

# Personal Protective Equipment COVID-19

The Department of Safety and Professional Services  
Solid Waste & Wastewater Workers Focused  
March 25, 2020

## Objectives



Train the Trainer –use the Notes view to see the included commentary



COVID-19 as of March 10, 2020  
CDC Guidance for Wastewater  
Workers Recommendations



Provide information on the  
selection and use of PPE

This training was developed to provide Personal Protective Equipment (PPE) information and resources for wastewater workers.

## Resources

Need to check daily for updates

### Water Transmission and COVID-19

- Drinking Water, Recreational Water and Wastewater: What You Need to Know
- <https://www.cdc.gov/coronavirus/2019-ncov/php/water.html>

### OSHA Safety & Health Topics: COVID-19

- Solid Waste and Wastewater Management Workers and Employers
- <https://www.osha.gov/SLTC/covid-19/controlprevention.html#solidwaste>

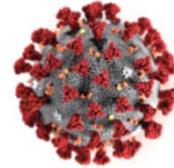
### Wisconsin DHS COVID-19: Business & Employers

- <https://www.dhs.wisconsin.gov/covid-19/employers.htm>

Check the Wisconsin Department of Health Services website for updates and resources.

## Wastewater Guidance

- Risk of transmission of COVID-19 from feces of an infected person is expected to be **low** based on data from previous outbreaks of related coronavairuses.
- **No** reports of fecal-oral transmission of COVID-19 to date.



## Common Exposure Routes for Wastewater Workers

### What is the most common cause of infection? *poor personal hygiene*

Three basic routes that may lead to infection:

- ingestion through splashes, contaminated food, or cigarettes
- inhalation of infectious agents or aerosols
- Infection due to an unprotected cut or abrasion
- **Ingestion** generally the major route of wastewater worker infection.
  - Hand-to-mouth habits
- **At highest risk:** workers who eat or smoke without washing their hands
- Personal hygiene practices including frequent washing of the hands will minimize these potential exposures

[http://www.marianasoperators.org/uploads/1/1/3/5/11353122/biological\\_safety\\_&\\_ppe\\_for\\_wastewater\\_workers\\_-\\_no\\_attachments.pdf](http://www.marianasoperators.org/uploads/1/1/3/5/11353122/biological_safety_&_ppe_for_wastewater_workers_-_no_attachments.pdf)

Ingestion can also occur from splashes to your face, wear a face shield when required

## Wastewater Safe Practices



Follow routine practices to prevent exposure to wastewater

Engineering & administrative controls  
Safe work practices  
PPE



No additional COVID-19 specific protections are recommended



Current disinfection methods are expected to be sufficient, such as:

oxidation with hypochlorite (i.e., chlorine bleach)  
peracetic acid  
ultraviolet irradiation.

Remember to check reputable sources daily for updates

## Basic Hygiene Practices

- Wash hands with soap and water
  - immediately after handling waste
  - *before* eating or drinking
  - *before* and *after* using the toilet
- Avoid touching face, mouth, eyes, nose, or open sores and cuts
- Before eating, removed soiled work clothes and eat in designated areas away from human waste and sewage-handling activities
- Do **not** smoke or chew tobacco or gum while handling human waste or sewage
- Keep open sores, cuts, and wounds covered with clean, dry bandages
- Remove rubber boots and work clothes
- Shower and change into clean clothes before leaving worksite
- Clean contaminated work clothing daily with 0.05% chlorine solution (1 part household bleach to 100 parts water)

Alternatively, use an industrial laundry service for your workplace clothes

## Personal Protective Equipment (PPE)

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**Goggles:** to protect eyes from splashes of human waste or sewage.

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**Protective face mask or splash-proof face shield:** to protect nose and mouth and face from splashes of human waste or sewage.

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**Liquid-repellent coveralls/Apron:** to keep human waste or sewage off clothing.

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**Waterproof gloves:** to prevent exposure to human waste or sewage.

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**Rubber boots:** to prevent exposure to human waste or sewage.

This slide shows the purpose of each kind of personal protective equipment.

## Factors Influencing PPE Selection

- Type of exposure anticipated
  - Splash/spray versus touch
  - Category of precaution, low risk versus high risk
- Durability and appropriateness of the PPE for the task
- Fit, will PPE create a different risk

## Gloves

- Limited/no protection when heavily soiled, torn or have holes
- Avoid “touch contamination”
  - Don’t touch your face or adjust PPE with contaminated gloves
  - Don’t touch other surfaces except as necessary
- Change Gloves
  - During use if torn and when heavily soiled
- Clean/disinfect per manufacturers instructions- wear a disposable glove under reusable gloves
- Never re-use disposable gloves even if you think that they are clean

## Coveralls

- Used to protect skin and/or clothing



Check the permeability of your coveralls and understand the protection they can provide, i.e. cloth coveralls will not protect you from liquids

## Eye and Face Protection

### Eye



- Goggles, should fit snugly over and around eyes
  - Used for liquid splashes and/or particles
- Safety glasses, used for protection against particles



### Face

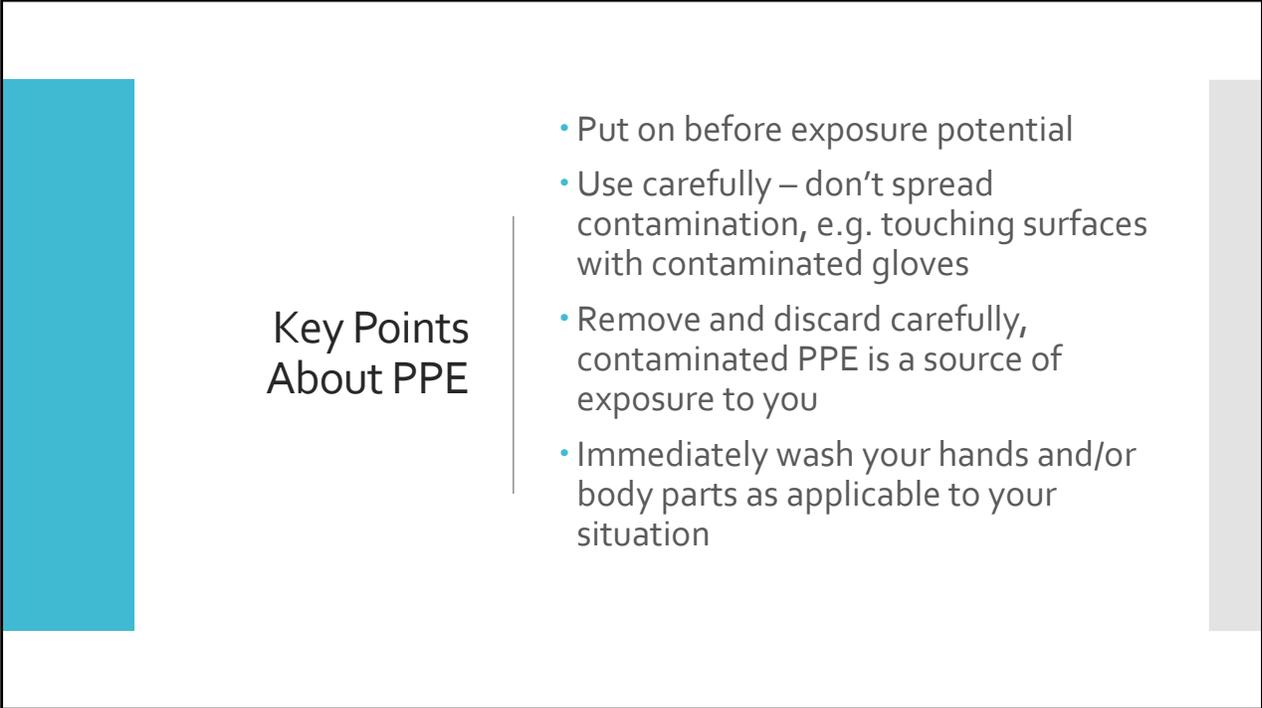


- Face shields protect face, noise, mouth and eyes
- Should cover forehead, extend below chin and wrap around side of face
- Goggles or safety glasses need to be worn under a face shield

Read and understand the manufacturer's use and limitations instructions



## How to safely put on, use and remove PPE



## Key Points About PPE

- Put on before exposure potential
- Use carefully – don't spread contamination, e.g. touching surfaces with contaminated gloves
- Remove and discard carefully, contaminated PPE is a source of exposure to you
- Immediately wash your hands and/or body parts as applicable to your situation

Kindly and effectively provide feedback to your co-workers if you notice that they are not properly wearing their PPE.



Example  
Sequence for  
Putting on PPE

Coveralls

Goggles

Face shield

Gloves

While PPE provides protection, you need to be careful when selecting PPE to ensure that the PPE doesn't create a greater hazard than the one you are protecting against.

As previously mentioned, check manufacturer's instructions and warnings to ensure you know the protection limitations of the PPE you have selected.

## Putting On Eye and Face Protection

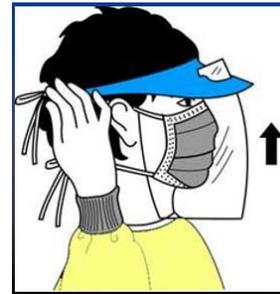
### Eye

- Position goggles or glasses over eyes and secure to your head using earpieces or headband

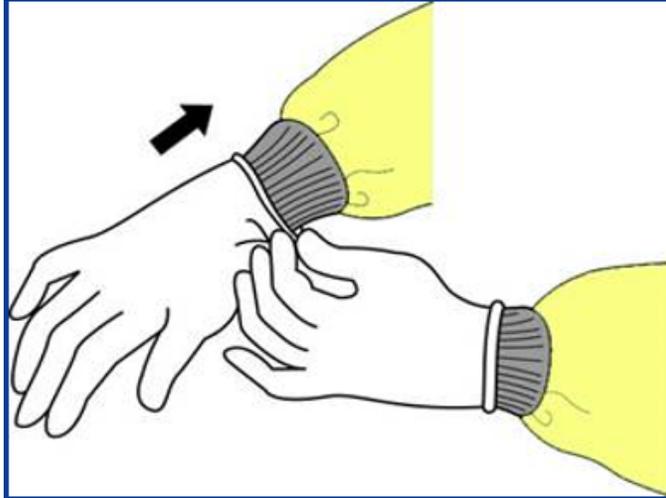


### Face Shield

- Position face shield over face and secure on brow with headband
- Adjust to fit comfortably



It's important to make sure that your eye and face protection is put on properly and comfortably so that you are not adjusting it with your contaminated hands or that it falls off during use.



## Putting on Gloves

- Put on gloves last
- Select correct type and size
- Insert hands into gloves
- Extend gloves over arm protection cuff if present or under coverall arm sleeve

Gloves that are too big or small have the potential to decrease protection by breaking, tearing or falling off

## Contaminated and Clean Areas of PPE

### Contaminated – Outside Front

- Areas of PPE that have or are likely to have been in contact with body sites, materials or environmental surfaces where the infectious organism may reside

### Clean - Inside

- Areas of PPE that are not likely to have been in contact with the infectious organism

It is safest to treat all your used PPE as if it were contaminated. Consider having water soluble laundry bags on site for workers to immediately place their grossly contaminated clothing into. These water-soluble bags can then be placed directly into the washer, without having to remove the clothing from the bag.

Sequence for  
Removing PPE

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Coveralls

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Gloves

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Face shield, goggles, safety  
glasses

This specific sequence is important to avoid contaminating yourself.



Outside of area



Ensure that hand washing facilities are available at point of removal

## Where to Remove PPE

Frequent hand washing and/or use of hand sanitizer can result in dry or cracked hands. Make sure to use hand lotion based on your skin needs to avoid dry or cracked hands. Many people find that limited ingredient and non scented products work best for them. Some examples are No-Crack or Udder Balm and other products that are focused on occupations that required frequent hand washing or harsh conditions.

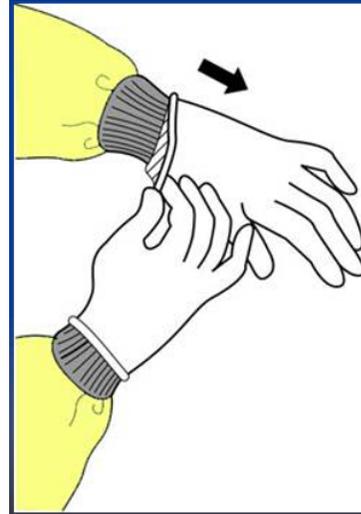
## Order of Removing PPE

1. Coveralls/Apron
2. Gloves  
**Wash Hands**
3. Face Shield/Eye Protection  
**Wash Hands**

The order is important to reduce potential contamination

## Removing Gloves

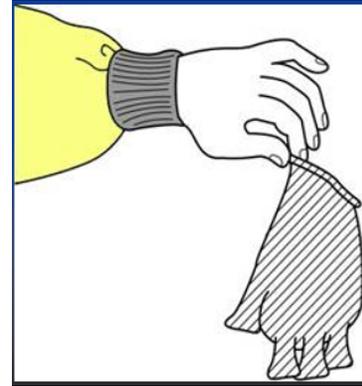
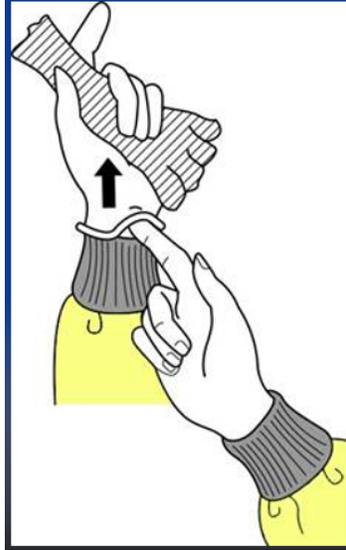
- Grasp outside edge near wrist
- Peel away from hand, turning glove inside-out
- Hold in opposite gloved hand



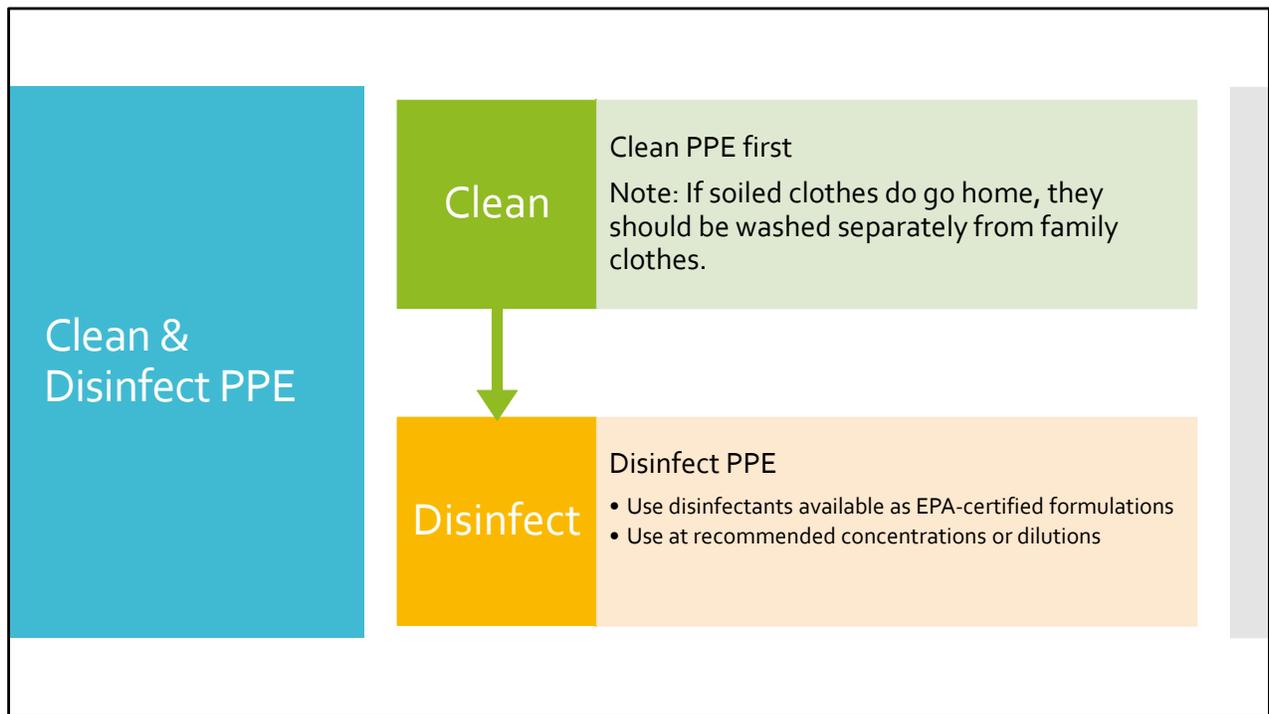
It takes a bit of practice to do this correctly. To save resources you can practice with reusable gloves such as dishwashing gloves to master the process

## Removing Gloves, cont.

Slide ungloved finger under the wrist of the remaining glove  
Peel off from inside, creating a bag for both gloves  
Discard gloves



Be careful to only touch the inside of the remaining glove



The manufacturer's recommend concentration(s) as provided on the label, are the most effective concentrations; more is not always better when it comes to disinfection concentrations

## Resources

OSHA Safety & Health Topics/COVID-19, Solid and Wastewater Management Workers and Employers

- <https://www.osha.gov/SLTC/covid-19/controlprevention.html#solidwaste>

Water Transmission and COVID-19

- <https://www.cdc.gov/coronavirus/2019-ncov/php/water.html>

Memos Issued by Wisconsin Department of Health Services

- <https://www.dhs.wisconsin.gov/covid-19/providers.htm>

Guidance for Reducing Health Risks to Workers Handling Human Waste or Sewage

- [https://www.cdc.gov/healthywater/global/sanitation/workers\\_handlingwaste.html](https://www.cdc.gov/healthywater/global/sanitation/workers_handlingwaste.html)

The listed resources are from recognized sources. Be cautious of resources that you use, there is a lot of misinformation out there.

The first three resources should be checked daily for updates.

# Questions?

[DSPSSBHealthandSafetyTech@wi.gov](mailto:DSPSSBHealthandSafetyTech@wi.gov)

Or contact your District Occupational Safety and Health Inspector:

[Public Sector District Safety Inspectors](#)

