

**Submission Format for Childhood Blood Lead Surveillance (CBLs) Data Files**  
**Updated July 10, 2019**

This document contains a list of variables that Recipients submit to CDC National Center for Environmental Health (NCEH) by the final business day of the following quarter (e.g., data collected during the first quarter is due on the final business day of the second quarter). Data submitted in text files are processed and maintained in the CDC Childhood Blood Lead Surveillance database. NCEH uses its processing software to perform data checks for required formatting on Recipient text files. Data files are parsed into separate linkable data tables (e.g., Child, Address, Lab Results, and Investigation).

<b>Table No.</b>	<b>Record Type</b>	<b>File ID</b>
1	Child	CHI
2	Address	ADD
3	Lab Results	LAB
4	Investigation	INV
5	Child-to-Address Link (optional)	LNK

Processing reports are generated and sent to Recipients, to indicate how many records were properly parsed and entered into the database and how many records were not loaded with an explanation of the rejection. Corrected records from Recipients are returned in subsequent quarterly data submissions. Therefore, NCEH has a one (1) to two (2) quarter lag with on-time data delivery. Annual Blood Lead Surveillance Reports are based on the calendar year and are published on the CDC Childhood Lead Program website.

The Recipients input data reported to their state or local jurisdiction(s) into a blood lead surveillance reporting system chosen by Recipient. Recipients are required to de-identify the data prior to delivery to NCEH. Personally identifiable information (PII), such as names and addresses of children are removed; only Child ID and Address ID are submitted to NCEH.

This information is collected under the authority of the Public Health Service Act [Section 301 (42 U.S.C. Section 241 and Section 247b-1 and 247b-3)]. CDC estimates the average public reporting burden for this collection of information as 4 hours per response, including the time for reviewing instructions, searching existing data/information sources, gathering and maintaining the data/information needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB Control Number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Information Collection Review Office, 1600 Clifton Road NE, MS D-74, Atlanta, Georgia 30333; ATTN: PRA (0920-0931).

## OVERVIEW OF DATA PROCESSING OF RECIPIENT RECORDS INTO CBLs RELATIONAL TABLE FORMATS

Each record contains a file identifier (FILEID), a program identifier (PGMID), and record-specific information to create a unique record identifier.  
FILEID + PGMID + Record-specific information  
 CHI + PGMID + CHILD\_ID  
 ADD + PGMID + ADDR\_ID  
 LAB + PGMID + CHILD\_ID + SAMP\_DATE  
 INV + PGMID + ADDR\_ID + DATE\_REF  
 LNK + PGMID + CHILD\_ID + ADDR\_ID + FIRST\_OCC

<b>BASIC FORMAT</b>
FILEID ... PGMID
CHILD_ID
ADDR_ID
TABLE-SPECIFIC FIELDS (see below)

**Basic Format** is used to create tables:

- **Table 1** - Child;
- **Table 2** - Address;
- **Table 3** - Lab Results;
- **Table 4** - Investigation; and
- **Table 5** - Child-to-Address Link (*optional*)

**CHILD\_ID ONLY TABLE**

**CHILD\_ID & ADDRESS\_ID TABLES**

**ADDRESS\_ID ONLY TABLES**

<b>Table 1: CHILD</b>
CHI ... PGMID Positions 1-12
CHILD_ID Positions 13-20
CHILD FIELDS Positions 21-49

<b>Table 3: LAB RESULTS</b>
LAB ... PGMID Positions 1-12
CHILD_ID Positions 13-20
ADDR_ID Positions 29-36
LAB RESULTS FIELDS Positions 21-144

<b>Table 2: ADDRESS</b>
ADD ... PGMID Positions 1-12
ADDR_ID Positions 13-20
ADDRESS FIELDS Positions 21-73

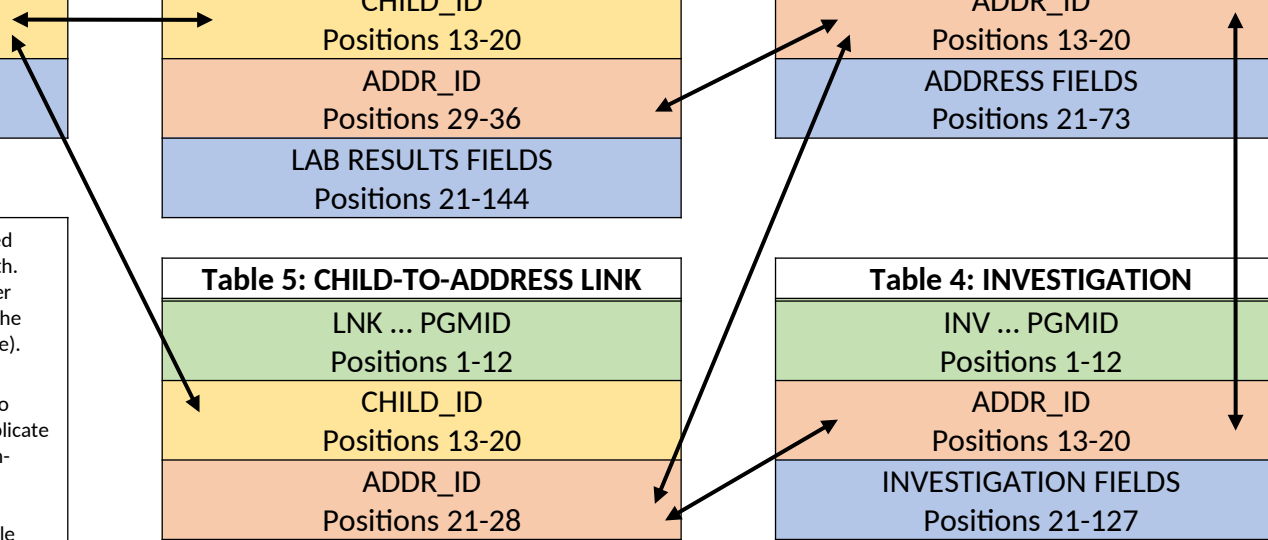
Data must be submitted by Programs in ASCII fixed field length (non-delimited), variable record length. Each record must have a unique numeric identifier determined by the values in the FILEID field and the unique identifier for each record (described above).  
 Each record submitted is validated for correct formatting and coding. Within each submission to NCEH, there should be no duplicate records. Duplicate records are not loaded into the database and non-duplicate record validation, ensures:

- One unique CHI record
- One unique LAB record per child per sample date

(see Appendix for more details)

<b>Table 5: CHILD-TO-ADDRESS LINK</b>
LNK ... PGMID Positions 1-12
CHILD_ID Positions 13-20
ADDR_ID Positions 21-28
LINK FIELDS Positions 29-45

<b>Table 4: INVESTIGATION</b>
INV ... PGMID Positions 1-12
ADDR_ID Positions 13-20
INVESTIGATION FIELDS Positions 21-127



**CHILDHOOD BLOOD LEAD SURVEILLANCE (CBLs) RECORD AND TABLE FORMATS**

<b>Record Type: Basic Format</b>		
<b>Position</b>	<b>Field Name</b>	<b>Valid Values - Description</b>
1-3	FILEID	File identifier for record type. <b>REQUIRED</b> CHI - Child ADD - Address LAB - Lab INV - Investigation LNK - Child-to-address link
4	ACTION	Database action code. <b>REQUIRED</b> A - Add record C - Change/replace D - Delete
5	QTR	Reporting quarter. All annual submissions should be "4" for fourth quarter. <b>REQUIRED</b> 1 - First quarter (1/01/yy - 3/31/yy) 2 - Second quarter (4/01/yy - 6/30/yy) 3 - Third quarter (7/01/yy - 9/30/yy) 4 - Fourth quarter (10/01/yy - 12/31/yy)
6-7	RPT_YR	Reporting year. <b>REQUIRED</b> Last two digits of the reporting year. Must be numeric.
8-12	PGMID	Program identifier. <b>REQUIRED</b> A unique identifier for the Recipient submitting the data, or for each lead reporting database within the Recipient jurisdiction. The first two positions must contain the state FIPS (Federal Information Processing Standard) code. The next three positions are assigned for uniqueness for each lead database within a state. Program ID is obtained from the CDC's Lead Surveillance Team.
13-20	CHILD_ID	Child identifier. <b>REQUIRED</b> A unique identifier for a child; must be numeric and zero-filled. This would generally be a system-assigned sequential number within a database. The identifier is used in relational databases to eliminate redundant data. The child information exists only once, in one physical record, and is linked to related records by the child identifier. When records from two or more databases are combined, the combination of PGMID and CHILD_ID form a unique identifier within the combined database.
13-20	ADDR_ID	Address identifier. <b>REQUIRED</b> A unique identifier for an address; must be numeric and zero-filled. This would generally be a system-assigned sequential number within a database. The identifier is used in relational databases to eliminate redundant data. The address information exists only once, in one physical record, and is linked to related records by the identifier. When records from two or more databases are combined, the combination of PGMID and ADDR_ID form a unique identifier within the combined database.
21-249	---	Table-specific variable format area based on required reporting.  The contents and format depend on the value in the field FILEID. See Tables 1-5 to follow.

**Table: 1**  
**Record Type: Child**  
**FILEID: CHI**

Position	Field Name	Valid Values - Description
1-3	FILEID	CHI - Child. <b>REQUIRED</b> File identifier for record type.
4	ACTION	Database action code. <b>REQUIRED</b> A - Add record C - Change/replace D - Delete
5	QTR	Reporting quarter. All annual submissions should be "4" for fourth quarter. <b>REQUIRED</b> 1 - First quarter (1/01/yy - 3/31/yy) 2 - Second quarter (4/01/yy - 6/30/yy) 3 - Third quarter (7/01/yy - 9/30/yy) 4 - Fourth quarter (10/01/yy - 12/31/yy)
6-7	RPT_YR	Reporting year. <b>REQUIRED</b> Last two digits of the reporting year. Must be numeric.
8-12	PGMID	Program identifier. <b>REQUIRED</b> A unique identifier for the Recipient submitting the data, or for each lead reporting database within the Recipient jurisdiction.
13-20	CHILD_ID	Child identifier. <b>REQUIRED</b> A unique identifier for a child; must be numeric and zero-filled.
21-28	DOB	Child's date of birth. (CCYMMDD) <b>REQUIRED</b> Birth date cannot be after the end of the reporting year. Child may not be older than 16 years at the start of the reporting year.
29	SEX	Sex. <b>REQUIRED</b> 1 - Male 2 - Female 9 - Unknown
30	ETHNIC	Ethnicity (Select only one). <b>REQUIRED</b> 1 - Hispanic or Latino 2 - Not Hispanic or Latino 9 - Unknown
31	--	BLANK
32	CHELATED	Chelation therapy administered. <b>REQUIRED</b> 1 - Yes 2 - No 9 - Unknown
33	CHEL_TYPE	Type of chelation. <b>REQUIRED</b> 1 - Inpatient 2 - Outpatient 3 - Both 9 - Unknown Cannot be blank if CHELATED =1. Cannot be 1, 2, or 3 if CHELATED =2 or 9.
34	CHEL_FUND	Source of funding for the chelation therapy. <b>REQUIRED</b> 1 - Public, includes Medicaid 2 - Private insurance 3 - Parent self-pay 8 - Other 9 - Unknown Cannot be blank if CHELATED = 1.

Table: 1 (continued)

Record Type: Child

FILEID: CHI

Position	Field Name	Valid Values - Description
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Attachment 5a. CBL Variables Text Files

35	NPLSZ	Non-paint lead source - other. <b>REQUIRED</b> 1 - Yes 2 - No 9 - Unknown
36	NPLSM	Non-paint lead source - traditional medicines. <b>REQUIRED</b> 1 - Yes 2 - No 9 - Unknown
37	NPLSO	Non-paint lead source - occupation of household member. <b>REQUIRED</b> 1 - Yes 2 - No 9 - Unknown
38	NPLSH	Non-paint lead source - hobby of household member. <b>REQUIRED</b> 1 - Yes 2 - No 9 - Unknown
39	NPLSP	Non-paint lead source - pottery, imported or improperly fired. <b>REQUIRED</b> 1 - Yes 2 - No 9 - Unknown
40	NPLSC	Non-paint lead source - child occupation. <b>REQUIRED</b> 1 - Yes 2 - No 9 - Unknown
41	BIRTH	Country of birth. 1 - U.S. 2 - Other 3 - Unknown
42 to 49	RACE	Race (Select all that apply) <b>REQUIRED</b>
42	RACE_AIAN	Race: American Indian Alaska Native <b>REQUIRED</b> 1 - Yes, 2 - No
43	RACE_ASIAN	Race: Asian <b>REQUIRED</b> 1 - Yes, 2 - No
44	RACE_BLACK	Race: Black or African American <b>REQUIRED</b> 1 - Yes, 2 - No
45	RACE_NHOPI	Race: Native Hawaiian or Other Pacific Islander <b>REQUIRED</b> 1 - Yes, 2 - No
46	RACE_WHITE	Race: White <b>REQUIRED</b> 1 - Yes, 2 - No
47	RACE_OTHER	Race: Other <b>REQUIRED</b> 1 - Yes, 2 - No
48	RACE_RTAA	Race: Refuse to Answer <b>REQUIRED</b> 1 - Yes, 2 - No
49	RACE_UNK	Race: Unknown <b>REQUIRED</b> 1 - Yes, 2 - No

<b>Table: 2</b>		
<b>Record Type: Address</b>		
<b>FILEID: ADD</b>		
<b>Position</b>	<b>Field Name</b>	<b>Valid Values - Description</b>

Attachment 5a. CBL Variables Text Files

1-3	FILEID	ADD - Address. <b>REQUIRED</b> File identifier for record type.
4	ACTION	Database action code. <b>REQUIRED</b> A - Add record C - Change/replace D - Delete
5	QTR	Reporting quarter. All annual submissions should be "4" for fourth quarter. <b>REQUIRED</b> 1 - First quarter (1/01/yy - 3/31/yy) 2 - Second quarter (4/01/yy - 6/30/yy) 3 - Third quarter (7/01/yy - 9/30/yy) 4 - Fourth quarter (10/01/yy - 12/31/yy)
6-7	RPT_YR	Reporting year. <b>REQUIRED</b> Last two digits of the reporting year. Must be numeric.
8-12	PGMID	Program identifier. <b>REQUIRED</b> A unique identifier for the Recipient submitting the data, or for each lead reporting database within the Recipient jurisdiction.
13-20	ADDR_ID	Address identifier. <b>REQUIRED</b>
21-35	CITY	City name.
36-38	CNTY_FIPS	County FIPS code. <b>REQUIRED</b> Numeric, zero-filled. A list of counties their associated FIPS codes is available from HHLPPP.
39-47	ZIP	Zip code (5+4 format, no dash). Left justified, blank-fill or zero-fill.
48-49	STATE	State abbreviation (two-letter alphabetic code).
50-56	CENSUS	Census tract. Left justified, blank-fill.
57	RENOVATED	Residence renovated. <b>REQUIRED</b> 1 - Yes, once 2 - No 3 - Yes, more than once 9 - Unknown
58-65	START_REN	Date first renovation begun. (CCYYMMDD) Date must be present when RENOVATED is coded 1 or 3. Date must be blank when RENOVATED is coded 2 or 9.
66-73	COMP_REN	Date latest renovation completed. (CCYYMMDD) Cannot be earlier than START_REN. Leave blank if renovation is ongoing as of the end of the reporting year.

Table: 3 Record Type: Lab Results FILEID: LAB		
Position	Field Name	Valid Values - Description
1-3	FILEID	LAB - Lab Results. <b>REQUIRED</b> File identifier for record type.

Attachment 5a. CBLs Variables Text Files

4	ACTION	Database action code. <b>REQUIRED</b> A - Add record C - Change/replace D - Delete
5	QTR	Reporting quarter. All annual submissions should be "4" for fourth quarter. <b>REQUIRED</b> 1 - First quarter (1/01/yy - 3/31/yy) 2 - Second quarter (4/01/yy - 6/30/yy) 3 - Third quarter (7/01/yy - 9/30/yy) 4 - Fourth quarter (10/01/yy - 12/31/yy)
6-7	RPT_YR	Reporting year. <b>REQUIRED</b> Last two digits of the reporting year. Must be numeric.
8-12	PGMID	Program identifier. <b>REQUIRED</b> A unique identifier for the Recipient submitting the data, or for each lead reporting database within the Recipient jurisdiction.
13-20	CHILD_ID	Child identifier. <b>REQUIRED</b>
21-28	SAMP_DATE	Date sample was drawn. (CCYYMMDD) <b>REQUIRED</b> . May not be prior to child DOB.
29-36	ADDR_ID	Address identifier. (Unique identifier of child's primary address on the date sample was drawn) Zero-fill if unknown.
37	PREGNANT	Pregnant at time of blood lead test. 1 - Yes 2 - No 3 - N/A 9 - Unknown
38-39	--	BLANK
40	LAB_FUND	Source of funding for the laboratory test. <b>REQUIRED</b> 1 - Public, includes Medicaid 2 - Private insurance 3 - Parent self-pay 8 - Other 9 - Unknown
41	SAMP_TYPE	Sample type. <b>REQUIRED</b> 1 - Venous, blood lead 2 - Capillary, blood lead 9 - Unknown
42	TEST_RSN	Test reason. <b>REQUIRED</b> 1 - Screening (asymptomatic child without previous elevated level) 2 - Clinical suspicion of lead poisoning (child symptomatic) 3 - Confirmatory test following elevated value by fingerstick 4 - Follow-up, child with confirmed elevated level 5 - EP, not for lead-screening 9 - Unknown/other

**Table: 3 (continued)**

**Record Type: Lab Results**

**FILEID: LAB**

Position	Field Name	Valid Values - Description
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Attachment 5a. CBLs Variables Text Files

43	LAB_TYPE	Type of laboratory processing sample. <b>REQUIRED</b> 1 - Public health laboratory 2 - Commercial laboratory 3 - Clinical setting (i.e., lead screening) 9 - Unknown
44	SCRN_SITE	Type of provider ordering test, or screening site. <b>REQUIRED</b> 1 - CLPPP fixed-site specific to lead 2 - Door to door program 3 - Other fixed-site screening program, e.g. WIC 4 - Private health care provider 5 - Referred for confirmation, no screening information 9 - Unknown/other
45	METH_ANAZ	Laboratory method used to analyze sample. <b>REQUIRED</b> 1 - Inductively coupled plasma mass spectrometry (ICP-MS) 2 - Graphite furnace atomic absorption spectroscopy (GFAAS) (also known as Electrothermal Atomic Absorption Spectroscopy (ETAAS)) 3 - Anodic Stripping Voltammetry (ASV) (e.g., LeadCare®) 9 - Unknown
46-51	METH_LOD	Limit of detection of METH_ANAZ. (000.00) See Note below.
52-59	SAMP_ANAZ_DT	Date sample analyzed by lab. (CCYYMMDD) May not be prior to SAMP_DATE.
60-67	RSLT_RPT_DT	Date results reported to/received by health department. (CCYYMMDD) May not be prior to SAMP_DATE.
68-73	RESULT	Sample result measured in µg/dL. (000.00) <b>REQUIRED</b> See Note below.
74	RST_INTPCODE	Numeric result comparator (result interpretation code). <b>REQUIRED</b> 1 - Equal 2 - Less Than 3 - Greater Than
75-80	LAB_LOD	Limit of detection of the lab that performed the results. (000.00) Only needed for "No Result" test. See Note below.
81-123	LAB_NAME	Name of Laboratory that reported result
124-134	LAB_ID	Clinical Laboratory Improvement Amendment (CLIA) Number of laboratory
135-144	NPI	National Provider Identifier or NPI is a unique 10-digit identification number issued to health care providers in the United States by the Centers for Medicare and Medicaid Services (CMS).

**Note:** Laboratory sample results and limits of detection (LODs) should all be shown right-justified, zero-filled on the left, and formatted with two decimal positions. If no decimal value, format with decimal and zero (000.00).

<b>Table: 4</b>		
<b>Record Type: Investigation</b>		
<b>FILEID: INV</b>		
Position	Field Name	Valid Values - Description
1-3	FILEID	INV - Investigation. <b>REQUIRED</b> File identifier for record type.



Attachment 5a. CBLs Variables Text Files

4	ACTION	Database action code. <b>REQUIRED</b> A - Add record C - Change/replace D - Delete
5	QTR	Reporting quarter. All annual submissions should be "4" for fourth quarter. <b>REQUIRED</b> 1 - First quarter (1/01/yy - 3/31/yy) 2 - Second quarter (4/01/yy - 6/30/yy) 3 - Third quarter (7/01/yy - 9/30/yy) 4 - Fourth quarter (10/01/yy - 12/31/yy)
6-7	RPT_YR	Reporting year. <b>REQUIRED</b> Last two digits of the reporting year. Must be numeric.
8-12	PGMID	Program identifier. <b>REQUIRED</b> A unique identifier for the Recipient submitting the data, or for each lead reporting database within the Recipient jurisdiction.
13-20	ADDR_ID	Address identifier. <b>REQUIRED</b>
21-28	DATE_REF	Date address referred for investigation. (CCYMMDD) <b>REQUIRED</b>
29-36	INSP_COMP	Date address investigation inspection completed. (CCYMMDD) May not be prior to DATE_REF.
37-44	ABAT_COMP	Date address hazard remediation or abatement completed. (CCYMMDD) May not be prior to INSP_COMP.
45-48	YEAR	Year the dwelling was constructed. (YYYY) Blank if unknown. May not be after reporting year.
49	OWNERSHIP	Residential ownership status. <b>REQUIRED</b> 1 - Private, owner-occupied 2 - Rental, privately owned 3 - Rental, publicly owned 4 - Rental, Section 8 9 - Unknown
50	DWELL_TYPE	Type of dwelling. <b>REQUIRED</b> 1 - Attached, single family 2 - Day care center 3 - Detached, single family 4 - Multi-unit 5 - School 8 - Other 9 - Unknown
51	PAINT_HAZ	Dwelling with peeling, chipping, or flaking paint. <b>REQUIRED</b> 1 - Yes, interior 2 - Yes, exterior 3 - Yes, both 4 - No 9 - Not inspected Must be 9 if INSP_COMP is blank.

**Table: 4 (continued)**

**Record Type: Investigation**

**FILEID: INV**

Position	Field Name	Valid Values - Description
52-56	XRF	Highest XRF reading in mg/cm <sup>2</sup> . (000.0) See Note below.

Attachment 5a. CBLS Variables Text Files

57-64	DUST_FLOOR	Highest floor dust sample reading. (000000.0) See Note below.
65	FLOOR_MSR	Unit of measure. U - $\mu\text{g}/\text{ft}^2$ P - ppm Cannot be blank if DUST_FLOOR > 0.
66-73	DUST_SILL	Highest window sill dust sample reading. (000000.0) See Note below.
74	SILL_MSR	Unit of measure. U - $\mu\text{g}/\text{ft}^2$ P - ppm Cannot be blank if DUST_SILL > 0.
75-82	DUST_WELL	Highest window well dust sample reading. (000000.0) See Note below.
83	WELL_MSR	Unit of measure. U - $\mu\text{g}/\text{ft}^2$ P - ppm Cannot be blank if DUST_WELL > 0.
84-91	PAINT	Highest paint chip sample reading. (000000.0) See Note below.
92	PAINT_MSR	Unit of measure. U - $\mu\text{g}/\text{ft}^2$ P - ppm M - $\text{mg}/\text{cm}^2$ Cannot be blank if PAINT > 0.
93-100	SOIL	Highest soil sample reading in ppm. (000000.0) See Note below.
101-108	WATER	Highest water sample reading in ppb. (000000.0) See Note below.
109	INDHAZ	Industrial hazard near dwelling. 1 - Yes 2 - No 9 - Unknown
110-117	DATE_DUE	Date remediation due. (CCYYMMDD)

**Table: 4 (continued)**

**Record Type: Investigation**

**FILEID: INV**

Position	Field Name	Valid Values - Description
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Attachment 5a. CBLs Variables Text Files

118	INV_CLOS_RES	Investigation closure reason. A - Administratively closed B - Batch closed C - Remediation complete D - Unit demolished F - Insufficient funds I - Permanent injunction M - Family moved N - No hazard found R - Inspection refused U - No longer rental unit
119-126	CLEAR_DATE	Date clearance testing completed. (CCYMMDD)
127	CLEAR_RSLT	Clearance Testing Results 1 - Passed 2 - Failed 9 - Unknown

**Note:** Environmental sample results should all be shown right-justified, zero-filled on the left, and formatted with one decimal position. If no decimal value, format with decimal and zero (000000.0).

<b>Table: 5</b>		
<b>Record Type: Child-to-address link (Optional)</b>		
<b>FILEID: LNK</b>		
<b>Position</b>	<b>Field Name</b>	<b>Valid Values - Description</b>
1-3	FILEID	LNK - Child-to-Address Link. <b>REQUIRED</b> File identifier for record type.

Attachment 5a. CBLs Variables Text Files

4	ACTION	Database action code. <b>REQUIRED</b> A - Add record C - Change/replace D - Delete
5	QTR	Reporting quarter. All annual submissions should be "4" for fourth quarter. <b>REQUIRED</b> 1 - First quarter (1/01/yy - 3/31/yy) 2 - Second quarter (4/01/yy - 6/30/yy) 3 - Third quarter (7/01/yy - 9/30/yy) 4 - Fourth quarter (10/01/yy - 12/31/yy)
6-7	RPT_YR	Reporting year. <b>REQUIRED</b> Last two digits of the reporting year. Must be numeric.
8-12	PGMID	Program identifier. <b>REQUIRED</b> A unique identifier for the Recipient submitting the data, or for each lead reporting database within the Recipient jurisdiction.
13-20	CHILD_ID	Child identifier. <b>REQUIRED</b>
21-28	ADDR_ID	Address identifier. <b>REQUIRED</b>
29	TYPE_ADDR	Type of Address. <b>REQUIRED</b> 1 - Primary address 2 - Relocation address 3 - Alternative 4 - Supplemental 9 - Unknown
30-37	FIRST_OCC	Date the child first occupied or began spending time at address. (CCYYMMDD) <b>REQUIRED</b> May not be after the end of the reporting period.
38-45	LAST_OCC	Date the child moved from or ceased spending time at address. (CCYYMMDD) May not be prior to FIRST_OCC.

**NOTE:** There should be only one "open" link record per child (LAST\_OCC is blank) where address type code is 1 or 2. A relocation address is considered a primary address to which a child has been permanently moved to remove them from a hazardous environment.

## APPENDIX. Childhood Blood Lead Surveillance (CBLs) Submission Format

### 1. General Requirements

Data must be in ASCII fixed field length (non-delimited), variable record length. The first three positions of each record will contain a file identifier (FILEID) which governs the record format and length.

### 2. Formatting and Coding

Each record submitted will be validated for correct formatting and coding. Action codes (Position 4 in each record) will be used to determine the record processing when loading to the master database.

### 3. CHI Processing

An ACTION code of "C" (change) will

- Replace an existing record on the CDC database if the unique identifiers match *unless* it is a CHI record with a changed DOB (date of birth).
- Add "C" transactions to the database when there is no match.

If a CHI (child) change transaction is received, and the DOB is changed, the existing CHI record, the related LNK, and related LAB records will be deleted. The new transactions for this child will then be added. This is effectively the same as submitting a CHI "delete" transaction and CHI (and any related LAB and LNK) "add" transactions.

This means if you submit a CHI *change* transaction with a changed date of birth, you must include all the related information/tests for the child. LAB records already in our database will be removed because we cannot determine if they are valid for the "new" child.

### 4. DUPLICATE KEY Processing

Records with ACTION code "A" will

- Be added to the database if there is no match.
- If there IS a match (DUPLICATE KEY=match on unique identifiers, see item 5 below), and

The record type is ...	The transaction is ...
LAB, INV, or LNK	is rejected.
CHI and the DOB is different	and all related LAB and LNK transactions in the submitted file are rejected.
ADD and both CITY and ZIP are different	and all related LAB, LNK and INV transactions in the submitted file are rejected.

For CHI and ADD transactions where those data fields (DOB or both city and zip code) are not changed, the transactions will update the master files and related transactions will be processed.

Records with ACTION code “D” are processed first. When a CHI delete transaction is processed, all related LNK and LAB records are also deleted. When an ADD (address) delete transaction is processed, all related LNK and INV records are also deleted. LAB records containing that address ID are modified to clear the ID to all zeroes.

CHI and ADD record types are processed first. When other record types are loaded, the related CHI and ADD records must exist in the master file or they are rejected.

Within each submission to CDC there should be NO duplicate records. For instance, while there may be any number of lab results for a given child, there must be only one occurrence of the child record. Additionally, there may only be one LAB record per child per sample date. Duplicates are determined by the values in the FILEID field and the unique identifier for each record.

Each record contains a file identifier (FILEID), a program identifier (PGMID), and record-specific information to create a unique record identifier, as follows:

<u>FILEID</u>	<u>+ PGMID</u>	<u>+ Record-specific information</u>
CHI	+ PGMID	+ CHILD_ID
ADD	+ PGMID	+ ADDR_ID
LAB	+ PGMID	+ CHILD_ID + SAMP_DATE
INV	+ PGMID	+ ADDR_ID + DATE_REF
LNK	+ PGMID	+ CHILD_ID + ADDR_ID + FIRST_OCC

Duplicates found within the same file are rejected, since we cannot determine which is the correct transaction.

“Duplicate” lab records (more than one test per child **on the same day**) should be resolved according to these guidelines.

**If samples are all venous, take the highest test result.**

**If samples are mixed capillary and venous, take the (highest) venous.**

**If the samples are all capillary, take the lowest test result.**

## 5. Record Formats

Record formats are illustrated in the tables and follow a basic record format. The first 12 positions are consistent in every record format. Positions 13-20 contain an 8-digit numeric identifier, either for child or address, depending on the record type. The rest of the layout is dependent upon the record type or FILEID value. Tables 1 through 5 illustrate the format variations for the five specific tables.

The field names used in the tables are CBLs field labels or derivatives. All alpha characters are in upper case. All numeric fields are right justified and zero-filled unless otherwise stated. Alpha-numeric fields are left justified and padded on the right with blanks as needed.

Values are **required** in all fields in positions 1-20. Fields which have number codes must contain a valid number value. Dates which are not applicable or unknown may be blank unless the table indicates REQUIRED.

## 6. **UNIQUE IDENTIFIERS**

Each child and address must have a unique numeric identifier. This identifier will be our only way to identify the record, as we cannot use personal identifiers such as name or street address. These identifiers must remain the same from one submission to the next.

### County

As noted in the following specifications, surveillance data submitted to CDC must use the county FIPS code rather than the county name. We have a file of these codes for all states and will be happy to provide you with a file for your state. To obtain a copy of the FIPS file for your state, email the CDC's Lead Surveillance Team ([leadsurv@cdc.gov](mailto:leadsurv@cdc.gov)).

### Program ID

The program ID is a number assigned by CDC to recipients submitting surveillance data. This identifier must be present in each submitted record. When used in combination with the child ID or the address ID, the program ID will assure data submitted to the national system remains unique.

A different program ID will be assigned to each location submitting data to the state system. When the program ID is combined with the "unique" record identifier assigned by the location, it will create a "true" unique identifier for each record in the state system in the CDC Childhood Blood Lead Surveillance database.

If a state is using a system which is deployed to more than one location, and each location assigns a "unique" identifier to each child and/or each address, conflicts may arise when combining data into a single database. Each location may generate identifiers using the same approach, e.g., each location may assign the number "00000001" to the first child or address entered into the system. Therefore, the necessity for generating "unique" program identifiers per location for both child and address records within the CDC Childhood Blood Lead Surveillance database is critical.

CDC's Lead Surveillance Team assigns and maintains the program IDs. Each recipient receives at least one unique program ID to be utilize when submitting data. If your state collects data from several related sites and requires additional program IDs, please write or email to Lead Surveillance support [[leadsurv@cdc.gov](mailto:leadsurv@cdc.gov)] with a list of valid jurisdiction names and locations, and we will assign a program ID number for each location.