Parkland Airshed Management Zone (PAMZ)

Mountain View County
December 5, 2018

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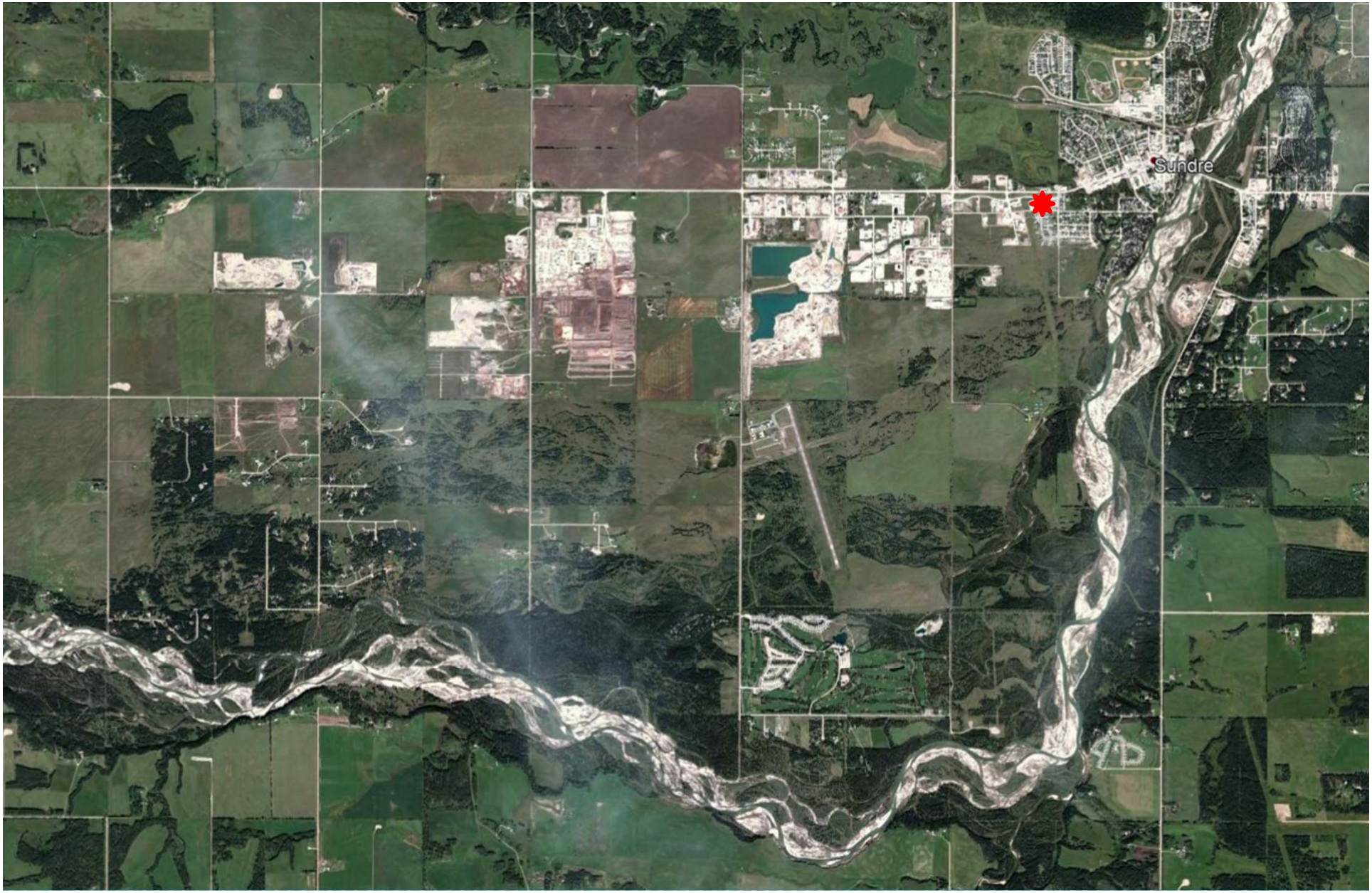
South McDougal Flats Monitoring

- Issue is resident's concern with air quality in West Sundre (South McDougal Flats) primarily dust from local gravel pit operations and emissions from associated asphalt plants when operational
- Recommendation to address the issue made by PAMZ Issues Response Group following a presentation by the South McDougal Flats Area Protection Society in August 2016
- Recommendation accepted by PAMZ Board of Directors in September 2016
- Monitoring scheduled for April & May 2017 by PAMZ Technical Working Group at their Nov 2016 meeting



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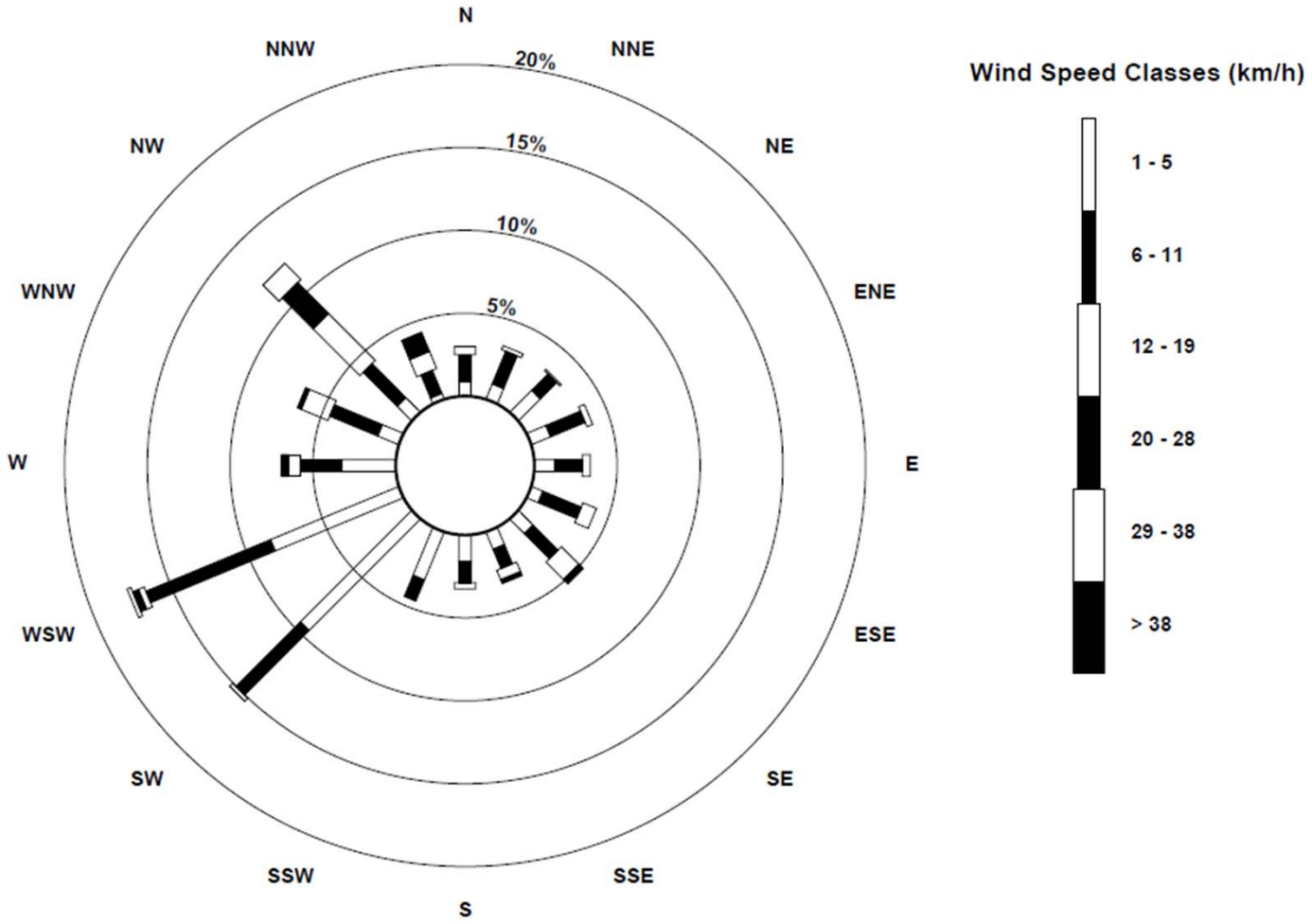
Wind Rose

Wind Speed (WS) (km/h)

South McDougal Flats - Aug 31, 2017 to Oct 5, 2017



2017 South McDougal Flats Monitoring

- In 2017 monitored May 4 - June 7 & Aug 31 - Oct 4
- Did not see any sustained high $PM_{2.5}$ levels with exception of smoke from fires Sept. 1-10
- Sampled TSP every 6 days, no levels above AAAQO, fall levels significantly less than spring
- Inorganic analysis of 4 TSP samples (2 spring, 2 fall)
- Spring samples comprised of mix of inorganic and organic matter
- Fall samples comprised primarily of inorganic matter

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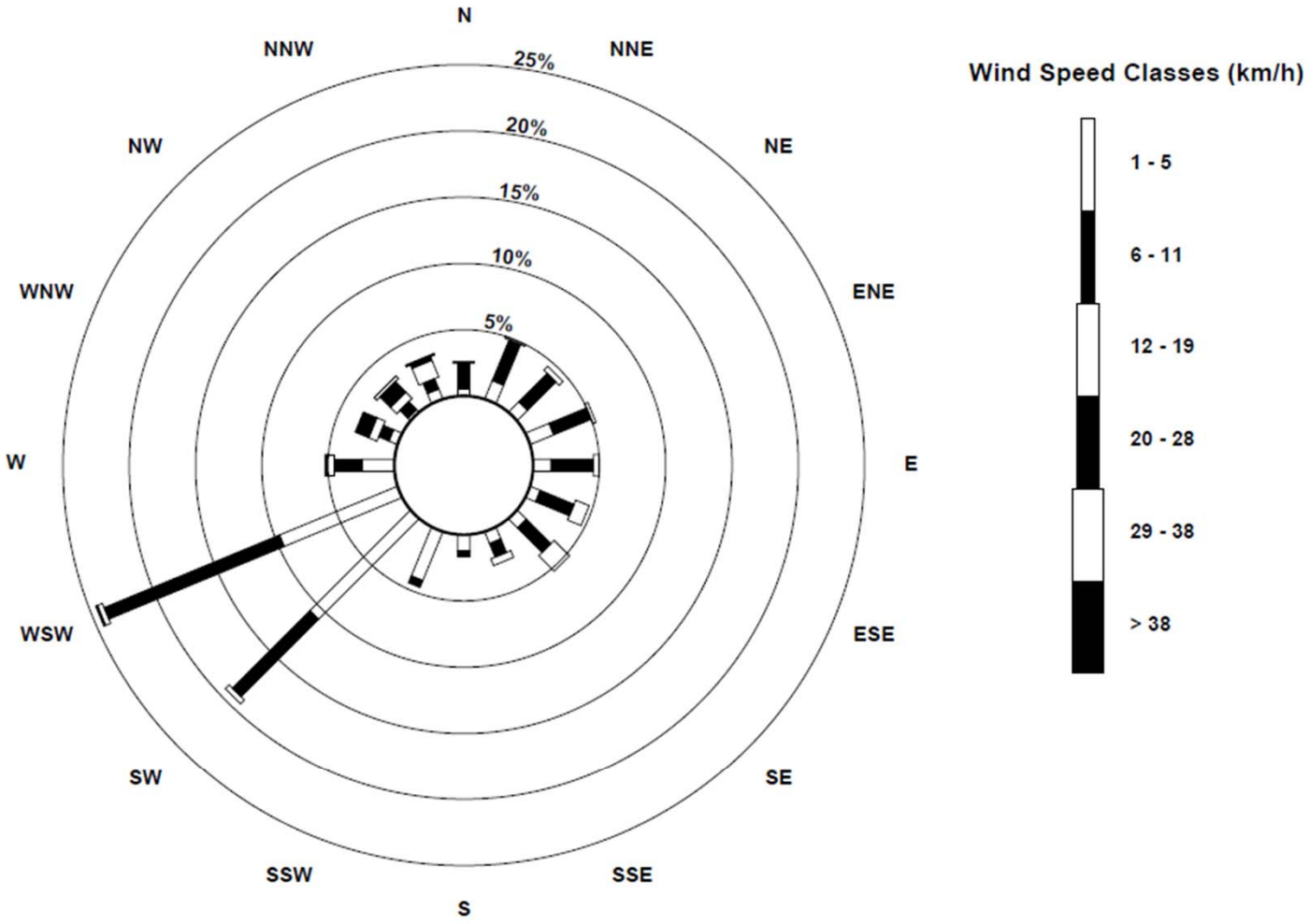
Wind Rose

Wind Speed (WS) (km/h)

South McDougal Flats 2 - Oct 1, 2018 to Nov 1, 2018



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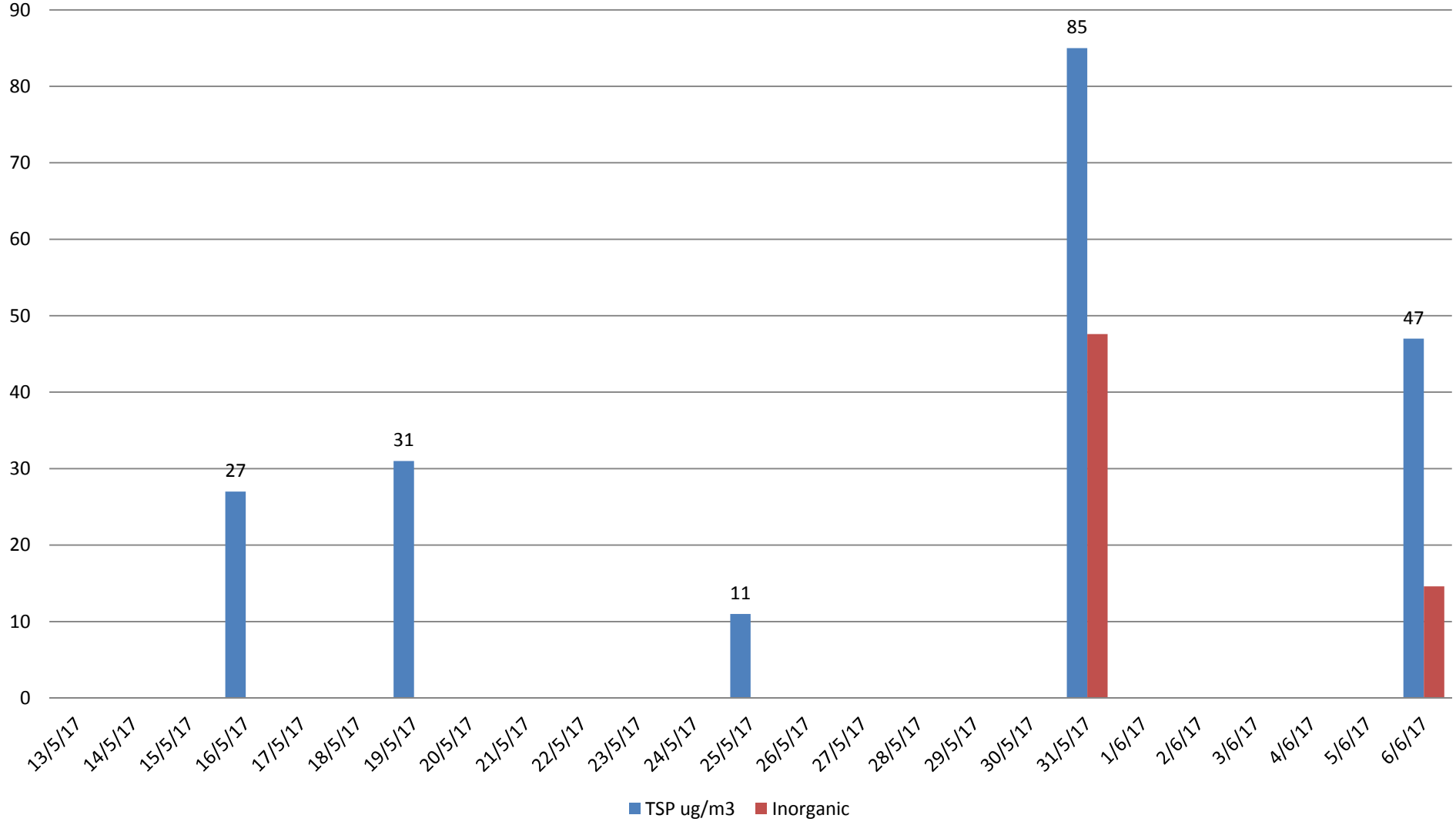
TSP Sampling Results
South McDougal Flats



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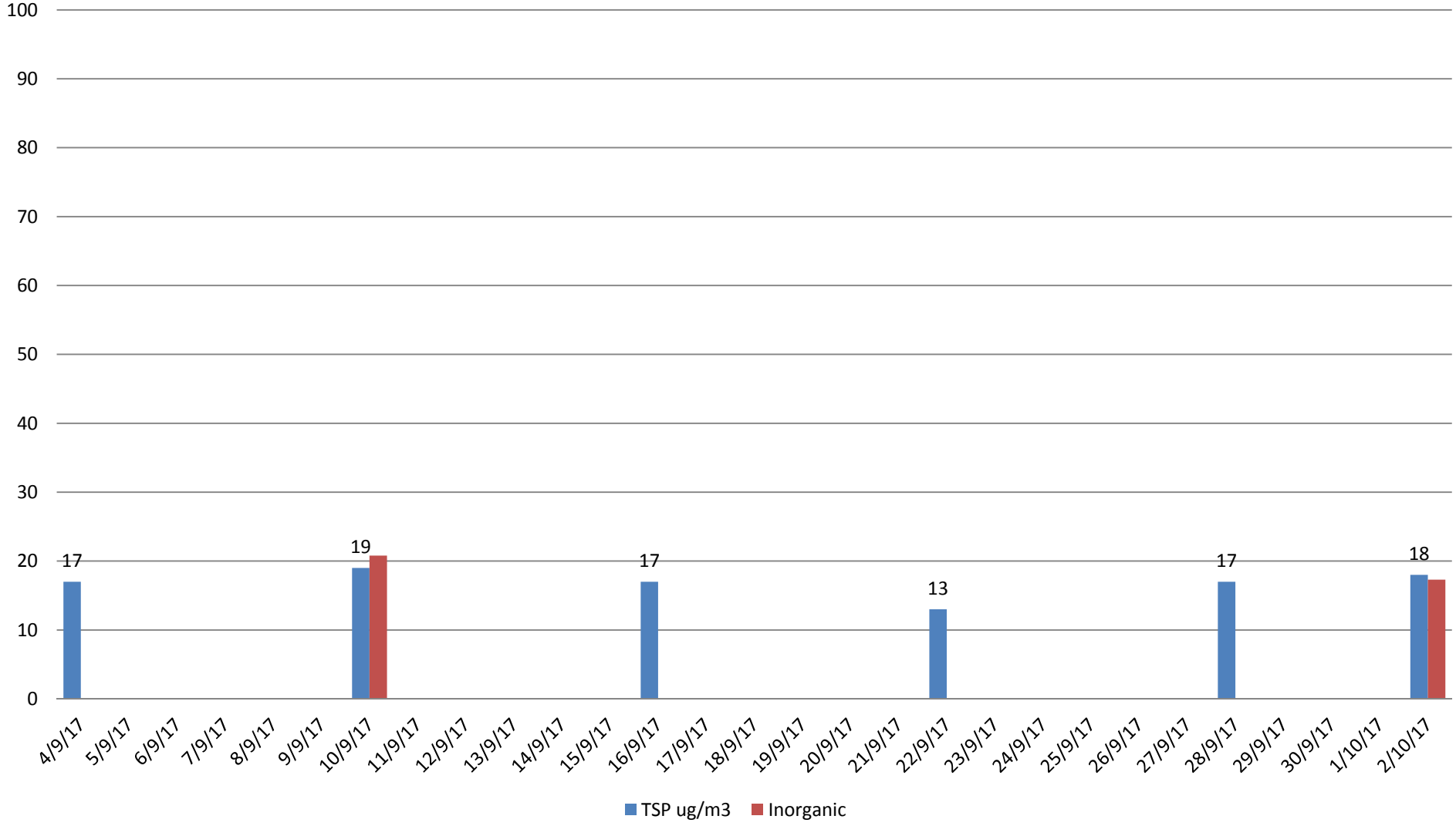

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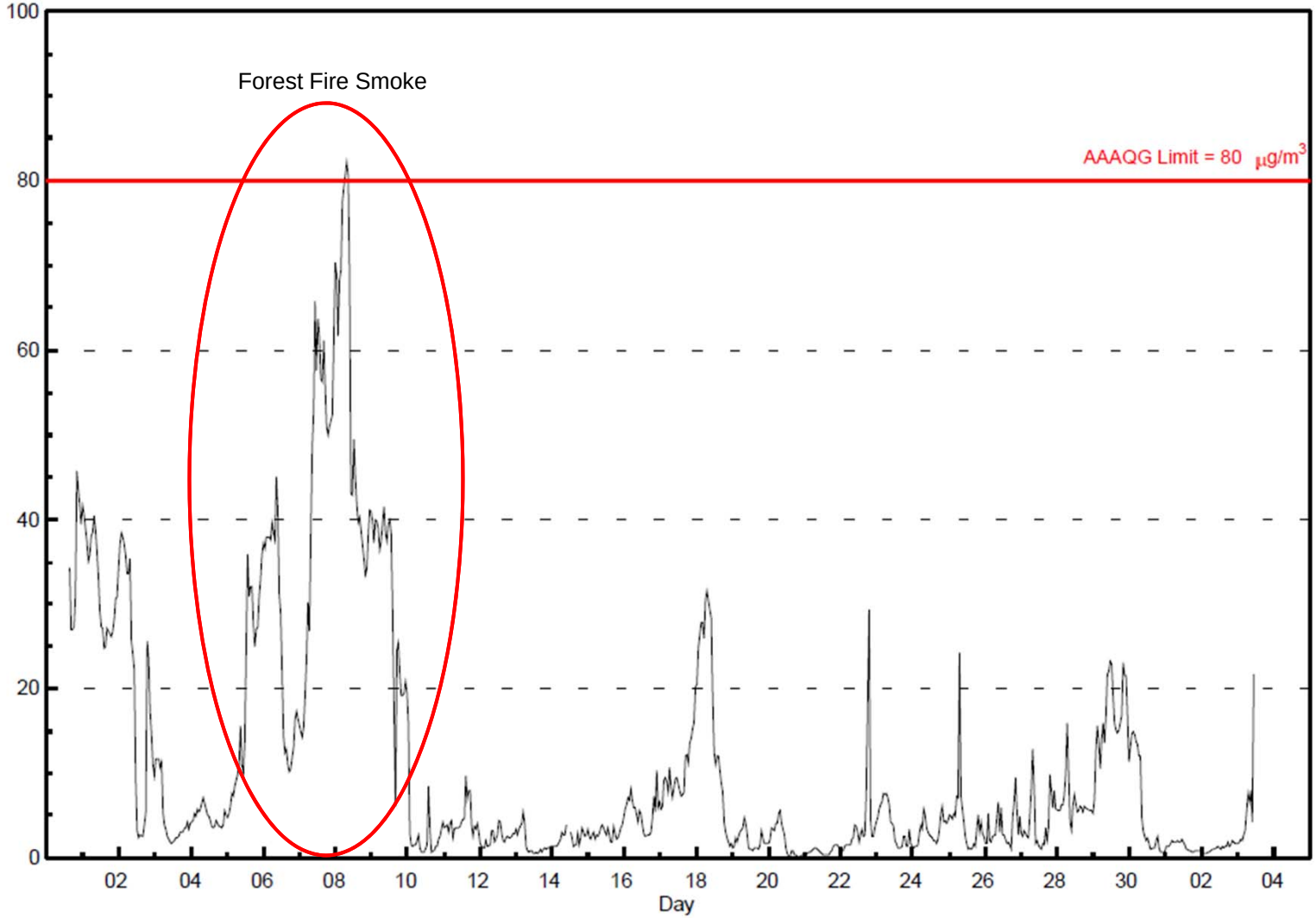
Hourly Averages

PM2.5S ($PM_{2.5S}$) - $\mu g/m^3$

South McDougal Flats - Aug 31, 2017 to Oct 5, 2017



2018 South McDougal Flats Monitoring

- In 2018 PAMZ monitored throughout summer months and extended monitoring into September and October as summer wildfires confounded August monitoring
- Replaced intermittent Partisol TSP Sampler (24-hour average sample every 6 days) with semi-continuous BAM 1020 TSP Monitor (hourly averages 24 hours/day for 720-744 data points versus 6 per month)
- In August there were fifteen 24-hour TSP exceedences, seventeen 24-hour PM2.5 exceedences and ninety-one 1-hour PM2.5 exceedences primarily attributable to wildfire smoke

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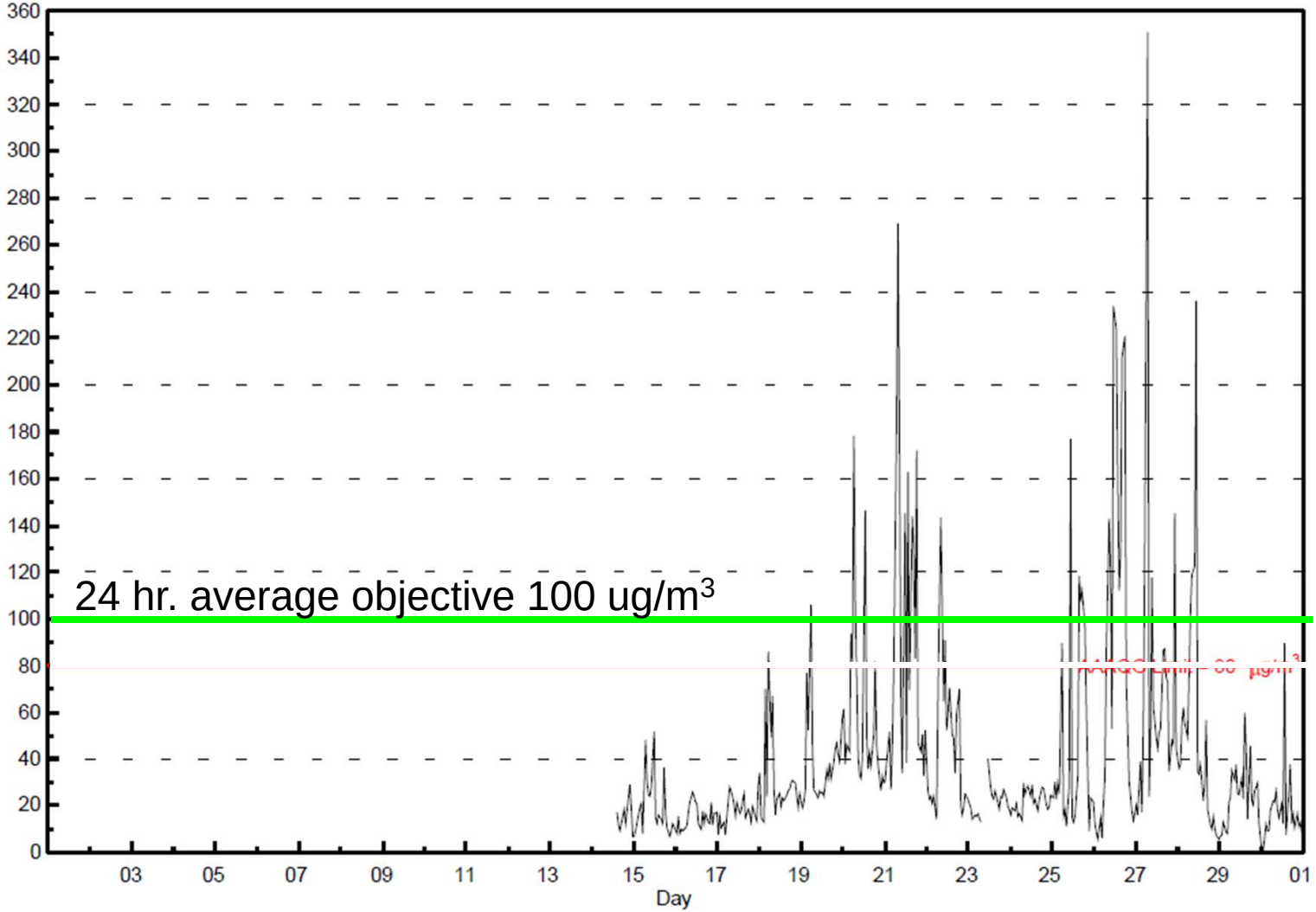
Hourly Averages

TSP (TSP) - µg/m³

South McDougal Flats 2 - Jun 1, 2018 to Jul 1, 2018



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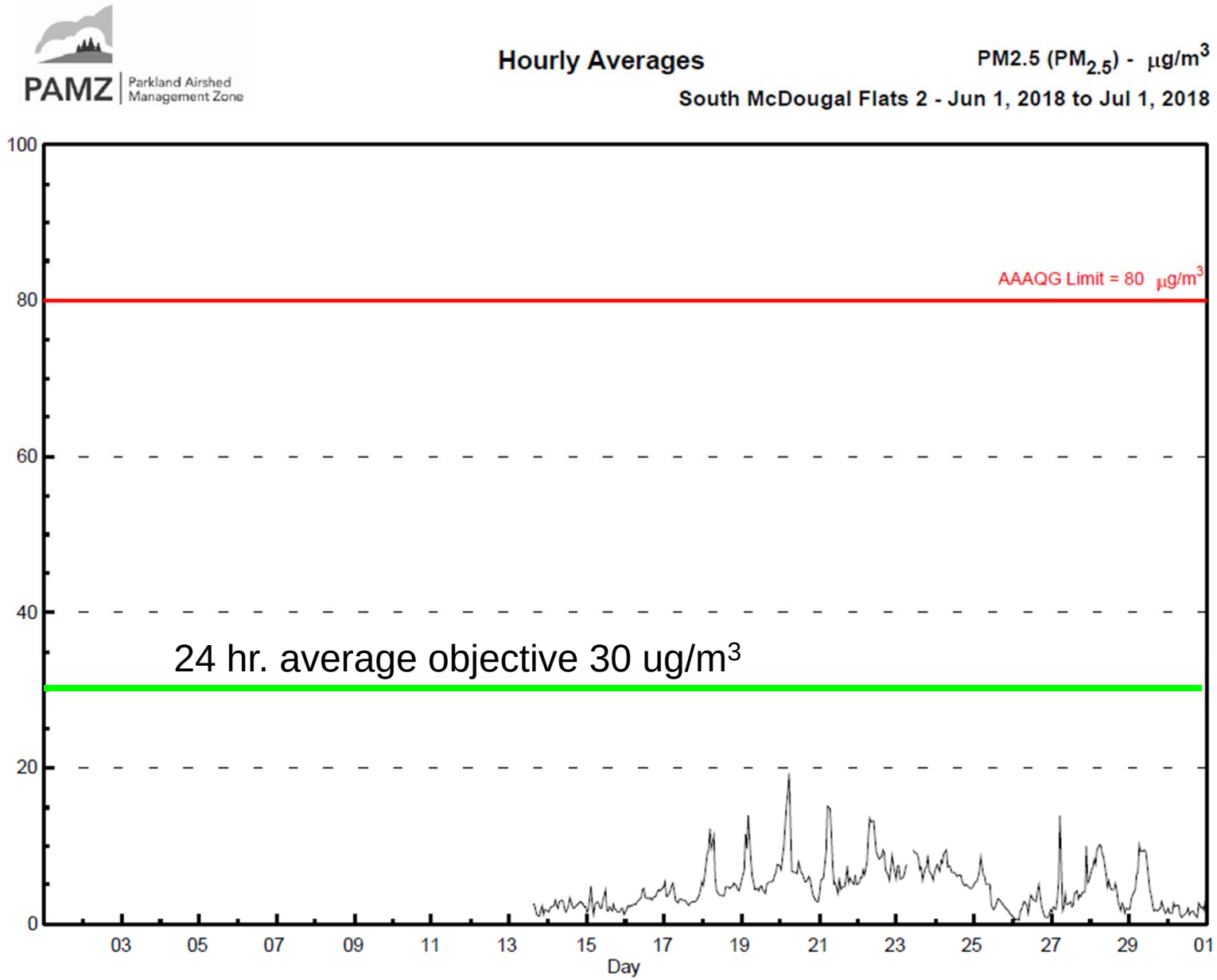

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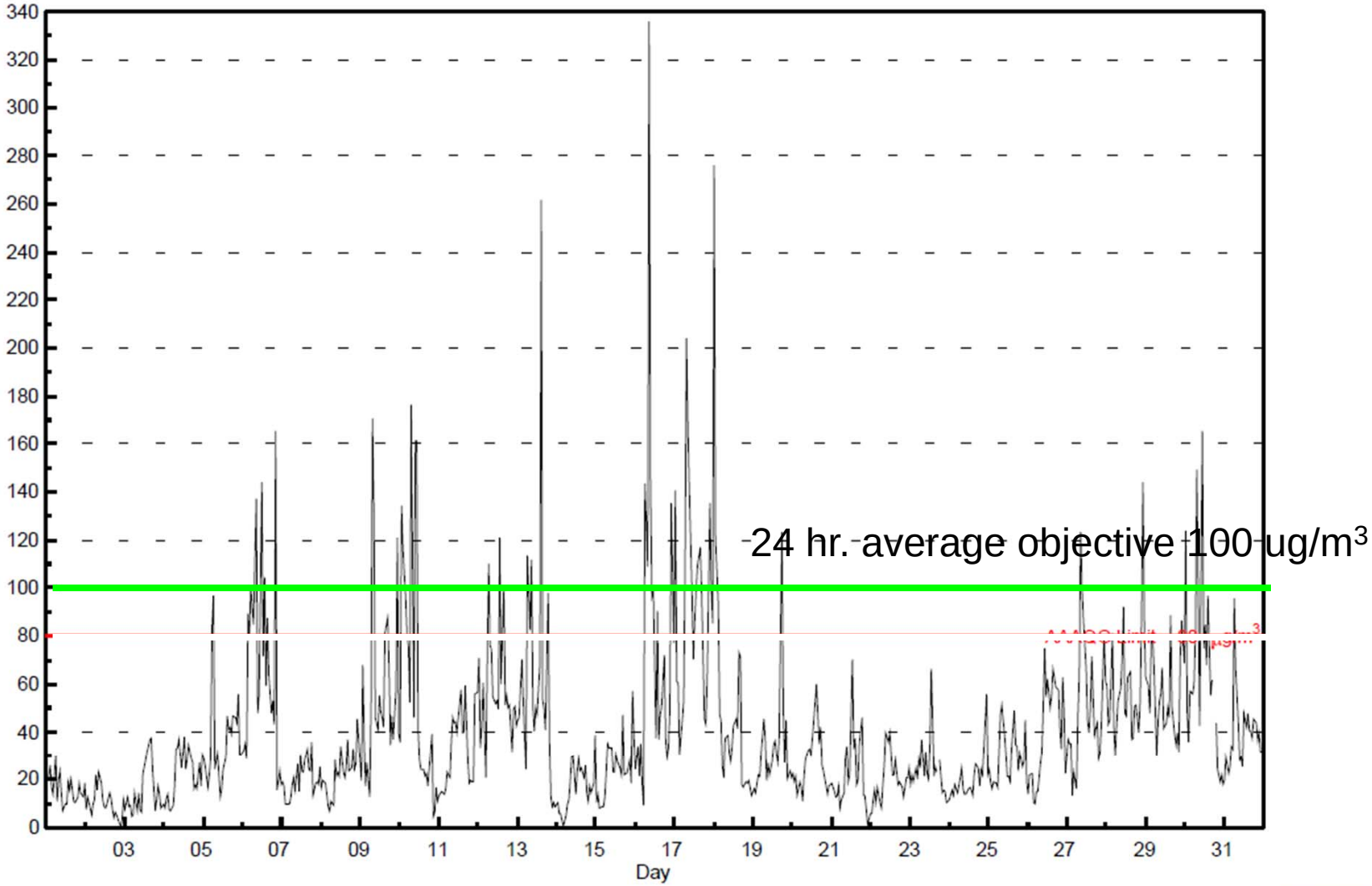

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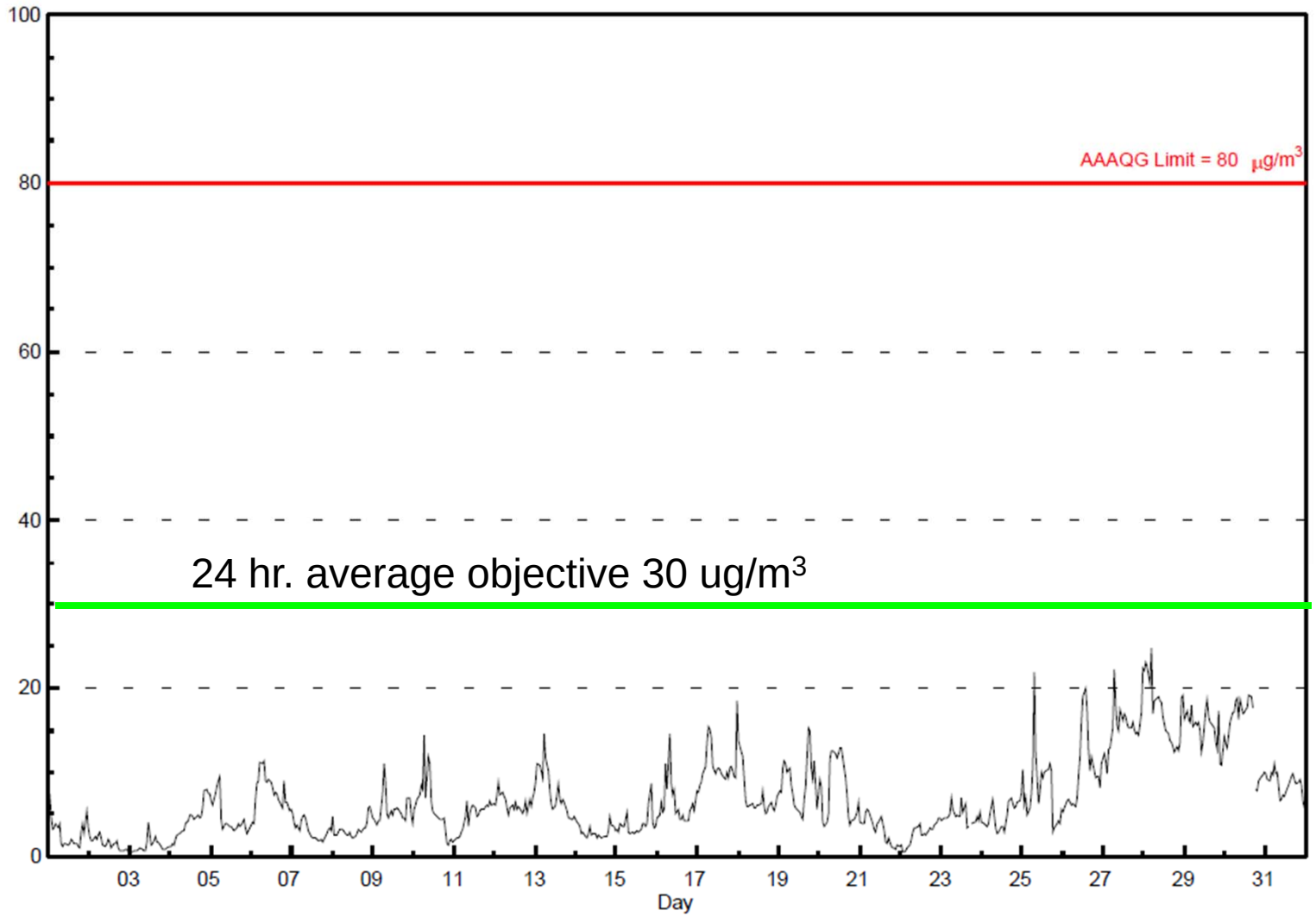

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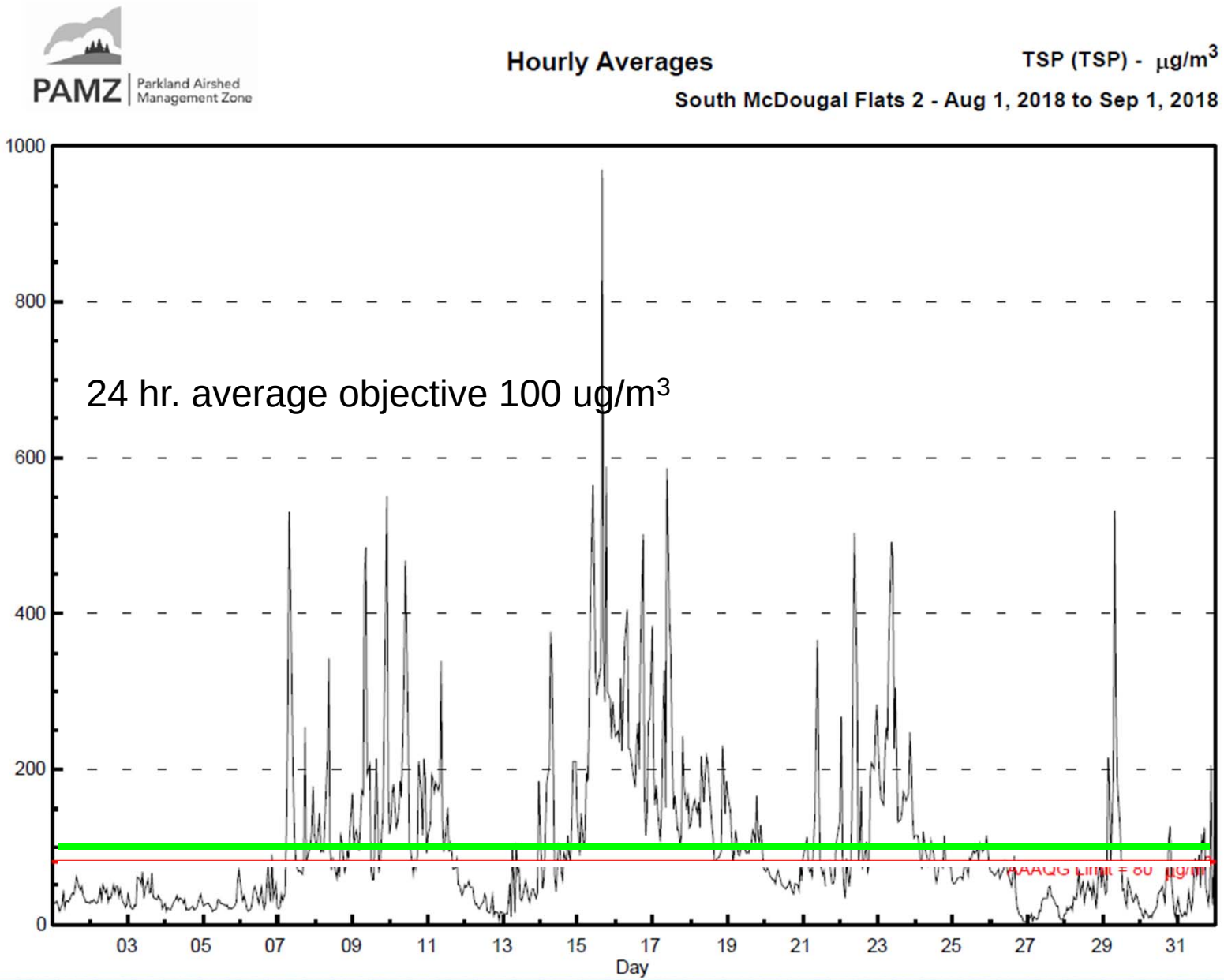

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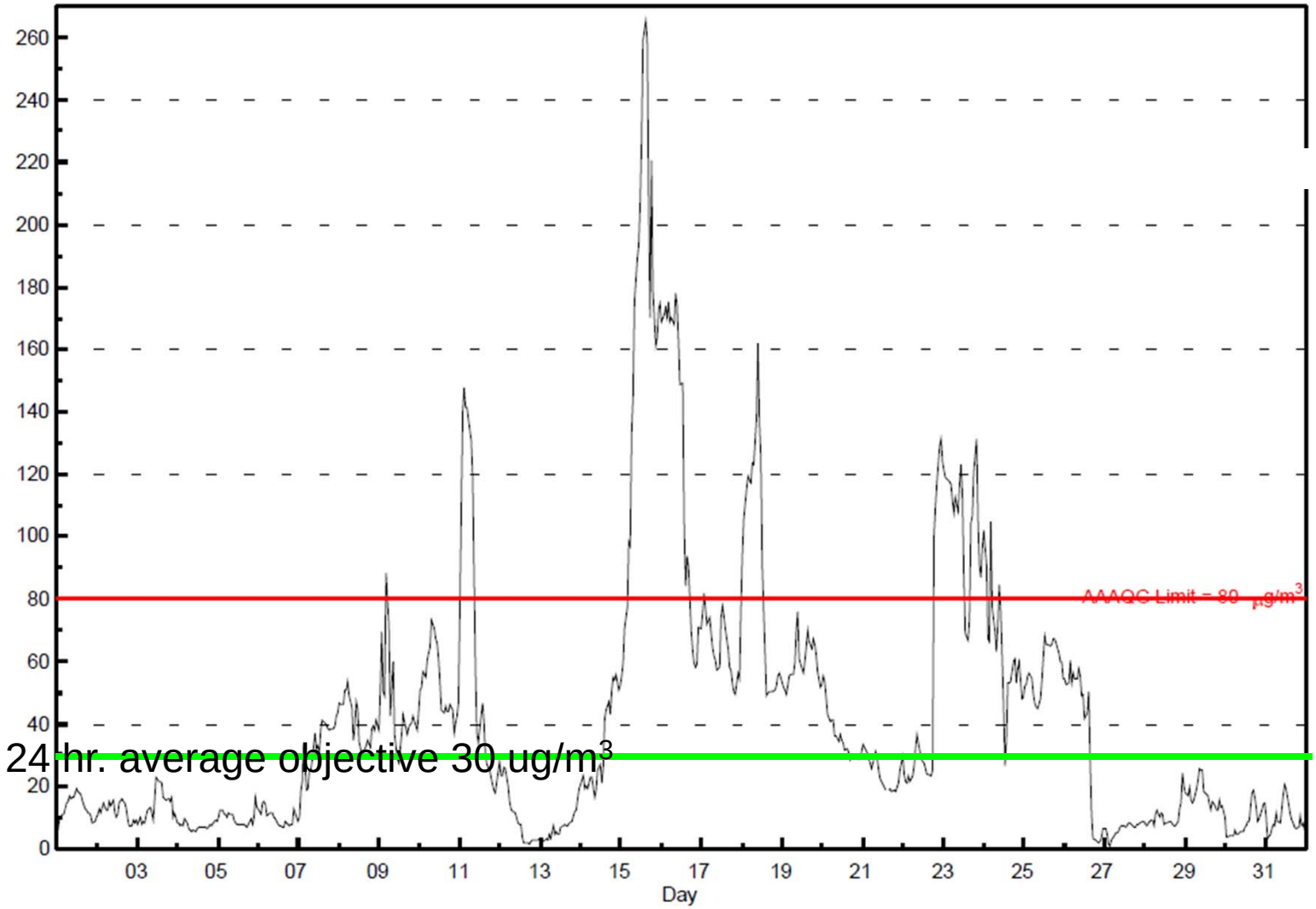
Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$

South McDougal Flats 2 - Aug 1, 2018 to Sep 1, 2018



24 hr. average objective 30 ug/m^3

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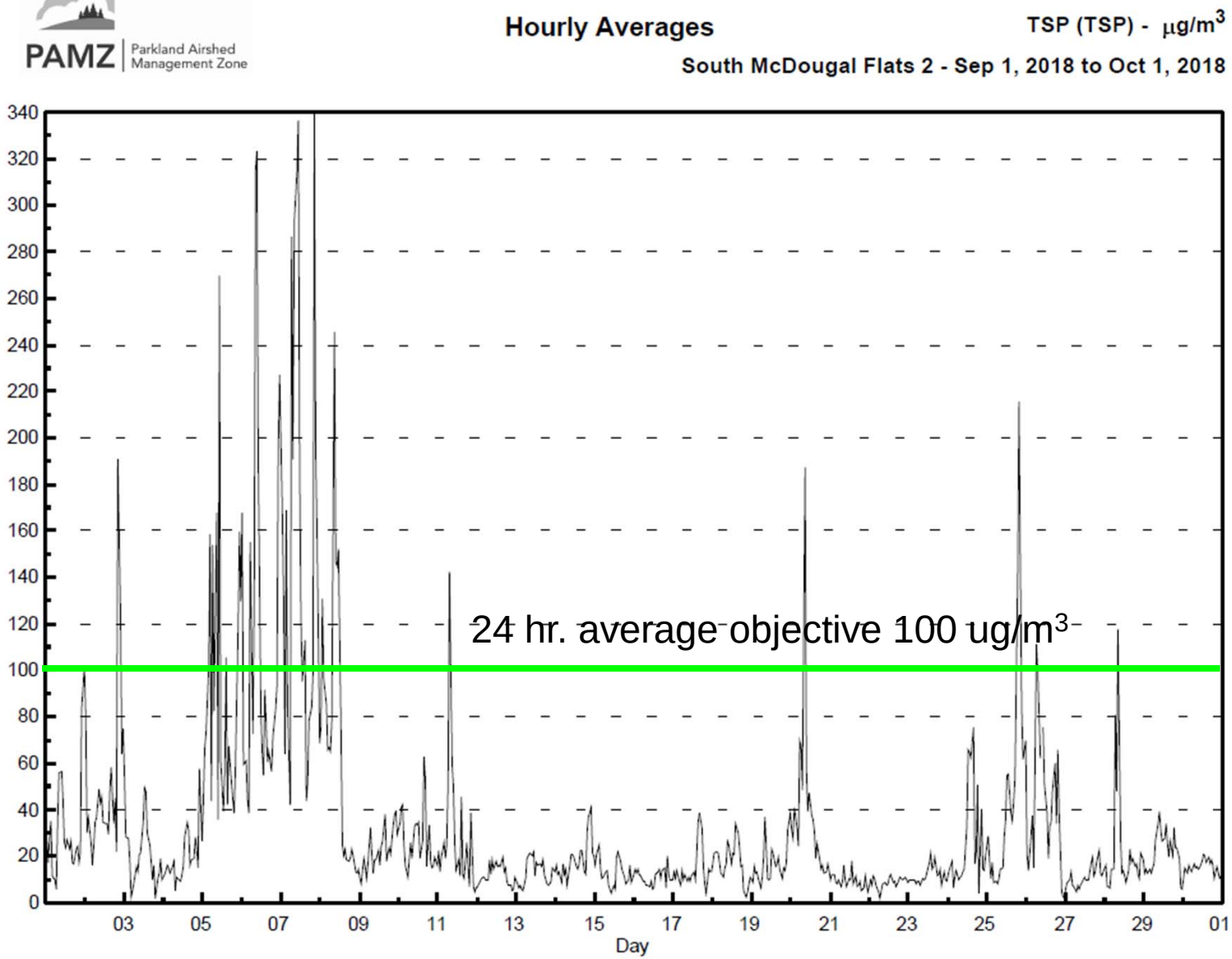

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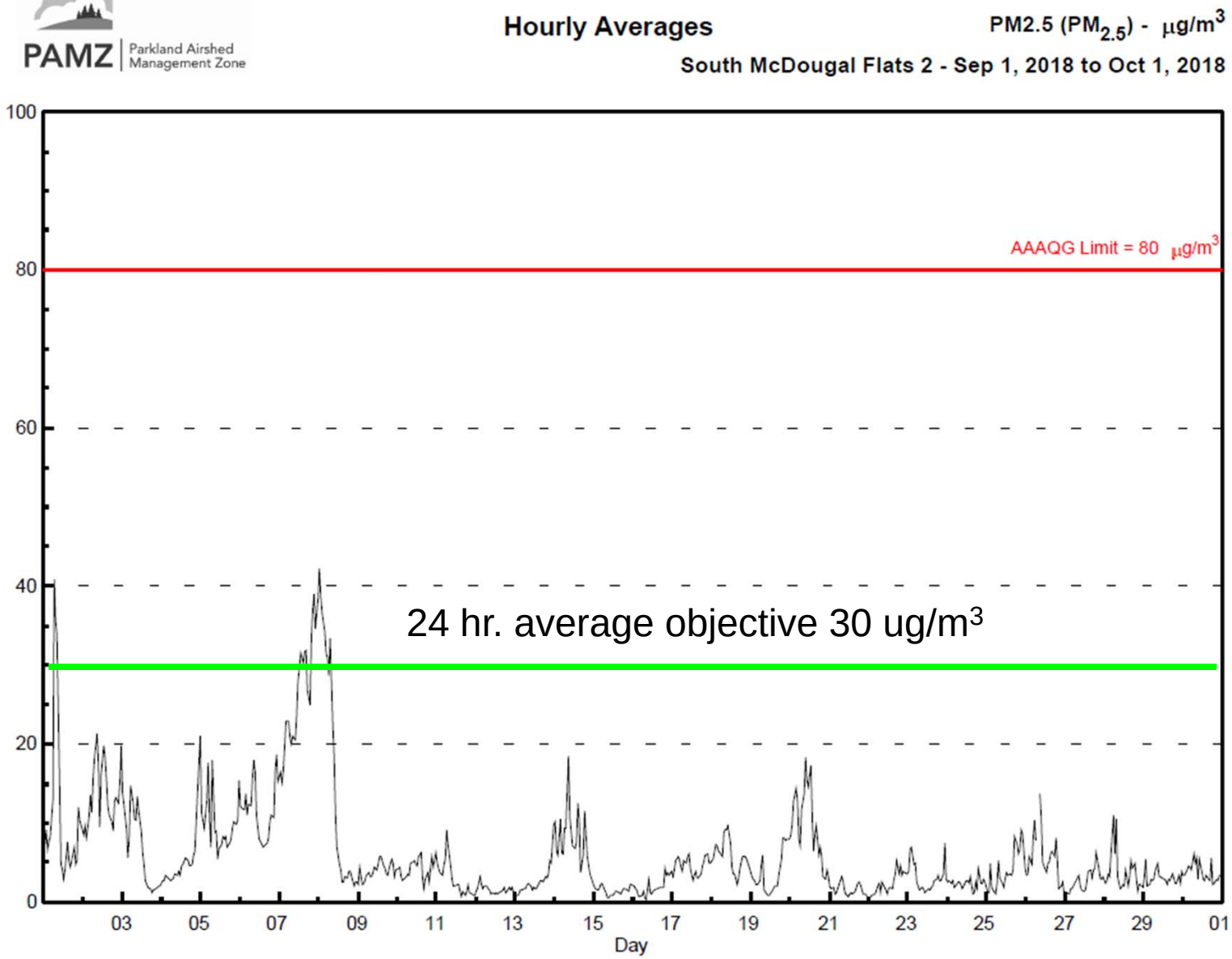

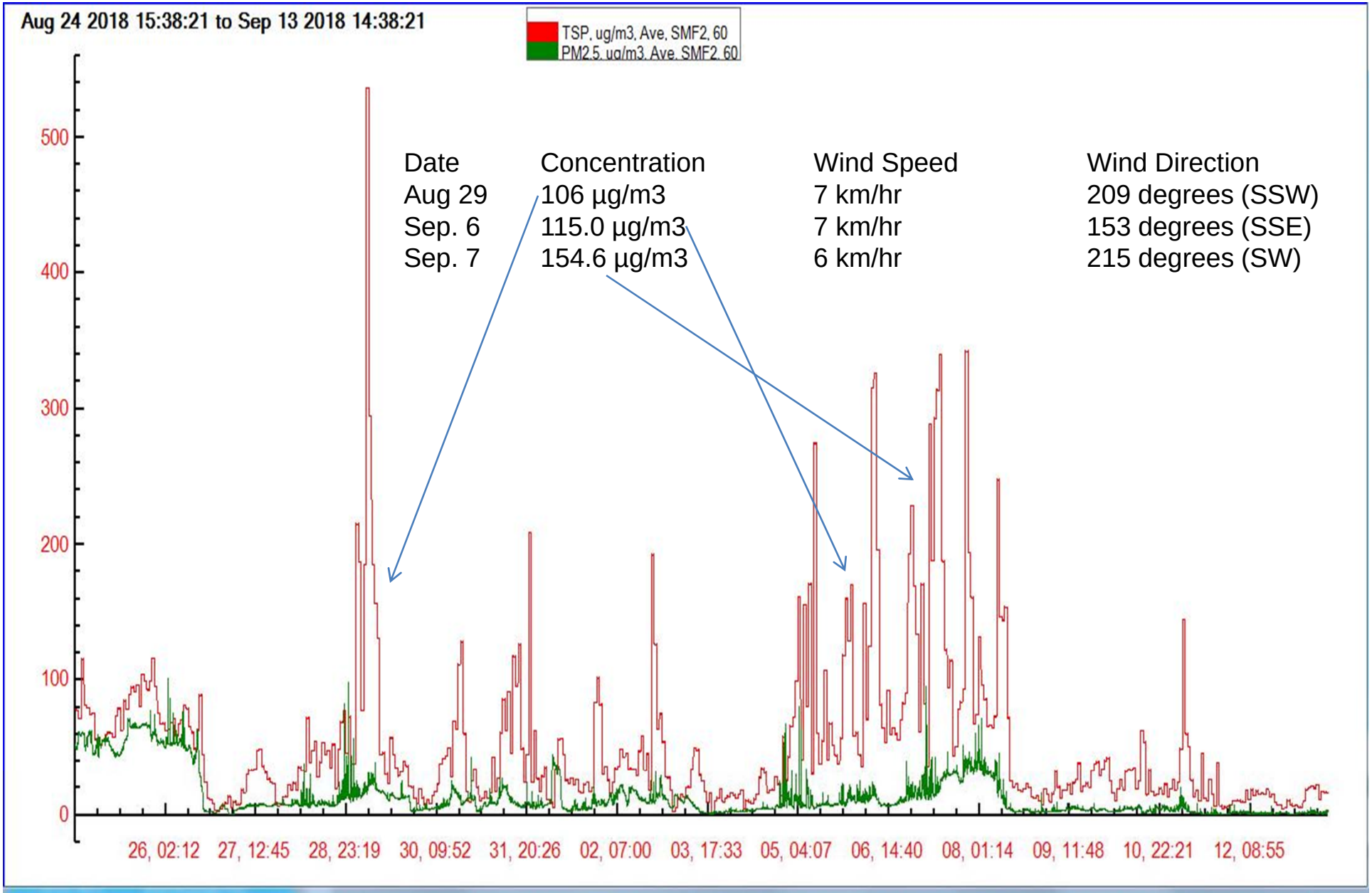

Date	Concentration	Wind Speed	Wind Direction
Aug 29	106 µg/m3	7 km/hr	209 degrees (SSW)
Sep. 6	115.0 µg/m3	7 km/hr	153 degrees (SSE)
Sep. 7	154.6 µg/m3	6 km/hr	215 degrees (SW)

S. McDougal Flats

- Recorded 10 Daily TSP AAAQO Exceedences in latter part of October

Ref# 345091	October 17, 2018	TSP= 148.7 ug/m3	WS= 8 km/hr	WD= 238 deg (WSW)
Ref# 345146	October 18, 2018	TSP= 156.1 ug/m3	WS= 7 km/hr	WD= 257 deg (W)
Ref# 345178	October 19, 2018	TSP= 124.9 ug/m3	WS= 6 km/hr	WD= 197 deg (SSW)
Ref# 345211	October 20, 2018	TSP= 102.5 uh/m3	WS= 7 km/hr	WD= 174 deg (S)
Ref# 345255	October 22, 2018	TSP= 145.1 ug/m3	WS= 6 km/hr	WD= 192 deg (SSW)
Ref# 345304	October 23, 2018	TSP= 364.8 ug/m3	WS= 6 km/hr	WD= 189 deg (S)
Ref# 345346	October 24, 2018	TSP= 170.8 ug/m3	WS= 8 km/hr	WD= 247 deg (WSW)
Ref# 345482	October 26, 2018	TSP= 141.9 ug/m3	WS= 8 km/hr	WD= 246 deg (WSW)
Ref# 346052	October 29, 2018	TSP= 153.9 ug/m3	WS= 5 km/hr	WD= 193 deg (SSW)
Ref# 346107	October 30, 2018	TSP= 312.6 ug/m3	WS= 4 km/hr	WD= 194 deg (SSW)

- Station relocated to RR 272 Site on October 31, 2018

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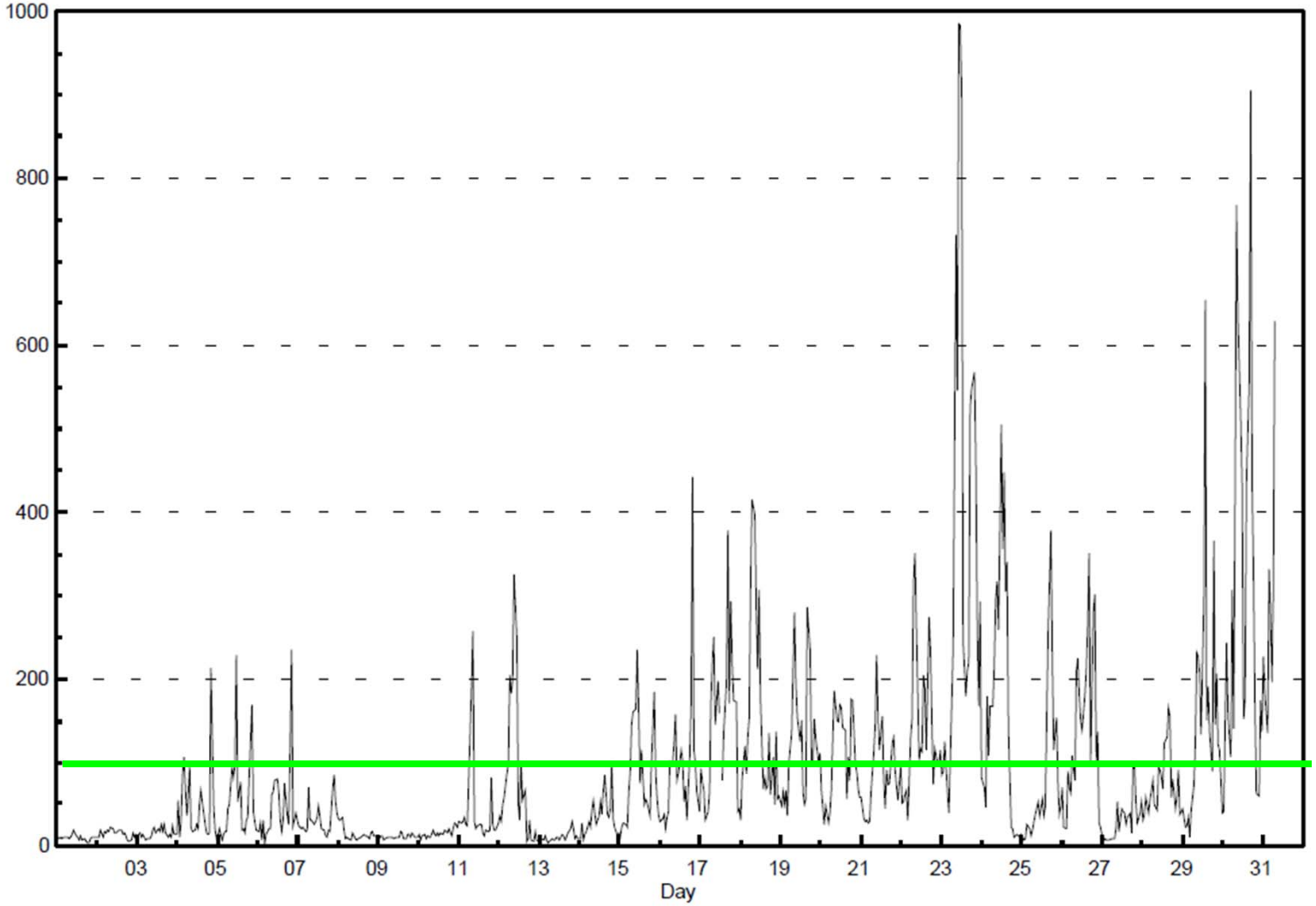

24 hr. average objective 100 ug/m^3

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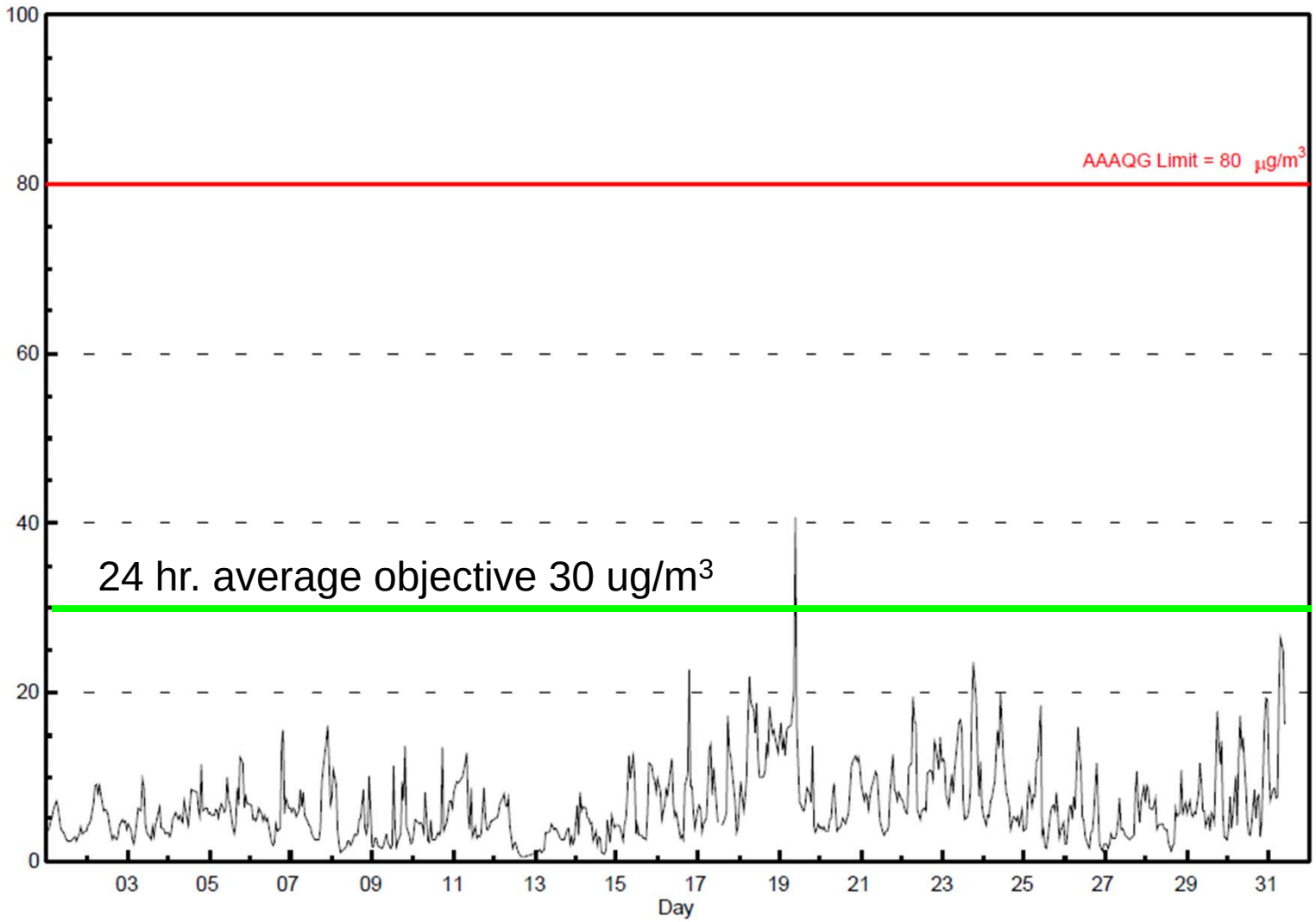

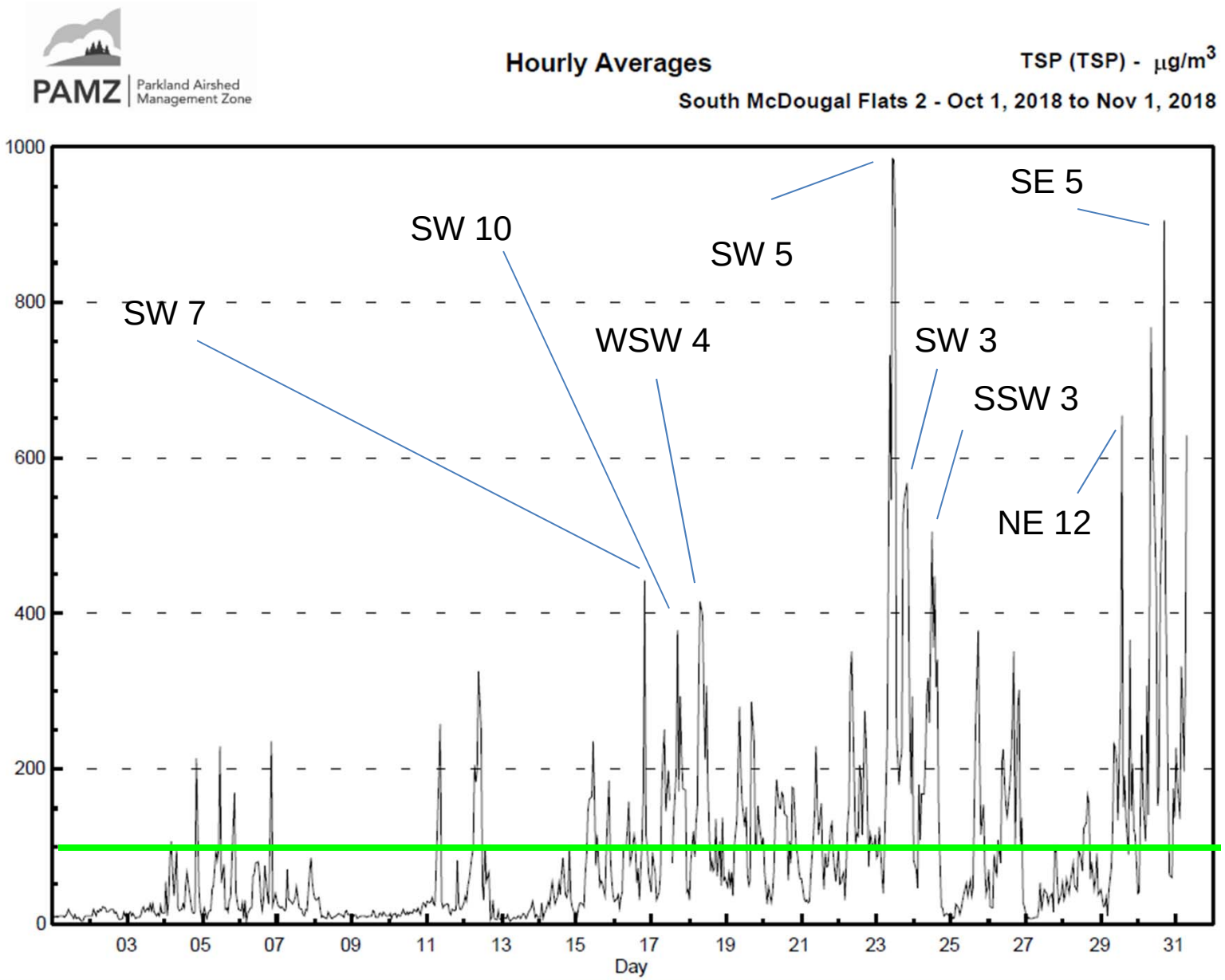

24 hr. average objective 100 ug/m^3

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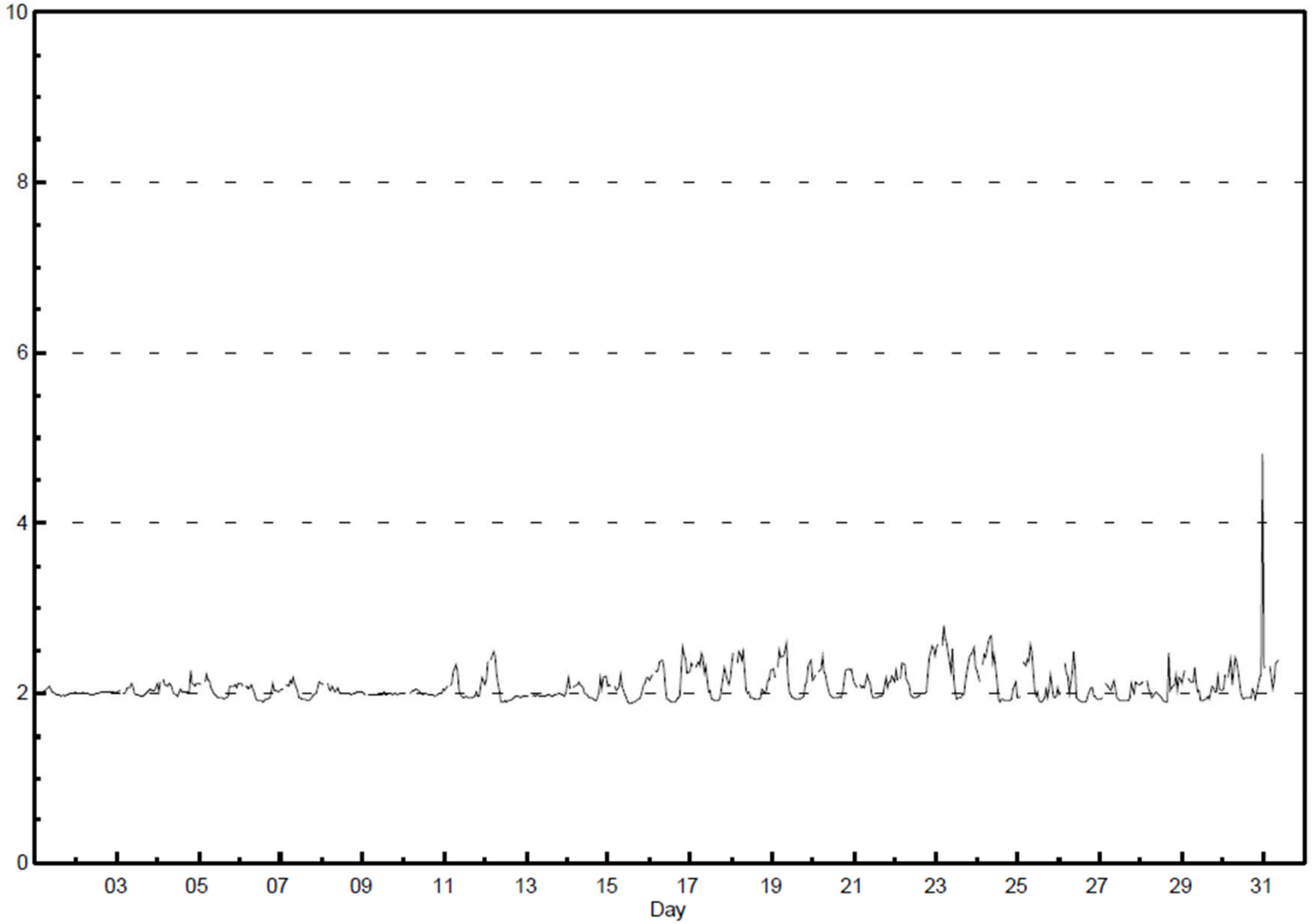
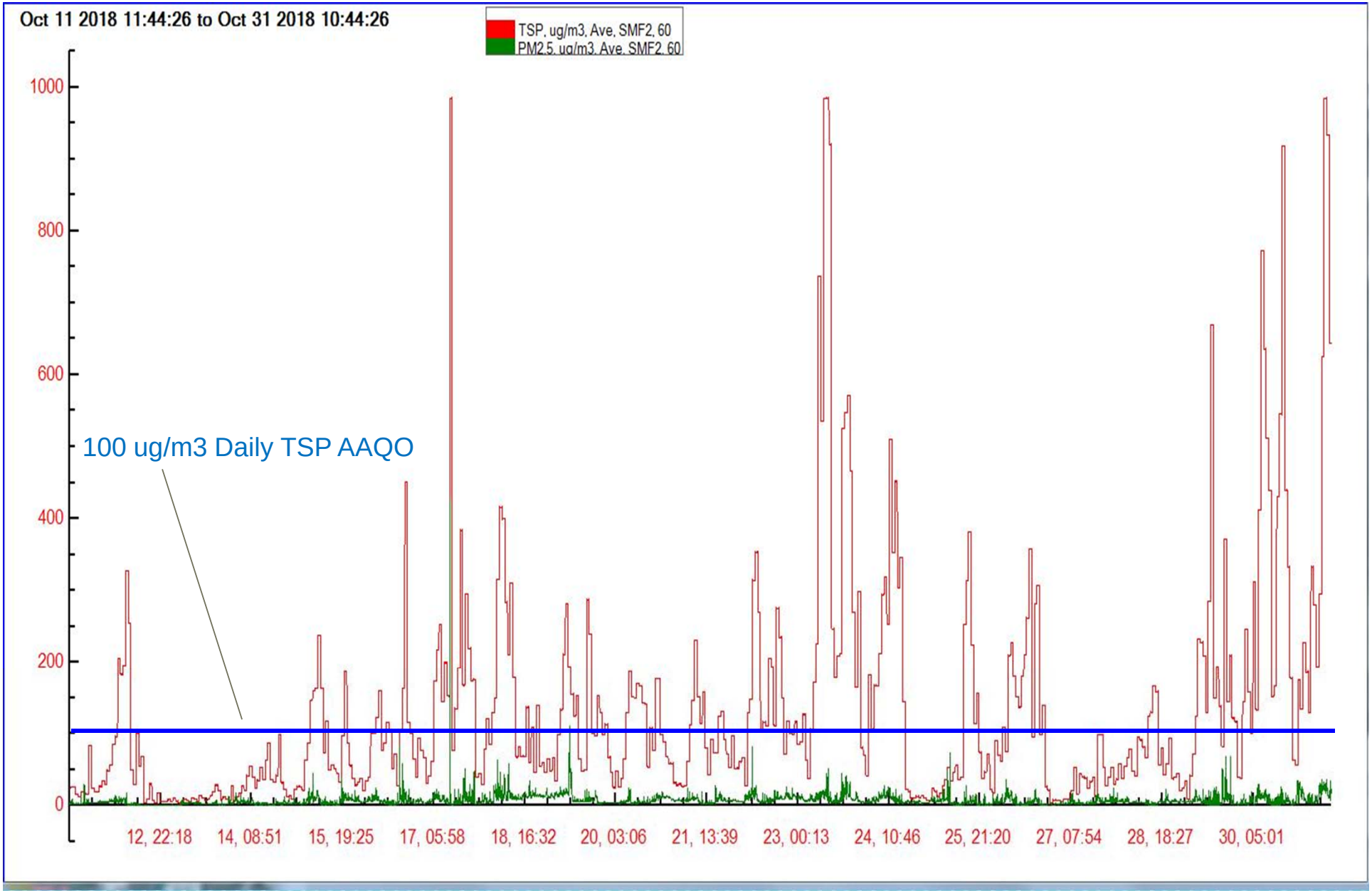
Hourly Averages

Total Hydrocarbons (THC) - ppm

South McDougal Flats 2 - Oct 1, 2018 to Nov 1, 2018





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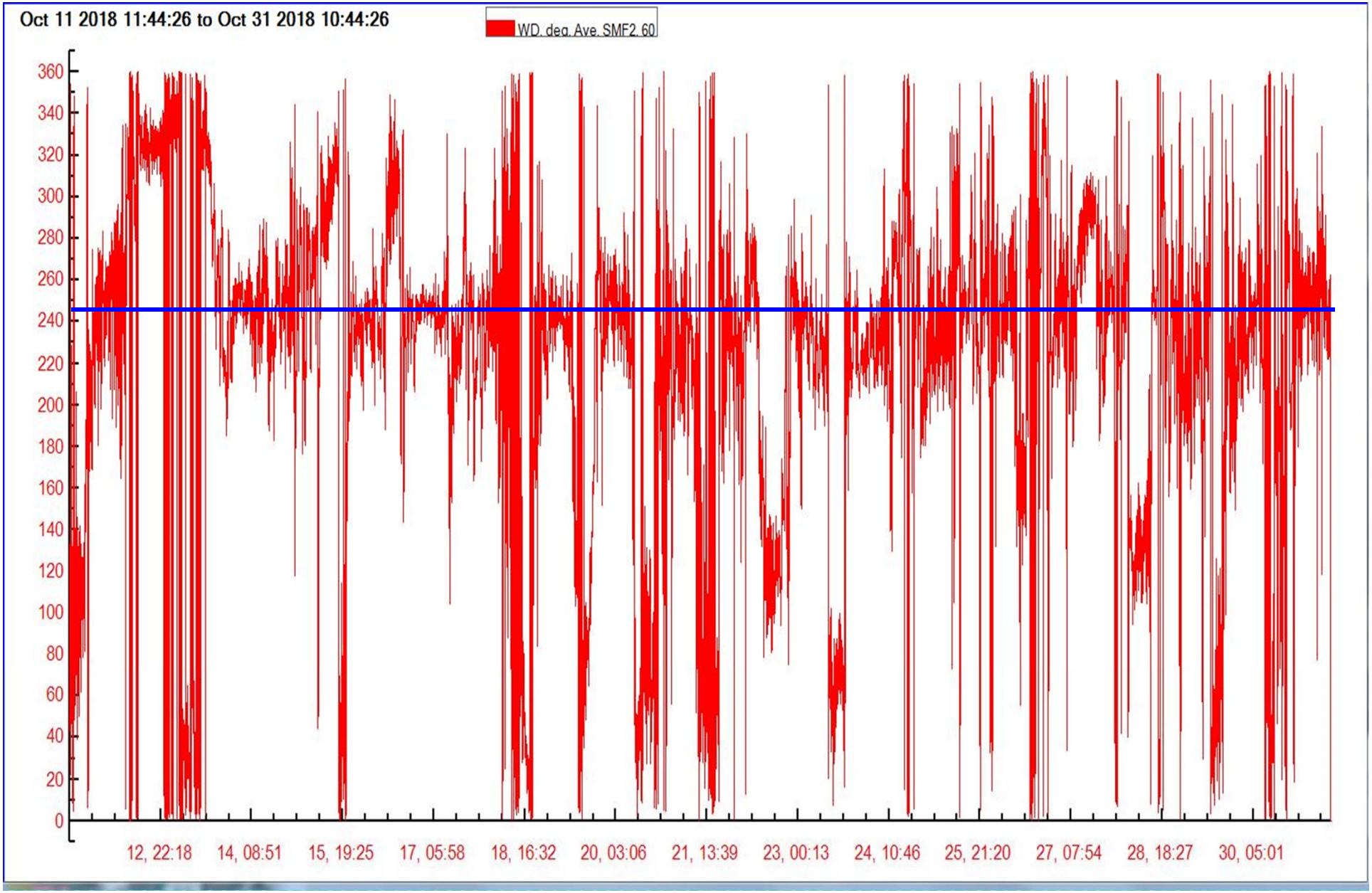

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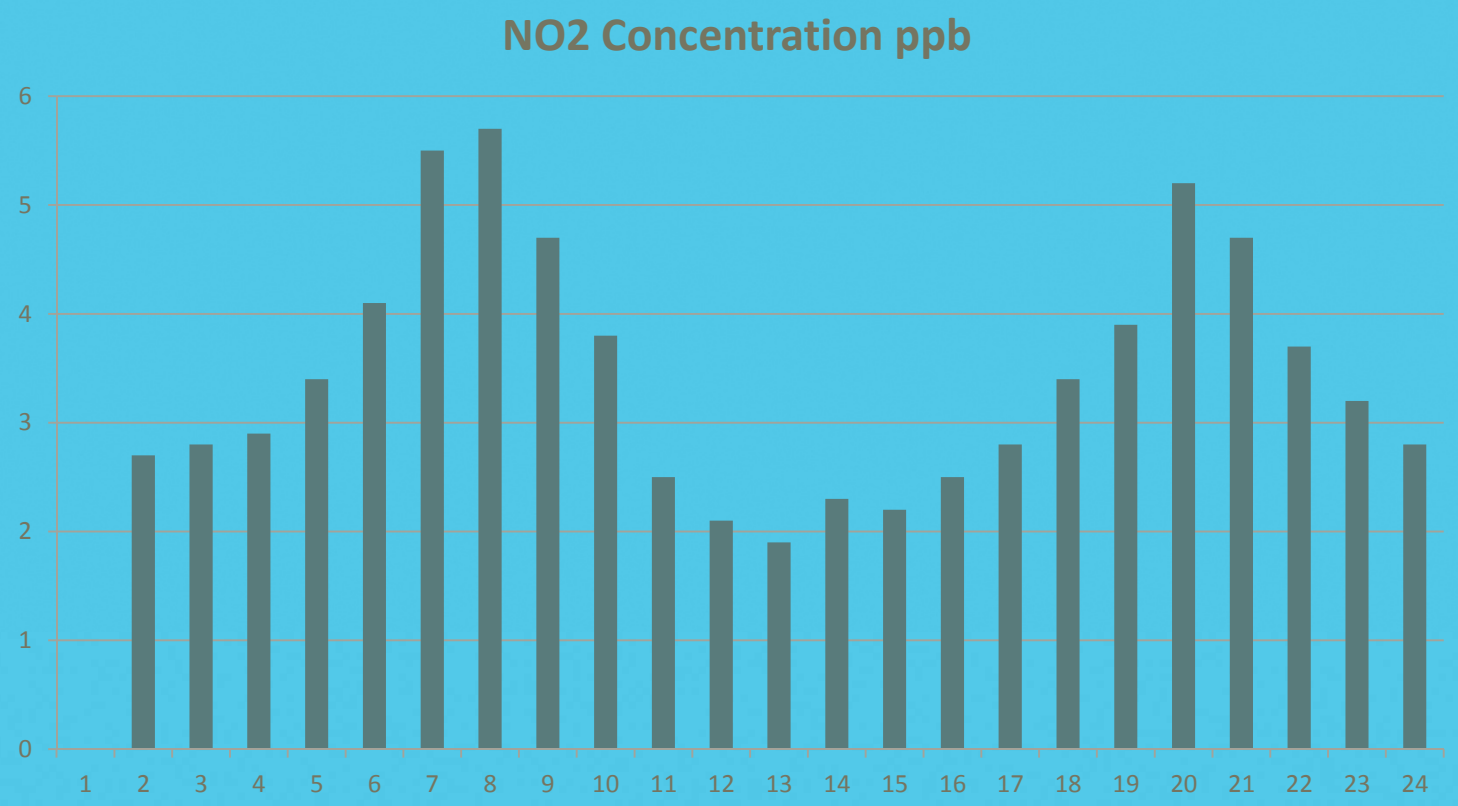
Diurnal NO2 Pattern (September)



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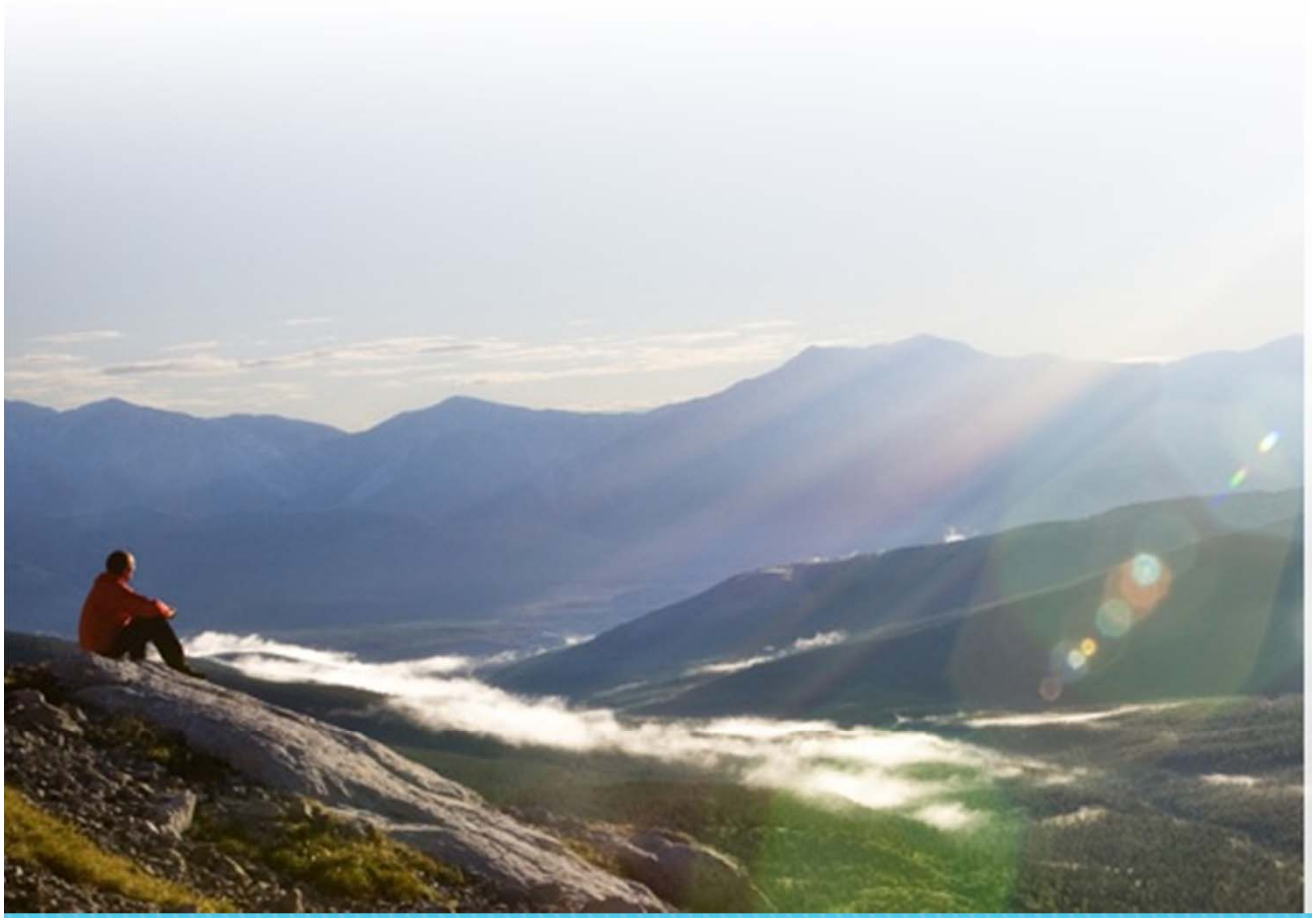

BLUE SKIES. BRIGHT FUTURE.

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