WEEKLY REPORT FOR WEEK 22
(JANUARY 2, 2019 – JANUARY 4, 2019)

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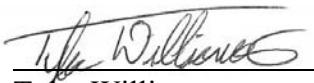

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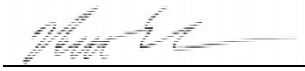

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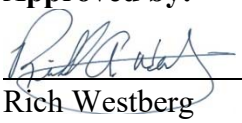

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Rich Westberg

Record of Revision

Revision	Date	Pages/Sections Changed	Brief Description
0	08/2019	All	Original Issue.

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Acronyms

ML	Mobile Laboratory
PST	Pacific Standard Time
PTR-MS	Proton Transfer Reaction – Mass Spectrometer
SST	Solid-State Relay

1.0 JANUARY 2, 2019 – MOBILE LABORATORY MODIFICATIONS AND TESTING

All times reported in this document are recorded in Pacific Standard Time (PST).

1.1 Summary

On January 2, 2019, the Mobile Laboratory (ML) operators arrived at 11:15, after attending an ML status meeting. Operators rerouted the sample system lines to the newly installed rack inside the ML. The two pumps that were previously located outside were moved inside the ML to increase the pump's longevity. The operators continued the previous week's work of installing these pumps inside the ML. The new temperature controller box, also constructed during the previous week, was wired beginning at 11:15. Operators then began the process of removing the previous heated line and installing the new 16-foot heated line.

2.0 JANUARY 3, 2019 – MOBILE LABORATORY MODIFICATIONS AND TESTING

2.1 Summary

On January 3, 2019 the ML personnel arrived at 10:00 and continued installing the tubing that connects to the sampling system. Operators also continued work on the Proton Transfer Reaction – Mass Spectrometer (PTR-MS) MODBUS®[1] connection to DAQFactory®[2]. The MODBUS software enables the three main instruments, Picarro ammonia analyzer, LI-COR®[3] carbon dioxide monitor, and the PTR-MS, to operate through the DAQFactory software. This would allow ML technicians to use one software, DAQFactory, to display data from all three instruments. The wiring of the temperature controller box was completed, and operators spent the remainder of the day wrapping the valves and tubing that attach to the instruments with thin heated wire that contains a mesh outer layer.

[1] MODBUS is a registered trademark of Schneider Electric USA, Inc., Palatine, Illinois.
[2] DAQFactory is a registered trademark of AzeoTech, Inc., Ashland, Oregon.
[3] LI-COR is a registered trademark of LI-COR, Inc., Lincoln, Nebraska.

3.0 JANUARY 4, 2019 – MOBILE LABORATORY MODIFICATIONS AND TESTING

3.1 Summary

On January 4, 2019, ML operators arrived at 06:00 and completed the wrapping of the heated line and sample system tubing. The Solid-State Relay (SSR) and power cord were also wrapped for protection. The SSR is an electronic switching device that turns the heat on and off in the heated line as needed. The temperature controllers send a pulsating direct current to the SSR to turn the power on or off, based on temperature reading. At 10:45, network cables were installed. Operators continued work on the MODBUS connection to the DAQFactory software. Communication errors between the Picarro and DAQFactory software prompted a restart of the Picarro PC. Picarro information was not being properly displayed in DAQFactory. During the Picarro restart, network cables were relocated to assist with the connection between the two software programs.