Diesel Fuel Storage

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Proposal Statement

The objective of this development is to design an efficient and sustainable terminal that provides easy access to infrastructure and promotes economic growth while maintaining a flourishing environment through green design and environmentally sound operation practices.

Location

10073 County Rd. 138 St. Cloud, MN 56301

45.5044 N, -94.31082 W

The location decided for the site is west of St. Cloud about 15 minutes off of state highway 23.

Railroad access allows for easier transportation access of incoming and outgoing fuel.

Trucks have quick access to highway 23 allowing for quick access to the interstate.

Target local businesses

Background Information

- More than 20,000 tanks across Minnesota
- At the federal level, the Environmental Protection Agency requires non-transportation-related facilities with a total above-ground oil storage capacity of greater than 1,320 gallons to meet Spill Prevention, Control, and Countermeasure (SPCC) requirements.
- Berm wall structure to contain total volume of tank if It were to spill. Lined with clay to prevent absorption into soil.
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Description of Tanks

- AST (Above-Ground Storage Tanks)
- Tanks are made in a variety of sizes
- Under 1,100 gallons don't need EAW
- See 40 cfr for regulations
- 10 tanks 7,000 gallons each.
- Concrete platform with a bowl like structure underneath to reduce risk of spill
- Lined with enamel coating.

Plastic vs. Steel Advantages

MN Statute 239.752 (Storage Tank Marking & Capacity)
All tanks must be identified by color. (Dark Green) for petroleum products.
Identification tag must be at least 3½ inches by 3½ inches.

- Plastic
  - Easier to store
  - Can have them fit almost everywhere
  - Plastic is an insulator so heat to fuel process is slowed
- Steel
  - Better security
  - Can store more fuel
  - Durable long lasting

Plastic vs. Steel Disadvantages

- Plastic
  - Can become weak from exposure to sunlight
  - Can be less durable easier to drill and siphon
  - Limited size
- Steel
  - Much heavier harder to move
  - Can corrode over time
  - Can be vulnerable at the seams

Soil in Area- Web soil survey

Stearns County, Minnesota (MN145)

Stearns County, Minnesota (MN145)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
181	Litchfield loamy sand	3.1	6.8%
183	Forada sandy loam, 0 to 2 percent slopes	30.3	66.4%
281	Darfur coarse sandy loam	6.3	13.8%
543	Markey muck, occasionally ponded, 0 to 1 percent slopes	1.5	3.4%
639B	Ridgeport sandy loam, 2 to 6 percent slopes	4.4	9.7%
Totals for Area of Interest		**45.7**	**100.0%**

Proposer Vantage

- Promotes economic growth locally
- Allows quicker access to needed resources
- Provides relief to local gas stations
- An estimated 500,000 dollars.
- Steel tanks because we hold a large amount of fuel. (70,000 gallons)

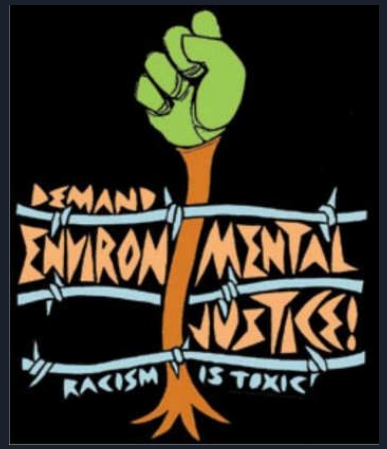
Regulator Vantage

- Impact on area traffic
- Concern for neighboring properties
- Immediate vs. long term environmental impact

Environmental Justice

“Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” (EPA 2017)

- Needs to follow the MPCA Environmental Audit Program
- In this area:
  - No residential development or homes
  - Technically in the “middle of nowhere”
  - Off of a highway and near an interstate



Risks and Benefits

Risks

- Vehicles can run into them
- Vulnerable to environmental concerns
- Can be considered eyesores by certain people

Benefits

- Can easily detect leaks
- Easily relocatable
- Local trucking companies and gas stations will use this fuel
    - Will benefit the community and promote economic growth

Spill Clean Up Possibility

- Four Step Plan for Spill Clean Up
  - Control
  - Contain
  - Clean up
  - Remediate

Spill Clean Up cont.

- Domestic well contamination
  - Location

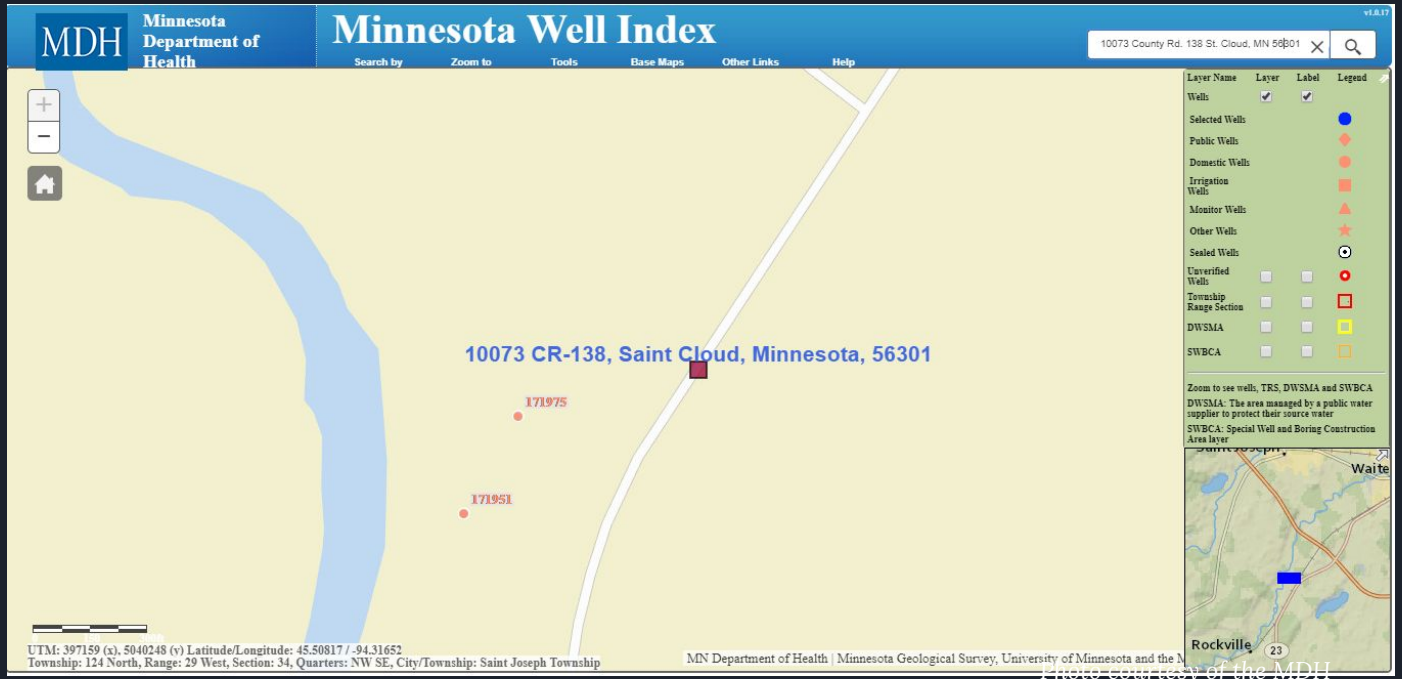


Photo courtesy of the MDH

Sustainable and Safe Design

- Solar powered transfer pump system
  - Cost
- Emergency vents
- Overfill prevention valves

Photo courtesy of Frontiers Blog

Questions...?

References

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- https://www.epa.gov/environmentaljustice
- https://www.pca.state.mn.us/waste/aboveground-storage-tank-systems
- https://gaubertoil.com/product-knowledge/benefits-and-risks-with-above-ground-storage-tanks/