

Hydro DB Tables – hd_ob92xxx

AdjustFactor - stores factors for adjusting raw SHEF value

Any SHEF message record which matches the fields of the primary key are processed using the following formula

$$\text{AdjustedValue} = (((\text{RawValue} / \text{divisor}) + \text{base}) \times \text{multiplier}) + \text{adder}$$

The raw SHEF value is adjusted using the above formula and then posted to the IHFS db. This table is read at the time the shefdecoder is started. If a change is made to a record in this table, the shefdecoder must be stopped and restarted to pick up the new value.

Admin - Admin and Observer payment information.

This store holds information used for the generation of administrative and observer payment reports. It also holds the HydroBase password.

Agricultural - Stores observed agricultural values

Agricultural stores SHEF decoded observations of variables with PE codes Ax at a location that have been segregated out of the overall observations table. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

AlertAlarmVal - Stores values exceeding alert/alarm

AlertAlarmVal stores data values (obs or forecast) that have been caught by the SHEF Decoder as exceeding user set alert and alarm thresholds. These data reside here briefly until action has been taken in response to the alert or alarm condition. The aa_categ indicates whether alert or alarm and the aa_check indicates whether triggered by a value or by a rate of change.

ArealFcst - Stores areal fcst data for SSHP

Stores forecast values for SSHP with ts = FL. Note that the data applies to an area instead of a point. The "pe" can be any valid SHEF type. The lid refers to an area instead of a station.

ArealObs - Stores areal obs data for SSHP

Stores observed values for SSHP with ts = PM. Note that the values apply to an area instead of a point. The "pe" can be any valid SHEF type. The lid refers to an area instead of a station. The data in the table may be estimated based on observed data such as basin-averaged precip.

Benchmark - River Station Reference Benchmarks

This entity stores the one to several benchmark elevations defined for the river observation station by the U.S. Geodetic Survey.

City - (30-char length)

The name of a city or town. Used currently in the Observer table and the NWRTransmitter table. Note, the length in the NWRTransmitter table is 20. ;

ColorName -

The ColorName entity stores the list of color names, taken as a subset from the UNIX rgb.txt system file, that is used as a pick list for assigning colors to WHFS and Stage 3 displays. The contents of the entity are created from the AWIPS rgb.txt file. The color names in the original file are modified to cut down the list of available choices for this entity. The modifications are to use only upper case names, remove embedded blanks in the names, and remove all of the names that spell "GRAY" as "GREY". This cuts the list down from nearly 1000 choices to around 600.

ColorOverlay - user color preferences for map overlays

The ColorOverlay entity stores preferences for the colors of map overlays in Post Analysis. The settings are unique for each user and application program. The overlay_type and color_name define the set of colors to use for the map displays. Not currently used by MPE Editor.

ColorValue - user color preferences for thresholded values

The ColorValue entity stores preferences for threshold values and colors for various data displays such as the HydroView FFG displays, the HydroView MAP displays, the HydroView Area-Wide displays, the HydroView gridded radar displays, and various Stage 3 areal displays. The settings are unique to each user and application program. The color_use_name and duration identify what kind of display. The threshold_value and color_name define the set of colors to use for that display. The threshold_unit field allows for threshold values in English or Metric units

CommentValue - Stores obs value level SHEF comments

CommentValue stores comments that have been included in SHEF messages. These comments can be assigned to the level of an observed or forecasted value using the primary key of location, SHEF PEDTSEP, and time. All comments for any type of SHEF data (based on type-source or physical element) are stored in this one table unlike how the actual data are segregated by type-source and physical element.

Contacts - Location Phone Contacts

This entity stores several contact phone numbers for individuals to contact in the event of severe weather or gage malfunction at a station location. The priority attribute allows prioritization of those contacts for a station location.

ContingencyValue - Stores decoded SHEF data from ts=C* messages
Table ContingencyValue stores all decoded values that arrive from the SHEF Decoder where the SHEF type-source code is C* (i.e., contingency values). Contrast this with forecast values which have type-source code F* and observed values which have type-source code R*. ContingencyValue is structured like one of the forecast PE tables for easy access by application code.

CoopComms - A look-up table of all Coop obs comm types
This is a simple look-up table of all defined communication types (phone, rosa, etc.) for Cooperative observers. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the comm type mnemonic.

CoopRecip - A look-up table of first coop obs recipients
This is a simple look-up table of all defined first recipients of cooperative observer observations. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the first recipient mnemonic.

CoopSpons - A look-up table of all Coop obs sponsors
This is a simple look-up table of all defined sponsor funding codes vs. organizations of cooperative observers. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the coop sponsor mnemonic.

Counties - County names

CountyNum - range 001x - 999x
The 3-character FIPS county code for any county in the U.S plus a character to indicate a sub-area within that county for use in Watches and Warnings. The code is only unique within a state. As used in the NatCounty and NatDamLocation tables for DamCat, this element is char(3) - only the FIPS code.

CountyTransmit - NWR transmitter-county link
This entity embodies the many-to-many relationship between NOAA Weather Radio transmitters and the counties that are served by them. That is, a transmitter may serve one or more counties and a county may be served by one or more transmitters. Those links are stored here.

Crest - River Station High Water Events
This entity stores information about significant historical river crest events at this station.

CurPC - Stores PC precip observations for just last XX hours
Stores SHEF decoded observations of variables with PE code = PC for a location. It is exactly the same as the RawPC table but stores only the last XX hours of precip by station. These data are a copy of the last XX hours of data in the RawPC table. This is a de-normalization of the precip data to serve to satisfy on-demand requirements for precip accumulation and display. This table was added in OB5.

CurPP - Stores PP precip observations for just last XX hours

Stores SHEF decoded observations of variables with PE code = PP for a location. It is exactly the same as the RawPP table but stores only the last XX hours of precip by station. These data are a copy of the last XX hours of data in the RawPP table. This is a de-normalization of the precip data to serve to satisfy on-demand requirements for precip display. This table was added in OB5. Units of values = inches

DailyPP - Stores observed 24hr precip values

This table holds the Level1 and Level2 processed data with pe code = "PP". Records are written to this table by the gage_pp app. Records are read from this table by the DailyQC portion of the MPEEditor application

DamTypes - Look up table for all dam types

Simple look-up table of all defined types of dams. It is used to drive the HydroBase user interface. It currently contains only one column, the dam type mnemonic.

DataLimits - data range limits for all stations

This entity stores data limits (i.e., quality control ranges and alert/alarm limits) by SHEF physical element code, SHEF duration code, and time of year. These are the default data limits that apply to all station locations and areas except where overridden by station-specific data limits stored in LocDataLimits. The time-of-year limits specified with monthdaystart and monthdayend will be subject to the rules that they are not allowed to overlap in any way for the same pe + dur and that monthdaystart must always be <= to monthdayend (i.e., no wrapping past the end of the calendar year). Note, if any of the range or alert/alarm limits are NULL, then those checks are not performed.

Datum - River Station Reference Elevations

This entity stores the one to several reference elevations computed for a river observation station that may differ by date of survey.

Dcp - range F - a station is not a DCP station T - a station is a DCP

A true/false flag indicating whether a station is a Data Collection Platform (DCP) station or not.

DcpOwner - A look-up table of all DCP owners

This is a simple look-up table of all defined owners of DCPs. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the DCP owner mnemonic. It could be expanded to add a description column.

DefiningIssueCriteria - A look-up table for Forecast Services issuance criteria

Current entries are DailyDuringFcstIssueStage DuringDrought DailyMandatorySeasonal MandatorySpringSnowmeltOutlook OptionalSpringSnowmeltOutlook CrestFcst DailyMandatory AsRequested Other

Descrip - River Station Textual Description

This entity stores several textual attributes which describe a river observation station's environment, such as dimensions, topography, and reservoir regulation.

DhrAdapt - holds DHR adaptation parameters

This entity stores a group of parameters known as adaptation parameters. These are part of the Digital Hybrid Reflectivity (DHR) gridded product generated by the NEXRAD radar

DhrRadar - Holds Stage I radar data

This table holds information read from the Digital Hybrid Reflectivity (DHR) product from NEXRAD Stage I processing. These products are 1 deg x 1 km grids of reflectivity under radar umbrellas. The gridded data is in a UNIX file named by the attribute in the grid_filename column. The path to these files is a .Apps_defaults token

Discharge - discharge value

DpaAdapt - holds DPA adaptation parameters

This entity stores a group of parameters known as adaptation parameters. These are part of the Digital Precipitation Array (DPA) gridded product generated by the NEXRAD radar.

DpaRadar - Holds Stage I radar data

This table holds information read from the Digital Precipitation Accumulation (DPA) product from NEXRAD Stage I processing. These products are HRAP grids of hourly precipitation accumulations under radar umbrellas. The grid data is in a UNIX file named by the attribute in the grid_filename column. The path to these files is a .Apps_defaults token.

DspAdapt - holds DSP adaptation parameters

This entity stores a group of parameters known as adaptation parameters. These are part of the Digital Storm-Total Precipitation (DSP) gridded product generated by the NEXRAD radar.

DspRadar - Holds Stage I radar data

This table holds information read from the Digital Storm-Total Precipitation (DSP) product from NEXRAD Stage processing. These products are 2 km x 1 deg polar grids of precipitation accumulations generated once every volume scan. The gridded data is in a UNIX file named by the attribute in the grid_filename column. The path to these files is a .Apps_defaults token.

Eligzon - A look-up table of all forecast zones

This is a look-up table of all defined forecast zones for a WFO. The primary key allows a zone number to be reused across state boundaries for those WFOs which have multi-state responsibility.

Evaporation - Stores segregated evaporation observations
Evaporation stores SHEF decoded observations of variables with PE codes Ex at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

FcstDischarge - Stores most recent fcst water discharges
FcstDischarge stores forecast discharge values prepared for a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the forecast.

FcstGenMethod - A look-up table Forecast Services forecast generation methods
Current entries are... IFP, Batch/CRON, Other

FcstHeight - Stores most recent fcst water heights
FcstHeight stores forecast height values prepared for a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the forecast.

FcstHorizon - A look-up table Forecast Services forecast horizons
Current entries are 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 1 week, 2 weeks, 1 month, 2 months, 3 months, 6 months, 1 year, Other.

FcstOther - FcstOther stores all forecast type data for which there is no named table. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the forecast. This table was introduced in the Bld 5.1.2 database.

FcstPrecip - Stores forecast precip
FcstPrecip stores forecast precipitation values prepared for a location or an area like a basin. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the forecast.

FcstPtDeterm - Stores forecast services deterministic points
Table stores the attributes of the site's deterministic forecast points.

FcstPtEsp - Stores forecast services ESP points
Table stores the attributes of the site's ESP forecast points.

FcstPtService - Table stores the attributes of the site's forecast points.

FcstPtWatSup - Stores forecast services water supply points
Table stores the attributes of the site's water supply forecast points.

FcstTemperature - Stores forecast temperatures
FcstTemperature stores forecast temperature values prepared for a location or an area like a basin. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the forecast.

FcstType - Forecast time horizon type. Values are controlled by the FcstType table.

FishCount - Stores segregated fish count observations
FishCount stores SHEF decoded observations of variables with PE codes Fx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

Flood - Damage Statements by Flood Stage
This entity stores a damage statement and a displayable summary statement for each historical flood for each river station. It is like a store of historical damages by flood keyed by flood stage and station location.

FloodCat - River Station Flood Stage Categories
This entity stores the definitions of three flood stage and flow categories (Minor, Moderate, and Major) at this river station.

FloodStmt - River Station Flood Impact Statements
This entity stores flood impact statements for each possible combination of location, stage, rising-falling condition, and dates.

FloodTS - Flood stage observed heights stored for a station
FloodTS stores a subset of the observed height time series data from the Height table for a particular station location. The subset is for that portion of the time series that has height values that exceed the flood stage for the station. For every height that exceeds flood stage, values immediately prior to and after flood stage are stored in addition to the values above the flood stage. Each record in this table is one element of a time series (keyed by location and time). Elements of a particular connected time series are joined by use of the flood_event_id. Therefore, all observed elements of a flood event can be retrieved based on a common flood_event_id.

FlowType - Flow type column is used in the FcstPtESP table. Values are controlled by the FlowType table.

FpPrevProd - Latest RiverPro formatter state data for a station

This table holds the most recent RiverPro defined state information for a river station. It is used to know what the last river product was for a river station in order to consistently prepare the next formatted product for a river station such as flood statements and flood warnings.

FpPrevProdPractice - Practice table for FpPrevProd

Previously issued product information for each location. Same schema as FpPrevProd table. This table is used by RiverPro running in "practice" workstation mode.

FrequencyUpdate - A look-up table for Forecast Services frequency update values

Current entries are 1hour, 2hour, 3hour, 4hour, 5hour, 6hour, 12hour, 24hour, EveryOtherDay, Weekly, BiWeekly, BiMonthly, Monthly, EventDriven, Other.

Gage - River Station Gage History

This entity stores information about each automated river gage that has ever been deployed at this river station. It is keyed by location + deployment date + type of gage.

GageMaint - A look-up table of all maintainers of precip gages

This is a simple look-up table of all defined maintainers of precipitation gages at river stations. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the gage maintainer mnemonic.

GageOwner - A look-up table of all precip gage owners

This is a simple look-up table of all defined owners of precipitation gages at river stations. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the gage owner mnemonic.

GageType - A look-up table of all valid precip gage types

This is a simple look-up table of all defined types of precipitation gages at river stations. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the gage type mnemonic.

GateDam - Stores observed gate opening and dam info

GateDam stores SHEF decoded observations of variables with PE codes Nx at a location.

GeoArea - Holds boundary geographic features

The GeoArea entity stores lat/lon coordinates for boundary features that are drawn on map backgrounds such as counties, basins, etc.

Ground - Stores observed ground frost & state values
Ground stores SHEF decoded observations of variables with PE codes Gx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

Height - Stores observed water heights
Height stores SHEF decoded observations of variables with PE codes Hx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

HgStation - Used by HydroGen application.

HourlyPC - Stores slotted PC data
Stores slotted PC data. (hour2 - hour1) = amount of precip which fell in hour ending at 01Z at location of gage in units of inches. Populated by gage_pp application. This table was added in OB5.

HourlyPP - Stores slotted PP data
Stores slotted hourly PP and 6hr PP data. Populated by the gage_pp application. This table was added in Build OB5. The sixhrXX columns were added in Build OB7 to store the 6hr precip values used by DailyQC

Hsa - A 3-letter code for hydrologic service area. Note, this element is typed as char(3) in tables HSA and Location but is typed as char(5) in table Admin.

HydrologicMethod - A look-up table for Forecast Services hydrologic computation methods. Current entries are :

SiteSpecific-API
SiteSpecific-SAC_SMA
NWSRFS-API-CONT
NWSRFS-API-SLC
NWSRFS-API-CIN
NWSRFS-API-HAR
NWSRFS-API-HAR2
NWSRFS-API-HFD
NWSRFS-API-MKC
NWSRFS-SS-SAC
NWSRFS-ASSIM
NWSRFS-SWB-NILE
NWSRFS-SAC-SMA
NWSRFS-XIN-SMA
NWSRFS-DistributedModel
Other

Ice - winter freezing problems

IngestFilter - Filter for ingesting data into database

This store defines the set of (Location, SHEF PE code, SHEF duration code, SHEF TS code, and SHEF extremum code) combinations that are eligible for posting observation and forecast data to the database. The ts_rank attribute lets the user prioritize alternate sources for the same parameter from the same station. The ingest attribute is a flag indicating whether this combination is to be ingested or not. Subsets of the posted observations and forecasts are specifically directed to OFS processing and MPE processing with the two flags, ofs_input and stg2_input. There is no foreign key connection back to a location table because data exist in IngestFilter for both station locations and areas such as basins.

Lake - Stores observed lake data values

Lake stores SHEF decoded observations of variables with PE codes Lx at a location. Examples are surface area and storage volume of the lake. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

LatestObsValue - Stores latest date-time & value of decoded SHEF observation data

This entity stores the latest date-time and observed value received into the database from the SHEF Decoder for every combination of location and SHEF PEDTSEP physical parameter codes. Note that the record structure is identical to ObsValue so that this table has ALL information available for the latest observation.

Lightning - Stores lightning strike observations

Each record in the table contains the HRAP x and y coordinates of the grid box, obstime and number of lightning strikes reported in the box. Table is used for gage quality control purposes.

LineSegs - Grid cells covered by an area

This store defines the HRAP grid cells which are covered by an irregular area such as a river basin, a county, or a forecast zone.

LocArea - This table is used by RiverPro. It contains a description of affected areas associated with a river forecast point.

Location - Geographic Reference Locations

This entity stores parent geographic information for various types of particular observing stations such as reservoirs, DCPs, telemetry stations, river stations, and other observer stations. Note that the "subtype" entities just mentioned are NOT mutually exclusive (i.e., a location defined in this entity may appear linked to more than one sub-entity).

LocDataLimits - data range limits overrides by station

This entity stores data limits (i.e., quality control ranges and alert/alarm limits) by station location or area, SHEF physical element code, SHEF duration code, and time of year. These are the data limits defined specifically by station location or area that override the default data limits found in DataLimits. The time-of-year ranges specified with monthdaystart and monthdayend will be subject to the rules that they are not allowed to overlap in any way for the same lid + pe + dur and that monthdaystart must always be <= to monthdayend (i.e., no wrapping past the end of the calendar year). Note, if any of the range or alert/alarm limits are NULL, then those checks are not performed. Note, this table was previously named LocRangeCheck in DB schemas prior to IHFS_DB V2.0.

LocExtAgency - connects stn locations w/ agency offices

This entity connects station locations with external cooperating agency offices in the many-to-many relationship between them. That is, a station location may be related to 0 or many agency offices and an agency office may be related to 0 or many station locations. Each combination of station location and agency office creates a record in this table.

LocImage - This table associates a picture in gif/jpeg format with a location (gage). As of OB2, there is no interface to this table.

Lowwater - River Station Low Water Events

This entity stores information about each significant low water event through history that has occurred at this station.

LWstmt - Low Water Statement

Sample record

XXXO2, QR, 400, 700, 1, "Fish species stressed in shallow water", "Applies during summer months", "County Environmental Service"

In OB8.1, changed the name of columns "criteria" and "source" to "lw_criteria" and "lw_source" to distinguish them from columns with the same name in other tables.

Moisture - Stores segregated moisture observations

Moisture stores SHEF decoded observations of variables with PE codes Mx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

MonthlyValues - Used by Site Specific application. Note that values may be adjustment factors OR actual values in mm.

Network - Data type = char(3) network (See Appendix A of NWSI 10-1307:

- **A** supports the climate network
- **B** is the primary Hydrology data network (forecast and warning and water resource forecast service program)
- **C** supports Met forecast, warning, & public service programs of WFO
- **Other** – could be Historical Climate Network, Flood Control Network, Part Time Station, or other network

NwrTransmitter - Info about NWR transmitters

This entity stores information about NOAA Weather Radio (NWR) transmitter towers for use in constructing RiverPro products to send to those towers. Note, the column, "county", has been included here even though that information is not readily available from the OSO data set. If/when the county data become available, the FK will be (county + state) back to Counties and NOT state back to State.

Observer - **F** - a station is not a manual observer station

T - a station is a manual observer station

A true/false flag indicating whether a station is a manual observer station or not.

OfficeNotes - Table is read by and written to by the RiverMon application. Table has also been used for storing internal coordination messages at sites. In OB9.0, the note column was changed to a text field which allows any size note to be stored.

OfsDataTrans - Translates SHEF data types to OFS

This store holds the translations from SHEF physical elements (defined by PE code, duration code, and extremum code) to OFS Version 5 internal data types. It also includes the forward and backward timeliness windows used for those OFS data types by ofsde.

OfsStnTrans - OFS stn id translation table

This store holds station identifier translations from original SHEF Handbook 5 station ids to station ids that are suitable for input to OFS.

PairedValue - Stores paired values, vectors

PairedValue stores special SHEF physical elements which require a second independent variable for the primary key. Examples are TB (temperature at a depth under bare soil), HQ (distance to river's edge from stake) and ST (snow temperatures at various depths). The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the forecast.

PerfLog - Performance log table for processes

This store holds computer performance information about precip processing applications submitted via the cron such as ofsde, mpe_fieldgen and db_purge.

PointDataPresets - Table contains sets of information describing the options for a given point data query made through the PointControl interface of HydroView.

PostProcessor - A look-up table for Forecast Services post processor values
Current entries are:

- ER1
- ER2D
- ER2S
- None
- Other

Power - Stores observed generation and generator data
Height stores SHEF decoded observations of variables with PE codes Vx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

Pressure - Stores Pressure observations
Pressure stores SHEF decoded observations of variables with PE codes PA at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

ProcValue - Stores decoded SHEF data from ts=P* messages
Table ProcValue stores all decoded values that arrive from the SHEF Decoder where the SHEF type-source code is P* (i.e., processed values). Contrast this with forecast values with type-source code F* and with observed values with type-source code R*. This table also stores processed values created from within application code such as mean areal precipitation values prepared by the mapx_whfs processor.

ProductLink - Cross table linking locations to products
This table provides the many-to-many link between locations and products that reference them. It sits between the Location table and the TextProduct table. Note that we DO NOT establish a foreign key link from here back to TextProduct. This is because we often do not actually store the products identified in this table due to storage reasons. Note that we have removed the foreign key link from here back to Location. This is because entries (for forecast data such as QPS forecast precip) can now be made in ProductLink that refer to areas as well as to station locations. Product posting time is part of the key to allow tracking of repeat arrivals of the same exact product.

Proximity - The proximity of a river gage to a river station location

PseudoGageVal - Pseudo Rain Gages for MPE

This store holds the pseudo rain gage information. Pseudo rain gages are additional rain gages created by a forecaster running MPE. Unique records in this store are distinguished by pseudo gage identifier and observation datetime. Other data include the lat/lon of the location of the pseudo gage and its data value.

Pub - River Station/Publication Xref

This entity stores the one to several publications which describe the river observation station.

PurgeDynData - Purge criteria for dynamic data tables

The PurgeDynData entity stores criteria used to decide which data are to be purged from the dynamic data tables such as Height, CurPP, CurPC, FcstHeight, etc. The purge criteria are based on time. That is, each record here tells how many hours of data to keep for a particular dynamic data table based on one of its time attributes such as obstime or basistime or validtime. The db_purge program will use this information to purge all data older than num_hours_host for primary stations and older than num_hours_backup for backup stations in the table named.

PurgeProduct - Purge criteria for TextProduct table

The PurgeProduct entity stores the criteria used to determine how to purge records from the TextProduct table so that it does not get too large. For each product, defined by its product identifier, you specify the number of versions back in time to retain in the database. When the db_purge utility executes, it will delete all records in the TextProduct table except for the last num_versions number of them. This PurgeProduct entity also stores the time information (i.e., product timestamp and database posting time) for the most recent product matching product_id that has been encountered by the SHEF Decoder. The user (through a GUI) selects the number of versions to retain while the SHEF Decoder maintains the latest product time and posting time data. Note, if num_versions is set to 0, then no products will be stored in the TextProduct table.

RadarLoc - A look-up table of all radars in area of interest

Look-up table of all radars that exist within an office's area of responsibility.

RadarResp - List of radars and their responsible sites

This table lists the NEXRAD radars and the site (normally a WFO) which is responsible for its Bias Message Generation processing

Radiation - Stores observed radiation values

Radiation stores SHEF decoded observations of variables with PE codes Rx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

Rating - River Station Rating Curve

This entity stores the rating curve that relates river stage to river flow at this station. The rating curve is defined by the several data points stored in this entity for a particular river station.

RatingShift - River Station Rating Curve Shift Info

This table stores the rating curve shift information for river station rating curves.

RawPC - Stores PC precip observations

Stores SHEF decoded observations of variables with PE code = PC at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

RawpOther - Stores all precip observations other than PP and PC

Stores SHEF decoded observations of variables with PE codes other than PC or PP at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

RawPP - Stores PP precip observations

Stores SHEF decoded observations of variables with PE code = PP at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation. units of values = inches

Refer - River Station/Reference Xref

This entity stores the names of one to several reference documents which describe river gage information at this river station.

RejectedData - Stores all Q/C rejected data

This entity stores each and every observed or forecast data value that has been rejected due to manual QC efforts by a user or automatic QC efforts by a process. A data value may have been rejected by updating an existing value or deleting an existing value. A data value may have been rejected by failure to pass an automated QC check such as the range check employed by the SHEF Decoder. The reject_type indicates whether the rejection was due to an automated process or due to a manual update or delete. All quality attributes carried with the rejected observation are carried into this table. Note that the same data value may be rejected more than once. Each and every rejection is separately captured by including the posting time to this table as part of the primary key. Therefore, the complete history of QC of a value can be traced. Also, note that the user or process that makes each change is recorded.

RequiredPeriod - A look-up table for Forecast Services required period values
Current entries are: Jan-Mar, Apr-Sep, Mar-Sep, Apr-Jul, May-Sep, Apr-Aug, Apr-peak, Spring, Fall, Other

ResCap - Reservoir Elevation/Storage Xref

This entity stores the relationship between elevation and storage for a reservoir in the reservoir entity. Each record relates one elevation with one storage capacity value for the reservoir.

Reservoir - Reservoir Reference Information

This entity stores reference information about a reservoir that is associated with a river gage station location, lid. It does contain some dam-specific information that should eventually get transitioned to dam entities in the database.

ReservoirModel - A look-up table Forecast Services reservoir models

Current entries are:

- SSSAR
- RES-SINGL
- RES-J
- FLDWAV
- None
- Other

ResOwner - A look-up table of reservoir owners

This store is a simple look-up table of all defined owners of reservoirs.

Rfc - range =

- AKRFC - Alaska
- NWRFC - Northwest
- CNRFC - California/Nevada
- CBRFC - Colorado Basin
- MBRFC - Missouri Basin
- ABRFC - Arkansas/Red River Basin
- WGRFC - West Gulf
- NCRFC - North Central
- LMRFC - Lower Mississippi
- OHRFC - Ohio
- NERFC - North East
- MARFC - Middle Atlantic
- SERFC - South East

Alphabetic identifier for River Forecast Centers. There are 13 identifiers for actual RFC offices. This data element is also used by the RWResult table but in this table its size is 8 characters so that the dummy RFC "ofstest" can be used for regression testing purposes at OH. In the RWResult table, the values are all lower case.

RiverMonGroup - River Monitor app group

RiverMonLocation - River Monitor app location

RiverStat - River Station Reference Information

This entity stores reference information about river observation stations.

RiverStatus - Contains the latest observed and forecast height and discharge data for a river. The basistime field is filled if the office receives SHEF RVF products which contain river forecasts else the field is NULL.

RoutingMethod - A look-up table for Forecast Services hydraulic computation methods

Current entries are:

- None
- TATUM
- LAG/K
- FLDWAV
- DWOPER
- LAY-COEF
- MUSKROUT
- SARROUTE
- GLACIER
- Other

RpfFcstGroup - A look-up table of all defined RiverPro Forecast Groups

This is a simple look-up table of all defined RiverPro Forecast Groups. In the WFO environment, a Forecast Group is an aggregation of forecast points that is defined for use in the RiverPro formatter. It typically includes all forecast points in a basin or sub-basin. Note, this kind of forecast group is not necessarily the same as NWSRFS Regular Forecast Groups or Special Forecast Groups. The ordinal attribute allows the user to set the order of forecast groups as displayed by RiverPro

RpfFcstPoint - The subset of river stations that are also RiverPro forecast points

This entity holds the subset of river stations which are also RiverPro forecast points. It has an optional one-to-one relationship with Riverstat. It is pulled out of Riverstat in order to define forecast services for forecast points. The forecast service entities will be defined later in some structure beneath this RpfFcstPoint entity. It also defines the membership of a RiverPro forecast point within its RiverPro forecast group (i.e., a RiverPro forecast point may be a member of one and only one RiverPro forecast group). The group_id is a foreign key that points back to the forecast group definition in RpfFcstGroup. The ordinal attribute defines the order of this forecast point within its forecast group for display by RiverPro.

RpfParams - This table holds control parameters for the RiverPro formatter application program.

RwBiasDyn - This table holds the dynamic parameters for mean field bias calculations. The values in this table appear in the mpe_fieldgen logs and can also be displayed through MPE Editor. These values are also known as the state variables.

RwBiasStat - This table holds the static parameters used for the mean field bias calculations.

RwParams - This table holds the adaptable parameters for the multisensor analysis which is done as part of the mpe_fieldgen process.

RwPrefs - This table holds the start-up display preferences for each user of MPE Editor. It sets the field to be displayed when the main window first comes up and the number of hours displayed in the choose hours window.

RwRadarResult - radar, gage and bias information
This table holds the radar related information for each radar and time. The bias value actually used along with its memory span value is stored in this table.

RwResult - information concerning the entire area wide field of analysis
This table holds information describing the Best Estimate QPE field generated by the MPE process. mpe_fieldgen checks the **auto_save** field to determine whether or not a **Best Estimate QPE** field has been manually saved. If it has been manually saved, then mpe_fieldgen will not overwrite it.

S3PostAnalParams - This table holds the set of application parameters required by the Post Analysis process. Note, this table has no primary key because it consists of one single record of four values.

S3PostAnalPrefs - This table holds the start-up preferences for each user of the Post Analysis process. It sets opening features such as which overlays shall be turned on.

SacSmaParams - Table contains sets of parameters for different locations and times for the Sacramento Soil Moisture Accounting Model. Used by the Site Specific application.

SacSmaState - Table contains sets of state (carryover) variables for a particular location and time for the Sacramento Soil Moisture Accounting Model. Used by the Site Specific application.

ServiceType - A look-up table for Forecast Services service types
Current entries are: Data, Forecast, Other

ShefDur - A simple look-up table that defines all of the SHEF duration code values. The durcode attribute is the single letter SHEF code as defined in **Table 3** of the SHEF manual. The dur attribute is a numerically coded value corresponding to the SHEF letter code for use within the applications.

ShefEx - A simple look-up table that defines all of the SHEF extremum code values.

ShefPe - This is a simple look-up table of all defined 2-letter SHEF codes for physical elements. Each 2-letter pe code is accompanied with the name of the physical element and by the English and Metric unit abbreviation to use in displays.

ShefPeTrans - Stores translations for SHEF physical elements

ShefProb - A simple look-up table that defines all of the SHEF probability code values as defined in Table 6 of the SHEF manual. The probcode attribute is the single letter SHEF code that is the alphanumeric representation of the actual numerical probability value. The probability attribute is the actual numerical probability value.

ShefQc - Look-up table of SHEF QC Codes

A simple look-up table that defines all of the SHEF Data String Qualifier QC code values

ShefTS - A simple look-up table that defines all of the SHEF type/source code combination values.

Snow - Stores snow observations

Snow stores SHEF decoded observations of variables with PE codes Sx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

SnowMethod - A look-up table for Forecast Services snow computation methods

Current entries are:

- SNOW-17
- SNOW-43
- None
- Other

SshpConfig - Used by Site Specific application

State - The 2-letter U.S. postal code abbreviation for a state, commonwealth or territory, including:

- DC - District of Columbia
- GU – Guam
- MR - Mariana Islands
- PR - Puerto Rico
- VI - Virgin Islands
- XX - undefined

StnClass - The StnClass entity stores classification information about point station locations for the purpose of quickly and easily displaying them in HydroView. This table exists purely as a de-normalization to enhance performance. The information stored here is derivable from other primary sources in the database. Each record tells what type(s) of display class(es) a station belongs to and whether it is a DCP station, whether it is a manual observer station, and what type of telemetry station it might be.

Telem - This entity stores reference information about the specific type of location that is a telemetry reporting station

TelmOwner - This is a simple look-up table of all defined owners of telemetry observation stations. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the telemetry stn gage owner mnemonic.

TelmPayor - This is a simple look-up table of all defined paying agencies of telemetry observation stations. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the telemetry paying agency mnemonic.

TelmType - This is a simple look-up table of all defined types of telemetry observation stations. It is used to drive the Hydrobase user interface with this information. It currently contains only one column, the telemetry stn type mnemonic.

Temperature - Temperature stores SHEF decoded observations of variables with PE codes Tx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

TextProduct - This store holds formatted text products that have been received from the outside world, such as SHEF observation and forecast messages, or have been issued by internal software applications, such as the RiverPro formatter. Each text product is identified by its product identifier and its timestamp. In the odd case of repeat arrivals of the exact same product, the database posting time is part of the key so that all product arrivals can be captured for inspection. The issnum attribute applies to products issued internally, not externally received products. The product field is a text field that contains the entire formatted product.

TimeZone - This table lists the time zone codes and the time zone names. It serves as the lookup table for the tzone field of the Location table.

UnitGraph - UnitGraph stores the unit hydrograph information for river stations used by the Site-Specific Hydrologic Prediction Function in WHFS. It provides a curve of river discharges at a river station (lid), that has runoff from upstream basin (area_id).

UnkStn - SHEF ids from unknown locations

This table stores location identifiers and product information for SHEF messages that cannot be properly identified and stored by the database because the location identifiers do not appear in the Location table or the GeoArea table. Note that this table differs from the UnkStnValue table in that it only stores location information and source product information - it does NOT store any data.

UnkStnValue - SHEF data from unknown locations

This table stores decoded SHEF messages that cannot be properly identified and stored by the database because their location identifiers do not appear in the Location table or the GeoArea table. It is designed to hold unknown observations but it is possible that unknown location forecasts could get in here too but with some key data lost - we could create a companion table for unknown forecasts if that becomes necessary. Note that this table differs from the UnkStn table in that it stores ALL DATA for the unknown locations.

UserPrefs - This table contains preferences that control the user interface for the HydroBase database administrator application. They are sets (keyed by user) of application setup data for this application.

Velocity - Stores u and v velocity data for HPN application.

VerifRespType - A look-up table for verification response types

Current entries are:

- Fast
- Slow
- Interm
- Other

VtecAction - This table serves as a lookup table for VTEC action codes. It is also used by RiverPro interface when presenting a pick list of choices for the field

VtecCause - This table contains the valid entries for the VTEC immediate cause field used by RiverPro.

VtecEvent - This table contains information for each VTEC event. It is loaded by RiverPro as the VTEC products are issued. Each event is uniquely identified by its geographic identifier (geoid) combined with the product identifier (productid) and the time of the product (producttime). The geographic identifier is given as either the forecast point identifier, forecast group identifier or the county identifier. Note that VTEC = Valid Time Event Code.

VtecPhenom - This table serves as a lookup table for the VTEC phenomena codes appearing in the VTECevent table. It is also used in RiverPro when presenting a pick list of choices for the field.

VtecPractice - Practice table for VTEC event handling. Schema is identical to VTECevent table

VtecRecord - This table contains (data) used by RiverPro

VtecSever - This table contains the valid VTEC severity codes used by RiverPro

VtecSignif - This table serves as the lookup table for the VTEC significance levels in the VTECevent table. It is also used by RiverPro when presenting a pick list of choices for the field.

WaterQuality - Stores water quality observations
WaterQuality stores SHEF decoded observations of variables with PE codes Wx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

WatSupCoordAgency - A look-up table for Forecast Services water supply agencies
Current entries are:

- SALT
- NRCS
- NRCS/AlbertaEnvironment StateWaterResourcesAgency
- COE
- None
- Other

WatSupCriterion - A look-up table for Forecast Services water supply criteria
Current entries are:

- HighFlow
- LowFlow
- PeakStage
- CriticalThreshold
- Volume
- Other

WatSupMethod - A look-up table for Forecast Services water supply computation methods. Current entries are:

- SWS-PrincipleComponents(Regression)
- APrioriVariables
- ESP
- SingleTraceProcedure

- Other

WatSupRespAgency - A look-up table for water supply responsible agencies

Current entries are:

- RFC
- WFO
- NRCS
- NRCS & StateWaterResourcesAgency
- RFC & NRCS
- Other

Weather - Stores weather observations

Weather stores SHEF decoded observations of variables with PE codes Xx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

Wfo - range 119 published identifiers maybe going up to 121

The 3-character identifier for a National Weather Service weather forecast office. There are currently 119 (maybe to be 121) such identifiers in the Modernized weather service. In the counties table, this field contains the wfo with primary responsibility over the county. The default value of the wfo field in the counties table is either "XXX" or the first alphabetical value of the wfo field from the location table where the location.county and counties.county field match.;

Wind - Stores wind observations

Wind stores SHEF decoded observations of variables with PE codes Ux at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

Yunique - Stores unique stn-specific values

YUnique stores SHEF decoded observations of variables with PE codes Yx at a location. The shef_qual_code attribute is the quality code decoded from the SHEF message. The quality_code attribute is an internal quality code based on combinations of quality checks that have been applied to the observation.

ZoneNum - zone number

Total = 186 rows (tables) in hd_ob92xxx database

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