## Command Reference: ReadReclamationHDB()

## Read time series from a Reclamation HDB database

Version 10.24.01, 2013-09-30

The ReadReclamationHDB () command reads one or more time series from a Reclamation HDB database:

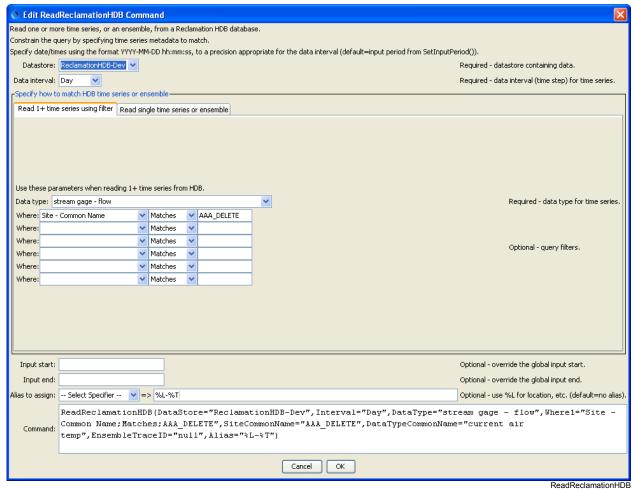
- a single "real" time series (observations)
- a single "model" time series (results from a model)
- a time series ensemble, indicated by the ensemble name, in which case each ensemble trace time series is read as a "model" time series

The primary metadata necessary to read the time series are a site data type identifier (SDI) and, if reading a model time series, a model run identifier (MRI). These values can be selected directly (from long lists), or selected through incremental selection of other data. Both options are provided for flexibility where appropriate.

See the WriteReclamationHDB() command documentation for information about writing the time series that are read by this command. See the **Reclamation HDB Data Store Appendix** for more information about the database features and limitations.

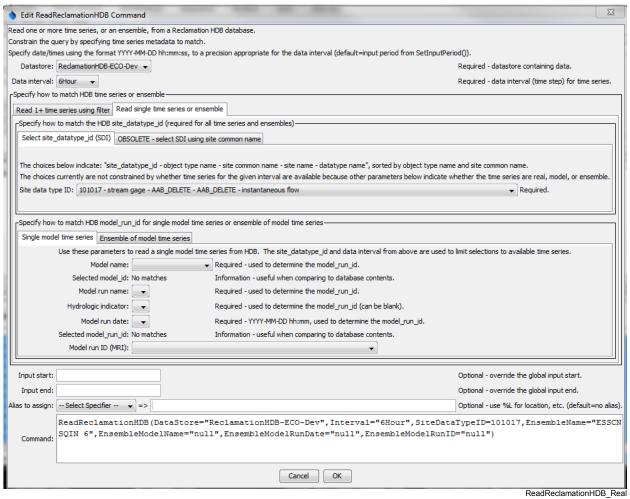
In all cases, the choices presented to the user cascade to allow only valid choices. For example, when a site data type identifier is selected, then only time series and ensembles are listed that have data records with the site data type identifier. This ensures that only time series with data are read.

The following dialog is used to edit the command and illustrates the syntax of the command when reading "real" or "model" data using filters. This approach can be used when reading one or more time series in bulk. **Where** criteria should be specified in sequential order without intervening blank specifiers. This approach is useful when processing a group of time series in bulk.



ReadReclamationHDB() Command Editor When Using Filters to Read 1+ Time Series

The following figure illustrates reading a single "real" time series (note that the model parameters are not specified).

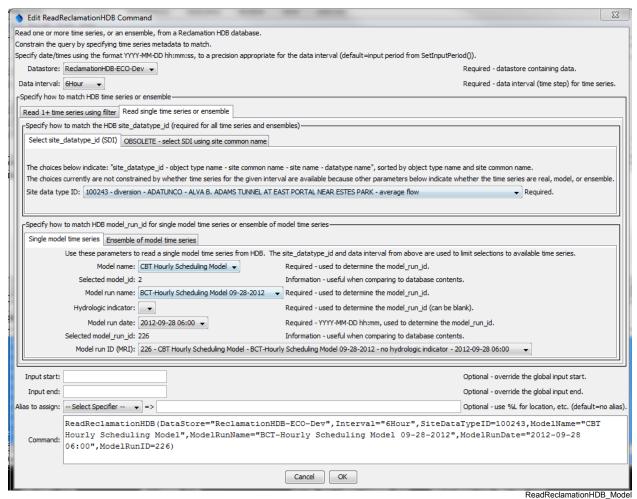


ReadReclamationHDB() Command Editor to Read a Single Real Time Series

The following figure illustrates reading a single "model" time series, in which case model parameters are specified in addition to the site and data type parameters. There are two ways to select the MRI:

- 1. Pick the MRI from the list at the bottom of the parameter section:
  - a. Additional information is shown in the choice, but only the MRI is saved in the command parameter
- 2. Sequentially pick model-related metadata until a unique MRI is determined (multiple command parameters are saved):
  - a. Model name
  - b. Model run name
  - c. Hydrologic indicator (may be blank)
  - d. Model run date (may be blank)

The following figure illustrates both approaches, although normally one or the other would be used. Selecting an MRI directly takes precedence over the other approach.

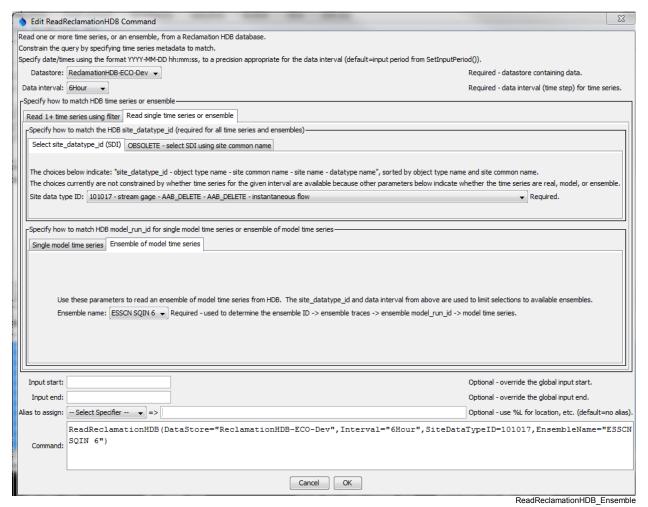


ReadReclamationHDB() Command Editor to Read a Single Model Time Series

The following figure illustrates reading an ensemble of "model" time series, in which case an ensemble name is specified in addition to the SDI. Ensembles are stored in HDB as follows:

Ensemble (ensemble name is unique)
Ensemble Trace(s) (trace number is unique)
Model run identifier(s) (MRI is unique)
M \* data tables

Consequently, in order to list the ensemble names for selection, the data table is checked for matching SDI, and additional queries map the data back to the ensemble data, which provide the list of ensemble names to choose from.



ReadReclamationHDB() Command Editor to Read an Ensemble of Model Time Series

The command syntax is as follows:

ReadReclamationHDB (Parameter=Value, ...)

## **Command Parameters**

Parameter	Description	Default
DataStore	Reclamation HDB data store name indicating	None – must be

Parameter	Description	Default
	database from which to read time series.	specified.
Interval	The data interval to read (Hour, Day, Month,	None – must be
	Year, Irregular). Irregular is used for	specified.
	instantaneous data and internally results in data	
	with date/times to minute precision.	
	Use the following parameter when reading 1+ time	
	series using filters	
DataType	The data type to read as ObjectType -	None – must be
	DataTypeCommonName. The object type is	specified.
	shown to help with selections. * can be specified	
	to read all data types.	
WhereN	The "where" clauses to be applied when querying	If not specified, the
	data, which match the values in the <b>Where</b> fields in	query will not be
	the TSTool main interface. The parameters should	limited and very large
	be specified as Where1, Where2, etc., with no	numbers of time series
	intervening gaps in numbering. All clauses are	may result from the
	joined as "and" and are therefore cumulative in	query (which may
	limiting the query. The format of each parameter	require a long time to
	value is:	perform the query).
	"Item; Operator; Value"	
	Whom It windicates a data field to be filtered on	
	Where I tem indicates a data field to be filtered on,	
	Operator is the type of constraint, and Value is	
	the value to be checked when querying.	
	Use the following parameters when reading a single time series or an ensemble of time series.	
SiteDataTypeID		
Siccoacaryperb	The site_datatype_id value to match the time series. Direct selection using the provided	
	choices is preferred because the other parameters	
	(below) are not guaranteed to be unique.	
Site	The site common name for the time series location;	None – must be
CommonName	used with the data type common name to determine	specified unless
	the site datatype id in the database. This	SiteDataTypeID is
	approach is discouraged and may be removed in the	specified.
	future because site common name is not	1
	unique in HDB.	
DataType	The data type common name for the time series;	None – must be
CommonName	used with the site common name to determine the	specified unless
	site datatype id in the database. This	SiteDataTypeID is
	approach is discouraged and may be removed in the	specified.
	future because datatype common name is not	•
	unique in HDB.	
	Use the following parameters when reading a single	
	model time series.	
ModelRunID	The model_run_id value to match the time	
	series. Direct selection using the provided choices	
	is an option to specifying the equivalent multiple	

Parameter	Description	Default
	parameters described below.	
ModelName	The model name for the time series; used with the	None – must be
	model run name, hydrologic indicator(s), and model	specified unless
	run date to determine the model_run_id in the	ModelRunID is
	database.	specified.
ModelRunName	The model run name for the time series; used with	None – must be
	the model name, hydrologic indicator(s), and model	specified unless
	run date to determine the model_run_id in the	ModelRunID is
	database.	specified.
ModelRunDate	The model run date (timestamp) to use for the time	None – must be
	series; used with the model name, model run name,	specified unless
	and hydrologic indicator(s) to determine the	ModelRunID is
	model_run_id in the database. The run date	specified.
	should be specified using the format YYYY-MM-DD	
	hh: mm (zero-padded with hour 0-23, minute 0-59).	
Hydrologic	The hydrologic indicator(s) to use for the time	None – must be
Indicator	series; used with the model name, model run name,	specified unless
	and model run date to determine the	ModelRunID is
	model_run_id in the database.	specified.
	Use the following parameters when reading an	
	ensemble of model time series.	
EnsembleName	The name of the ensemble to read. Corresponding	Must be specified if
	trace data are queried to determine	reading an ensemble.
	model_run_id to read individual time series.	
	The following parameters are always appropriate.	
InputStart	Start of the period to query, specified in format	Read all available data.
	YYYY-MM-DD hh:mm, with a precision	
	appropriate for the interval.	
InputEnd	End of the period to query, specified in format	Read all available data.
	YYYY-MM-DD hh:mm, with a precision	
	appropriate for the interval.	
Alias	Indicate an alias to assign to time series, which can	No alias is assigned.
	result in shorter identifiers for time series when	
	referenced with other commands.	

ReadReclamationHDB(	() Command
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