

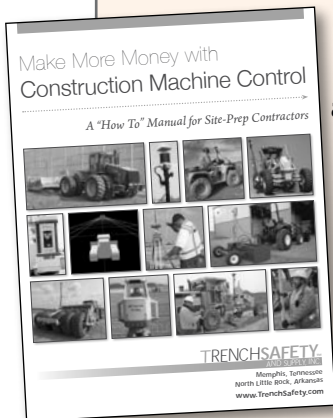
Safety Classes
are Filling!
**Enroll Your Crews
Today!**
See page 4.

Volume 12
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EXCAVATION SAFETY News

www.TrenchSafety.com

New Book on Machine Control Now Available



TrenchSafety's much-anticipated new book on Machine Control is finally "out there," and is available on Amazon.com.

"MAKE MORE MONEY WITH CONSTRUCTION MACHINE CONTROL: A 'HOW TO' MANUAL FOR SITE-PREP CONTRACTORS" covers every facet of Machine Control technology, starting with answers to questions about whether it makes sense for your company, all the way through laser-based equipment, 2- and 3-dimensional systems, GPS equipment, to the newest "Millimeter GPS" technology, which redefines accuracy in the site-preparation industry.

We've also created a companion web page on TrenchSafety's site. From any page simply click the "Machine Control Info" button on the left.

To order the book, simply go to Amazon.com, and search for "TrenchSafety" (all one word). The book's page will pop up.

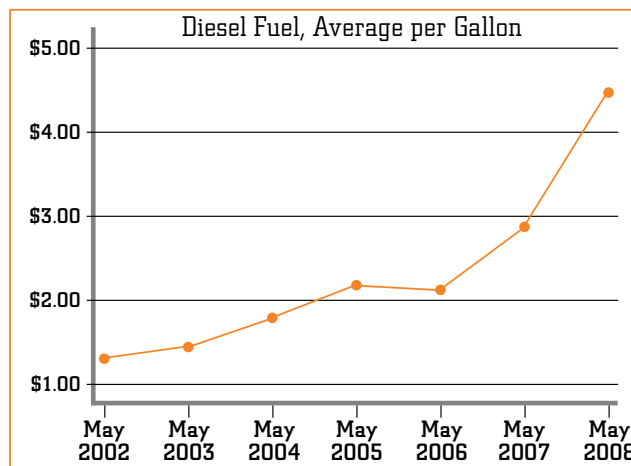
For your excavation work, here's the...

Cure for the Diesel Fuel Blues

For years, the cost of diesel fuel has been a large expense for utility and site-prep contractors. And, now, thanks to the recent dramatic increases in diesel prices, it's an even bigger expense. According to the U.S. Department of Energy, diesel fuel prices have risen 348 percent since 2002.

Diesel fuel cost is problematic for at least six reasons:

- You cannot operate your heavy machinery without it.
- You have no control over the price.
- It is a significant expense.
- The cost directly affects your profitability. A \$5,000 per month increase in fuel costs represents a \$5,000 reduction in your net income.
- Few construction contracts have provisions to help alleviate the impact of your fuel cost increases.
- Higher costs directly affect your cash flow. Many fuel suppliers, for example, require weekly payments, and being late is unacceptable.



Source: U.S. Energy Information Administration, www.eia.doe.gov

One cure for the "Diesel Fuel Blues" is to use some form of trench shielding for most of your underground work. Trench shields will significantly reduce the amount of material that you have to handle, and the time required to complete a project.

Let's analyze just the fuel costs needed to dig a trench on a hypothetical sewer project.

Should You Slope or Use Shields?

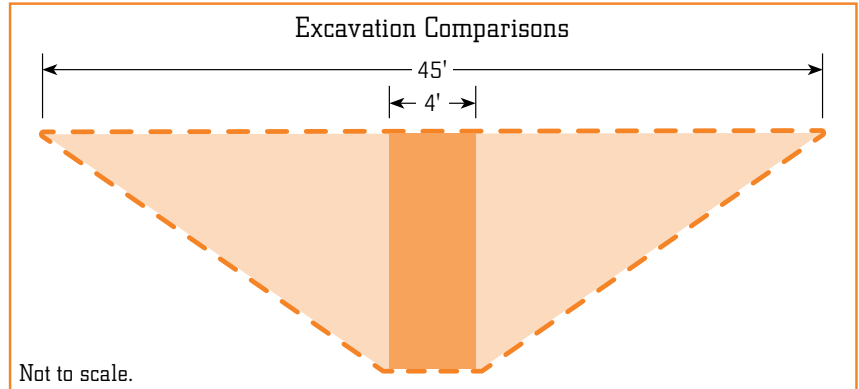
This hypothetical job calls for you to lay 1,000 feet of pipe, 14 feet

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“DIESEL FUEL BLUES” FROM PAGE 1

deep in soil that is classified as “Type C” using the OSHA Standard “CONSTRUCTION INDUSTRY REGULATIONS 29 CFR 1926, SUBPART P - EXCAVATIONS.” You are trying to decide whether to slope the walls of the trench or use trench shields. So, you make the following assumptions:

- You plan to use a mid-sized excavator that burns 120 gallons of diesel fuel during a ten-hour day.
- Diesel fuel costs \$4.50 per gallon, so you’ll spend \$540 per day for fuel.
- The excavator can dig 1,800 cubic yards of dirt per day. That is based on the machine and operator being able to complete three cycles per minute, for 50 minutes each hour of work, with a 1.2 cubic-yard bucket, and a 10-hour workday. (The math: 3 cycles per minute x 50 minutes x 1.2 cubic yards x 10 hours = 1,800 cubic yards per day.)
- You will also use a small dozer to handle the



In this view looking down the length of the excavation, if sloping was your choice to meet the OSHA Excavation Standard, then the entire volume inside the dotted line (both the dark and light areas) would have to be excavated, then temporarily stored, replaced, and the surface restored. If your choice was to use a trench shield, only the dark area in the center would get the same treatment. For a trench of any length, that’s only 17% of the volume that would be required to be moved compared to the sloping option.



Proper use of trench shoring or shielding, such as this steel trench box, can mean significant savings in time and excavator fuel costs...and it saves lives!

excavated material. The dozer will operate about 50 percent of the time that the excavator is working. The dozer burns 25 gallons of fuel in a ten-hour day. At \$4.50 per gallon, you’ll spend \$113 each day for dozer fuel.

Let’s assume that with sloping, you will need a width of three feet at the bottom of the trench to lay your pipe. Since you are working in a “Type C” soil, the OSHA Standard requires that the walls are

SEE “DIESEL FUEL BLUES” ON NEXT PAGE...

Excavation Safety News

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This newsletter provides a brief overview of safety regulations and systems. It is not intended to provide specific legal or engineering advice. Please refer to OSHA CFR29, Part 1926, Subpart P, “Excavation and Trenches,” and to other governmental regulations, and to manufacturers’ instructions for specific information.

Construction techniques and equipment usage must be in accordance with all governmental regulations and manufacturers’ instruction. All orders placed with TrenchSafety are subject to the terms, conditions, and warranty limitations contained in TrenchSafety’s Rental and Sales Agreements.

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“DIESEL FUEL BLUES” FROM PAGE 2

sloped at a 34-degree angle, or 1½ (H) to 1 (V). As a result, the trench will be 45 feet wide at the top, and you will have to dig 12,444 cubic yards of material for every linear foot of the excavation. The total for the 1,000-foot sloped trench will be 12,444 cubic yards of material.

trench. (2,074 cubic yards of dirt at 1,800 yards per day = 1.2 days to excavate.) Your fuel costs will be:

Total Fuel Costs Using Trench Shields	
Excavator Fuel (\$540 per day x 1.2 days)	\$648
Dozer Fuel (\$113 per day X 1.2 days)	\$ 136
Total Fuel Costs	\$784



Just imagine the time — and the fuel — needed to excavate this large sloped trench. And, of course, all that soil is stored somewhere, and will have to be returned, the trench filled, and the surface restored.

At a production rate of 1,800 yards of dirt per day for the excavator, it will take 6.9 days to dig this trench. (12,444 cubic yards of dirt at 1,800 cubic yards per day = 6.9 days to excavate.) Using those figures, let’s calculate just your fuel costs.

Total Fuel Costs for Sloping	
Excavator Fuel (\$540 per day x 6.9 days) . . .	\$3,726
Dozer Fuel (\$113 per day X 6.9 days)	\$ 780
Total Fuel Costs	\$4,506

The Trench Shield Option

With trench shields, you would dig a slightly wider trench to allow for the thickness of the shield walls and still provide a three-foot-wide work space inside the shield. However, unlike sloping, the walls of the trench can be vertical.

A four-foot-wide trench, 14 feet deep and 1,000 feet long, will require digging just 2,074 cubic yards of material, or only 17 percent of the amount of material that you would excavate in the sloping example.

Using the same production rate of 1,800 cubic yards of dirt per day, it will take just 1.2 days to dig this

Obviously, you would save **\$3,722 in fuel costs alone**, on this relatively small job. And, of course, we have not even considered other of your costs that will be drastically reduced because of the smaller size of the excavation and because the work will be completed in 1.2 days instead of nearly 7:

- Personnel
- Right-of-way requirements
- Barricading the job site
- Removal of surface encumbrances (streets, sidewalks, curbs and gutters, utility/electrical poles, fire hydrants, trees, etc.)
- Trucking, if the spoil has to be stored off site
- Relocation and/or support of underground utilities
- Backfilling and compaction
- Restoration of the surface
- Wear and tear on equipment

By using the trench shield option, your crews will also be significantly more productive. It will take

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"DIESEL FUEL BLUES" FROM PAGE 3

less time to complete the job and they can move on to the next job a lot sooner. Said another way,



Aluminum hydraulic shoring is an excellent choice for reducing costs and providing a safe workplace in many applications. The shores are light-weight and easily installed and removed by just one person.

compared to sloping the walls of the trench, the same crew using the same equipment will be able to do more work with trench shields...and generate more revenue.

In summary, using trench shields can significantly reduce your expenditures for diesel fuel, and "cure your diesel fuel blues."

Vital Safety Training Saves Lives

Injuries and deaths from trench cave-ins and "bad air" in confined spaces are senseless. **And these tragedies can be avoided.** Take advantage of TrenchSafety's top-notch safety training courses.



We offer training on a variety of topics...all presented in a clear, easy-to-understand format. This training can make your job sites more productive, can reduce worker injuries, and can increase overall productivity and efficiency.

Our "Competent Person" training provides your employees with a thorough review of the OSHA General Requirements, plus an in-depth look at the OSHA Standard, other vital information, as well as numerous documents with helpful information on a wide range of issues about excavation safety.

We also offer the "Confined Space Entry" class. There's is no reason to let "bad air" kill and injure workers and would-be rescuers.

And "Refresher" courses for both classes are also available.

The one-day courses are \$95 each, including lunch. Every participant will take home the valuable Training Manual, which will serve as an indispensable reference source to help them stay up on best practices...and the law.

"Competent Person" Classes

- Tuesday, Sept. 23 Memphis
- Tuesday, Sept. 30 North Little Rock
- Tuesday, Oct. 19 Memphis
- Tuesday, Oct. 28 North Little Rock
- Tuesday, Nov. 4 Tupelo, Miss.
- Tuesday, Nov. 11 Memphis
- Tuesday, Nov. 18 North Little Rock
- Tuesday, Dec. 9 Ft. Smith, Ark.

"Confined Space Entry" Classes

- Tuesday, Oct. 14 Memphis
- Tuesday, Mar. 25 North Little Rock

Two easy ways to enroll your crews:
Online: www.TrenchSafety.com
Call: (901) 346-5800 ▪ (800) 865-5801

