Meta data for

**USGS\_ALL\_USE\_DATA.xlsx** and

**USGS\_gw\_sw\_use.xlsx**

**USGS\_gw\_sw\_use.xlsx** extracts specific data from **USGS\_ALL\_USE\_DATA.xlsx** and manipulates inputs (done manually due to differing headers) as follows:

State attributes and water use categories extracted:

State attributes:

|  |  |  |
| --- | --- | --- |
| STATE ATTRIBUTES | Water use type | Water use header |
| State abbreviation (e.g. AL)  State FIPS (XX)  County (name)  County FIPS (XXX)  Year (every 5 years 1985-2010)  County population (×103) | Public (GW, SW, T) | PS\_ |
| Domestic (self supplied) (GW, SW, T) | DO\_ |
| Industrial self supplied (GW, SW, T) | IN\_ |
| Irrigation (GW, SW, T) | IR\_ |
| Livestock (GW, SW, T) | LI\_ |
| Mining (GW, SW, T) | MI\_ |
| Thermoelectric (GW, SW, T) | PT\_ |
| Total (GW, SW, T) | TO\_ |

GW=groundwater (total of fresh and, where applicable, saline)

SW=surface water (total of fresh and, where applicable, saline)

To=total

All water uses are in Mgal/day = 3785.41m3/day

Crop and golf irrigation data (in 2005 and 2010 data) sum to irrigation water.

Commercial water use not estimated from 2000 onwards. Prior to 1985, commercial water use was reported in the same category as industrial. Therefore, for 1985-1995, commercial water use was added to industrial in **USGS\_gw\_sw\_use.xlsx**. 1990-1995, fish hatchery water use was included under the category of commercial water use in some states and was later reported under the category of Aquaculture from 2000 onwards. i.e. may see some movement of water use from industrial to livestock from 2000 onwards. Livestock listed as total and separated into stock and animal specialties in 1995, while fish farming is included in livestock in 1985.

Notes on data manipulation to produce **USGS\_gw\_sw\_use.xlsx**:

Alaska, Hawaii, Virgin Islands and Puerto Rico data removed from all years.

All water use headings changed to match 2010 data dictionary

## 1985 Water use data

Commercial and industrial water use summed

Total gw and sw for public supply not given: calculated by summing fresh and saline gw/sw

2000 County names added and checked against FIPS

Counties with inconsistencies with 2000 county data and treatment. Change of county details from <https://www.census.gov/geo/reference/county-changes.html>

|  |  |  |  |
| --- | --- | --- | --- |
| County FIPS | County Name | Issue | Treatment |
| 12025 | Dade County, FL | Not in 2000 county list. Renamed Miami-Dade and renumbered 12086 in July 1997. | 12025 Dade renamed and renumbered to Miami-Dade 12086 |
| 12086 | Miami-Dade, FL | Not in 1985 county list | See above line |
| 29193 | Ste Genevieve | FIPS not in 2000 county list | 29193 renumbered to 29186 |
| 29186 | Ste Genevieve | FIPS not in 1985 county list. Ste Genevieve FIPS changed to 29186 in Sept 1979 from [Penn State website](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&cad=rja&uact=8&ved=0ahUKEwjA7MGFq53MAhUDyT4KHbOBCjIQFgg_MAU&url=http%3A%2F%2Fsodapop.pop.psu.edu%2Fcodebooks%2Farf%2FUSR2009.doc&usg=AFQjCNHIHSLKfbt-ZbvuZAjwuMIHDw1i2g&sig2=rDh0UvvXdLuv-DToa54CUg) | See above line |
| 30113 | Yellowstone National Park | County not in 2000 list. Merged with Gallatin 30031 and Park 30067 in Nov 1997 | 30113 divided equally between 30031 and 30067 |
| 51780 | South Boston City, VA | Not in 2000 list. Merged with Halifax County 51083 in June 1995 | 51780 data added to 51083 |

## 1990 Water use data

Commercial and industrial water use summed

Total gw and sw for public supply not given: calculated by summing fresh and saline gw/sw

No column for saline gw extracted for PT: results in missing gw (and gw+sw ≠to). PT\_GW infilled with saline GW for 32001, 32011, 32019, 32031

|  |  |  |  |
| --- | --- | --- | --- |
| County FIPS | County Name | Issue | Treatment |
| 12025 | Dade County, FL | Not in 2000 county list. Renamed Miami-Dade and renumbered 12086 in July 1997. | 12025 Dade renamed and renumbered to Miami-Dade 12086 |
| 12086 | Miami-Dade, FL | Not in 1985 county list | See above line |
| 30113 | Yellowstone National Park | County not in 2000 list. Merged with Gallatin 30031 and Park 30067 in Nov 1997 | 30113 divided equally between 30031 and 30067 |
| 51780 | South Boston City, VA | Not in 2000 list. Merged with Halifax County 51083 in June 1995 | 51780 data added to 51083 |

## 1995 Water use data

Commercial and industrial water use summed

Total gw and sw for public supply not given: calculated by summing fresh and saline gw/sw

|  |  |  |  |
| --- | --- | --- | --- |
| County FIPS | County Name | Issue | Treatment |
| 12025 | Dade County, FL | Not in 2000 county list. Renamed Miami-Dade and renumbered 12086 in July 1997. | 12025 Dade renamed and renumbered to Miami-Dade 12086 |
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## 2000 Water use data

Total GW, total SW and grand total water use were not included in some states (CT, TX, a few others). Manually calculated and formula checked against existing entries.

Data was not collected at a county scale, or collected at all for some states for domestic and mining water use respectively. See <http://water.usgs.gov/watuse/data/2000/index.html> for more details on missing data.

Mining data unavailable for the following states: AL, CO, CT, DE, DC, ID, IL, KY, LA, ME, MA, MI, MS, MT, NV, NM, NY, ND, OR, RI, SC, SD, TN, VT, VA, WA, WV, WI

Domestic data at a county level not available for the following states: CT, KY, ME, OR, PA, TN, TX, UT, WV

## 2005 Water use data

|  |  |  |  |
| --- | --- | --- | --- |
| County FIPS | County Name | Issue | Treatment |
| 08014 | Broomfield, CO | 08014 not in 2000 census data. Created Nov 2001 from 08001 (Adams), 08013 (Boulder), 08059 (Jefferson) and 08123 (Weld) | 08014 divided equally between 08001, 08013, 08059 and 08123 |
| 51560 | Clifton Forge | Not in 2005 data. Clifton Forge is now part of Alleghany County (51005) | 51005 (Alleghany County) 2005 water use data split into 51005 and 51560 by 2000 population ratio of 12.93:4.29 (51005:51560) |

## 2010 Water use data

|  |  |  |  |
| --- | --- | --- | --- |
| County FIPS | County Name | Issue | Treatment |
| 08014 | Broomfield, CO | 08014 not in 2000 census data. Created Nov 2001 from 08001 (Adams), 08013 (Boulder), 08059 (Jefferson) and 08123 (Weld) | 08014 divided equally between 08001, 08013, 08059 and 08123 |
| 51560 | Clifton Forge | Not in 2005 data. Clifton Forge is now part of Alleghany County (51005) | 51005 (Alleghany County) 2005 water use data split into 51005 and 51560 by 2000 population ratio of 12.93:4.29 (51005:51560) |