

File Format Specifications for Time Series Data

The WIDM batch import data format specifies the required file format to manually import time series data into WIDM. This method of data import is used when the time series data source is not accessible via direct telemetry.

Standards

The required file format for batch import is defined in Figure 1 and Table 1, Table 2 and Table 3. The specified file format must be attained by formatting data from proprietary management systems prior to importing to WIDM.

The recommended format can easily be attained through the use of EXCEL, or similar spreadsheet program and saving the formatted spreadsheet as a CSV (Comma delimited) file.

File type:

CSV (Comma delimited) text file (*.csv)

File name:

Determined by the user, it must conform for the format of *.CSV, where the "*" or file name is a maximum of 8 characters (e.g.98AYUM01.CSV).

File content and layout:

All data submitted to WIDM for batch import shall conform to the format presented in Figure 1 and Table 1 and Table 2.

Figure 1. Standard spreadsheet layout

| | | | | | |
|------------------|-----------------------------------|-----------------|-----------------|-----------------|-----------------|
| EMS ID | E012345 | | | | |
| EMS NAME | The exact site name in EMS | | | | |
| Data Source Name | The exact data source name in EMS | | | | |
| | | | | | |
| | | | | | |
| DATE | TIME | Parameter abbr. | Parameter abbr. | Parameter abbr. | Parameter abbr. |
| | | Read Type | Read Type | Read Type | Read Type |
| | | Channel # | Channel # | Channel # | Channel # |
| YYYY/MM/DD | HH:MI:SS | 99.9999 | 99.9999 | 99.9999 | 99.9999 |

HINT: All text entries are case sensitive and must be identical to the corresponding information established in WIDM

Table 1. Standard column and line assignment for batch import data.

| Column | Row | Content |
|---------------------|-------|---|
| 1 | 1 | EMS ID |
| 1 | 2 | EMS Name |
| 1 | 3 | WQDMS Data Source Name |
| 1 | 4 | BLANK |
| 1 | 5 | BLANK |
| 1 | 6 | DATE |
| 1 | 7 | Blank |
| 1 | 8 | Blank |
| 1 | 9 - n | YYYY/MM/DD (see note #3) |
| 2 | 1 | TEXT |
| 2 | 2 | TEXT (see note #1) |
| 2 | 3 | TEXT (see note #2) |
| 2 | 4 | BLANK |
| 2 | 5 | BLANK |
| 2 | 6 | TIME |
| 2 | 7 | Blank |
| 2 | 8 | Blank |
| 2 | 9 - n | HH:MI:SS |
| 3 - n (see note #4) | 1 - 5 | BLANK |
| | 6 | TEXT: Source Parameter Abbreviation (see note #5) |
| | 7 | Text: Reading Type (see note #6) |
| | 8 | Text: Channel # (see note #7) |
| | 9 - n | numeric: general format (max. 4 decimals) |

Notes:

1. EMS Name of the site **MUST** be identical to WIDM site name (text is uppercase-e.g. AYUM CREEK NEAR MOUTH).

2. Data Source Name MUST be identical to the name created under WIDM/WQ-Sensors (text is typically uppercase - e.g. AYUM_C_THALIMEDES).
3. Date format must be YYYY/MM/DD.
4. Columns 3- n, line 6: Order of parameters to be consistent with channel assignment created under WIDM/WQ-Sensors (see note 5)
5. Source Parameter Abbreviations must be identical to WIDM Source Parameter Abbreviation, for each sensor found under Parameters Monitored. Contact Resources Inventory Branch Application Manager for list of standard Source Parameter Abbreviations.
6. Reading type is determined by the programming of the data source and is stored in the table READING_TYPE in WIDM, (valid reading types include; MAX, MIN, AVG, RAW, etc.)
7. Channel #: The channel number that the sensor is assigned to. Must be consistent with the channel number information from the WIDM/WQ- Sensors screen (valid entries may be alpha numeric. For example 1 or A1 are acceptable entries).

Table 2. Example of Timeseries comma delimited CSV file using spreadsheet program (EXCEL) for import into WIDM/HD & WQ

| | | | | | | | | |
|------------------|----------------------|-------|------|------|------|--------|------|-------|
| EMS ID | E231765 | | | | | | | |
| EMS Name | BUHL CREEK AT BRIDGE | | | | | | | |
| Data Source Name | BUHL_C | | | | | | | |
| | | | | | | | | |
| DATE | TIME | Wvl | Temp | pH | Turb | SpCond | TDS | Batt |
| | | AVG | AVG | AVG | AVG | AVG | AVG | RAW |
| | | 1A | 2B | 3C | 4D | 5E | 6F | 7G |
| 1999/06/02 | 13:00:00 | 1.342 | | | | | | |
| 1999/06/02 | 14:00:00 | 1.339 | 2.46 | 7.93 | 298 | 47 | 0.03 | |
| 1999/06/02 | 15:00:00 | 1.336 | 2.62 | 7.98 | 189 | 47 | 0.03 | |
| 1999/06/02 | 16:00:00 | 1.335 | 2.81 | 8.01 | 304 | 47 | 0.03 | |
| 1999/06/02 | 17:00:00 | 1.338 | 2.93 | 8.02 | 266 | 48 | 0.03 | |
| 1999/06/02 | 18:00:00 | 1.331 | 3 | 8.03 | 184 | 48 | 0.03 | |
| 1999/06/02 | 19:00:00 | 1.329 | 2.95 | 8.03 | 270 | 48 | 0.03 | |
| 1999/06/02 | 20:00:00 | 1.324 | 2.81 | 8.02 | 227 | 48 | 0.03 | |
| 1999/06/02 | 21:00:00 | 1.328 | 2.63 | 8 | 217 | 48 | 0.03 | |
| 1999/06/02 | 22:00:00 | 1.326 | 2.46 | 7.99 | 233 | 49 | 0.03 | |
| 1999/06/02 | 23:00:00 | 1.325 | 2.28 | 7.98 | 264 | 49 | 0.03 | |
| 1999/06/03 | 0:00:00 | 1.337 | 2.16 | 7.99 | 238 | 49 | 0.03 | 12.39 |

Table 3. Example of Timeseries, comma delimited CSV file using ASCII text editor (Notepad) for import into WIDM/HD & WQ.

```
EMS ID,E231765,,,,,,,,
EMS Name,BUHL CREEK AT BRIDGE,,,,,,,,
Data Source Name,BUHL_C,,,,,,,,
DATE,TIME,Wlvl,Temp,pH,Turb,SpCond,TDS,Batt
,AVG,AVG,AVG,AVG,AVG,AVG,RAW
,1A,2B,3C,4D,5E,6F,7G
1999/06/02,13:00:00,1.342, , , , ,
1999/06/02,14:00:00,1.339,2.46,7.93,298,47,0.03,
1999/06/02,15:00:00,1.336,2.62,7.98,189,47,0.03,
1999/06/02,16:00:00,1.335,2.81,8.01,304,47,0.03,
1999/06/02,17:00:00,1.338,2.93,8.02,266,48,0.03,
1999/06/02,18:00:00,1.331,3,8.03,184,48,0.03,
1999/06/02,19:00:00,1.329,2.95,8.03,270,48,0.03,
1999/06/02,20:00:00,1.324,2.81,8.02,227,48,0.03,
1999/06/02,21:00:00,1.328,2.63,8,217,48,0.03,
1999/06/02,22:00:00,1.326,2.46,7.99,233,49,0.03,
1999/06/02,23:00:00,1.325,2.28,7.98,264,49,0.03,
1999/06/03,0:00:00,1.337,2.16,7.99,238,49,0.03,12.39
```

EXAMPLES

The following are examples of data from different data logger types and formatted into the proper batch import specifications. These examples have been provided in order to lead users through their first few attempts at importing files into WQDMS.

For the first attempts at importing files the following suggestions may be helpful:

1. Start with a small file, no more than one day's worth of data.
2. Format the file in EXCEL, save as an EXCEL file and a "CSV" file.
3. View the CSV file through NOTEBOOK to ensure that formatting is correct.
4. Attempt import.
5. Record any useful notes for yourself and keep them with your WQDMS manuals. If problems are encountered during import of data files please check the following:

- Review formatted file to ensure that the format is full adherence to the above specifications.
- Ensure that sensors have been configured and parameters monitored and channel assignments are correct.
- Check that date and time formats are correct.
- Ensure that file is saved as a *.csv file.
- Occasionally, files will not load unless being imported from a c:\temp directory. An error message will appear saying 'file not found' or 'incorrect file name'. If your file doesn't load, try moving it into c:\temp and try again. WIDM is being run from the NT Terminal Server and as such x: drive on the terminal server is c: drive on your local machine.

Example of data dumped from a Valcom VEDAS logger

```
/1995.10.10/08GB015 /MASTER0
HG / 2.1928e+00/00:00:15
TA / 1.0260e+01/00:00:15
WT / 3.1047e+00/00:00:50
TB / -2.9442e+01/00:01:50
HG / 2.2266e+00/00:15:15
-End of Archive Dump –
```

After being parsed by import wizard in EXCEL:

| | | |
|----|---------|---------|
| TB | 77.3461 | 1:00:20 |
| WT | 6.82 | 1:00:50 |
| CO | 24.3333 | 1:00:50 |
| PH | 7.28333 | 1:00:50 |
| HG | 0.34701 | 1:00:20 |
| TB | 77.8828 | 1:15:20 |
| WT | 6.78333 | 1:15:50 |
| CO | 24 | 1:15:50 |
| PH | 7.28 | 1:15:50 |
| HG | 0.34301 | 1:15:20 |
| TB | 80.4176 | 1:30:20 |
| WT | 6.75 | 1:30:50 |
| CO | 24.3333 | 1:30:50 |
| PH | 7.27666 | 1:30:50 |
| HG | 0.34301 | 1:30:20 |

Properly Formatted file, ready to be saved as a *.CSV:

| | | | | | | |
|------------------|--------------------|---------|---------|--------|---------|---------|
| EMS ID | 12345AB | | | | | |
| EMS NAME | Monitoring Station | | | | | |
| Data Source Name | Valcom VEDAS | | | | | |
| | | | | | | |
| | | | | | | |
| DATE | TIME | TB | WT | CO | PH | HG |
| | | AVG | AVG | AVG | AVG | AVG |
| | | 1 | 2 | 3 | 4 | 5 |
| 1995/10/10 | 1:00:20 | 77.3461 | | | | 0.34701 |
| 1995/10/10 | 1:00:50 | | 6.82 | 24.333 | 7.28333 | |
| 1995/10/10 | 1:15:20 | 77.8828 | | | | 0.34301 |
| 1995/10/10 | 1:15:50 | | 6.78333 | 24 | 7.28 | |
| 1995/10/10 | 1:30:20 | 80.4176 | | | | 0.34301 |

Example of data from a Starlogger

Example of format of a *.dat file from starlog PDL:

```
04-09-96 14:18, 72.6, 72.6, 72.6
04-09-96 14:19, 72.6, 72.6, 72.6
04-09-96 14:20, 72.6, 72.6, 72.6
04-09-96 14:21, 94.8, 83.5, 93.1
04-09-96 14:22, 93.9, 87.7, 90.7
04-09-96 14:23, 86.9, 82.8, 84.8
```

After imported into EXCEL with import Wizard:

| | | | | |
|--------|-------|------|------|------|
| 4/9/96 | 14:18 | 72.6 | 72.6 | 72.6 |
| 4/9/96 | 14:19 | 72.6 | 72.6 | 72.6 |
| 4/9/96 | 14:20 | 72.6 | 72.6 | 72.6 |
| 4/9/96 | 14:21 | 94.8 | 83.5 | 93.1 |
| 4/9/96 | 14:22 | 93.9 | 87.7 | 90.7 |
| 4/9/96 | 14:23 | 86.9 | 82.8 | 84.8 |

Properly Formatted file, ready to be saved as a *.CSV:

| | | | | |
|------------------|--------------------|------|------|------|
| EMS ID | 12345AB | | | |
| EMS Name | Monitoring Station | | | |
| Data Source Name | Data Logger | | | |
| | | | | |
| | | | | |
| DATE | TIME | TB | TB | TB |
| | | MAX | MIN | AVG |
| | | A7 | A7 | A7 |
| 1996/04/09 | 14:18:00 | 72.6 | 72.6 | 72.6 |
| 1996/04/09 | 14:19:00 | 72.6 | 72.6 | 72.6 |
| 1996/04/09 | 14:20:00 | 72.6 | 72.6 | 72.6 |
| 1996/04/09 | 14:21:00 | 94.8 | 83.5 | 93.1 |
| 1996/04/09 | 14:22:00 | 93.9 | 87.7 | 90.7 |
| 1996/04/09 | 14:23:00 | 86.9 | 82.8 | 84.8 |

Example of data from a Campbell Scientific data

Data dumped from a 21x:

```
"107,239,1400,584.1,138.3,16.66,13.12,0,586.8,1359"
"107,239,1430,-6999,-6999,-6999,12.79,0,955,1412"
"107,239,1500,1.049,481.3,15.95,13.25,0,1.201,1459"
"107,239,1530,1.094,482.8,15.38,12.83,0,1.601,1530"
"107,239,1600,1.099,483,15.43,12.6,0,1.334,1550"
"107,239,1630,1.165,482.6,15.47,12.49,0,1.735,1618"
"107,239,1700,1.272,479.4,14.69,12.44,0,1.602,1700"
"107,239,1730,1.313,475,13.89,12.43,0,1.469,1730"
"107,239,1800,1.385,472.1,-8.46,12.36,0,1.737,1757"
"107,239,1830,1.559,468.9,7.05,12.28,0,1.871,1806"
"107,239,1900,1.818,466.7,12.36,12.16,0,2.272,1900"
```

After import into EXCEL using the import wizard. As the data is contained within quotation marks you must remove the qualifier that quote marks delimit text.

| | | | | | | | | | |
|-----|-----|------|-------|-------|-------|-------|---|-------|---------------|
| 107 | 239 | 1400 | 584.1 | 138.3 | 16.66 | 13.12 | 0 | 586.8 | 9/20/03 0:00 |
| 107 | 239 | 1430 | -6999 | -6999 | -6999 | 12.79 | 0 | 955 | 11/12/03 0:00 |
| 107 | 239 | 1500 | 1.049 | 481.3 | 15.95 | 13.25 | 0 | 1.201 | 12/29/03 0:00 |
| 107 | 239 | 1530 | 1.094 | 482.8 | 15.38 | 12.83 | 0 | 1.601 | 3/9/04 0:00 |
| 107 | 239 | 1600 | 1.099 | 483 | 15.43 | 12.6 | 0 | 1.334 | 3/29/04 0:00 |
| 107 | 239 | 1630 | 1.165 | 482.6 | 15.47 | 12.49 | 0 | 1.735 | 6/5/04 0:00 |
| 107 | 239 | 1700 | 1.272 | 479.4 | 14.69 | 12.44 | 0 | 1.602 | 8/26/04 0:00 |
| 107 | 239 | 1730 | 1.313 | 475 | 13.89 | 12.43 | 0 | 1.469 | 9/25/04 0:00 |

Properly Formatted file, ready to be saved as a *.CSV:

| | | | | | | | |
|------------------|---------------------|--------|--------|-------|-------|------|--------|
| EMS ID | 12345AB | | | | | | |
| EMS Name | Monitoring Station | | | | | | |
| Data Source Name | Campbell Scientific | | | | | | |
| | | | | | | | |
| | | | | | | | |
| DATE | TIME | WDEPTH | SDMNTS | ATEMP | VOLT | RAIN | WDEPTH |
| | | AVG | MAX | AVG | RAW | RAW | MAX |
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| 1995/08/27 | 15:00:00 | 1.049 | 481.3 | 15.95 | 13.25 | 0 | 1.201 |
| 1995/08/27 | 15:30:00 | 1.094 | 482.8 | 15.38 | 12.83 | 0 | 1.601 |
| 1995/08/27 | 16:00:00 | 1.099 | 483 | 15.43 | 12.6 | 0 | 1.334 |
| 1995/08/27 | 16:30:00 | 1.165 | 482.6 | 15.47 | 12.49 | 0 | 1.735 |
| 1995/08/27 | 17:00:00 | 1.272 | 479.4 | 14.69 | 12.44 | 0 | 1.602 |