

ND Tribal Utility Systems

LCDR Travis Spaeth P.E. – U.S. Public Health Service

Overview

- Reservations
- Operations
 - Water
 - Sewer
- Regulations
- Issues
- Differences ND versus Saipan
- Questions



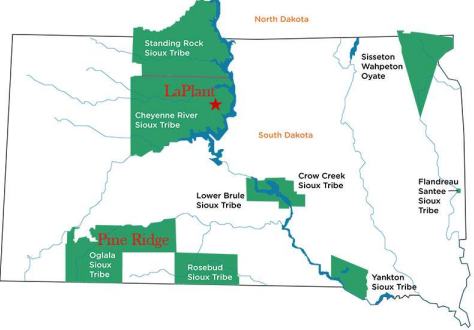
Reservations – Where is ND Anyway?

Reservations

- Standing Rock Sioux Tribe – North Dakota and South Dakota
- Three Affiliated Tribes – North Dakota
 - Trenton Indian Service Area – North Dakota and Montana
- Turtle Mountain Band of Chippewa – North Dakota
- Spirit Lake Band of Chippewa



ND Map of Reservations
<http://thefirstscout.blogspot.com/2015/12/the-north-dakota-indian-affairs.html>

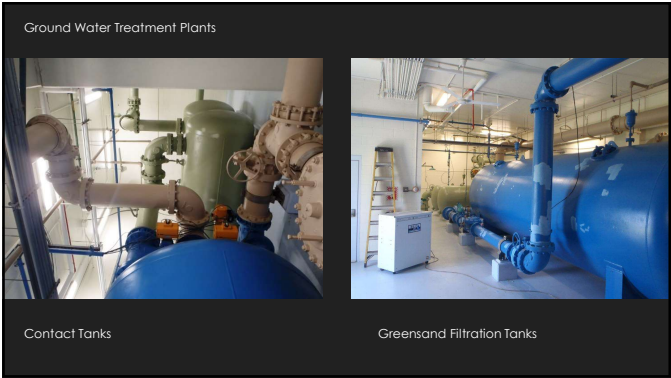
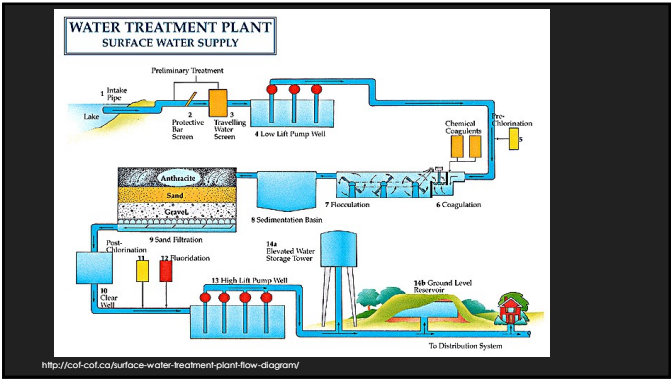


SD Map of Reservations
<http://www.nativex.net/blog/2013/07/01/road-trip-for-art-on-the-cheyenne-river-reservation/>



Water Systems

- Combination of Surface Water Treatment Plants and Ground Water Treatment Plants
- Conventional Treatment Plants for Surface Water
- Large High Tech Treatment Plants (conventional plant followed by Microfiltration Tubes)
- Ground Water Mainly treated with Greensand Filters



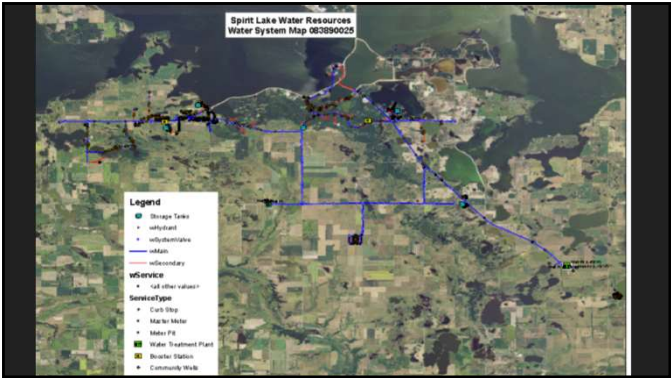
Tanks

Tanks are all different varieties.

- Elevated
- Stand Pipes
- Under Ground

Materials

- Concrete
- Steel (usually glass lined)
- Composite (stainless steel)

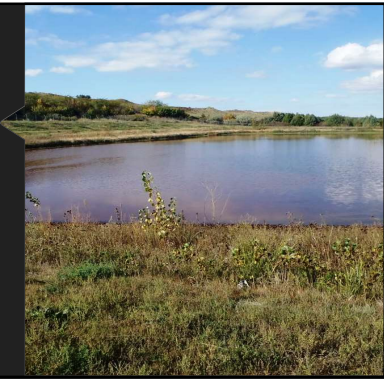


Other Appurtenances

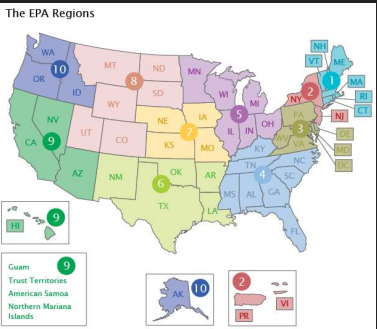
- Gate Valves
- PRV's
- PSV's
- Meters – Electronic Reads
 - Some metered some didn't
- Hydrants – Dry Barrel
- Curb Stops
- Corp Stops
- Etc.

Sewer Systems

- Collection systems
 - Gravity Sewer along with Lift Stations and Force Mains.
- Treatment
 - Lagoons
 - On-site Wastewater



- Regulations
- Region 8 EPA Oversight
 - CCR's
 - Sanitary Surveys
 - Water and Wastewater
 - Violations
 - Revised Total Coliform Rule
 - Lead and Copper Rule



https://cfpub.epa.gov/toe/images/locator_maps/map-1.png

Issues

- Pipe depths
- Frost – Freezing Water or Sewer Mains
- Operational Funds
 - Sewer Needs
 - Lack of Water Revenue
- Employee Turnover

Differences ND versus Saipan

- Climate
- Pipe depths
- Changes of Seasons (Freeze Thaw)
- Construction Timeframes
- Materials (mainly procuring)
- Source Water

Questions

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