

Database Management

Microsoft Excel - reservoir

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

Meta data for data used in the URGWOM modeling project--usr1\urgwom\data/basicdata4\reservoir.dss

1	A	B	C	D	E	F
2	Station Name	Data Comments	DSS record B-parts	Agency collecting data	Data type	Dimension of data
3	Heron Reservoir near Los Ojos, NM	USBR data	HERON			
4	Heron Reservoir near Los Ojos, NM	USBR data	HERON			
5	Heron Reservoir near Los Ojos, NM	USBR data	HERON			
6	Heron Reservoir near Los Ojos, NM	USBR data	HERON			
7	Heron Reservoir near Los Ojos, NM	USBR data	HERON			
8	Heron Reservoir near Los Ojos, NM	USBR data	HERON			

reservoir

Draw AutoShapes

Ready

reservoir.dss - HEC-DSSVue

File Edit View Display Utilities Help

CDEC Excel Precision USGS

File Name: C:\Projects\URGWOMModelFiles\Historical\DSSfiles\reservoir.dss

Pathnames Shown: 319 Pathnames Selected: 0 Pathnames in File: 4259 File Size: 8

Search A: C: By Parts: B: D:

Number	A part	B part	C part
58	ELVADO	HERON RELEASE	
59	ELVADO	HERON RELEASE	
60	ELVADO	INFLOW	
61	ELVADO	INFLOW	
62	ELVADO	K FACTOR	
63	ELVADO	MAX AIR TEMPERATURE	
64	ELVADO	MIN AIR TEMPERATURE	
65	ELVADO	OUTFLOW	
66	ELVADO	PAN EVAPORATION	
67	ELVADO	PAN ICE SWITCH	
68	ELVADO	PIRRIG	
69	ELVADO	PMEADOW	
70	ELVADO	POOL ELEVATION	
71	ELVADO	PRECIPITATION RATE	
72	ELVADO	RELEASE	
73	ELVADO	RELEASE	
74	ELVADO	STORAGE	
75	ELVADO	SURFACE ICE COVERAGE	
76	ELVADO	TAILWATER ELEVATION	

Select De-Select Clear Selections Restore Selections Set Time Window

No time window set.

//ELVADO/PAN EVAPORATION/01 JAN...

File Edit View

Ordinate	Date / Time	ELVADO PAN EVAPORA... USBR
	Units	IN
	Type	PER-AVER
1	01 Apr 75 24:00	0.02000
2	02 Apr 75 24:00	0.00000
3	03 Apr 75 24:00	0.00000
4	04 Apr 75 24:00	0.23000
5	05 Apr 75 24:00	0.20000
6	06 Apr 75 24:00	0.19000
7	07 Apr 75 24:00	0.27000
8	08 Apr 75 24:00	0.00000
9	09 Apr 75 24:00	0.00000
10	10 Apr 75 24:00	0.16000
11	11 Apr 75 24:00	0.03000
12	12 Apr 75 24:00	0.10000
13	13 Apr 75 24:00	0.00000
14	14 Apr 75 24:00	0.00000
15	15 Apr 75 24:00	0.10000
16	16 Apr 75 24:00	0.19000
17	17 Apr 75 24:00	0.32000
18	18 Apr 75 24:00	0.27000
19	19 Apr 75 24:00	0.06000
20	20 Apr 75 24:00	0.13000
21	21 Apr 75 24:00	0.20000
22	22 Apr 75 24:00	0.24000
23	23 Apr 75 24:00	0.34000
24	24 Apr 75 24:00	0.23000
25	25 Apr 75 24:00	0.24000
26	26 Apr 75 24:00	0.36000
27	27 Apr 75 24:00	0.31000

URGWOM Technical Review

October 14, 2010

Data Needs

- Historical data needed for URGWOM runs are maintained in DSS files and include:
 - Stream Gage Data
 - Local Inflows
 - Calculated San Juan Tributary Flows
 - Reservoir Data
 - Diversions (MRGCD, Rio Chama)
 - Crop and Riparian ET Rates
 - Crop Areas
 - Deep Aquifer Heads
 - Shallow Aquifer Heads
 - Wastewater Returns
 - Synthetic and Assumed Values

Data File Format

- Database maintained in files having the format of the Corps' Hydrologic Engineering Center (HEC) Data Storage System (DSS)
- DSS files can be viewed (and edited) using HEC-DSSVue.
 - Free software can be downloaded from <http://www.hec.usace.army.mil/software/hec-dss/hecdssvue-download.htm>.

Data Management Interface (DMI)

- For Planning Model runs completed using historical hydrology, DMIs are used to import data from DSS.
- Historical data are also imported to the Forecast Model following each database update with a DMI
 - and then referenced when developing forecasted inputs for Water Operations Model runs.

Completed Database Work

- ✓ Historical database updated.
- ✓ Database DMIs set up.
- ✓ New Template spreadsheet and basic control file DMI established to import initial conditions.
- ✓ Separate DSS files and database DMIs set up for the synthetic hydrologic sequences.
- ✓ Database DMIs set up in the Accounting, Forecast, and Water Operations Models.

Historical Database Updated

- Historical database completely updated through 2006,
 - through 2007 for the Middle Valley portion.
- Update reflects new data needs for the new Middle Valley configuration in the model.
 - Additional ETRate and GWObject DSS files created.
- Excel Add-In used for updating DSS files.
- Metadata files updated.

Sources for Historical Data

- Updating the database entails obtaining the following:
 - gage data from the USGS or Colorado websites,
 - Corps and Reclamation reservoir data from the Acct Model,
 - Caballo and Elephant Butte data from Reclamation's El Paso office,
 - MRGCD diversion data from MRGCD,
 - Rio Chama diversions from OSE,
 - computed historical ungaged local inflows - *separate model*,
 - computed flows above diversions in the San Juan basin,
 - wastewater data from municipalities and the EPA,
 - riparian and crop ET data from the ET Toolbox,
 - crop areas from ISC, and
 - deep aquifer heads from OSE,
 - shallow aquifer storage and elevations - for initial conditions.

Crop Type Mapping

- Updates to ET data required work on crop mapping.
 - Crop types for the period through 1999 are based on the old Land Use Trend Analysis (LUTA) crop types and
 - Crop types for period starting in 2000 are based on crop types used with IKONOS data.
- ➔ Neither matches the crop types used in URGWOM.
- Due to the differences, different mapping used
 - between LUTA and URGWOM versus
 - between IKONOS and URGWOM.

Historical Database DMIs

- Database DMIs serve as a direct connection between RiverWare and DSS - a newer RiverWare capability.
 - Database DMIs were set up for importing historical data
- Allows for DMIs to now be invoked on RiverWare for Windows
 - as opposed to the previous control file/executable DMIs that ran on RiverWare for Solaris on Sun workstations.
- Database DMI also established for importing initial conditions based on historical values,
 - specifically needed for calibration models.

Template Spreadsheet -Initial Conditions

- A template spreadsheet was created for importing initial conditions to the Planning Model.
- Initial conditions for planning studies are often defined independent of the hydrology.
 - Initial conditions may be based on *current conditions* (not yet available in the URGWOM database);
 - current conditions are available in the Accounting Model; or
 - based on projected conditions for the beginning date defined for a planning study.

Separate DSS Files and Database DMIs

Synthetic Sequences

- Separate DSS files were set up for the synthetic sequences.
 - Historical data are sorted based on the sequences.
 - Script files used to take data from the historical database DSS files and create new DSS files - appropriately adjusting for leap years.
 - Files specifically set up for a 2010-2019 simulation period.
 - URGWOM runs with sequences set up for 2010-2019 run period.
- Separate Database DMIs established to import data for the synthetic sequences.

Database DMIs for AOP Runs

- Database DMIs were established in the Accounting, Forecast, and Water Operations Models for data transfers as part of completing AOP runs.