

COVID-19 Vehicle Cleaning and Disinfection Plan

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Document Purpose

This document outlines the steps that will be undertaken to ensure the safety of UWRL staff and related field team members operating University, UWRL, or other project vehicles during the COVID-19 pandemic. This plan has been developed following USU policies (<https://www.usu.edu/covid-19/>, <https://research.usu.edu/covid19/>) and guidelines put forth via the Centers for Disease Control and Prevention (CDC; <https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/disinfecting-transport-vehicles.html>) as follows:

- Each vehicle will be cleaned and disinfected before it can be check out by another person.
- UWRL Business Office Staff will clean each vehicle after it has been checked back in to the UWRL and will leave a completed form on the driver's seat in the vehicle to designate disinfection has occurred (see end of document for form).
- If surfaces are visibly dirty, prior to disinfection, those surfaces should be cleaned with water and mild detergent as appropriate for the surface being cleaned.
- Two disinfection protocols have been approved: ozone disinfection and/or wet disinfection.
- While disinfecting the vehicles, employees must wear a mask, latex or nitrile gloves, and washable eyewear for their personal protection (see Part 4 below).

Ozone (O₃) Disinfection

Gas-phase ozone (O₃) can be used as an effective disinfection for the inactivation of surface viruses within enclosed systems (Tseng and Li, 2008; and others). Ozone disinfection is a function of concentration and exposure time, and the following guidelines are based on Tseng and Li (2008). UWRL/EQL has an A2Z Ozone, Inc. Model MP-3000 O₃ generator which can be used for vehicle disinfection and checked out from the Business Office.

Ensure the silica gel in the drying tube is blue in color

- If the silica gel is mostly pink, it needs to be replaced and regenerated; contact Joan McLean, Joshua Horton, Dr. Dupont, or Dr. Martin for help with silica gel replacement.

To disinfect a vehicle:

- 1) Close vehicle windows and doors during disinfection
 - It may be necessary to have one window slightly open for access to a power outlet
- 2) Place O₃ generator in a centralized location in the vehicle -- make sure the O₃ exhaust tube is unblocked, ideally pointing up
- 3) Plug the unit into a 120v AC circuit
- 4) Turn the TIMER dial to 15 minutes and the OZONE CONCENTRATION dial to 40
 - This is calculated to achieve a cab-wide O₃ concentration of ≥10 ppm and achieve a virus destruction of ≥99% based on 50" x 60" x 70" cab (Dodge RAM 1500), with 200 ppm O₃ flowrate of 14 Lpm (specified generator settings)
- 5) Turn the COMPRESSOR to the ON position
- 6) Turn the OZONE switch to the ON position
- 7) Close any open vehicle doors and windows and let the system operate until the timer shuts off
- 8) Open the vehicle doors/windows and allow the vehicle to vent for at least 10-20 minutes or until the smell of O₃ (lightning/rain "fresh") is no longer noticeable

WARNING: HIGH O₃ CONCENTRATIONS ARE A HUMAN HEALTH HAZARD. It is important that no individuals remain in the vehicle while the O₃ generator is operating.

WARNING: INTERIOR O₃ DISINFECTION DOES NOT DEACTIVATE VIRUS ON EXTERNAL SURFACES. All external touchpoints and surfaces should still be wet wiped, as described below.

Wet Disinfection/Cleaning Procedures

Use these wet disinfection/cleaning procedures in the case ozone disinfection is not possible.

The guidelines listed below are summarized from the CDC protocols for non-emergency transport vehicles:

Ensure adequate vehicle ventilation – Vehicle doors and windows should remain open during disinfection to ensure adequate ventilation.

Focus on vehicle surfaces and touchpoints – Disinfecting efforts should focus on surfaces and touchpoints within the vehicle. These include, but are not limited to hard seats, arm rests, door handles, seat belt buckles, mirrors, light and air controls, inside door and window controls, and other grab handles.

- Wipe or spray disinfectants on surfaces then let them dry naturally to allow sufficient contact time for virus inactivation
 - **ELECTRONIC SURFACES** – Use disinfectant spray with ≥70% alcohol solution or another manufacturer-approved product on electronic surfaces (touchscreens, tablets, etc.).

- **VEHICLE SURFACES** – To avoid surface discoloration or deterioration, disinfectants to be used should be bleach and hydrogen peroxide free, rather based on quaternary ammonium or citric acid

Recommended disinfectants include many Lysol products, Fantastik All-Purpose Cleaner, Nu-Gen Disinfectant Wipes, Panther Disinfectant Towelette, ClearCide Wipes, or a water solution with $\geq 70\%$ alcohol, although this should be avoided for leather as it can lead to excessive drying.

Other suitable disinfectants can be found on EPA's "Registered Antimicrobial Products for Use Against Novel Coronavirus SAR-CoV-2" (<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>); just make sure they are not bleach or hydrogen peroxide based

PPE Requirements during Disinfection/Cleaning

While disinfecting/cleaning a vehicle, individuals must wear the following:

- A protective mask (N95, cloth, etc.). *Clean or dispose of the mask following use*
- Disposable latex or nitrile gloves
- Washable eye protection

The EQL will provide gloves and eye protection to be kept in reception for use in vehicle disinfection.

UWRL Vehicle Disinfection Form

TRAVELER REMINDERS:

This completed and signed form verifies that disinfection procedures have been completed for this vehicle. When you take occupancy of a vehicle to use it, please remember the following:

- If the mileage is more than indicated below, this form may no longer be current.
- Please remove and recycle this form at the beginning of your trip.
- Face coverings are required in USU vehicles when riding with others.
- Consider using separate vehicles for longer trips, if at all possible. (UWRL funding can help with expenses incurred through use of multiple vehicles by approval of the director).

Additional information related to USU travel guidelines are available at
<https://www.usu.edu/covid-19/operations/travel>

UWRL BUSINESS SERVICES OFFICE DISINFECTION VERIFICATION:

Name: _____ Date: _____

Vehicle Mileage: _____

I certify that this vehicle was disinfected after use by:

- Ozone disinfection + wipe down of exterior surfaces (door handles, rear lift gate handle, gas cap and cover, etc.) with disinfectant
- Wipe down of surfaces with disinfectant

Signed: _____