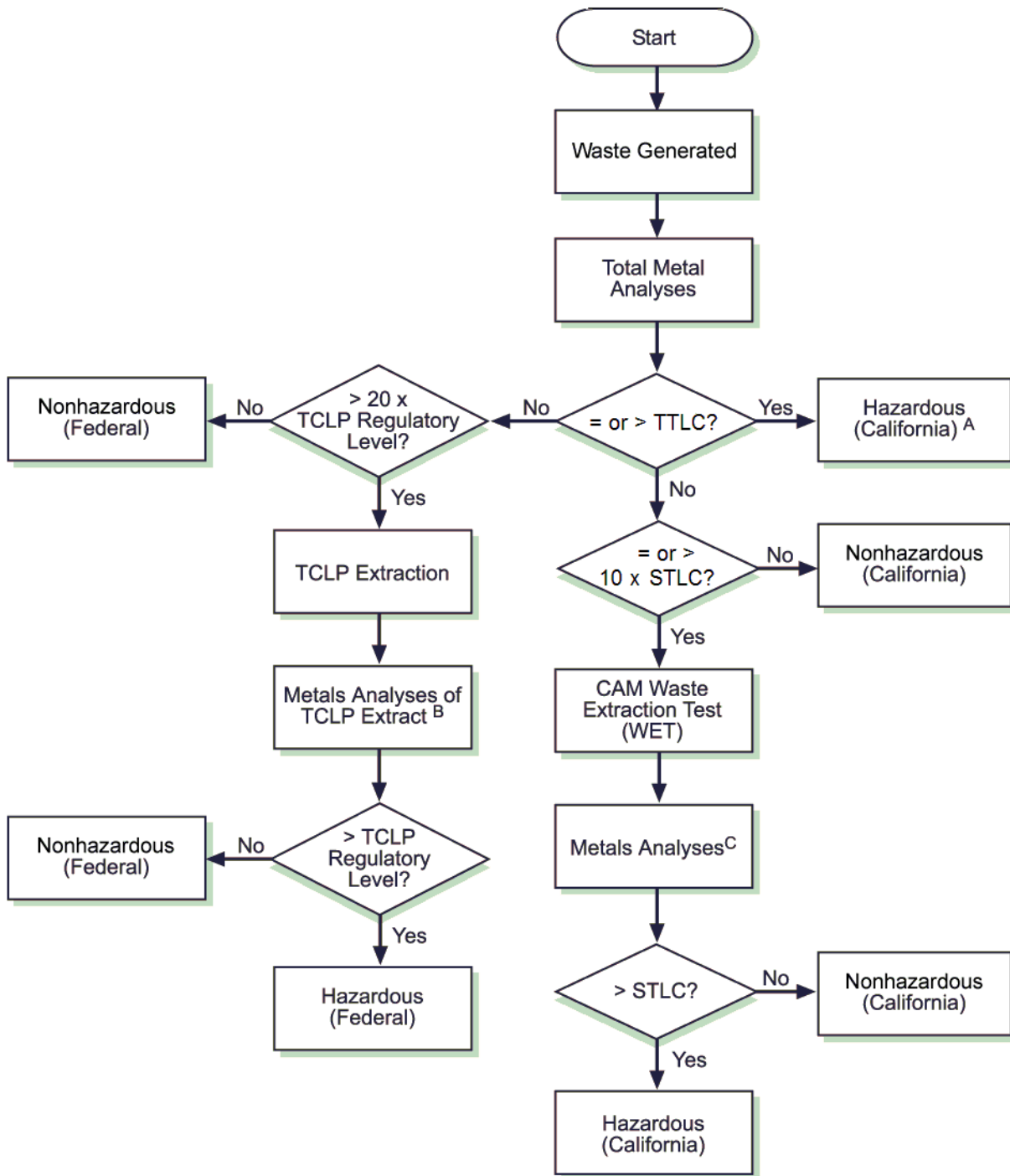
**Name:** \_\_\_\_\_ **Organization:** \_\_\_\_\_  
**Address/Building:** \_\_\_\_\_ **Phone:** \_\_\_\_\_  
**National Stock Number:** \_\_\_\_\_ **Start Date:** \_\_\_\_\_

**WASTE INFORMATION**

1. Contents: \_\_\_\_\_  
2. Container Information: \_\_\_\_\_ 3. EM# \_\_\_\_\_  
4. Unit of Issue: \_\_\_\_\_ 5. Weight: \_\_\_\_\_ 6. Unit of Measure: \_\_\_\_\_  
7. Liquid: ☐ Solid: ☐ 8. Profile: \_\_\_\_\_ 9. MSDS - Yes ☐ No ☐  
9a. MSDS#: \_\_\_\_\_ 9b. MSDS Date: \_\_\_\_\_  
10. Shipping Name: \_\_\_\_\_  
11. Comments: \_\_\_\_\_  
12. JON#: \_\_\_\_\_ Pick up/Delivered by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_



**Figure 8-2. Metal Analyses Decision Flow Diagram**



A) If any **one** of the metals equals/exceeds its TTLC, do not perform TCLP or WET CAM for **any** of the metals if the waste has an existing profile and can be classified as a RCRA HW based on generator knowledge. If a new waste with no existing profile, and there is not enough generator knowledge available, then perform TCLP to determine RCRA HW status.

B) Only analyze for those metals below TTLC and exceeding the TCLP regulatory level.

C) Only analyze for those metals below TTLC and exceeding 10 times the STLC. Analyze for Cr VI if Cr > 50 mg/L (10 x STLC for Cr VI).

## 9.0 WASTE ANALYSIS PLAN REVISION

This Edwards AFB WAP will be evaluated and reviewed annually by CEV to ensure that the most up-to-date procedures are implemented. This plan will also be reviewed and revised whenever:

- The sample frequency changes due to changes in the annual volume of the base's HW;
- Analytical parameters change due to changes in the processes generating HW;
- California EPA//U.S. EPA waste codes and/or DOT identification numbers change due to regulatory revisions; and
- Disposal methods change due to revisions to land disposal restrictions or changes in disposal contracts.

## 10.0 REFERENCES

Air Force Hazardous Management Guide Section 4-1 Nov 13 1992

Air Force Instruction

*32-7042, 1994, Solid Waste and Hazardous Waste Compliance, 12 May*

American Standard American Society for Testing and Materials (ASTM)

*ASTM D140–01(2007) “Standard Practice for Sampling Bituminous Materials”*

*ASTM D346–04e1 “Standard Practice for Collection and Preparation of Coke Samples for Laboratory Analysis”*

*ASTM D420–98(2003) “Standard Guide to Site Characterization for Engineering, Design, and Construction Purposes”*

*ASTM D1452–07a “Standard Practice for Soil Investigation and Sampling by Auger Borings”*

*ASTM D2234/D2234M–07 “Standard Practice for Collection of a Gross Sample of Coal”*

California Code of Regulations

*Title 22 Part 66261.2, Hazardous Criteria.*

*Title 22 Part 66261.3, Hazardous Criteria.*

*Title 22 Part 66262.20, General Requirements*

*Title 22 Part 66264.13, General Waste Analysis*

Code of Federal Regulation

*Title 19 Section 173.300 Amended 30 Sep 1982, regarding Hazardous Materials regulations (transport).*

*Title 40 Section 264.13(a)(b), regarding Handling, Storage, and Disposal of Hazardous Materials and Waste*

*Title 40 Section 261, regarding transporting hazardous waste*

*Title 49 Section 173.53, Transportation.*

*Title 49 Section 173.851 Amended 31 May 1979*

United States Environmental Protection Agency

*1311 –Toxicity Characteristic Leaching Procedure*

*6020A–Inductively Coupled Plasma-Mass Spectrometry*

*8260B–Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)*

*8270D–Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)*

*8015C–Nonhalogenated Organics by Gas Chromatography*

*8082A–Polychlorinated Biphenyls (PCBs) by Gas Chromatography*

*9020B–Total Organic Halides (TOX)*

*9045D–Soil and Waste pH*

*1010A–Test Methods for Flash Point by Pensky-Martens Closed-Cup Tester*

*1040–Test Method for Oxidizing Solids*

*SW-846–Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*

## ATTACHMENT A

Attachment A-1. Hazardous Waste Inventory			
Profile #	Waste Profile Description	EPA Codes	State Code
EDA001	SOIL C/W FUEL/OIL	NONE	611
EDA002	ABSORBENT C/W FUEL AND OIL (BIODEGRADABLE ONLY)	NONE	352
EDA003	DEBRIS & PPE C/W GREASE/OIL	NONE	181
EDA004	SOIL C/W ANTIFREEZE & LOW METALS	NONE	611
EDA005	RAGS & PPE C/W GREASE-OIL-FUEL	NONE	352
EDA006	SOIL C/W TRACE CHLORINATED COMPOUNDS	NONE	611
EDA007	DEBRIS C/W OIL & GREASE - LIQUID	NONE	223
EDA009	DEBRIS C/W FUEL AND METALS (LEAD)	D008, D018	352
EDA013	SOIL C/W PETROLEUM NON-HAZARDOUS	NONE	NONE
EDA014	SOIL C/W CHLORINATED SOLVENTS & METALS (ERP)	D039	611
EDA014-1	SOIL C/W CHLORINATED SOLVENTS & METALS (ERP)	D039	611
EDA016-1	SOIL C/W METALS	D007	521
EDA017	SOIL- NON-HAZARDOUS- METALS & OTHER CONTAMINANTS	NONE	NONE
EDA116	PPE, DEBRIS, CONTAMINATED WITH TRACE INORGANICS	NONE	181
EDB001	OIL FILTERS (LIQUID)	NONE	223
EDB002	FUEL AND SOLVENTS C/W WATER	D001, D018, F003, F005	212
EDB003	FUEL & DEBRIS (MOGAS & NON-LEAD GASOLINE)	D001, D018	331
EDB004	PETROLEUM DISTILLATES, STODDARD SOLVENTS, PARAFFIN	D001	343
EDB005 v1	ANTI-FREEZE AND COOLANTS W/WATER	NONE	135
EDB006	SOIL C/W JP4 & MO-GAS AND/OR GASOLINE (LEAD < 5PPM	D018	611
EDB007	SPENT PENETRATE W/WATER	NONE	221
EDB009	OIL C/W WATER DEBRIS AND METALS (NO PUMP-OUT)	D005, D006, D007, D008	223
EDB010	FUEL FILTERS (WET)	D001, D005, D006, D007, D008, D018	343
EDB011	FUEL FILTERS (DRY) – NOT METAL CASED	D001, D018	352
EDB013	JP-8 FUEL (FOR RECYCLING)	D001, D018	223
EDB014	OIL (FOR RECYCLE)	NONE	221
EDB015	FUEL C/W LOW SOLVENT, ETHYLENE GLYCOL & WATER	D001	223
EDB016	OIL (FOR RECYCLE) COMBUSTIBLE	NONE	221
EDB017	FUEL - DEBRIS, HOSES C/W JP-8, WET	D001, D018	223
EDB018	FUEL - JP-4, FROM GROUND WATER FILTER PROCESS	D001, D018, D039, D040, F001, F002, F003, F005	341
EDB020	WASTE OIL- RECYCLE- MAY CONTAIN >5% HALOGENS & BENZENE	D018, D039, D040	741
EDB021	GASOLINE OR JP-4- UNLEADED ONLY	D001, D018	343
EDB022	MINERAL OIL WITH SURFACTANTS	NONE	223
EDB024	HEAT TRANSFER FLUID, COOLANT LUBRICANT	NONE	331
EDB028	BIO-DIESEL COMBUSTIBLE LIQUID	NONE	343

Attachment A-1. Hazardous Waste Inventory			
Profile #	Waste Profile Description	EPA Codes	State Code
EDB030	HYDRAULIC FLUID WITH TRIPHENYL PHOSPHATE (SKYDROL)	NONE	221
EDC001	AEROSOL (FLAMMABLE)	D001, D003, D007, D008, D035	331
EDC002	AEROSOL (NON-FLAMMABLE)	D003	211
EDC002V1	NON-FLAMMABLE AEROSOLS TOXIC	NONE	141
EDC003	SOLVENTS HALO/NON-HALO MIX	D001, D022, D028, D035, D039, F002, F003, F005	212, 331
EDC005	SOLVENTS NON HALOGENATED	D001, D035, F003, F005	212
EDC006	SOLVENT-HALOGENATED	D039, F001, F002	741
EDC007	SOLVENTS AND FUELS SPILL CLEAN-UP (LIQUIDS)	D001, D007, D008, F003, F005	214
EDC008	SOLVENTS AND FUELS SPILL CLEAN-UP (SOLID)	D007, D008, F003, F005	351
EDC010	SOLVENT SPENT CITRUS BASED (COMBUSTIBLE LIQUID)	NONE	214
EDC012	PETROLEUM BASED SOLVENT DEGREASE - (ALIPHATIC HYDROCARBONS)	D001	331
EDC013	METHYL ETHYL KETONE - (UNUSED)	U159, U159, D001, D035	331
EDC014	SOLVENT CLEANER- HYDROCARBON BASED-ISOPARAFINNIC	NONE	331
EDC015	SOLVENT - LACQUER THINNER W/MEK, TOLUENE, HYDROCARBONS	D001, D035, F003, F005	214
EDC016	ISOPARAFINNIC HYDROCARBONS	D001	331
EDC017	SOLVENT - AFRL, CLEANING PROCESS W/BENZENE, NAPHTHA	D001, D018, F003, F005	212
EDC018	SOLVENTS- MIXED HALO/NON-HALO W/ CHLOROFORM, TOLUENE	D001, D002, D022, D028, F001, F002, F003, F005	214
EDC019	SOLVENT- MIXED SOLUTIONS, D-LIMONENE, (UNUSED)	D001	214
EDC020	CARBON CLEANER WITH BUTOXYETHANOL, AMINOETHANOL	D001, D002	214
EDC022	SOLVENT - IPA AND AK-225	D001	214
EDCL001	LABORATORY SOLVENTS-HALOGENATED/NON-HALOGENATED	D001, D018, D019, D022, D035, D039, D040, F002, F003, F005	214
EDCL002	LABORATORY WASTE NON-HALOGENATED SOLVENTS	D001, D035, F003, F005	212
EDCL004	LABORATORY SOLVENT WASTE - HALO/NON-HALO WITH ACID	D001, D002, D022, F003	214
EDD001	PAINT C/W SOLVENTS	D001, D005, D007, D008, D011, D035, F002, F003, F005	214

Attachment A-1. Hazardous Waste Inventory			
Profile #	Waste Profile Description	EPA Codes	State Code
EDD002	PAINT - LATEX (WATER BASE) COATING (FORMERLY EDD026)	NONE	291, 331
EDD003	PAINT REMOVER-(METHYLENE CHLORIDE, SODIUM CHROMATE)	D002, D007, F002	331
EDD004	PAINT FILTERS	D007, D008, D035, F002, F003, F005	352
EDD005	PAINT RAGS CHEESECLOTH C/W SOLVENT PPE	D007, D008, D011, D035, F002, F003, F005	352
EDD006	PAINT DEBRIS (CANS, PAINT, TRASH, SOLVENT, BRUSHES)	D005, D007, D008, D011, D035, F002, F005	352
EDD007	PAINT SPILL RESIDUE	D007,D008,F003,F005	181
EDD008	PAINT (LATEX) C/W DEBRIS	NONE	352
EDD009	PAINT CHIPS (SAND) SANDBLAST GRIT	D007, D008	181
EDD010	PAINT CHIPS (PLASTIC) BLAST MEDIA	D007, D008	181
EDD011	PAINT W/ SOLVENT (OFF-SPEC-INCLUDING =>5 GALLON	D001, D035	331
EDD012	BLAST MEDIA MIXED (SAND/PLASTIC/GLASS)	D005, D006, D007, D008	181
EDD013	DEBRIS SOLID C/W ACID PAINT REMOVER (ALODINE, METHYLENE CHLORIDE)	D005, D006, D007, D008, D011, F002	352
EDD014	PAINTCHIPS - C/W DIRT & METALS PB, CD, BA, CR ABOVE REGULATORY LIMITS	D005, D006, D007, D008	181
EDD015	ISOPROPANOL C/W WATER & RESIN, AND/OR PETROLEUM	D001,D035	214
EDD016	TONER POWDER INCLUDING CARTRIDGES (CARBON BLACK)	NONE	331
EDD017	METAL CUTTING SLUDGE W/ GARNET WITH WATER ON TOP	D006, D007, D008	172
EDD018	METAL CUTTING SLUDGE W/ WATER C/W METALS	D005, D006, D007, D008, D010	722
EDD019	PAINT REMOVER (METHYLENE CHLORIDE & FORMIC ACID)	D002,F001,F002	791
EDD020	PAINT CHIPS C/W LEAD (DEBRIS AND PPE)	D008	181
EDD022	PAINT - FROM PROCESS - SOLID/LIQUID - WITH HARDENER	D001, D005, D006, D007, D008, D011, D035, D039, F002, F003, F005	352
EDD025	PAINT (LATEX) C/W DEBRIS- NON HAZARDOUS WASTE	NONE	
EDD026	FILTERS FROM SAND BLAST (EDD012)	D005, D007, D008	181
EDD027	PAINT FILTERS (BULK) CORROSION FILTER CHANGE-OUT	D005, D006, D007, D008, D035	352
EDD028	COMPOSITE SHOP DUST C/W RCRA METALS	D006, D007, D008	181
EDD029	PAINT RELATED MATERIAL (CONTAINING ISOCYANATES)	D001, F003, F005	331
EDD030	PAINT RELATED MATERIAL CORROSIVE, FLAMMABLE	D001	331



Attachment A-1. Hazardous Waste Inventory			
Profile #	Waste Profile Description	EPA Codes	State Code
EDD031	PAINT RELATED MATERIAL (CONTAINING AMINES) (DOT CORROSIVE)	NONE	331
EDE004	ADHESIVE DEBRIS W/CHROME	D007, D018, D035, F005	352
EDE009	ELASTOMER - WATER BASE - LIQUID (MAY INCLUDE MASTIC)	NONE	281
EDE013	SILICATE BASED POWER/FIBER AND FIBERGLASS FILLER	NONE	141
EDG008	BATTERIES-LEAD ACID-BROKEN W/LIQUID	D002,D008	792
EDI001	ACID MIXTURES, INCLUDING CLEANING LABORATORY GLASS	D002	791
EDI004	ACIDS AND MIXTURES W/CHROMIC ACID (CORROSIVE)	D002,D007	792
EDI006	BASIC, SODIUM HYDROXIDE, POTASSIUM HYDROXIDE (CORROSIVE)	D002	122
EDI016	BOILER TREATMENT BETZENTEC 722 (BASIC ORGANIC)	D002	122
EDI018	CHEMICAL - SODIUM COMPOUNDS SOLIDS	NONE	141
EDJ002	FERRIC CHLORIDE	D002	791
EDJ003	CALCIUM HYPOCHLORITE	D001	141
EDJ040	HYDRAZINE ANHYDROUS	D001, D002	141
EDK003	WATER C/W SOLVENTS, SLUDGE AND METALS-MAY INCLUDE RINSATE	D005, D006, D007, D008, D018, F001, F002, F003, F005	241, 741
EDK005	WATER C/W ALKALINE CLEANER (PH >5 <11)	NONE	135
EDK006	WATER C/W OIL AND SOLVENTS-SURFACTANTS	NONE	134, 135
EDK007	WATER C/W JET-FUEL (JP-8) TPH > 2000 < 10000 PPM	NONE	NONE
EDK015	WATER - CONTAMINATED W/AFFF 3% ANSUL, DEFOAMING EMULSION	NONE	NONE
EDK022	WATER WITH PHOSPHORIC ACID AND DURACLEAN FROM ABL	NONE	135
EDK024	PROCESS RINSEATE WATER (NON-HAZARDOUS)	NONE	NONE
EDK026V1	WATER - WITH PHOSPHORIC ACID, SILICA GEL, SALTS, FURAZANS	NONE	135
EDK027	WATER - NON HAZARDOUS WASTE (TRACE HYDROCARBONS)	NONE	NONE
EDK029	WATER- RINSING PROCESS (HIGH CARBON-TDS	NONE	135
EDK033	WATER C/W >10% JET FUEL (D001 ONLY)	D001	133
EDL002	ASBESTOS (FRIABLE)	NONE	151
EDL012	PCB-BALLASTS & CAPACITORS	NONE	261
EDL013	WOOD C/W CRESOL, METALS & PENTACHLOROPHENOL	D004, D007, D008, D037	614
EDL015	WOOD & DEBRIS C/W CREOSOTE (NO CREOSOL) & METALS	NONE	614
EDL017	WOOD C/W CREOSOTE AND METALS (LOW DEBRIS)	NONE	614
EDL026	LARGE DEBRIS C/W HYDROCARBONS (DRUMS <110 G, PALLETS, ETC.)	NONE	512
EDL028	NON FRIABLE ASBESTOS NON HAZ	NONE	NONE
EDL033	NON-PCB BALLASTS, CAPACITORS & TRANSFORMERS	NONE	NONE

Attachment A-1. Hazardous Waste Inventory			
Profile #	Waste Profile Description	EPA Codes	State Code
EDL041	NRCRA & NON-HAZ (EMPTY TANKS)	NONE	512
EDLP102	LAB-PACK FLAMMABLE LIQUIDS, D-CODE	D001, D008, D035	551
EDM001	BURN RESIDUE C/W METALS (BURN RESIDUE)	D005, D006, D007, D008	181
EDM020	NON HAZARDOUS SPENT CARBON FILTRATION	NONE	352
EDM029	WASTE-TO-ENERGY ASH C/W METALS AND LOW DIOXINS	D006, D007, D008	801
EDM030	SILICA AEROGEL MATERIAL	NONE	141
EDN006	CYLINDER: CARBON MONOXIDE (0.0005-1.0 %) AND AIR	NONE	551
EDN016	CYLINDER-COMPRESSED AIR (LOW THC)	NONE	141
EDN018	REFRIGERANT-MAY INCLUDE R-12, R-134A, R-22, R-407A,B,C,D	NONE	331
EDN033	CYLINDER-OXYGEN, (OXIDIZING)	D001	331
EDN039	CYLINDER- COMPRESSED GASES (NON-FLAM)-INERT	NONE	141, 331
EDN077	CYLINDER - FLAMMABLE GAS MIXTURE IN NON-FLAMMABLE	NONE	141, 331
EDN082	CYLINDERS - SULFUR HEXAFLUORIDE 100% (NON-FLAM GASES)	NONE	141
EDOP110	PAINT RELATED MATERIALS & SOLVENTS (<= 5 GALLONS)	D001, D005, D006, D007, D008, D011, D035	331
EDOP111	ADHESIVES- LIQUID (MAY INCLUDE SMALL CONTAINERS)	D001, D005, D006, D007, D008, D011, D035	331
EDOP112	POTASSIUM PERMANGANATE	D001	141, 551
EDOP113	PAINT, COATING, ADHESIVE COMPOUNDS AND ACTIVATORS	D001	331
EDOP118	ALCOHOLS-(MAY INCLUDE IPA, METHYL, ETHYL ALCOHOL)	D001	331
EDOP122	INSTANT COLD PACKS CONTAINING AMMONIUM NITRATE (OXIDIZING)	D001	141
EDOP221	CLEANERS AND SURFACE PREPARATION COMPOUNDS (CORROSIVE)	D002	141
EDOP400	ADHESIVES- SOLID CONTAINING (MEK, LEAD, CHROMIUM)	D005,D007,D008,D011,D035	281
EDOP711	SOLVENT - CYCLOHEXANE (< 5 GALLON CINTAINERS COMMODITY-PACK)	D001,U056	331
EDOP712	N,N-DIMETHYLHYDRAZINE (<5 GALLONS PER INNER PACKAGE)	U098,D001,D002	551
EDOP801	LATEX PAINT & LATEX/WATER BASED SEALANT/COMPOUND	NONE	331
EDOP803	ISOCYANATE POLYMERS AND COATING COMPOUNDS	NONE	331
EDOP804	NON-RCRA ADHESIVES & EPOXIES (LIQUID)	NONE	331
EDOP805	NON-RCRA ADHESIVE CATALYSTS	NONE	281
EDOP813	CITRIC ACID POWDER	NONE	331

Attachment A-1. Hazardous Waste Inventory			
Profile #	Waste Profile Description	EPA Codes	State Code
EDP102	FLAMMABLE LIQUID CORROSIVE SMALL ITEMS, ACID	D001, D002	331, 551
EDP103	FLAMMABLE LIQUIDS - MAY INCLUDE CATALYST	D001	331, 551
EDP111	FLAMMABLE LIQUIDS (INCLUDING CATALYSTS) (SMALL ITEMS)	D001	551
EDP112	FLAMMABLE LIQUIDS, TOXIC W/MEK (SMALL ITEMS)	D001, D035	331
EDP126	FLAMMABLE SOLID TOXIC, ORGANIC(SMALL)	D001	551
EDP133	OXIDIZING SOLIDS W/SILVER	D001, D011	551
EDP139	FLAMMABLE LIQUID TOXIC, CORROSIVE (BASIC, INORGANIC)	D001, D002	551
EDP201	CORROSIVE LIQUIDS ACIDIC, ORGANIC LAB-PACK	D002	331, 551
EDP202	CORROSIVE LIQUIDS BASIC, INORGANIC (SMALL ITEMS)	D002	141
EDP319	FLAMMABLE LIQUID, TOXIC, REACTIVE	D001, D003, D009	331, 551
EDP800	NON-RCRA LIQUID (SMALL ITEMS) (NO CATALYSTS)	NONE	331, 551
EDP801	NON-RCRA SOLID (SMALL ITEMS)	NONE	141, 331
EDP804	CORROSIVE SOLID ACIDIC, ORGANIC (SMALL ITEMS)	NONE	331, 551
EDP900	NON HAZARDOUS WASTE LIQUID	NONE	NONE
EDP901	NON HAZARDOUS WASTE SOLID	NONE	NONE
EDRE02	DRAINED USED OIL FILTERS	NONE	NONE
EDRE06	GASOLINE (UNLEADED)	NONE	NONE
EDUW01	UNIVERSAL WASTE MERCURY CONTAINING DEVICES	NONE	NONE
EDUW010	UNIVERSAL WASTE ELECTRONIC DEVICES	NONE	NONE
EDUW02	UNIVERSAL WASTE BATTERIES (ALKALINE)	NONE	NONE
EDUW03	UNIVERSAL WASTE BATTERIES (NI-CAD)	NONE	NONE
EDUW04	UNIVERSAL WASTE BATTERIES MERCURY	NONE	NONE
EDUW05	UNIVERSAL WASTE AEROSOLS (FLAM & NON FLAM)	NONE	NONE
EDUW06	UNIVERSAL WASTE LAMPS-MAY INCLUDE FLUORESCENT, HID	NONE	NONE
EDUW07	UNIVERSAL WASTE BATTERIES SMALL SEALED LEAD ACID BATTERY	NONE	NONE
EDUW08	UNIVERSAL WASTE BATTERIES (SILVER ZINC)	NONE	NONE
EDUW09	UNIVERSAL WASTE CRTS, TELEVISIONS & MONITORS	NONE	NONE
EDUW11	UNIVERSAL WASTE BATTERIES-LITHIUM BATTERIES	NONE	NONE
EDUW13	BATTERIES-CARBON ZINC BATTERIES (SOLID) UW	NONE	181
EDUW14	METAL HYDRIDE BATTERIES [INCLUDES NICKEL HYDRIDE)	NONE	NONE
EDUW15	UNIVERSAL WASTE BROKEN FLUORESCENT LAMPS	NONE	NONE
EDUW16	UNIVERSAL WASTE BULBS -MERCURY, HID, (NO FLUORESCENT)	NONE	NONE
EDUW17	UNIVERSAL WASTE BATTERIES NICKEL-IRON (NI-IRON) BATTERIES	NONE	NONE

Attachment A-1. Hazardous Waste Inventory			
Profile #	Waste Profile Description	EPA Codes	State Code
EDX100	OB/OD MATERIAL	NONE	NONE
EDY172	SOIL C/W FIRE FIGHTING FOAM (SOLID)	NONE	611
EDY173	FIRE FIGHTING FOAM W/BUTYL CARBITOL OR DIETHYLENE	NONE	131
EDY174	ABSORBENT C/W FIRE FIGHTING FOAM (SOLID)	NONE	352
EDY175	ABSORBENT PADS AND DEBRIS C/W LIQUID AFFF (BUTYL CARBITOL)	NONE	343
EDY643	SOLVENT - CLEANER LECTRACLEAN W/1,1,1TRICHLOROETHYLENE	NONE	331
EDY789	CHEMICAL - SILICA AND SILICA COMPOUNDS	NONE	141
EDY830	DETERGENT SOAP & SURFACTANTS W/ PHOSPHATES, ETHOXY	NONE	561
EDY841	SOLVENT-CONTAINING FLUOROPROPANE COMPOUNDS	NONE	331
EDY869	HYDRAULIC FLUID-CONTAINING TRIPHENYL PHOSPHATE MIX	NONE	331
EDY881	ACID DISTILLATION FILTER (SOLID CORROSIVE ACIDIC INORGANIC)	NONE	181
EDY881V1	ACID DISTILLATION FILTER (SOLID CORROSIVE ACIDIC INORGANIC)	NONE	181
EDY882	CAUSTIC DISTILLATION FILTER (CORROSIVE SOLID, BASIC)	NONE	181

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDA001	SOIL C/W FUEL/OIL		X			X								X								X	AR
EDA002	ABSORBENT C/W FUEL AND OIL (BIODEGRADABLE ONLY)		X			X								X			X					X	AR
EDA003	DEBRIS & PPE C/W GREASE/OIL		X			X		X						X			X				X	X	AR
EDA004	SOIL C/W ANTIFREEZE & LOW METALS			X		X						X		X			X					X	
EDA005	RAGS & PPE C/W GREASE-OIL-FUEL					X		X						X			X				X	X	AR
EDA006	SOIL C/W TRACE CHLORINATED COMPOUNDS				X	X						X					X				X	X	
EDA007	DEBRIS C/W OIL & GREASE - LIQUID					X		X						X			X				X	X	AR
EDA009	DEBRIS C/W FUEL AND METALS (LEAD)				X	X						X		X	X		X					X	
EDA013	SOIL C/W PETROLEUM NON-HAZARDOUS	X			X	X						X		X			X					X	
EDA009	DEBRIS C/W FUEL AND METALS (LEAD)				X	X						X		X	X		X					X	
EDA014	SOIL C/W CHLORINATED SOLVENTS & METALS (ERP)				X	X						X		X	X		X				X	X	
EDA014-1	SOIL C/W CHLORINATED SOLVENTS & METALS (ERP)				X	X						X		X	X		X				X	X	
EDA016-1	SOIL C/W METALS					X						X		X	X		X						

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDA017	SOIL- NON-HAZARDOUS- METALS & OTHER CONTAMINANTS	X			X	X						X		X	X		X					X	
EDA116	PPE, DEBRIS, CONTAMINATED WITH TRACE INORGANICS					X						X					X					X	
EDB001	OIL FILTERS (LIQUID)- FILTERS					X		X						X								X	AR
EDB002	FUEL AND SOLVENTS C/W WATER		X		X	X					X	X	X	X			X					X	
EDB003	FUEL & DEBRIS (MOGAS & NON-LEAD GASOLINE)		X			X								X								X	AR
EDB004	PETROLEUM DISTILLATES, STODDARD SOLVENTS, PARAFFIN		X		X	X					X	X	X	X			X					X	
EDB005 v1	ANTI-FREEZE AND COOLANTS W/WATER			X		X					X	X	X	X								X	AR
EDB006	SOIL C/W JP4 & MO-GAS AND/OR GASOLINE (LEAD < 5PPM				X	X						X		X			X					X	
EDB007	SPENT PENETRATE W/WATER		X			X					X	X	X				X					X	
EDB009	OIL C/W WATER DEBRIS AND METALS (NO PUMP-OUT)					X								X			X					X	AR
EDB010	FUEL FILTERS (WET)					X								X								X	AR
EDB011	FUEL FILTERS (DRY) – NOT METAL CASED					X								X								X	AR
EDB013	JP-8 FUEL (FOR RECYCLING)		X	X	X						X	X	X	X	X	X					X	X	AR
EDB014	OIL (FOR RECYCLE)		X	X		X		X			X		X				X			X		X	AR

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDB015	FUEL C/W LOW SOLVENT, ETHYLENE GLYCOL & WATER		X			X					X		X								X		AR
EDB016	OIL (FOR RECYCLE) COMBUSTIBLE					X								X			X					X	AR
EDB017	FUEL - DEBRIS, HOSES C/W JP-8, WET		X		X	X						X					X					X	
EDB018	FUEL - JP-4, FROM GROUND WATER FILTER PROCESS		X		X	X					X	X	X	X			X					X	
EDB020	WASTE OIL- RECYCLE- MAY CONTAIN >5% HALOGENS & BENZENE		X			X							X	X								X	AR
EDB021	GASOLINE OR JP-4- UNLEADED ONLY		X		X						X	X	X				X					X	
EDB022	MINERAL OIL WITH SURFACTANTS (BOWLING ALLEY)		X			X		X				X					X						
EDB024	HEAT TRANSFER FLUID, COOLANT LUBRICANT		X	X		X					X	X	X	X								X	
EDB028	BIO-DIESEL COMBUSTIBLE LIQUID		X			X					X		X	X								X	AR
EDB030	HYDRAULIC FLUID WITH TRIPHENYL PHOSPHATE (SKYDROL)		X			X					X	X	X	X			X					X	
EDC001	AEROSOL (FLAMMABLE)	AEROSOL																					
EDC002	AEROSOL (NON-FLAMMABLE)	AEROSOL																					

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDC002V1	NON-FLAMMABLE AEROSOLS TOXIC	AEROSOL																					
EDC003	SOLVENTS HALO/NON-HALO MIX		X			X						X	X	X			X					X	AR
EDC005	SOLVENTS NON HALOGENATED		X			X		X				X	X	X								X	AR
EDC006	SOLVENT-HALOGENATED		X			X		X				X	X	X								X	AR
EDC007	SOLVENTS AND FUELS SPILL CLEAN-UP (LIQUIDS)		X		X	X						X		X			X					X	
EDC008	SOLVENTS AND FUELS SPILL CLEAN-UP (SOLID)		X			X								X								X	AR
EDC010	SOLVENT SPENT CITRUS BASED (COMBUSTIBLE LIQUID)		X			X					X	X	X									X	AR
EDC012	PETROLEUM BASED SOLVENT DEGREASE - (ALIPHATIC HYDROCARBONS)		X		X	X						X		X			X					X	
EDC013	METHYL ETHYL KETONE – UNUSED)	Certified by their SDS																					
EDC014	SOLVENT CLEANER-HYDROCARBON BASED-ISOPARAFINNIC		X					X			X	X									X		AR
EDC015	SOLVENT - LACQUER THINNER W/MEK, TOLUENE, HYDROCARBONS		X			X						X					X					X	
EDC016	ISOPARAFINNIC HYDROCARBONS		X			X						X					X					X	



**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDC017	SOLVENT - CLEANING PROCESS W/BENZENE, NAPHTHA		X			X						X	X	X								X	AR
EDC018	SOLVENTS- MIXED HALO/NON-HALO W/ CHLOROFORM, TOLUENE		X									X		X							X	X	
EDC019	SOLVENT- MIXED SOLUTIONS, D-LIMONENE, (UNUSED)	Certified by their SDS																					
EDC020	CARBON CLEANER WITH BUTOXYETHANOL, AMINOETHANOL		X			X						X		X								X	
EDC022	SOLVENT - IPA AND AK-225		X			X						X		X								X	
EDCL001	LABORATORY SOLVENTS- HALOGENATED/NON-HALOGENATED		X			X						X	X	X								X	AR
EDCL002	LABORATORY WASTE NON-HALOGENATED SOLVENTS		X			X						X		X							X	X	
EDCL004	LABORATORY SOLVENT WASTE - HALO/NON-HALO WITH ACID		X			X						X		X							X	X	
EDD001	PAINT C/W SOLVENTS		X			X							X	X			X					X	AR
EDD002	PAINT - LATEX (WATER BASE) COATING (FORMERLY EDD026)		X			X					X		X	X								X	AR
EDD003	PAINT REMOVER-(METHYLENE CHLORIDE, SODIUM CHROMATE)		X			X						X	X	X							X	X	AR
EDD004	PAINT FILTERS					X						X		X			X					X	AR

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDD005	PAINT RAGS CHEESECLOTH C/W SOLVENT PPE					X								X			X					X	AR
EDD006	PAINT DEBRIS (CANS, PAINT, TRASH, SOLVENT, BRUSHES)					X								X			X					X	AR
EDD007	PAINT SPILL RESIDUE					X						X			X							X	
EDD008	PAINT (LATEX) C/W DEBRIS					X								X								X	AR
EDD009	PAINT CHIPS (SAND) SANDBLAST GRIT					X								X			X					X	AR
EDD010	PAINT CHIPS (PLASTIC) BLAST MEDIA					X									X								
EDD011	PAINT W/ SOLVENT (OFF-SPEC-INCLUDING =>5 GALLON		X			X								X			X					X	AR
EDD012	BLAST MEDIA MIXED (SAND/PLASTIC/GLASS)					X								X			X					X	AR
EDD013	DEBRIS SOLID C/W ACID PAINT REMOVER (ALODINE, METHYLENE CHLORIDE)					X						X			X							X	
EDD014	PAINTCHIPS - C/W DIRT & METALS PB, CD, BA, CR ABOVE REGULATORY LIMITS					X									X								
EDD015	ISOPROPANOL C/W WATER & RESIN, AND/OR PETROLEUM		X			X						X	X	X								X	AR
EDD016	TONER POWDER INCLUDING CARTRIDGES (CARBON BLACK)	Certified by their SDS																					
EDD017	METAL CUTTING SLUDGE W/ GARNET WITH WATER ON TOP					X					X		X	X			X					X	AR

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDD018	METAL CUTTING SLUDGE W/ WATER C/W METALS		X			X						X	X	X			X					X	AR
EDD019	PAINT REMOVER (METHYLENE CHLORIDE & FORMIC ACID)		X			X						X			X							X	
EDD020	PAINT CHIPS C/W LEAD (DEBRIS AND PPE)					X									X								
EDD022	PAINT - FROM PROCESS - SOLID/LIQUID - WITH HARDENER		X			X						X	X	X			X					X	AR
EDD025	PAINT (LATEX) C/W DEBRIS- NON HAZARDOUS WASTE	X				X						X			X								
EDD026	FILTERS FROM SAND BLAST (EDD012)					X						X			X								
EDD027	PAINT FILTERS (BULK) CORROSION FILTER CHANGE-OUT					X																X	AR
EDD028	COMPOSITE SHOP DUST C/W RCRA METALS					X									X								
EDD029	PAINT RELATED MATERIAL (CONTAINING ISOCYANATES)		X			X						X		X	X							X	
EDD030	PAINT RELATED MATERIAL CORROSIVE, FLAMMABLE		X			X						X										X	
EDD031	PAINT RELATED MATERIAL (CONTAINING AMINES) (DOT CORROSIVE)					X						X			X							X	
EDE004	ADHESIVE DEBRIS W/CHROME					X						X		X			X					X	AR

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDE009	ELASTOMER - WATER BASE - LIQUID (MAY INCLUDE MASTIC)		X			X						X			X								
EDE013	SILICATE BASED POWER/FIBER AND FIBERGLASS FILLER					X						X			X								
EDG008	BATTERIES-LEAD ACID-BROKEN W/LIQUID					X						X			X								
EDI004	ACIDS AND MIXTURES W/CHROMIC ACID (CORROSIVE)		X			X	X					X	X	X			X		X			X	AR
EDI006	BASIC, SODIUM HYDROXIDE, POTASSIUM HYDROXIDE (CORROSIVE)		X			X						X	X	X			X					X	AR
EDI016	BOILER TREATMENT BETZENTEC 722 (BASIC ORGANIC)		X	X		X					X	X		X			X						
EDI018	CHEMICAL - SODIUM COMPOUNDS SOLIDS					X						X											
EDJ002	FERRIC CHLORIDE	Certified by their SDS																					
EDJ003	CALCIUM HYPOCHLORITE	Certified by their SDS																					
EDJ040	HYDRAZINE ANHYDROUS	Certified by their SDS																					
EDK003	WATER C/W SOLVENTS, SLUDGE AND METALS-MAY INCLUDE RINSEATE		X			X					X	X	X	X			X					X	AR
EDK005	WATER C/W ALKALINE CLEANER (PH >5 <11)		X			X						X	X	X			X					X	AR
EDK006	WATER C/W OIL AND SOLVENTS-SURFACTANTS			X		X						X	X	X			X	X		X		X	AR

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDK007	WATER C/W JET-FUEL (JP-8) TPH > 2000 < 10000 PPM	X				X						X	X	X			X	X		X		X	AR
EDK015	WATER - CONTAMINATED W/AFFF 3% ANSUL, DEFOAMING EMULSION	X	X	X		X						X		X			X	X	X		X	X	
EDK022	WATER WITH PHOSPHORIC ACID AND DURACLEAN FROM ABL					X	X					X	X										AR
EDK024	PROCESS RINSEATE WATER (NON-HAZARDOUS)	X				X	X					X	X	X				X		X		X	AR
EDK026V1	WATER - WITH PHOSPHORIC ACID, SILICA GEL, SALTS, FURAZANS		X			X	X					X		X					X		X	X	
EDK027	WATER - NON HAZARDOUS WASTE (TRACE HYDROCARBONS)	X				X							X	X			X					X	AR
EDK029	WATER-NORTH BASE RINSING PROCESS (HIGH CARBON-TDS		X			X						X		X			X	X	X		X	X	
EDK033	WATER C/W >10% JET FUEL (D001 ONLY)		X		X	X					X	X					X					X	
EDL002	ASBESTOS (FRIABLE)					X									X								
EDL012	PCB-BALLASTS & CAPACITORS							X							X		X						
EDL013	WOOD C/W CRESOL, METALS & PENTACHLOROPHENOL					X								X	X		X						
EDL015	WOOD & DEBRIS C/W CREOSOTE (NO CREOSOL) & METALS	X				X						X		X	X		X					X	

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDL017	WOOD C/W CREOSOTE AND METALS (LOW DEBRIS)					X						X		X	X								
EDL026	LARGE DEBRIS C/W HYDROCARBONS (DRUMS <110 G, PALLETS, ETC.)					X						X		X									
EDL028	NON FRIABLE ASBESTOS NON HAZ														X								
EDL033	NON-PCB BALLASTS, CAPACITORS & TRANSFORMERS							X															
EDL041	NRCRA & NON-HAZ (EMPTY TANKS)					X						X			X		X						
EDP102	LAB-PACK FLAMMABLE LIQUIDS, D-CODE	Lab Pack																					
EDM001	BURN RESIDUE C/W METALS (BURN RESIDUE)	X				X						X			X								
EDM020	NON HAZARDOUS SPENT CARBON FILTRATION	X				X						X			X							X	
EDM029	WASTE-TO-ENERGY ASH C/W METALS AND LOW DIOXINS	X				X						X			X								
EDM030	SILICA AEROGEL MATERIAL	Lab Pack																					
EDN006	CYLINDER: CARBON MONOXIDE (0.0005-1.0 %) AND AIR	Gas Cylinder																					
EDN016	CYLINDER-COMPRESSED AIR (LOW THC)	Gas Cylinder																					
EDN018	REFRIGERANT-MAY INCLUDE R-12, R-134A, R-22, R-407A,B,C,D	Certified by their SDS																					

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDN033	CYLINDER-OXYGEN, (OXIDIZING)	Gas Cylinder																					
EDN039	CYLINDER- COMPRESSED GASES (NON-FLAM)-INERT	Gas Cylinder																					
EDN077	CYLINDER - FLAMMABLE GAS MIXTURE IN NON-FLAMMABLE	Gas Cylinder																					
EDN082	CYLINDERS - SULFUR HEXAFLUORIDE 100% (NON-FLAM GASES)	Gas Cylinder																					
EDOP110	PAINT RELATED MATERIALS & SOLVENTS (<= 5 GALLONS)		X			X						X			X							X	
EDOP111	ADHESIVES- LIQUID (MAY INCLUDE SMALL CONTAINERS)		X			X						X			X							X	
EDOP112	POTASSIUM PERMANGANATE	Certified by their SDS																					
EDOP113	PAINT, COATING, ADHESIVE COMPOUNDS AND ACTIVATORS		X			X						X		X	X							X	
EDOP118	ALCOHOLS-(MAY INCLUDE IPA, METHYL, ETHYL ALCOHOL)		X			X						X										X	
EDOP122	INSTANT COLD PACKS CONTAINING AMMONIUM NITRATE (OXIDIZING)	Lap Pack																					
EDOP221	CLEANERS AND SURFACE PREPARATION COMPOUNDS (CORROSIVE)					X						X		X								X	
EDOP400	ADHESIVES- SOLID CONTAINING (MEK, LEAD, CHROMIUM)		X			X						X			X							X	

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDOP711	SOLVENT - CYCLOHEXANE (< 5 GALLON CONTAINERS COMMODITY-PACK)		X			X								X								X	
EDOP712	N,N-DIMETHYLHYDRAZINE (<5 GALLONS PER INNER PACKAGE)		X			X	X		X			X										X	
EDOP801	LATEX PAINT & LATEX/WATER BASED SEALANT/ COMPOUND					X						X			X								
EDOP803	ISOCYANATE POLYMERS AND COATING COMPOUNDS					X								X								X	
EDOP804	NON-RCRA ADHESIVES & EPOXIES (LIQUID)		X			X								X								X	
EDOP805	NON-RCRA ADHESIVE CATALYSTS		X			X								X								X	
EDOP813	CITRIC ACID POWDER	Certified by their SDS																					
EDP102	FLAMMABLE LIQUID CORROSIVE SMALL ITEMS, ACID (D001, D002)	Certified by their SDS																					
EDP103	FLAMMABLE LIQUIDS (D001 ONLY) - MAY INCLUDE CATALYST	Certified by their SDS																					
EDP111	FLAMMABLE LIQUIDS (INCLUDING CATALYSTS) (SMALL ITEMS)	Certified by their SDS																					
EDP112	FLAMMABLE LIQUIDS, TOXIC W/MEK	Certified by their SDS																					
EDP126	FLAMMABLE SOLID TOXIC, ORGANIC	Certified by their SDS																					
EDP133	OXIDIZING SOLIDS W/SILVER	Certified by their SDS																					



**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDP139	FLAMMABLE LIQUID TOXIC, CORROSIVE (BASIC, INORGANIC)	Certified by their SDS																					
EDP201	CORROSIVE LIQUIDS ACIDIC, ORGANIC LAB-PACK	Lap Pack																					
EDP202	CORROSIVE LIQUIDS BASIC, INORGANIC	Certified by their SDS																					
EDP319	FLAMMABLE LIQUID, TOXIC, REACTIVE	Certified by their SDS																					
EDP800	NON-RCRA LIQUID (NO CATALYSTS)	Certified by their SDS																					
EDP801	NON-RCRA SOLID	Certified by their SDS																					
EDP804	CORROSIVE SOLID ACIDIC, ORGANIC	Certified by their SDS																					
EDP900	NON HAZARDOUS WASTE LIQUID	X	X			X						X		X			X	X				X	
EDP901	NON HAZARDOUS WASTE SOLID	X				X						X					X					X	
EDRE02	DRAINED USED OIL FILTERS					X									X		X						
EDRE06	GASOLINE (UNLEADED)		X																			X	
EDUW01	UNIVERSAL WASTE MERCURY CONTAINING DEVICES	Universal Waste																					
EDUW010	UNIVERSAL WASTE ELECTRONIC DEVICES	Universal Waste																					
EDUW02	UNIVERSAL WASTE BATTERIES (ALKALINE)	Universal Waste																					

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDUW03	UNIVERSAL WASTE BATTERIES (NI-CAD)	Universal Waste																					
EDUW04	UNIVERSAL WASTE BATTERIES MERCURY	Universal Waste																					
EDUW05	UNIVERSAL WASTE AEROSOLS (FLAM & NON FLAM)	Universal Waste																					
EDUW06	UNIVERSAL WASTE LAMPS-MAY INCLUDE FLUORESCENT, HID	Universal Waste																					
EDUW07	UNIVERSAL WASTE BATTERIES SMALL SEALED LEAD ACID BATTERY	Universal Waste																					
EDUW08	UNIVERSAL WASTE BATTERIES (SILVER ZINC)	Universal Waste																					
EDUW09	UNIVERSAL WASTE CRTS, TELEVISIONS & MONITORS	Universal Waste																					
EDUW11	UNIVERSAL WASTE BATTERIES-LITHIUM BATTERIES	Universal Waste																					
EDUW13	BATTERIES-CARBON ZINC BATTERIES (SOLID) UW	Universal Waste																					
EDUW14	METAL HYDRIDE BATTERIES (INCLUDES NICKEL HYDRIDE)	Universal Waste																					
EDUW15	UNIVERSAL WASTE BROKEN FLUORESCENT LAMPS	Universal Waste																					
EDUW16	UNIVERSAL WASTE BULBS - MERCURY, HID, (NO FLUORESCENT)	Universal Waste																					

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDUW17	UNIVERSAL WASTE BATTERIES NICKEL-IRON (NI-IRON) BATTERIES	Universal Waste																					
EDX100	OB/OD MATERIAL	Certified by their SDS																					
EDY172	SOIL C/W FIRE FIGHTING FOAM (SOLID)	Certified by their SDS																					
EDY173	FIRE FIGHTING FOAM W/BUTYL CARBITOL OR DIETHYLENE					X							X	X								X	AR
EDY174	ABSORBENT C/W FIRE FIGHTING FOAM (SOLID)	Certified by their SDS																					
EDY175	ABSORBENT PADS AND DEBRIS C/W LIQUID AFFF (BUTYL CARBITOL)	Certified by their SDS																					
EDY643	SOLVENT - CLEANER LECTRACLEAN W/1,1,1TRICHLOROETHYLENE	Certified by their SDS																					
EDY789	CHEMICAL - SILICA AND SILICA COMPOUNDS	Certified by their SDS																					
EDY830	DETERGENT SOAP & SURFACTANTS W/ PHOSPHATES, ETHOXY	Universal Waste																					
EDY841	SOLVENT-CONTAINING FLUOROPROPANE COMPOUNDS	Universal Waste																					
EDY869	HYDRAULIC FLUID - CONTAINING TRIPHENYL PHOSPHATE MIX	Universal Waste																					

**Attachment A-2. Hazardous Wastestream Sample and Analysis Parameters<sup>a,b</sup>**

**Analysis Requested (Test Method Number<sup>c</sup>) (Test Matrix (S = Solid, L = Liquid))**

Profile No.	Description	Fish Bioassay (#) (S,L)	Flash Point (1010) (L,S)	Glycol Screening (Modified 8015) (S,L)	JP-4 and JP-8 (8015) (L)	Metals (6010,6020) (S,L)	Oxidizer (1040) (S)	Polychlorinated Biphenyls (8082) (S,L)	Hydrazine (8270) (S,L)	Organic Peroxide, Hydrogen Peroxide (L)	% Water (E203) (S,L)	pH (9040,9045) (S,L)	Specific Gravity (SM 2710F) - (S,L)	Semi-volatile Organic Compounds (8270) (S,L)	Metals for TCLP (#) (S,L)	Benzene for TCLP (#) (L)	Total Extractable Hydrocarbons (8015) (S,L)	Total Dissolved Solids, Non-Hazardous Water (2540) (L)	Total Solids (2540) (L)	Total Suspended Solids, Non-Hazardous Water (2540) (L)	Total Organic Halides (9020) (L)	Volatile Organic Compounds (8260) (S,L)	Sample Frequency (AR = Annual)
EDY881	ACID DISTILLATION FILTER (SOLID CORROSIVE ACIDIC INORGANIC)	Universal Waste																					
EDY881V1	ACID DISTILLATION FILTER (SOLID CORROSIVE ACIDIC INORGANIC)	Universal Waste																					
EDY882	CAUSTIC DISTILLATION FILTER (CORROSIVE SOLID, BASIC)	Certified by their SDS																					

<sup>a</sup> The profiles without the sample & analysis parameters and labeled as the following; aerosol cans, gas cylinders, universal waste, and products used for lab packing; do not require sampling as these can be classified based on their inherent waste characteristics.

<sup>b</sup> The profiles without the sample & analysis parameters labeled as 'Certified by their SDS: do not require sampling nor recertification for each turn-in as these can be characterized based on their characteristics as specified in their SDS.

<sup>c</sup> # California Department Of Fish And Game, Static Acute Bioassay Procedures for Hazardous Waste Samples, Water Pollution Control Laboratory, November 1988, [http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP\\_bioassay\\_report.pdf](http://www.dtsc.ca.gov/HazardousWaste/upload/HWMP_bioassay_report.pdf). ## TCLP extraction per EPA method 1311 and analytical method determined by analyte(s) of concern.

## ATTACHMENT B

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-138513-1

Client Project/Site: HWSF (Water)

For:

JT3 LLC

5 E Popson, Bldg 2650 A

Edwards AFB, California 93524

Attn: Mr. Maung Thein



Authorized for release by:

3/8/2016 10:06:51 PM

Urvashi Patel, Manager of Project Management

(949)261-1022

[urvashi.patel@testamericainc.com](mailto:urvashi.patel@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

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[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Sample Summary

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-138513-1	Propulsion water	Water	02/17/16 13:00	02/18/16 09:50



# Case Narrative

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

**Job ID: 440-138513-1**

**Laboratory: TestAmerica Irvine**

## Narrative

### Job Narrative 440-138513-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 2/18/2016 9:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC VOA

Method(s) 8015B: Surrogate recovery for the following sample was outside control limits: Propulsion water (440-138513-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) 8015B: The following sample required a dilution due to the nature of the sample matrix: Propulsion water (440-138513-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch preparation batch 440-312413 and analytical batch 440-312722 . The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.(LCS 440-312413/2-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method(s) 6010B: The following samples was diluted due to the nature of the sample matrix: Propulsion water (440-138513-1) and (440-138509-D-1-A ^5). Elevated reporting limits (RLs) are provided. Samples appear to be yellow and orange with a thick oily top layer on the surface.

Method(s) 6010B: The continuing calibration blank (CCB) for analytical batch 440-313760 contained Antimony above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed. Propulsion water (440-138513-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

Method(s) 3510C: Samples came in 500mL amber bottles. 2 bottles Propulsion water (440-138513-1) G & E were combined to make about 1000mL volume for extraction.

Method(s) 3510C: Due to the matrix, the following sample could not be concentrated to the final method required volume: Propulsion water (440-138513-1). The reporting limits (RLs) are elevated proportionately.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Client Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

**Client Sample ID: Propulsion water**

**Lab Sample ID: 440-138513-1**

**Date Collected: 02/17/16 13:00**

**Matrix: Water**

**Date Received: 02/18/16 09:50**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		50000	2500	ug/L			02/24/16 22:36	10000
1,1,1-Trichloroethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,1,2,2-Tetrachloroethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,1,2-Trichloroethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,1-Dichloroethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,1-Dichloroethene	ND		50000	2500	ug/L			02/24/16 22:36	10000
1,1-Dichloropropene	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,2,3-Trichlorobenzene	ND		50000	4000	ug/L			02/24/16 22:36	10000
1,2,3-Trichloropropane	ND		100000	2500	ug/L			02/24/16 22:36	10000
1,2,4-Trichlorobenzene	ND		50000	4000	ug/L			02/24/16 22:36	10000
<b>1,2,4-Trimethylbenzene</b>	<b>440000</b>		20000	2500	ug/L			02/24/16 22:36	10000
1,2-Dibromo-3-Chloropropane	ND		50000	5000	ug/L			02/24/16 22:36	10000
1,2-Dibromoethane (EDB)	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,2-Dichlorobenzene	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,2-Dichloroethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,2-Dichloropropane	ND		20000	2500	ug/L			02/24/16 22:36	10000
<b>1,3,5-Trimethylbenzene</b>	<b>130000</b>		20000	2500	ug/L			02/24/16 22:36	10000
1,3-Dichlorobenzene	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,3-Dichloropropane	ND		20000	2500	ug/L			02/24/16 22:36	10000
1,4-Dichlorobenzene	ND		20000	2500	ug/L			02/24/16 22:36	10000
2,2-Dichloropropane	ND		20000	4000	ug/L			02/24/16 22:36	10000
2-Butanone (MEK)	ND		100000	25000	ug/L			02/24/16 22:36	10000
2-Chlorotoluene	ND		50000	2500	ug/L			02/24/16 22:36	10000
4-Chlorotoluene	ND		50000	2500	ug/L			02/24/16 22:36	10000
Benzene	ND		20000	2500	ug/L			02/24/16 22:36	10000
Bromobenzene	ND		50000	2500	ug/L			02/24/16 22:36	10000
Bromochloromethane	ND		50000	2500	ug/L			02/24/16 22:36	10000
Bromodichloromethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
Bromoform	ND		50000	4000	ug/L			02/24/16 22:36	10000
Bromomethane	ND		50000	2500	ug/L			02/24/16 22:36	10000
Carbon tetrachloride	ND		50000	2500	ug/L			02/24/16 22:36	10000
Chlorobenzene	ND		20000	2500	ug/L			02/24/16 22:36	10000
Chloroethane	ND		50000	4000	ug/L			02/24/16 22:36	10000
Chloroform	ND		20000	2500	ug/L			02/24/16 22:36	10000
Chloromethane	ND		50000	2500	ug/L			02/24/16 22:36	10000
cis-1,2-Dichloroethene	ND		20000	2500	ug/L			02/24/16 22:36	10000
cis-1,3-Dichloropropene	ND		20000	2500	ug/L			02/24/16 22:36	10000
Dibromochloromethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
Dibromomethane	ND		20000	2500	ug/L			02/24/16 22:36	10000
Dichlorodifluoromethane	ND		50000	2500	ug/L			02/24/16 22:36	10000
<b>Ethylbenzene</b>	<b>53000</b>		20000	2500	ug/L			02/24/16 22:36	10000
Hexachlorobutadiene	ND		50000	2500	ug/L			02/24/16 22:36	10000
<b>Isopropylbenzene</b>	<b>24000</b>		20000	2500	ug/L			02/24/16 22:36	10000
<b>m,p-Xylene</b>	<b>210000</b>		20000	5000	ug/L			02/24/16 22:36	10000
Methylene Chloride	ND		50000	11000	ug/L			02/24/16 22:36	10000
<b>Naphthalene</b>	<b>64000</b>		50000	4000	ug/L			02/24/16 22:36	10000
<b>n-Butylbenzene</b>	<b>78000</b>		50000	4000	ug/L			02/24/16 22:36	10000
<b>N-Propylbenzene</b>	<b>72000</b>		20000	2500	ug/L			02/24/16 22:36	10000
<b>o-Xylene</b>	<b>110000</b>		20000	2500	ug/L			02/24/16 22:36	10000

TestAmerica Irvine

# Client Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

**Client Sample ID: Propulsion water**

**Lab Sample ID: 440-138513-1**

**Date Collected: 02/17/16 13:00**

**Matrix: Water**

**Date Received: 02/18/16 09:50**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
p-Isopropyltoluene	41000		20000	2500	ug/L			02/24/16 22:36	10000
sec-Butylbenzene	34000	J	50000	2500	ug/L			02/24/16 22:36	10000
Styrene	ND		20000	2500	ug/L			02/24/16 22:36	10000
tert-Butylbenzene	ND		50000	2500	ug/L			02/24/16 22:36	10000
Tetrachloroethene	ND		20000	2500	ug/L			02/24/16 22:36	10000
Toluene	40000		20000	2500	ug/L			02/24/16 22:36	10000
trans-1,2-Dichloroethene	ND		20000	2500	ug/L			02/24/16 22:36	10000
trans-1,3-Dichloropropene	ND		20000	2500	ug/L			02/24/16 22:36	10000
Trichloroethene	ND		20000	2500	ug/L			02/24/16 22:36	10000
Trichlorofluoromethane	ND		50000	2500	ug/L			02/24/16 22:36	10000
Vinyl chloride	ND		50000	2500	ug/L			02/24/16 22:36	10000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		02/24/16 22:36	10000
Dibromofluoromethane (Surr)	100		76 - 132		02/24/16 22:36	10000
Toluene-d8 (Surr)	105		80 - 128		02/24/16 22:36	10000

## Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	87000000		5000000	2500000	ug/L			02/27/16 03:58	100000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	145	X	65 - 140		02/27/16 03:58	100000

## Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	1100		110	22	mg/L		02/19/16 16:48	02/22/16 11:49	100
EFH (C10-C40)	1100		110	22	mg/L		02/19/16 16:48	02/22/16 11:49	100
ORO (C29-C40)	65	J	110	22	mg/L		02/19/16 16:48	02/22/16 11:49	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	1782	X	45 - 120	02/19/16 16:48	02/22/16 11:49	100

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.050	0.030	mg/L		02/22/16 09:49	02/25/16 18:00	5
Arsenic	ND		0.050	0.025	mg/L		02/22/16 09:49	02/25/16 18:00	5
Barium	0.13		0.050	0.025	mg/L		02/22/16 09:49	02/25/16 18:00	5
Beryllium	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 18:00	5
Cadmium	0.045		0.025	0.010	mg/L		02/22/16 09:49	02/25/16 18:00	5
Chromium	0.058		0.025	0.013	mg/L		02/22/16 09:49	02/25/16 18:00	5
Cobalt	0.021	J	0.050	0.013	mg/L		02/22/16 09:49	02/25/16 18:00	5
Copper	0.34		0.050	0.025	mg/L		02/22/16 09:49	02/25/16 18:00	5
Lead	0.13		0.025	0.013	mg/L		02/22/16 09:49	02/25/16 18:00	5
Molybdenum	0.093	J	0.10	0.050	mg/L		02/22/16 09:49	02/25/16 18:00	5
Nickel	0.077		0.050	0.025	mg/L		02/22/16 09:49	02/25/16 18:00	5
Selenium	ND		0.050	0.031	mg/L		02/22/16 09:49	02/25/16 18:00	5
Thallium	ND		0.050	0.025	mg/L		02/22/16 09:49	02/25/16 18:00	5
Vanadium	ND		0.050	0.025	mg/L		02/22/16 09:49	02/25/16 18:00	5
Zinc	2.5		0.10	0.050	mg/L		02/22/16 09:49	02/25/16 18:00	5
Silver	ND		0.050	0.025	mg/L		02/22/16 09:49	02/25/16 18:00	5

TestAmerica Irvine

# Client Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0010	0.00050	mg/L		03/01/16 11:42	03/01/16 18:59	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	34000		400	160	NTU			02/19/16 11:24	4000
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	127		72.0	72.0	Degrees F			02/21/16 15:57	1
pH	7.05	HF	0.100	0.100	SU			02/19/16 12:41	1

## Method Summary

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B	Gasoline Range Organics - (GC)	SW846	TAL IRV
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
6010B	Metals (ICP)	SW846	TAL IRV
7470A	Mercury (CVAA)	SW846	TAL IRV
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL IRV
9040B	pH	SW846	TAL IRV
SM 2130B	Turbidity	SM	TAL IRV

### Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# Lab Chronicle

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

**Client Sample ID: Propulsion water**

**Date Collected: 02/17/16 13:00**

**Date Received: 02/18/16 09:50**

**Lab Sample ID: 440-138513-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10000	10 mL	10 mL	313425	02/24/16 22:36	AA	TAL IRV
Total/NA	Analysis	8015B		100000	10 mL	10 mL	313891	02/27/16 03:58	JB	TAL IRV
Total/NA	Prep	3510C			900 mL	2 mL	312413	02/19/16 16:48	QCT	TAL IRV
Total/NA	Analysis	8015B		100	900 mL	2 mL	312723	02/22/16 11:49	CN	TAL IRV
Total Recoverable	Prep	3005A			25 mL	25 mL	312730	02/22/16 09:49	K1E	TAL IRV
Total Recoverable	Analysis	6010B		5	25 mL	25 mL	313760	02/25/16 18:00	TK	TAL IRV
Total/NA	Prep	7470A			4 mL	20 mL	314320	03/01/16 11:42	DB	TAL IRV
Total/NA	Analysis	7470A		1	4 mL	20 mL	314994	03/01/16 18:59	DB	TAL IRV
Total/NA	Analysis	1010		1			312644	02/21/16 15:57	KDP	TAL IRV
Total/NA	Analysis	9040B		1		50 mL	312370	02/19/16 12:41	ST	TAL IRV
Total/NA	Analysis	SM 2130B		4000		20 mL	312386	02/19/16 11:24	AMH	TAL IRV

## Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-313425/4

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	0.25	ug/L			02/24/16 18:54	1
1,1,1-Trichloroethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,1,2,2-Tetrachloroethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,1,2-Trichloroethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,1-Dichloroethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,1-Dichloroethene	ND		5.0	0.25	ug/L			02/24/16 18:54	1
1,1-Dichloropropene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,2,3-Trichlorobenzene	ND		5.0	0.40	ug/L			02/24/16 18:54	1
1,2,3-Trichloropropane	ND		10	0.25	ug/L			02/24/16 18:54	1
1,2,4-Trichlorobenzene	ND		5.0	0.40	ug/L			02/24/16 18:54	1
1,2,4-Trimethylbenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.50	ug/L			02/24/16 18:54	1
1,2-Dibromoethane (EDB)	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,2-Dichlorobenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,2-Dichloroethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,2-Dichloropropane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,3,5-Trimethylbenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,3-Dichlorobenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,3-Dichloropropane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
1,4-Dichlorobenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
2,2-Dichloropropane	ND		2.0	0.40	ug/L			02/24/16 18:54	1
2-Butanone (MEK)	ND		10	2.5	ug/L			02/24/16 18:54	1
2-Chlorotoluene	ND		5.0	0.25	ug/L			02/24/16 18:54	1
4-Chlorotoluene	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Benzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Bromobenzene	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Bromochloromethane	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Bromodichloromethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Bromoform	ND		5.0	0.40	ug/L			02/24/16 18:54	1
Bromomethane	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Carbon tetrachloride	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Chlorobenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Chloroethane	ND		5.0	0.40	ug/L			02/24/16 18:54	1
Chloroform	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Chloromethane	ND		5.0	0.25	ug/L			02/24/16 18:54	1
cis-1,2-Dichloroethene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
cis-1,3-Dichloropropene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Dibromochloromethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Dibromomethane	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Dichlorodifluoromethane	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Ethylbenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Hexachlorobutadiene	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Isopropylbenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
m,p-Xylene	ND		2.0	0.50	ug/L			02/24/16 18:54	1
Methylene Chloride	ND		5.0	1.1	ug/L			02/24/16 18:54	1
Naphthalene	ND		5.0	0.40	ug/L			02/24/16 18:54	1
n-Butylbenzene	ND		5.0	0.40	ug/L			02/24/16 18:54	1
N-Propylbenzene	ND		2.0	0.25	ug/L			02/24/16 18:54	1

TestAmerica Irvine

# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-313425/4

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
p-Isopropyltoluene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
sec-Butylbenzene	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Styrene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
tert-Butylbenzene	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Tetrachloroethene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Toluene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
trans-1,2-Dichloroethene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
trans-1,3-Dichloropropene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Trichloroethene	ND		2.0	0.25	ug/L			02/24/16 18:54	1
Trichlorofluoromethane	ND		5.0	0.25	ug/L			02/24/16 18:54	1
Vinyl chloride	ND		5.0	0.25	ug/L			02/24/16 18:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		02/24/16 18:54	1
Dibromofluoromethane (Surr)	102		76 - 132		02/24/16 18:54	1
Toluene-d8 (Surr)	107		80 - 128		02/24/16 18:54	1

Lab Sample ID: LCS 440-313425/5

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	26.3		ug/L		105	60 - 141
1,1,1-Trichloroethane	25.0	27.8		ug/L		111	70 - 130
1,1,2,2-Tetrachloroethane	25.0	26.0		ug/L		104	63 - 130
1,1,2-Trichloroethane	25.0	25.4		ug/L		101	70 - 130
1,1-Dichloroethane	25.0	25.5		ug/L		102	64 - 130
1,1-Dichloroethene	25.0	26.4		ug/L		106	70 - 130
1,1-Dichloropropene	25.0	27.1		ug/L		108	70 - 130
1,2,3-Trichlorobenzene	25.0	26.9		ug/L		108	60 - 140
1,2,3-Trichloropropane	25.0	26.7		ug/L		107	63 - 130
1,2,4-Trichlorobenzene	25.0	27.4		ug/L		110	60 - 140
1,2,4-Trimethylbenzene	25.0	27.8		ug/L		111	70 - 135
1,2-Dibromo-3-Chloropropane	25.0	27.6		ug/L		110	52 - 140
1,2-Dibromoethane (EDB)	25.0	27.0		ug/L		108	70 - 130
1,2-Dichlorobenzene	25.0	26.6		ug/L		106	70 - 130
1,2-Dichloroethane	25.0	28.2		ug/L		113	57 - 138
1,2-Dichloropropane	25.0	26.4		ug/L		106	67 - 130
1,3,5-Trimethylbenzene	25.0	28.1		ug/L		112	70 - 136
1,3-Dichlorobenzene	25.0	26.0		ug/L		104	70 - 130
1,3-Dichloropropane	25.0	25.7		ug/L		103	70 - 130
1,4-Dichlorobenzene	25.0	25.7		ug/L		103	70 - 130
2,2-Dichloropropane	25.0	28.7		ug/L		115	68 - 141
2-Butanone (MEK)	31.3	34.3		ug/L		110	44 - 150
2-Chlorotoluene	25.0	26.9		ug/L		108	70 - 130
4-Chlorotoluene	25.0	27.3		ug/L		109	70 - 130
Benzene	25.0	26.1		ug/L		104	68 - 130

TestAmerica Irvine



# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-313425/5

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	25.0	27.0		ug/L		108	70 - 130
Bromochloromethane	25.0	26.3		ug/L		105	70 - 130
Bromodichloromethane	25.0	27.4		ug/L		109	70 - 132
Bromoform	25.0	29.8		ug/L		119	60 - 148
Bromomethane	25.0	27.3		ug/L		109	64 - 139
Carbon tetrachloride	25.0	29.2		ug/L		117	60 - 150
Chlorobenzene	25.0	24.5		ug/L		98	70 - 130
Chloroethane	25.0	25.9		ug/L		104	64 - 135
Chloroform	25.0	26.9		ug/L		107	70 - 130
Chloromethane	25.0	26.4		ug/L		106	47 - 140
cis-1,2-Dichloroethene	25.0	26.6		ug/L		106	70 - 133
cis-1,3-Dichloropropene	25.0	27.4		ug/L		110	70 - 133
Dibromochloromethane	25.0	27.3		ug/L		109	69 - 145
Dibromomethane	25.0	26.9		ug/L		108	70 - 130
Dichlorodifluoromethane	25.0	26.6		ug/L		106	29 - 150
Ethylbenzene	25.0	26.2		ug/L		105	70 - 130
Hexachlorobutadiene	25.0	27.0		ug/L		108	10 - 150
Isopropylbenzene	25.0	27.5		ug/L		110	70 - 136
m,p-Xylene	25.0	27.0		ug/L		108	70 - 130
Methylene Chloride	25.0	25.9		ug/L		103	52 - 130
Naphthalene	25.0	27.3		ug/L		109	60 - 140
n-Butylbenzene	25.0	28.8		ug/L		115	65 - 150
N-Propylbenzene	25.0	27.9		ug/L		112	67 - 139
o-Xylene	25.0	27.8		ug/L		111	70 - 130
p-Isopropyltoluene	25.0	28.1		ug/L		112	70 - 132
sec-Butylbenzene	25.0	27.7		ug/L		111	70 - 138
Styrene	25.0	28.0		ug/L		112	70 - 134
tert-Butylbenzene	25.0	28.1		ug/L		112	70 - 130
Tetrachloroethene	25.0	26.4		ug/L		105	70 - 130
Toluene	25.0	26.1		ug/L		104	70 - 130
trans-1,2-Dichloroethene	25.0	27.5		ug/L		110	70 - 130
trans-1,3-Dichloropropene	25.0	27.9		ug/L		112	70 - 132
Trichloroethene	25.0	26.6		ug/L		106	70 - 130
Trichlorofluoromethane	25.0	28.3		ug/L		113	60 - 150
Vinyl chloride	25.0	26.5		ug/L		106	59 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	105		76 - 132
Toluene-d8 (Surr)	100		80 - 128

Lab Sample ID: 440-138807-A-1 MS

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		25.0	26.6		ug/L		106	60 - 149
1,1,1-Trichloroethane	ND		25.0	29.0		ug/L		116	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-138807-A-1 MS

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	ND		25.0	26.6		ug/L		106	63 - 130
1,1,2-Trichloroethane	ND		25.0	25.9		ug/L		104	70 - 130
1,1-Dichloroethane	ND		25.0	26.0		ug/L		104	65 - 130
1,1-Dichloroethene	ND		25.0	27.1		ug/L		108	70 - 130
1,1-Dichloropropene	ND		25.0	28.4		ug/L		114	64 - 130
1,2,3-Trichlorobenzene	ND		25.0	28.0		ug/L		112	60 - 140
1,2,3-Trichloropropane	ND		25.0	26.7		ug/L		107	60 - 130
1,2,4-Trichlorobenzene	ND		25.0	28.6		ug/L		115	60 - 140
1,2,4-Trimethylbenzene	ND		25.0	28.6		ug/L		114	70 - 130
1,2-Dibromo-3-Chloropropane	ND		25.0	27.5		ug/L		110	48 - 140
1,2-Dibromoethane (EDB)	ND		25.0	27.4		ug/L		110	70 - 131
1,2-Dichlorobenzene	ND		25.0	27.0		ug/L		108	70 - 130
1,2-Dichloroethane	ND		25.0	28.0		ug/L		112	56 - 146
1,2-Dichloropropane	ND		25.0	26.5		ug/L		106	69 - 130
1,3,5-Trimethylbenzene	ND		25.0	28.8		ug/L		115	70 - 130
1,3-Dichlorobenzene	ND		25.0	26.8		ug/L		107	70 - 130
1,3-Dichloropropane	ND		25.0	26.0		ug/L		104	70 - 130
1,4-Dichlorobenzene	ND		25.0	26.8		ug/L		107	70 - 130
2,2-Dichloropropane	ND		25.0	30.0		ug/L		120	69 - 138
2-Butanone (MEK)	ND		31.3	33.6		ug/L		107	48 - 140
2-Chlorotoluene	ND		25.0	27.0		ug/L		108	70 - 130
4-Chlorotoluene	ND		25.0	27.5		ug/L		110	70 - 130
Benzene	ND		25.0	26.5		ug/L		106	66 - 130
Bromobenzene	ND		25.0	27.1		ug/L		108	70 - 130
Bromochloromethane	ND		25.0	26.5		ug/L		106	70 - 130
Bromodichloromethane	ND		25.0	27.7		ug/L		111	70 - 138
Bromoform	ND		25.0	30.1		ug/L		120	59 - 150
Bromomethane	ND		25.0	27.6		ug/L		110	62 - 131
Carbon tetrachloride	ND		25.0	29.8		ug/L		119	60 - 150
Chlorobenzene	ND		25.0	24.8		ug/L		99	70 - 130
Chloroethane	ND		25.0	26.4		ug/L		106	68 - 130
Chloroform	ND		25.0	27.4		ug/L		110	70 - 130
Chloromethane	ND		25.0	27.0		ug/L		108	39 - 144
cis-1,2-Dichloroethene	ND		25.0	27.3		ug/L		109	70 - 130
cis-1,3-Dichloropropene	ND		25.0	27.6		ug/L		110	70 - 133
Dibromochloromethane	ND		25.0	27.5		ug/L		110	70 - 148
Dibromomethane	ND		25.0	27.0		ug/L		108	70 - 130
Dichlorodifluoromethane	ND		25.0	27.8		ug/L		111	25 - 142
Ethylbenzene	ND		25.0	26.7		ug/L		107	70 - 130
Hexachlorobutadiene	ND		25.0	27.9		ug/L		112	10 - 150
Isopropylbenzene	ND		25.0	28.2		ug/L		113	70 - 132
m,p-Xylene	ND		25.0	27.8		ug/L		111	70 - 133
Methylene Chloride	ND		25.0	26.1		ug/L		104	52 - 130
Naphthalene	ND		25.0	28.4		ug/L		113	60 - 140
n-Butylbenzene	ND		25.0	29.9		ug/L		119	61 - 149
N-Propylbenzene	ND		25.0	28.9		ug/L		116	66 - 135
o-Xylene	ND		25.0	27.7		ug/L		111	70 - 133
p-Isopropyltoluene	ND		25.0	29.0		ug/L		116	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-138807-A-1 MS

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
sec-Butylbenzene	ND		25.0	28.5		ug/L		114	67 - 134
Styrene	ND		25.0	28.4		ug/L		114	29 - 150
tert-Butylbenzene	ND		25.0	28.6		ug/L		115	70 - 130
Tetrachloroethene	ND		25.0	27.2		ug/L		109	70 - 137
Toluene	ND		25.0	26.4		ug/L		106	70 - 130
trans-1,2-Dichloroethene	ND		25.0	28.2		ug/L		113	70 - 130
trans-1,3-Dichloropropene	ND		25.0	28.0		ug/L		112	70 - 138
Trichloroethene	ND		25.0	27.0		ug/L		108	70 - 130
Trichlorofluoromethane	ND		25.0	29.0		ug/L		116	60 - 150
Vinyl chloride	ND		25.0	26.7		ug/L		107	50 - 137

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	103		76 - 132
Toluene-d8 (Surr)	99		80 - 128

Lab Sample ID: 440-138807-A-1 MSD

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		25.0	26.7		ug/L		107	60 - 149	0	20
1,1,1-Trichloroethane	ND		25.0	28.2		ug/L		113	70 - 130	3	20
1,1,2,2-Tetrachloroethane	ND		25.0	26.8		ug/L		107	63 - 130	1	30
1,1,2-Trichloroethane	ND		25.0	26.1		ug/L		104	70 - 130	0	25
1,1-Dichloroethane	ND		25.0	26.0		ug/L		104	65 - 130	0	20
1,1-Dichloroethene	ND		25.0	26.9		ug/L		108	70 - 130	1	20
1,1-Dichloropropene	ND		25.0	28.1		ug/L		113	64 - 130	1	20
1,2,3-Trichlorobenzene	ND		25.0	28.1		ug/L		112	60 - 140	0	20
1,2,3-Trichloropropane	ND		25.0	26.6		ug/L		107	60 - 130	0	30
1,2,4-Trichlorobenzene	ND		25.0	29.0		ug/L		116	60 - 140	1	20
1,2,4-Trimethylbenzene	ND		25.0	28.5		ug/L		114	70 - 130	0	25
1,2-Dibromo-3-Chloropropane	ND		25.0	27.4		ug/L		109	48 - 140	0	30
1,2-Dibromoethane (EDB)	ND		25.0	27.7		ug/L		111	70 - 131	1	25
1,2-Dichlorobenzene	ND		25.0	26.9		ug/L		108	70 - 130	0	20
1,2-Dichloroethane	ND		25.0	28.2		ug/L		113	56 - 146	1	20
1,2-Dichloropropane	ND		25.0	26.4		ug/L		106	69 - 130	0	20
1,3,5-Trimethylbenzene	ND		25.0	29.3		ug/L		117	70 - 130	2	20
1,3-Dichlorobenzene	ND		25.0	26.8		ug/L		107	70 - 130	0	20
1,3-Dichloropropane	ND		25.0	26.6		ug/L		106	70 - 130	2	25
1,4-Dichlorobenzene	ND		25.0	27.1		ug/L		108	70 - 130	1	20
2,2-Dichloropropane	ND		25.0	29.5		ug/L		118	69 - 138	2	25
2-Butanone (MEK)	ND		31.3	33.7		ug/L		108	48 - 140	0	40
2-Chlorotoluene	ND		25.0	27.5		ug/L		110	70 - 130	2	20
4-Chlorotoluene	ND		25.0	28.0		ug/L		112	70 - 130	2	20
Benzene	ND		25.0	26.7		ug/L		107	66 - 130	1	20
Bromobenzene	ND		25.0	27.3		ug/L		109	70 - 130	1	20
Bromochloromethane	ND		25.0	26.8		ug/L		107	70 - 130	1	25

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# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-138807-A-1 MSD

Matrix: Water

Analysis Batch: 313425

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromodichloromethane	ND		25.0	27.7		ug/L		111	70 - 138	0	20
Bromoform	ND		25.0	29.7		ug/L		119	59 - 150	1	25
Bromomethane	ND		25.0	27.7		ug/L		111	62 - 131	0	25
Carbon tetrachloride	ND		25.0	29.5		ug/L		118	60 - 150	1	25
Chlorobenzene	ND		25.0	25.1		ug/L		100	70 - 130	1	20
Chloroethane	ND		25.0	26.5		ug/L		106	68 - 130	1	25
Chloroform	ND		25.0	27.2		ug/L		109	70 - 130	1	20
Chloromethane	ND		25.0	26.4		ug/L		106	39 - 144	2	25
cis-1,2-Dichloroethene	ND		25.0	27.3		ug/L		109	70 - 130	0	20
cis-1,3-Dichloropropene	ND		25.0	28.0		ug/L		112	70 - 133	2	20
Dibromochloromethane	ND		25.0	28.1		ug/L		112	70 - 148	2	25
Dibromomethane	ND		25.0	26.9		ug/L		108	70 - 130	0	25
Dichlorodifluoromethane	ND		25.0	27.3		ug/L		109	25 - 142	2	30
Ethylbenzene	ND		25.0	27.0		ug/L		108	70 - 130	1	20
Hexachlorobutadiene	ND		25.0	27.8		ug/L		111	10 - 150	0	20
Isopropylbenzene	ND		25.0	28.4		ug/L		114	70 - 132	1	20
m,p-Xylene	ND		25.0	28.0		ug/L		112	70 - 133	1	25
Methylene Chloride	ND		25.0	25.7		ug/L		103	52 - 130	1	20
Naphthalene	ND		25.0	28.4		ug/L		114	60 - 140	0	30
n-Butylbenzene	ND		25.0	30.0		ug/L		120	61 - 149	1	20
N-Propylbenzene	ND		25.0	29.4		ug/L		118	66 - 135	2	20
o-Xylene	ND		25.0	28.0		ug/L		112	70 - 133	1	20
p-Isopropyltoluene	ND		25.0	29.0		ug/L		116	70 - 130	0	20
sec-Butylbenzene	ND		25.0	28.7		ug/L		115	67 - 134	1	20
Styrene	ND		25.0	28.6		ug/L		114	29 - 150	1	35
tert-Butylbenzene	ND		25.0	29.2		ug/L		117	70 - 130	2	20
Tetrachloroethene	ND		25.0	27.1		ug/L		108	70 - 137	0	20
Toluene	ND		25.0	26.7		ug/L		107	70 - 130	1	20
trans-1,2-Dichloroethene	ND		25.0	28.2		ug/L		113	70 - 130	0	20
trans-1,3-Dichloropropene	ND		25.0	28.9		ug/L		115	70 - 138	3	25
Trichloroethene	ND		25.0	27.5		ug/L		110	70 - 130	2	20
Trichlorofluoromethane	ND		25.0	28.4		ug/L		114	60 - 150	2	25
Vinyl chloride	ND		25.0	26.7		ug/L		107	50 - 137	0	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132
Toluene-d8 (Surr)	101		80 - 128

## Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 440-313891/13

Matrix: Water

Analysis Batch: 313891

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	25	ug/L			02/26/16 13:55	1

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# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: MB 440-313891/13

Matrix: Water

Analysis Batch: 313891

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		65 - 140		02/26/16 13:55	1

Lab Sample ID: LCS 440-313891/12

Matrix: Water

Analysis Batch: 313891

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	800	780		ug/L		98	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	96		65 - 140				

Lab Sample ID: 440-139211-E-1 MS

Matrix: Water

Analysis Batch: 313891

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	54		800	738		ug/L		86	65 - 140
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	89		65 - 140						

Lab Sample ID: 440-139211-E-1 MSD

Matrix: Water

Analysis Batch: 313891

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	54		800	785		ug/L		91	65 - 140	6	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	91		65 - 140								

## Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-312413/1-A

Matrix: Water

Analysis Batch: 312722

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 312413

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
DRO (C10-C28)	ND		0.50	0.10	mg/L		02/19/16 13:06	02/22/16 08:22	1
EFH (C10-C40)	ND		0.50	0.10	mg/L		02/19/16 13:06	02/22/16 08:22	1
ORO (C29-C40)	ND		0.50	0.10	mg/L		02/19/16 13:06	02/22/16 08:22	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
n-Octacosane	92		45 - 120				02/19/16 13:06	02/22/16 08:22	1

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# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 440-312413/2-A

Matrix: Water

Analysis Batch: 312722

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 312413

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28)	1.00	0.800		mg/L		80	40 - 115
Surrogate	%Recovery	LCS Qualifier	Limits				
n-Octacosane	86		45 - 120				

Lab Sample ID: LCSD 440-312413/3-A

Matrix: Water

Analysis Batch: 312722

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 312413

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28)	1.00	0.866		mg/L		87	40 - 115	8	25
Surrogate	%Recovery	LCSD Qualifier	Limits						
n-Octacosane	94		45 - 120						

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-312730/1-A

Matrix: Water

Analysis Batch: 313760

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 312730

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.010	0.0060	mg/L		02/22/16 09:49	02/25/16 17:38	1
Arsenic	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 17:38	1
Barium	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 17:38	1
Beryllium	ND		0.0020	0.0010	mg/L		02/22/16 09:49	02/25/16 17:38	1
Cadmium	ND		0.0050	0.0020	mg/L		02/22/16 09:49	02/25/16 17:38	1
Chromium	ND		0.0050	0.0025	mg/L		02/22/16 09:49	02/25/16 17:38	1
Cobalt	ND		0.010	0.0025	mg/L		02/22/16 09:49	02/25/16 17:38	1
Copper	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 17:38	1
Lead	ND		0.0050	0.0025	mg/L		02/22/16 09:49	02/25/16 17:38	1
Molybdenum	ND		0.020	0.010	mg/L		02/22/16 09:49	02/25/16 17:38	1
Nickel	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 17:38	1
Selenium	ND		0.010	0.0061	mg/L		02/22/16 09:49	02/25/16 17:38	1
Thallium	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 17:38	1
Vanadium	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 17:38	1
Zinc	ND		0.020	0.010	mg/L		02/22/16 09:49	02/25/16 17:38	1
Silver	ND		0.010	0.0050	mg/L		02/22/16 09:49	02/25/16 17:38	1

Lab Sample ID: LCS 440-312730/2-A

Matrix: Water

Analysis Batch: 313760

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 312730

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.00	1.00		mg/L		100	80 - 120
Arsenic	1.00	0.937		mg/L		94	80 - 120
Barium	1.00	0.957		mg/L		96	80 - 120

TestAmerica Irvine

# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 440-312730/2-A

Matrix: Water

Analysis Batch: 313760

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 312730

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	0.967		mg/L		97	80 - 120
Cadmium	1.00	0.926		mg/L		93	80 - 120
Chromium	1.00	0.948		mg/L		95	80 - 120
Cobalt	1.00	0.961		mg/L		96	80 - 120
Copper	1.00	0.980		mg/L		98	80 - 120
Lead	1.00	0.948		mg/L		95	80 - 120
Molybdenum	1.00	0.972		mg/L		97	80 - 120
Nickel	1.00	0.948		mg/L		95	80 - 120
Selenium	1.00	0.882		mg/L		88	80 - 120
Thallium	1.00	0.956		mg/L		96	80 - 120
Vanadium	1.00	0.956		mg/L		96	80 - 120
Zinc	1.00	0.907		mg/L		91	80 - 120
Silver	0.500	0.475		mg/L		95	80 - 120

Lab Sample ID: 440-138509-D-1-B MS ^5

Matrix: Water

Analysis Batch: 313760

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

Prep Batch: 312730

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		1.00	0.934		mg/L		93	75 - 125
Arsenic	ND		1.00	0.870		mg/L		87	75 - 125
Barium	ND		1.00	0.943		mg/L		94	75 - 125
Beryllium	ND		1.00	0.873		mg/L		87	75 - 125
Cadmium	ND		1.00	0.862		mg/L		86	75 - 125
Chromium	ND		1.00	0.918		mg/L		92	75 - 125
Cobalt	ND		1.00	0.926		mg/L		93	75 - 125
Copper	ND		1.00	0.918		mg/L		92	75 - 125
Lead	ND		1.00	0.868		mg/L		87	75 - 125
Molybdenum	ND		1.00	0.882		mg/L		88	75 - 125
Nickel	ND		1.00	0.925		mg/L		93	75 - 125
Selenium	ND		1.00	0.860		mg/L		86	75 - 125
Thallium	ND		1.00	0.803		mg/L		80	75 - 125
Vanadium	ND		1.00	0.881		mg/L		88	75 - 125
Zinc	0.13		1.00	1.04		mg/L		92	75 - 125
Silver	ND		0.500	0.453		mg/L		91	75 - 125

Lab Sample ID: 440-138509-D-1-C MSD ^5

Matrix: Water

Analysis Batch: 313760

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 312730

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND		1.00	0.934		mg/L		93	75 - 125	0	20
Arsenic	ND		1.00	0.816		mg/L		82	75 - 125	6	20
Barium	ND		1.00	0.922		mg/L		92	75 - 125	2	20
Beryllium	ND		1.00	0.859		mg/L		86	75 - 125	2	20
Cadmium	ND		1.00	0.836		mg/L		84	75 - 125	3	20
Chromium	ND		1.00	0.896		mg/L		90	75 - 125	2	20
Cobalt	ND		1.00	0.909		mg/L		91	75 - 125	2	20
Copper	ND		1.00	0.892		mg/L		89	75 - 125	3	20

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# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-138509-D-1-C MSD ^5

Matrix: Water

Analysis Batch: 313760

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 312730

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1.00	0.855		mg/L		85	75 - 125	2	20
Molybdenum	ND		1.00	0.869		mg/L		87	75 - 125	2	20
Nickel	ND		1.00	0.905		mg/L		90	75 - 125	2	20
Selenium	ND		1.00	0.843		mg/L		84	75 - 125	2	20
Thallium	ND		1.00	0.825		mg/L		82	75 - 125	3	20
Vanadium	ND		1.00	0.855		mg/L		85	75 - 125	3	20
Zinc	0.13		1.00	1.01		mg/L		89	75 - 125	3	20
Silver	ND		0.500	0.439		mg/L		88	75 - 125	3	20

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 440-314320/1-A

Matrix: Water

Analysis Batch: 314648

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 314320

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00010	mg/L		02/29/16 14:47	03/01/16 18:36	1

Lab Sample ID: LCS 440-314320/2-A

Matrix: Water

Analysis Batch: 314648

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 314320

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00800	0.00767		mg/L		96	80 - 120

Lab Sample ID: 440-138404-D-1-D MS

Matrix: Water

Analysis Batch: 314648

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 314320

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00800	0.00768		mg/L		96	70 - 130

Lab Sample ID: 440-138404-D-1-E MSD

Matrix: Water

Analysis Batch: 314648

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 314320

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00800	0.00742		mg/L		93	70 - 130	3	20

## Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method

Lab Sample ID: LCS 440-312644/1

Matrix: Water

Analysis Batch: 312644

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	84.0	82.40		Degrees F		98	95 - 105

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# QC Sample Results

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method (Continued)

Lab Sample ID: 440-138513-1 DU

Matrix: Water

Analysis Batch: 312644

Client Sample ID: Propulsion water

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Flashpoint	127		127.4		Degrees F		0	20

## Method: 9040B - pH

Lab Sample ID: 440-138237-A-7 DU

Matrix: Water

Analysis Batch: 312370

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.69		7.680		SU		0.1	2

## Method: SM 2130B - Turbidity

Lab Sample ID: MB 440-312386/5

Matrix: Water

Analysis Batch: 312386

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10	0.040	NTU			02/19/16 11:24	1

Lab Sample ID: 440-138523-C-1 DU

Matrix: Water

Analysis Batch: 312386

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Turbidity	7.4		7.30		NTU		1	20

# QC Association Summary

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## GC/MS VOA

### Analysis Batch: 313425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138513-1	Propulsion water	Total/NA	Water	8260B	
440-138807-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
440-138807-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 440-313425/5	Lab Control Sample	Total/NA	Water	8260B	
MB 440-313425/4	Method Blank	Total/NA	Water	8260B	

## GC VOA

### Analysis Batch: 313891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138513-1	Propulsion water	Total/NA	Water	8015B	
440-139211-E-1 MS	Matrix Spike	Total/NA	Water	8015B	
440-139211-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
LCS 440-313891/12	Lab Control Sample	Total/NA	Water	8015B	
MB 440-313891/13	Method Blank	Total/NA	Water	8015B	

## GC Semi VOA

### Prep Batch: 312413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138513-1	Propulsion water	Total/NA	Water	3510C	
LCS 440-312413/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-312413/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 440-312413/1-A	Method Blank	Total/NA	Water	3510C	

### Analysis Batch: 312722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-312413/2-A	Lab Control Sample	Total/NA	Water	8015B	312413
LCSD 440-312413/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	312413
MB 440-312413/1-A	Method Blank	Total/NA	Water	8015B	312413

### Analysis Batch: 312723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138513-1	Propulsion water	Total/NA	Water	8015B	312413

## Metals

### Prep Batch: 312730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138509-D-1-B MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
440-138509-D-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
440-138513-1	Propulsion water	Total Recoverable	Water	3005A	
LCS 440-312730/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 440-312730/1-A	Method Blank	Total Recoverable	Water	3005A	

### Analysis Batch: 313760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138509-D-1-B MS ^5	Matrix Spike	Total Recoverable	Water	6010B	312730
440-138509-D-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6010B	312730
440-138513-1	Propulsion water	Total Recoverable	Water	6010B	312730

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# QC Association Summary

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Metals (Continued)

### Analysis Batch: 313760 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-312730/2-A	Lab Control Sample	Total Recoverable	Water	6010B	312730
MB 440-312730/1-A	Method Blank	Total Recoverable	Water	6010B	312730

### Prep Batch: 314320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138404-D-1-D MS	Matrix Spike	Total/NA	Water	7470A	
440-138404-D-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
440-138513-1	Propulsion water	Total/NA	Water	7470A	
LCS 440-314320/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 440-314320/1-A	Method Blank	Total/NA	Water	7470A	

### Analysis Batch: 314648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138404-D-1-D MS	Matrix Spike	Total/NA	Water	7470A	314320
440-138404-D-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	314320
LCS 440-314320/2-A	Lab Control Sample	Total/NA	Water	7470A	314320
MB 440-314320/1-A	Method Blank	Total/NA	Water	7470A	314320

### Analysis Batch: 314994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138513-1	Propulsion water	Total/NA	Water	7470A	314320

## General Chemistry

### Analysis Batch: 312370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138237-A-7 DU	Duplicate	Total/NA	Water	9040B	
440-138513-1	Propulsion water	Total/NA	Water	9040B	

### Analysis Batch: 312386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138513-1	Propulsion water	Total/NA	Water	SM 2130B	
440-138523-C-1 DU	Duplicate	Total/NA	Water	SM 2130B	
MB 440-312386/5	Method Blank	Total/NA	Water	SM 2130B	

### Analysis Batch: 312644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-138513-1	Propulsion water	Total/NA	Water	1010	
440-138513-1 DU	Propulsion water	Total/NA	Water	1010	
LCS 440-312644/1	Lab Control Sample	Total/NA	Water	1010	

## Definitions/Glossary

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

#### GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Certification Summary

Client: JT3 LLC  
Project/Site: HWSF (Water)

TestAmerica Job ID: 440-138513-1

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-16
Arizona	State Program	9	AZ0671	10-13-16
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-16
Nevada	State Program	9	CA015312007A	07-31-16
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-16 *
Oregon	NELAP	10	4005	01-29-17
USDA	Federal		P330-09-00080	07-08-18
Washington	State Program	10	900	09-03-16

\* Certification renewal pending - certification considered valid.

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## Login Sample Receipt Checklist

Client: JT3 LLC

Job Number: 440-138513-1

**Login Number: 138513**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Avila, Stephanie 1**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	