DATA DOWNLOAD & VISUALIZATION

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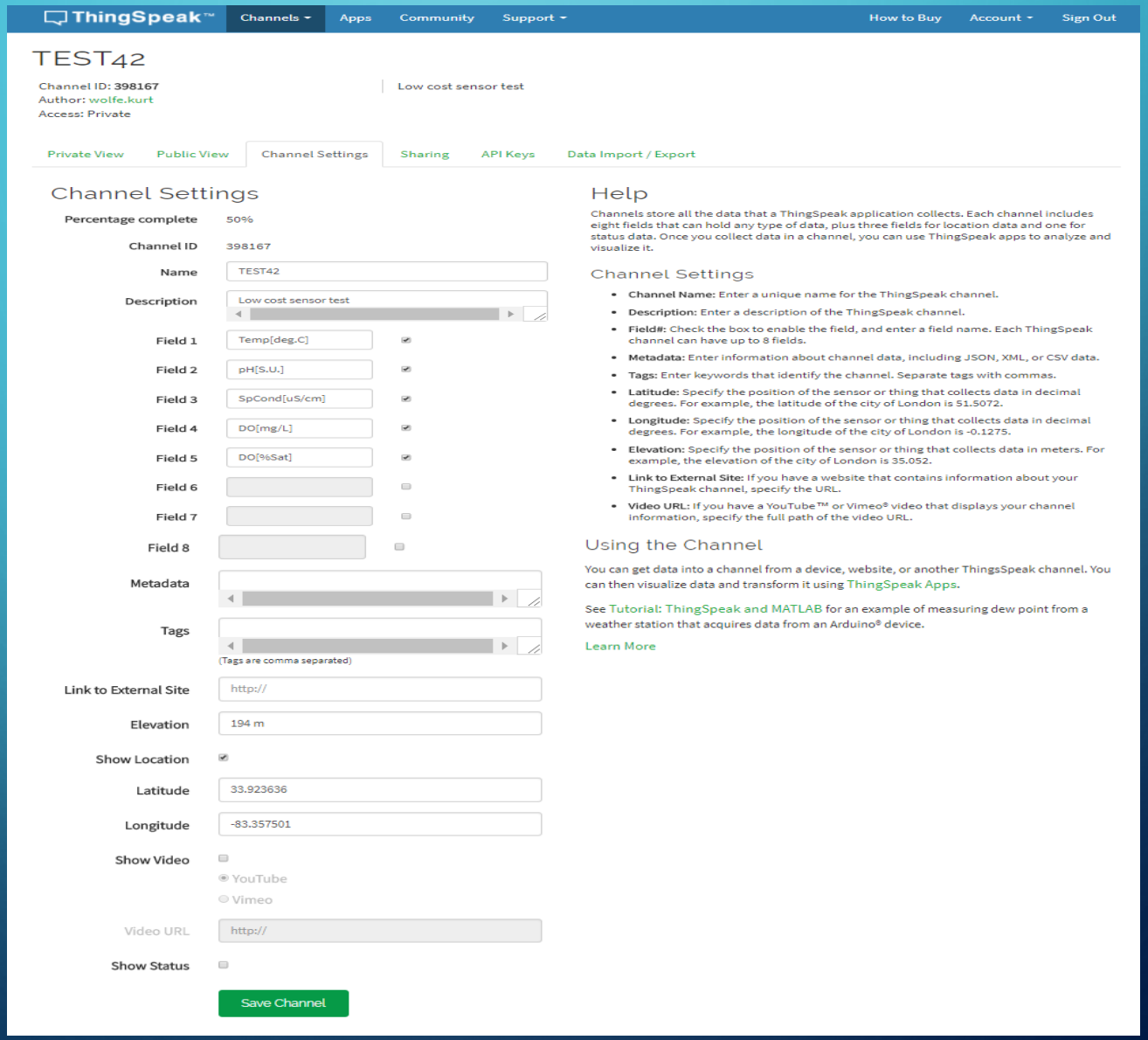
SET UP AN ACCOUNT

- https://thingspeak.com
- Internet of Things (IoT) cloud based analytics platform service
- Capture, aggregate, visualize and serve live data streams
- Getting Started:
  - Create an account – a free account is sufficient
  - Create a new channel – a channel corresponds to a deployed sensor package
  - Setup your channel – add your variables and metadata
  - Record your Channel ID, Read API Key, Write API Key and User API Key

SET UP A CHANNEL

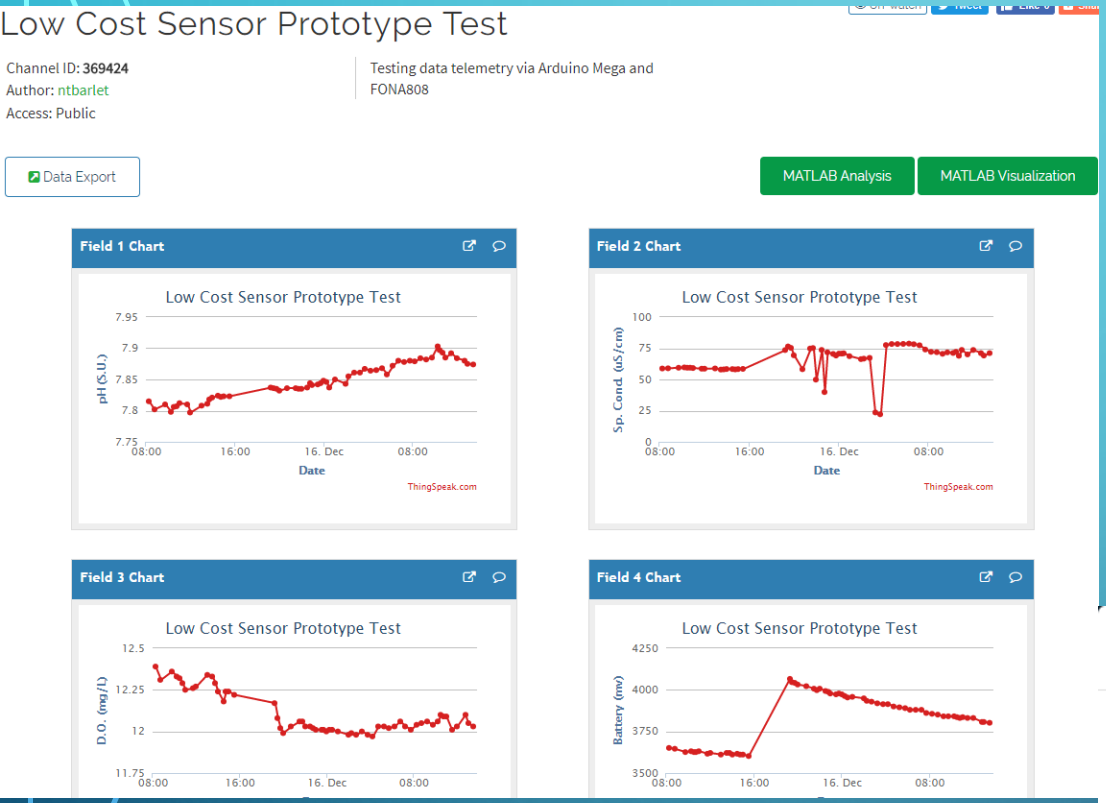


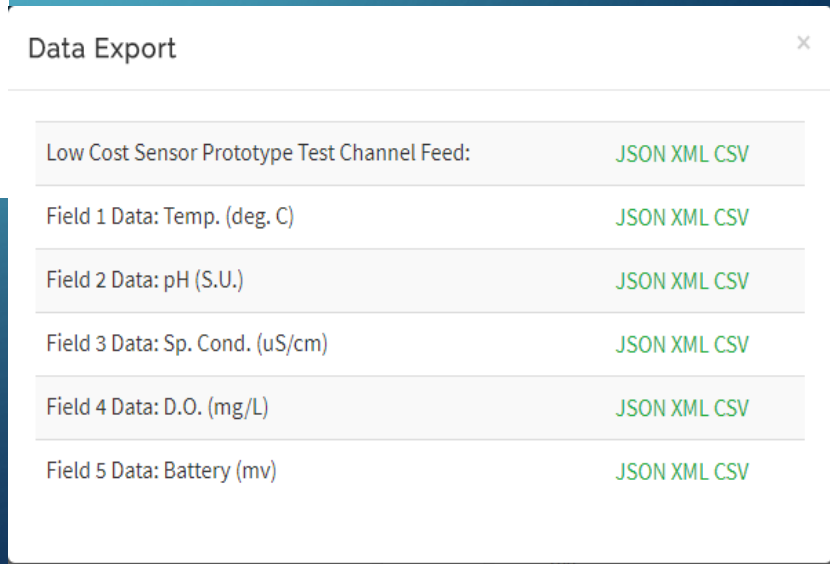
DATA DOWNLOAD OPTIONS

- Option One
  - Export data from SD card and import to Excel

DATA DOWNLOAD OPTIONS

- Option Two
  - Export data from ThingSpeak and import to Excel





DATA DOWNLOAD OPTIONS

- Option Two
  - Export data from ThingSpeak and import to Excel

- Make sure your CSV file is properly formatted with all the relevant field headers defined as:
  datetime, field1, field2, field3, field4, field5, field6, field7, field8, altitude, longitude, elevation, status

	A	B	C	D	E	F
1	datetime	field1	field2	field3	field4	field5
2	2017-10-24T09:16:00	19.419	7.399	191	11.75	79.6
3	2017-10-24T09:17:00	19.047	7.483	187.7	11.25	76.2
4	2017-10-24T09:18:00	19.05	7.538	187.8	10.92	74
5	2017-10-24T09:19:00	19.059	7.565	187.6	10.76	72.9
6	2017-10-24T09:21:00	19.083	7.571	187	10.56	71.6
7	2017-10-24T09:22:00	19.106	7.575	186.9	10.35	70.2
8	2017-10-24T09:23:00	19.262	7.578	187.2	10.19	69.1
9	2017-10-24T09:24:00	19.253	7.578	187.1	10.08	68.3

DATA DOWNLOAD OPTIONS

- Retrieving Data

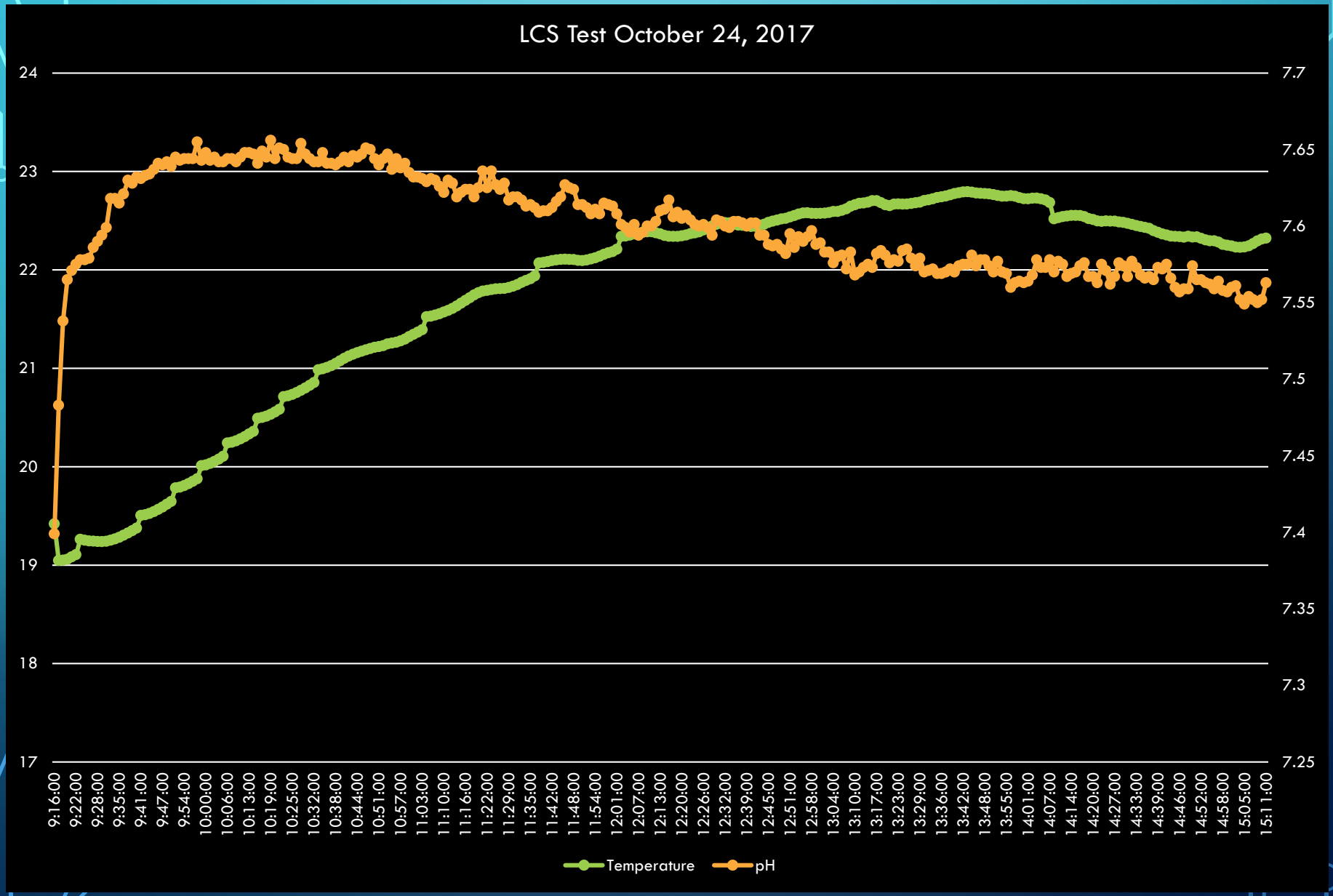
https://api.thingspeak.com/channels/398167/feeds.json?api_key=Q3SAZ0MGWY86TH64&results=2

Channel ID

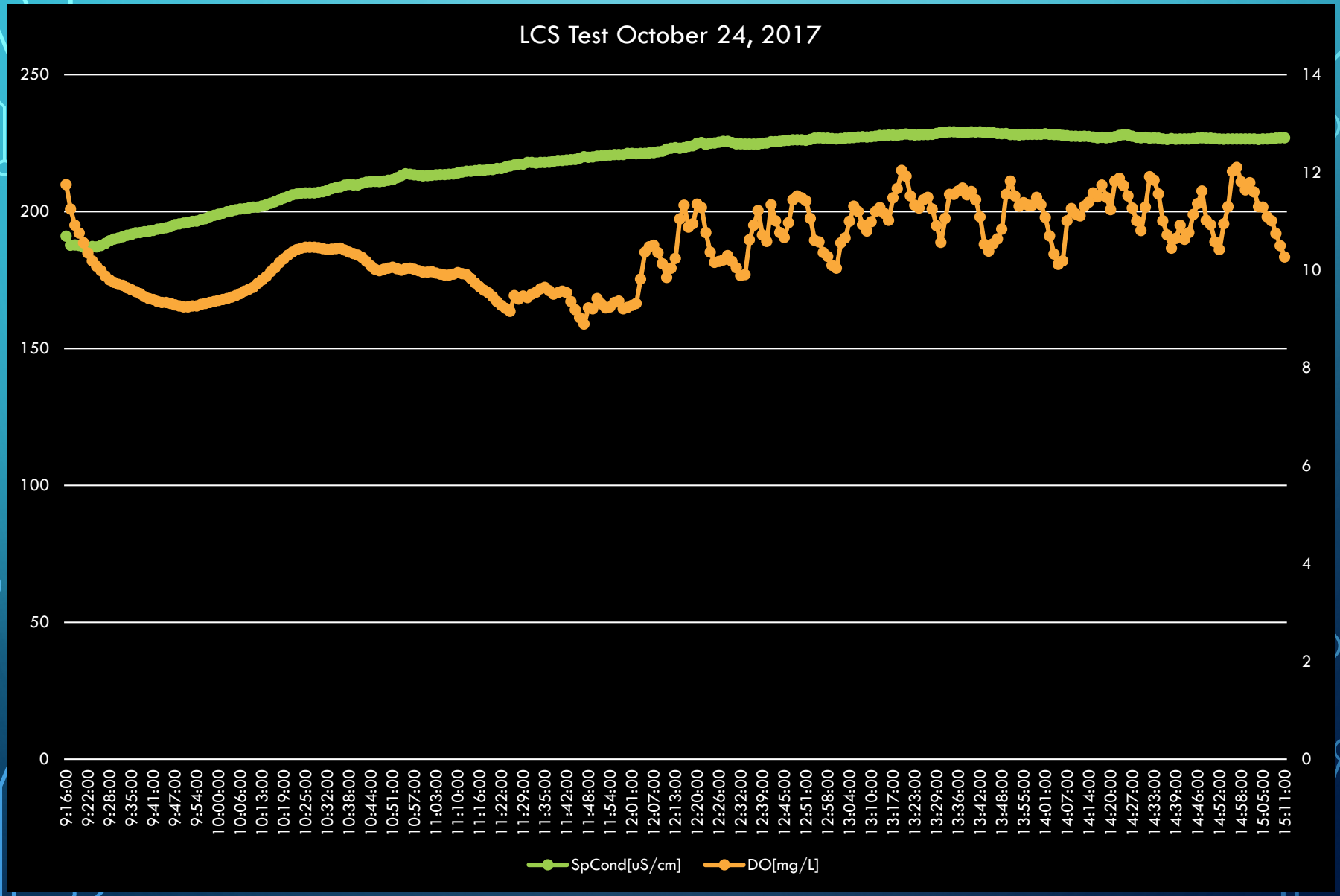
Read API Key


```
{
  "channel": {
    "id": 398167,
    "name": "TEST42",
    "description": "Low cost sensor test",
    "latitude": "33.923636",
    "longitude": "-83.357501",
    "field1": "Temp[deg.C]",
    "field2": "pH[S.U.]",
    "field3": "SpCond[uS/cm]",
    "field4": "DO[mg/L]",
    "field5": "DO[%Sat]",
    "created_at": "2018-01-05T20:08:02Z",
    "updated_at": "2018-01-05T22:14:23Z",
    "elevation": "194 m",
    "last_entry_id": 281
  },
  "feeds": [
    {
      "created_at": "2017-10-24T19:10:00Z",
      "entry_id": 280,
      "field1": "22.312",
      "field2": "7.552",
      "field3": "226.9",
      "field4": "10.5",
      "field5": "71.2"
    },
    {
      "created_at": "2017-10-24T19:11:00Z",
      "entry_id": 281,
      "field1": "22.322",
      "field2": "7.563",
      "field3": "226.9",
      "field4": "10.27",
      "field5": "69.6"
    }
  ]
}
```

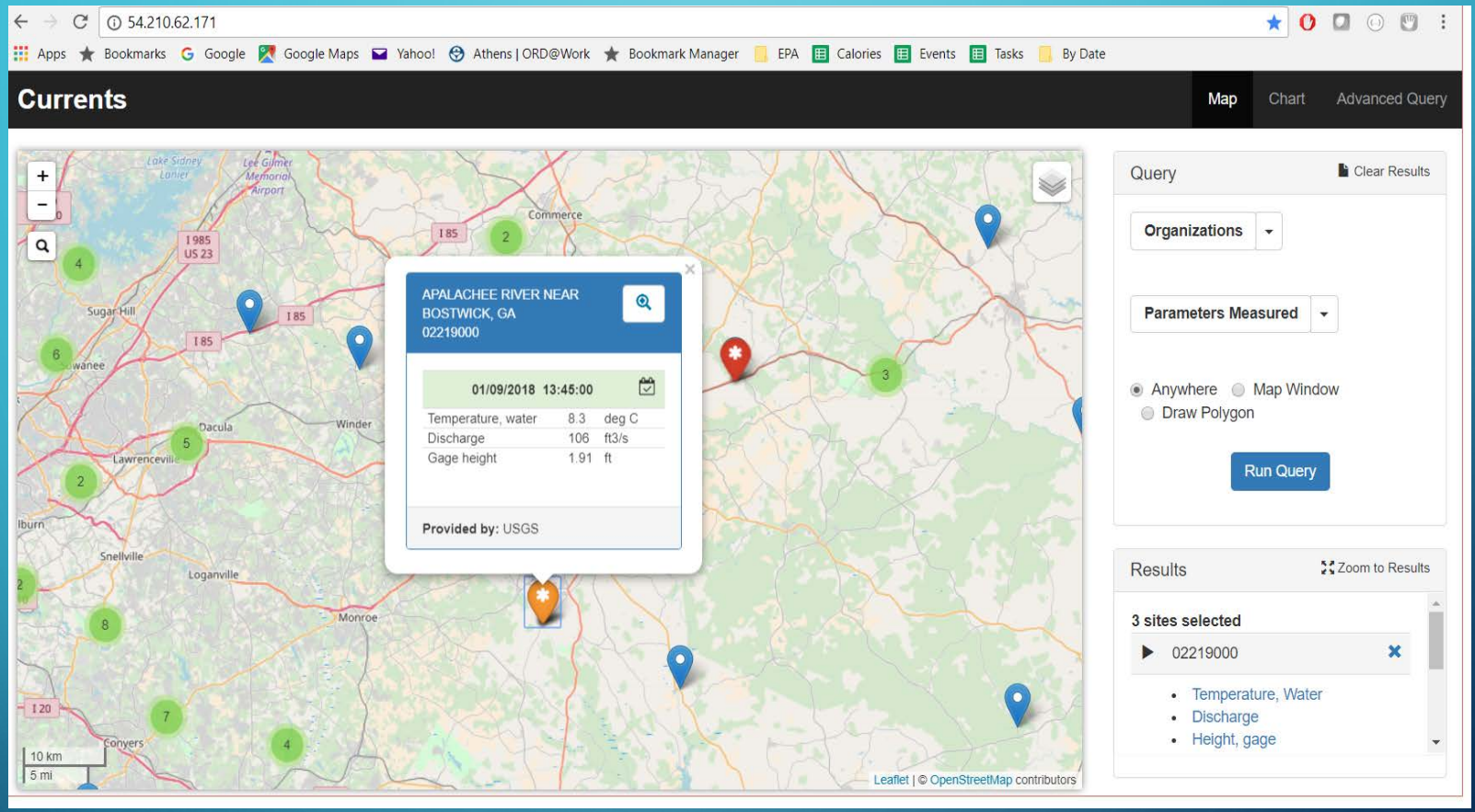
DATA VISUALIZATION



DATA VISUALIZATION



LOOKING TOWARDS THE FUTURE



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QUESTIONS