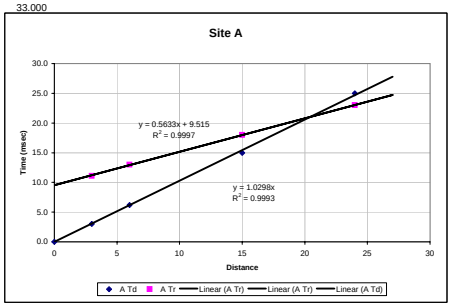
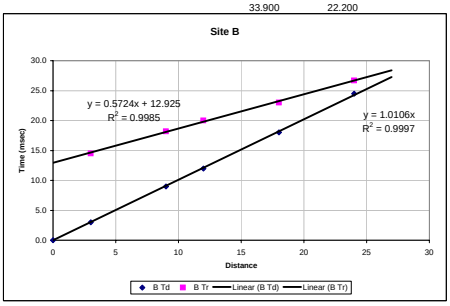
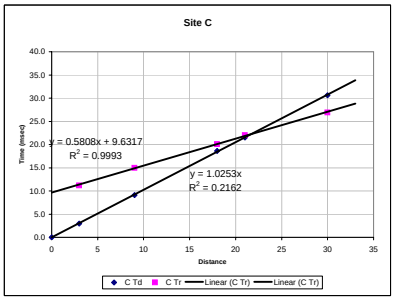
Two layer refraction problem, Fall 2006
The observed data are on top, followed by my solutions for the Velocities and depths.

	OBSERVED A			OBSERVED B			OBSERVED C			OBSERVED D		
X	Td	Tr		Td	Tr		Td	Tr		Td	Tr	
0.000	0.000			0.000			0.000			0.000		
3.000	3.000	11.100		3.000	14.500		3.000	11.200				
6.000	6.200	13.000										
9.000				9.000	18.200		9.100	15.000				
12.000				12.000	20.000					12.000	10.200	
15.000	15.000	18.000								15.500	12.000	
18.000				18.000	23.000		18.600	20.100				
21.000							21.500	22.000				
24.000	25.000	23.000		24.500	26.700					24.800	17.000	
27.000												
30.000							30.600	26.900				
33.000										33.900	22.200	

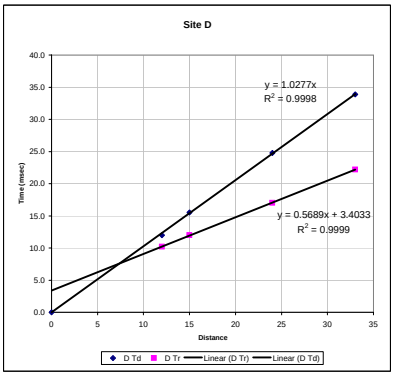






I chose to include (0,0) on Td and force the solution through that point except on Site A where I got a better fit without doing so
Invert slopes and multiply by 1,000 to get velocities in meters/second
Next, I used the z=f(intercept time) equation to solve for Z in each case: for example, CELL B49=(B48*B46*B47)/(2*SQRT(B47^2-B46^2

	A		B		C		D	
V1 =	971.1	m/s	1000.3	m/s	1025.3	m/s	975.0	m/s
V2 =	1775.3	m/s	1747.0	m/s	1721.8	m/s	1745.0	m/s
Ti =	9.515E-03	seconds	1.293E-02	seconds	9.632E-03	seconds	3.403E-03	seconds
Z =	5.5	meters	7.9	meters	6.1	meters	2.0	meters



Now, I assume there are two layers, each with a constant velocity.
Thus,

V1 =	993	with S.D.=	25 meters/second
V2 =	1747	with S.D.=	22 meters/second

There are no X, Y coordinates on the map of seismic line locations, so I'll leave that map dimensionless except for depths
I used these coordinates and gridded them in Surfer using minimum curvature since they are from groundwate

Site	site X	site Y	site Z
A	0.938	3.675	5.5 meters
B	1.000	1.375	7.9 meters
C	3.500	1.750	6.1 meters
D	5.125	4.000	2.0 meters