

**Lead Levels Observed at RHV by  
Bay Area Air Quality Management District (BAAQMD)  
from 1/1/2016 through 6/20/2020**

**Michael McDonald**

# BAAQMD Lead Monitoring at RHV

- **Monitoring from 02/03/2012 through 6/20/2020**
  - Every six days (“6d”)
  - Testing discontinued 6/20: earth-moving equipment impacted power source
- **Located within airport property; Pb levels will be exponentially lower outside of airport**



# BAAQMD Eliminating Lead Testing Due to Low Measured Levels

**“The Air District expects to request EPA approval of the shutdown of the Reid Hillview monitoring site outside the annual network plan process in 2021 considering the most recent 3-month averages of lead concentrations are below 50% of the NAAQS”**

June 7, 2021 email  
Charley A. Knoderer, CCM  
Meteorology & Quality Assurance Manager  
Meteorology & Measurement Division  
The Bay Area Air Quality Management District

NAAQS – National Ambient Air Quality Standard [EPA regulated]

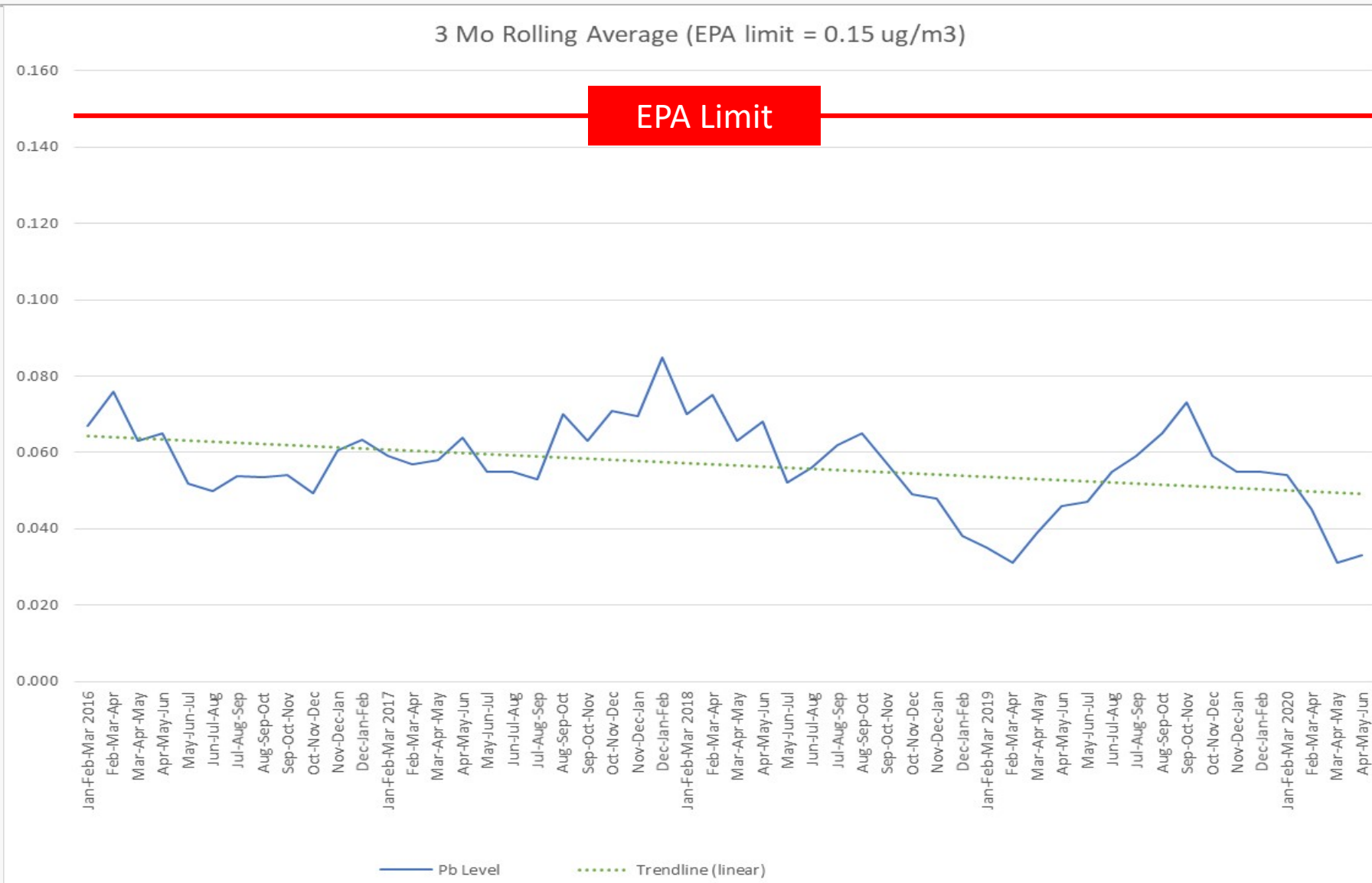
# Key Messages

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- **No significant lead issue at RHV**
  - No day exceeded EPA NAAQS limits over last two years of testing
  - Only 5 days over 4.5 years exceeded NAAQS lead limit\*
- **“Daily” and 3-month rolling averages of lead are roughly 1/3 of EPA limit**
  - ~0.057 ug/m<sup>3</sup> vs EPA NAAQS limit of 0.15 ug/m<sup>3</sup>
- **BAAQMD will petition EPA to discontinue lead due to low measured levels**
- **Lead levels outside of RHV will be exponentially lower than at airport meter**
  - Current results are taken within RHV property lines
  - Lead levels rapidly decrease over distance

Note: NAAQS lead threshold is based on a 3-month average, not on a daily amount.

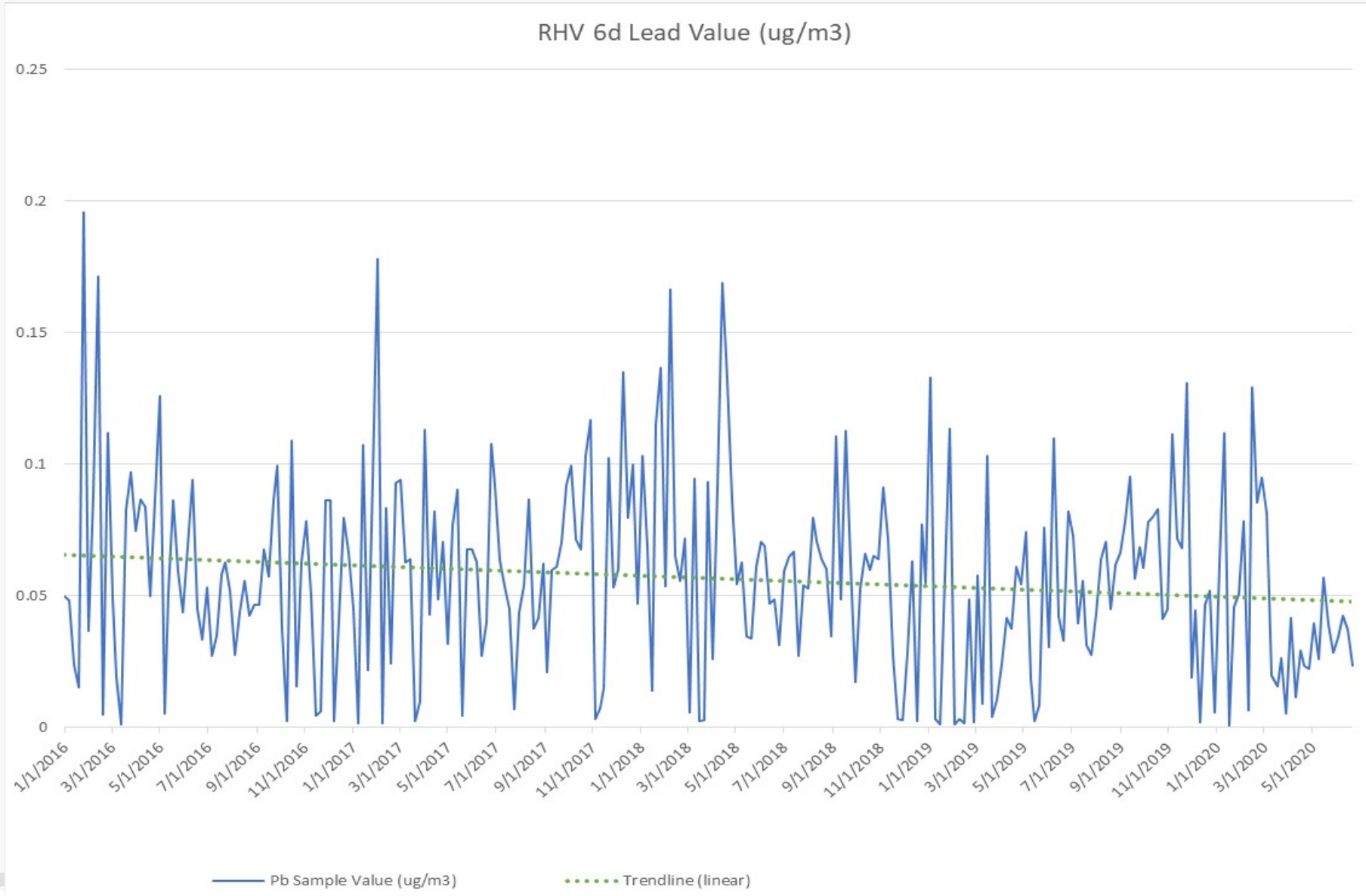
# Rolling 3 Month Lead Average (1/1/2016 thru 6/20/2020)



Mean	0.056561
Median	0.056

- Average was ~0.057: about 1/3 EPA limit
- EPA limit is 0.15 over a 3 month calendar period
- Average lead (green line) decreasing over time

# Daily Lead Measurements over 4.5 Years (1/1/2016 thru 6/20/2020)



<b>Mean</b>	<b>0.056776</b>
Median	0.0549

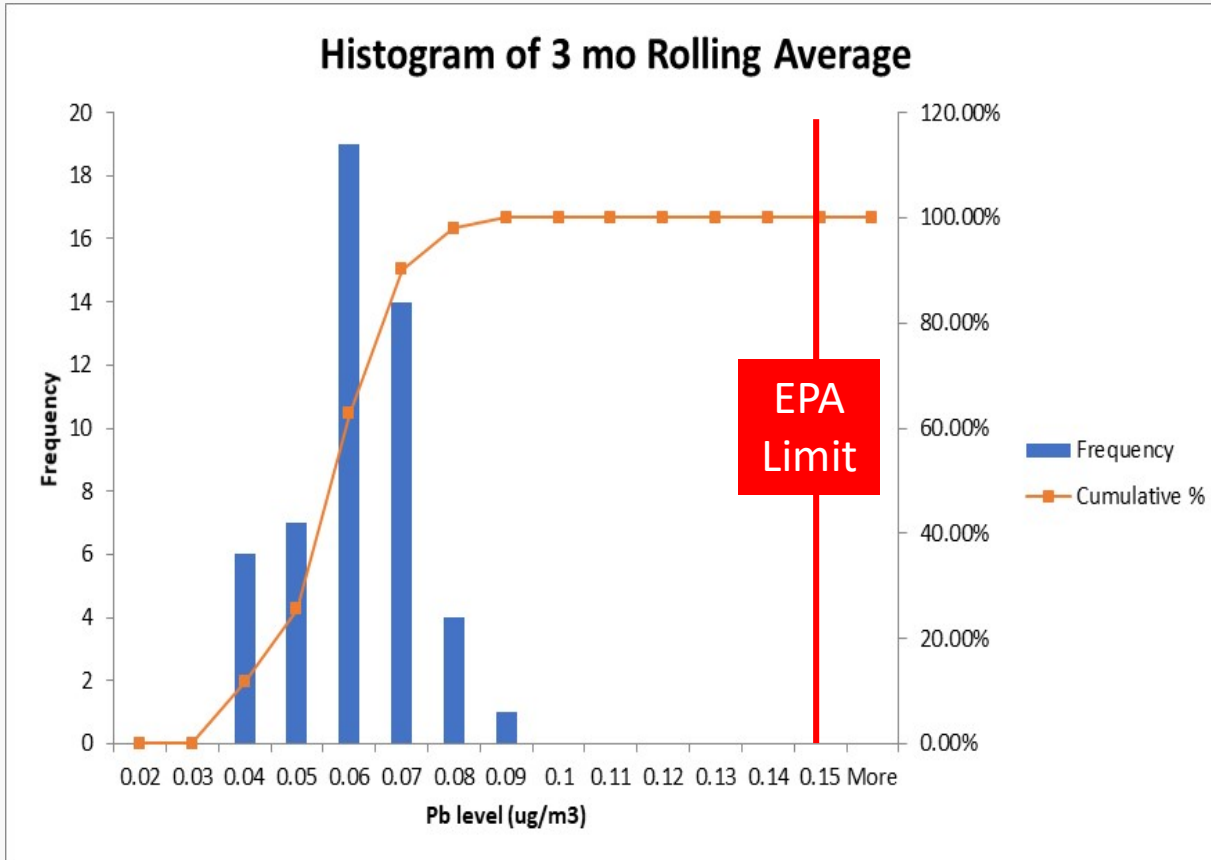
*Samples taken every 6 days for 4.5 years*

*Average lead (green line) decreasing over time*

*Only 5 days over 4.5 years exceeded EPA threshold. (Note that EPA measures a “3-month average”, not isolated anomalies)*



# Samples at a Particular Level (3 Month Rolling Average)



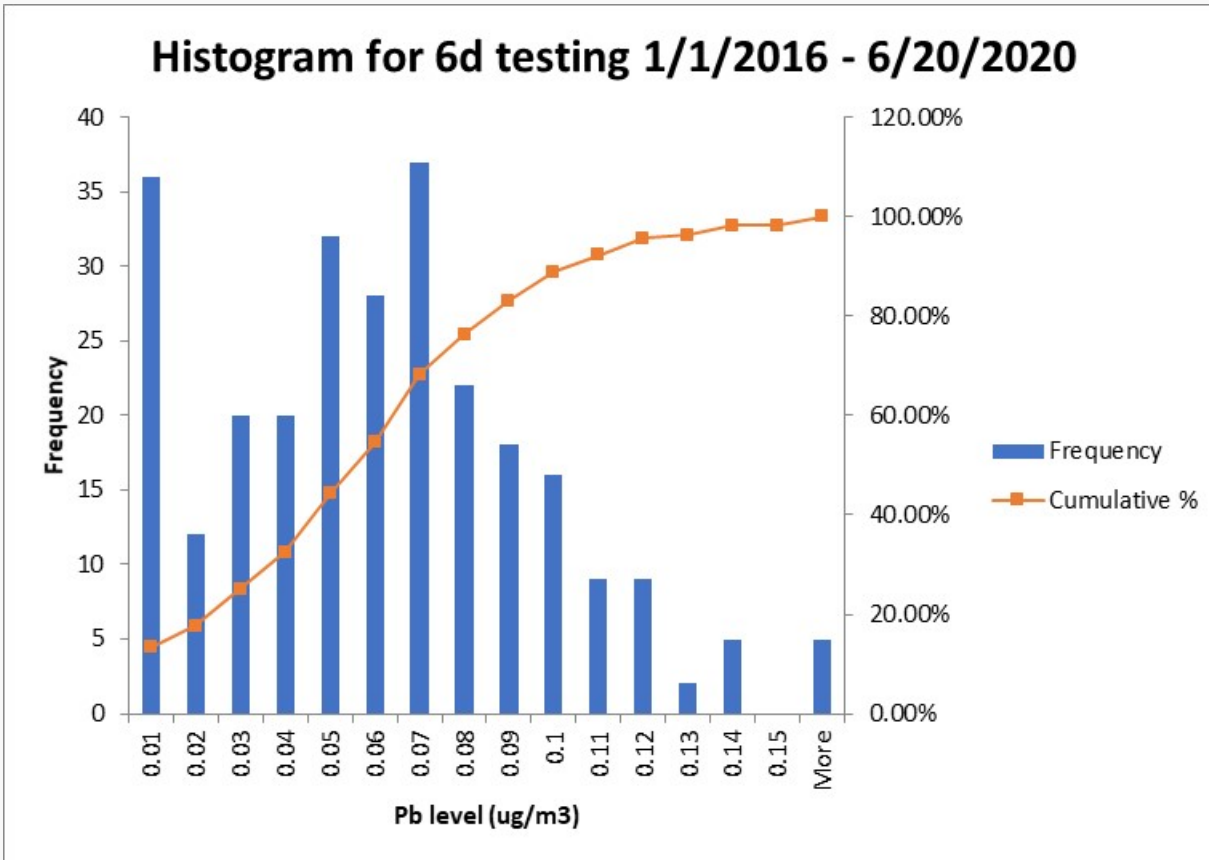
Bin	Frequency	Cumulative %
0.01	0	0%
0.02	0	0.00%
0.03	0	0.00%
0.04	6	11.76%
0.05	7	25.49%
0.06	19	62.75%
0.07	14	90.20%
0.08	4	98.04%
0.09	1	100.00%
0.1	0	100.00%
0.11	0	100.00%
0.12	0	100.00%
0.13	0	100.00%
0.14	0	100.00%
0.15	0	100.00%
More	0	100.00%

## Example of how to read this:

- 14 “3-month averages” are between 0.06 and 0.07
- 90.2% of the 3-month averages are below 0.07

- EPA limit is 0.15 over a 3 month calendar period
- No 3-month period exceeded 0.09
- RHV is about 1/3 of the EPA limit

# Samples at a Particular Level (Daily Measurements)



Bin	Frequency	Cumulative %
0.01	36	13.28%
0.02	12	17.71%
0.03	20	25.09%
0.04	20	32.47%
0.05	32	44.28%
0.06	28	54.61%
0.07	37	68.27%
0.08	22	76.38%
0.09	18	83.03%
0.1	16	88.93%
0.11	9	92.25%
0.12	9	95.57%
0.13	2	96.31%
0.14	5	98.15%
0.15	0	98.15%
More	5	100.00%

## Example of how to read this:

- 37 test samples are between 0.06 and 0.07
- 68.27% of the test samples are below 0.07

- EPA limit is 0.15 over a 3 month calendar period
- Only 5 tests over 4.5 year period exceeded 0.15
- None exceeded limits in 2019 or 2020



Daily Measurements  
(Every Six Days)

Date	Sample Value (ug/m3)
1/1/2016	0.0498
1/7/2016	0.0485
1/13/2016	0.0241
1/19/2016	0.0152
1/25/2016	0.196
1/31/2016	0.0369
2/6/2016	0.0887
2/12/2016	0.1714
2/18/2016	0.0049
2/24/2016	0.1121
3/1/2016	0.0493
3/7/2016	0.0196
3/13/2016	0.0011
3/19/2016	0.0827
3/25/2016	0.0971
3/31/2016	0.0749
4/6/2016	0.0869
4/12/2016	0.0839
4/18/2016	0.05
4/24/2016	0.0869
4/30/2016	0.1259
5/6/2016	0.0054
5/12/2016	0.0514
5/18/2016	0.0863
5/24/2016	0.0595
5/30/2016	0.0439
6/5/2016	0.0689
6/11/2016	0.0941
6/17/2016	0.0451
6/23/2016	0.0336
6/29/2016	0.0533
7/5/2016	0.0272
7/11/2016	0.0351
7/17/2016	0.0584
7/23/2016	0.0629
7/29/2016	0.0515

Daily Measurements  
(Every Six Days)

8/4/2016	0.0276
8/10/2016	0.0436
8/16/2016	0.0557
8/22/2016	0.0426
8/28/2016	0.0466
9/3/2016	0.0466
9/9/2016	0.0677
9/15/2016	0.0574
9/21/2016	0.0863
9/27/2016	0.0995
10/3/2016	0.0375
10/9/2016	0.0025
10/15/2016	0.1091
10/21/2016	0.0157
10/27/2016	0.0629
11/2/2016	0.0785
11/8/2016	0.0505
11/14/2016	0.0046
11/20/2016	0.0062
11/26/2016	0.0863
12/2/2016	0.0863
12/8/2016	0.0025
12/20/2016	0.0797
12/26/2016	0.0665
1/1/2017	0.045
1/7/2017	0.0017
1/13/2017	0.1073
1/19/2017	0.0218
1/25/2017	0.0947
1/31/2017	0.178
2/6/2017	0.0016
2/12/2017	0.0833
2/18/2017	0.0245
2/24/2017	0.0929
3/2/2017	0.0941
3/8/2017	0.0629
3/14/2017	0.0641

Daily Measurements  
(Every Six Days)

3/20/2017	0.0025
3/26/2017	0.0099
4/1/2017	0.1133
4/7/2017	0.0429
4/13/2017	0.0821
4/19/2017	0.0489
4/25/2017	0.0707
5/1/2017	0.0318
5/7/2017	0.0767
5/13/2017	0.0905
5/19/2017	0.0045
5/25/2017	0.0677
5/31/2017	0.0677
6/6/2017	0.0629
6/12/2017	0.0272
6/18/2017	0.0399
6/24/2017	0.1079
6/30/2017	0.0917
7/6/2017	0.0635
7/12/2017	0.0535
7/18/2017	0.0451
7/24/2017	0.0069
7/30/2017	0.0437
8/5/2017	0.0542
8/11/2017	0.0869
8/17/2017	0.0376
8/23/2017	0.0417
8/29/2017	0.0623
9/4/2017	0.021
9/10/2017	0.0599
9/16/2017	0.0611
9/22/2017	0.0701
9/28/2017	0.0923
10/4/2017	0.0995
10/10/2017	0.0713
10/16/2017	0.0677
10/22/2017	0.1031

Daily Measurements  
(Every Six Days)

10/28/2017	0.1169
11/3/2017	0.0034
11/9/2017	0.0074
11/15/2017	0.0151
11/21/2017	0.1025
11/27/2017	0.0534
12/3/2017	0.0605
12/9/2017	0.1349
12/15/2017	0.0797
12/21/2017	0.1001
12/27/2017	0.0469
1/2/2018	0.1031
1/8/2018	0.0689
1/14/2018	0.0141
1/20/2018	0.1151
1/26/2018	0.1367
2/1/2018	0.0538
2/7/2018	0.1666
2/13/2018	0.0653
2/19/2018	0.0556
2/25/2018	0.0719
3/3/2018	0.0056
3/9/2018	0.0947
3/15/2018	0.0026
3/21/2018	0.0027
3/27/2018	0.0935
4/2/2018	0.0259
4/8/2018	0.0917
4/14/2018	0.169
4/20/2018	0.1325
4/26/2018	0.0869
5/2/2018	0.0544
5/8/2018	0.0629
5/14/2018	0.0346
5/20/2018	0.034
5/26/2018	0.0611
6/1/2018	0.0707

Daily Measurements  
(Every Six Days)

6/7/2018	0.0689
6/13/2018	0.0471
6/19/2018	0.0486
6/25/2018	0.0313
7/1/2018	0.0594
7/7/2018	0.0647
7/13/2018	0.0671
7/19/2018	0.0272
7/25/2018	0.054
7/31/2018	0.0529
8/6/2018	0.0797
8/12/2018	0.0707
8/18/2018	0.0641
8/24/2018	0.0605
8/30/2018	0.0345
9/5/2018	0.1109
9/11/2018	0.0489
9/17/2018	0.1127
9/23/2018	0.0623
9/29/2018	0.0174
10/5/2018	0.0529
10/11/2018	0.0659
10/17/2018	0.0597
10/23/2018	0.0653
10/29/2018	0.0641
11/4/2018	0.0911
11/10/2018	0.0713
11/16/2018	0.0278
11/22/2018	0.0031
11/28/2018	0.0029
12/4/2018	0.0287
12/10/2018	0.0633
12/16/2018	0.0024
12/22/2018	0.0773
12/28/2018	0.0549
1/3/2019	0.1329
1/9/2019	0.0035

Daily Measurements  
(Every Six Days)

1/15/2019	0.0013
1/27/2019	0.1137
2/2/2019	0.0013
2/8/2019	0.0033
2/14/2019	0.0015
2/20/2019	0.0486
2/26/2019	0.002
3/4/2019	0.0578
3/10/2019	0.0092
3/16/2019	0.1033
3/22/2019	0.004
3/28/2019	0.0108
4/3/2019	0.0242
4/9/2019	0.0418
4/15/2019	0.0376
4/21/2019	0.0612
4/27/2019	0.0546
5/3/2019	0.0744
5/9/2019	0.0184
5/15/2019	0.0026
5/21/2019	0.0087
5/27/2019	0.0761
6/2/2019	0.0304
6/8/2019	0.1097
6/14/2019	0.042
6/20/2019	0.0329
6/26/2019	0.0821
7/2/2019	0.0725
7/8/2019	0.0396
7/14/2019	0.0557
7/20/2019	0.0315
7/26/2019	0.0276
8/1/2019	0.0433
8/7/2019	0.0639
8/13/2019	0.0705
8/19/2019	0.0451
8/25/2019	0.0619



Daily Measurements  
(Every Six Days)

8/31/2019	0.0665
9/6/2019	0.0784
9/12/2019	0.0954
9/18/2019	0.0567
9/24/2019	0.0686
9/30/2019	0.0609
10/6/2019	0.0781
10/12/2019	0.0803
10/18/2019	0.0831
10/24/2019	0.0412
10/30/2019	0.045
11/5/2019	0.1116
11/11/2019	0.0719
11/17/2019	0.0683
11/23/2019	0.1311
11/29/2019	0.0189
12/5/2019	0.0445
12/11/2019	0.002
12/17/2019	0.0466
12/23/2019	0.0521
12/29/2019	0.0057
1/4/2020	0.0622
1/10/2020	0.1118
1/16/2020	0.001
1/22/2020	0.046
1/28/2020	0.0508
2/3/2020	0.0785
2/9/2020	0.0064
2/15/2020	0.1294
2/21/2020	0.0855
2/27/2020	0.095
3/4/2020	0.0812
3/10/2020	0.02
3/18/2020	0.0158
3/22/2020	0.0264
3/28/2020	0.0054
4/3/2020	0.0417

Daily Measurements  
(Every Six Days)

4/9/2020	0.0116
4/15/2020	0.0293
4/21/2020	0.0237
4/27/2020	0.0225
5/3/2020	0.0395
5/9/2020	0.0261
5/15/2020	0.057
5/21/2020	0.0393
5/27/2020	0.0286
6/2/2020	0.0342
6/8/2020	0.0426
6/14/2020	0.0373
6/20/2020	0.0237

Three Month Rolling Average

Jan-Feb-Mar 2016	0.067
Feb-Mar-Apr	0.076
Mar-Apr-May	0.063
Apr-May-Jun	0.065
May-Jun-Jul	0.052
Jun-Jul-Aug	0.050
Jul-Aug-Sep	0.054
Aug-Sep-Oct	0.053
Sep-Oct-Nov	0.054
Oct-Nov-Dec	0.049
Nov-Dec-Jan	0.061
Dec-Jan-Feb	0.063
Jan-Feb-Mar 2017	0.059
Feb-Mar-Apr	0.057
Mar-Apr-May	0.058
Apr-May-Jun	0.064
May-Jun-Jul	0.055
Jun-Jul-Aug	0.055
Jul-Aug-Sep	0.053
Aug-Sep-Oct	0.070
Sep-Oct-Nov	0.063
Oct-Nov-Dec	0.071
Nov-Dec-Jan	0.070
Dec-Jan-Feb	0.085
Jan-Feb-Mar 2018	0.070
Feb-Mar-Apr	0.075
Mar-Apr-May	0.063
Apr-May-Jun	0.068
May-Jun-Jul	0.052
Jun-Jul-Aug	0.056
Jul-Aug-Sep	0.062
Aug-Sep-Oct	0.065
Sep-Oct-Nov	0.057
Oct-Nov-Dec	0.049
Nov-Dec-Jan	0.048
Dec-Jan-Feb	0.038
Jan-Feb-Mar 2019	0.035

Three Month Rolling Average

Feb-Mar-Apr	0.031
Mar-Apr-May	0.039
Apr-May-Jun	0.046
May-Jun-Jul	0.047
Jun-Jul-Aug	0.055
Jul-Aug-Sep	0.059
Aug-Sep-Oct	0.065
Sep-Oct-Nov	0.073
Oct-Nov-Dec	0.059
Nov-Dec-Jan	0.055
Dec-Jan-Feb	0.055
Jan-Feb-Mar 2020	0.054
Feb-Mar-Apr	0.045
Mar-Apr-May	0.031
Apr-May-Jun	0.033