

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



**VERIFICATION OF CONTINUED ATTAINMENT FOR
THE HILLSBOROUGH-POLK COUNTY SULFUR
DIOXIDE (SO₂) MAINTENANCE AREA**

July 1, 2021

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1. Background

Effective March 23, 2020, the U.S. Environmental Protection Agency (EPA) approved Florida's redesignation request and maintenance plan for the Hillsborough-Polk sulfur dioxide (SO₂) maintenance area. 85 Fed. Reg. 9,666 (February 20, 2020). The maintenance plan includes a section regarding verification of ongoing attainment, which requires the Florida Department of Environmental Protection (Department) to provide an annual report to EPA on or before July 1st that certifies whether the area is continuing to attain the 2010 SO₂ national ambient air quality standard (NAAQS). Specifically, the annual report must include:

- 1) The status of ongoing compliance with the SO₂ emission limits for the Mosaic New Wales and Mosaic Bartow facilities;
- 2) A review of annual emissions data for these facilities;
- 3) A review of the air dispersion modeling inputs and assumptions identified by EPA as a result of coordination with the Department;
- 4) A certification that there are no changes in the air dispersion modeling inputs and assumptions that could result in a modeled violation; and
- 5) All supporting documentation and data evaluated by the Department to prepare its annual report.

This annual report addresses the items listed above to demonstrate that the Hillsborough-Polk maintenance area continues to attain the 2010 SO₂ NAAQS.

2. Status of Ongoing Compliance with the SO₂ Emission Limits

The attainment modeling demonstration was based on permitted SO₂ emissions caps of 1,090 pounds per hour (lb/hr) for the five sulfuric acid plants (SAPs) at New Wales and 1,100 lb/hr for the three SAPs at Bartow, based on a 24-hour average as determined by continuous emission monitoring systems (CEMS) data. These SO₂ emissions limits have been incorporated into Florida's State Implementation Plan (SIP) to make the limits permanent and federally enforceable.

Mosaic has been in compliance with the 24-hour block average SAP emissions for each facility since the limits became effective on August 31, 2019. **Appendix A** provides all of the 24-hour averages from August 31, 2019 through January 31, 2021. All of the 24-hour averages are below the respective limits for each facility, demonstrating that Mosaic continues to comply with the SO₂ emissions limits at both facilities required to maintain the NAAQS.

3. Review of Annual Emissions Data

Table 1, below, shows the 2020 annual emissions from New Wales and Bartow in relation to the potential to emit from those facilities. Since the attainment modeling demonstration uses potential to emit, there has been less SO₂ emitted from these facilities than was modeled.

Table 1: 2020 annual SO₂ emissions from New Wales and Bartow compared to the potential to emit.

Facility	2020 Actual Emissions (TPY)	Potential to Emit (TPY)	Percentage of Potential to Emit
New Wales SAPs 1-5	3,987.6	4,774	83.5%
Bartow SAPs 4-6	2,897.4	4,818	60.1%

4. Review of Air Dispersion Modeling Inputs and Assumptions

The Department coordinated with EPA to determine which modeling inputs and assumptions used in the attainment modeling demonstration should be reviewed to determine whether there have been any changes that could result in a modeled violation of the 2010 SO₂ NAAQS. These modeling inputs and assumptions are discussed below.

Source-Specific Modeling Inputs and Assumptions

The stack parameters for each SAP at New Wales and Bartow have not changed since submittal of the attainment modeling demonstration. There has not been any construction or new buildings added at New Wales or Bartow that could change building downwash parameters.

Operation of the SAPs at both New Wales and Bartow has also not changed and continues to reflect what was modeled in the attainment modeling demonstration. Therefore, no change in the temporal or spatial distribution of SO₂ emissions or concentrations is expected.

Meteorology

The Department analyzed the meteorology and wind rose data for the most recent five years of available data (2015-2019) and compared this to the meteorology and wind rose data for the five years used in the attainment modeling demonstration (2012-2016). **Figure 1** shows the wind roses for these two periods and shows that the wind pattern is very similar between the two periods.

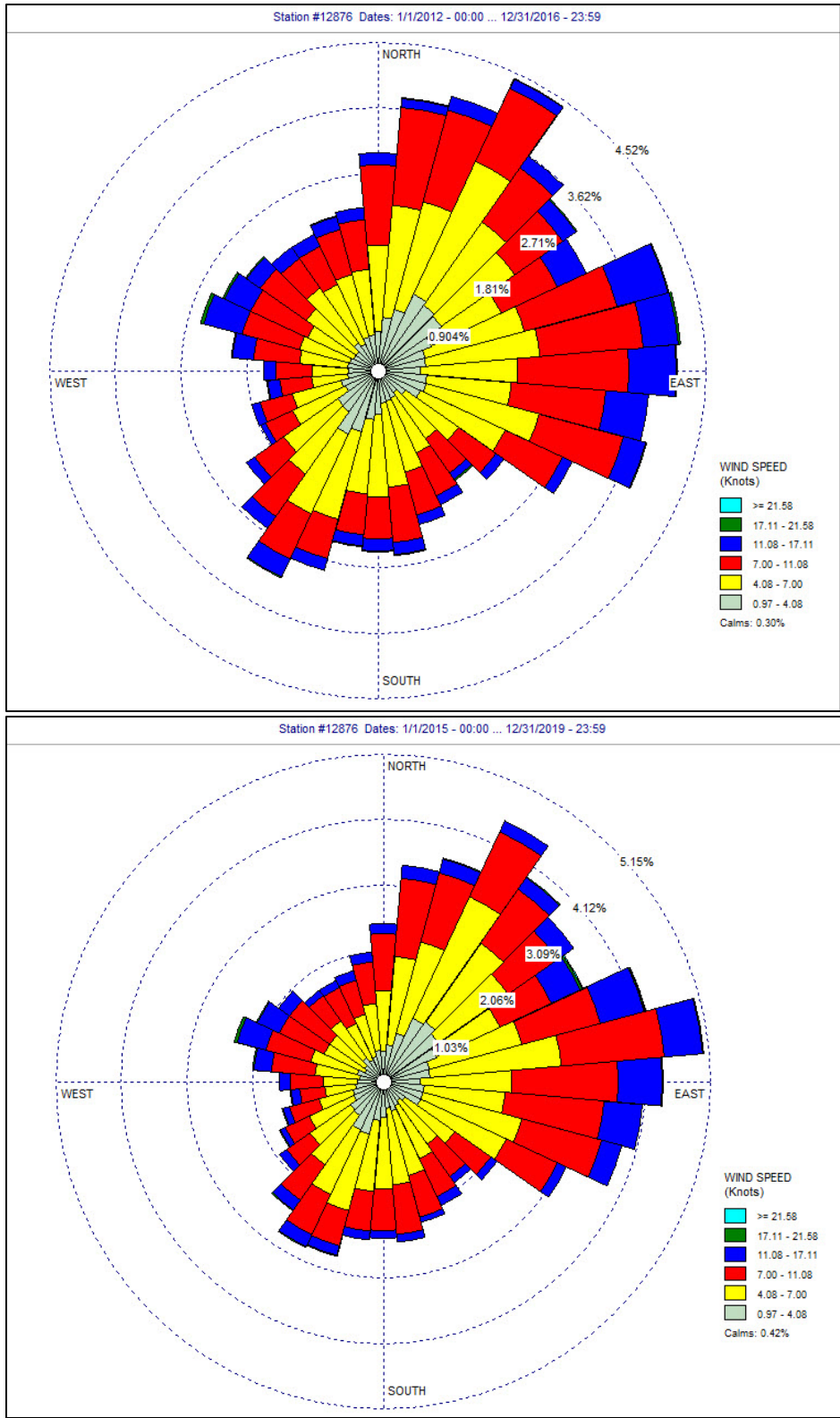


Figure 1: Wind rose data for the KGIF Winter Haven Regional Airport ASOS station for the years 2012-2016 (top) and 2015-2019 (bottom)

The most important wind direction to analyze is when the wind is traveling from Bartow towards New Wales. This is the wind direction that results in the maximum modeled concentrations because it includes impacts from both the New Wales facility plus contributions from the nearby Bartow facility. Bartow is approximately 45 degrees northeast of New Wales, so the Department looked at the proportion of time the wind direction was in the range of 0 to 90 degrees. This range conservatively covers all potential periods of time when Bartow emissions could be contributing to modeled SO₂ concentrations near New Wales. **Table 2** below compares the percentage of time that winds were from 0-90 degrees in the 2012-2016 meteorology dataset and the 2015-2019 meteorology dataset. There is only a slight increase in the percentage of time winds blow from Bartow towards New Wales in the 2015-2019 dataset, which is unlikely to have a significant effect on modeled concentrations.

Table 2: Percentage of time wind direction is from 0 to 90 degrees

Years	Wind Direction 0-90°
2012-2016	33.51%
2015-2019	34.38%

Land-Use in the Area

Land use in the area, which can affect the meteorological parameters, has not changed since the area attained the NAAQS.

Ambient Background Concentrations

The Department evaluated ambient background concentrations of SO₂ at the Sydney monitor (12-057-3002). The Department used 2014-2016 data from the Sydney monitor to calculate background SO₂ concentrations used in the attainment modeling demonstration.

Table 3 shows that the one-hour SO₂ design value at the Sydney monitor has decreased since the 2014-2016 period from 13 to 9 ppb.

Table 3: SO₂ 1-hour design values at the Sydney monitor

Period	Design Value
2014-2016	13 ppb
2015-2017	10 ppb
2016-2018	9 ppb
2017-2019	9 ppb
2018-2020	9 ppb

The Department also recalculated the background SO₂ concentrations averaged by season and hour for the most recent three years of available data (2017-2019). **Table 4** and **Table 5** show the background concentrations for the 2014-2016 period, used in the attainment modeling demonstration, and the 2017-2019 period, respectively. The maximum background SO₂ value for 2014-2016 is 7.33 µg/m³. The maximum background SO₂ value for 2017-2019 is 2.77 µg/m³, a significant decrease.

Table 4: Background SO₂ concentrations (µg/m³) used in the attainment modeling demonstration (2014-2016)

Hour	Winter	Spring	Summer	Fall
0:00	1.00	1.33	0.67	2.33
1:00	2.00	1.33	1.00	2.00
2:00	1.67	1.33	0.67	2.67
3:00	1.33	1.67	1.00	2.33
4:00	1.33	1.67	1.00	3.33
5:00	1.33	1.67	0.67	3.00
6:00	1.00	2.33	1.00	1.33
7:00	1.67	2.67	2.33	3.00
8:00	2.33	3.00	2.33	7.33
9:00	4.00	3.33	3.67	6.00
10:00	3.00	3.00	3.33	3.67
11:00	3.00	3.00	3.00	3.33
12:00	3.33	2.67	2.33	2.67
13:00	3.00	2.00	2.00	2.33
14:00	3.67	2.33	2.67	1.67
15:00	2.33	2.67	2.00	2.33
16:00	3.33	3.00	1.67	2.67
17:00	3.33	2.67	1.33	2.00
18:00	2.33	3.67	1.00	1.67
19:00	2.67	5.33	1.00	2.33
20:00	2.67	3.00	0.67	1.67
21:00	1.67	2.67	1.00	2.00
22:00	2.00	1.33	1.33	2.33
23:00	1.33	1.00	1.00	1.33

Table 5: Background SO₂ concentrations (µg/m³) for the most recent three years (2017-2019)

Hour	Winter	Spring	Summer	Fall
0:00	0.74	0.85	0.53	0.70
1:00	0.65	0.60	0.42	0.57
2:00	0.92	0.48	0.40	0.58
3:00	0.79	0.52	0.37	0.52
4:00	0.97	0.49	0.32	0.52
5:00	1.01	0.41	0.35	0.54
6:00	0.91	0.63	0.75	0.55
7:00	0.95	1.57	1.63	0.73
8:00	0.92	2.30	1.76	1.09
9:00	1.94	2.44	2.48	1.44

Hour	Winter	Spring	Summer	Fall
10:00	2.25	1.63	2.60	1.84
11:00	2.11	1.58	1.95	1.49
12:00	1.91	2.04	1.45	1.31
13:00	2.60	1.65	1.54	1.15
14:00	1.63	1.83	1.15	1.04
15:00	1.62	1.71	1.27	1.33
16:00	1.78	1.68	0.93	1.26
17:00	2.09	1.79	0.90	1.19
18:00	2.79	2.89	0.71	1.39
19:00	2.51	2.52	0.61	1.09
20:00	1.40	2.14	0.51	1.30
21:00	0.99	1.14	0.47	1.09
22:00	0.89	0.82	0.45	1.22
23:00	0.70	1.12	1.32	1.02

Critical Emissions Value

The critical emissions value (CEV) is the emissions level (lb/hr) at which the maximum modeled concentration is equal to the NAAQS. The CEVs calculated in the attainment demonstration modeling for New Wales and Bartow are 1,118 lb/hr and 1,163 lb/hr, respectively. The emissions data submitted with the redesignation request and attainment modeling demonstration from August 31, 2019 (the attainment date) through October 2, 2019 exceeded the CEV 2.8 percent of the time at New Wales, and 1.0 percent of the time at Bartow, while still maintaining the permitted emissions limits.

The Department analyzed the frequency that each facility's emissions exceeded their respective CEVs from August 31, 2019 through December 31, 2020 (see **Appendix B**). Emissions from New Wales exceeded the CEV 3.5 percent of the time, and emissions from Bartow exceeded the CEV 0.3 percent of the time, while still maintaining the permitted emissions limits. It is expected that these occasional spikes above the CEV, which can occur with longer-term limits such as 24-hour average limits, are unlikely to have a significant impact on air quality, as they are unlikely to occur repeatedly at the same time as meteorological conditions conducive for high ambient concentrations of SO₂.

In addition, considering that the ambient background concentrations of SO₂ at the Sydney monitor have decreased since the 2014-2016 period, the CEVs of 1,118 lb/hr and 1,163 lb/hr for New Wales and Bartow are conservative. If the CEVs were recalculated with updated modeling, the updated CEVs would be higher, so the frequency that the hourly emissions would exceed the CEVs may be reduced.

5. Certification of Continued Attainment

The Department certifies that there are no changes in the air dispersion modeling inputs and assumptions that could result in a modeled violation, and therefore recommends that no additional action or information is necessary to verify continued attainment. The Hillsborough-Polk maintenance area is expected to continue to maintain the 2010 SO₂ NAAQS.

Appendix A – New Wales and Bartow 24-hour block average SAP emissions

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Bartow Cap 1,100 PPH
8/31/2019	737	843
9/1/2019	783	917
9/2/2019	854	963
9/3/2019	913	964
9/4/2019	947	900
9/5/2019	954	791
9/6/2019	949	936
9/7/2019	1,020	978
9/8/2019	1,012	943
9/9/2019	1,007	946
9/10/2019	1,011	927
9/11/2019	1,024	953
9/12/2019	980	929
9/13/2019	1,032	985
9/14/2019	1,054	952
9/15/2019	1,042	971
9/16/2019	1,062	986
9/17/2019	945	869
9/18/2019	808	851
9/19/2019	706	826
9/20/2019	923	1,003
9/21/2019	1,027	993
9/22/2019	1,021	1,070
9/23/2019	989	1,070
9/24/2019	950	1,071
9/25/2019	997	1,053
9/26/2019	1,044	1,048
9/27/2019	1,025	1,043
9/28/2019	1,037	985
9/29/2019	1,055	1,057
9/30/2019	960	849
10/1/2019	1,014	975
10/2/2019	987	995
10/3/2019	813	944
10/4/2019	891	1,014
10/5/2019	946	1,008
10/6/2019	874	988
10/7/2019	1,020	1,007
10/8/2019	1,034	1,011
10/9/2019	960	949
10/10/2019	721	993
10/11/2019	955	1,016
10/12/2019	893	1,037

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
10/13/2019	1,064	1,018
10/14/2019	961	987
10/15/2019	971	1,035
10/16/2019	839	857
10/17/2019	941	1,044
10/18/2019	902	1,030
10/19/2019	1,004	1,027
10/20/2019	1,014	862
10/21/2019	946	924
10/22/2019	1,008	972
10/23/2019	1,026	810
10/24/2019	878	992
10/25/2019	1,016	897
10/26/2019	929	713
10/27/2019	1,057	664
10/28/2019	1,075	980
10/29/2019	1,016	963
10/30/2019	1,050	1,054
10/31/2019	829	932
11/1/2019	1,075	803
11/2/2019	1,077	983
11/3/2019	1,016	977
11/4/2019	1,055	854
11/5/2019	903	852
11/6/2019	879	845
11/7/2019	798	876
11/8/2019	1,033	926
11/9/2019	1,036	970
11/10/2019	1,058	982
11/11/2019	833	952
11/12/2019	695	972
11/13/2019	298	984
11/14/2019	592	960
11/15/2019	941	967
11/16/2019	1,068	1,010
11/17/2019	1,072	943
11/18/2019	1,063	937
11/19/2019	1,064	913
11/20/2019	938	886
11/21/2019	1,070	935
11/22/2019	1,050	898
11/23/2019	1,034	928
11/24/2019	988	944

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
11/25/2019	1,026	947
11/26/2019	827	921
11/27/2019	938	841
11/28/2019	1,065	898
11/29/2019	1,023	926
11/30/2019	1,052	944
12/1/2019	957	945
12/2/2019	1,075	938
12/3/2019	1,047	809
12/4/2019	1,065	912
12/5/2019	1,050	943
12/6/2019	1,060	945
12/7/2019	1,071	895
12/8/2019	1,058	928
12/9/2019	1,029	892
12/10/2019	1,058	912
12/11/2019	955	902
12/12/2019	885	836
12/13/2019	1,043	794
12/14/2019	1,062	908
12/15/2019	1,071	892
12/16/2019	974	828
12/17/2019	1,040	617
12/18/2019	1,051	860
12/19/2019	1,060	886
12/20/2019	998	815
12/21/2019	998	825
12/22/2019	1,039	813
12/23/2019	1,008	883
12/24/2019	855	917
12/25/2019	725	838
12/26/2019	826	814
12/27/2019	772	833
12/28/2019	1,061	486
12/29/2019	1,052	419
12/30/2019	1,071	552
12/31/2019	1,046	329
1/1/2020	1,019	416
1/2/2020	1,000	604
1/3/2020	770	606
1/4/2020	889	366
1/5/2020	961	331
1/6/2020	1,031	304

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
1/7/2020	1,066	219
1/8/2020	882	296
1/9/2020	881	229
1/10/2020	1,053	143
1/11/2020	640	98
1/12/2020	815	69
1/13/2020	922	41
1/14/2020	844	12
1/15/2020	1,009	0
1/16/2020	1,000	133
1/17/2020	937	63
1/18/2020	1,056	29
1/19/2020	1,056	28
1/20/2020	1,008	28
1/21/2020	920	18
1/22/2020	883	17
1/23/2020	828	16
1/24/2020	815	83
1/25/2020	1,017	26
1/26/2020	763	17
1/27/2020	666	20
1/28/2020	854	31
1/29/2020	781	29
1/30/2020	630	20
1/31/2020	613	14
2/1/2020	638	15
2/2/2020	628	15
2/3/2020	640	16
2/4/2020	707	16
2/5/2020	637	16
2/6/2020	732	52
2/7/2020	739	41
2/8/2020	882	59
2/9/2020	562	59
2/10/2020	572	32
2/11/2020	600	65
2/12/2020	862	288
2/13/2020	870	318
2/14/2020	859	142
2/15/2020	868	209
2/16/2020	910	347
2/17/2020	949	351
2/18/2020	943	76

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
2/19/2020	999	184
2/20/2020	1,057	235
2/21/2020	1,017	468
2/22/2020	1,040	217
2/23/2020	1,052	218
2/24/2020	1,040	814
2/25/2020	910	794
2/26/2020	960	890
2/27/2020	902	792
2/28/2020	1,054	760
2/29/2020	1,054	756
3/1/2020	1,034	832
3/2/2020	1,004	809
3/3/2020	876	792
3/4/2020	1,000	524
3/5/2020	969	809
3/6/2020	1,066	883
3/7/2020	1,065	864
3/8/2020	1,052	826
3/9/2020	1,065	784
3/10/2020	989	903
3/11/2020	1,050	813
3/12/2020	1,006	691
3/13/2020	990	900
3/14/2020	860	797
3/15/2020	917	834
3/16/2020	951	833
3/17/2020	984	823
3/18/2020	1,064	732
3/19/2020	1,008	850
3/20/2020	1,026	675
3/21/2020	1,018	657
3/22/2020	1,051	796
3/23/2020	1,062	609
3/24/2020	1,051	859
3/25/2020	857	790
3/26/2020	873	820
3/27/2020	970	812
3/28/2020	1,045	838
3/29/2020	1,007	795
3/30/2020	899	720
3/31/2020	878	751
4/1/2020	1,012	911

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
4/2/2020	773	818
4/3/2020	772	838
4/4/2020	978	849
4/5/2020	995	864
4/6/2020	1,006	832
4/7/2020	1,046	804
4/8/2020	1,047	836
4/9/2020	980	854
4/10/2020	1,020	920
4/11/2020	1,019	915
4/12/2020	1,020	880
4/13/2020	1,065	902
4/14/2020	1,051	849
4/15/2020	1,072	836
4/16/2020	1,066	876
4/17/2020	1,063	860
4/18/2020	1,074	474
4/19/2020	1,073	863
4/20/2020	1,074	619
4/21/2020	1,038	423
4/22/2020	981	772
4/23/2020	1,012	888
4/24/2020	1,031	840
4/25/2020	985	913
4/26/2020	1,065	894
4/27/2020	1,021	931
4/28/2020	981	881
4/29/2020	916	549
4/30/2020	910	911
5/1/2020	994	911
5/2/2020	934	962
5/3/2020	915	837
5/4/2020	919	877
5/5/2020	911	918
5/6/2020	926	897
5/7/2020	823	940
5/8/2020	950	898
5/9/2020	1,019	893
5/10/2020	1,020	891
5/11/2020	989	864
5/12/2020	1,006	968
5/13/2020	949	821
5/14/2020	921	849

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
5/15/2020	996	880
5/16/2020	1,005	812
5/17/2020	1,078	895
5/18/2020	1,071	930
5/19/2020	1,046	963
5/20/2020	878	965
5/21/2020	621	821
5/22/2020	868	779
5/23/2020	945	865
5/24/2020	930	871
5/25/2020	982	641
5/26/2020	1,034	716
5/27/2020	1,044	687
5/28/2020	941	571
5/29/2020	1,015	575
5/30/2020	999	394
5/31/2020	957	561
6/1/2020	953	422
6/2/2020	970	451
6/3/2020	957	479
6/4/2020	671	495
6/5/2020	709	417
6/6/2020	931	326
6/7/2020	974	833
6/8/2020	947	558
6/9/2020	1,002	663
6/10/2020	946	840
6/11/2020	642	702
6/12/2020	803	841
6/13/2020	914	849
6/14/2020	982	879
6/15/2020	1,012	624
6/16/2020	1,021	619
6/17/2020	995	742
6/18/2020	867	793
6/19/2020	917	803
6/20/2020	928	801
6/21/2020	980	818
6/22/2020	933	826
6/23/2020	986	863
6/24/2020	962	862
6/25/2020	813	685
6/26/2020	1,035	635

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
6/27/2020	1,044	734
6/28/2020	1,063	764
6/29/2020	929	765
6/30/2020	942	635
7/1/2020	963	802
7/2/2020	1,052	776
7/3/2020	1,010	769
7/4/2020	1,041	819
7/5/2020	1,034	787
7/6/2020	775	778
7/7/2020	776	815
7/8/2020	575	831
7/9/2020	698	784
7/10/2020	793	804
7/11/2020	1,008	691
7/12/2020	1,002	816
7/13/2020	882	759
7/14/2020	499	641
7/15/2020	627	769
7/16/2020	874	522
7/17/2020	987	874
7/18/2020	1,023	870
7/19/2020	902	856
7/20/2020	957	870
7/21/2020	944	969
7/22/2020	1,038	292
7/23/2020	702	819
7/24/2020	833	810
7/25/2020	1,001	877
7/26/2020	755	891
7/27/2020	627	859
7/28/2020	566	418
7/29/2020	467	638
7/30/2020	680	708
7/31/2020	713	870
8/1/2020	934	865
8/2/2020	1,039	922
8/3/2020	1,061	845
8/4/2020	1,003	803
8/5/2020	832	841
8/6/2020	923	911
8/7/2020	971	895
8/8/2020	1,064	743

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
8/9/2020	975	790
8/10/2020	933	714
8/11/2020	955	696
8/12/2020	959	728
8/13/2020	971	661
8/14/2020	935	708
8/15/2020	923	753
8/16/2020	950	764
8/17/2020	978	558
8/18/2020	1,000	670
8/19/2020	1,002	788
8/20/2020	1,010	585
8/21/2020	919	730
8/22/2020	739	745
8/23/2020	694	835
8/24/2020	722	772
8/25/2020	698	721
8/26/2020	736	687
8/27/2020	706	677
8/28/2020	762	699
8/29/2020	795	644
8/30/2020	676	647
8/31/2020	511	565
9/1/2020	517	673
9/2/2020	582	411
9/3/2020	495	641
9/4/2020	693	756
9/5/2020	675	741
9/6/2020	680	714
9/7/2020	688	756
9/8/2020	851	852
9/9/2020	922	796
9/10/2020	862	782
9/11/2020	999	592
9/12/2020	968	492
9/13/2020	893	860
9/14/2020	909	769
9/15/2020	994	288
9/16/2020	1,030	177
9/17/2020	744	375
9/18/2020	1,010	841
9/19/2020	964	860
9/20/2020	814	840

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
9/21/2020	892	799
9/22/2020	775	843
9/23/2020	914	834
9/24/2020	926	684
9/25/2020	898	808
9/26/2020	949	777
9/27/2020	863	788
9/28/2020	1,011	776
9/29/2020	953	786
9/30/2020	842	916
10/1/2020	687	899
10/2/2020	785	855
10/3/2020	767	825
10/4/2020	956	773
10/5/2020	994	766
10/6/2020	1,053	760
10/7/2020	1,036	779
10/8/2020	833	810
10/9/2020	933	803
10/10/2020	959	776
10/11/2020	995	762
10/12/2020	1,017	840
10/13/2020	1,011	816
10/14/2020	950	804
10/15/2020	958	759
10/16/2020	851	800
10/17/2020	1,041	807
10/18/2020	1,053	731
10/19/2020	905	803
10/20/2020	750	558
10/21/2020	892	766
10/22/2020	1,026	753
10/23/2020	1,059	843
10/24/2020	820	843
10/25/2020	842	844
10/26/2020	797	810
10/27/2020	954	671
10/28/2020	926	939
10/29/2020	891	777
10/30/2020	983	1,018
10/31/2020	1,044	885
11/1/2020	968	892
11/2/2020	896	829

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
11/3/2020	797	764
11/4/2020	947	833
11/5/2020	965	788
11/6/2020	1,009	829
11/7/2020	1,025	822
11/8/2020	1,041	844
11/9/2020	1,060	382
11/10/2020	1,057	546
11/11/2020	911	306
11/12/2020	878	520
11/13/2020	919	796
11/14/2020	934	796
11/15/2020	931	788
11/16/2020	936	654
11/17/2020	929	505
11/18/2020	510	578
11/19/2020	699	864
11/20/2020	900	836
11/21/2020	930	817
11/22/2020	991	833
11/23/2020	794	970
11/24/2020	788	902
11/25/2020	841	845
11/26/2020	881	883
11/27/2020	948	980
11/28/2020	1,021	930
11/29/2020	1,040	966
11/30/2020	1,025	964
12/1/2020	1,011	1,008
12/2/2020	963	961
12/3/2020	920	918
12/4/2020	921	812
12/5/2020	1,019	743
12/6/2020	1,067	1,036
12/7/2020	1,056	511
12/8/2020	1,070	110
12/9/2020	989	794
12/10/2020	1,041	902
12/11/2020	1,052	818
12/12/2020	1,058	871
12/13/2020	1,036	575
12/14/2020	1,043	866
12/15/2020	1,012	749

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
12/16/2020	1,017	231
12/17/2020	847	588
12/18/2020	813	908
12/19/2020	799	631
12/20/2020	784	412
12/21/2020	882	461
12/22/2020	774	453
12/23/2020	732	475
12/24/2020	691	454
12/25/2020	728	509
12/26/2020	681	491
12/27/2020	675	623
12/28/2020	668	605
12/29/2020	684	723
12/30/2020	666	509
12/31/2020	637	494
1/1/2021	670	470
1/2/2021	712	526
1/3/2021	750	591
1/4/2021	809	646
1/5/2021	870	926
1/6/2021	826	1,054
1/7/2021	841	997
1/8/2021	884	1,048
1/9/2021	899	1,049
1/10/2021	880	1,036
1/11/2021	872	1,082
1/12/2021	933	822
1/13/2021	948	378
1/14/2021	937	898
1/15/2021	902	1,068
1/16/2021	919	1,088
1/17/2021	914	1,058
1/18/2021	1,005	1,051
1/19/2021	958	993
1/20/2021	962	703
1/21/2021	781	741
1/22/2021	949	924
1/23/2021	875	950
1/24/2021	909	693
1/25/2021	931	712
1/26/2021	1,008	676
1/27/2021	1,023	1,015

NAAQS SO₂ lb/hr Daily CAPs



Table 1. SO₂ lb /hour, 24-hour block average (6:00 a.m. to 6:00 a.m.)

Date	New Wales Cap 1,090 PPH	Barlow Cap 1,100 PPH
1/28/2021	1,006	1,067
1/29/2021	1,066	1,069
1/30/2021	1,054	1,041
1/31/2021	1,072	994

Appendix B – New Wales and Bartow Frequency of SO₂ Emissions over the CEV

Table 1. Bartow Sulfuric Acid Plants – Hours Over the Critical Emission Value (CEV)

Month	Hours Over CEV (hr)	Operating Hours (hr)	Percent Over CEV
September 2019	6	720	0.8%
October 2019	6	744	0.8%
November 2019	0	744	0.0%
December 2019	2	744	0.3%
January 2020	0	643	0.0%
February 2020	0	666	0.0%
March 2020	2	719	0.3%
April 2020	0	707	0.0%
May 2020	1	744	0.1%
June 2020	0	719	0.0%
July 2020	4	744	0.5%
August 2020	6	728	0.8%
September 2020	0	672	0.0%
October 2020	2	744	0.3%
November 2020	1	713	0.1%
December 2020	6	696	0.9%
Total	36	11,445	0.3%

Table 2. New Wales Sulfuric Acid Plants – Hours Over the Critical Emission Value (CEV)

Month	Hours Over CEV (hr)	Operating Hours (hr)	Percent Over CEV
September 2019	22	705	3.1%
October 2019	20	744	2.7%
November 2019	45	744	6.0%
December 2019	35	744	4.7%
January 2020	33	744	4.4%
February 2020	18	696	2.6%
March 2020	34	720	4.7%
April 2020	49	720	6.8%
May 2020	37	744	5.0%
June 2020	33	720	4.6%
July 2020	14	744	1.9%
August 2020	13	744	1.7%
September 2020	14	672	2.1%
October 2020	24	744	3.2%
November 2020	10	720	1.4%
December 2020	9	696	1.3%
Total	410	11,601	3.5%