



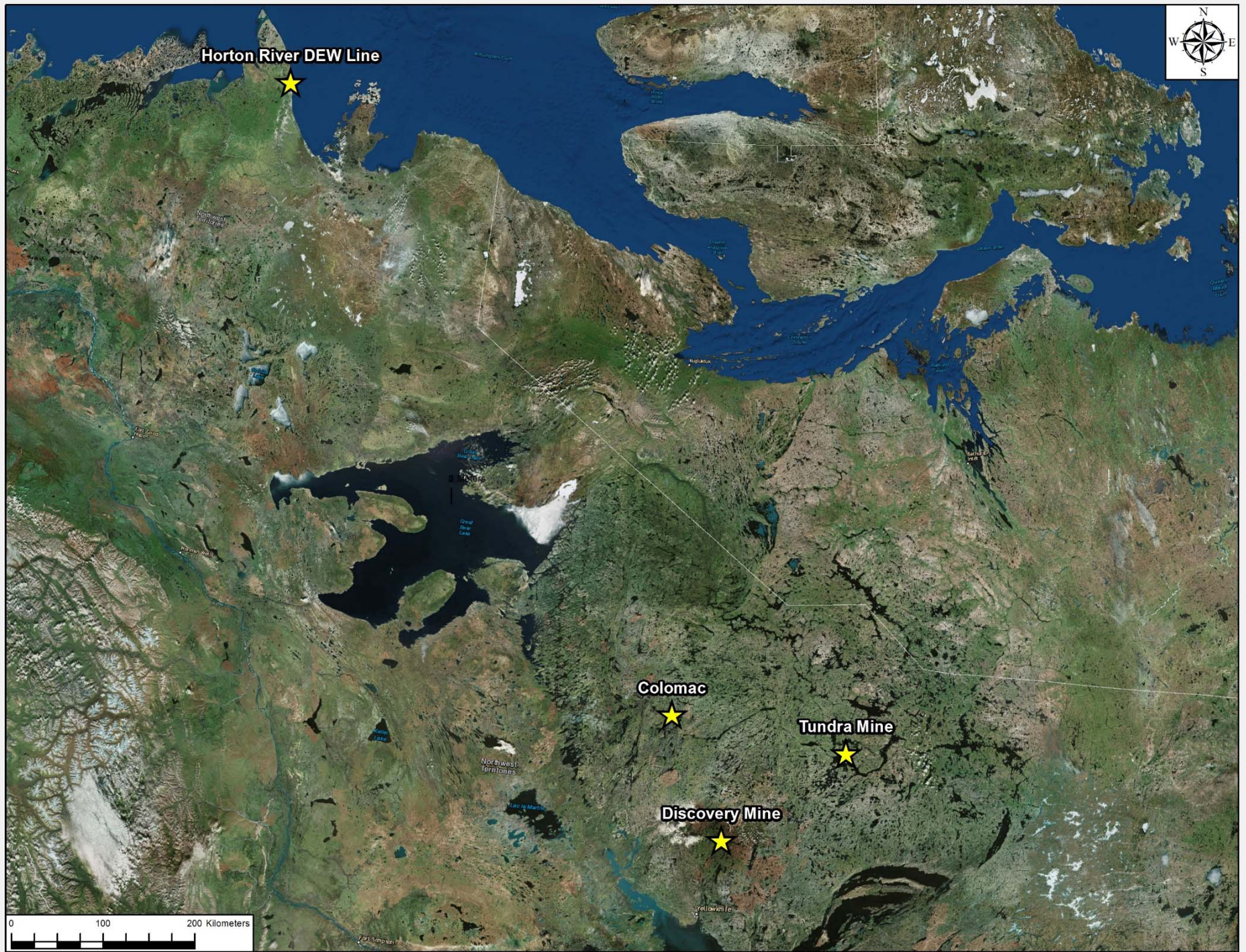
# Remote Sensing and Monitoring

Sept. 12, 2018

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# Remote Sensing

## Vegetation Index Analysis

# Satellite Imagery Acquisition

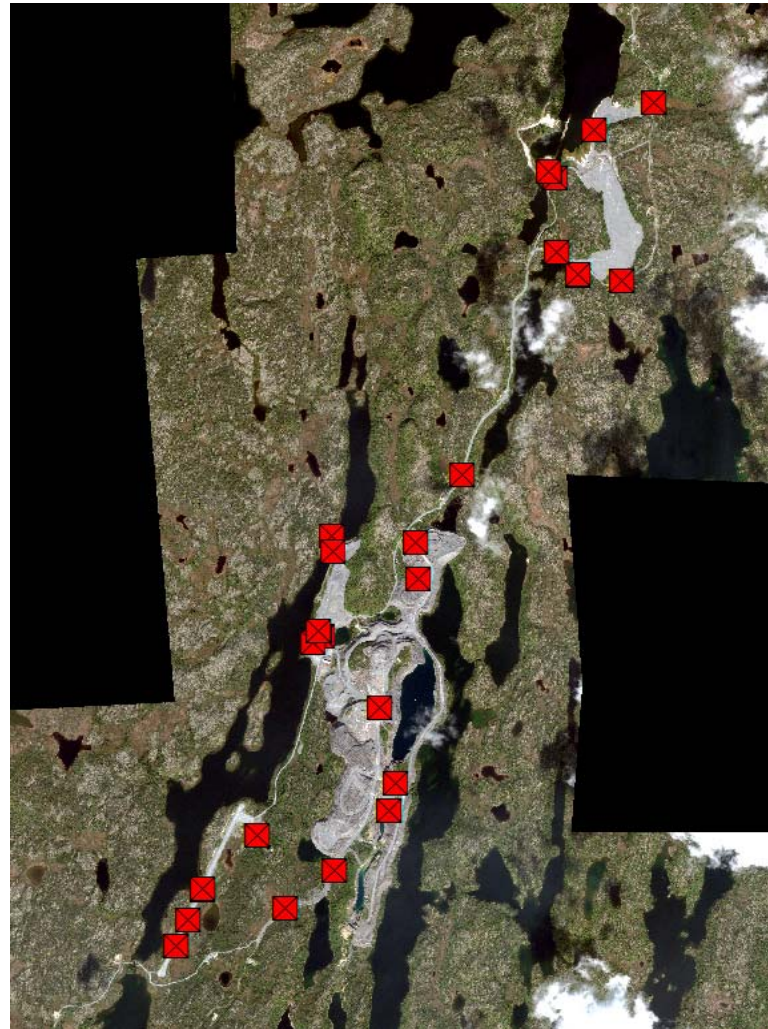
2010



2014



# Ground Truthing





# Vegetation Index Analysis

2010



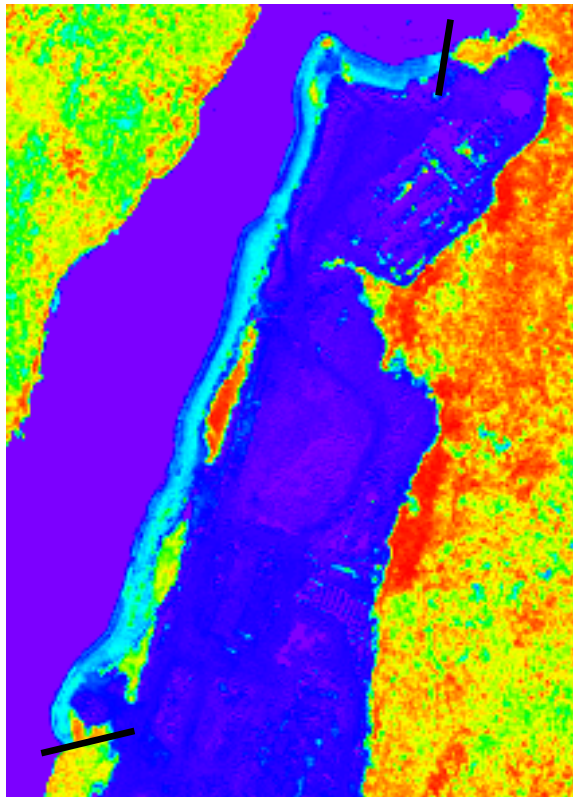
2014



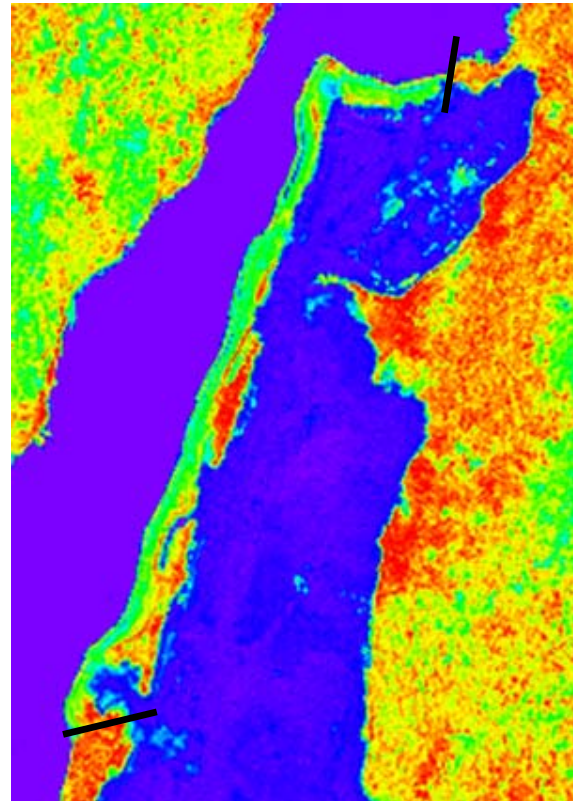
— Study Area (between lines)

# Vegetation Index Analysis

2010



2014

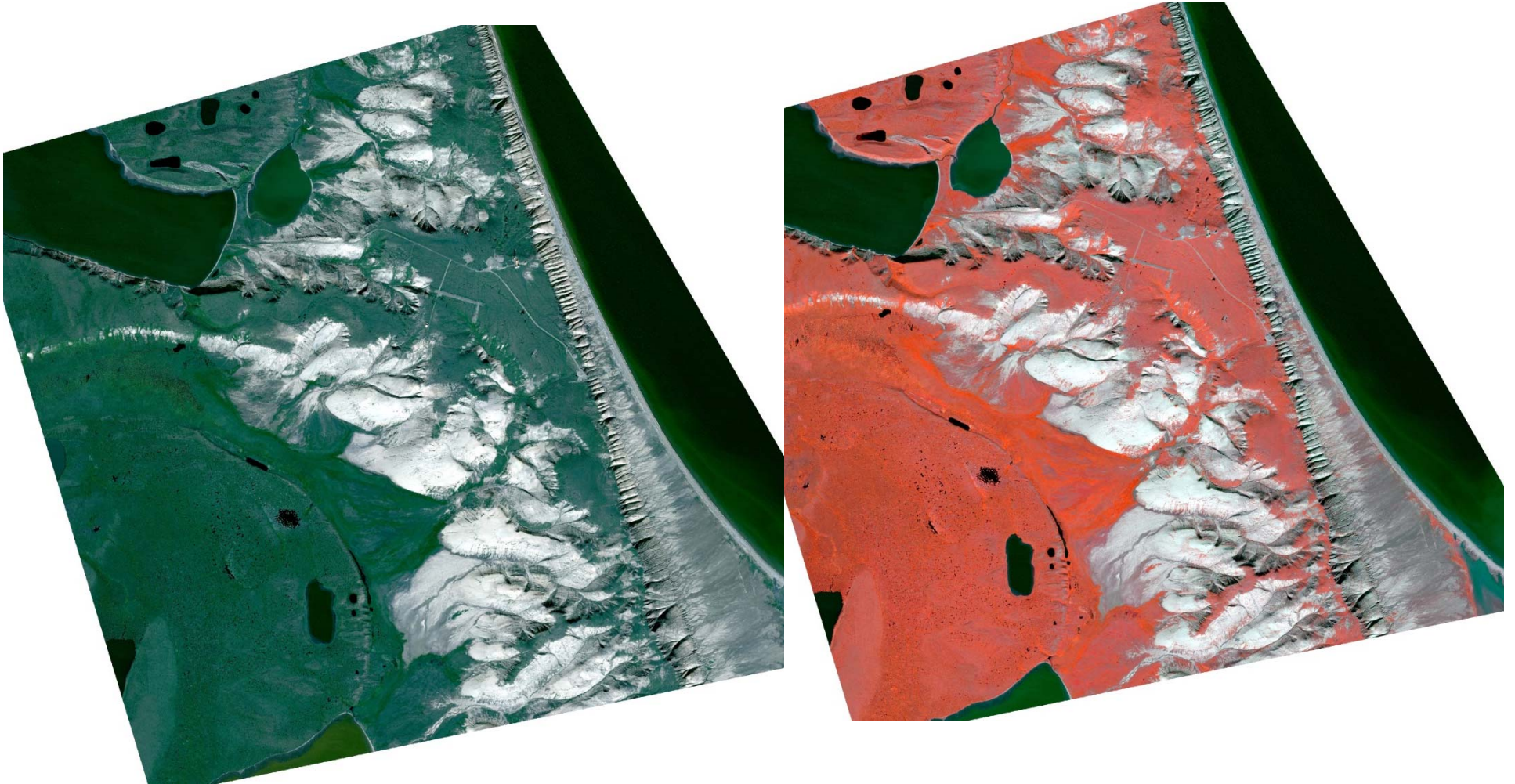


— Study Area (between lines)



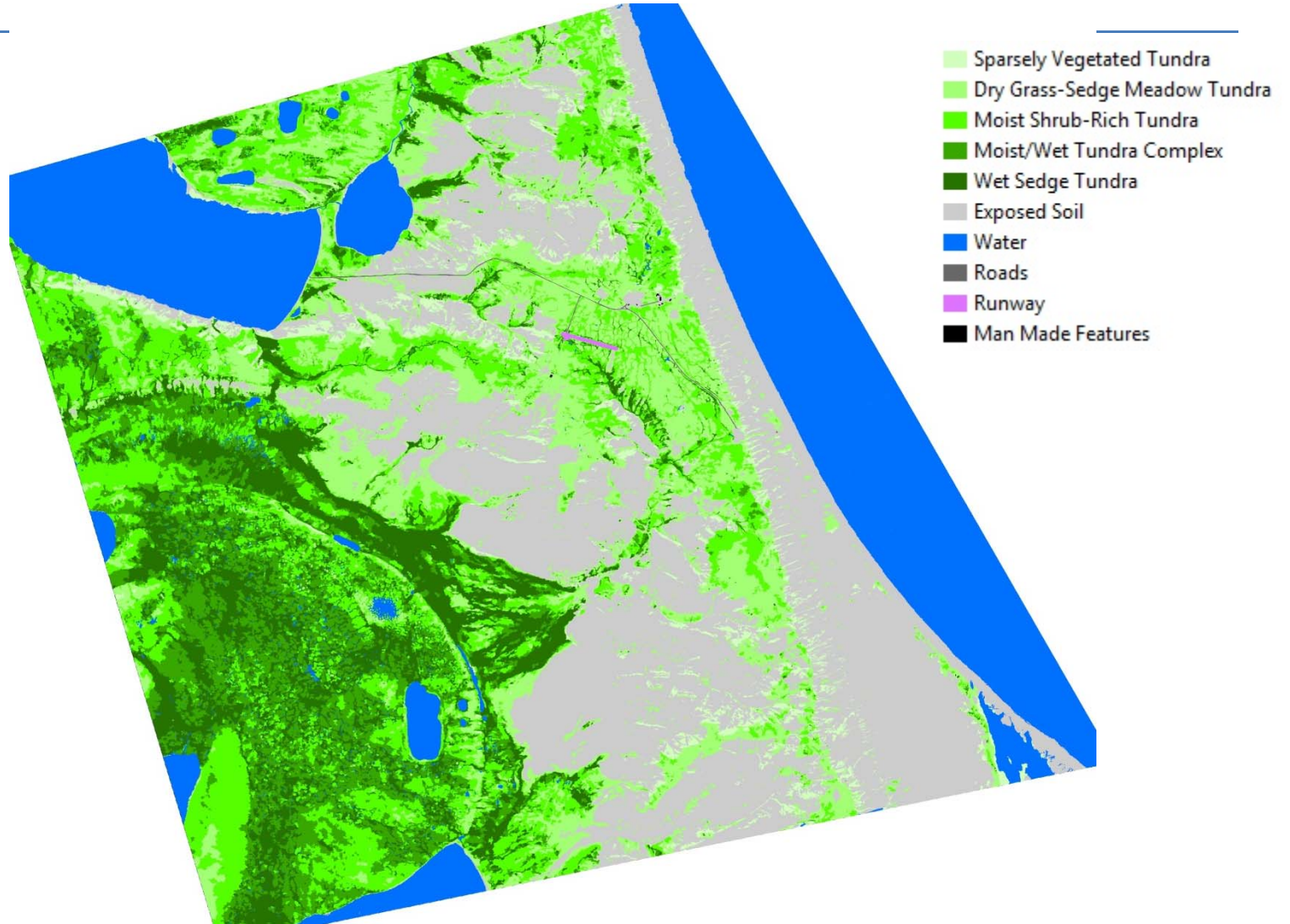


# Horton DEW Line Site Land Cover



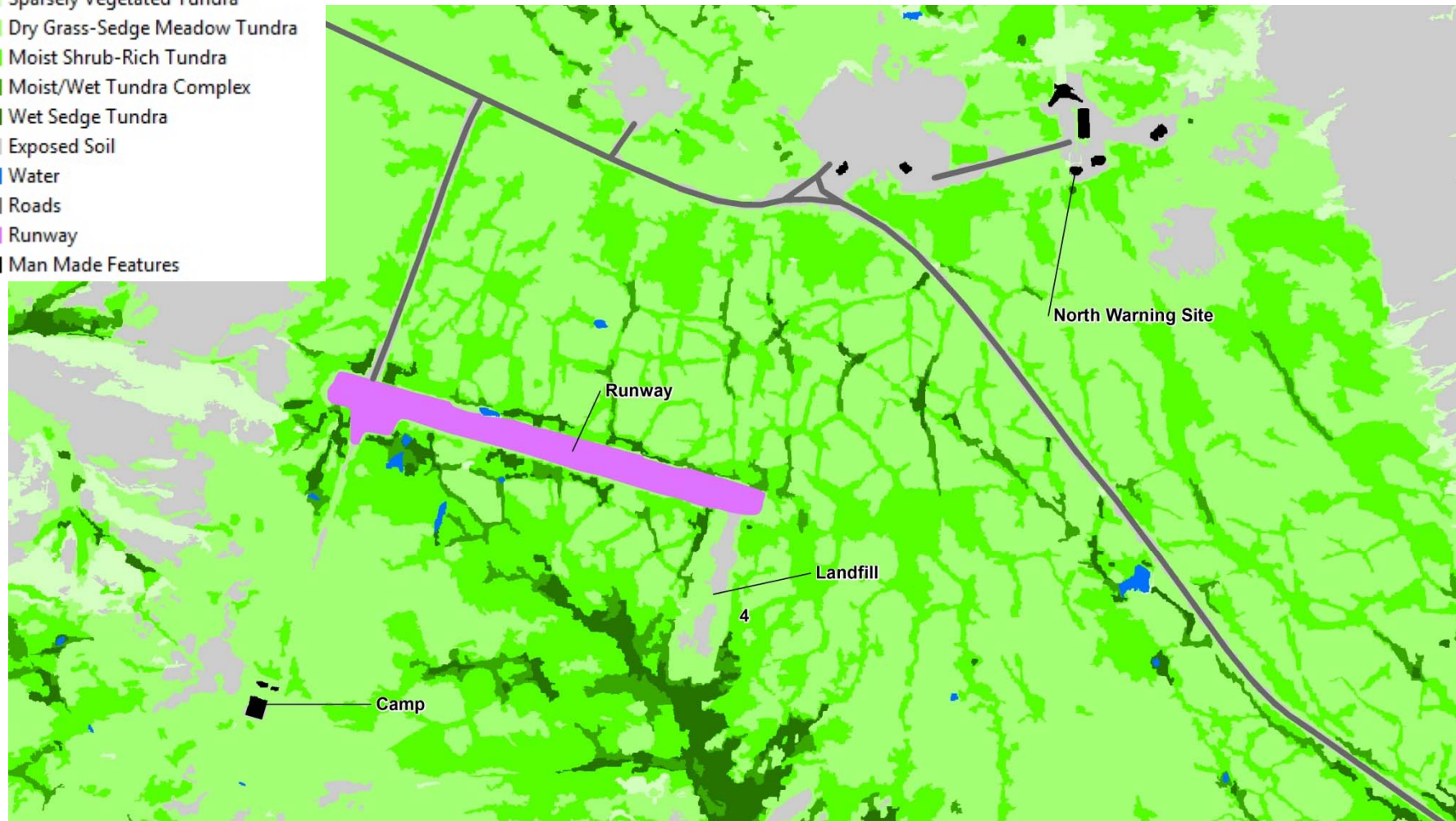


# Horton DEW Line Site Land Cover



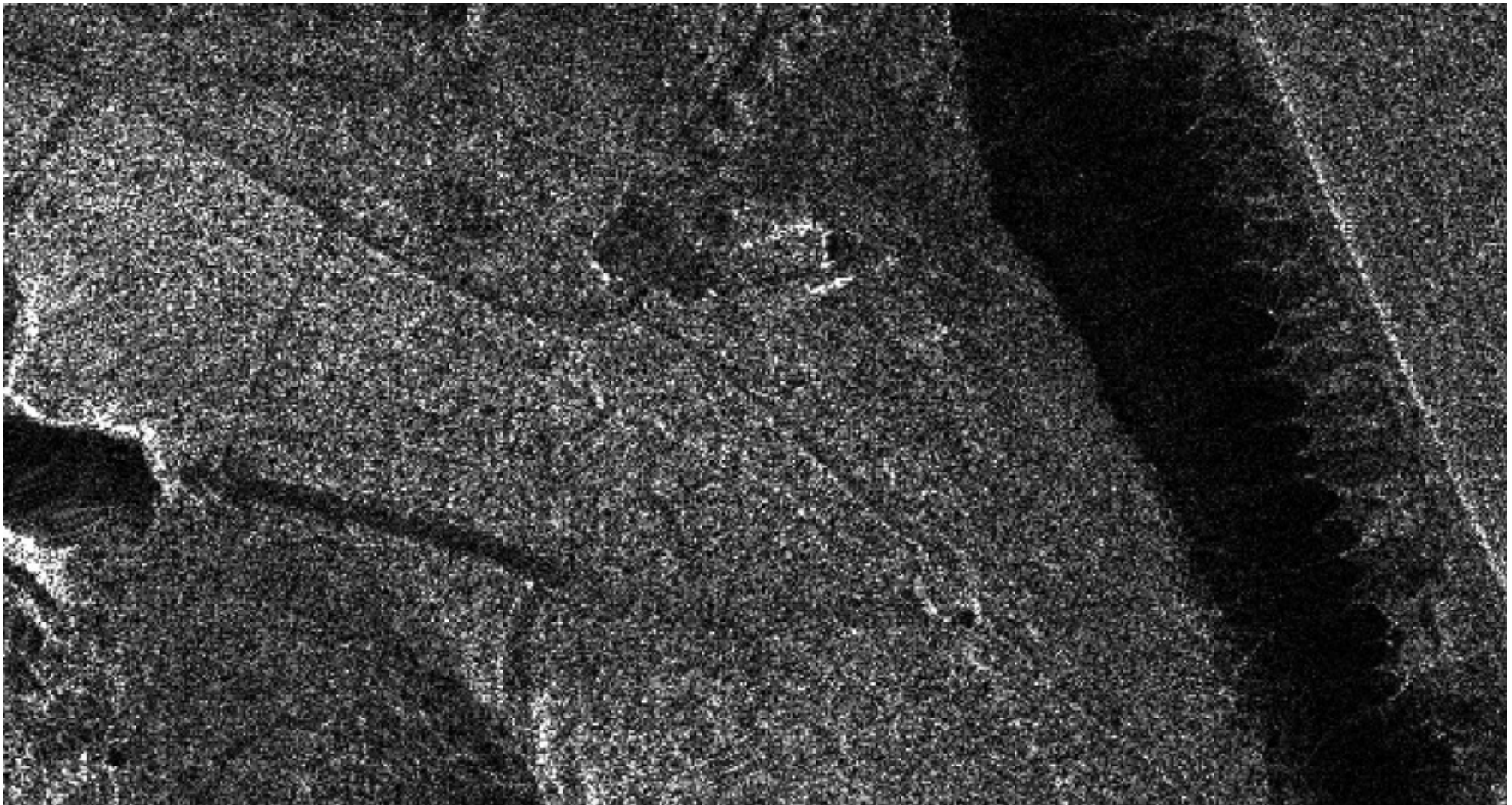
# Horton DEW Line Site Land Cover

- Sparsely Vegetated Tundra
- Dry Grass-Sedge Meadow Tundra
- Moist Shrub-Rich Tundra
- Moist/Wet Tundra Complex
- Wet Sedge Tundra
- Exposed Soil
- Water
- Roads
- Runway
- Man Made Features



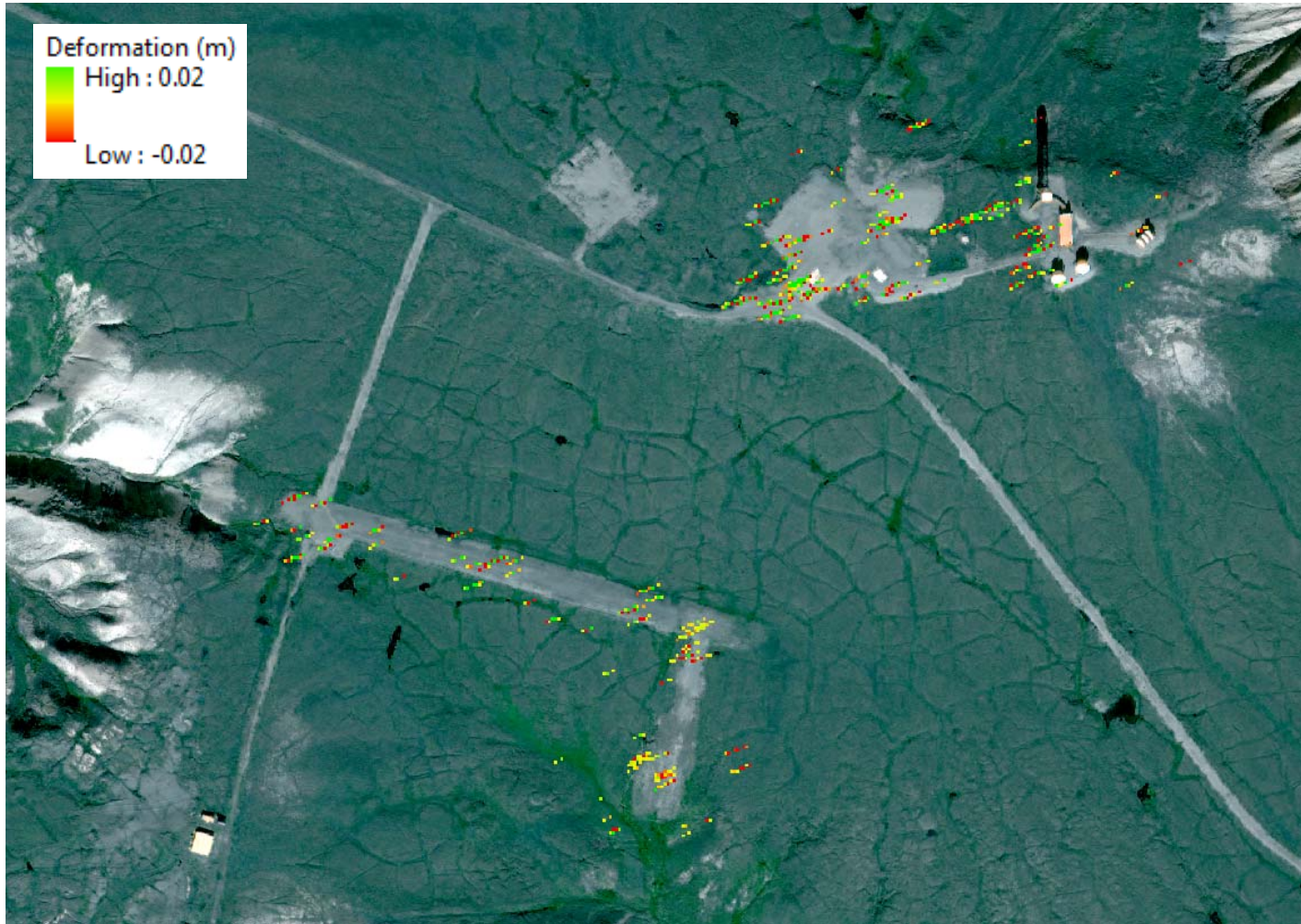


# Horton DEW Line Site RADAR





# Horton DEW Line Site RADAR

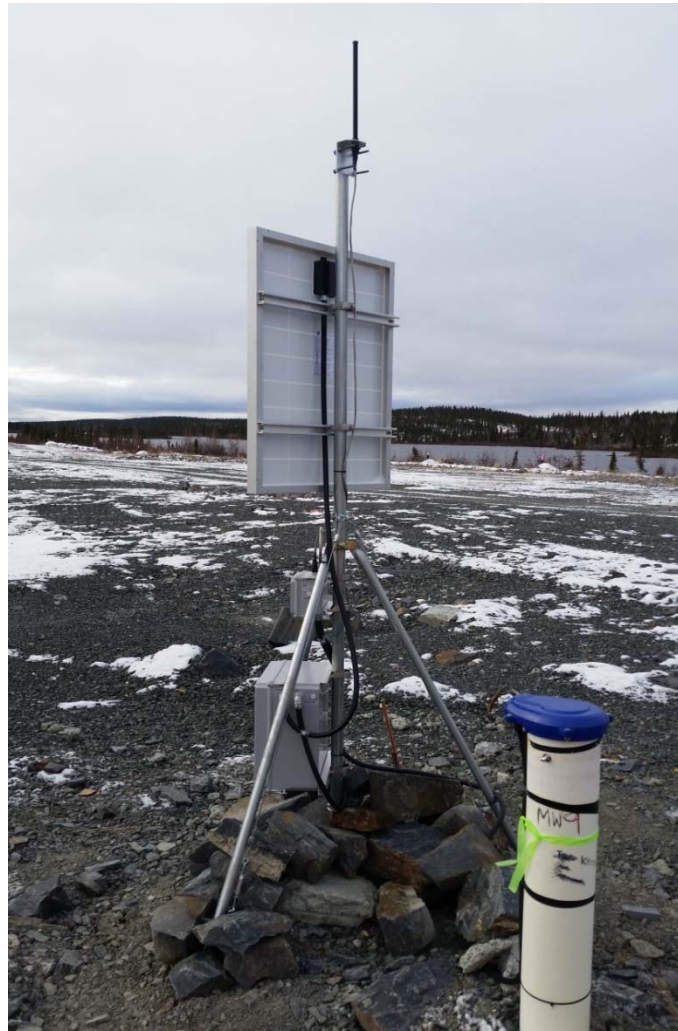




# Remote Monitoring

## Site Visit for Instrumentation Installation

# Well Instrumentation





# Master Station





# Lake Sensor





# Next Steps

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- Use remote sensing to relate lake chemistry.
- Monitor data real-time for any change or trends.
- Need good baseline data.
- Annual calibration required.

**Let's look at the data!**

HydrometCloud

hydrometcloud.com/hydrometcloud/index.jsp?menu=index

Welcome: blumetric (BluMetric Environmental) Logout

MAP | DASHBOARD | ALARMS | DATA REPORTS

Map Satellite

Wekweëti

Tundra_Weather_Station		
Air Temperature	7.64 C	2018-06-15 11:00
Barometric Pressure	952.10 mb	2018-06-15 11:00
Battery Voltage	13.50 V	2018-06-15 11:00
Rain Fall	18.20 mm	2018-06-15 11:00
RH	98.50 %	2018-06-15 11:00
Solar Radiation	239.60 W/m2	2018-06-15 11:00
Wind Direction	296.47 deg	2018-06-15 11:00
Wind Gust	14.60 km/hr	2018-06-15 11:00
Wind Speed	12.30 km/hr	2018-06-15 11:00

Windows taskbar: 1:52 PM, 2018-06-15





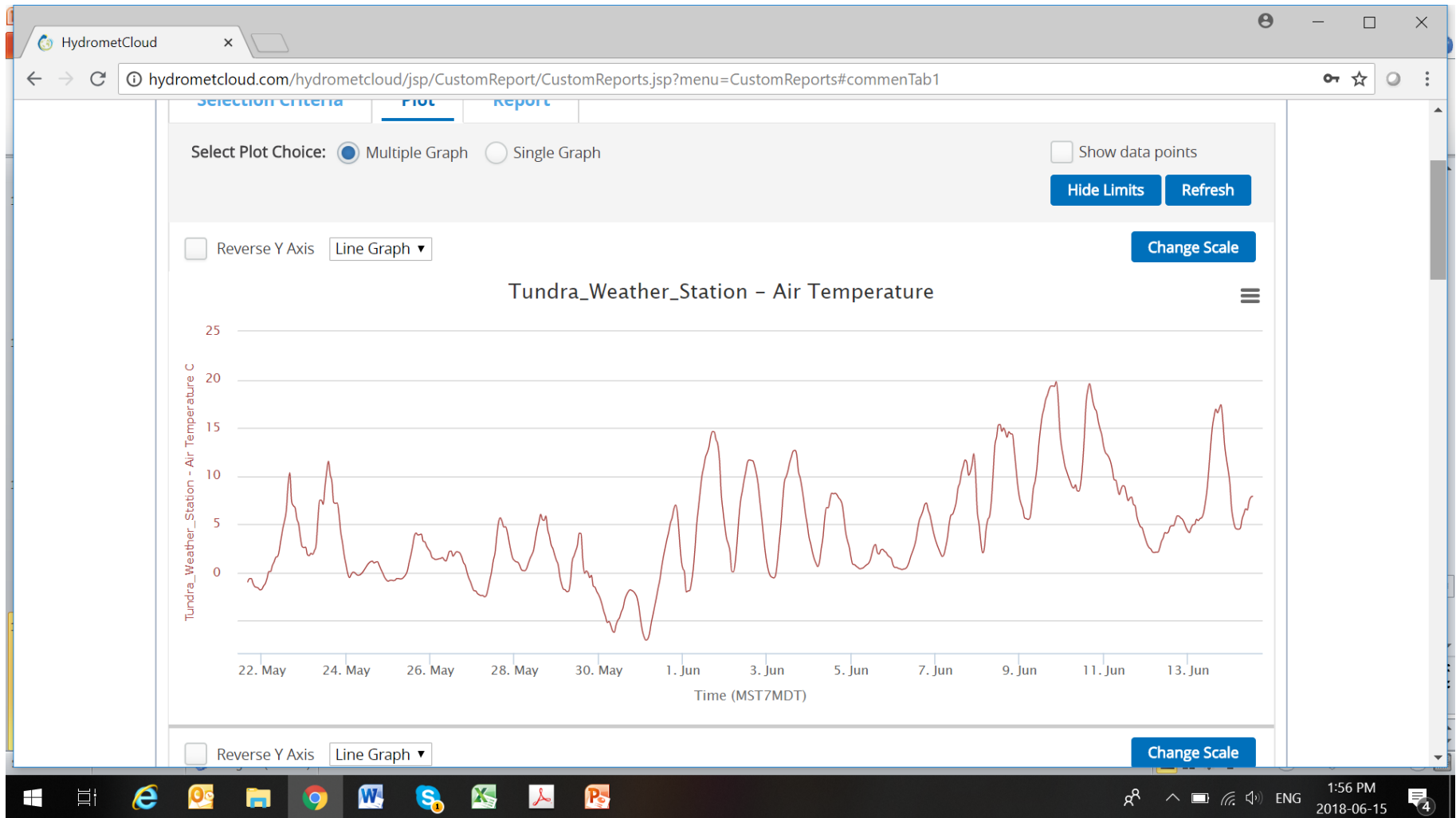
# Web Link Hydrometcloud

The screenshot shows a web browser window displaying the HydrometCloud application. The browser's address bar shows the URL: `hydrometcloud.com/hydrometcloud/jsp/CustomReport/CustomReports.jsp?menu=CustomReports`. The page header includes the HydrometCloud logo, a navigation menu with links for MAP, DASHBOARD, ALARMS, and DATA REPORTS, and a user greeting: "Welcome: blumetric (BluMetric Environmental)" with a Logout button. The main content area is titled "Data Reports" and contains a note: "Note: Sensors that have no data have been disabled". Below the note are three tabs: Selection Criteria (active), Plot, and Report. The Selection Criteria tab shows a "Select Sensors:" section with a "Display By:" dropdown set to "Station/Sensors" and a "Search:" dropdown set to "Stations". A search input field is also present. The sensor selection list includes:

- BluMetricEnvironmental
- BC4-MW15
- DAM1-Thermistors
- Tundra\_Weather\_Station
  - Air Temperature
  - Barometric Pressure
  - Battery Voltage
  - Rain Fall
  - RH
  - Solar Radiation
  - Wind Direction
  - Wind Gust
  - Wind Speed

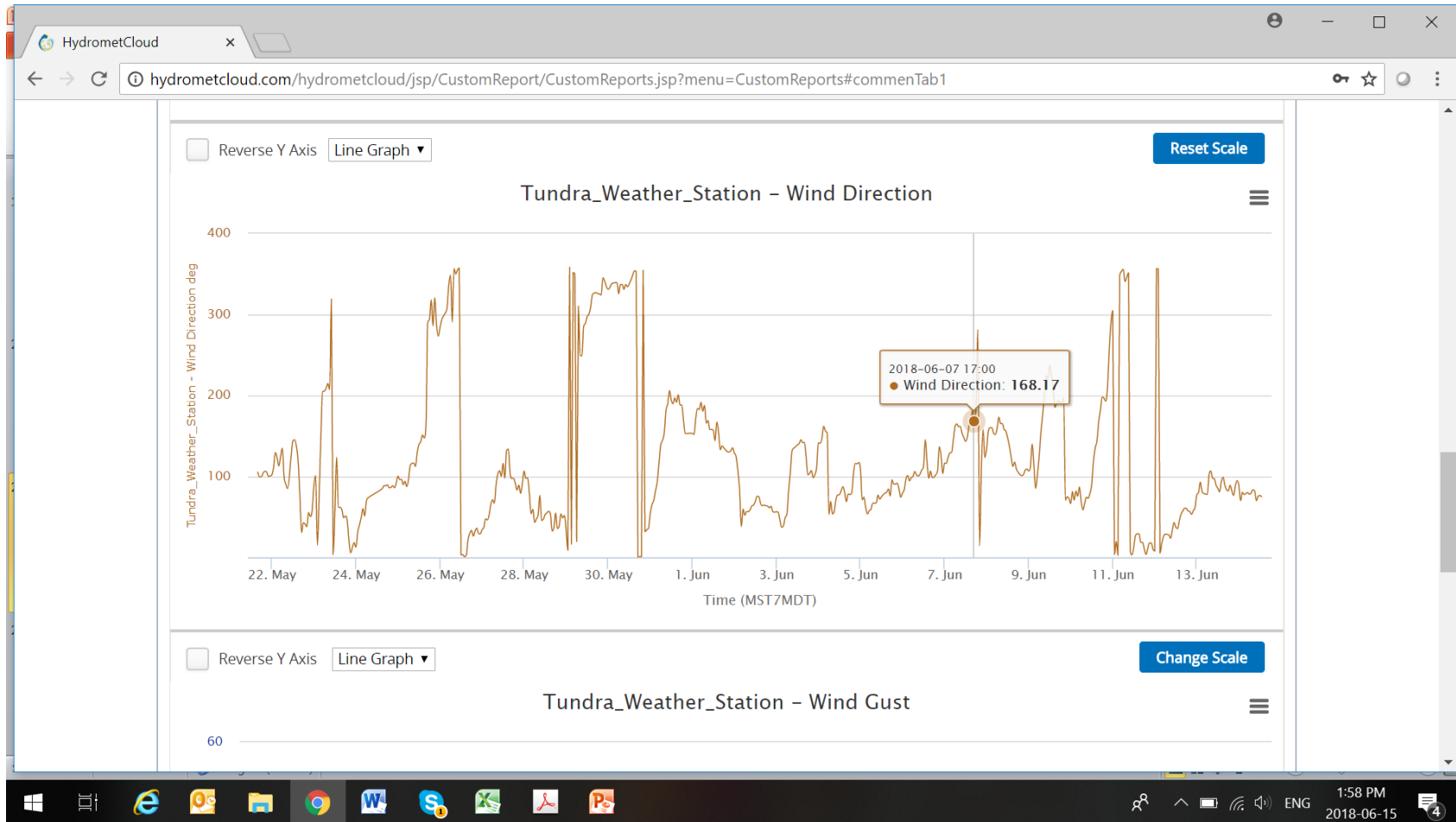
The Windows taskbar at the bottom shows the system tray with the date and time: 1:54 PM, 2018-06-15.

# Air Temperature

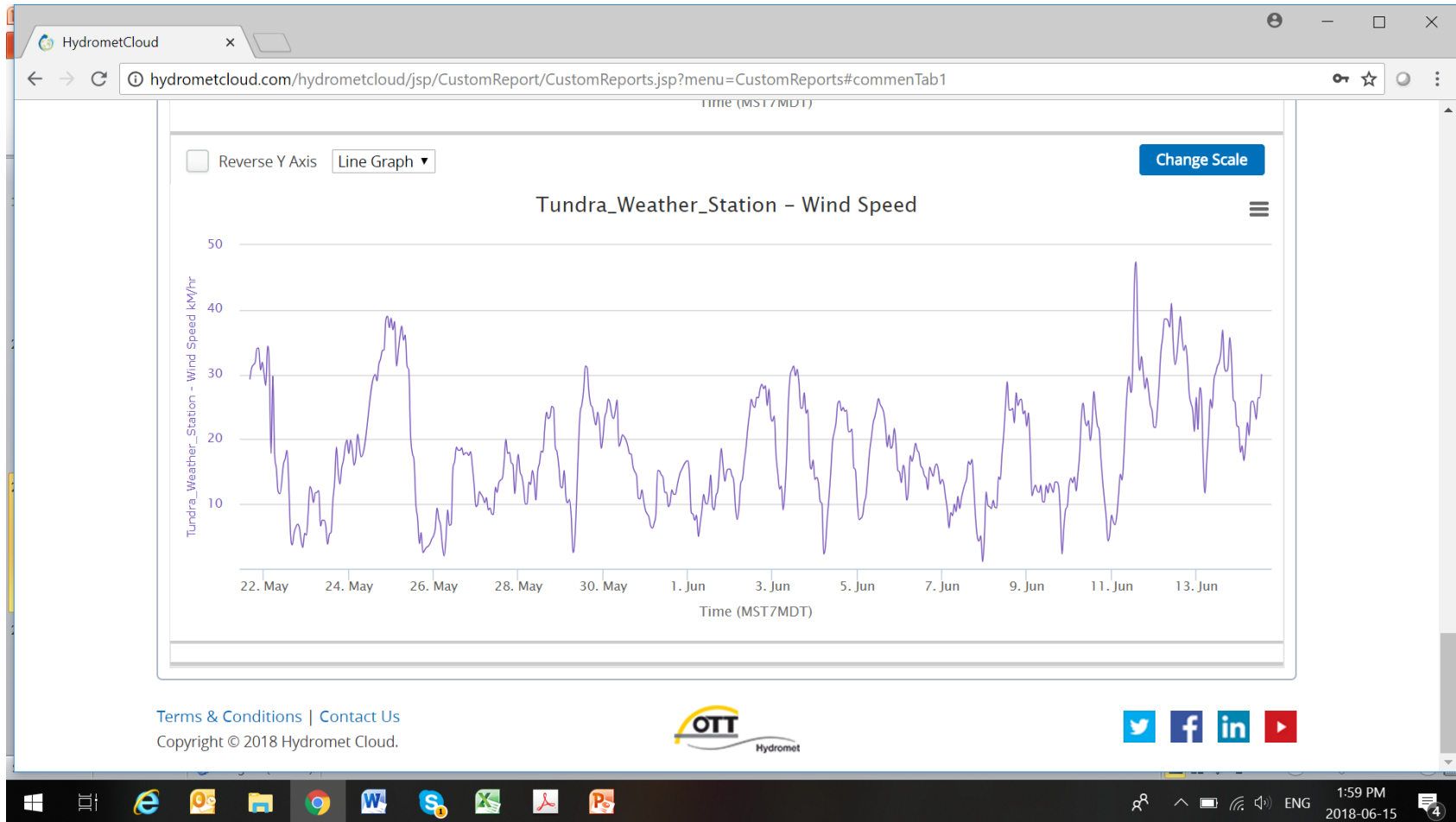




# Wind Direction

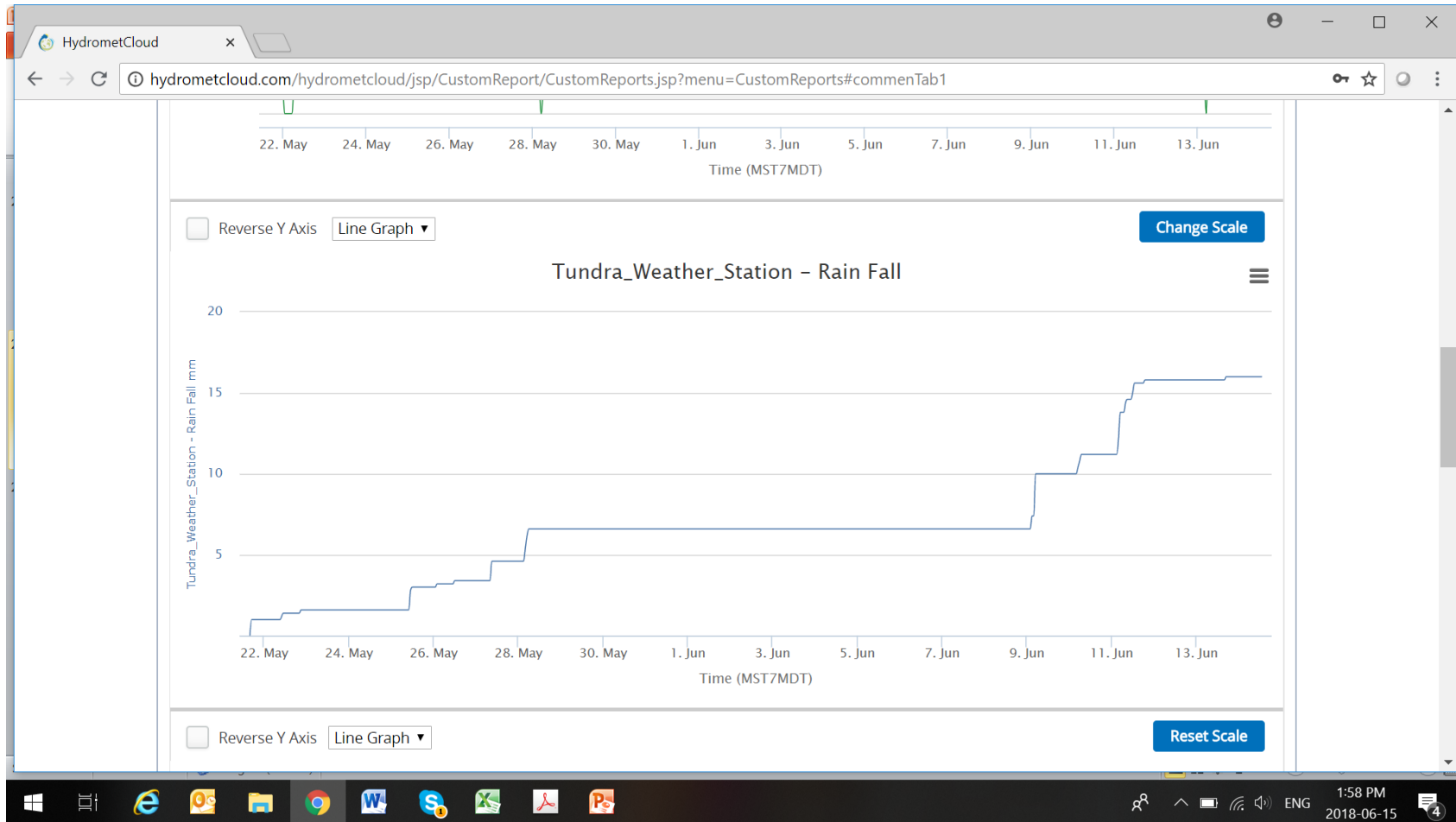


# Wind Speed

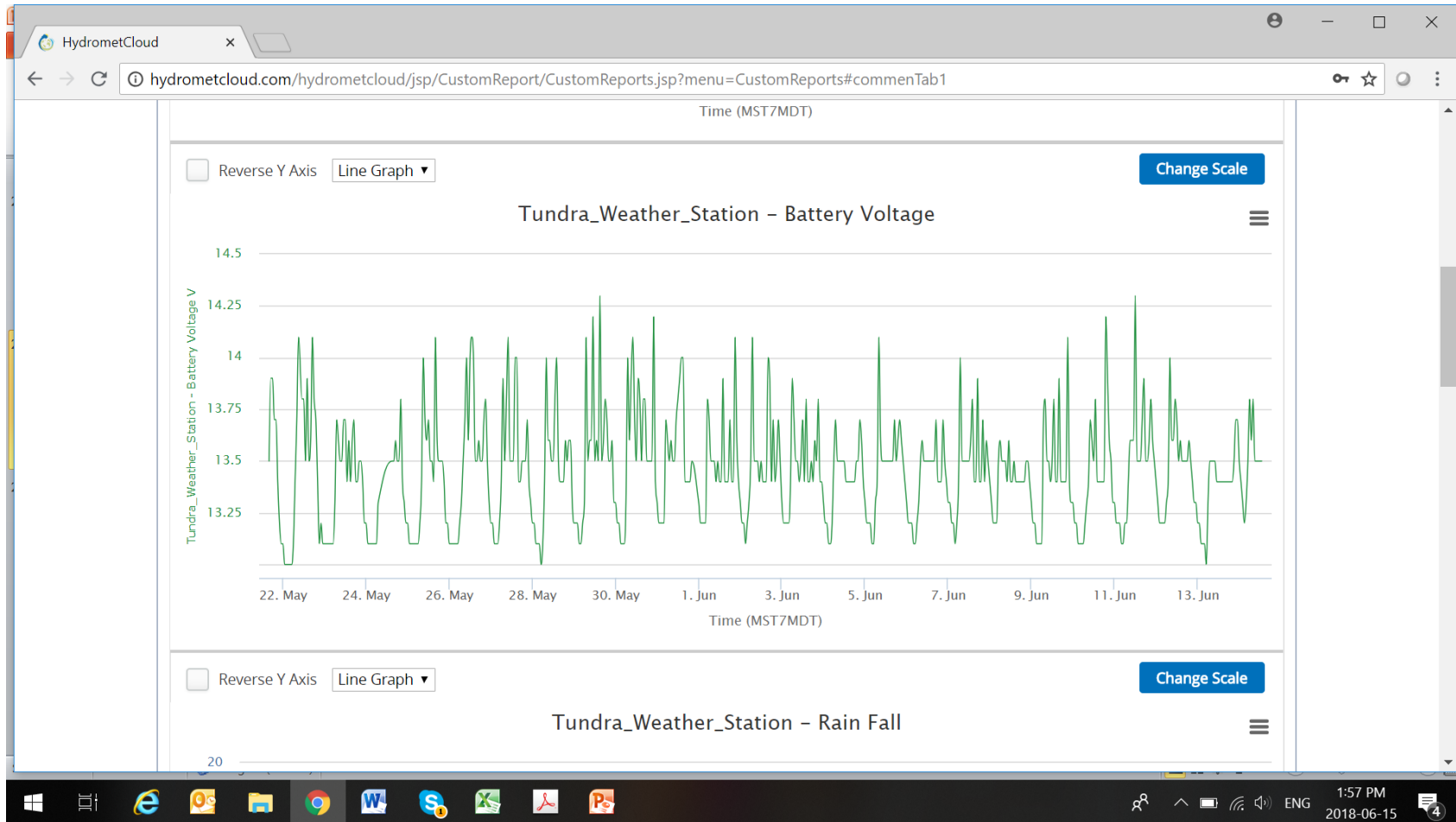




# Rain Fall



# Battery Voltage





# Thank You

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## INAC-CARD

- Kathryn Eagles
- Andrew Richardson
- Stanley Yee
- Joel Gowman



## BluMetric™

- Wayne Ingham
- Yannick Lanthier

## Geo Trek

- Ken Skaftfeld
- Nelson Ferreira