


MINNESOTA ASSOCIATION OF COUNTY PLANNING & ZONING ADMINISTRATORS

# MACPZA

## Annual Conference

OCTOBER 2 - 4, 2024

*Willmar Conference Center, Willmar*



**Troy Block**

**Northern Natural Gas**



**Pat Donovan**

**MN Office of Pipeline Safety**



# MN Office of Pipeline Safety (MNOPS) History

- ❑ MN Legislature created the office in 1987  
1986 - Mounds View incident.
- ❑ The Federal Office of Pipeline Safety, now PHMSA (*Pipeline and Hazardous Materials Safety Administration*),
  - Interstate Agent status in 1991



The **State Fire Marshal** is the  
Director of the  
**MN Office of Pipeline Safety (MNOPS)**



Daniel Krier



# MNOPS Responsibilities

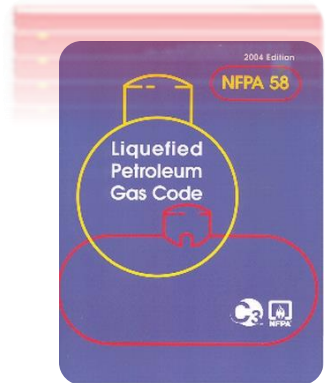
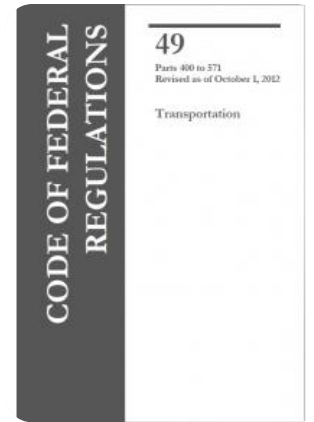
- **Inspect Pipeline Operators (companies)**
  - ✓ *Ensure compliance with regulatory requirements.*
  
- **Investigate Incidents & Accidents**
  
- **Enforce MS 216D (Call Before You Dig -- 811)**
  - ✓ *Basically – anyone who excavates*
  
- **Education**
  - ✓ *Contractors*
  - ✓ *FD's*
  - ✓ *Operators*
  - ✓ *Conferences*
  - ✓ *Public*





# MNOPS inspects...

- Natural Gas
- Liquefied Natural Gas facilities (*3 in MN*)
- Propane Air Plants
- LPG (Liquefied petroleum gas)
  - ✓ 10 or more customers on a tank
- Hazardous Liquids (**INTERstate**)
  - ✓ petroleum, petroleum products, or anhydrous ammonia
- Breakout Tanks



# So what's that mean?

- MNOPS – basically we are “Regulators”
  - ✓ *Ensure compliance with regulatory requirements.*

Pipeline companies are required  
to follow **MINIMUM** Federal Regulations  
to follow **MINIMUM** Federal Regulati



# MNOPS Reportable Event Requiring Notification

MINNESOTA DUTY OFFICER ..... 800-422-0798

- *Evacuation of 10 or more people*
- *Evacuation of a school, hospital or health care facility*
- *Rerouting of traffic or closing a highway by public emergency responders*
- *50 or more customers out of service*
- *Unintentional fire or explosion*
- *Any media attention*



# Calling 911 is Required - if a Contractor hits a pipeline



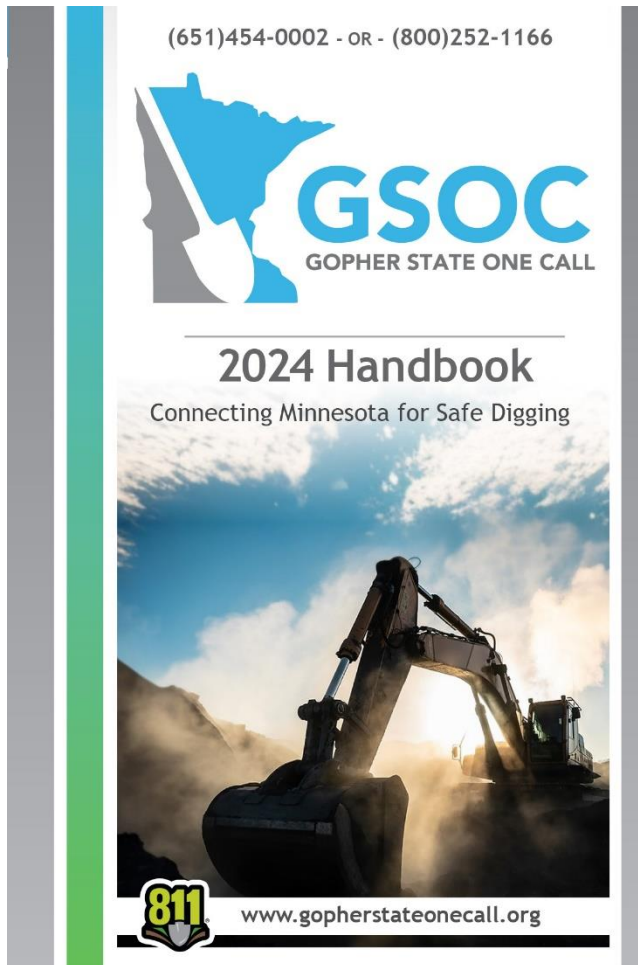
216D.06 DAMAGE TO FACILITY.

*...If the damage results in the escape of any flammable, toxic, or corrosive gas or liquid or endangers life, health, or property, the excavator responsible shall immediately notify the operator and the 911 public safety answering point...*



# Incidents and Accidents

## ➤ MS216D - Call Before You Dig Law



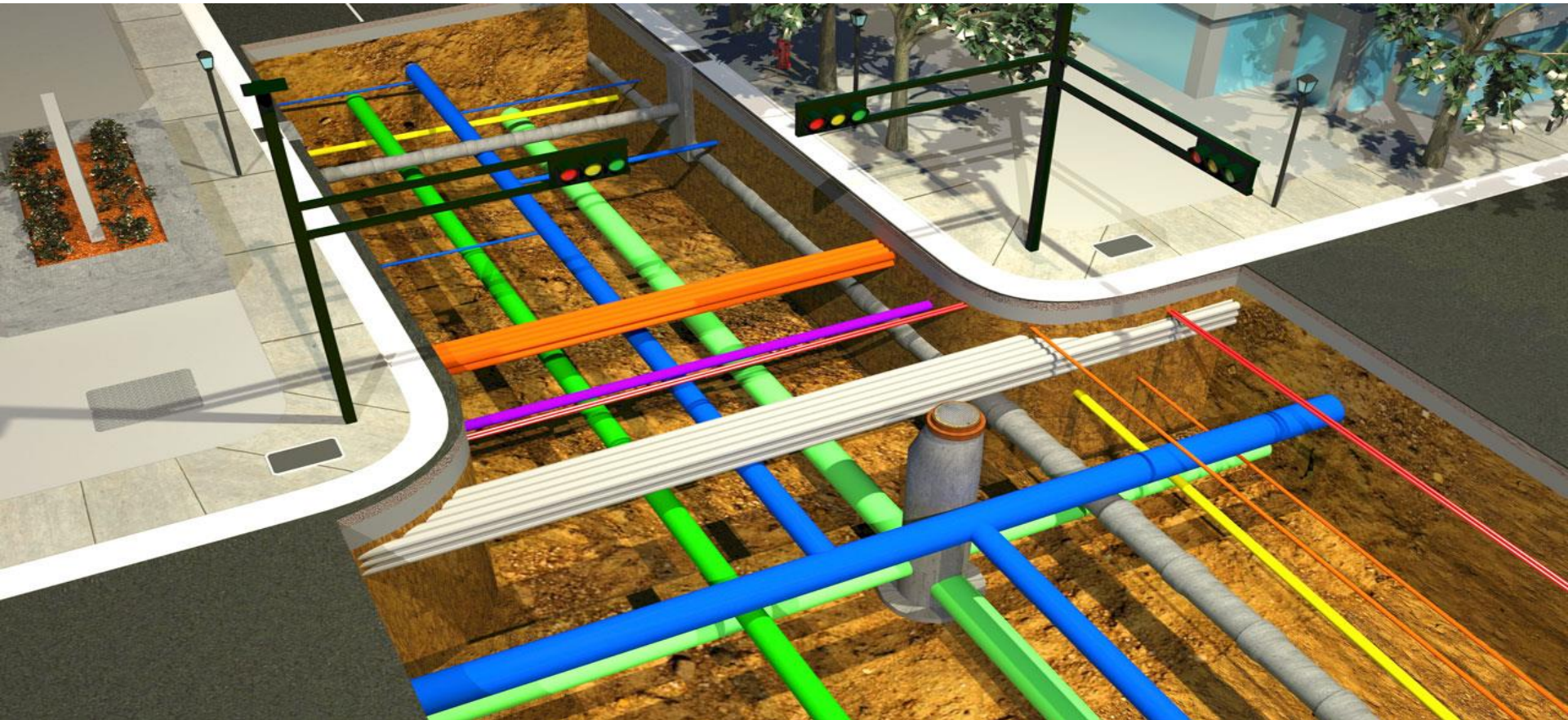
**Know what's below.  
Call before you dig.**







**One-Call Center contacts the utilities for the address given.**



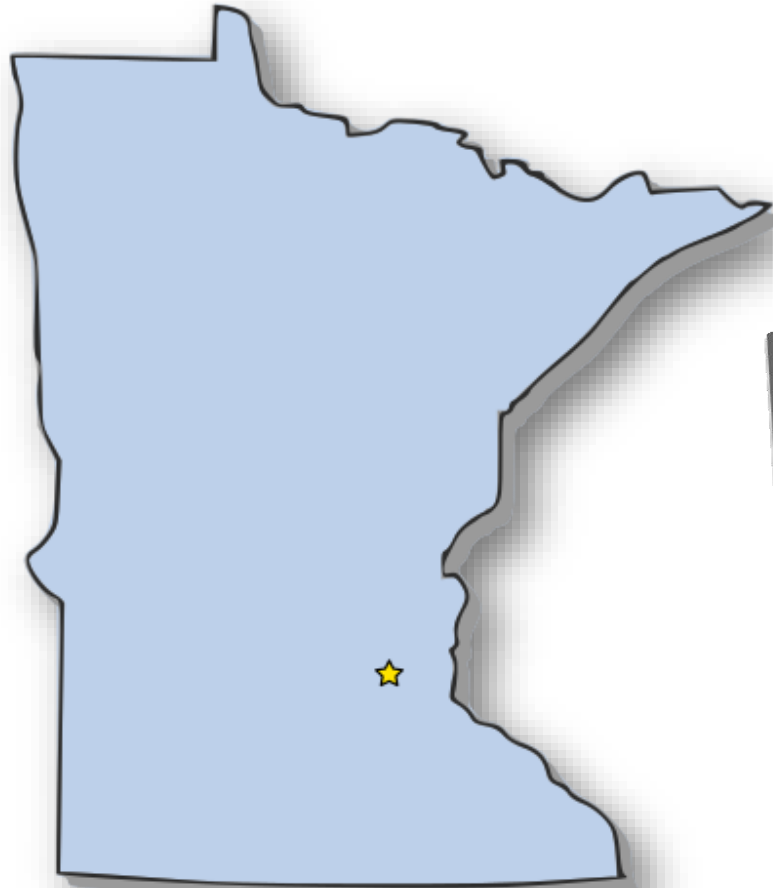
# One-Call basics

- ✓ **Excavation – activity that moves, removes, or otherwise disturbs the soil by means of mechanized equipment**
- ✓ Contractors are responsible for calling for locates if using power equipment
- ✓ Locate request ..... 48 Hrs. prior to excavation
- ✓ Locate marks have to be within 2 feet (horizontally) of the underground utility..... ***(depths are not given)***
- ✓ Excavators need to know the **precise location** before excavating within 2 ft.



# Investigations

- Utility hits



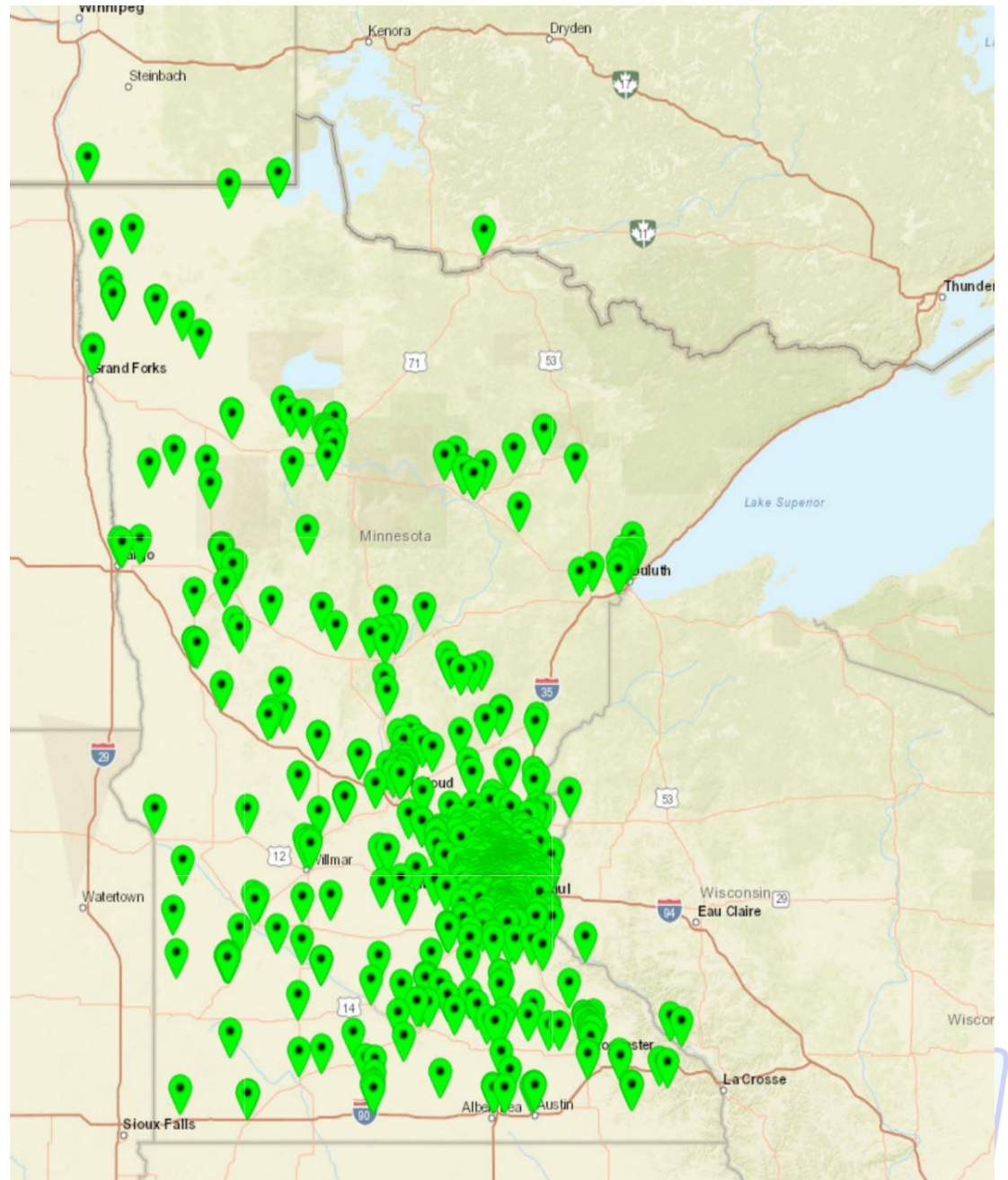
# Reporting to an Incident

- Incident Command (IC)
- Make sure the Pipeline Operators are following their procedures:
  - ❖ What happened?
  - ❖ What's being done to make the area safe?
  - ❖ Is the Pipeline Operator maintaining Liaison?



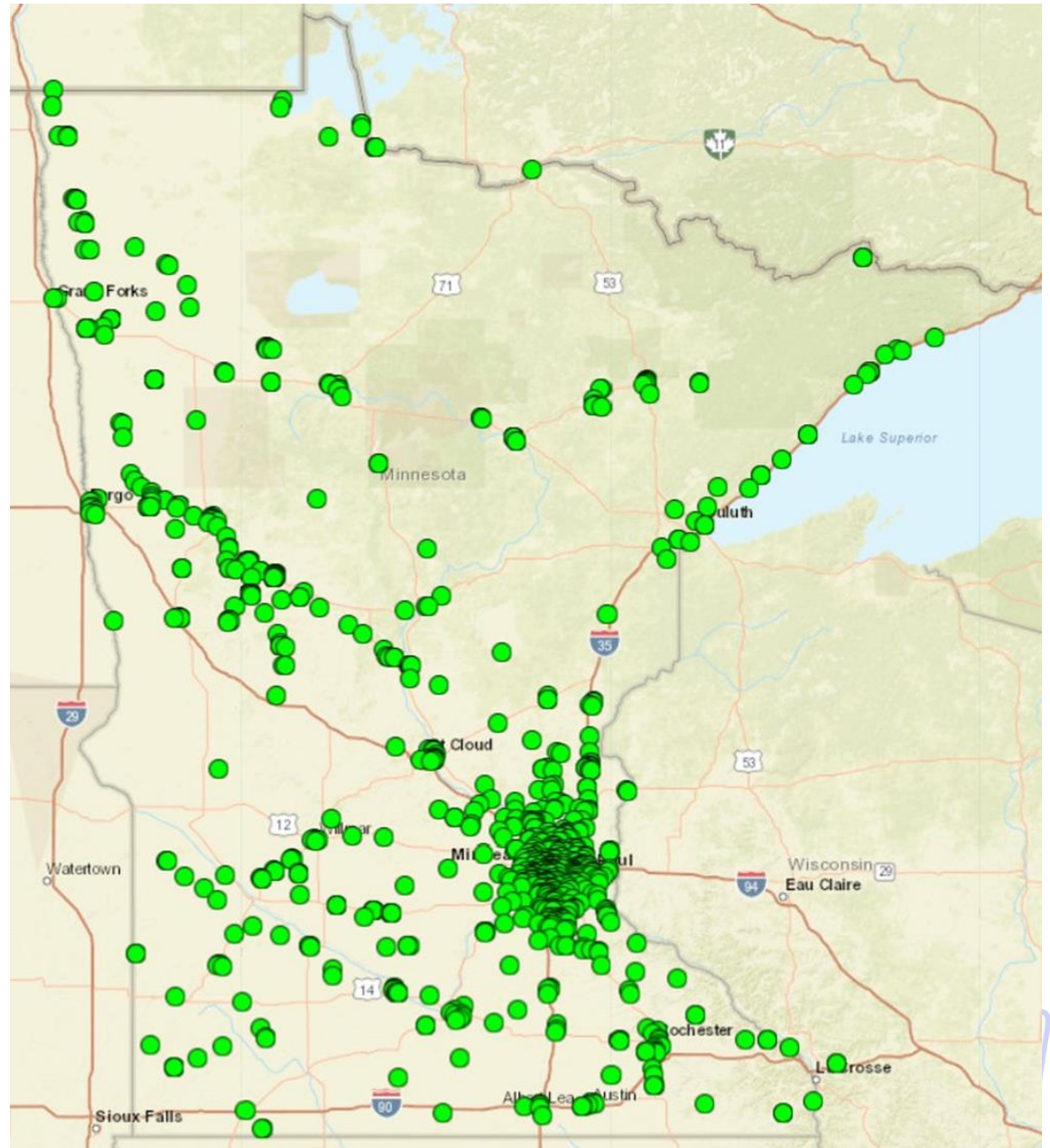


# 2023 Accident/Incident Investigations





# 2023 Inspections



# ODORANT

## §192.625 Odorization of gas.

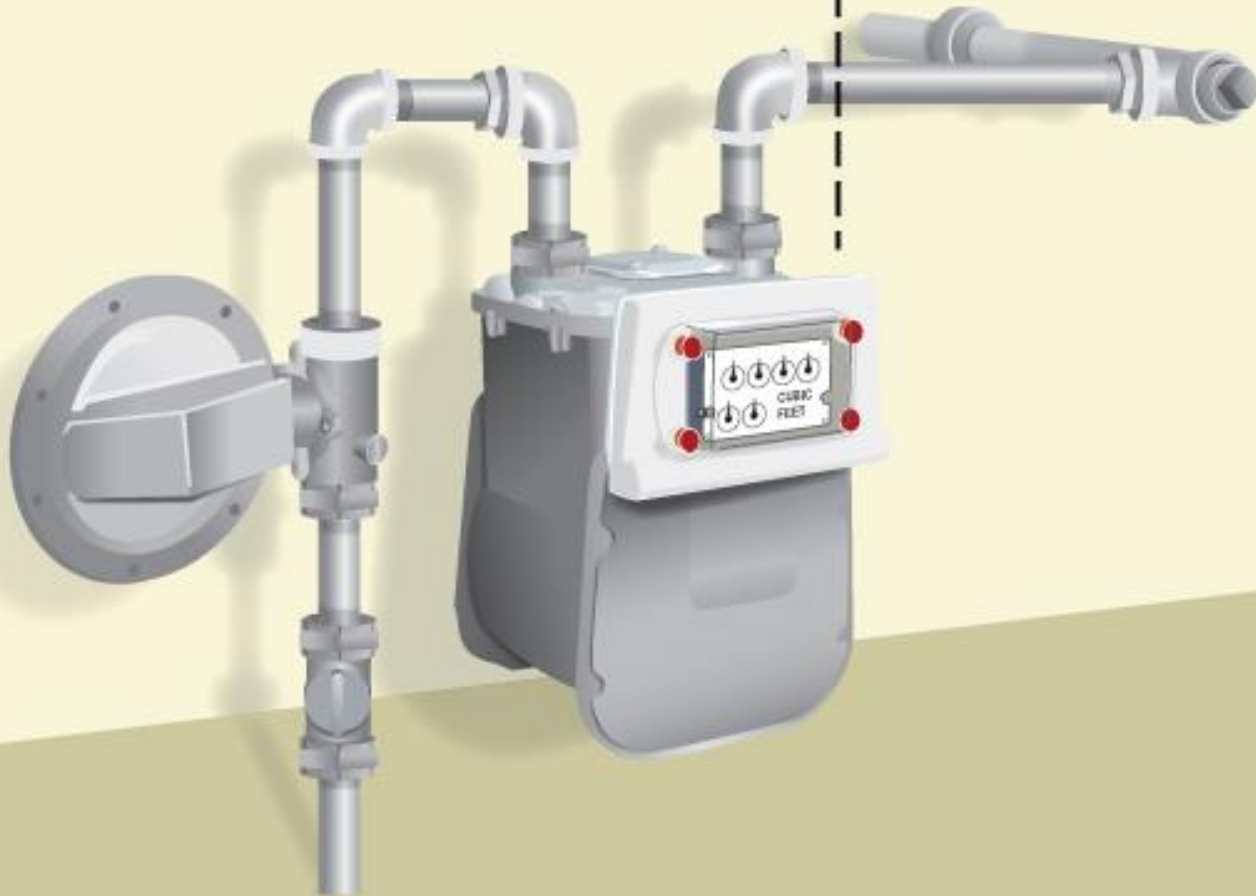
(a) A combustible gas in a distribution line must contain a natural odorant or be odorized so that at a concentration in air of one-fifth of the lower explosive limit, (1% Gas) the gas is readily detectable by a person with a normal sense of smell.

➤ Mercaptan is the most commonly used odorant.



**Gas Company  
piping**

**Customer  
piping**





# House Fire



Gas meter



Gas meter was away from the main fire  
Area was bar holed and Sewer checked  
No aboveground or underground gas.

06.04.2





# Static





# Paynesville - October 22, 2019













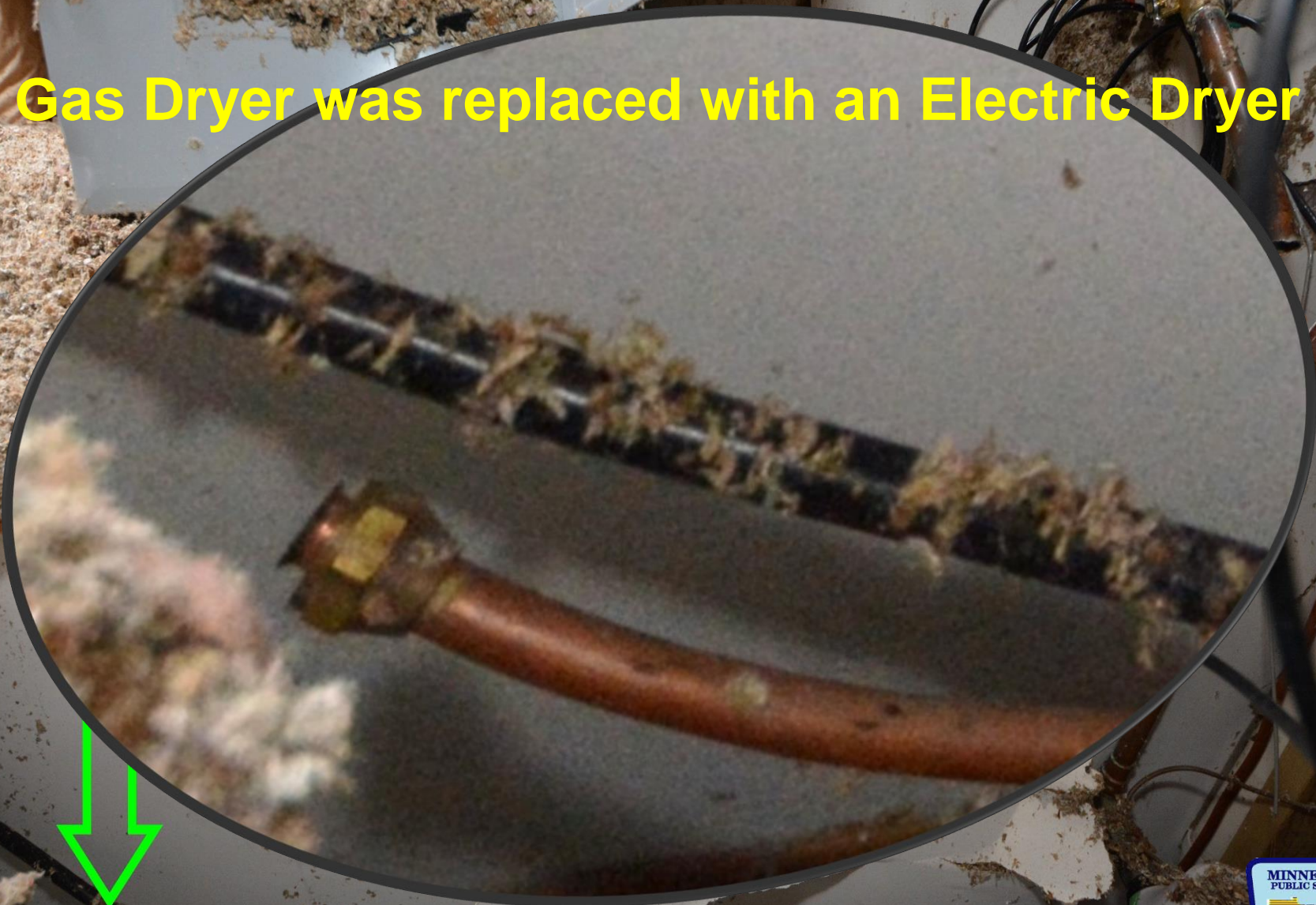








**Gas Dryer was replaced with an Electric Dryer**





Kitchen - Not Capped  
Gas Stove had been replaced with an electric stove





# Gas meter hit

## Evacuation of 10 or more people



**Meter location**







# Repaired and protected



# What is Natural Gas?

## Facts about natural gas:

- Natural gas is not a poison or toxic.
- Natural gas is **colorless and odorless** in its natural state.
- Natural gas will not ignite on its own. To burn, gas requires both a precise amount of oxygen and an ignition source.
- Natural gas is lighter than air and will rise and diffuse rapidly.



# Your Safety

Natural Gas is Lighter than AIR

Everything else is HEAVIER

Where do you park?

- Manhole
- Off to the side

➤ How do you tell if there is gas?

- Your nose? (*NOT* always)
- CGI (Combustible Gas Detector)





# Properties

## Natural Gas

- Odorless
- Colorless
- **Lighter** than air
- ✓ Explosive Range
  - LEL          5 %
  - UEL          15%

## Propane

- Odorless
- Colorless
- **Heavier** than air
- ✓ Explosive Range
  - LEL          2%
  - UEL          10%

*LEL = Lower Explosive Limit same as LFL = Lower Flammable Limit*



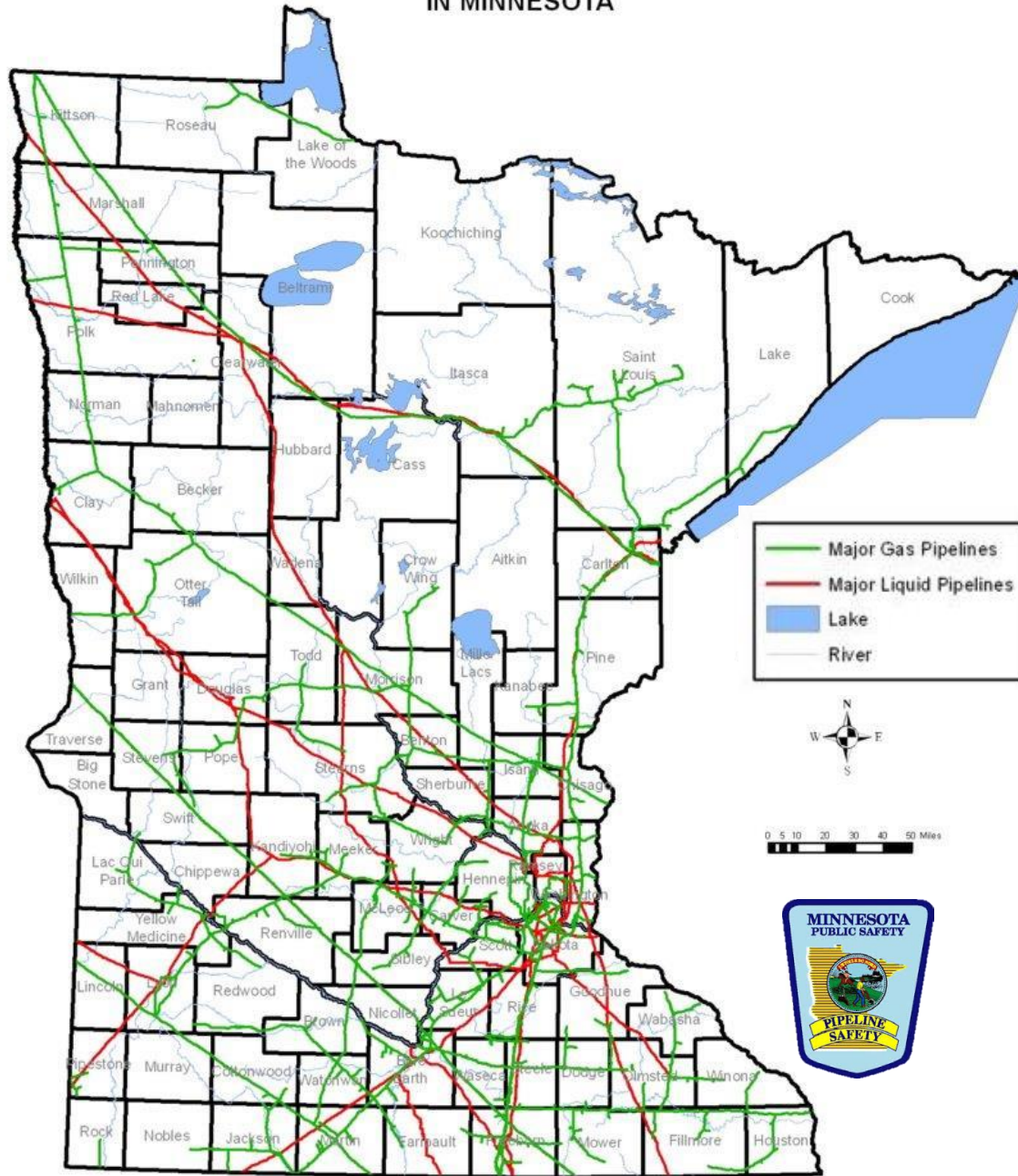
# LPG/Propane

- Liquefied petroleum gas (LPG)
  - ✓ Hydrocarbon-based gases
  - ✓ Derived from crude oil and or natural gas.
- LPG is mostly propane, butane or a mix of the two.
- Propane expansion rate 270 to 1



MINNESOTA DEPARTMENT OF PUBLIC SAFETY  
OFFICE OF PIPELINE SAFETY

MAJOR GAS AND LIQUID PIPELINES  
IN MINNESOTA





# Town Border Station (TBS)





# District Regulator Station (DRS)



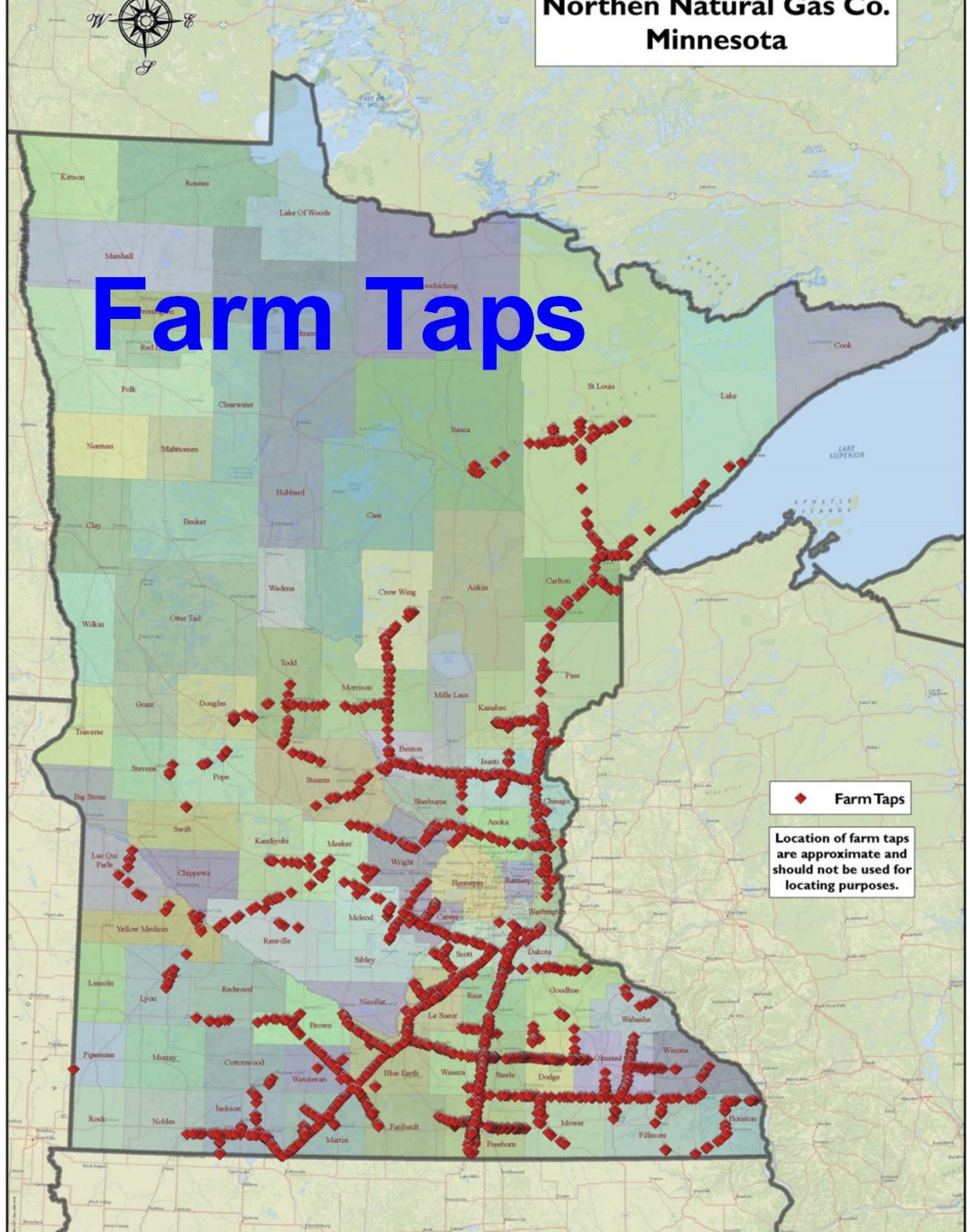


# Emergency Valve





# Farm Taps

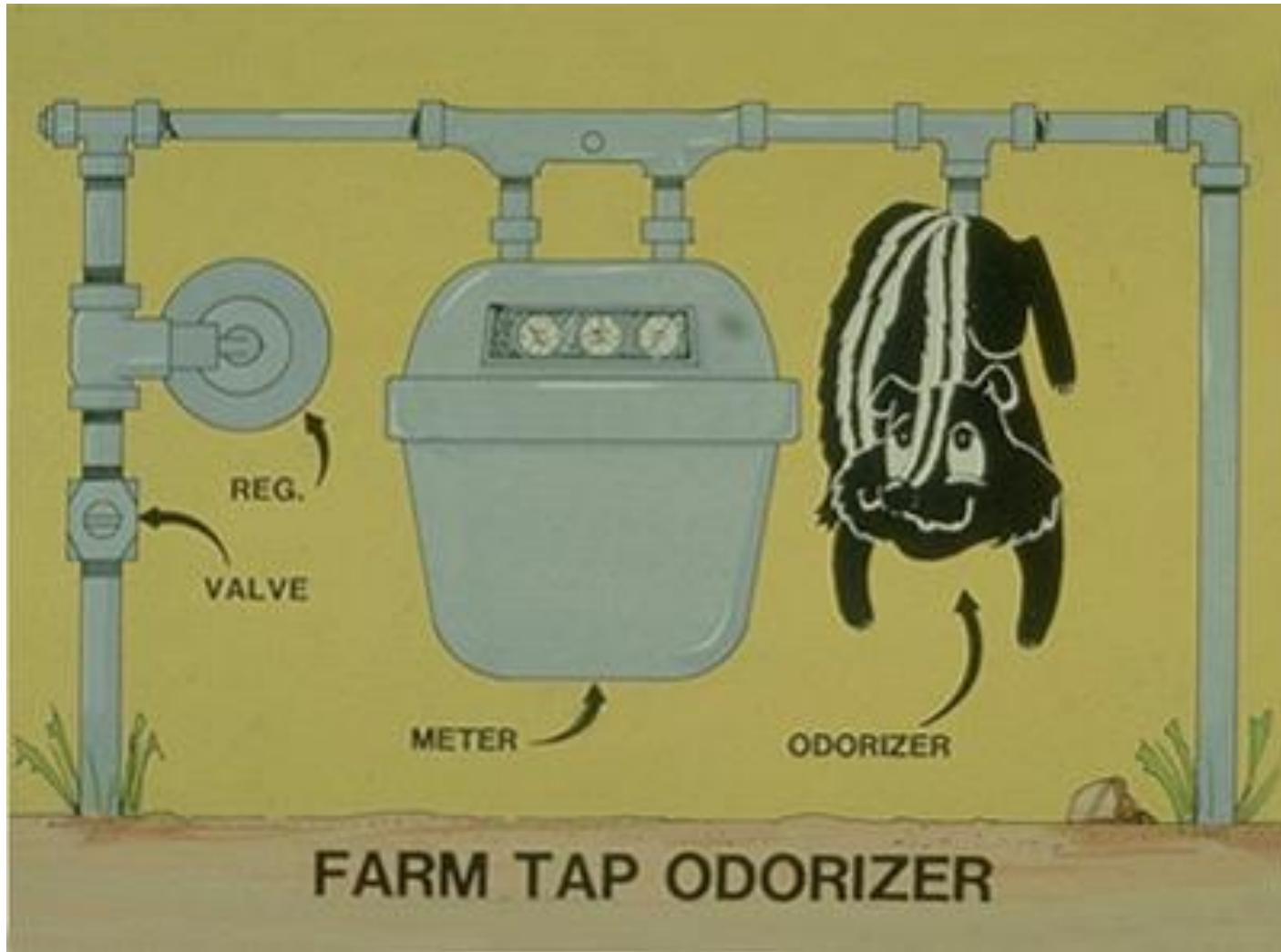


◆ Farm Taps

Location of farm taps are approximate and should not be used for locating purposes.



# Farm Taps





**Caution**  
**Gas**  
**Pipeline**

Do not dig or drill without first calling 811 or your local utility company. Digging or drilling near a gas pipeline can cause a gas leak, fire, or explosion. Call 811 or your local utility company before digging or drilling. For more information, visit [www.811.com](http://www.811.com).  
© 2011 TUST LEADS, Inc.

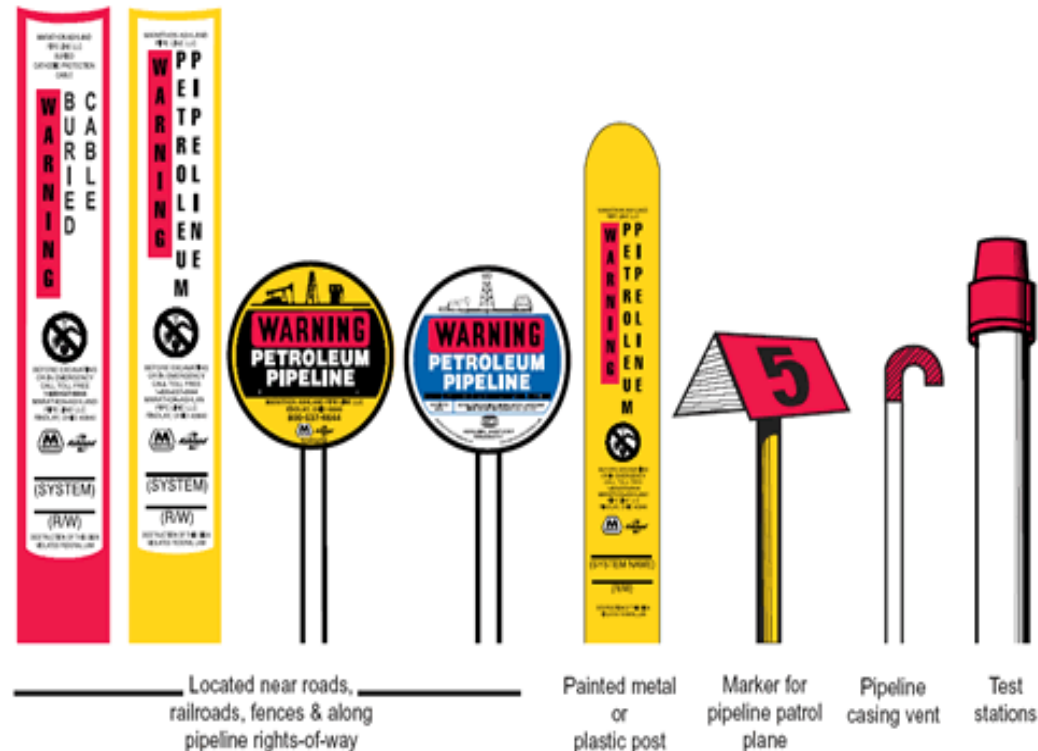
**Pipe**  
**Depth**  
**Warning**



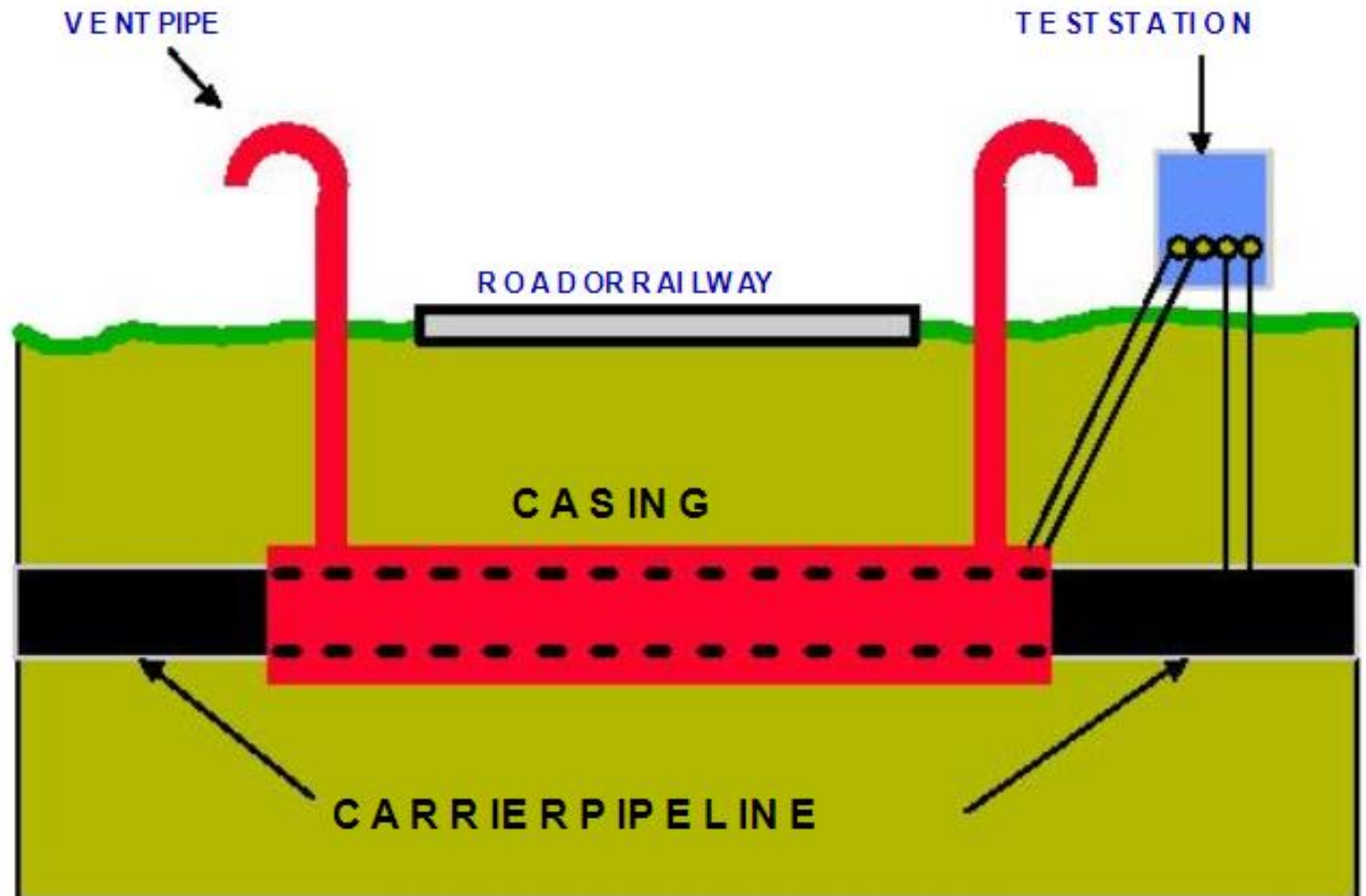
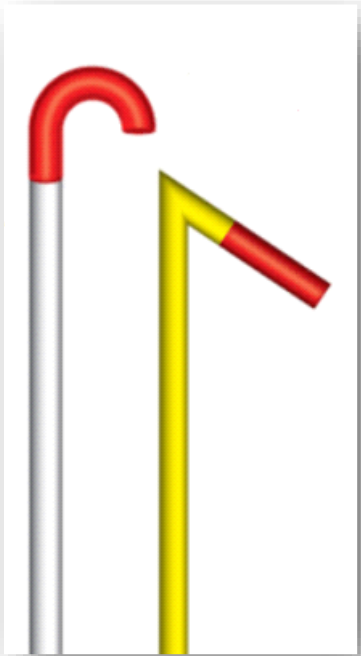


# Line Markers Required

- \$192.707 Line markers for mains and transmission lines.
- \$195.410 Line markers. (liquid lines)
  - ✓ Road crossings
  - ✓ Fields
  - ✓ Railroads
  - ✓ At water crossings
- (liquids)
- ✓ Above ground facilities

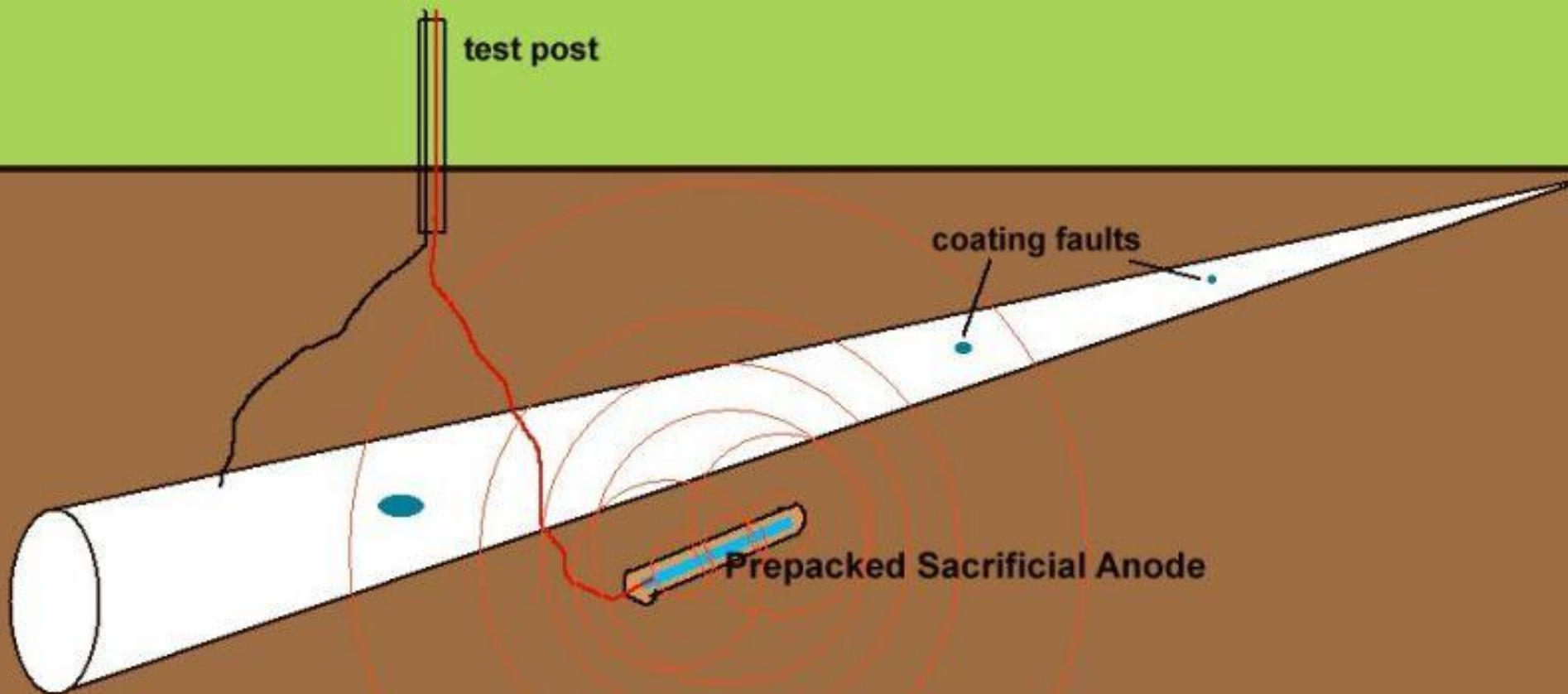


# Typical Pipeline Casing





# Cathodic Protection



# Line Markers



**Operator name**

**Product type**

**Emergency Phone Number**

**May NOT be directly over the pipeline**





# \$192.706 Transmission lines: Leakage surveys.

- Leakage surveys of a transmission line must be conducted at intervals not exceeding 15 months, but at least once each calendar year...
- Some areas more frequently (densely populated areas)



OCT 29 2011



# Liquid lines, Inspection of rights-of-way and crossings under navigable waters.

- Each operator shall, at intervals not exceeding 3 weeks, but at least 26 times each calendar year, inspect the surface conditions on or adjacent to each pipeline right-of-way.
- *Methods of inspection include walking, driving, flying or other appropriate means of traversing the right-of-way.*







# Transmission line - Right Of Way



212

18

76

130th Ave

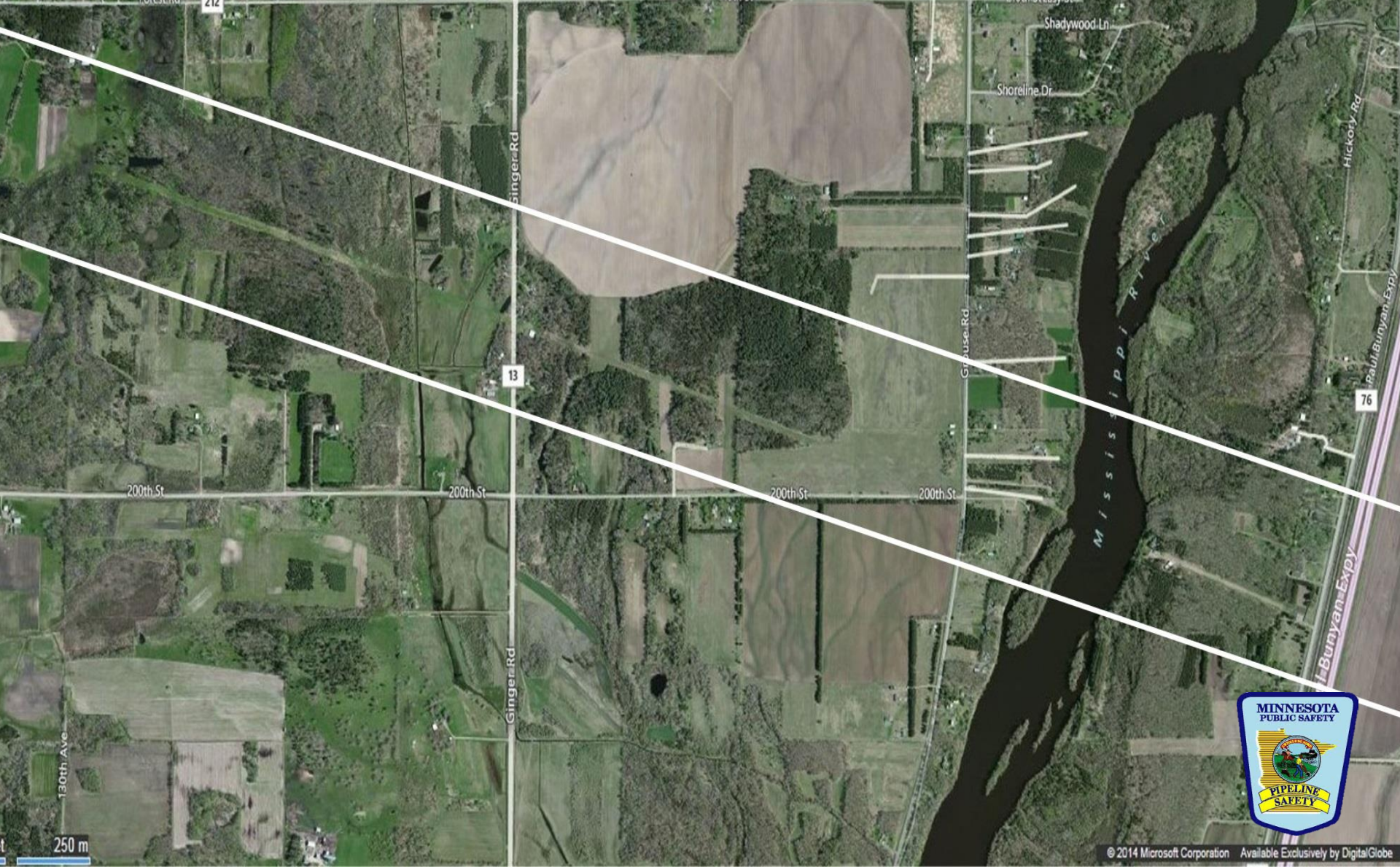
250 m







# Transmission line - Right Of Way





# Liquefied Natural Gas (LNG)



- **1/600<sup>th</sup>** (1 gallon of liquid = 600 gallons of gas)
- **Stored at - 260°**

photo 150 ft. up.



# Breakout tank



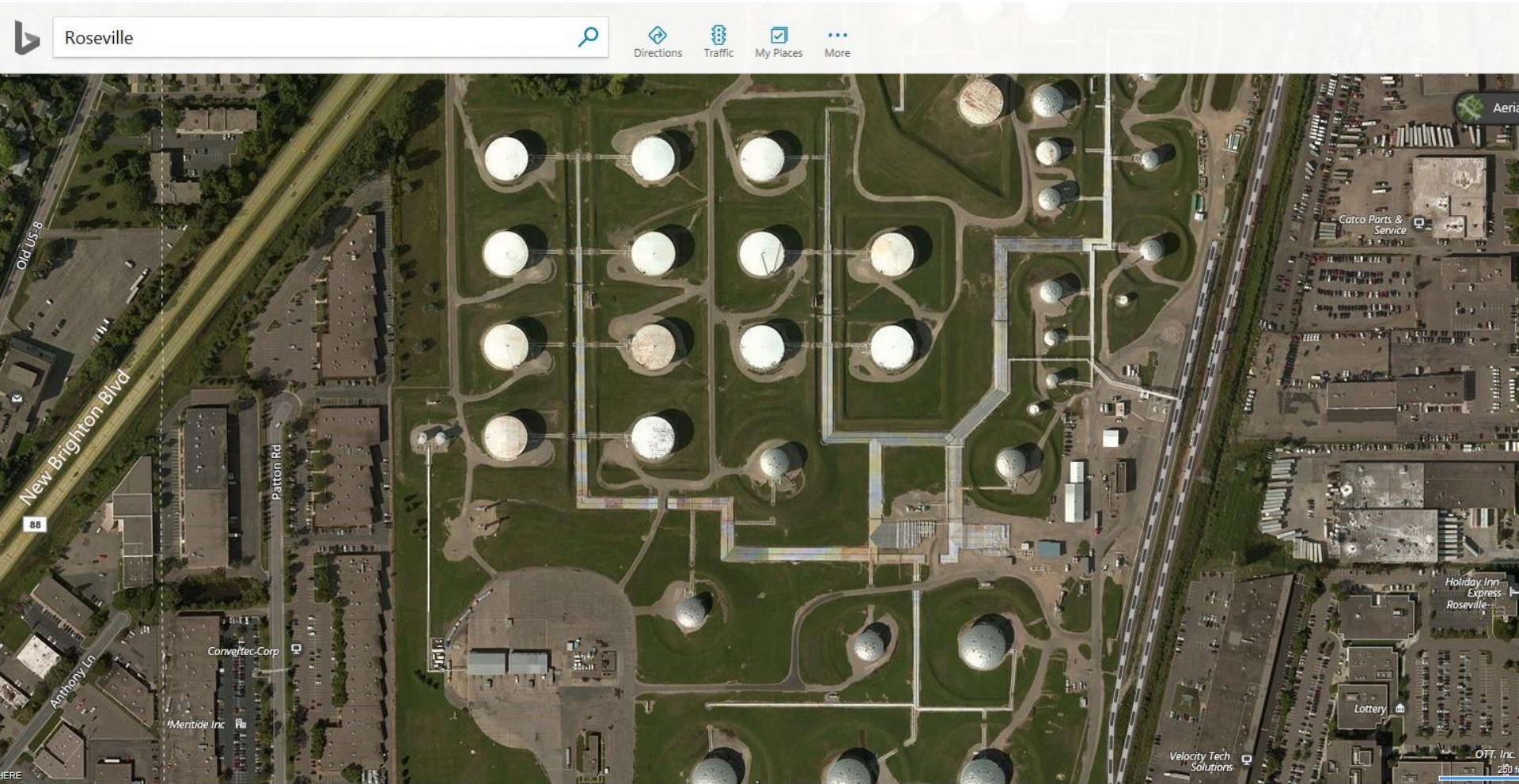
***Breakout tank*** means a tank used to:

(a) **relieve surges** in a hazardous liquid pipeline system or

(b) **receive and store** hazardous liquid transported by a pipeline for **reinjection** and continued transportation by pipeline.



# Breakout Tanks - Roseville Tank Farm





# Pipeline Construction Inspections







OCT 21 2009



60







JAN 26 201

# Internal Inspections

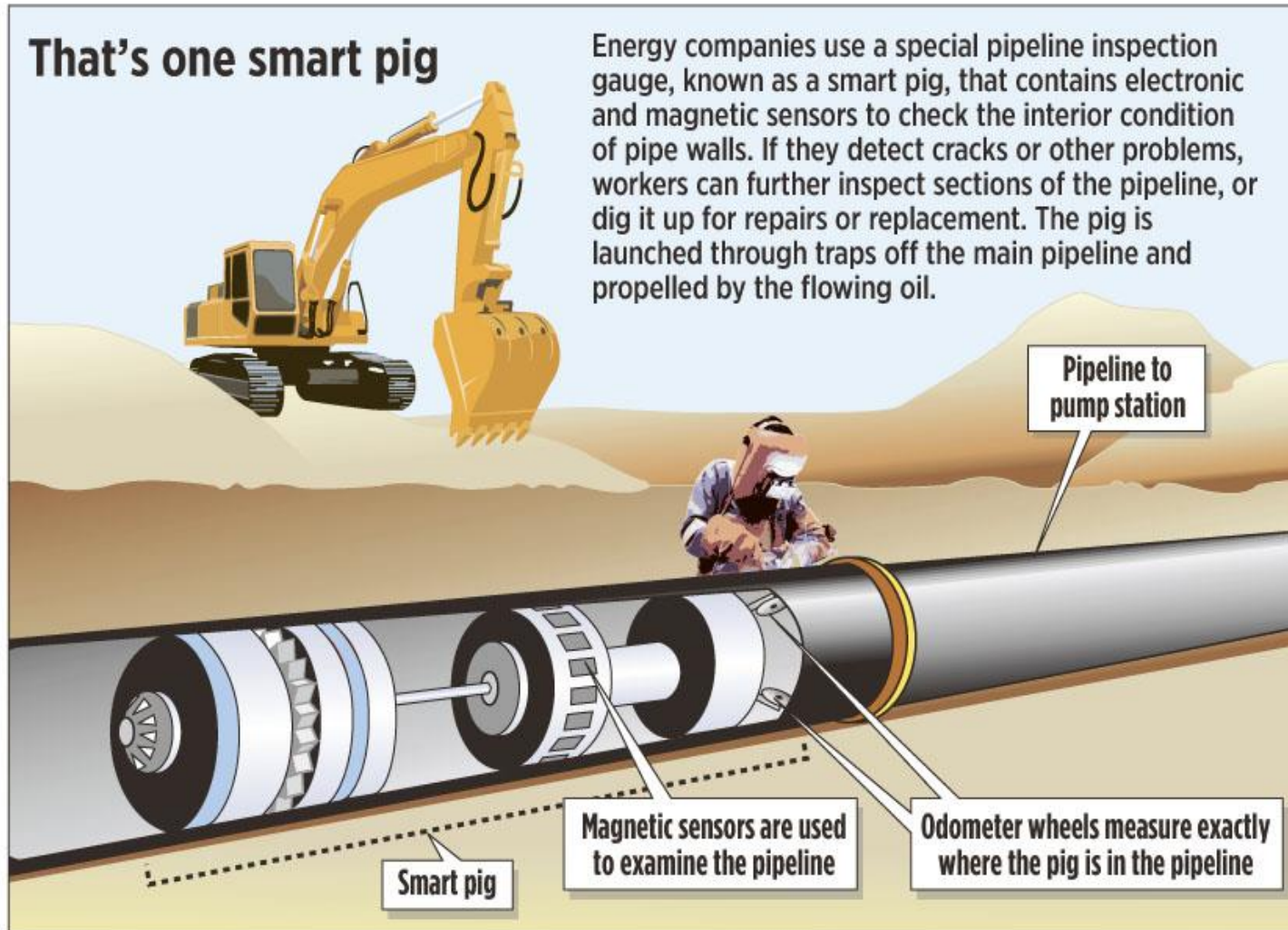
How do you inspect the inside of the pipeline?





# Smart Pigs

## Pipeline Inspection Gauges (PIGs)













Aug 6, 2022 at 11:51:29 AM  
1262-1320 Burr St  
Saint Paul MN 55130  
United States









2406 CEG ASTM D2517 F2







USE ONLY =



UNITED STATES OF AMERICA  
LIBERTY  
QUARTER DOLLAR





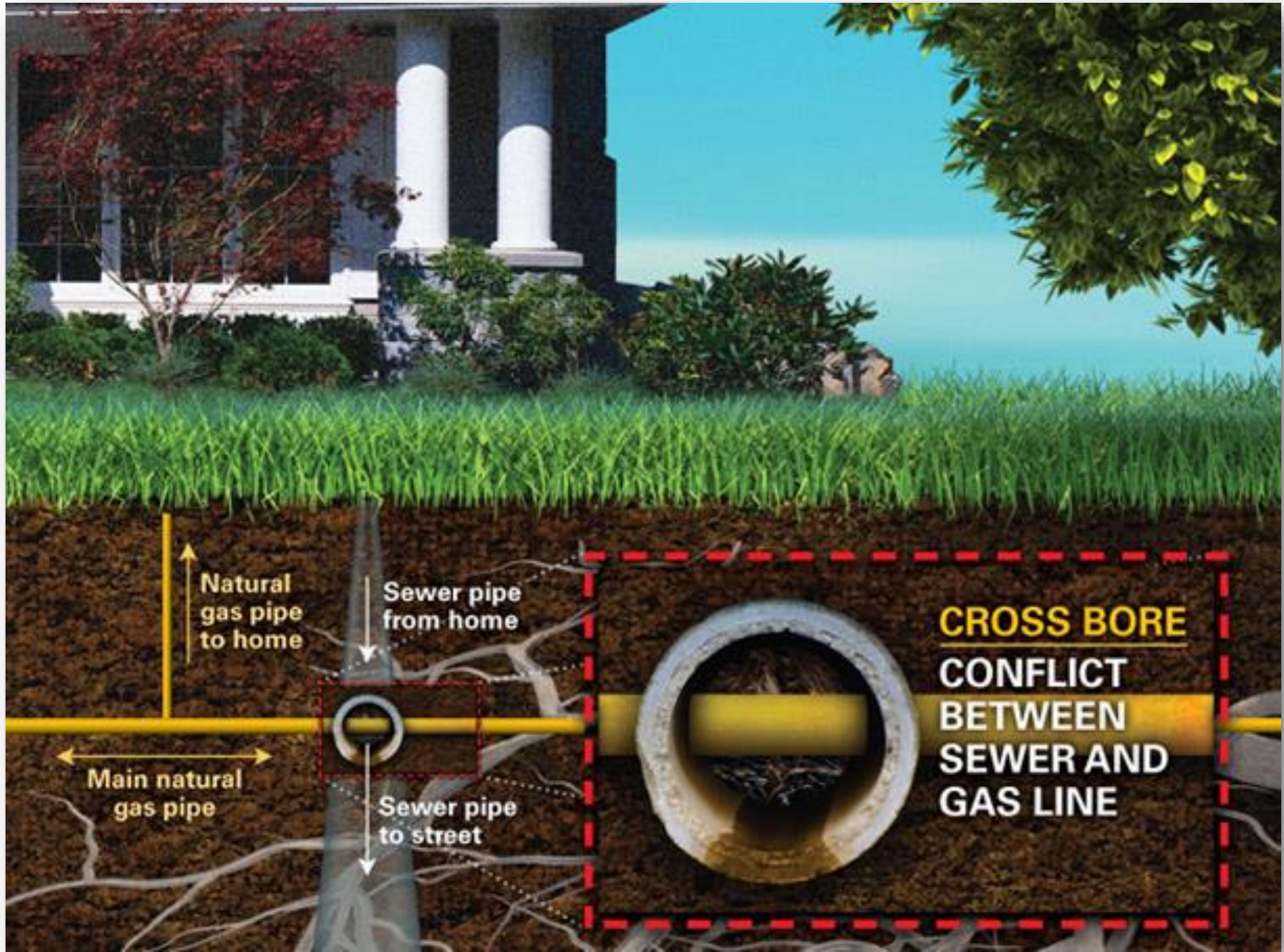




# Cross Bore







Natural gas pipe to home

Sewer pipe from home

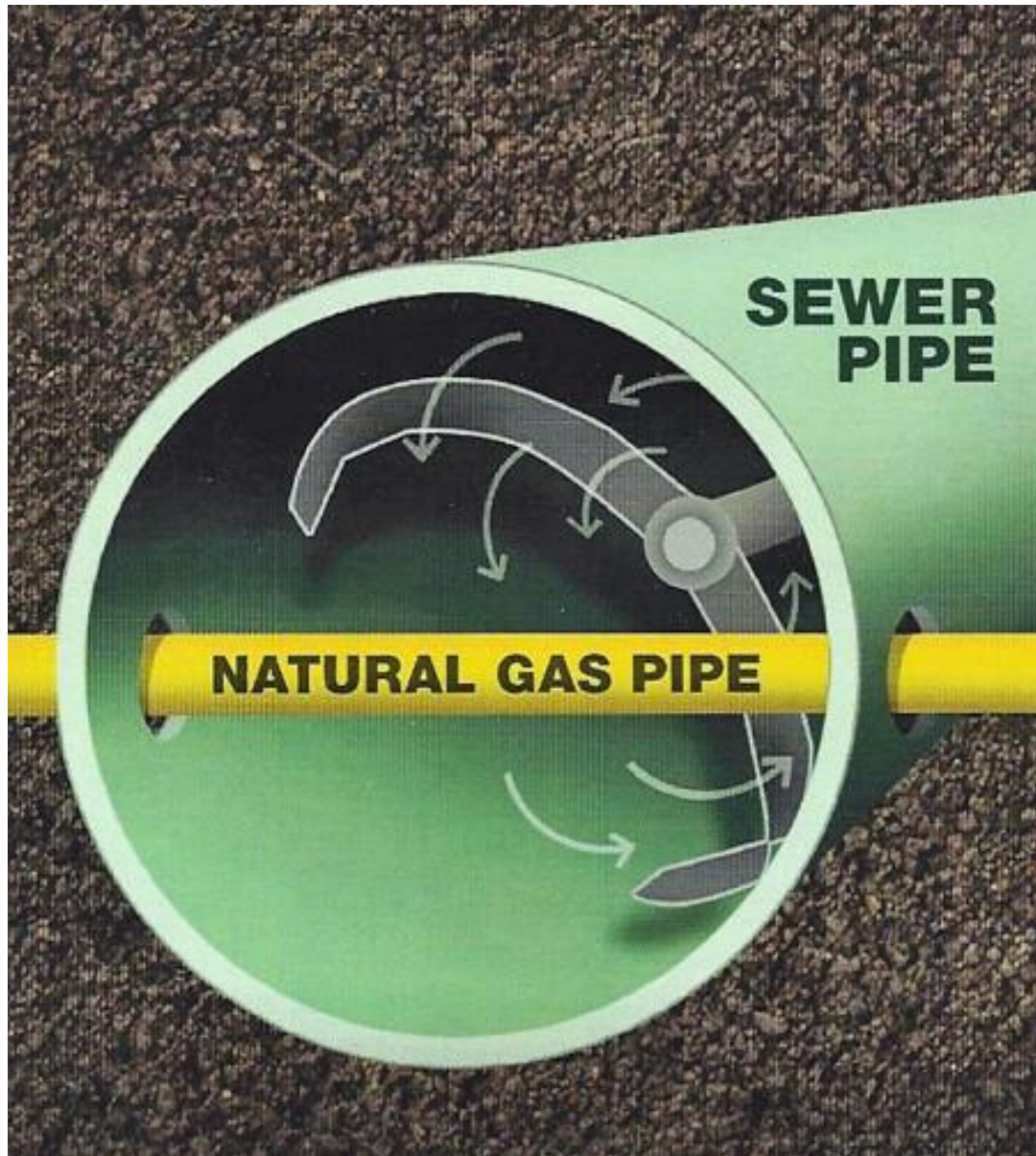
Main natural gas pipe

Sewer pipe to street

**CROSS BORE  
CONFLICT  
BETWEEN  
SEWER AND  
GAS LINE**



# Cross Bore



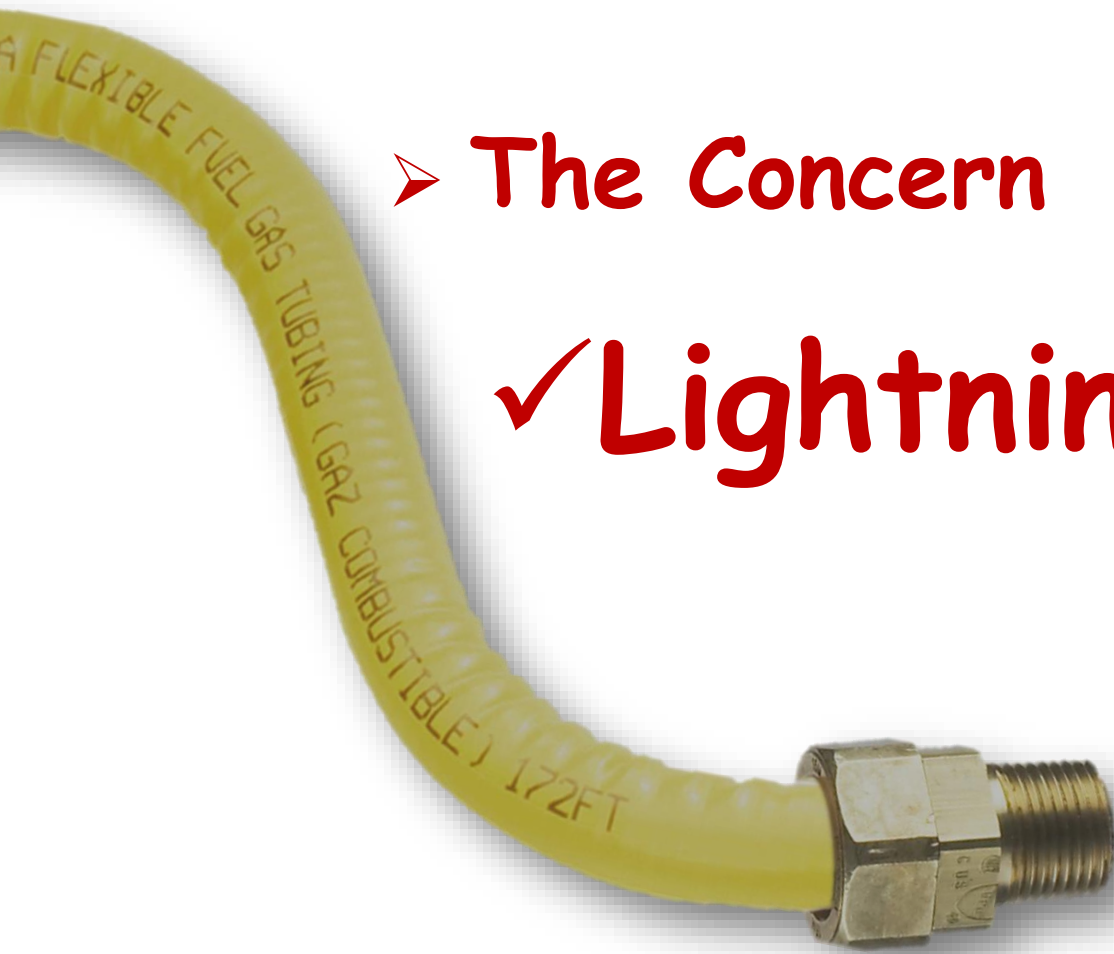


# What is CSST?

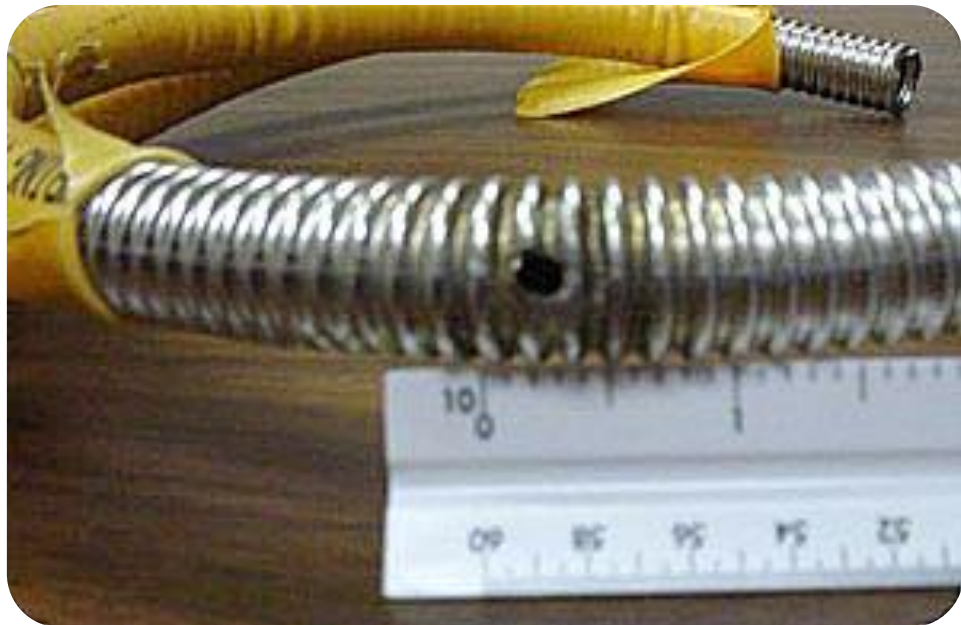
- Corrugated Stainless Steel Tubing (CSST)
  - Flexible customer piping

- **The Concern**

✓ **Lightning Strikes**

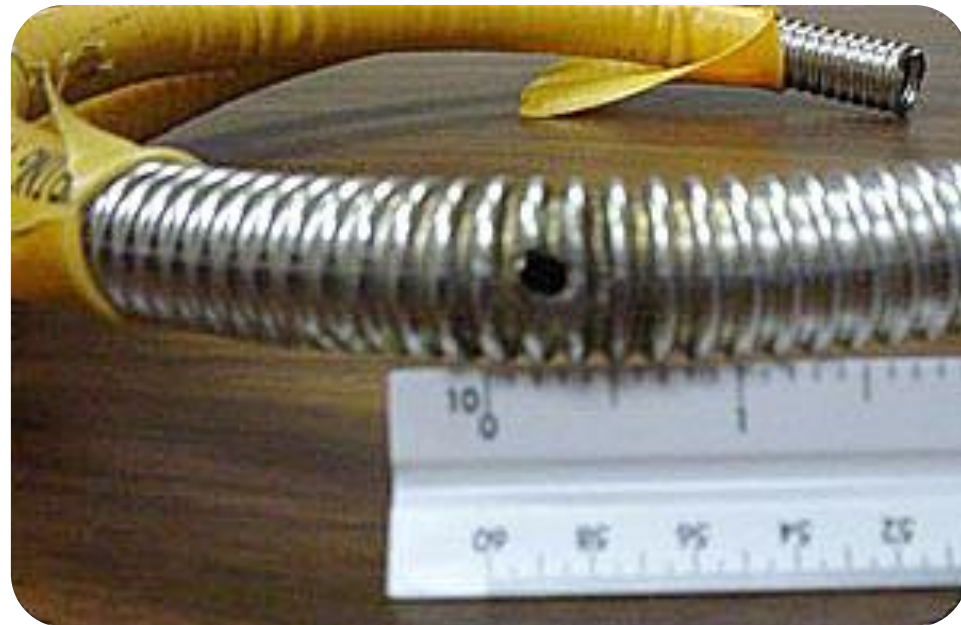


# CSST





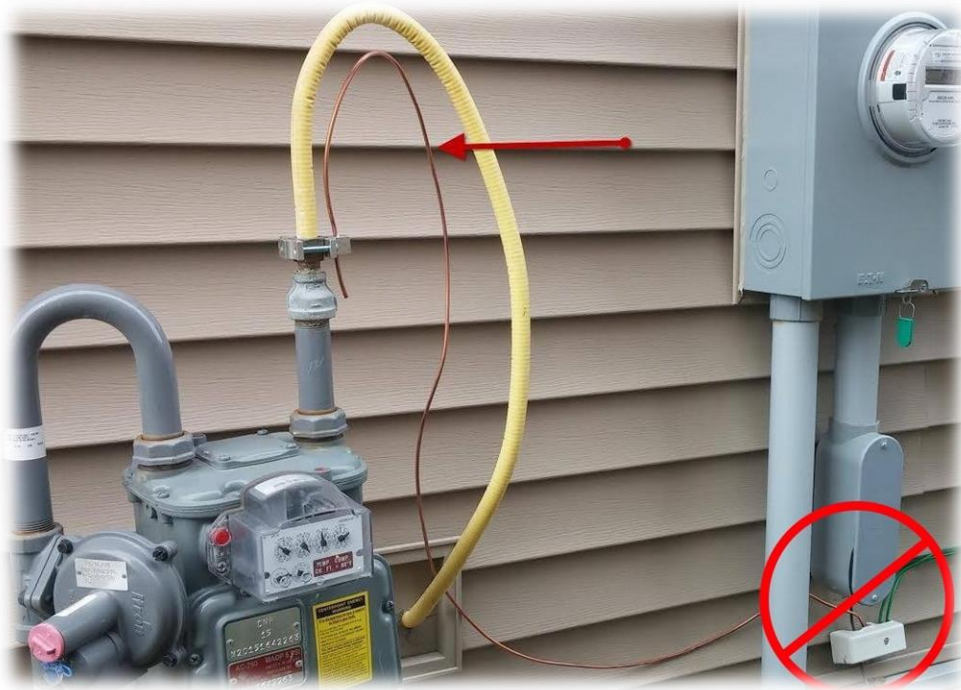
# CSST





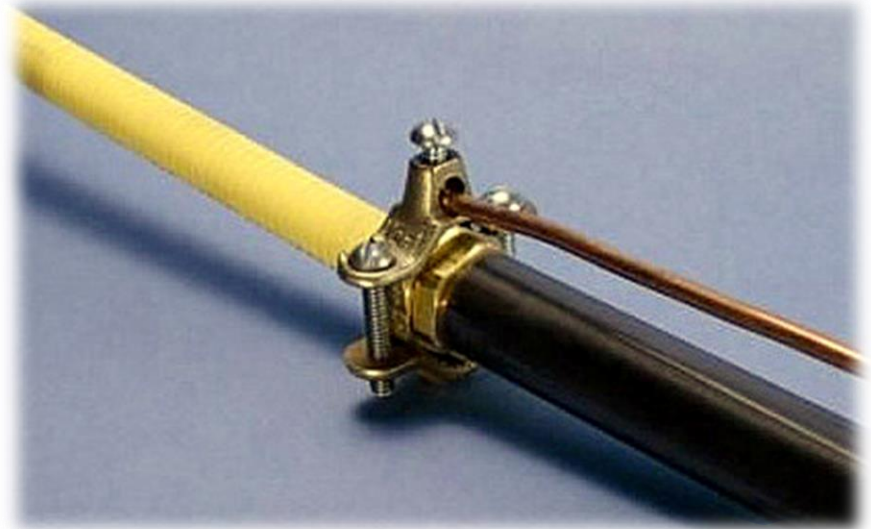


# Bonded CSST



Bonding has been a requirement of the lawsuits

For more information  
look up:  
"CSST Lawsuit"





**Lightning Strike caused the fire and holes in the CSST**



# Lightning strike & CSST





Left corner of house was on fire and flames were coming out from behind the gas meter









Flames exiting from  
CSST inlet to house









# Zumbrota

568 18th St E, Zumbrota, Minnesota 55992, United States



Directions

Traffic

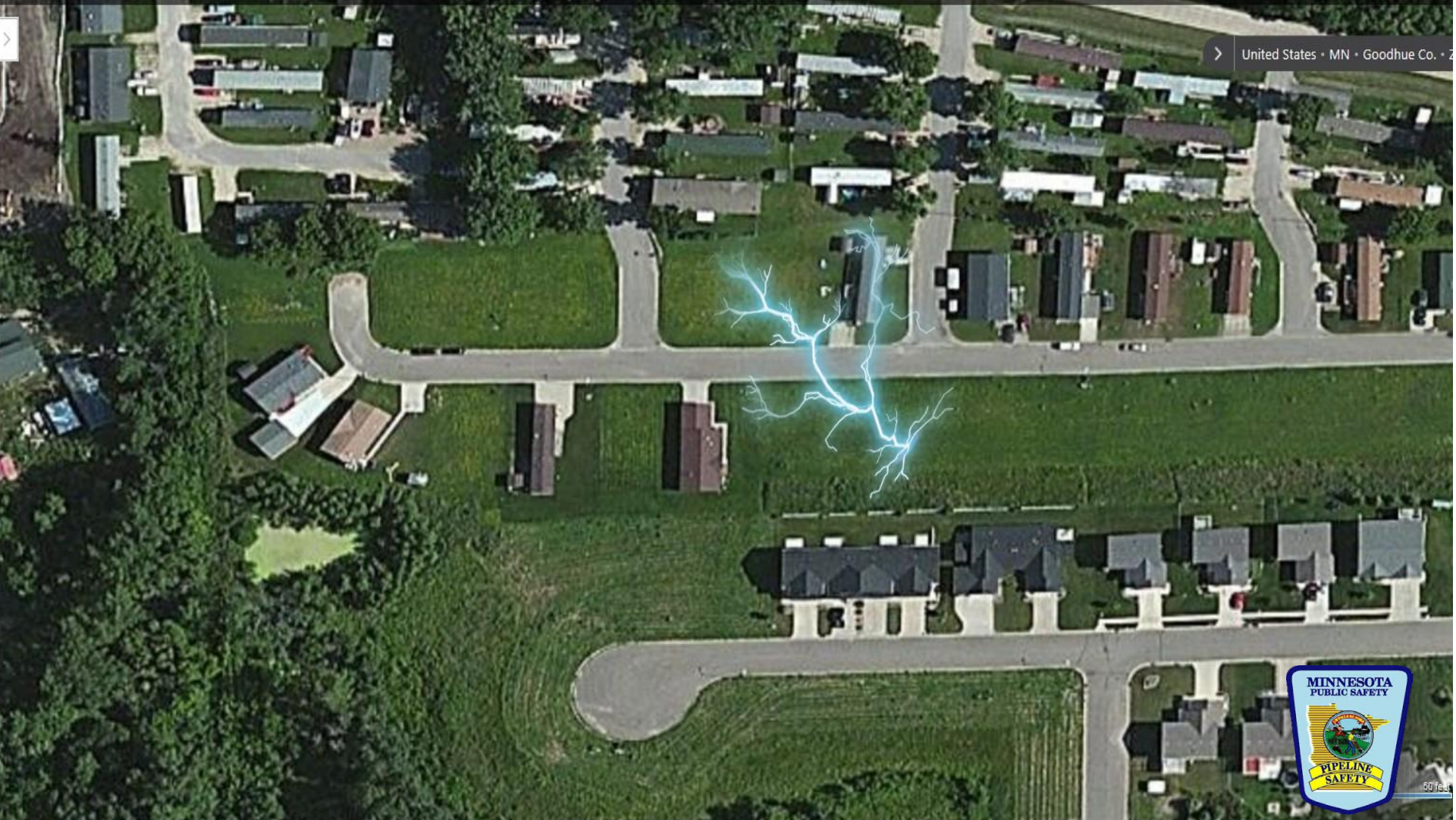
My Places

Print

Share

Full Screen

United States • MN • Goodhue Co. • Z









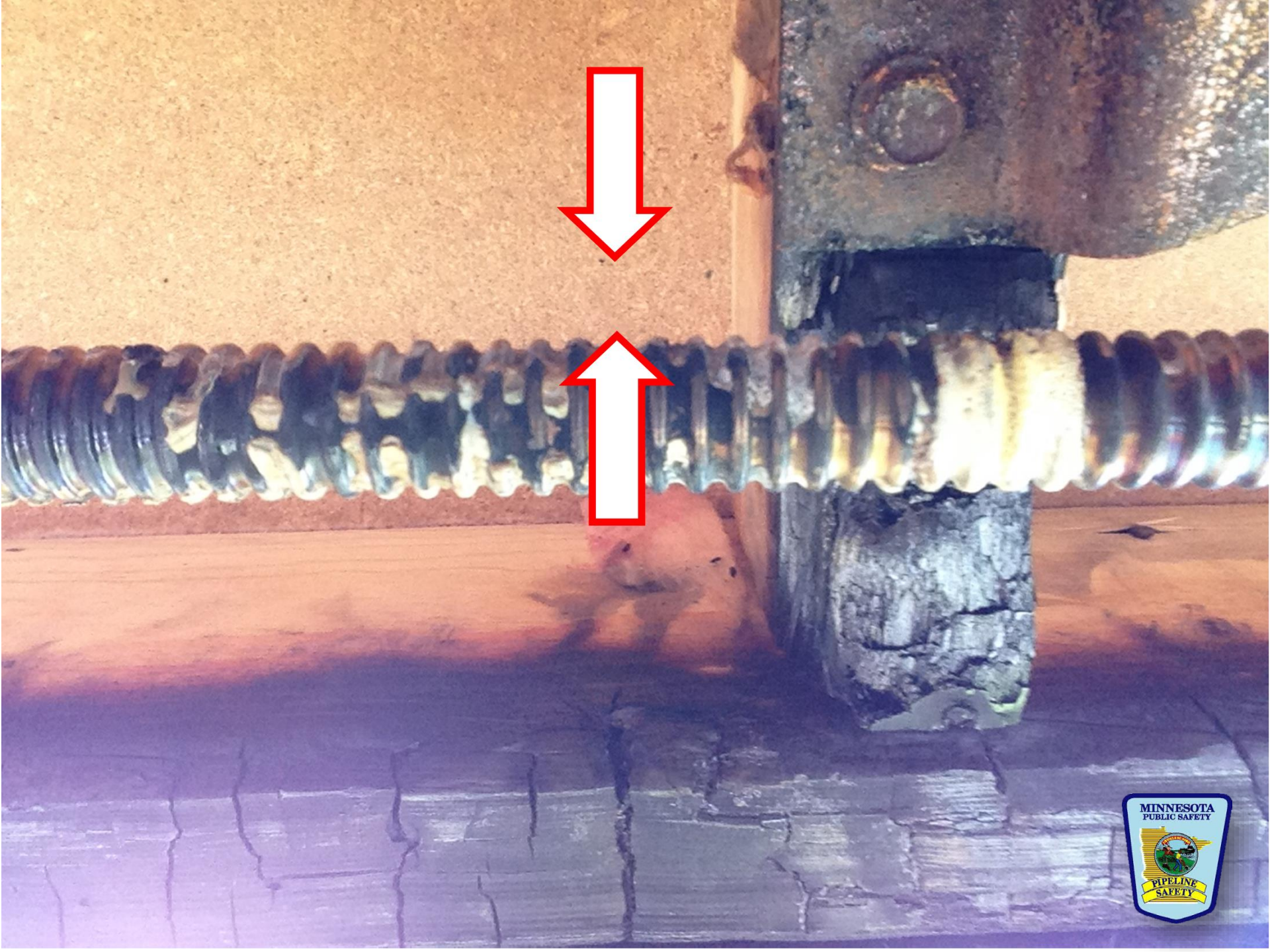


A.F. 1  
S.P.  
S.DRY

1/4" x 8"









# Gas Safety

## ☐ Gas involved

Let it burn  
(Then you know  
where the gas is.)



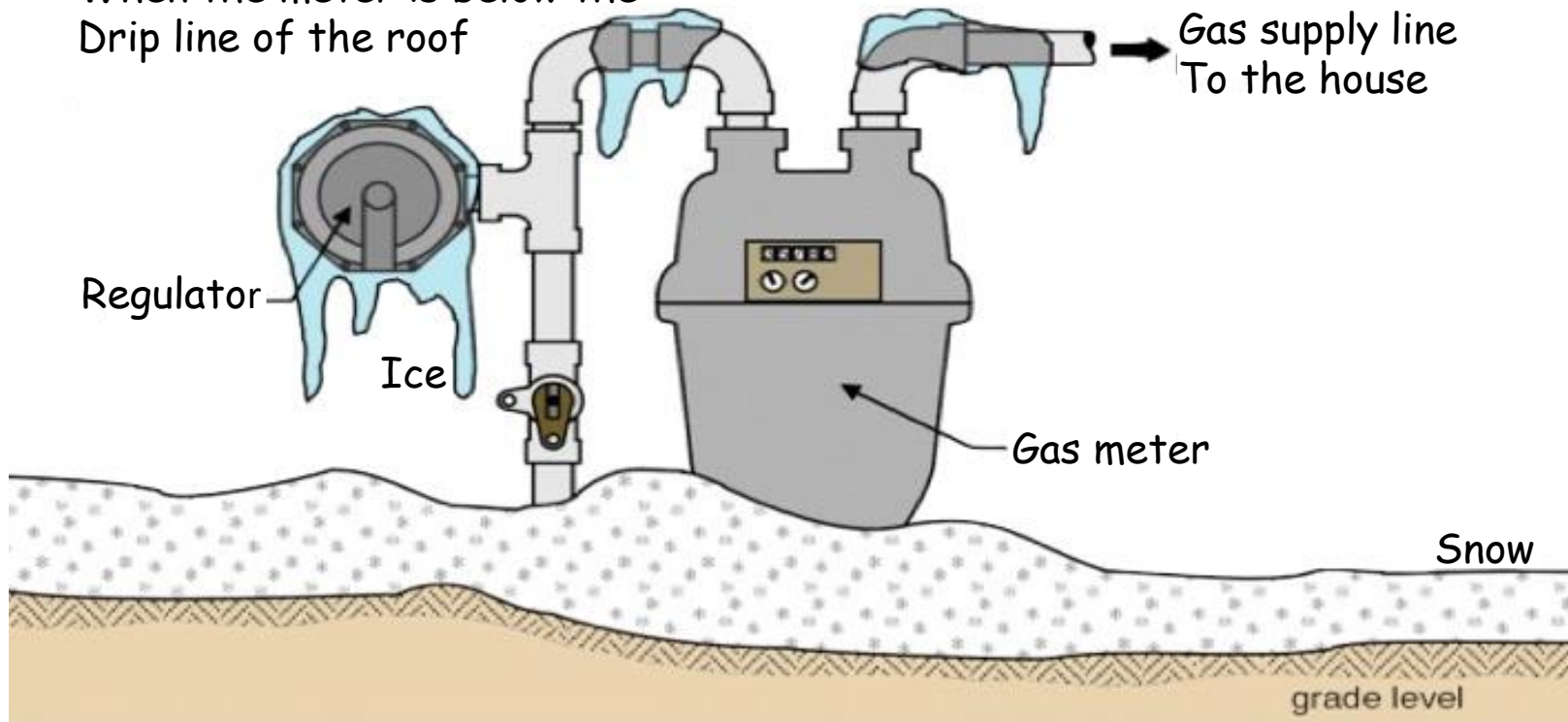


# Ice & Snow

## Ice on regulator

Ice build-up on regulators can block  
The vents and potentially allow  
Excess gas pressure into the house

This is most likely to happen  
When the meter is below the  
Drip line of the roof













# Electric Safety

- There is no perfect coating.
- Don't handle electric line.
- Reclosure up to 4 times
- OSHA requires a 10 foot clearance from
- Overhead lines  
(you & equipment)

- **Electric burns**  
(they burn from the inside out)





**— PARKING —  
SHENEFIELD'S  
EVENT CENTER**





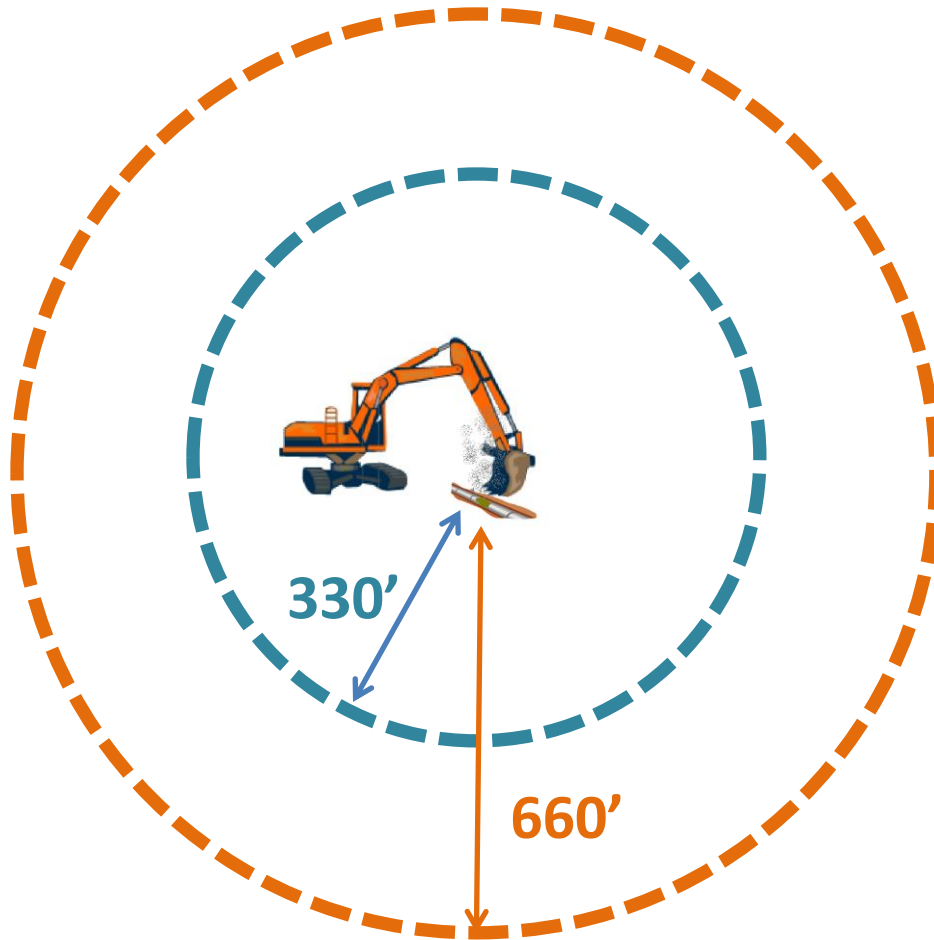
# Emergency Response Guidebook





# Immediate Precautionary Measure

(General Guidelines)



## Natural Gas Pipelines

- **Distribution lines:**  
**330 Feet**  
(Emergency Response Guide Book)
- **Transmission lines:**  
**660 Feet**  
(Potential Impact Radius CFR192.903)

**Consider other factors  
such as sewer lines &  
critical buildings**

**make the area safe**







Pipelines - what's in the area

Meet with facility operators

MNCAER Meetings

[www.mncaer.com](http://www.mncaer.com)

[www.mncaer.com](http://www.mncaer.com)



### National Pipeline Mapping System (NPMS)

Meeting Resources

CoRE and HSEEP Information

Awards

Outreach

Damage Prevention

Industry Links

Integrity Management Programs

Kids Korner

Leak Recognition Response

National Pipeline Mapping System



### Upcoming Meetings

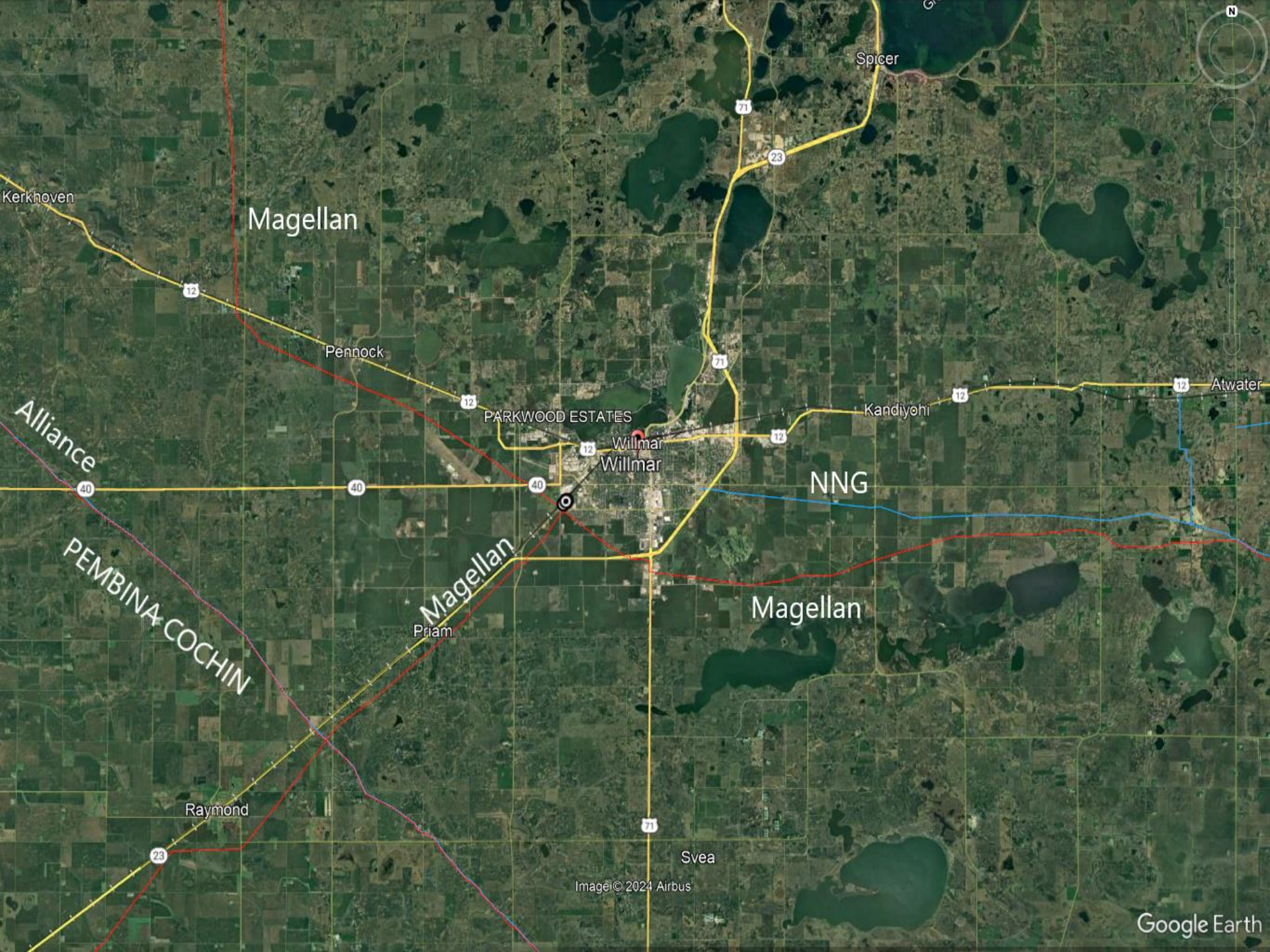
Monticello, MN  
January 30, 2023  
[Meeting Details](#)

Isanti, MN  
January 31, 2023  
[Meeting Details](#)

Chaska, MN  
February 1, 2023  
[Meeting Details](#)

[View More Meetings](#)





Magellan

Spicer

Kerkhoven

Pennock

Alliance

PARKWOOD ESTATES

Willmar

Kandiyohi

Atwater

NNG

PEMBINA-COCHIN

Magellan

Magellan

Priam

Raymond

Svea

Image © 2024 Airbus

Google Earth





- **Duty Officer**  
**800-422-0798**

**Metro**

**651-649-5451**

- **MNOPS Main**  
**651-201-7230**





**Pat Donovan**  
**Minnesota Office of Pipeline Safety**  
**651.201.7230**  
**[dps.mn.gov/divisions/ops](https://dps.mn.gov/divisions/ops)**







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