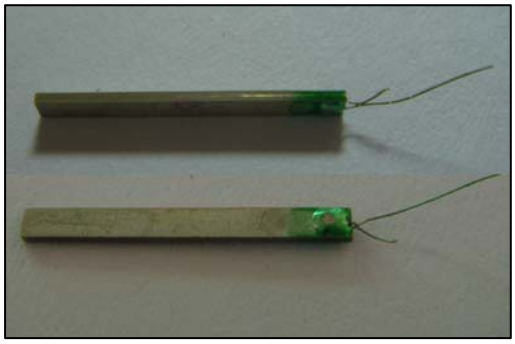
APPENDIX B

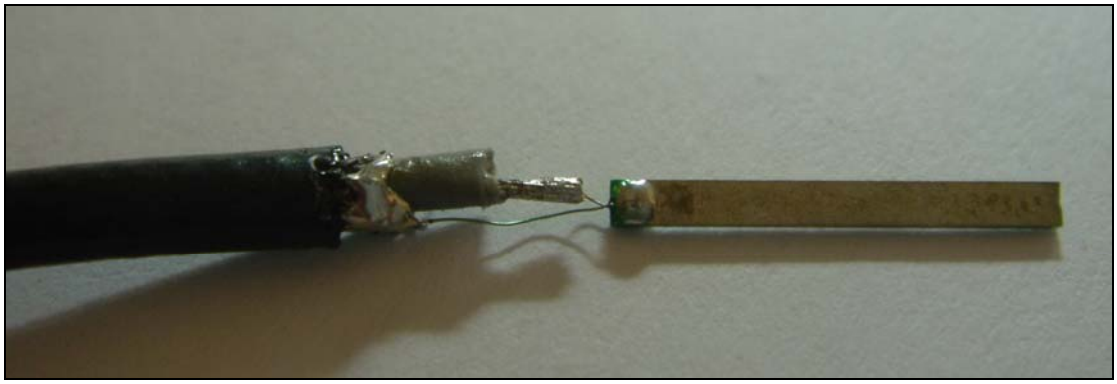
SCHEMATIC BENDER ELEMENT DEVELOPMENT PROCEDURE

STEP 1: SURFACE PREPARATION



Before anything could be done on the element, the insulation paint was removed from the surface of the bender element. The paint or any grease or dirt on the surface of the bender element would prevent the epoxy adhering to the element and creates a weaker region. The epoxy coat could crack under continuous vibration and water pressure. The element was dipped in acetone momentarily to remove the green insulation paint. The element was then wiped clean.

STEP 2: ATTACHING ELEMENT TO WIRE



After the element surface had been prepared, the two lead wires from the element were connected to wire that could carry the signal from the element to the instrumentation. Shielded wires were used to reduce environmental noise. The one lead from the element was soldered to the center wire and the other lead was soldered to the outer shield of the wire.

STEP 3: INSTALLING SHRINGAKE TUBE

The shrinkage tube was then put onto the bender element wiring. The back end of the tube was shrunk onto the wire with a heat gun. It was important to leave enough space for the epoxy to cover the entire soldered part.

STEP 4: FILLING OF SHRINKAGE TUBE WITH EPOXY

With the aid of a stand, the bender element was fixed in an upright position to be immersed in epoxy. The epoxy was injected into the cavity with the aid of a syringe and needle. It was important that no air bubbles were trapped within the epoxy, since any air would produce a weak spot within the epoxy coating. The bubbles could be removed with the needle, but care must be taken to ensure that the tube was not damaged. After all the air was removed, the epoxy was left to cure. This took a maximum of 2 days. During this period, it was important to ensure that the bender element did not touch the tube, as this would also produce weaknesses within the epoxy coat.

STEP 5: REMOVE SHRINKAGE TUBING

After the epoxy had fully hardened, the shrinkage tubing could be removed. The tube could be easily removed with a side cutter.

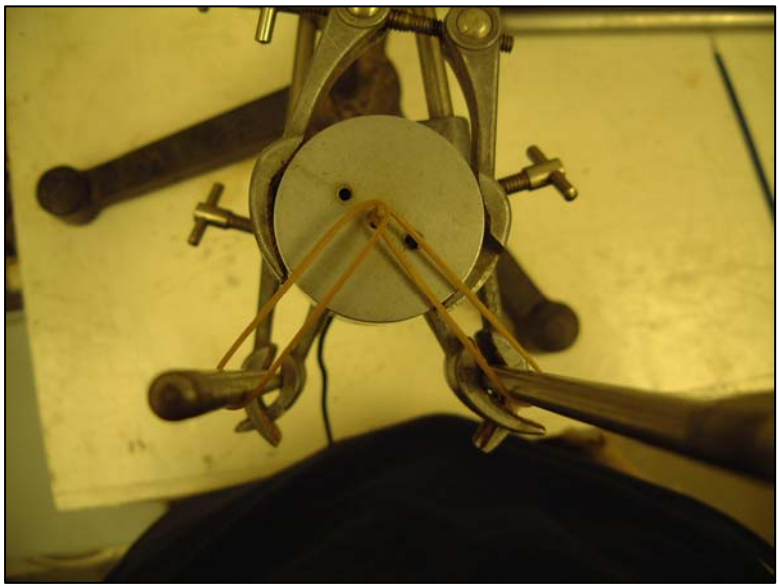
STEP 6: SHAPING THE ELEMENT

When the tubing was removed, the hardened epoxy took the form of the tube, which was cylindrical. A miniature grinder was used to shape the round epoxy coating into the shape of the element. If the coat was too thick, the element would only vibrate at very small amplitudes or not vibrate at all. The aim was to produce a thin layer of epoxy coating the bender element without the coat being too thin to crack under vibration and pressure, but at the same time not damage the bender or grind through the epoxy, as this would defeat the aim of the epoxy coat.

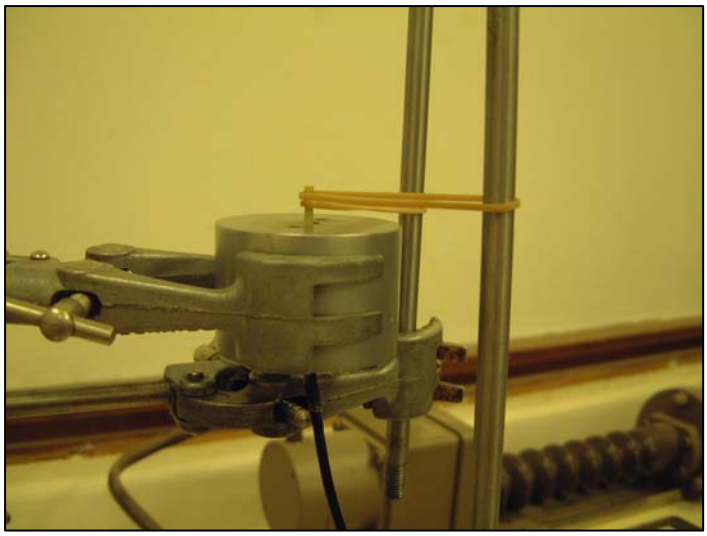
STEP 7: SEALING THE BACK END OF THE CAP

When the bender was to be installed into the top cap or the base, the back end of the cap must be sealed to prevent epoxy from leaking out under gravity. This was done using plumbers tape. When the injection of the epoxy was complete, the plumbers tape was left on.

STEP 8: ALIGNING THE BENDER ELEMENT

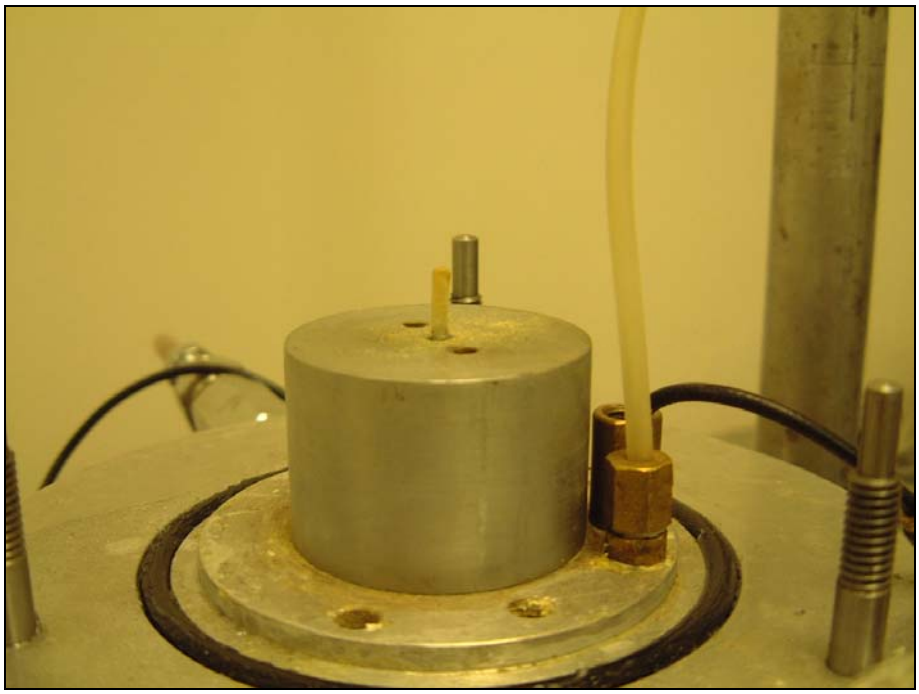


The alignment of the bender relative to the caps was also important. A perfectly vertical bender would generate the most energy in the preferred direction, as well as reduce wave reflections from the membrane. The bender was placed within the cap which was fixed vertically with a stand. The wire exiting the bottom of the cap was also fixed, as the wire could slip out under gravity. The epoxy was injected into the predrilled hole, again with a syringe and needle. It was again important that air bubbles were removed, as bubbles could create weaknesses within the epoxy. When mixing the epoxy, care should be taken not



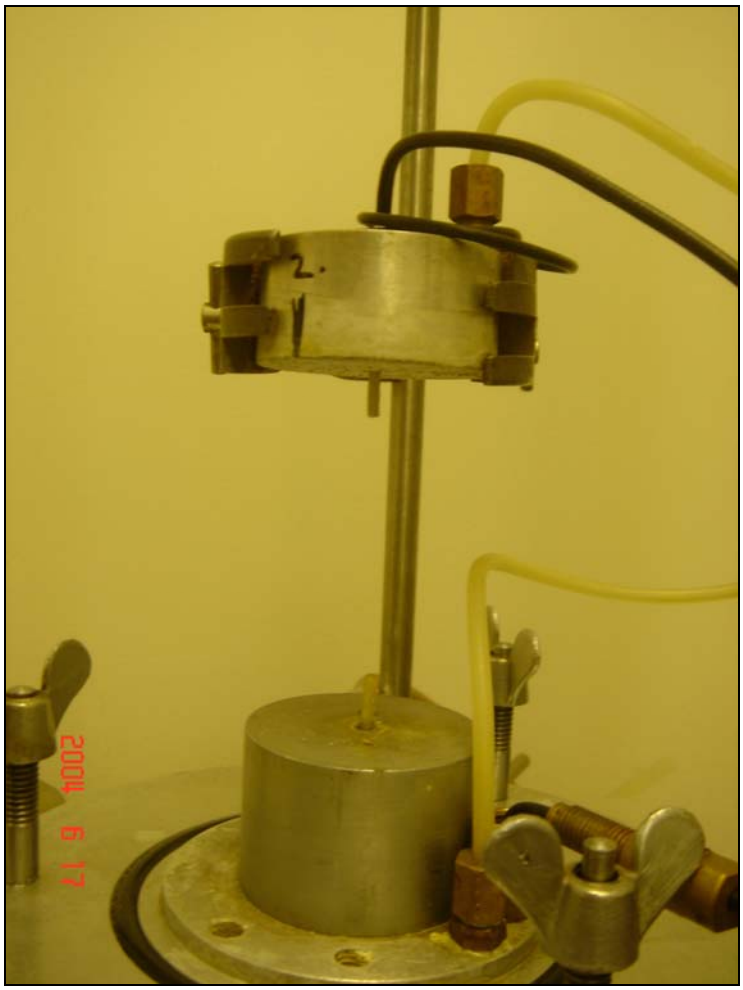
to mix too vigorously, as minor air bubbles would be introduced into the epoxy.

The bender was held in a vertical position with elastic bands in both directions. A top view of the setup is shown in the first figure above, while the figure directly above shows a side view of the setup. The epoxy was allowed to harden for a maximum of 2 days.



The figure above shows the finished base pedestal. The figure also shows the position of the top drainage as well as the position of the exit plug for the top cap wire. The plug prevented the cell water from escaping through the hole. The base wire exited through the bottom, which would not leak because of the presence of the O rings.

The figure below shows the complete bender element setup including the finished top cap.



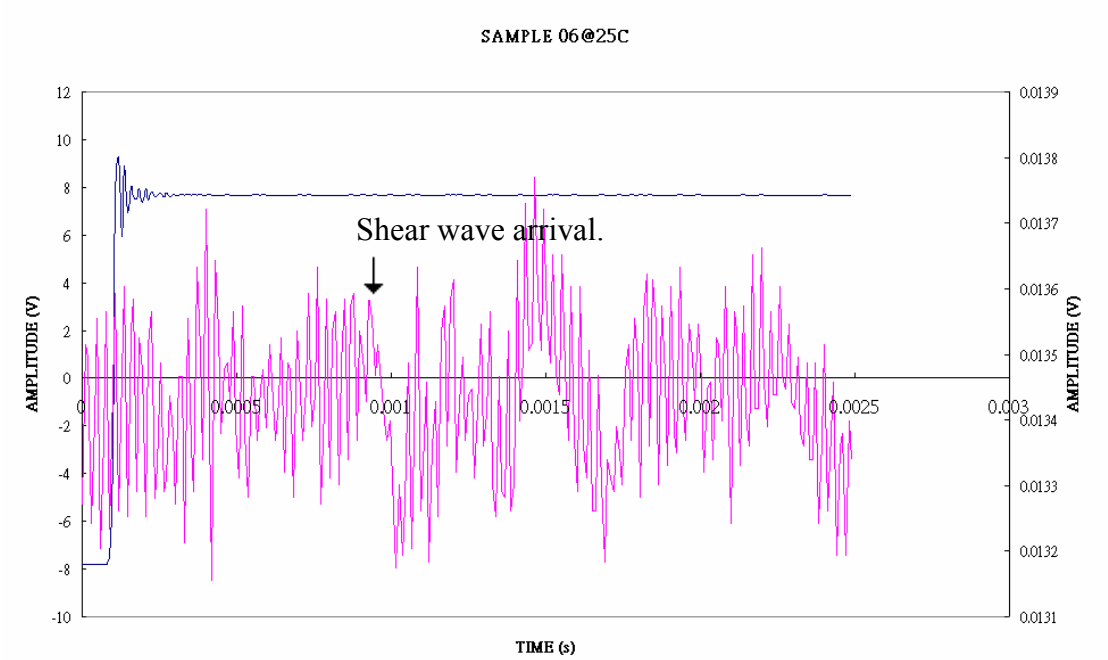
APPENDIX D

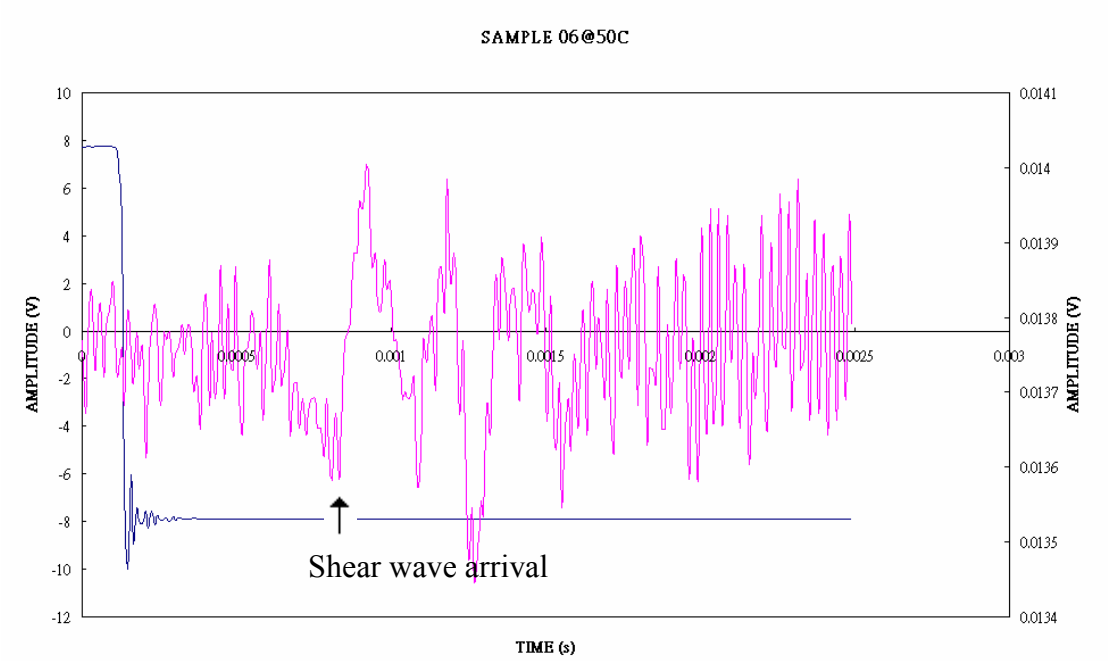
SHEAR WAVE VELOCITY RESULTS DETERMINED USING FIRST ARRIVALS METHOD

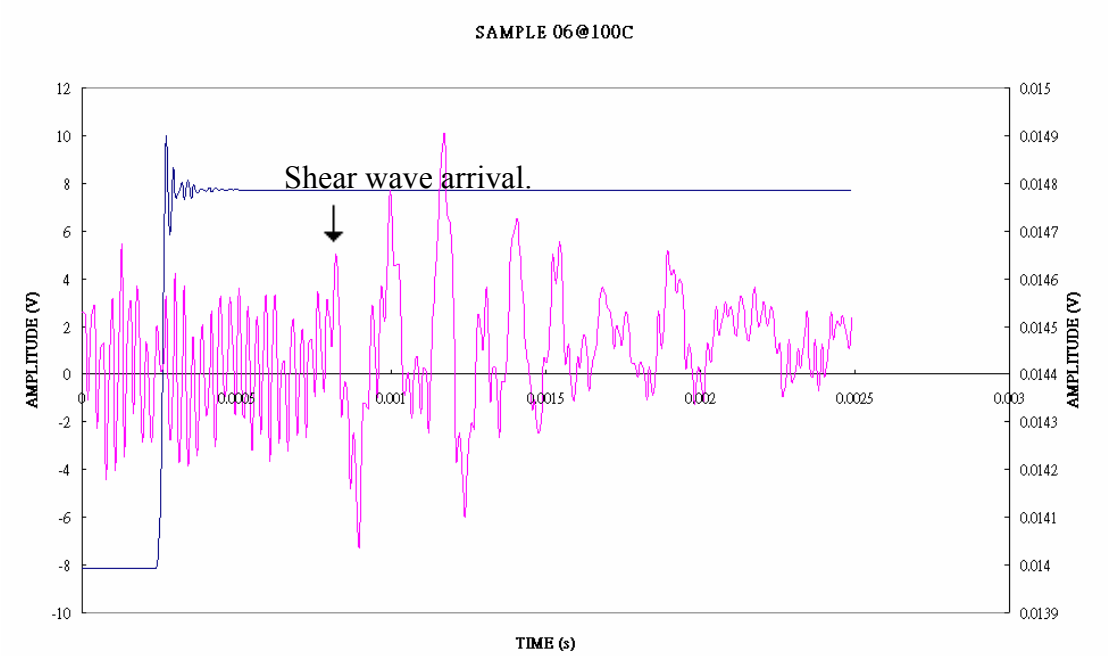
Summary of signal interpretation

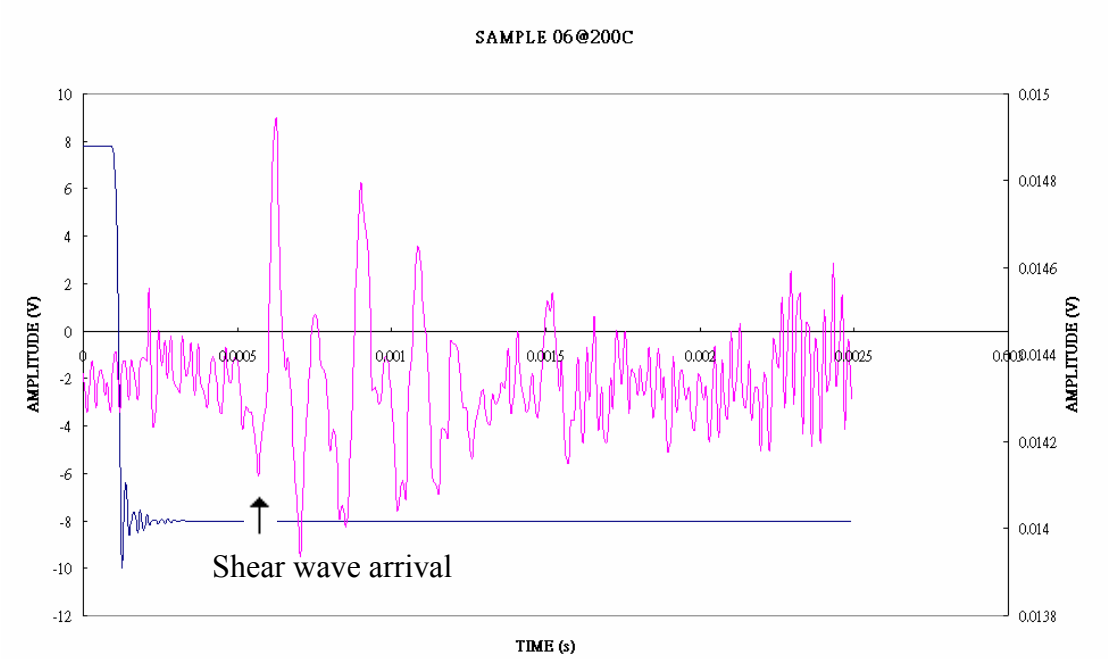
File name	Arrival time	File name	Arrival time
0625C	9.28E-04	1225C	Signal unclear
0650C	8.30E-04	1250C	Signal unclear
06100C	8.20E-04	12100C	9.57E-04
06200C	5.66E-04	12200C	7.13E-04
06400C	7.03E-04	12400C	1.01E-03
06200S	6.15E-04	12200S	1.22E-03
06100S	8.11E-04	12100S	7.81E-04
0650S	8.11E-04	1250S	Signal unclear
0625S	Signal unclear	1225S	Signal unclear
0825C	1.84E-03	1425C	1.06E-03
0850C	1.04E-03	1450C	8.98E-04
08100C	1.59E-03	14100C	7.13E-04
08200C	1.26E-03	14200C	7.62E-04
08400C	1.83E-03	14400C	5.57E-04
08200S	1.91E-03	14200S	5.76E-04
08100S	1.95E-03	14100S	7.81E-04
0850S	1.72E-03	1450S	7.13E-04
0825S	1.29E-03	1425S	1.07E-03
1025C	2.58E-03	08C25C	1.08E-03
1050C	Signal unclear	08C50C	1.04E-03
10100C	1.34E-03	08C100C	8.40E-04
10200C	1.02E-03	08C200C	5.86E-04
10400C	Signal unclear	08C400C	6.84E-04
10200S	5.66E-04	08C200S	4.79E-04
10100S	1.29E-03	08C100S	6.54E-04
1050S	1.71E-03	08C50S	1.25E-03
1025S	Signal unclear	08C25S	9.08E-04

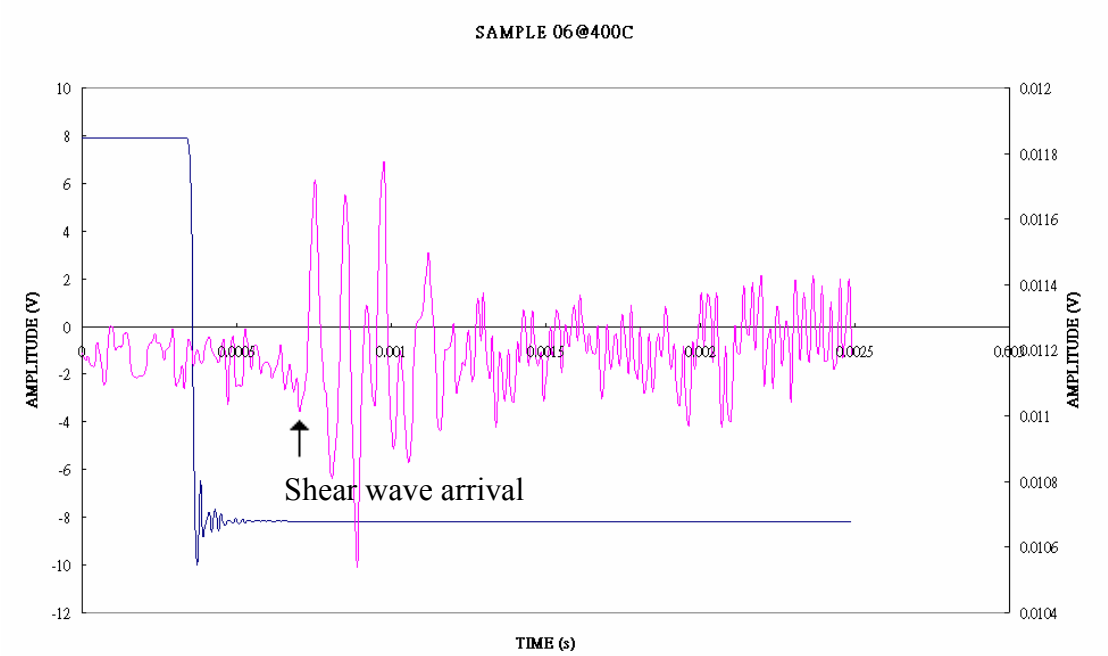
SAMPLE 06

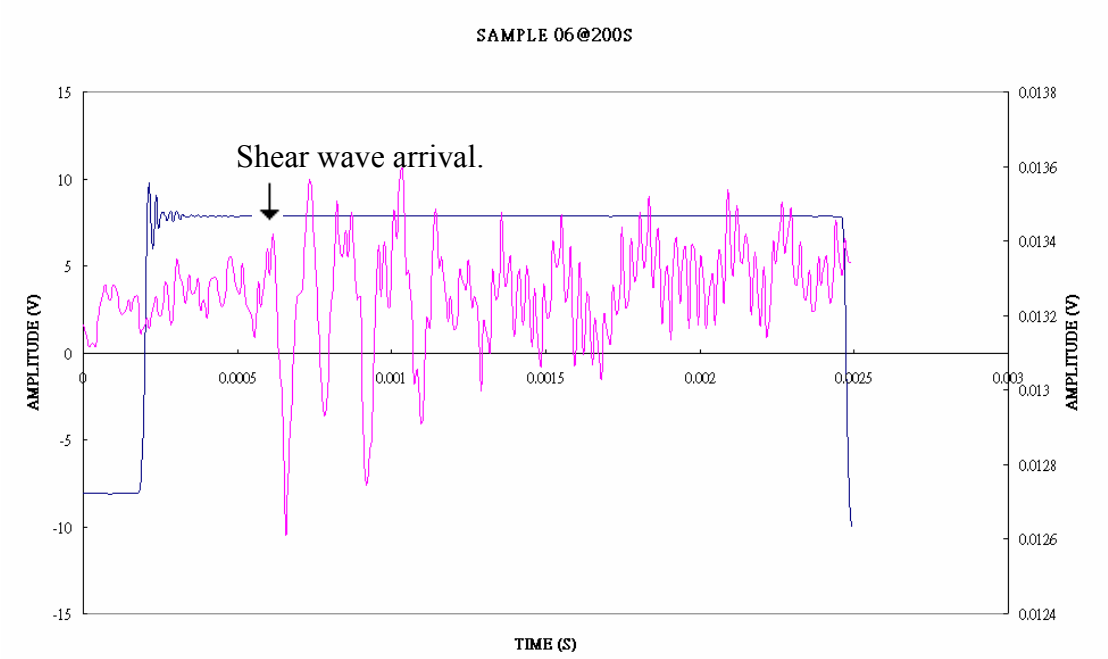

SAMPLE 06@25C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0.0139
0.0138
0.0137
0.0136
0.0135
0.0134
0.0133
0.0132
0.0131
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

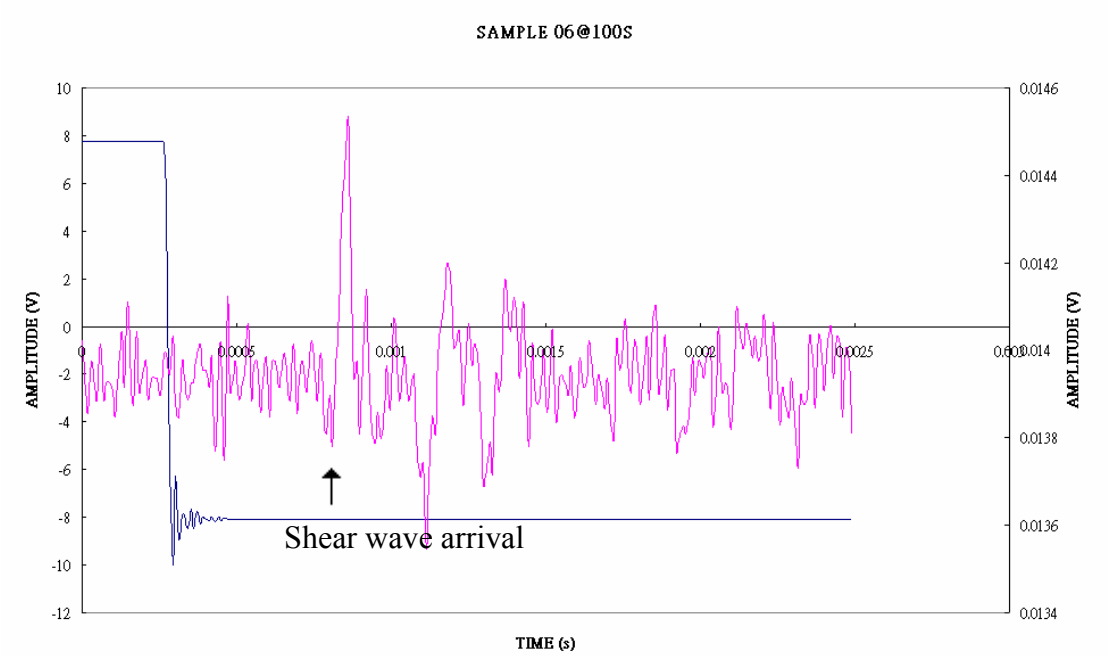

SAMPLE 06@50C
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
0.0141
0.014
0.0139
0.0138
0.0137
0.0136
0.0135
0.0134
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

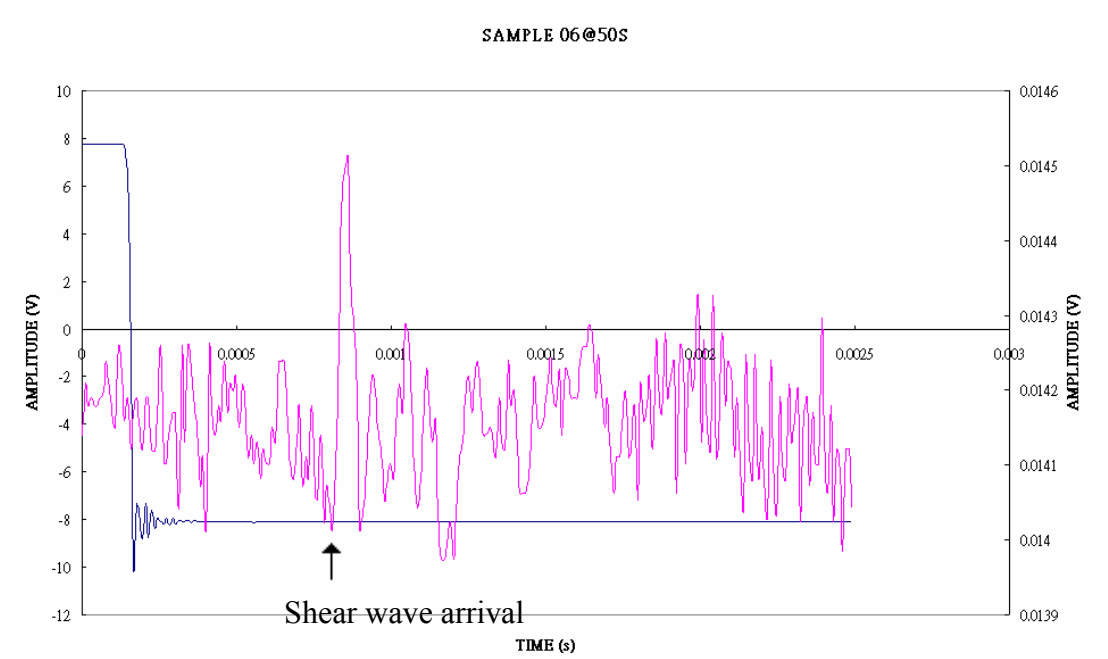

SAMPLE 06@100C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0.015
0.0149
0.0148
0.0147
0.0146
0.0145
0.0144
0.0143
0.0142
0.0141
0.014
0.0139
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

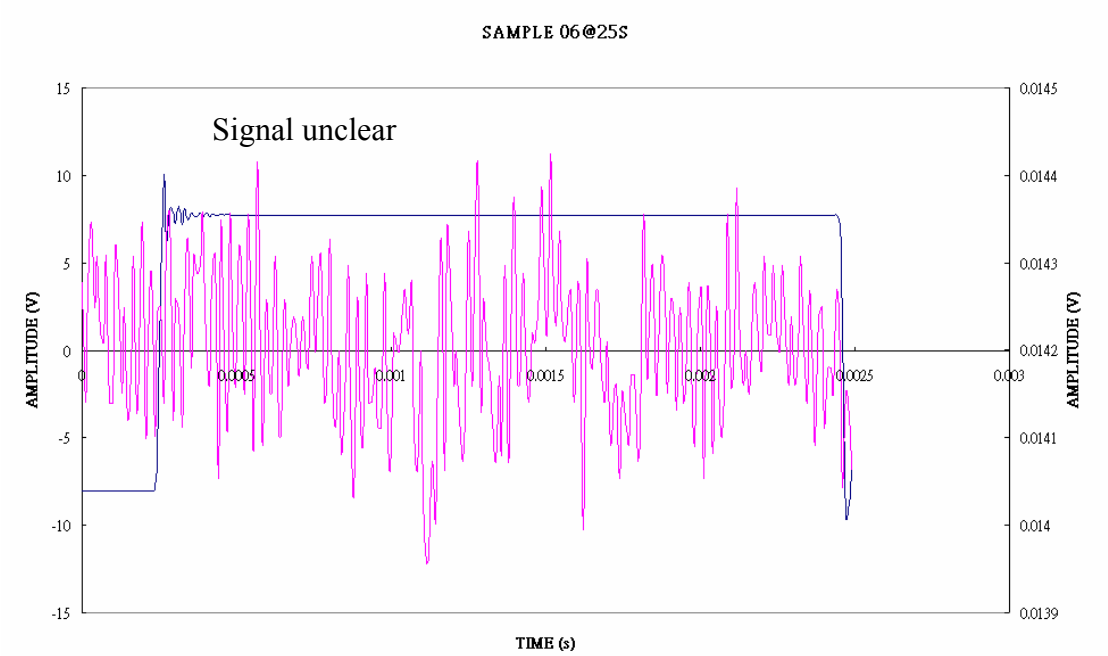

SAMPLE 06@200C
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
0.015
0.0148
0.0146
0.0144
0.0142
0.014
0.0138
0
0.0005
0.001
0.0015
0.002
0.0025


SAMPLE 06@400C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
0.012
0.0118
0.0116
0.0114
0.0112
0.011
0.0108
0.0106
0.0104
0
0.0005
0.001
0.0015
0.002
0.0025

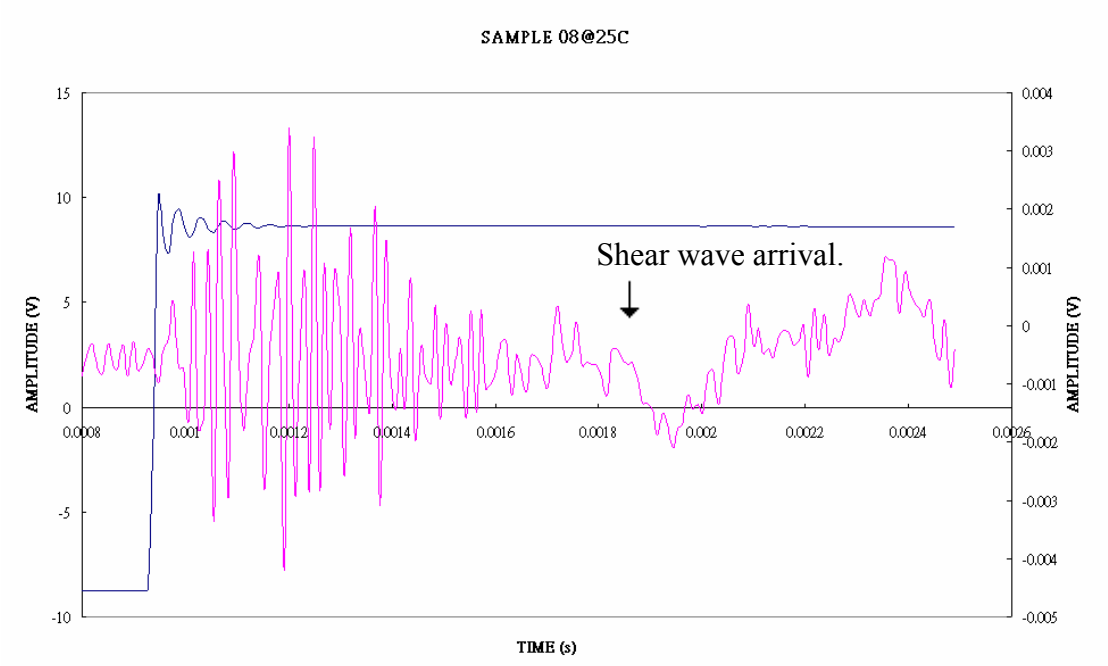

SAMPLE 06@200S
AMPLITUDE (V)
AMPLITUDE (V)
TIME (S)
Shear wave arrival.
15
10
5
0
-5
-10
-15
0.0138
0.0136
0.0134
0.0132
0.013
0.0128
0.0126
0.0124
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

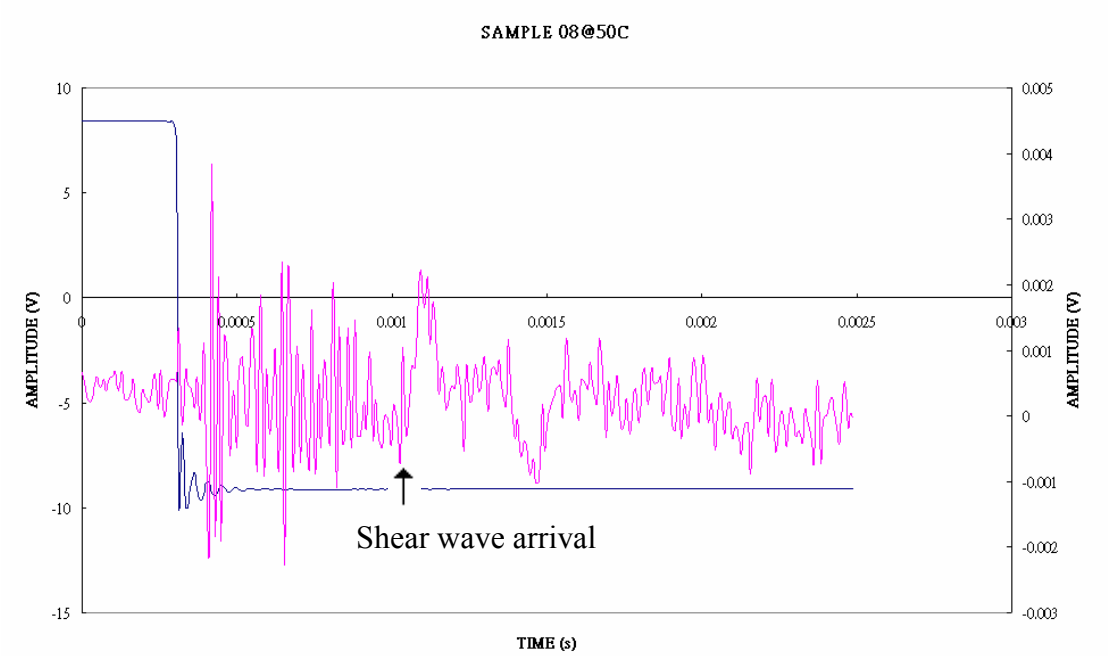

SAMPLE 06@100S
AMPLITUDE (V)
TIME (s)
Shear wave arrival

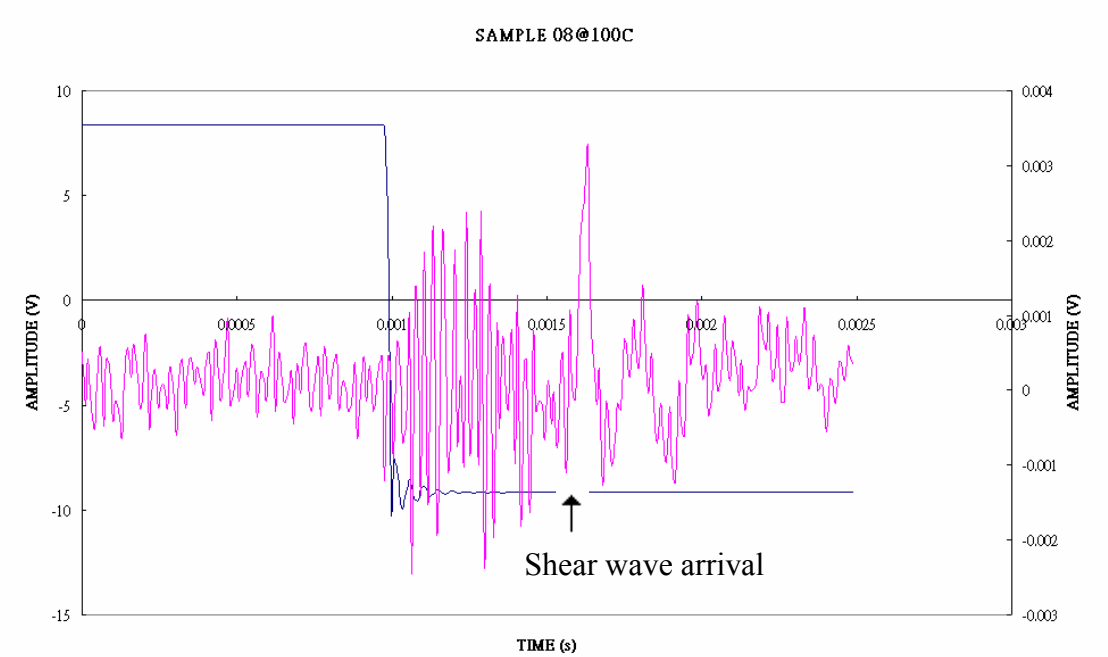

SAMPLE 06@50S
AMPLITUDE (V)
TIME (s)
Shear wave arrival

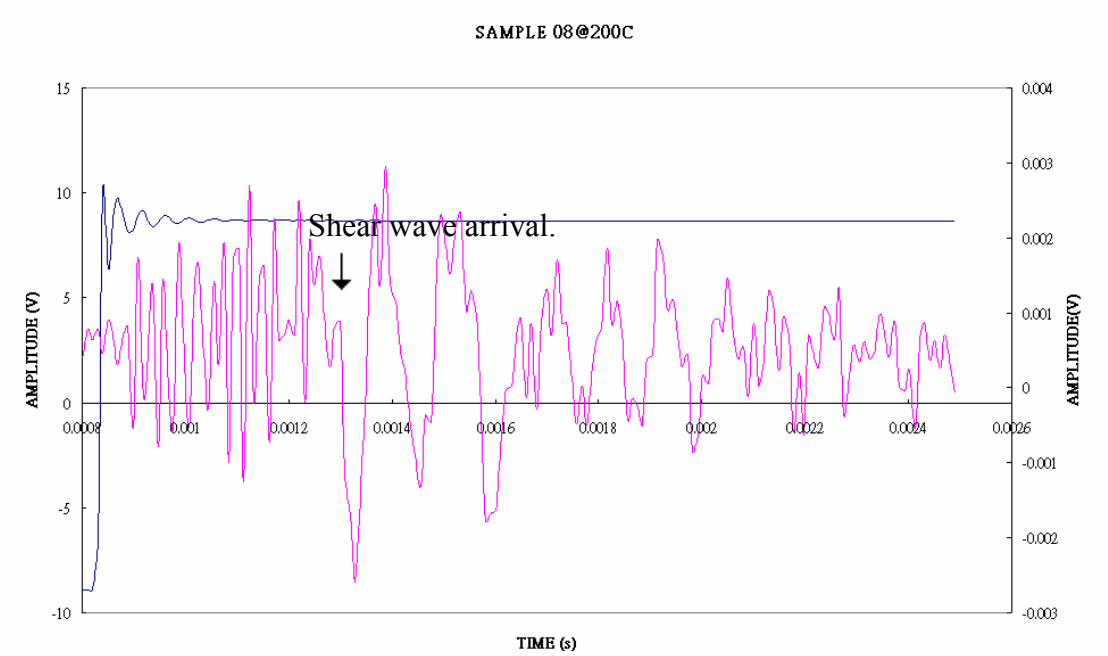

SAMPLE 06@25S
Signal unclear
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.0145
0.0144
0.0143
0.0142
0.0141
0.014
0.0139
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

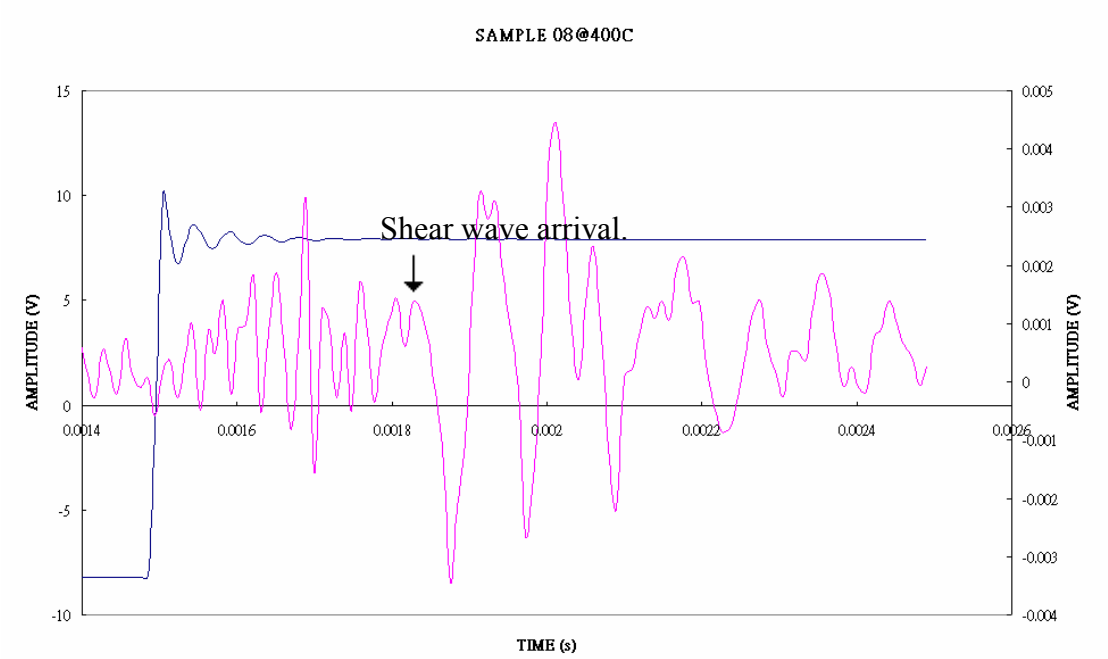
SAMPLE 08

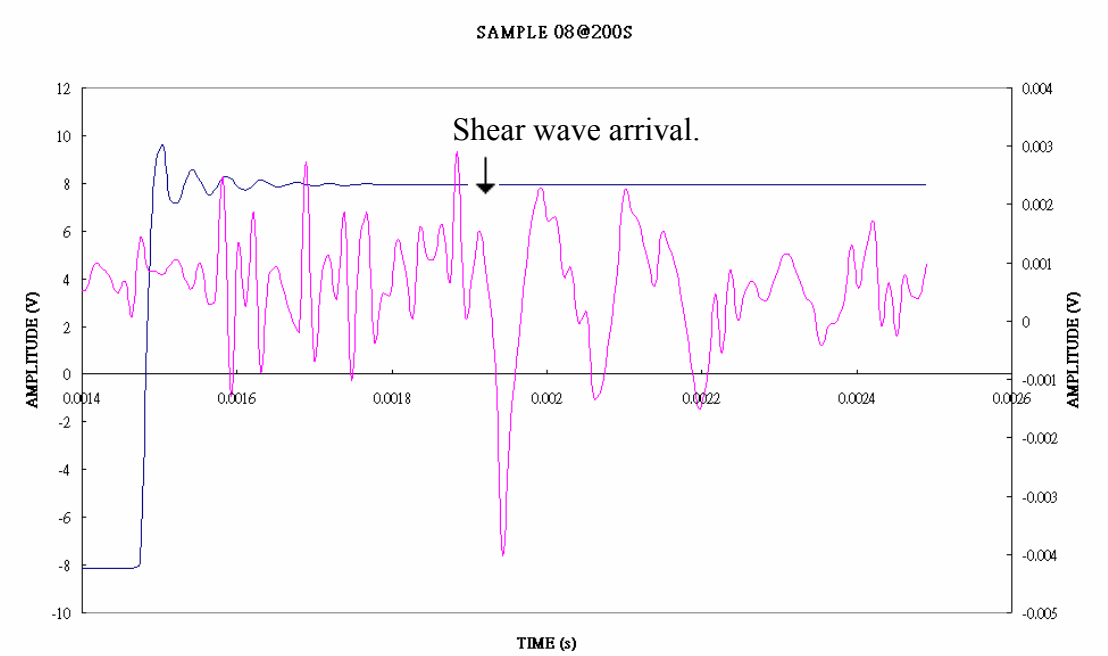

SAMPLE 08@25C
Shear wave arrival.
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
0.004
0.003
0.002
0.001
0
-0.001
-0.002
-0.003
-0.004
-0.005
0.0008
0.001
0.0012
0.0014
0.0016
0.0018
0.002
0.0022
0.0024
0.0026

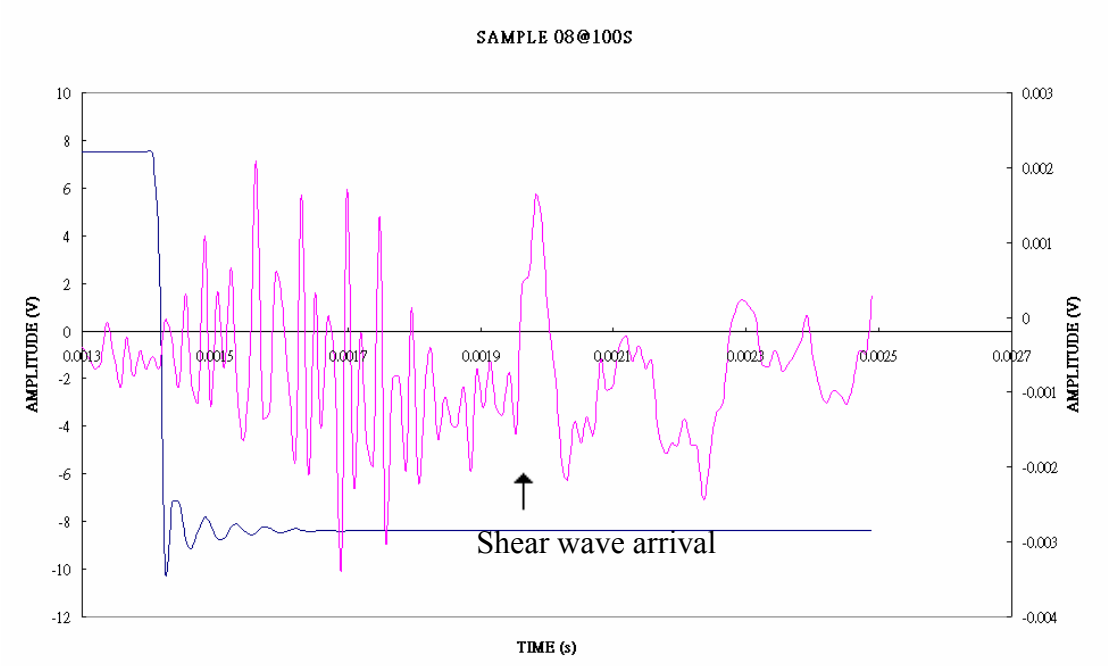

SAMPLE 08@50C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival

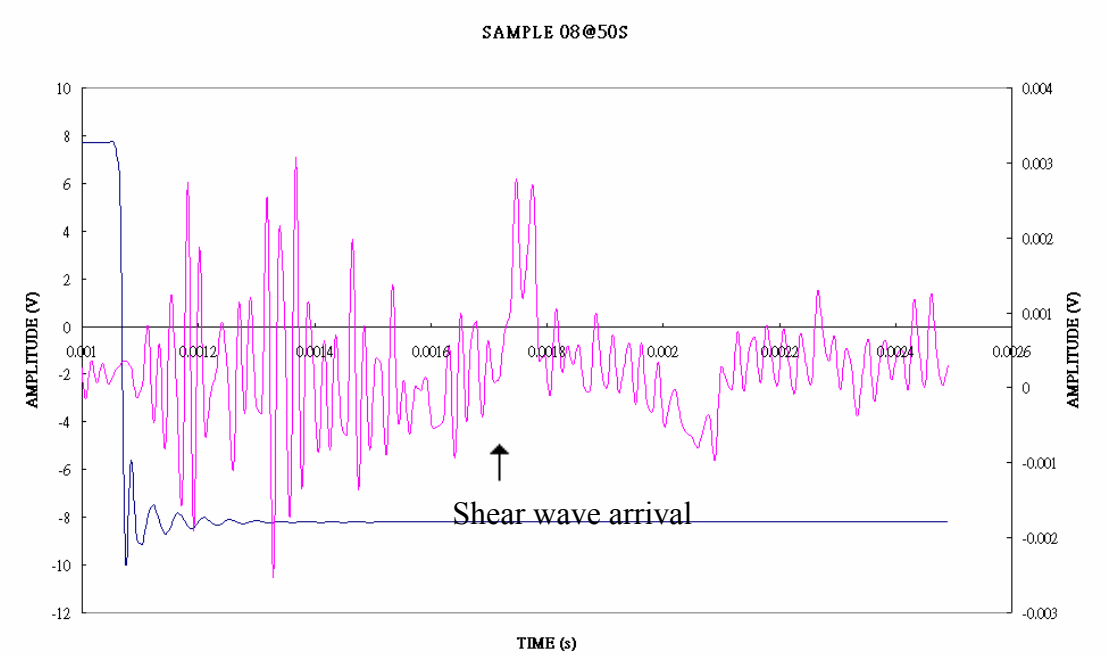

SAMPLE 08@100C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival

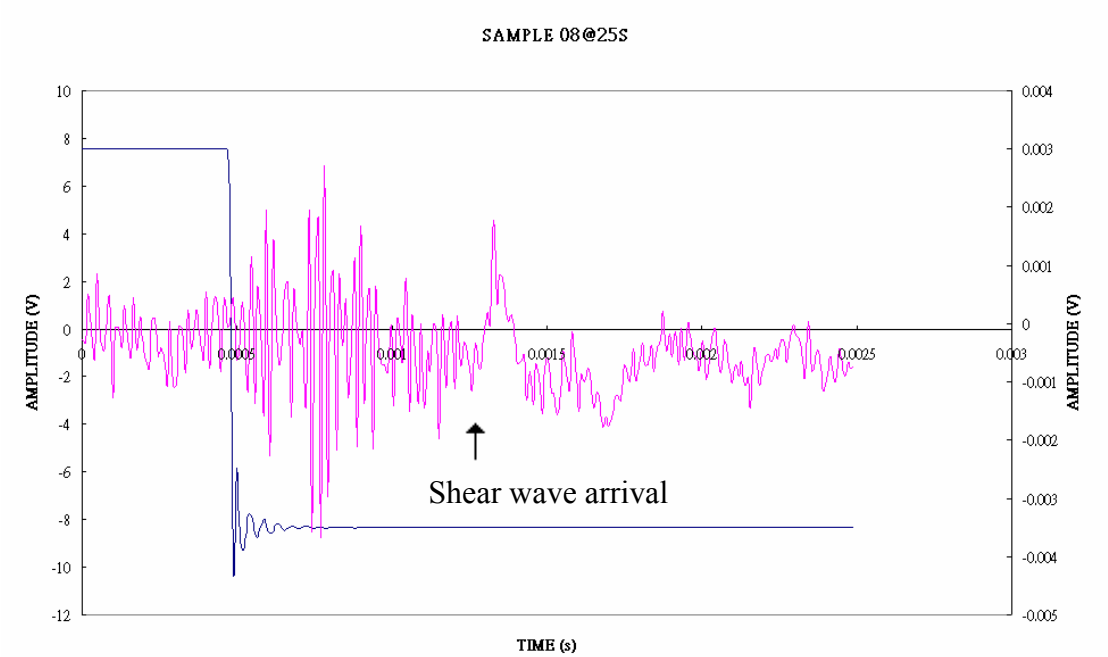

SAMPLE 08@200C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE(V)
TIME (s)
15
10
5
0
-5
-10
0.004
0.003
0.002
0.001
0
-0.001
-0.002
-0.003
0.0008
0.001
0.0012
0.0014
0.0016
0.0018
0.002
0.0022
0.0024
0.0026


SAMPLE 08@400C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
0.005
0.004
0.003
0.002
0.001
0
-0.001
-0.002
-0.003
-0.004
0.0014
0.0016
0.0018
0.002
0.0022
0.0024
0.0026

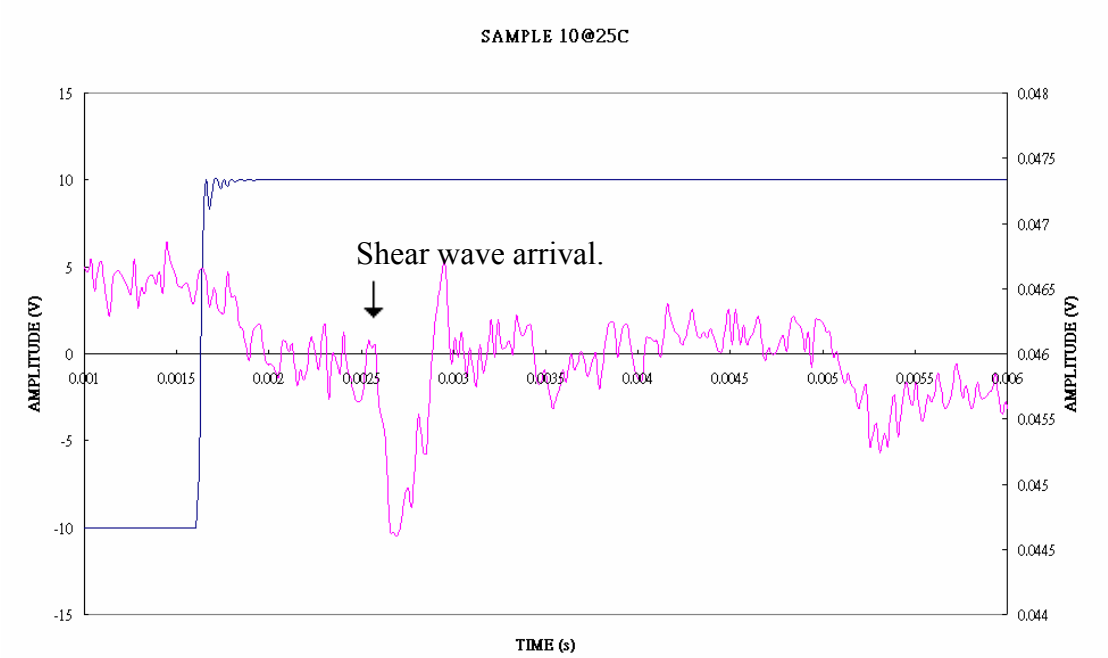

SAMPLE 08@200S
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0.004
0.003
0.002
0.001
0
-0.001
-0.002
-0.003
-0.004
-0.005
0.0014
0.0016
0.0018
0.002
0.0022
0.0024
0.0026

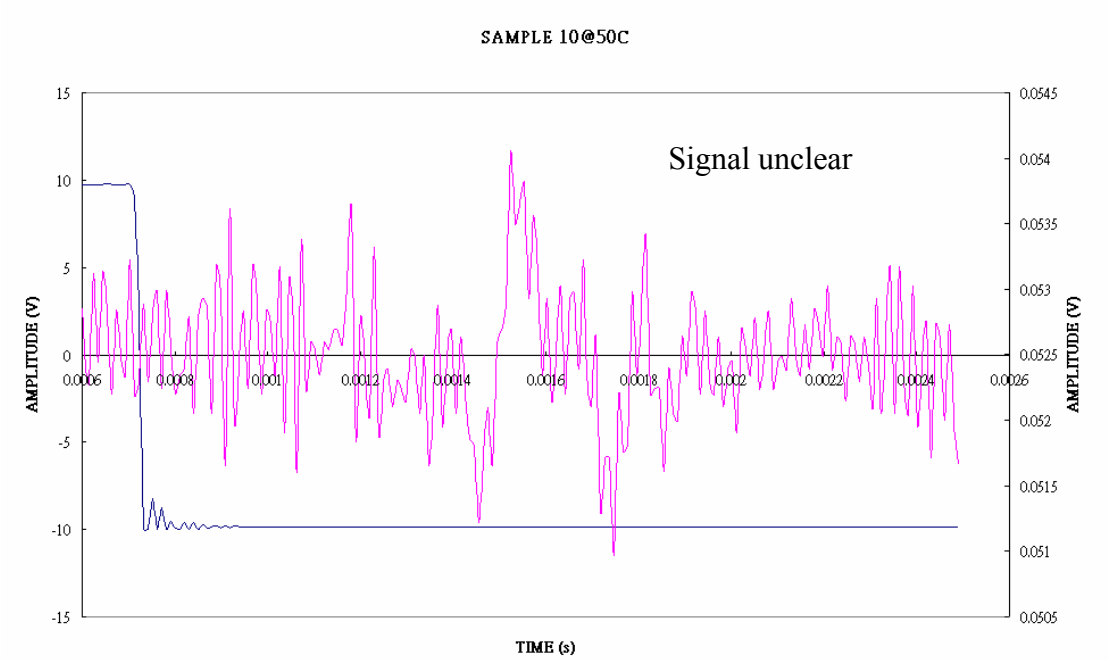

SAMPLE 08@100S
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
0.003
0.002
0.001
0
-0.001
-0.002
-0.003
-0.004
0.0013
0.0015
0.0017
0.0019
0.0021
0.0023
0.0025
0.0027

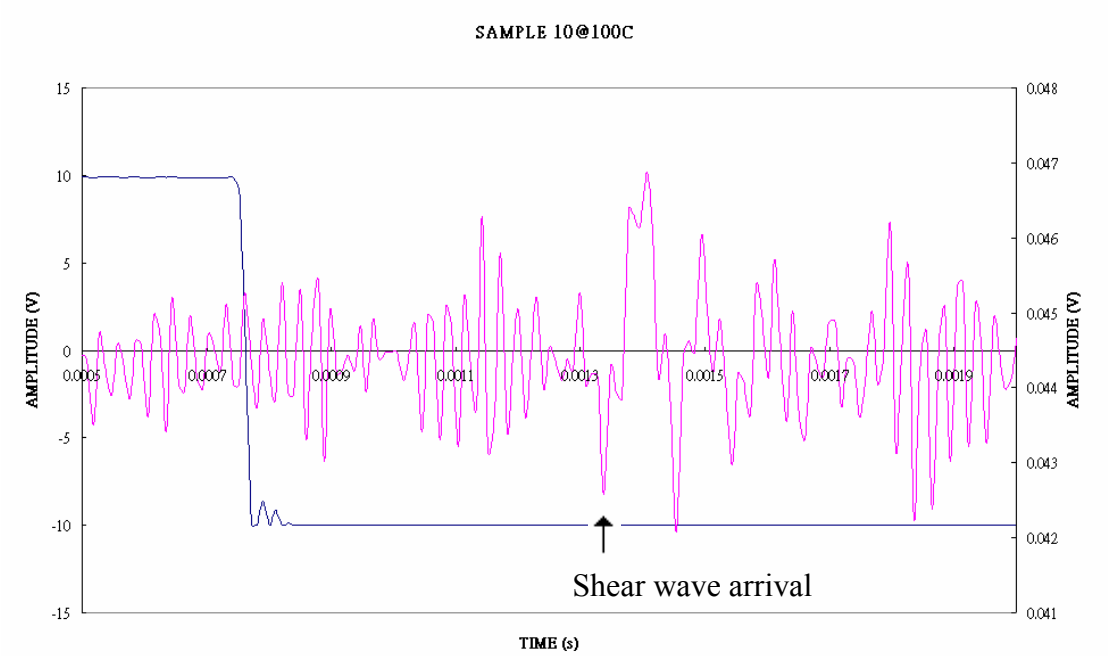

SAMPLE 08@50S
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival

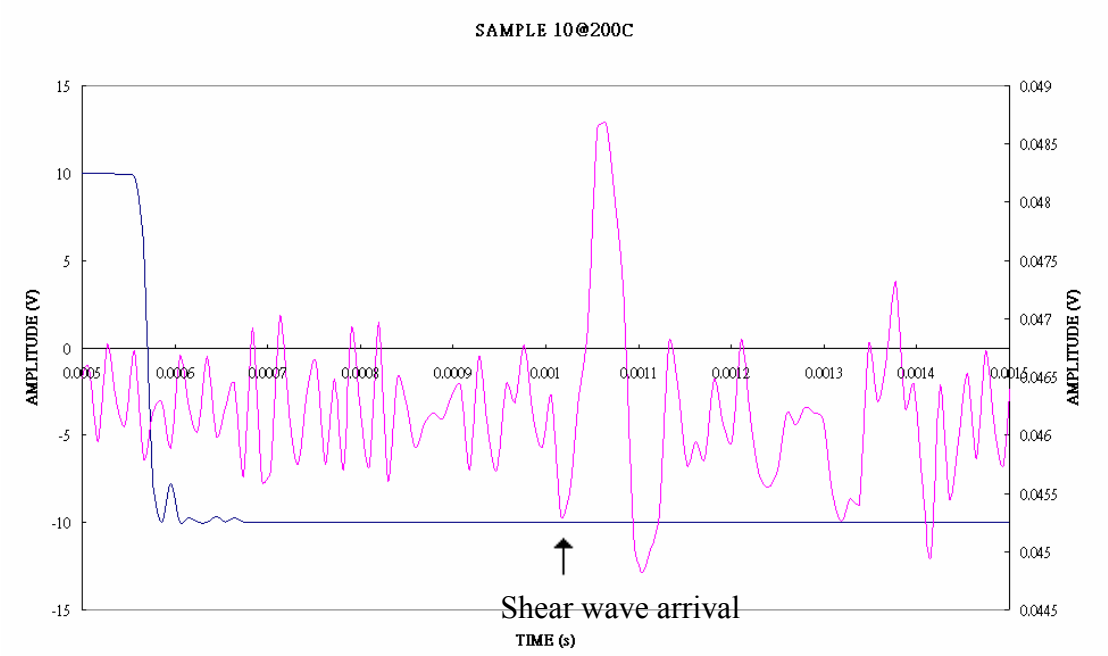

SAMPLE 08@25S
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival

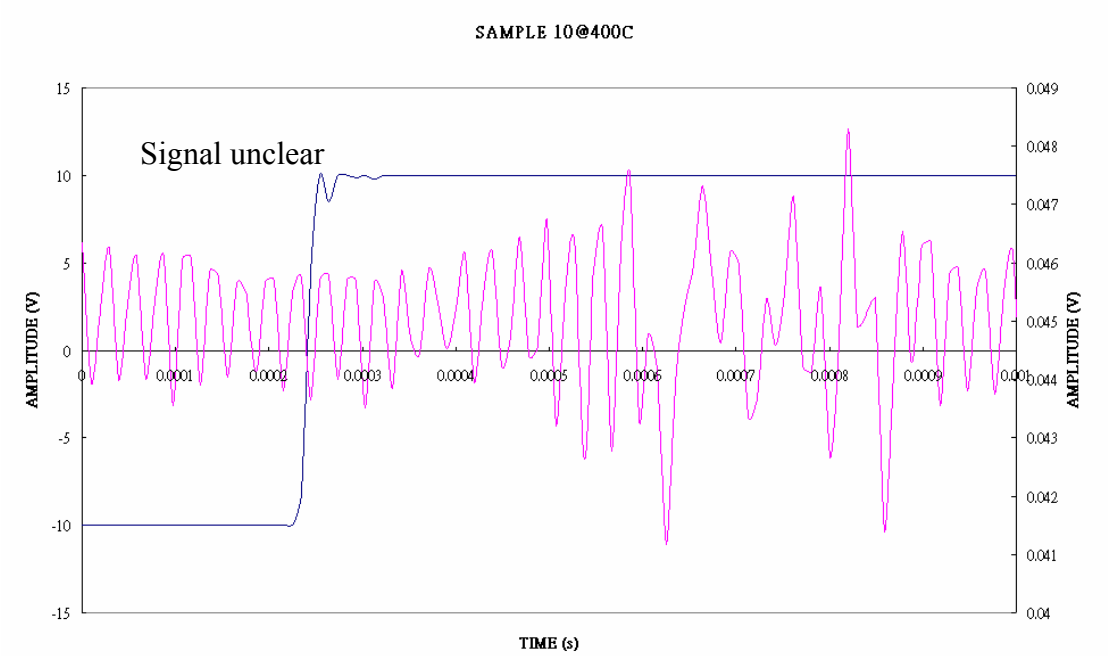
SAMPLE 10

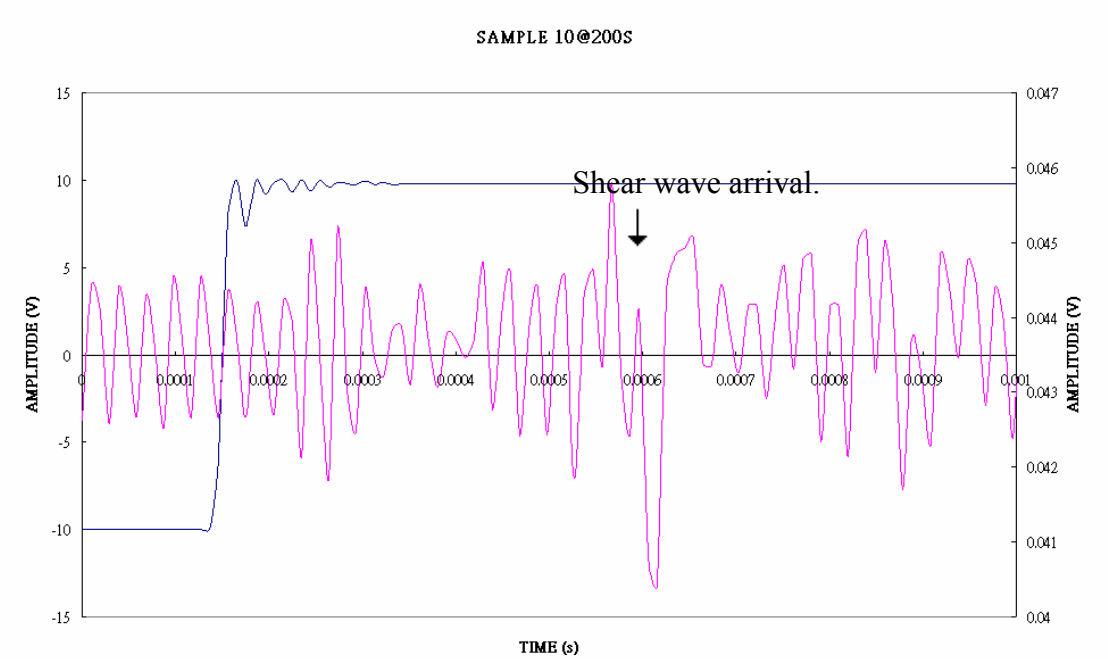

SAMPLE 10@25C
Shear wave arrival.
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.048
0.0475
0.047
0.0465
0.046
0.0455
0.045
0.0445
0.044
0.001
0.0015
0.002
0.0025
0.003
0.0035
0.004
0.0045
0.005
0.0055
0.006

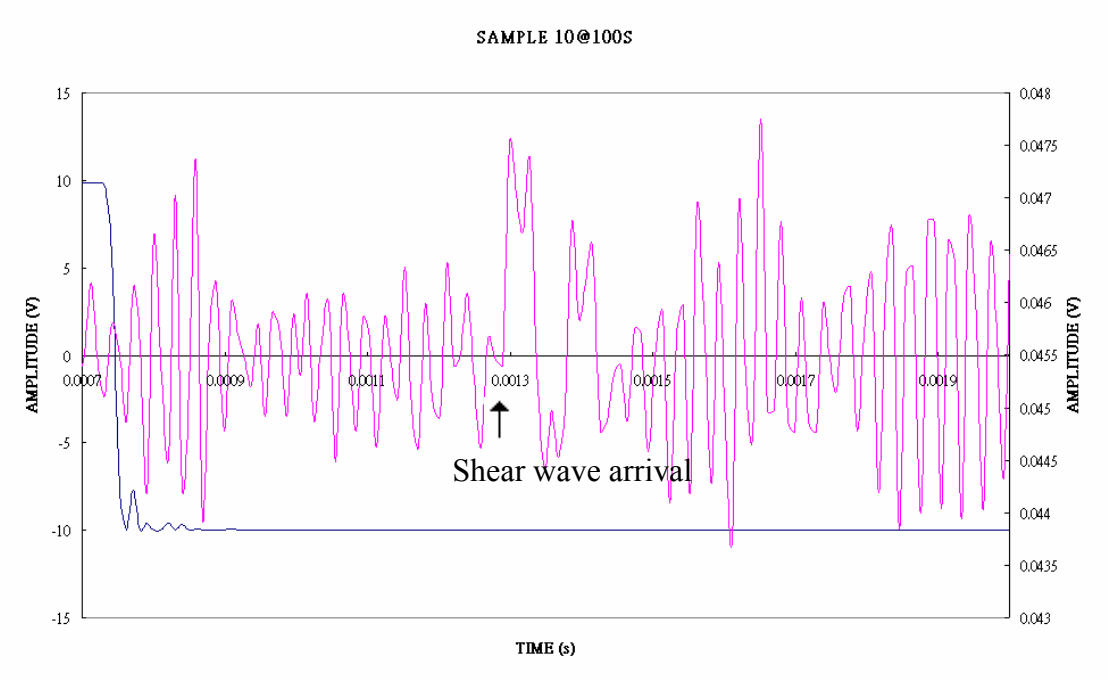

SAMPLE 10@50C
Signal unclear
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.0545
0.054
0.0535
0.053
0.0525
0.052
0.0515
0.051
0.0505
0.0006
0.0008
0.001
0.0012
0.0014
0.0016
0.0018
0.002
0.0022
0.0024
0.0026

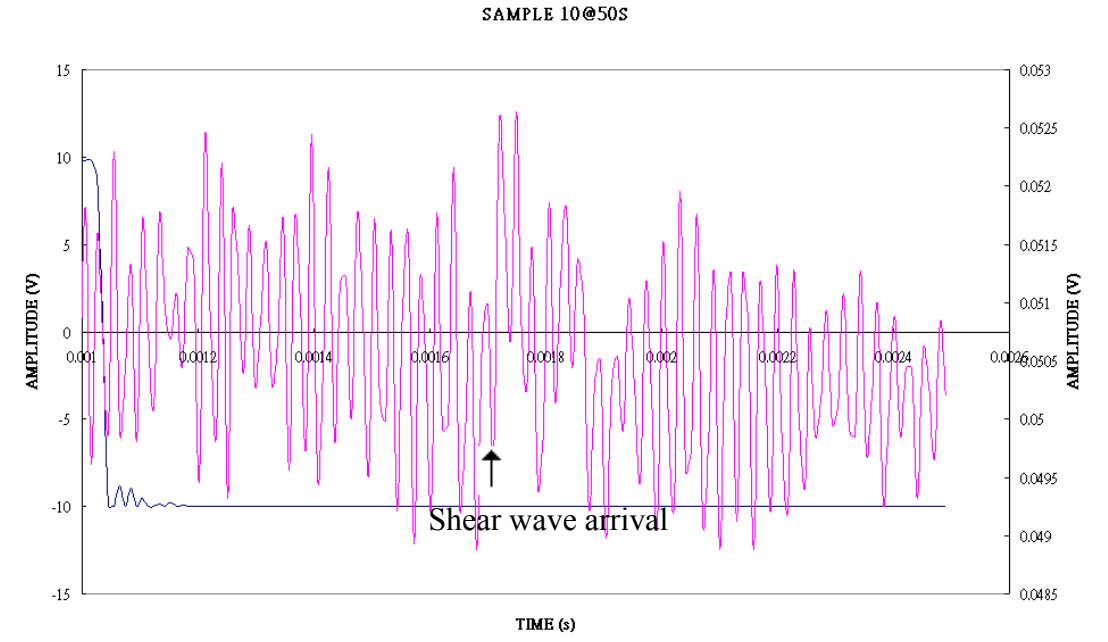

SAMPLE 10@100C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival

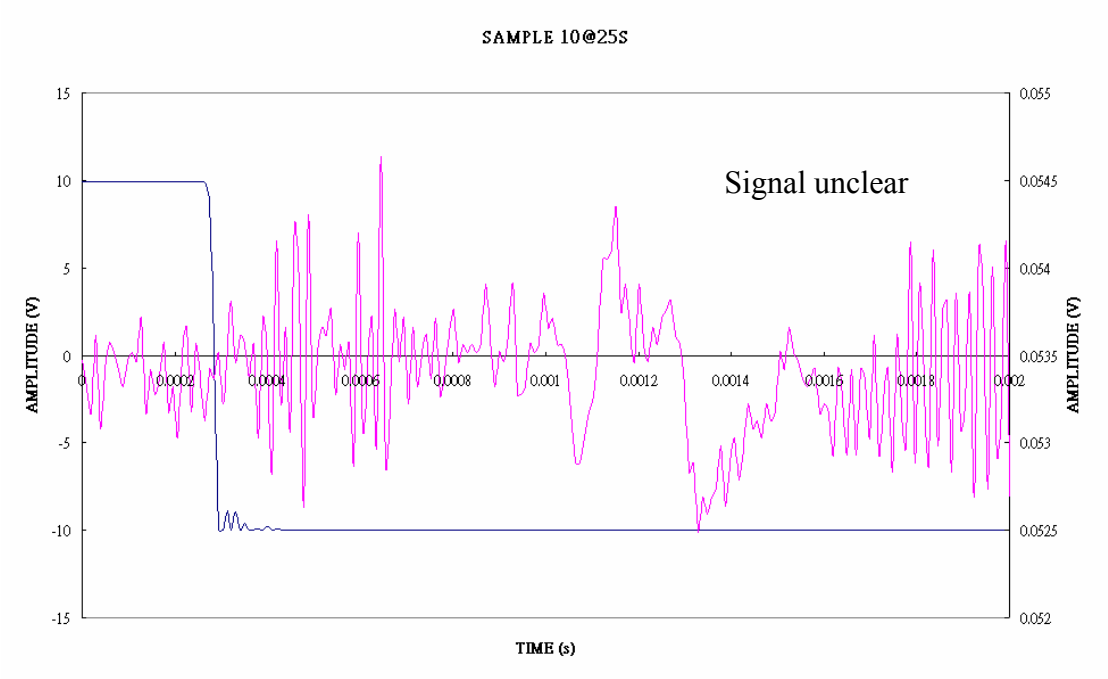

SAMPLE 10@200C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival


SAMPLE 10@400C
Signal unclear
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.049
0.048
0.047
0.046
0.045
0.044
0.043
0.042
0.041
0.04
0
0.0001
0.0002
0.0003
0.0004
0.0005
0.0006
0.0007
0.0008
0.0009
0.001

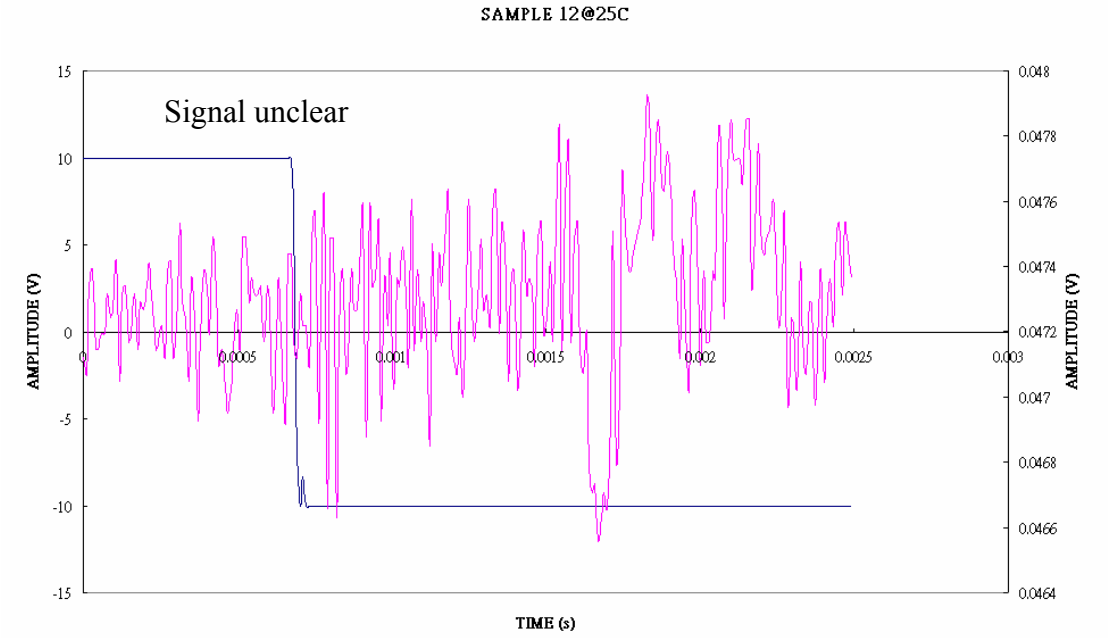

SAMPLE 10@200S
Shear wave arrival.
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.047
0.046
0.045
0.044
0.043
0.042
0.041
0.04
0
0.0001
0.0002
0.0003
0.0004
0.0005
0.0006
0.0007
0.0008
0.0009
0.001

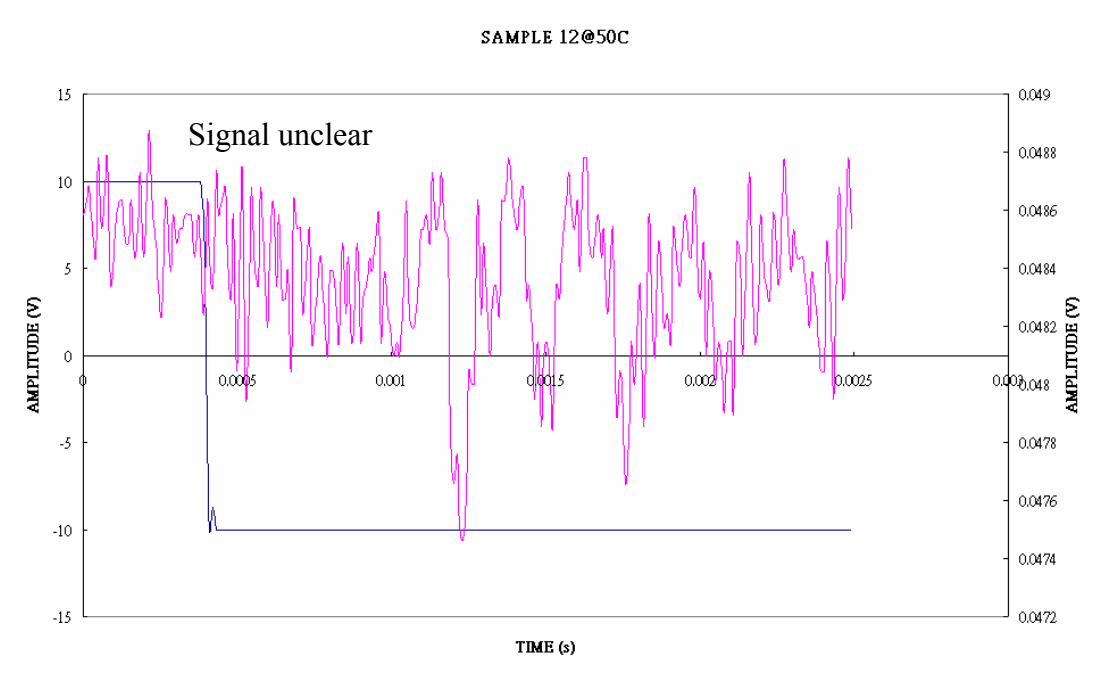

SAMPLE 10@100S
AMPLITUDE (V)
TIME (s)
Shear wave arrival
15
10
5
0
-5
-10
-15
0.0007
0.0009
0.0011
0.0013
0.0015
0.0017
0.0019
0.048
0.0475
0.047
0.0465
0.046
0.0455
0.045
0.0445
0.044
0.0435
0.043

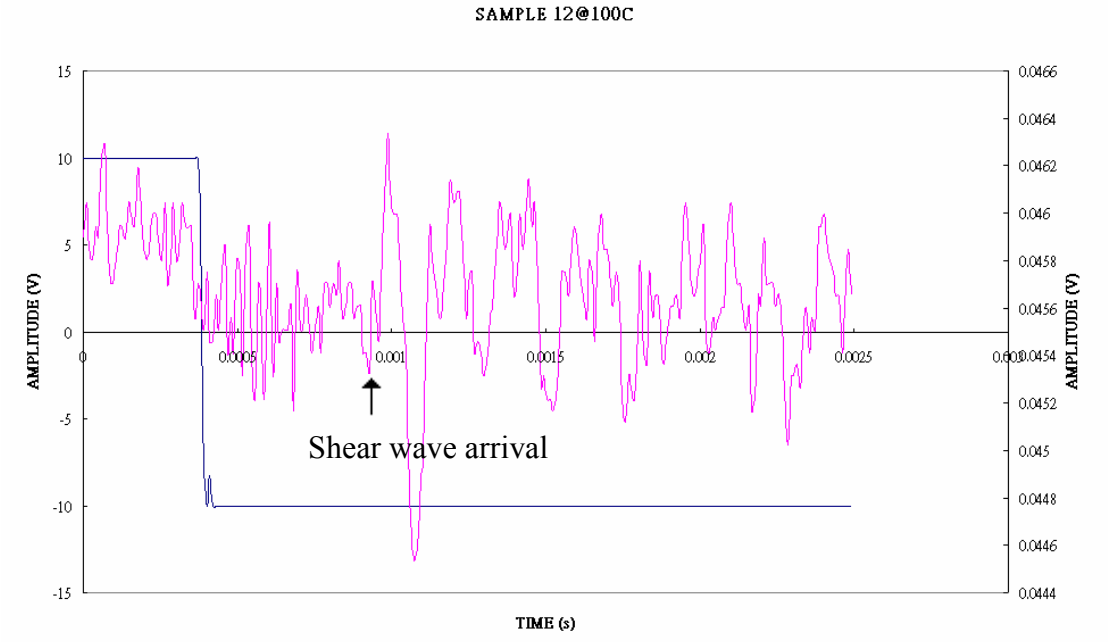

SAMPLE 10@50S
AMPLITUDE (V)
TIME (s)
Shear wave arrival
15
10
5
0
-5
-10
-15
0.001
0.0012
0.0014
0.0016
0.0018
0.002
0.0022
0.0024
0.0026
0.053
0.0525
0.052
0.0515
0.051
0.0505
0.05
0.0495
0.049
0.0485

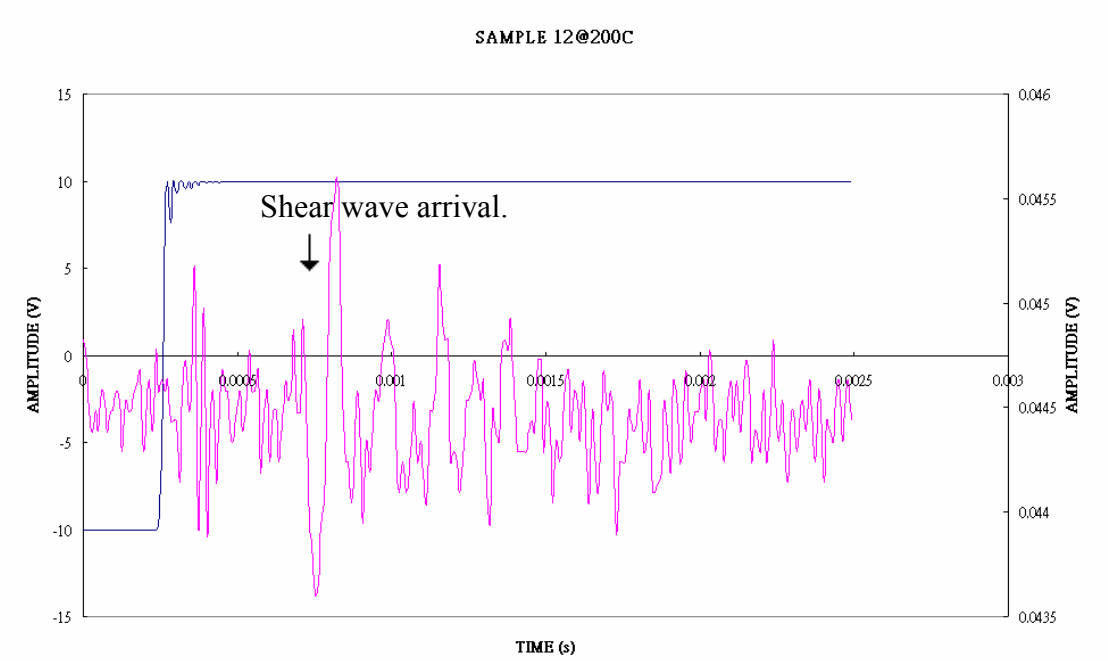

SAMPLE 10@25S
Signal unclear
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.055
0.0545
0.054
0.0535
0.053
0.0525
0.052
0
0.0002
0.0004
0.0006
0.0008
0.001
0.0012
0.0014
0.0016
0.0018
0.002

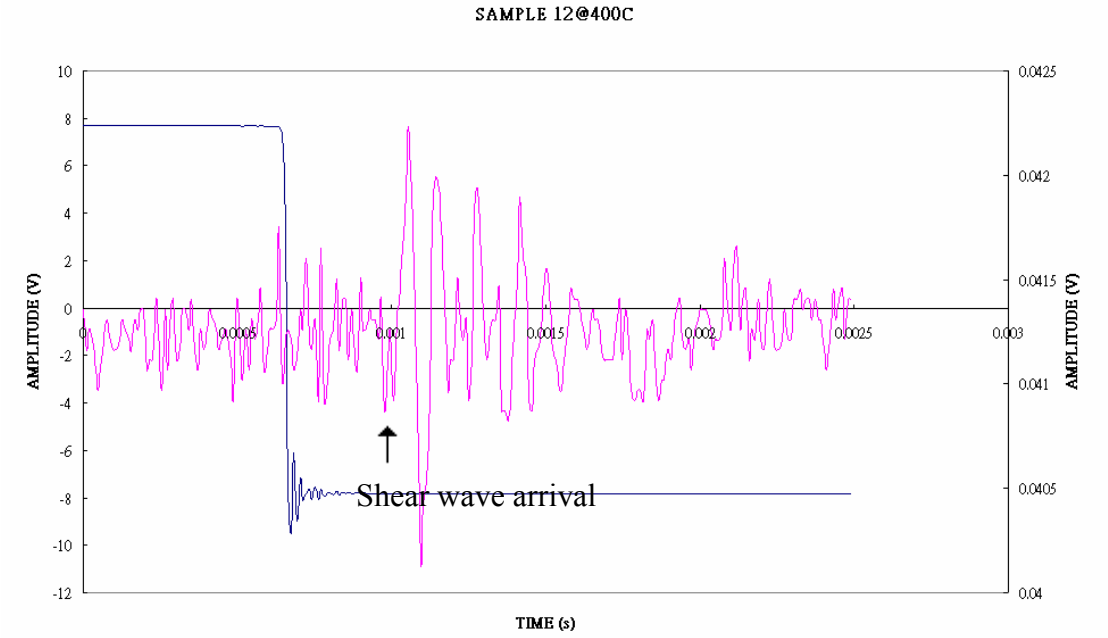
SAMPLE 12

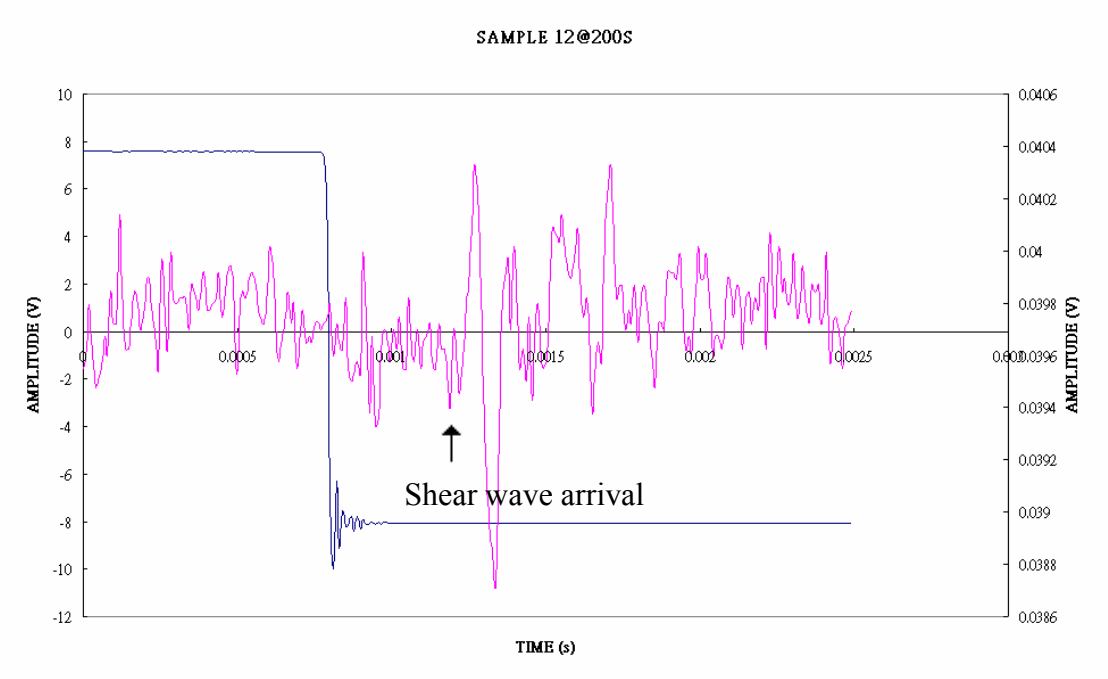

SAMPLE 12@25C
Signal unclear
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.048
0.0478
0.0476
0.0474
0.0472
0.047
0.0468
0.0466
0.0464
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

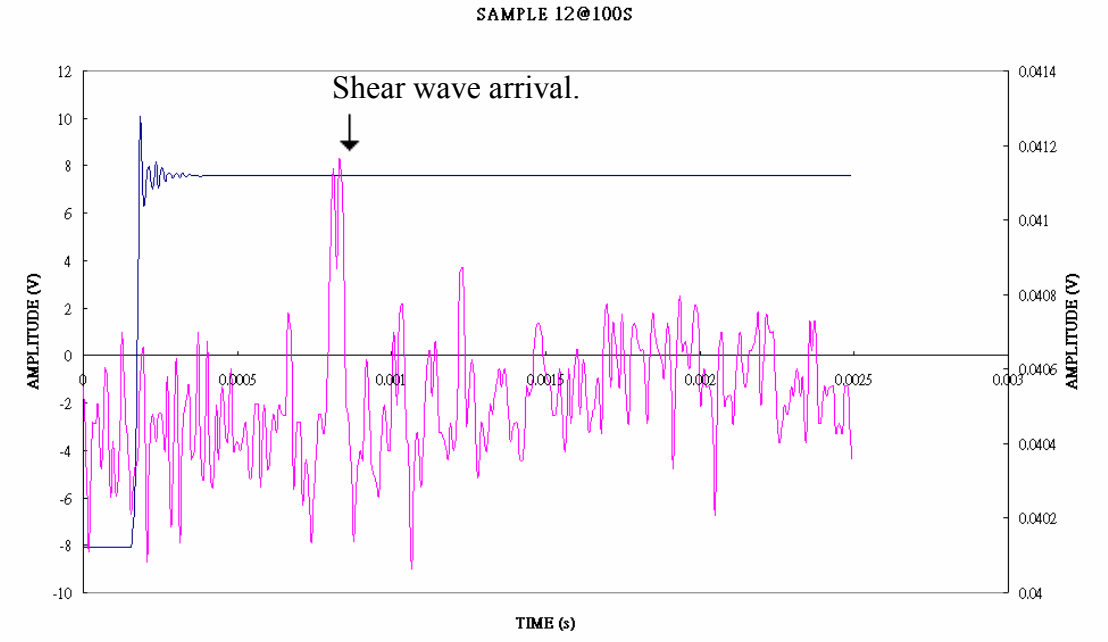

SAMPLE 12@50C
Signal unclear
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.0005
0.001
0.0015
0.002
0.0025
0.049
0.0488
0.0486
0.0484
0.0482
0.048
0.0478
0.0476
0.0474
0.0472

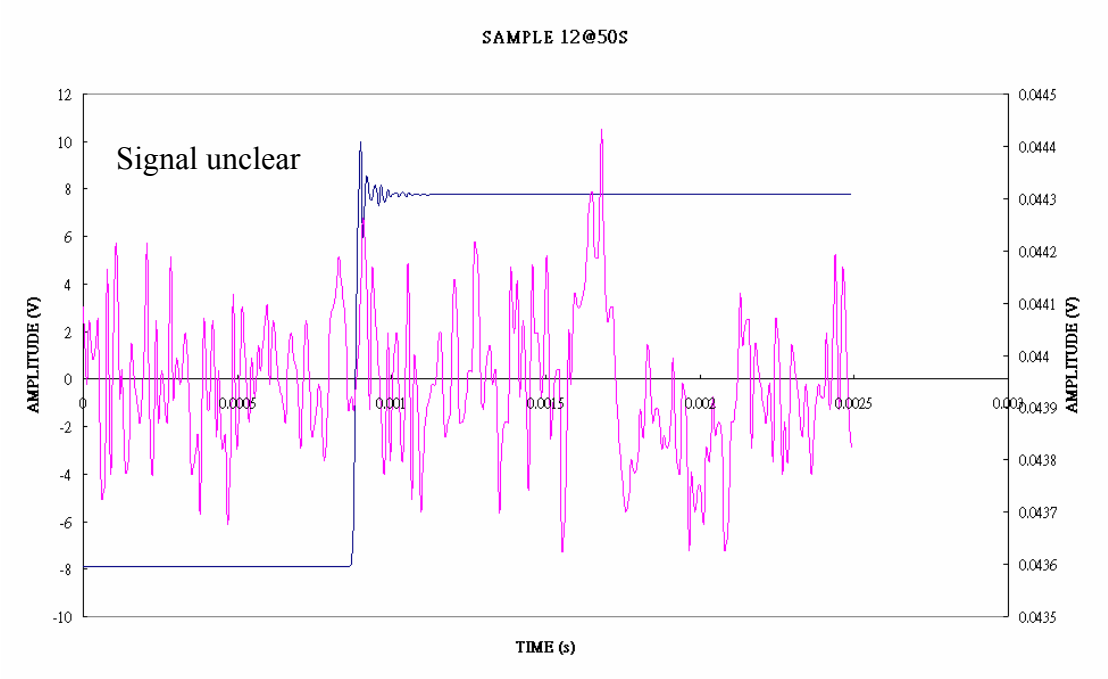

SAMPLE 12@100C
Shear wave arrival
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.0005
0.001
0.0015
0.002
0.0025
0.0466
0.0464
0.0462
0.046
0.0458
0.0456
0.0454
0.0452
0.045
0.0448
0.0446
0.0444

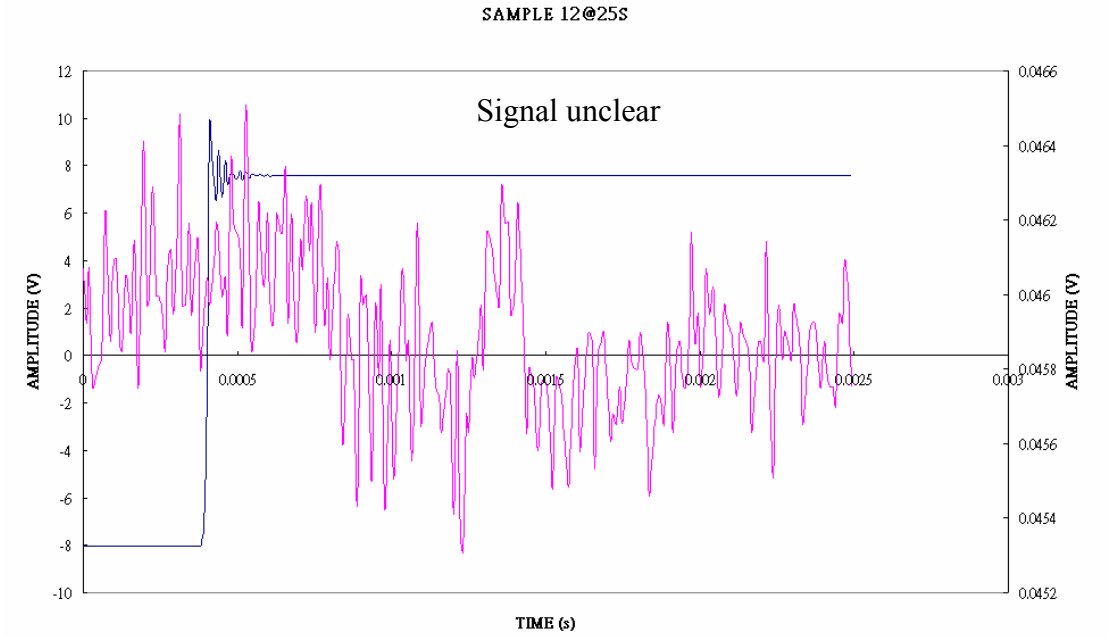

SAMPLE 12@200C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.046
0.0455
0.045
0.0445
0.044
0.0435
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

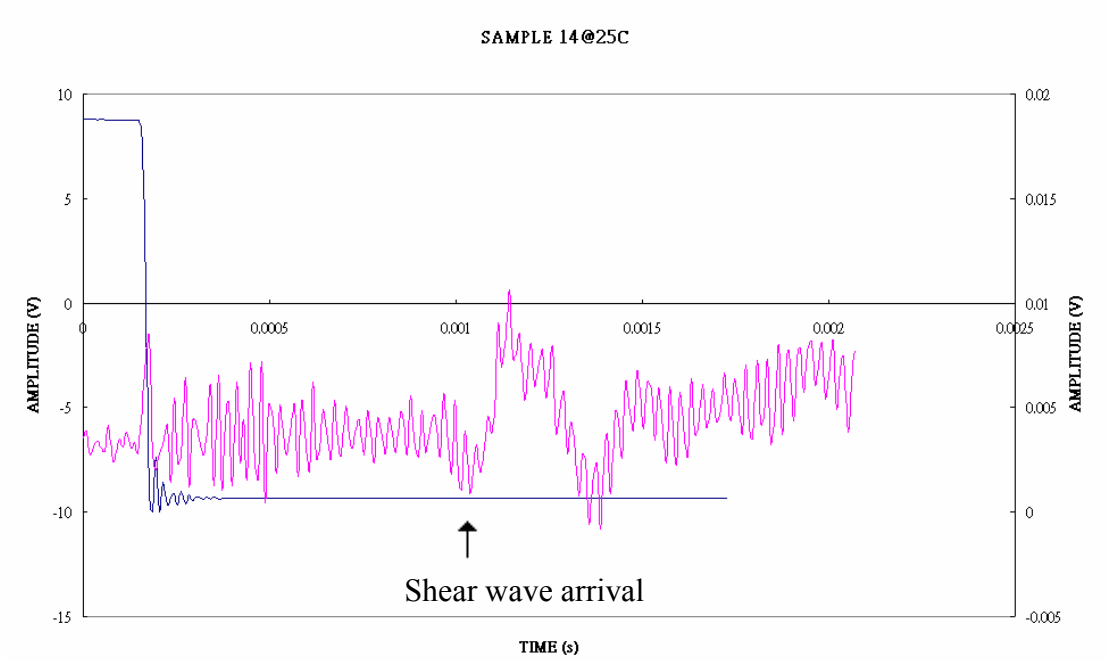

SAMPLE 12@400C
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
0.0425
0.042
0.0415
0.041
0.0405
0.04
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

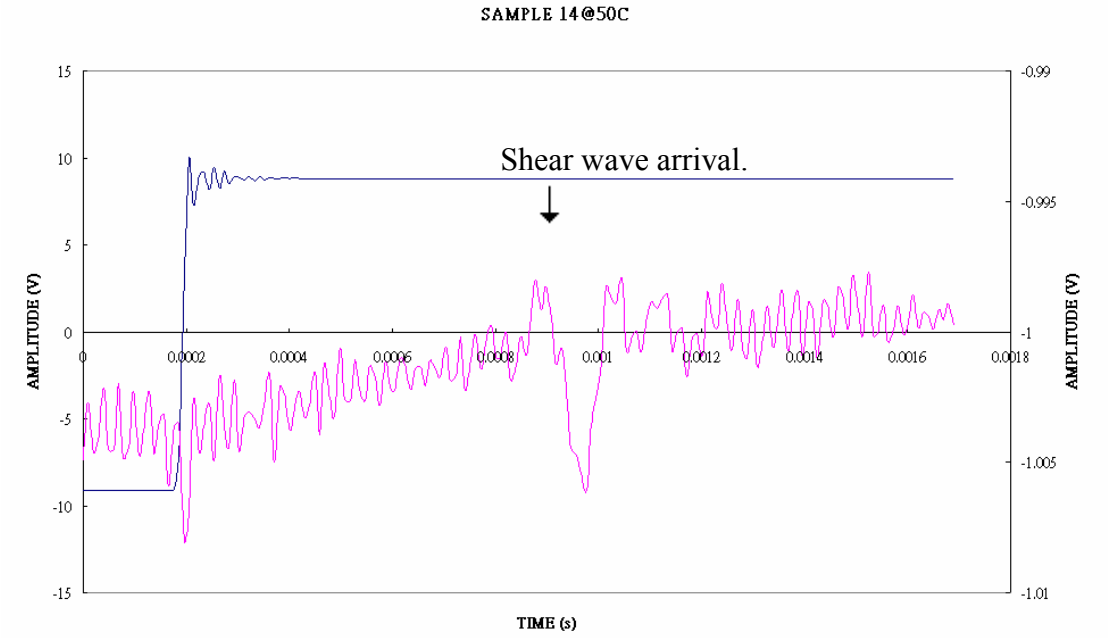

SAMPLE 12@200S
AMPLITUDE (V)
TIME (s)
Shear wave arrival

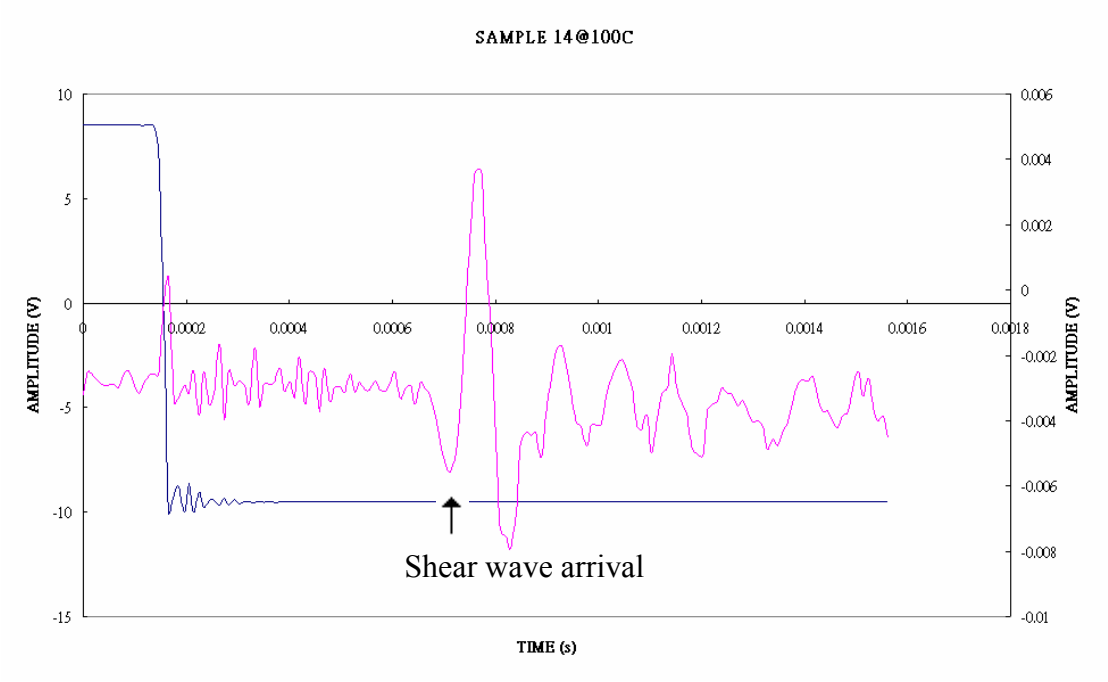

SAMPLE 12@100S
Shear wave arrival.
AMPLITUDE (V)
TIME (s)

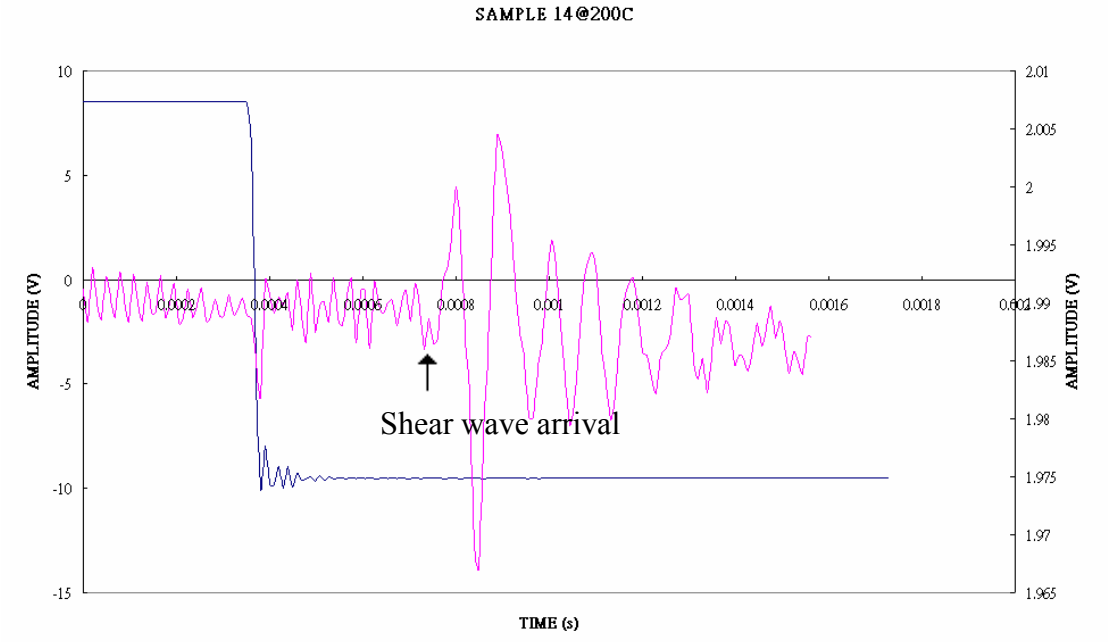

SAMPLE 12@50S
Signal unclear
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0.0445
0.0444
0.0443
0.0442
0.0441
0.044
0.0439
0.0438
0.0437
0.0436
0.0435
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

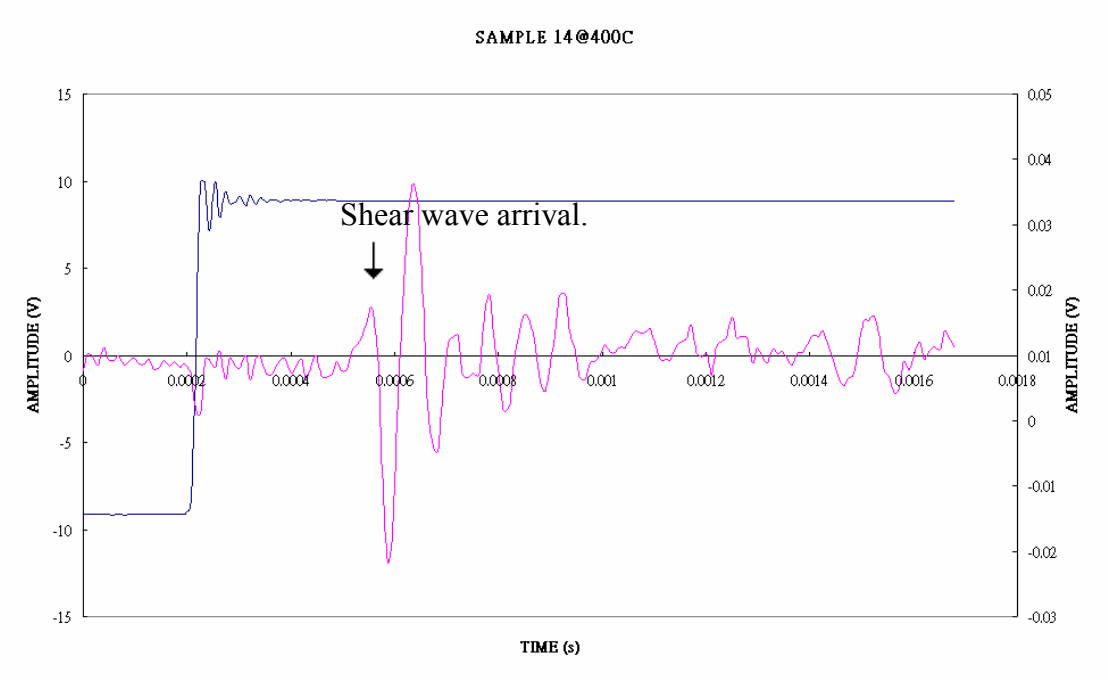

SAMPLE 12@25S
Signal unclear
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0.0466
0.0464
0.0462
0.046
0.0458
0.0456
0.0454
0.0452
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

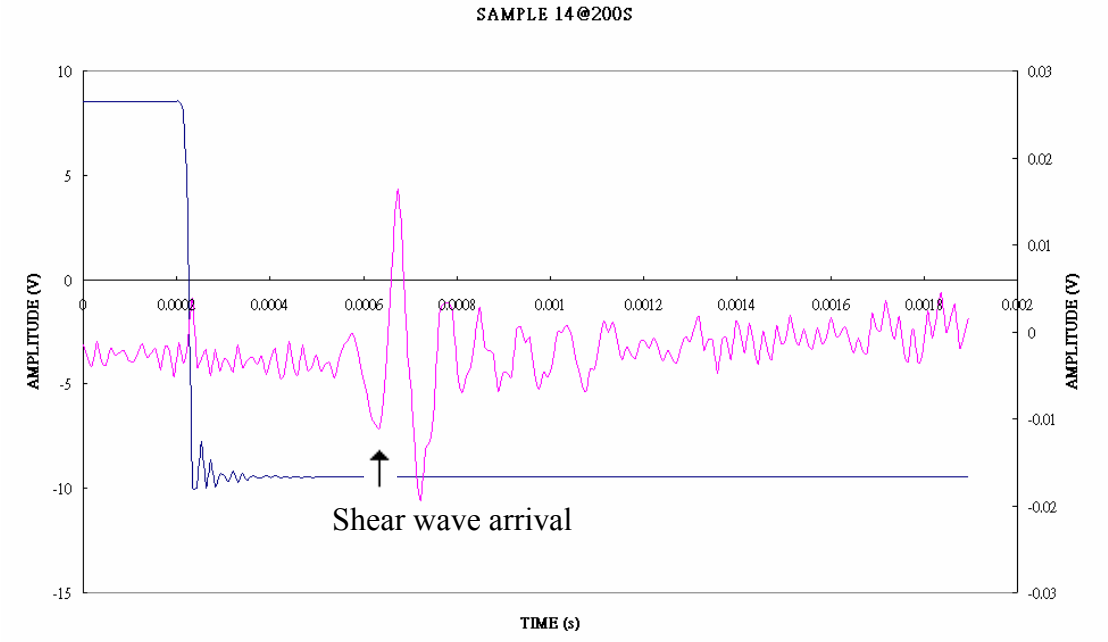

SAMPLE 14@25C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival
10
5
0
-5
-10
-15
0.02
0.015
0.01
0.005
0
-0.005
0
0.0005
0.001
0.0015
0.002
0.0025

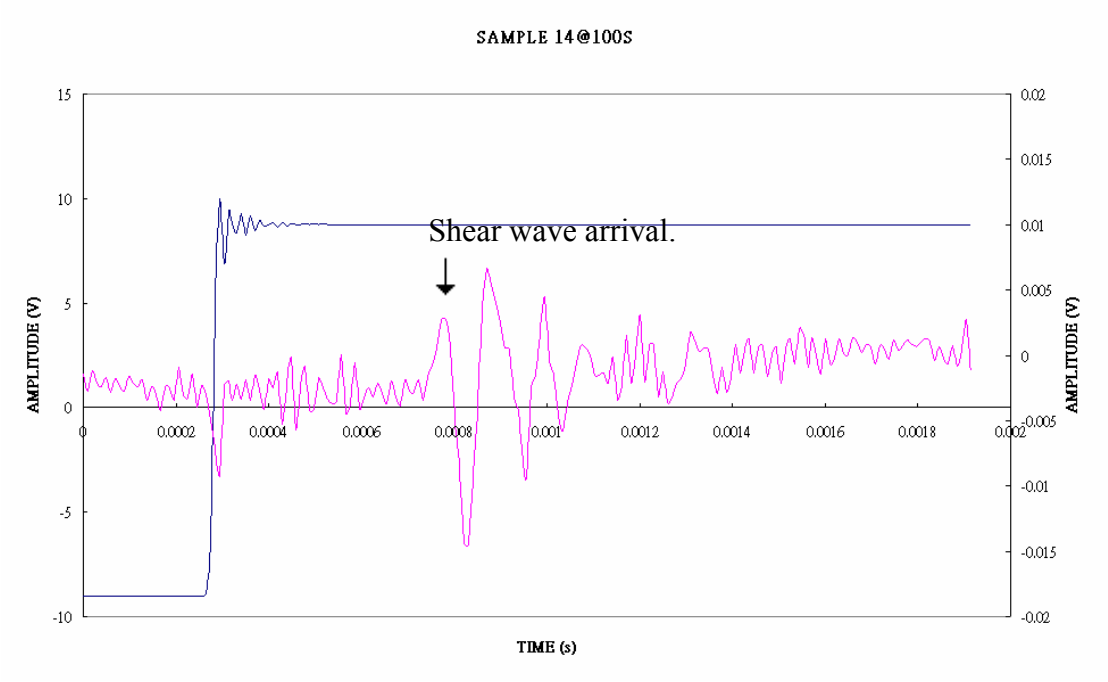

SAMPLE 14@50C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival.
15
10
5
0
-5
-10
-15
-0.99
-0.995
-1
-1.005
-1.01
0
0.0002
0.0004
0.0006
0.0008
0.001
0.0012
0.0014
0.0016
0.0018

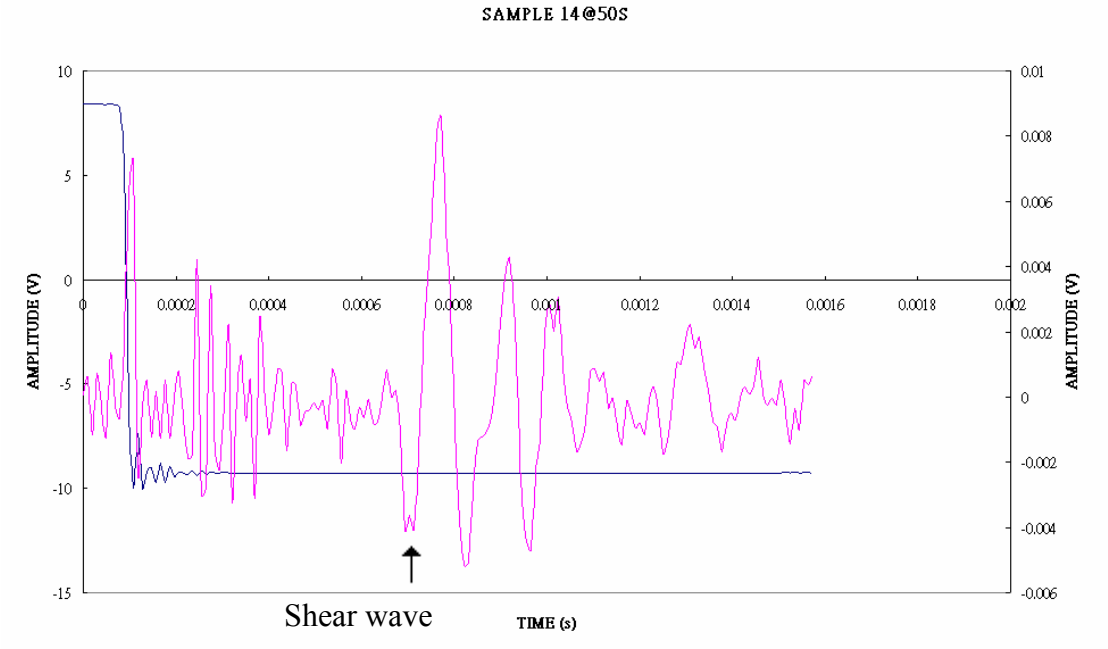

SAMPLE 14@100C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival


SAMPLE 14@200C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival

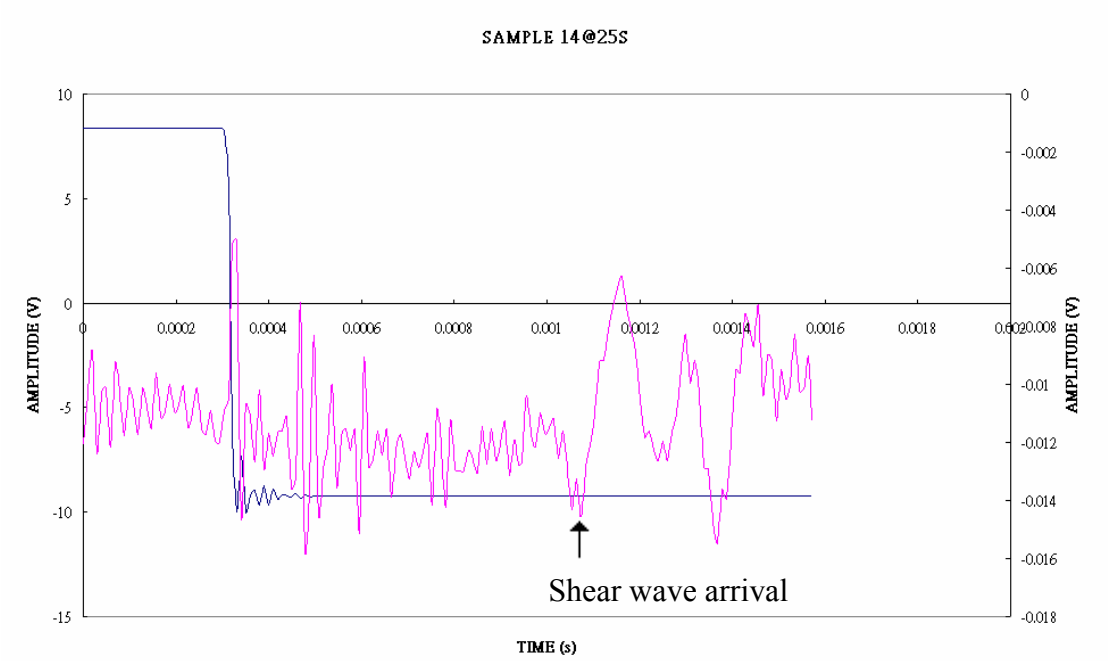

SAMPLE 14@400C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
0
0.0002
0.0004
0.0006
0.0008
0.001
0.0012
0.0014
0.0016
0.0018

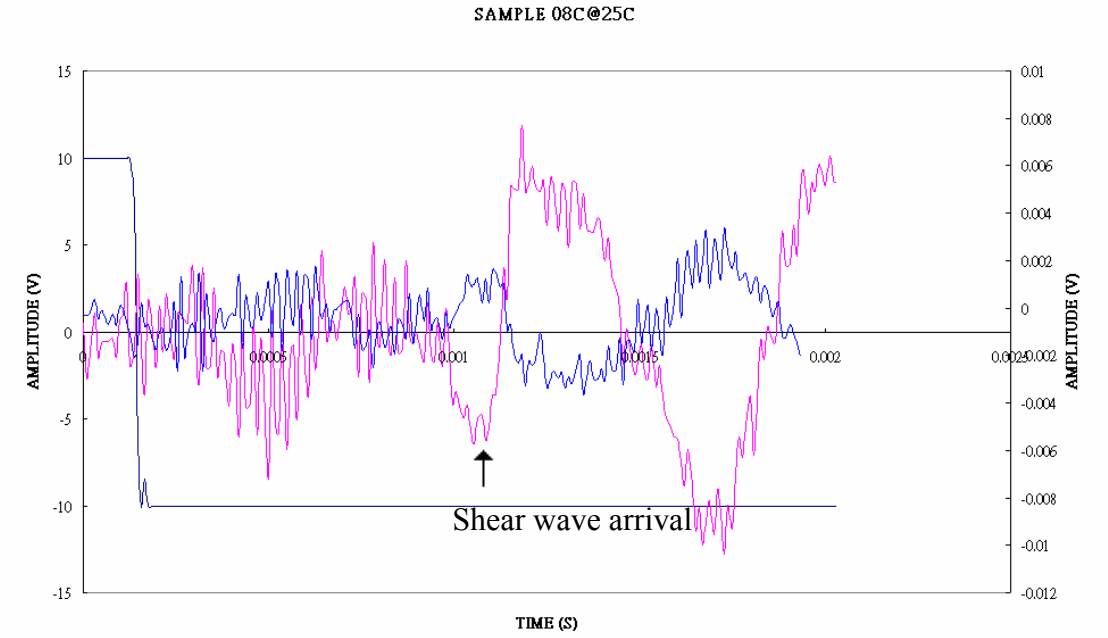

SAMPLE 14@200S
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
10
5
0
-5
-10
-15
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
0
0.0002
0.0004
0.0006
0.0008
0.001
0.0012
0.0014
0.0016
0.0018
0.002

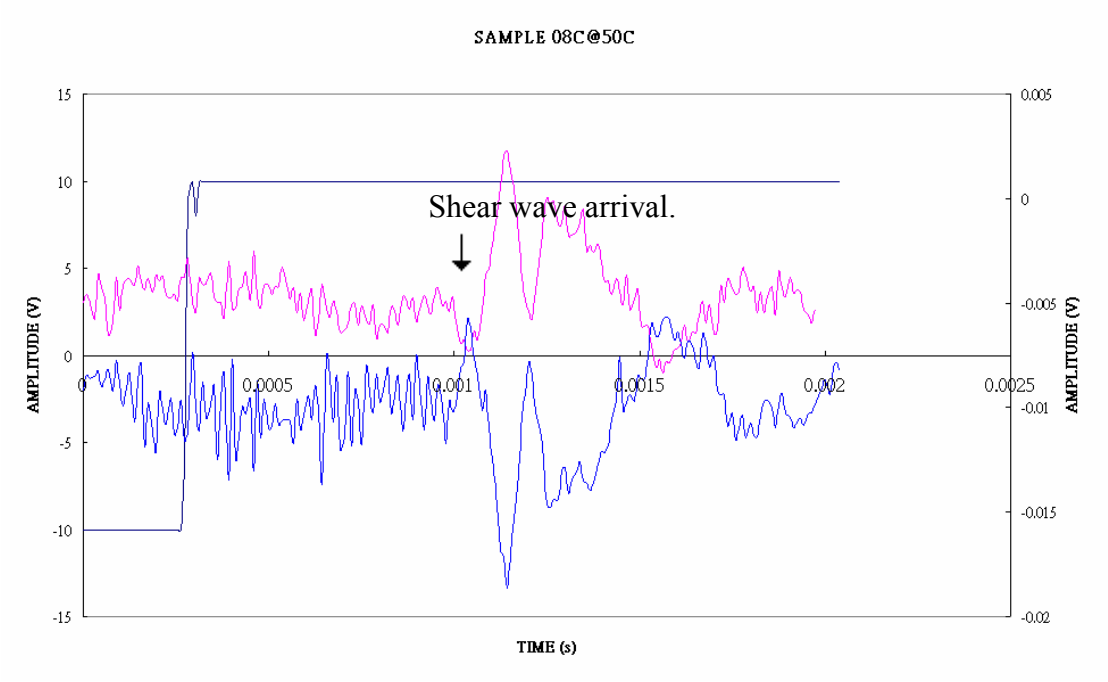


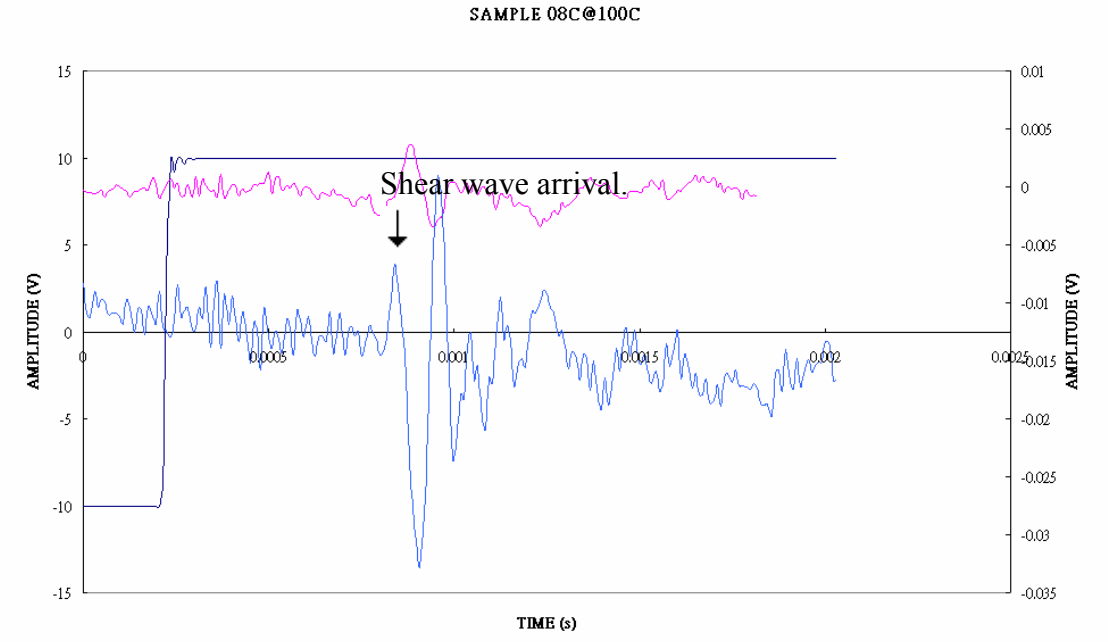


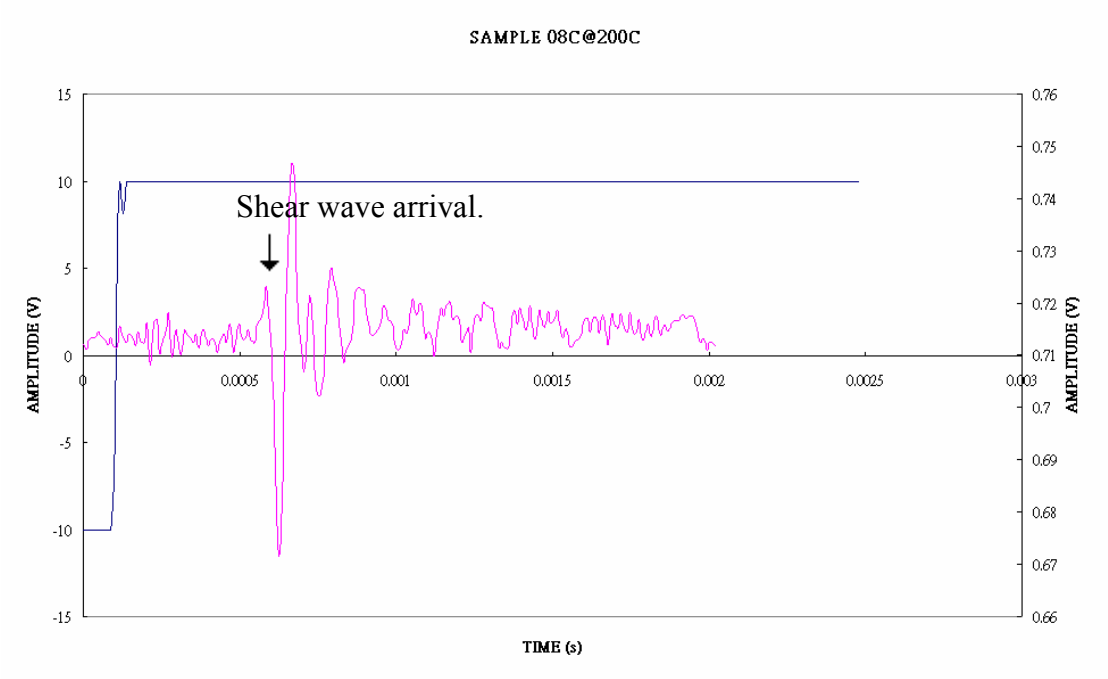
Shear wave arrival

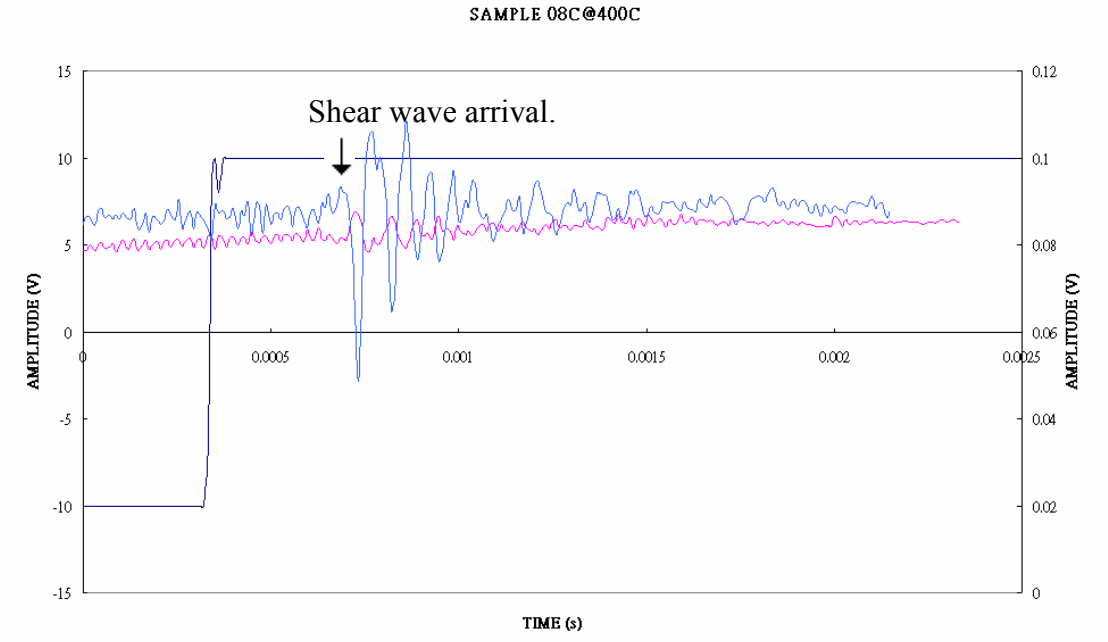

SAMPLE 14@25S
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
Shear wave arrival

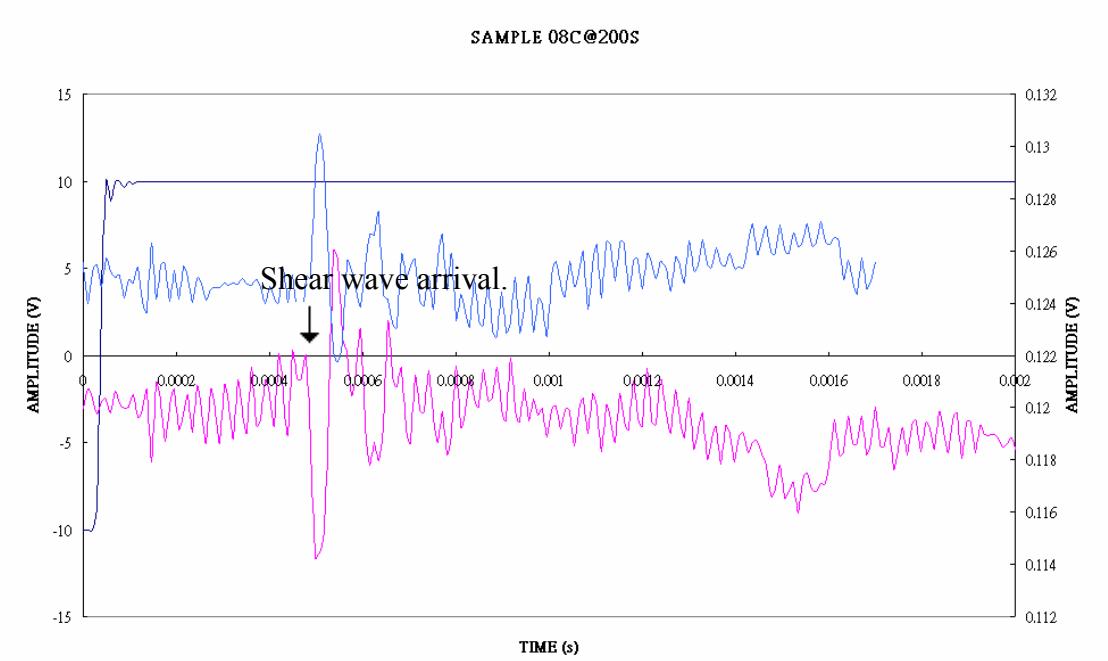

SAMPLE 08C@25C
AMPLITUDE (V)
AMPLITUDE (V)
TIME (S)
Shear wave arrival

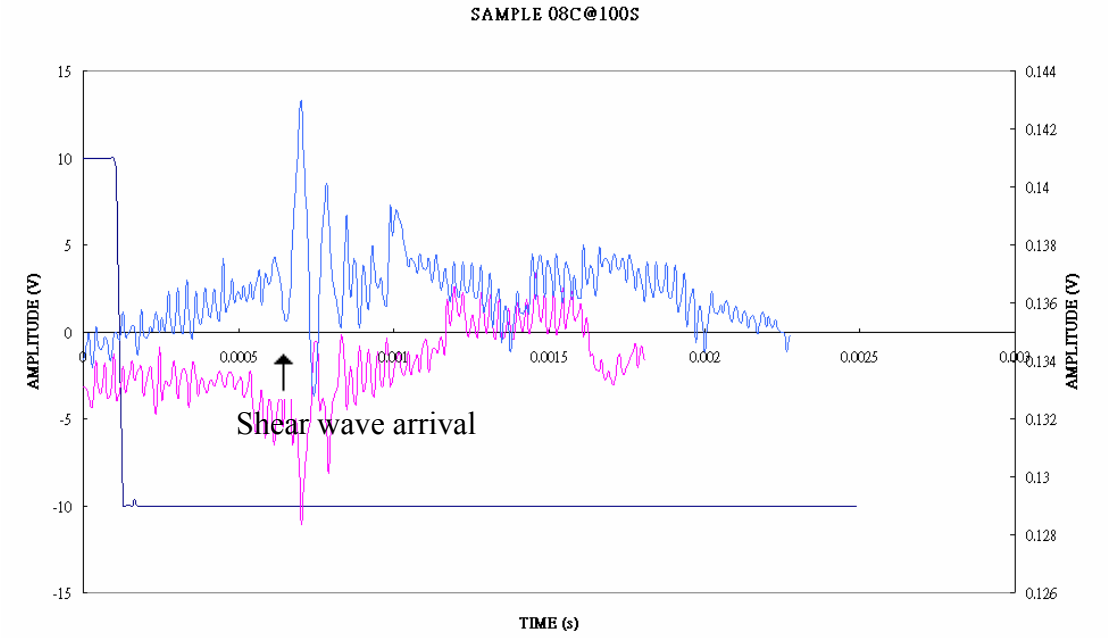

SAMPLE 08C@50C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.005
0
-0.005
-0.01
-0.015
-0.02
0
0.0005
0.001
0.0015
0.002
0.0025

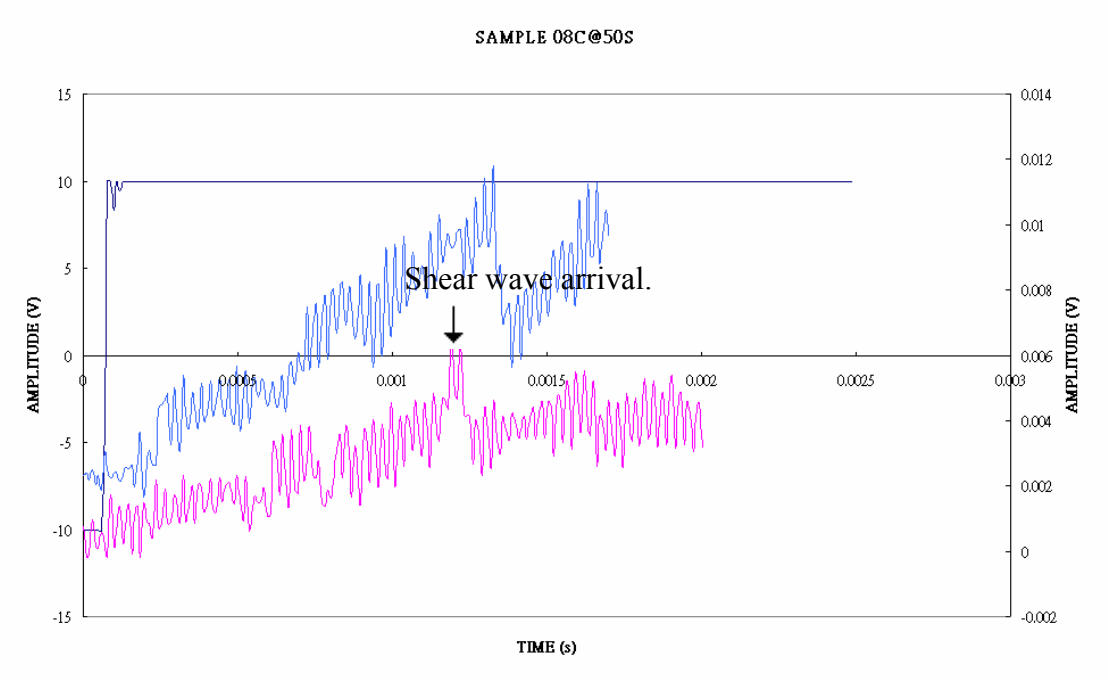

SAMPLE 08C@100C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.01
0.005
0
-0.005
-0.01
-0.015
-0.02
-0.025
-0.03
-0.035
0
0.0005
0.001
0.0015
0.002
0.0025

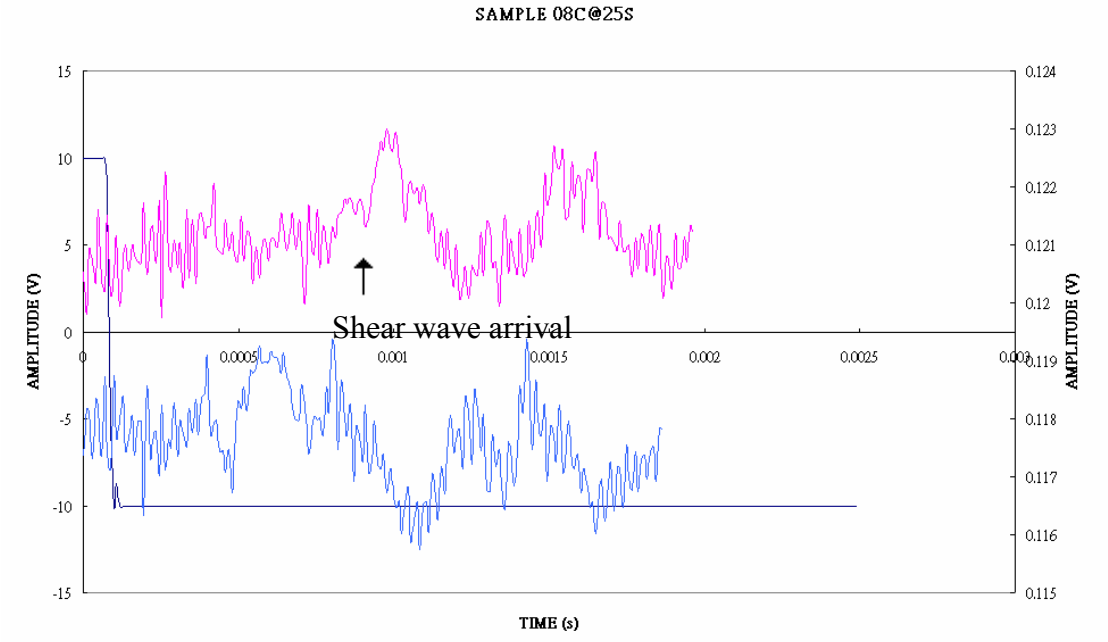

SAMPLE 08C@200C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.76
0.75
0.74
0.73
0.72
0.71
0.7
0.69
0.68
0.67
0.66
0
0.0005
0.001
0.0015
0.002
0.0025
0.003


SAMPLE 08C@400C
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.0005
0.001
0.0015
0.002
0.0025


SAMPLE 08C@200S
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.132
0.13
0.128
0.126
0.124
0.122
0.12
0.118
0.116
0.114
0.112
0
0.0002
0.0004
0.0006
0.0008
0.001
0.0012
0.0014
0.0016
0.0018
0.002


SAMPLE 08C@100S
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.144
0.142
0.14
0.138
0.136
0.134
0.132
0.13
0.128
0.126
0
0.0005
0.001
0.0015
0.002
0.0025
0.003


SAMPLE 08C@50S
Shear wave arrival.
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
-0.002
0
0.0005
0.001
0.0015
0.002
0.0025
0.003


SAMPLE 08C@25S
Shear wave arrival
AMPLITUDE (V)
AMPLITUDE (V)
TIME (s)
15
10
5
0
-5
-10
-15
0.124
0.123
0.122
0.121
0.12
0.119
0.118
0.117
0.116
0.115
0
0.0005
0.001
0.0015
0.002
0.0025
0.003

APPPENDIX E

SHEAR WAVE VELOCITY RESULTS DETERMINED USING PHASE SENSITIVE DETECTION

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
104	1.82E-03	2.13E-03	1.84E-03	3.23	0.0304	0.0293	0.0011	3780	229	118	80	60	48
105	2.05E-03	2.35E-03	2.07E-03	3.33	0.0276	0.0271	0.0005	3780	236	122	82	62	50
106	1.97E-03	2.28E-03	1.99E-03	3.23	0.0302	0.0294	0.0008	3780	229	118	80	60	48
107													
108	7.32E-04	1.03E-03	7.33E-04	3.36	0.0328	0.0322	0.0006	151200	253	127	85	63	51
109	1.31E-03	1.60E-03	1.58E-03	3.45	0.0331	0.0324	0.0007	280	135	89	66	53	44
110	1.11E-03	1.40E-03	1.41E-03	3.45	0.0277	0.0273	0.0004	252	128	86	65	52	43
111	7.91E-04	1.07E-03	8.11E-04	3.58	0.0272	0.0270	0.0002	3780	253	131	88	67	53
112	3.22E-04	6.00E-04	3.52E-04	3.60	0.0309	0.0303	0.0006	2520	245	129	88	66	53
113	2.08E-03	2.35E-03	2.12E-03	3.70	0.0327	0.0322	0.0005	1890	244	130	89	67	54
114	2.34E-04	5.00E-04	2.64E-04	3.76	0.0327	0.0323	0.0004	2520	255	135	91	69	56
115	1.46E-03	1.73E-03	1.47E-03	3.77	0.0277	0.0273	0.0004	7560	275	140	94	71	57
116	1.70E-04	4.30E-04	1.86E-04	3.85	0.0304	0.0293	0.0011	4725	274	141	95	72	57
117	2.20E-03	2.46E-03	2.23E-03	3.85	0.0281	0.0273	0.0008	2520	261	137	93	71	57
118	3.52E-04	6.10E-04	3.91E-04	3.88	0.0329	0.0321	0.0008	1938	255	136	93	71	57
119	2.93E-04	5.47E-04	3.52E-04	3.94	0.0328	0.0320	0.0008	1281	242	133	92	70	57
120	1.84E-03	2.09E-03	1.96E-03	4.00	0.0334	0.0324	0.0010	630	204	122	87	68	55
121	6.84E-04	9.28E-04	7.52E-04	4.10	0.0330	0.0320	0.0010	1112	242	136	95	72	59
122	2.30E-04	4.75E-04	3.13E-04	4.08	0.0283	0.0275	0.0008	911	230	132	92	71	58
123	1.90E-03	2.14E-03	1.96E-03	4.17	0.0334	0.0324	0.0010	1260	252	140	97	74	60

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
124	1.88E-03	2.12E-03	1.97E-03	4.17	0.0304	0.0293	0.0011	840	229	133	93	72	59
125	1.16E-03	1.40E-03	1.49E-03	4.08	0.0332	0.0327	0.0005	226	130	92	71	57	48
126	1.27E-03	1.50E-03	1.36E-03	4.35	0.0326	0.0318	0.0008	840	236	137	97	75	61
127	1.47E-03	1.71E-03	1.57E-03	4.26	0.0332	0.0325	0.0007	756	226	133	94	73	59
128	1.01E-03	1.24E-03	1.10E-03	4.35	0.0331	0.0320	0.0011	840	236	137	97	75	61
129	1.16E-03	1.39E-03	1.24E-03	4.35	0.0332	0.0322	0.0010	945	244	140	98	76	61
130	3.13E-04	5.27E-04	3.91E-04	4.67	0.0284	0.0276	0.0008	969	259	149	105	81	66
131	1.30E-03	1.51E-03	1.39E-03	4.76	0.0304	0.0292	0.0012	840	252	148	105	81	66
132	2.44E-04	4.59E-04	3.32E-04	4.65	0.0334	0.0323	0.0011	859	250	146	103	80	65
133	5.18E-04	7.32E-04	6.25E-04	4.67	0.0296	0.0277	0.0019	707	236	141	101	79	64
134	3.03E-04	5.08E-04	4.00E-04	4.88	0.0315	0.0293	0.0022	779	250	149	106	82	67
135	2.12E-03	2.32E-03	2.23E-03	4.88	0.0288	0.0271	0.0017	657	236	144	104	81	66
136	2.00E-03	2.21E-03	2.12E-03	4.76	0.0340	0.0323	0.0017	630	229	140	101	79	65
137	2.22E-03	2.42E-03	2.34E-03	4.88	0.0288	0.0273	0.0015	605	229	141	102	80	66
138	1.56E-04	3.61E-04	2.93E-04	4.88	0.0300	0.0285	0.0015	552	221	138	101	79	65
139	1.37E-04	3.37E-04	3.07E-04	5.00	0.0322	0.0305	0.0017	445	204	133	98	78	65
140	1.95E-04	3.96E-04	3.42E-04	4.98	0.0337	0.0325	0.0012	514	217	138	101	79	66
141	7.42E-04	9.38E-04	8.89E-04	5.10	0.0290	0.0276	0.0014	514	220	140	103	81	67
142	1.17E-04	3.13E-04	2.70E-04	5.10	0.0338	0.0328	0.0010	494	217	139	102	81	67
143	1.22E-04	3.18E-04	2.73E-04	5.10	0.0293	0.0279	0.0014	501	218	139	102	81	67

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
144	2.05E-03	2.25E-03	2.21E-03	5.00	0.0290	0.0277	0.0013	473	210	135	99	79	65
145	7.00E-05	2.64E-04	2.25E-04	5.15	0.0299	0.0284	0.0015	488	217	139	103	81	67
146	1.41E-03	1.60E-03	1.56E-03	5.41	0.0289	0.0275	0.0014	504	226	145	107	85	70
147	8.20E-05	2.70E-04	2.54E-04	5.32	0.0310	0.0292	0.0018	440	210	138	103	82	68
148	1.60E-04	3.46E-04	3.32E-04	5.38	0.0338	0.0326	0.0012	440	211	139	104	83	69
149	1.63E-03	1.82E-03	1.80E-03	5.26	0.0337	0.0322	0.0015	458	213	139	103	82	68
150	1.61E-03	1.80E-03	1.78E-03	5.26	0.0318	0.0310	0.0008	445	210	137	102	81	68
151	1.15E-03	1.33E-03	1.32E-03	5.41	0.0339	0.0325	0.0014	432	210	139	104	83	69
152	1.80E-04	3.61E-04	3.52E-04	5.52	0.0342	0.0325	0.0017	440	214	142	106	84	70
153	9.77E-05	2.73E-04	2.73E-04	5.70	0.0344	0.0325	0.0019	431	216	144	108	86	72
154	1.46E-04	3.22E-04	1.47E-04	5.68	0.0294	0.0276	0.0018	151200	428	214	143	107	86
155	2.60E-04	4.30E-04	2.73E-04	5.88	0.0295	0.0276	0.0019	5815	413	214	145	109	88
156	1.02E-04	2.73E-04	1.37E-04	5.85	0.0297	0.0279	0.0018	2160	367	201	138	105	85
157	1.12E-04	2.83E-04	1.46E-04	5.85	0.0297	0.0282	0.0015	2224	369	201	138	105	85
158	2.34E-04	4.02E-04	2.83E-04	5.95	0.0293	0.0279	0.0014	1543	348	196	137	105	85
159	1.17E-03	1.34E-03	1.22E-03	5.88	0.0299	0.0280	0.0019	1512	344	194	135	104	84
160	1.00E-04	2.64E-04	1.46E-04	6.10	0.0298	0.0282	0.0016	1643	360	202	141	108	87
161	2.23E-03	2.39E-03	2.29E-03	6.25	0.0340	0.0327	0.0013	1260	344	199	140	108	88
162	2.24E-03	2.39E-03	2.31E-03	6.45	0.0319	0.0306	0.0013	1008	329	196	140	109	89
163	2.13E-04	3.74E-04	3.03E-04	6.21	0.0322	0.0311	0.0011	840	301	183	132	103	84
164	1.09E-03	1.24E-03	1.18E-03	6.45	0.0311	0.0301	0.0010	796	302	187	135	106	87

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
165	1.16E-03	1.32E-03	1.22E-03	6.25	0.0290	0.0286	0.0004	1260	344	199	140	108	88
166	2.16E-03	2.31E-03	2.24E-03	6.67	0.0314	0.0310	0.0004	889	322	196	141	110	91
167	1.86E-04	3.42E-04	2.54E-04	6.41	0.0339	0.0333	0.0006	1112	338	199	141	109	89
168	1.32E-04	2.85E-04	2.15E-04	6.54	0.0321	0.0313	0.0008	911	320	194	139	109	89
169	1.77E-04	3.32E-04	2.73E-04	6.45	0.0291	0.0285	0.0006	788	301	186	135	106	87
170	1.82E-04	3.34E-04	3.13E-04	6.58	0.0319	0.0303	0.0016	577	267	174	129	102	85
171	1.29E-04	2.80E-04	2.64E-04	6.62	0.0320	0.0303	0.0017	560	264	173	129	102	85
172	1.30E-04	2.80E-04	1.31E-04	6.67	0.0324	0.0305	0.0019	75600	501	251	168	126	101
173	2.40E-04	3.91E-04	2.54E-04	6.62	0.0344	0.0325	0.0019	5400	458	239	162	122	98
174	1.90E-04	3.39E-04	2.34E-04	6.71	0.0319	0.0296	0.0023	1718	392	221	154	118	96
175	2.05E-04	3.52E-04	2.44E-04	6.80	0.0323	0.0300	0.0023	1938	406	227	158	121	98
176	2.14E-03	2.29E-03	2.19E-03	6.67	0.0345	0.0329	0.0016	1512	378	216	151	116	95
177	2.37E-04	3.82E-04	2.93E-04	6.90	0.0347	0.0329	0.0018	1350	376	218	154	119	97
178	1.18E-04	2.63E-04	1.79E-04	6.90	0.0324	0.0305	0.0019	1239	367	215	152	118	96
179	1.37E-04	2.79E-04	2.03E-04	7.04	0.0346	0.0328	0.0018	1145	363	216	154	119	97
180	2.34E-04	3.76E-04	3.03E-04	7.04	0.0325	0.0305	0.0020	1096	358	214	153	119	97
181	1.58E-04	2.99E-04	2.25E-04	7.09	0.0313	0.0296	0.0017	1128	363	217	154	120	98
182	1.17E-04	2.60E-04	1.86E-04	6.99	0.0311	0.0296	0.0015	1096	357	213	152	118	96
183	1.25E-04	2.64E-04	1.90E-04	7.19	0.0308	0.0288	0.0020	1163	371	220	157	122	99
184	1.27E-04	2.66E-04	1.95E-04	7.19	0.0334	0.0317	0.0017	1112	365	218	156	121	99
185	1.76E-04	3.12E-04	2.40E-04	7.35	0.0348	0.0327	0.0021	1181	378	225	160	124	102

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
186	1.11E-04	2.47E-04	1.86E-04	7.35	0.0352	0.0325	0.0027	1008	358	218	157	122	100
187	1.86E-04	3.20E-04	2.54E-04	7.46	0.0334	0.0303	0.0031	1112	374	225	161	125	102
100	1.22E-04	2.54E-04	1.96E-04	7.58	0.0360	0.0331	0.0029	1022	367	224	161	126	103
101	1.39E-04	2.73E-04	2.15E-04	7.46	0.0371	0.0337	0.0034	995	360	220	158	124	101
102	1.82E-04	3.05E-04	2.15E-04	7.52	0.0322	0.0289	0.0033	2291	485	271	188	144	117
103	2.08E-04	3.40E-04	2.83E-04	7.58	0.0380	0.0349	0.0031	1008	365	223	161	125	103
104	1.81E-04	3.11E-04	2.64E-04	7.69	0.0349	0.0313	0.0036	911	355	220	160	125	103
105	1.97E-04	3.28E-04	2.83E-04	7.63	0.0367	0.0337	0.0030	879	348	217	158	124	102
106	1.29E-04	2.58E-04	2.17E-04	7.75	0.0319	0.0287	0.0032	859	348	218	159	125	103
107	1.84E-04	3.12E-04	2.73E-04	7.81	0.0383	0.0350	0.0033	849	348	219	160	126	104
108	1.27E-04	2.54E-04	2.25E-04	7.87	0.0379	0.0347	0.0032	771	336	215	158	125	103
109	1.95E-04	3.20E-04	2.90E-04	8.00	0.0350	0.0323	0.0027	796	344	219	161	127	105
110	2.13E-04	3.38E-04	3.13E-04	8.00	0.0327	0.0295	0.0032	756	336	216	159	126	104
111	2.03E-04	3.27E-04	3.03E-04	8.06	0.0353	0.0327	0.0026	756	338	217	160	127	105
112	1.82E-04	3.05E-04	2.83E-04	8.13	0.0376	0.0351	0.0025	749	338	218	161	127	106
113	1.66E-04	2.89E-04	2.73E-04	8.13	0.0316	0.0293	0.0023	707	329	214	159	126	105
114	1.08E-04	2.31E-04	2.10E-04	8.13	0.0314	0.0285	0.0029	741	336	217	161	127	105
115	1.25E-04	2.45E-04	2.13E-04	8.33	0.0316	0.0289	0.0027	859	363	230	169	133	110
116	2.03E-04	3.23E-04	3.13E-04	8.33	0.0317	0.0289	0.0028	687	329	216	161	128	106

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
117	1.76E-04	2.95E-04	2.83E-04	8.40	0.0316	0.0288	0.0028	707	335	219	163	130	108
118	2.00E-04	3.20E-04	3.10E-04	8.33	0.0380	0.0348	0.0032	687	329	216	161	128	106
119	1.02E-04	2.22E-04	2.10E-04	8.33	0.0379	0.0348	0.0031	700	332	217	162	129	107
120	1.88E-04	3.08E-04	3.01E-04	8.33	0.0380	0.0345	0.0035	669	324	214	160	127	106
121	1.72E-04	2.89E-04	2.88E-04	8.55	0.0353	0.0311	0.0042	652	324	216	162	129	108
122	1.95E-04	3.13E-04	3.13E-04	8.47	0.0370	0.0326	0.0044	641	320	214	160	128	107
123	1.86E-04	3.03E-04	3.02E-04	8.55	0.0353	0.0306	0.0047	652	324	216	162	129	108
124	1.57E-04	2.73E-04	1.66E-04	8.62	0.0325	0.0277	0.0048	8400	605	314	212	160	128
125	1.25E-04	2.40E-04	1.37E-04	8.70	0.0333	0.0283	0.0050	6300	595	312	212	160	129
126	1.33E-04	2.46E-04	1.46E-04	8.85	0.0391	0.0341	0.0050	5815	600	316	215	163	131
127	1.27E-04	2.39E-04	1.39E-04	8.93	0.0388	0.0340	0.0048	6300	610	320	217	164	132
128	1.92E-04	3.05E-04	2.15E-04	8.85	0.0324	0.0273	0.0051	3287	556	304	209	159	129
129	1.98E-04	3.11E-04	2.25E-04	8.85	0.0327	0.0282	0.0045	2800	540	299	207	158	128
130	1.99E-04	3.11E-04	3.33E-04	8.93	0.0377	0.0327	0.0050	564	307	211	161	130	109
131	1.73E-04	2.83E-04	2.05E-04	9.09	0.0341	0.0292	0.0049	2363	532	300	209	160	130
132	1.40E-04	2.51E-04	1.76E-04	9.01	0.0370	0.0321	0.0049	2100	514	293	205	158	128
133	1.66E-04	2.73E-04	2.05E-04	9.35	0.0376	0.0331	0.0045	1938	518	299	210	162	132
134	1.73E-04	2.81E-04	2.10E-04	9.26	0.0337	0.0295	0.0042	2043	521	299	209	161	131
135	1.60E-04	2.69E-04	1.95E-04	9.17	0.0385	0.0343	0.0042	2160	525	299	209	161	130
136	1.95E-04	3.03E-04	2.34E-04	9.26	0.0344	0.0302	0.0042	1938	514	296	208	161	131
137	1.07E-04	2.15E-04	1.46E-04	9.26	0.0320	0.0275	0.0045	1938	514	296	208	161	131

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
138	1.93E-04	3.01E-04	2.38E-04	9.26	0.0351	0.0311	0.0040	1680	494	290	205	158	129
139	1.37E-04	2.43E-04	1.81E-04	9.43	0.0367	0.0327	0.0040	1718	504	295	209	162	132
140	1.37E-04	2.44E-04	1.86E-04	9.35	0.0386	0.0336	0.0050	1543	485	287	204	158	129
141	1.11E-04	2.16E-04	1.61E-04	9.52	0.0361	0.0313	0.0048	1512	488	291	207	161	131
142	1.04E-04	2.06E-04	1.66E-04	9.80	0.0363	0.0325	0.0038	1219	461	284	205	161	132
143	1.96E-04	3.03E-04	2.54E-04	9.35	0.0392	0.0338	0.0054	1303	458	278	199	156	127
144	1.67E-04	2.72E-04	2.25E-04	9.52	0.0326	0.0272	0.0054	1303	464	282	203	158	130
145	1.40E-04	2.44E-04	1.96E-04	9.62	0.0329	0.0274	0.0055	1350	473	286	205	160	131
146	1.51E-04	2.54E-04	2.13E-04	9.71	0.0382	0.0322	0.0060	1219	458	282	204	159	131
147	1.80E-04	2.83E-04	2.42E-04	9.71	0.0381	0.0319	0.0062	1219	458	282	204	159	131
148	1.77E-04	2.79E-04	2.36E-04	9.80	0.0367	0.0305	0.0062	1281	470	287	207	162	133
149	1.37E-04	2.38E-04	2.01E-04	9.90	0.0331	0.0280	0.0051	1181	458	284	206	162	133
150	1.08E-04	2.08E-04	1.76E-04	10.00	0.0324	0.0274	0.0050	1112	450	282	205	162	133
151	1.34E-04	2.34E-04	2.03E-04	10.00	0.0389	0.0338	0.0051	1096	447	281	205	161	133
152	1.66E-04	2.65E-04	2.34E-04	10.10	0.0379	0.0329	0.0050	1112	453	284	207	163	134
153	1.66E-04	2.64E-04	2.36E-04	10.20	0.0381	0.0337	0.0044	1080	450	284	208	164	135
154	1.15E-04	2.14E-04	1.86E-04	10.10	0.0356	0.0309	0.0047	1065	445	281	205	162	134
155	1.48E-04	2.47E-04	2.25E-04	10.10	0.0351	0.0306	0.0045	982	430	275	202	160	132
156	2.04E-04	3.02E-04	2.74E-04	10.20	0.0372	0.0325	0.0047	1080	450	284	208	164	135
157	1.22E-04	2.18E-04	1.97E-04	10.42	0.0344	0.0297	0.0047	1008	442	283	208	165	136
158	1.26E-04	2.23E-04	2.00E-04	10.31	0.0356	0.0313	0.0043	1022	442	282	207	164	135

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
159	1.49E-04	2.46E-04	2.25E-04	10.31	0.0380	0.0333	0.0047	995	437	280	206	163	135
160	1.78E-04	2.74E-04	2.54E-04	10.42	0.0378	0.0329	0.0049	995	440	282	208	164	136
161	2.44E-04	3.41E-04	3.22E-04	10.31	0.0360	0.0279	0.0081	969	432	278	205	162	134
162	1.90E-04	2.83E-04	2.68E-04	10.75	0.0322	0.0284	0.0038	969	442	286	212	168	139
163	2.26E-04	3.22E-04	3.08E-04	10.42	0.0361	0.0306	0.0055	922	425	276	204	162	135
164	2.01E-04	2.93E-04	2.83E-04	10.87	0.0369	0.0314	0.0055	922	434	284	211	168	139
165	1.09E-04	2.04E-04	1.95E-04	10.53	0.0368	0.0315	0.0053	879	418	274	204	162	135
166	1.47E-04	2.43E-04	2.34E-04	10.42	0.0345	0.0281	0.0064	869	413	271	202	161	133
167	1.37E-04	2.28E-04	2.25E-04	10.99	0.0344	0.0283	0.0061	859	422	280	209	167	139
168	1.37E-04	2.29E-04	2.25E-04	10.87	0.0360	0.0301	0.0059	859	420	278	208	166	138
169	1.44E-04	2.34E-04	2.33E-04	11.11	0.0365	0.0302	0.0063	849	422	281	211	168	140
170	1.63E-04	2.54E-04	2.54E-04	10.99	0.0392	0.0329	0.0063	831	415	277	208	166	138
171	1.27E-04	2.16E-04	1.27E-04	11.24	0.0341	0.0283	0.0058	756000	848	424	283	212	170
172	1.45E-04	2.34E-04	1.51E-04	11.24	0.0366	0.0302	0.0064	12600	796	411	277	209	168
173	1.83E-04	2.73E-04	1.88E-04	11.11	0.0336	0.0270	0.0066	15120	796	409	275	207	166
174	1.57E-04	2.46E-04	1.64E-04	11.24	0.0392	0.0327	0.0065	10800	788	409	276	208	167
175	1.37E-04	2.25E-04	1.38E-04	11.36	0.0377	0.0296	0.0081	151200	854	428	286	214	172
176	1.87E-04	2.74E-04	2.00E-04	11.49	0.0370	0.0314	0.0056	5815	756	404	276	209	169
177	1.56E-04	2.44E-04	1.73E-04	11.36	0.0380	0.0307	0.0073	4447	720	392	269	205	165
178	1.00E-04	1.87E-04	1.18E-04	11.49	0.0352	0.0270	0.0082	4200	720	394	271	207	167
179	1.41E-04	2.29E-04	1.63E-04	11.36	0.0343	0.0266	0.0077	3436	687	382	264	202	164

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
180	1.84E-04	2.71E-04	2.06E-04	11.49	0.0333	0.0273	0.0060	3436	694	386	267	204	165
181	1.16E-04	2.03E-04	1.37E-04	11.49	0.0381	0.0331	0.0050	3600	700	388	268	205	166
182	1.27E-04	2.13E-04	1.56E-04	11.63	0.0399	0.0312	0.0087	2607	657	376	263	203	165
183	1.45E-04	2.31E-04	1.76E-04	11.63	0.0346	0.0268	0.0078	2439	646	372	262	202	164
184	1.46E-04	2.33E-04	1.81E-04	11.49	0.0374	0.0297	0.0077	2160	620	362	255	197	161
185	1.20E-04	2.05E-04	1.56E-04	11.76	0.0343	0.0265	0.0078	2100	625	367	260	201	164
186	1.74E-04	2.58E-04	2.09E-04	11.90	0.0365	0.0291	0.0074	2160	635	372	263	204	166
187	1.24E-04	2.08E-04	1.66E-04	11.98	0.0342	0.0271	0.0071	1800	602	362	258	201	165
188	1.04E-04	1.87E-04	1.45E-04	12.05	0.0381	0.0311	0.0070	1844	610	365	261	203	166
189	1.27E-04	2.13E-04	1.71E-04	11.63	0.0339	0.0272	0.0067	1718	582	350	250	195	159
190	1.85E-04	2.68E-04	2.30E-04	12.05	0.0343	0.0279	0.0064	1680	591	358	257	201	164
191	1.26E-04	2.08E-04	1.74E-04	12.20	0.0337	0.0275	0.0062	1575	582	357	257	201	165
192	1.35E-04	2.16E-04	1.82E-04	12.35	0.0356	0.0301	0.0055	1609	591	362	261	204	167
193	9.77E-05	1.82E-04	1.48E-04	11.86	0.0334	0.0279	0.0055	1503	562	345	249	195	160
194	1.56E-04	2.37E-04	2.07E-04	12.35	0.0367	0.0323	0.0044	1482	573	355	257	202	166
195	1.21E-04	2.04E-04	1.76E-04	12.05	0.0328	0.0284	0.0044	1375	548	342	249	195	161
196	1.73E-04	2.54E-04	2.26E-04	12.35	0.0331	0.0289	0.0042	1426	564	352	255	201	165
197	1.22E-04	2.04E-04	1.75E-04	12.20	0.0323	0.0283	0.0040	1426	560	348	253	198	163
198	1.78E-04	2.61E-04	2.32E-04	12.05	0.0380	0.0337	0.0043	1400	552	344	250	196	161
199	1.12E-04	1.94E-04	1.64E-04	12.20	0.0335	0.0292	0.0043	1454	564	350	254	199	164
200	1.76E-04	2.55E-04	2.27E-04	12.66	0.0386	0.0341	0.0045	1482	582	362	263	206	170

File	Peak 1	Peak 2	Trough	Frequency (kHz)	Top	Bottom	Amplitude (V)	0	1	2	3	4	5
201	1.55E-04	2.34E-04	2.10E-04	12.66	0.0380	0.0333	0.0047	1375	564	355	259	204	168
202	1.28E-04	2.08E-04	1.85E-04	12.50	0.0385	0.0328	0.0057	1326	552	348	255	201	165
203	1.11E-04	1.92E-04	1.68E-04	12.35	0.0383	0.0321	0.0062	1326	548	345	252	198	164
204	1.27E-04	2.05E-04	1.85E-04	12.82	0.0397	0.0335	0.0062	1303	556	353	259	204	169
205	1.37E-04	2.15E-04	1.96E-04	12.82	0.0395	0.0325	0.0070	1281	552	352	258	204	168
206	1.76E-04	2.54E-04	2.39E-04	12.82	0.0340	0.0272	0.0068	1200	536	345	255	202	167
207	1.31E-04	2.09E-04	1.95E-04	12.82	0.0377	0.0309	0.0068	1181	532	344	254	201	167
208	1.35E-04	2.12E-04	1.98E-04	12.99	0.0344	0.0270	0.0074	1200	540	348	257	204	169
209	1.71E-04	2.47E-04	2.35E-04	13.16	0.0353	0.0275	0.0078	1181	540	350	259	205	170
210	1.54E-04	2.31E-04	2.25E-04	12.99	0.0348	0.0270	0.0078	1065	511	336	250	199	166
211	1.38E-04	2.15E-04	2.10E-04	12.99	0.0347	0.0274	0.0073	1050	507	335	250	199	165
212	1.47E-04	2.25E-04	2.24E-04	12.82	0.0406	0.0320	0.0086	982	488	324	243	194	162
213	1.60E-04	2.35E-04	2.34E-04	13.33	0.0360	0.0283	0.0077	1022	507	338	253	202	168
214	1.70E-04	2.45E-04	2.45E-04	13.33	0.0345	0.0269	0.0076	1008	504	336	252	202	168

APPENDIX F

FULL PAGE SIZE OF GRAPHS SHOWN IN DISCUSSION CHAPTER

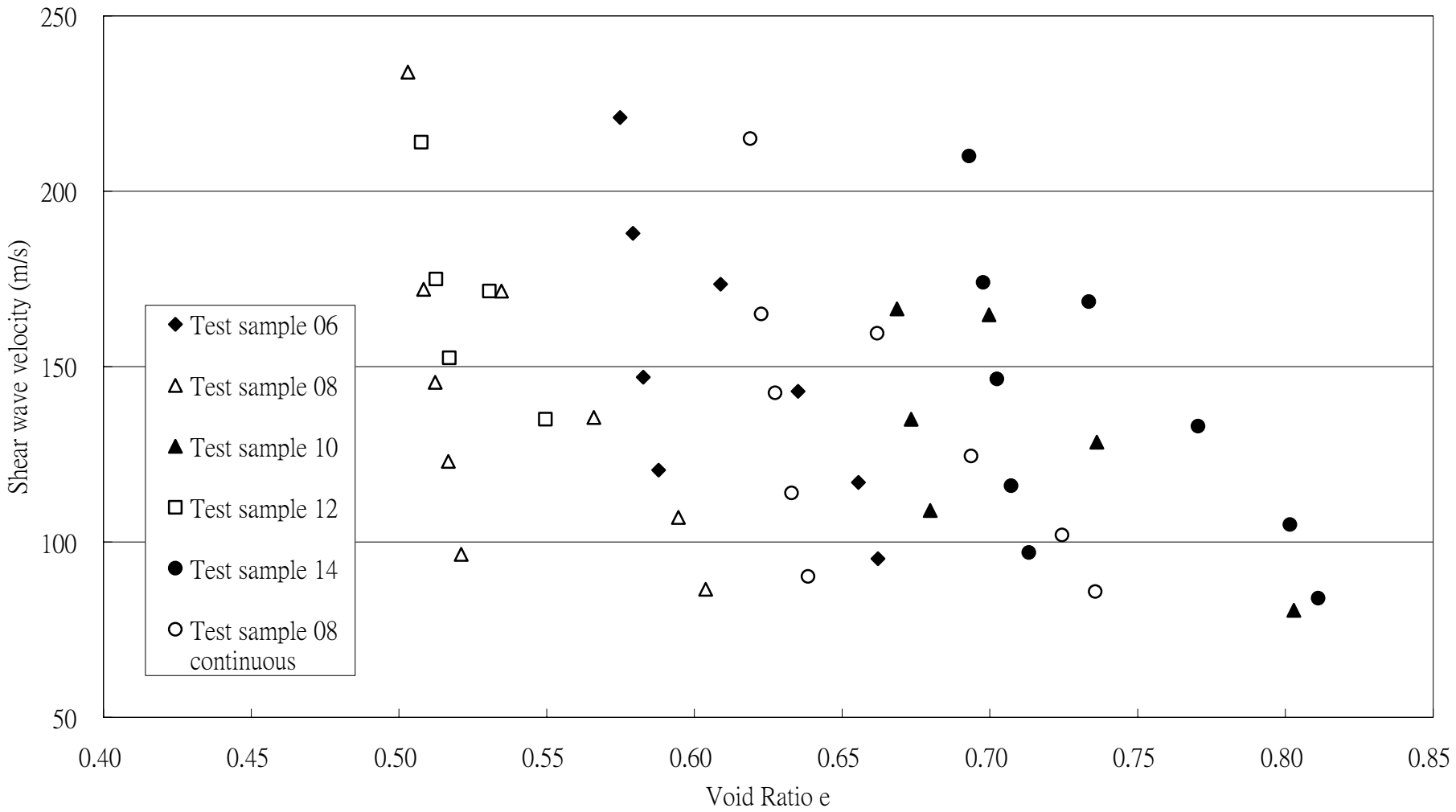


Figure 30. Graph of shear wave velocity against void ratio for various samples.

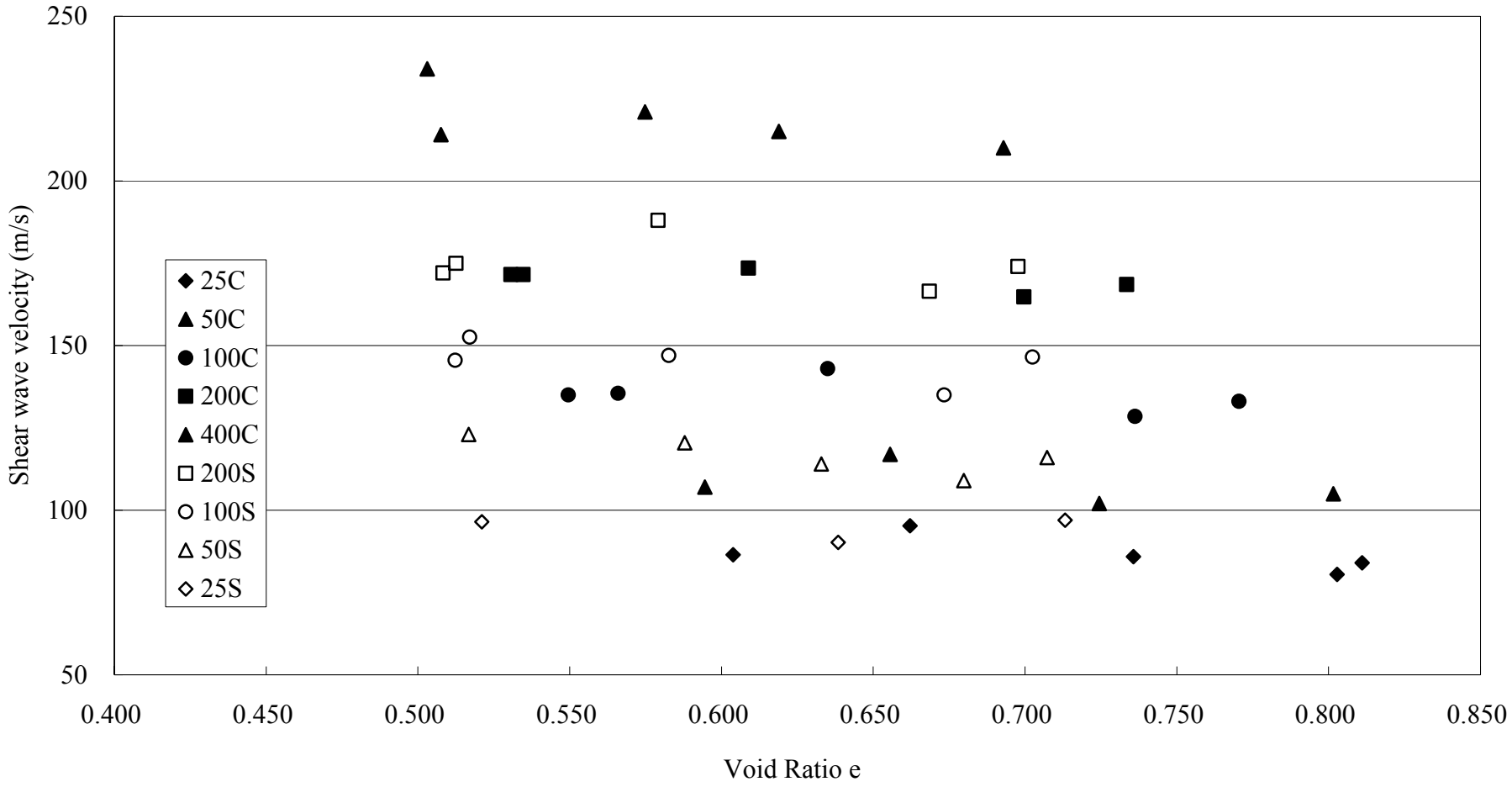
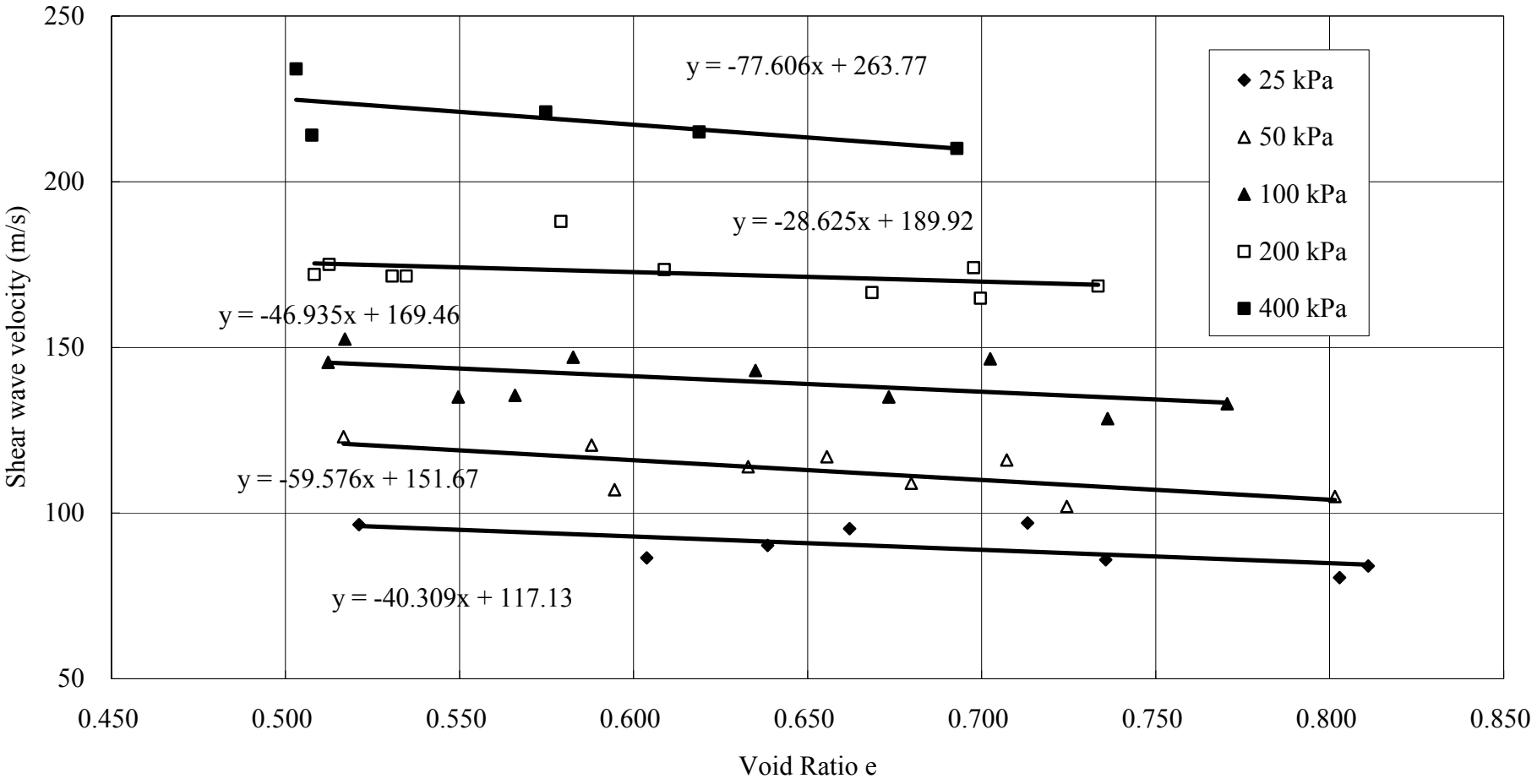
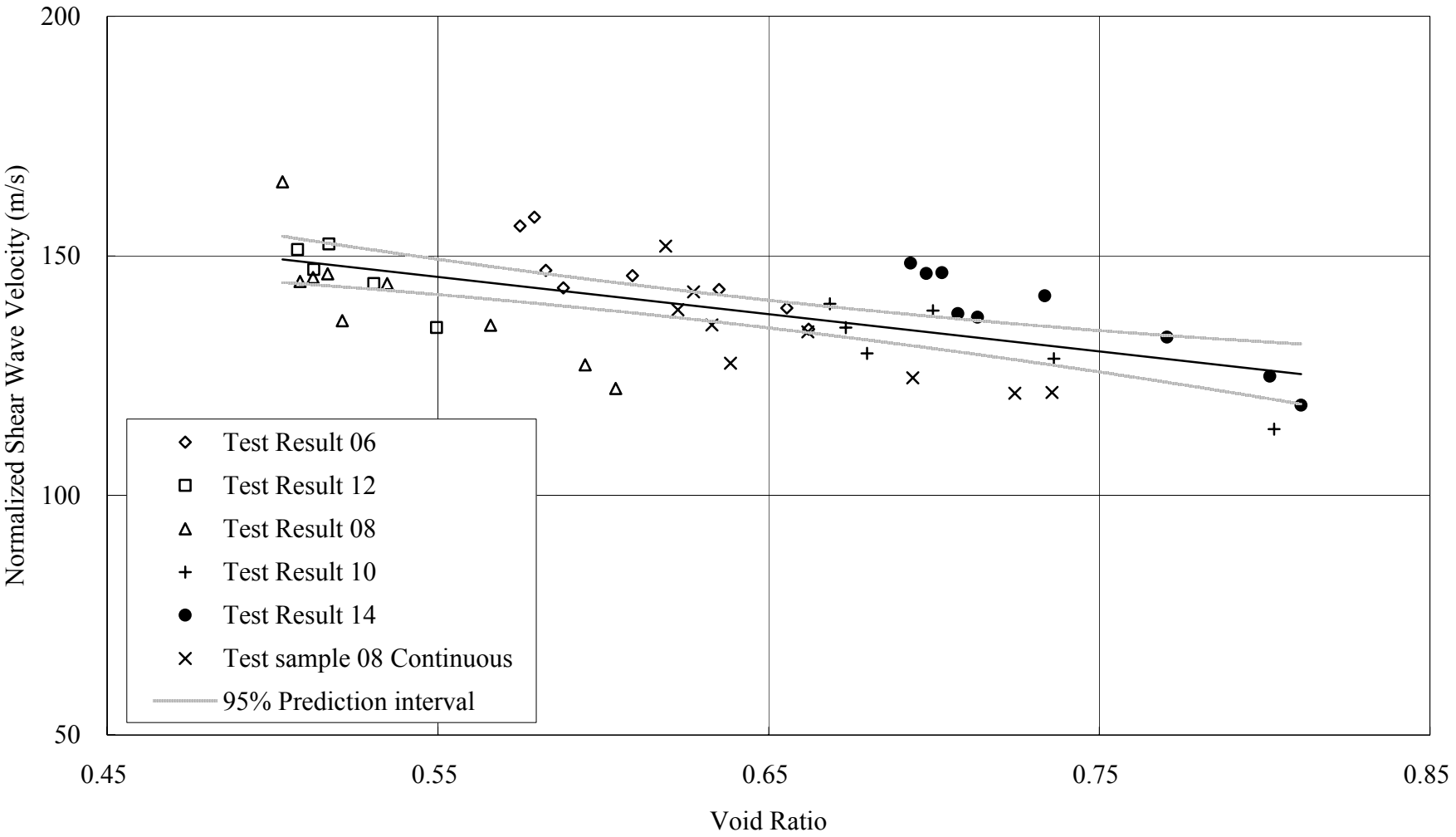


Figure 31. Shear wave velocity vs void ratio plot for various effective stresses.


250
200
150
100
50
Shear wave velocity (m/s)
0.450
0.500
0.550
0.600
0.650
0.700
0.750
0.800
0.850
Void Ratio e
y = -77.606x + 263.77
y = -28.625x + 189.92
y = -46.935x + 169.46
y = -59.576x + 151.67
y = -40.309x + 117.13
25 kPa
50 kPa
100 kPa
200 kPa
400 kPa


200
150
100
50
Normalized Shear Wave Velocity (m/s)
0.45
0.55
0.65
0.75
0.85
Void Ratio
Test Result 06
Test Result 12
Test Result 08
Test Result 10
Test Result 14
Test sample 08 Continuous
95% Prediction interval

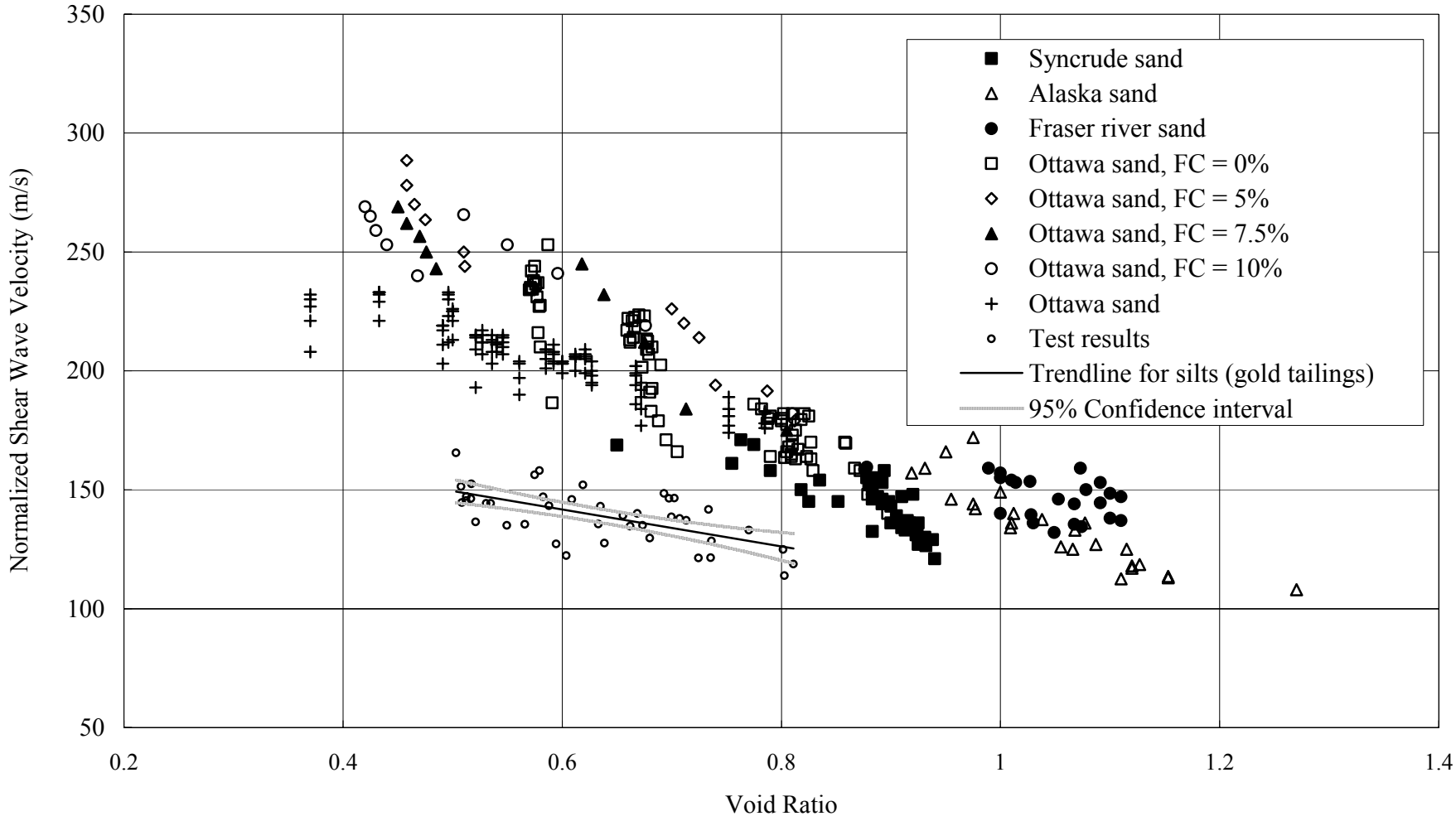


Figure 34. Results obtained in this research imposed on previous results from Robertson and Fear (1995).

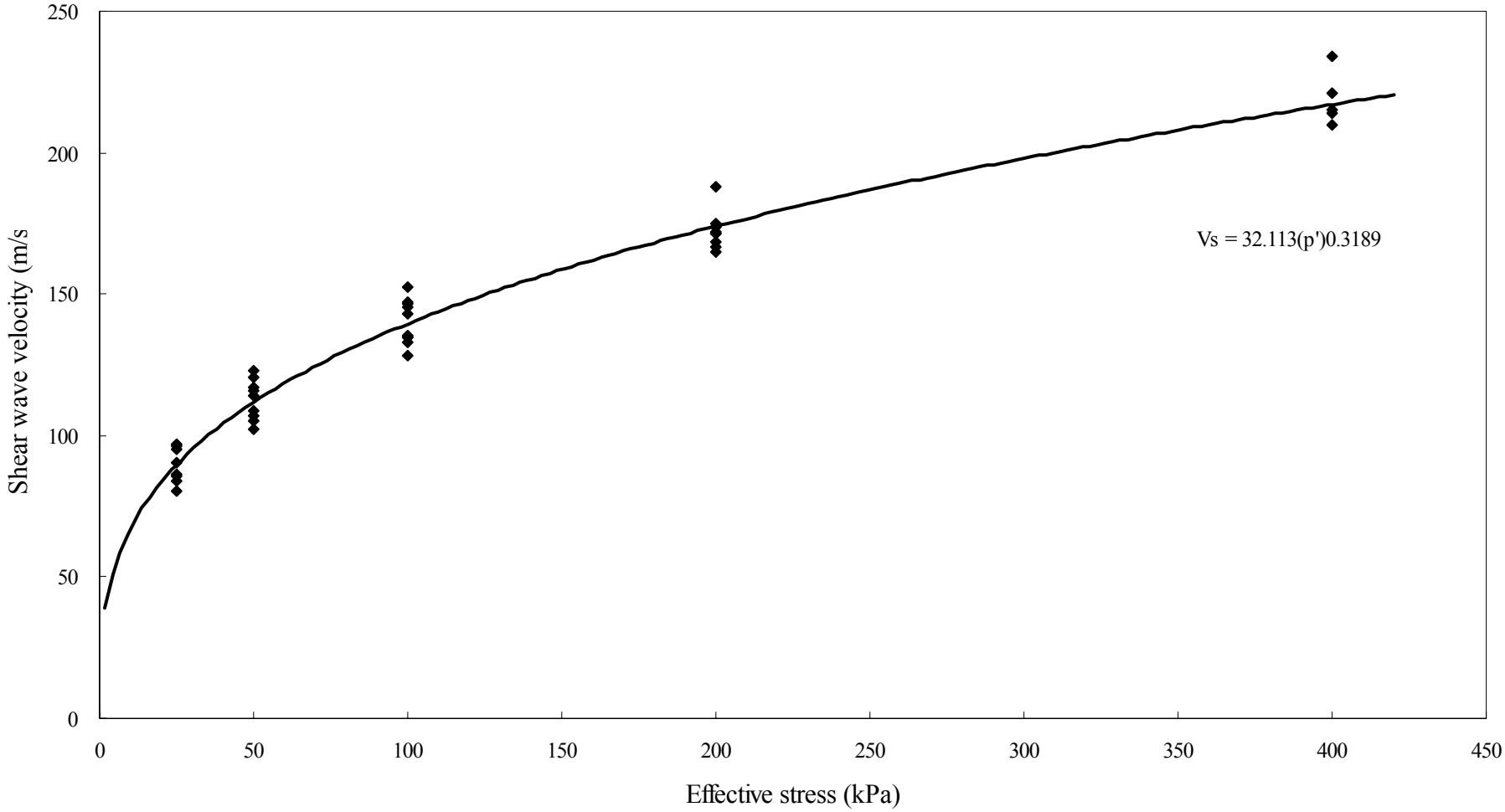


Figure 36. Graph of shear wave velocity against effective stress.

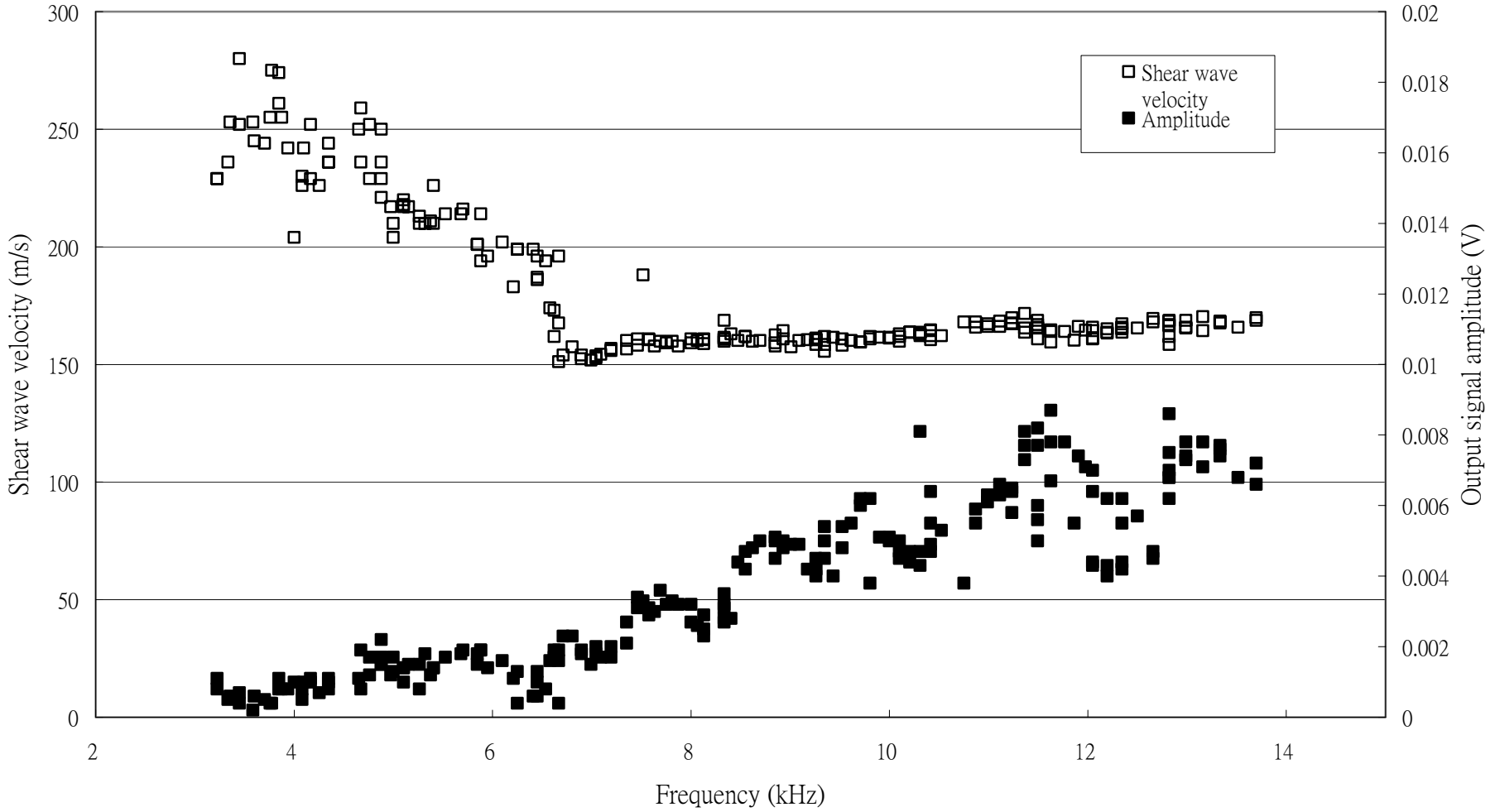


Figure 37. Graph of shear wave velocity and output signal amplitude against frequency.

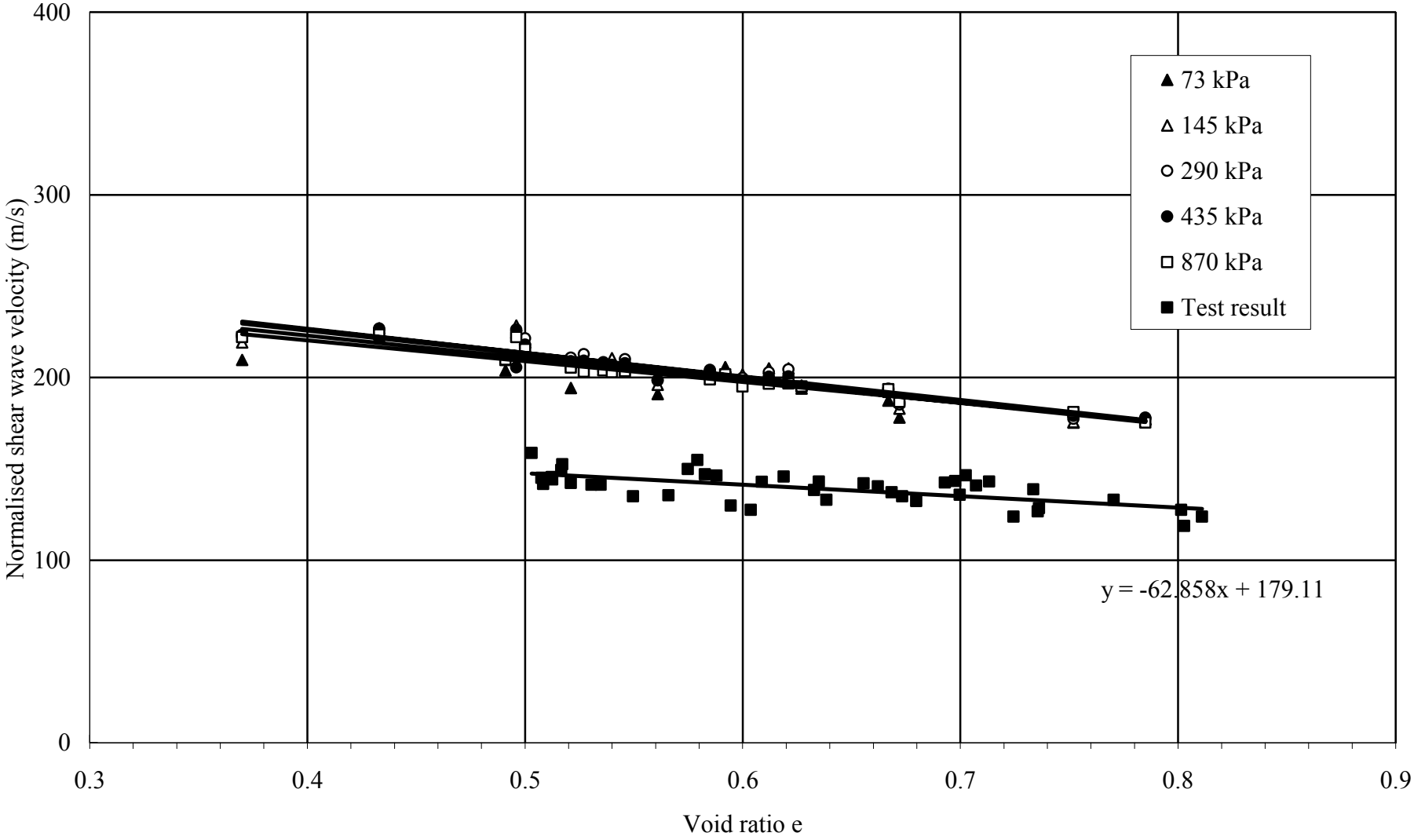


Figure 35. Normalized shear wave velocity imposed on results of Hardin and Richart (1963).