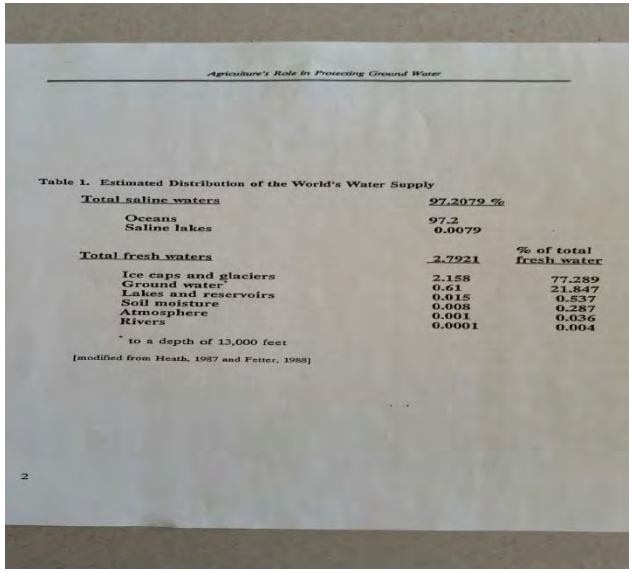

Benzie-Leelanau District
Health Department
caring for our communities

Rotary Well Drilling in Michigan

Why Groundwater



Agriculture's Role in Protecting Ground Water

Table 1. Estimated Distribution of the World's Water Supply

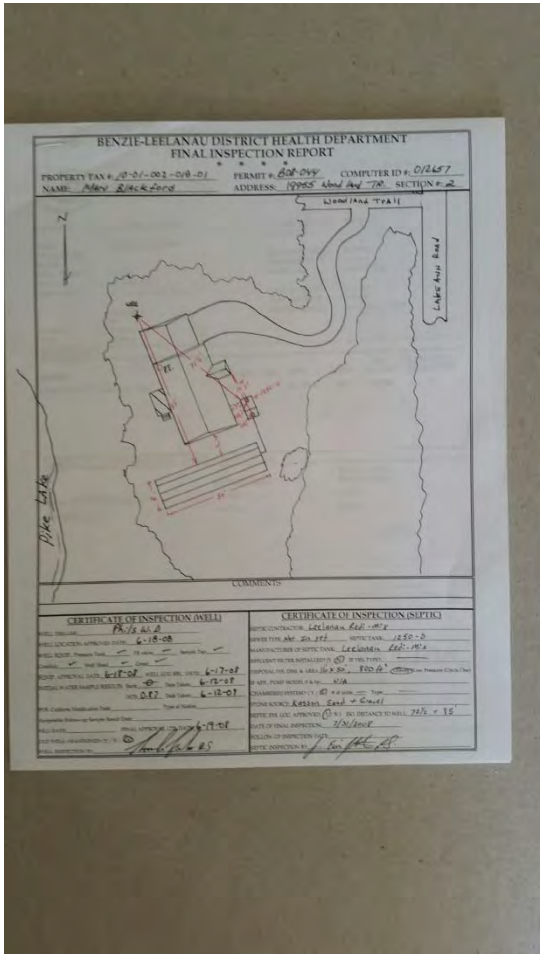
Total saline waters	97.2079 %	
Oceans	97.2	
Saline lakes	0.0079	
		% of total fresh water
Total fresh waters	2.7921	
Ice caps and glaciers	2.158	77.289
Ground water*	0.61	21.847
Lakes and reservoirs	0.015	0.537
Soil moisture	0.008	0.287
Atmosphere	0.001	0.036
Rivers	0.0001	0.004

* to a depth of 13,000 feet

[modified from Heath, 1987 and Fetter, 1988]

2

First Things First



Predrilling Site Review

Isolation distance to potential contamination sources.

Existing groundwater contamination near drilling site.

Minimum well depth requirement.

How many gallons per minute peak demand.

Effect on adjoining property with new well placement

Water sampling requirements established.

Permit issuance only after visiting site.

Minimum Isolation Distance

Animal/poultry yard	50 feet
Buried gravity sewer, cast iron/Sch 40 PVC	10 feet
Buried pressure sewer	50 feet
Septic drainfield	50 feet
Septic tank	50 feet
Outhouse	50 feet
Septage waste disposal site	800 feet
Fuel storage tank >1100 gal.	300 feet or 50 feet (secondary contain.)
Building / roof line	3 feet
Surface water *	10 feet
Ag. Chem./fertilizer storage and prep.	150 feet

Rotary Well Drilling Rig

Rig Components

Drilling Mud and Bore Hole

Drilling Mud And Cuttings

Observing Cuttings and Well Rig

Well Screen and Gravel Pack

Setting Well Screen and Casing

Gravel Pack


K & E
Well
Gravel
MADE IN CANADA
K & E SAND AND GRAVEL
P.O. BOX 359
WYOMING, ONTARIO N0N 1T0
Well Gravel
K&E

Well Developing

REMOVES MUD FROM CASING

FLUSHES CHLORINE

USES COMPRESSED AIR

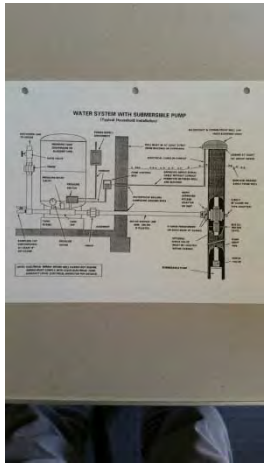
DETERMINES IF PEAK DEMAND CAN BE MET FROM THE NEW WELL

PREPARATION FOR GROUTING

Static Water/ Flowing Well

Grouting the Annular Space
“Bore Hole”

Pitless Adaptor and Final Hookup



Well Abandonment

Well pit and 4” steel well.

Well Log Submission

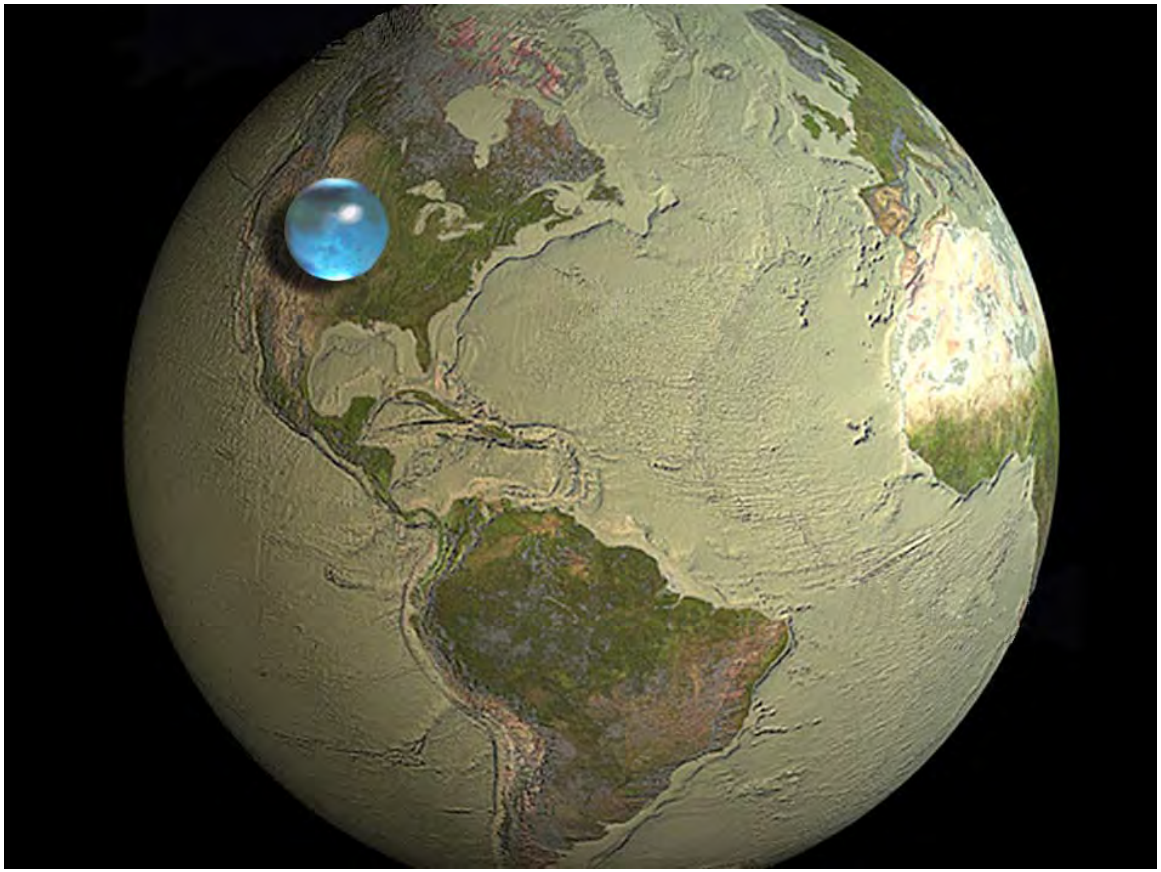
Drillers Field Notes

Completed Well Log Submitted Within 60 days

To Much Water

Stopping a Flowing Well

Our Job To Be Good Stewards



Thanks To:

B and Z Well Drilling

Cluff Well Drilling

Shoebridge Well Drilling