HydroServer Bulk Upload API User Guide

**Version 0.1 (Beta)**

**Brian Cummings, Senior Software Engineer**

**September 2018**

# Introduction

In addition to the Standard and Advanced Upload options supported by the HydroServer web client, **Figure 1**, the HydroServer REST API accepts ‘bulk’ uploads of \*.CSV metadata and data values files of any size.

Via standard HTTP facilities, the user can call the Bulk Upload API from self-authored client software or via any file upload utility. This user guide illustrates the use of the cURL utility (<https://curl.haxx.se/>) with the Bulk Upload API.

After a successful file upload, the API validates file contents and, if successful, attempts database insert/update processing. In the return from each file upload call, the API includes a status report detailing the call’s outcome.

# Setup Procedures

The setup procedures prepare the user’s client machine and obtain the identifier(s) required for data service identification.

**Please note:** These procedures assume the existence of a registered data service and an associated database. If you have not yet registered your data service or have not obtained a database, please do so before proceeding with these instructions.

## API Key Retrieval

For data service identification, the Bulk Upload API relies on a unique API ‘key’. To obtain the API key for a registered service:

* Log in to the HydroServer web client with the service username (gmail account) and password
* On the Home page (**Figure 1**), under the ‘Status’ heading use the mouse pointer to right-click the ‘API Key’ label to display the key value.
* Copy the key value and retain for later reference

## cURL Utility Installation

On the machine from which you plan to issue Bulk Upload API calls, download and install the OS-specific version of the cURL utility program (<https://curl.haxx.se/download.html>).

For additional help in determining the correct download, please consult the cURL Download Wizard (<https://curl.haxx.se/dlwiz/>)

**Please note:** cURL functionality is ‘packaged’ as the cURL utility program and the libcurl utility library. This user guide assumes use of the cURL utility program.

## Metadata and Data Values File Preparation

Prepare the metadata and data values files per the instructions found in the HydroServer Formatting Guide (which can be downloaded from the web client’s ‘Home’ page).

**Please note:** The Bulk Upload API assumes each uploaded file contains data for one and only one database table. For example, a ‘methods’ file should contain only methods metadata definitions; a ‘data values’ file should contain only data values entries.

Depending on the volume of information available for upload, the user may find it convenient to apportion metadata values ***of the same type*** among multiple files. Similarly, the contents of a multi-gigabyte data values file may be subdivided among smaller files.

## cURL Config File Preparation

The cURL utility, via the ‘config’ option, can read parameters from a file. For use with the Bulk Upload API, these ‘config’ files specify:

* Source File Path and Name
* Bulk Upload API URL
* ‘Progress bar’ display during file upload
* Post upload display of:
  + Total Bytes Uploaded
  + Total Upload Time
  + Log File Path and Name

### Config File Template

The config file template (**Figure 2**), lists the cURL commands required for file upload and upload status display with placeholders (denoted by triple brackets: <<< >>>) for user-defined entries.

The sample entries section provides an example of a completed cURL config file.

### Sample Config File Template Entries

Given the following values:

* Network API Key: 792E7D21921A40B390E3A463CCADE43D
* Metadata file path and name: C:\BulkUpload\Sources\methods.csv
* Log file path and name: C:\BulkUpload\Logs\Methods\_Upload.html

A completed ‘Methods’ cURL config file would appear like the one shown in **Figure 3**.

**Please note:** Selected file contents, like file path specifications, may vary with the operating system. In such cases, please refer to cURL’s online documentation (<https://curl.haxx.se/docs/>).

# Upload Procedures

The upload procedures listed herein assume the following:

* Upload parameters for each metadata file appear in a separate cURL config file
* Upload parameters for the data values file appear in a separate cURL config file
* Files reside in the following directories:
  + cURL config files: C:\BulkUpload
  + \*.CSV metadata and data values files: C:\BulkUpload\Sources
  + Upload log files: C:\BulkUpload\logs\upload

## Metadata Uploads

For metadata uploads, perform these steps on the cURL machine:

* Open a command window and enter the cURL config files directory
* For each metadata config file, enter the cURL upload command:
  + curl –config <<<cURL config file name>>>
* Wait for the command to complete, as indicated by the displayed message (**Figure 4**)

Ensure all metadata uploads complete successfully before attempting data values uploads.

### Upload Status Report

Each metadata upload command produces an upload status report (**Figure 5)**. As in the HydroServer web client, status reports can indicate errors during validation, if any, or record(s) rejected during database processing. In the latter case, a rejected records \*.csv file is available for download from the status report.

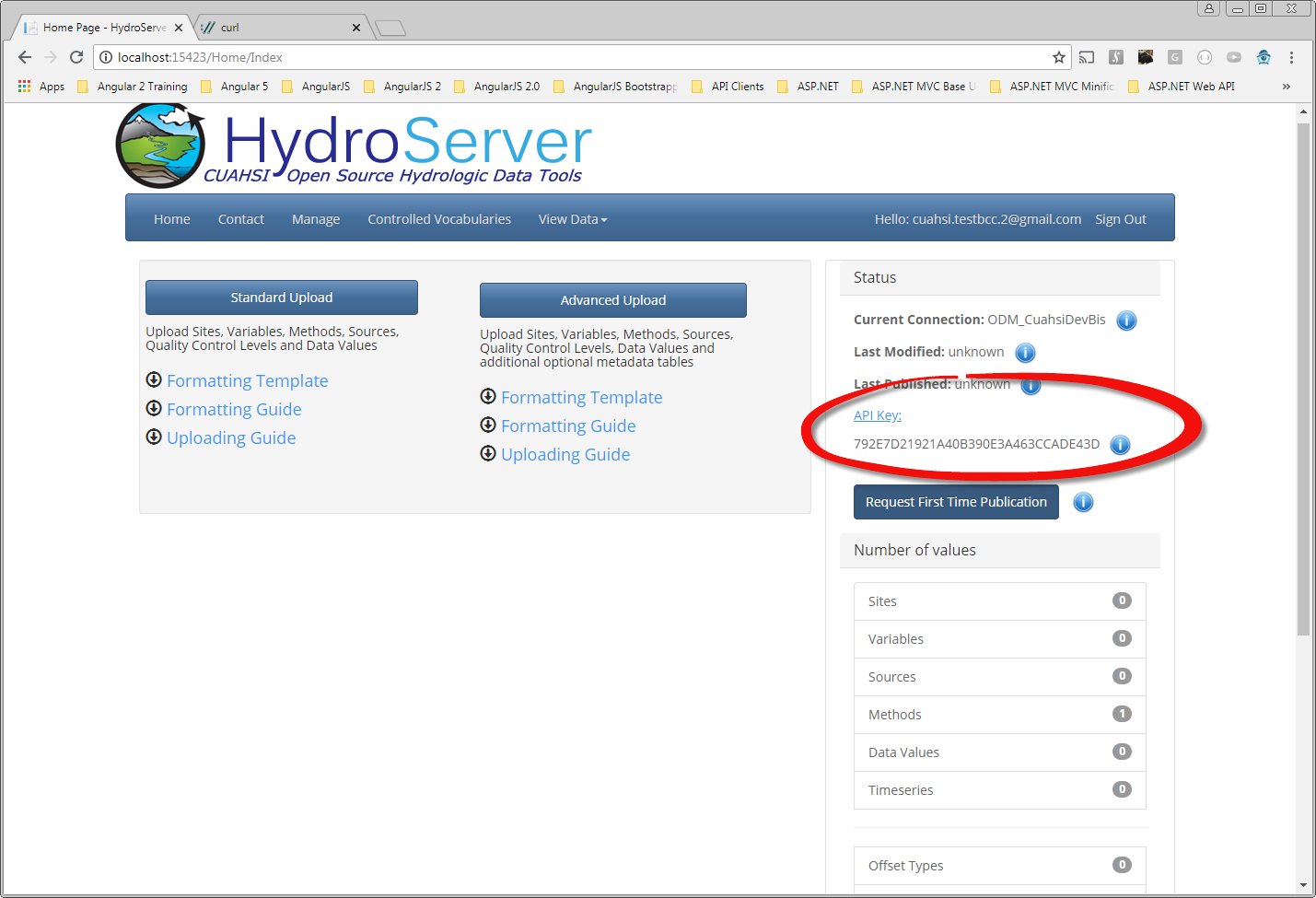
## Data Values Uploads

After the successful completion of all metadata uploads, proceed to data values upload.

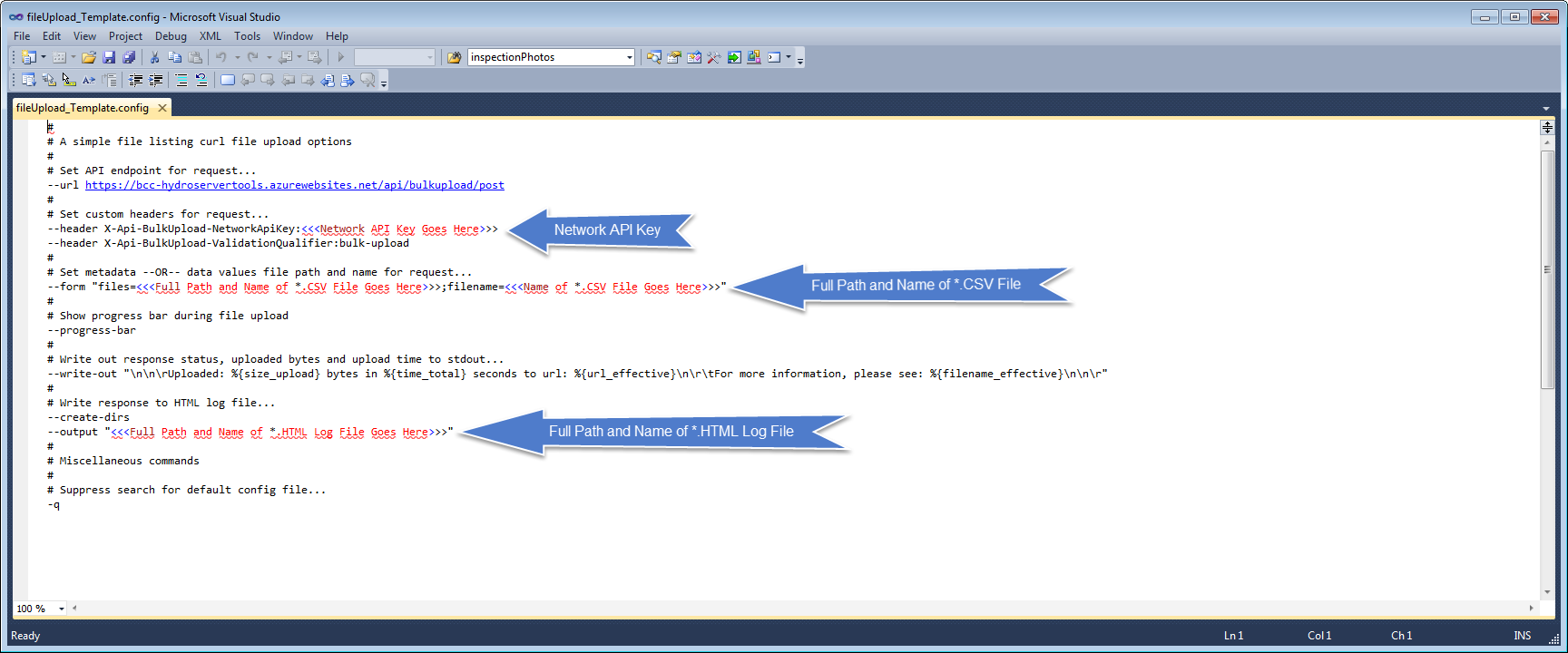
The upload procedure for data values files is the same as that for metadata files. Given the probable larger size of data values files, more time will be required for data values uploads.

## Upload Verification

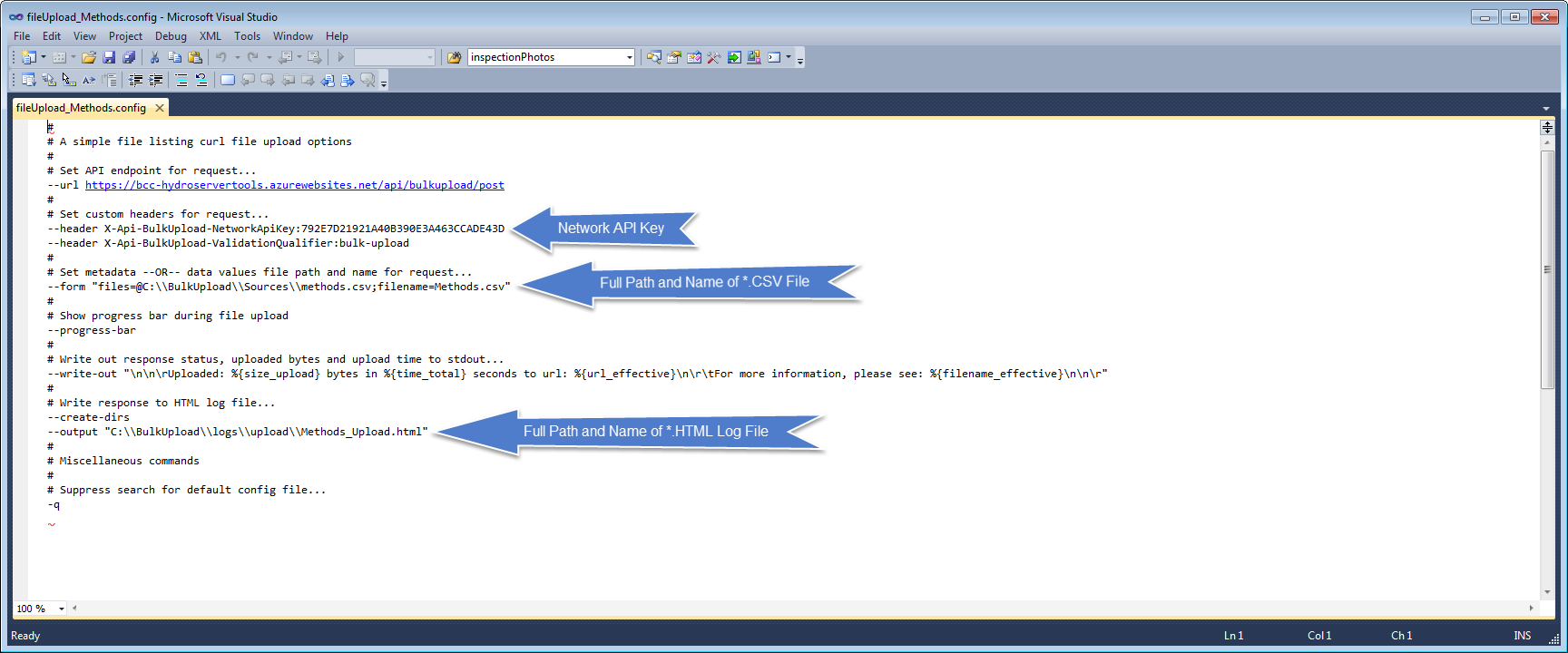
To verify an upload, view the entries in the HydroServer web client (**Figure 6**).



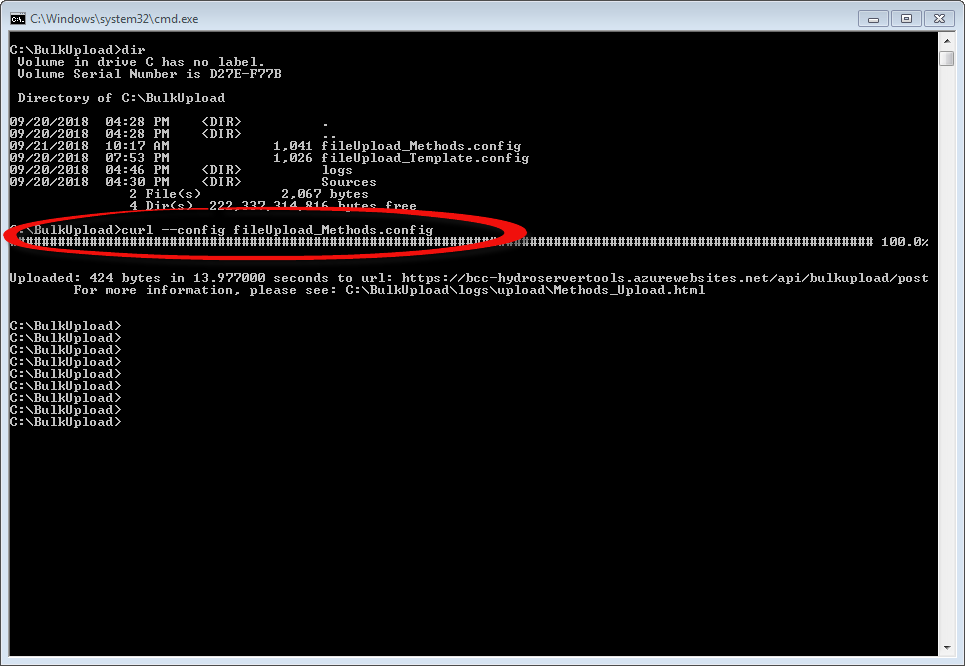
**Figure 1: HydroServer Web Client Showing API Key**



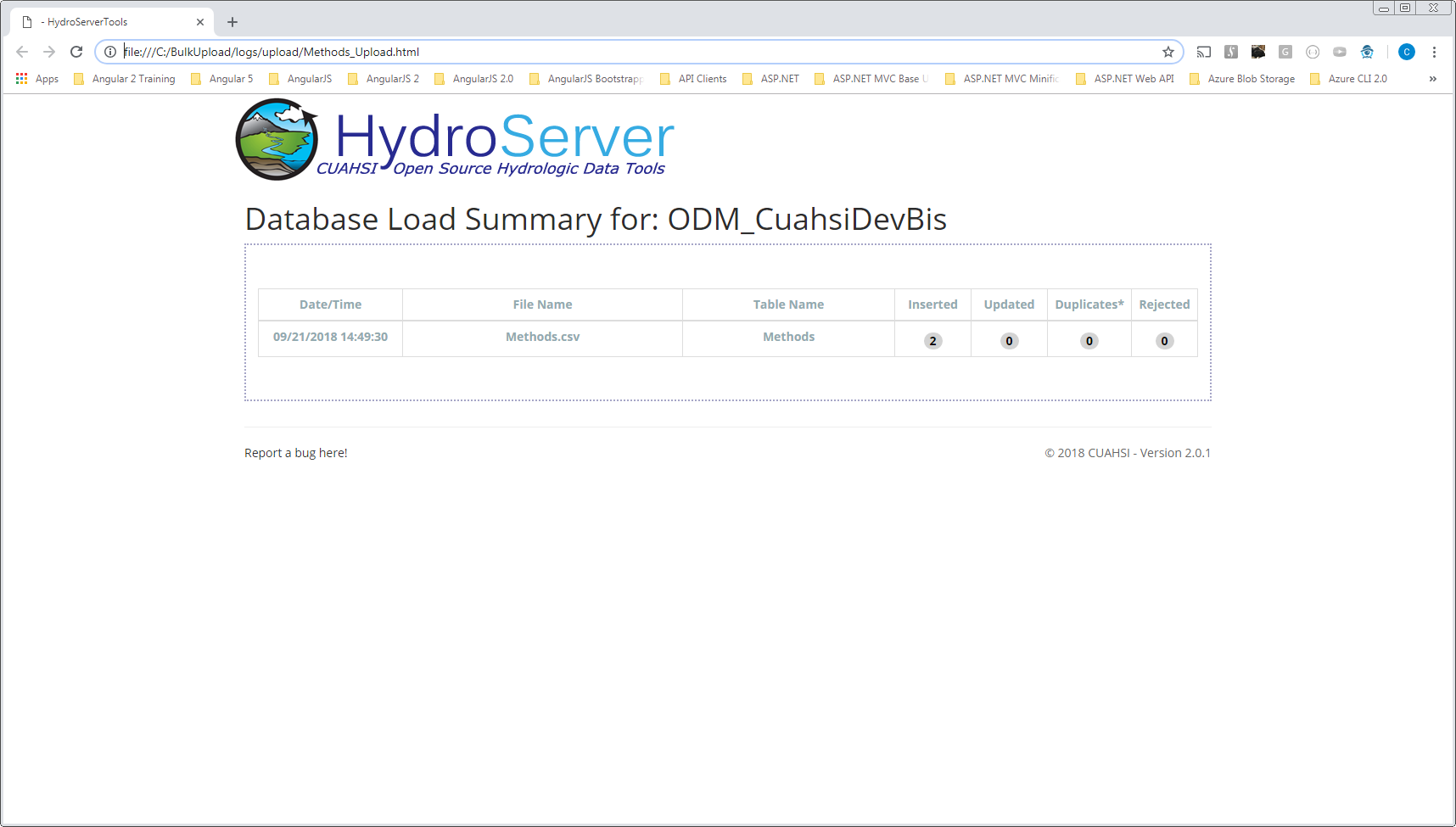
**Figure 2: cURL Config File Template**



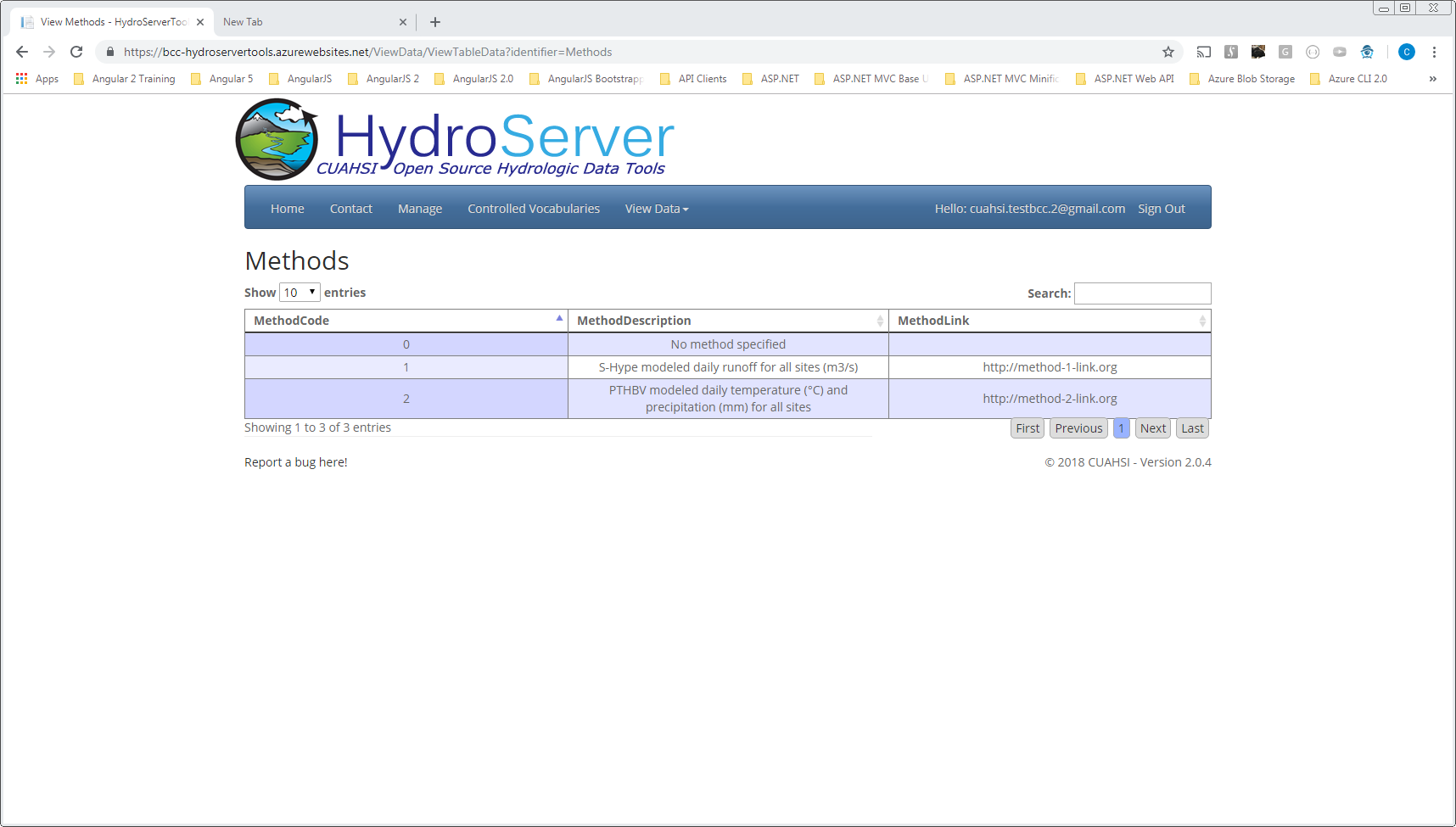
**Figure 3: cURL Config File for Methods Metadata**



**Figure 4: Sample cURL Upload Command Entry and Upload Message**



**Figure 5: Metadata Upload Status Report**



**Figure 6: HydroServer Web Client - View Data Option**