Imiq Database Design Specifications

# Data Dictionary

## Imiq Table and Field Structure.

The following is a description of the tables, data types and data of the Imiq. Examples are given of the information stored in each field, constraints imposed on each field, and the origin of each field (CUAHSI, UAF-IARC, Berkeley-Sensor). In some cases fields originating from one database are stored in a table originating from another database -- "Berkeley Sensor / CUAHSI" means that the table is from Berkeley sensor, but the field was originally associated with the CUAHSI ODM database. Tables are organized by the order in which they should be added to the database. Controlled vocabulary tables are not included. For more information on the controlled vocabulary tables, see the "CUAHSI Community Observation Data Model Design (ODM) Version 1.1 Design Specifications" (Tarboton et al 2008).

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| ISOMetadata | This table lists project level metadata for partial compliance with the draft ISO 19115 standards. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| MetadataID | integer | Primary key. Unique integer identifier. | "23" | mandatory, primary key | CUAHSI |
| TopicCategory | nvarchar(255) | Describes a broad topic category for data that is populated by the TopicCategoryCV lookup table. | "biota", "inlandWaters", "climatology/meteorology/atmosphere" | mandatory, foreign key | CUAHSI |
| Title | nvarchar(255) | Title of project -- the title should be somewhat descriptive and include limited information about location and variables measured. | "Climate monitoring in the Kuparuk River Basin" | mandatory | CUAHSI |
| Abstract | nvarchar(MAX) | Abstract for a specific data source. This abstract should be related to the TopicCategory selected in the previous field. |  | mandatory | CUAHSI |
| ProfileVersion | nvarchar(255) | The profile version of metadata. | "ISOXXX" | mandatory | CUAHSI |
| MetadataLink | nvarchar(500) | Additional metadata provided by the data source can be linked here. | "http…" | optional | CUAHSI |

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| Sources | Source information for the Sites that are populating the database. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| SourceID | integer | Primary key. Unique integer identifier. | "149" | mandatory, primary key | CUAHSI |
| Organization | nvarchar(255) | Name of the organization that collected or published the data. | BLM and UAF\_WERC | mandatory | CUAHSI |
| SourceDescription | nvarchar(MAX) | A more detailed description of where the data was actually obtained and/or is currently stored. For example, data were obtained from a scanned report (see citation link) and are now stored in a csv file on Xxxx XXXX's computer in documents/sources/Xxxx/Xxxxx/Xxxxx.csv." | "http…" or "frost.ine.uaf.edu/documents…" | mandatory | CUAHSI |
| SourceRole | nvarchar(50) | Notes whether the source is the 'originator', 'publisher' or both. |  | mandatory | UAF-IARC |
| SourceLink | nvarchar(500) | Link that can be pointed at the original data file, associated metadata, and/or project website. | "http…" | optional | CUAHSI |
| ContactName | nvarchar(255) | Name of contact for information about data. | "Jane Doe" | mandatory | CUAHSI |
| Phone | nvarchar(255) | Phone number of contact. | xxx-xxx-xxxx | mandatory | CUAHSI |
| Email | nvarchar(255) | Email address of contact. | [xxxxx@xxx.xxx](mailto:xxxxx@xxx.xxx) | mandatory | CUAHSI |
| Address | nvarchar(255) | Street address of contact. | 456 Xxxxxx St. | mandatory | CUAHSI |
| City | nvarchar(255) | City associated with contact person's mailing address. | Fairbanks | mandatory | CUAHSI |
| State | nvarchar(255) | State/territory associated with contact person's mailing address. | AK | mandatory | CUAHSI |
| ZipCode | nvarchar(255) | Zip code associated with contact's mailing address. | 99709 | mandatory | CUAHSI |
| Citation | nvarchar(MAX) | Citation to be used when the data from this source is used. When available, journal citations should be used. Published dataset example: Y. Xxxxx, Z. Rrrrrrr, and M. Nnnnnn. Surface water and fisheries data collected between 2002 and 2006 at Xxxxx. Hyperlink. (year and date of retrieval). Published article example: Y. Xxxxx, Z. Rrrrrrr, and M. Nnnnnn. 2009. Vulnerability of XXX to climate change. Water Resources Research. 92(9): 172-187. |  | mandatory | CUAHSI |
| MetadataID | integer | Integer identifier that references the record in the ISOMetadata table. | 23 | mandatory, foreign key | CUAHSI |

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| Organizations | Data source that is associated with multiple organizations. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| OrganizationID | integer | Integer identifier that references a record in the OrganizationDescriptions table. | 60 | mandatory, foreign key | UAF-IARC |
| SourceID | integer | Integer identifier that references the record in the Sources table. | 142 | mandatory, foreign key | UAF-IARC |

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| OrganizationDescriptions | Organizations, which are associated with Sources. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| OrganizationID | integer | Primary key. Unique integer identifier. | 60 | mandatory, Primary key | UAF-IARC |
| OrganizationCode | nvarchar(50) | Organization code used by organization that collects the data. | “USGS” | mandatory | UAF-IARC |
| OrganizationDescription | nvarchar(max) | Full text description of the organization. | “U.S. Geological Survey” | mandatory | UAF-IARC |

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| Processing (Optional) | The Processing table lists Qa/Qc that was done to the Sources, ISOMetadata and Sites tables. It also lists any known data restrictions, priority of data entry and processing needs that need to be done. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| ProcessingID | integer | Primary key. Unique integer identifier. |  | mandatory, primary key | UAF-IARC |
| SourceID | integer | Integer identifier that references a record in the Sources table. |  | Optional, foreign key | UAF-IARC |
| SiteID | Integer | Integer identifier that references a record in the Sites table. |  | Optional, foreign key | UAF-IARC |
| MetadataID | integer | Integer identifier that references a record in the ISOMetadata table. |  | Optional, foreign key | UAF-IARC |
| DataRestrictions | nvarchar(255) | Any known restrictions on data | “na”, “no” | optional | UAF-IARC |
| DataPriority | integer | Priority level for data entry | “High priority”, “Low priority” | optional | UAF-IARC |
| ProcessingNeeds | nvarchar(MAX) | Things that need to be done before data are entered into the database. | enter data from field 27 field notebooks | optional | UAF-IARC |
| QaQcPerson | nvarchar(255) | Name of database team member who has performed the QaQc on a Sources, ISOMetadata or Sites record. |  | optional | UAF-IARC |
| QaQcComments | nvarchar(MAX) | The QA/QC comments | “QaQc at level A”,  "Metadata was verified by the Xxxx Xxxx, position, affillitation on 5May 2011 via email. A record of this email can be found on…."  “Fifty percent of the data values entered (hand-typed) from the report were randomly selected and qa/qc'd. Two out of 100 data values had to be corrected. These data were checked again and no additional errors were found. The other half of the data values were QA/QC'd and no additional errors were found. All variable information for this datastream was verified.” | optional | UAF-IARC |
| QaQcDate | nvarchar(50) | Date that QaQc was performed. |  | optional | UAF-IARC |

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| Sites | Site information that describes where the data values were sampled. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| SiteID | integer | Primary key. Unique integer identifier. | 2460 | mandatory, primary key | CUAHSI |
| SiteCode | nvarchar(50) | Unique text code for site. | "UAFWERC\_BettyPingoMet", "UAFWERC\_BettyPingo\_SnowSurvey" | mandatory | CUAHSI |
| SiteName | nvarchar(255) | Site name used by organization that collects data. | “USK1” | optional, | CUAHSI |
| SpatialCharacteristics | nvarchar(50) | Indicates whether site is a point, polygon, linestring. | “point”, “polygon” | mandatory | SciScope |
| SourceID | integer | Integer identifier that references the record in the Sources table. | 149 | mandatory, foreign key | CUAHSI |
| VerticalDatum | nvarchar(255) | Vertical datum of the elevation. Use Controlled Vocabulary. | “NAVD88”, “Unknown” | optional, foreign key | CUAHSI |
| LocalProjectionID | integer | Integer identifier that references a record in the SpatialReferences table. For this implementation, all local coordinates should be converted to WGS84, so that the spatial capabilities of SQL Server 2008 R2 can be utilized. | NULL | optional | CUAHSI |
| PosAccuracy\_m | float | Positional accuracy of coordinates in meters. | 30 | optional | CUAHSI |
| State | nvarchar(255) | State/territory where site is located. | “AK”, “Yukon” | optional | CUAHSI |
| County | nvarchar(255) | County /country where site is located. | “North Slope Borough”, “Canada” | optional | CUAHSI |
| Comments | nvarchar(MAX) | Any additional site comments that are not related to the location of the site. | "GPS location was recorded while flying over site", "coordinates were inferred from Google Maps". | optional | CUAHSI |
| LatLongDatumID | integer | Foreign key references SpatialReferenceID in SpatialReferences table. To enable spatial calculations, all datum should be WGS84 (the code for this is 3). | 3 (WGS84) | mandatory, foreign key | CUAHSI |
| GeoLocation | nvarchar(MAX) | Coordinates and elevation given in a specific format for points and polygons. Latitude and Longitude should be in decimal degrees. Elevation is in meters. Point locations are stored as "Point (long lat elevation)". | POINT(-141.78956 69.12345 312),  POLYGON (-146.34425083697045 69.688296227508985, -146.34308827446938 69.688355477509049,...) | optional | SciScope |
| LocationDescription | nvarchar(MAX) | Description of location from publication or project web site. | "Station is on east bank of XX Rver. Surrounding vegetation consists of…." | optional | UAF-IARC |

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| Attributes (Optional) | Lookup table, used with the SiteAttributes table, of attributes for a Site. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| AttributeID | integer | Primary key. Unique integer identifier. | 1 | mandatory,  primary key | UAF-IARC |
| AttributeName | nvarchar(255) | The name of the attribute. | “Water Type”, “Citation”, “References” | mandatory | UAF-IARC |

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| SiteAttributes (Optional) | Lists site attributes values that are non-numeric. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| SiteID | integer | Integer identifier that references a record in the Sites table. |  | mandatory,  foreign key | UAF-IARC |
| AttributeID | integer | Integer identifier that references a record in the Attributes table. | 1 | mandatory,  foreign key | UAF-IARC |
| AttributeValue | nvarchar(255) | The non-numeric data value | "Lake", "Stream" | mandatory | UAF-IARC |
| AttributeComment | nvarchar(MAX) | Attribute comment. |  | optional | UAF-IARC |

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| Incidents (Optional) | Lists natural or anthropogenic incidents, that may have affected a site, data values or an instruments ability to collect data. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| IncidentID | integer | Primary key. Unique integer identifier. |  | mandatory, primary key | UAF-IARC |
| SiteID | integer | Integer identifier that references a record in the Sites table. |  | optional | UAF-IARC |
| DatastreamID | integer | Integer identifier that references a record in the Datastreams table. |  | optional | UAF-IARC |
| StartTime | Datetime | When incident started -- note this does not refer to the measurement start time. | 4/3/2011 | optional | UAF-IARC |
| StartPrecision | nvarchar(255) | Precision of the recorded incident start time. | "sometime after 4/3/2011" | optional | UAF-IARC |
| EndTime | Datetime | When incident ended. | 9/30/2011 | optional | UAF-IARC |
| EndPrecision | nvarchar(255) | Precision of the recorded incident end time. | "one day" | optional | UAF-IARC |
| Type | nvarchar(255) | Type of incident that affected data collection or values. | "animal attack", "sensor malfunction", "programming error", etc | mandatory | UAF-IARC |
| Description | nvarchar(MAX) | Detailed description of what happened (or what state equipment was found in" and what measurements may have been affected | "Found met station tripod and sensors on ground on 9/30/2011, soil sensors were intact, air temperature sensor was on ground…" OR "Data logger malfunctioned…" | optional | UAF-IARC |
| ReportedBy | nvarchar(96) | Person who reported incident. | "Jane Doe" | optional | UAF-IARC |
| Comments | nvarchar(MAX) | Additional comments on incident. |  | optional | UAF-IARC |

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| Categories (Optional) | The Categories table defines the non-numeric data values for categorical variables. Records are required for Variables that have a DataType specified as "Categorical." A Variable can have multiple entries, one for each possible non-numeric data value. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| CategoryID | integer | Primary key. Unique integer identifier. |  | mandatory, primary key | UAF-IARC |
| VariableID | integer | Integer identifier that references a record in the Variables table | 12 | mandatory, foreign key | CUAHSI |
| CategoryName | nvarchar(255) | Name of the category used in the data set. | “00” ,“A” | mandatory | UAF-IARC |
| CategoryDescription | nvarchar(MAX) | Description of categorical variable value. If provided, the description of the CategoryName given by the data source. | "” None, SKC or CLR”, “Abridged Beaufort, NCDC ISH” | mandatory | CUAHSI |

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| Variables | This table provides a complete description about variables measured. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| **VariableID** | integer | Primary key. Unique integer identifier. | 42 | mandatory, primary key | CUAHSI |
| VariableCode | nvarchar(50) | Text code to identify the variable. | “USFWS\_0003” | mandatory | CUAHSI |
| VariableName | nvarchar(255) | Variable name, which is selected from the VariableNameCV table’s controlled vocabulary. | “discharge” | mandatory, foreign key | CUAHSI |
| VariableDescription | nvarchar(MAX) | Description of the variable. | discharge\_cfs\_daily\_avg\_-9999 | optional | UAF-IARC |
| Speciation | nvarchar(255) | Speciation code, which is selected from the SpeciationCV table’s controlled vocabulary. | “NO3” | mandatory, foreign key | CUAHSI |
| VariableUnitsID | integer | Measured unit, which is selected from the Units table’s controlled vocabulary. | 4 | mandatory, foreign key | CUAHSI |
| SampleMedium | nvarchar(255) | Sample medium, which is selected from the SampleMediumCV table’s controlled vocabulary. | “surface water”, “air” | mandatory, foreign key | CUAHSI |
| ValueType | nvarchar(255) | Value type, which is selected from the ValueTypeCV table’s controlled vocabulary. | "model simulation results", "field observation" | mandatory, foreign key | CUAHSI |
| IsRegular | bit | Indicates whether data are from a regularly sampled time-series (TRUE or FALSE) | "True", "False" | mandatory | CUAHSI |
| TimeSupport | float | Interval of measure. | “15” for every 15 minutes | mandatory | CUAHSI |
| TimeUnitsID | integer | Unit ID, which is selected from the Units table’s controlled vocabulary. | UnitID 104 = ‘daily’ measurement | mandatory, foreign key | CUAHSI |
| DataType | nvarchar(255) | Data type, which is selected from the DataTypeCV table’s controlled vocabulary. If the data type is categorical, then there must be at least one associated CategoricalID to the VariableID. | "average", "categorical", "continuous", "cumulative", "minimum" | mandatory, foreign key | CUAHSI |
| GeneralCategory | nvarchar(255) | General category, which is selected from the GeneralCategoryCV table’s controlled vocabulary. | "water quality", "climate" | mandatory, foreign key | CUAHSI |
| NoData value | float | Numeric value used to encode no data values for this variable. | -9999 | mandatory | CUAHSI |

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| Devices | This table provides a description of devices used to collect data. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| **DeviceID** | integer | Primary key. Unique integer identifier. |  | mandatory, primary key | Berkeley Sensor |
| DeviceName | nvarchar(255) | Make and model or type of device | WS2000 CRX | mandatory | Berkeley Sensor |
| SerialNumber | nvarchar(50) | Serial number associated with device | 1728360271 | optional | Berkeley Sensor |
| DateActivated | date | date sensor was activated | 3/4/2010 | optional | Berkeley Sensor |
| DateDeactivated | date | date sensor was deactivated | 3/6/2011 | optional | Berkeley Sensor |
| Comments | nvarchar(MAX) | how the device was installed, what height, etc |  | optional | Berkeley Sensor |

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| Methods | This table provides a description of methods used to collect data. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| **MethodID** | integer | Primary key. Unique integer identifier. | 6 | mandatory, primary key | CUAHSI |
| MethodName | nvarchar(255) | Name of method used. |  | mandatory |  |
| MethodDescription | nvarchar(MAX) | Description of method. | "turbidity was measured using a Horiba XXX…" | mandatory | CUAHSI |
| MethodLink | nvarchar(500) | Link to additional reference material on method. |  | optional | CUAHSI |

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| QualityControlLevels (Optional) | This table references the quality control levels used to indicate what level of quality control data has been through and allows for versioning of the data in the database. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| **QualityControlLevelID** | integer | Primary key. Unique integer identifier. | 0, 1, 2, 3, 4, or 5 | mandatory, primary key | CUAHSI |
| QualityControlLevelCode | nvarchar(50) | Code used to identify the level of quality control to which data values have been subjected. | "raw", "qc checked", etc | mandatory, no tab line feed or carriage return characters | CUAHSI |
| Definition | nvarchar(255) | Definition of quality control level | "Raw data", "quality control level", "published data", etc. | mandatory, no tab line feed or carriage return characters | CUAHSI |
| Explanation | nvarchar(MAX) | Explanation of quality control level | "raw data has not undergone quality control" | mandatory | CUAHSI |

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| OffsetTypes (Optional) | This table describes measurement offsets, including vertical and horizontal offsets. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| **OffsetTypeID** | integer | Primary key. Unique integer identifier. | 3 | mandatory, primary key | CUAHSI |
| OffsetUnitsID | integer | Units for horizontal or vertical offset, which is selected from the Units table’s controlled vocabulary. |  | mandatory, foreign key | CUAHSI |
| OffsetDescription | nvarchar(MAX) | Description of offset type. | “vertical distance above ground in meters” | mandatory | CUAHSI |

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| Datastreams | This table lists relevant information about a particular datastream. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| **DatastreamID** | integer | Primary key. Unique integer identifier. | 312 | mandatory, primary key | Berkeley Sensor |
| DatastreamName | nvarchar(255) | Name of the datastream. | “WindDir\_Jago\_10\_meter” | mandatory, foreign key | Berkeley Sensor |
| SiteID | integer | Integer identifier that references a record in the Sites table | 2300 | mandatory, foreign key | Berkeley Sensor / CUAHSI |
| VariableID | integer | Integer identifier that references a record in the Variables table | 57 | mandatory, foreign key | Berkeley Sensor / CUAHSI |
| FieldName | nvarchar(50) | Field name of incoming datastream. | “airtemp\_2m” | optional | Berkeley Sensor |
| DeviceID | integer | Integer identifier that references a record in the Device table | 7 | mandatory, foreign key | Berkeley Sensor |
| MethodID | integer | Integer identifier that references a record in the Methods table | 9 | mandatory, foreign key | Berkeley Sensor / CUAHSI |
| Comments | nvarchar(MAX) | Comments related to the incoming datastream. |  | optional |  |
| QualityControlLevelID | integer | Integer identifier that references a record in the QualityControlLevels table | 0 | optional, foreign key | Berkeley Sensor / CUAHSI |
| RangeMin | decimal(8, 2) | Minimum threshold value for a sensor | 0 | optional | Berkeley Sensor / CUAHSI |
| RangeMax | decimal(8, 2) | Maximum threshold value for a sensor | 360 | optional | Berkeley Sensor / CUAHSI |
| StartDate | date | Start date of a sensor. | 5/30/1998 | optional | IARC-UAF |
| EndDate | date | End date of a sensor. | 9/30/2000 | optional | IARC-UAF |
| AnnualTiming | nvarchar(255) | Annual timing of data collection. | May to Sept | optional | IARC-UAF |
| DownloadDate | date | Date that data set was acquired from a source. | 2/26/2010 | optional | IARC-UAF |

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| Qualifiers (Optional) | Provides additional information concerning the conditions of the weather, instrumentation, etc, that a data value was collected. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| QualifierID | integer | Primary key. Unique integer identifier. | 9 | mandatory, primary key | CUAHSI |
| QualifierCode | nvarchar(50) | Code used by organization collecting the data. | "i" | optional, no tab line feed or carriage return characters | CUAHSI |
| QualifierDescription | nvarchar(MAX) | Description of the conditions in which the data value was acquired. | "ice affected" | mandatory | CUAHSI |

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| DerivedFrom (Optional) | Contains two data values, one for the derived data value and one for the data value it was derived from. If the ValueID was derived from more than one ‘DerivedFromID’, then all should be listed separately. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| DerivedFromID | integer | The ValueID of the data value that the ‘derived from’ data value is based on. | 7 | mandatory, primary key | CUAHSI |
| ValueID | integer | The ValueID of the derived data value. | 10234568 | mandatory | CUAHSI |

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| Groups (Optional) | Groups data values that are related to each other. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| GroupID | integer | Integer identifier that references a record in the GroupDescriptions table |  | mandatory, foreign key | CUAHSI |
| ValueID | integer | Integer identifier that references a record in the Data values, RawData values or RasterData values table |  | mandatory, foreign key | CUAHSI |

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| GroupDescription (Optional) | Describes the relation of a group of data values. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| GroupID | integer | Primary key. Unique integer identifier. |  | mandatory, primary key | CUAHSI |
| GroupDescription | nvarchar(MAX) | Describes how the data values are related to each other. | "Snow survey measurements taken along a 50 meter transect near Betty Pingo, May 2011” | optional | CUAHSI |

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| Data values | Data values. If the data value is non-numeric, the data value should be NULL and the Categories table should be used. If the data value is missing, the data value should be NULL and the QualifierID should be set to a missing marker. | | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | | **Origin** |
| ValueID | integer | Primary key. Unique integer identifier. | 10265349 | mandatory, primary key | | CUAHSI |
| Data value | float | Numeric or NULL data value. The data value is NULL if it is Categorical or the data value is missing. | 6.5, NULL | optional | | CUAHSI |
| ValueAccuracy | float | Measurement accuracy of the data value. | 9.99 | optional | | CUAHSI |
| LocalDateTime | datetime | Local date and time in the following format (Month/Date/Year): 00/00/0000 0:00:00 |  | mandatory | | CUAHSI |
| UTCOffset | float | Offset in hours from UTC time for the corresponding LocalDateTime. |  | mandatory | | CUAHSI |
| QualifierID | integer | Integer identifier that references a record in the Qualifiers table |  | optional, foreign key | | CUAHSI |
| DerivedFromID | integer | Integer identifier that references a record in the DerivedFrom table |  | optional, foreign key | | CUAHSI |
| DatastreamID | integer | Integer identifier that references a record in the Datastreams table |  | mandatory, foreign key | | CUAHSI |
| CensorCode | nvarchar(50) | Indication of censoring from the CensorCodeCV controlled vocabulary. The default for this field is 'nc' (not censored). Other censor codes include codes to modify the data value, such as 'lt' for 'less than' the data value. | "lt", "gt", "nc" | optional, foreign key | | CUAHSI |
| OffsetTypeID | integer | Integer identifier that references a record in the OffsetTypes table | 2 | | optional, foreign key | Berkeley Sensor / CUAHSI |
| OffsetValue | float | A set distance from a base point that the data value was measured. | 10 | | optional | Berkeley Sensor / CUAHSI |
| CategoryID | integer | Integer identifier that references a record in the OffsetTypes table | 7 | | optional, foreign key | UAF-IARC |

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| RasterData values | Similar to the Data values table, but used for raster and grid data. This table is not currently in use and is based on SciScope’s handling of non-point data values. Please refer to: http://research.microsoft.com/pubs/70602/tr-2008-92.pdf | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| ValueID | integer | Primary key. Unique integer identifier. |  | mandatory, primary key | SciScope / CUAHSI |
| Data value | nvarchar(MAX) | GRID(3 4 5, 6 7 8), 10: Rows separated by commas and data values separated by spaces. The cell size is specified in decimal degrees. |  | optional | SciScope / CUAHSI |
| ValueAccuracy | float | Measurement accuracy of the data value. |  | optional | SciScope / CUAHSI |
| LocalDateTime | datetime | Local date and time in the following format (Month/Date/Year): 00/00/0000 0:00:00 |  | mandatory | SciScope / CUAHSI |
| UTCOffset | float | Offset in hours from UTC time for the corresponding LocalDateTime. |  | mandatory | SciScope / CUAHSI |
| QualifierID | integer | Integer identifier that references the record in the Qualifiers table |  | optional, foreign key | SciScope / CUAHSI |
| DerivedFromID | integer | Integer identifier that references the record in the DerivedFrom table |  | optional, foreign key | SciScope / CUAHSI |
| DatastreamID | integer | Integer identifier that references the record in the Datastreams table |  | mandatory, foreign key | SciScope / CUAHSI |
| CensorCode | nvarchar(50) | Indication of censoring from the CensorCodeCV controlled vocabulary. The default for this field is 'nc' (not censored). Other censor codes include codes to modify the data value, such as 'lt' for 'less than' the data value. | "lt", "gt", "nc" | optional, foreign key | / CUAHSI |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data valuesRaw | Data values that are not made available to the general public. | | | | |
| **Field Name** | **Data Type** | **Description** | **Example** | **Constraint** | **Origin** |
| ValueID | integer | Primary key. Unique integer identifier. |  | mandatory, primary key | CUAHSI |
| Data value | float | Numeric or NULL data value. The data value is NULL if it is Categorical or the data value is missing. |  | optional | CUAHSI |
| ValueAccuracy | float | Measurement accuracy of the data value. |  | optional | CUAHSI |
| LocalDateTime | datetime | Local date and time in the following format (Month/Date/Year): 00/00/0000 0:00:00 |  | mandatory | CUAHSI |
| UTCOffset | float | Offset in hours from UTC time for the corresponding LocalDateTime. |  | mandatory | CUAHSI |
| QualifierID | integer | Integer identifier that references the record in the Qualifiers table |  | optional, foreign key | CUAHSI |
| DatastreamID | integer | Integer identifier that references the record in the Datastreams table |  | mandatory, foreign key | CUAHSI |

## 

## Imiq database diagram (shown on following page).

