

## AQRP Monthly Technical Report

<b>PROJECT TITLE</b>	Galveston Offshore Ozone Observations (GO3)	<b>PROJECT #</b>	20-004
<b>PROJECT PARTICIPANTS</b>	James Flynn (UH) Yuxuan Wang (UH) Paul Walter (St. Edward's University) Gary Morris (St. Edward's University)	<b>DATE SUBMITTED</b>	1/8/2021
<b>REPORTING PERIOD</b>	<b>From:</b> December 1, 2020 <b>To:</b> December 31, 2020	<b>REPORT #</b>	6

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 14<sup>th</sup> of the month following the reporting period shown above.

### Detailed Accomplishments by Task for reporting period

- Worked with AQRP, TCEQ and project team to modify project to include NO<sub>2</sub> measurements.
- Ordered parts to test a computer power supply that will act as a UPS and shut down computer properly in the event of a power loss or interruption during transfer between ship and shore power.
- Discussed future testing of the omnidirectional antenna.

### Data Collected

No additional sampling data was collected during this period,.

### Preliminary Analysis

No additional analysis was performed

### Identify Any Problems or Issues Encountered and Proposed Solutions or Adjustments

No major problems were encountered during this period

### Goals and Anticipated Issues for the Succeeding Reporting Period

- Order three GSP as soon as amendment to Task Order has been executed.
- Begin building second small sampling system
- Continue testing CL-51 ceilometer at the UH Launch Trailer
- Testing of the omnidirectional antenna. The two questions the testing will address are (1) whether it picks up the signal just as well from all azimuthal directions or only half of them and (2) how it performs compared to our standard Yagi directional antenna that we typically use for telemetry with ozonesonde launches. If it performs well for all azimuthal directions and also compares reasonably well compared to the Yagi directional antenna during the ascent of a sonde throughout the troposphere, then we likely can reliably track the signal from a moving (and turning) pontoon boat. The omnidirectional antenna could remove the need to constantly rotating a directional antenna as the boat moves.

- Carry out a test where a radiosonde will be run from the rooftop of a building and then drive to another location with the omnidirectional antenna setup. Once far enough away to have a relatively weak signal, rotate the omnidirectional antenna and observe performance.
- Do a test launch of a radiosonde while having two telemetry systems measuring the signal with one setup using the omnidirectional antenna and the other using the Yagi directional antenna. During the flight rotate the omnidirectional antenna to observe whether the signal is affected.

After these tests are concluded, if the performance of the omnidirectional antenna merits its being used on the pontoon boat, we will look further into how it will be mounted on the pontoon boat

### **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 O<sub>3</sub> 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**

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Submitted to AQRP by

James Flynn