2013 AG Drain Tile Meeting

MINNESOTA
PUBLIC SAFETY
PIPELINE
SAFETY

811
Know what's below.
Call before you dig.

Meeting Agenda

1) Introduction to drain tiling and historical perspective.
2) Governing regulations and permit process.
3) Drain tiling activity in Minnesota.
4) Case studies and actions taken.
5) Round table discussion.

Poorly drained farmland = very bad!

Drainage Historical Perspective

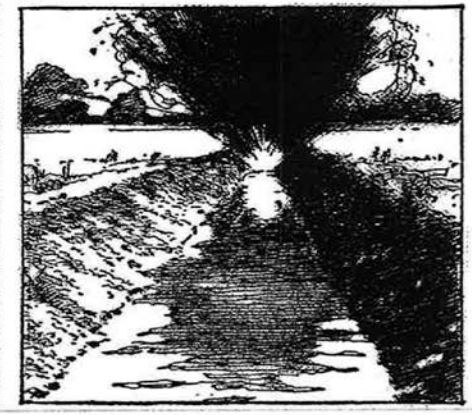
from the

BUREAU FARMER Aug. 1930

2 ways

to improve your farm with DYNAMITE

—the easy, quick, low-cost way to clear your farm of stumps and boulders...to provide better drainage



Drainage Historical Perspective

John Johnston “The Father of drain tile drainage”.

Installed 3,000 tiles on his Seneca County, New York farm in 1838

Johnston eventually had installed 72 miles of tile drains on his 320-acre farm.

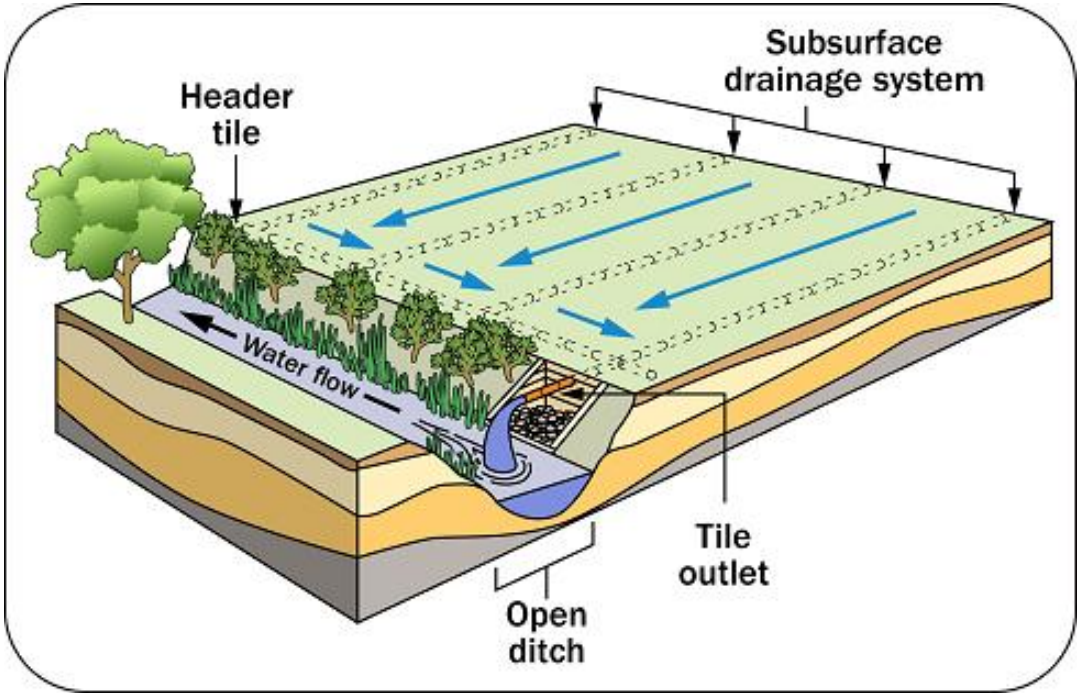
As late as 2003, the Kime family— current owners of Johnston’s original farm reported that many of Johnston’s tile lines were still working.

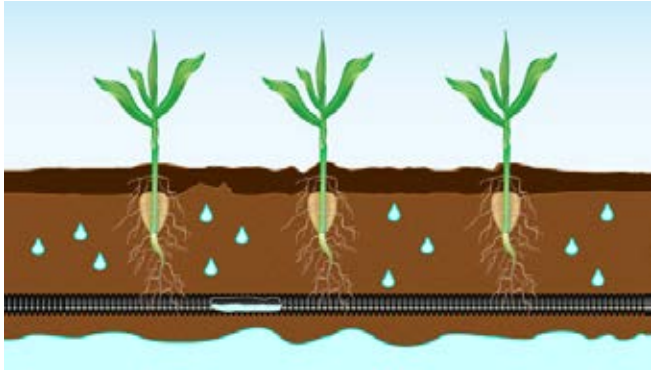
Drainage Historical Perspective

Drain tiling in the early 1900’s

Modern Day Methods

1 truckload of tile = 6 rolls with 1500 feet per roll.





Other uses

Drain tile permitting can get complicated

MN Statutes Chapter 103E Public Drainage Authorities

Counties (approximately 80 of 87 currently administer Chapter 103E drainage systems)

Watershed Districts (21 of 46 currently administer Chapter 103E drainage systems)

Joint County Drainage Authorities (for drainage systems in more than one county) (5 members, at least 1 from each county board)

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

TILING?

Know your Responsibility:

Interested in tiling? USDA participants should indicate their intention to perform any drainage activities by completing an AD-1026 form, available at local Farm Service Agency offices.

USDA does not issue drainage permits. As such, participants may proceed at anytime with drainage activities with or without a certified wetland determination. However, participants are responsible to know where wetlands are in relation to their project on their own and on adjacent land. Each participant is responsible to maintain their eligibility by avoiding impacts to these wetlands. Some wetlands are obvious and some wetlands may not always look "wet" they may even be cropped Impacts include actions outside the wetland that reduce water flow to the wetland.

A USDA certified wetland determination helps participants avoid impacts, but is not required and the responsible participant may proceed at any time, accepting complete responsibility for their knowledge of wetlands and their drainage actions.

Drainage activities may require other approvals or permits. Avoid violations by also knowing your responsibilities under the Minnesota Wetland Conservation Act, the Clean Water Act, and other state or local regulations.

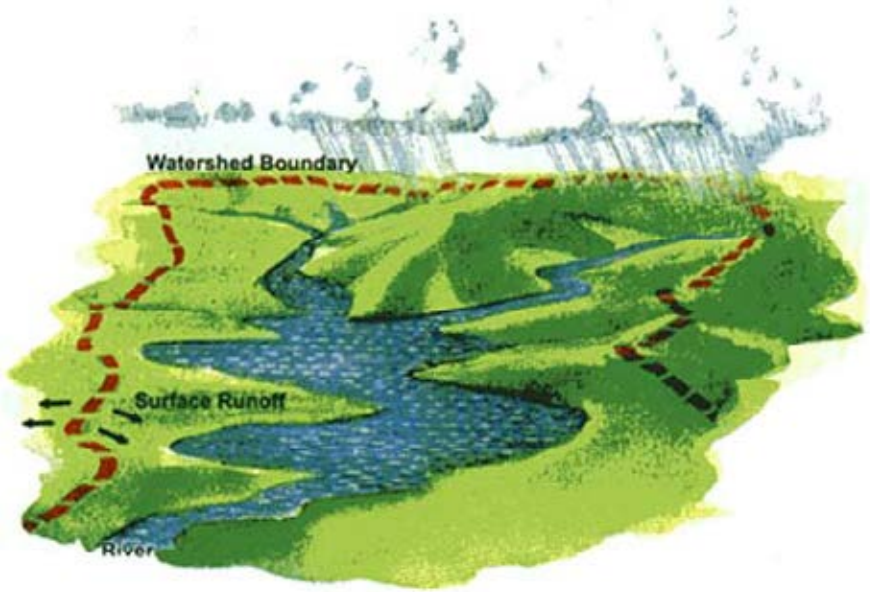
Get E-MAIL updates from GOVDELIVERY

Bois de Sioux Watershed District
Permitting Checklist (page 1 of 2)

The following agencies may require a permit for any projects/activities involving water, either surface or otherwise. **You are advised to contact these agencies prior to doing any work within their jurisdiction.** This list is being provided to you in an effort to coordinate the permitting activities and make it easier for you, the applicant, to know what you need to do and where you need to go for permits.

Shoreland/Zoning Offices
Grant County – Greg Lillemon – 218-685-4967
Traverse County – Gary Tracy – 320-563-4411
Big Stone County – Darren Wilke - 320-839-3136
Stevens County – Duane Hebert - 320-589-7417
Otter Tail County – Bill Kalar - 218-739-2271
Wilkin County – Bruce Poppel – 218-643-5815

Road Authorities – for work in road right of way
County Highway Department
Grant County – Arne Lutz, Assistant Engineer – 218-685-4481
Traverse County - Larry Haukos, Engineer – 320-563-4848
Big Stone County – Nick Anderson, Engineer – 320-839-2594
Stevens County – Larry Schaub - 320-589-7430
Otter Tail County – Rick West - 218-739-2271
Wilkin County – Tom Richels, Engineer – 218-643-4772
Twp Road Authority – Twp. Board Members
MnDOT – Herb Nelson , Morris – 320-589-7300
Jim Utech, Detroit Lakes – 218-847-1587



Bois de Sioux Watershed District
Permitting Checklist (page 2 of 2)

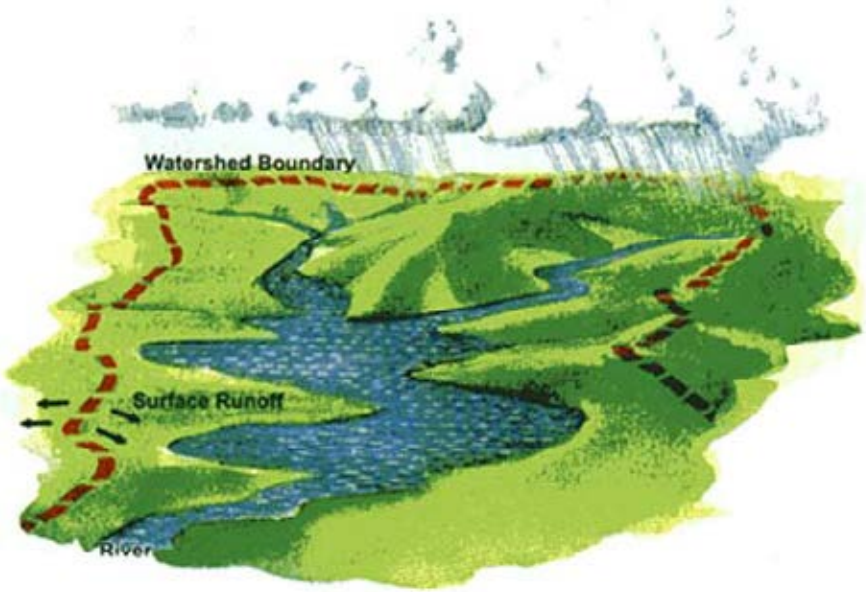
Wetland Conservation Act (WCA) – Local Government Units (LGU)
Grant County – Greg Lillemon – 218-685-4967
Traverse County 320-563-8218
Big Stone County – 320-839-6149
Stevens County– Bill Kleindl - 320-589-7420
Otter Tail County – Kyle Westergard - 218-739-2271
Wilkin County– Bruce Poppel – 218-643-5815

Swampbuster – Natural Resource Conservation Service (NRCS)
Grant County – 218-685-5341
Traverse County - 320-563-8218
Big Stone County – 320-839-6149
Stevens County – Jeff Hellerman - 320-589-2266
Otter Tail County - 218-739-5247
Wilkin County – 218-643-3051

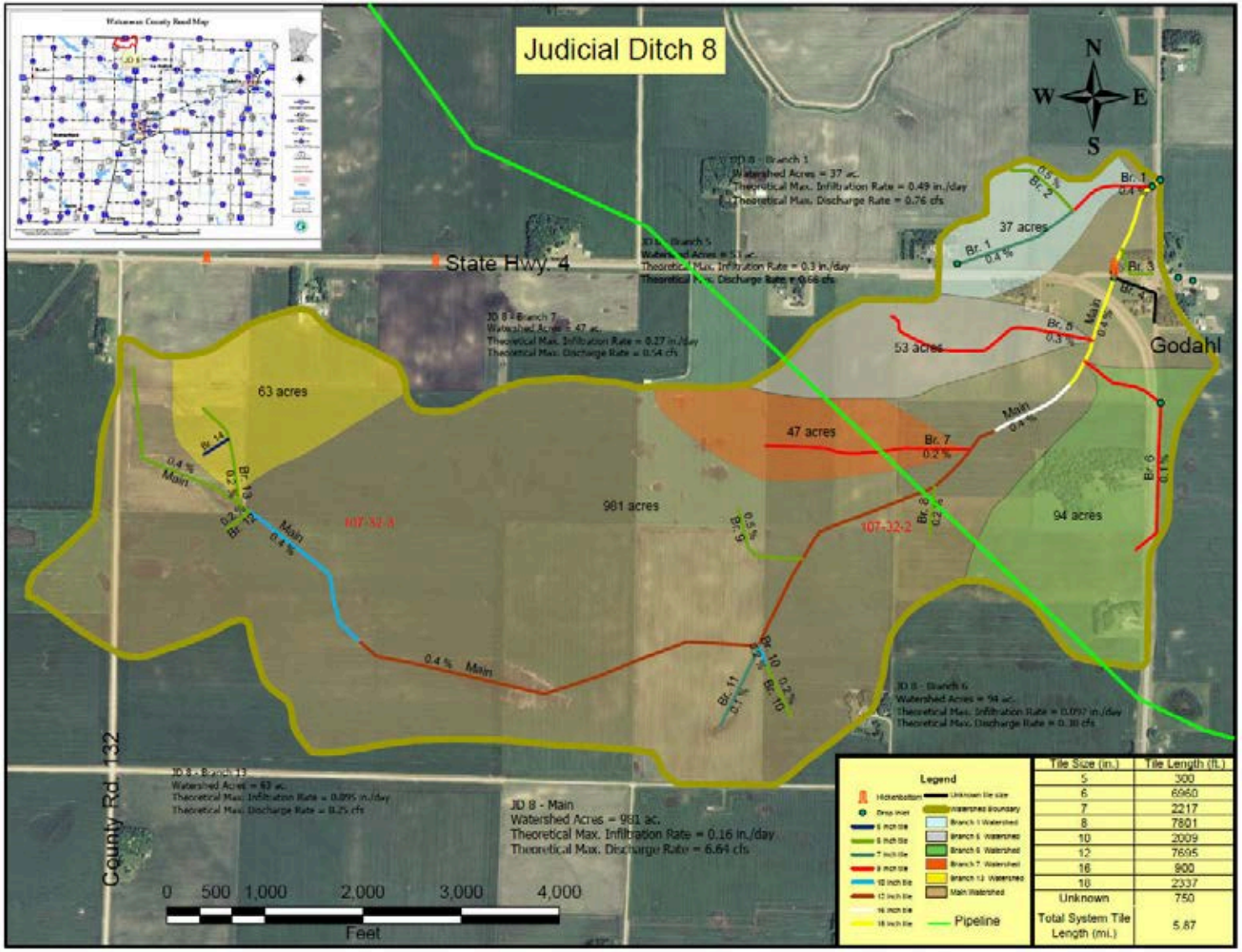
Mn Department of Natural Resources (DNR)
Ottertail, Wilkin, Traverse, Stevens, and Grant Counties
Terry Lejcher, Julie Aadlund –218-739-7576
Big Stone - 320-796-6272

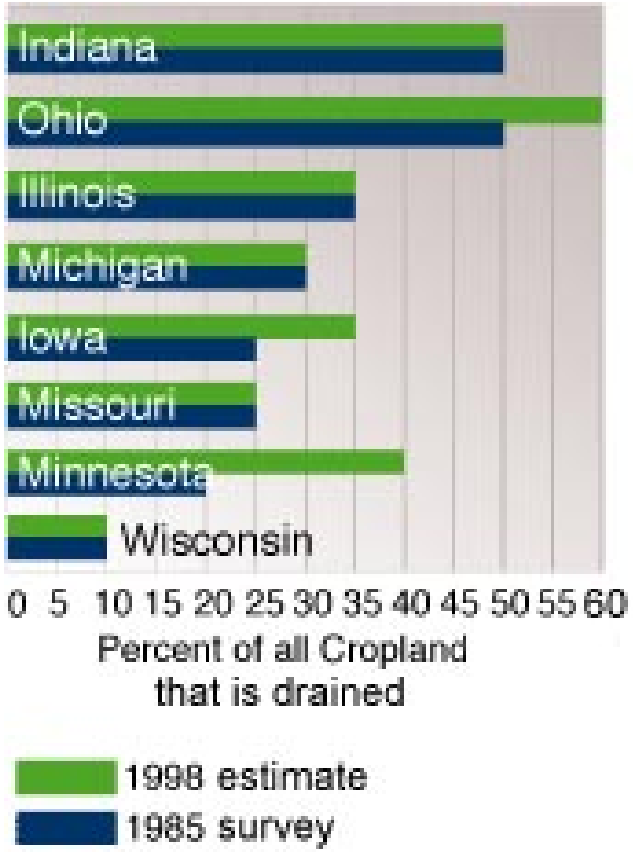
Bois de Sioux Watershed District – Jon Roeschlein – 320-563-4185
U.S. Army Corps of Engineers – Regulatory Dept. – 651-290-5372

Drafted 1-24-02; Revised 9-28-2004



Watonwan County – Southern MN
Watershed map
Note – Crosses pipe in several locations





Percent of all cropland that is drained within each state. The figures, revised for 1998 are based on expert opinion. No comprehensive survey has been conducted since a 1985 USDA effort (results shown in table at right). Discrepancies highlight the need for a new survey to quantify changes in drainage development over the last 15 years, and to make projections for the future.

In Minnesota, contractors have been installing 100 million feet of tile annually.

(Est. by University of Minnesota Extension Service)

How many installations are by professional contractors?

How many are land-owner installed?

Existing drain tile permitting process does not provide notice of locate requirements.

Professional vs. Amateur

- Familiarity with the inherent dangers
- GSOC notification process
- Compliance with “careful and prudent excavation practices”

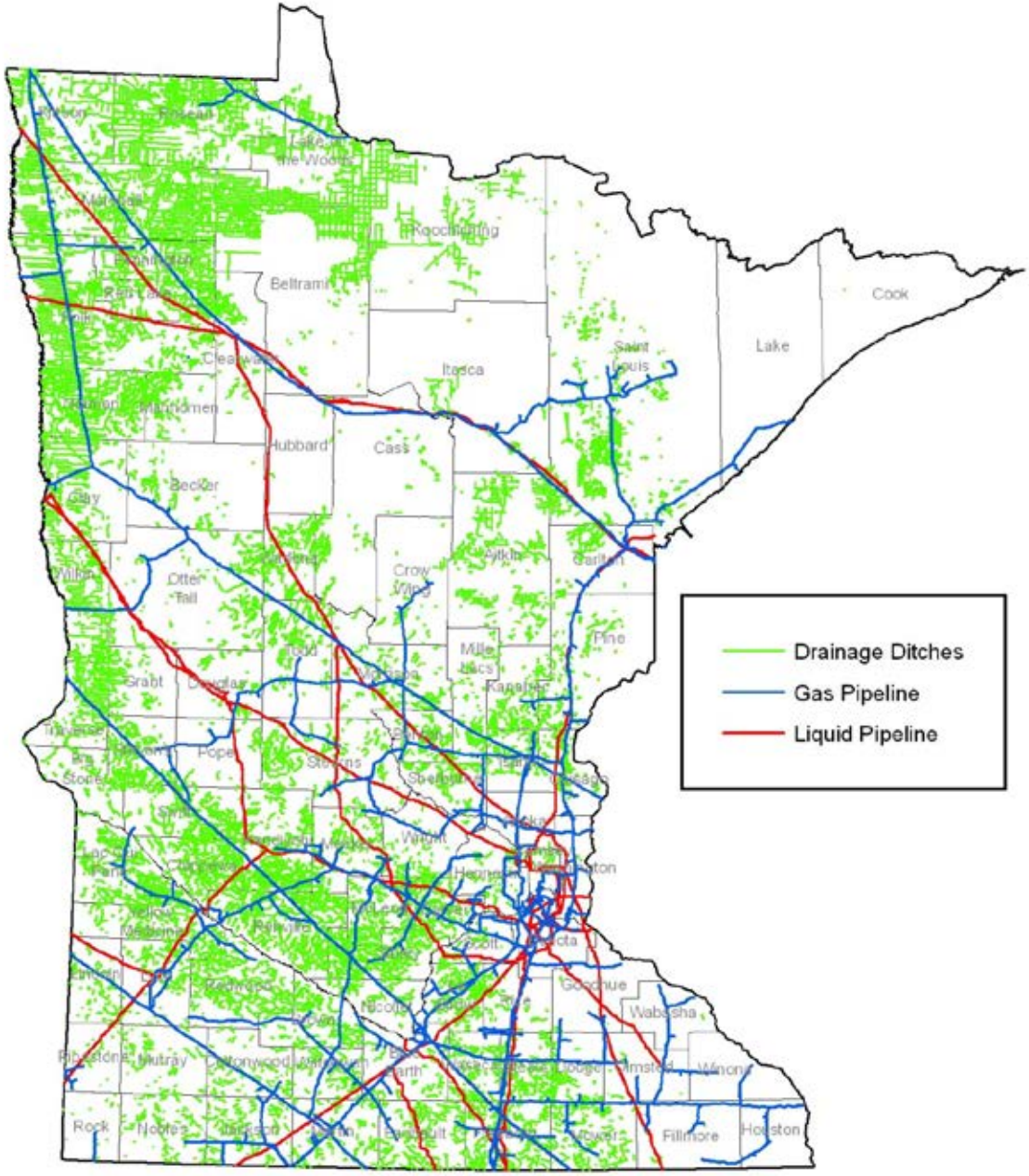
A BIG ISSUE

1204 YTD drain tile tickets in Minnesota as of May 6, 2013
(Not all these are Agricultural tile installations)

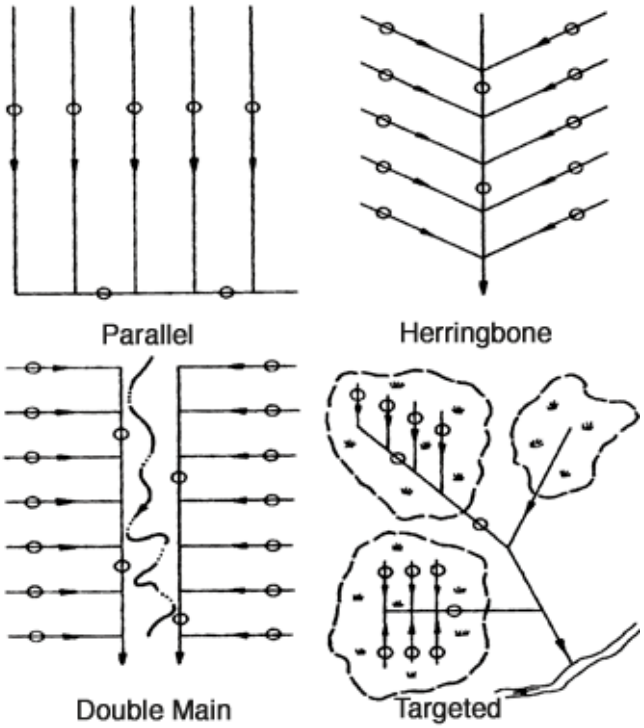
January - 61
February - 16
March - 46
April - 683
May (1-6) - 398

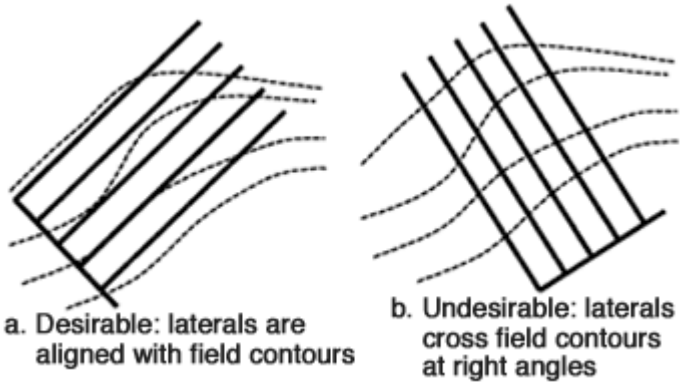
More important:

How many drain tile projects did not have a one-call ticket?


Drainage Ditches
Gas Pipeline
Liquid Pipeline
Beltrami
Koochiching
Cook
Lake
Itasca
Saint Louis
Hubbard
Cass
Becker
Clay
Otter Tail
Crow Wing
Aitkin
Carlton
Pine
Mille Lacs
Kanabec
Grant
Douglas
Pope
Stevens
Sherburne
Wright
Hennepin
Ramsey
Washington
Goodhue
Wabasha
Olmsted
Winona
Fillmore
Houston
Rock
Nobles
Jackson
Cottonwood
Murray
Pipestone

Various Tiling layouts





120th St
120th St
120th St
bing

Example of field with drain tile and ditches and pipe crossing

Marshall, MN - 2012
6 inch, 796 psi Natural Gas pipeline
Activity identified by aerial patrol

Plummer, MN - 1997
Visible 31 miles away
12 inch, 1200 psi, petroleum pipeline
2 injured – 1 significantly

Rural Morris, MN - September 2011
6 in. Natural Gas Pipeline, Pressure 528 psi
3 TOWNS WITHOUT GAS

Rural Morris, MN - September 2011
6 in. Natural Gas Pipeline, Pressure 528 psi
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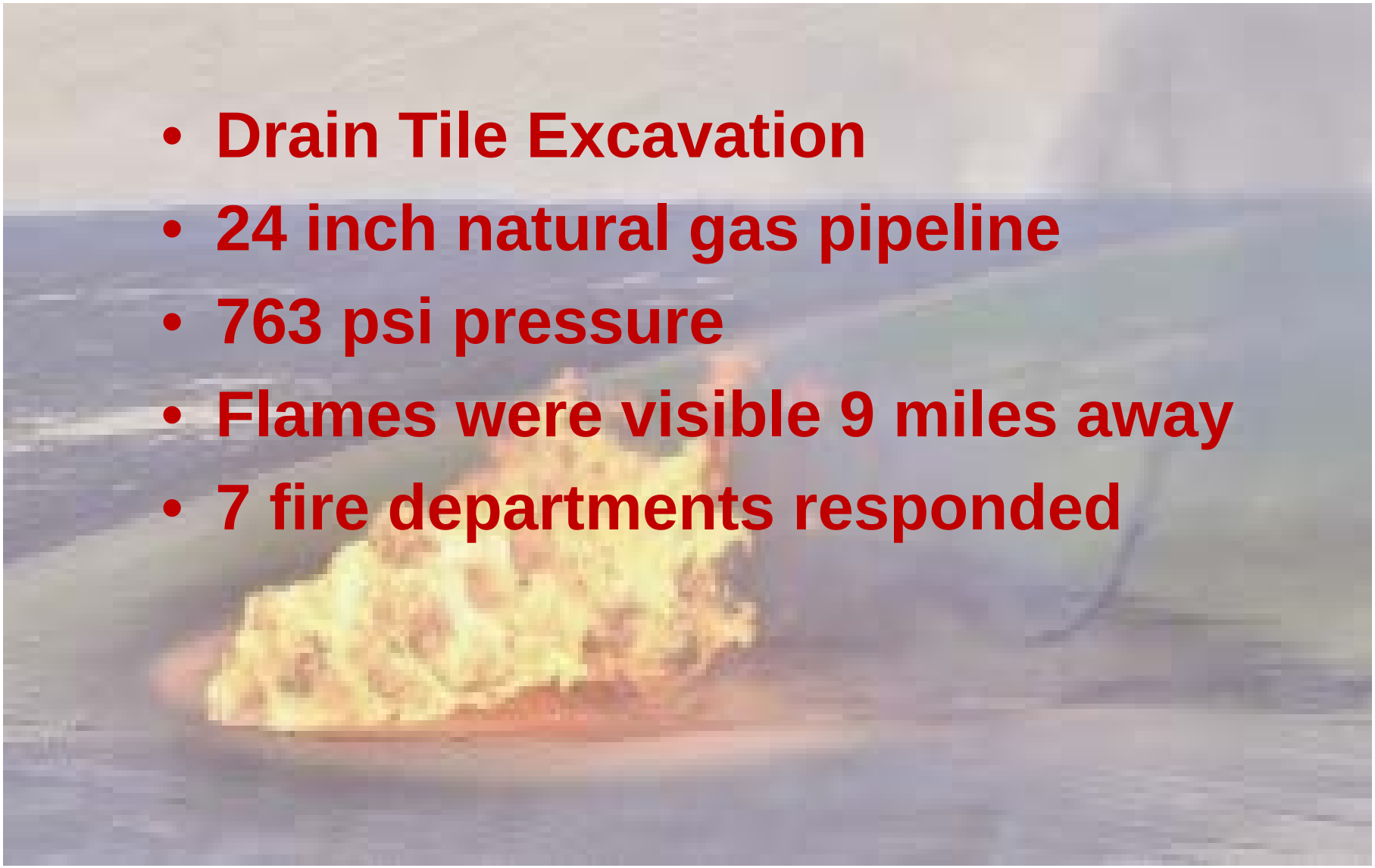
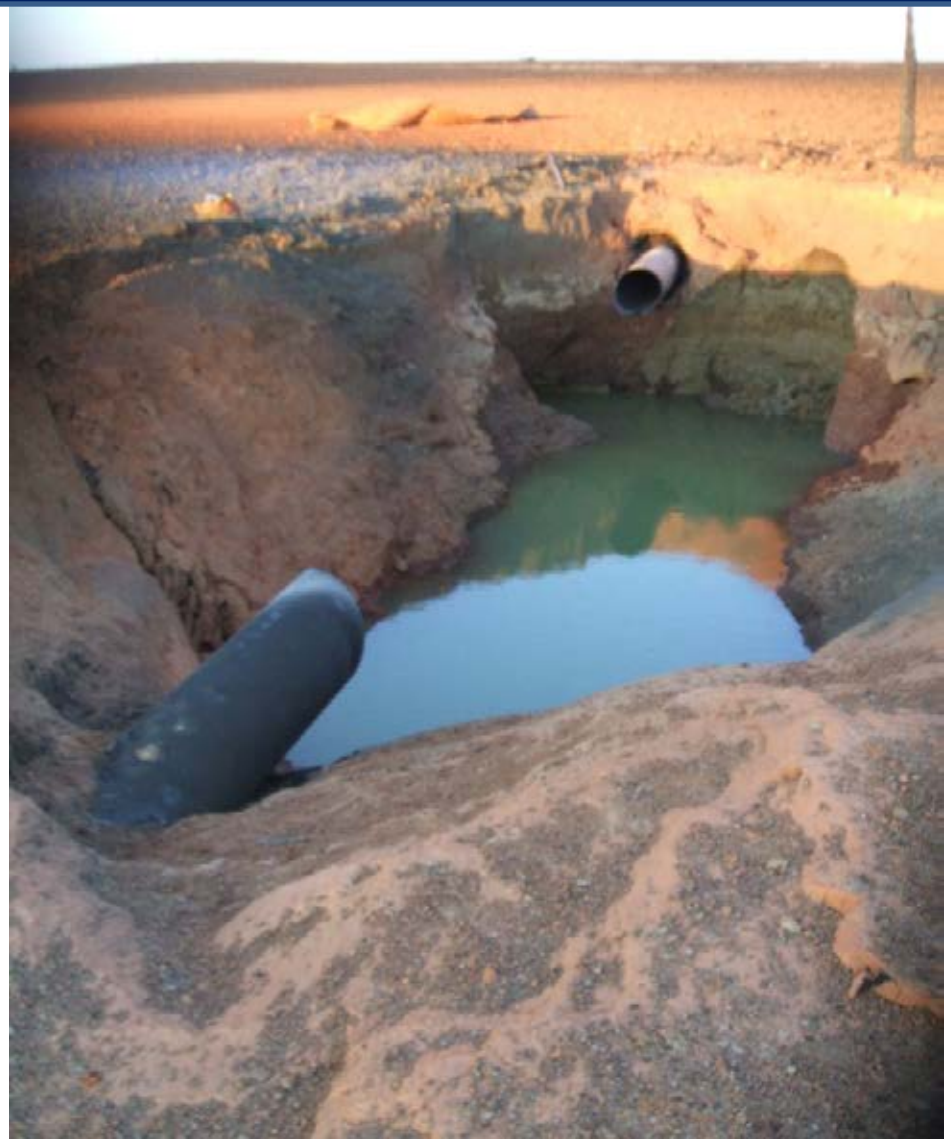
Hinton, Iowa - 2012



- **Drain Tile Excavation**
- **24 inch natural gas pipeline**
- **763 psi pressure**
- **Flames were visible 9 miles away**
- **7 fire departments responded**

Remaining Crater after the explosion!

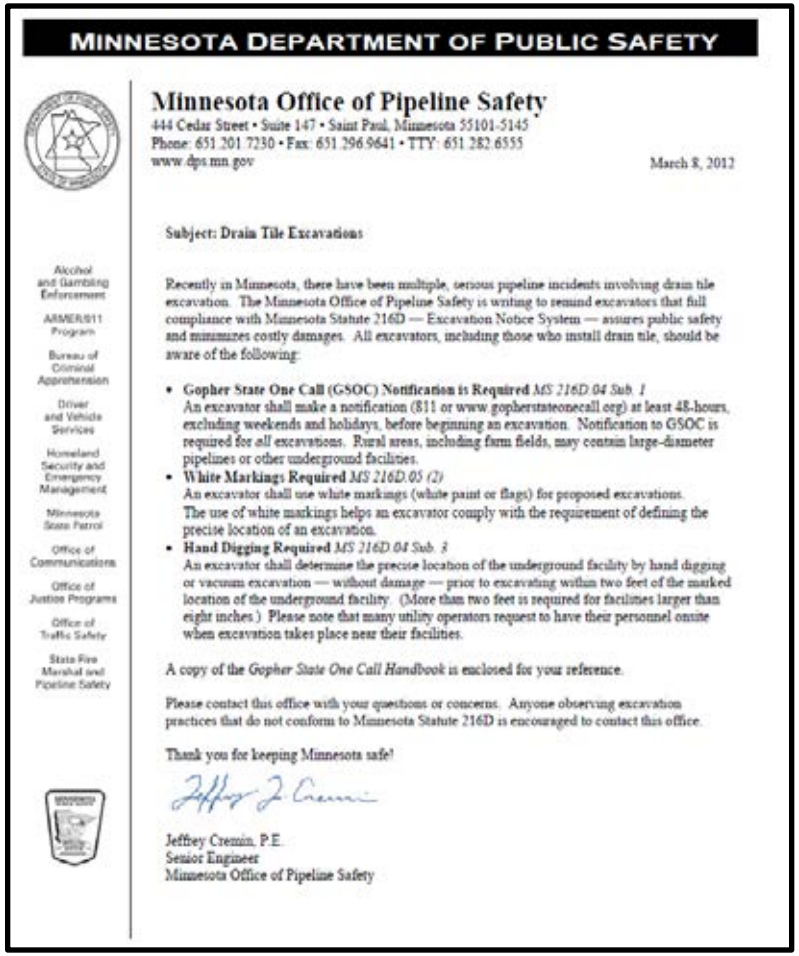


Unbelievable!

A week later the excavator was caught excavating in the same area – again without a one-call ticket!

Iowa Attorney General proceeded with $25,000 civil penalty against excavator

MNOPS Actions



MINNESOTA DEPARTMENT OF PUBLIC SAFETY

Minnesota Office of Pipeline Safety
444 Cedar Street • Suite 147 • Saint Paul, Minnesota 55101-5145
Phone: 651.201.7230 • Fax: 651.296.9641 • TTY: 651.282.6555
www.dps.mn.gov

March 8, 2012

Alcohol and Gambling Enforcement
ARMER/911 Program
Bureau of Criminal Apprehension
Driver and Vehicle Services
Homeland Security and Emergency Management
Minnesota State Patrol
Office of Communications
Office of Justice Programs
Office of Traffic Safety
State Fire Marshal and Pipeline Safety

Subject: Drain Tile Excavations

Recently in Minnesota, there have been multiple, serious pipeline incidents involving drain tile excavation. The Minnesota Office of Pipeline Safety is writing to remind excavators that full compliance with Minnesota Statute 216D — Excavation Notice System — assures public safety and minimizes costly damages. All excavators, including those who install drain tile, should be aware of the following:

- **Gopher State One Call (GSOC) Notification is Required** *MS 216D.04 Sub. 1*
  An excavator shall make a notification (811 or www.gopherstateonecall.org) at least 48-hours, excluding weekends and holidays, before beginning an excavation. Notification to GSOC is required for *all* excavations. Rural areas, including farm fields, may contain large-diameter pipelines or other underground facilities.
- **White Markings Required** *MS 216D.05 (2)*
  An excavator shall use white markings (white paint or flags) for proposed excavations. The use of white markings helps an excavator comply with the requirement of defining the precise location of an excavation.
- **Hand Digging Required** *MS 216D.04 Sub. 3*
  An excavator shall determine the precise location of the underground facility by hand digging or vacuum excavation — without damage — prior to excavating within two feet of the marked location of the underground facility. (More than two feet is required for facilities larger than eight inches.) Please note that many utility operators request to have their personnel onsite when excavation takes place near their facilities.

A copy of the *Gopher State One Call Handbook* is enclosed for your reference.

Please contact this office with your questions or concerns. Anyone observing excavation practices that do not conform to Minnesota Statute 216D is encouraged to contact this office.

Thank you for keeping Minnesota safe!

Jeffrey Cremin, P.E.
Senior Engineer
Minnesota Office of Pipeline Safety

In 2012 MNOPS sent a letter to 300 companies.

Source of tiler information:

- Tilers in MNOPS database,
- GSOC tickets indicating “drain tile”
- MN LICA contractor listing

MNOPS Actions

MN OFFICE OF PIPELINE SAFETY

*By **Jeffrey Cremin**, P.E., Senior Engineer, Minnesota Office of Pipeline Safety*

DON'T EXCAVATE BLINDLY!

DRAIN TILE EXCAVATION – DAMAGE PREVENTION

In 2011, Gopher State One Call (GSOC) reported 16,815 tickets (2.7% of the total volume of tickets) as having a 'drain tile' work type. Although this percentage of tickets is relatively small, the Minnesota Office of Pipeline Safety (MNOPS) has recently investigated multiple, serious pipeline incidents that occurred during drain tile excavation. The majority of these incidents are the result of the excavator *failing to make the required notice to GSOC*, or marking instructions that don't match the actual excavation area. There are simple ways to prevent these incidents and this article is intended to educate excavators that full compliance with Minnesota Statute (MS) 216D—*Excavation Notice System*—assures public safety and minimizes costly damages.

MNOPS is always willing to answer questions about statutory requirements, as education is the most effective tool in reducing third-party damages. Excavators who install drain tile (and excavators in general) should be aware of the following:

GSOC Notification Is Required
MS 216D.04 Sub. 1

An excavator shall provide notice (by contacting GSOC at 651-454-0002, Metro; 800-252-1166, Greater Minnesota, via the GSOC website; www.gopherstateonecall.org or by dialing 811) at least 48 hours, excluding weekends and holidays, before beginning an excavation. Notification to GSOC is required for all excavations as defined by MS 216D.01 Sub. 5 (excavators are still encouraged to make notification when excavations are exempted from the notification requirement). Rural areas, including farm fields, township and county road right-of-ways, may contain large-diameter pipelines or other underground facilities.

White Markings Required
MS 216D.05 (2)

An excavator shall use white markings (white paint or flags) for proposed excavations. The use of white markings helps an excavator comply with the requirement to define the precise location of an excavation. White paint or flags provide effective communication of an excavation area between the facility locator and the excavator.

Hand Digging Required
MS 216D.04 Sub. 3

An excavator shall determine the precise location of the underground facility by hand digging or vacuum excavation—without damage—prior to excavating within two feet of the marked location of the underground facility. (More than two feet is required for facilities larger than eight inches.) Please note: Many utility operators request to have their personnel onsite when excavation takes place near their facilities.

MNOPS is reviewing the current language in MS 216D (above) with the goal of improving public safety. MNOPS is interested in listening to your perspective on possible statute changes in 2014. Please visit our website at https://dps.mn.gov/divisions/ops for more information.

Damage Prevention Education

You may contact this Office anytime at 651-201-7230 to request a no-cost damage-prevention presentation for your company. Education is the primary means that MNOPS uses to ensure compliance with regulations. When education is ineffective, enforcement actions may be taken. The goal is always to ensure full compliance with Minnesota Statutes and Rules in order to ensure public safety.

Thank you for helping keep Minnesota safe!

Did You Know? GSOC's Public Relations, Education, & Marketing team are available for no-charge safety presentations. Contact Aly Wallberg: aly.wallberg@gopherstateonecall.org or 651-681-7306; Estelle Richard: estelle.richard@gopherstateonecall.org or 651-681-7303 or Kevin Grutzmacher: kevin@gopherstateonecall.org at 651-681-7305. Let us help you craft your next excavation safety day!

MNOPS Actions

MNOPS drain tile investigations and enforcement

2012

11 cases directly related to drain tiling activities.

5 cases included an enforcement letter.

Open Discussion

1. **What do you believe to be the key root cause to this issue? What's the problem?**

   What programs, activities or projects that your organization has undertaken that have been helpful in addressing this issue? What have you done?

2. **What programs, activities or projects that if developed and implemented would most effectively address this issue? What can be done?**

   Should it be done and coordinated as a group?

Open Discussion

What do you believe to be the key root cause to this issue? What's the problem?

What programs, activities or projects that your organization has undertaken that have been helpful in addressing this issue? What have you done?

What programs, activities or projects that if developed and implemented would most effectively address this issue? What can be done?

Should it be done and coordinated as a group?

Possible Next Steps

1. Results of todays meeting will be made public, allowing others to choose and implement ideas independently.

2. Develop this meeting into a committee to serve as a resource for further developing best practices.

3. Build upon and expand this meeting by including other stakeholders *(ex. Excavators and landowners)* for further developing best practices.