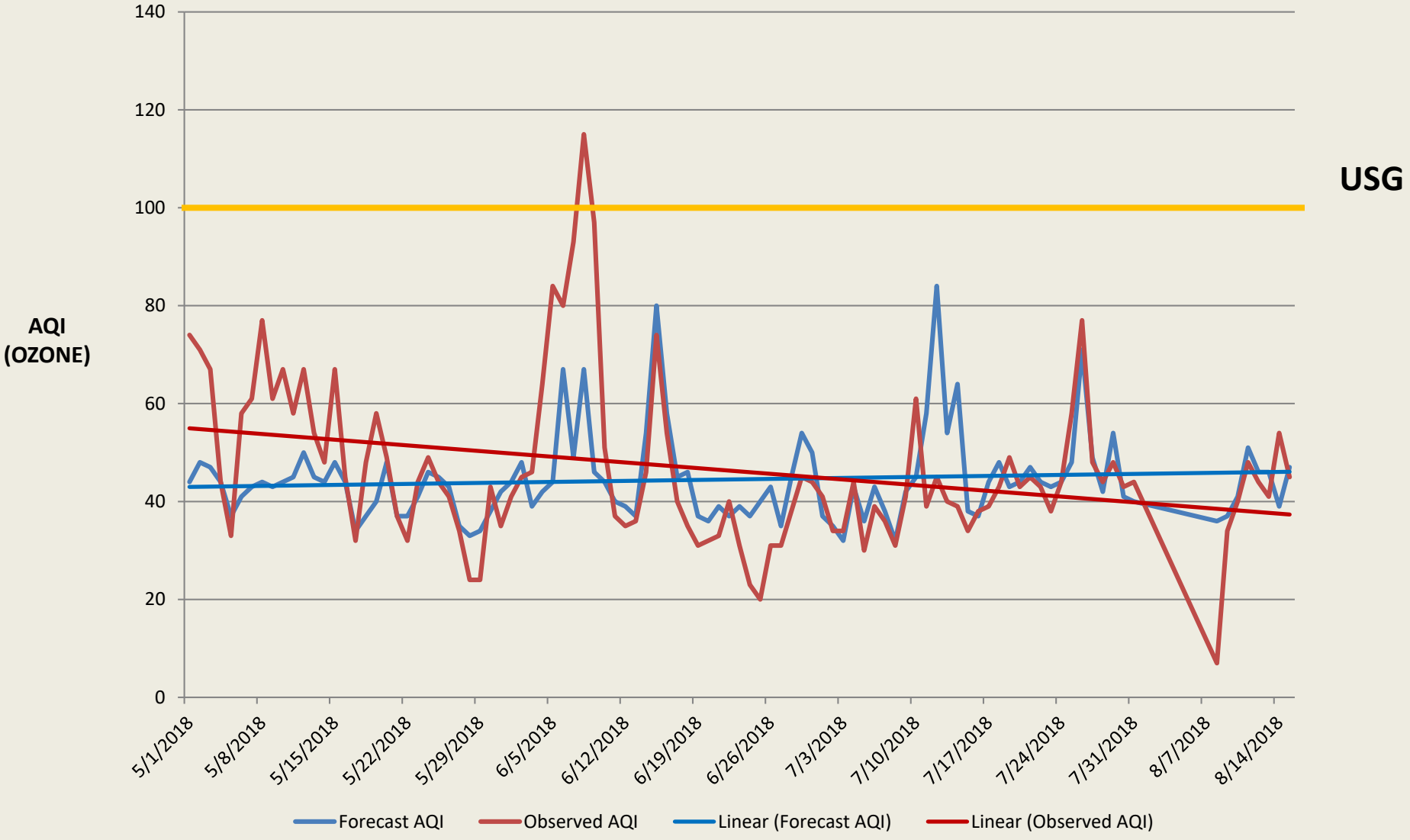
2018 NOAA Model Performance in Alabama

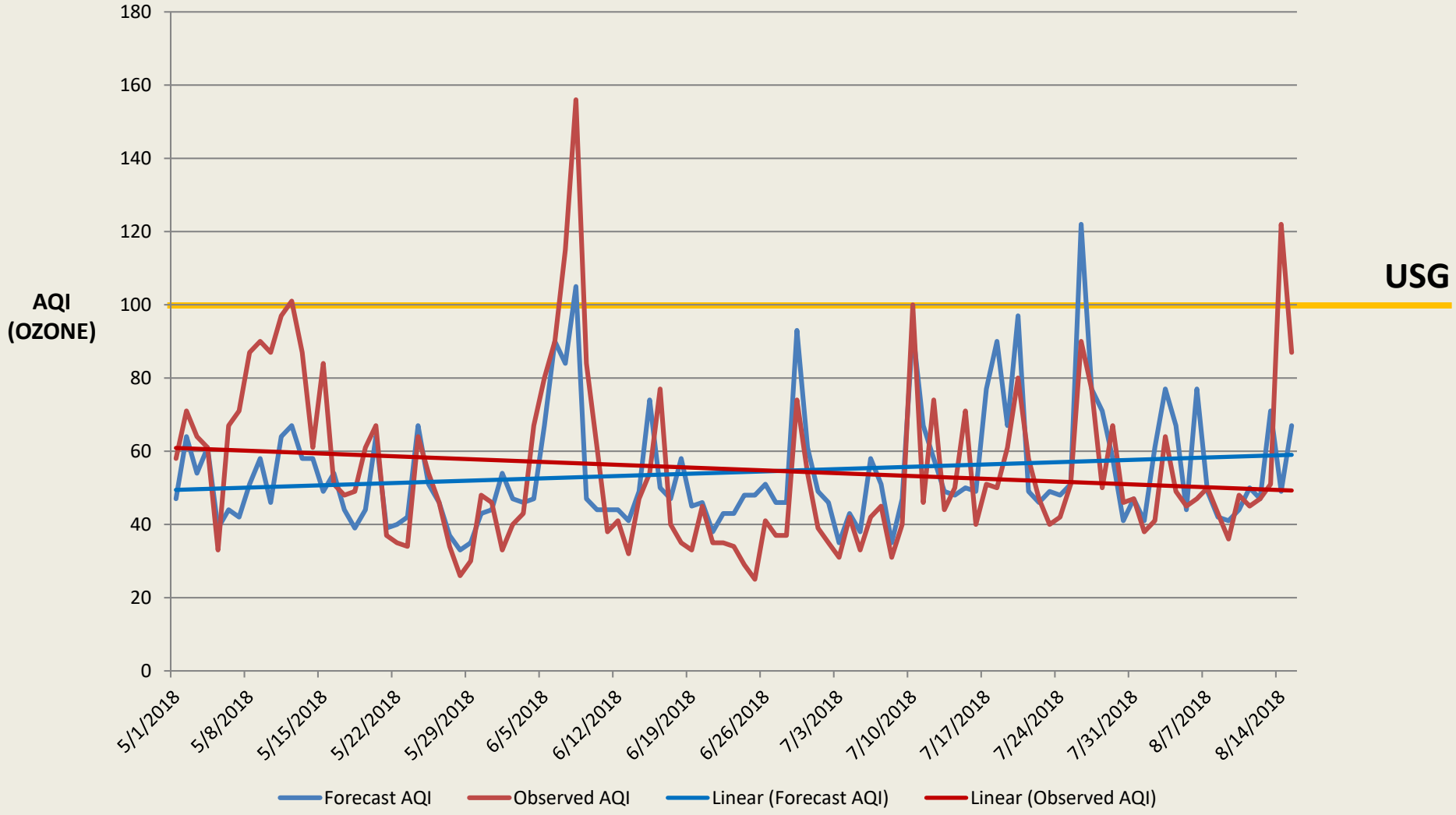
Michael Leach
Geoff Healan

ADEM Alabama Department of Environmental Management

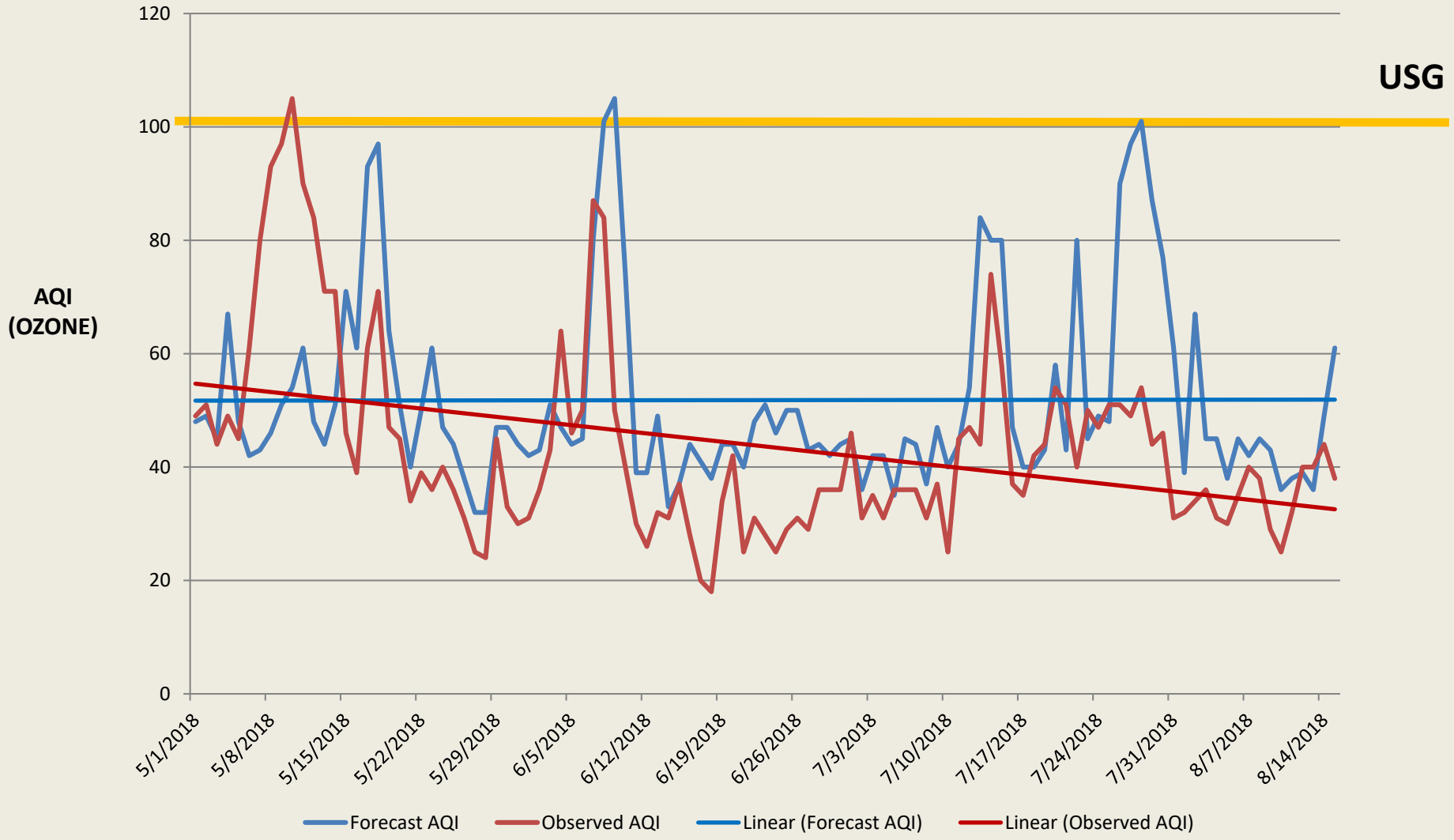
Huntsville Forecast vs. Observed



Birmingham Forecast vs. Observed



Mobile Forecast vs. Observed



Model Statistics

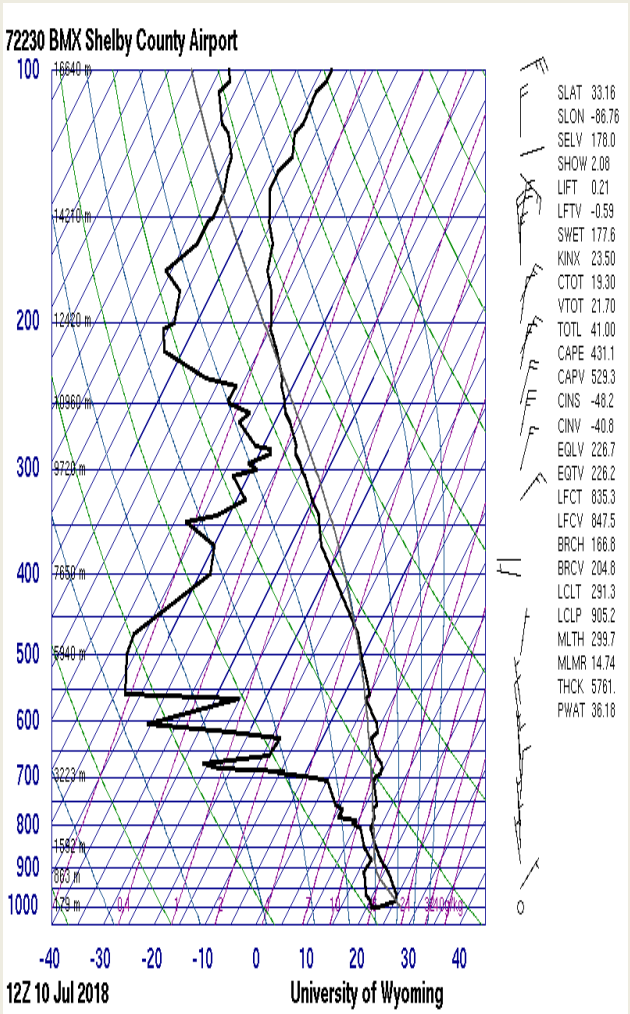
Forecast City	NOAA Model Percent Correct (Color Code)	NOAA Model Bias (AQI)	NOAA FAR
Huntsville (O_3)	72%	0.50	62
Huntsville (PM)	78%		0
Birmingham (O_3)	79%	0.96	26
Mobile (O_3)	75%	1.45	59

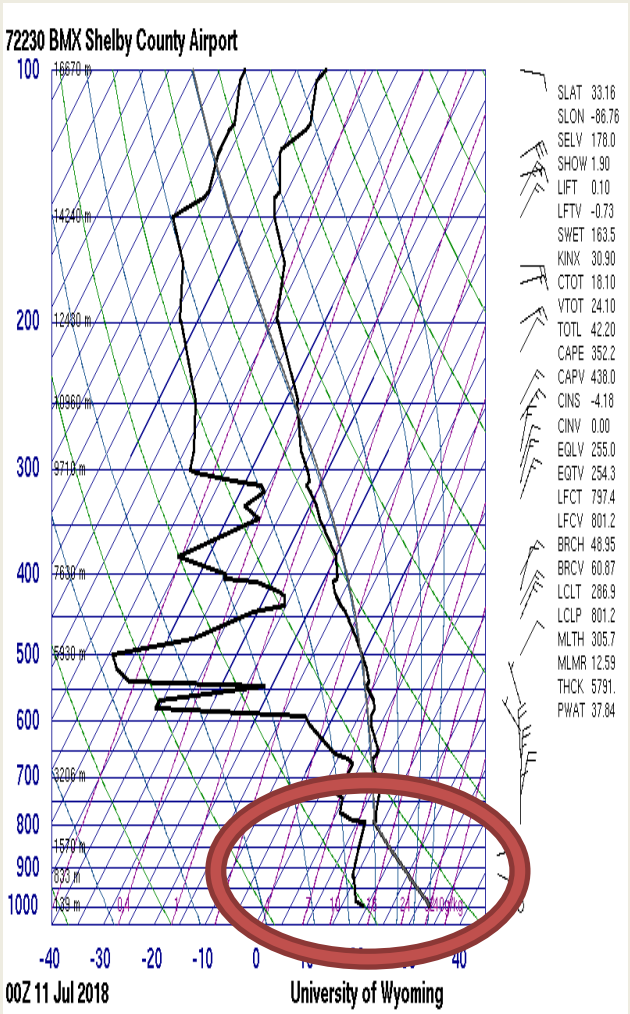
Model Statistics 2017 vs. 2018

Forecast City	NOAA Model Percent Correct (Color Code)	NOAA Model Bias (AQI)	NOAA FAR
Huntsville (2017)	89%	0.82	50
Huntsville (2018)	72%	0.50	62
Birmingham (2017)	80%	1.48	50
Birmingham (2018)	79%	0.96	26
Mobile (2017)	75%	2.21	75
Mobile (2018)	75%	1.45	59

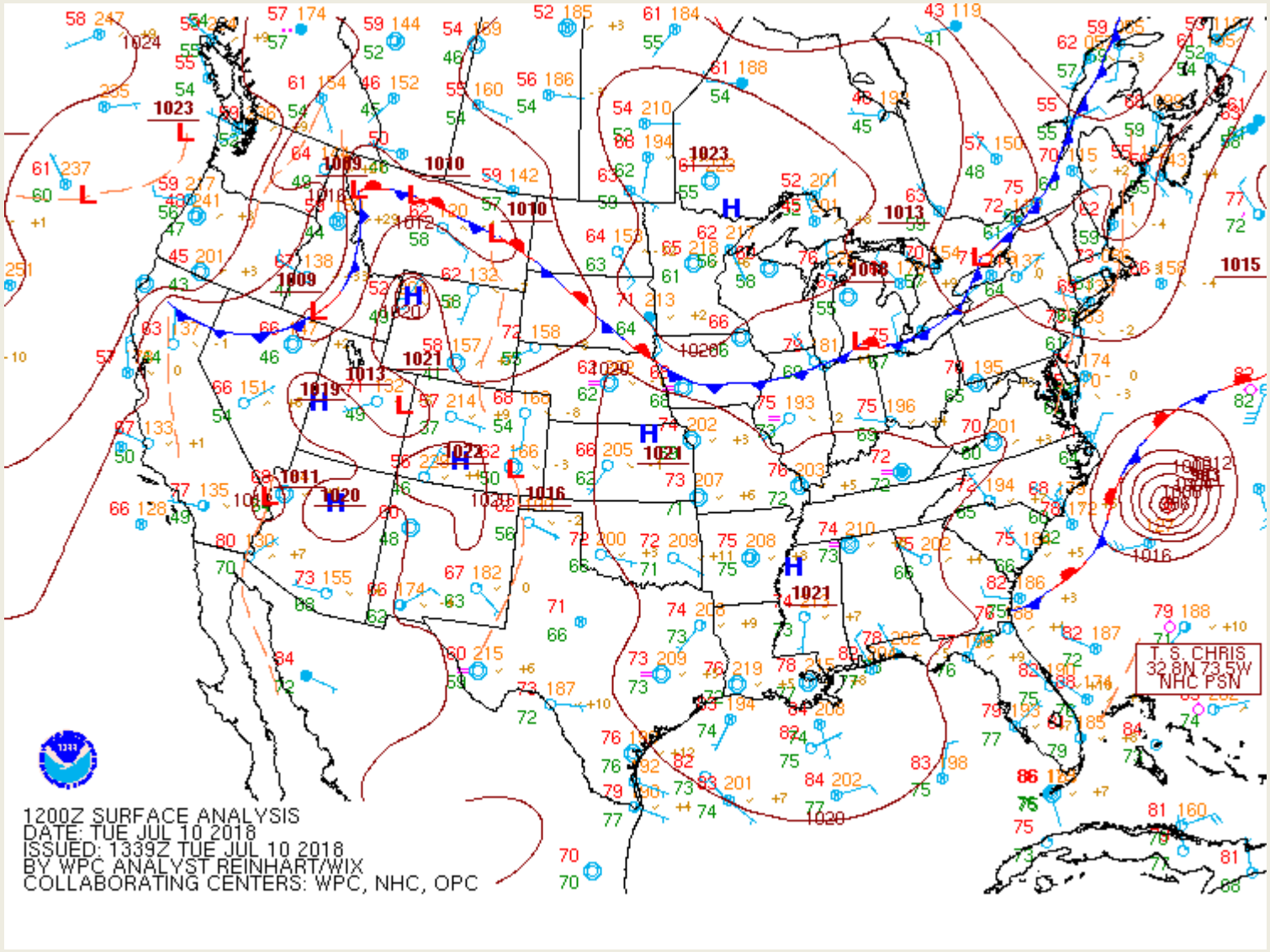
Case Study July 10, 2018
Birmingham, Alabama

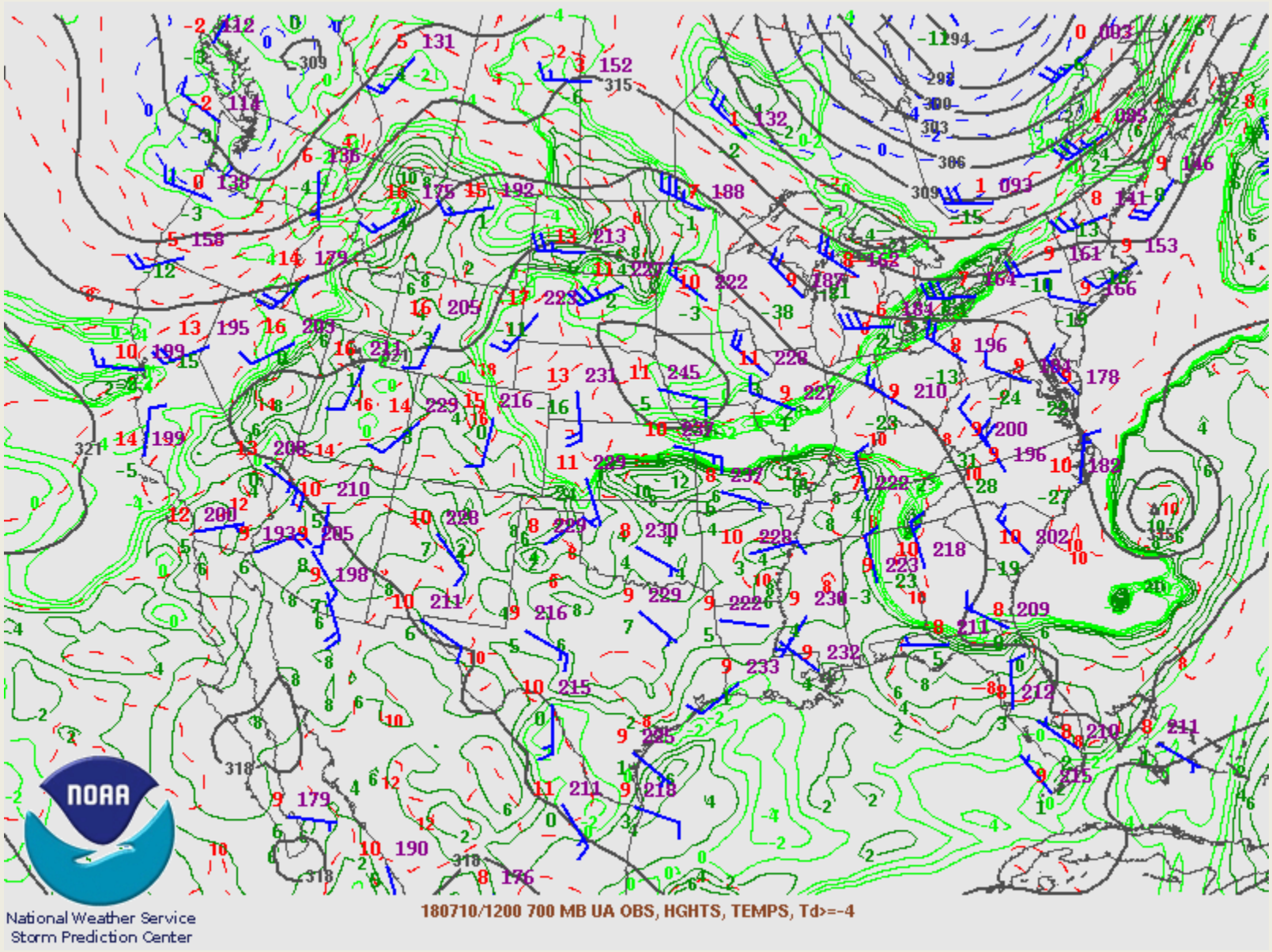
NOAA Forecast AQI for July 10 was 93

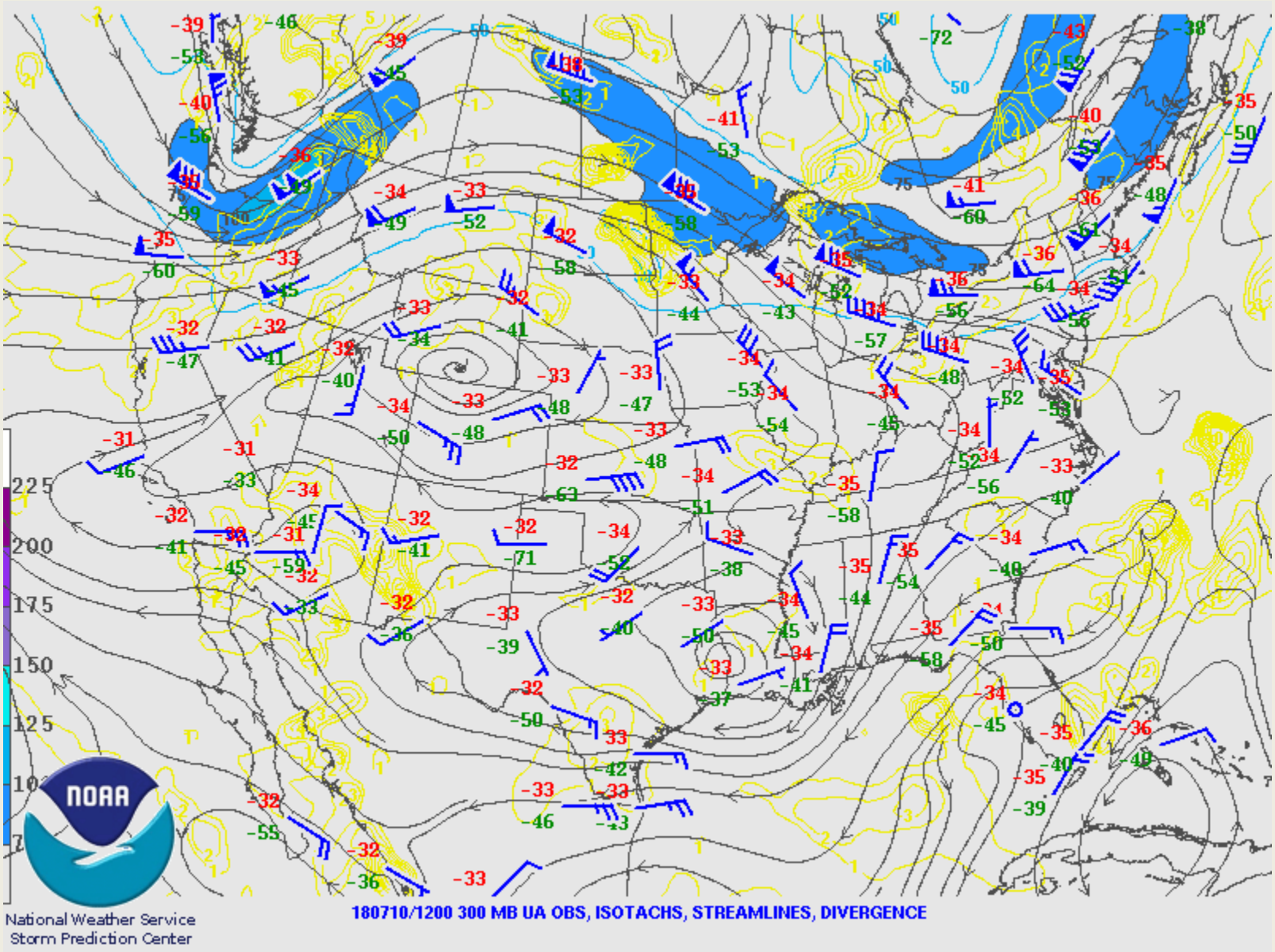


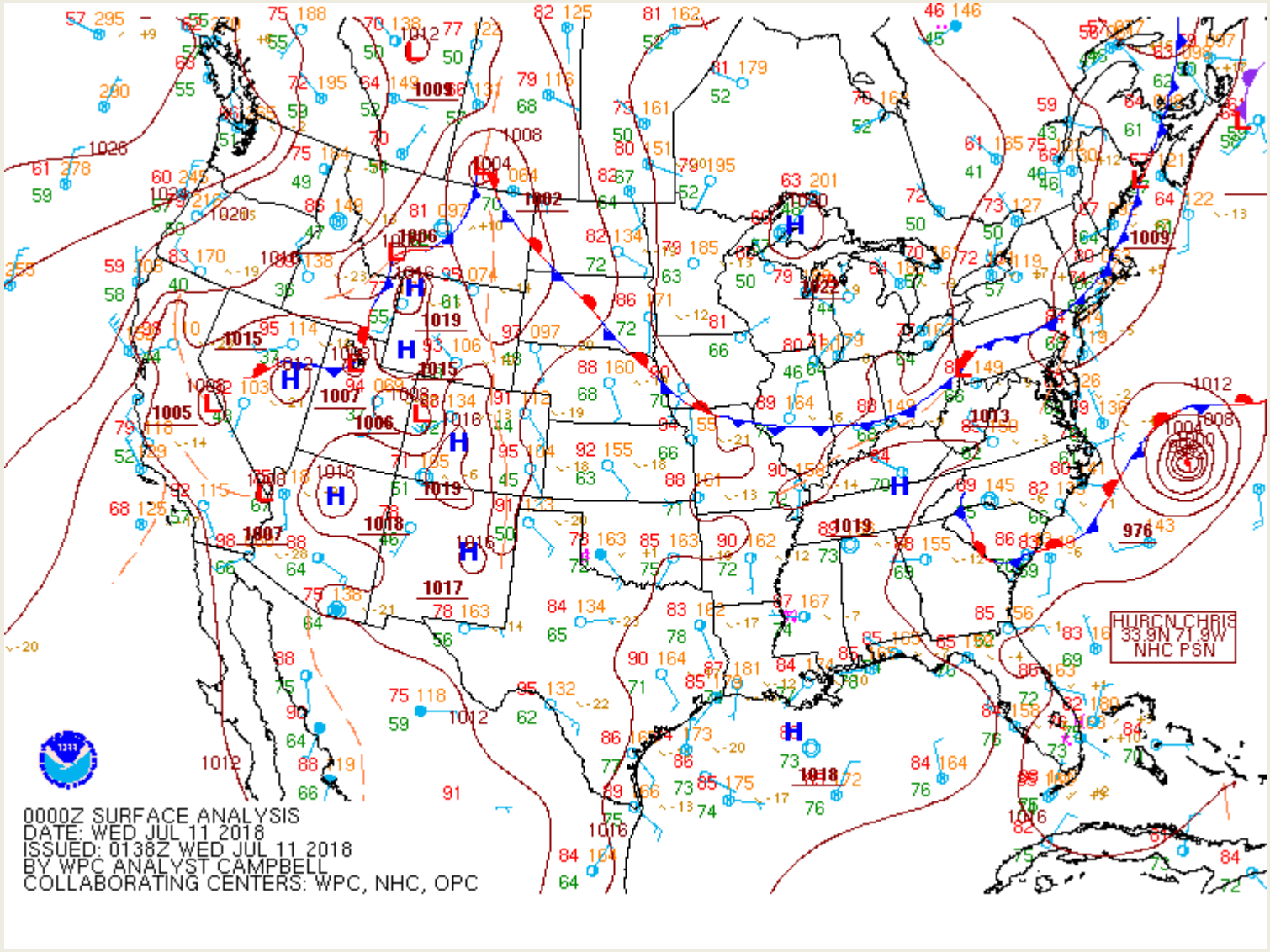


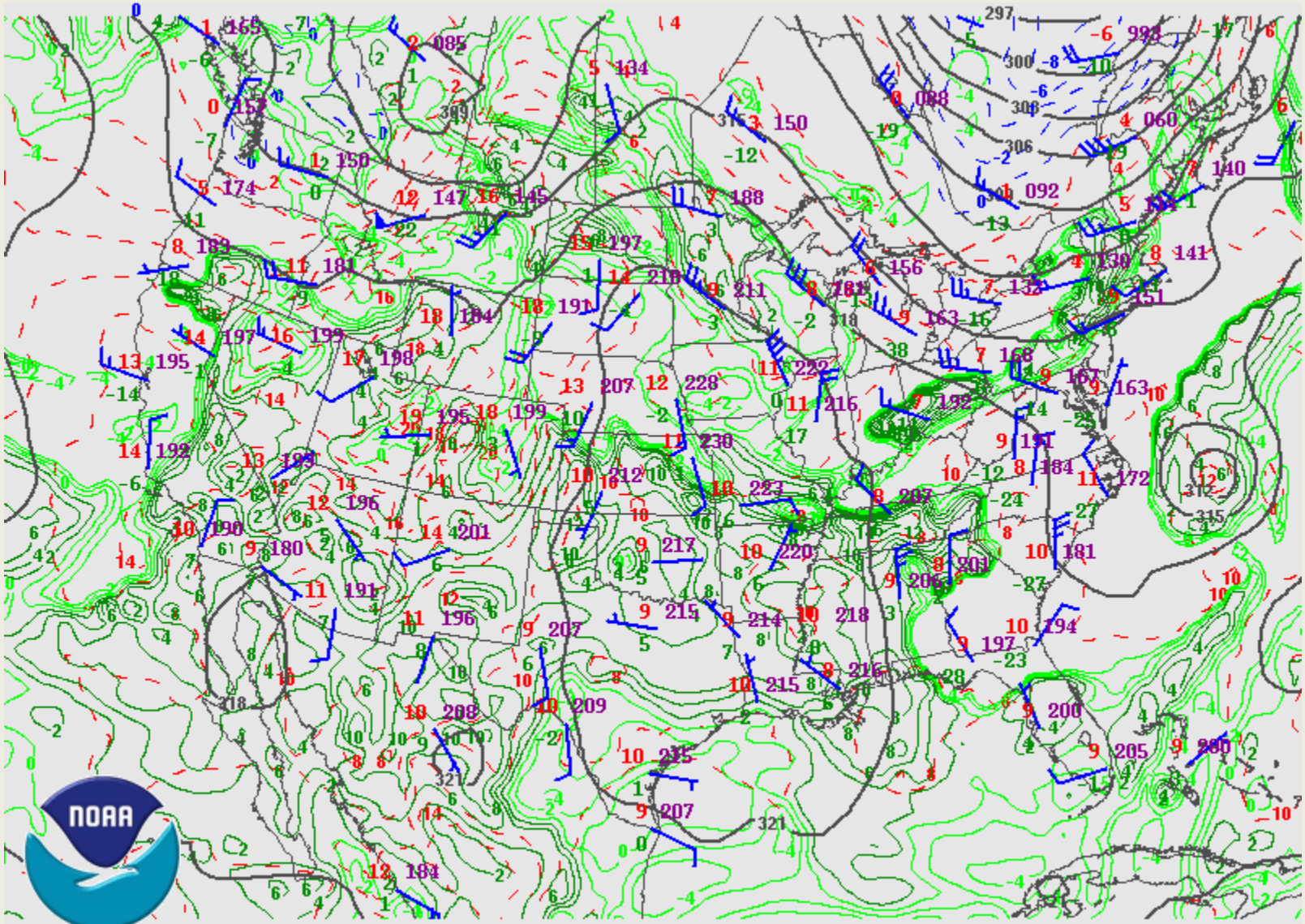
OBSERVED AQI WAS 100

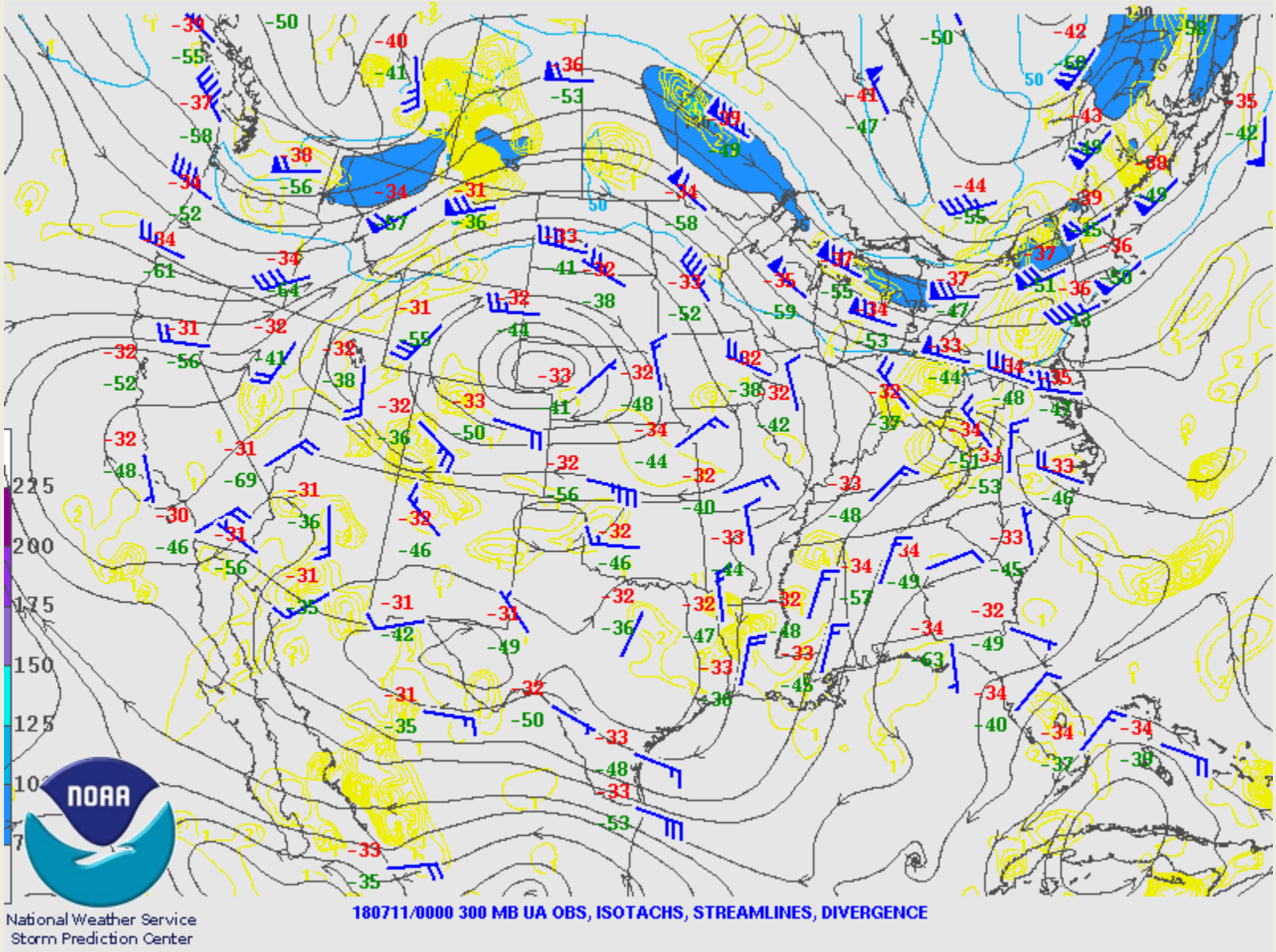

1200Z SURFACE ANALYSIS
DATE: TUE JUL 10 2018
ISSUED: 1339Z TUE JUL 10 2018
BY WPC ANALYST REINHART/WIX
COLLABORATING CENTERS: WPC, NHC, OPC
T. S. CHRIS
32.8N 73.5W
NHC PSN


NOAA
National Weather Service
Storm Prediction Center
180710/1200 700 MB UA OBS, HGHTS, TEMPS, Td>=-4


225
200
175
150
125
NOAA
National Weather Service
Storm Prediction Center
180710/1200 300 MB UA OBS, ISOTACHS, STREAMLINES, DIVERGENCE


0000Z SURFACE ANALYSIS
DATE: WED JUL 11 2018
ISSUED: 0138Z WED JUL 11 2018
BY WPC ANALYST CAMPBELL
COLLABORATING CENTERS: WPC, NHC, OPC
HURCN CHRIS
33.9N 71.3W
NHC PSN


NOAA
National Weather Service
Storm Prediction Center
180711/0000 700 MB UA OBS, HGHTS, TEMPS, Td>=-4


225
200
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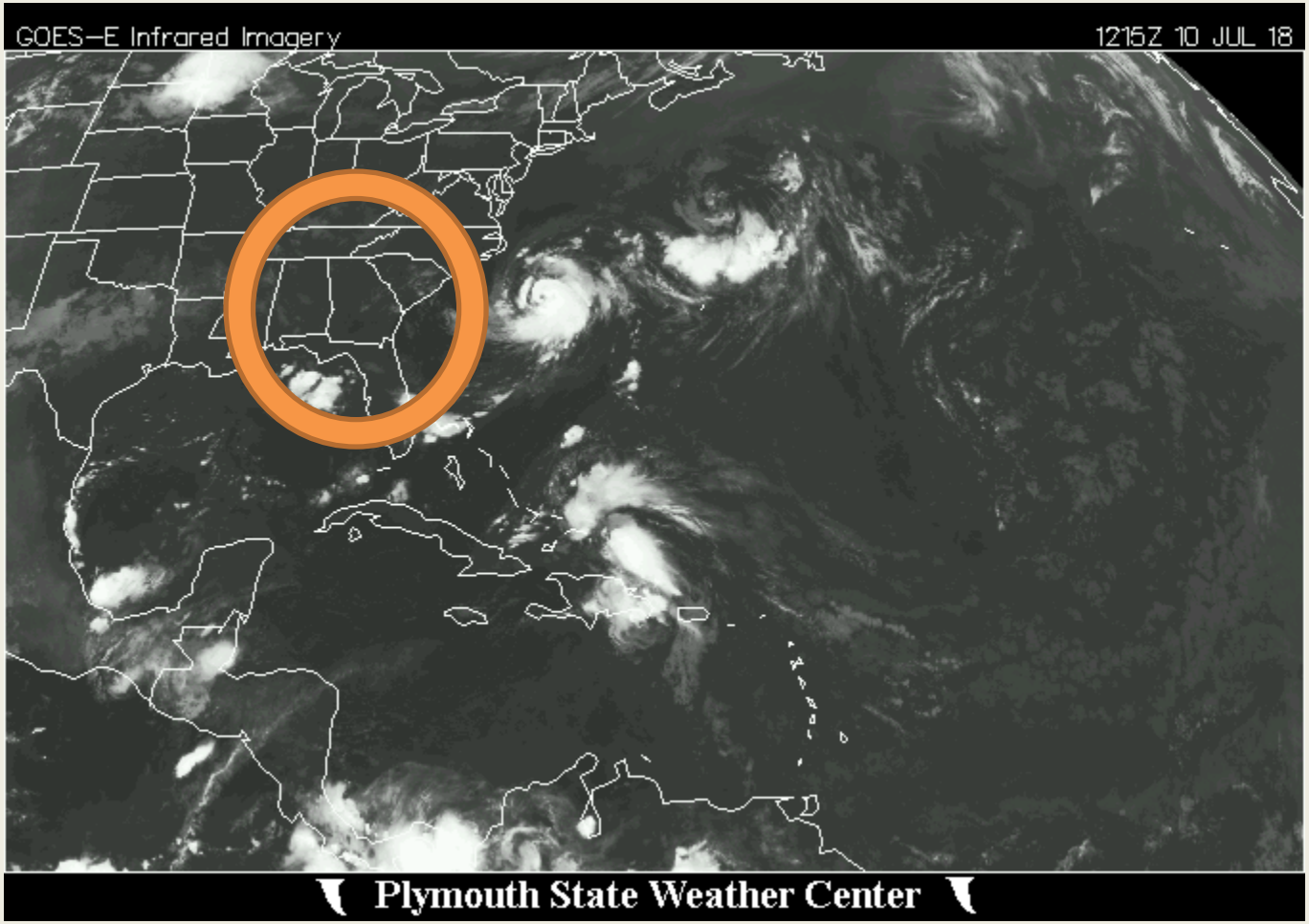
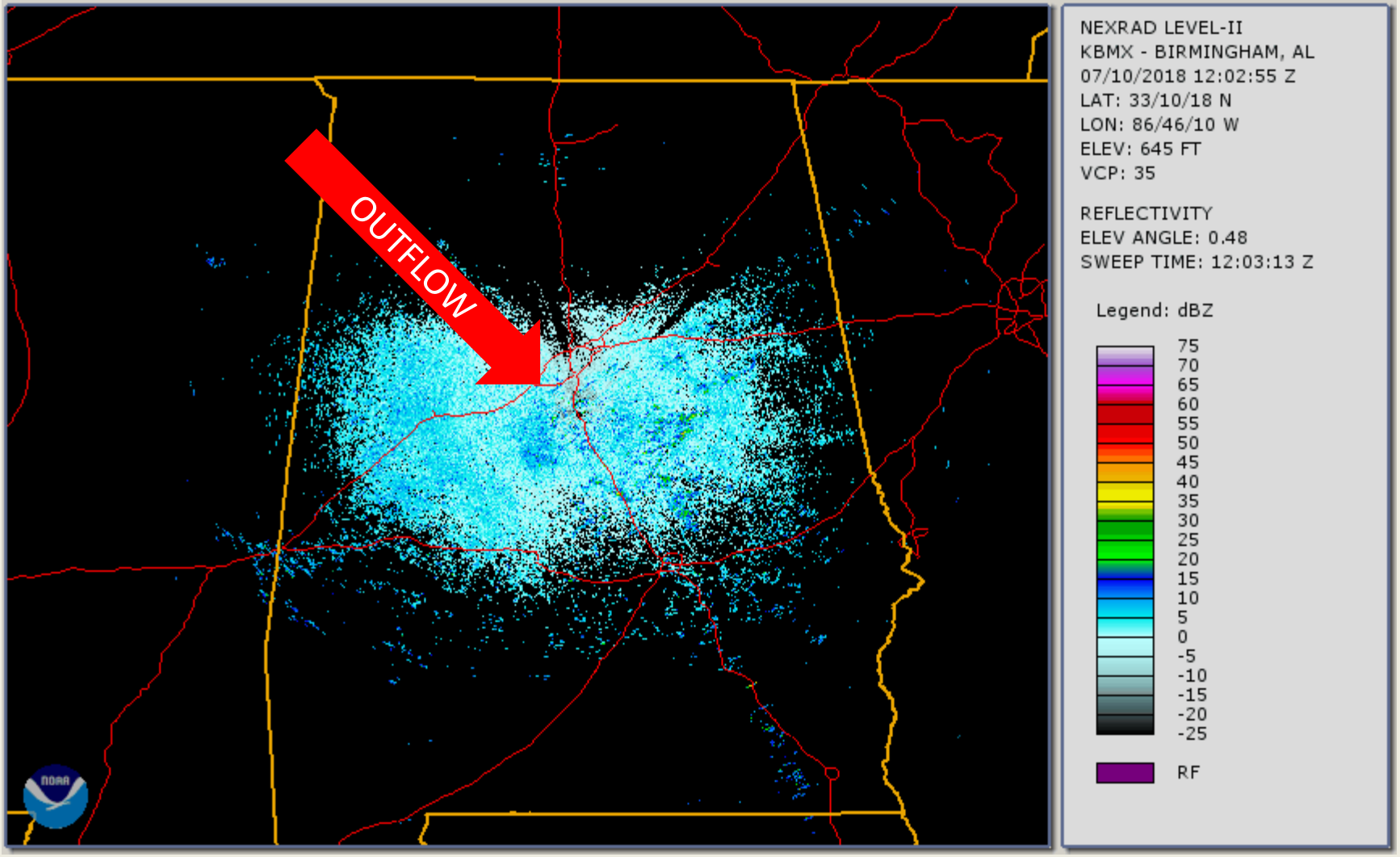
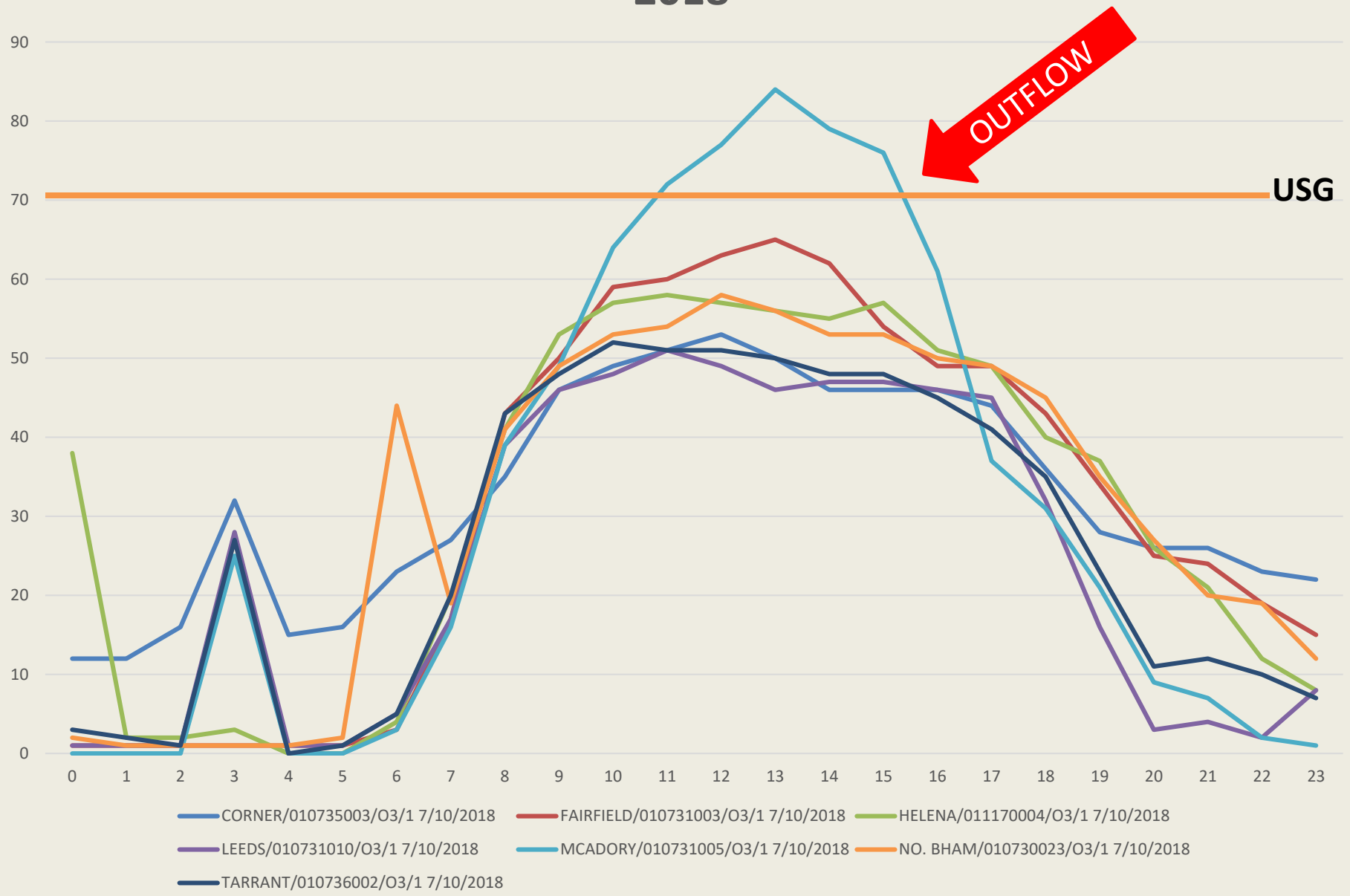
NOAA
National Weather Service
Storm Prediction Center
180711/0000 300 MB UA OBS, ISOTACHS, STREAMLINES, DIVERGENCE


GOES-E Infrared Imagery
1215Z 10 JUL 18
Plymouth State Weather Center


OUTFLOW
NEXRAD LEVEL-II
KBMX - BIRMINGHAM, AL
07/10/2018 12:02:55 Z
LAT: 33/10/18 N
LON: 86/46/10 W
ELEV: 645 FT
VCP: 35
REFLECTIVITY
ELEV ANGLE: 0.48
SWEEP TIME: 12:03:13 Z
Legend: dBZ
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
RF

Birmingham Hourly Ozone Values (PPB) for July 10, 2018



Conclusions

- The NOAA model did a decent job of forecasting for Birmingham and Mobile but accuracy declined for Huntsville for 2018.
- Typically as you progress farther south in Alabama, the bias tends to increase as you approach the Gulf of Mexico.
- We believe there needs to be more emphasis placed on dew points and land/sea breeze interaction along the coast.