

Carleton Farms Deepwell

Sumpter Township Planning Board
September 28, 2021



36K

EMPLOYEES

5M

AVERAGE. PICKUPS PER DAY

16K

TRUCKS

One of the largest fleets in the U.S.

20%

OF FLEET POWERED
BY NATURAL GAS

340

HAULING FACILITIES

75

LANDFILL GAS &
RENEWABLE ENERGY
PROJECTS

79

RECYCLING CENTERS

189

ACTIVE, MODERN-DAY
LANDFILLS

41

STATES

14

INJECTION
WELLS

212

TRANSFER STATIONS

99%+

SERVICE
RELIABILITY RATE

75%

REPUBLIC DRIVERS HAVE
WON 75% OF THE
INDUSTRY'S DRIVER OF THE
YEAR AWARDS SINCE 2009

2,400+

MUNICIPAL
CUSTOMERS

130

CLOSED LANDFILLS
MANAGED

1st

IN INDUSTRY TO SET
A SCIENCE-BASED,
GREENHOUSE GAS
EMISSIONS TARGET

39%

BETTER SAFETY
PERFORMANCE THAN THE
INDUSTRY AVERAGE

Based on OSHA recordable rates

AWARDS AND RECOGNITION





ABOUT Carleton Farms Landfill

- ✓ 664 acres
- ✓ 30 employees
- ✓ 20+ years in the community
- ✓ \$4.6 million returned to local governments in host fees in last 12 months
- ✓ 57 percent of that directly to Sumpter Township

Community Impact

30

full time
employees

20+

years in local
community

\$450K

in host and good
neighbor agreements

COMMUNITY PARTNERSHIPS WITH THE FOLLOWING ORGANIZATIONS

Sumpter Township Country Fest

Sumpter Parks and Recreation

Why a Deepwell at Carleton Farms?

- ✓ Regulated by the U.S. EPA
- ✓ Safe, environmentally proven technology
- ✓ 22 deepwells already safely operating in Michigan
- ✓ 800+ permitted, active Class I deepwells operating nationwide
- ✓ Reduces carbon emissions
- ✓ Constant monitoring and safety control



Fewer semi trucks onsite and on local roads

30,417 gallons of diesel fuel eliminated annually

341 tons of CO2 eliminated annually



What is an Industrial Well?

Class I wells allow for the injection of leachate far below the lowermost groundwater drinking zone.



Layered concrete and steel barriers

DRINKING WATER AQUIFER

Barriers of steel and cement isolate drinking water aquifers

Pressurized well seal fluid is monitored continuously

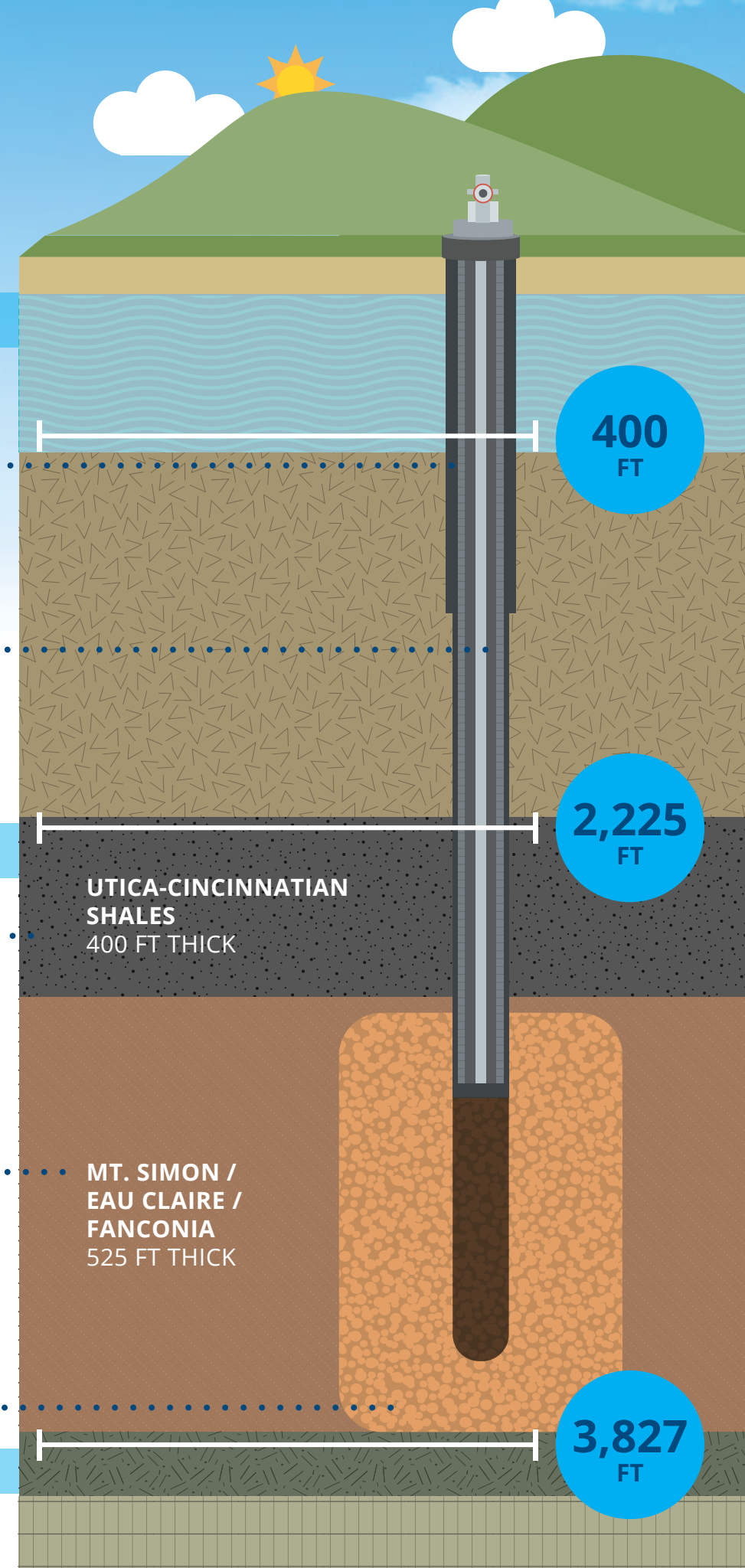
UPPER CONFINING ZONE

Injection zone capped by 400 feet of a low permeability shale formation to confine all wastewater

Mt. Simon extends under Michigan, Ohio, Illinois and Indiana, with over 50 deep wells in operation

Liquids are permanently contained, like natural oil and gas deposits

LOWER CONFINING ZONE





US EPA & State Regulations

- ▶ Siting
- ▶ Construction
- ▶ Operation, monitoring, inspection and testing
- ▶ Record keeping and reporting
- ▶ Closure

WHAT THE EXPERTS ARE SAYING

SAFETY

“EPA and other scientific experts have concluded that these liquid wastes are “removed from the environment” — isolated from the biosphere thousands of feet below the earth’s surface, where they will remain confined for millions of years.” ^a

BENEFITS

EPA declared that underground injection “reduces human exposure to organic and inorganic chemicals and heavy metals by removing them from the environment.” ^a

GROUNDWATER PROTECTIONS

“Because these wells inject waste below the deepest USDW, there is little chance of any negative effects on potentially usable groundwater.” ^b

“EPA has taken a strong protective stand to assure that USDWs are not endangered in the short-term ... or the long term ...” ^d

MINIMIZING RISK

“...a typical Class I non-hazardous well affords the public and the environment an extremely low level of risk” ^c



For More Information

CarletonFarmsDeepwell.com

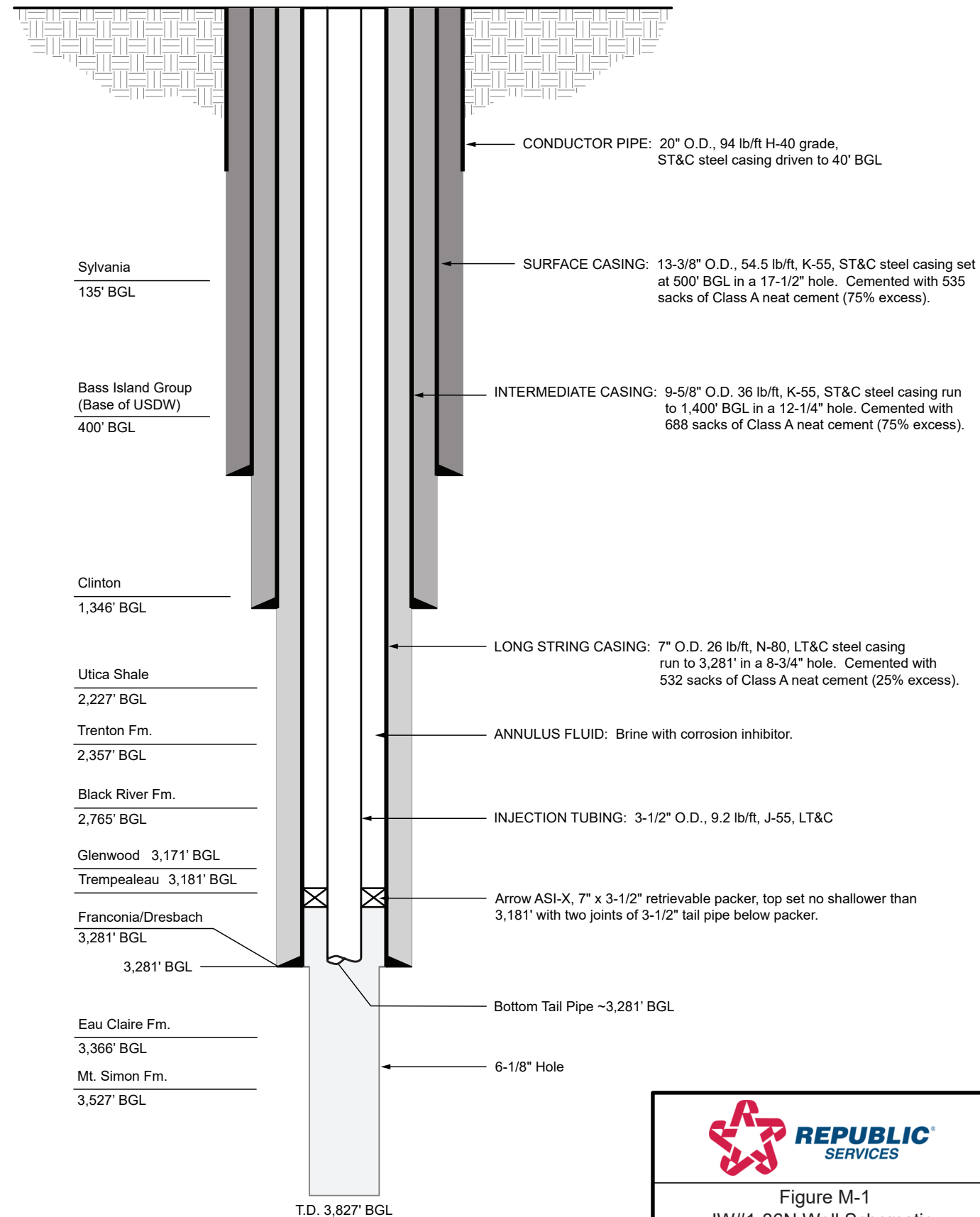
APPENDIX

^a Removed from the Environment,
Robert F. Van Voorhees, The
Environmental Law Institute,
<https://bit.ly/36CC2Dk>

^b Injection Wells: An Introduction to
Their Use, Operation & Regulation,
Groundwater Protection Council,
<https://bit.ly/2UuB6vc>

^c Class I Underground Injection
Control Program: Study of the Risks
Associated with Class I
Underground Injection Wells, U.S.
EPA, <https://bit.ly/32MHPVB>

^d Class I Deepwell Injection
Technology: A safe and proven
liquid waste management option,
Petrotek Engineering Corporation,
<https://bit.ly/35zn4P4>



NOTE:

- NOT TO SCALE



Figure M-1
IW#1-36N Well Schematic,
Carleton Farms Landfill

2019 Permit Application

Scale: See Vertical Scale	Date: February 2020	
2019_CFL_EPA_Fig_M-01.pdf	By: WEK	Checked: CW

Petrotek

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