Barton & Loguidice

December 14, 2023

Michele Kharroubi, P.E.
Regional Air Pollution Control Engineer
NYSDEC Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Re: Monthly $H_2S$ Monitoring Report – November 2023
Landfill Gas Sampling & Continuous $H_2S$ Monitoring
Ontario County Sanitary Landfill
DEC ID: 8-3244-00004

File: 574.204.021

Dear Ms. Kharroubi:

On behalf of Casella Waste Services of Ontario, L.L.C., Barton & Loguidice, D.P.C. (B&L), is submitting this attached monitoring and sampling data obtained from the Ontario County Landfill to the New York State Department of Environmental Conservation (NYSDEC) for the period of November 1 through November 30, 2023. The data summarized herein is provided according to the Supplemental Hydrogen Sulfide Sampling and Monitoring Plan (B&L, October 2020).

**Continuous Ambient Air Perimeter Monitoring**
Casella has installed 6 Acrulog H2S monitoring units at the NYSDEC approved monitoring locations surrounding the Ontario County Landfill prior to the reporting period. A figure of the monitoring locations is provided in Attachment 1.

Summary of Monitoring Data
The continuous monitoring presented in this report covers the period commencing on Wednesday at midnight, November 1st, and ending at midnight on Thursday, November 30th. The data has been summarized into charts, presenting the rolling 1-hour average H2S concentration and the ppb threshold for each monitoring station. Please note, in the first chart at each station, the time scale is exaggerated slightly due to the chart containing 4.5 days of data (instead of 7 days) and the last chart containing 3.5 days of data (instead of 7 days).

The following is a summary of the data collected during this period:

- A total of 25,391 measurements of H2S were collected.
- Of the 25,391 measurements collected, 24,351 (or 95.9%) were below the detection limit of instruments.
- Station 4 had no observed periods where the hourly average H2S concentration exceeded the NYSDEC Ambient Air Standard of 10 ppb.
- Station 1 data indicates the following periods where the hourly average H2S concentration exceeded 10 ppb:

- November 4 – 5:10 AM to 6:00 AM – Maximum hourly average of 25.17 ppb. The wind at this time was from the south-southwest at 8.1 mph.
- November 5 – 9:10 PM to 9:50 PM – Maximum hourly average of 13.33 ppb. The wind at this time was calm.
- November 6 – 4:00 AM to 4:40 AM – Maximum hourly average of 12.00 ppb. The wind at this time was from the south-southwest at 6.3 mph.

- Station 2 data indicates the following periods where the hourly average H2S concentration exceeded 10 ppb:
  - November 1 – 4:40 AM to 5:40 AM – Maximum hourly average of 12.67 ppb. The wind at this time was from the west and west-southwest between 3.4 and 6.7 mph.
  - November 4 – 4:20 AM to 5:20 AM – Maximum hourly average of 62.17 ppb. The wind at this time was from the south-southwest between 5.8 and 8.1 mph.
  - November 4 – 7:00 PM to 8:10 PM – Maximum hourly average of 24.17 ppb. The wind at this time was from north-northwest between 0 and 4 mph.
  - November 5 – 4:30 AM to 4:40 AM – Maximum hourly average of 11.83 ppb. The wind at this time was from the west-northwest at 3.7 mph.
  - November 5 – 7:50 PM to 10:00 PM – Maximum hourly average of 67.33 ppb. The wind at this time was calm.
  - November 12 – 3:10 AM – Maximum hourly average of 10.50 ppb. The wind at this time was from the northwest at 3.4 mph.
  - November 12 – 3:50 AM to 4:10 AM – Maximum hourly average of 13.17 ppb. The wind at this time was from the northwest between 0 and 3.4 mph.
  - November 12 – 6:50 AM to 7:10 AM – Maximum hourly average of 11.67 ppb. The wind at this time was from the north-northeast between 4.9 and 5.6 mph.
  - November 14 – 5:55 PM to 6:55 PM – Maximum hourly average of 44.17 ppb. The wind at this time was from the south-southeast between 0 and 3.4 mph.
  - November 18 – 5:25 PM to 5:35 PM – Maximum hourly average of 10.67 ppb. The wind at this time was from the south-southwest at 3.4 mph.
  - November 23 – 5:20 AM to 6:30 AM – Maximum hourly average of 13.83 ppb. The wind at this time was from the southwest between 5.8 and 6.8 mph.
- Station 3 data indicates the following periods where the hourly average H2S concentration exceeded 10 ppb:
  - November 4 – 4:00 PM to 5:20 PM – Maximum hourly average of 43.83 ppb. The wind at this time was from the northeast between 0 and 3.4 mph.
  - November 4 – 6:40 PM to 7:30 PM – Maximum hourly average of 13.17 ppb. The wind at this time was calm.
  - November 5 – 4:30 PM to 6:40 PM – Maximum hourly average of 84.33 ppb. The wind at this time was from the north between 0 and 6 mph.
  - November 19 – 11:30 PM to November 20 at 12:20 AM – Maximum hourly average of 16.50 ppb. The wind at this time was from the west-northwest between 5.6 and 5.8 mph.
  - November 20 – 1:10 AM to 2:30 AM – Maximum hourly average of 33.67 ppb. The wind at this time was from the west-northwest between 0 and 4.7 mph.
  - November 20 – 3:40 AM to 4:10 AM – Maximum hourly average of 10.83 ppb. The wind at this time was from the northwest between 0 and 5.6 mph.

- Station 5 data indicates the following periods where the hourly average H2S concentration exceeded 10 ppb:
    - November 4 – 5:10 AM to 6:20 AM – Maximum hourly average of 56.00 ppb. The wind at this time was from the southwest between 5.6 and 8.1 mph.
    - November 4 – 10:40 AM – Maximum hourly average of 10.67 ppb. The wind at this time was from the south-southwest at 5.2 mph.
    - November 13 – 6:05 AM to 6:35 AM – Maximum hourly average of 16.50 ppb. The wind at this time was from the south-southwest 8.1 mph.
    - November 13 – 9:15 AM to 9:25 AM – Maximum hourly average of 11.17 ppb. The wind at this time was from the south-southwest 12.7 mph.
    - November 15 – 5:55 PM to 7:05 PM – Maximum hourly average of 27.67 ppb. The wind at this time was from the south-southwest between 7 and 9.2 mph.
    - November 15 – 9:45 PM to 11:05 PM – Maximum hourly average of 20.17 ppb. The wind at this time was from the south-southwest and west-southwest between 3.7 and 9.3 mph.
    - November 16 – 3:45 PM to 4:25 PM – Maximum hourly average of 12.50 ppb. The wind at this time was from the northeast between 0 and 3.7 mph.
    - November 16 – 6:25 PM to 8:15 PM – Maximum hourly average of 21.00 ppb. The wind at this time was from the west-southwest and south-southwest between 3.4 and 9.6 mph.
    - November 22 – 8:40 AM to 9:20 AM – Maximum hourly average of 13.17 ppb. The wind at this time was from the southwest between 4.3 and 5.8 mph.
    - November 25 – 6:20 PM to 8:00 PM – Maximum hourly average of 25.67 ppb. The wind at this time was from the south between 0 and 3.4 mph.
    - November 25 – 8:30 PM to 9:20 PM – Maximum hourly average of 18.50 ppb. The wind at this time was from the southeast between 0 and 3.7 mph.
- Station 6 data indicates the following periods where the hourly average H2S concentration exceeded 10 ppb:
    - November 1 – 2:50 AM to 4:10 AM – Maximum hourly average of 22.00 ppb. The wind at this time was from the west and west-southwest between 0 and 6.7 mph.
    - November 4 – 4:30 AM to 6:00 AM – Maximum hourly average of 30.67 ppb. The wind at this time was from the south-southwest between 5.8 and 8.1 mph.
    - November 5 – 8:50 PM to 10:00 PM – Maximum hourly average of 20.50 ppb. The wind at this time was calm.
    - November 12 – 6:00 AM to 6:40 AM – Maximum hourly average of 14.50 ppb. The wind at this time was from the north-northeast at 4.5 mph.

Note: The stations routinely go down for battery failures and other technical problems. The following stations had data loss during the month of September:

- Station 6 was down from November 13 at 11:30 AM to 2:25 PM while the loaner station was replaced by the original unit.
- Station 1 was down from November 20 at 1:50 AM to 1:50 PM when the batteries were replaced.
- Station 2 was down from November 20 at 2:10 AM to 1:50 PM when the batteries were replaced.

Observations

On November 15, the facility experienced a veneer failure of the capping system associated with work that was performed this summer, capping the southwest corner of the facility. Observed H2S monitoring exceedances that occurred after November 15 are likely associated with the veneer failure, as several gas wells, lateral pipes, and leachate force mains were impacted by the event. The facility immediately began repairs to the area, including installation of several new wells and lateral connections over the past several weeks and corrective measures will be under way for several months.

Summary of Meteorological Data

Weather data from Penn Yan airport was utilized in this report. The Penn Yan data is only available in hourly averages. Please see above for a brief description of the weather conditions noted during the periods of exceedance. For further details, please find the charts containing the full Met Data in Attachment 2.

**Landfill Perimeter Ambient Monitoring**

As outlined in Section 3.0 of the $H_2S$ Plan, the facility performed daily monitoring at ten locations around the facility with a handheld Jerome, gold-film analyzer for measurement of hydrogen sulfide concentration. Data from this monitoring will be submitted with the quarterly report, as per Section 3.0 of the $H_2S$ Plan.

Please feel free to contact Mr. Samuel Nicolai, or the undersigned if you have any questions regarding the data discussed above.

Sincerely,

BARTON & LOGUIDICE, D.P.C.

William F. Doebler IV, QEP
Associate

WFD/jms
Attachments
cc: R. Anderson (Casella)
S. Nicolai (Casella)
B. Sanders (Casella)
S. Sayward (Casella)
K. Gelting (Casella)
K. Crosby (Casella)
J. Filipek (Casella)
C. Jordan (Ontario County)
C. DeBolt (Ontario County)
T. West (The West Firm, PLLC)
B. Schilling (NYSDEC)
K. Merchant (NYSDEC)
L. Schwartz (NYSDEC)
M. Osypian (NYSDEC)
G. MacLean (NYSDEC)
J. Boliver (NYSDEC)

**Attachment 1**

**Continuous Perimeter H2S**
**Monitoring Data**

Plotted: Sep 18, 2019 – 10:48AM SYR By: gec
Z:\BL–Vault\1 – Project Files\1.1 – View by Proj Num{2}Class{2}Folder–Active Only\500\574.120.019\CAD\120–03 Misc Engineering\574.120.019_Continuous Air Monitoring Locations Plan.dwg


Barton & Loguidice

800' 0 800'
1"=800'

CASELLA WASTE SERVICES OF ONTARIO, LLC
ONTARIO COUNTY SANITARY LANDFILL

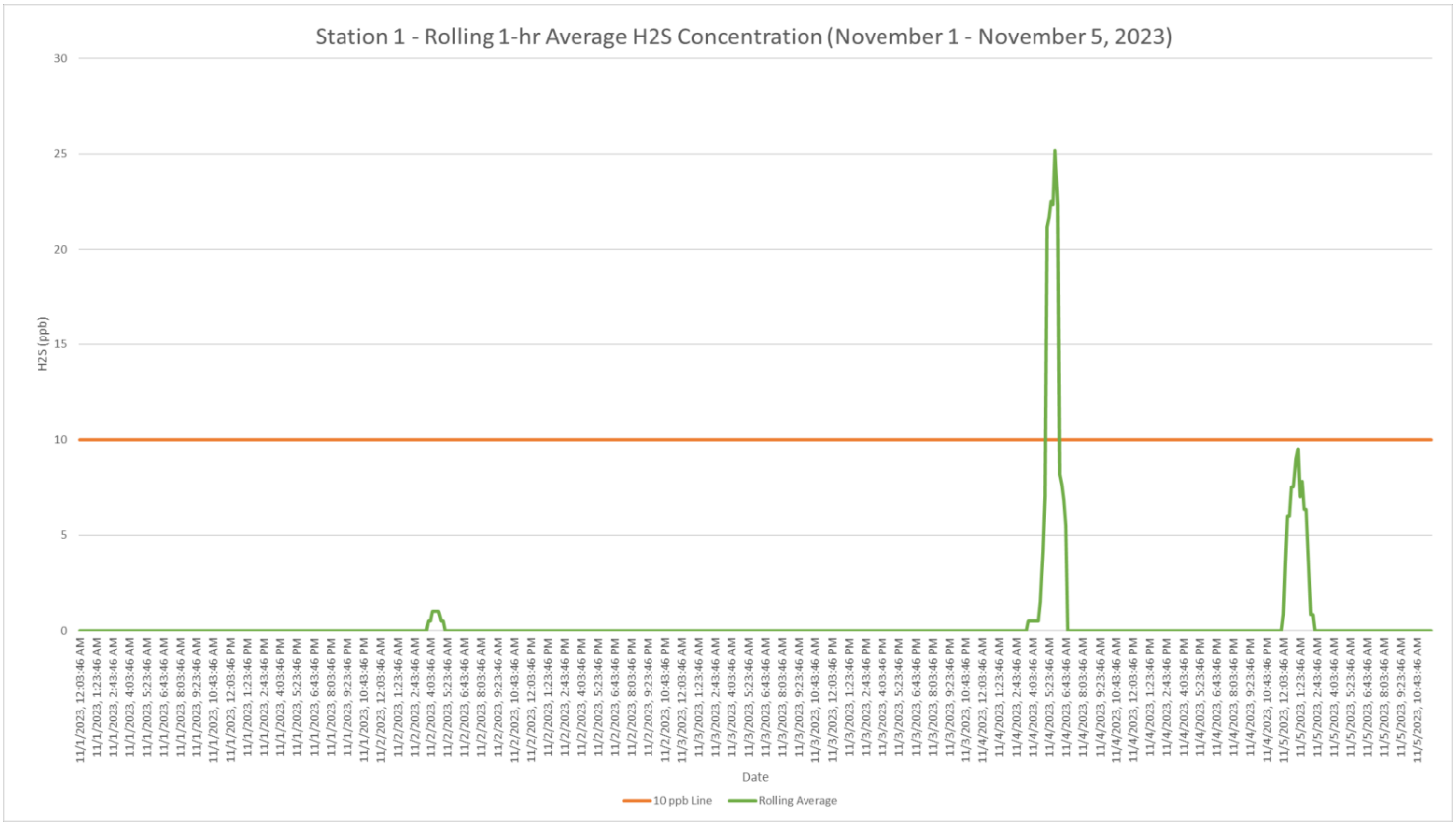
# CONTINUOUS AIR MONITORING LOCATIONS

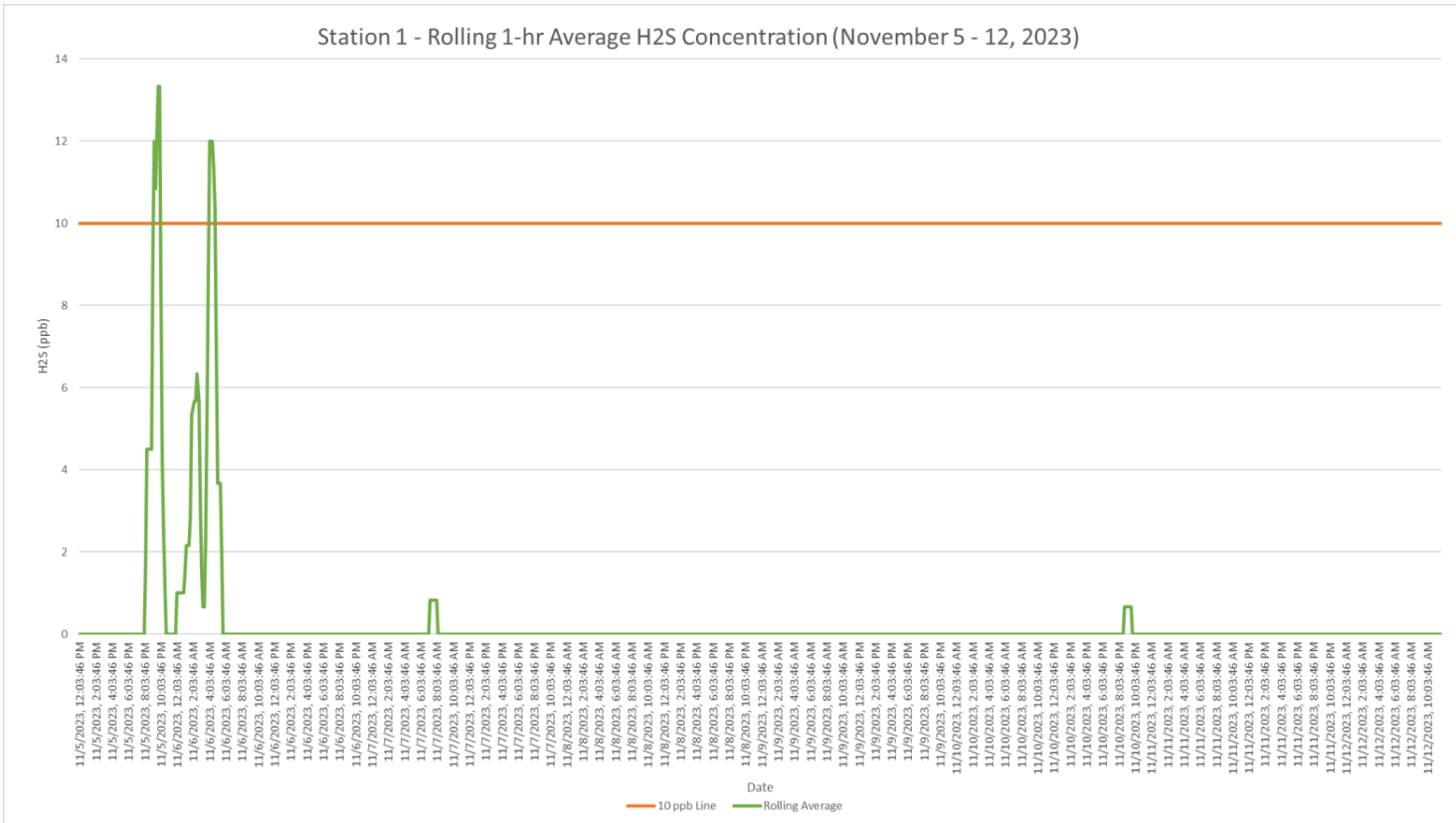
TOWN OF SENECA ONTARIO COUNTY, NEW YORK

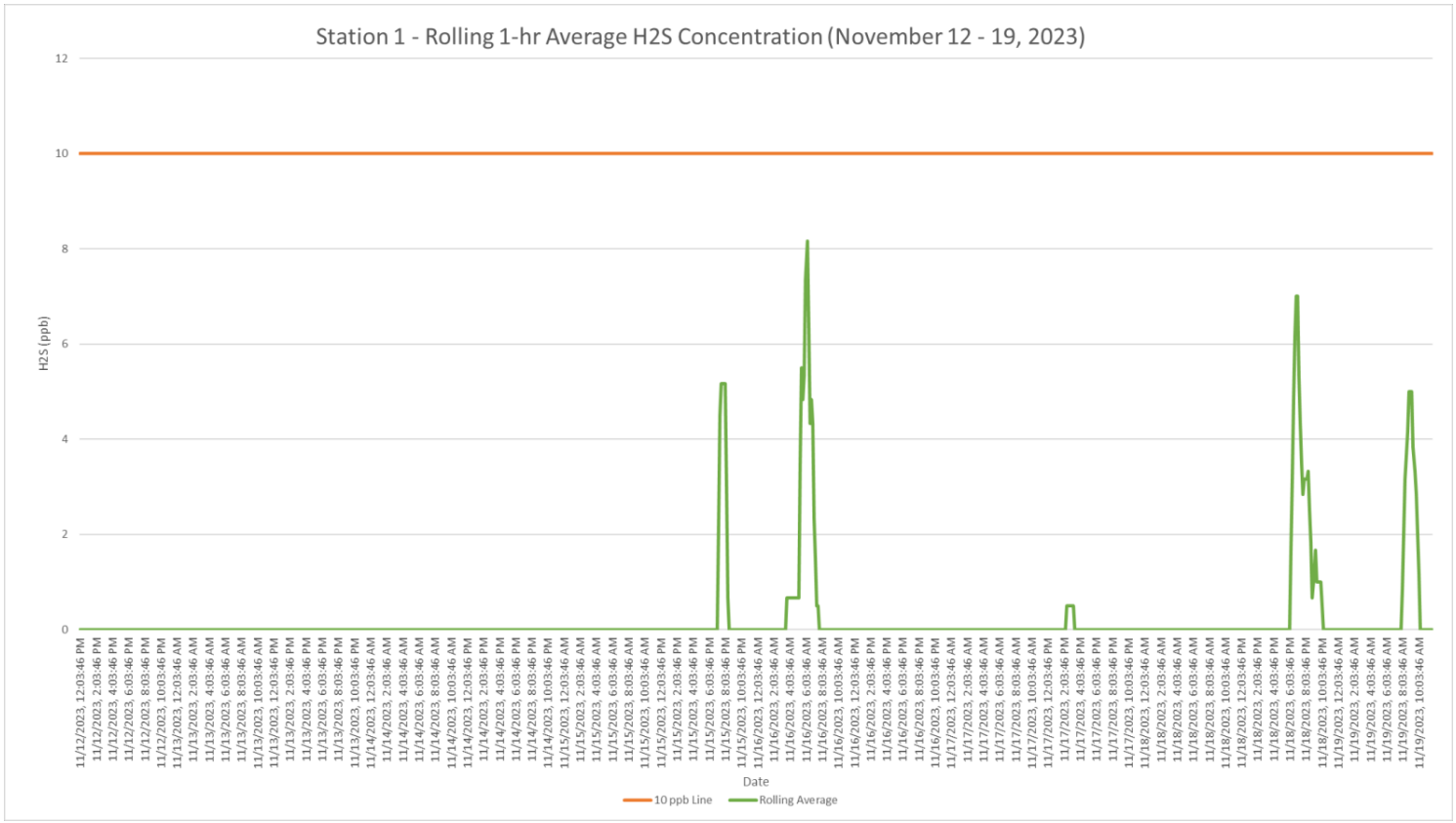
| Date | Scale |
|---|---|
| SEPTEMBER 2020 | 1" = 800' |

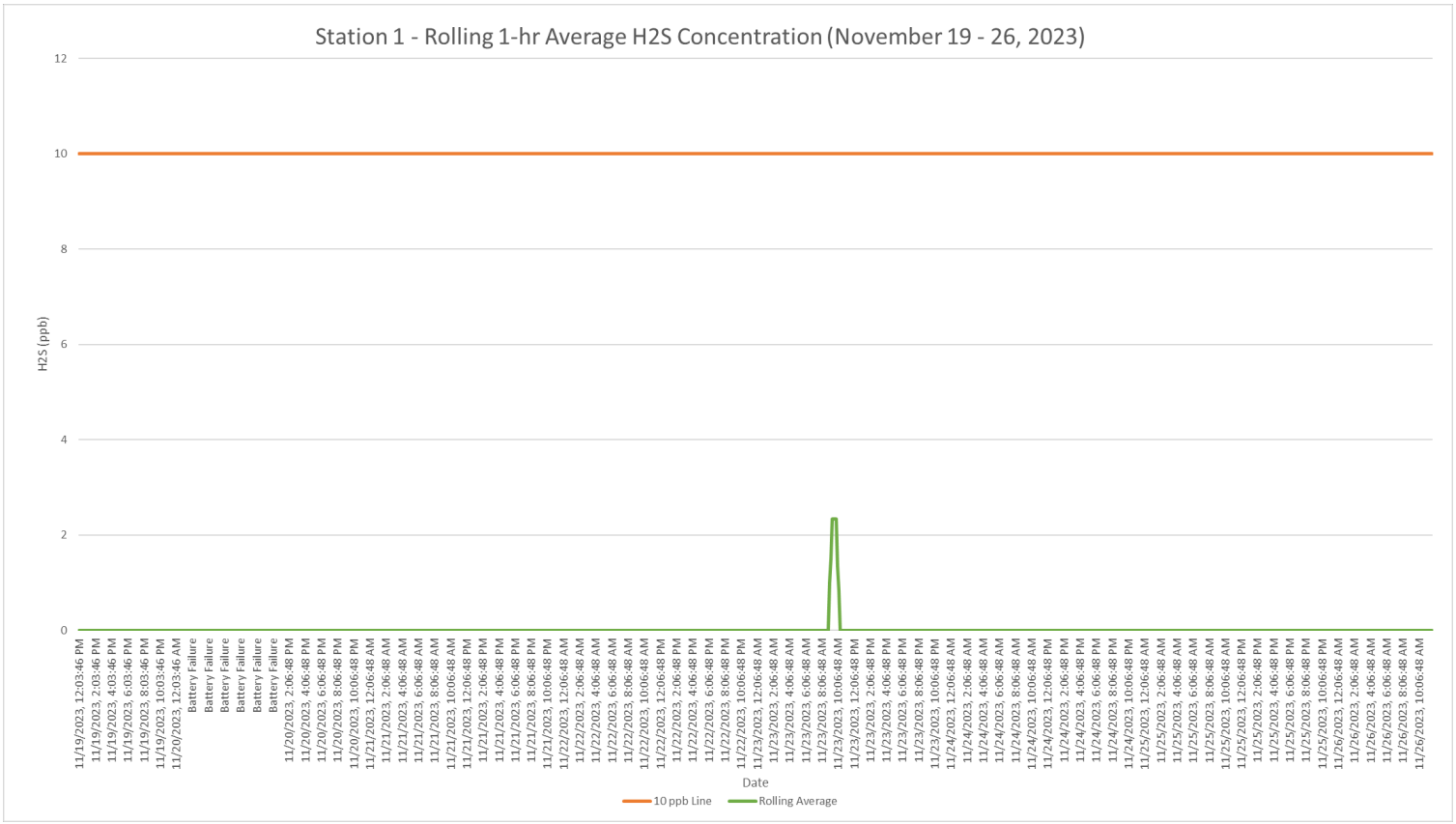
Figure Number
1

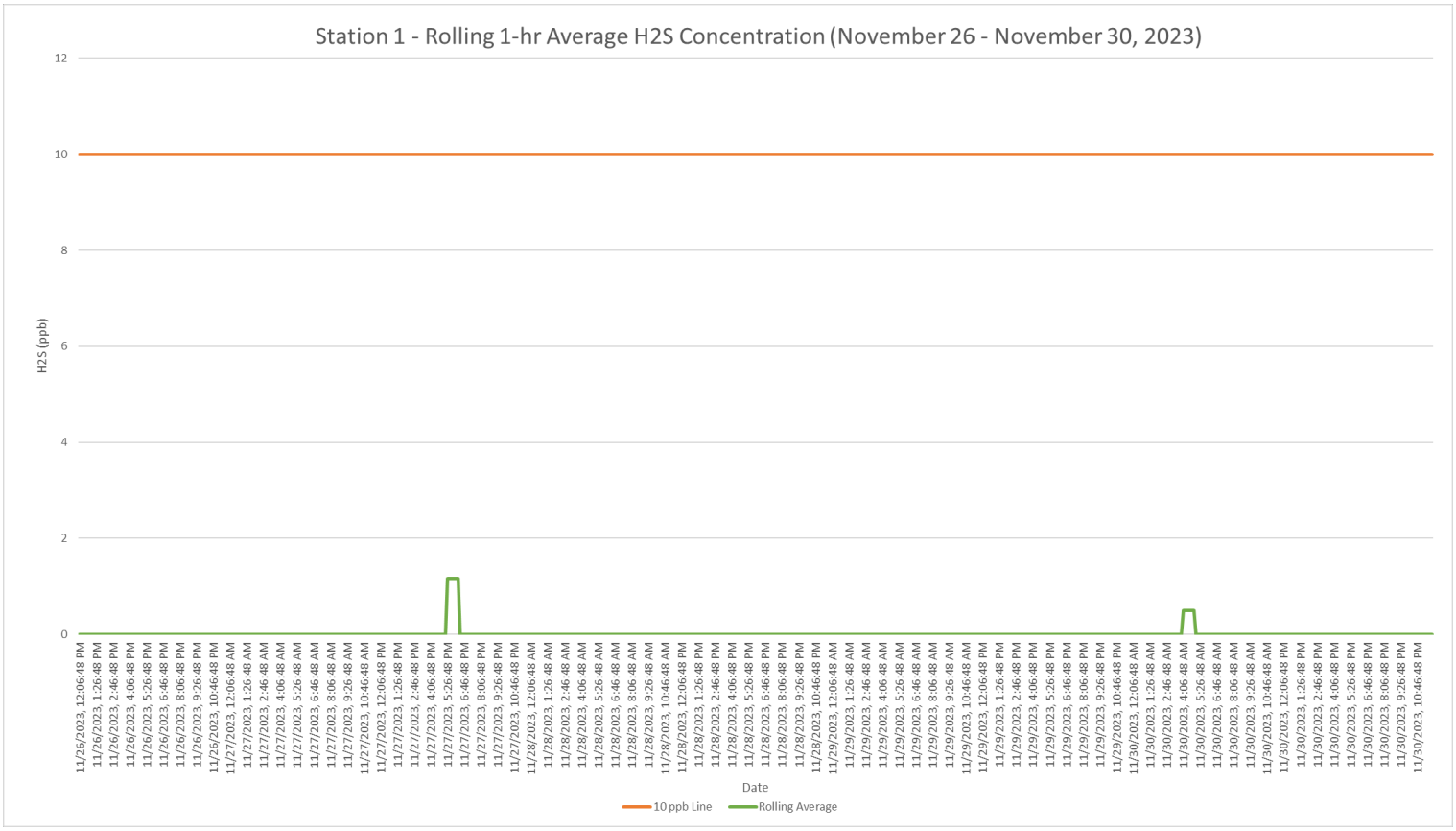
Project Number
574.204.001

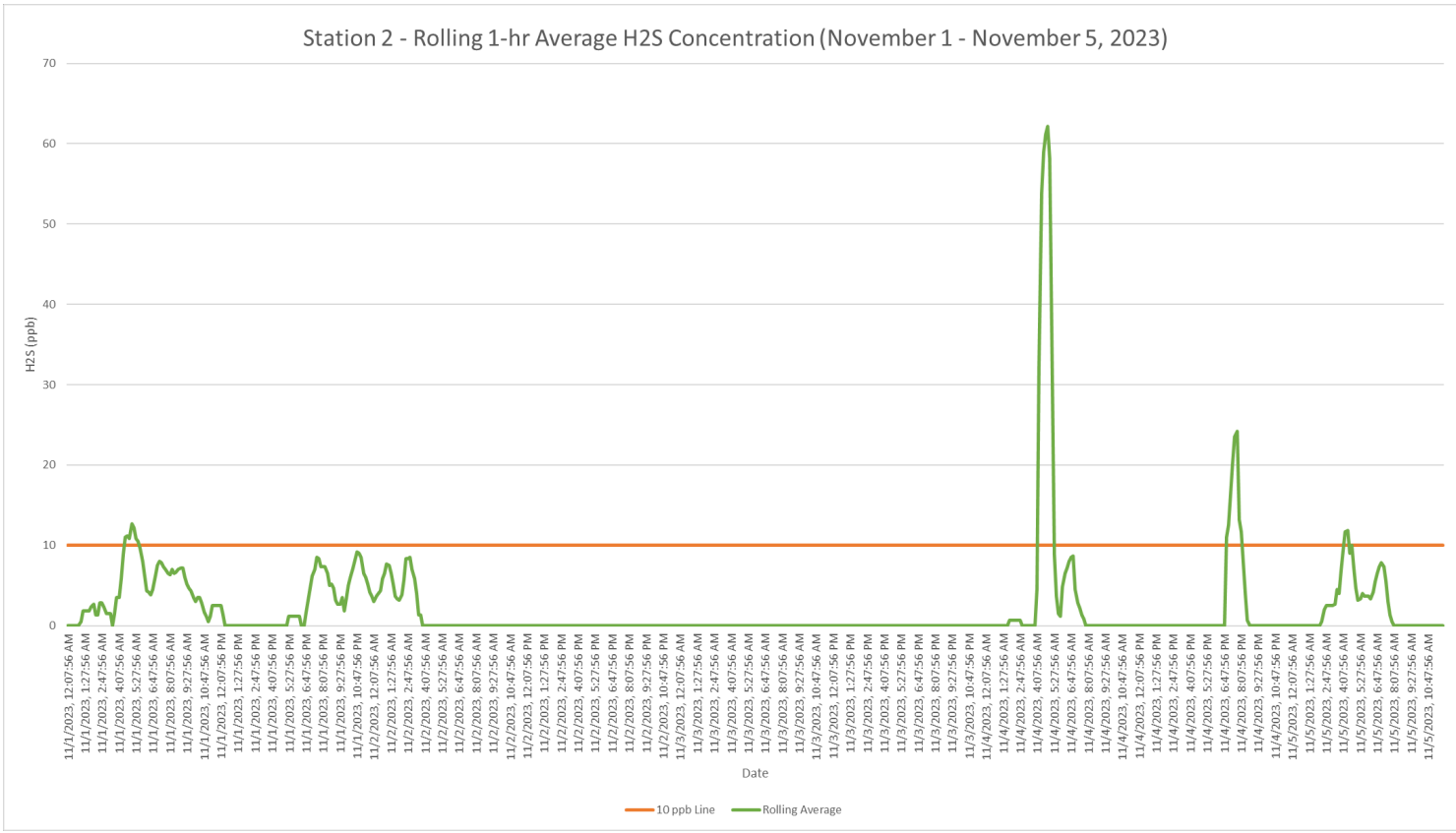

Station 1 - Rolling 1-hr Average H2S Concentration (November 1 - November 5, 2023)
H2S (ppb)
30
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average

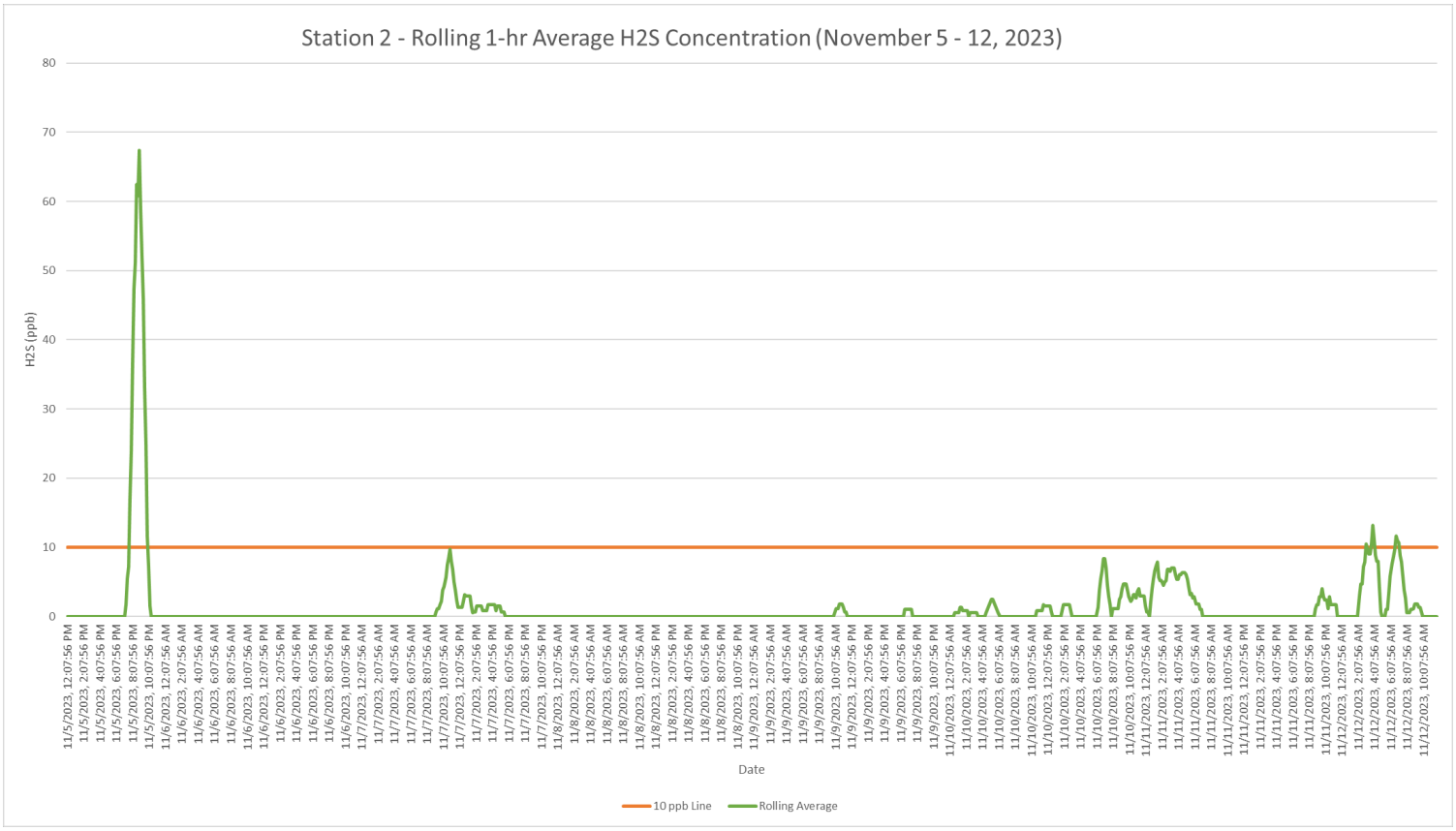

Station 1 - Rolling 1-hr Average H2S Concentration (November 5 - 12, 2023)
H2S (ppb)
14
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

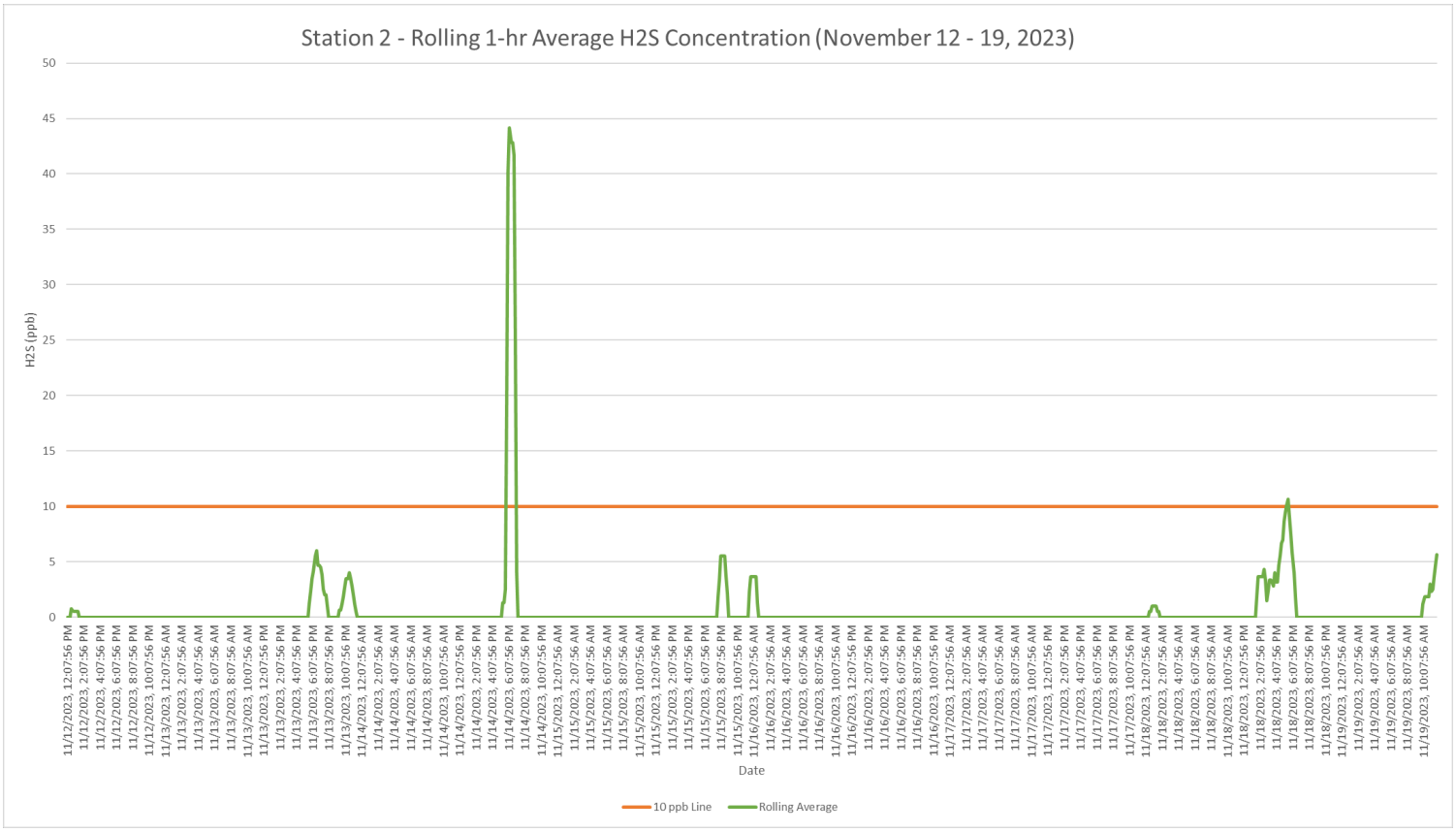

Station 1 - Rolling 1-hr Average H2S Concentration (November 12 - 19, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

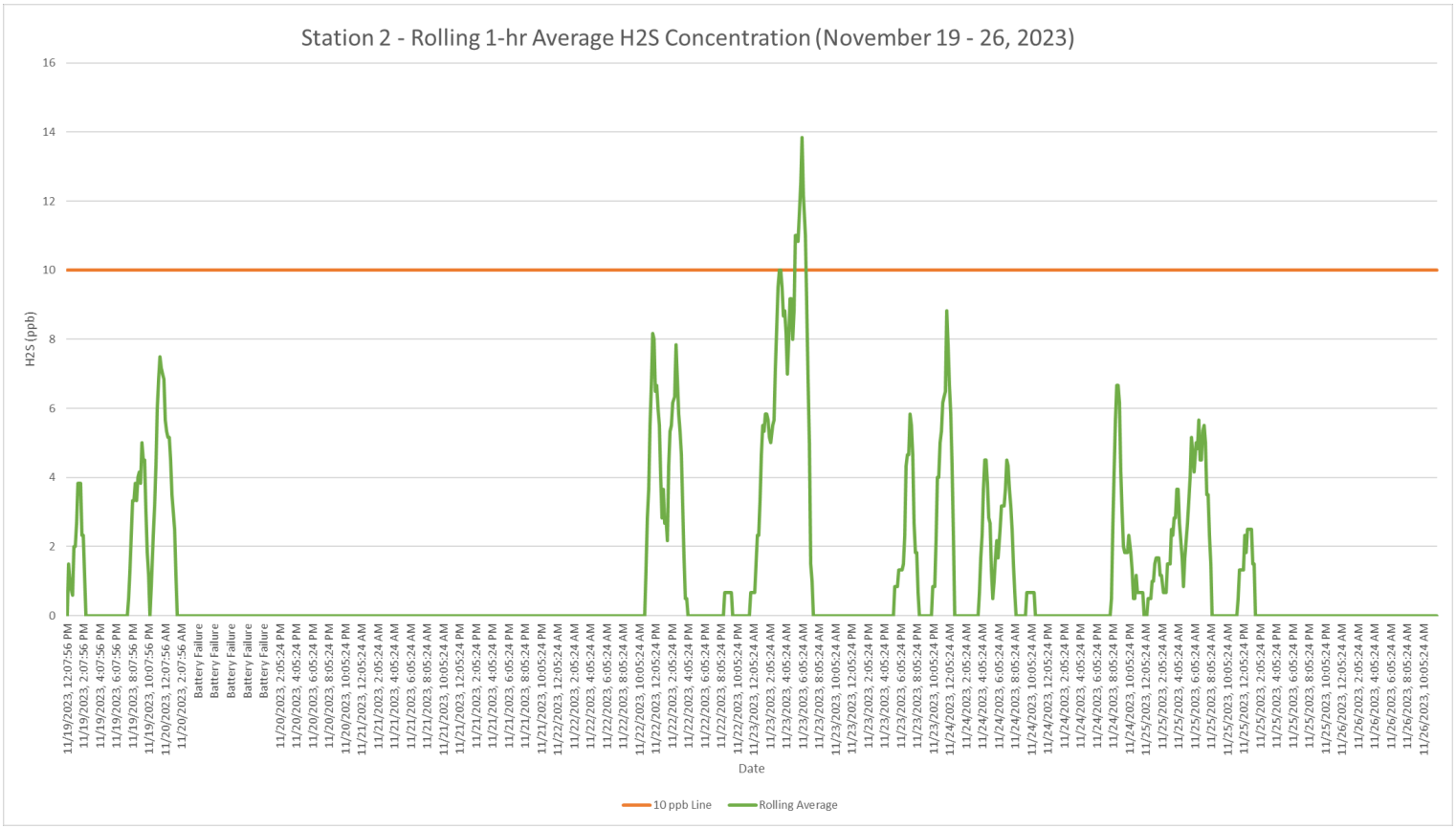

Station 1 - Rolling 1-hr Average H2S Concentration (November 19 - 26, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

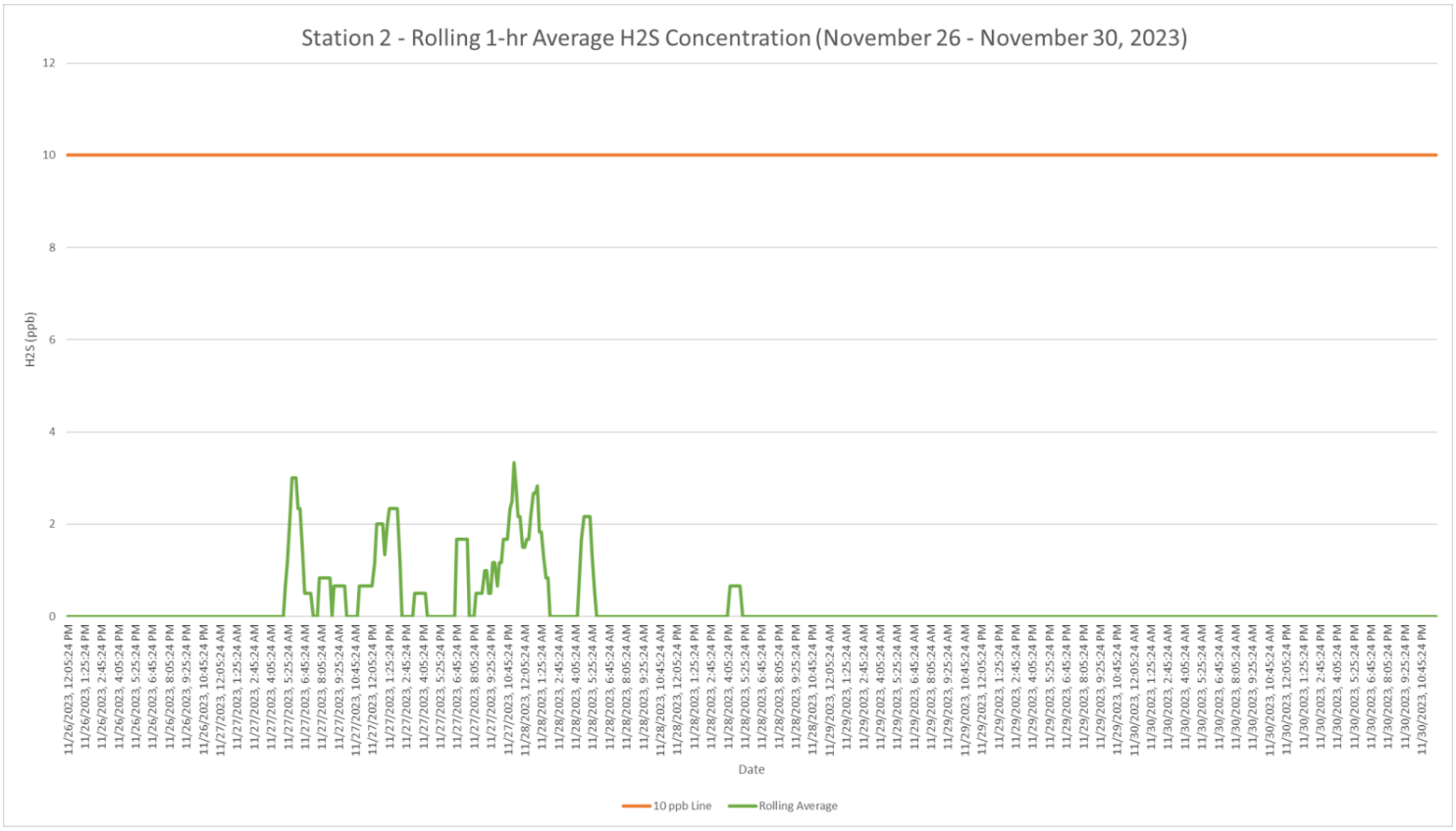

Station 1 - Rolling 1-hr Average H2S Concentration (November 26 - November 30, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

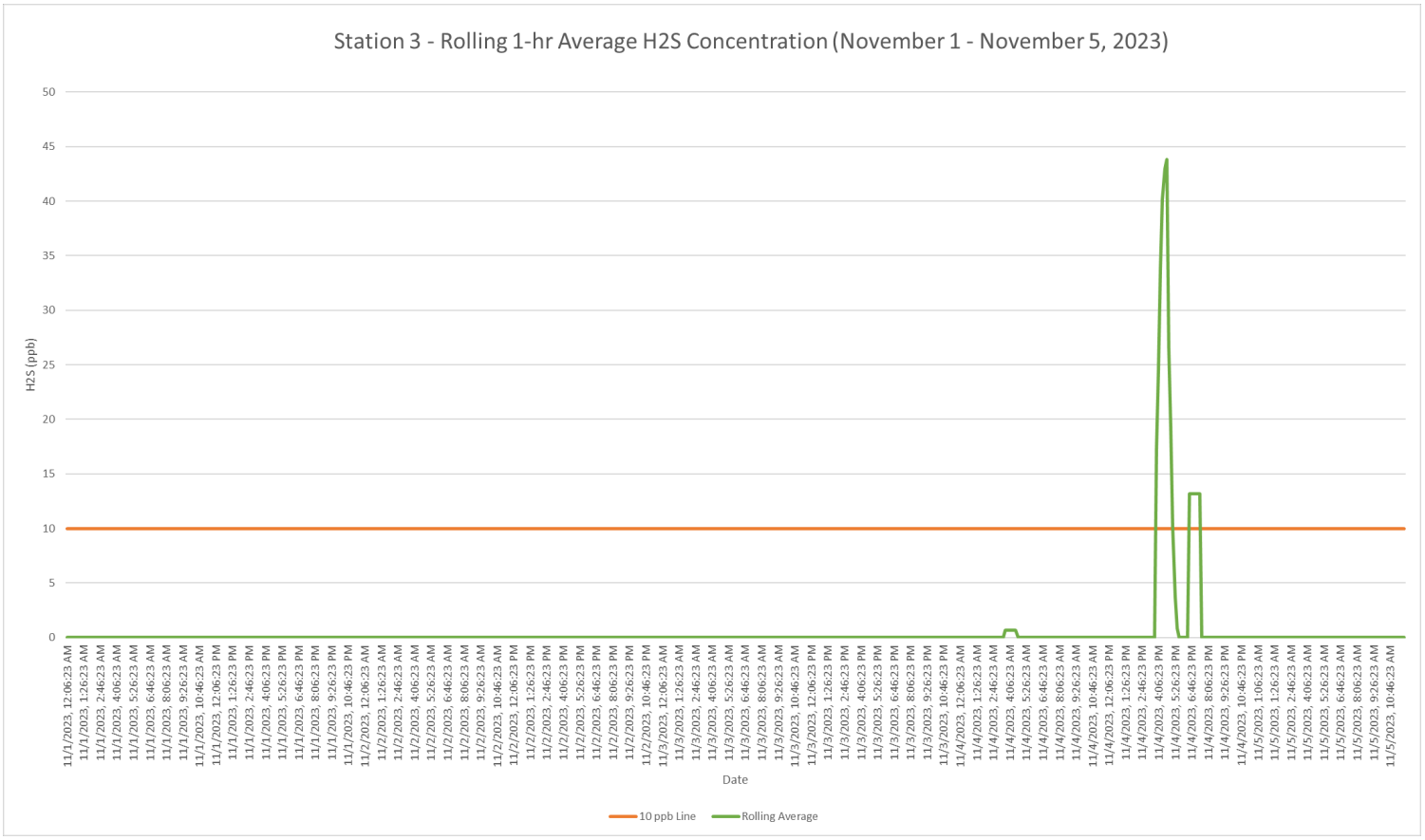

Station 2 - Rolling 1-hr Average H2S Concentration (November 1 - November 5, 2023)
H2S (ppb)
70
60
50
40
30
20
10
0
Date
10 ppb Line
Rolling Average

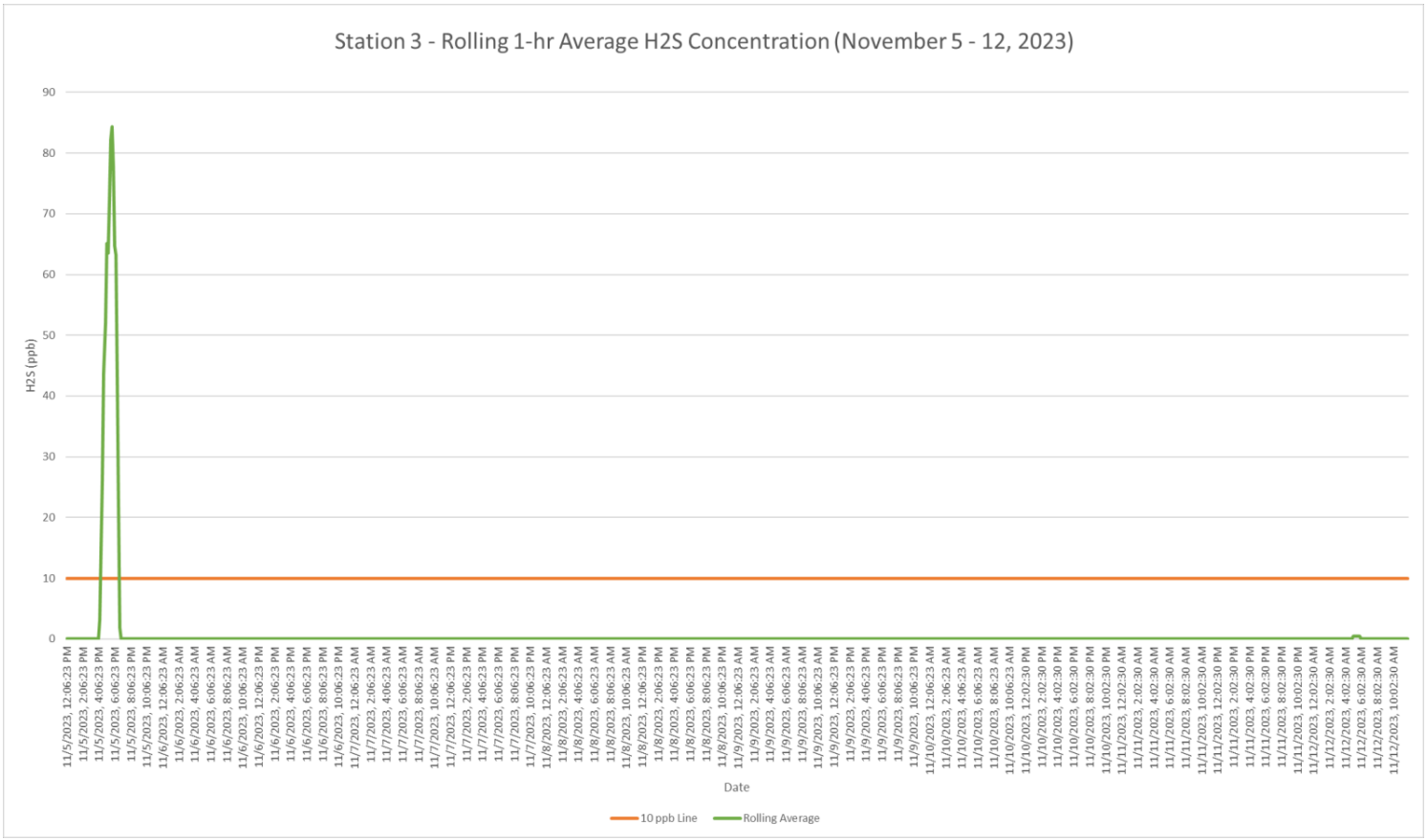

Station 2 - Rolling 1-hr Average H2S Concentration (November 5 - 12, 2023)
H2S (ppb)
80
70
60
50
40
30
20
10
0
Date
10 ppb Line
Rolling Average

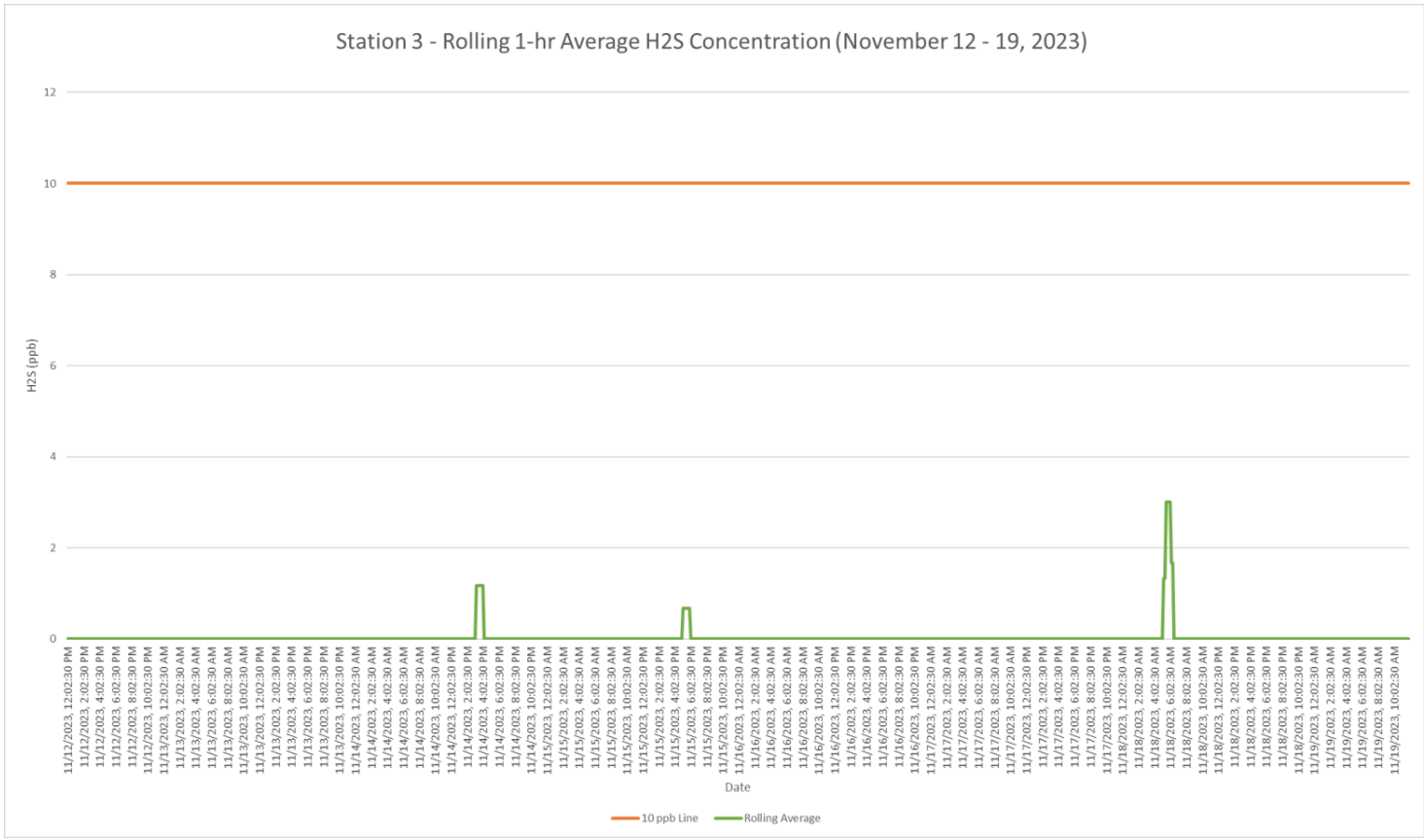

Station 2 - Rolling 1-hr Average H2S Concentration (November 12 - 19, 2023)
H2S (ppb)
50
45
40
35
30
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average

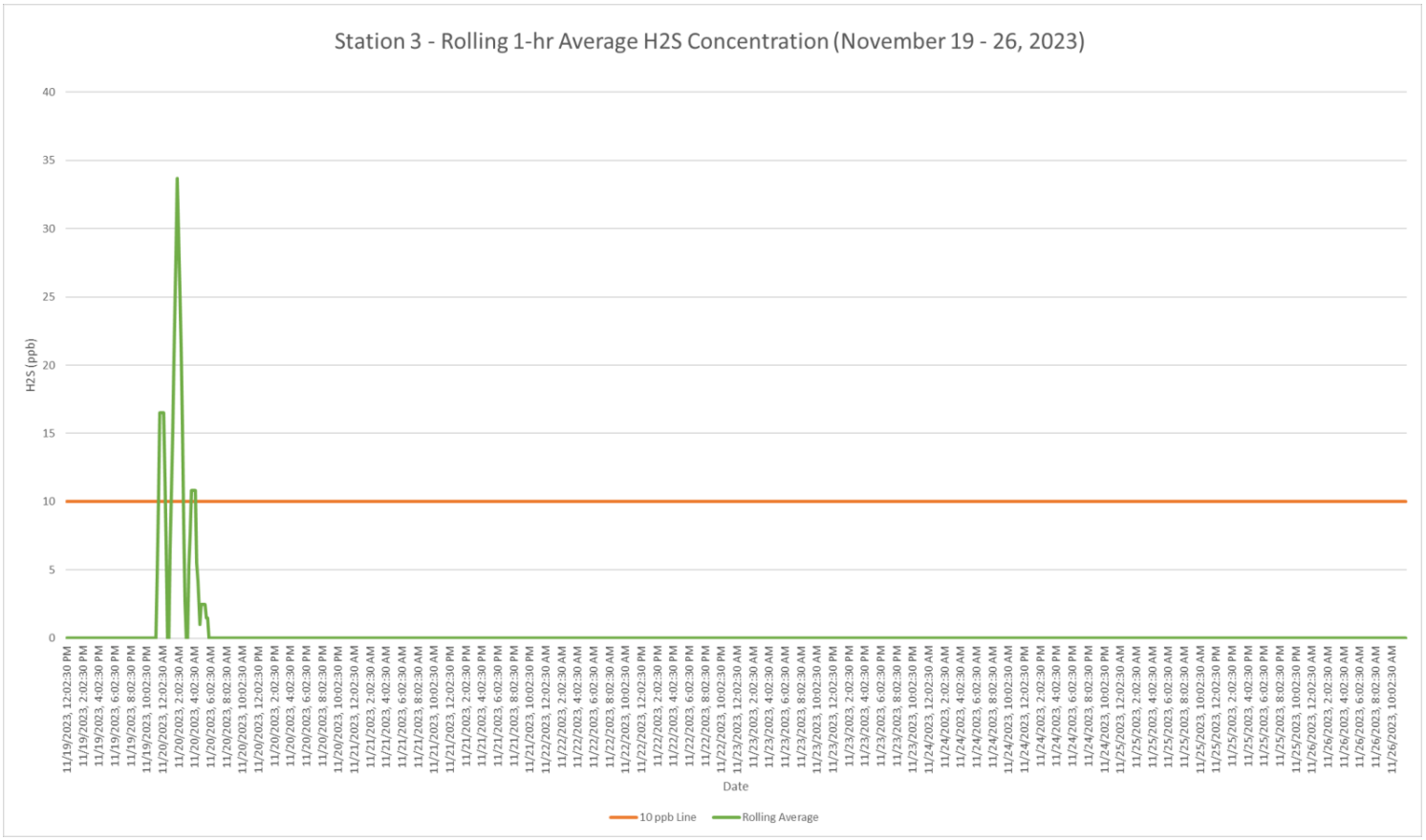

Station 2 - Rolling 1-hr Average H2S Concentration (November 19 - 26, 2023)
H2S (ppb)
16
14
12
10
8
6
4
2
0
Battery Failure
Date
10 ppb Line
Rolling Average

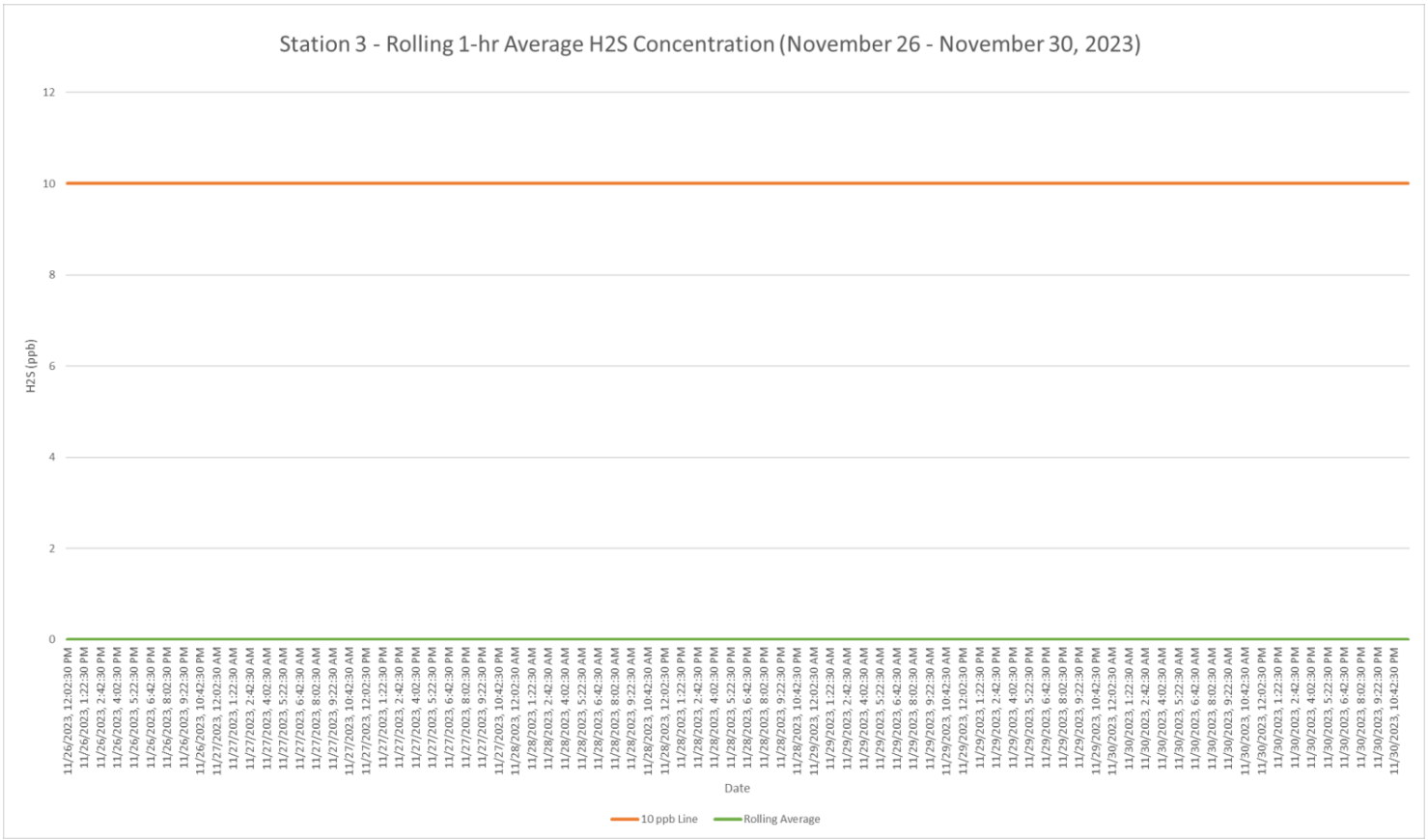

Station 2 - Rolling 1-hr Average H2S Concentration (November 26 - November 30, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

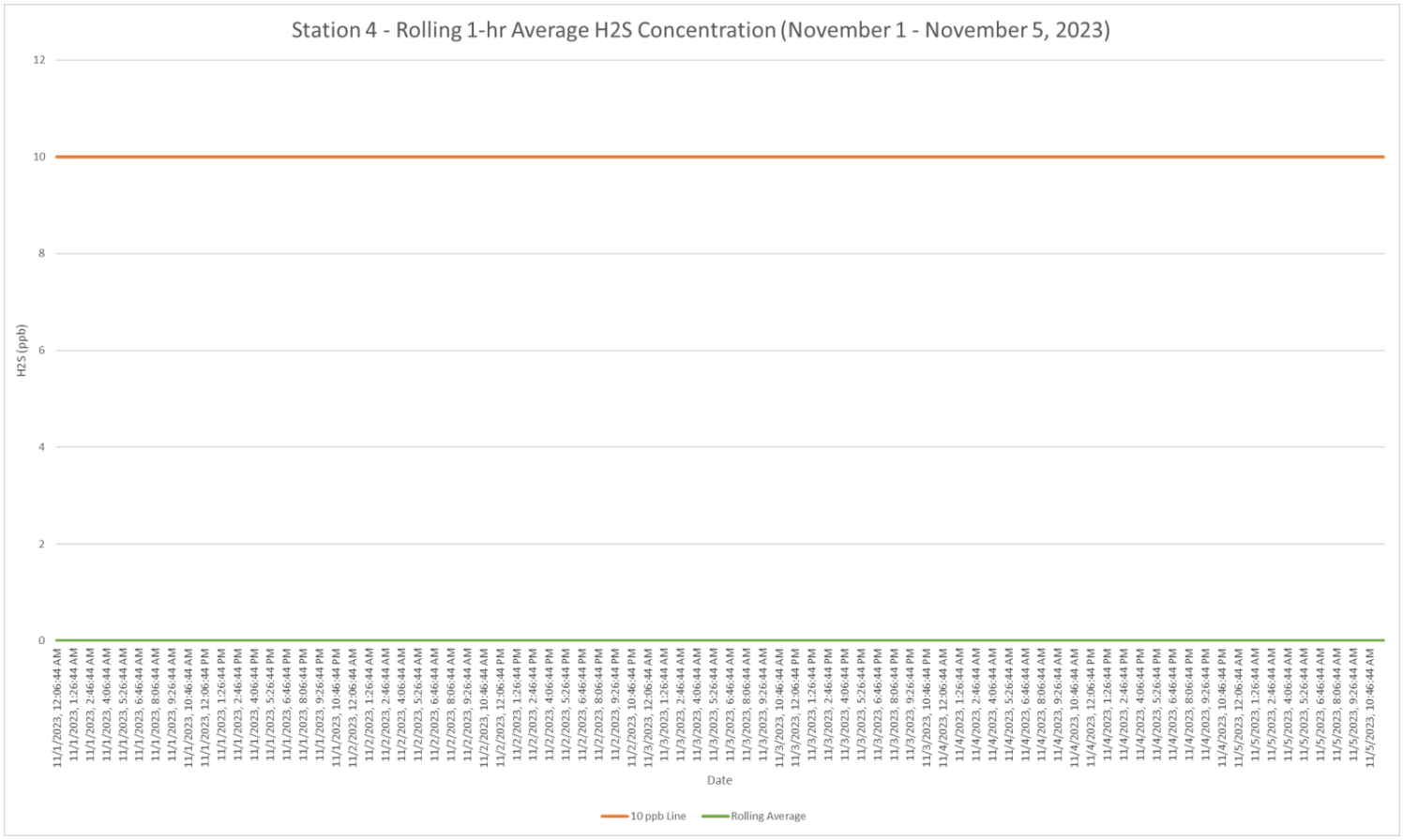

Station 3 - Rolling 1-hr Average H2S Concentration (November 1 - November 5, 2023)
H2S (ppb)
50
45
40
35
30
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average

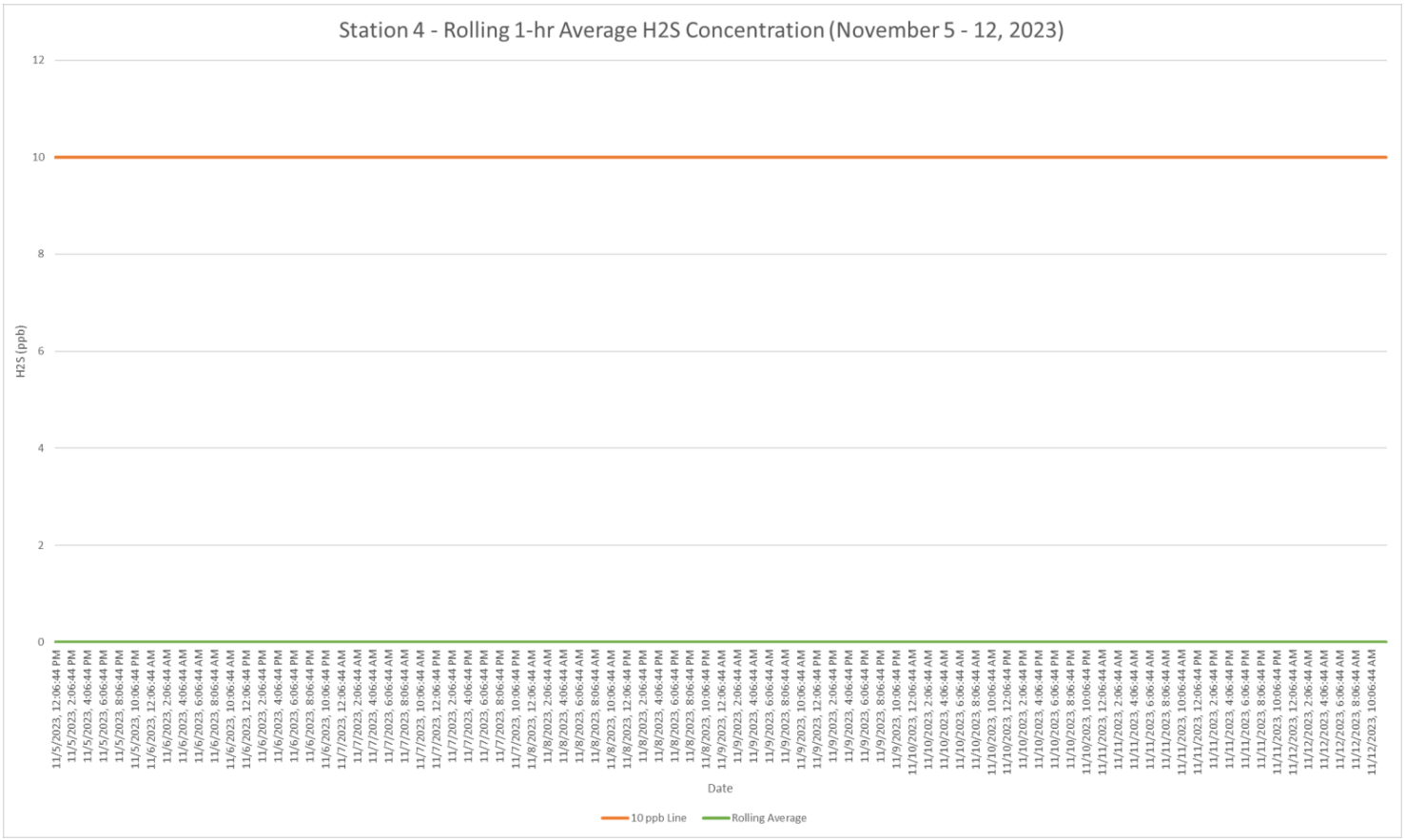

Station 3 - Rolling 1-hr Average H2S Concentration (November 5 - 12, 2023)
H2S (ppb)
90
80
70
60
50
40
30
20
10
0
Date
10 ppb Line
Rolling Average

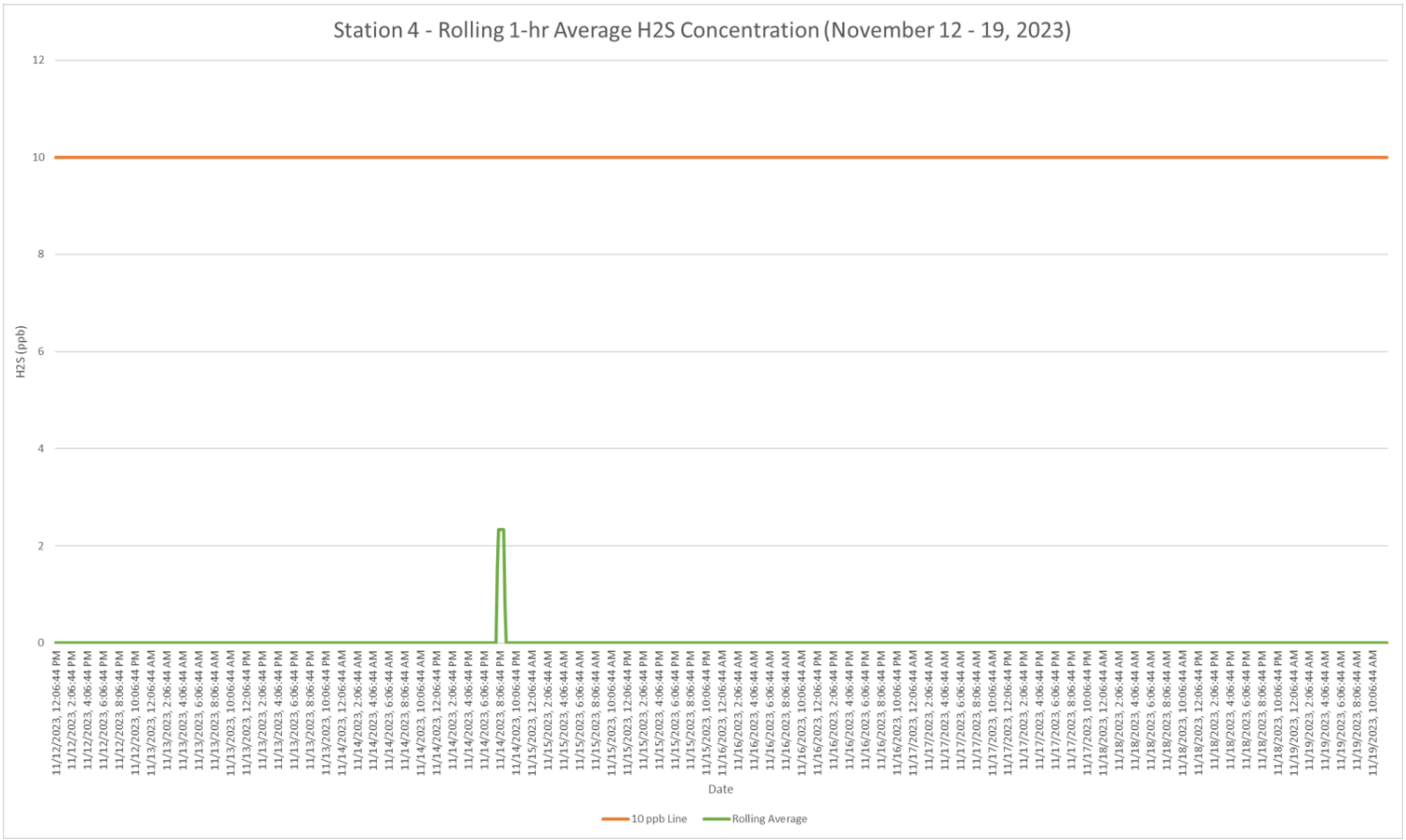

Station 3 - Rolling 1-hr Average H2S Concentration (November 12 - 19, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

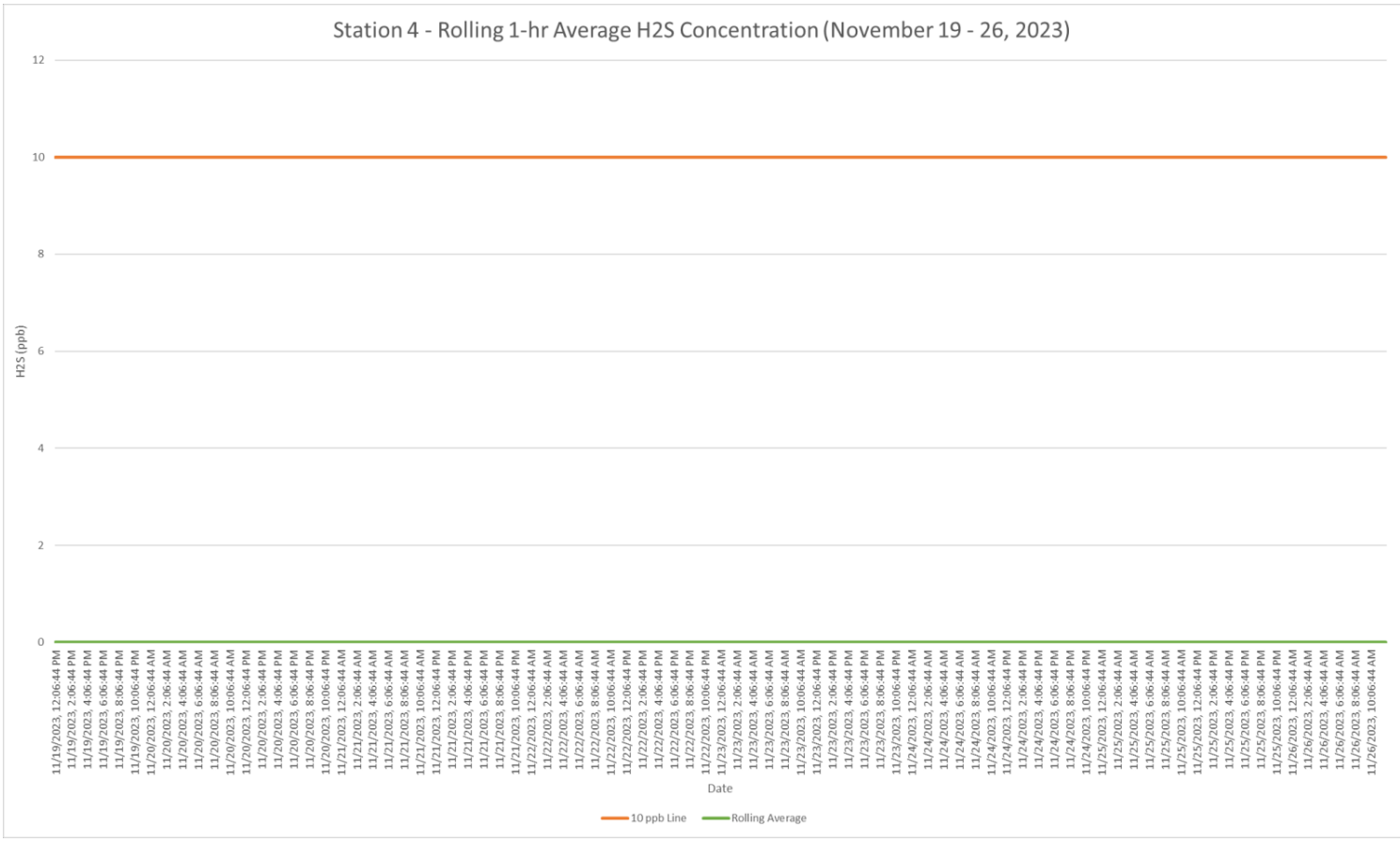

Station 3 - Rolling 1-hr Average H2S Concentration (November 19 - 26, 2023)
H2S (ppb)
40
35
30
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average

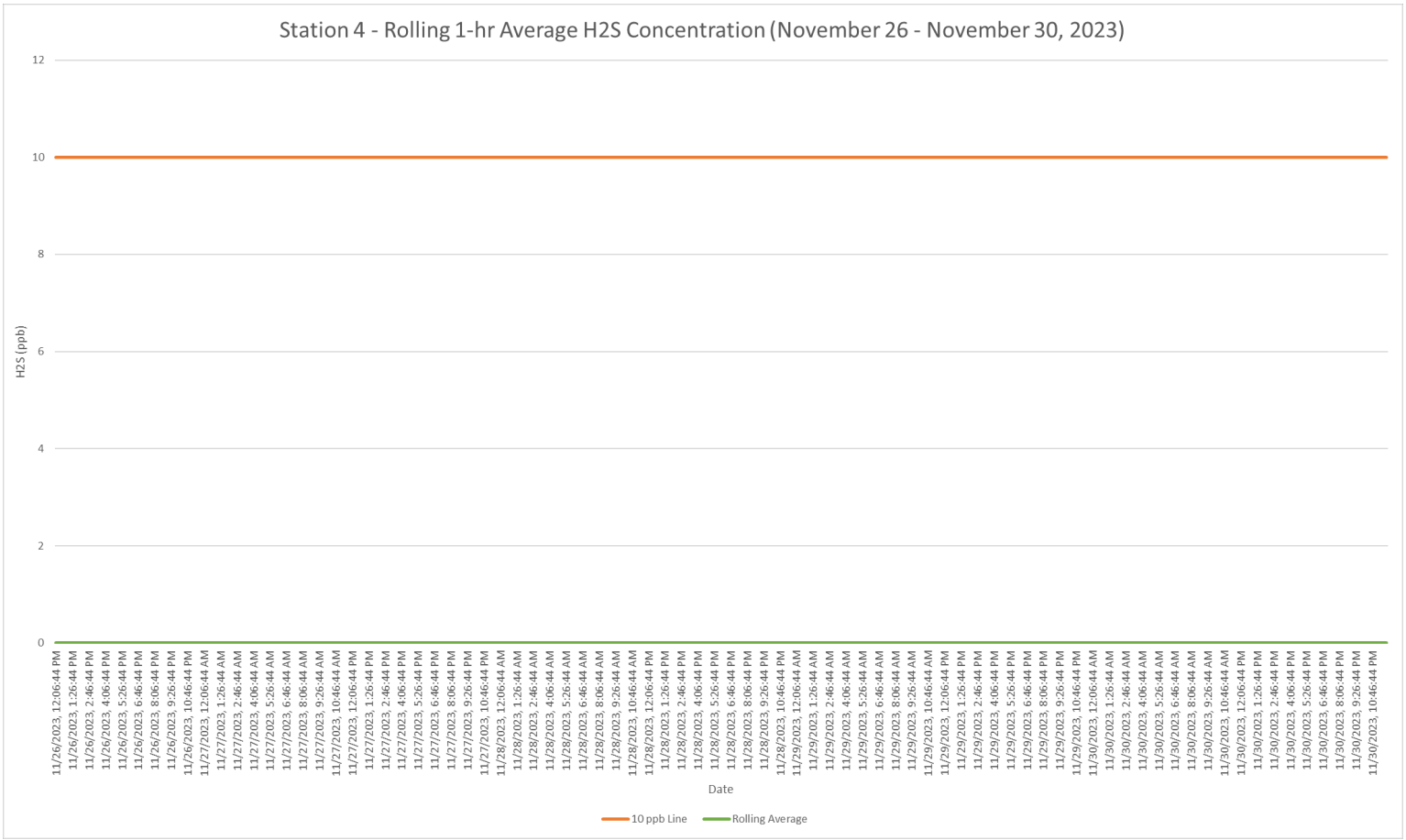

Station 3 - Rolling 1-hr Average H2S Concentration (November 26 - November 30, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

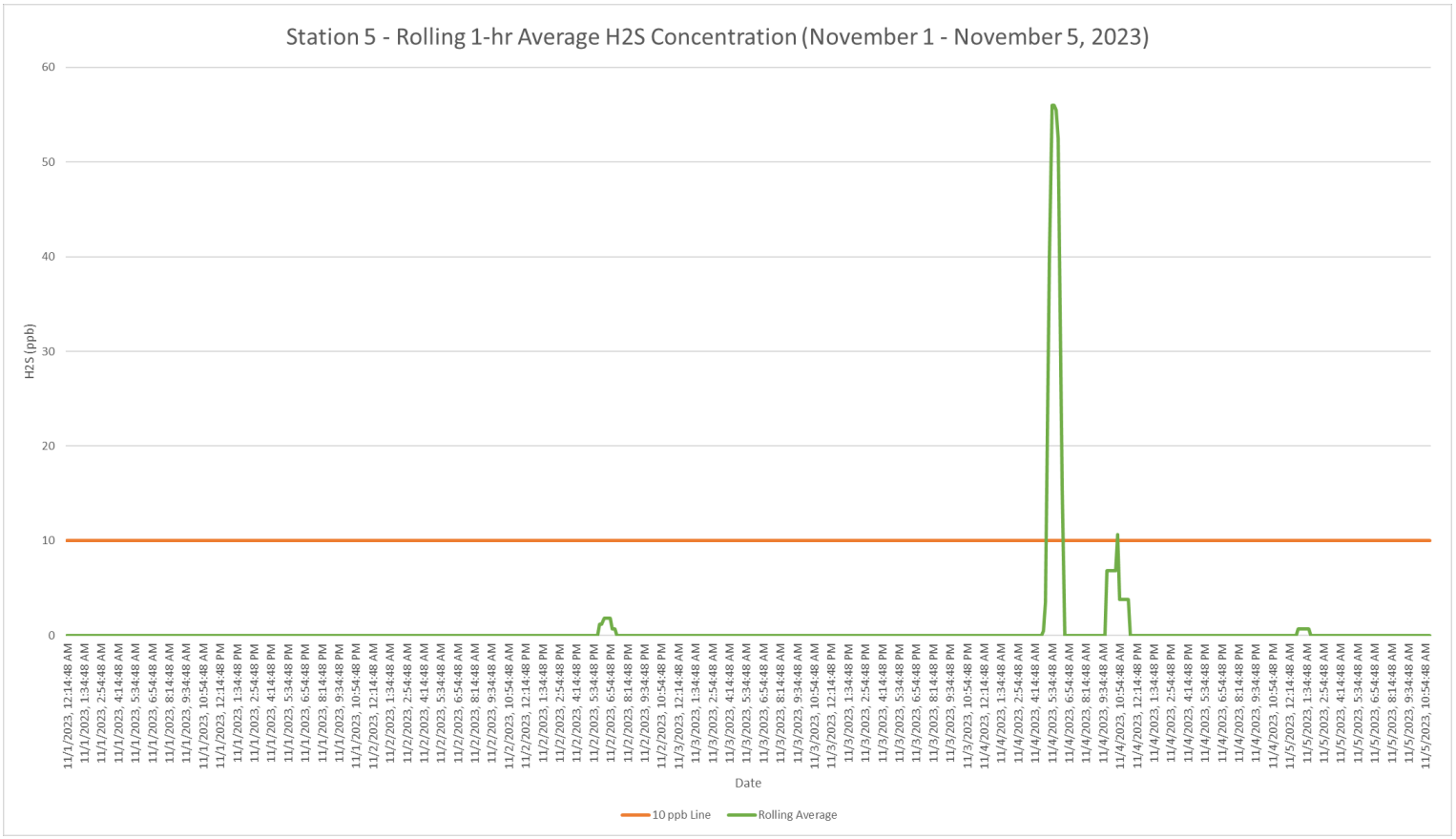

Station 4 - Rolling 1-hr Average H2S Concentration (November 1 - November 5, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

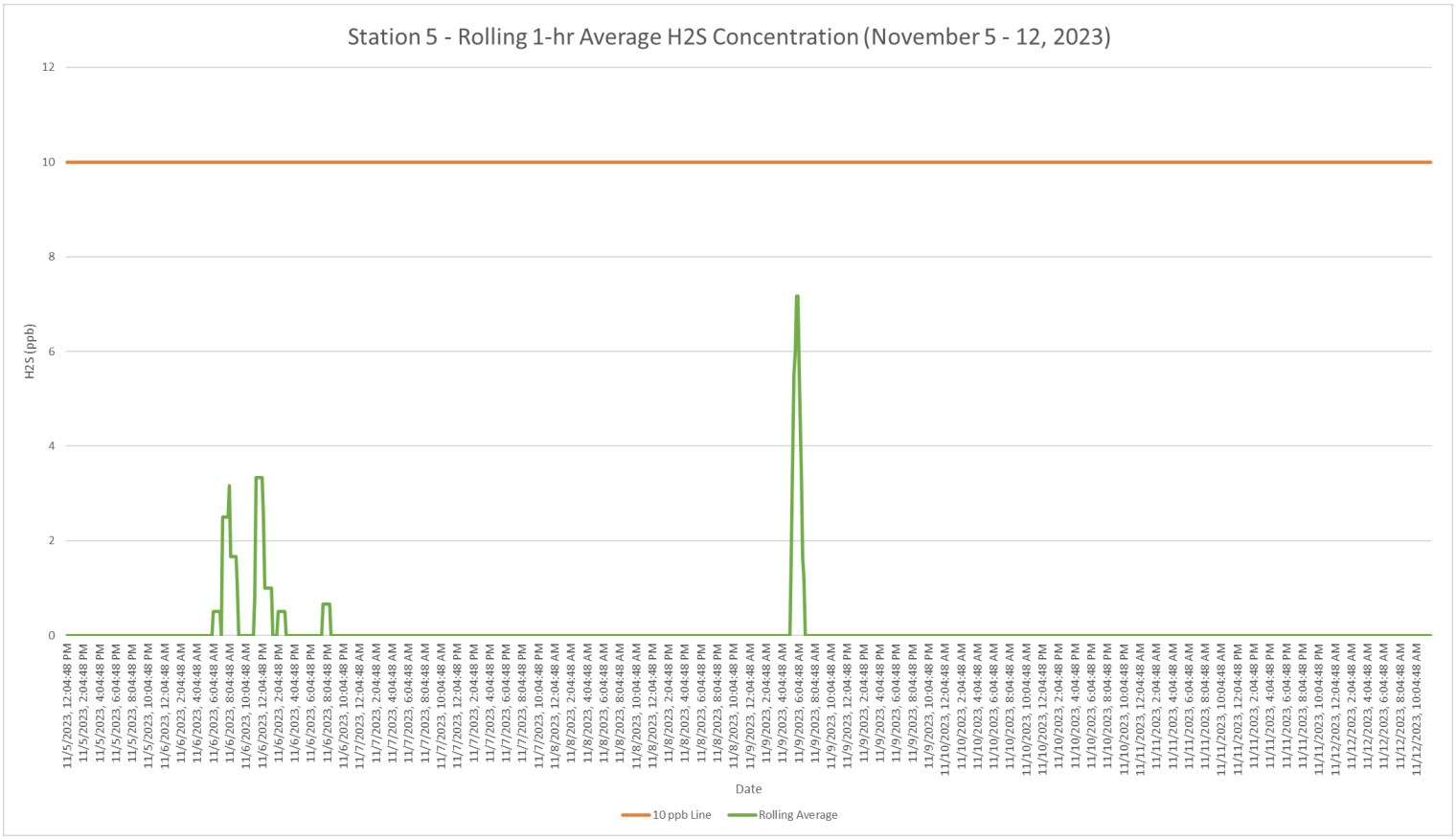

Station 4 - Rolling 1-hr Average H2S Concentration (November 5 - 12, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

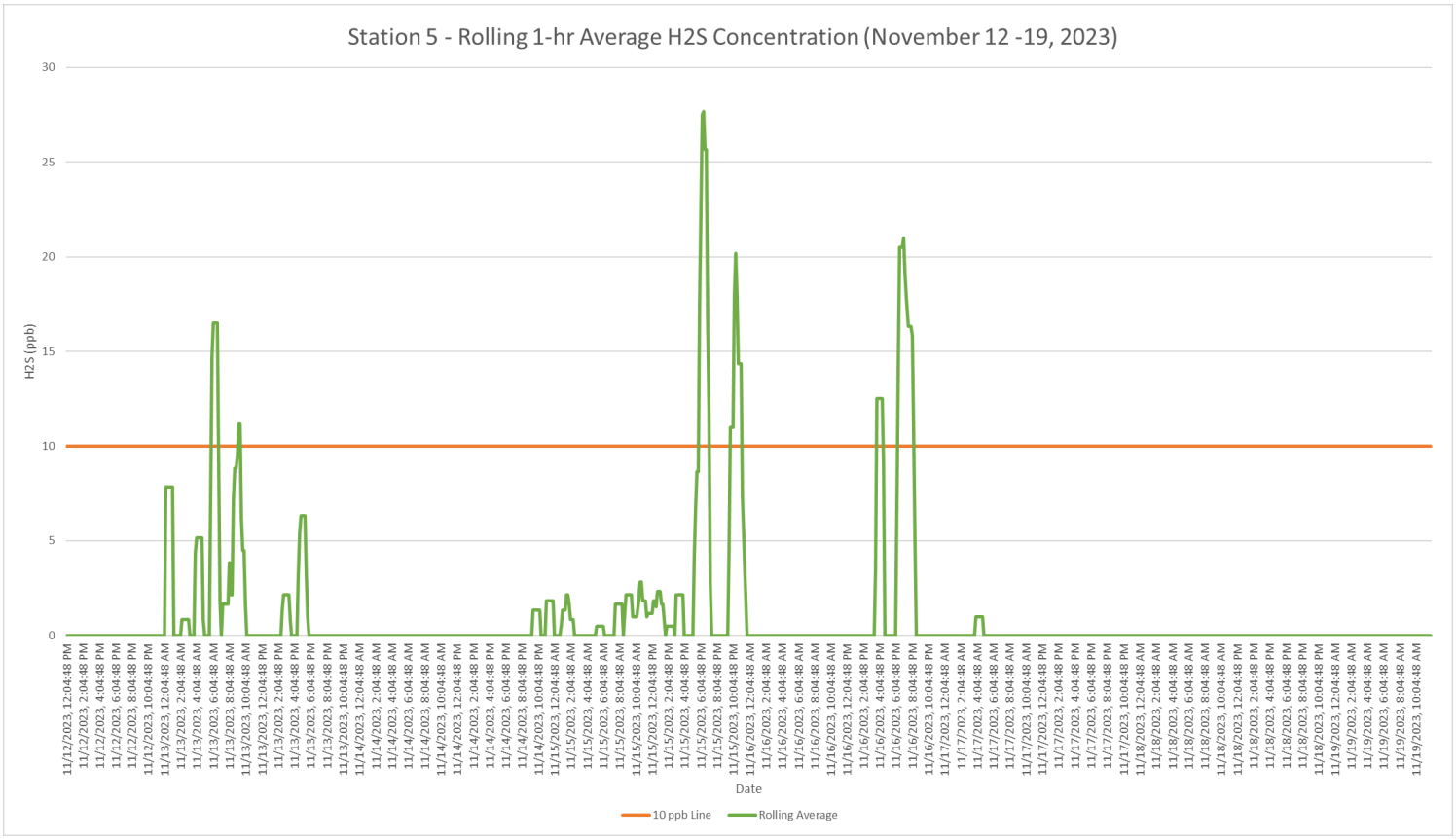

Station 4 - Rolling 1-hr Average H2S Concentration (November 12 - 19, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

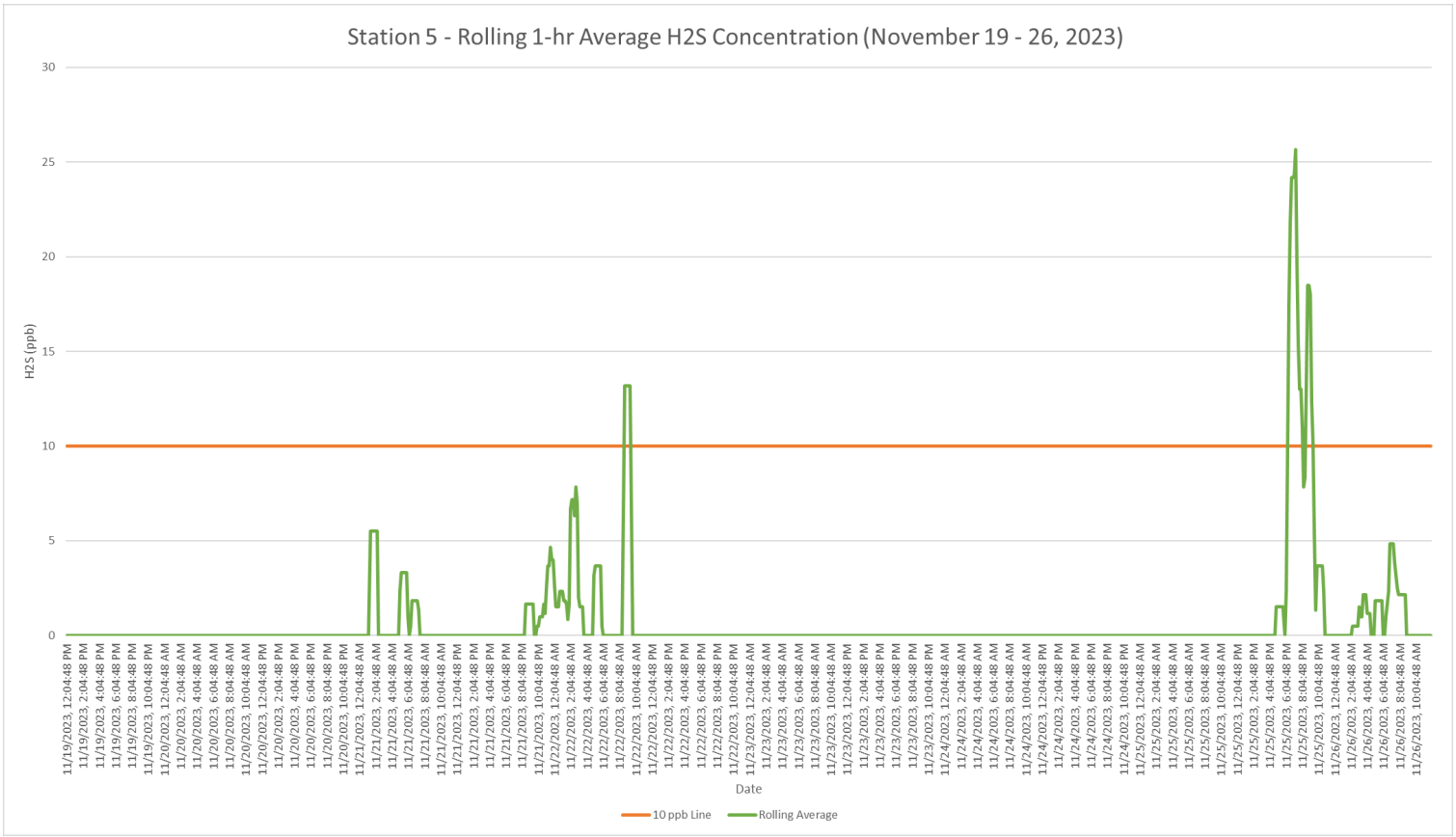

Station 4 - Rolling 1-hr Average H2S Concentration (November 19 - 26, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

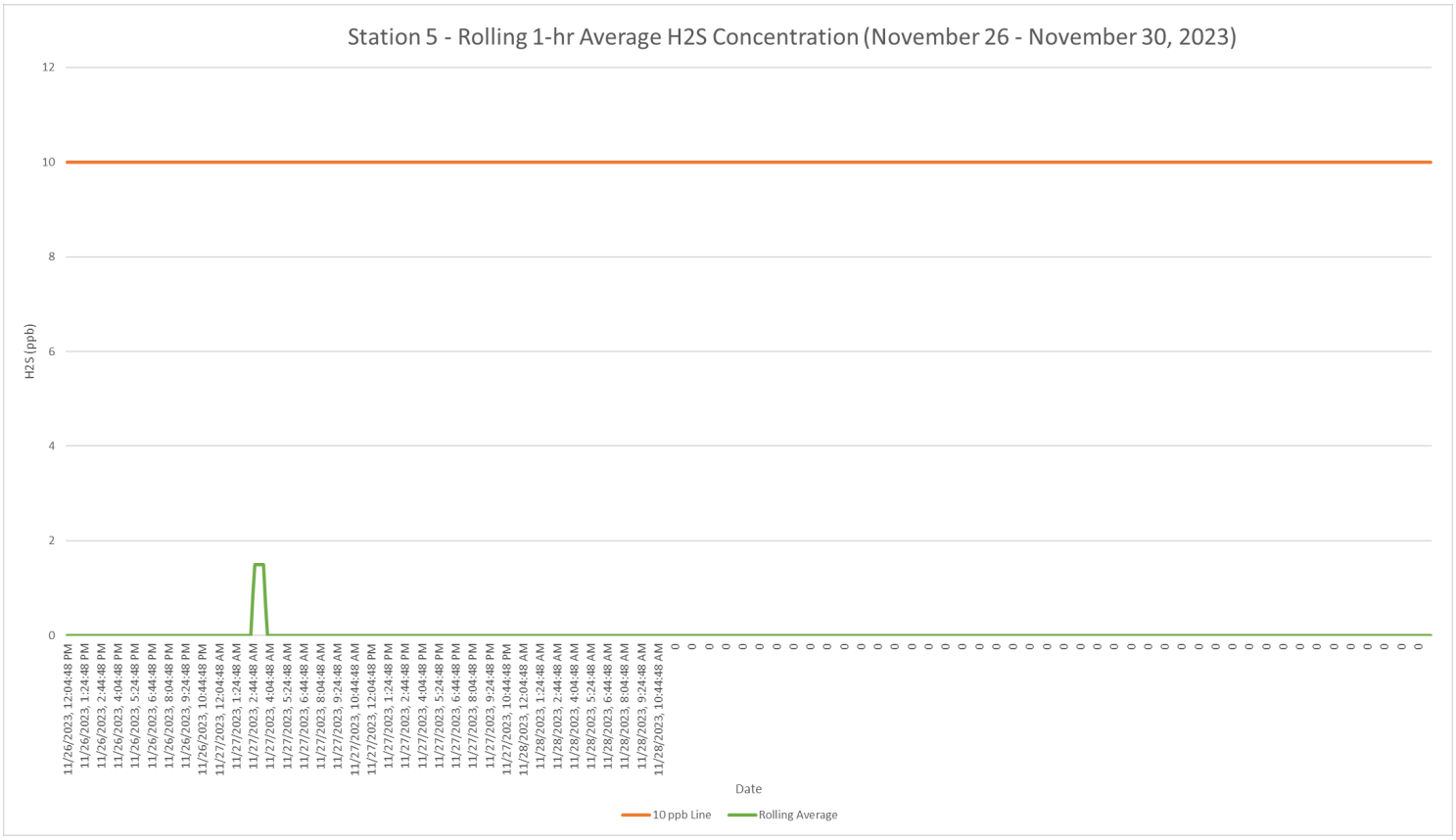

Station 4 - Rolling 1-hr Average H2S Concentration (November 26 - November 30, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

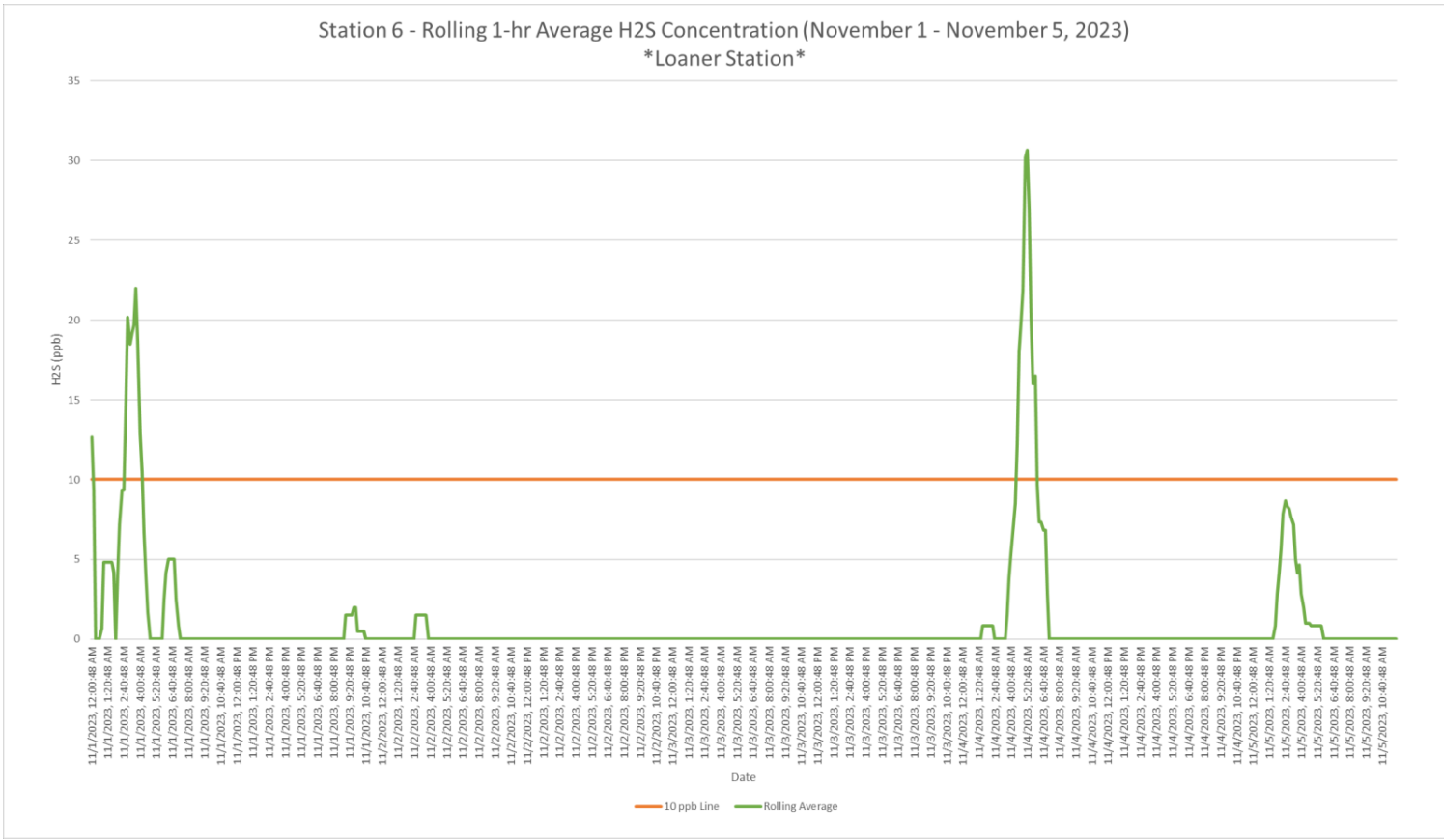

Station 5 - Rolling 1-hr Average H2S Concentration (November 1 - November 5, 2023)
H2S (ppb)
60
50
40
30
20
10
0
Date
10 ppb Line
Rolling Average

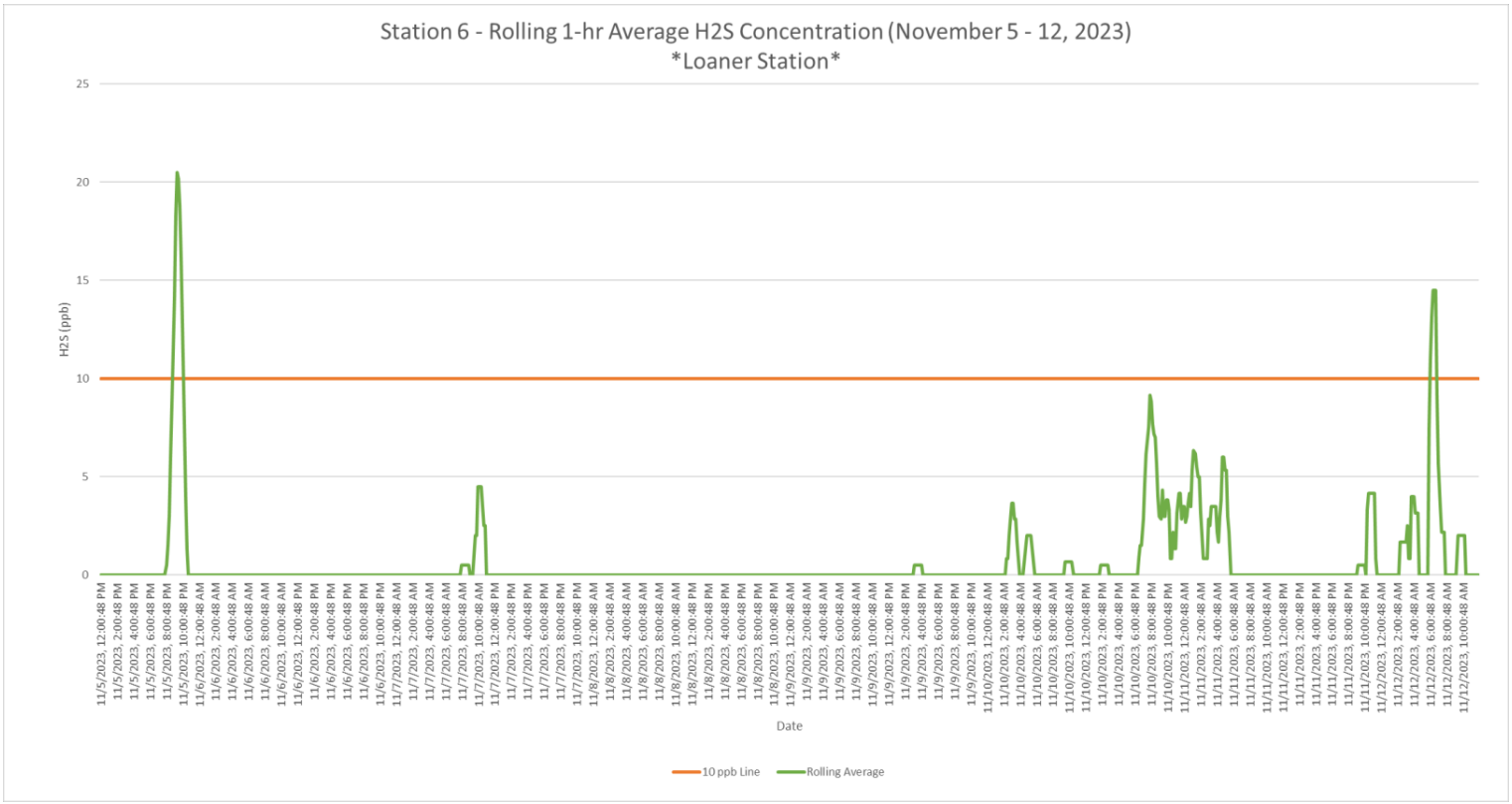

Station 5 - Rolling 1-hr Average H2S Concentration (November 5 - 12, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

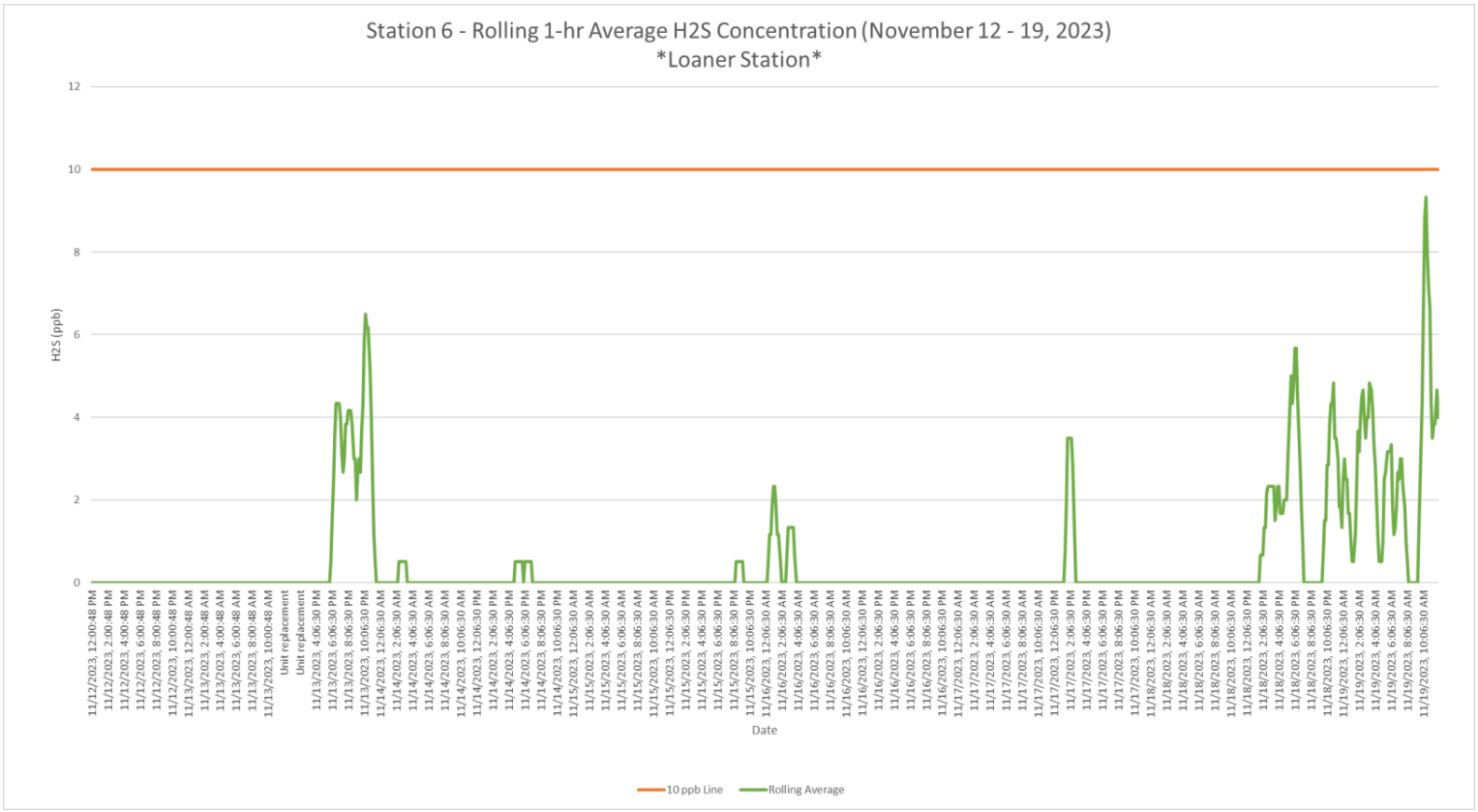

Station 5 - Rolling 1-hr Average H2S Concentration (November 12 -19, 2023)
H2S (ppb)
30
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average

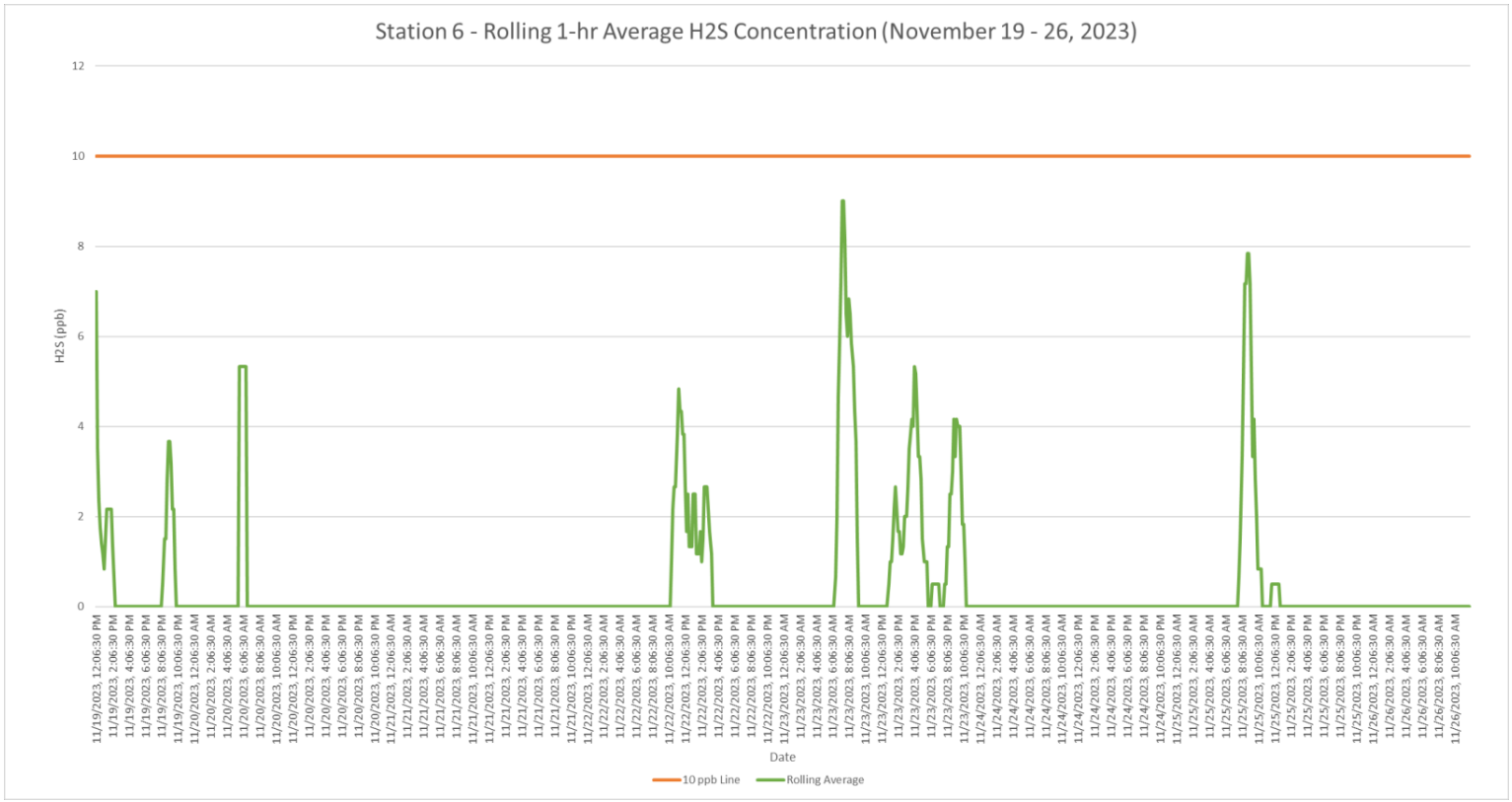

Station 5 - Rolling 1-hr Average H2S Concentration (November 19 - 26, 2023)
H2S (ppb)
30
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average

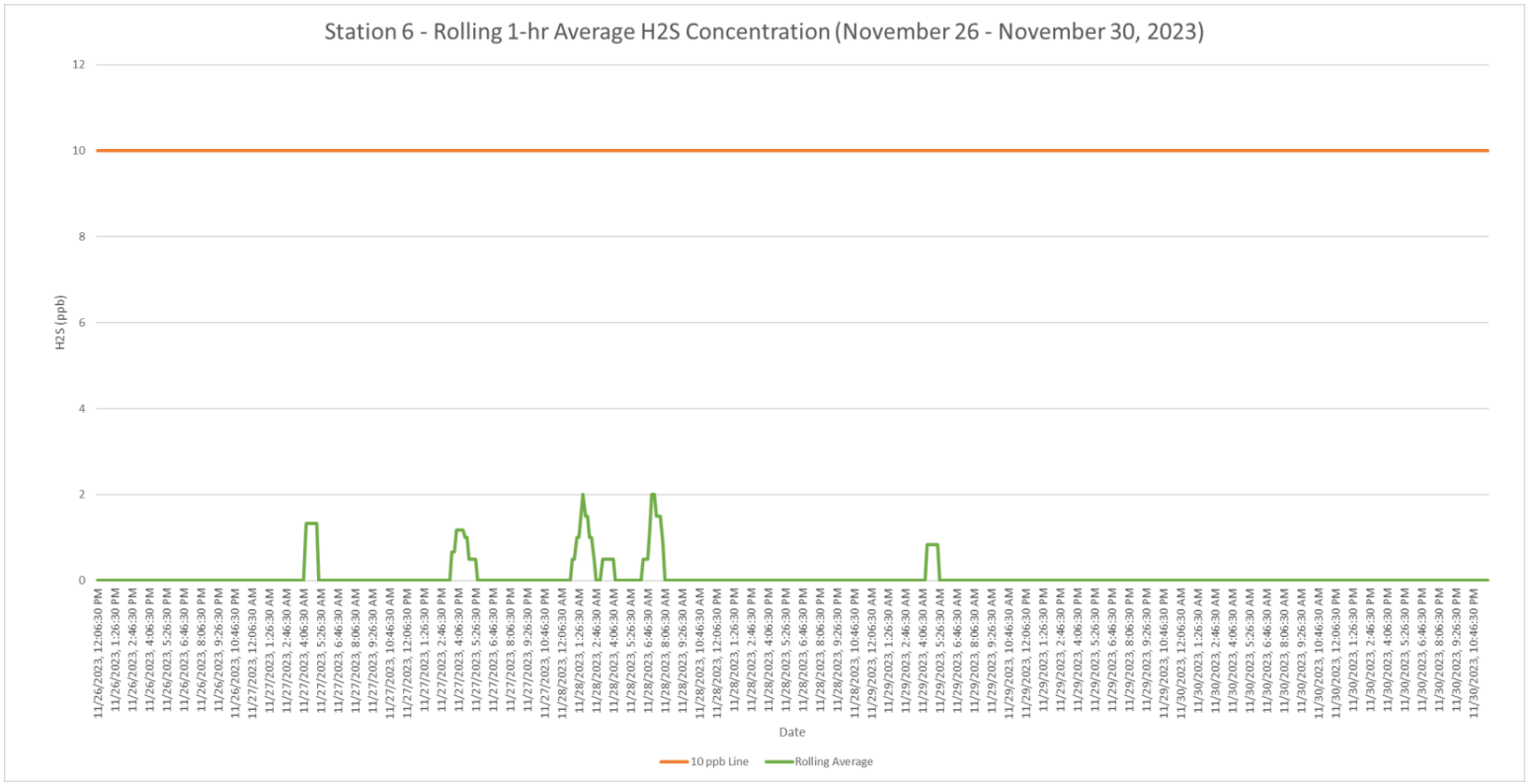

Station 5 - Rolling 1-hr Average H2S Concentration (November 26 - November 30, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average


Station 6 - Rolling 1-hr Average H2S Concentration (November 1 - November 5, 2023)
*Loaner Station*
H2S (ppb)
35
30
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average


Station 6 - Rolling 1-hr Average H2S Concentration (November 5 - 12, 2023)
*Loaner Station*
H2S (ppb)
25
20
15
10
5
0
Date
10 ppb Line
Rolling Average


Station 6 - Rolling 1-hr Average H2S Concentration (November 12 - 19, 2023)
*Loaner Station*
H2S (ppb)
12
10
8
6
4
2
0
Unit replacement
Unit replacement
Date
10 ppb Line
Rolling Average


Station 6 - Rolling 1-hr Average H2S Concentration (November 19 - 26, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average


Station 6 - Rolling 1-hr Average H2S Concentration (November 26 - November 30, 2023)
H2S (ppb)
12
10
8
6
4
2
0
Date
10 ppb Line
Rolling Average

# Attachment 2

# Meteorological Station Data

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2 | Blue shading indicates periods of exceedance noted at Station 3 | Green shading indicates periods when exceedances were noted at both Stations 2 & 6

RED Red text indicates periods of exceedance noted at Station 1 | Grey shading indicates periods of exceedance noted at Station 5 | BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-01 00:00:00 | 34 | 31.8 | 92 | 0 | | 150 | 4.7 | | 1015.9 | SSE |
| 2023-11-01 01:00:00 | 35.6 | 30.6 | 82 | 0 | | 290 | 4.3 | | 1015 | WNW |
| 2023-11-01 02:00:00 | 33.1 | 29.8 | 88 | 0 | | 280 | 3.4 | | 1015.9 | W |
| 2023-11-01 03:00:00 | 32 | 30 | 92 | 0 | | 0 | 0 | | 1015.6 | |
| 2023-11-01 04:00:00 | 30.2 | 27.3 | 89 | 0 | | 250 | 6.7 | | 1015 | WSW |
| 2023-11-01 05:00:00 | 30.9 | 28 | 89 | 0 | | 270 | 3.4 | | 1016.6 | W |
| 2023-11-01 06:00:00 | 32 | 26.8 | 81 | 0 | | 260 | 3.4 | | 1017.2 | W |
| 2023-11-01 07:00:00 | 28.9 | 25 | 85 | 0 | | 180 | 3.4 | | 1017.9 | S |

Site Meteorological Data

November 1 - 30, 2023

Note:
Yellow/Tan shading indicates periods of exceedance noted at Station 2
RED Red text indicates periods of exceedance noted at Station 1
Blue shading indicates periods of exceedance noted at Station 3
Grey shading indicates periods of exceedance noted at Station 5
Green shading indicates periods when exceedances were noted at Stations 1, 2, 5, & 6
BLUE Blue text indicates periods of exceedance noted at Station 6
Red shading indicates periods when exceedances were noted at stations 2, 3, & 6
Orange shading indicates periods when exceedances were noted at both stations 1 & 5
GREEN Green text indicates periods when exceedances were noted at stations 2 & 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-04 03:00:00 | 48 | 30.7 | 51 | 0 | | 170 | 5.8 | | 1021.2 | S |
| 2023-11-04 04:00:00 | 50 | 26.1 | 39 | 0 | | 200 | 5.8 | | 1021.2 | SSW |
| 2023-11-04 05:00:00 | 50 | 31.1 | 48 | 0 | | 210 | 8.1 | | 1021.5 | SSW |
| 2023-11-04 06:00:00 | 48.2 | 31.5 | 52 | 0 | | 220 | 5.6 | | 1021 | SW |
| 2023-11-04 07:00:00 | 46.4 | 31.5 | 56 | 0 | | 180 | 4.3 | | 1022 | S |
| 2023-11-04 08:00:00 | 46.9 | 32.9 | 58 | 0 | | 0 | 0 | | 1022.5 | |
| 2023-11-04 09:00:00 | 48.9 | 35.2 | 59 | 0 | | 100 | 3.4 | | 1022.3 | E |
| 2023-11-04 10:00:00 | 51.8 | 34.7 | 52 | 0 | | 202 | 5.2 | | 1022 | SSW |
| 2023-11-04 11:00:00 | 52 | 34 | 50 | 0 | | 0 | 0 | | 1022.3 | |
| 2023-11-04 12:00:00 | 53.1 | 36 | 52 | 0 | | 0 | 0 | | 1021.5 | |
| 2023-11-04 13:00:00 | 52 | 37.2 | 57 | 0 | | 70 | 5.8 | | 1020.5 | ENE |
| 2023-11-04 14:00:00 | 54 | 35.2 | 49 | 0 | | 204 | 3.4 | | 1019.7 | SSW |
| 2023-11-04 15:00:00 | 53.6 | 35.4 | 50 | 0 | | 50 | 4.3 | | 1020 | NE |
| 2023-11-04 16:00:00 | 52 | 37.2 | 57 | 0 | | 40 | 3.4 | | 1019.7 | NE |
| 2023-11-04 17:00:00 | 48.9 | 38.1 | 66 | 0 | | 0 | 0 | | 1019.5 | |
| 2023-11-04 18:00:00 | 48.9 | 38.1 | 66 | 0 | | 0 | 0 | | 1019.9 | |
| 2023-11-04 19:00:00 | 48 | 39 | 71 | 0 | | 0 | 0 | | 1019.8 | |
| 2023-11-04 20:00:00 | 48.2 | 37.4 | 66 | 0 | | 286 | 4 | | 1019 | WNW |
| 2023-11-04 21:00:00 | 48 | 39 | 71 | 0 | | 0 | 0 | | 1019.5 | |
| 2023-11-04 22:00:00 | 47.1 | 39.9 | 76 | 0 | | 236 | 2 | | 1019 | SW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-05 02:00:00 | 46.4 | 39.2 | 76 | 0 | | 240 | 3.7 | | 1017 | WSW |
| 2023-11-05 03:00:00 | 46 | 39.9 | 79 | 0 | | 0 | 0 | | 1017.7 | |
| 2023-11-05 04:00:00 | 46.4 | 38.5 | 74 | 0 | | 290 | 3.7 | | 1018 | WNW |
| 2023-11-05 05:00:00 | 46.9 | 39.7 | 76 | 0 | | 0 | 0 | | 1018.2 | |
| 2023-11-05 06:00:00 | 46.4 | 41.5 | 83 | 0 | | 310 | 6.3 | | 1018 | NW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

RED Red text indicates periods of exceedance noted at Station 1

Blue shading indicates periods of exceedance noted at Station 3

Grey shading indicates periods of exceedance noted at Station 5

Green shading indicates periods when exceedances were noted at both Stations 1, 2, & 6

BLUE Blue text indicates periods of exceedance noted at Station 6

GREEN Green text indicates periods of exceedance noted at both Stations 2 & 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-05 14:00:00 | 48.2 | 30.9 | 51 | 0 | | 330 | 8.1 | | 1020 | NW |
| 2023-11-05 15:00:00 | 48 | 28.8 | 47 | 0 | | 320 | 8.1 | | 1020.6 | NW |
| 2023-11-05 16:00:00 | 45 | 27.9 | 51 | 0 | | 0 | 0 | | 1020.7 | |
| 2023-11-05 17:00:00 | 39.9 | 29.1 | 65 | 0 | | 0 | 0 | | 1021.6 | |
| 2023-11-05 18:00:00 | 39.2 | 28.4 | 65 | 0 | | 11 | 6 | | 1022 | N |
| 2023-11-05 19:00:00 | 32 | 26.8 | 81 | 0 | | 0 | 0 | | 1022.4 | |
| 2023-11-05 20:00:00 | 32 | 26.8 | 81 | 0 | | 0 | 0 | | 1022.5 | |
| 2023-11-05 21:00:00 | 30 | 27 | 88 | 0 | | 0 | 0 | | 1022.1 | |
| 2023-11-05 22:00:00 | 33.1 | 28.2 | 82 | 0 | | 250 | 3.4 | | 1022.2 | WSW |
| 2023-11-05 23:00:00 | 35.1 | 32.2 | 89 | 0 | | 220 | 5.8 | | 1021.9 | SW |
| 2023-11-06 00:00:00 | 35.6 | 32.7 | 89 | 0 | | 210 | 6.8 | | 1021 | SSW |
| 2023-11-06 01:00:00 | 37 | 32 | 82 | 0 | | 200 | 8.1 | | 1021.6 | SSW |
| 2023-11-06 02:00:00 | 37 | 30.7 | 78 | 0 | | 210 | 7 | | 1021.1 | SSW |
| 2023-11-06 03:00:00 | 37 | 32 | 82 | 0 | | 210 | 4.7 | | 1021.4 | SSW |
| 2023-11-06 04:00:00 | 35.6 | 30.6 | 82 | 0 | | 208 | 6.3 | | 1021 | SSW |
| 2023-11-06 05:00:00 | 35.1 | 30.2 | 82 | 0 | | 220 | 4.7 | | 1021.7 | SW |
| 2023-11-06 06:00:00 | 37 | 32 | 82 | 0 | | 210 | 3.4 | | 1021.3 | SSW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

RED Red text indicates periods of exceedance noted at Station 1

Blue shading indicates periods of exceedance noted at Station 3

Grey shading indicates periods of exceedance noted at Station 5

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

BLUE Blue text indicates periods of exceedance noted at Station 6

GREEN Green text indicates periods of exceedance noted at both Stations 2 & 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-12 01:00:00 | 33.8 | 28 | 79 | 0 | | 330 | 4.3 | | 1032 | NW |
| 2023-11-12 02:00:00 | 33.8 | 28.9 | 82 | 0 | | 350 | 3.7 | | 1032 | N |
| 2023-11-12 03:00:00 | 34 | 26.2 | 73 | 0 | | 320 | 3.4 | | 1032.9 | NW |
| 2023-11-12 04:00:00 | 34 | 24.8 | 69 | 0 | | 0 | 0 | | 1033.2 | |
| 2023-11-12 05:00:00 | 34 | 26.2 | 73 | 0 | | 0 | 0 | | 1033.7 | |
| 2023-11-12 06:00:00 | 35.6 | 25.3 | 66 | 0 | | 13 | 5.6 | | 1033 | NNE |
| 2023-11-12 07:00:00 | 35.6 | 25.3 | 66 | 0 | | 14 | 4.9 | | 1033 | NNE |
| 2023-11-12 08:00:00 | 36 | 27.1 | 70 | 0 | | 320 | 4.7 | | 1034.4 | NW |
| 2023-11-12 09:00:00 | 35.6 | 22.6 | 59 | 0 | | 330 | 4.3 | | 1033 | NW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-13 04:00:00 | 30 | 26.1 | 85 | 0 | | 220 | 7 | | 1027.7 | SW |
| 2023-11-13 05:00:00 | 30.9 | 24.8 | 78 | 0 | | 210 | 9.2 | | 1027.2 | SSW |
| 2023-11-13 06:00:00 | 30.9 | 26.1 | 82 | 0 | | 210 | 8.1 | | 1026.8 | SSW |
| 2023-11-13 07:00:00 | 33.8 | 26.8 | 75 | 0 | | 200 | 13.7 | | 1025 | SSW |
| 2023-11-13 08:00:00 | 35.1 | 27.9 | 75 | 0 | | 210 | 13.9 | | 1025 | SSW |
| 2023-11-13 09:00:00 | 37 | 28.2 | 70 | 0 | | 210 | 12.7 | | 1024.3 | SSW |
| 2023-11-13 10:00:00 | 39.9 | 28 | 62 | 0 | | 210 | 13.9 | | 1022.7 | SSW |
| 2023-11-13 11:00:00 | 44.6 | 29.5 | 55 | 0 | | 200 | 11.8 | | 1020 | SSW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-14 15:00:00 | 44.1 | 28 | 53 | 0 | | 300 | 4.7 | | 1029.1 | WNW |
| 2023-11-14 16:00:00 | 39.2 | 26.4 | 60 | 0 | | 328 | 3.4 | | 1028 | NW |
| 2023-11-14 17:00:00 | 28.4 | 24.4 | 85 | 0 | | 0 | 0 | | 1030 | |
| 2023-11-14 18:00:00 | 26.6 | 23.7 | 89 | 0 | | 160 | 3.4 | | 1030.1 | SSE |
| 2023-11-14 19:00:00 | 26.1 | 23 | 88 | 0 | | 0 | 0 | | 1030.3 | |
| 2023-11-14 20:00:00 | 26.1 | 23 | 88 | 0 | | 0 | 0 | | 1030.1 | |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-15 15:00:00 | 54 | 30.2 | 40 | 0 | | 170 | 5.8 | | 1020.9 | S |
| 2023-11-15 16:00:00 | 46.4 | 28.2 | 49 | 0 | | 198 | 8.1 | | 1020 | SSW |
| 2023-11-15 17:00:00 | 51.1 | 28.8 | 42 | 0 | | 200 | 7 | | 1021.2 | SSW |
| 2023-11-15 18:00:00 | 50 | 31.1 | 48 | 0 | | 210 | 8.1 | | 1021.3 | SSW |
| 2023-11-15 19:00:00 | 50 | 30 | 46 | 0 | | 210 | 9.2 | | 1021.6 | SSW |
| 2023-11-15 20:00:00 | 46.4 | 30.7 | 54 | 0 | | 200 | 3.7 | | 1021 | SSW |
| 2023-11-15 21:00:00 | 48.2 | 30.4 | 50 | 0 | | 200 | 9.3 | | 1022 | SSW |
| 2023-11-15 22:00:00 | 44.1 | 30.2 | 58 | 0 | | 240 | 4.7 | | 1022.5 | WSW |
| 2023-11-15 23:00:00 | 41 | 30.9 | 67 | 0 | | 240 | 4.7 | | 1022.8 | WSW |
| 2023-11-16 00:00:00 | 42.1 | 32 | 67 | 0 | | 210 | 7 | | 1022.4 | SSW |
| 2023-11-16 01:00:00 | 39.2 | 31.3 | 73 | 0 | | 243 | 8.3 | | 1022 | WSW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-16 13:00:00 | 60.1 | 35.1 | 39 | 0 | | 0 | 0 | | 1020.7 | |
| 2023-11-16 14:00:00 | 61 | 35.2 | 38 | 0 | | 40 | 4.7 | | 1020.4 | NE |
| 2023-11-16 15:00:00 | 59 | 35.2 | 41 | 0 | | 50 | 3.7 | | 1020 | NE |
| 2023-11-16 16:00:00 | 46.4 | 33.6 | 61 | 0 | | 0 | 0 | | 1019.9 | |
| 2023-11-16 17:00:00 | 44.6 | 33.6 | 65 | 0 | | 0 | 0 | | 1019.5 | |
| 2023-11-16 18:00:00 | 43 | 33.8 | 70 | 0 | | 250 | 3.4 | | 1019.5 | WSW |
| 2023-11-16 19:00:00 | 48 | 36 | 63 | 0 | | 200 | 8.1 | | 1018.9 | SSW |
| 2023-11-16 20:00:00 | 46.8 | 38.8 | 74 | 0 | | 207 | 9.6 | | 1019.3 | SSW |
| 2023-11-16 21:00:00 | 48.9 | 35.2 | 59 | 0 | | 210 | 8.1 | | 1018.2 | SSW |
| 2023-11-16 22:00:00 | 48.2 | 33.3 | 56 | 0 | | 210 | 8.1 | | 1017 | SSW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-18 15:00:00 | 42.1 | 26.2 | 53 | 0 | | 270 | 5.8 | | 1012.3 | W |
| 2023-11-18 16:00:00 | 37.9 | 24.8 | 59 | 0 | | 0 | 0 | | 1011.9 | |
| 2023-11-18 17:00:00 | 30.2 | 25.2 | 81 | 0 | | 200 | 3.4 | | 1012.2 | SSW |
| 2023-11-18 18:00:00 | 30.2 | 23.5 | 76 | 0 | | 190 | 4.3 | | 1011 | S |
| 2023-11-18 19:00:00 | 32 | 25 | 75 | 0 | | 0 | 0 | | 1012.2 | |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

RED Red text indicates periods of exceedance noted at Station 1

Blue shading indicates periods of exceedance noted at Station 3

Grey shading indicates periods of exceedance noted at Station 5

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-19 21:00:00 | 34 | 23 | 64 | 0 | | 300 | 4.7 | | 1021.3 | WNW |
| 2023-11-19 22:00:00 | 33.1 | 23 | 66 | 0 | | 290 | 7 | | 1021.8 | WNW |
| 2023-11-19 23:00:00 | 32 | 21.9 | 66 | 0 | | 300 | 5.6 | | 1022 | WNW |
| 2023-11-20 00:00:00 | 30.9 | 21.9 | 69 | 0 | | 300 | 5.8 | | 1023.3 | WNW |
| 2023-11-20 01:00:00 | 30 | 22.1 | 72 | 0 | | 300 | 4.7 | | 1023.9 | WNW |
| 2023-11-20 02:00:00 | 28 | 21.2 | 75 | 0 | | 0 | 0 | | 1024.9 | |
| 2023-11-20 03:00:00 | 26.6 | 19.8 | 75 | 0 | | 319 | 5.6 | | 1025 | NW |
| 2023-11-20 04:00:00 | 27 | 20.1 | 75 | 0 | | 0 | 0 | | 1026.7 | |
| 2023-11-20 05:00:00 | 24.8 | 18.9 | 78 | 0 | | 327 | 6 | | 1026 | NW |
| 2023-11-20 06:00:00 | 25 | 17.8 | 74 | 0 | | 0 | 0 | | 1028.6 | |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-22 06:00:00 | 43 | 42.3 | 97 | 0 | | 0 | 0 | | 1008.5 | |
| 2023-11-22 07:00:00 | 44.1 | 42.1 | 93 | 0 | | 220 | 4.7 | | 1008.6 | SW |
| 2023-11-22 08:00:00 | 44.6 | 43.9 | 97 | 0 | | 230 | 4.3 | | 1008 | SW |
| 2023-11-22 09:00:00 | 46 | 44.1 | 93 | 0.008 | | 220 | 5.8 | | 1008.1 | SW |
| 2023-11-22 10:00:00 | 46.9 | 44.2 | 90 | 0 | | 220 | 5.8 | | 1007.6 | SW |
| 2023-11-22 11:00:00 | 48 | 44.1 | 86 | 0 | | 240 | 5.8 | | 1006.8 | WSW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

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RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-23 03:00:00 | 37 | 28.9 | 72 | 0 | | 280 | 7 | | 1011.7 | W |
| 2023-11-23 04:00:00 | 37.9 | 28 | 67 | 0 | | 0 | 0 | | 1012 | |
| 2023-11-23 05:00:00 | 37 | 28.9 | 72 | 0 | | 220 | 5.8 | | 1012.2 | SW |
| 2023-11-23 06:00:00 | 37.4 | 30.6 | 76 | 0 | | 200 | 6.8 | | 1012 | SSW |
| 2023-11-23 07:00:00 | 37 | 30.2 | 76 | 0 | | 170 | 5.8 | | 1013 | S |
| 2023-11-23 08:00:00 | 39 | 32.2 | 76 | 0 | | 210 | 4.7 | | 1013 | SSW |

Site Meteorological Data

November 1 - 30, 2023

Note: Yellow/Tan shading indicates periods of exceedance noted at Station 2

Blue shading indicates periods of exceedance noted at Station 3

Green shading indicates periods when exceedances were noted at both Stations 5 & 6

RED Red text indicates periods of exceedance noted at Station 1

Grey shading indicates periods of exceedance noted at Station 5

BLUE Blue text indicates periods of exceedance noted at Station 6

| time | temp | dwpt | rhum | prcp | snow | wdir | wspd | wpgt | pres | conversion |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023-11-25 16:00:00 | 30.2 | 21.2 | 69 | 0 | | 120 | 4.3 | | 1025 | ESE |
| 2023-11-25 17:00:00 | 30 | 21 | 69 | 0 | | 140 | 4.7 | | 1026.3 | SE |
| 2023-11-25 18:00:00 | 28.9 | 20.1 | 69 | 0 | | 190 | 3.4 | | 1025 | S |
| 2023-11-25 19:00:00 | 28 | 19.8 | 71 | 0 | | 0 | 0 | | 1025.6 | |
| 2023-11-25 20:00:00 | 28 | 22.1 | 78 | 0 | | 0 | 0 | | 1024.8 | |
| 2023-11-25 21:00:00 | 26.6 | 21.6 | 81 | 0 | | 130 | 3.7 | | 1023 | SE |
| 2023-11-25 22:00:00 | 33.1 | 21.9 | 63 | 0 | | 200 | 5.8 | | 1024.1 | SSW |
| 2023-11-25 23:00:00 | 33.8 | 19.8 | 56 | 0 | | 190 | 8.1 | | 1023 | S |