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Appendix A
EBS Survey Data Base
Data Dictionary
Environmental Baseline Survey
Data Base

Data Dictionary

Prepared For:
Aeronautical Systems Center
Wright-Patterson Air Force Base, Ohio
and
Air Force Center for Environmental Excellence
Brooks Air Force Base, Texas

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Alexandria, Virginia 22314

November 1999
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</tr>
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Section 1.0  Introduction

The Environmental Baseline Survey (EBS) Data Base was developed for U.S. Air Force, Aeronautical Systems Center (ASC) from requirements identified by the Acquisition Environmental Management office. It contains a package of attribute data bases—hazwi0.tab, asbesti0.tab, leadi0.tab, pcebi0.tab, radoni0.tab, medi0.tab, ordi0.tab, bldgi0.tab, and facnoi0.tab—that can be used with MapInfo and MapInfo Data Processing System, Version 2.0 to produce condition of property maps, ad hoc graphics, and reports.

The EBS Data Base Data Dictionary contains guidelines on the data entry into the EBS Data Base. The mapping process requires complete and accurate data bases to ensure that environmental factors are depicted correctly on the maps generated for the EBS reports.

This document contains enough information for the users to update and accurately rebaseline any EBS data base that has been provided ASC. Section 2.0 provides a data base overview stating the general nature of the data base, a history of its development, use, and maintenance, and general guidelines for completing the data entry process. Section 3.0 provides data entry guidelines for creating the data base for environmental factors affecting property categorization. Section 4.0 provides guidelines on creating the data bases for disclosure factors.
Section 2.0 Overview

2.1 Data Base Overview

The EBS Data Base was developed in 1995 for ASC so that EBSs for airplane and missile plants could be automated, manipulated, and ultimately uploaded into the existing Technical Information System where data are stored. This version of the data dictionary modifies definitions previously in use, based on amendments to the Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA) Section 120(h)(4)(A) and changes in DOD policy.

The EBS Data Base provides attribute data that describe, in tabular form, the environmental condition of property at the 11 airplane and missile plants owned by the Air Force. The nine tables created for each plant are called hazwi0.tab, asbesti0.tab, leadi0.tab, pcbi0.tab, radoni0.tab, medi0.tab, ordi0.tab, bldg01.tab, and facnoi0.tab. Only the attribute data in hazwi0 are linked with spatial data using MapInfo and the EBS Data Processing System Version 2.0 to create a condition of property map. All of the data tables can be used to produce ad hoc graphics and reports. Existing data tables do not need to be modified, as a result of the changes in this document. However, the user should run the MapInfo EBS Processing System Version 2.0 to ensure that property category is correct.

The EBS Data Base design is identical for each of the 11 Air Force plants. All the data were entered using this data dictionary. Since the completion of the EBSs, additional data have become available, the “shelf-life” of the EBSs has expired, or regulatory requirements have changed indicating that the original surveys require updating. The EBS Data Base updates should use the guidelines in this dictionary to ensure valid entries. There are no auto-fill fields in the Data Base, and no tracking when changes are made. Therefore, it is important that the project manager for each plant be notified when access is given to the data, and when changes are made.

2.2 EBS Process Overview

The colors and symbols that appear on the oversized maps (Plates 3-1 and 3-2) in the EBS reports are generated by data that have been entered into the EBS Data Base. The data in the data bases can be grouped and sorted to create the colors and symbols on the maps as well as the summary reports in each section of the EBS report. These guidelines were written to assist the data base task managers who are responsible for making sure that complete and adequate data are entered into the data bases to create accurate maps and reports.

There are 15 environmental factors that are evaluated in the EBS reports. Data must be entered for each of the factors that are pertinent to the plant’s environmental history. These 15 factors include property categorization factors and disclosure factors, which are explained in the following subsections.
2.2.1 Property Categorization Factors

Property categorization factors determine how a piece of property is categorized according to the Department of Defense (DOD) seven-parcel categorization. There are nine environmental factors that contribute to property categorization. Information within these factors is combined into one attribute database named “hazwi0”, commonly referred to as the hazwaste table. The nine property categorization factors include:

- Hazardous and petroleum material management,
- Hazardous and petroleum waste management,
- Radioactive materials and mixed waste,
- Aboveground/underground storage tanks and pipelines,
- Oil/water separators (considered POL waste storage),
- Wastewater treatment and disposal (exceedances or spills only),
- IRP sites,
- Pesticides, and
- Solid waste (on-site disposal only).

Each building, IRP site, or other location included in hazwi0.tab will be categorized into one or more of the seven categories depending on the specific codes entered in the data base. Each of the categories will be a different color on the Property Categorization Map (Plate 3-1) in the EBS report. The seven categories of property that will be colorized on the map include:

- **Category 1**: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- **Category 2**: Areas where petroleum products have been released (or areas that required additional evaluation and are known to contain only petroleum products).
- **Category 3**: Areas where hazardous substances have been released but do not require a removal or remedial action.
- **Category 4**: Areas where hazardous substances have been released and all remedial actions necessary to protect human health and the environment have been taken.
- **Category 5**: Areas where hazardous substances have been released and/or remedial actions are under way, but all required remedial actions have not yet been completed.
- **Category 6**: Areas where hazardous substances have been released but all required remedial actions have not yet been implemented.
- **Category 7**: Areas that are unevaluated or require additional evaluation.

Symbols representing the specific locations of the property categorization factors will appear on the Location of Environmental Factors Map (Plate 3-2) in the EBS report. (Plates 3-1 and 3-2 are usually E-sized drawings.)
2.2.2 Disclosure Factors

1. Instead, they are represented by a symbol on the facility on Plate 3-2 where a particular disclosure factor occurs. Six of the environmental factors will not affect property categorization if present in a properly managed condition (i.e., no release into the environment). These are the disclosure factors; they will not be represented by a color on Plate 3-1. Instead, a symbol will appear on the facility where a particular disclosure factor occurs. The data for each of these factors are not combined into one data base; they are entered into individual data bases. The six disclosure factors and their corresponding file names:

- Asbestos (asbesti0.tab),
- Lead-based paint (leadi0.tab),
- PCBs (pcbi0.tab),
- Radon (radoni0.tab),
- Medical and biohazardous waste (medi0.tab), and
- Ordnance (ordi0.tab).

Not all plants have all of these disclosure factors associated with them. A data base does not have to be created if a disclosure factor does not apply.

2.2.3 Related Data Bases

In addition to the data bases mentioned above, two other data bases must be created to complete the GIS mapping process. These data bases and their corresponding file names are:

- Building Inventory - A list of all buildings at the plant (bldgi0.tab).
- FACNO List - A list of all unique FACNOs and their names, including buildings, IRP sites, and other locations. In the EBS report, this list is called the index of unique identifiers (facnoi0.tab).

2.3 Getting Started

Prior to data entry, a reference list that includes all of the resources and documentation associated with a plant must be generated (AFPxx-Ref.doc where “xx” is the plant number). It is essential to have a reference number assigned to each document so that the number may be entered into the data base along with its associated data. The documents may have to be referred to several times during the preparation of the EBS report; therefore, it is highly desirable to have an accurate reference list and an organized file drawer to complete the data entry process.
Remember that the EBS is intended to include both historical and current information on each of the 15 environmental factors. Sources for historical information include comprehensive documents such as record searches, preliminary assessments, and management action plans; old lists of tanks, accumulation points, and PCB equipment locations; aerial photographs of the plant; and interviews with long-time plant personnel.

More recent information can be obtained from SPCC plans, annual hazardous waste generation reports, ECAMP reports, asbestos, lead-based paint and radon surveys, IRP documents, and interviews with plant personnel.

Sections 3.0 and 4.0 of this document provide guidelines on entering data associated with property categorization factors and disclosure factors, respectively.

### 2.4 General Data Entry Guidelines

General data entry guidelines include the following:

- Do not make entries in all capital letters.
- Do not capitalize every word when describing a substance or general location: Domestic hot water piping, not Domestic Hot Water Piping.
- Limit use of abbreviations. Make entries easy to read without having to consult a key.
- Do not enter “Unknown” if the information is not known. Simply leave the field blank.
- All fields should be created as character and not numeric fields.
- Capitalize each word of an IRP site name.
- Be as consistent as possible when naming FACNOs, describing locations, or summarizing activities at a site.

Specific guidelines for each data base are provided in Sections 3.0 and 4.0.

### 2.5 When Data Entry Is Complete

When the data bases are complete, they can be sent to the TIS. There are several checks that can be done to ensure that the data are accurate and complete before transferring to the TIS:

- Check for duplicate records. Any duplicate should be deleted from the data base.
- Proofread all entries for spelling, punctuation, and capitalization.
- Check that FACNO names make sense and adequately describe the FACNO.
- Run the MapInfo EBS Processing System Version 2.0 to ensure:
  - Those fields required for the property categorization analysis are completed.
  - Each unique FACNO in the hazwi0.tab has a correspondence FACNO in one of the map tables. i.e., the attribute data and the maps reflect the same information.

Review the data base as often as necessary to identify any inconsistencies.
Section 3.0  Property Categorization Factors

Data Entry Guidelines

This section provides guidelines for creating the Hazwaste Data Base for the nine property categorization factors.

3.1  Property Categorization Methodology

The seven DOD Environmental Conditions Categories that describe plant property are derived from data entered into specific fields in hazwi0.tab. These fields are HISTORY, STATUS, RASTATUS, and TYPE. During the property recategorization process, the program will assign category numbers to each record in the hazwi0 based on the data contained in these fields. It is imperative that the user know the relationship between the fields used during the recategorization process. Appendix Table 3-1 shows the relationship between the fields and provides a listing of the valid field entries for each of the four fields used to determine property categorization. The user must use Appendix Table 3-1 to ensure the data are entered accurately and completely.

Appendix Table 3-1 provides a summary of the property categorization methodology used to arrive at the correct colors on Condition of Property map (Plate 3-1) in the EBS report. If after the map is generated a particular area on the map appears to be colored incorrectly, review hazwi0 and check that the proper entries have been made as per Appendix Table 3-1.

In many cases, there may be different categories of data associated with the same piece of property. When this occurs, the category with the highest number is assigned to that property (for mapping purposes). For example, if Landfill 1 had soil contamination that has been cleaned up (RASTATUS = C, Category 4) but has other remedial action underway (RASTATUS = U, Category 5), then Landfill 1 would be colored yellow (Category 5). The user can always use the hazwi0.tab file to determine all property categorizations for a specific FACNO.

3.2  Setting Up the Hazwaste Data Base

Use the guidelines in Appendix Table 3-2 when entering data into hazwi0. The individual data elements in the database design are shown on the table. The “Order” is the sequence of the fields in the data base. The “Field Name” is the field or column heading. The “Field Width” is the number of characters that can be entered into a particular field. Information entered must not exceed the field width. Some fields have a limited list of entries that are valid for analysis. Other fields have various entries that are valid and may differ from plant to plant. The “Definition” of the field names or valid entries, and “Comments” on data entry are also provided in Appendix Table 3-2.
### Table 3-1
#### Summary of Property Categorization Methodology

<table>
<thead>
<tr>
<th>Category</th>
<th>Brief Definition</th>
<th>Color on EBS Plate 3-1</th>
<th>Valid Entries in Hazwaste Data Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No release; POL, POLW, HAZ, HAZW, PES, RAD, RADW</td>
<td>White</td>
<td>No data entered for “clean” properties POL, POLW, HAZ, HAZW, PES, RAD, RADW</td>
</tr>
<tr>
<td>2</td>
<td>Release of POL or POLW</td>
<td>Blue</td>
<td>N, C, U or F POL, POLW</td>
</tr>
<tr>
<td>2</td>
<td>Un evaluated or further investigation required</td>
<td>Blue</td>
<td>POL, POLW</td>
</tr>
<tr>
<td>3</td>
<td>Release HAZ, HAZW, PES, RAD, RADW; below action level</td>
<td>Light Green</td>
<td>HAZ, HAZW, PES, RAD, RADW</td>
</tr>
<tr>
<td>4</td>
<td>Release HAZ, HAZW, PES, RAD, RADW; cleanup complete</td>
<td>Dark Green</td>
<td>HAZ, HAZW, PES, RAD, RADW</td>
</tr>
<tr>
<td>5</td>
<td>Release HAZ, HAZW, PES, RAD, RADW; cleanup underway</td>
<td>Yellow</td>
<td>HAZ, HAZW, PES, RAD, RADW</td>
</tr>
<tr>
<td>6</td>
<td>Release HAZ, HAZW, PES, RAD, RADW; cleanup not begun</td>
<td>Red</td>
<td>HAZ, HAZW, PES, RAD, RADW</td>
</tr>
<tr>
<td>7</td>
<td>Un evaluated or requires further investigation</td>
<td>Gray</td>
<td>HAZ, HAZW, PES, RAD, RADW</td>
</tr>
</tbody>
</table>

**Key:**
- **A** = Additional investigation required, or unevaluated
- **C** = Remedial action complete and/or no further remedial action required
- **D** = Disposal
- **F** = Remedial action not yet implemented, will occur in the future
- **N** = No remedial action required
- **R** = Release
- **S** = Storage
- **U** = Remedial action underway
- **Y** = Entered for all records except those under condition "A"

**Abbreviations:**
- **POL** = Petroleum product
- **POLW** = Petroleum waste product
- **HAZ** = Hazardous material
- **HAZW** = Hazardous waste material
- **PES** = Pesticide
- **RAD** = Radioactive material
- **RADW** = Radioactive waste material
### 3.2.1.1.1.1 File Name: HAZW10

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Field Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
</table>
| 1     | FACNO      | 10          | Various     | Facility number associated with the nearest building number, IRP site number, or unique ID where substance is stored, release or disposed | • Use numbers and names that facility uses  
• USTs, ASTs, and OWSs (refer to SOURCE) are assigned unique FACNOs. Combine FACNO and TANKNO with a dash (not to exceed a field width of 10) |
| 2     | TANKNO     | 10          | Various (for tanks and OWSs) | Tank ID number assigned to USTs, ASTs, and OWSs | • Use numbers that facility uses  
• If tank does not have a number, assign it a unique number  
• Choose a TANKNO that, when combined with the FACNO, will not exceed a field width of 10  
• If tank has a replacement, use the same TANKNO followed by an "X" to identify the replacement tank. |
| 3     | STATUS     | 1           | Refer to Table 3-1  
A = Additional investigation is required  
Y = All other records | A code indicating whether the property needs further investigation or not. | • An "A" usually refers to an IRP site that is still under investigation (remedial action has not been determined)  
• If an "A" is entered there is no need to enter anything in RASTATUS  
• Do not enter an "A" simply because ALL the information could not be obtained (e.g., tank capacity)  
• Do enter an "A" if vital information is missing or questionable (e.g., the presence of a tank) |
| 4     | CON        | 10          | BOEING = Boeing North America; CA = Cabaco, Inc.; FAA = Federal Aviation Administration; Hughes = Hughes Missile Systems Company; LA = Los Angeles County; LASC = ???????; LK = Lockheed; LM = Lockheed Martin; MD = McDonnell Douglas; MM = Martin Marietta; NO = Northrop; PA = ?????; RI = Rockwell International Corporation; EGG = EG&G | Name of the contractor that occupies the above FACNO | • List at left is not exclusive.  
• Entering the contractor has the cross-purpose of tracking changes made to the data base. |
### 3.2.1.1.1.2 File Name: HAZWi0

#### Table 3-2
Hazwaste Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Field Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>LOCATION</td>
<td>40</td>
<td>Various</td>
<td>Description of location of storage, release, or disposal; name of IRP site; name of department; room number; SWMU number is not used for the FACNO</td>
<td>• Do not restate the building number; it is already entered in the FACNO</td>
</tr>
<tr>
<td>6</td>
<td>HISTORY</td>
<td>1</td>
<td>Refer to Table 3-1</td>
<td>A code indicating if the substance was stored, released, or disposed.</td>
<td>• An “S” refers to storage only. If a release has occurred at the same location, create a duplicate record with an “R” in this field. • If an “R” or “D” entered here, enter a code in RASTATUS</td>
</tr>
<tr>
<td>7</td>
<td>TYPE</td>
<td>4</td>
<td>Refer to Table 3-1</td>
<td>A code indicating the type of substance stored, released or disposed.</td>
<td>• Do not add “W” to HAZ or POL if the substance that was released/disposed was a material and not a waste • Enter disclosure factors as HAZW if of asbestos, lead-based paint, PCB, radon, medical/biohazard, or ordnancee. • Enter POL for diesel and heating oil only. Gasoline is HAZ, not POL. Waste oil is HAZW.</td>
</tr>
<tr>
<td>8</td>
<td>SUBSTANCE</td>
<td>40</td>
<td>Various</td>
<td>Hazardous substance as defined by CERCLA and petroleum produces and their derivatives</td>
<td>• Generally enter one substance per record (line of data) unless source is an accumulation point, 90-day storage area, TSDF, or IRP site with many released substances in one area • Refer to 40 CFR 302.4 for list of CERCLA hazardous substances. Use these nomenclature • Generally list all substances being stored regardless of whether it is a CERCLA hazardous substance. Often the hazardous constituent of a product is unknown.</td>
</tr>
</tbody>
</table>
### Table 3-2
Hazwaste Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Field Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>SOURCE</td>
<td>20</td>
<td>UST = Underground storage tank; AST = Aboveground storage tank; OWS = Oil water separator; Accumulation point = RCRA satellite accumulation area; 90-day storage = Less than 90 day storage area; TSDF = Permitted treatment, storage and disposal facility unit; Drum = 55-,30-,5-gallon drum Process tank = tank used in process and not for waste Landfill = landfill Machine pit = sump Outfall = NPDES discharge point Degreaser = Vapor degreaser</td>
<td>Unit where storage, release or disposal occurred</td>
<td>• List at left includes most common sources; it is not exclusive. Use the &quot;source&quot; field to group together various substances  • Do not enter type of activity/process that generated the substance</td>
</tr>
<tr>
<td>10</td>
<td>QUANTITY</td>
<td>10</td>
<td>Numbers</td>
<td>Amount in appropriate units of measure of storage, release or disposal</td>
<td>• Units are typically volume (for example capacity of tank), but can be area, distance, velocity, etc.  • Do not enter commas</td>
</tr>
<tr>
<td>11</td>
<td>UNITS</td>
<td>10</td>
<td>gallons, pounds, kilograms, gal/year, lbs/year, cu. ft.</td>
<td>Units of amount stored, released or disposed</td>
<td>• List at left includes most common units; it is not exclusive  • Do not capitalize  • Enter quantity in English units if both English and metric are available  • Enter consistent units of measurement</td>
</tr>
<tr>
<td>12</td>
<td>DATESSTART</td>
<td>8</td>
<td>04/15/91, 04/91, 1991</td>
<td>The date when storage, release or disposal began</td>
<td>• Enter 2-digit year for all updated entries  • If a release event begins and ends on the same day, enter the same date in DATESSTART and DATEEND</td>
</tr>
<tr>
<td>13</td>
<td>DATEEND</td>
<td>8</td>
<td>04/15/91, 04/91, Present</td>
<td>The date when the storage, release or disposal ended</td>
<td>• Enter 2-digit year for all updated entries  • If storage, release or disposal is occurring at the time of the EBS, enter “Present”</td>
</tr>
</tbody>
</table>
### 3.2.1.1.1.4 File Name: HAZW10

#### Table 3-2
Hazwaste Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Field Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
</table>
| 14    | REFERENCE   | 20          | Refer to Appendix A of plant-specific EBS for appropriate number reference | Reference number(s) from source(s) of information | • Numbers should correspond to numbers in EBS references listed in Appendix A of the EBS  
• Enter numbers in numerical order  
• Separate reference numbers by commas, no spaces |
| 15    | TANKSTATUS  | 8           | Active = In place and in use  
Inactive = In place and not in use  
Removed = Tank not in place | Identifies the actions taken on the tank or oil/water separator | • Use this field for tanks and oil/water separators only |
| 16    | ACTIVITY    | 40          | Various | Description of activity, best management practice, remedial action, stage of IRP process, preventive measure, or whatever was done to clean up or prevent release | None |
| 17    | RASTATUS    | 1           | Refer to Table 3-1  
N = No remedial action required  
C = Remedial action complete and/or no further remedial action required  
U = Remedial action underway  
F = Remedial action not yet implemented, will occur in the future | A code identifying the stage of remediation | • Enter only if a release or disposal has occurred  
• Remember that this is the status of remedial action, not the status of investigation  
• The letter entered here will determine the property categorization  
• Blank DOES NOT = Unknown |
### 3.2.1.1.5 File Name: HAZWi0

**Table 3-2**

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Field Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
</table>
| 18    | CATEGORY   | 1           | Refer to Table 3-1  
1 = No release; POL, POLW, HAZ, HAZW, PES, RAD, RADW  
2 = Release of POL/POLW or POL/POLW unevaluated or further investigation required  
3 = Release HAZ, HAZW, PES, RAD, RADW; below action level  
4 = Release HAZ, HAZW, PES, RAD, RADW; cleanup complete  
5 = Release HAZ, HAZW, PES, RAD, RADW; cleanup underway  
6 = Release HAZ, HAZW, PES, RAD, RADW; cleanup not begun,  
7 = Unevaluated or requires further investigation (HAZ, HAZW, PES, RAD, RADW) | A code indicating the property category value for the record | • This field is generated using the algorithm of property categorization established by the Air Force and presented in Table 2-1. |
**Section 4.0 Disclosure Factors Data Entry Guidelines**

This section provides guidelines for creating the six disclosure factor data bases and other related data bases required for the mapping process.

### 4.1 Setting Up the Disclosure Data Bases

The guidelines in the following tables are to be used when creating the disclosure factor data bases. These tables are set up the same way as Appendix Table 3-2. Many of the fields in the disclosure data bases are similar to those in the Hazwaste Data Base. However, the fields for STATUS and RASTATUS are not included because they are necessary only for property categorization. Information in the disclosure data bases does not determine categories of property, but provides additional information regarding disclosure factors at the plant.

Please note that if a spill or release has occurred that is associated with any of the disclosure factors, it must be entered as HAZW into the data base of property categorization factors (hazw0). The property where that spill or release occurred will then receive a color on the map. For example, if there were a PCB oil leak or spill at a site, this information would be entered in the Hazwaste Data Base, not the PCB data base.

#### 4.1.1 Medical/Biohazardous Waste

The medical/biohazardous waste data base is to include only storage of medical/biohazardous waste; any release or disposal of this waste on plant property must be entered into the Hazwaste Data Base. Medical/biohazardous waste data base guidelines are provided in Appendix Table 4-1.

#### 4.1.2 Ordnance

The ordnance data base is to include only storage of ordnance; any release or disposal of ordnance (UXO) on the plant property must be entered into the Hazwaste Data Base. Ordnance data base guidelines are provided in Appendix Table 4-2.

#### 4.1.3 Asbestos

The asbestos data base is to include only positive results data from asbestos surveys conducted at the plant; any release or disposal of asbestos on plant property must be entered into the Hazwaste Data Base. Asbestos data base guidelines are provided in Appendix Table 4-3.

#### 4.1.4 PCBs

The PCB data base is to include only storage of PCB equipment; any release or disposal of PCBs on the plant property must be entered into the Hazwaste Data Base. PCB data base guidelines are provided in Appendix Table 4-4.
### 4.1.4.1.1.1 File Name: MEDi0

**Table 4-1**  
Medical/Biohazardous Waste Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>CON</td>
<td>10</td>
<td>Various</td>
<td>Initials of contractor that occupies the above FACNO</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>LOCATION</td>
<td>40</td>
<td>Various</td>
<td>Description of storage location; name of department</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>SUBSTANCE</td>
<td>40</td>
<td>Various</td>
<td>Substance stored</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>QUANTITY</td>
<td>10</td>
<td>Various</td>
<td>Amount of storage</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>UNITS</td>
<td>10</td>
<td>gallons, pounds, kilograms, gal/year, lbs/year</td>
<td>Units of amount stored</td>
<td>List at left includes most common units; it is not exclusive</td>
</tr>
<tr>
<td>7</td>
<td>DATESSTART</td>
<td>8</td>
<td>04/15/91, 04/91, 1991</td>
<td>Date storage began</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>DATESEND</td>
<td>8</td>
<td>04/15/91, 04/91, 1991, Present</td>
<td>Date storage ended</td>
<td>If storage is occurring at the time of the EBS, enter “Present”</td>
</tr>
</tbody>
</table>
| 9     | REFERENCE  | 20    | XX,YY,ZZZ   | Reference number(s) from source(s) of information | Numbers should correspond to numbers in EBS reference list  
• Enter numbers in numerical order  
• Separate reference numbers by commas, no spaces |
| 10    | ACTIVITY   | 40    | Various     | Description of activity, best management practice, preventive measure, or whatever was done to prevent release | None |
### 4.1.4.1.1.2 File Name: ORDI0

#### Table 4-2
**Ordnance Data Base Dictionary**

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>CON</td>
<td>10</td>
<td>Various</td>
<td>Initials of contractor that occupies the above FACNO</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>LOCATION</td>
<td>40</td>
<td>Various</td>
<td>Description of storage location</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>SUBSTANCE</td>
<td>40</td>
<td>Various</td>
<td>Substance stored</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>DATESTART</td>
<td>8</td>
<td>04/15/91, 04/91, 1991</td>
<td>Date storage began</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>DATEEND</td>
<td>8</td>
<td>04/15/91, 04/91, 1991, Present</td>
<td>Date storage ended</td>
<td>If storage is occurring at the time of the EBS, enter “Present”</td>
</tr>
</tbody>
</table>
| 7     | REFERENCE    | 20    | XX,YY,ZZZ   | Reference numbers from source(s) of information | • Numbers should correspond to numbers in EBS reference list  
• Enter numbers in numerical order  
• Separate reference numbers by commas, no spaces |
| 8     | ACTIVITY     | 40    | Various     | Description of activity, best management practice, preventive measure, or whatever was done to prevent release | None                                   |
### 4.1.4.1.1.3 FILE NAME: ASBESTI0

#### Table 4-3
Asbestos Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>CON</td>
<td>10</td>
<td>Various</td>
<td>Initials of contractor that occupies the above FACNO</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>LOCATION</td>
<td>40</td>
<td>Various</td>
<td>Description of ACM location</td>
<td>This may describe the sample location or area of a building where ACM is located</td>
</tr>
<tr>
<td>4</td>
<td>QUANTITY</td>
<td>10</td>
<td>Various</td>
<td>Amount of ACM</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>UNITS</td>
<td>10</td>
<td>sq. feet, lin. feet</td>
<td>Units of amount of ACM</td>
<td>List at left includes most common units; it is not exclusive</td>
</tr>
<tr>
<td>6</td>
<td>REFERENCE</td>
<td>20</td>
<td>XX,YY,ZZZ</td>
<td>Reference number(s) from source(s) of information</td>
<td>Numbers should correspond to numbers in EBS reference list</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Enter numbers in numerical order</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Separate reference numbers by commas, no spaces</td>
</tr>
<tr>
<td>7</td>
<td>ACTIVITY</td>
<td>40</td>
<td>Various</td>
<td>Description of removal activity, best management practice, preventive measure, or whatever was done to cleanup or prevent release</td>
<td>None</td>
</tr>
</tbody>
</table>
# 4.1.4.1.1.4 File Name: PCBi0

## Table 4-4
**PCB Data Base Dictionary**

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>CON</td>
<td>10</td>
<td>Various</td>
<td>Initials of contractor that occupies the above FACNO</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>SERIALNO</td>
<td>10</td>
<td>Various</td>
<td>Serial number of equipment</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>LOCATION</td>
<td>40</td>
<td>Various</td>
<td>Description of storage location; name of department</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>EQUIPTYPE</td>
<td>20</td>
<td>Transformer, light ballast, capacitor</td>
<td>Equipment that contains PCBs</td>
<td>List at left includes most common equipment; it is not exclusive</td>
</tr>
<tr>
<td>6</td>
<td>SIZE</td>
<td>10</td>
<td>Various</td>
<td>Size of equipment</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>SUNITS</td>
<td>20</td>
<td>kVA</td>
<td>Units of size</td>
<td>List at left includes most common units; it is not exclusive</td>
</tr>
<tr>
<td>8</td>
<td>QUANTITY</td>
<td>10</td>
<td>Various</td>
<td>Equipment capacity</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>QUNITS</td>
<td>10</td>
<td>Gallons, kilograms</td>
<td>Units of equipment capacity</td>
<td>List at left includes most common units; it is not exclusive</td>
</tr>
<tr>
<td>10</td>
<td>CONC</td>
<td>10</td>
<td>Various</td>
<td>PCB concentration</td>
<td>Enter equipment in the data base only if the PCB concentration is greater than 50 ppm</td>
</tr>
<tr>
<td>11</td>
<td>CUNITS</td>
<td>5</td>
<td>ppm</td>
<td>Units of PCB concentration</td>
<td>None</td>
</tr>
<tr>
<td>12</td>
<td>DATESTART</td>
<td>8</td>
<td>04/15/91, 04/91, 1991</td>
<td>Date storage began</td>
<td>None</td>
</tr>
<tr>
<td>13</td>
<td>DATEEND</td>
<td>8</td>
<td>04/15/91, 04/91, 1991, Present</td>
<td>Date storage ended</td>
<td>If storage is occurring at the time of the EBS, enter “Present”</td>
</tr>
<tr>
<td>14</td>
<td>REFERENCE</td>
<td>20</td>
<td>XX,YY,ZZZ</td>
<td>Reference number(s) from source(s) of information</td>
<td>Numbers should correspond to numbers in EBS reference list; Enter numbers in numerical order; Separate reference numbers by commas, no spaces</td>
</tr>
<tr>
<td>15</td>
<td>ACTIVITY</td>
<td>40</td>
<td>Various</td>
<td>Description of activity, best management practice, preventive measure, or whatever was done to prevent release</td>
<td>None</td>
</tr>
</tbody>
</table>
4.1.5 Radon

The radon data base is to include only positive results data from radon surveys conducted at the plant. Radon data base guidelines are provided in Appendix Table 4-5.

4.1.6 Lead-Based Paint

The lead-based paint data base is to include only positive results data from lead-based paint surveys conducted at the plant. If no surveys have been conducted, the building inventory data base shall be used to list all buildings constructed prior to or during 1978. Lead-based paint data base guidelines are provided in Appendix Table 4-6.

4.2 Setting Up Related Data Bases

The building inventory and FACNO list data bases are additional data bases required for the EBS mapping process.

4.2.1 Building Inventory

The building inventory data base is to include all buildings and structures located on the property. Building inventory data base guidelines are provided in Appendix Table 4-7.

4.2.2 FACNO List

The FACNO list data base is to include a list of all unique FACNOs that are entered into each data base. This data base should be generated after all other data bases are complete. The NAME field must be edited so that each FACNO is adequately described. FACNO list data base guidelines are provided in Appendix Table 4-8.
### 4.2.2.1.1.1 File Name: RADONi0

#### Table 4-5
Radon Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>CON</td>
<td>10</td>
<td>Various</td>
<td>Initials of contractor that occupies the above FACNO</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>LOCATION</td>
<td>40</td>
<td>Various</td>
<td>Description of testing location</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>CONC</td>
<td>10</td>
<td>Various</td>
<td>Concentration of radon</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>UNITS</td>
<td>5</td>
<td>pCi/L</td>
<td>Units of concentration</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>REFERENCE</td>
<td>20</td>
<td>XX,YY,ZZZ</td>
<td>Reference number(s) from source(s) of information</td>
<td>• Numbers should correspond to numbers in EBS reference list</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Enter numbers in numerical order</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Separate reference numbers by commas, no spaces</td>
</tr>
<tr>
<td>7</td>
<td>ACTIVITY</td>
<td>40</td>
<td>Various</td>
<td>Description of activity, best management practice, or whatever was done to prevent release</td>
<td>None</td>
</tr>
</tbody>
</table>
### 4.2.2.1.1.2 File Name: LEADi0

#### Table 4-6

**Lead-Based Paint Data Base Dictionary**

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>CON</td>
<td>10</td>
<td>Various</td>
<td>Initials of contractor that occupies the above FACNO</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>LOCATION</td>
<td>40</td>
<td>Various</td>
<td>Description of lead location</td>
<td>This may describe the sample location or the area of the building where the lead-based paint is located</td>
</tr>
<tr>
<td>4</td>
<td>CONC</td>
<td>10</td>
<td>Various</td>
<td>Sampling analysis results</td>
<td>If no survey has been conducted, this data base is not needed; use the building inventory to show all buildings constructed before 1978</td>
</tr>
<tr>
<td>5</td>
<td>UNITS</td>
<td>10</td>
<td>Various</td>
<td>Concentration units</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>LEADSOURCE</td>
<td>20</td>
<td>Various</td>
<td>Description of sample location</td>
<td>This may describe the unit that contains lead-based paint</td>
</tr>
<tr>
<td>7</td>
<td>REFERENCE</td>
<td>20</td>
<td>XX,YY,ZZZ</td>
<td>Reference number(s) from source(s) of information</td>
<td>Numbers should correspond to numbers in EBS reference list</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Enter numbers in numerical order</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Separate reference numbers by commas, no spaces</td>
</tr>
<tr>
<td>8</td>
<td>ACTIVITY</td>
<td>40</td>
<td>Various</td>
<td>Description of activity, best management practice, preventive measure, or whatever was done to prevent release</td>
<td>None</td>
</tr>
</tbody>
</table>
### 4.2.2.1.1.3 File Name: BLDG10

#### Table 4-7
Building Inventory Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>CON</td>
<td>10</td>
<td>Various</td>
<td>Initials of contractor that occupies the above FACNO</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>NAME</td>
<td>40</td>
<td>Various</td>
<td>Name of building</td>
<td>Use names that facility uses</td>
</tr>
<tr>
<td>4</td>
<td>AREA</td>
<td>10</td>
<td>Various</td>
<td>Area of building</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>UNITS</td>
<td>10</td>
<td>Various</td>
<td>Units of building area</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>YEARBUILT</td>
<td>4</td>
<td>19XX</td>
<td>Year of building construction</td>
<td>This field cannot be blank; estimate if unsure and enter &quot;***&quot; in EST field</td>
</tr>
<tr>
<td>7</td>
<td>EST</td>
<td>1</td>
<td>*</td>
<td>Indicates YEARBUILT is estimated</td>
<td>Use when YEARBUILT is estimated</td>
</tr>
<tr>
<td>8</td>
<td>REFERENCE</td>
<td>20</td>
<td>XX,YY,ZZZ</td>
<td>Reference number(s) from source(s) of information</td>
<td>Numbers should correspond to numbers in EBS reference list</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Enter numbers in numerical order</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Separate reference numbers by commas, no spaces</td>
</tr>
</tbody>
</table>
4.2.2.1.1.4 File Name: FACNO10

Table 4-8
FACNO List Data Base Dictionary

<table>
<thead>
<tr>
<th>Order</th>
<th>Field Name</th>
<th>Width</th>
<th>Valid Entry</th>
<th>Definition</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACNO</td>
<td>10</td>
<td>Various</td>
<td>Building number, IRP site number, or unique ID</td>
<td>Use numbers and names that facility uses</td>
</tr>
<tr>
<td>2</td>
<td>NAME</td>
<td>40</td>
<td>Various</td>
<td>Name of building, IRP site, or other location</td>
<td>Use names that facility uses</td>
</tr>
</tbody>
</table>

Note: There should be no blanks in this data base.
Appendix B
Queries Most Often Used to Display EBS Data
Queries Most Often Used to Display EBS Data

The following queries can be used by the MapInfo user to view the attribute data in the EBS processing system.

**Building Descriptions**
Applicable File: bldgi0.tab
Query: SELECT ALL

**Hazardous Waste Storage Areas**
Applicable File: hazwi0.tab
Query: SOURCE = “Accumulation Point” or SOURCE = “90-day storage” or SOURCE = “TSDF”, and HISTORY = “S”

**Aboveground Storage Tanks**
Applicable File: hazwi0.tab
Query: SOURCE = “AST” and HISTORY = “S”

**Underground Storage Tanks**
Applicable File: hazwi0.tab
Query: SOURCE = “UST” and HISTORY = “S”

**Buildings Containing Asbestos**
Applicable File: asbesti0.tab
Query: SELECT ALL

**Buildings Assumed to Contain Lead-Based Paint**
Applicable File: bldgi0.tab
Query: YEARBUILT = < 1978

**Location of PCB-Containing Equipment**
Applicable File: pcbi0.tab
Query: SELECT ALL

**Facilities Surveyed for Lead-Based Paint**
Applicable File: leadi0.tab
Query: SELECT ALL

Hazardous Materials and Petroleum Products Stored by Facility
Applicable File: hazwi0.tab
Query: TYPE = “POL” or
      TYPE = “HAZ” or
      TYPE = “RAD” or
      TYPE = “PES” and
      TYPE = “S”

Hazardous and Petroleum Wastes Stored by Facility
Applicable File: hazwi0.tab
Query: TYPE = “POLW” or
      TYPE = “HAZW” or
      TYPE = “RADW” and
      TYPE = “S”

Hazardous Substances and Petroleum Products/Wastes Releases
Applicable File: hazwi0.tab
Query: TYPE = “POLW” or
      TYPE = “HAZ” or
      TYPE = “POL” or
      TYPE = “RADW” or
      TYPE = “RAD” or
      TYPE = “PES” or
      TYPE = “HAZW” and
      HISTORY = “R” or
      HISTORY = “D”
Appendix C
Geographic Projections for EBS Plants
Wright-Patterson AFB Technical Information System
<table>
<thead>
<tr>
<th>Plant</th>
<th>Geographic Projection</th>
<th>Datum</th>
<th>Zone</th>
<th>Units</th>
<th>Spheroid</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFP3</td>
<td>Stateplane</td>
<td>NAD27</td>
<td>5026 Oklahoma North</td>
<td>Feet</td>
<td>Clarke 1866</td>
</tr>
<tr>
<td>AFP4</td>
<td>Stateplane</td>
<td>NAD27</td>
<td>5351 Texas North Central</td>
<td>Feet</td>
<td>Clarke 1866</td>
</tr>
<tr>
<td>AFP6</td>
<td>Stateplane</td>
<td>NAD27</td>
<td>3651 Georgia East</td>
<td>Feet</td>
<td>Clarke 1866</td>
</tr>
<tr>
<td>AFP42</td>
<td>Stateplane</td>
<td>NAD27</td>
<td>3426 California Zone VII</td>
<td>Feet</td>
<td>Clarke 1866</td>
</tr>
<tr>
<td>AFP44</td>
<td>Stateplane</td>
<td>NAD27</td>
<td>3176 Arizona Central</td>
<td>Feet</td>
<td>Clarke 1866</td>
</tr>
<tr>
<td>AFP85</td>
<td>Stateplane</td>
<td>NAD27</td>
<td>5001 Ohio South</td>
<td>Feet</td>
<td>Clarke 1866</td>
</tr>
<tr>
<td>AFP PJKS</td>
<td>Stateplane</td>
<td>NAD27</td>
<td>3476 Colorado Central</td>
<td>Feet</td>
<td>Clarke 1866</td>
</tr>
</tbody>
</table>
Appendix D
Glossary
Glossary

Archive: The process of compressing and storing the current EBS data for a given plant.

ARC/INFO: A geographic information system (GIS) software product designed to capture, store, update, manipulate, analyze, and display geographically referenced information.

ARC/INFO Macro Language (AML): A high-level, algorithmic language that provides full programming capabilities and toolset for building menus to tailor user interfaces for specific applications within ARC/INFO.

ArcLink: A MapBasic program that allows the MapInfo user to import and use ARC/INFO export file formats (.e00 files).

Attribute data: A tabular file containing characteristics of a geographic feature linked to the feature by a unique identifier (FACNO). Attribute data are synonymous with an INFO file (.dat extension) in ARC/INFO or a table (.tab extension) in MapInfo.

Baseline data: Coverage and .dat files for an EBS plant currently residing in the ARC/INFO component of the EBS system.

Coverage: A file containing a set of thematically associated data considered as a unit in ARC/INFO and MapInfo. A coverage represents a single theme, or layer in a map, such as structures, soils, roads or land use.

.dat files: Files containing attribute data stored in ARC/INFO format.

.dbf files: Files containing attribute data stored in dBASE format.

.e00 files: Files containing any coverage that has been converted to ARC/INFO export format.

Export: The process within the Technical Information System (TIS) that selects all the coverage and .dat files for one EBS plant, creates ARC/INFO export format (.e00) files, and inserts the files into a directory ($TISROOT/afpxx/exports) for access by MapInfo.

FACNO (Unique Identifier): An identifier, up to 10 characters in length, assigned for each plant building, site, or other area not associated with a building or site (e.g., outdoor spill, PCB storage area, UST).

gzip: A command unique to UNIX that allows for further compression beyond the export process. The resulting file will be a gzipped exported file specified as <filename>.e00.gz.

Hazwaste Table: The name commonly used to refer to either the hazwi0.tab in MapInfo or hazw.dat in ARC/INFO.
**Import:** The process within the TIS that selects .e00 and .dbf files from the import directory ($TISROOT/afpxx/import_e00) and converts them into coverage and .dat files for the ARC/INFO administrator.

**MapBasic:** A software language that lets the user customize and automate the MapInfo desktop mapping software.

**MapInfo:** A software product designed to view, modify, and import/export spatial and tabular data such as EBS plant data.

**New data:** Coverage and .dat files for an EBS plant that have been altered in MapInfo and imported to the TIS ARC/INFO platform. The data are considered new because they will replace the current EBS plant data set.

**Spatial data:** Graphic files containing the location, shape of, and relationships among geographic features, usually stored as coordinates and topology. Spatial data are synonymous with a coverage in ARC/INFO and tables in MapInfo.

**.tab files:** Files containing attribute or spatial data stored in MapInfo.

**Technical Information System (TIS):** The TIS is the computer system used by the Aeronautical Systems Center (ASC) that serves as the central collection point for environmental sampling and analysis data, and maps relating to the environmental cleanup of Air Force missile and aircraft plants.

**wilbur:** The Sun SPARCstation on the TIS housed at ASC (Building 8) used to store the EBS plant map and attribute data. The file names and directories used on **wilbur** include:

- $TISROOT - parent directory of the TIS system
- afpxx - Air Force plant identifier, e.g., afp44
- $TISROOT/afpxx - working directory for the TIS EBS component
- $TISROOT/afpxx/import_e00 - the latest edits to the EBS data prior to insertion into baseline directory
- $TISROOT/afpxx/parent - directory containing EBS files one version old
- $TISROOT/afpxx/exports - baseline version of the EBS ready to import into MapInfo
- $TISROOT/afpxx/archive - directory containing gzipped EBS data two versions old.
Appendix E
Project Manager’s Guide
MapInfo EBS Process Screen Captures
Screen 1 of 2 for starting the recatgry.mbx program
Screen 2 of 2 for starting the recatgry.mbx program

This Summary Table consists of a unique record for each FACNO including all applicable property categories.
Creating a summary table of all coverage data tables used for property categorization.
Converting unique house class codes FACNOs to a summary table of coverage FACNOs.
Creating individual category coverage tables for Categories 2 through 7.
Assigning the appropriate property categorization code to each category table.

For help on this dialog, press F1.
Screen 1 of 7 when an invalid entry in the HISTORY, STATUS, RASTATUS, or TYPE field is encountered. (For valid field entries see Table 1)
Screen 2 of 7 when an invalid entry in the HISTORY, STATUS, RASTATUS, or TYPE field is encountered.
Screen 3 of 7 when an invalid entry in the HISTORY, STATUS, RASTATUS, or TYPE field is encountered.
Screen 4 of 7 when an invalid entry in the HISTORY, STATUS, RASTATUS, or TYPE field is encountered.
Screen 5 of 7 when an invalid entry in the HISTORY, STATUS, RASTATUS, or TYPE field is encountered.

After making changes/fixes in the errorhazw Browser window, save the table. In order to do this ‘TAB’ out of the field being edited. After hitting the “TAB” key, the “save copy” option under the file pull-down menu becomes active.
Screen 6 of 7 when an invalid entry in the HISTORY, STATUS, RASTATUS, or TYPE field is encountered.
Screen 7 of 7 when an invalid entry in the HISTORY, STATUS, RASTATUS, or TYPE field is encountered.
Screen 1 of 1 telling the user that the Hazwi0.tab could not be found.
Screen 1 of 1 telling the user that the covname.tab file could not be found.
Screen 1 of 1 telling the user that the boundp.tab file could not be found.
Screen 1 of 4 telling the user that one or more of the coverages needed for categorization could not be found.
Screen 2 of 4 telling the user that one or more of the coverages needed for categorization could not be found.
Screen 3 of 4 telling the user that one or more of the coverages needed for categorization could not be found.
Screen 4 of 4 telling the user that one or more of the coverages needed for categorization could not be found.

This screen contains two different browser windows. The browser labeled “covname Browser” contains a list of the valid table names for the particular plant. The second window labeled “misscovs Browser” shows the tables that are located in the plants working directory but that do not match any table names in the covname.tab file.
Screen 1 of 4 telling the user that one or more of the facnos contained in the hazwi0.tab file do not have corresponding facnos in any of the spatial coverages.
Screen 2 of 4 telling the user that one or more of the facnos contained in the hazwi0.tab file do not have corresponding facnos in any of the spatial coverages.
Screen 3 of 4 telling the user that one or more of the facnos contained in the hazwi0.tab file do not have corresponding facnos in any of the spatial coverages.
Screen 4 of 4 telling the user that one or more of the facnos contained in the hazwi0.tab file do not have corresponding facnos in any of the spatial coverages.

This screen contains two different browser windows. The browser labeled “covfacnos Browser” contains a list of all of the facnos and the tables they are in. The second window labeled “errorhazw Browser” shows the facnos that are located in the hazwi0.tab file but that do not have a corresponding facno in any of the valid tables. The user can use the facno listing to help identify if the facno is really not included in any of the valid tables or if the facno might have been mistyped originally in the hazwi0.tab.
Screen 1 of 2 telling the user that the recategorization has been completed successfully.
Screen 2 of 2 telling the user that the recategorization has been completed successfully.
APPENDIX F
PROJECT MANAGER’S GUIDE
MapInfo EBS Process Naming
Conventions for All Coverage/Attribute Files Used in the EBS Process
### Table F-1
**Air Force Plant 44**

<table>
<thead>
<tr>
<th>Attribute/Coverage Files AFP44 (Tucson, Arizona)</th>
<th>Files Used in Property Categorization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATTRIBUTE NAMES</strong></td>
<td></td>
</tr>
<tr>
<td>HAZWI0</td>
<td>●</td>
</tr>
<tr>
<td><strong>COVERAGE NAMES</strong></td>
<td></td>
</tr>
<tr>
<td>Addp</td>
<td>●</td>
</tr>
<tr>
<td>Add2p</td>
<td>●</td>
</tr>
<tr>
<td>ASTSp</td>
<td>●</td>
</tr>
<tr>
<td>Boundp</td>
<td>●</td>
</tr>
<tr>
<td>Cascawp</td>
<td>●</td>
</tr>
<tr>
<td>Drywellp</td>
<td>●</td>
</tr>
<tr>
<td>Giwp</td>
<td>●</td>
</tr>
<tr>
<td>Leachp</td>
<td>●</td>
</tr>
<tr>
<td>Plume1p</td>
<td>●</td>
</tr>
<tr>
<td>Plume2p</td>
<td>●</td>
</tr>
<tr>
<td>Plume3p</td>
<td>●</td>
</tr>
<tr>
<td>Sites1p</td>
<td>●</td>
</tr>
<tr>
<td>Sites2p</td>
<td>●</td>
</tr>
<tr>
<td>Sites4p</td>
<td>●</td>
</tr>
<tr>
<td>Sites6p</td>
<td>●</td>
</tr>
<tr>
<td>Stormp</td>
<td>●</td>
</tr>
<tr>
<td>Strucp</td>
<td>●</td>
</tr>
<tr>
<td>Swmu1p</td>
<td>●</td>
</tr>
<tr>
<td>Swmu2p</td>
<td>●</td>
</tr>
<tr>
<td>Tunnelp</td>
<td>●</td>
</tr>
<tr>
<td>Ustsp</td>
<td>●</td>
</tr>
</tbody>
</table>

| **OTHER NAMES USED FOR EBS PROCESS**             |                                      |
| COVNAME.TAB                                      | ●                                    |
| CONDPROP                                         |                                      |
APPENDIX G
MapInfo EBS Process
Recatgry.mbx Source Code
This MapBasic program implements the Property Categorization Methodology established by:
Memorandum, Department of Defense, 1996. Clarification of Uncontaminated Environmental Condition of Property at Base Realignment and Closure Installations, 21 October.

The program categorizes property on MapInfo coverages based on information stored in an associated hazardous waste table (HAZW10.TAB). The program implements error trapping to halt program execution if errors occur that would prevent the completion of property categorization. In these cases, the user is provided detailed error messages to aid in correcting the error.

Include "Mapbasic.def"

`Declaration of procedures used by this program`

Declare sub main
Declare sub initial_variables
Declare sub delete_old_program_files
Declare sub hazwaste_categorization
Declare sub summarytable_of_facno_propertycategories
Declare sub table_of_unique_facnos_from_propertycoverages
Declare sub compare_hazfacnos_to_propertycoverage_facnos
Declare sub construct_individual_category_coverages
Declare sub update_coverage_categories
Declare sub color_category_coverage
Declare sub create_summarytable_of_facno_propertycategories
Declare sub end_program_message
Declare sub apply_specific_color_to_coverage_facnos(ByVal file_path as string, ByVal catcolor as integer)
Declare sub error_message(ByVal errorcode as smallint)
Declare sub setmaxcat(maxcat as string, currentcat as string)
Declare sub update_coverage_facno_categories(ByVal file_name as string)
Declare sub delete_file(ByVal file_pathname as string, ByVal filename as string)
Declare sub verifyColumn(ByVal ColumnName As String, ByVal TabName As String, VerifyFlag As String)
Declare sub sql_select_invalid_hazcats
Declare sub sql_select_inv_facnos
Declare sub sql_select_missing_coverages
Declare sub close_all_open_tables
Declare sub cleanup_system_files
Declare sub map_category_coverages
Declare sub map_category_coverage(ByVal file_pathname as string, ByVal tablename as string, makenewmapwindow as string)
Declare sub create_category_table(fullpath_tablename as string)

`Declaration of Public or Global variables`

global file_path as string
global prog_directorypath as string
global hazw_file as string
global hazwsmry_file as string
global facnocats_file as string
global covname_file as string
global boundp_file as string
global bndry_file as string
global misscovs_file as string
global missfacno_file as string
global facnocovcats_file as string
global covfacnos_file as string
global tempcov_file as string
global cat2_file as string
global cat3_file as string
global cat4_file as string
global cat5_file as string
global cat6_file as string
global cat7_file as string

' Main program procedure

sub main
  call close_all_open_tables
  call initial_variables
  call delete_old_program_files
  call hazwaste_categorization
  call summarytable_of_facno_propertycategories
  call table_of_unique_facnos_from_propertycoverages
  call compare_hazfacnos_to_propertycoverage_facnos
  call construct_individual_category_coverages
  call color_category_coverage
  call update_coverage_categories
  call end_program_message
  call cleanup_system_files
  call map_category_coverages
end sub

4.3 ' The following procedure closes all open tables
sub close_all_open_tables
  close all
end sub

4.4 ' The following procedure initializes global program variables
sub initial_variables
  prog_directorypath = ApplicationDirectory$()
  hazw_file = prog_directorypath + “hazwi0.tab”
  hazwsmry_file = prog_directorypath + “hazwsmry.tab”
  facnocats_file = prog_directorypath + “facnocats.tab”
  covname_file = prog_directorypath + “covname.tab”
  boundp_file = prog_directorypath + “boundp.tab”
  bndry_file = prog_directorypath + “bndry.tab”
  misscovs_file = prog_directorypath + “misscovs.tab”
  missfacno_file = prog_directorypath + “missfac.tab”
  facnocovcats_file = prog_directorypath + “facnocovcats.tab”
  covfacnos_file = prog_directorypath + “covfacnos.tab”
tempcov_file = prog_directorypath + "tempcov.tab"
cat2_file = prog_directorypath + "cat2.tab"
cat3_file = prog_directorypath + "cat3.tab"
cat4_file = prog_directorypath + "cat4.tab"
cat5_file = prog_directorypath + "cat5.tab"
cat6_file = prog_directorypath + "cat6.tab"
cat7_file = prog_directorypath + "cat7.tab"

end sub

' The following procedure deletes program tables that are created each time this program is executed.
' Essentially, this is a house-cleaning procedure that guarantees old program tables are deleted before
' the program starts a new EBS property categorization. The following tables are deleted:
cat2.tab, cat3.tab,
' cat4.tab, cat5.tab, cat6.tab, cat7.tab, bndry.tab, hazwsmry.tab, facnocats.tab, misscovs.tab, missfac.tab,
' facnocovcats.tab, covfacnos.tab, tempcov.tab.

sub delete_old_program_files
    Print "File Maintainence: Deleting old program files"
    Dim file_cntr as smallint
    Dim file_spec as string

Dim file_drop as string

Dim totalcategories as smallint

file_cntr = 2

totalcategories = 7

Do while file_cntr <= totalcategories
    file_drop = “cat” + file_cntr
    file_spec = prog_directorypath + file_drop + “.tab”
    Call delete_file(file_spec, file_drop)
    file_cntr = file_cntr + 1
Loop
Call delete_file(bndry_file,”bndry”)
Call delete_file(hazwsmry_file,”hazwsmry”)
Call delete_file(facnocats_file,”facnocats”)
Call delete_file(misscovs_file,”misscovs”)
Call delete_file(missfacno_file,”missfac”)
Call delete_file(facnocovcats_file,”facnocovcats”)
Call delete_file(covfacnos_file,”covfacnos”)
    Call delete_file(tempcov_file,”tempcov”)
End sub

' This procedure receives the pathname and filename for a file. If the file exists,
' the procedure deletes the file.

sub delete_file(ByVal file_pathname as string, ByVal filename as string)

If FileExists(file_pathname) then
    Open table file_pathname
    drop table filename
End if
End sub

4.5 If FileExists(file_pathname) then

    Open table file_pathname
    drop table filename

End sub

' This procedure updates the EBS hazardous waste table according to the criteria for property
categorization.
' This procedure determines if the CATEGORY field exists in the hazardous waste table. If the
' CATEGORY field exists, the procedure drops (deletes) the CATEGORY field and creates a new blank
' CATEGORY field; if the
' CATEGORY field does not exist, the procedure creates a new blank CATEGORY field. Each
' hazardous waste table
' record is evaluated according to the values stored in its HISTORY, STATUS, TYPE, and
RASTATUS fields. Based on the combination of values in these four fields, a specific property category (1 to 7) is assigned to the records CATEGORY field. If an invalid combination of values is stored in the HISTORY, STATUS, TYPE, and RASTATUS fields, an E (for error) is stored in the records CATEGORY field. Once all records in the hazardous waste table are evaluated for property categorization, if any errors occurred, the program halts and a Mapinfo table is displayed containing all hazardous waste table records in error (i.e., having an E in the CATEGORY field).

sub hazwaste_categorization

    Print “EBS Property Categorization Process for the EBS Hazardous Waste Table”
    Print “Each record in the EBS Hazardous Waste Table will be evaluated”
    Dim rowcntr as smallint

    Dim errorflag as string
    Dim verifycolumnflag as string

    OnError Goto Bad_open
    open table hazw_file as hazw
    OnError Goto 0
    call verifycolumn(“category”,hazw,verifycolumnflag)
    if verifycolumnflag = “No” then
        Alter table hazw(Add category Char (1))
    else
        Alter table hazw(Drop category)
        Alter table hazw(Add category Char (1))
    end if
errorflag = “No”

rowcnt = 1
fetch first from hazw

do while not EOT(hazw)
if (hazw.type = “HAZ” or hazw.type = “HAZW” or hazw.type = “POL” or hazw.type = “POLW”
or hazw.type = “PES”
or hazw.type = “RAD” or hazw.type = “RADW”) and hazw.status = “Y” and hazw.history = “S”
and ltrim$(hazw.rastatus) = “”

then update hazw set Category = “1” where rowid = rowcnt

elseif (hazw.type = “POL” or hazw.type = “POLW”) and hazw.status = “Y” and (hazw.history = “R” or hazw.history = “D”) and
(hazw.rastatus = “N” or hazw.rastatus = “C” or hazw.rastatus = “U” or hazw.rastatus = “F”)

then update hazw set Category = “2” where rowid = rowcnt

elseif (hazw.type = “HAZ” or hazw.type = “HAZW” or hazw.type = “PES” or hazw.type = “RAD” or hazw.type = “RADW”) and
hazw.status = “Y” and (hazw.history = “R” or hazw.history = “D”) and hazw.rastatus = “N”

then update hazw set Category = “3” where rowid = rowcnt

elseif (hazw.type = “HAZ” or hazw.type = “HAZW” or hazw.type = “PES” or hazw.type = “RAD” or hazw.type = “RADW”) and
hazw.status = “Y” and (hazw.history = “R” or hazw.history = “D”) and hazw.rastatus = “C”

then update hazw set Category = “4” where rowid = rowcnt

elseif (hazw.type = “HAZ” or hazw.type = “HAZW” or hazw.type = “PES” or hazw.type = “RAD” or hazw.type = “RADW”) and
hazw.status = “Y” and (hazw.history = “R” or hazw.history = “D”) and hazw.rastatus = “U”

then update hazw set Category = “5” where rowid = rowcnt

elseif (hazw.type = “HAZ” or hazw.type = “HAZW” or hazw.type = “PES” or hazw.type = “RAD” or hazw.type = “RADW”) and
hazw.status = “Y” and (hazw.history = “R” or hazw.history = “D”) and hazw.rastatus = “F”

then update hazw set Category = “6” where rowid = rowcnt

elseif (hazw.type = “HAZ” or hazw.type = “HAZW” or hazw.type = “PES” or hazw.type = “RAD” or hazw.type = “RADW”) and
hazw.status = “A” and (hazw.history = “S” or hazw.history = “R” or hazw.history = “D”) and
ltrim$(hazw.rastatus) = “”

then update hazw set Category = “7” where rowid = rowcnt
else update hazw set Category = “E” where rowid = rowcnt
errorflag = “Yes”
end if
fetch next from hazw
rowcnt= rowcnt+ 1
loop

4.5.1 If errorflag = “Yes” then
  Call error_message(1)
  Call error_message(10)
  Call error_message(11)
  Commit table hazw
  close all
  Call sql_select_invalid_hazcats
  end program
  Else
    commit table hazw
    close all
  End If
  Last_exit:   exit sub
  ‘ This routine prevents the program from unintentionally executing the error
  handlers’
  Bad_open:   Call error_message(2)
  end program

end sub

‘ This procedure is executed if errors occurred while updating the hazardous waste table for
property
‘ categorization. This procedure displays a Mapinfo table containing all hazardous waste table
records in
‘ error (i.e., having an E in the CATEGORY field).
sub sql_select_invalid_hazcats

4.6   OnError Goto Bad_open
open table hazw_file as hazw

OnError Goto 0

Select * from hazw where category = “E” into errorhazw
Browse * from errorhazw

_last_exit:  exit sub

‘ This routine prevents the program from unintentionally executing the error
handler

Bad_open:  Call error_message(2)
end program

end sub

‘ This procedure creates a summary table (HAZWSMRY.TAB) based on an evaluation of all the
hazardous waste

‘ table records. For each unique FACNO in the hazardous waste table, a unique record is created
in the summary table

‘ for each FACNO and all applicable categories (i.e., 1 through 7)

sub summarytable_of_facno_propertycategories

Print “Constructing a Summary Table of All Property Categories applicable to each Hazardous
Waste FACNO”

Print “This Summary Table consists of a unique record for each FACNO including all applicable
property categories”

Dim facnohold as string
Dim rowcntr as smallint
Dim errorflag as string
Dim fieldname as string
Dim casecategory as string
Dim maxcat as string
Dim totalcategories as smallint

OnError Goto Bad_open
open table hazw_file as temphazw
select * from temphazw into Hazw order by facno
OnError Goto 0

Call create_summarytable_of_facno_propertycategories
errorflag = “No”
totalcategories = 7
rowcntr = 1
fetch first from Hazw
Do while not EOT(Hazw)

If Hazw.facno = “” then

Fetch next from Hazw
Else

facnohold = Hazw.facno

end sub
maxcat = "0"
Insert into hazwsmry(facno) values(facnohold)
Do while not EOT(Hazw) and facnohold = Hazw.facno
casecategory = Hazw.category
If val(casecategory) >= 1 and val(casecategory) <= totalcategories then
fieldname = "cat"+ casecategory
Update hazwsmry set fieldname = casecategory where rowid = rowcntr
    Call setmaxcat(maxcat,casecategory)
    Else errorflag = "Yes"
End If
Fetch next from Hazw
Loop
    Update hazwsmry set highestcat = maxcat where rowid = rowcntr
    rowcntr = rowcntr + 1
End if
Loop
If errorflag = "Yes" then
    close all
    Call error_message(3)
    End Program
Else
    Commit table hazwsmry
    Close All
End If

4.7  ' This procedure opens the COVNAME.TAB table that identifies all the coverages that should
    ' be used for the property categorization. Each record in COVNAME.TAB should contain the
    ' This procedure compares two string integers and returns the maximum value as a string
    ' in the first procedure parameter maxcat
sub setmaxcat(maxcat as string, currentcat as string)
    if val(maxcat) < val(currentcat)then
        maxcat = currentcat
    End if
End sub
a single coverage in the table’s COVERAGEFILENAME field. This procedure reads each coverage name from COVNAME.TAB, it opens the coverage table and inserts specific coverage data for each coverage FACNO into a summary table (BNDRY.TAB). Specifically, the summary table (BNDRY.TAB) contains a unique record for each FACNO with its AREA, PERIMETER, and the filename for its coverage. If a coverage cannot be opened, the coverage name is inserted into a error file (MISSCOVS.TAB). At the end of this procedure, if any coverages could not be opened, the user is informed, the program is halted, and the user is presented a error table displaying the coverages that could not be opened. The COVNAME.TAB table is also displayed to the user.

sub table_of_unique_facnos_from_propertycoverages
Print “Creating a summary table of all coverage data tables used for property categorization”

    Dim file_spec as string
    Dim file_name as string
    Dim error_count as smallint
    Dim verifycolumnflag as string

    OnError Goto Bad_open1
    Open table covname_file as covname
    OnError Goto Bad_open2
    Open table boundp_file as boundary
    OnError Goto 0

    select * from boundary where facno <> "" into tempcovfile
    Commit table tempcovfile as bndry_file
    Close table tempcovfile

    Close table boundary
    Open table bndry_file as allcoverages
    call verifycolumn("coveragefilename",allcoverages,verifycolumnflag)
    if verifycolumnflag = "No" then
        Alter table allcoverages(Add coveragefilename Char (120))
    else
        Alter table allcoverages(Drop coveragefilename)
        Alter table allcoverages(Add coveragefilename Char (120))
    end if
    update allcoverages set coveragefilename = boundp_file
create table misscovs (coveragefilename char(120)) file misscovs_file
error_count = 0
fetch first from covname
Do while not EOT(covname)
   file_name = ltrim$(covname.coveragefilename)
   If file_name <> "" then
      file_spec = prog_directorypath + file_name
      OnError goto bad_open3
      open table file_spec as validcoveragefile
      OnError goto 0
      select area,perimeter,facno from validcoveragefile where facno <> "" into tempcovfile
      commit table tempcovfile as tempcov_file
      close table tempcovfile
      close table validcoveragefile
      open table tempcov_file as tempcovfile
      alter table tempcovfile(Add coveragefilename Char(120))
      update tempcovfile set coveragefilename = file_spec
      insert into allcoverages(area,perimeter,facno,coveragefilename) select
         area,perimeter,facno,coveragefilename from tempcovfile
      close table tempcovfile
   end if
   Get_Next_Coverage: fetch next from covname
Loop
   If error_count > 0 then
      commit table misscovs
      call error_message(16)
      close all
      Call sql_select_missing_coverages
      end program
   else
      commit table allcoverages
      close all
      end if
      Last_exit: exit sub
Bad_open1:  Call error_message(4)
      end program
Bad_open2:  Call error_message(5)
      close all
      end program

4.8  Bad_open3: error_count = error_count + 1
      insert into misscovs(coveragefilename) values
                     (file_spec)
      Resume Get_Next_Coverage
end sub

‘ This procedure is executed if one or more coverages identified in COVNAME.TAB could not be opened. This procedure
‘ displays a Mapinfo table (MISSCOVS) containing all coverages that could not be opened.

sub sql_select_missing_coverages
    OnError Goto Bad_open1
    open table misscovs_file as misscovs
    OnError Goto Bad_open2
    Open table covname_file as covname
    OnError Goto 0

4.8.1 Select * from covname
    Browse * from covname
    Select * from misscovs
    Browse * from misscovs
    Last_exit: exit sub
    ‘ “This routine prevents the program from unintentionally executing the error
    handlers”
    Bad_open1: Call error_message(15)
    end program
    Bad_open2: Call error_message(4)
close all
end program
end sub

‘ This procedure creates the facnocats (FACNOCATS.TAB) table that contains all the records
in the
‘ hazardous waste summary table (HAZWSMRY.TAB) that have a category greater than 1. The
‘ FACNOs in the
‘ facnocats table are compared against the summary table of coverage data (BNDRY.TAB) that
‘ consists of all FACNOs in all coverages specified in COVNAME.TAB (i.e. the file that
‘ specifies
‘ all the coverages that are to be used for property categorization). If a FACNO in the
‘ facnocats table is not contained in the bndry table, then the FACNO is not defined on
‘ any coverage specified in COVNAME.TAB. This is an error since each FACNO in the
‘ hazardous waste table with a category greater than 1 (i.e., the facnocats table) must be
‘ in a single coverage. If this error occurs, the program is halted. The user is provided
‘ with
‘ a table containing the hazardous waste table records that have FACNOs that are not in any
‘ coverage. Also, the program displays a master list of the coverages identified in
‘ COVNAME.TAB
‘ and the FACNOs that occur in each coverage. The user must correct the hazardous waste
‘ records
‘ or the coverages such that each FACNO in the hazardous waste table having a property
category
‘ greater than 1 matches a FACNO in one of the coverages identified in COVNAME.TAB

sub compare_hazfacnos_to_propertycoverage_facnos
    Print “Comparing unique hazardous waste FACNOs to a summary table of coverage
FACNOs.”
Dim facnohold as string
Dim missflag as string

OnError Goto Bad_open1
open table hazwsmry_file as hazwsmry
Onerror goto 0
Select * from hazwsmry where highestcat <> "1" into facnocats
commit table facnocats as facnocats_file
close all
open table facnocats_file as facnocats
OnError Goto Bad_open2
open table bndry_file as allcoverages
OnError Goto 0
create table miss_fac (missfacno char(10)) file missfacno_file

missflag = "No"
fetch first from facnocats
Do while not EOT(facnocats)
    facnohold = facnocats.facno
    select facno from allcoverages where allcoverages.facno = facnohold
    If selectionInfo(sel_info_nrows) = 0 then
        insert into miss_fac(missfacno) values (facnohold)
        missflag = "Yes"
    end if
    fetch next from facnocats
loop
Commit table miss_fac
close all

4.8.2 If missflag = “Yes” then
    Call error_message(7)
    Call error_message(12)
    Call error_message(13)
    close all
    Call sql_select_inv_facnos
end program
end if

Last_exit:  exit sub
    ' This routine prevents the program from unintentionally executing the error
    handlers
Bad_open1:  Call error_message(8)
end program
Bad_open2:  close all

Call error_message(6)
end program
end sub
This procedure is executed if a hazardous waste FACNO having a property category greater than 1 is not in any coverage identified in COVNAME.TAB. The user will be provided a table containing the hazardous waste table records with FACNOS having a property category greater than 1 that are not in any coverage identified in COVNAME.TAB. Also, this procedure displays a master list of the coverages identified in COVNAME.TAB and the FACNOS in each coverage. The user must correct the hazardous waste records or the coverages such that each FACNO in the hazardous waste table having a property category greater than 1 matches a FACNO on one of the coverages identified in COVNAME.TAB.

```
sub sql_select_inv_facnos
    Onerror Goto Bad_open1
    open table missfacno_file as missfacnos
    Onerror Goto Bad_open2
    open table hazw_file as Hazw
        Onerror Goto 0
    Select * from hazw,missfacnos where hazw.facno = missfacnos.missfacno into errorhazw
    Browse * from errorhazw
        Onerror Goto Bad_open3
    open table bndry_file as allcoverages
        Onerror Goto 0
    Select coveragefilename, facno from allcoverages into covfacnos
    commit table covfacnos as covfacnos_file
    close table covfacnos
    close table allcoverages
    open table covfacnos_file as covfacnos
    Browse * from covfacnos

4.8.3 Last_exit: exit sub
    “This routine prevents the program from unintentionally executing the error handlers”
        Bad_open1:
            Call error_message(14)
            close all
            end program
        Bad_open2:
            Call error_message(2)
            close all
            end program
        Bad_open3:
            Call error_message(6)
```

close all
end program
end sub

' This procedure creates the facnocovcats table that is the intersection of the
' summary table (facnocats.tab) of FACNOs with categories greater than 1 with the summary
' table (bndry.tab) of FACNOs in the coverages identified in COVNAME.TAB. Based on previous
' error checking, each FACNO in the facnocats table will match a FACNO in the bndry table.
' Once the facnocovcats table is created, it is used to create individual coverage
' tables (Cat2.tab to Cat7.tab) for property categories 2 through 7. Please note that only
' applicable property category coverages are created; a particular category coverage is not
' created if there are no hazardous waste records that evaluate to that property category.

4.9 Sub construct_individual_category_coverages
Print “Creating individual category coverage tables for Categories 2 through 7”
Dim sel_cnt as smallint
OnError Goto Bad_open1
open table facnocats_file as facnocats
OnError Goto Bad_open2
open table bndry_file as allcoverages
OnError Goto 0

Select * from allcoverages,facnocats where allcoverages.facno = facnocats.facno into facnocovcats
commit table facnocovcats as facnocovcats_file
Select * from facnocovcats where cat2 = “2” into tempselectiontable order by facno
call create_category_table(cat2_file)
Select * from facnocovcats where cat3 = “3” into tempselectiontable order by facno
call create_category_table(cat3_file)
Select * from facnocovcats where cat4 = “4” into tempselectiontable order by facno
call create_category_table(cat4_file)

4.10 Select * from facnocovcats where cat5 = “5” into tempselectiontable order by facno
call create_category_table(cat5_file)
4.11 Select * from facnocovcats where cat6 = “6” into tempselectiontable order by facno
    call create_category_table(cat6_file)

4.12 Select * from facnocovcats where cat7 = “7” into tempselectiontable order by facno
    call create_category_table(cat7_file)
    close all

4.12.1 Last_exit: exit sub
    This routine prevents the program from unintentionally executing the error handlers”
    Bad_open1:
    Call error_message(9)
    end program
    Bad_open2:
    close all
    Call error_message(6)
    end program
end sub
sub create_category_table(fullpath_tablename as string)
    if selectionInfo(sel_info_nrows) > 0 then
    commit table tempselectiontable as fullpath_tablename
    end if
    close table tempselectiontable
end sub

' This procedure modifies the property category coverage tables such that the mappable objects
' in each category table are assigned the color appropriate for that property category
' (i.e., category 2 = blue, category 3 = lightgreen, category 4 = dark green, category 5 = yellow,
' category 6 = red, and category 7 = grey).

sub color_category_coverage

4.13 Print “Assigning the appropriate property categorization color to each category table”
    Dim catblue as integer
    Dim catlightgreen as integer
    Dim catdarkgreen as integer
    Dim catyellow as integer
    Dim caret as integer
Dim catgrey as integer

    catblue = rgb(176,255,255)
catlightgreen = rgb(160,255,160)
catdarkgreen = rgb(0,244,0)
catyellow = rgb(255,255,144)
catred = rgb(255,128,128)
catgrey = rgb(191,192,192)

    call apply_specific_color_to_coverage_facnos(cat2_file,catblue)
call apply_specific_color_to_coverage_facnos(cat3_file,catlightgreen)
call apply_specific_color_to_coverage_facnos(cat4_file,catdarkgreen)
call apply_specific_color_to_coverage_facnos(cat5_file,catyellow)
call apply_specific_color_to_coverage_facnos(cat6_file,catred)
call apply_specific_color_to_coverage_facnos(cat7_file,catgrey)
end sub

' This procedure receives the filename for a specific category coverage table and the EBS property categorization color that is applicable to all the mappable objects in the category table.
' This procedure determines if the specific category table exists (a specific property category table will not exist if there are no hazardous waste records that evaluate to the property category). If the category table exists, it assigns the categorization color to each mappable object in the category table.
sub apply_specific_color_to_coverage_facnos(ByVal file_path as string, ByVal catcolor as integer)
    dim new_brush as brush
dim cat_object as object
    dim rowcntr as smallint

4.13.1 If FileExists(file_path) then
    Onerror Goto bad_open

open table file_path as categorytable
Onerror Goto 0

    fetch first from categorytable
    rowcntr = 1
    new_brush = makebrush(2,catcolor,catcolor)
Do while not EOT(categorytable)
    cat_object = categorytable.obj

alter object cat_object info obj_info_brush,new_brush
update categorytable set obj = cat_object where rowid = rowcntr
fetch next from categorytable
rowcntr = rowcntr + 1
loop
commit table categorytable
close all
end if
Last_exit: exit sub
bad_open: Note "Program was halted before property categorization was completed."
Could not open category table: " + file_path
end program

end sub

‘ This procedure updates the CATEGORY field in the individual coverages used for property
categorization

4.14 ‘ that are identified in COVNAME.TAB. This procedure reads each
coverage name from COVNAME.TAB,
‘ it opens the coverage table and updates the CATEGORY field in the coverage table based on
the property
‘ categorization. Specifically, the CATEGORY field for each FACNO in the coverage table is
assigned the
‘ highest property category identified in the summary table (HAZWSMRY.TAB) of all property
categories
‘ applicable to each FACNO. The HAZWSMRY.TAB was constructed based on the property
categorization for the
‘ hazardous waste table.
sub update_coverage_categories
    Dim filename as string
    OnError Goto Bad_open1
    Open table covname_file as covname
    OnError Goto 0

    fetch first from covname
    Do while not EOT(covname)
      filename = ltrim$(covname.coveragefilename)
      if filename <> "" then
        Call update_coverage_facno_categories(filename)
      end if
    Loop
    close all
### 4.15 This procedure is used to update the CATEGORY field of coverages that are used for property categorization

This procedure is used to update the CATEGORY field of coverages that are used for property categorization (i.e., a coverage identified in COVNAME.TAB). The procedure receives the filename of a specific coverage, opens the coverage, and tests whether the coverage has a CATEGORY field. If the coverage does not have a CATEGORY field, this field is created. If the coverage does have a CATEGORY field, the CATEGORY field is dropped (deleted), and a new empty CATEGORY field is created. The CATEGORY field for each FACNO in the coverage table is assigned the highest property category identified in the summary table (HAZWSMRY.TAB) of all property categories applicable to each FACNO. The HAZWSMRY.TAB was constructed based on the property categorization for the hazardous waste table.

```vba
sub update_coverage_facno_categories(ByVal file_name as string)
    Dim file_spec as string
    Dim facnohold as string
    Dim fieldname as string
    Dim highestcategory as string
    Dim verifycolumnflag as string
    Dim rowcntr as smallint

    file_spec = prog_directorypath + file_name
    OnError goto bad_open1
    open table file_spec as validcoverage
    OnError goto bad_open2
    open table hazwsmry_file as hazwsmry
    OnError goto 0

    Call verifyColumn("category", validcoverage, verifycolumnflag)
    if verifycolumnflag = "No" then
        alter table validcoverage(Add category Char(1))
    end if
end sub
```
else
    alter table validcoverage(Drop category)
    alter table validcoverage(Add category Char(1))
end if

rowcntr = 1
fetch first from validcoverage
Do while not EOT(validcoverage)
    if validcoverage.facno <> "" then
        facnohold = validcoverage.facno
        select highestcat from hazwsmry where hazwsmry.facno = facnohold into temphighcat
        If selectionInfo(sel_info_nrows) > 0 then
            highestcategory = temphighcat.highestcat
            update validcoverage set category = highestcategory where rowid = rowcntr
            else
                update validcoverage set category = "1" where rowid = rowcntr
        end if
        close table temphighcat
    end if
    fetch next from validcoverage
    rowcntr = rowcntr + 1
end loop

Last_exit: commit table validcoverage
close table validcoverage
close table hazwsmry
exit sub
Bad_open1: close all

Note “The program was halted before property categorization was completed. Could not open coverage table:" + validcoverage + " . Coverage tables need to be located in program directory " + prog_directorypath
end program

4.16 Bad_open2: close all
    Call error_message(8)
end program
end sub

` This procedure is executed if the categorization process was successfully completed using the hazardous waste table
` and the coverages identified in COVNAME.TAB. It informs the user that the property categorization process has been
completed and informs the user that a map window displaying the categorization results will be displayed.

sub end_program_message

Note “The property categorization process has been successfully completed. The property categorization results will be displayed in a map window that contains all applicable category coverages (Cat2.tab to Cat7.tab). Only category coverages that are applicable to the property categorization are created.”

Note “Category coverage tables are located in the program directory “+ prog_directorypath + “ Execute the MapInfo Menu Option: Tools\Arclink\MapInfo -> ArcInfo to export tables to the ArcInfo Platform.”

end sub

‘ This procedure performs house cleaning by deleting temporary tables created by the program during the property categorization.

sub cleanup_system_files
    Call delete_file(facnocats_file,”facnocats”)
    Call delete_file(tempcov_file,”tempcov”)
end sub

‘ This procedure opens a map window and displays the results of the property categorization; specifically,
‘ the map window displays only the category coverages (i.e., Cat2.tab to Cat7.tab) that are applicable to the
‘ property categorization. A particular property category may not be applicable if there are no hazardous waste
‘ records that evaluate to that property category.

sub map_category_coverages

4.17 Dim MakeNewMapWindow as string

    MakeNewMapWindow = “Yes”
    call map_category_coverage(cat2_file,”cat2”,MakeNewMapWindow)
    call map_category_coverage(cat3_file,”cat3”,MakeNewMapWindow)
    call map_category_coverage(cat4_file,”cat4”,MakeNewMapWindow)
    call map_category_coverage(cat5_file,”cat5”,MakeNewMapWindow)
    call map_category_coverage(cat6_file,”cat6”,MakeNewMapWindow)
    call map_category_coverage(cat7_file,”cat7”,MakeNewMapWindow)
    set map zoom entire
end program
end sub
This procedure receives the pathname and tablename for a mappable property category table.

The procedure determines whether the specified table exists; a particular property category table
may not be applicable (i.e. will not exist) if there were no hazardous waste records that
evaluated to that property category. If a new map window has not been created to display the property
categorization results,

the procedure creates the map window and maps the table. If a new map window has been
created to display the

property categorization results, the procedure maps the table as a new layer in the existing map
window.

sub map_category_coverage(ByVal file_pathname as string, ByVal tablename as string,MakeNewMapWindow as string)

4.18 If FileExists(file_pathname)and MakeNewMapWindow = “Yes” then

Open table file_pathname as tablename
map from tablename Position(0,0) Max
MakeNewMapWindow = “No”
extif FileExists(file_pathname) and MakeNewMapWindow = “No” then
Open table file_pathname as tablename
Add map layer tablename
end if
end sub

This procedure receives a column name and table name. It searches the table to verify
that the column is in the table. The procedure returns either a “Yes” or “No” by its
verifyflag parameter depending on whether the column is or is not in the table, respectively.

sub verifyColumn(ByVal ColumnName As String, ByVal TabName As String,VerifyFlag As String)

Dim col_name As String
Dim I as smallint

VerifyFlag = “No”
For I = 1 to NumCols(TabName)
    col_name = ColumnInfo(TabName,”col” + I, COL_INFO_NAME)
    If col_name = ColumnName then
        VerifyFlag = “Yes”
    end if
Next
end sub
This procedure creates a summary table of each FACNO and all its applicable property categories based on the property categorization for the hazardous waste table.

```vba
sub create_summarytable_of_facno_propertycategories
  create table hazwsmry
  4.19  (facno char(10),
    Cat1 char(1),
    Cat2 char(1),
    Cat3 char(1),
    Cat4 char(1),
    Cat5 char(1),
    Cat6 char(1),
    Cat7 char(1),
    HighestCat char(1)) file hazwsmry_file
end sub
```

This procedure displays program error messages. It receives an integer that identifies a specific error and uses the MapInfo Note function to display the error to the user.

```vba
sub error_message(ByVal errorcode as smallint)
  Do Case errorcode
  Case 1
    Note “The program was halted before property categorization was completed. The hazardous waste table contained record(s) with invalid criteria for property categorization.” + “All hazardous waste records that have invalid property categorization criteria will be displayed in a table for correction.”
  Case 2
    Note “The program was halted before property categorization was completed. Hazardous waste table “ + hazw_file + “ could not be opened! “ + “Please be sure that this table is in the program directory “ + prog_directorypath
  Case 3
    Note “A category value was encountered outside the valid range(1-7). Please review hazardous waste table “ + hazw_file + “ for invalid categories.”
  Case 4
    Note “The program was halted before property categorization was completed. Table “ + covname_file + “ could not be opened! This file contains the names of coverages used for property categorization. “ + “Please be sure that this table is in the program directory “ + prog_directorypath
```
4.23 Case 5
Note “The program was halted before property categorization was completed. The boundary file “ + boundp_file + “ could not be opened!” + “ Please be sure that this table is in the program directory “ + prog_directorypath

4.24 Case 6
Note “The program was halted before property categorization was completed. The spatial summary table “ + bndry_file + “ could not be opened” + “Please be sure that this table is in the program directory “ + prog_directorypath

4.25 Case 7
Note “The program was halted before property categorization was completed. The hazardous waste table contains one or more FACNOs that do not match the spatial coverage tables that are used for property categorization.”

4.26 Case 8
Note “The program was halted before property categorization was completed. The category summary table “ + hazwsmry_file + “ could not be opened” + “Please be sure that this table is in the program directory “ + prog_directorypath

4.27 Case 9
Note “The program was halted before property categorization was completed. The category summary table “ + facnocats_file + “ could not be opened” + “Please be sure that this table is in the program directory “ + prog_directorypath

4.28 Case 10
Note “Note that the hazardous waste records in error have an E (for error) in the CATEGORY field; however, the user does not edit the CATEGORY field. Corrections must be made to the HISTORY, STATUS, TYPE, and/or RASTATUS fields since these fields are used to determine property categorization. “

4.29 Case 11
Note “Once corrections have been made to the hazardous waste records in error, save the corrected table and re-run the categorization program.”

4.30 Case 12
Note “A table will display the hazardous waste records having FACNOs that do not match any FACNO in the coverages used for property categorization. An additional table will summarize all FACNOs in each of the coverages used for the property categorization.”
4.31 Case 13
Note “Please correct all discrepancies such that the hazardous waste FACNOs match a FACNO in one of the coverages used for property categorization. Once corrected, re-rerun the property categorization program.”

4.32 Case 14
Note “The program was halted before property categorization was completed. The missing facnos table “ + missfacno_file + “ could not be opened” + “Please be sure that this table is in the program directory “ + prog_directorypath

4.33 Case 15
Note “The program was halted before property categorization was completed. The missing coverages table “ + misscovs_file + “ could not be opened” + “Please be sure that this table is in the program directory “ + prog_directorypath

4.34 Case 16
Note “The program was halted before property categorization was completed. One or more coverage tables that are used for property categorization could not be opened. The user will be displayed an error table (MISSCOVS) of the coverages that could not be opened.”
Note “All coverages that are used for property categorization are identified in table: “ + covname_file + “. This table will also be displayed to the user.”
Note “All coverages used for property categorization must be located in the program directory “ + prog_directorypath

4.35 End Case
end sub
Appendix H
Wilbur’s System Administrator Guide
ARC/INFO EBS Data Processing System Screen Captures
Figure 1. Screen 1 of 1 showing the first menu list after running the “runtis” command
Figure 2. Screen 1 of 3 showing the TIS GUI and menu options
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Figure 4. Screen 3 of 3 showing the TIS GUI and the EBS Operations menu options
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Figure 6. Screen 2 of 3 showing the process for a successful recategorization
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Figure 12. Screen 2 of 4 showing the process for a successful export of coverages
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Figure 14. Screen 4 of 4 showing the process for a successful export of coverages
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Figure 16. Screen 2 of 4 showing the process for a successful import of coverages and dBase files
Figure 17. Screen 3 of 4 showing the process for a successful import of coverages and dBase files
Figure 18. Screen 4 of 4 showing the process for a successful import of coverages and dBase files
Figure 19. Screen 1 of 2 showing the screen as it appears when invalid field entries for the HISTORY, STATUS, RASTATUS, and TYPE fields are encountered
**Figure 20.** Screen 2 of 2 showing the screen as it appears when invalid field entries for the HISTORY, STATUS, RASTATUS, and TYPE fields are encountered
Figure 21. Screen 1 of 1 showing the screen as it appears when facnos in the hazw.dat file do not have corresponding facnos in one of the spatial data files
APPENDIX I
WILBUR’S SYSTEM ADMINISTRATOR GUIDE
NAMING CONVENTIONS FOR ALL COVERAGE/ATTRIBUTE FILES USED IN THE EBS PROCESS
<table>
<thead>
<tr>
<th>Attribute/Coverage Files AFP44 (Tucson, Arizona)</th>
<th>Files Used in Property Categorization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATTRIBUTE NAMES</strong></td>
<td></td>
</tr>
<tr>
<td>ASBEST</td>
<td></td>
</tr>
<tr>
<td>BLDG</td>
<td></td>
</tr>
<tr>
<td>FACNO</td>
<td></td>
</tr>
<tr>
<td>HAZW</td>
<td>●</td>
</tr>
<tr>
<td>PCB</td>
<td></td>
</tr>
<tr>
<td><strong>COVERAGE NAMES</strong></td>
<td></td>
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<td>USTS</td>
<td>●</td>
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<tr>
<td><strong>OTHER NAMES USED FOR EBS PROCESS</strong></td>
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<tr>
<td>COVNAME.TAB</td>
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<tr>
<td>CONDPROP</td>
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APPENDIX J

WILBUR'S SYSTEM ADMINISTRATOR GUIDE

ARC/INFO EBS DATA PROCESSING SYSTEM EBS_OPS.AML SOURCE CODE
APPENDIX K
WILBUR’S SYSTEM ADMINISTRATOR GUIDE
ARC/INFO EBS DATA PROCESSING SYSTEM EBS_OPS.MENU SOURCE CODE
4.35.1  7 +ebs_ops.menu

/* ***************************************************************************
/* The Earth Technology Corporation
/* 200 Sparkman Drive NW, Suite 1
/* Huntsville, AL
/* 205-837-0199
/* ***************************************************************************
/* Menu  : +ebs_ops.menu
/* Purpose: To provide user interface to +EBS_OPS.AML.
/* Requires: ARC/INFO Rev. 7.0.3.
/* ***************************************************************************
/* History: written by Tim Rourke, TETC, August 9, 1995
/* updated by John Cooley, Earth Tech, Sept 22, 1999
/* Modified: 09/8/1999 by John Cooley, Earth Tech - Alexandria
/* 1) The draw option on the EBS menu was commented out per
/* request from Sandra Eberts, GIS Data Base Administrator
/* for ASC, WPAFB.
/* ***************************************************************************
/* User: %input1
/* %button6_1
/* %button7
/* This input field was used during the testing process.
/* It can be used to set a user name for storage in exported coverages.
/* The name, along with the date and time, can be stored in export
/* files to track exported versions of the same plant. The routines that
/* use these items are ADD_LOG_ITEMS, FILL_LOG_ITEMS and DROP_LOG_ITEMS.
/* These routines are available by uncommenting the lines in the
/* EXPORT routine that call ADD_LOG_ITEMS.
/* %input1 INPUT +EBS_OPS$USER 24 TYPEIN YES SCROLL NO ~
/* REQUIRED ~
/* HELP 'Name of the user checking out/in' ~
/* CHARACTER
/* These buttons were used during the testing process. The IMPORT
/* routine now calls these routines automatically.
/* %button6_1 BUTTON KEEP 'Popup Category Legend' &RUN +EBS_OPS LEGEND
/* %button7 BUTTON KEEP 'Help' &RUN +EBS_OPS HELP
/* %button8_1
/* %button6
/* %button1
/* %button1_1
/* %button1_2
/* %button1_4
/* %button1_3
/* %choice1

4.35.1.1 Command echo: %choice1
%button1 BUTTON KEEP 'Export Data Set' &RUN +EBS_OPS EXPORT
%button1_1 BUTTON KEEP 'Import Data Set' &RUN +EBS_OPS IMPORT
%button1_2 BUTTON KEEP ‘Recategorization’ &RUN +EBS_OPS CATEGORY
%button1_4 BUTTON KEEP ‘Condition of Property’ &RUN +EBS_OPS CONDITION
/* %button1_3 BUTTON KEEP ‘Display EBS Datasets’ &RUN +EBS_DRAW INIT
%button8_1 BUTTON KEEP ‘Archive Data’ &RUN +EBS_OPS REPLACE
%button6 BUTTON KEEP ‘Cancel’ &RUN +EBS_OPS EXIT
%choice1 CHOICE .IF_ECHO PAIRS KEEP ~
4.35.1.1.1 INITIAL '.FALSE.' ~

HELP ‘Set &ECHO ON or OFF for testing’ ~
RETURN ‘&ECHO [UNQUOTE %.if_echo%]’ ~
‘On’ ‘&ON’ ‘Off’ ‘&OFF’