

# Air Pollution in Chicagoland

samantha gomez

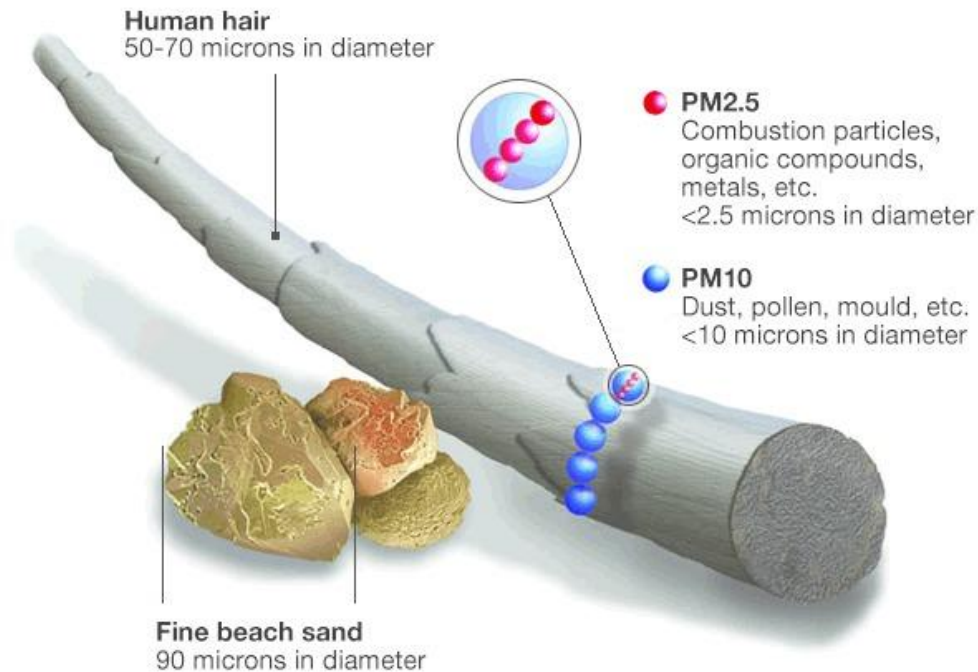
**what is the question ?**

**what are the air pollution levels?  
how high are they?**

# why does this matter?

- air pollution is incredibly harmful to humans
- 7 million premature deaths per year due to indoor and outdoor air pollution (WHO, 2021)
- increased risk for asthma
- worsens chronic illnesses

# air pollutants



Source: US EPA

$O_3$   
 $PM_{10}$   
 **$PM_{2.5}$**   
 $NO_2$

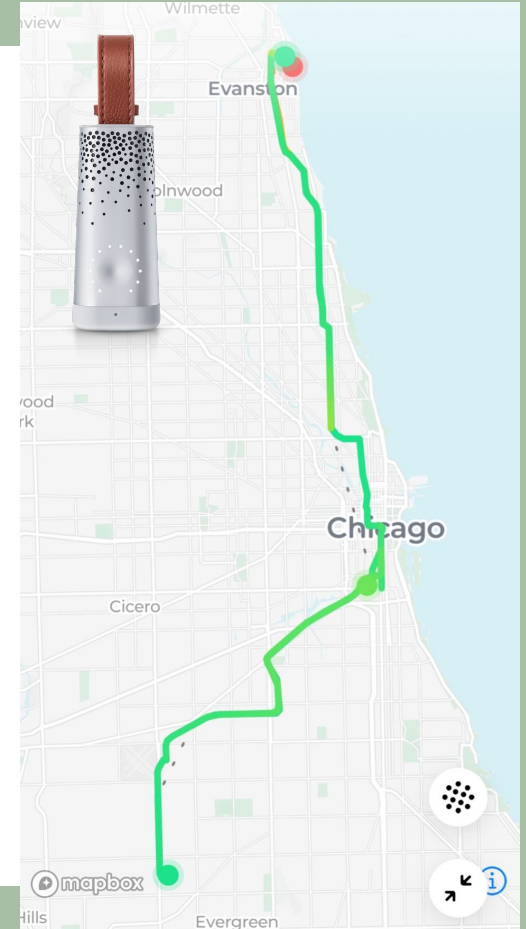
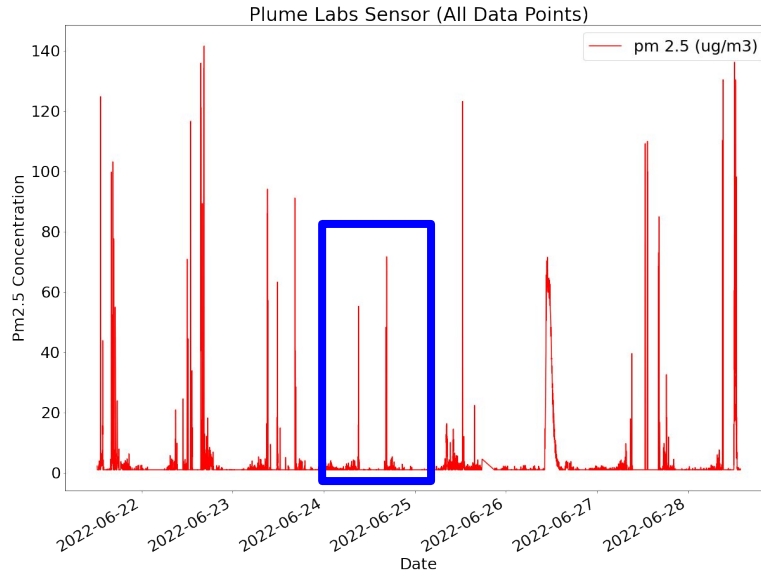
# sensors



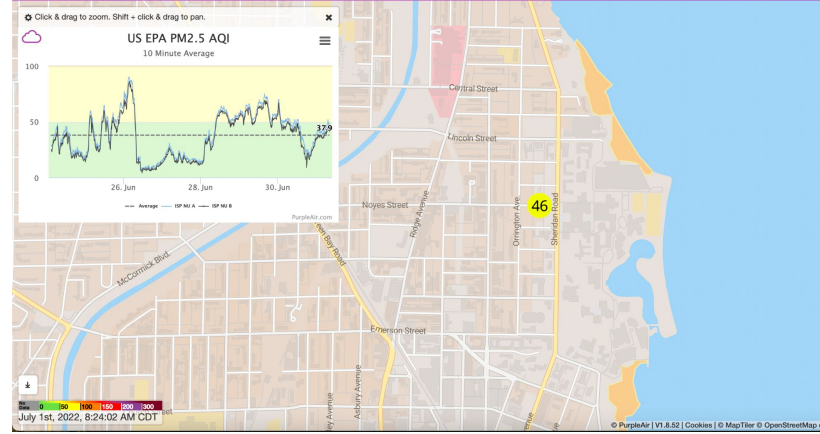
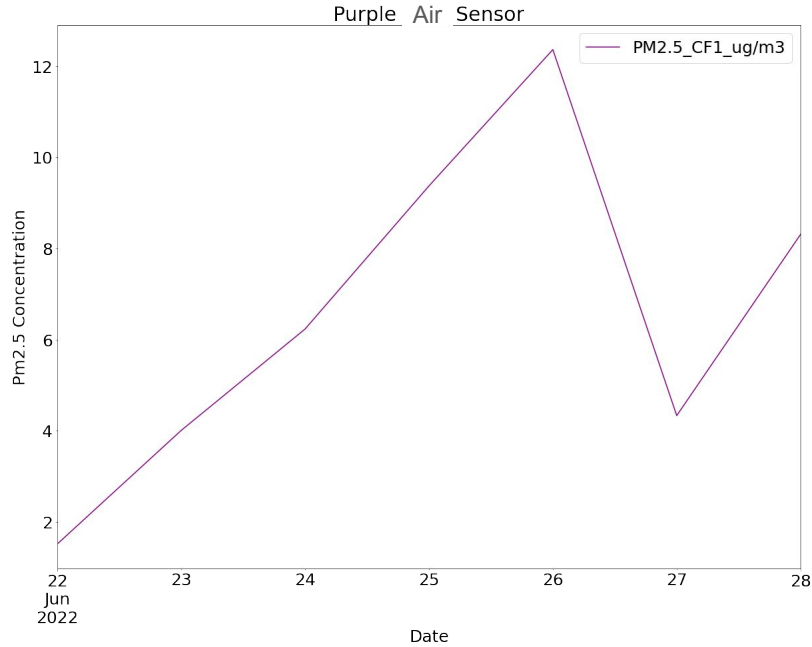
# plume labs



- take plume labs air quality sensor everywhere I go



# purple air



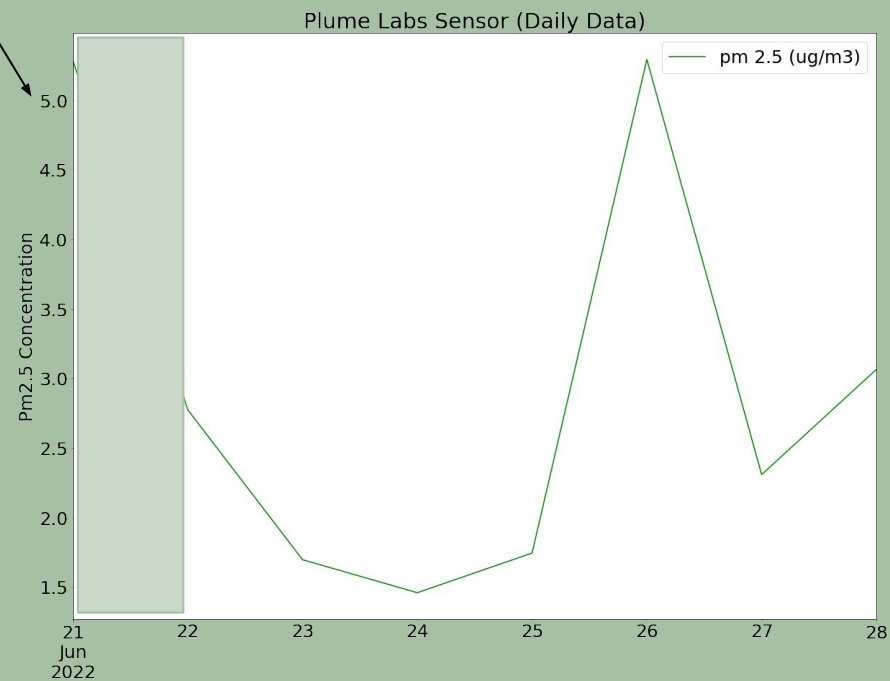
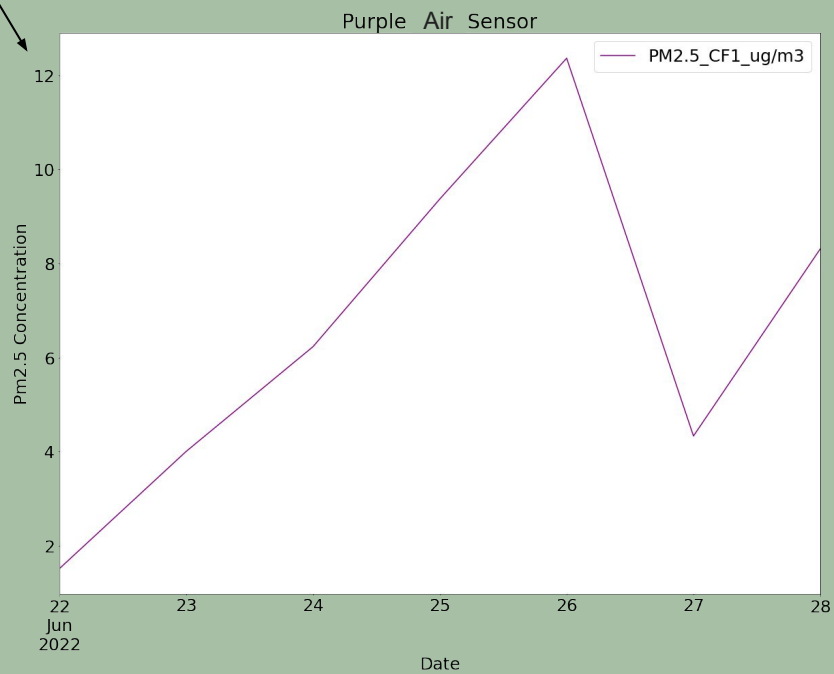
## Air Quality Monitoring Station



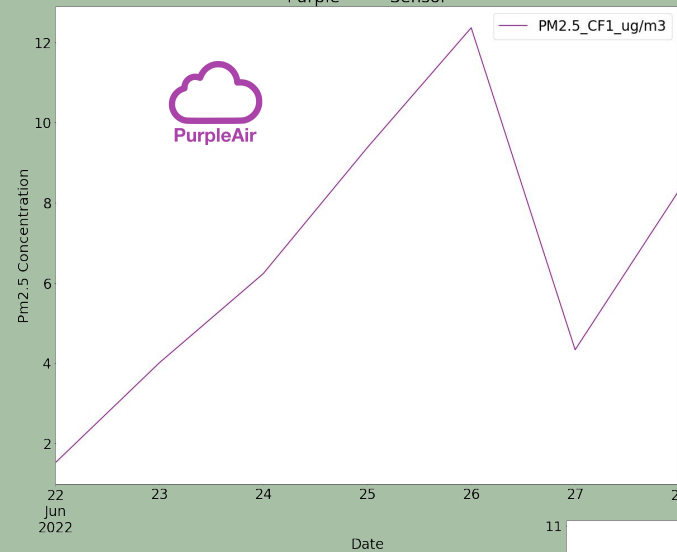
scan for realtime  
air quality data

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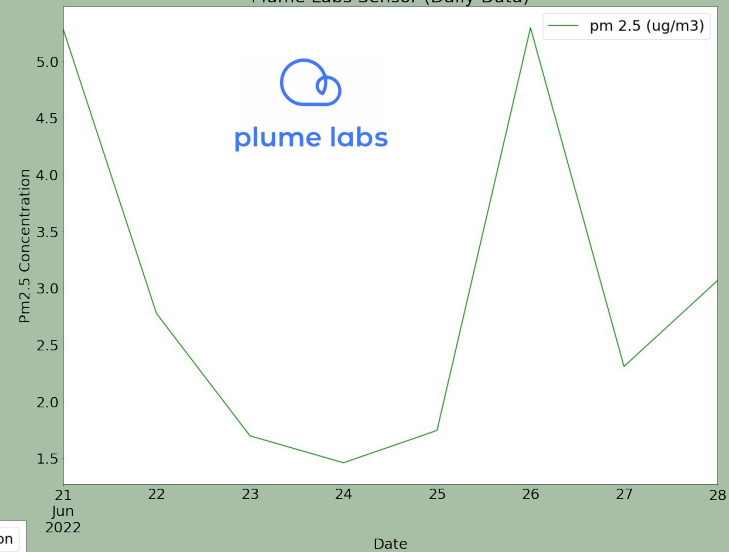




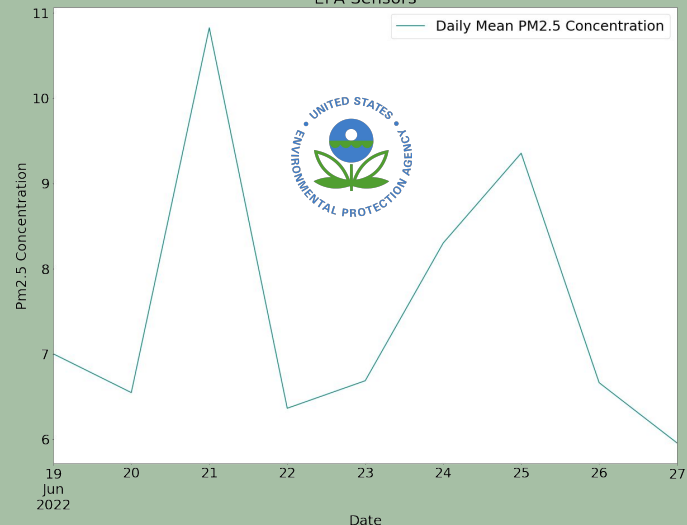
Purple Air Sensor



Plume Labs Sensor (Daily Data)

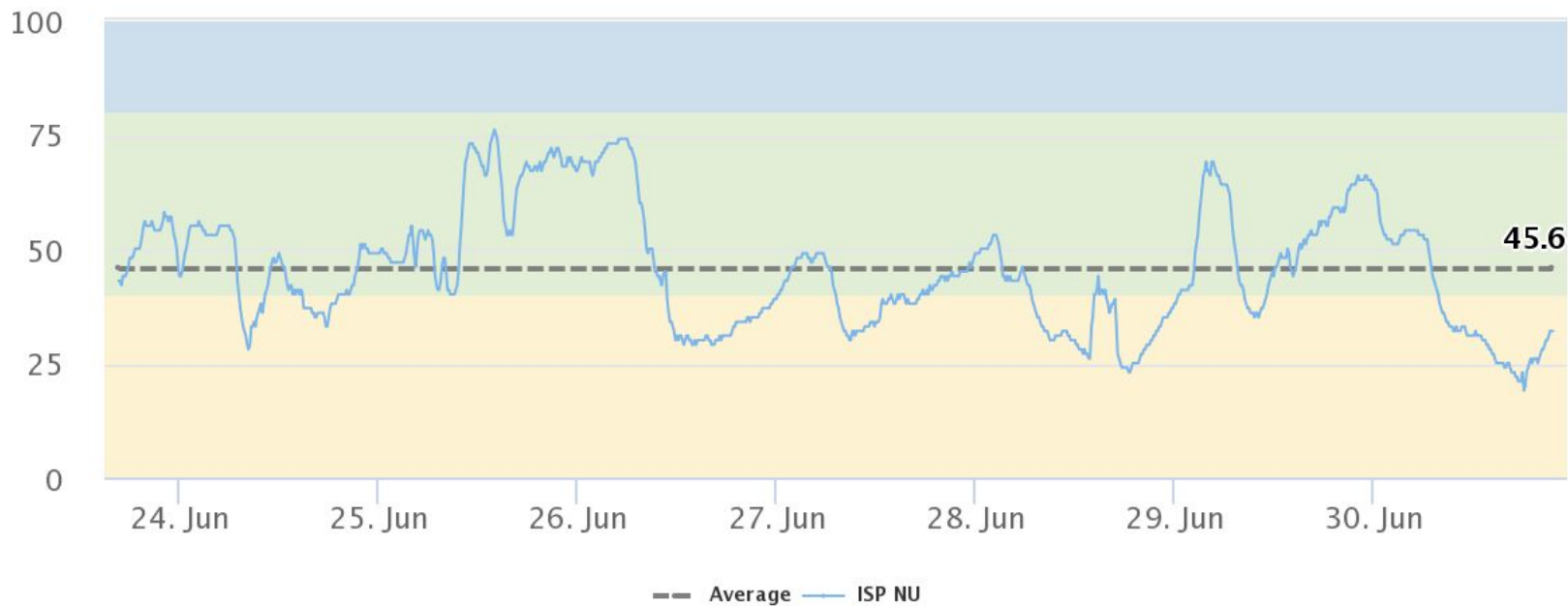


EPA Sensors



# Humidity %

10 Minute Average

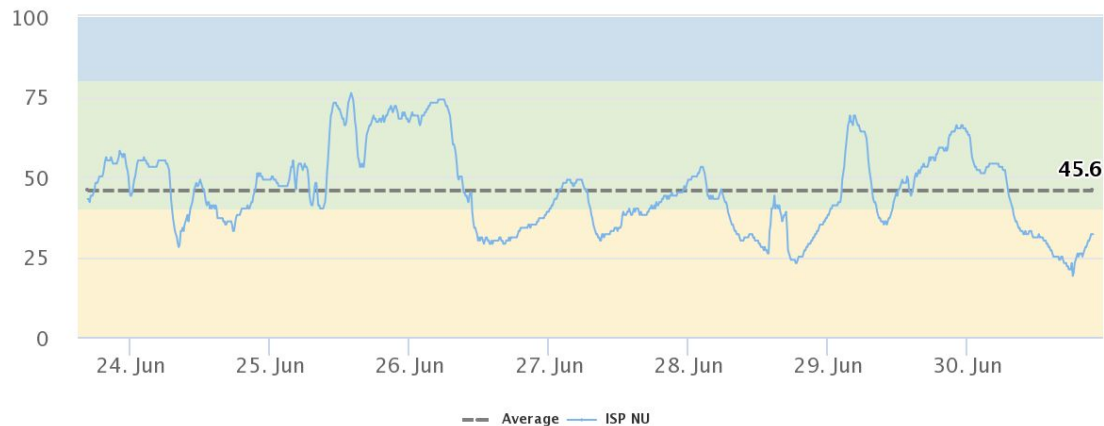


PurpleAir.com



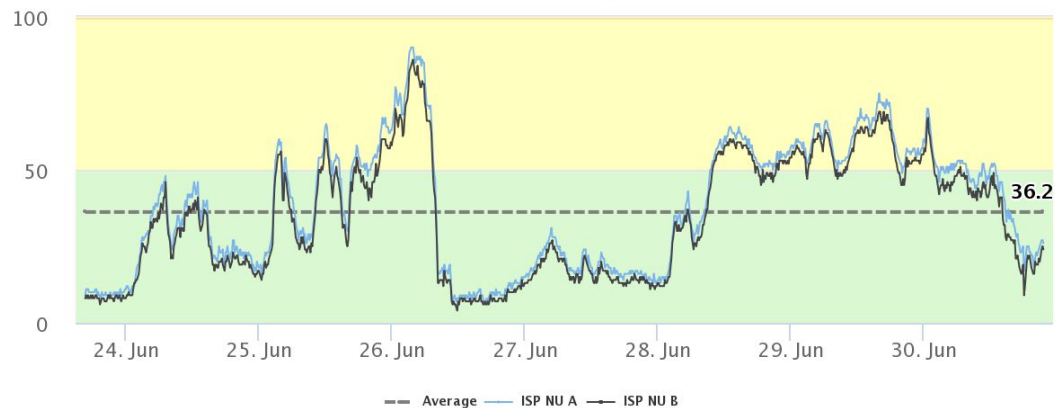
## Humidity %

10 Minute Average



## US EPA PM2.5 AQI

10 Minute Average



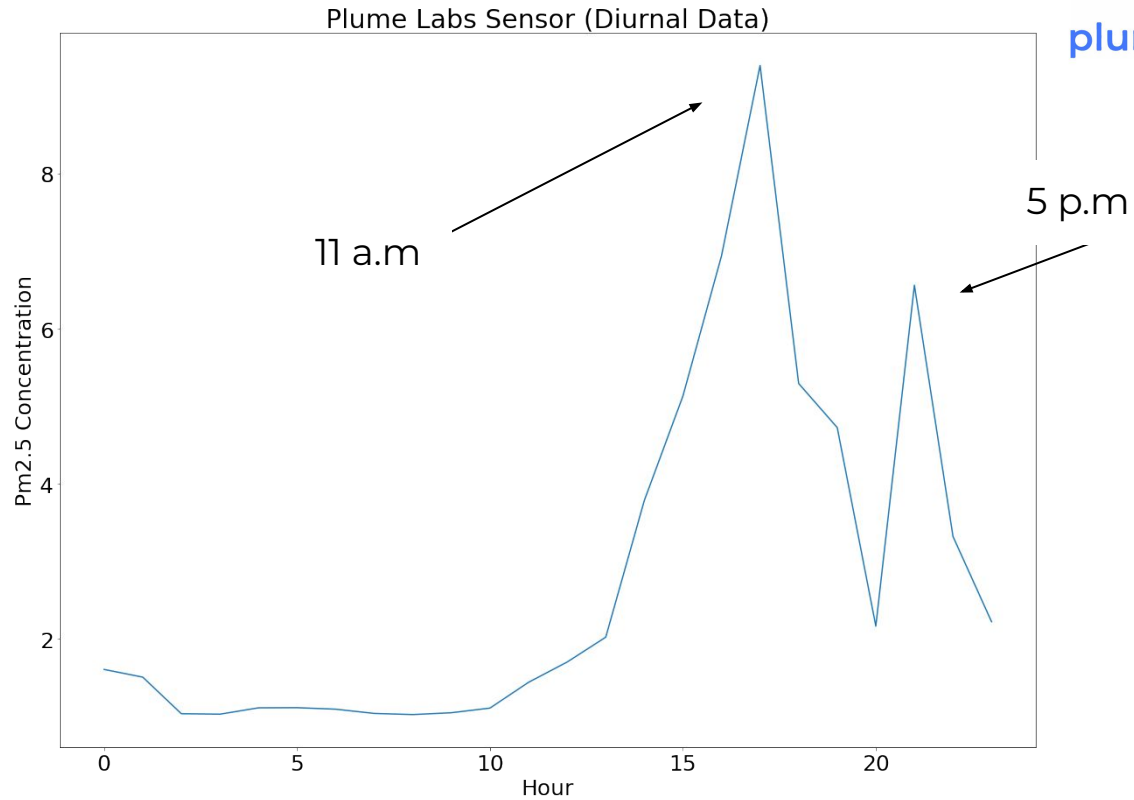
# Air Quality Index

AIR QUALITY INDEX (AQI)	CATEGORY
0-50	Good
51-100	Satisfactory
101-200	Moderate
201-300	Poor
301-400	Very Poor
401-500	Severe

June						
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
S	S	M	T	W	T	F



plume labs



# conclusions

- $\text{PM}_{2.5}$  levels vary from day to day
- they also vary from indoor to outdoor
- the sensors performed well when compared to EPA data
- weather can lead to with higher  $\text{PM}_{2.5}$  levels
- on two out of eight days there was moderate air quality

# challenges

- getting wifi on the purple air sensor initially

- not having more time to collect and interpret data

- using python for the first time was a struggle



# Thank You

any questions?