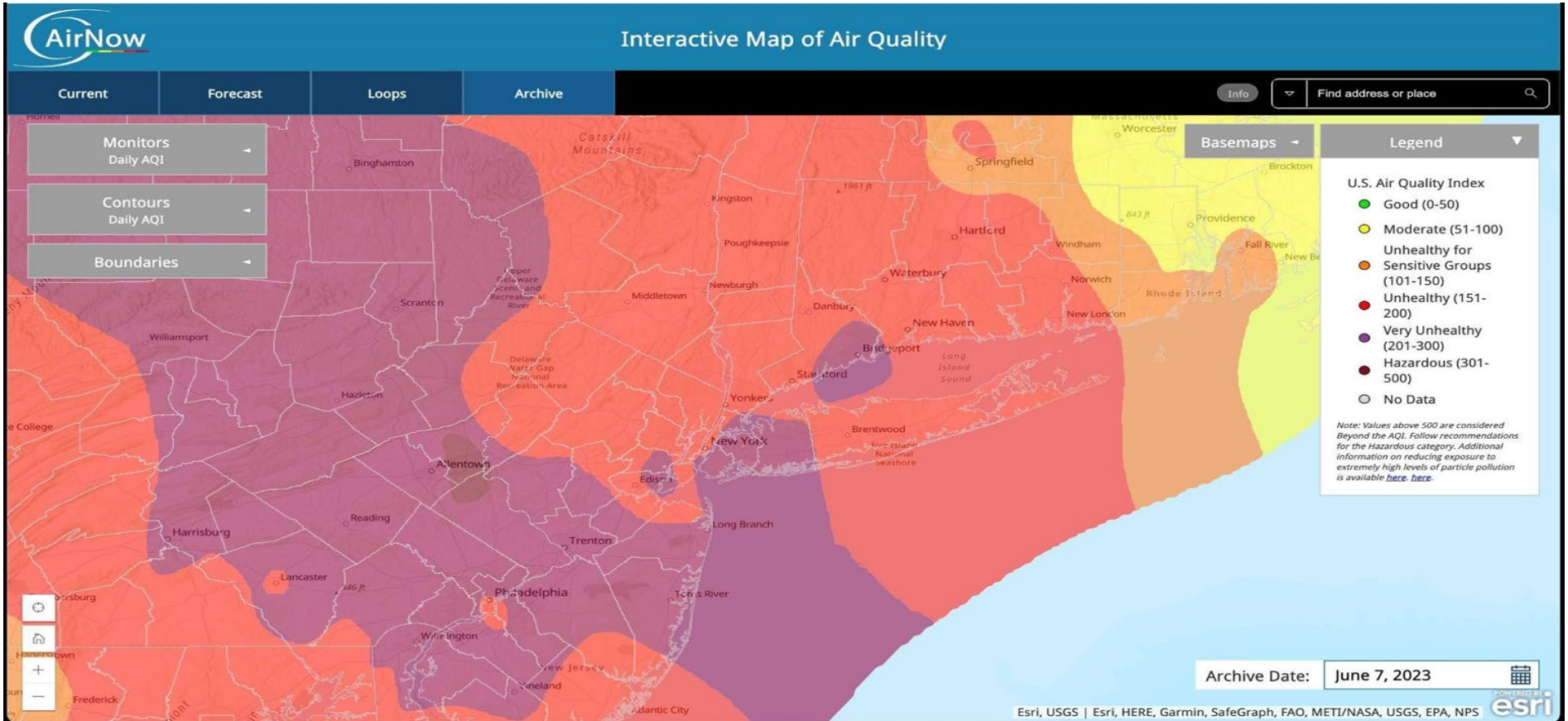
- HSSD (not included in the sPHENIX ASE) was disabled for sPHENIX last Wed. afternoon so that sPHENIX could continue to run without interruption. It was re-enabled the following day when smoke condition was improved.



sPHENIX Commissioning Progress

Cooling:

- A crack in the flow meter panel of TPC was found and fixed during the long IR access last Wed. A scheme was also devised to balance cooling power over the entire TPC and its (FEE) temperature has seemed to remain stable so far.

- MVTX had a cooling problem due to blockage in the filter. The filter was replaced Sunday night/Morning morning.
    - The MVTX experts went into the IR to turn on the valves yesterday.

sPHENIX Commissioning Progress (cont.)

Counter	Date	Time	Descriptioin	hours of staying at full current
1	6/2/2023	11:54	Quench Link dropped due to inner/outer coil dropping or PLL-loss check	48.7
2	6/5/2023	23:05	capacitor bank fuse blown	77.3
3	6/6/2023	9:26	Quench Link drop due to Neg_90_deg_offset_jnt	4.6
4	6/11/2023	9:58	Quench Link drop due to Neg_90_deg_offset_jnt	68

- Magnet tripped/fast-discharged at 09:58 Sunday morning (June 11) after running for ~68 hours continuously since 13:56 June 8. [It also ran almost 15 hours before Maintenance Day on Wed.]
- We have tried to clean up the quench-detection program, and get a little more cooling (though it turned out to be tiny 0.02 K).
- Since magnetic field is not critically needed at this moment, we leave the magnet ~150 A to see whether this mode can trigger quench-link/fast-discharge.

sPHENIX Commissioning Progress (cont.)

- We have set up ZDC triggers (in addition to MBD triggers) and its ADC readout.
- Background counters are now installed north and south of IP8 and all scalers are usable.
- We continue to work hard to improve calorimeter readout.

- MVTX took first collision data last Sat. (June 10) and now there is ongoing 100 Hz rate-leveled RHIC collisions: attempting TPC HV commissioning with beam and "field off" → all installed detectors have taken collision data.

- We got our BHSO approval to operate on May 18. We are 3½ weeks (26 days) into our commissioning plan.

12 week sPHENIX Commissioning Plan

- 2 weeks of stores with 6-28 bunches @ zero crossing angle (<2 kHz) for initial tune-up of timing and trigger.
  - The magnet doors will be closed and the magnet ramped at the earliest at one end of this period.

- 2 weeks of stores with 111 bunches @ zero crossing angle (1-5 kHz) for optimizing trigger, plus data analysis & diagnosis.
  - The trigger developed in the first two weeks will provide physics triggers for all other detectors

- 1 week of machine studies of optimizing crossing angle. **— this Thursday !**
  - The major goal of this period will be to demonstrate the narrower vertex distribution and reduced rates in the TPC allowed by the crossing angle. The evidence for this will come from the vertex distribution from the trigger and hit distribution in the TPC and the silicon detectors.

- 1 week of 111 bunches @ non-zero crossing angle for calorimeter timing/tune-up.
  - As the luminosity nears the design, the experiment will continue to collect data from as many of the sub-detectors as possible, and the radiation damage to the silicon photomultipliers will be carefully monitored.

- 4 weeks of 111 bunches @ non-zero crossing angle (1-5 kHz) for operating tracking detectors including TPC.
  - This running period is designed to collect data from all detectors which will asymptotically approach physics data at modest rate. Any detectors which are having problems taking data or keeping up with the rate will be debugged during this period.

- 2 week of 111 bunches @ non-zero crossing angle with increasing collision rates (15-20 kHz).
  - This period is a dry-run of operation for physics which will develop software and procedure for physics data taking, which immediately follows this period.