

Information Item 2: Kemps Waste Discharge at Empire

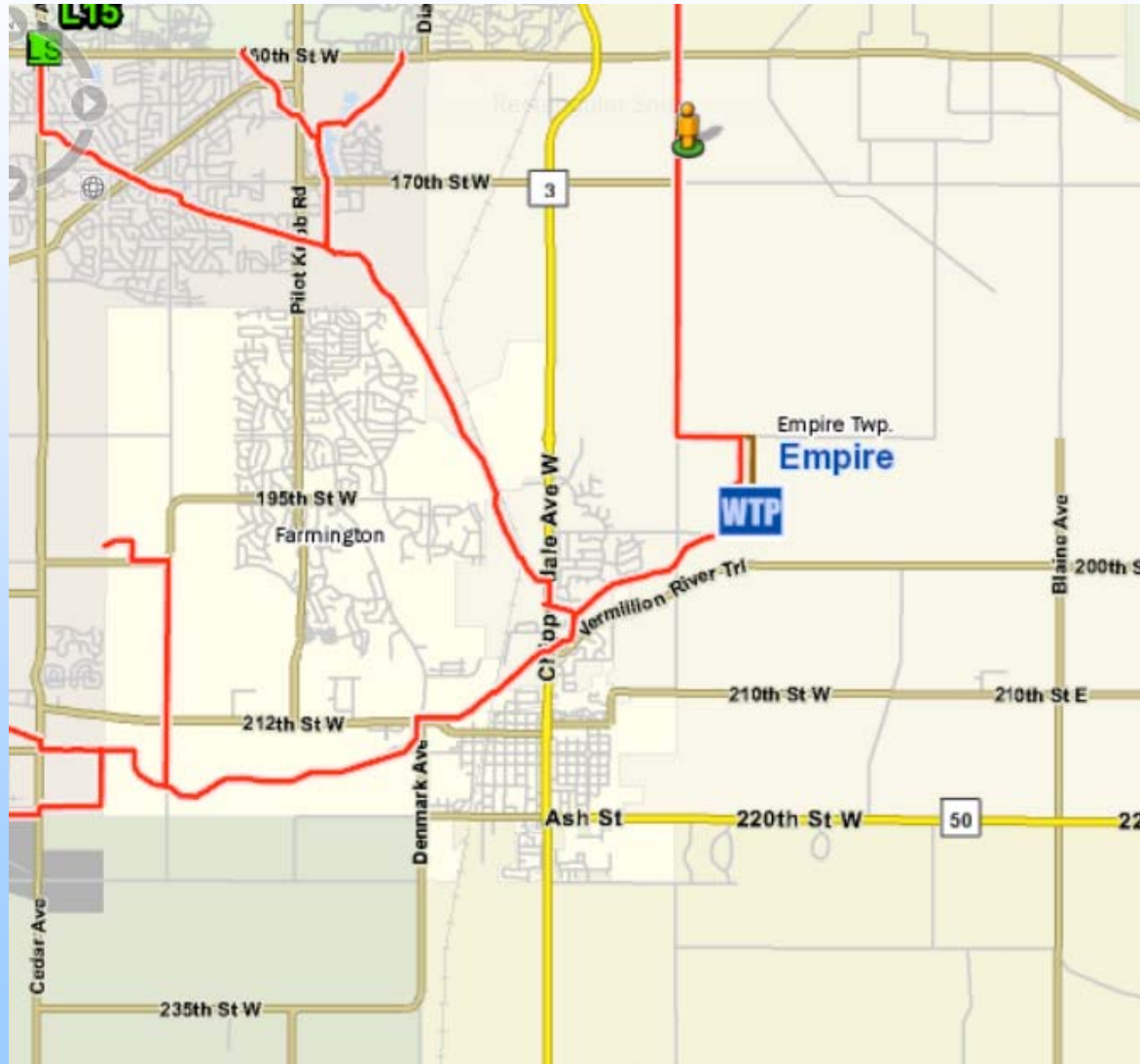
Presented to the Environment Committee

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Empire Plant and Kemps





Kemps Loading

- **Industrial and domestic wastewater**
- **Whey permeate**
 - **High strength organic material
(55,000 mg/L COD)**
 - **Low solids (ultrafiltration permeate)**
 - **25,000 gpd**



Impact on Empire Plant

- **20% of influent load to plant**
- **Not removed in primary clarifiers**
 - No feed directly to digestion
- **Consumes aeration energy**
- **Produces WAS**
 - Difficult to digest and dewater



Options Available

- **Kemps provides additional treatment**
- **Direct high strength organic load to digestion**
 - **Reduces aeration tank energy consumption by over 25%-30% (20% of influent load not removed by primaries are higher fraction of load to aeration tanks)**
 - **Can generate up to 100,000 cubic feet per day of gas which is 50% increase over current production**
 - **Potential to reduce land application costs by generating dryer digested sludge**



Next Steps

- **Remove Kemps from Empire for short term test to document improvements in solids production and gas generation**
- **Complete study for accepting high organic strength wastes directly to the digesters at Empire and to improve our energy utilization**