

PFAS Solutions

Republic Services offers innovative technologies and expertise to safely and compliantly manage per- and polyfluoroalkyl substances (PFAS) waste.



REPUBLIC[®]
SERVICES

Sustainability in Action

PFAS Solutions

Republic Services is a leader in environmental services. Through the acquisition of US Ecology, ACV Enviro and ECOFLO, Republic Services can now offer comprehensive Environmental Solutions for all types of waste, including PFAS.

Our solutions protect human health and the environment from PFAS contaminants. We work closely with federal and state regulators to assess and comply with the evolving regulatory framework surrounding PFAS management.

Accepted Waste Streams

- Aqueous Film Forming Foam (AFFF) and fire-related debris
- Contaminated or impacted soil, sludge and biosolids
- Liquid and liquid-phase waste
- Wastewater, leachate, filter cake

Value of Our PFAS Solutions

- Cost-effective
- Safe and compliant with evolving regulatory framework
- End the mobility cycle
- Unmatched capacity and capabilities
- Professionally trained and experienced team members
- State-of-the-art equipment
- Customized solutions for any project size or complexity
- Turnkey services, including industry-leading recycling, treatment and disposal



LANDFILL
DISPOSAL



INJECTION
WELL
DISPOSAL



THERMAL
TREATMENT



INDUSTRIAL
SERVICES
FOR AFFF



REMEDICATION



Landfill Disposal Solutions

RCRA Subtitle C and D Landfills

Through a nationwide network of RCRA Subtitle C and D landfills we provide secure PFAS disposal options for commercial and government entities, including refineries, chemical production facilities, manufacturers and utilities.

Our Landfills

Belleville Facility — Michigan

Robstown Facility — Texas

- Part B permitted treatment facility and Subtitle C, RCRA/TSCA landfill
- Fully compliant with RCRA Subpart CC emissions standards
- Manages nearly all federal and state waste codes

Our Arid-Climate Landfills

Beatty Facility — Nevada

Grand View Facility — Idaho

- Part B, RCRA/TSCA facilities are permitted for stabilization and responsible disposal of hazardous waste
- Accept solids, liquids and AFFF
- Fire extinguishers are de-pressurized and dismantled followed by the secure disposal of all materials
- State-of-the-art landfill cells feature double composite liner systems, leachate collection, leak-detection systems and treatment

SAFETY AND COMPLIANCE

- EPA permitted and regulated landfill designs
- Extensive leak, groundwater and air monitoring systems
- Specifically designed for secure long-term disposal and protection from further environmental impact

BENEFITS OF ARID CLIMATE SUBTITLE C LANDFILLS

- RCRA Subtitle C landfills in remote, arid climates provide secure disposal with zero discharge offsite
- Superior geological conditions, deep groundwater and massive clay deposits
- Low population density and limited growth
- Stringent facility designs complement existing natural protections
- High net pan evaporation rates
- Leachate collection system and treatment in place



Injection Well Disposal Solutions

Class I & II Injection Wells

Disposal of hazardous and non-hazardous waste into deep, confined rock formations. Injection wells offer safe, compliant and cost-effective wastewater disposal solutions.

Accepted PFAS Liquid Waste

- Landfill leachate
- AFFF
- End-of-life products, like cleaning solvents
- Process water residual from manufacturing facilities

Safety and Compliance

- Waste streams stored until injected
- Waste sampled and analyzed to ensure injection compatibility
- Over 4,500 feet deep with approved Class I no-migration petitions
- Liquids with high solids content handled with filter press system
- Annual Mechanical Integrity Testing (MIT)

Benefits of Injection Wells

- Simple and safe solution
- Material fully encapsulated eliminating further environmental impact
- Cost-effective
- Adheres to EPA guidance for PFAS-contaminated liquid waste

Our Injection Wells

Winnie Facility — Texas

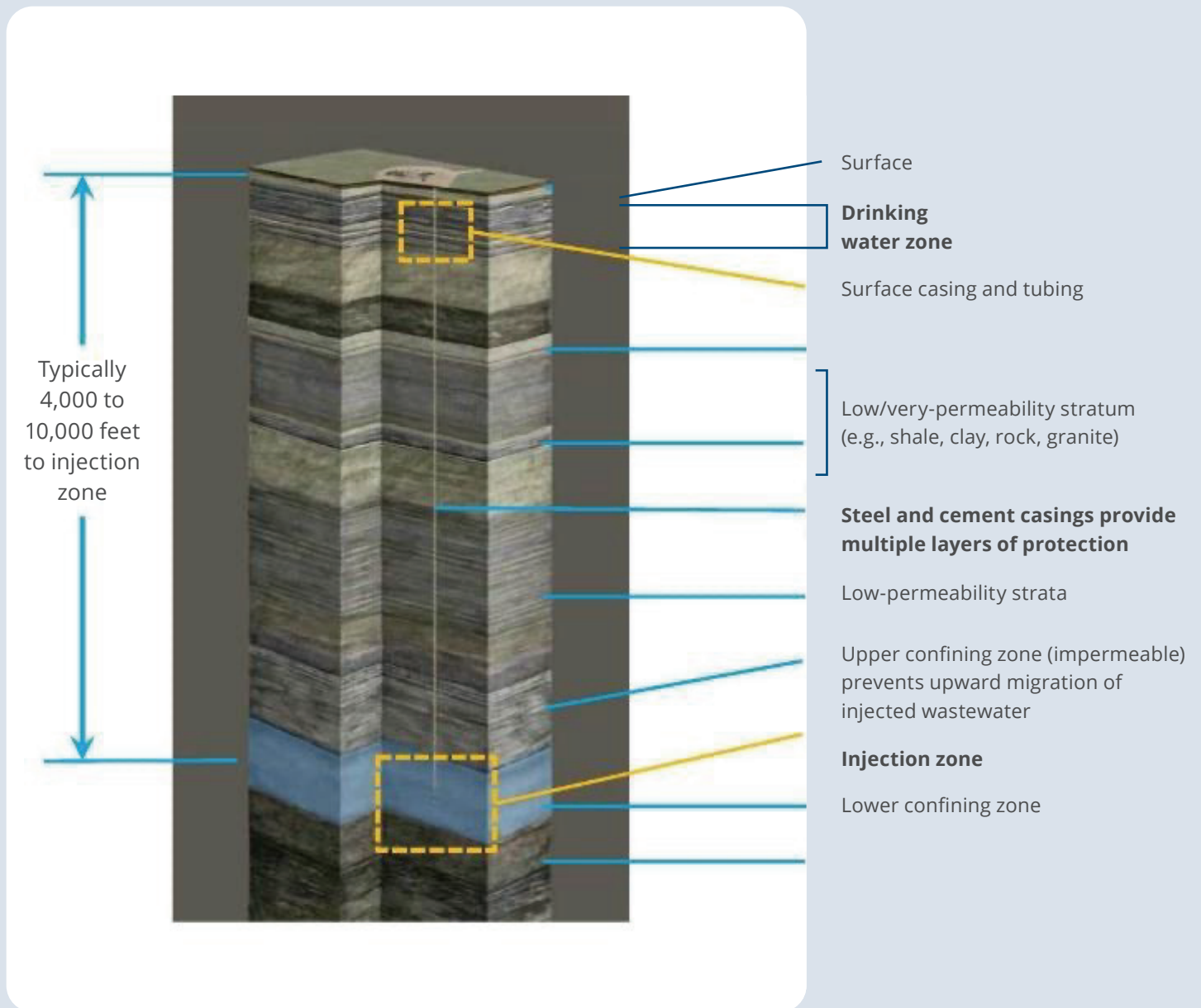
Detroit Industrial Well — Michigan

- Permitted for all Class I and Class II non-hazardous industrial waste
- Multiple steel and cement barriers and constant monitoring prevents leakage
- Safe, cost-effective alternative to traditional wastewater treatment options
- Accept hazardous wastewater as bulk waste, tankers, small containers and totes by road or rail



INJECTION WELL CONSTRUCTION

MULTIPLE LAYERS OF ROCK AND SHALE FORM AN IMPERMEABLE BARRIER THAT PREVENTS MIGRATION OF INJECTED FLUIDS.





Thermal Treatment Solutions

In Alaska, our compliant thermal treatment of PFAS-contaminated soils and sediments creates a clean and recycled product.

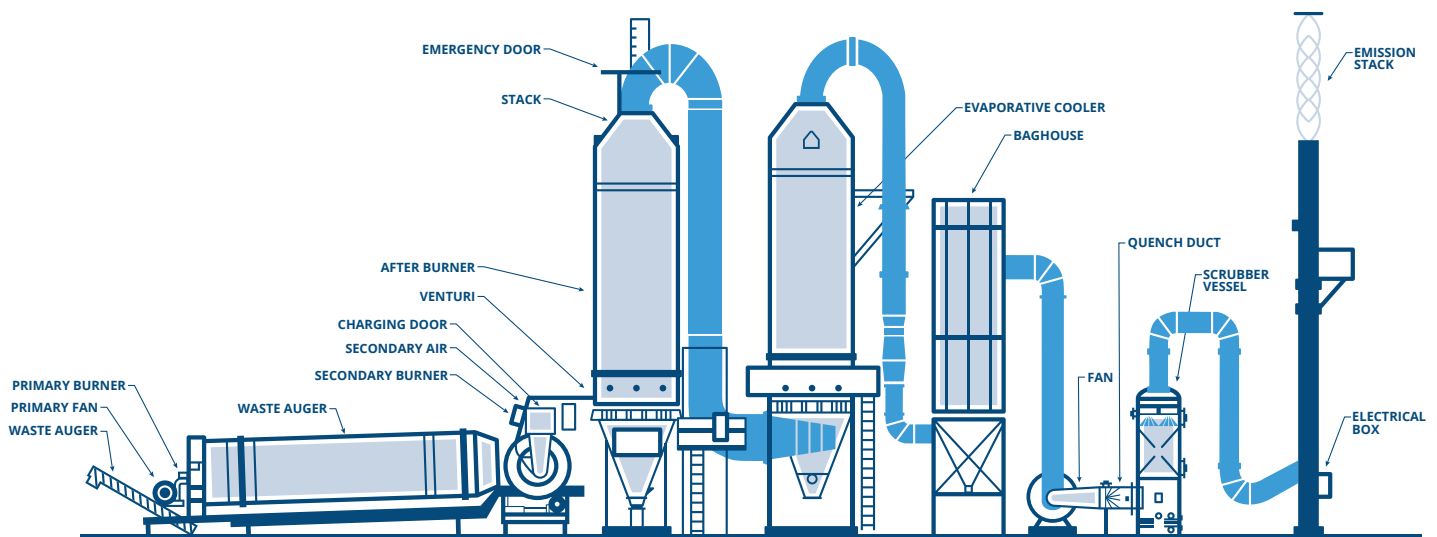
The Thermal Treatment Process

1. Ensure materials are non-RCRA or RCRA exempt
2. Inject contaminated soil into a kiln
3. Heat the soil to 1200-1500°F
4. Draw gas vapors and particulates into secondary combustion chamber to destroy PFAS compounds with 1800-2000°F temperatures
5. In the cooling tower, spray gases and particulates with water to cool to 350°F
6. Cool exhaust gases in quench duct before they enter scrubber
7. Expose gases to caustic solution
8. Exhaust gases through a stack on top of scrubber

OUR THERMAL FACILITIES

MOOSE CREEK FACILITY — ALASKA

- High temperature thermal oxidizer
- Remediates any level of hydrocarbon contamination
- Superior cleanup with wet scrubber
- Assures air quality is 5x cleaner than stringent state regulations





Industrial Services for AFFF

Our Industrial Services professionals have the latest equipment and training to safely and efficiently decommission large-scale AFFF deluge hangar fire suppression systems and manage handheld fire extinguishers.

Capabilities:

- Evacuate AFFF concentrate from fire suppression system tanks
- Dismantle tanks, hose reels, piping and valve removal
- Remove AFFF bladders
- Transport and dispose of AFFF and rinse waters in drums, totes or bulk tankers
- Transport LTL for small quantities
- Containerize and transport debris and piping in roll offs
- 24/7 Emergency Response



Remediation

We work with government, engineering and consulting firms nationwide to provide soil remediation and environmental cleanup services that remove and dispose of PFAS-contaminated soil, water, sediment and debris.

Capabilities:

- Close biosolid impoundments
- Dewater and remove sediment from stormwater ponds
- Excavate and restore wetlands
- Decontaminate facilities
- Excavate and restore fire training areas
- Services at airports & USAF bases

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RepublicServices.com/ES to learn
how we can help you reduce
waste and achieve compliance.

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