

# National Health and Nutrition Examination Survey 1999–2000

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## Documentation, Codebook, and Frequencies

MEC Laboratory Component:  
Lead Dust

Survey Years:  
1999 to 2000

SAS Export File:  
Lab20.XPT



First Published: June 2006  
Last Revised: N/A

# NHANES 1999-2000 Data Documentation

## Laboratory Assessment: Lab 20 – Lead Dust

Years of Coverage: 1999-2000

First Published: June 2006

Last Revised: N/A

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### Component Description

Lead is a known environmental toxin that has been shown to deleteriously affect the nervous, hematopoietic, endocrine, renal, and reproductive systems. In young children, lead exposure is a particular hazard because children more readily absorb lead than do adults, and children's developing nervous systems also make them more susceptible to the effects of lead. Since first measuring blood lead during the 1976–1980 survey, NHANES has been the cornerstone for lead exposure surveillance in the U.S.

In 1999, NHANES began to collect dust samples from the homes of children 1–5 years of age to be tested for the presence of lead. Lead in dust is most often the result of old, peeling, or chipping lead-based paint. As part of the household visit, NHANES interviewers collected separate dust-wipe samples from the floor and window sill of one room in the home. Signing of a special informed consent was required prior to the collection.

### Eligible Sample

Eligible survey participants were households with children 1–5 years of age.

### Description of Laboratory Methodology

The preparation procedure for dust-wipe sample digestion involves the quantitative transfer of the sample from the container into a beaker, and then the subsequent addition of nitric and hydrochloric acids and hot-plate heating. The procedure is described in the Appendix of the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1). The technique does not involve complete digestion of the sample, but does entail leaching of the lead (Pb) from the collected dust. Recovery of the method is based and evaluated on the results of matrix (wipe) spiked National Institute of Standards and Technology (NIST) quality control samples. The lead content of the digestate is determined by using a PerkinElmer Flame Atomic Absorption Spectrometer (FAAS) Model 5000 or 5100 for all window dust-wipe samples and a PerkinElmer Graphite Furnace Atomic Absorption Spectrometer (GFAAS) Model 5100 for all floor dust-wipe samples. However, a floor dust sample whose value was found to be 5 µg or greater by GFAAS are re-analyzed by FAAS and that value is reported.

## Laboratory Quality Control and Monitoring

Additional dust samples (either window sill or floor) were taken in 5% of households as part of the quality control procedures. A field blank was also collected. Results from these quality control measures are not included as part of this data file.

For the year 2000, the floor samples (n=30) had a 99.8% (+/-2.1%) recovery at an average spike level of 75.31 (sd 14.29) µg. The window sill samples (n=29) revealed a 99.8% (+/-2.9%) recovery at an average spike level of 74.94 (sd 18.77)µg. This data is not available for 1999.

## Data Processing and Editing

Detailed specimen collection instructions are discussed in the NHANES Household Interview Procedures Manual, Chapter 7. This chapter specifies the procedure to be used for preparation of the window and floor, specimen collection, labeling, and conditions for specimen transport.

## Analytic Notes

This data file includes the laboratory values as well as variables related to characteristics of the room where the samples were taken, and other factors relevant to data collection.

### DCDINDEX

The variable identifies the index child designated for dust collection. Descriptive data about the home environment and the dust samples were collected for one child in the household. In homes where more than one child aged 1-5 years resided, the descriptive and laboratory data for the index child were assigned to all other children in the age group.

### DCDSTAT

This variable indicates which samples are available. In some households, only a single sample (either window sill or floor) was taken. This variable was derived based on final results from the laboratory.

### DCD030

The room where the sample was taken was most often the same room where the child spent most of his or her time in the home. In editing this variable, some responses from the "other" category were re-coded to pre-existing categories, and additional categories were created.

### DCD070A

Carpet in room selected for sample. Response categories ordering from the original question were reordered for purposes of clarification and consistency.

It is advised that this data file should be combined with additional years of data because data are available on a small subset of the survey population. This data file was designed to be used primarily at the SP level with other data collected in the MEC. Please note, data were retained for persons who took part in the household interview (including dust collection) but were not examined at the MEC.

### **LBXDFS**

Floor sample, lead dust result ( $\mu\text{g}/\text{sq ft}$ ), by GFAAS. All floor dust results are derived from a 1 square foot area, the size of the template used for the sample collection. If a floor sample was collected but the result is missing for LBXDFS, use LBXDFSF. Use LBDDFSLC, the laboratory comment code, to determine values below the limit of detection.

### **LBXDFSF**

Floor sample, lead dust result ( $\mu\text{g}/\text{sq ft}$ ) by FAAS. All floor dust results are derived from a 1 square foot area, the size of the template used for the sample collection. If a floor sample was collected but the result is missing for LBXDFSF, use LBXDFS. Use LBDD3LC, the laboratory comment code, to determine values below the limit of detection.

### **LBXDDWS**

Window sill sample, lead dust result ( $\mu\text{g}/\text{sq ft}$ ). All window sill dust results were calculated based on the measured length and width of the window sill area. Use LBDDWSLC, the laboratory comment code, to determine values below the limit of detection.

## **References**

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing. Washington, DC: United States Department of Housing and Urban Development; 1995.

## Locator Fields

**Title:** Lead Dust

**Contact Number:** 1-866-441-NCHS

**Years of Content:** 1999-2000

**First Published:** June 2006

**Revised:** N/A

**Access Constraints:** None

**Use Constraints:** None

**Geographic Coverage:** National

**Subject:** Lead Dust

**Record Source:** NHANES 1999-2000

**Survey Methodology:** NHANES 1999-2000 is a stratified multistage probability sample of the civilian non-institutionalized population of the U.S.

**Medium:** NHANES Web site; SAS transport files

# National Health and Nutrition Examination Survey Codebook for Data Production (1999-2000)

## Lead Dust (LAB20) Person Level Data

First Published: June 2006

Last Revised: N/A



|  |                            |
|--|----------------------------|
| <b>SEQN</b>                                      | <b>Target</b>              |
|  | B(1 Yrs. to 5 Yrs.)        |
| <b>Hard Edits</b>                                | <b>SAS Label</b>           |
|  | Respondent sequence number |
| <b>English Text:</b> Respondent sequence number. |                            |
| <b>English Instructions:</b>                     |                            |

|                              |                          |
|------------------------------|--------------------------|
| <b>DCDINDEX</b>              | <b>Target</b>            |
|                              | B(1 Yrs. to 5 Yrs.)      |
| <b>Hard Edits</b>            | <b>SAS Label</b>         |
|                              | Index child for sampling |
| <b>English Text:</b>         |                          |
| <b>English Instructions:</b> |                          |

| Code or Value | Description           | Count | Cumulative | Skip to Item |
|---------------|-----------------------|-------|------------|--------------|
| 1             | Primary Child         | 795   | 795        |              |
| 2             | Other Household Child | 290   | 1085       |              |
| .             | Missing               | 0     | 1085       |              |

| <b>DCDSTAT</b>               | <b>Target</b>       |              |                   |                     |
|------------------------------|---------------------|--------------|-------------------|---------------------|
|                              | B(1 Yrs. to 5 Yrs.) |              |                   |                     |
| <b>Hard Edits</b>            | <b>SAS Label</b>    |              |                   |                     |
|                              | Dust sample status  |              |                   |                     |
| <b>English Text:</b>         |                     |              |                   |                     |
| <b>English Instructions:</b> |                     |              |                   |                     |
| <b>Code or Value</b>         | <b>Description</b>  | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 1                            | Floor Only          | 191          | 191               |                     |
| 2                            | Window Only         | 0            | 191               |                     |
| 3                            | Floor and Window    | 798          | 989               |                     |
| .                            | Missing             | 96           | 1085              |                     |

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| <b>DCD030</b>   | <b>Target</b>               |              |                   |                     |
|---|-----------------------------|--------------|-------------------|---------------------|
|   | B(1 Yrs. to 5 Yrs.)         |              |                   |                     |
| <b>Hard Edits</b>                                     | <b>SAS Label</b>            |              |                   |                     |
|   | Room where samples taken    |              |                   |                     |
| <b>English Text:</b> Room where samples taken         |                             |              |                   |                     |
| <b>English Instructions:</b> ENTER LOCATION OF SAMPLE |                             |              |                   |                     |
| <b>Code or Value</b>                                  | <b>Description</b>          | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 2   | Living Room/Family Room/Den | 823          | 823               |                     |
| 3   | Dining Room                 | 13           | 836               |                     |
| 4   | Kitchen                     | 14           | 850               |                     |
| 5   | Bedroom                     | 115          | 965               |                     |
| 7   | Another room                | 24           | 989               |                     |
| .   | Missing                     | 96           | 1085              |                     |

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| <b>DCD070A</b>  |             | <b>Target</b>                    |            |              |
|---|-------------|----------------------------------|------------|--------------|
|   |             | B(1 Yrs. to 5 Yrs.)              |            |              |
| <b>Hard Edits</b>   |             | <b>SAS Label</b>                 |            |              |
|   |             | Room selected was floor carpeted |            |              |
| <b>English Text:</b> Indicates whether floor was carpeted in room-floor sample  |             |                                  |            |              |
| <b>English Instructions:</b> ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED. |             |                                  |            |              |
| Code or Value   | Description | Count                            | Cumulative | Skip to Item |
| 1   | Yes         | 794                              | 794        |              |
| 2   | No          | 195                              | 989        |              |
| .   | Missing     | 96                               | 1085       |              |

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| <b>DCQ070B</b>  |             | <b>Target</b>               |            |              |
|---|-------------|-----------------------------|------------|--------------|
|   |             | B(1 Yrs. to 5 Yrs.)         |            |              |
| <b>Hard Edits</b>   |             | <b>SAS Label</b>            |            |              |
|   |             | Room selected had floor mat |            |              |
| <b>English Text:</b> Indicates whether mat was found in room-floor sample   |             |                             |            |              |
| <b>English Instructions:</b> ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED. |             |                             |            |              |
| Code or Value   | Description | Count                       | Cumulative | Skip to Item |
| 1   | Yes         | 13                          | 13         |              |
| 2   | No          | 976                         | 989        |              |
| .   | Missing     | 96                          | 1085       |              |

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| <b>DCQ070C</b>  |                    | <b>Target</b>              |                   |                     |
|---|--------------------|----------------------------|-------------------|---------------------|
|   |                    | B(1 Yrs. to 5 Yrs.)        |                   |                     |
| <b>Hard Edits</b>   |                    | <b>SAS Label</b>           |                   |                     |
|   |                    | Room selected had area rug |                   |                     |
| <b>English Text:</b> Indicates whether area rug was found in room-floor sample  |                    |                            |                   |                     |
| <b>English Instructions:</b> ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED. |                    |                            |                   |                     |
| <b>Code or Value</b>  | <b>Description</b> | <b>Count</b>               | <b>Cumulative</b> | <b>Skip to Item</b> |
| 1   | Yes                | 141                        | 141               |                     |
| 2   | No                 | 848                        | 989               |                     |
| .   | Missing            | 96                         | 1085              |                     |

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| <b>DCQ070D</b>  |                    | <b>Target</b>                         |                   |                     |
|---|--------------------|---------------------------------------|-------------------|---------------------|
|   |                    | B(1 Yrs. to 5 Yrs.)                   |                   |                     |
| <b>Hard Edits</b>   |                    | <b>SAS Label</b>                      |                   |                     |
|   |                    | Room selected had wall-wall carpeting |                   |                     |
| <b>English Text:</b> If there was wall to wall carpet-floor sample  |                    |                                       |                   |                     |
| <b>English Instructions:</b> ENTER ROOM CARPET CODE: CAPI EDIT: IF "NO CARPET" (CODE 2) IS SELECTED, NO OTHER CODE MAY BE SELECTED. |                    |                                       |                   |                     |
| <b>Code or Value</b>  | <b>Description</b> | <b>Count</b>                          | <b>Cumulative</b> | <b>Skip to Item</b> |
| 1   | Yes                | 705                                   | 705               |                     |
| 2   | No                 | 284                                   | 989               |                     |
| .   | Missing            | 96                                    | 1085              |                     |

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| <b>DCQ090</b>   |                | <b>Target</b>       |            |              |
|---|----------------|---------------------|------------|--------------|
|   |                | B(1 Yrs. to 5 Yrs.) |            |              |
| <b>Hard Edits</b>                                     |                | <b>SAS Label</b>    |            |              |
|   |                | Carpet pile depth   |            |              |
| <b>English Text:</b> Depth of carpeting-floor sample  |                |                     |            |              |
| <b>English Instructions:</b> ENTER CARPET PILE DEPTH: |                |                     |            |              |
| Code or Value   | Description    | Count               | Cumulative | Skip to Item |
| 1   | Low pile       | 661                 | 661        |              |
| 2   | High pile      | 101                 | 762        |              |
| 3   | Not applicable | 32                  | 794        |              |
| .   | Missing        | 291                 | 1085       |              |

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| <b>DCQ160</b>   |                          | <b>Target</b>                           |            |              |
|---|--------------------------|---|------------|--------------|
|   |                          | B(1 Yrs. to 5 Yrs.)                     |            |              |
| <b>Hard Edits</b>   |                          | <b>SAS Label</b>                        |            |              |
|   |                          | Surface condition for floor dust sample |            |              |
| <b>English Text:</b> Surface condition for floor dust sample  |                          |   |            |              |
| <b>English Instructions:</b> CAPI EDIT: IF "NO CARPET" (CODE 2) HAS BEEN SELECTED IN DCD.070, DO NOT ALLOW SELECTION OF "CARPETED" (CODE 3) IN DCQ.160. |                          |   |            |              |
| Code or Value   | Description              | Count                                   | Cumulative | Skip to Item |
| 1   | Smooth and Cleanable     | 216                                     | 216        |              |
| 2   | Not Smooth and Cleanable | 9                                       | 225        |              |
| 3   | Carpet                   | 59                                      | 284        |              |
| .   | Missing                  | 801                                     | 1085       |              |

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|   |                    |                      |                   |                     |
|---|--------------------|----------------------|-------------------|---------------------|
| <b>DCQ240</b>                             |                    | <b>Target</b>        |                   |                     |
|   |                    | B(1 Yrs. to 5 Yrs.)  |                   |                     |
| <b>Hard Edits</b>                         |                    | <b>SAS Label</b>     |                   |                     |
|   |                    | Window sill finished |                   |                     |
| <b>English Text:</b> Window sill finished |                    |                      |                   |                     |
| <b>English Instructions:</b>              |                    |                      |                   |                     |
| <b>Code or Value</b>                      | <b>Description</b> | <b>Count</b>         | <b>Cumulative</b> | <b>Skip to Item</b> |
| 1   | Yes                | 697                  | 697               |                     |
| 2   | No                 | 101                  | 798               |                     |
| .   | Missing            | 287                  | 1085              |                     |

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|   |                          |  |                   |                     |
|---|--------------------------|--|-------------------|---------------------|
| <b>DCQ250</b>   |                          | <b>Target</b>                          |                   |                     |
|   |                          | B(1 Yrs. to 5 Yrs.)                    |                   |                     |
| <b>Hard Edits</b>   |                          | <b>SAS Label</b>                       |                   |                     |
|   |                          | Surface condition for sill dust sample |                   |                     |
| <b>English Text:</b> Surface condition for sill dust sample |                          |  |                   |                     |
| <b>English Instructions:</b>                                |                          |  |                   |                     |
| <b>Code or Value</b>  | <b>Description</b>       | <b>Count</b>                           | <b>Cumulative</b> | <b>Skip to Item</b> |
| 1   | Smooth and Cleanable     | 704                                    | 704               |                     |
| 2   | Not Smooth and Cleanable | 94                                     | 798               |                     |
| .   | Missing                  | 287                                    | 1085              |                     |

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| <b>DCQ400</b>  | <b>Target</b>        |              |                   |                     |
|--|----------------------|--------------|-------------------|---------------------|
|  | B(1 Yrs. to 5 Yrs.)  |              |                   |                     |
| <b>Hard Edits</b>  | <b>SAS Label</b>     |              |                   |                     |
|  | Room cleanliness     |              |                   |                     |
| <b>English Text:</b> INTERVIEWER OBSERVATION: ROOM CLEANLINESS |                      |              |                   |                     |
| <b>English Instructions:</b>                                   |                      |              |                   |                     |
| <b>Code or Value</b>   | <b>Description</b>   | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 1  | Dirtier than average | 139          | 139               |                     |
| 2  | Average              | 616          | 755               |                     |
| 3  | Cleaner than average | 234          | 989               |                     |
| .  | Missing              | 96           | 1085              |                     |

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| <b>DCQ410</b>  | <b>Target</b>                     |              |                   |                     |
|--|-----------------------------------|--------------|-------------------|---------------------|
|  | B(1 Yrs. to 5 Yrs.)               |              |                   |                     |
| <b>Hard Edits</b>  | <b>SAS Label</b>                  |              |                   |                     |
|  | Room clutter                      |              |                   |                     |
| <b>English Text:</b> INTERVIEWER OBSERVATION: ROOM CLUTTER |                                   |              |                   |                     |
| <b>English Instructions:</b>                               |                                   |              |                   |                     |
| <b>Code or Value</b>                                       | <b>Description</b>                | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 1  | Very cluttered (nothing in place) | 118          | 118               |                     |
| 2  | Average amount of clutter         | 594          | 712               |                     |
| 3  | Organized (nothing out of place)  | 277          | 989               |                     |
| .  | Missing                           | 96           | 1085              |                     |

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|  |                          |              |                   |                     |
|--|--------------------------|--------------|-------------------|---------------------|
| <b>LBXDFS</b>  | <b>Target</b>            |              |                   |                     |
|  | B(1 Yrs. to 5 Yrs.)      |              |                   |                     |
| <b>Hard Edits</b>  | <b>SAS Label</b>         |              |                   |                     |
|  | Floor, GFAAS (ug/sq.ft.) |              |                   |                     |
| <b>English Text:</b> Floor result in micrograms per square feet by graphite furnace atomic absorption spectrophotometric method. |                          |              |                   |                     |
| <b>English Instructions:</b>   |                          |              |                   |                     |
| <b>Code or Value</b>   | <b>Description</b>       | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 0.11 to 9.02   | Range of Values          | 902          | 902               |                     |
| .  | Missing                  | 183          | 1085              |                     |

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|  |                          |              |                   |                     |
|--|--------------------------|--------------|-------------------|---------------------|
| <b>LBXDFSF</b>   | <b>Target</b>            |              |                   |                     |
|  | B(1 Yrs. to 5 Yrs.)      |              |                   |                     |
| <b>Hard Edits</b>  | <b>SAS Label</b>         |              |                   |                     |
|  | Floor, FAAS (ug/sq. ft.) |              |                   |                     |
| <b>English Text:</b> Floor result in micrograms per square feet by flame atomic absorption spectrophotometric method.  |                          |              |                   |                     |
| <b>English Instructions:</b> If the floor sample result by the GFAAS method is >5 then it is measured by the FAAS method. Only the FAAS method result is reported. |                          |              |                   |                     |
| <b>Code or Value</b>   | <b>Description</b>       | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 0.11 to 102.3  | Range of Values          | 87           | 87                |                     |
| .  | Missing                  | 998          | 1085              |                     |

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|  |                           |              |                   |                     |
|--|---------------------------|--------------|-------------------|---------------------|
| <b>LBDDWS</b>  | <b>Target</b>             |              |                   |                     |
|  | B(1 Yrs. to 5 Yrs.)       |              |                   |                     |
| <b>Hard Edits</b>  | <b>SAS Label</b>          |              |                   |                     |
|  | Window, FAAS (ug/sq. ft.) |              |                   |                     |
| <b>English Text:</b> Window result in micrograms per square feet by flame atomic absorption spectrophotometric method. |                           |              |                   |                     |
| <b>English Instructions:</b>   |                           |              |                   |                     |
| <b>Code or Value</b>   | <b>Description</b>        | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 0.38 to 7650   | Range of Values           | 798          | 798               |                     |
| .  | Missing                   | 287          | 1085              |                     |

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|                              |                                      |              |                   |                     |
|------------------------------|--------------------------------------|--------------|-------------------|---------------------|
| <b>LBDDFSLC</b>              | <b>Target</b>                        |              |                   |                     |
|                              | B(1 Yrs. to 5 Yrs.)                  |              |                   |                     |
| <b>Hard Edits</b>            | <b>SAS Label</b>                     |              |                   |                     |
|                              | Lead dust floor (GFAAS) comment code |              |                   |                     |
| <b>English Text:</b>         |                                      |              |                   |                     |
| <b>English Instructions:</b> |                                      |              |                   |                     |
| <b>Code or Value</b>         | <b>Description</b>                   | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 0                            | At or above limit of detection       | 798          | 798               |                     |
| 1                            | Below limit of detection             | 104          | 902               |                     |
| .                            | Missing                              | 183          | 1085              |                     |

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|                              |                                     |              |                   |                     |
|------------------------------|-------------------------------------|--------------|-------------------|---------------------|
| <b>LBDD3LC</b>               | <b>Target</b>                       |              |                   |                     |
|                              | B(1 Yrs. to 5 Yrs.)                 |              |                   |                     |
| <b>Hard Edits</b>            | <b>SAS Label</b>                    |              |                   |                     |
|                              | Lead dust floor (FAAS) comment code |              |                   |                     |
| <b>English Text:</b>         |                                     |              |                   |                     |
| <b>English Instructions:</b> |                                     |              |                   |                     |
| <b>Code or Value</b>         | <b>Description</b>                  | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 0                            | At or above limit of detection      | 84           | 84                |                     |
| 1                            | Below limit of detection            | 3            | 87                |                     |
| .                            | Missing                             | 998          | 1085              |                     |

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|                              |                                    |              |                   |                     |
|------------------------------|------------------------------------|--------------|-------------------|---------------------|
| <b>LBDDWSLC</b>              | <b>Target</b>                      |              |                   |                     |
|                              | B(1 Yrs. to 5 Yrs.)                |              |                   |                     |
| <b>Hard Edits</b>            | <b>SAS Label</b>                   |              |                   |                     |
|                              | Lead dust window sill comment code |              |                   |                     |
| <b>English Text:</b>         |                                    |              |                   |                     |
| <b>English Instructions:</b> |                                    |              |                   |                     |
| <b>Code or Value</b>         | <b>Description</b>                 | <b>Count</b> | <b>Cumulative</b> | <b>Skip to Item</b> |
| 0                            | At or above limit of detection     | 496          | 496               |                     |
| 1                            | Below limit of detection           | 302          | 798               |                     |
| .                            | Missing                            | 287          | 1085              |                     |

| Hard Edits                   | SAS Label                          |       |            |              |
|------------------------------|------------------------------------|-------|------------|--------------|
|                              | Lead dust window sill comment code |       |            |              |
| <b>English Text:</b>         |                                    |       |            |              |
| <b>English Instructions:</b> |                                    |       |            |              |
| Code or Value                | Description                        | Count | Cumulative | Skip to Item |
| 0                            | At or above limit of detection     | 496   | 496        |              |
| 1                            | Below limit of detection           | 302   | 798        |              |
| .                            | Missing                            | 287   | 1085       |              |