

Iowa Water Quality Information System (IWQIS)

REST API

Parameters

<https://api.iwqis.iowawis.org/v1/params>

<https://api.iwqis.iowawis.org/v1/params/discharge> (for a specific parameter, discharge here)

Sites

<https://api.iwqis.iowawis.org/v1/sites>

<https://api.iwqis.iowawis.org/v1/sites/WQS0020> (for a specific site, WQS0020 here)

Latest value

- Latest value by a site and by a parameter
 - https://api.iwqis.iowawis.org/v1/latest?site_uid=WQS0020¶m_uid=discharge
- Latest value of all parameters by a site
 - https://api.iwqis.iowawis.org/v1/latest?site_uid=WQS0020

Returned JSON

```
[{
  "measure_uid": 86164,
  "editor_uid": "iihr",
  "param_uid": "discharge",
  "method_uid": null,
  "site_uid": "WQS0020",
  "datetime": "2017-04-19T14:45:00.000Z",
  "value": 121356,
  "private": false
}, {
  "measure_uid": 86168,
  "editor_uid": "iihr",
  "param_uid": "yield",
  "method_uid": null,
  "site_uid": "WQS0020",
  "datetime": "2017-04-19T14:45:00.000Z",
  "value": 0.03471,
  "private": false
}, {
  "measure_uid": 85798,
  "editor_uid": "iihr",
  "param_uid": "nitrate_con",
  "method_uid": "nitratax",
  "site_uid": "WQS0020",
  "datetime": "2017-04-19T15:30:00.000Z",
  "value": 3.39,
  "private": false
}, {
  "measure_uid": 86165,
  "editor_uid": "iihr",
  "param_uid": "load",
  "method_uid": null,
  "site_uid": "WQS0020",
  "datetime": "2017-04-19T14:45:00.000Z",
  "value": 2205890,
  "private": false
}]
```

Get Values with Time range

We have two others endpoints that give hourly and daily aggregates. Since we are dealing with dense time series (with a fixed timestep), I use a compact storage for the time serie data. An hourly resource represent one day of hourly data as an array of 24 values. A daily resource represent one year of daily data as an array of 365/366 values.

https://api.iwqis.iowawis.org/v1/hourly?site_uid=WQS0020&begin=2017-04-01&end=2017-04-20

where "begin" and "end" dates are in YYYY-MM-DD format.

https://api.iwqis.iowawis.org/v1/daily?site_uid=WQS0020¶m_uid=discharge&begin=2016&end=2017

where "begin" and "end" are YYYY.

Emails

Hi Sam,

Thanks very much for the detailed email – very helpful! Looks to me like it is very user friendly.

I only have one question at the moment: are there parameters that can be added to the data endpoints or another endpoint other than <https://api.iwqis.iowawis.org/v1/latest> that provides historical data?

Thanks much,

Marcus

--

Marcus Slavenas

Research Programmer, NCSA, ISDA

(217) 244-0774

On 4/20/17, 11:19 AM, "Debionne, Samuel H P" <samuel-debionne@uiowa.edu> wrote:

Hi Marcus,

The IWQIS API is an industry standard implementation of a REST service, so hopefully should be user-friendly. The API, which is not public , was designed to be consumed by front-end web applications and not as a typical data retrieval web service (e.g. NWIS).

The description of the parameters available in the system (the params resource) can be retrieved using this endpoint:

<https://api.iwqis.iowawis.org/v1/params>

<https://api.iwqis.iowawis.org/v1/params/discharge> (for a specific parameter, discharge here)

Same idea for the available sites (the sites resource):

<https://api.iwqis.iowawis.org/v1/sites>

<https://api.iwqis.iowawis.org/v1/sites/WQS0020> (for a specific site, WQS0020 here)

Then for a given site and parameter, the latest values can be retrieve using:

https://api.iwqis.iowawis.org/v1/latest?site_uid=WQS0020¶m_uid=discharge

To get all the latest values at WQS0020, one would use:

https://api.iwqis.iowawis.org/v1/latest?site_uid=WQS0020

that returns:

```
[{
  "measure_uid": 86164,
  "editor_uid": "iihr",
  "param_uid": "discharge",
  "method_uid": null,
  "site_uid": "WQS0020",
  "datetime": "2017-04-19T14:45:00.000Z",
  "value": 121356,
  "private": false
}, {
  "measure_uid": 86168,
  "editor_uid": "iihr",
  "param_uid": "yield",
  "method_uid": null,
  "site_uid": "WQS0020",
  "datetime": "2017-04-19T14:45:00.000Z",
  "value": 0.03471,
  "private": false
}, {
  "measure_uid": 85798,
  "editor_uid": "iihr",
```

```

    "param_uid": "nitrate_con",
    "method_uid": "nitratax",
    "site_uid": "WQS0020",
    "datetime": "2017-04-19T15:30:00.000Z",
    "value": 3.39,
    "private": false
  }, {
    "measure_uid": 86165,
    "editor_uid": "iihr",
    "param_uid": "load",
    "method_uid": null,
    "site_uid": "WQS0020",
    "datetime": "2017-04-19T14:45:00.000Z",
    "value": 2205890,
    "private": false
  }
}

```

Eventually, some parameters (e.g. water temperature) may be measured using different methods, so you would get two latest values for a parameter (param_uid) but with different methods (method_uid).

Do not expect the number of parameters available at a given site to be fixed: if a parameter is out of range or a sensor pulled out of the water, the corresponding parameters will not be listed in the latest resource. The "latest" resource keeps only a 5 days history, eg the value is the latest within the last 5 days period.

Hoping that helps and let me know if you have any questions,

Sam

> -----Original Message-----

> From: Ted Kratschmer [<mailto:EKratsch@lc.edu>]

> Sent: Thursday, April 20, 2017 8:43 AM

> To: Jones, Christopher S <christopher-s-jones@uiowa.edu>; Slavenas,

> Marcus C (slavenas@illinois.edu) <slavenas@illinois.edu>

> Cc: Debionne, Samuel H P <samuel-debionne@uiowa.edu>;

> sbrad77@illinois.edu; Lee, Jong Sung (jonglee1@illinois.edu)

> <jonglee1@illinois.edu>

> Subject: RE: developer

>

> Hi Chris- Yes, we do. Marcus Slavenas is copied on this message, and is our

> data ingestion guru.

>

>

>

> Thanks,

>

> Ted

>

>

>

> From: Jones, Christopher S [<mailto:christopher-s-jones@uiowa.edu>]

> Sent: Thursday, April 20, 2017 7:50 AM

> To: Ted Kratschmer

> Cc: Debionne, Samuel H P

> Subject: developer

>

>

>

> Ted do you have a developer that knows a bit about REST, endpoints,

> resources, that can connect with our guy to resolve the remaining data

> transfer issues?

>

>

>

> _____

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