

AQRP Monthly Technical Report

PROJECT TITLE	Galveston Offshore Ozone Observations (GO3)	PROJECT #	20-004
PROJECT PARTICIPANTS	James Flynn (UH) Yuxuan Wang (UH) Paul Walter (St. Edward's University) Gary Morris (St. Edward's University)	DATE SUBMITTED	10/5/2020
REPORTING PERIOD	From: September 1, 2020 To: September 30, 2020	REPORT #	3

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 14th of the month following the reporting period shown above.

Detailed Accomplishments by Task for reporting period

- Had online meeting with AQRP, TCEQ and project team to discuss changes to deployment timeline and scope of work.
- Received reupholstered seat cushions and reinstalled them on the pontoon boat.
- Tested communication between navigation chart plotter and VHF communication radio to display commercial ship location and movement for pontoon boat safety.
- Secured indoor storage location for the UH pontoon boat to preserve the investment that has been made so that it can more easily be available for future research projects.
- UH team began taking online boater safety courses.
- Finished fabrication on package for Gulf of Mexico boat and delivered it to UH for programming and lab testing
- Worked with Larry Willis on liability issues for installing research equipment on his shrimp boat for Galveston Bay measurements
- Spoke with Larry Willis about delaying measurements into CY 2021 and confirmed he was still available and willing to work with us.
- Received CL-51 ceilometer for installation on Larry Willis's shrimp boat.

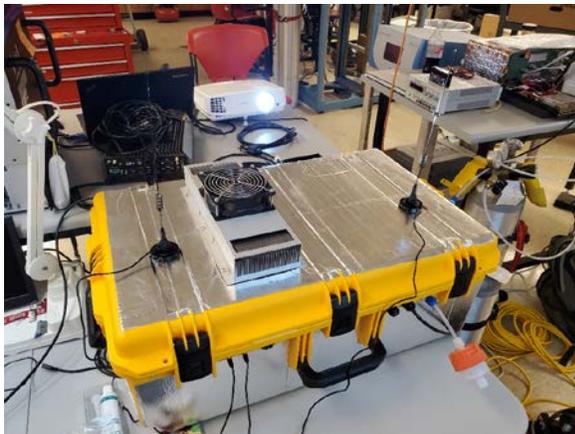


Figure 1. Offshore sampling package closed with cellular antennas on lid (left). Sampling package lid opened during testing at UH (right).

Preliminary Analysis

No data collected.

Data Collected

Lab testing of the first system showed expected performance. The ozone monitor calibrated with a sensitivity near 1 and the charcoal zero filter also worked well and was consistent with zero air challenges.

Identify Any Problems or Issues Encountered and Proposed Solutions or Adjustments

In the last report the deployment schedule was identified as a potential problem. During the meeting with the project team, AQRP, and TCEQ in September, Doug suggested we hold off deploying this calendar year and focus efforts on the spring and suggested we further explore the possibility of adding a photolytic NO₂ converter to the package to allow for estimates of NO₂ over the water in addition to O₃.

The second issue identified last month related to the liability waiver for Larry Willis. UH Office of Contracts and Grants shared a modified boat rental agreement as an example for his attorney to follow when requesting a liability waiver. All parties hope to have this resolved in the coming weeks.

The computer in the completed package experienced a couple of minor power issues. First, the 12V battery circuitry was unable to support the computer when taxed at full load. This led the computer to being moved to the main 24V power supply. This allowed for programming however once the cooling system was activated the computer would shutdown randomly. After troubleshooting it is suspected that the thermoelectric cooling system may be inducing transient power spikes in the system which are causing the computer to shut down. The interim solution to continue lab testing was to operate the computer from a separate power supply while blocking diodes are installed in the power system to prevent back feeding power spikes to other components. An alternate 12V or 24V battery system is being investigated to act as a UPS for the computer as initially intended.

Goals and Anticipated Issues for the Succeeding Reporting Period

- Continue discussion of time line and change in scope of work with AQRP and TCEQ
- Test first instrument package at UH Moody Tower.
- Test CL-51 ceilometer
- Complete preparations and testing of pontoon boat
- Coordinate new deployment schedule with Ryan Marine for Gulf of Mexico work.

Detailed Analysis of the Progress of the Task Order to Date

The project is moving forward quite well with respect to the Task Order issue date. With the request from AQRP and TCEQ to delay deployment into the 2021 O₃ season the timeline has shifted which will allow more time for preparation and coordination.

Do you have any publications related to this project currently under development? If so, please provide a working title, and the journals you plan to submit to.

Yes No

Do you have any publications related to this project currently under review by a journal? If so, what is the working title and the journal name? Have you sent a copy of the article to your AQRP Project Manager and your TCEQ Liaison?

Yes No

Do you have any bibliographic publications (ie: publications that cite the project) related to this project that have been published? If so, please list the reference information. List all items for the lifetime of the project.

Yes No

Do you have any presentations related to this project currently under development? If so, please provide working title, and the conference you plan to present it (this does not include presentations for the AQRP Workshop).

Yes No

Do you have any presentations related to this project that have been published? If so, please list reference information. List all items for the lifetime of the project.

Yes No

Have any personnel changes occurred that were not listed in the original proposal? If so, please include a detailed description of the personnel change(s) below.

Yes No

Are any delays expected in the progress of the research? If so, please include a detailed description of the potential delay below.

Yes No

The AQRP and TCEQ have requested the deployment to be delayed into CY2021.

Describe any possible concerns/issues (technical or non-technical) that AQRP should be made aware of.

Yes No

**Are you anticipating using all the available funds allocated to this project by the end date?
If not, why and approximately what is the amount to be returned?**

Yes No

Submitted to AQRP by
James Flynn