НИЙСЛЭЛИЙН ЗАСАГ ДАРГЫН ТАМГЫН ГАЗАР
НИЙСЛЭЛИЙН ОНЦГОЙ БАЙДЛЫН ГАЗАР
ОЛОН УЛСЫН ХАМТЫН АЖИЛЛАГААНЫ БАЙГУУЛЛАГА (ЛСА)

МОНГОЛ УЛС
УЛААНБААТАР ХОТЫН
ГАЗАР ХӨДЛӨЛТИЙН ГАМШГИЙН
ЭРСДЭЛЭЭС СЭРГИЙЛЭХ
ЧАДАВХИЙГ БЭХЖҮҮЛЭХ ТӨСӨЛ

(ХӨГЖЛИЙН СУДАЛГААНЫ ХЭЛБЭРТ ТЕХНИКИЙН ХАМТЫН АЖИЛЛАГАА)

Төсгөлийн тайлан

4-р бүлэг Дагалдах Тайлан

2013 ОНЫ 10 САР

ХОТЫН ГАМШГААС УРЬДЧИЛСЭН СЭРГИЙЛЭХ СУДАЛГААНЫ ХҮРЭЭЛЭН, АЗИЙН ГАМШГААС УРЬДЧИЛАН СЭРГИЙЛЭХ ТӨВ

ТООДЭН СЭККЭЙ ХК

МОНГОЛ УЛС
УЛААНБААТАР ХОТЫН
ГАЗАР ХӨДЛӨЛТИЙН ГАМШГИЙН ЭРСДЭЛЭЭС СЭРГИЙЛЭХ
ЧАДАВХИЙГ БЭХЖҮҮЛЭХ ТӨСӨЛ

бүлэг		хэл
1	Товч агуулга	Монгол Англи Япон
2	Үндсэн тайлан	Монгол Англи Япон
3	Дагалдах тайлан	Монгол Англи
4	Цуглуулсан мэдээлэл	Монгол Англи

Төгрөг (Төг.) 1 = 0.068 Иен
1 ам. доллар = 98.07 Иен
1 ам. доллар = 1,442 Төгрөг
(2013 оны 7-р сарын ханш)

МОНГОЛ УЛС
УЛААНБААТАР ХОТЫН
ГАЗАР ХӨДЛӨЛТИЙН ГАМШГИЙН ЭРСДЭЛЭЭС СЭРГИЙЛЭХ ЧАДАВХИЙГ БЭХЖҮҮЛЭХ ТӨСӨЛ

Төсгөлийн тайлан
4-р бүлэг Цуглуулсан мэдээлэл

Товчилсон үг

ADB	Asian Development Bank	Азийн хөгжлийн банк
ADRC	Asian Disaster Reduction Center	Азийн гамшгаас сэргийлэх төв
ALACGaC	Agency of Land Affairs, Construction, Geodecy and Cartography	Газрын харилцаа барилга геодези зураг зүйн газар
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer, Global Digital Elevation Model	Дэлхийн 3 хэмжээст байр зүйн мэдээлэл
CA	Capacity Assessment	Чадавхийн үнэлгээ
CBS	Cellphone Broadcast System	Гар утсаар мэдээлэл дамжуулах систем
CP	Counterpart	Хамтран ажиллах тал
DF/R	Draft Final Report	Эцсийн тайлангийн төсөл
EMDC	The Emergency Management Department of the Capital City	Нийслэлийн Онцгой Байдлын Газар
EOST	la Ecole et Observatoire des Sciences de la Terre	Францын геофизикийн судалгааны хүрээлэн
F/R	Final Report	Төгсгөлийн тайлан
GDP	Gross Domestic Product	Дотоодын Нийт Бүтээгдэхүүн
GIS	Geographic Information System	Газарзүйн Мэдээллийн Систем
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit	Германы техникийна хамтын ажиллагааны нийгэмлэг
HFA	Hyogo Framework for Action	Хёогогийн үйл ажиллагааны хүрээ
HRW	Human Rights Watch	“Хүний эрхийн хяналт” ТББ
IC/R	Inception Report	Эхлэлийн тайлан
ISC	International Seismological Centre	Олон улсын газар хөдлөлтийн хүрээлэн
JCC	Joint Coordination Committee	Хамтарсан зохицуулах зөвлөл
JICA	Japan International Cooperation Agency	Японы Олон Улсын Хамтын Ажиллагааны Байгууллага
M	Japan Meteorological Agency (JMA) magnitudes	Японы цаг уурын газрын баримталдаг газар хөдлөлтийн хүчний хэмжидэхүүн
Ml	Richter magnitudes	Рихтерийн шаталбар
Ms	Surface magnitudes	Гадаргын долгионы хэмжигдэхүүн
Mw	Moment magnitudes	Газар хөдлөлтийн хагаралд явагдсан шилжилт хөдөлгөөнд үндэслэн тооцох хэмжигдэхүүн
M/M	Minutes of Meetings	Хурлын протокол
MHFC	Mongolian Housing Finance Corporation	Монгол Орон сууц санхүүжилтын корпораци

MRTCUD	Ministry of Roads, Transport, Construction and Urban Development	Барилга, орон сууц, нийтийн аж ахуйн бодлогын газар
MSK	Medvedev-Sponheuer-Karnik intensity scale	MSK газар хөдлөлтийн хүчний шаталбар
MUST	Mongolian University of Science and Technology	Монгол ШУТИС
NEMA	National Emergency Management Agency	Онцгой Байдлын Ерөнхий Газар
NGIC	Mongolian National Geo-information Center	Үндэсний гео-мэдээллийн төв
NGO	Non-Governmental Organization	Төрийн бус байгууллага
PGA	Peak Ground Acceleration	Оргил хурдатгал
PR/R	Progress Report	Явцын тайлан
R/D	Record of Discussions	Хэлэлцүүлгийн тэмдэглэл
RC	Reinforced Concrete	Төмөр бетон
RCAG	Research Center of Astronomy and Geophysics of Mongolian Academy of Sciences	ШУА ООГСТ
SC	Steering Committee	Удирдах Хороо
UB	Ulaanbaatar	Улаанбаатар
UBMPS	The Study on City Master Plan and Urban Development Program of Ulaanbaatar City	УБ хотын хот төлөвлөлтийн мастер төлөвлөгөө, хот байгуулалтын хөтөлбөр боловсруулах судалгаа
UN	United Nations	Нэгдсэн үндэстний байгууллага
UNDP	United Nations Development Programme	НҮБ-ийн Хөгжлийн Хөтөлбөр
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific	НҮБ-н Ази номхон далайн эдийн засаг нийгмийн комисс
UN-HABITAT	United Nations Human Settlements Programme	НҮБ-н хүн амын суурьшил нутагшилын хөтөлбөр
USD	United States Dollar	Ам. доллар
USGS	United States Geological Survey	Америкийн геологийн судалгааны хүрээлэн
WB	World Bank	Дэлхийн банк
WG	Working Group	Ажлын хэсэг
WMO	World Meteorological Organization	Дэлхийн цаг уурын байгууллага

Агуулга

1. ДҮГЭЭР БҮЛЭГ. ХӨРСНИЙ СУДАЛГААНЫ ДҮН

1.1 Судалгааны цэгийн мэдээлэл

Point ID		No	Label	Easting	Northing	Latitude(N, °)	Longitude(E, °)	Type of Survey				Date of conduction						
								Boring	PS Logging	Surface wave	Microtremor	Boring			PS Logging		Surface wave	Microtremor
												Depth	Laboratory test	Date	Depth	Date	Date	Date
Bagakhangai	BI	1	BI_Bo_01	663561.000	5252 95.000	47.397493	107.432438	×	×	×	×	30		2012/9/9	30	2012/9/11	2012/8/25	2012/8/26
		2	BI_02	663009.437	5249921.461	47.376850	107.424913	×	×	×	×						2012/8/26	2012/8/26
		3	BI_03	664256.000	5247590.000	47.37945	107.462302			×	×	30		2012/9/8	30	2012/9/7	2012/8/28	2012/8/28
Baganuur	BR	4	BR_01	300745.000	5290705.000	47.60995	108.336011	×	×	×	×	30		2012/9/11	30	2012/9/13	2012/8/21	2012/8/27
		5	BR_02	310340.000	5032391.000	47.572779	108.375503	×	×	×	×	30		2012/9/14	30	2012/9/15	2012/8/21	2012/8/27
		6	BR_Bo_03	750171.320	5304398.031	47.647716	108.344659			×	×						2012/8/21	2012/8/27
Nalaikh	NH	7	NH_01	669923.000	5294884.000	47.779057	107.255013	×	×	×	×	30		2012/9/3	30	2012/9/4	2012/8/28	2012/8/28
		8	NH_02	601041.000	5292772.000	47.763385	107.281384	×	×	×	×	30		2012/9/1	30	2012/9/3	2012/8/28	2012/8/28
		9	NH_03	670151.489	5290542.912	47.602824	107.255832			×	×						2012/8/28	2012/8/28
Ulaanbaatar	UB	10	UB_01	628913.918	5304381.261	47.684351	106.723077			×	×						2012/8/12	2012/8/7
		11	UB_02	630615.120	5304593.165	47.634974	106.747165			×	×						2012/8/13	2012/8/8
		12	UB_03	630601.010	5305510.244	47.656602	106.745500			×	×						2012/8/12	2012/8/7
		13	UB_04	630678.213	5307088.135	47.911855	106.745676			×	×						2012/8/9	2012/8/8
		14	UB_05	633070.654	5306125.185	47.912636	106.780621			×	×						2012/8/9	2012/8/9
		15	UB_06	633102.577	5305482.326	47.897864	106.780841			×	×						2012/8/12	2012/8/7
		16	UB_07	632983.560	5305035.503	47.894909	106.778804			×	×						2012/8/13	2012/8/8
		17	UB_08	635362.740	5303302.033	47.869752	106.810069			×	×						2012/8/14	2012/8/8
		18	UB_09	635320.425	5304359.714	47.883699	106.810022			×	×						2012/8/14	2012/8/8
		19	UB_10	635355.730	5306163.701	47.912500	106.811553			×	×						2012/8/12	2012/8/14
		20	UB_11	635402.103	5309317.390	47.924656	106.812544			×	×						2012/8/15	2012/8/15
		21	UB_12	635362.740	5311029.381	47.938215	106.812493			×	×						2012/8/14	2012/8/14
		22	UB_13	635334.196	5312090.885	47.962402	106.812612			×	×						2012/8/14	2012/8/14
		23	UB_14	638273.254	5310598.199	47.937371	106.851434			×	×						2012/8/15	2012/8/15
		24	UB_15	638235.802	5308039.702	47.910751	106.849623			×	×						2012/8/16	2012/8/15
		25	UB_16	638236.632	5306521.011	47.89713	106.849133			×	×						2012/8/15	2012/8/15
		26	UB_17	638211.570	5304314.452	47.882876	106.846858			×	×						2012/8/16	2012/8/16
		27	UB_18	641083.727	5308242.437	47.911077	106.888196			×	×						2012/8/16	2012/8/16
		28	UB_19	641101.742	5309818.011	47.926142	106.888808			×	×						2012/8/23	2012/8/22
		29	UB_20	643729.399	5315707.466	47.978510	106.925155			×	×						2012/8/17	2012/8/17
		30	UB_21	643669.661	5314104.313	47.964115	106.924685			×	×						2012/8/17	2012/8/17
		31	UB_22	643590.925	5312541.184	47.950076	106.923109			×	×						2012/8/23	2012/8/17
		32	UB_23	643630.233	5311093.167	47.937347	106.923153			×	×						2012/8/23	2012/8/22
		33	UB_24	643621.346	5309658.059	47.924133	106.922835			×	×						2012/8/23	2012/8/23
		34	UB_25	643590.925	5308579.018	47.89047	106.921123			×	×						2012/8/16	2012/8/16
		35	UB_26	646375.000	5311498.000	47.889496	106.962429			×	×						2012/8/23	2012/8/20
		36	UB_27	640636.620	5305370.855	47.895690	106.960276			×	×						2012/8/24	2012/8/21
		37	UB_28	645915.921	5306157.807	47.910138	106.952745			×	×						2012/8/22	2012/8/21
		38	UB_29	648165.450	5309514.729	47.921616	106.963565			×	×						2012/8/23	2012/8/20
		39	UB_30	648221.443	5306194.227	47.909934	106.963592			×	×						2012/8/24	2012/8/22
		40	UB_31	648215.658	5305646.645	47.896020	106.963956			×	×						2012/8/24	2012/8/21
		41	UB_32	650295.133	5305659.465	47.894665	107.035951			×	×						2012/8/24	2012/8/21
		42	UB_33	655196.735	5308282.655	47.910290	107.010028			×	×						2012/8/24	2012/8/22
		43	UB_34	652242.853	5308208.922	47.909075	107.037378			×	×						2012/8/24	2012/8/20
		46	UB_35	652242.558	5308889.833	47.894566	107.038809			×	×						2012/8/18	2012/8/18
		44	UB_36	654132.558	5308455.882	47.89291	107.062025			×	×						2012/8/13	2012/8/13
		45	UB_37	654132.558	5306148.837	47.908132	107.062633			×	×						2012/8/24	2012/8/23
UB boring	UB_Bo	46	UB_Bo_01	605653.000	5306405.000	47.887297	106.810416	×	×	×	×	30		2012/8/22	25	2012/8/25	2012/8/25	2012/8/21
		47	UB_Bo_02	635225.000	5309523.000	47.924254	106.850080	×	×	×	×	30		2012/8/20	10	2012/8/24	2012/8/5	2012/8/5
		49	UB_Bo_03	641149.000	5305474.000	47.895914	106.888072	×	×	×	×	30		2012/8/25	29	2012/8/29	2012/8/30	2012/8/22
		50	UB_Bo_04	643500.000	5308112.000	47.910032	106.920461	×	×	×	×	30		2012/8/26	28	2012/9/6	2012/8/28	2012/8/21
Total								10	10	50	50							

Ref: JICA Project Team

1.2 Х өрсний судалгааны аргачлал

Судалгааны зүйл	Арга зүй, стандарт	Ашигласан тоног төхөөрөмж	Тэмдэглэл
Цооног	Шнейкэн өрөм	UGB-1VSмаягийн、4500 м.х-тэй шнейкэн өрөм. Цооногийн обсадный хөндлөн огтлол:146- 168mm, Өрмийн хошууны хөндлөн огтлол:89 mm	
Стандарт нэвтрэлтийн туршилт	JIS-A-1219：2001	Жин 63.5±0.5kg-ын дравэйр алх	
Шигшүүрийн шинжилгээ	JIS-A-1204	Шигшүүр、флоатац(хөвүүлэлт)	
Цооногийн каротаж	JGS-1122-2003	Сейсмометр:"Кавасаки геологи "компаний 6 сувагтай нэг иж бүрдэл аппарат	Бүртгэл авах цагийн интервал:0.55сек
		Цооногийн дотоод чичирхийл-лийн долгион баригч：BHP Model-3315, 3бүрдэл (эх үүсвэртэй) (28герцийн)	Сорьц авалт: 0.25msec
		Гадаргын чичирхийллийн долгионы хүлээн авагч: 3бүрдэлтэй геофон (28герц)	
		Чичирхийлэлийн эх үүсвэр: Алх	
Гадаргын долгионы судалгаа		Чичирхийлэл хэмжигч: Strataview, 1иж бүрдэл 60сувагтай	
		Чичирхийлэл хэмжигч: Геофон L-22D, 12нэгж	Бүртгэх хугацаа:16сек (вибратор), 1сек (алх)
		Эх үүсвэр: Цахилгаан соронзон вибратор (0.5 kN), алх	Сорьцлолт:1msec
Бичил чичирхийлэл		Чичирхийлэл хэмжигч: KTX-316BT	Бүртгэх хугацаа:40минут (шаардлагатай тохиодолд 20 минут нэмж болно)
		Чичирхийлэл хэмжигч:L-4C, 3 бүрдэл (эх үүсвэртэй)	Сорьцлолт:1msec

Ref: JICA Project Team

1.3 Судалгааны үр дүн

1.3.1 Өрмийн судалгааны дүн

Цооногийн дугаар	Гүн (GL- m)	Хөрсний шинж чанар	Дундаж N утга	Гүний усны түвшин (GL-m)
UB_BO_01	0.0-0.2	Өнгөн хөрс	—	6.0
	0.2-16.5	Элс, бөөрөнхий хайрга холилдсон хөрзөн	32	
	16.5-30.0	Элс, бөөрөнхий хайрга, шавраас бүрдэх хөрзөн чулуу	50	
UB_BO_02	0.0-0.2	Өнгөн хөрс	—	4.7
	0.2-4.0	Шавар, элс, бөөрөнхий хайрга бүхий ялгарал муутай хөрзөн	34	
	4.0-30.0	Элсэрхэг хөрзөн. Шавар, бөөрөнхий чулуун хавчуурга, 15,4-16,5 м-т элс холилдсон хөрзөн	50	
UB_BO_03	0.0-0.2	Өнгөн хөрс	—	8.0
	0.2-7.0	Ялгарал муутай хөрзөн, шавар, элс, хайргатай.	38	
	7.0-16.0	Хөрзөн зонхилсон, заримдаа шаварлаг хөрзөн. Элс, бөөрөнхий хайрган хавчуургатай.	36	
	16.0-30.0	Хөрзөн голлоно. Шавар, элс, бөөрөнхий хайрга	50	
UB_BO_04	0.0-1.6	Өнгөн хөрс, шаварлаг хөрзөн	24	3.2
	1.6-9.5	Хөрзөн голлосон шавар, элс, бөөрөнхий хайрга	48	
	9.5-24.5	Шаварлаг хөрзөн зонхилсон, элс, бөөрөнхий хайрга	50	
	24.5-30.0	Хөрзөн бүхий элсэн чулуу	50	
NH_01	0.0-0.5	Өнгөн хөрс	—	0.0
	0.5-8.4	Хөрзөнтэй шаварлаг элс	29	
	8.4-30	Барьцалдалт султай шавар голлоно, заримдаг элсэн чулуу	49	
NH_02	0.0-0.2	Өнгөн хөрс	—	2.8
	0.5-30	Элсэн чулуу, барьцалдалт муутай шавар, 5.2 метрээс мөнх цэвдэг	41	
BI_01	0.0-0.4	Өнгөн хөрс	—	14.5
	0.4-5.2	Хөрзөн холилдсон элс	21	
	5.2-30.0	Элс холилдсон шаварлаг хөрзөн	36	
BI_03	0.0-0.4	Өнгөн хөрс	-	21.1
	0.4-5.0	Элс, шавар	32	
	9.6-30.0	Элс, хөрзөн холилдсон шавар	40	
BR_01	0.0-0.3	Өнгөн хөрс	—	11.2
	0.3-18.0	Шаварлаг элс, хөрзөн бүхий	34	
	18.0-30.0	Хөрзөн холилдсон элсэрхэг шавар	44	
BR_02	0.0-1.1	Өнгөн хөрс	24	3.5
	1.1-17.2	Шавар, хөрзөн холилдсон элс	33	
	17.2-30	Элсэрхэг шавар, хөрзөн бүхий	44	

Ref: JICA Project Team

1.3.2 Өрмийн судалгааны дүн (Boring Logging)

Soil Trade LLC

LOG OF BOREHOLE -UB_BO_01
and Standard Penetration Test

CLIENT:	MON MAP LLC		
PROJECT NAME:	Strengthening the capacity of seismic disaster risk management	COORDS:	E: 106 49 3.63 N: 47 53 47.78
LOCATION:	Power Plant	DEPTH:	30.0 m
HOLE DIA:	89 mm	GROUND WATER LEVEL:	3.4 m

Drill rig:	UGB-1VS & Power 4500
Driller:	Soil Trade LLC
Date:	06-15.Aug.2012
Logged:	D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Tickness of stratum	Graphic log	Symbol	Description of Soil
0	0.0	0.2	0.2			Top soil, brownish browen.
2–16	0.2	16.5	16.3		GP	Poorly graded GRAVEL with sand, trace cobbles - Yellowish brown, moist condition, alluvium-proluvium deposit
16–30	16.5	30.0	14.5		GP-GC	Poorly graded GRAVEL with sand and clay, trace cobbles - Yellowish brown, wet condition, alluvium proluvium deposit

Standart Penetration Test

Depth, m	Number Blows/ N / Penetration depth, cm	Number of every 15 cm: 15cm	30cm	45cm
	18/30	2	8	10
2	15/30	5	6	9
	18/30	3	9	9
4	20/30	4	9	11
	25/30	8	13	12
6	35/30	12	20	15
	28/30	9	10	18
8	32/30	8	18	14
	36/30	11	10	26
10	38/30	15	19	19
	37/30	11	18	19
12	41/30	13	20	21
	44/30	14	23	21
14	48/30	12	24	24
	41/30	16	19	22
16	41/30	17	18	23
	43/30	13	21	22
18	51/30	16	23	28
	54/30	15	24	30
20	48/30	11	28	20
	51/30	10	19	32
22	52/30	18	21	31
	55/30	20	25	30
24	58/30	23	29	29
	56/30	18	31	25
26	58/30	19	24	34
	57/30	20	26	31
28	54/30	22	24	30
	59/30	21	30	29
30				

Soil Trade LLC

LOG OF BOREHOLE -UB_BO_02

and Standard Penetration Test

CLIENT: MON MAP LLC
PROJECT NAME: Strengthening the capacity of seismic disaster risk management
LOCATION: Songino-Khairhan district
HOLE DIA: 89 mm
COORDS: E: 106 51 1.20 N: 47 55 26.72
DEPTH: 30.0 m
Ground water level: m-Known
Sheet: 1of 1
Drill rig: UGB-1VS & Power 4500
Driller: Soil Trade LLC
Date: 06.Aug-30.Jun.2012
Logged: D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Thickness of stratum	Graphic log	Symbol	Description of Soil
	0.0	0.2	0.2			Top soil: brownish brown
2	0.2	4.0	3.8		GP	Poorly Graded GRAVEL with clay & sand, trace cobbles - brownish grey to yellowish brown, well rounded to rounded, medium dense to very dense. Alluvium-Proluvium deposits
4						
6						
8						
10					GP-GC	Poorly Graded GRAVEL with clay & sand, trace cobbles - brownish grey to yellowish brown, well rounded to rounded, medium dense to very dense. Proluvium deposits
12						
14	4.0	15.4	11.4			
16						
18						
20						
22						
24						
26					GP-GC	Poorly Graded GRAVEL with clay & sand, trace cobbles - brownish grey to yellowish brown, well rounded to rounded, medium dense to very dense. Proluvium deposits
28						
30	15.4	30.0	14.6			

Standart Penetration Test

Depth, m	Number Blows/ Penetration depth, cm	Number of every 15 cm: 15cm	30cm	45cm
2	12/30	5	6	6
	32/30	6	12	20
	59/30	9	18	41
4	52/30	11	20	32
	46/30	8	12	34
6	52/30	10	18	34
	48/30	6	16	32
8	52/30	15	21	31
	53/30	14	20	33
10	55/30	13	19	34
	55/30	11	20	35
12	54/30	8	12	42
	56/30	7	18	38
14	58/30	10	22	36
	68/30	16	68	25
16	57/30	7	17	40
	59/30	11	26	33
18	59/30	18	24	35
	58/30	17	19	39
20	56/30	14	28	28
	48/30	7	17	31
22	55/30	11	12	43
	49/30	12	16	33
24	47/30	6	20	27
	50/30	9	29	21
26	51/30	18	31	20
	51/30	14	28	23
28	54/30	13	32	22
	56/30	16	27	29
30				

Depth, m	Symbol
	•
	•
	•
	•
	•
	•
	•
	•
	•
	•

Soil Trade LLC

LOG OF BOREHOLE -UB_BO_03

and Standard Penetration Test

CLIENT: MON MAP LLC
PROJECT NAME: Strengthening the capacity of seismic disaster risk management
LOCATION: Han-Uul district
HOLE DIA: 89 mm
COORDS: E: 106 53 18.50 N: 47 53 46.07
DEPTH: 30.0 m
Ground water level 2.9 m
Sheet: 1of 1
Drill rig: UGB-1VS & Power 4500
Driller: Soil Trade LLC
Date: 19-23.Aug.2012
Logged: D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Thickness of stratum	Graphic log	Symbol	Description of Soil
	0.0	0.2	0.2			Top soil, brownish browen.
2					GP	Poorly Graded GRAVEL with clay & sand, trace cobbles - brownish grey to yellowish brown, well rounded to rounded, medium dense to very dense. Alluvium-Proluvium deposits
4						
6						
	0.2	7.0	6.8			
8					GP-GC	Poorly Graded GRAVEL with clay & sand, trace cobbles - brownish grey to yellowish brown, well rounded to rounded, medium dense to very dense. Alluvium-Proluvium deposits
10						
12						
	7.0	13.1	6.1			
14					GC	Clayey GRAVEL with sand, trace cobbles-brownish grey to yellowish brown, slightly moist to wet, Upper & Modern Quaternary aged. Alluvium-Proluvium deposits
16	13.1	16.0	2.9			
18					GP-GC	Poorly Graded GRAVEL with clay & sand, trace cobbles - brownish grey to yellowish brown, well rounded to rounded, medium dense to very dense. Alluvium-Proluvium deposits
20						
22						
24						
26						
28						
30	16.0	30.0	14.0			

Depth, m	Number Blows N / Penetration depth, cm	Number of every 15 cm			Depth, m	Symbol
		15cm	30cm	45cm		
2	40/30	8	21	19		
	37/30	6	15	22		
4	36/30	9	18	18		
	41/30	10	19	23		
6	38/30	12	19	19		
	36/30	18	14	22		
8	39/30	12	20	19		
	34/30	15	16	18		
10	32/30	16	17	15		
	31/30	19	14	17		
12	35/30	19	19	16		
	40/30	18	21	19		
14	41/30	13	21	20		
	38/30	16	18	20		
16	36/30	16	17	19		
	40/30	15	20	20		
18	37/30	19	18	19		
	36/30	20	19	17		
20	45/30	16	22	23		
	51/30	17	24	27		
22	54/30	23	26	28		
	62/30	22	30	32		
24	58/30	24	29	29		
	59/30	28	29	30		
26	60/30	23	31	29		
	58/30	30	30	28		
28	61/30	32	30	31		
	60/30	26	30	30		
30	59/30	31	30	29		
	62/30	27	35	27		

Soil Trade LLC

LOG OF BOREHOLE -UB_BO_04

and Standard Penetration Test

CLIENT:	MON MAP LLC			Sheet:	1of 1
PROJECT NAME:	Strengthening the capacity of seismic disaster risk management	COORDS:	E: 106 55 15.41 N: 47 54 37.78	Drill rig:	UGB-1VS & Power 4500
				Driller:	Soil Trade LLC
LOCATION:	1-st Sukhbaatar district	DEPTH:	30.0 m	Date:	15-19.Aug.2012
HOLE DIA:	89 mm	Ground water level:	3.2 m	Logged:	D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Tickness of stratum	Graphic log	Symbol	Description of Soil
0-1.6	0.0	1.6	1.6		t Qiv	Ebanknement soil - Poorly graded GRAVEL with sand - Dark brown, Brownish grey dry, loose to medium dense.
1.6-9.5	1.6	9.5	7.9		GP	Poorly Graded GRAVEL with clay & sand, trace cobbles - brownish grey to yellowish brown, well rounded to rounded, medium dense to very dense, alluvium- Proluvium deposits.
9.5-24.5	9.5	24.5	15.0		GC	Clayey GRAVEL with sand, trace cobbles-brownish grey to yellowish brown, slightly moist to wet, Upper & Modern Quaternary aged, Alluvium-Proluvium deposits.
24.5-30.0	24.5	30.0	5.5		SC	Clayey SAND with gravel -Low plasticity, wet yellowish brown, Middle & Upper Quaternary aged, Residual deposits.

Depth, m	Number Blows N / Penetration depth, cm	Number of every 15 cm		
		15cm	30cm	45cm
2	23/30	4	9	14
	24/30	6	11	13
4	32/30	8	14	18
	41/30	10	20	21
6	48/30	9	26	22
	54/30	8	26	28
8	55/30	12	26	29
	54/30	20	25	29
10	55/30	27	27	28
	57/30	19	23	34
12	56/30	19	24	32
	54/30	20	20	34
14	58/30	13	28	30
	53/30	16	28	25
16	55/30	18	28	25
	56/30	14	27	29
18	58/30	21	29	29
	56/30	27	29	27
20	59/30	24	29	30
	55/30	15	29	26
22	57/30	23	26	31
	53/30	19	30	23
24	58/30	22	28	30
	56/30	20	28	28
26	54/30	21	26	28
	59/30	26	28	31
28	62/30	28	30	32
	65/30	29	32	33
30	67/30	31	31	36
	68/30	27	35	33

Soil Trade LLC

LOG OF BOREHOLE - NH_01
and Standard Penetration Test

CLIENT:	MON MAP LLC			Sheet:	1of 1
PROJECT NAME:	Strengthening the capacity of seismic disaster risk management	COORDS:	E: 669923 N: 5294884	Drill rig:	Power 4500
				Driller:	Soil Trade LLC
LOCATION:	Nalaih district	DEPTH:	30.0 m	Date:	12-15.Sep.2012
HOLE DIA:	89 mm	Ground water level:	un-known	Logged:	D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Tickness of stratum	Graphic log	Symbol	Description of Soil
0	0.0	0.5	0.5			Top soil-Clayey SAND, with vegetation roots, brown
2					SC	Clayey SAND with gravel- yellowish brown, stiff consistency. Deluvium - Proluvium deposits
4						
6						
8	0.5	8.4	7.9			
10					CL	Lean Clay- yellowish brown, Greenish grey stiff consistency. Deluvium- Proluvium deposits
12						
14						
16						
18						
20						
22						
24						
26						
28						
30	8.4	30.0	21.6			

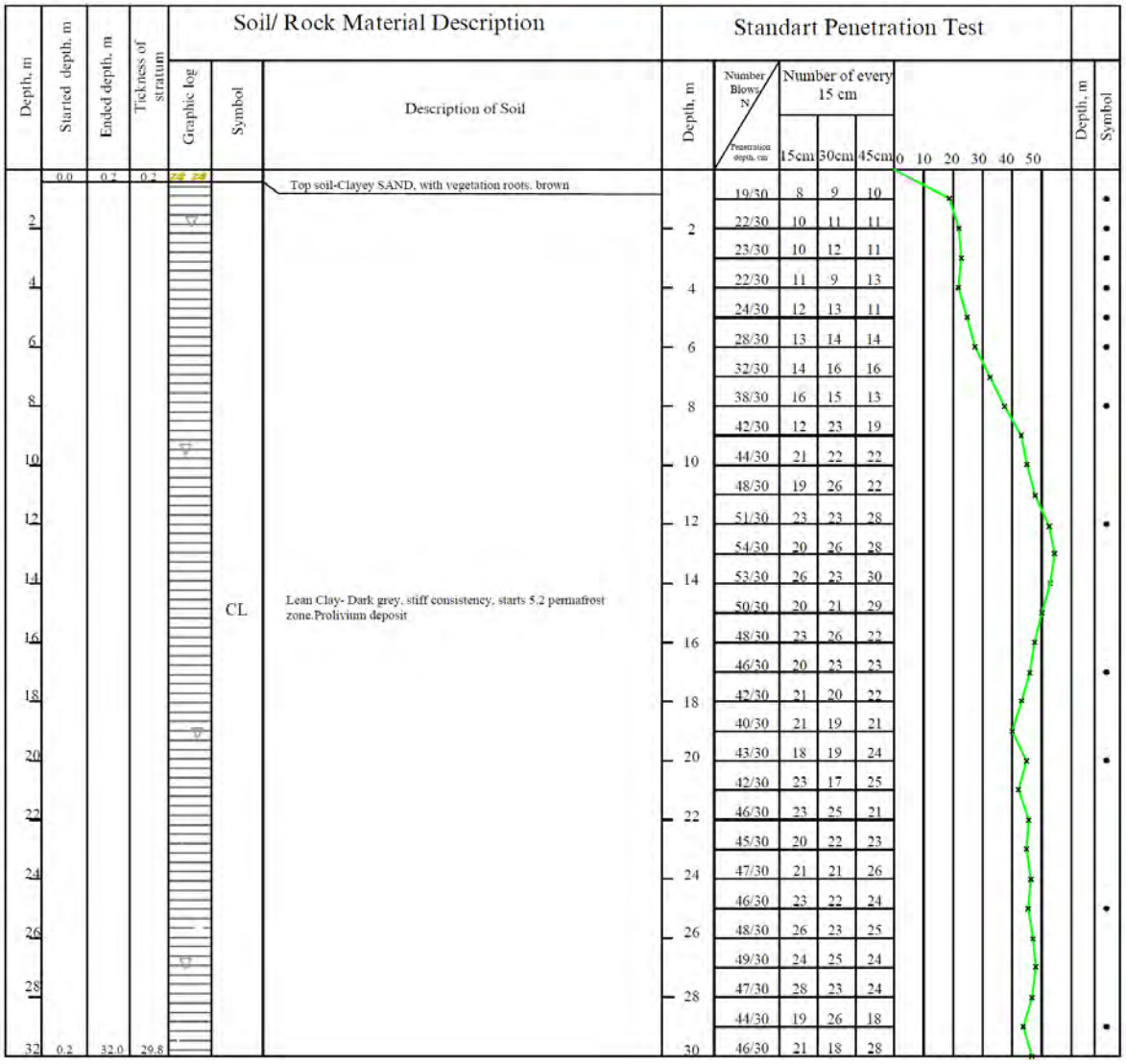
Depth, m	Number Blows N / Penetration depth, cm	Number of every 15 cm			Depth, m	Symbol
		15cm	30cm	45cm		
2	19/30	10	9	10		
	20/30	11	10	10		
	22/30	12	9	13		
4	26/30	14	17	9		
	31/30	10	12	19		
6	33/30	10	12	21		
	36/30	16	16	20		
8	42/30	20	22	20		
	40/30	21	17	23		
10	46/30	20	23	23		
	44/30	19	21	23		
12	47/30	23	23	24		
	49/30	21	20	29		
14	46/30	23	23	25		
	48/30	22	23	25		
16	47/30	22	27	20		
	48/30	21	19	29		
18	46/30	27	23	23		
	49/30	24	21	28		
20	50/30	23	26	24		
	52/30	23	24	28		
22	48/30	19	26	22		
	50/30	22	26	24		
24	52/30	23	29	23		
	54/30	24	23	31		
26	50/30	26	27	23		
	52/30	26	30	22		
28	53/30	23	32	21		
	51/30	28	25	26		
30	52/30	26	22	30		

Soil Trade LLC

LOG OF BOREHOLE - NH_02

and Standard Penetration Test

CLIENT:	MON MAP LLC			Sheet:	1of 1
PROJECT NAME:	Strengthening the capacity of seismic disaster risk management	COORDS:	E: 671047 N: 5292772	Drill rig:	Power 4500
				Driller:	Soil Trade LLC
LOCATION:	Nalaih district	DEPTH:	30.0 m	Date:	09-12.Sep.2012
HOLE DIA:	89 mm	Ground water level:	un-known	Logged:	D.Duurenjargal



Soil Trade LLC

LOG OF BOREHOLE - BI_01

and Standard Penetration Test

CLIENT: MON MAP LLC
PROJECT NAME: Strengthening the capacity of seismic disaster risk management
LOCATION: Baga hangai district
HOLE DIA: 89 mm
COORDS: E: 683561 N: 5252195
DEPTH: 30.0 m
Ground water level: un-known
Sheet: 1of 1
Drill rig: Power 4500
Driller: Soil Trade LLC
Date: 27-31.Aug.2012
Logged: D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Tickness of stratum	Graphic log	Symbol	Description of Soil
	0.0	0.4	0.4			Top soil. brownish browen
2					GP	Sand with GRAVEL-Yellowish brown, stiff consistency, Proluvium deposits.
4						
	0.4	5.2	4.8			
6					GC	Clayey GRAVEL with sand-yellowish brown, slightly moist to wet, Upper & Modern Quaternary aged, Proluvium deposits.
8						
10						
12						
14						
16						
18						
20						
22						
24						
26						
28						
30	5.2	30.0	24.8			

Depth, m	Number Blows N / Penetration depth, cm	Number of every 15 cm 15cm	30cm	45cm
2	16/30	6	7	9
	19/30	8	9	10
	22/30	9	10	12
4	24/30	11	12	12
	25/30	10	14	11
6	28/30	12	14	14
	32/30	14	15	17
8	36/30	15	17	19
	34/30	10	16	18
10	33/30	16	17	16
	35/30	14	18	17
12	36/30	15	18	18
	38/30	13	18	20
14	34/30	14	15	19
	33/30	15	16	17
16	38/30	18	17	21
	37/30	17	19	18
18	39/30	20	19	20
	37/30	16	20	17
20	40/30	15	20	20
	38/30	16	18	20
22	36/30	19	17	19
	37/30	15	29	18
24	34/30	16	17	17
	36/30	15	17	19
26	35/30	16	18	17
	37/30	18	18	19
28	39/30	16	17	22
	42/30	18	21	21
30	41/30	16	21	23

Soil Trade LLC

LOG OF BOREHOLE - BI_03
and Standard Penetration Test

CLIENT: MON MAP LLC
PROJECT NAME: Strengthening the capacity of seismic disaster risk management
LOCATION: Baga hangai district
HOLE DIA: 89 mm
COORDS: E: 690256 N: 5247590
DEPTH: 30.0 m
Ground water level: un-known
Sheet: 1of 1
Drill rig: Power 4500
Driller: Soil Trade LLC
Date: 23-27.Aug.2012
Logged: D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Tickness of stratum	Graphic log	Symbol	Description of Soil
0	0.0	0.4	0.4			Top soil. brownish browen.
2					SC	Sand and clay-yellowish brown. Proluvium deposit, stiff consistency.
4	0.4	5.0	4.6			
6					CL	Sand lean Clay with gravel- Yellowish brown and greenish greye. Proluvium deposit, medium yet.
8						
10						
12	4.6	9.6	5.0			
14					CL	Sandy leau Clay with gravel- Greenish greye. Proluvium deposit, firm consistency.
16						
18						
20						
22						
24						
26						
28						
30	9.6	30.0	20.4			

Depth, m	Number Blows N / Penetration depth, cm	Number of every 15 cm: 15cm	30cm	45cm
2	28/30	10	12	16
	30/30	9	14	16
	34/30	12	18	16
4	36/30	11	19	17
	34/30	10	16	18
6	32/30	12	18	14
	36/30	14	18	18
8	35/30	13	15	20
	38/30	16	18	21
10	36/30	19	17	19
	37/30	15	17	20
12	35/30	14	18	17
	38/30	13	20	18
14	40/30	16	20	20
	39/30	17	20	19
16	37/30	18	18	19
	36/30	16	15	21
18	40/30	18	21	19
	41/30	20	20	21
20	39/30	15	19	20
	42/30	21	20	22
22	40/30	19	18	22
	43/30	13	23	20
24	44/30	20	22	22
	43/30	21	19	24
26	40/30	19	19	21
	42/30	20	23	19
28	46/30	23	25	21
	48/30	22	26	22
30	46/30	16	23	23

Soil Trade LLC

LOG OF BOREHOLE - BR_01
and Standard Penetration Test

CLIENT: MON MAP LLC
PROJECT NAME: Strengthening the capacity of seismic disaster risk management
LOCATION: Baga nuur district
HOLE DIA: 89 mm

COORDS: E: 300745 N: 5290705
DEPTH: 30.0 m
Ground water level: un-known

Sheet: 1of 1
Drill rig: Power 4500
Driller: Soil Trade LLC
Date: 01-04.Sep.2012
Logged: D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Thickness of stratum	Graphic log	Symbol	Description of Soil
	0.0	0.3	0.3			Top soil-Clayey SAND, with vegetation roots, brown
2–18	0.3	18.0	17.7		SC	Clayey SAND with gravel- yellowish brown, stiff consistency. Proluvium deposits
20–30	18.0	30.0	12.0		CL	Sandy lean Clay with gravel- Dark grey, stiff consistency

Depth, m	Number Blows, N / Penetration depth, cm	Number of every 15 cm 15cm	30cm	45cm
2	18/30	8	8	10
	20/30	9	11	9
	23/30	13	11	12
4	26/30	11	12	14
	28/30	12	15	13
6	31/30	10	16	15
	33/30	12	17	16
8	36/30	14	17	19
	38/30	15	17	21
10	39/30	17	18	21
	40/30	17	19	21
12	42/30	18	22	20
	40/30	16	20	20
14	44/30	18	21	23
	41/30	17	20	21
16	38/30	18	19	19
	36/30	18	17	19
18	37/30	19	20	17
	38/30	15	18	20
20	40/30	18	19	21
	39/30	14	18	21
22	43/30	19	21	22
	44/30	20	21	23
24	46/30	23	22	24
	47/30	19	24	23
26	48/30	22	24	24
	46/30	23	22	24
28	45/30	16	24	21
	44/30	16	24	20
30	42/30	18	23	19

Soil Trade LLC

LOG OF BOREHOLE - BR_02
and Standard Penetration Test

CLIENT: MON MAP LLC
PROJECT NAME: Strengthening the capacity of seismic disaster risk management
LOCATION: Baga nuur district
HOLE DIA: 89 mm
COORDS: E: 310340 N: 5302991
DEPTH: 30.0 m
Ground water level: un-known
Sheet: 1of 1
Drill rig: Power 4500
Driller: Soil Trade LLC
Date: 04-08.Sep.2012
Logged: D.Duurenjargal

Depth, m	Started depth, m	Ended depth, m	Tickness of stratum	Graphic log	Symbol	Description of Soil
0	0.0	1.1	1.1			Top soil-Clayey SAND, with vegetation roots, brown
2					SP-SC	Poorly graded SAND with clay and gravel- yellowish brown, moist condition, Alluvium- Proluvium deposits
4						
6						
8						
10	1.1	9.8	8.7			
12					SC	Poorly graded SAND with clay and gravel- yellowish brown, stiff consistency, Alluvium-Proluvium deposits
14						
16	9.8	17.2	7.4			
18					CL	Sandy lean Clay with gravel- Dark grey, stiff consistency Alluvium-Proluvium deposits
20						
22						
24						
26						
28						
30	17.2	30.0	12.8			

Depth, m	Number Blows N / Penetration depth, cm	Number of every 15 cm			Depth, m	Symbol
		15cm	30cm	45cm		
2	24/30	11	12	12	2	•
	26/30	14	14	12		•
	28/30	14	15	13		•
4	31/30	12	16	15	4	•
	32/30	10	18	14		•
6	34/30	11	16	18	6	•
	36/30	13	17	19		
8	40/30	12	21	19	8	•
	39/30	15	19	20		•
10	42/30	18	21	21	10	•
	43/30	16	22	21		
12	40/30	13	22	18	12	•
	42/30	19	19	23		
14	46/30	16	19	27	14	
	48/30	16	28	20		
16	47/30	12	26	21	16	
	46/30	19	23	23		
18	44/30	21	21	23	18	
	46/30	18	22	24		•
20	49/30	16	25	24	20	
	47/30	18	24	23		
22	48/30	21	22	26	22	
	45/30	23	22	23		•
24	46/30	20	25	21	24	
	47/30	24	26	21		
26	46/30	24	23	23	26	
	45/30	26	20	25		
28	48/30	27	26	22	28	•
	49/30	26	23	26		
30	50/30	26	24	26	30	

1.3.3 Хөрсний ширхэглэлийг бүрэлдэхүүн шинжилгээ

(1) Мөхлөгийн туршилт, өрмийн судалгааны үр дүн (Datasheet)

No.	Hole no.	Depth (m)	Particle size, %																Particle Analysis, (%)			Atterberg Limits			Cu	Cc	Soil type	Soil name MNS-ASTM D2487
			75	50	37,5	25	19	12,5	9,5	4,75	2,00	0,850	0,425	0,250	0,106	0,075	<0,075	%	Gravel	Sand	Silt/Clay	LL	PL	PI				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	UB_Bo_01	1.0-1.5	0.0	10.8	16.0	8.0	6.5	5.4	6.5	9.0	11.4	8.7	4.4	3.8	3.8	0.8	4.9	100.0	62.2	32.9	4.9	Nonplastic					GP	Poorly graded GRAVELwith sand
2	UB_Bo_01	2.0-2.2	0.0	0.0	4.8	16.7	10.6	10.3	21.3	20.0	9.8	2.5	0.6	0.4	0.8	0.6	1.6	100.0	83.7	14.7	1.6	Nonplastic					GP	Poorly graded GRAVELwith sand
3	UB_Bo_01	3.0	0.0	0.0	3.5	7.4	12.5	14.0	19.8	23.4	10.0	3.2	1.6	1.2	0.7	0.4	2.3	100.0	80.6	17.1	2.3	Nonplastic					GP	Poorly graded GRAVELwith sand
4	UB_Bo_01	4.0	0.0	6.5	12.5	16.0	9.5	7.6	18.6	8.6	7.9	4.0	2.4	1.0	0.6	1.3	3.5	100.0	79.3	17.2	3.5	Nonplastic					GP	Poorly graded GRAVELwith sand
5	UB_Bo_01	5.0	0.0	5.3	7.7	17.0	6.0	7.3	11.2	17.1	14.2	6.7	1.3	0.7	1.8	0.8	2.9	100.0	71.6	25.5	2.9	Nonplastic					GP	Poorly graded GRAVELwith sand
6	UB_Bo_01	6.0	0.0	0.0	11.2	8.6	7.2	9.8	15.0	21.6	7.0	11.2	2.5	1.8	0.8	0.5	2.8	100.0	73.4	23.8	2.8	Nonplastic					GP	Poorly graded GRAVELwith sand
7	UB_Bo_01	7.0	0.0	4.6	9.3	10.2	7.5	11.0	13.5	16.8	9.4	5.9	3.3	1.9	1.2	0.8	4.6	100.0	72.9	22.5	4.6	Nonplastic					GP	Poorly graded GRAVELwith sand
8	UB_Bo_01	8.0-8.3	0.0	10.4	12.8	12.7	7.8	15.8	4.8	7.9	7.3	5.5	3.4	4.4	2.1	0.4	4.7	100.0	72.2	23.1	4.7	Nonplastic					GP	Poorly graded GRAVELwith sand
9	UB_Bo_01	10.0	0.0	5.6	7.8	16.5	9.4	21.5	13.0	4.0	6.2	5.9	2.8	1.9	1.9	0.3	3.2	100.0	77.8	19.0	3.2	Nonplastic					GP	Poorly graded GRAVELwith sand
10	UB_Bo_01	11	0.0	7.8	13.6	16.8	6.5	18.2	10.4	5.4	3.5	8.1	5.4	1.6	0.5	0.2	2.0	100.0	78.7	19.3	2.0	Nonplastic					GP	Poorly graded GRAVELwith sand
11	UB_Bo_01	12.0-12.5	0.0	5.4	8.2	23.7	7.2	7.6	9.9	8.0	5.6	4.0	4.0	5.3	3.6	0.8	6.7	100.0	70.0	23.3	4.8	Nonplastic					GP	Poorly graded GRAVELwith sand
12	UB_Bo_01	14.0	0.0	0.0	7.2	14.6	9.0	10.3	8.8	13.4	13.0	8.6	3.7	4.7	2.6	0.2	3.9	100.0	63.3	32.8	3.9	Nonplastic					GP	Poorly graded GRAVELwith sand
13	UB_Bo_01	15.8-16.0	0.0	4.0	9.9	7.4	5.6	7.3	6.3	10.7	23.3	10.8	4.1	4.9	2.5	0.3	2.9	100.0	51.2	45.9	2.9	Nonplastic					GP	Poorly graded GRAVELwith sand
14	UB_Bo_01	18.2	0.0	0.0	22.6	7.2	1.2	6.7	4.8	10.1	11.7	8.3	4.5	4.8	5.5	0.7	11.9	100.0	52.6	35.5	11.9	20.5	13.6	6.9			GP-GC	Poorly graded GRAVELwith sand and clay
15	UB_Bo_01	20.0	0.0	2.3	10.1	12.1	4.3	6.0	6.0	11.0	12.9	10.4	7.2	5.3	4.2	0.5	7.7	100.0	51.8	40.5	7.7	22.3	15	7.3			GP-GC	Poorly graded GRAVELwith sand and clay
16	UB_Bo_01	23.4-24.0	0.0	0.0	16.8	9.8	5.3	8.9	7.5	7.0	8.4	4.2	7.8	5.2	6.0	2.6	10.5	100.0	55.3	34.2	10.5	22.7	15.2	7.5			GP-GC	Poorly graded GRAVELwith sand and clay
17	UB_Bo_01	25.0	0.0	17.7	14.9	6.9	3.5	5.4	4.0	8.0	8.5	8.1	4.3	3.2	3.8	0.7	11.0	100.0	60.4	28.6	11.0	22.3	15.3	7			GP-GC	Poorly graded GRAVELwith sand and clay
18	UB_Bo_01	29.5-30.0	12.6	13.2	12.1	12.1	5.1	3.4	5.6	8.1	7.6	6.3	2.8	1.9	2.4	0.4	6.4	100.0	72.2	21.4	6.4	24.5	17.3	7.2			GP-GC	Poorly graded GRAVELwith sand and clay

No.	Hole no.	Depth (m)	Particle size, %																Particle Analysis, (%)			Atterberg Limits			Cu	Cc	Soil type	Soil name MNS-ASTM D2487
			75	50	37,5	25	19	12,5	9,5	4,75	2,00	0,850	0,425	0,250	0,106	0,075	<0,075	%	Gravel	Sand	Silt/Clay	LL	PL	PI				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	UB_Bo_02	1.0-1.2	0.0	7.6	12.5	21.3	10.3	6.2	7.8	11.0	6.2	5.3	3.5	2.7	1.8	0.6	3.2	100.0	76.7	20.1	3.2	Nonplastic					GP	Poorly graded GRAVELwith sand
2	UB_Bo_02	2.0	0.0	1.5	4.8	13.0	15.5	21.6	10.2	15.5	5.6	4.3	2.7	1.6	1.0	0.4	2.3	100.0	82.1	15.6	2.3	Nonplastic					GP	Poorly graded GRAVELwith sand
3	UB_Bo_02	3.0	0.0	0.0	2.6	8.2	8.9	13.2	19.0	25.4	8.6	3.2	1.6	1.2	2.5	1.3	4.3	100.0	77.3	18.4	4.3	Nonplastic					GP	Poorly graded GRAVELwith sand
4	UB_Bo_02	3.8-4.0	0.0	7.2	12.5	16.0	9.5	7.6	20.9	8.6	5.6	3.6	2.4	0.8	1.4	1.0	2.9	100.0	82.3	14.8	2.9	Nonplastic					GP	Poorly graded GRAVELwith sand
5	UB_Bo_02	5.0	0.0	0.0	0.0	6.5	13.1	9.8	13.0	20.4	11.3	6.0	3.8	2.5	3.2	2.5	7.9	100.0	62.8	29.3	7.9	23.4	15.8	7.6			GP-GC	Poorly graded GRAVELwith sand and clay
6	UB_Bo_02	6.8-7.0	0.0	0.0	4.8	13.6	7.6	10.2	7.9	15.4	8.6	4.3	5.2	3.2	5.0	3.7	10.5	100.0	59.5	30.0	10.5	21.7	13.8	7.9			GP-GC	Poorly graded GRAVELwith sand and clay
7	UB_Bo_02	11.0	0.0	0.0	2.3	10.2	7.5	9.5	11.3	16.8	5.0	6.1	4.0	8.7	6.1	4.3	8.2	100.0	57.6	34.2	8.2	24.2	16.1	8.1			GP-GC	Poorly graded GRAVELwith sand and clay
8	UB_Bo_02	14.8-15.0	0.0	0.0	7.8	11.0	9.2	12.3	4.8	6.5	5.2	4.0	6.7	10.2	5.8	5.9	10.6	100.0	51.6	37.8	10.6	22.0	14.3	7.7			GP-GC	Poorly graded GRAVELwith sand and clay

No.	Hole no.	Depth (m)	Particle size, %															Particle Analysis, (%)			Atterberg Limits				Cu	Cc	Soil type	Soil name MNS-ASTM D2487
			75	50	37.5	25	19	9.5	4.75	2	0.6	0.425	0.25	0.15	0,075	<0,075	%	Gravel	Sand	Silt/Clay	LL	PL	PI						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	20	21	22	23	24	25	26	26	27	28	29
1	UB_Bo_03	1.0			4.2	12.0	10.8	25.5	9.5	7.9	4.9	4.3	7.9	6.5	1.8	4.8	100.0	62.0	33.3	4.8	Nonplastic						GP	Poorly graded GRAVELwith sand
2	UB_Bo_03	2.0-2.3		7.6	4.6	6.3	9.3	14.0	12.1	13.4	9.0	7.8	4.7	4.8	1.3	4.9	100.0	53.9	41.2	4.9	Nonplastic						GP	Poorly graded GRAVELwith sand
3	UB_Bo_03	3.0		6.5	5.0	7.8	10.3	13.8	15.0	12.1	8.7	10.0	3.8	2.3	0.8	3.9	100.0	58.4	37.7	3.9	Nonplastic						GP	Poorly graded GRAVELwith sand
4	UB_Bo_03	4.0-4.5				11.3	4.9	20.0	14.9	12.8	9.5	10.1	8.5	4.0	0.5	3.5	100.0	51.1	45.4	3.5	Nonplastic						GP	Poorly graded GRAVELwith sand
5	UB_Bo_03	6.8-7.0			11.1	8.6	7.0	19.1	13.5	11.3	10.9	5.2	4.4	3.5	0.6	4.9	100.0	59.3	35.8	4.9	Nonplastic						GP	Poorly graded GRAVELwith sand
6	UB_Bo_03	10.0-10.5	0.0	13.2	8.3	13.3	3.7	11.1	13.2	14.0	9.2	1.7	1.1	1.8	1.3	8.1	100.0	62.8	29.1	8.1	24	15.1	8.9				GP-GC	Poorly graded GRAVELwith sand and clay
7	UB_Bo_03	12.0		8.7	10.3	15.2	5.8	10.8	14.0	101.0	8.2	5.0	0.9	2.5	0.9	7.6	100.0	64.8	27.6	7.6	23.8	16.2	7.6				GP-GC	Poorly graded GRAVELwith sand and clay
8	UB_Bo_03	14.5-15.0		6.5	10.2	6.8	12.0	7.8	6.8	4.6	5.0	4.3	7.0	6.2	4.5	18.3	100.0	50.1	31.6	18.3	26.5	16.5	10				GC	Clayey GRAVEL with sand
9	UB_Bo_03	16.0-16.2			4.8	7.3	9.2	15.4	13.7	12.1	7.4	5.4	5.9	6.7	1.4	10.9	100.0	50.3	38.8	10.9	23.8	16.8	7.0				GP-GC	Poorly graded GRAVELwith sand and clay
10	UB_Bo_03	20.0-20.4			4.8	15.1	10.6	16.9	11.4	11.0	8.2	4.1	2.9	4.2	1.0	9.9	100.0	58.9	31.3	9.9	23.2	15.3	7.9				GP-GC	Poorly graded GRAVELwith sand and clay
11	UB_Bo_03	26.0		2.8	5.6	13.8	9.2	12.7	10.8	14.4	7.6	5.1	3.1	2.8	1.6	10.5	100.0	54.9	34.6	10.5	23.2	15.3	7.9				GP-GC	Poorly graded GRAVELwith sand and clay
12	UB_Bo_03	29.0	0.0	0.0	13.8	4.8	8.2	25.5	14.5	10.6	5.8	1.2	0.8	2.0	1.6	11.2	100.0	66.8	22.0	11.2	25.3	18.0	7.3				GP-GC	Poorly graded GRAVELwith sand and clay

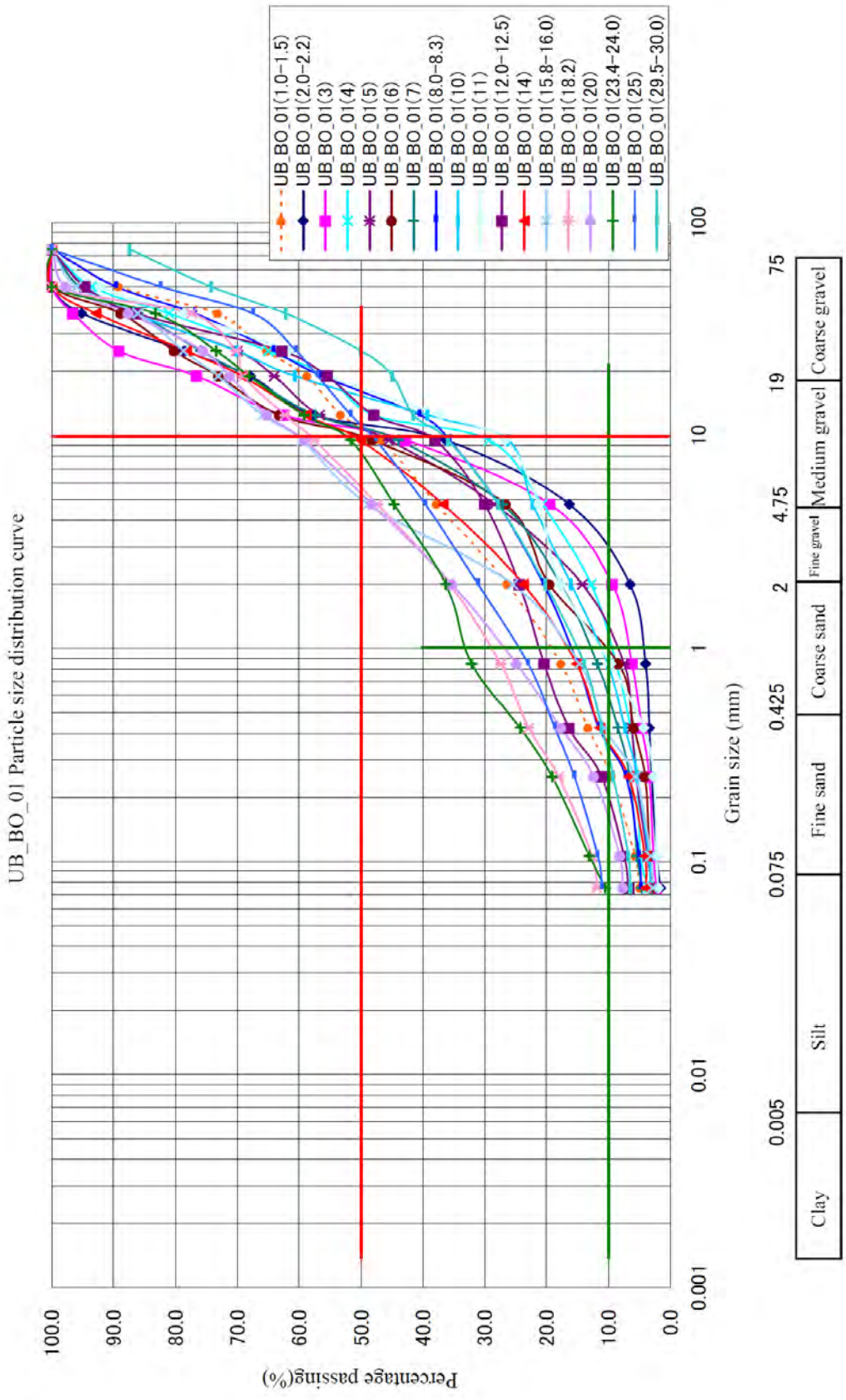
No.	Hole no.	Depth (m)	Particle size, %															Particle Analysis, (%)			Atterberg Limits				Cu	Cc	Soil type	Soil name MNS-ASTM D2487
			75	50	37.5	25	19	9.5	4.75	2	0.85	0.425	0.25	0.106	0,075	0,075	<0,075	%	Gravel	Sand	Silt/Clay	LL	PL	PI					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	UB_Bo_04	1.0	0.0	0.0	1.7	9.6	9.6	13.4	22.3	38.2	1.0	0.7	0.5	0.7	0.1		2.2	100.0	56.6	41.2	2.2	Nonplastic					GP	Poorly graded GRAVELwith sand
2	UB_Bo_04	2.0	0.0	2.8	8.0	8.4	13.8	9.8	26.8	12.0	5.8	4.2	2.6	0.8	1.2		3.8	100.0	69.6	26.6	3.8	Nonplastic					GP	Poorly graded GRAVELwith sand
3	UB_Bo_04	2.7-3.2	0.0	17.1	16.8	5.6	9.5	14.2	7.4	7.0	5.1	2.9	5.3	4.4	0.5		4.2	100.0	70.6	25.2	4.2	Nonplastic					GP	Poorly graded GRAVELwith sand
4	UB_Bo_04	4.0-4.5	0.0	0.0	40.1	17.2	10.2	8.6	4.8	7.7	4.2	1.9	0.9	1.1	0.2		3.1	100.0	80.9	16.0	3.1	Nonplastic					GP	Poorly graded GRAVELwith sand
5	UB_Bo_04	5.0	0.0	13.8	21.4	17.2	11.3	7.5	9.0	6.8	5.0	2.1	1.0	1.3	0.7		2.9	100.0	80.2	16.9	2.9	Nonplastic					GP	Poorly graded GRAVELwith sand
6	UB_Bo_04	6.0	0.0	15.3	16.8	21.4	8.6	5.3	10.3	5.6	4.8	3.5	2.5	1.9	0.0		3.0	100.0	77.7	19.3	3.0	Nonplastic					GP	Poorly graded GRAVELwith sand
7	UB_Bo_04	7.0	5.6	9.5	11.3	16.5	20.4	6.3	7.8	9.0	5.1	1.4	2.6	0.8	1.1		2.6	100.0	77.4	20.0	2.6	Nonplastic					GP	Poorly graded GRAVELwith sand
8	UB_Bo_04	8.0	0.0	15.4	9.8	23.4	11.4	7.5	9.1	4.6	6.2	2.6	3.4	1.8	0.8		4.0	100.0	76.6	19.4	4.0	Nonplastic					GP	Poorly graded GRAVELwith sand
9	UB_Bo_04	8.8-9.2	0.0	0.0	4.8	16.7	10.6	31.6	20.0	9.8	2.5	0.6	0.4	0.8	0.6		1.6	100.0	83.7	14.7	1.6	Nonplastic					GP	Poorly graded GRAVELwith sand
10	UB_Bo_04	10	0.0	0.0	0.0	3.3	6.6	20.6	19.1	15.9	8.1	2.2	1.8	4.1	2.9		15.4	100.0	49.6	35.0	15.4	28.5	19.8	8.7			GC	Clayey SAND with gravel
11	UB_Bo_04	14.0-14.2	0.0	0.0	21.4	6.7	4.7	11.5	9.6	11.4	6.5	4.0	3.0	4.6	0.9		15.7	100.0	53.9	30.4	15.7	21.1	13.2	7.9			GC	Clayey SAND with gravel
12	UB_Bo_04	21.5-22.0	0.0	19.6	17.2	11.4	3.2	8.9	6.7	7.5	3.9	2.3	2.1	3.2	0.7		13.3	100.0	67.0	19.7	13.3	22.4	13.6	8.8			GC	Clayey SAND with gravel
13	UB_Bo_04	23.8	0.0	0.0	6.9	10.5	13.6	8.4	12.0	5.7	3.2	4.9	5.5	6.9	4.5		17.9	100.0	51.4	30.7	17.9	36.3	22.8	13.5			GC	Clayey SAND with gravel
14	UB_Bo_04	25.0-25.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.5	4.9	12.0	22.4	16.0	15.6		27.4	100.0	0.0	72.4	27.4	27	17.5	9.5			SC	Clayey SAND
15	UB_Bo_04	29.6-30.0	0.0	0.0	0.0	8.8	2.8	14.9	14.3	14.3	13.5	6.3	4.3	4.9	0.6		15.3	100.0	40.8	43.4	15.3	22.8	15.2	7.6			SC	Clayey SAND with gravel

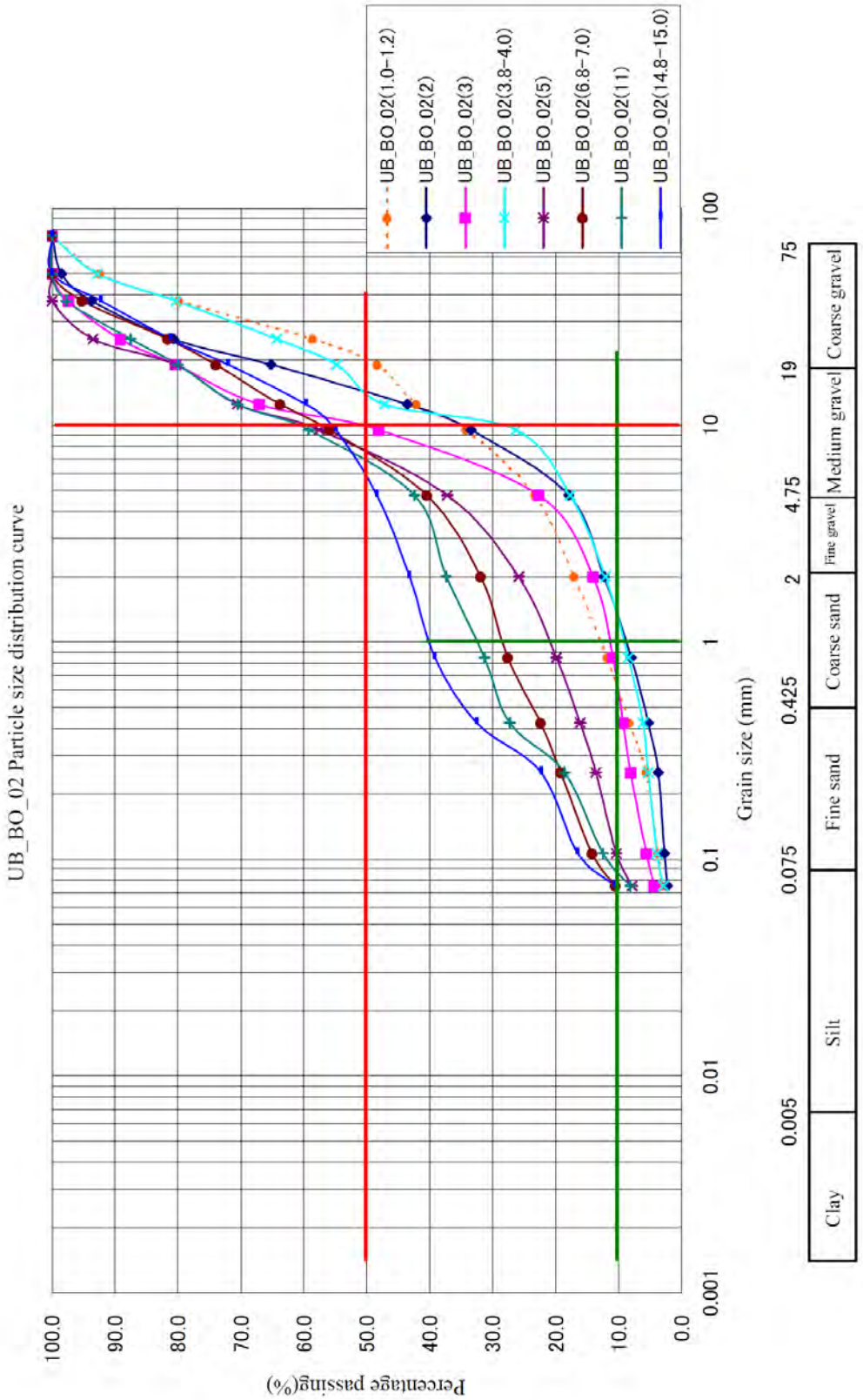
No.	Hole no.	Depth (m)	Particle size, %																Particle Analysis, (%)			Atterberg Limits			Cu	Cc	Soil type	Soil name MNS-ASTM D2487
			75	50	37,5	25	19	9.5	4.75	2	0.85	0.425	0.25	0.106	0,075	0,075	<0,075	%	Gravel	Sand	Silt/Clay	LL	PL	PI				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	NH_01	1.0						3.4	1.0	2.0	5.8	2.0	3.4	34.5	7.4		40.5	100.0	4.4	55.1	40.5	27.8	15.4	12.4			SC	Clayey SAND
2	NH_01	2.0						18.4	10.0	21.4	10.3	5.4	4.0	6.2	1.8		19.5	100.0	28.4	52.1	19.5	23.8	13.4	10.4			SC	Clayey SAND with gravel
3	NH_01	3.0						20.9	11.6	19.8	11.3	6.7	5.8	8.0	1.6		14.3	100.0	32.5	53.2	14.3	25.6	14.2	11.4			SC	Clayey SAND with gravel
4	NH_01	4.0							0.3	2.9	4.5	2.4	3.8	34.5	4.7		46.9	100.0	0.3	52.8	46.9	26.8	15.5	11.3			SC	Clayey SAND
5	NH_01	5.0					0.4	3.6	19.6	35.4	4.8	1.0	0.6	3.0	2.5		29.1	100.0	23.6	47.3	29.1	28.9	19.7	9.2			SC	Clayey SAND with gravel
6	NH_01	6.0					10.5	9.4	8.3	12.0	9.0	5.5	4.3	7.6	4.1		29.3	100.0	28.2	42.5	29.3	22.5	15.2	7.3			SC	Clayey SAND with gravel
7	NH_01	7.0					0.0	2.9	1.6	7.0	12.9	6.2	4.8	12.2	8.7		43.7	100.0	4.5	51.8	43.7	27.0	19.9	7.1			SC	Clayey SAND
8	NH_01	8.0					1.7	8.7	7.2	11.2	9.0	6.2	6.5	9.1	2.0		38.4	100.0	17.6	44.0	38.4	24.4	14.2	10.2			SC	Clayey SAND with gravel
9	NH_01	9.0							0.1	0.2	0.1	0.4	1.8	1.3	4.1		92.0	100.0	0.1	7.9	92.0	34.6	18.9	15.7			CL	Lean CLAY
10	NH_01	10.0							3.5	2.0	7.8	3.0	2.9	1.0	0.8		79.0	100.0	3.5	17.5	79.0	36.8	21.4	15.4			CL	Lean CLAY
11	NH_01	12.0								1.0	0.5	0.5	2.4	3.0	1.3		91.3	100.0	0.0	8.7	91.3	36.5	18.5	18.0			CL	Lean CLAY
12	NH_01	15.0								1.0	0.5	0.5	2.4	3.0	1.3		91.3	100.0	0.0	8.7	91.3	39.8	20.3	19.5			CL	Lean CLAY
13	NH_01	18.0								0.1	1.0	0.3	0.2	0.1	2.7		95.6	100.0	0.0	4.4	95.6	37.8	19.8	18.0			CL	Lean CLAY
14	NH_01	24.0								6.7	0.04	0.04	0.1	0.1	0.1		92.9	100.0	0.0	7.1	92.9	36.5	14.8	21.7			CL	Sandy lean CLAY
15	NH_01	29.0							6.2	8.2	0.1	0.1	0.1	0.1	0.04		85.2	100.0	6.2	8.6	85.2	42.1	21.6	20.5			CL	Sandy lean CLAY
16	NH_02	1.0								1.1	0.1	0.3	1.0	20.4	18.6		58.5	100.0	0.0	41.5	58.5	38.2	19.8	18.4			CL	Lean CLAY with sand
17	NH_02	2.0								0.1	2.2	0.1	0.8	18.4	15.0		63.4	100.0	0.0	36.6	63.4	37.8	18.6	19.2			CL	Sandy lean CLAY
18	NH_02	3.0										0.5	1.0	16.0	11.0		71.5	100.0	0.0	28.5	71.5	42.1	23.0	19.1			CL	Lean CLAY with sand
19	NH_02	4.0									1.5	3.0	5.3	11.0	9.8		69.4	100.0	0.0	30.6	69.4	39.8	19.8	20.0			CL	Sandy lean CLAY
20	NH_02	5.0								0.5	2.0	1.8	4.3	9.8	7.0		74.6	100.0	0.0	25.4	74.6	37.2	17.6	19.6			CL	Lean CLAY with sand
21	NH_02	6.0							1.0	2.3	1.5	2.3	5.6	16.3	9.1		61.9	100.0	1.0	37.1	61.9	41.0	21.5	19.5			CL	Sandy lean CLAY
22	NH_02	8.0								3.7	0.7	0.9	1.7	25.2	14.3		53.5	100.0	0.0	46.5	53.5	39.8	22.3	17.5			CL	Sandy lean CLAY
23	NH_02	12.0							1.3	2.4	1.1	0.4	1.2	16.8	20.0		56.8	100.0	1.3	41.9	56.8	41.3	16.8	24.5			CL	Lean CLAY with sand
24	NH_02	17.0							1.2	2.9	1.2	0.7	1.0	16.8	6.5		69.7		1.2	29.1	69.7	36.8	18.2	18.6			CL	Lean CLAY with sand
25	NH_02	20.0								1.3	1.5	0.3	0.3	12.5	8.5		75.6		0.0	24.4	75.6	43.5	21.4	22.1			CL	Lean CLAY with sand
26	NH_02	25.0									1.3	2.7	4.0	2.6	6.0		83.4	100.0	0.0	16.6	83.4	38.0	18.8	19.2			CL	Lean CLAY with sand
27	NH_02	29.0								2.4	2.0	4.0	3.2	5.1	7.0		76.3	100.0	0.0	23.7	76.3	41.0	21.3	19.7			CL	Lean CLAY with sand

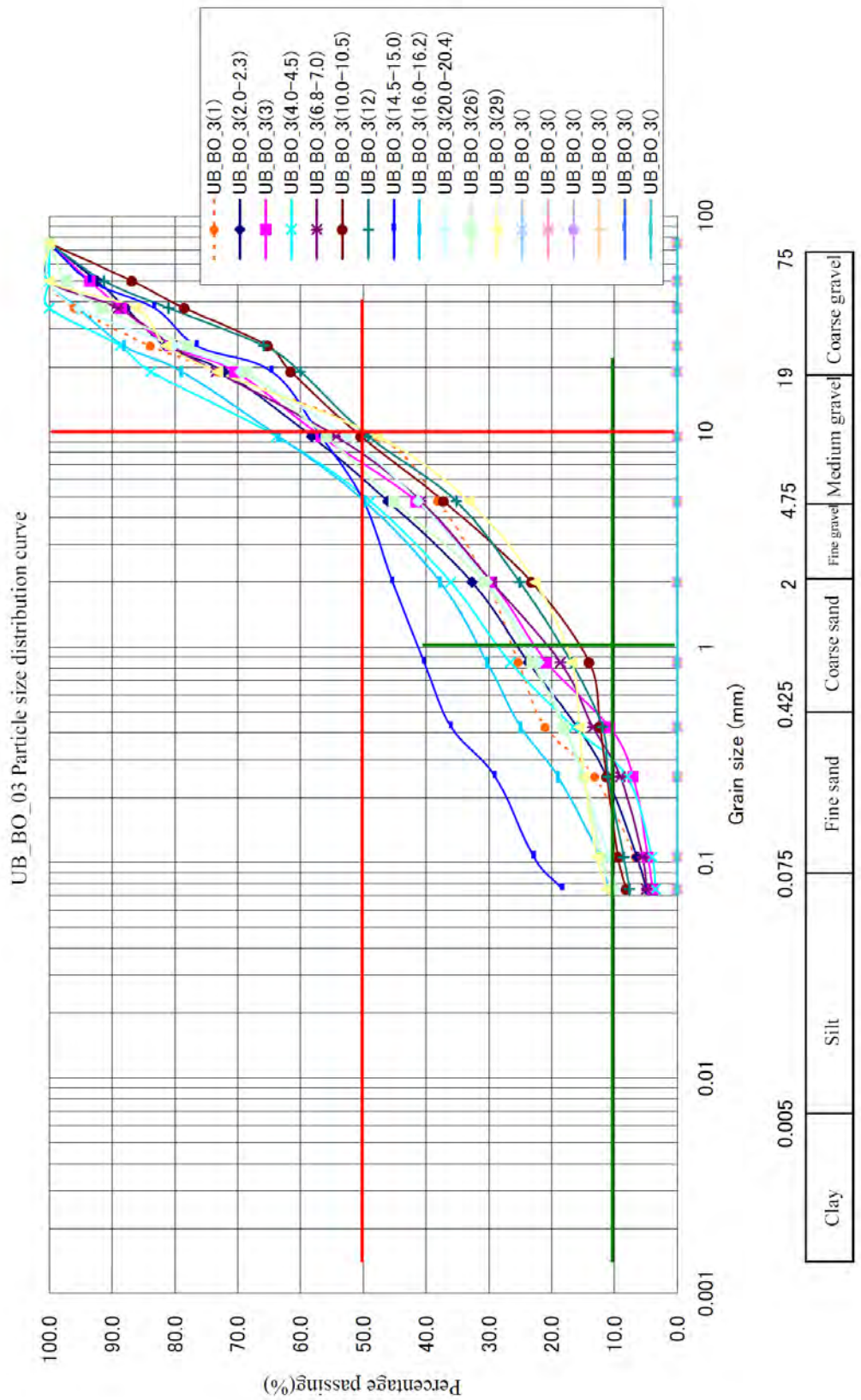
No.	Hole no.	Depth (m)	Particle size, %																Particle Analysis, (%)			Atterberg Limits			Cu	Cc	Soil type	Soil name MNS-ASTM D2487
			75	50	37.5	25	19	9.5	4.75	2	0.85	0.425	0.25	0.106	0.075	0.075	<0.075	%	Gravel	Sand	Silt/Clay	LL	PL	PI				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	BI_01	1.0		0.0	1.7	9.6	9.6	13.4	22.3	38.2	1.0	0.7	0.5	0.7	0.1		2.2	100.0	56.6	41.2	2.2	Nonplastic					GP	Poorly graded GRAVELwith sand
2	BI_01	2.0		14.8	9.9	2.6	8.7	12.8	12.0	14.0	5.9	4.4	6.8	4.4	0.8		4.9	100.0	58.8	36.3	4.9	Nonplastic					GP	Poorly graded GRAVELwith sand
3	BI_01	3.0		17.1	16.8	5.6	9.5	14.2	7.4	7.0	5.1	2.9	5.3	4.4	0.5		4.2	100.0	70.6	25.2	4.2	Nonplastic					GP	Poorly graded GRAVELwith sand
4	BI_01	4.0		0.0	18.6	19.8	14.8	24.6	14.1	5.9	1.5	0.1	0.1	0.1	0.1		0.5	100.0	91.9	7.6	0.5	Nonplastic					GP	Poorly graded GRAVEL
5	BI_01	5.0		0.0	40.1	17.2	10.2	8.6	4.8	7.7	4.2	1.9	0.9	1.1	0.2		3.1	100.0	80.9	16.0	3.1	Nonplastic					GP	Poorly graded GRAVELwith sand
6	BI_01	8.0		0.0	21.4	6.7	4.7	11.5	9.6	11.4	6.5	4.0	3.0	4.6	0.9		15.7	100.0	53.9	30.4	15.7	21.1	13.2	7.9			GC	Clayey GRAVEL with sand
7	BI_01	13.0		0.0	0.0	3.3	6.6	20.6	19.1	15.9	8.1	2.2	1.8	4.1	2.9		15.4	100.0	49.6	35.0	15.4	28.5	19.8	8.7			GC	Clayey GRAVEL with sand
8	BI_01	17.0		10.5	16.5	16.9	8.7	8.4	6.5	4.2	3.0	1.9	2.1	4.3	1.0		16.0	100.0	67.5	16.5	16.0	20.7	12.5	8.2			GC	Clayey GRAVEL with sand
9	BI_01	22.0		19.6	17.2	11.4	3.2	8.9	6.7	7.5	3.9	2.3	2.1	3.2	0.7		13.3	100.0	67.0	19.7	13.3	22.4	13.6	8.8			GC	Clayey GRAVEL with sand
10	BI_01	28.0		0.0	4.6	13.3	13.3	20.1	15.4	12.7	2.3	0.4	0.3	0.6	0.4		16.6	100.0	66.7	16.7	16.6	24.6	14.1	10.5			GC	Clayey GRAVEL with sand
11	BI_03	1.0				2.6	0.4	3.6	19.6	35.4	4.8	1.0	0.6	1.4	1.5		29.1	100.0	26.2	44.7	29.1	28.9	19.7	9.2			SC	Clayey SAND with gravel
12	BI_03	1.8-2.0				5.3	10.5	9.4	8.3	12.0	9.0	5.5	4.3	5.2	1.2		29.3	100.0	33.5	37.2	29.3	22.5	15.2	7.3			SC	Clayey SAND with gravel
13	BI_03	3.0					0.0	2.9	1.6	7.0	12.9	6.2	4.8	12.2	8.7		43.7	100.0	4.5	51.8	43.7	27.0	19.9	7.1			SC	Clayey SAND
14	BI_03	4.0					1.7	8.7	7.2	11.2	9.0	6.2	6.5	9.1	2.0		38.4	100.0	17.6	44.0	38.4	24.4	14.2	10.2			SC	Clayey SAND with gravel
15	BI_03	5.0					5.7	8.3	13.9	16.8	11.4	6.8	2.8	1.0	0.8		32.5	100.0	27.9	39.6	32.5	25.0	16.2	8.8			SC	Clayey SAND with gravel
16	BI_03	6.0								1.3	5.2	3.0	8.6	11.0	2.5		68.4	100.0	0.0	31.6	68.4	36.5	18.3	18.2			CL	Sandy lean CLAY
17	BI_03	7.0									2.8	4.0	7.5	10.2	3.5		72.2	100.0	0.0	27.8	72.2	41.0	21.3	19.7			CL	Lean CLAY with sand
18	BI_03	7.6-8.0							1.0	4.8	6.3	7.0	6.2	15.5	4.2		57.0	100.0	1.0	42.0	57.0	37.2	18.1	19.1			CL	Sandy lean CLAY
19	BI_03	9.0										2.5	8.9	13.0	7.3		68.3	100.0	0.0	31.7	68.3	43.2	24.3	18.9			CL	Lean CLAY with sand
20	BI_03	10.0								1.6	3.8	5.4	9.0	4.6	2.8		72.8	100.0	0.0	27.2	72.8	38.5	19.2	19.3			CL	Sandy lean CLAY
21	BI_03	10.8-11									5.8	4.0	5.2	10.2	5.8		69.0	100.0	0.0	31.0	69.0	43.6	23.0	20.6			CL	Lean CLAY with sand
22	BI_03	12.0									1.2	2.4	5.7	14.1	1.3		75.3	100.0	0.0	24.7	75.3	35.0	17.6	17.4			CL	Lean CLAY with sand
23	BI_03	17.0								0.9	1.5	4.0	9.3	15.3	6.2		62.8	100.0	0.0	37.2	62.8	38.4	19.5	18.9			CL	Sandy lean CLAY
24	BI_03	22.0										1.2	2.4	8.8	6.4		81.2	100.0	0.0	18.8	81.2	36.8	18.6	18.2			CL	Lean CLAY with sand
25	BI_03	28.0									1.8	3.0	3.0	15.4	8.1		72.5	100.0	0.0	31.3	72.5	38.0	19.5	18.5			CL	Sandy lean CLAY

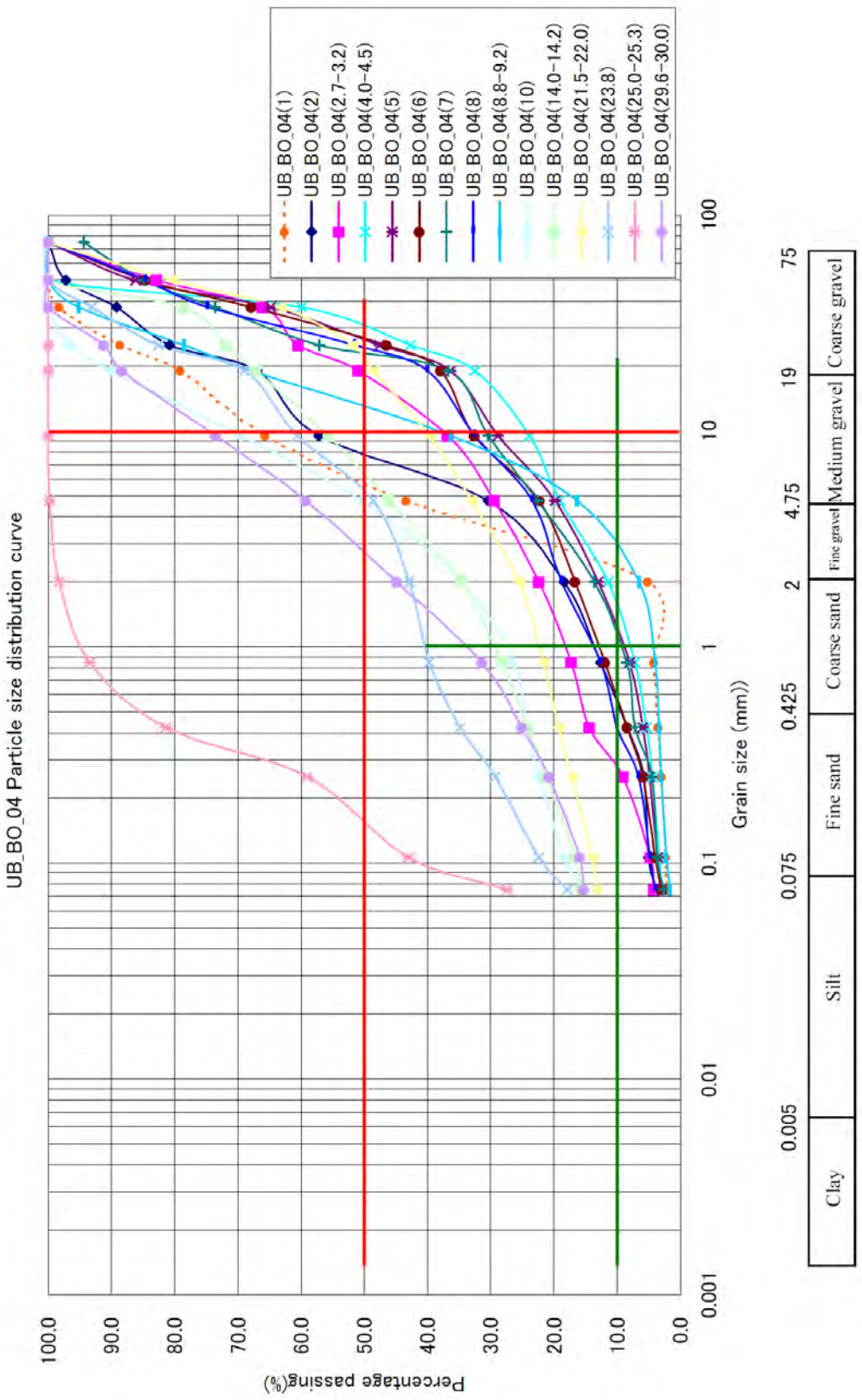
No.	Hole no.	Depth (m)	Particle size, %																Particle Analysis, (%)			Atterberg Limits			Cu	Cc	Soil type	Soil name MNS-ASTM D2487
			75	50	37,5	25	19	9,5	4,75	2	0,85	0,425	0,25	0,106	0,075	0,075	<0,075	%	Gravel	Sand	Silt/Cla	LL	PL	PI				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	BR_01	1.0			11.1	4.1	2.3	11.0	11.9	13.9	10.4	7.1	5.2	5.2	0.8		17.0	100.0	40.4	42.6	17.0	22.3	13.1	9.2			SC	Clayey SAND with gravel
2	BR_01	2.0				3.1	1.6	5.4	14.6	20.2	13.9	4.9	8.1	6.4	3.4		18.4	100.0	24.7	56.9	18.4	36.3	22.8	13.5			SC	Clayey SAND with gravel
3	BR_01	3.0				2.0	4.7	12.6	7.7	8.9	8.3	4.9	6.8	11.2	1.7		31.2	100.0	27.0	41.8	31.2	23.3	16.0	7.3			SC	Clayey Gravel with sand
4	BR_01	4.0				0.0	0.0	1.1	3.1	12.4	26.4	21.1	9.3	6.2	4.8		15.6	100.0	4.2	80.2	15.6	35.3	18.7	16.6			SC	Clayey SAND
5	BR_01	5.0				0.0	0.0	1.5	4.1	16.4	23.5	17.6	10.2	7.3	4.5		14.9	100.0	5.6	79.5	14.9	36.0	17.9	18.1			SC	Clayey SAND
6	BR_01	6.0						9.5	13.4	11.4	10.4	8.9	8.3	13.0	2.8		22.3	100.0	22.9	54.8	22.3	24.8	16.1	8.7			SC	Clayey SAND with gravel
7	BR_01	8.0					4.8	13.9	7.6	11.0	9.9	8.2	7.5	10.7	1.6		24.8	100.0	26.3	48.9	24.8	23.8	15.8	8.0			SC	Clayey SAND with gravel
8	BR_01	12.0						6.0	15.3	9.8	8.3	11.3	6.2	9.8	1.3		32.0	100.0	21.3	46.7	32.0	24.0	15.8	8.2			SC	Clayey SAND with gravel
9	BR_01	14.0					7.5	5.9	12.0	22.1	13.2	6.5	4.0	6.5	1.7		20.6	100.0	25.4	54.0	20.6	24.0	15.5	8.5			SC	Clayey SAND with gravel
10	BR_01	15.0						23.4	8.9	10.5	6.9	6.3	7.0	10.7	2.0		24.3	100.0	32.3	43.4	24.3	25.3	17.2	8.1			SC	Clayey SAND with gravel
11	BR_01	18.0					7.6	24.6	4.7	7.6	7.2	6.3	7.9	10.2	1.1		22.8	100.0	36.9	40.3	22.8	24.6	15.3	9.3			SC	Clayey SAND with gravel
12	BR_01	19.0								4.5	4.6	8.3	5.2	9.8	4.5		63.1	100.0	0.0	36.9	63.1	36.0	19.3	16.7			CL	Sandy lean CLAY
13	BR_01	24.0						1.0	1.8	4.3	6.1	7.8	10.3	6.1	3.6		59.0	100.0	2.8	38.2	59.0	36.0	19.3	16.7			CL	Sandy lean CLAY
14	BR_01	29.0							6.2	20.7	3.6	2.0	1.4	5.0	2.4		58.7	100.0	6.2	35.1	58.7	36.5	18.5	18.0			CL	Sandy lean CLAY
15	BR_02	1.0					8.6	10.4	4.8	26.5	10.3	8.7	11.0	5.8	3.5		10.4	100.0	23.8	65.8	10.4	25.5	17.2	8.3			SP-SC	Poorly graded SAND with gravel and clay
16	BR_02	2.0				1.5	10.3	15.8	3.5	21.4	12.2	6.7	9.0	7.6	2.8		9.2	100.0	31.1	59.7	9.2	22.1	14.9	7.2			SP-SC	Poorly graded SAND with gravel and clay
17	BR_02	3.0					3.2	5.0	5.8	12.0	26.4	15.0	11.0	5.3	4.5		11.8	100.0	14.0	74.2	11.8	24.1	16.5	7.6			SP-SC	Poorly graded SAND with gravel and clay
18	BR_02	4.0				2.8	5.0	13.5	10.4	8.6	26.5	11.0	5.0	6.5	2.1		8.6	100.0	31.7	59.7	8.6	22.7	15.3	7.4			SP-SC	Poorly graded SAND with gravel and clay
19	BR_02	5.0					4.6	6.8	8.1	21.8	20.4	13.6	7.8	4.6	2.5		9.8	100.0	19.5	70.7	9.8	21.9	14.6	7.3			SP-SC	Poorly graded SAND with gravel and clay
20	BR_02	6.0				1.0	1.4	3.2	9.4	8.7	23.4	18.4	12.0	7.5	3.7		11.3	100.0	15.0	73.7	11.3	23.5	16.0	7.5			SP-SC	Poorly graded SAND with gravel and clay
21	BR_02	8.0					3.0	4.3	7.3	10.5	28.4	17.0	6.4	8.2	4.6		10.3	100.0	14.6	75.1	10.3	24.8	17.2	7.6			SP-SC	Poorly graded SAND with gravel and clay
22	BR_02	9.0				1.3	3.5	5.7	6.5	9.0	23.5	19.8	10.2	7.0	3.6		9.9	100.0	17.0	73.1	9.9	26.1	17.6	8.5			SP-SC	Poorly graded SAND with gravel and clay
23	BR_02	10.0					10.9	12.4	8.7	14.2	13.3	9.2	5.4	6.8	1.9		17.2	100.0	32.0	50.8	17.2	22.2	14.3	7.9			SC	Clayey SAND with gravel
24	BR_02	12.0	0.0	0.0	0.0	2.6	0.4	3.6	19.6	35.4	4.8	1.0	0.6	1.4	1.5		29.1		26.2	44.7	29.1	32.2	19.7	12.5			SC	Clayey SAND with gravel
25	BR_02	20.0							2.3	4.0	8.4	5.5	11.2	3.8	5.0		59.8		2.3	37.9	59.8	35.4	20.3	15.1			CL	Sandy lean CLAY
26	BR_02	23.0							4.4	3.5	7.2	4.3	9.8	5.0	2.8		63.0	100.0	4.4	32.6	63.0	40.5	23.5	17.0			CL	Sandy lean CLAY
27	BR_02	28.0						1.6	2.7	4.0	5.3	3.0	2.1	3.8	5.0		72.5	100.0	4.3	23.2	72.5	38.0	18.3	19.7			CL	Sandy lean CLAY

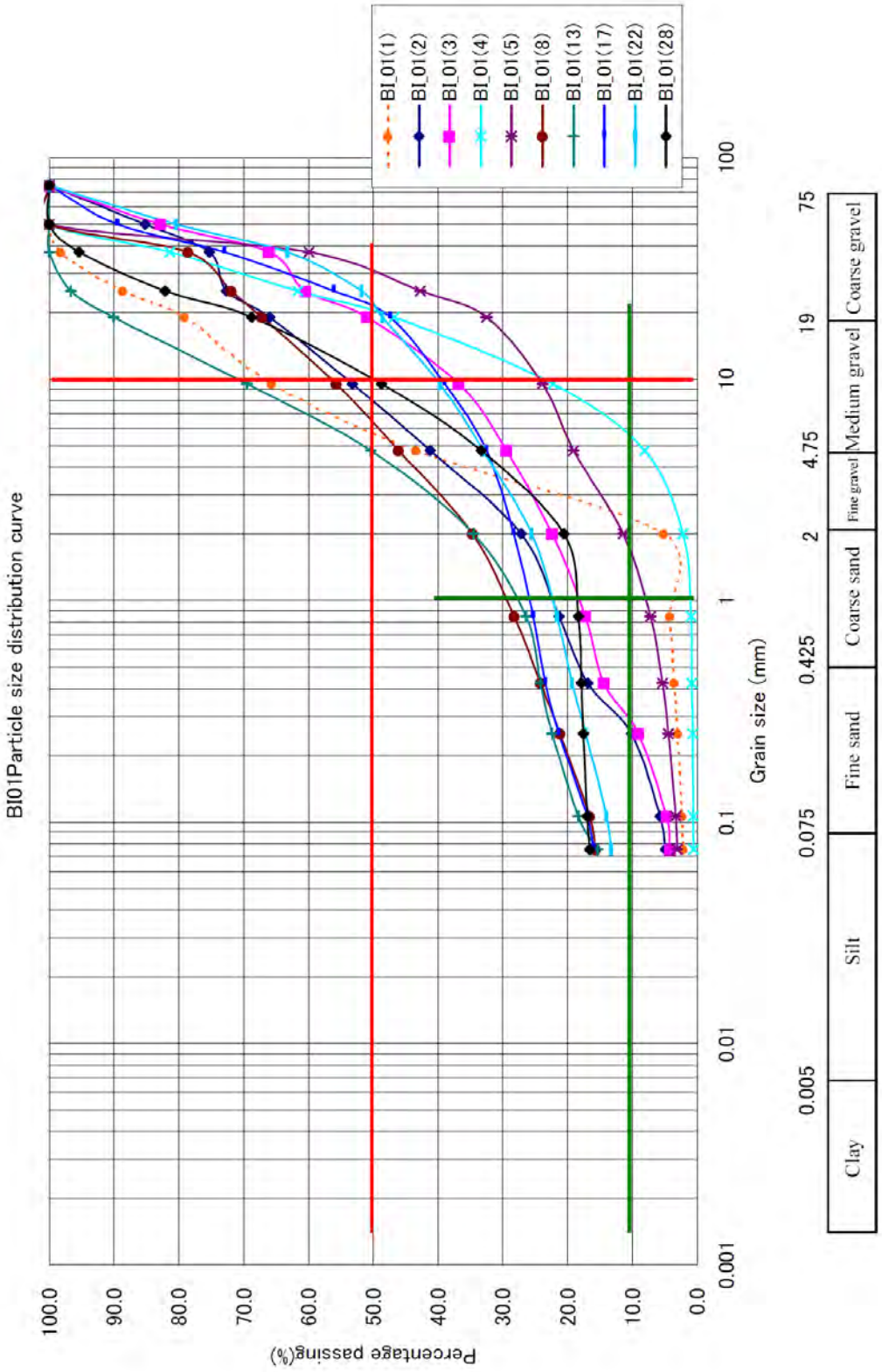
(2) Мөхлөгийн тархацын муруй

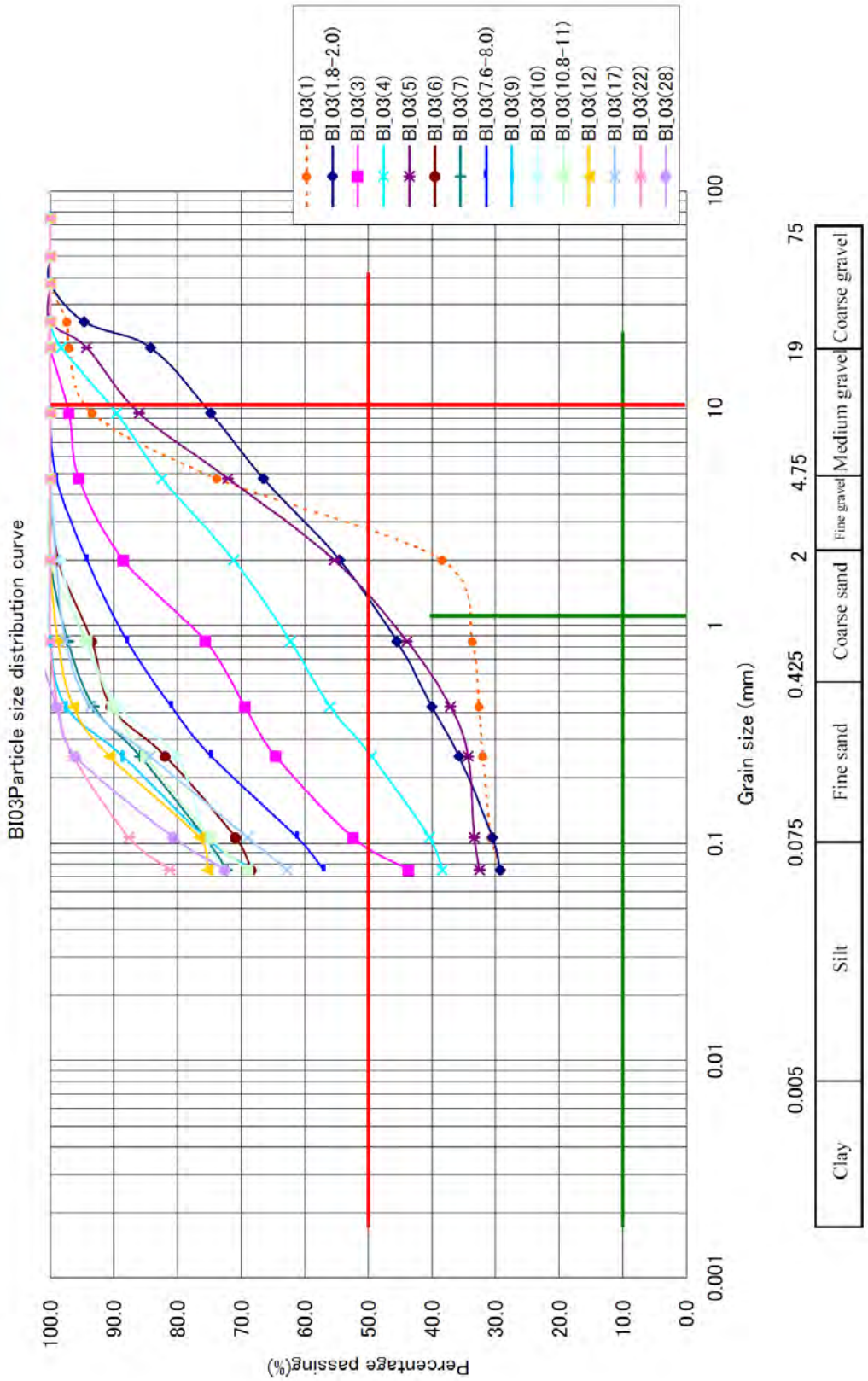


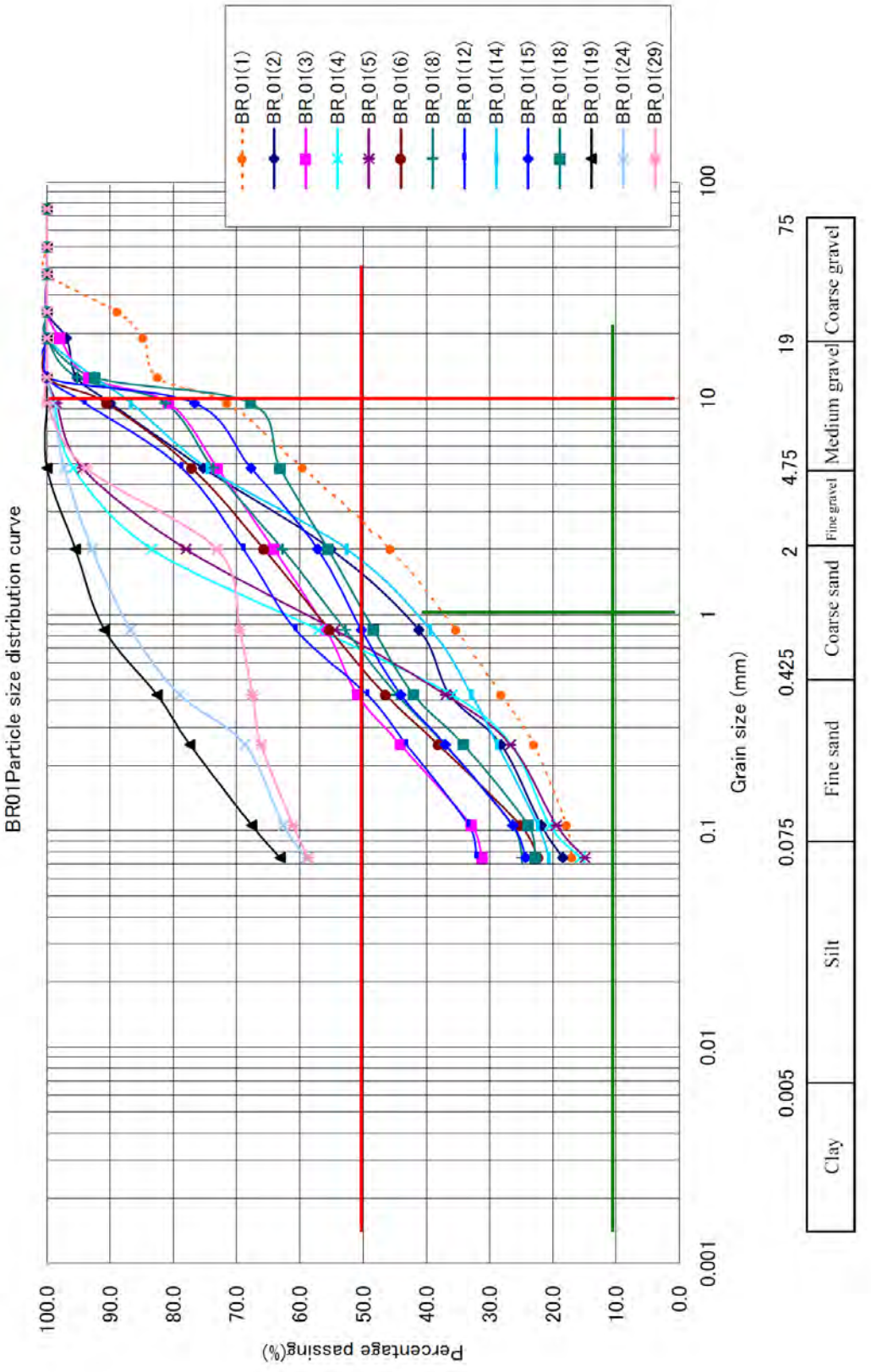

UB_BO_02 Particle size distribution curve
Percentage passing(%)
Grain size (mm)
UB_BO_02(1.0~1.2)
UB_BO_02(2)
UB_BO_02(3)
UB_BO_02(3.8~4.0)
UB_BO_02(5)
UB_BO_02(6.8~7.0)
UB_BO_02(11)
UB_BO_02(14.8~15.0)
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel

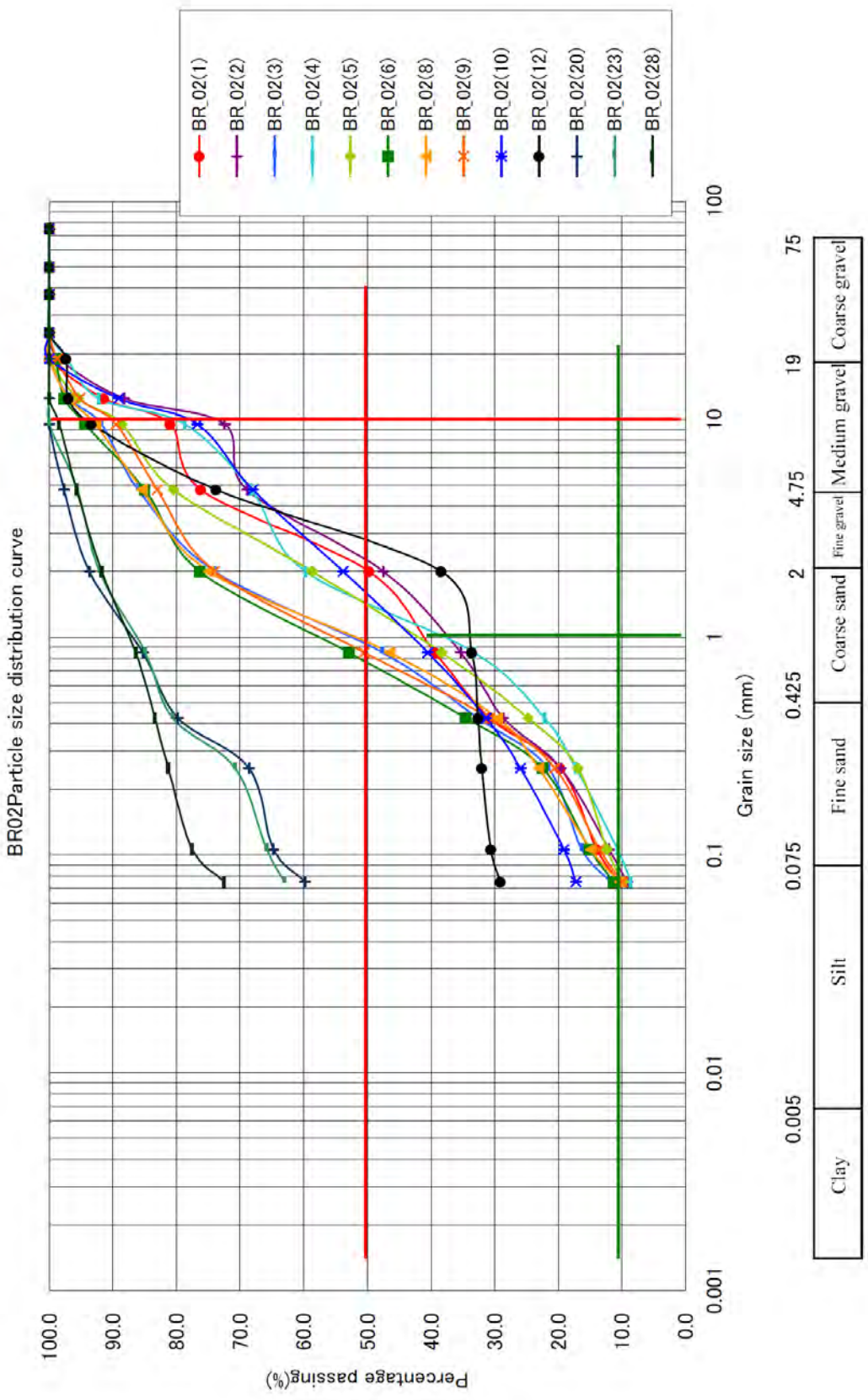

UB_BO_03 Particle size distribution curve
Percentage passing(%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Grain size (mm)
100
10
1
0.1
0.01
0.001
75
19
4.75
2
0.425
0.075
0.005
UB_BO_3(1)
UB_BO_3(2.0-2.3)
UB_BO_3(3)
UB_BO_3(4.0-4.5)
UB_BO_3(6.8-7.0)
UB_BO_3(10.0-10.5)
UB_BO_3(12)
UB_BO_3(14.5-15.0)
UB_BO_3(16.0-16.2)
UB_BO_3(20.0-20.4)
UB_BO_3(26)
UB_BO_3(29)
UB_BO_3()
UB_BO_3()
UB_BO_3()
UB_BO_3()
UB_BO_3()
UB_BO_3()
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel

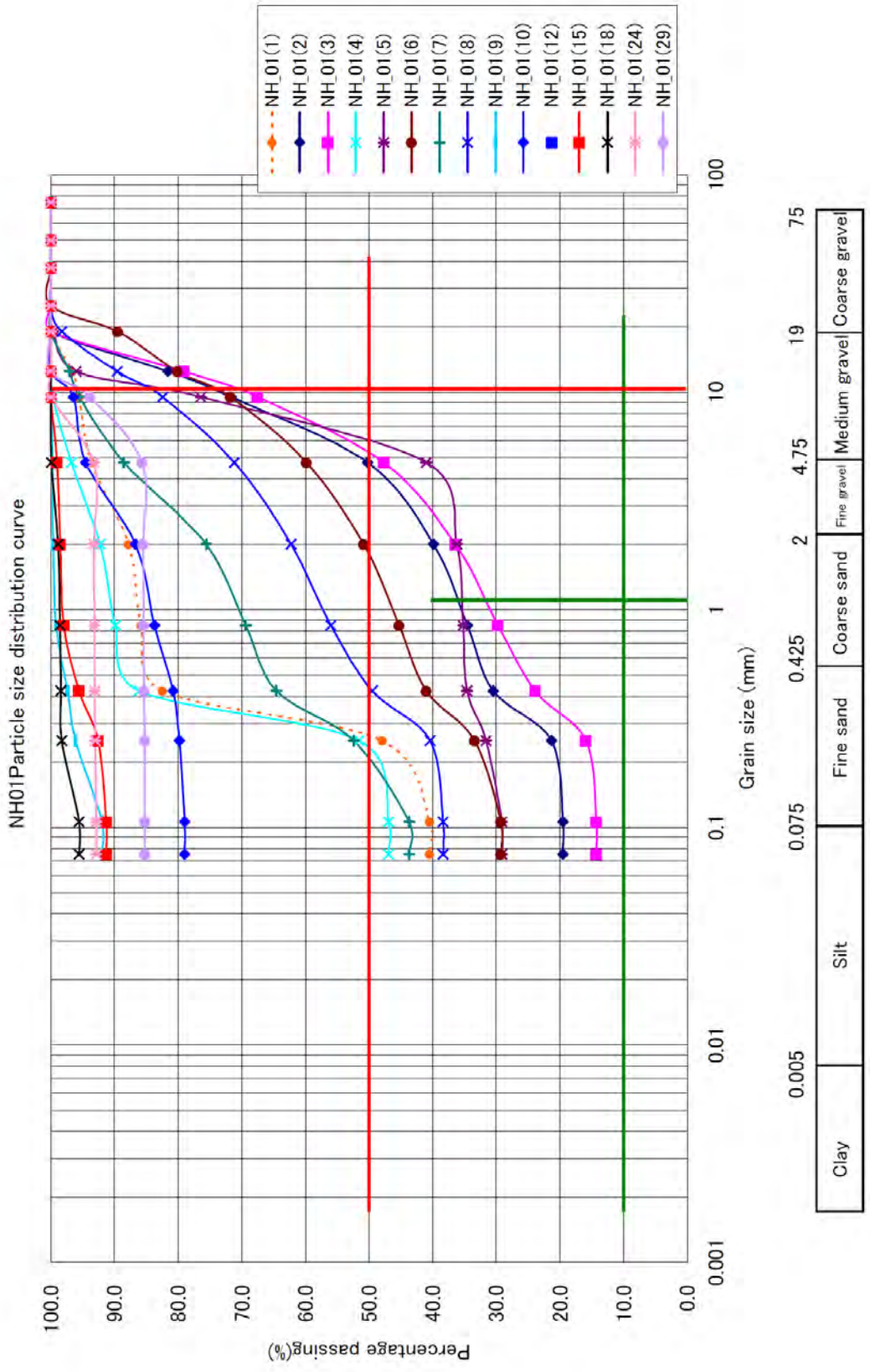

UB_BO_04 Particle size distribution curve
Percentage passing(%)
Grain size (mm))
UB_BO_04(1)
UB_BO_04(2)
UB_BO_04(2.7-3.2)
UB_BO_04(4.0-4.5)
UB_BO_04(5)
UB_BO_04(6)
UB_BO_04(7)
UB_BO_04(8)
UB_BO_04(8.8-9.2)
UB_BO_04(10)
UB_BO_04(14.0-14.2)
UB_BO_04(21.5-22.0)
UB_BO_04(23.8)
UB_BO_04(25.0-25.3)
UB_BO_04(29.6-30.0)
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel

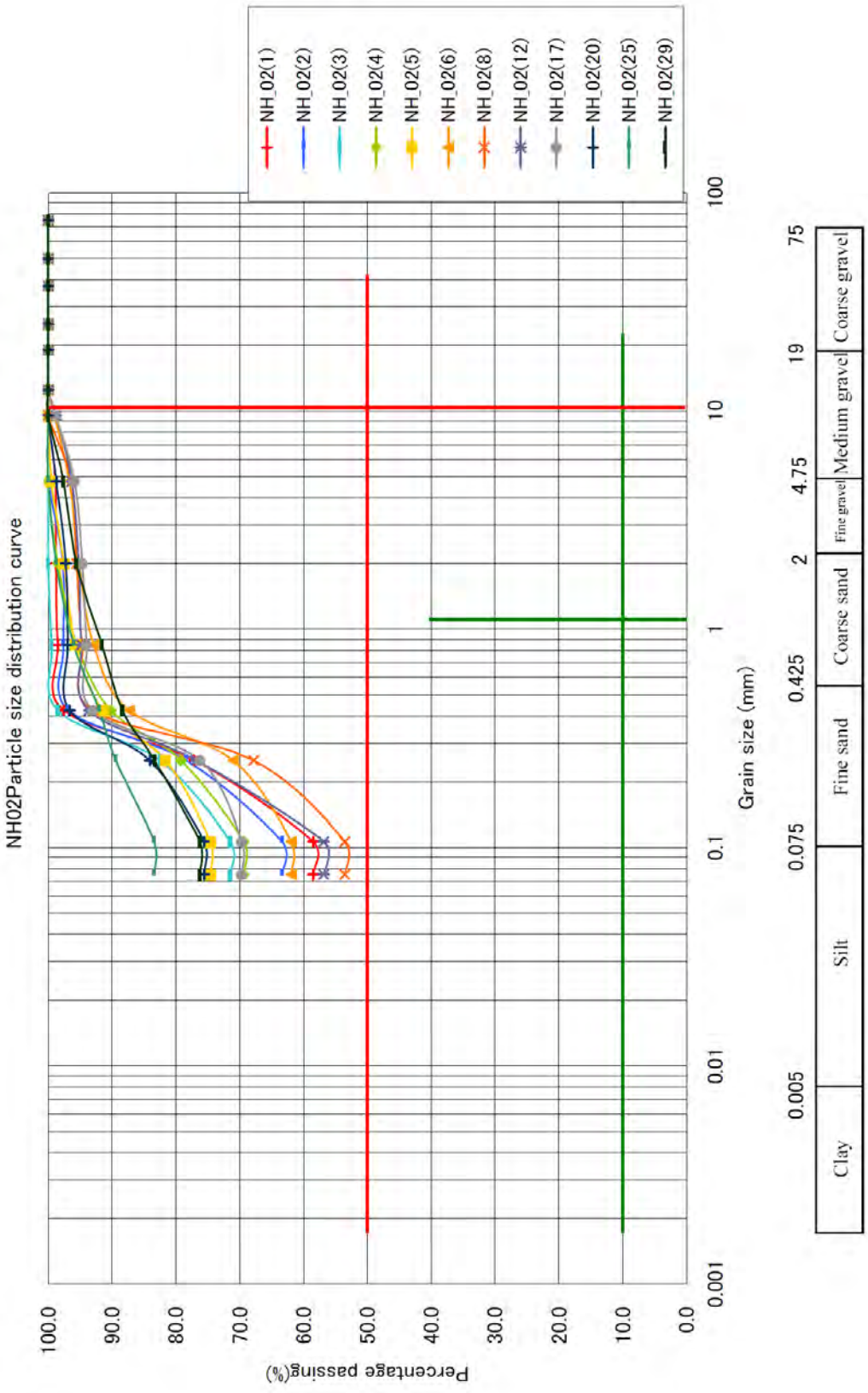

BI01Particle size distribution curve
Percentage passing(%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Grain size (mm)
0.001
0.01
0.1
1
10
100
0.005
0.075
0.425
2
4.75
19
75
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel
BI_01(1)
BI_01(2)
BI_01(3)
BI_01(4)
BI_01(5)
BI_01(8)
BI_01(13)
BI_01(17)
BI_01(22)
BI_01(28)


BI03Particle size distribution curve
Percentage passing(%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Grain size (mm)
0.001
0.01
0.1
1
10
100
BI_03(1)
BI_03(1.8-2.0)
BI_03(3)
BI_03(4)
BI_03(5)
BI_03(6)
BI_03(7)
BI_03(7.6-8.0)
BI_03(9)
BI_03(10)
BI_03(10.8-11)
BI_03(12)
BI_03(17)
BI_03(22)
BI_03(28)
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel
0.005
0.075
0.425
2
4.75
19
75


BR01Particle size distribution curve
Percentage passing(%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Grain size (mm)
0.001
0.01
0.1
1
10
100
0.005
0.075
0.425
2
4.75
19
75
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel
BR_01(1)
BR_01(2)
BR_01(3)
BR_01(4)
BR_01(5)
BR_01(6)
BR_01(8)
BR_01(12)
BR_01(14)
BR_01(15)
BR_01(18)
BR_01(19)
BR_01(24)
BR_01(29)


BR02Particle size distribution curve
BR_02(1)
BR_02(2)
BR_02(3)
BR_02(4)
BR_02(5)
BR_02(6)
BR_02(8)
BR_02(9)
BR_02(10)
BR_02(12)
BR_02(20)
BR_02(23)
BR_02(28)
Percentage passing(%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Grain size (mm)
100
10
1
0.1
0.01
0.001
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel
0.005
0.075
0.425
2
4.75
19
75


NH01Particle size distribution curve
Percentage passing(%)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Grain size (mm)
0.001
0.01
0.1
1
10
100
NH_01(1)
NH_01(2)
NH_01(3)
NH_01(4)
NH_01(5)
NH_01(6)
NH_01(7)
NH_01(8)
NH_01(9)
NH_01(10)
NH_01(12)
NH_01(15)
NH_01(18)
NH_01(24)
NH_01(29)
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel
0.005
0.075
0.425
2
4.75
19
75


NH02Particle size distribution curve
Percentage passing(%)
Grain size (mm)
NH_02(1)
NH_02(2)
NH_02(3)
NH_02(4)
NH_02(5)
NH_02(6)
NH_02(8)
NH_02(12)
NH_02(17)
NH_02(20)
NH_02(25)
NH_02(29)
Clay
Silt
Fine sand
Coarse sand
Fine gravel
Medium gravel
Coarse gravel

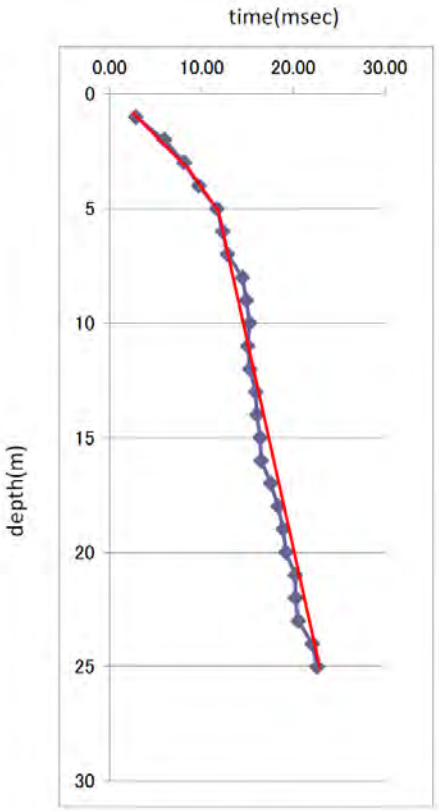
1.3.4 Цооногийн каротаж

(1) Цооногийн каротаж (PS Logging)

UB_BO_01_P&S

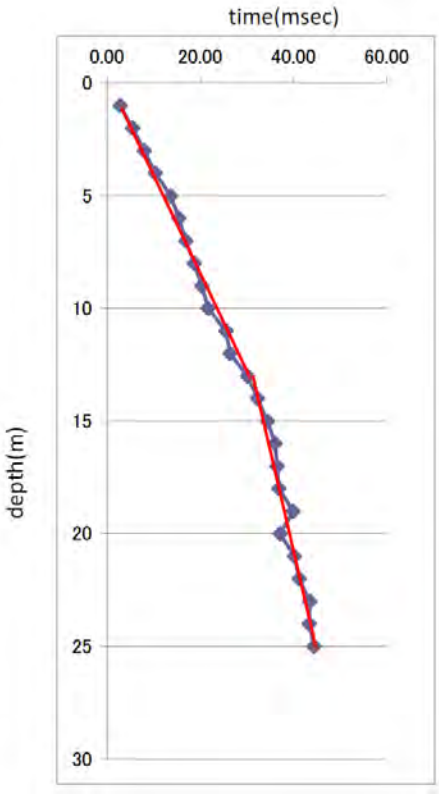
P-wave

offset(m)	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	14.5	14.50	5.10	**2.84**	1	
2	16	32.00	5.39	**5.94**	2	380
3	15.75	47.25	5.83	**8.10**	3	
4	15.5	62.00	6.40	**9.68**	4	561
5	16.5	82.50	7.07	**11.67**	5	
6	16	96.00	7.81	**12.29**	6	
7	15.75	110.25	8.60	**12.82**	7	
8	17	136.00	9.43	**14.42**	8	
9	17	153.00	10.30	**14.86**	9	
10	17	170.00	11.18	**15.21**	10	
11	16.5	181.50	12.08	**15.02**	11	
12	16.5	198.00	13.00	**15.23**	12	
13	17	221.00	13.93	**15.87**	13	
14	17	238.00	14.87	**16.01**	14	
15	17.25	258.75	15.81	**16.36**	15	1837
16	17.25	276.00	16.76	**16.46**	16	
17	18.25	310.25	17.72	**17.51**	17	
18	19	342.00	18.68	**18.31**	18	
19	19.5	370.50	19.65	**18.86**	19	
20	19.75	395.00	20.62	**19.16**	20	
21	20.75	435.75	21.59	**20.19**	21	
22	20.75	456.50	22.56	**20.23**	22	
23	21	483.00	23.54	**20.52**	23	
24	22.5	540.00	24.52	**22.03**	24	
25	23	575.00	25.50	**22.55**	25	



S-wave

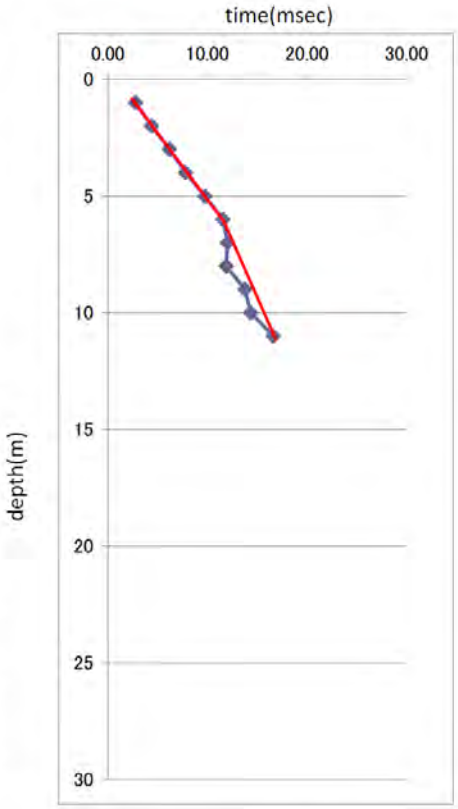
offset(m)	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	14.25	14.25	5.10	**2.79**	1	
2	14.75	29.50	5.39	**5.48**	2	
3	15.5	46.50	5.83	**7.97**	3	
4	16.5	66.00	6.40	**10.31**	4	
5	19.25	96.25	7.07	**13.61**	5	
6	20	120.00	7.81	**15.36**	6	
7	20.75	145.25	8.60	**16.88**	7	439
8	22	176.00	9.43	**18.66**	8	
9	23.25	209.25	10.30	**20.32**	9	
10	24.25	242.50	11.18	**21.69**	10	
11	28	308.00	12.08	**25.49**	11	
12	28.5	342.00	13.00	**26.31**	12	
13	32.25	419.25	13.93	**30.10**	13	
14	34.25	479.50	14.87	**32.25**	14	
15	36.25	543.75	15.81	**34.39**	15	
16	37.75	604.00	16.76	**36.03**	16	
17	38	646.00	17.72	**36.46**	17	
18	38.25	688.50	18.68	**36.85**	18	
19	41.25	783.75	19.65	**39.89**	19	841
20	38.25	765.00	20.62	**37.11**	20	
21	41.25	866.25	21.59	**40.13**	21	
22	42.25	929.50	22.56	**41.20**	22	
23	44.5	1023.50	23.54	**43.48**	23	
24	44.24	1061.76	24.52	**43.31**	24	
25	45.25	1131.25	25.50	**44.37**	25	



UB_BO_02_P&S

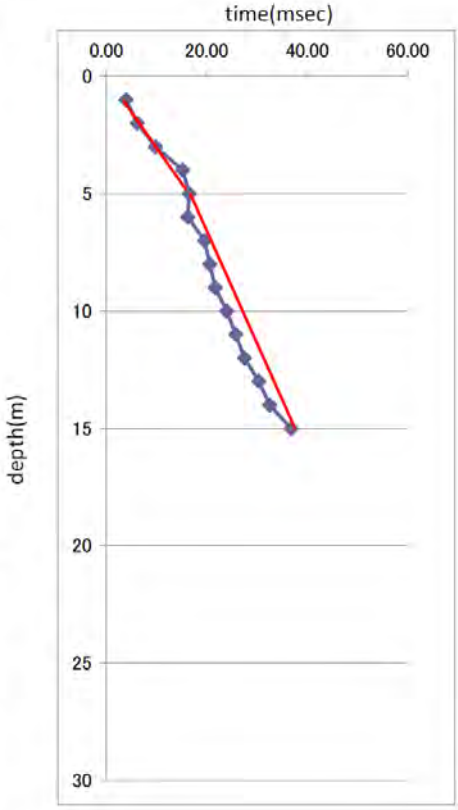
P-wave

offset(m)	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	14	14.00	5.10	**2.75**	1	
2	11.75	23.50	5.39	**4.36**	2	
3	12	36.00	5.83	**6.17**	3	570
4	12.5	50.00	6.40	**7.81**	4	
5	13.75	68.75	7.07	**9.72**	5	
6	15	90.00	7.81	**11.52**	6	
7	14.75	103.25	8.60	**12.00**	7	
8	14	112.00	9.43	**11.87**	8	
9	15.75	141.75	10.30	**13.77**	9	982
10	16	160.00	11.18	**14.31**	10	
11	18.25	200.75	12.08	**16.61**	11	
12		0.00	13.00		12	
13		0.00	13.93		13	
14		0.00	14.87		14	
15		0.00	15.81		15	
16		0.00	16.76		16	
17		0.00	17.72		17	
18		0.00	18.68		18	
19		0.00	19.65		19	
20		0.00	20.62		20	
21		0.00	21.59		21	
22		0.00	22.56		22	
23		0.00	23.54		23	
24		0.00	24.52		24	
25		0.00	25.50		25	
26		0.00	26.48		26	
27		0.00	27.46		27	
28		0.00	28.44		28	
29		0.00	29.43		29	
30		0.00	30.41		30	



S-wave

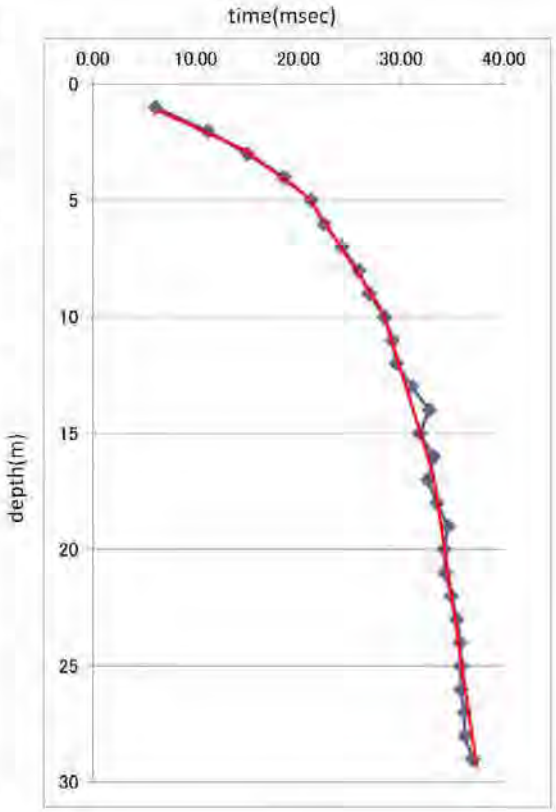
offset(m)	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	19.75	19.75	5.10	**3.87**	1	
2	16.5	33.00	5.39	**6.13**	2	
3	19	57.00	5.83	**9.78**	3	318
4	24.25	97.00	6.40	**15.15**	4	
5	23.25	116.25	7.07	**16.44**	5	
6	21	126.00	7.81	**16.13**	6	
7	24	168.00	8.60	**19.53**	7	
8	24.25	194.00	9.43	**20.56**	8	
9	24.75	222.75	10.30	**21.64**	9	
10	26.75	267.50	11.18	**23.93**	10	
11	28.25	310.75	12.08	**25.72**	11	492
12	29.75	357.00	13.00	**27.46**	12	
13	32.5	422.50	13.93	**30.33**	13	
14	34.5	483.00	14.87	**32.49**	14	
15	38.75	581.25	15.81	**36.76**	15	
16		0.00	16.76		16	
17		0.00	17.72		17	
18		0.00	18.68		18	
19		0.00	19.65		19	
20		0.00	20.62		20	
21		0.00	21.59		21	
22		0.00	22.56		22	
23		0.00	23.54		23	
24		0.00	24.52		24	
25		0.00	25.50		25	
26		0.00	26.48		26	
27		0.00	27.46		27	
28		0.00	28.44		28	
29		0.00	29.43		29	
30		0.00	30.41		30	



UB_BO_03_P&S

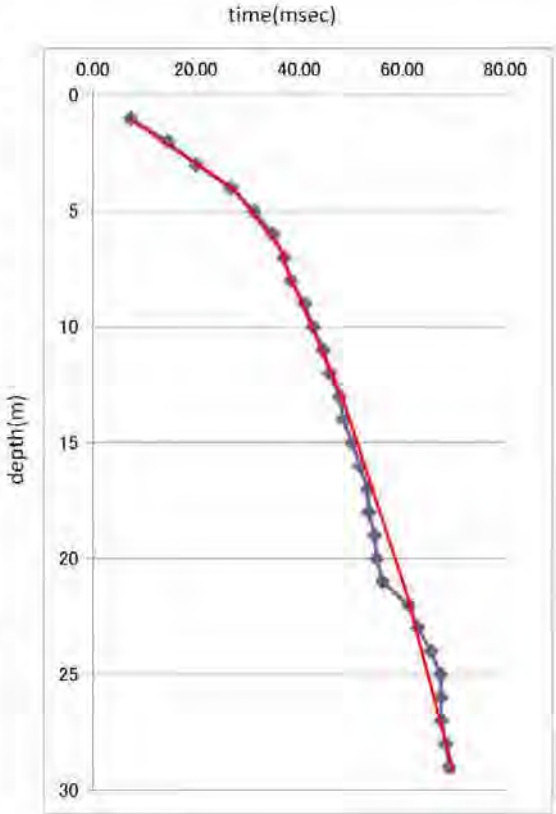
P-wave

offset(m	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	31	31.00	5.10	**6.08**	1	
2	30	60.00	5.39	**11.14**	2	223
3	29.25	87.75	5.83	**15.05**	3	
4	29.75	119.00	6.40	**18.58**	4	324
5	30	150.00	7.07	**21.21**	5	
6	29.25	175.50	7.81	**22.47**	6	
7	29.75	208.25	8.60	**24.21**	7	
8	30.5	244.00	9.43	**25.86**	8	696
9	30.75	276.75	10.30	**26.88**	9	
10	31.75	317.50	11.18	**28.40**	10	
11	32	352.00	12.08	**29.13**	11	
12	32	384.00	13.00	**29.54**	12	
13	33.25	432.25	13.93	**31.03**	13	
14	34.75	486.50	14.87	**32.73**	14	1659
15	33.5	502.50	15.81	**31.78**	15	
16	34.75	556.00	16.76	**33.17**	16	
17	34	578.00	17.72	**32.62**	17	
18	34.75	625.50	18.68	**33.48**	18	
19	35.75	679.25	19.65	**34.57**	19	
20	35.25	705.00	20.62	**34.20**	20	
21	35.25	740.25	21.59	**34.29**	21	
22	35.75	786.50	22.56	**34.86**	22	
23	36.25	833.75	23.54	**35.42**	23	2767
24	36.5	876.00	24.52	**35.73**	24	
25	36.5	912.50	25.50	**35.79**	25	
26	36.5	949.00	26.48	**35.84**	26	
27	36.75	992.25	27.46	**36.14**	27	
28	36.75	1029.00	28.44	**36.18**	28	
29	37.5	1087.50	29.43	**36.95**	29	



S-wave

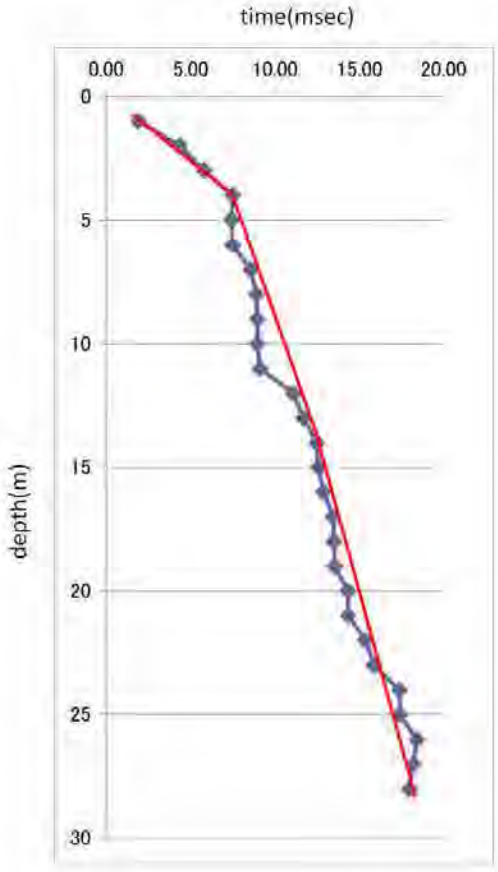
offset(m	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	37.25	37.25	5.10	**7.31**	1	
2	39	78.00	5.39	**14.48**	2	155
3	39	117.00	5.83	**20.07**	3	
4	42.75	171.00	6.40	**26.71**	4	
5	44.25	221.25	7.07	**31.29**	5	
6	45.5	273.00	7.81	**34.95**	6	291
7	45.5	318.50	8.60	**37.02**	7	
8	45.25	362.00	9.43	**38.37**	8	
9	47	423.00	10.30	**41.09**	9	
10	47.75	477.50	11.18	**42.71**	10	555
11	49	539.00	12.08	**44.61**	11	
12	49.75	597.00	13.00	**45.92**	12	
13	51.25	666.25	13.93	**47.83**	13	
14	51.5	721.00	14.87	**48.50**	14	
15	53	795.00	15.81	**50.28**	15	
16	54.25	868.00	16.76	**51.78**	16	
17	55.5	943.50	17.72	**53.24**	17	
18	55.5	999.00	18.68	**53.48**	18	674
19	56.5	1073.50	19.65	**54.64**	19	
20	56.75	1135.00	20.62	**55.06**	20	
21	57.75	1212.75	21.59	**56.18**	21	
22	62.75	1380.50	22.56	**61.19**	22	
23	64.5	1483.50	23.54	**63.03**	23	
24	67	1608.00	24.52	**65.59**	24	
25	68.75	1718.75	25.50	**67.41**	25	
26	68.75	1787.50	26.48	**67.51**	26	898
27	68.75	1856.25	27.46	**67.60**	27	
28	69.5	1946.00	28.44	**68.42**	28	
29	70	2030.00	29.43	**68.98**	29	



UB_BO_04_P&S

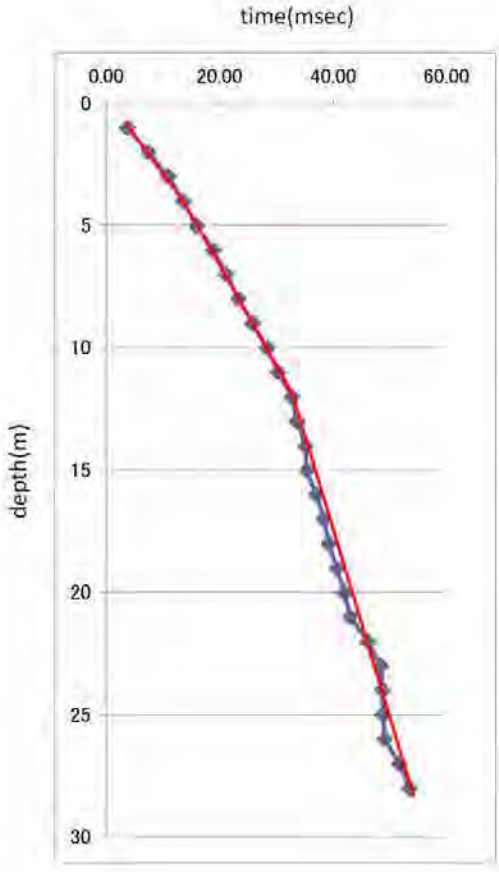
P-wave

offset(m	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	9.75	9.75	5.10	**1.91**	1	
2	11.75	23.50	5.39	**4.36**	2	537
3	11.25	33.75	5.83	**5.79**	3	
4	12.00	48.00	6.40	**7.50**	4	
5	10.50	52.50	7.07	**7.42**	5	
6	9.75	58.50	7.81	**7.49**	6	
7	10.50	73.50	8.60	**8.54**	7	
8	10.50	84.00	9.43	**8.90**	8	
9	10.25	92.25	10.30	**8.96**	9	2007
10	10.00	100.00	11.18	**8.94**	10	
11	10.00	110.00	12.08	**9.10**	11	
12	12.00	144.00	13.00	**11.08**	12	
13	12.50	162.50	13.93	**11.67**	13	
14	13.25	185.50	14.87	**12.48**	14	
15	13.25	198.75	15.81	**12.57**	15	
16	13.50	216.00	16.76	**12.89**	16	
17	14.00	238.00	17.72	**13.43**	17	
18	14.00	252.00	18.68	**13.49**	18	
19	14.00	266.00	19.65	**13.54**	19	
20	14.75	295.00	20.62	**14.31**	20	
21	14.75	309.75	21.59	**14.35**	21	2551
22	15.75	346.50	22.56	**15.36**	22	
23	16.25	373.75	23.54	**15.88**	23	
24	17.75	426.00	24.52	**17.38**	24	
25	17.75	443.75	25.50	**17.41**	25	
26	18.75	487.50	26.48	**18.41**	26	
27	18.50	499.50	27.46	**18.19**	27	
28	18.25	511.00	28.44	**17.97**	28	



S-wave

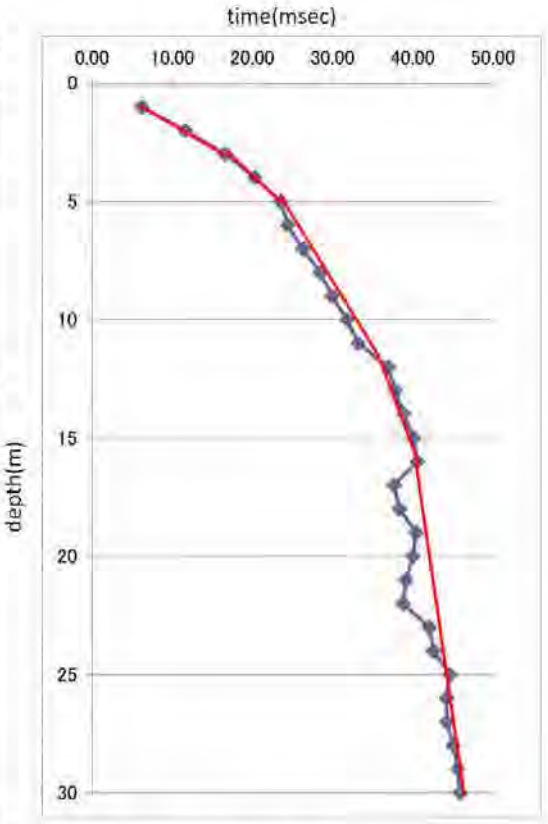
offset(m	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	19.00	19.00	5.10	**3.73**	1	
2	20.00	40.00	5.39	**7.43**	2	304
3	21.25	63.75	5.83	**10.93**	3	
4	21.75	87.00	6.40	**13.59**	4	
5	22.50	112.50	7.07	**15.91**	5	
6	24.50	147.00	7.81	**18.82**	6	
7	26.00	182.00	8.60	**21.16**	7	
8	27.50	220.00	9.43	**23.32**	8	
9	29.50	265.50	10.30	**25.79**	9	417
10	31.75	317.50	11.18	**28.40**	10	
11	33.25	365.75	12.08	**30.27**	11	
12	35.50	426.00	13.00	**32.77**	12	
13	36.00	468.00	13.93	**33.60**	13	
14	37.25	521.50	14.87	**35.08**	14	
15	37.25	558.75	15.81	**35.34**	15	
16	38.75	620.00	16.76	**36.99**	16	
17	40.00	680.00	17.72	**38.37**	17	
18	40.75	733.50	18.68	**39.26**	18	
19	42.00	798.00	19.65	**40.62**	19	
20	43.25	865.00	20.62	**41.96**	20	
21	44.25	929.25	21.59	**43.05**	21	775
22	47.25	1039.50	22.56	**46.08**	22	
23	49.50	1138.50	23.54	**48.37**	23	
24	49.75	1194.00	24.52	**48.70**	24	
25	49.75	1243.75	25.50	**48.78**	25	
26	50.00	1300.00	26.48	**49.10**	26	
27	52.50	1417.50	27.46	**51.62**	27	
28	54.25	1519.00	28.44	**53.41**	28	



NH_01_P&S

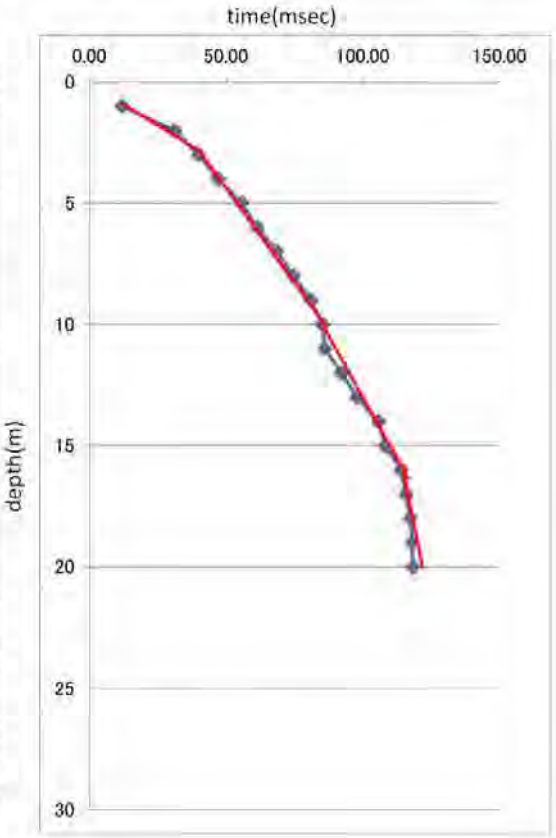
P-wave

offset(m)	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	31.25	31.25	5.10	**6.13**	1	
2	31.25	62.50	5.39	**11.61**	2	191
3	32.25	96.75	5.83	**16.59**	3	
4	32.5	130.00	6.40	**20.30**	4	256
5	33.25	166.25	7.07	**23.51**	5	
6	31.75	190.50	7.81	**24.39**	6	
7	32.25	225.75	8.60	**26.24**	7	
8	33.5	268.00	9.43	**28.41**	8	
9	34.25	308.25	10.30	**29.94**	9	522
10	35.5	355.00	11.18	**31.75**	10	
11	36.5	401.50	12.08	**33.23**	11	
12	40	480.00	13.00	**36.92**	12	
13	40.5	526.50	13.93	**37.80**	13	
14	41.25	577.50	14.87	**38.85**	14	1098
15	42.25	633.75	15.81	**40.08**	15	
16	42.5	680.00	16.76	**40.57**	16	
17	39.25	667.25	17.72	**37.66**	17	
18	39.75	715.50	18.68	**38.30**	18	
19	41.75	793.25	19.65	**40.38**	19	
20	41.25	825.00	20.62	**40.02**	20	
21	40.25	845.25	21.59	**39.16**	21	
22	39.75	874.50	22.56	**38.76**	22	
23	43	989.00	23.54	**42.02**	23	2641
24	43.5	1044.00	24.52	**42.59**	24	
25	45.5	1137.50	25.50	**44.62**	25	
26	45	1170.00	26.48	**44.19**	26	
27	45	1215.00	27.46	**44.25**	27	
28	45.75	1281.00	28.44	**45.04**	28	
29	46.25	1341.25	29.43	**45.58**	29	
30	46.50	1395.00	30.41	**45.87**	30	



S-wave

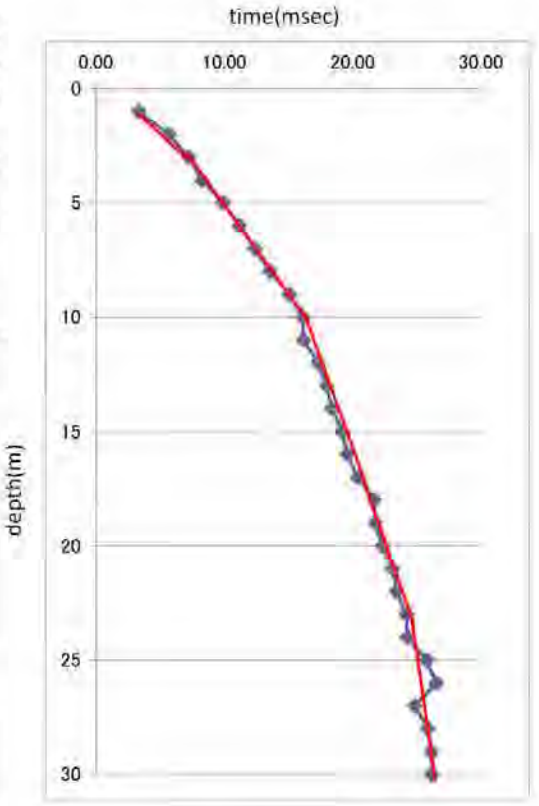
offset(m)	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	61.25	61.25	5.10	**12.01**	1	
2	83.75	167.50	5.39	**31.10**	2	72
3	77.5	232.50	5.83	**39.87**	3	
4	75.25	301.00	6.40	**47.01**	4	
5	78.75	393.75	7.07	**55.68**	5	
6	80	480.00	7.81	**61.46**	6	
7	84.25	589.75	8.60	**68.56**	7	154
8	88	704.00	9.43	**74.62**	8	
9	92.75	834.75	10.30	**81.08**	9	
10	95.25	952.50	11.18	**85.19**	10	
11	94.5	1039.50	12.08	**86.03**	11	
12	100	1200.00	13.00	**92.31**	12	
13	104.75	1361.75	13.93	**97.77**	13	208
14	112.25	1571.50	14.87	**105.71**	14	
15	114	1710.00	15.81	**108.15**	15	
16	119.5	1912.00	16.76	**114.06**	16	
17	120.75	2052.75	17.72	**115.84**	17	
18	121.75	2191.50	18.68	**117.31**	18	931
19	122	2318.00	19.65	**117.98**	19	
20	122	2440.00	20.62	**118.36**	20	
21		0.00	21.59		21	
22		0.00	22.56		22	
23		0.00	23.54		23	
24		0.00	24.52		24	
25		0.00	25.50		25	
26		0.00	26.48		26	
27		0.00	27.46		27	
28		0.00	28.44		28	
29		0.00	29.43		29	
30		0.00	30.41		30	



NH_02_P&S

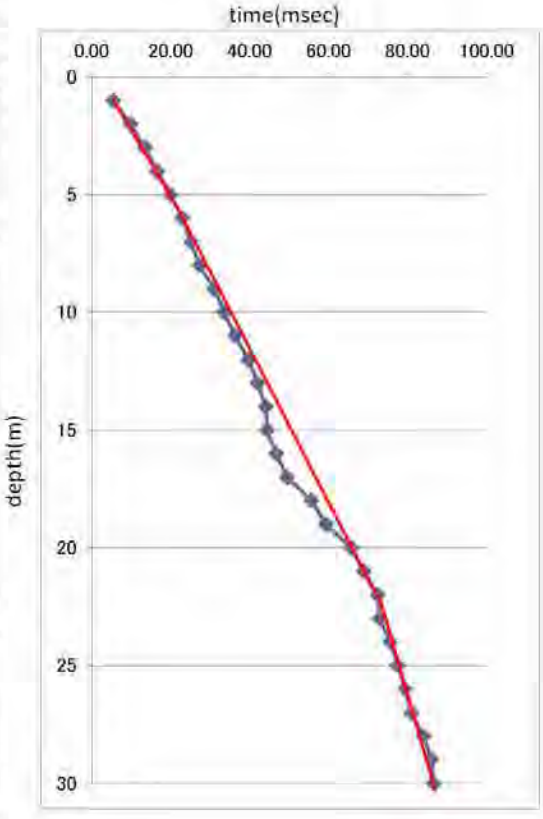
P-wave

offset(m	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	17	17.00	5.10	3.33	1	
2	15.25	30.50	5.39	5.66	2	517
3	14	42.00	5.83	7.20	3	
4	13.25	53.00	6.40	8.28	4	
5	14	70.00	7.07	9.90	5	
6	14.5	87.00	7.81	11.14	6	
7	15.25	106.75	8.60	12.41	7	787
8	16	128.00	9.43	13.57	8	
9	17.25	155.25	10.30	15.08	9	
10	18	180.00	11.18	16.10	10	
11	17.75	195.25	12.08	16.16	11	
12	18.75	225.00	13.00	17.31	12	
13	19.25	250.25	13.93	17.97	13	
14	19.5	273.00	14.87	18.36	14	1633
15	20.25	303.75	15.81	19.21	15	
16	20.5	328.00	16.76	19.57	16	
17	21.25	361.25	17.72	20.39	17	
18	22.5	405.00	18.68	21.68	18	
19	22.5	427.50	19.65	21.76	19	
20	23	460.00	20.62	22.31	20	
21	23.75	498.75	21.59	23.10	21	
22	24	528.00	22.56	23.40	22	
23	24.75	569.25	23.54	24.19	23	
24	24.75	594.00	24.52	24.23	24	2260
25	26.25	656.25	25.50	25.74	25	
26	27	702.00	26.48	26.51	26	
27	25.25	681.75	27.46	24.83	27	
28	26.25	735.00	28.44	25.84	28	
29	26.50	768.50	29.43	26.11	29	
30	26.50	795.00	30.41	26.14	30	



S-wave

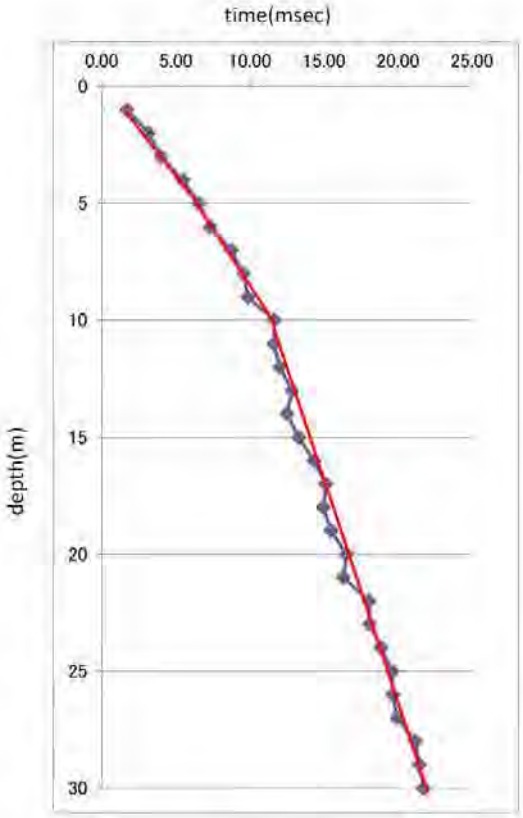
offset(m	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	27.75	27.75	5.10	5.44	1	
2	26.5	53.00	5.39	9.84	2	
3	26.25	78.75	5.83	13.51	3	287
4	26.5	106.00	6.40	16.55	4	
5	28.25	141.25	7.07	19.98	5	
6	29.75	178.50	7.81	22.85	6	
7	30.75	215.25	8.60	25.02	7	
8	32.25	258.00	9.43	27.35	8	
9	35.5	319.50	10.30	31.03	9	
10	37.5	375.00	11.18	33.54	10	
11	39.75	437.25	12.08	36.19	11	
12	43	516.00	13.00	39.69	12	
13	45	585.00	13.93	42.00	13	
14	46.75	654.50	14.87	44.03	14	
15	46.75	701.25	15.81	44.35	15	323
16	49	784.00	16.76	46.77	16	
17	51.5	875.50	17.72	49.41	17	
18	57.75	1039.50	18.68	55.64	18	
19	61.25	1163.75	19.65	59.23	19	
20	67.75	1355.00	20.62	65.73	20	
21	70.75	1485.75	21.59	68.83	21	
22	74.25	1633.50	22.56	72.40	22	
23	74.5	1713.50	23.54	72.80	23	
24	77.25	1854.00	24.52	75.63	24	
25	79	1975.00	25.50	77.47	25	
26	80.75	2099.50	26.48	79.30	26	565
27	82.25	2220.75	27.46	80.87	27	
28	85.25	2387.00	28.44	83.92	28	
29	87.25	2530.25	29.43	85.98	29	
30	87.75	2632.50	30.41	86.56	30	



BI_01_P&S

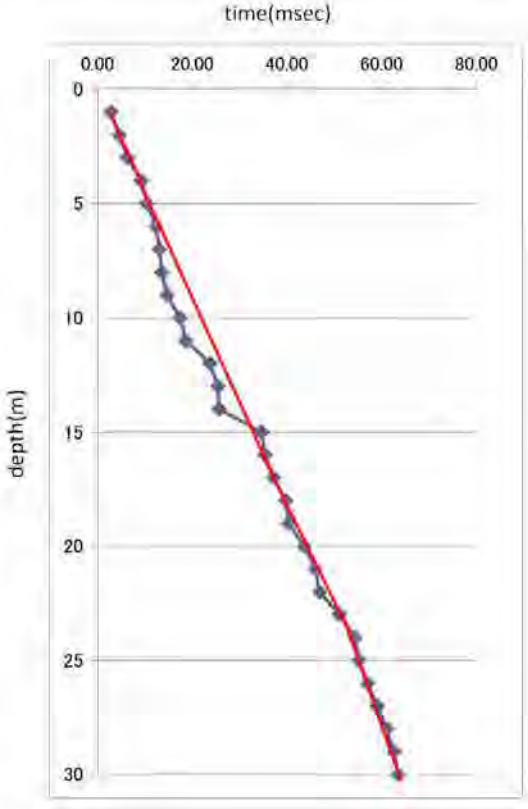
P-wave

offset(m	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	8.5	8.50	5.10	**1.67**	1	
2	8.5	17.00	5.39	**3.16**	2	
3	7.75	23.25	5.83	**3.99**	3	821
4	8.75	35.00	6.40	**5.47**	4	
5	9.25	46.25	7.07	**6.54**	5	
6	9.5	57.00	7.81	**7.30**	6	
7	10.75	75.25	8.60	**8.75**	7	
8	11.25	90.00	9.43	**9.54**	8	983
9	11.25	101.25	10.30	**9.83**	9	
10	13	130.00	11.18	**11.63**	10	
11	12.75	140.25	12.08	**11.61**	11	
12	13	156.00	13.00	**12.00**	12	
13	13.75	178.75	13.93	**12.83**	13	
14	13.25	185.50	14.87	**12.48**	14	
15	14	210.00	15.81	**13.28**	15	
16	15	240.00	16.76	**14.32**	16	
17	15.75	267.75	17.72	**15.11**	17	
18	15.5	279.00	18.68	**14.93**	18	
19	16	304.00	19.65	**15.47**	19	
20	17	340.00	20.62	**16.49**	20	1985
21	16.75	351.75	21.59	**16.29**	21	
22	18.5	407.00	22.56	**18.04**	22	
23	18.5	425.50	23.54	**18.08**	23	
24	19.25	462.00	24.52	**18.85**	24	
25	20	500.00	25.50	**19.61**	25	
26	20	520.00	26.48	**19.64**	26	
27	20.25	546.75	27.46	**19.91**	27	
28	21.5	602.00	28.44	**21.17**	28	
29	21.75	630.75	29.43	**21.43**	29	
30	22	660.00	30.41	**21.70**	30	



S-wave

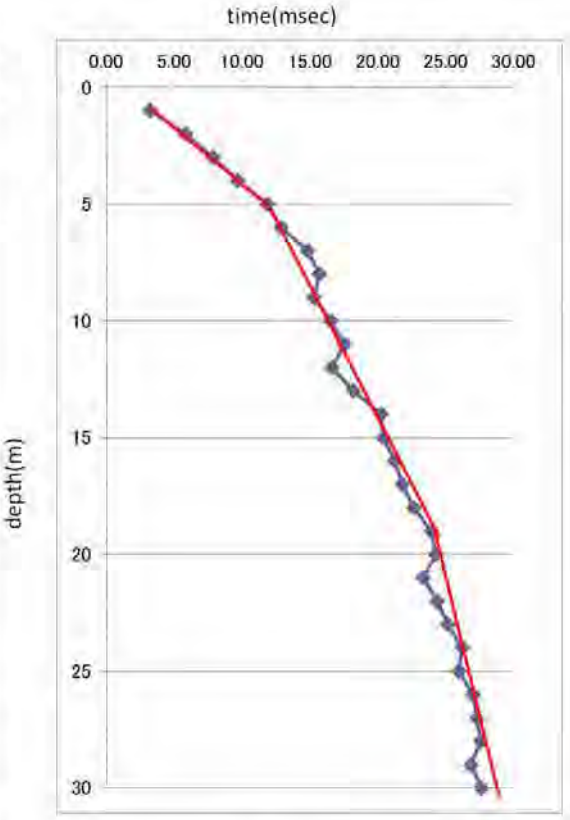
offset(m	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	14.50	14.50	5.10	**2.84**	1	
2	12.25	24.50	5.39	**4.55**	2	471
3	12.25	36.75	5.83	**6.30**	3	
4	14.75	59.00	6.40	**9.21**	4	
5	14.75	73.75	7.07	**10.43**	5	
6	16.00	96.00	7.81	**12.29**	6	
7	16.00	112.00	8.60	**13.02**	7	
8	16.00	128.00	9.43	**13.57**	8	
9	16.75	150.75	10.30	**14.64**	9	442
10	19.50	195.00	11.18	**17.44**	10	
11	20.50	225.50	12.08	**18.66**	11	
12	25.75	309.00	13.00	**23.77**	12	
13	27.25	354.25	13.93	**25.43**	13	
14	27.25	381.50	14.87	**25.66**	14	
15	36.50	547.50	15.81	**34.63**	15	
16	37.00	592.00	16.76	**35.32**	16	
17	38.75	658.75	17.72	**37.18**	17	
18	41.25	742.50	18.68	**39.75**	18	
19	41.75	793.25	19.65	**40.38**	19	
20	45.00	900.00	20.62	**43.66**	20	
21	47.25	992.25	21.59	**45.97**	21	
22	48.00	1056.00	22.56	**46.81**	22	522
23	52.25	1201.75	23.54	**51.06**	23	
24	55.50	1332.00	24.52	**54.33**	24	
25	56.25	1406.25	25.50	**55.16**	25	
26	58.00	1508.00	26.48	**56.96**	26	
27	60.00	1620.00	27.46	**59.00**	27	
28	62.00	1736.00	28.44	**61.03**	28	
29	63.50	1841.50	29.43	**62.58**	29	
30	64.25	1927.50	30.41	**63.38**	30	



BI_03_P&S

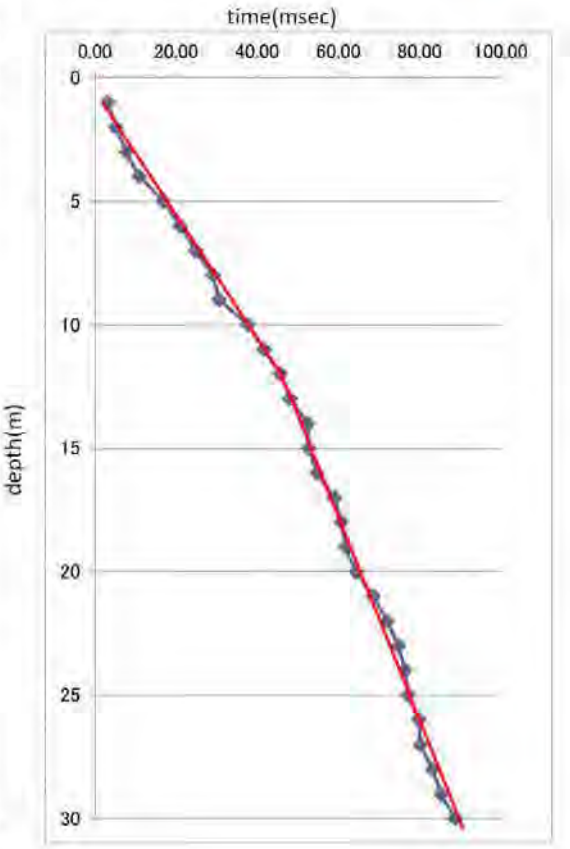
P-wave

offset(m	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	16.5	16.50	5.10	**3.24**	1	
2	15.75	31.50	5.39	**5.85**	2	
3	15.25	45.75	5.83	**7.85**	3	465
4	15.50	62.00	6.40	**9.68**	4	
5	16.75	83.75	7.07	**11.84**	5	
6	16.75	100.50	7.81	**12.87**	6	
7	18.25	127.75	8.60	**14.85**	7	
8	18.50	148.00	9.43	**15.69**	8	
9	17.50	157.50	10.30	**15.30**	9	
10	18.50	185.00	11.18	**16.55**	10	
11	19.25	211.75	12.08	**17.52**	11	
12	18.00	216.00	13.00	**16.62**	12	
13	19.50	253.50	13.93	**18.20**	13	1158
14	21.50	301.00	14.87	**20.25**	14	
15	21.50	322.50	15.81	**20.40**	15	
16	22.25	356.00	16.76	**21.24**	16	
17	22.75	386.75	17.72	**21.83**	17	
18	23.50	423.00	18.68	**22.64**	18	
19	24.75	470.25	19.65	**23.94**	19	
20	25.00	500.00	20.62	**24.25**	20	
21	24.00	504.00	21.59	**23.35**	21	
22	25.00	550.00	22.56	**24.38**	22	
23	25.75	592.25	23.54	**25.16**	23	
24	26.75	642.00	24.52	**26.19**	24	
25	26.50	662.50	25.50	**25.99**	25	2417
26	27.50	715.00	26.48	**27.01**	26	
27	27.75	749.25	27.46	**27.29**	27	
28	28.00	784.00	28.44	**27.56**	28	
29	27.25	790.25	29.43	**26.85**	29	
30	28.00	840.00	30.41	**27.62**	30	



S-wave

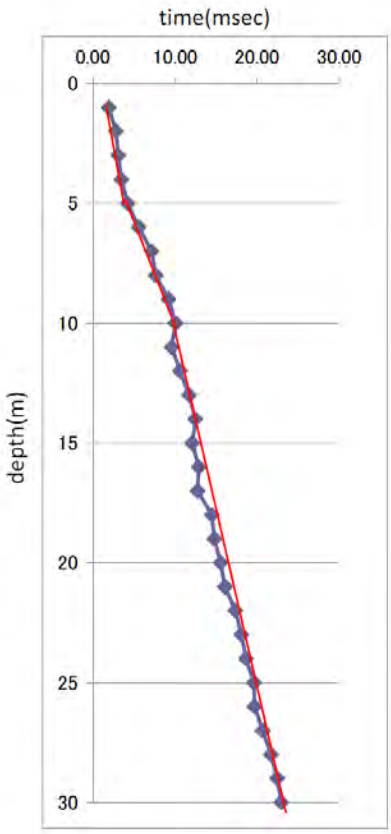
offset(m	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	16.25	16.25	5.10	**3.19**	1	
2	13.75	27.50	5.39	**5.11**	2	
3	15	45.00	5.83	**7.72**	3	
4	17.25	69.00	6.40	**10.78**	4	
5	23.75	118.75	7.07	**16.79**	5	
6	27.25	163.50	7.81	**20.93**	6	
7	30.5	213.50	8.60	**24.82**	7	259
8	34.25	274.00	9.43	**29.04**	8	
9	35	315.00	10.30	**30.60**	9	
10	42	420.00	11.18	**37.57**	10	
11	45.75	503.25	12.08	**41.65**	11	
12	49.5	594.00	13.00	**45.69**	12	
13	51.5	669.50	13.93	**48.07**	13	
14	55.75	780.50	14.87	**52.50**	14	
15	55.5	832.50	15.81	**52.65**	15	
16	57.25	916.00	16.76	**54.64**	16	
17	61.5	1045.50	17.72	**59.00**	17	
18	63	1134.00	18.68	**60.70**	18	
19	63.75	1211.25	19.65	**61.65**	19	
20	66.25	1325.00	20.62	**64.27**	20	
21	70.5	1480.50	21.59	**68.58**	21	
22	73.75	1622.50	22.56	**71.92**	22	418
23	76.5	1759.50	23.54	**74.75**	23	
24	78	1872.00	24.52	**76.36**	24	
25	78.75	1968.75	25.50	**77.22**	25	
26	81.25	2112.50	26.48	**79.79**	26	
27	81.5	2200.50	27.46	**80.14**	27	
28	84.5	2366.00	28.44	**83.18**	28	
29	86.5	2508.50	29.43	**85.24**	29	
30	90	2700.00	30.41	**88.78**	30	



BR01_P&S

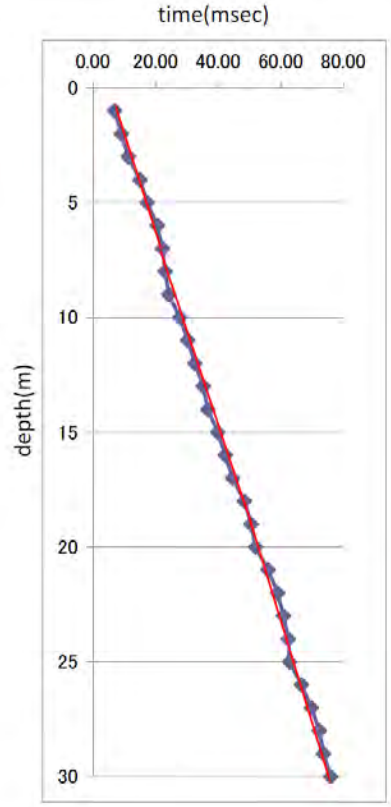
P-wave

offset(m)	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	9.75	10	5.10	**1.91**	1	
2	7.50	15	5.39	**2.79**	2	
3	6.00	18	5.83	**3.09**	3	
4	5.50	22	6.40	**3.44**	4	
5	6.00	30	7.07	**4.24**	5	1104
6	7.25	44	7.81	**5.57**	6	
7	8.75	61	8.60	**7.12**	7	
8	9.00	72	9.43	**7.63**	8	
9	10.50	95	10.30	**9.18**	9	
10	11.25	113	11.18	**10.06**	10	
11	10.50	116	12.08	**9.56**	11	
12	11.50	138	13.00	**10.62**	12	
13	12.50	163	13.93	**11.67**	13	
14	13.25	186	14.87	**12.48**	14	
15	12.75	191	15.81	**12.10**	15	
16	13.50	216	16.76	**12.89**	16	
17	13.25	225	17.72	**12.71**	17	
18	15.00	270	18.68	**14.45**	18	
19	15.25	290	19.65	**14.75**	19	
20	16.00	320	20.62	**15.52**	20	1554
21	16.50	347	21.59	**16.05**	21	
22	17.75	391	22.56	**17.31**	22	
23	18.50	426	23.54	**18.08**	23	
24	19.00	456	24.52	**18.60**	24	
25	20.00	500	25.50	**19.61**	25	
26	20.00	520	26.48	**19.64**	26	
27	21.00	567	27.46	**20.65**	27	
28	22.00	616	28.44	**21.66**	28	
29	22.75	660	29.43	**22.42**	29	
30	23.25	698	30.41	**22.93**	30	



S-wave

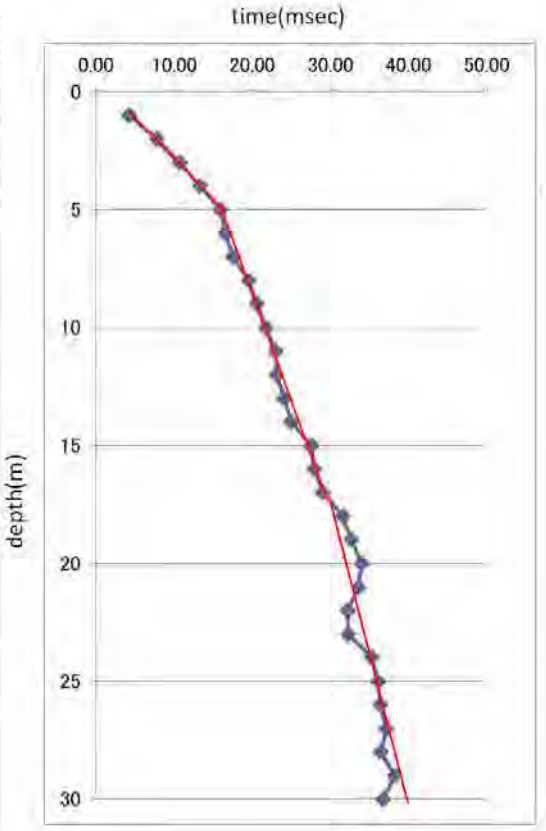
offset(m)	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	35	35	5.10	**6.86**	1	
2	24.25	49	5.39	**9.01**	2	
3	22	66	5.83	**11.32**	3	
4	24	96	6.40	**14.99**	4	392
5	24.5	123	7.07	**17.32**	5	
6	26.75	161	7.81	**20.55**	6	
7	27.25	191	8.60	**22.17**	7	
8	27.25	218	9.43	**23.11**	8	
9	27.75	250	10.30	**24.26**	9	
10	31	310	11.18	**27.73**	10	
11	33.25	366	12.08	**30.27**	11	
12	35.25	423	13.00	**32.54**	12	
13	37.75	491	13.93	**35.23**	13	419
14	39	546	14.87	**36.73**	14	
15	42	630	15.81	**39.84**	15	
16	44.25	708	16.76	**42.24**	16	
17	46.5	791	17.72	**44.61**	17	
18	50.25	905	18.68	**48.42**	18	
19	52.25	993	19.65	**50.53**	19	
20	53.5	1070	20.62	**51.90**	20	
21	57.5	1208	21.59	**55.94**	21	
22	60.5	1331	22.56	**59.00**	22	
23	62.25	1432	23.54	**60.83**	23	
24	63.75	1530	24.52	**62.41**	24	436
25	64	1600	25.50	**62.76**	25	
26	67.75	1762	26.48	**66.53**	26	
27	71	1917	27.46	**69.81**	27	
28	73.5	2058	28.44	**72.36**	28	
29	74.75	2168	29.43	**73.66**	29	
30	77	2310	30.41	**75.95**	30	



BR_02_P&S

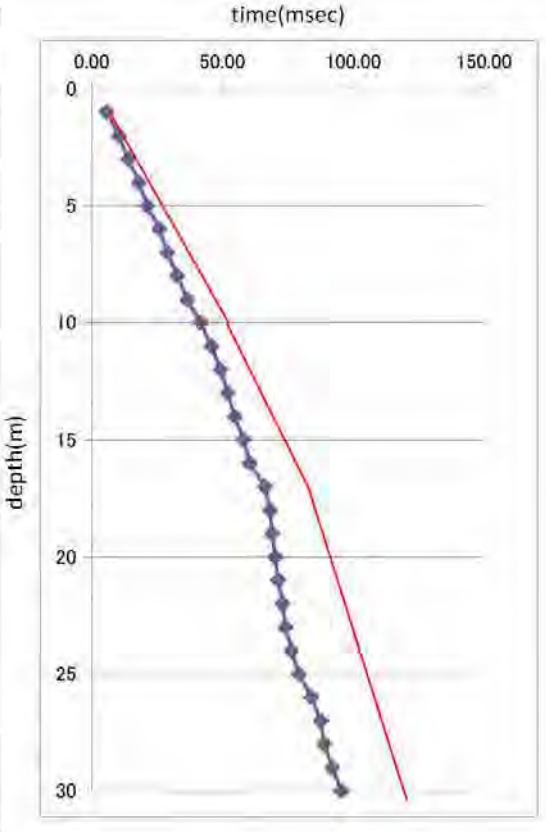
P-wave

offset(m)	5			correction		Provisional
depth	time			value	depth	Vp
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	21.50	21.50	5.10	**4.22**	1	
2	21.00	42.00	5.39	**7.80**	2	
3	20.75	62.25	5.83	**10.68**	3	342
4	21.25	85.00	6.40	**13.27**	4	
5	22.50	112.50	7.07	**15.91**	5	
6	21.50	129.00	7.81	**16.52**	6	
7	21.50	150.50	8.60	**17.50**	7	
8	23.00	184.00	9.43	**19.50**	8	
9	23.50	211.50	10.30	**20.54**	9	
10	24.25	242.50	11.18	**21.69**	10	
11	25.25	277.75	12.08	**22.99**	11	
12	25.00	300.00	13.00	**23.08**	12	915
13	25.75	334.75	13.93	**24.03**	13	
14	26.50	371.00	14.87	**24.96**	14	
15	29.00	435.00	15.81	**27.51**	15	
16	29.25	468.00	16.76	**27.92**	16	
17	30.25	514.25	17.72	**29.02**	17	
18	32.75	589.50	18.68	**31.56**	18	
19	33.75	641.25	19.65	**32.64**	19	
20	35.00	700.00	20.62	**33.95**	20	
21	34.50	724.50	21.59	**33.56**	21	
22	33.00	726.00	22.56	**32.18**	22	
23	33.00	759.00	23.54	**32.25**	23	
24	36.00	864.00	24.52	**35.24**	24	1683
25	36.75	918.75	25.50	**36.04**	25	
26	37.00	962.00	26.48	**36.33**	26	
27	37.75	1019.25	27.46	**37.12**	27	
28	37.00	1036.00	28.44	**36.42**	28	
29	38.75	1123.75	29.43	**38.19**	29	
30	37.25	1117.50	30.41	**36.74**	30	



S-wave

offset(m)	5			correction		Provisional
depth	time			value	depth	Vs
(m)	(msec)	cal1	cal2	(msec)	(m)	(m/sec)
1	28.75	28.75	5.10	**5.64**	1	
2	27.75	55.50	5.39	**10.31**	2	
3	27	81.00	5.83	**13.89**	3	
4	28.75	115.00	6.40	**17.96**	4	
5	30	150.00	7.07	**21.21**	5	
6	33.5	201.00	7.81	**25.74**	6	250
7	35.5	248.50	8.60	**28.89**	7	
8	38.5	308.00	9.43	**32.65**	8	
9	41.75	375.75	10.30	**36.50**	9	
10	46.5	465.00	11.18	**41.59**	10	
11	50.25	552.75	12.08	**45.75**	11	
12	53.25	639.00	13.00	**49.15**	12	
13	55.75	724.75	13.93	**52.03**	13	
14	58	812.00	14.87	**54.62**	14	284
15	61.25	918.75	15.81	**58.11**	15	
16	63.25	1012.00	16.76	**60.37**	16	
17	69	1173.00	17.72	**66.20**	17	
18	70.75	1273.50	18.68	**68.17**	18	
19	71.25	1353.75	19.65	**68.90**	19	
20	72.25	1445.00	20.62	**70.09**	20	
21	73.25	1538.25	21.59	**71.26**	21	
22	74.75	1644.50	22.56	**72.89**	22	
23	75.75	1742.25	23.54	**74.02**	23	
24	78	1872.00	24.52	**76.36**	24	445
25	80.75	2018.75	25.50	**79.18**	25	
26	85.5	2223.00	26.48	**83.96**	26	
27	89	2403.00	27.46	**87.51**	27	
28	90.25	2527.00	28.44	**88.84**	28	
29	93.25	2704.25	29.43	**91.89**	29	
30	96.75	2902.50	30.41	**95.43**	30	

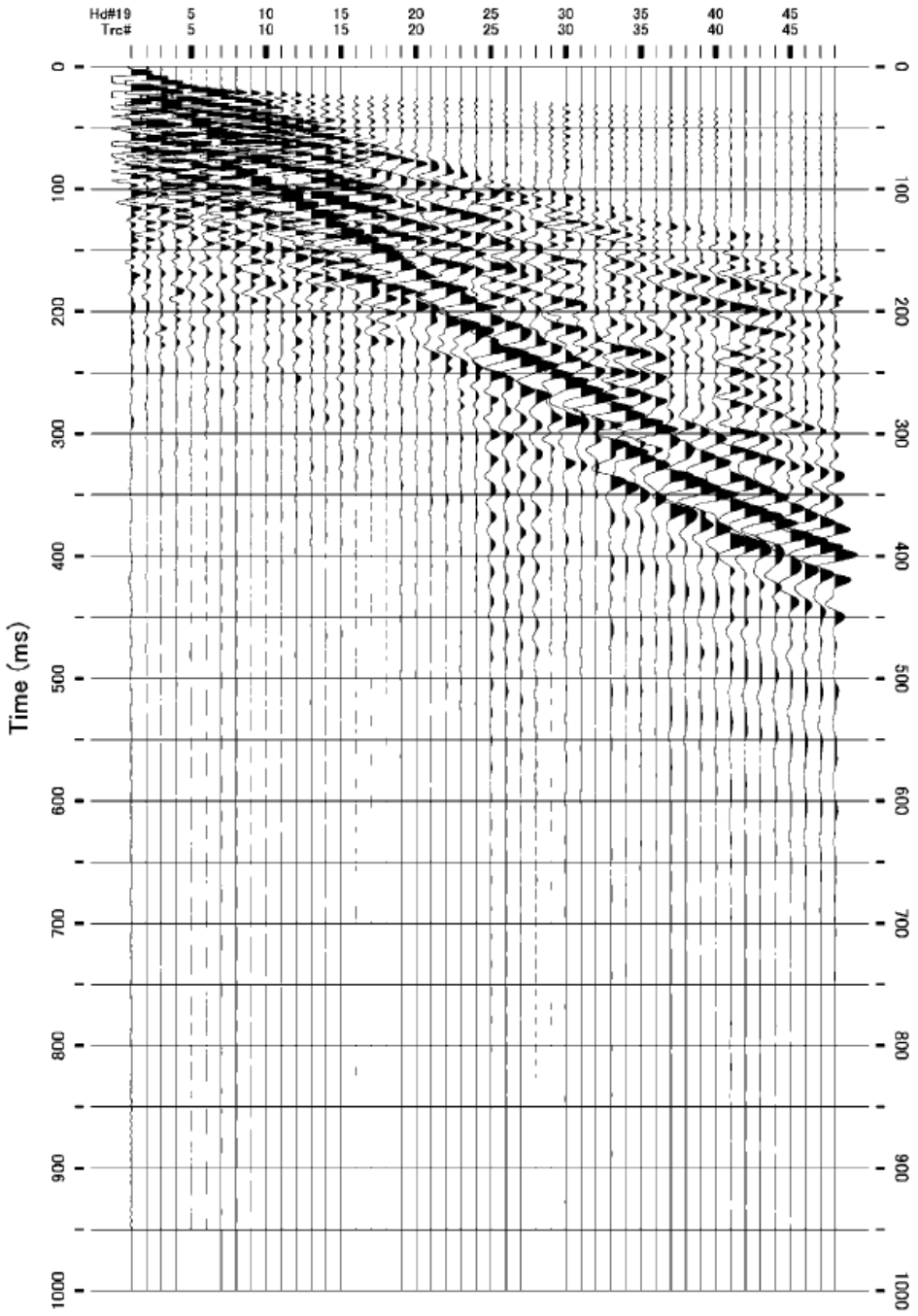


(2) Цооногийн каротажийн үр дүн

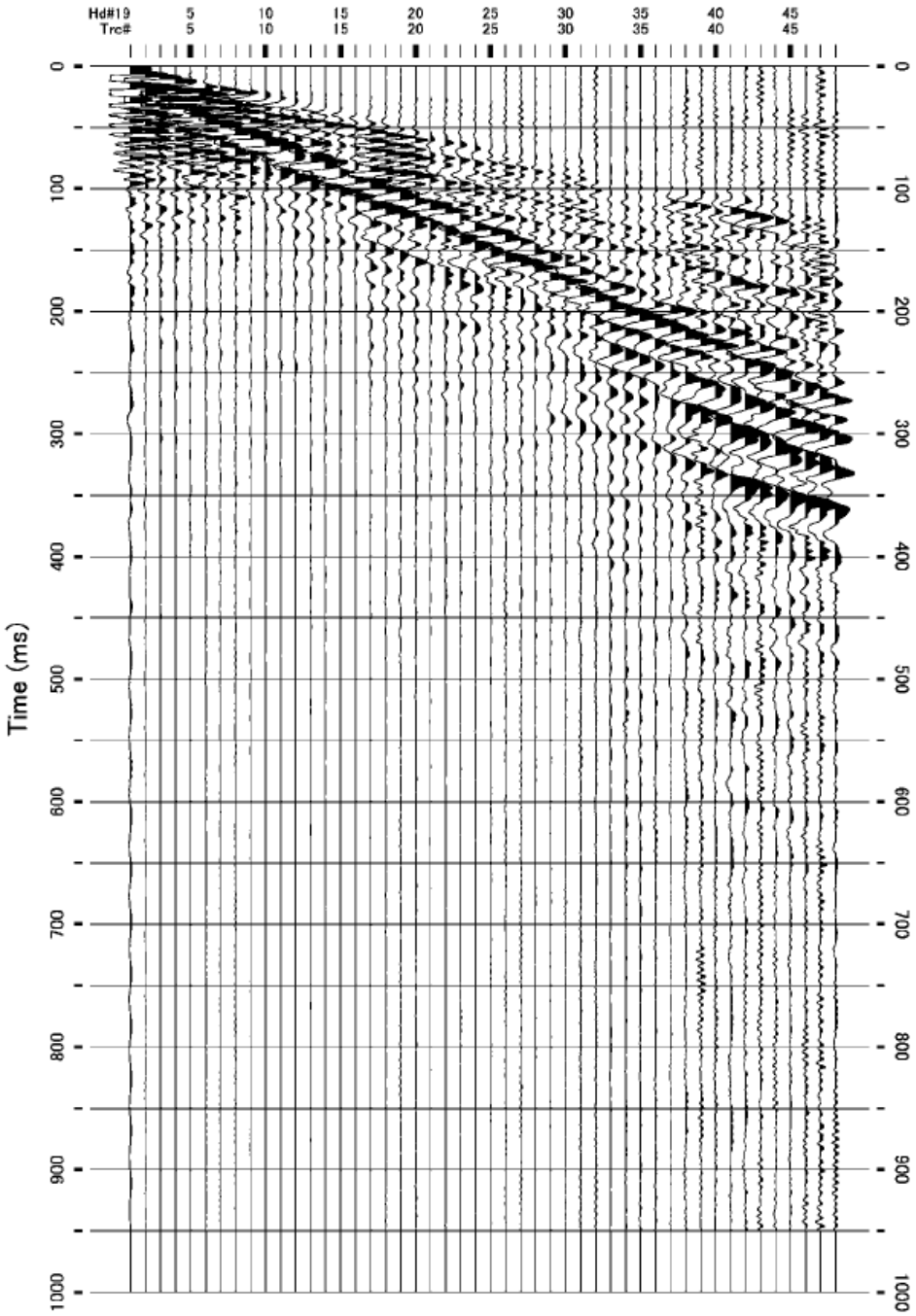
Цооногийн дугаар	гүн (GL- m)	S (уян) долгионы хурд (m/s)	Зонхилох хөрс (чулуулаг)	Дундаж N утга
UB_BO_01	0.0-13.0	439	Элс, бөөрөнхий хайрга холилдсон хөрзөн	29
	13.0-25.0	841	Элс, бөөрөнхий хайрга, шаваржин холимог хөрзөн	49
UB_BO_02	0.0-5.0	318	Шаваржин, элсжин, бөөрөнхий хайрга бүхий хөрзөн	39
	5.0-15.0	492	Элсэрхэг хөрзөн	50
UB_BO_03	0.0-4.0	155	Шаваржин,элс, хайрган хөрзөн	39
	4.0-7.0	291	Шаваржин, элсжин, хайргатай хөрзөн	38
	7.0-13.0	555	Элсжин, хайргатай хөрзөн	35
	13.0-22.0	674	Шаваржин, элс хайрган хөрзөн	42
	22.0-30.0	898	Шаваржин, элс хайрган хөрзөн	50
UB_BO_04	0.0-4.0	304	Шаваржин, элс хайрган хөрзөн	26
	4.0-12.0	417	Шаваржин, элс хайрган хөрзөн	50
	12.0-28.0	775	Хөрзөнгийн холимогтой шаварлаг элсэн чулуу	50
NH_01	0.0-3.0	72	Хөрзөнгийн холимогтой шаварлаг элсэн чулуу	20
	3.0-10.0	154	Хөрзөнгийн холимогтой шаварлаг элсэн чулуу	33
	10.0-16.0	208	Шавар	47
	16.0-20.0	931	Шавар	48
NH_02	0.0-6.0	287	Элсэрхэг шавар	22
	6.0-22.0	323	Элсэрхэг шавар	44
	22.0-30.0	565	Элсэрхэг шавар	46
BI_01	0.0-4.0	471	Хөрзөнтэй элс	19
	4.0-14.0	442	Элс холилдсон шаварлаг хөрзөн	36
	14.0-30.0	522	Элс холилдсон шаварлаг хөрзөн	37
BI_03	0.0-12.0	259	Элсжин, шаваржин	34
	12.0-30.0	418	элс, хөрзөн бүхий шаваржин	41
BR_01	0.0-7.0	392	Шаварлаг элсжин	24
	7.0-18.0	419	Шаварлаг элсжин	39
	18.0-30.0	436	Хөрзөн холилдсон элсэрхэг шавар	43
BR_02	0.0-10.0	250	Шавар, хөрзөн холимог элс	34
	10.0-17.0	284	Шавар, хөрзөн холимог элс	37
	17.0-30.0	445	Элсэрхэг шаваржин	42

1.3.5 Гадаргын долгионы судалгаа

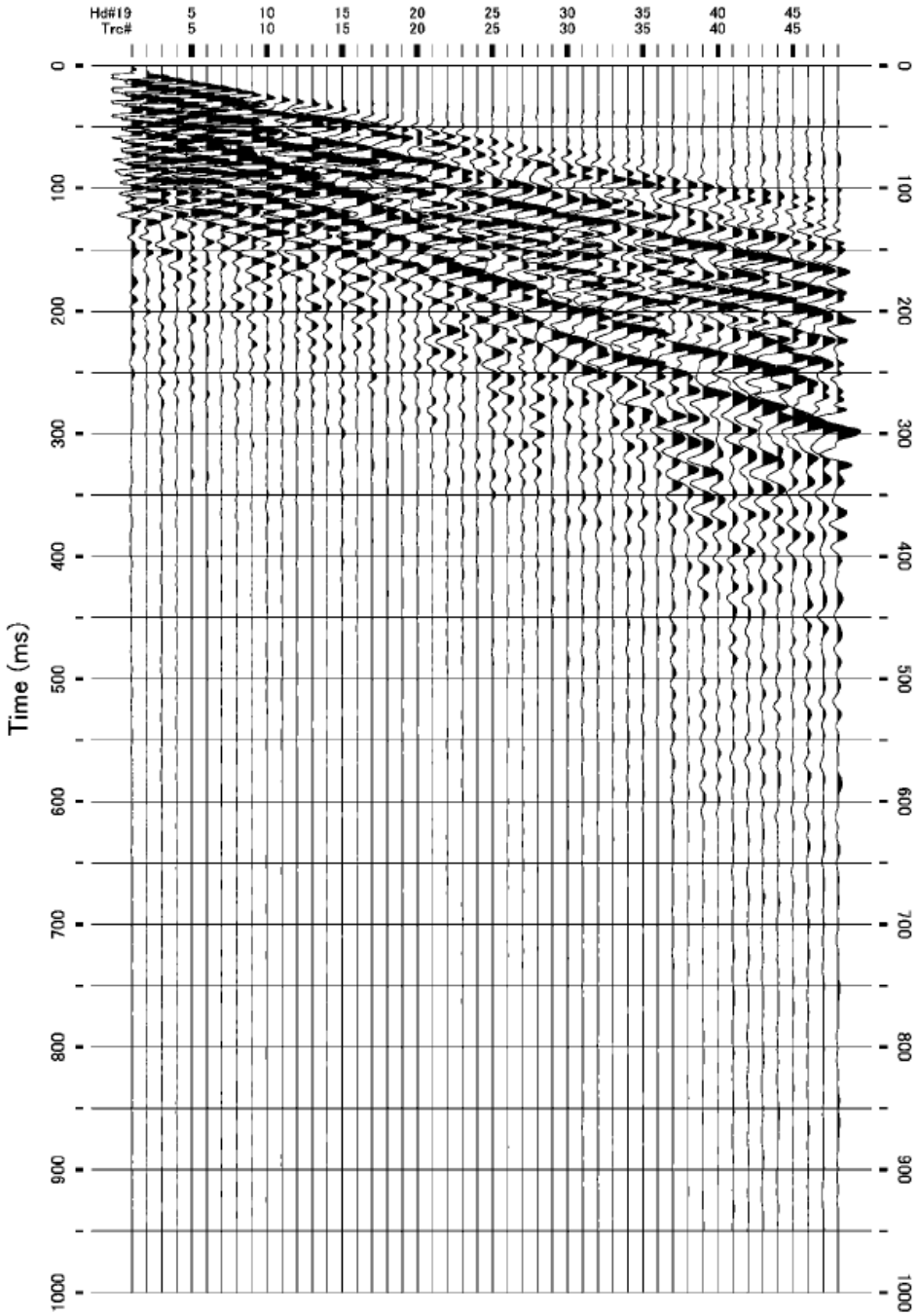
(1) Гадаргын долгионы судалгааны үелзлэлийн бүртгэл



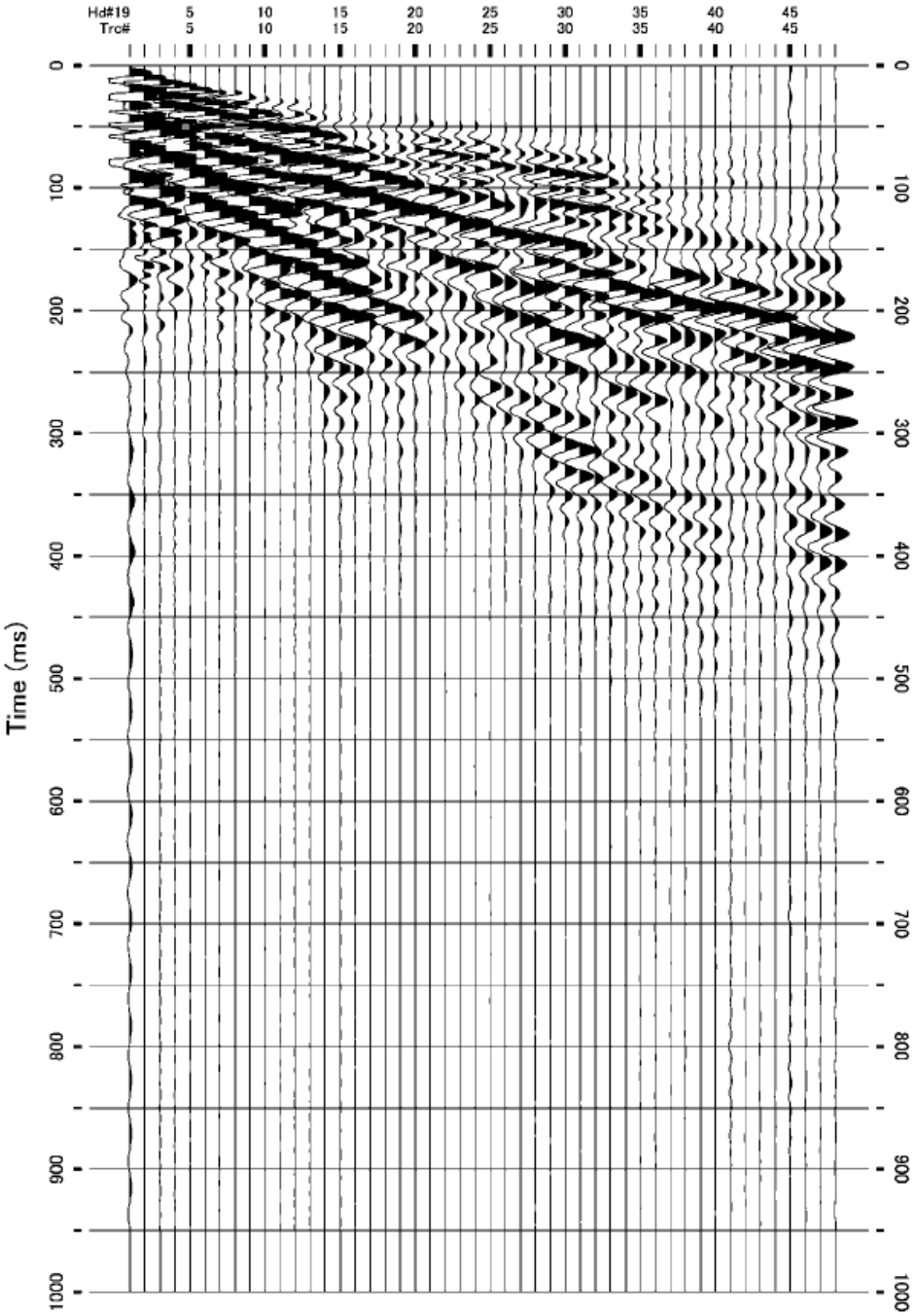
Field data (Surface wave shot record) : UB_01



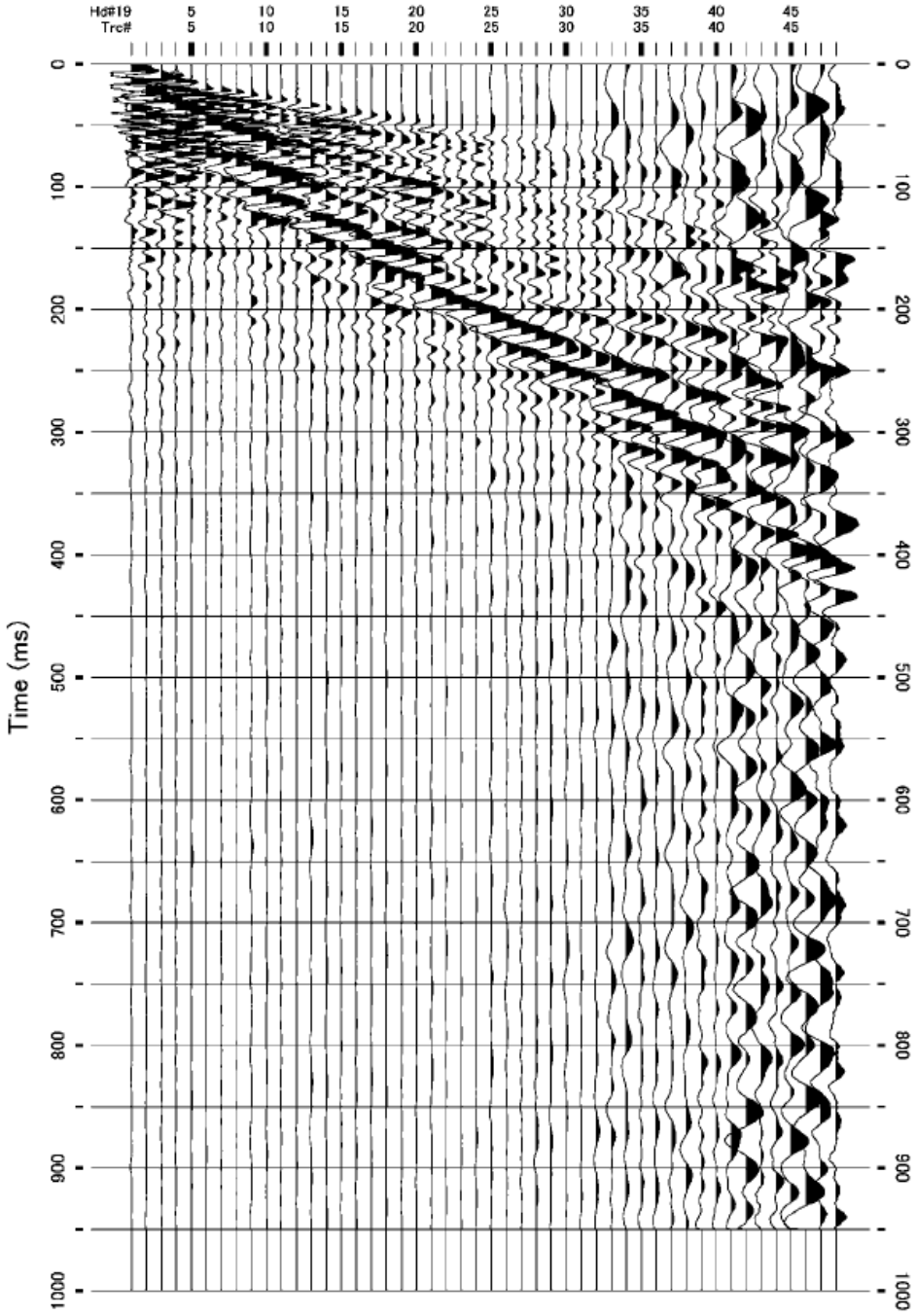
Field data (Surface wave shot record) : UB_02



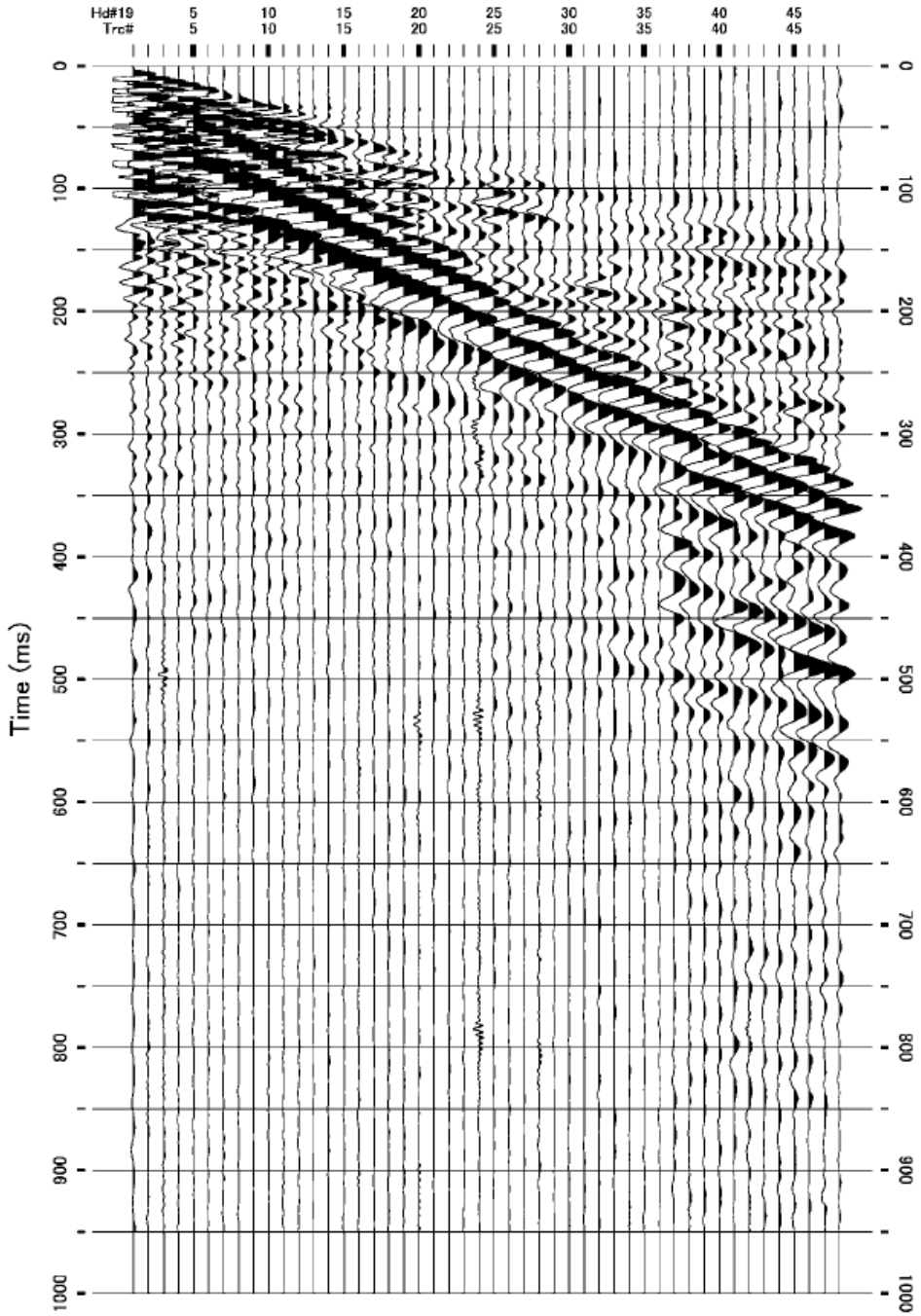
Field data (Surface wave shot record) : UB_03



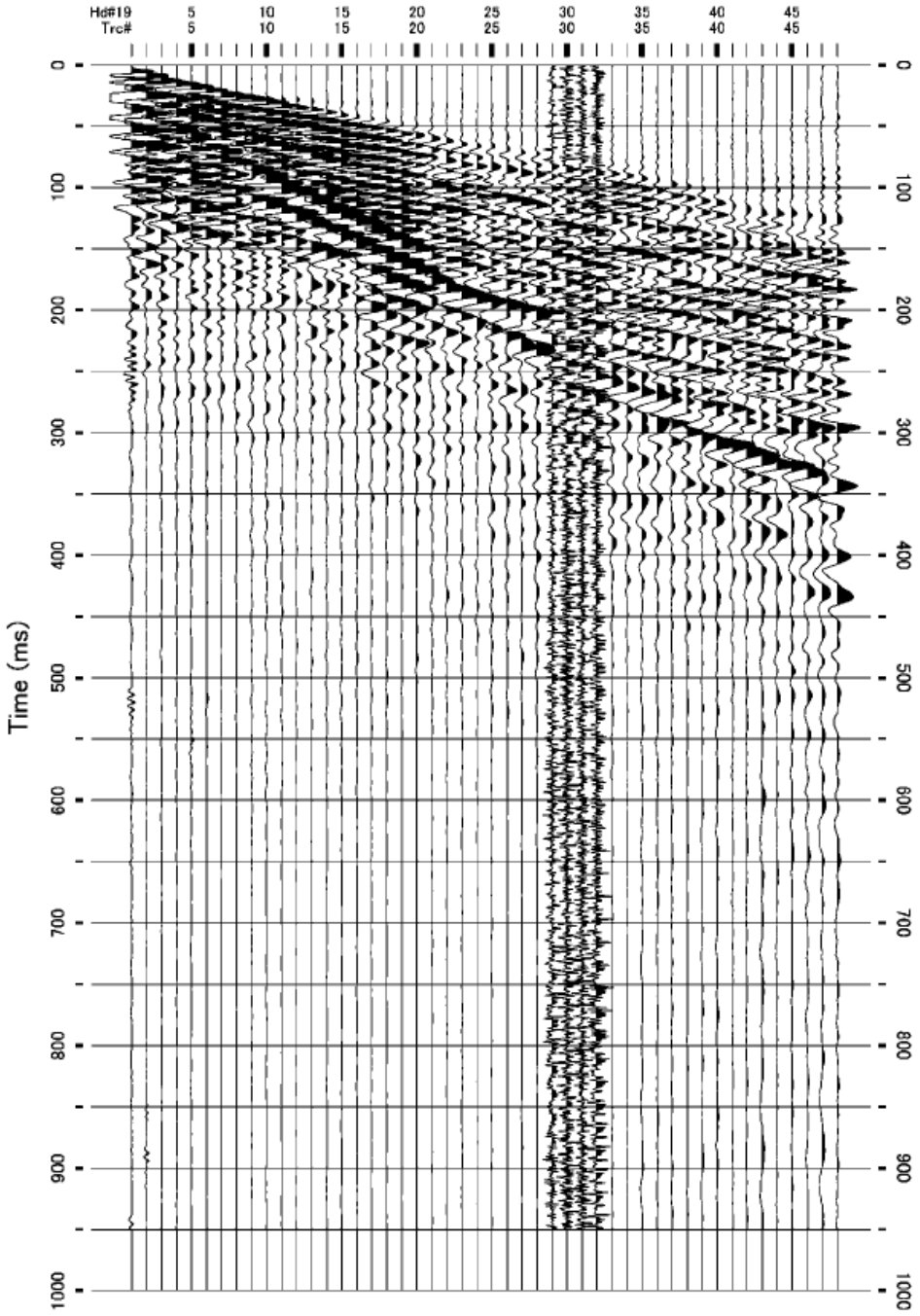
Field data (Surface wave shot record) : UB_04



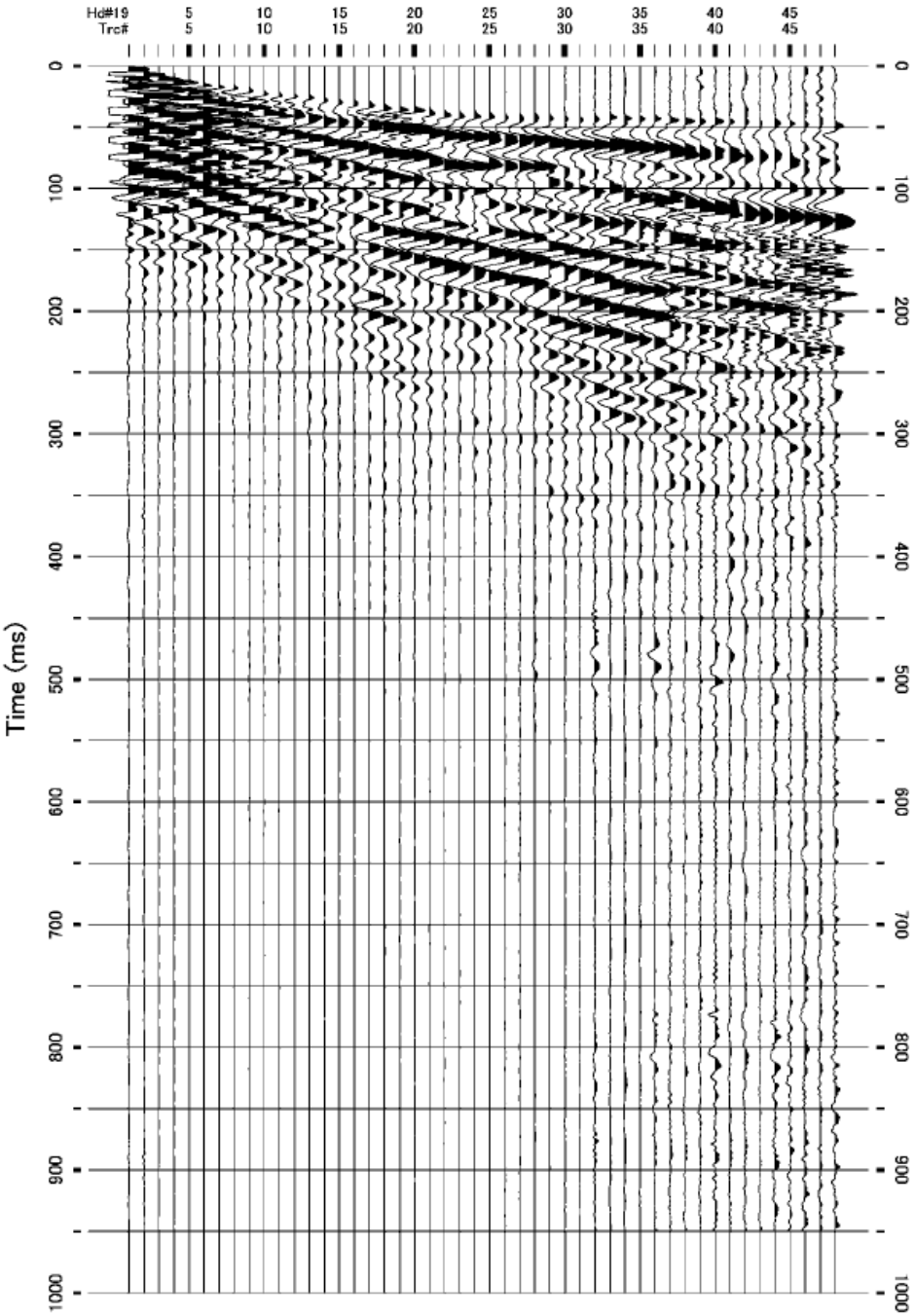
Field data (Surface wave shot record) : UB_05



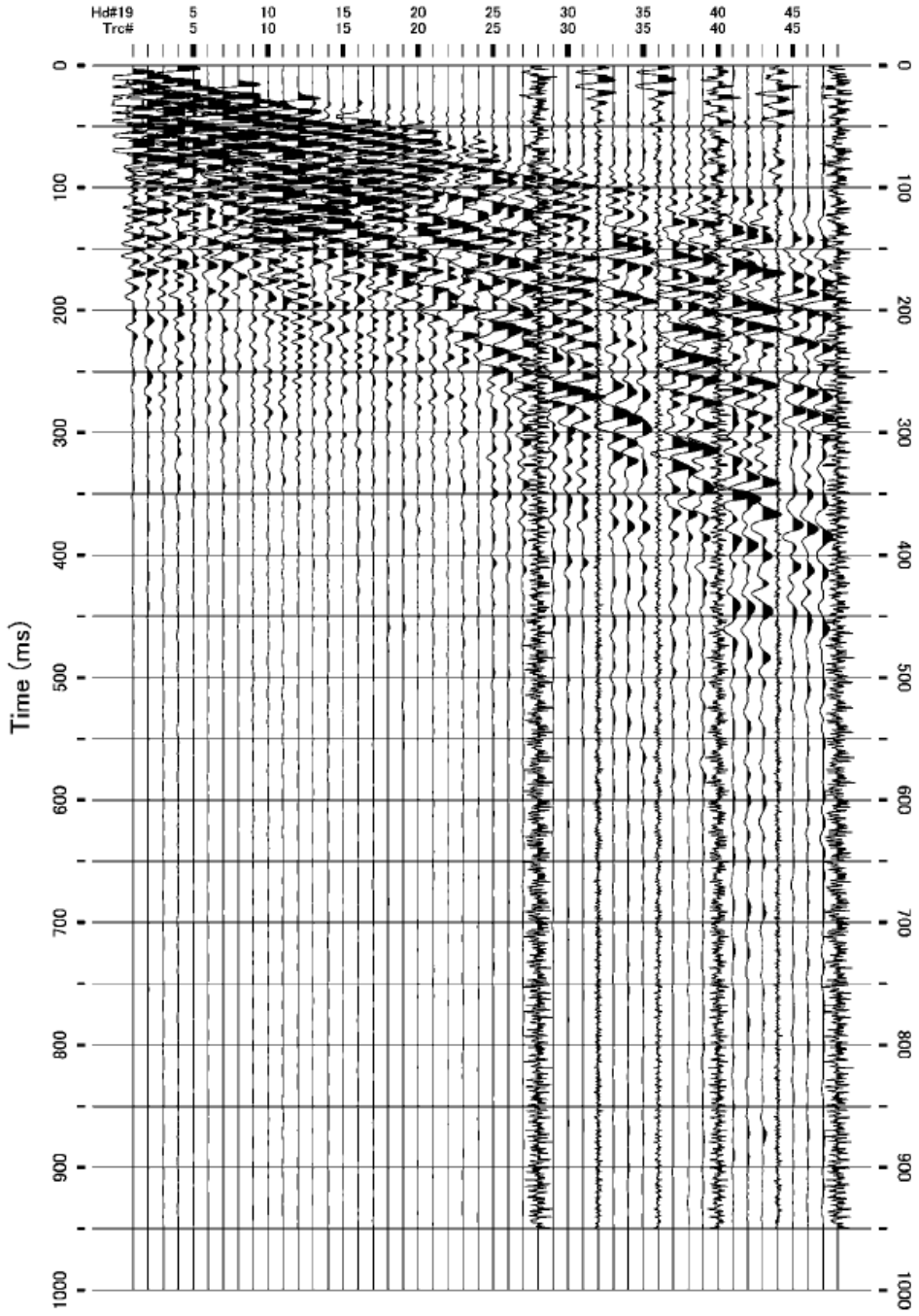
Field data (Surface wave shot record) : UB_06



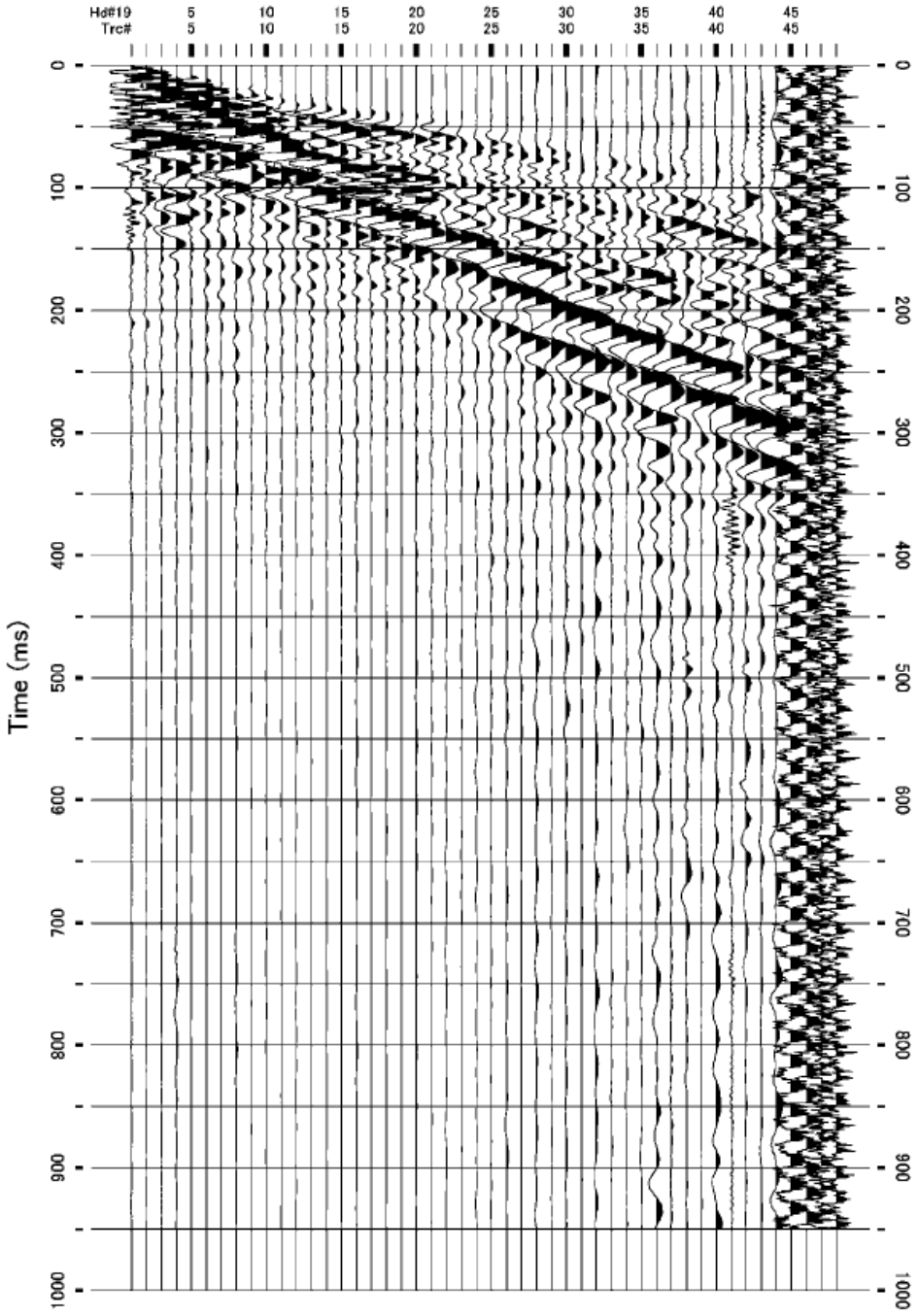
Field data (Surface wave shot record) : UB_07



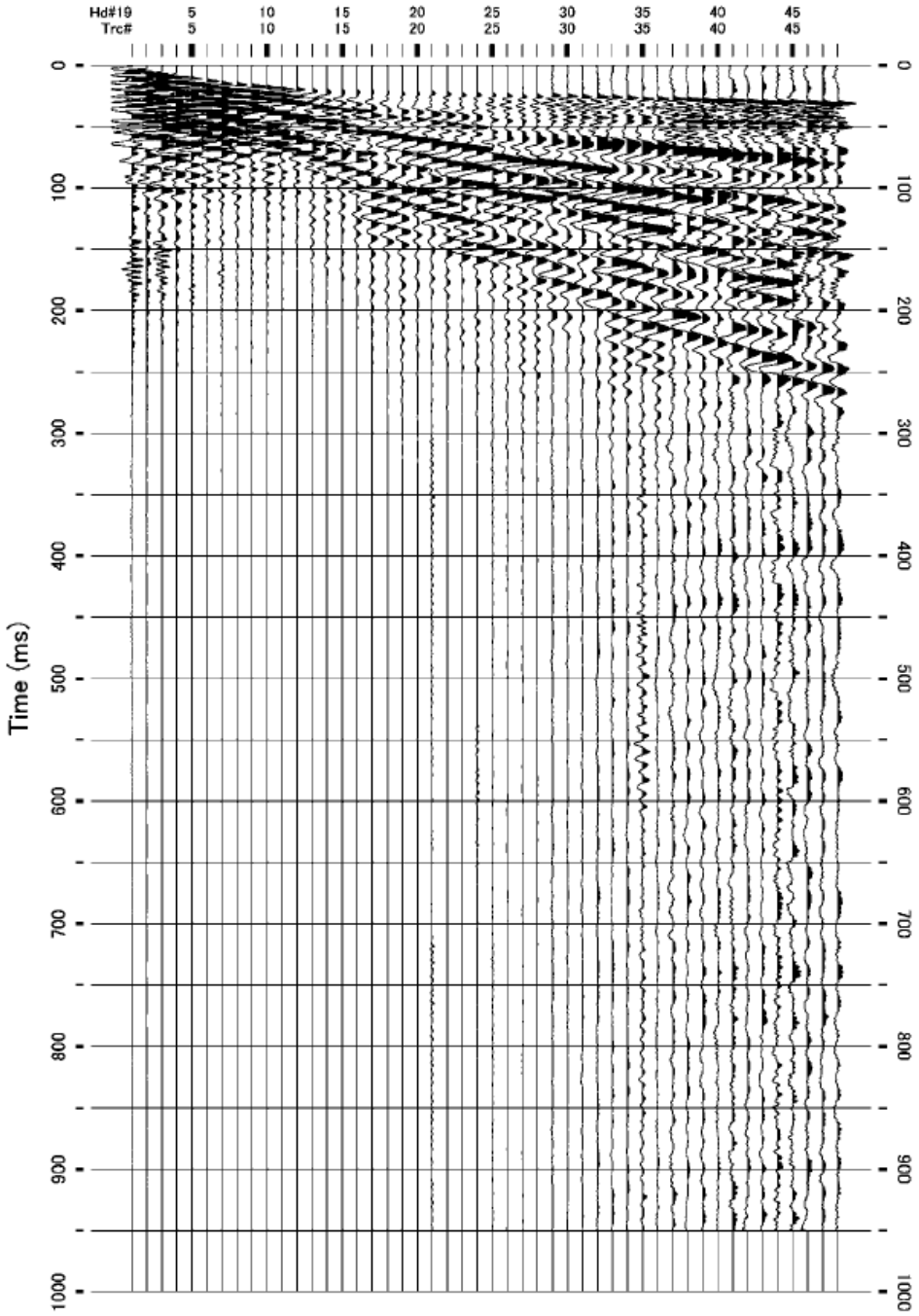
Field data (Surface wave shot record) : UB_08



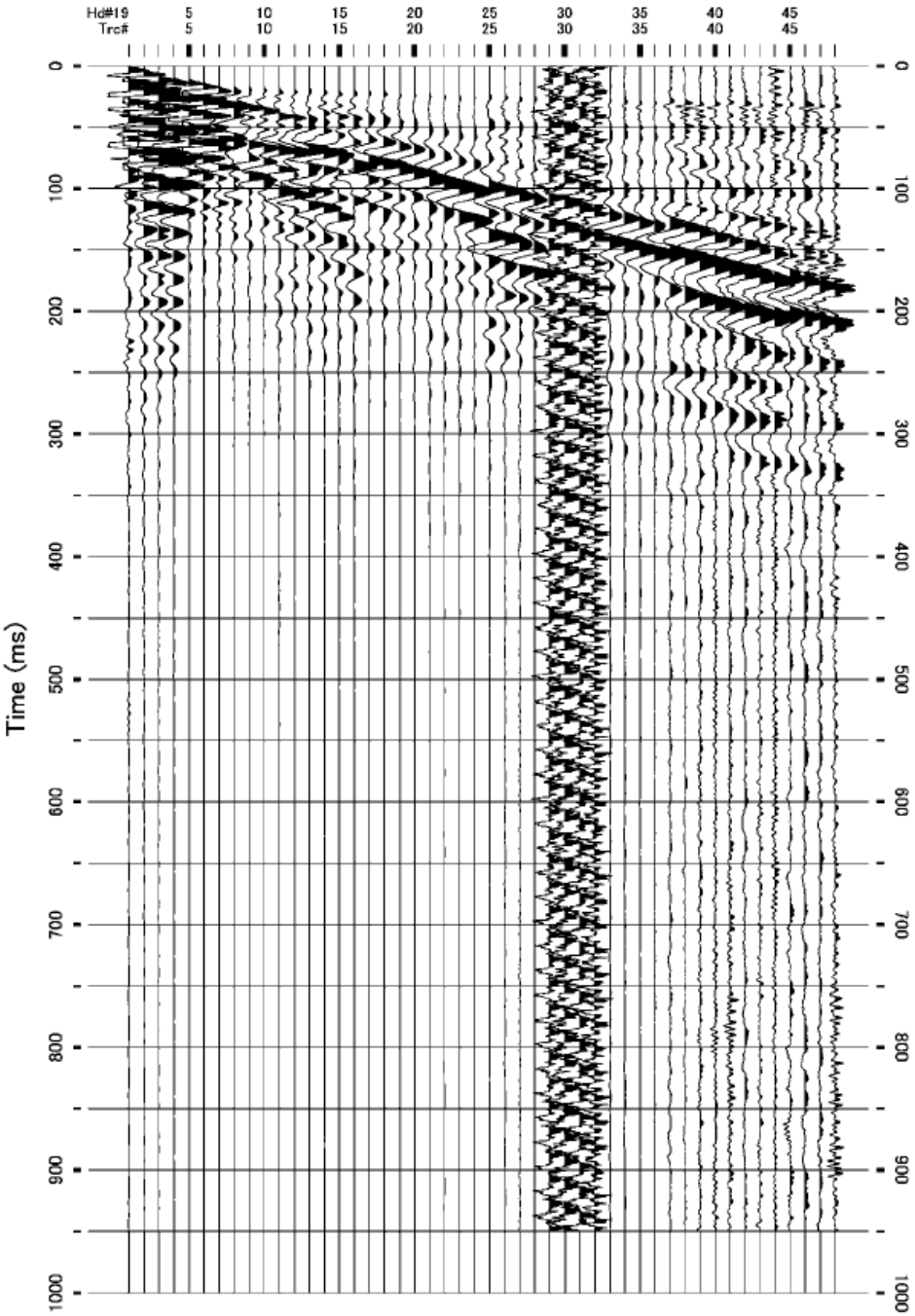
Field data (Surface wave shot record) : UB_09



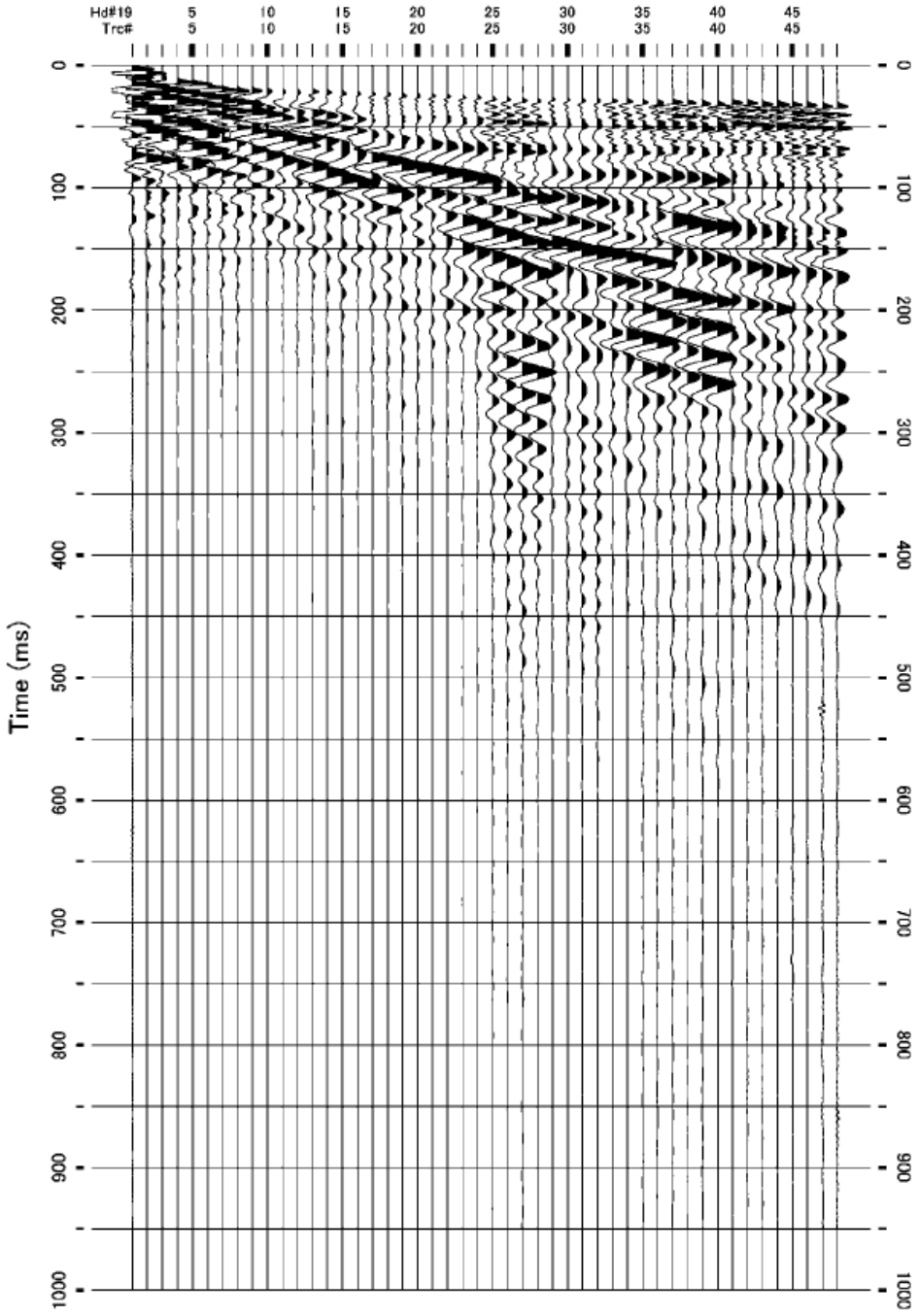
Field data (Surface wave shot record) : UB_10



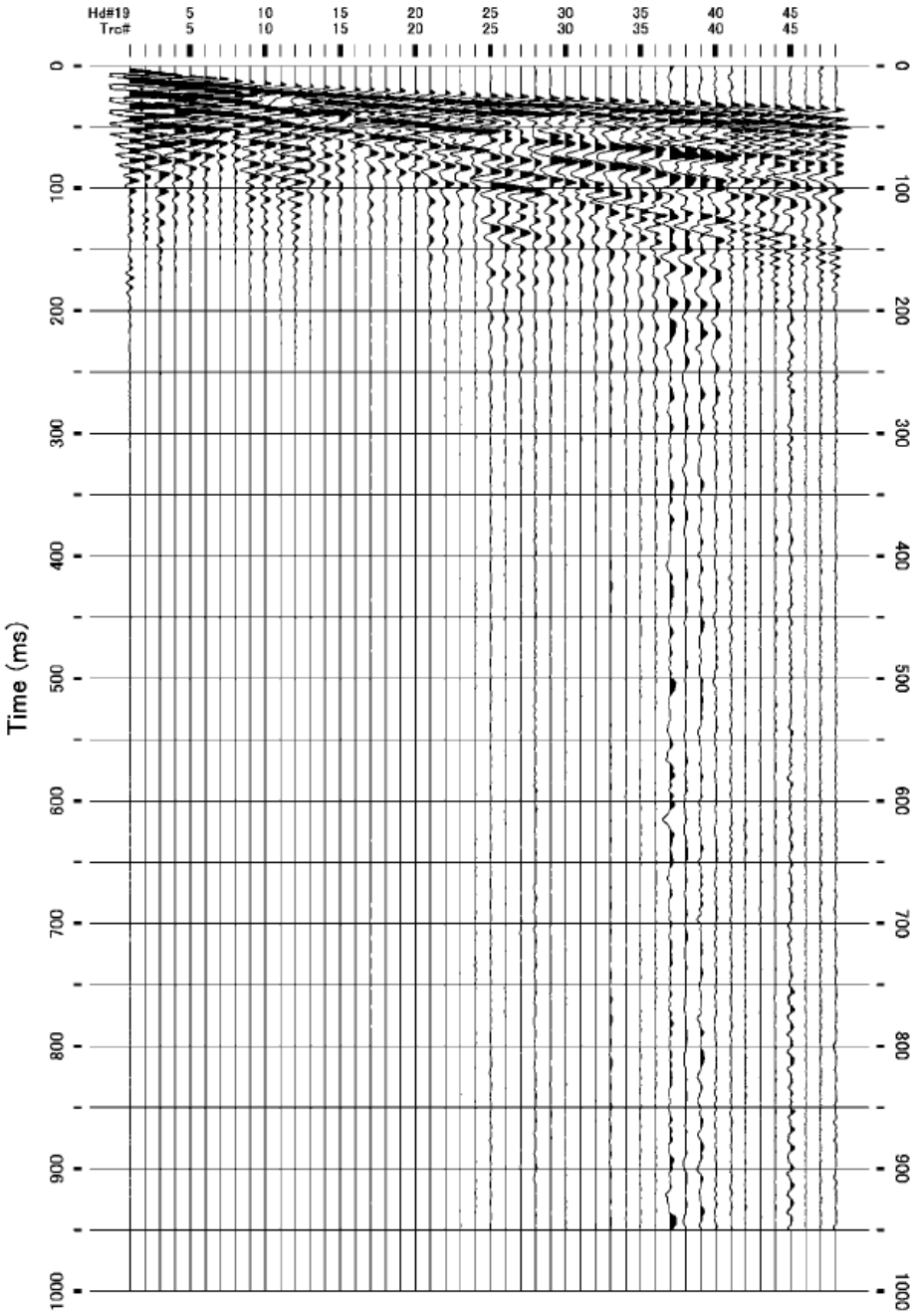
Field data (Surface wave shot record) : UB_11



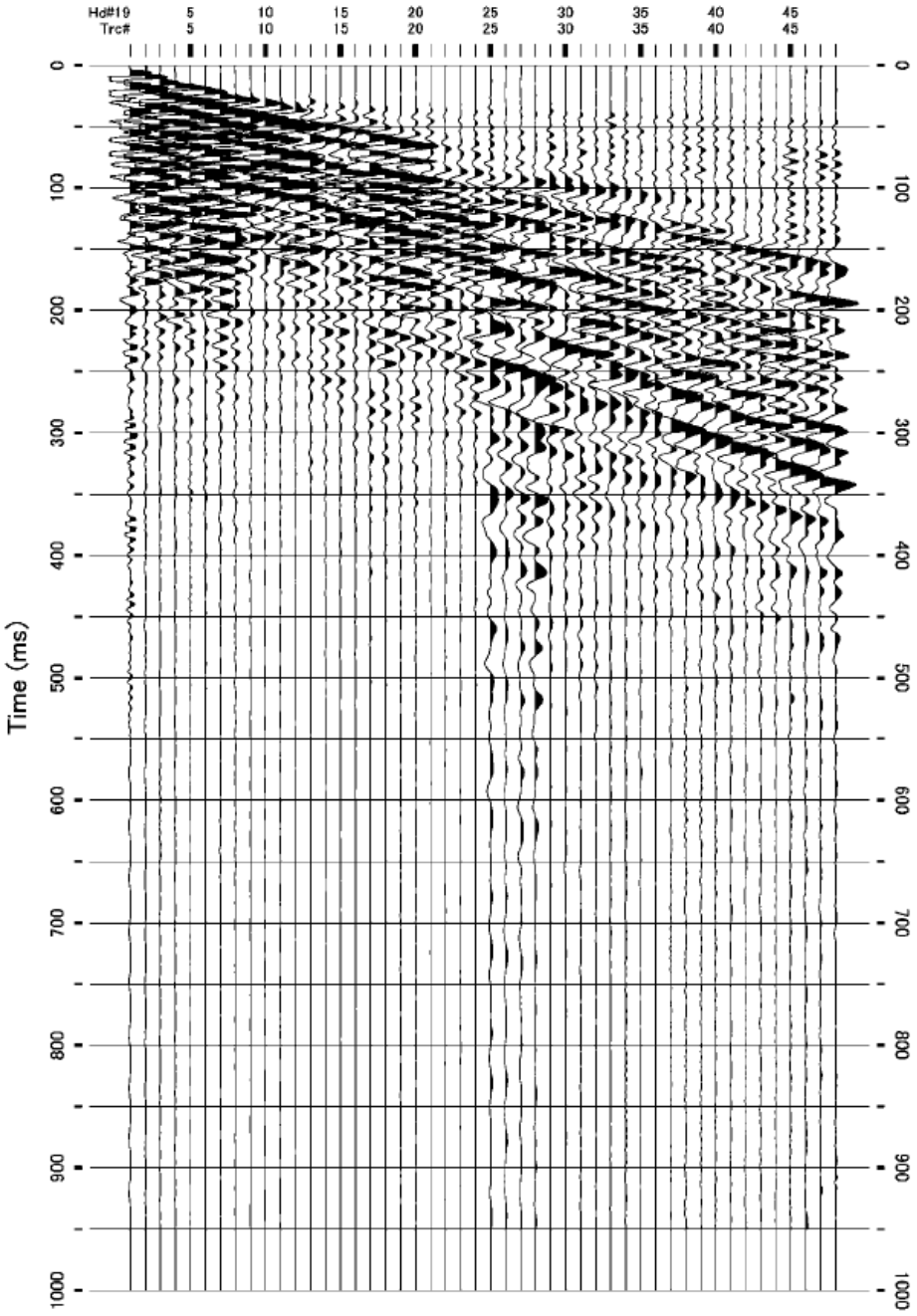
Field data (Surface wave shot record) : UB_12



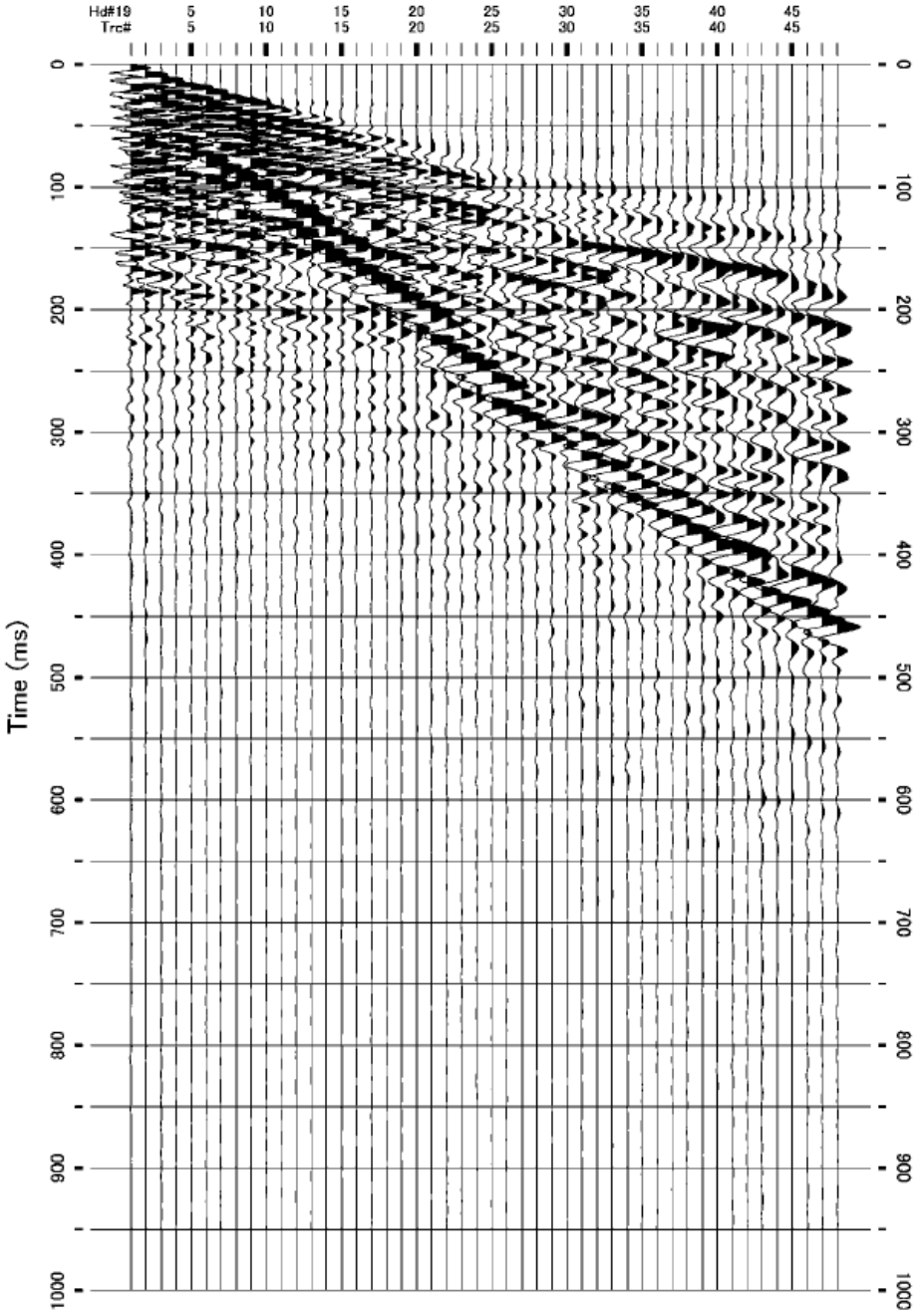
Field data (Surface wave shot record) : UB_13



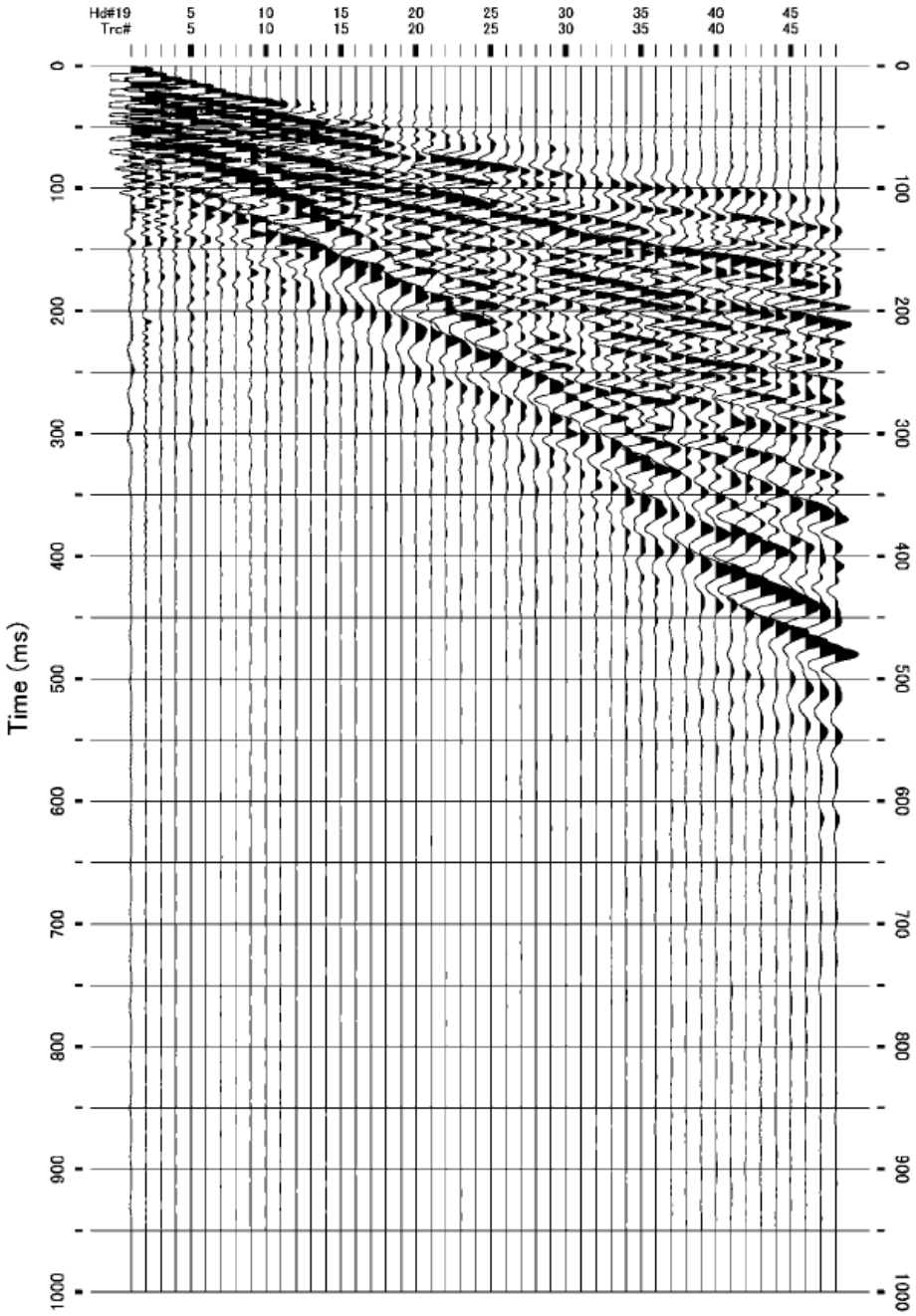
Field data (Surface wave shot record) : UB_14



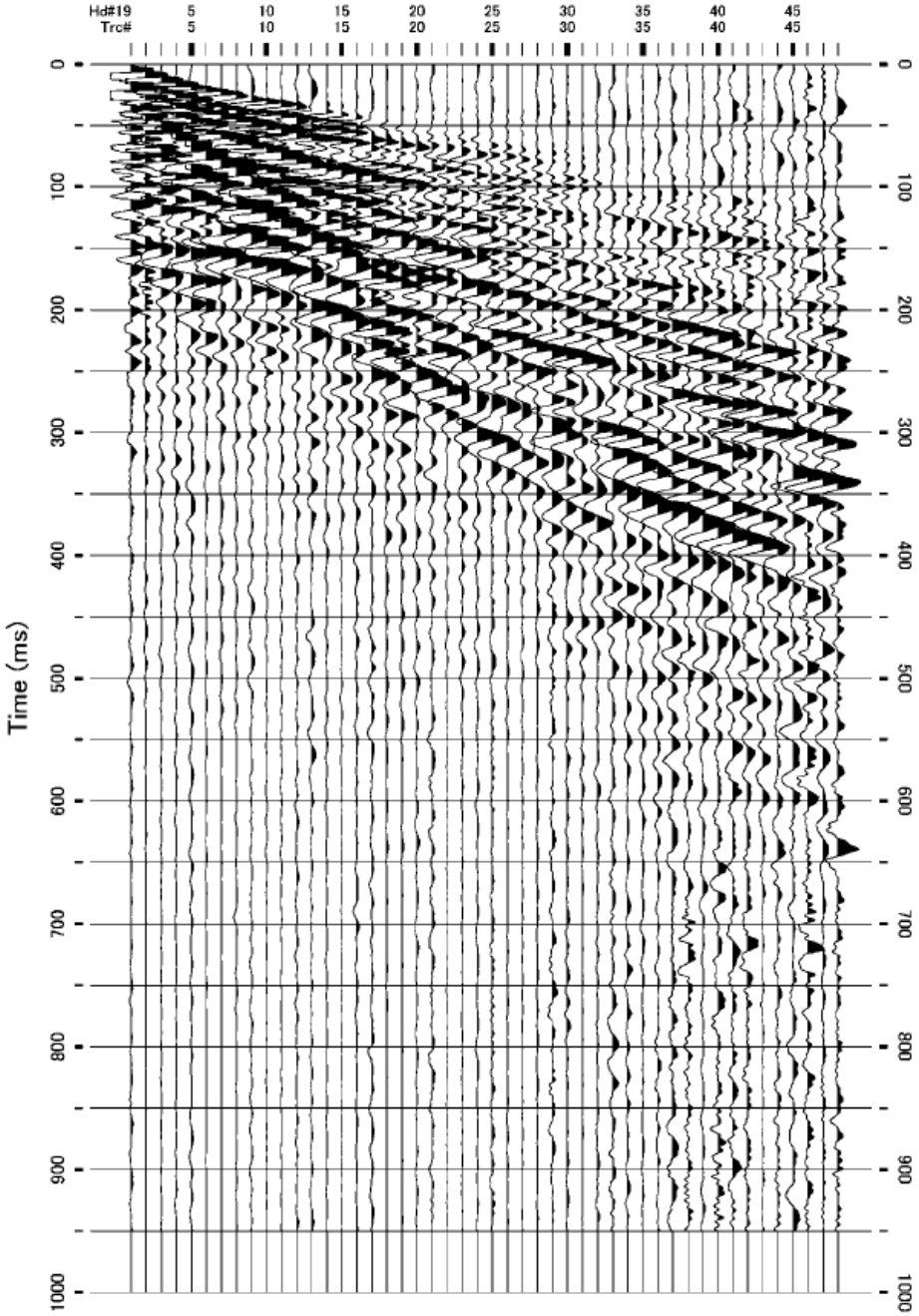
Field data (Surface wave shot record) : UB_15



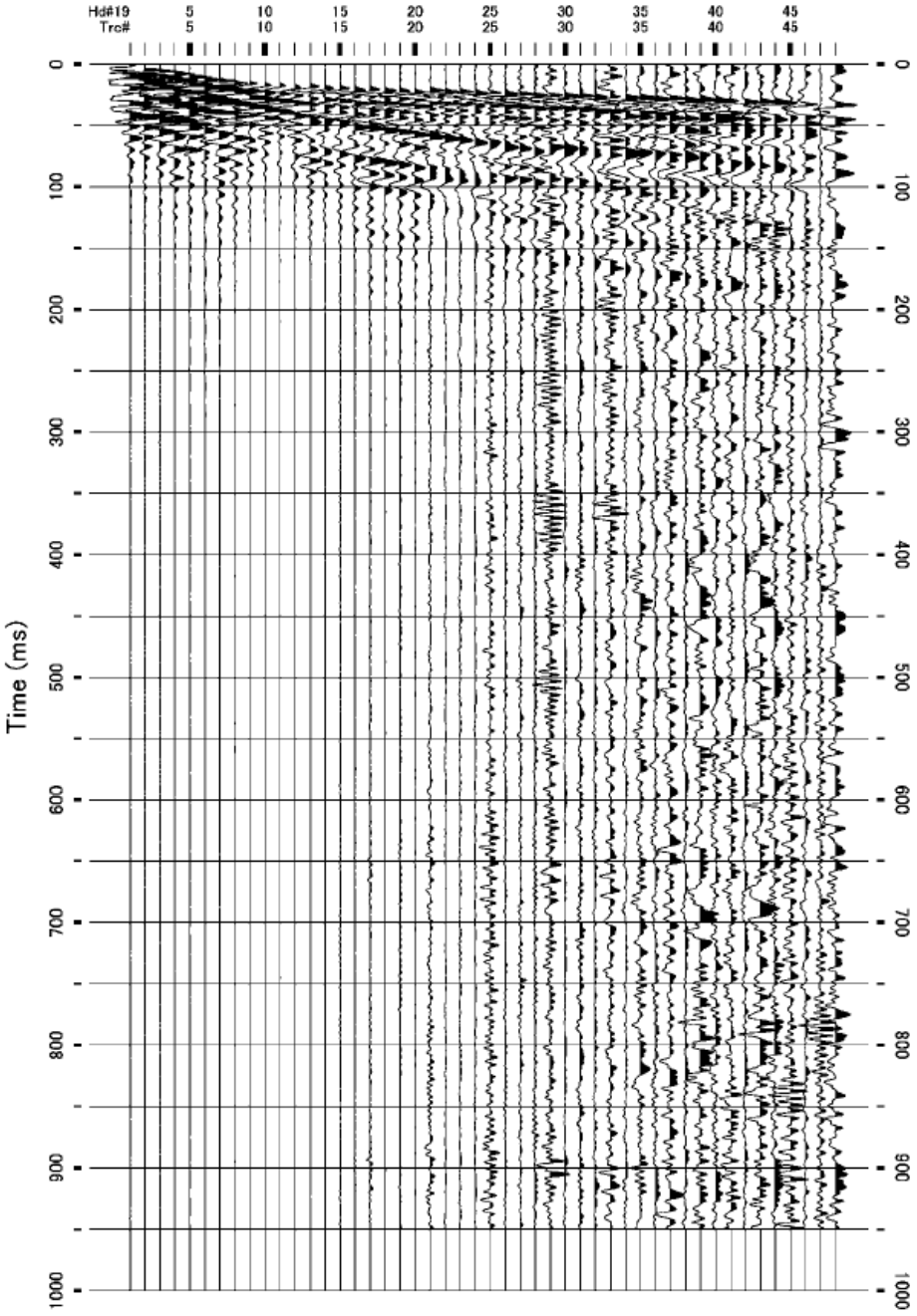
Field data (Surface wave shot record) : UB_16



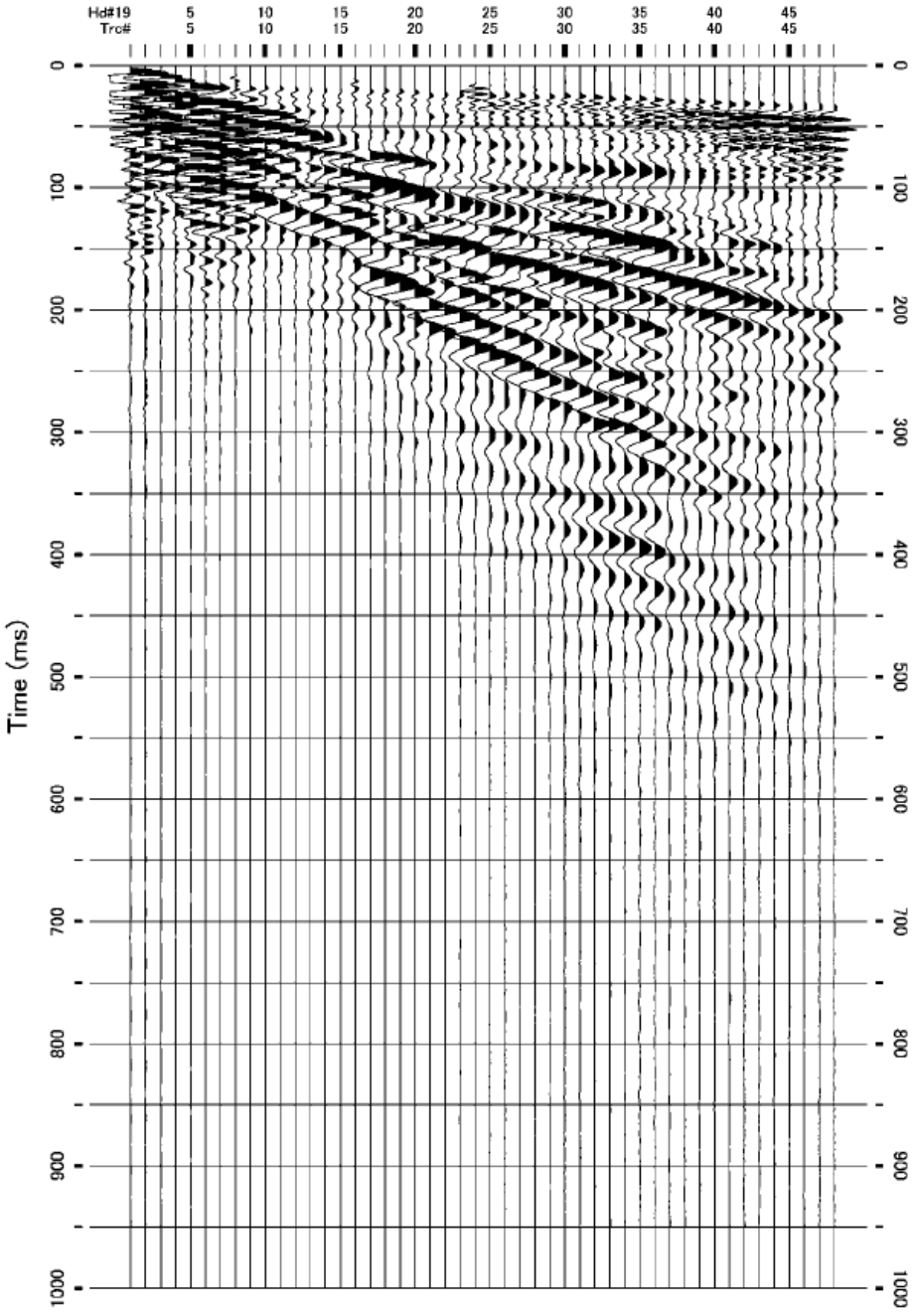
Field data (Surface wave shot record) : UB_17



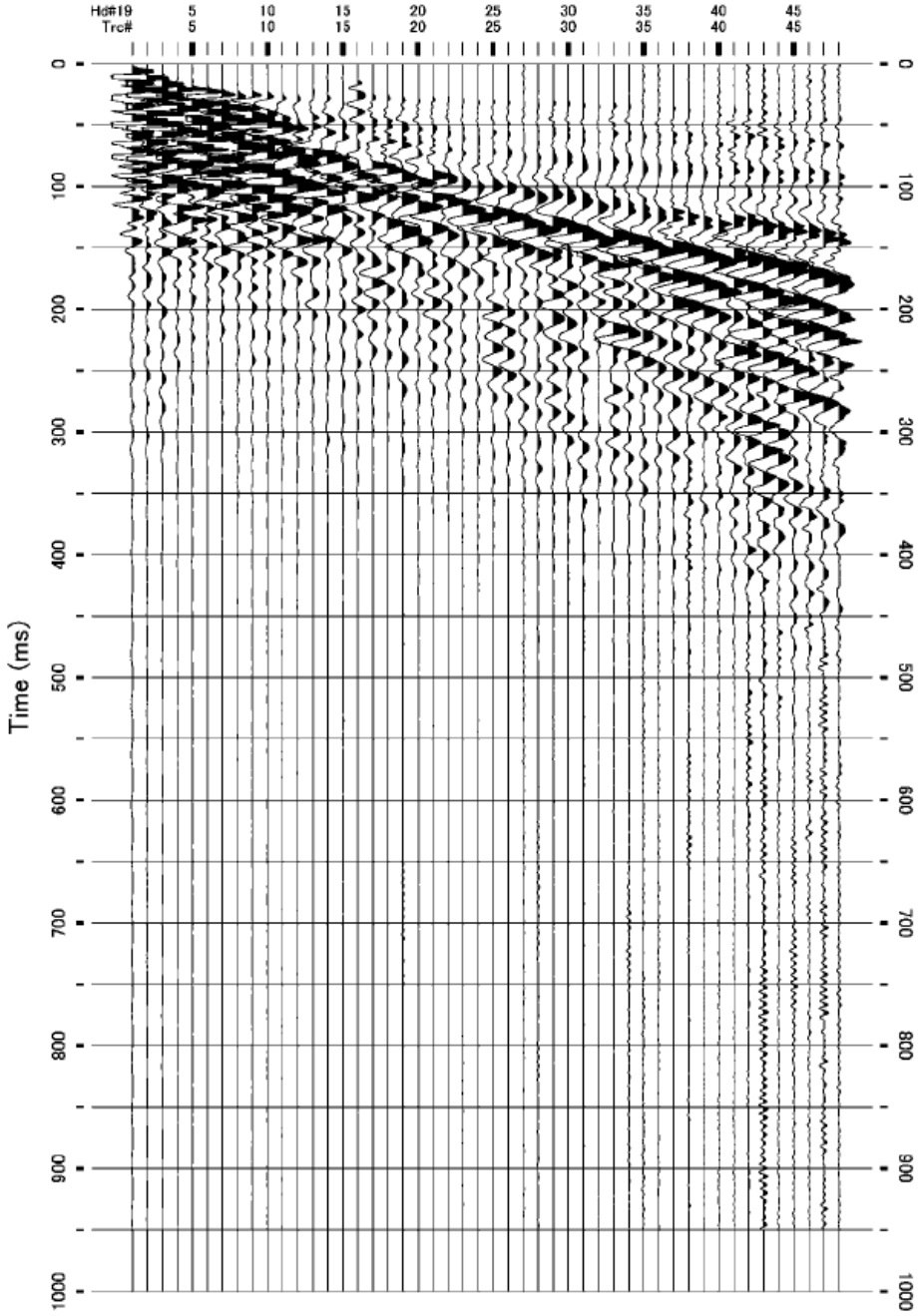
Field data (Surface wave shot record) : UB_18



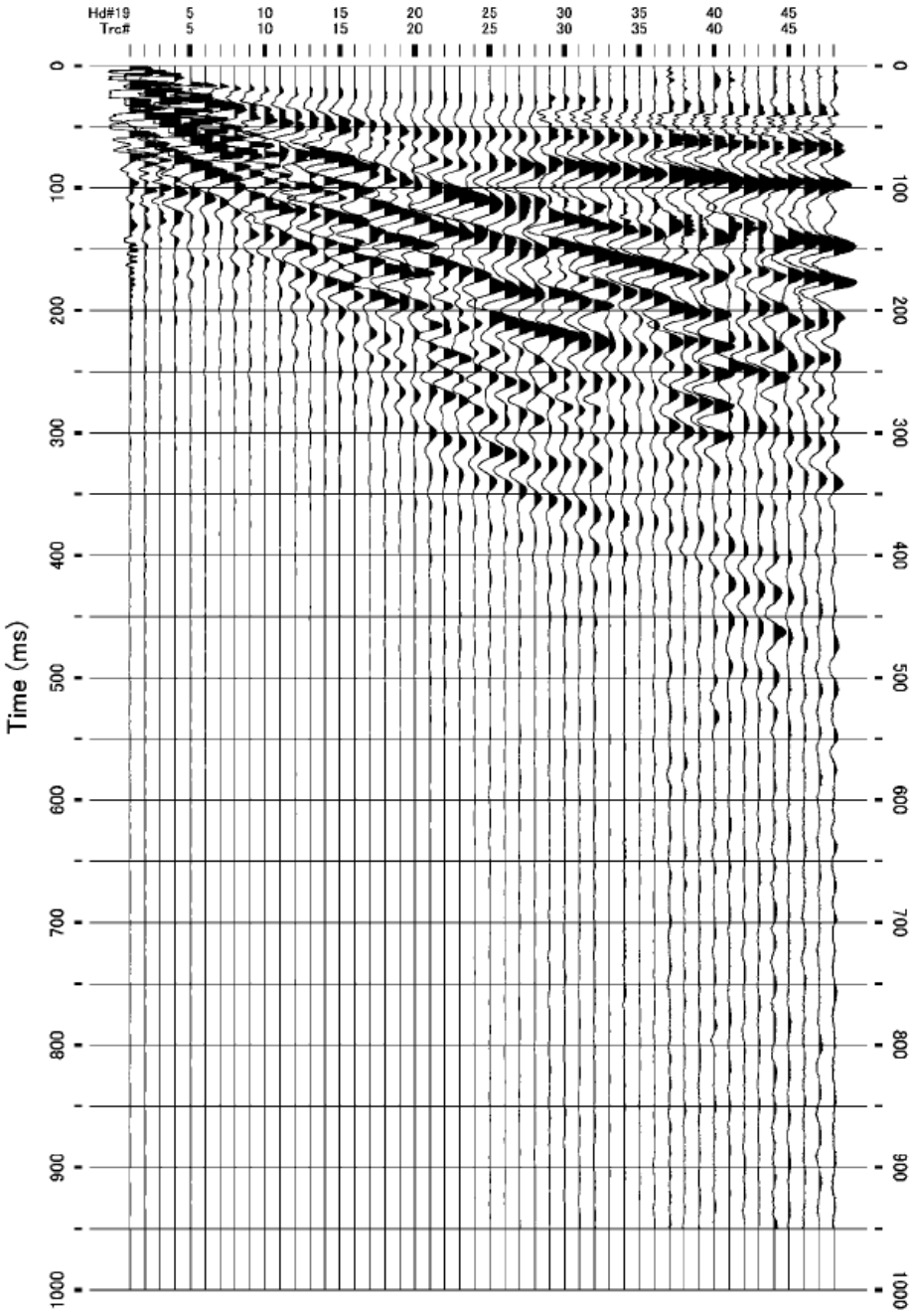
Field data (Surface wave shot record) : UB_19



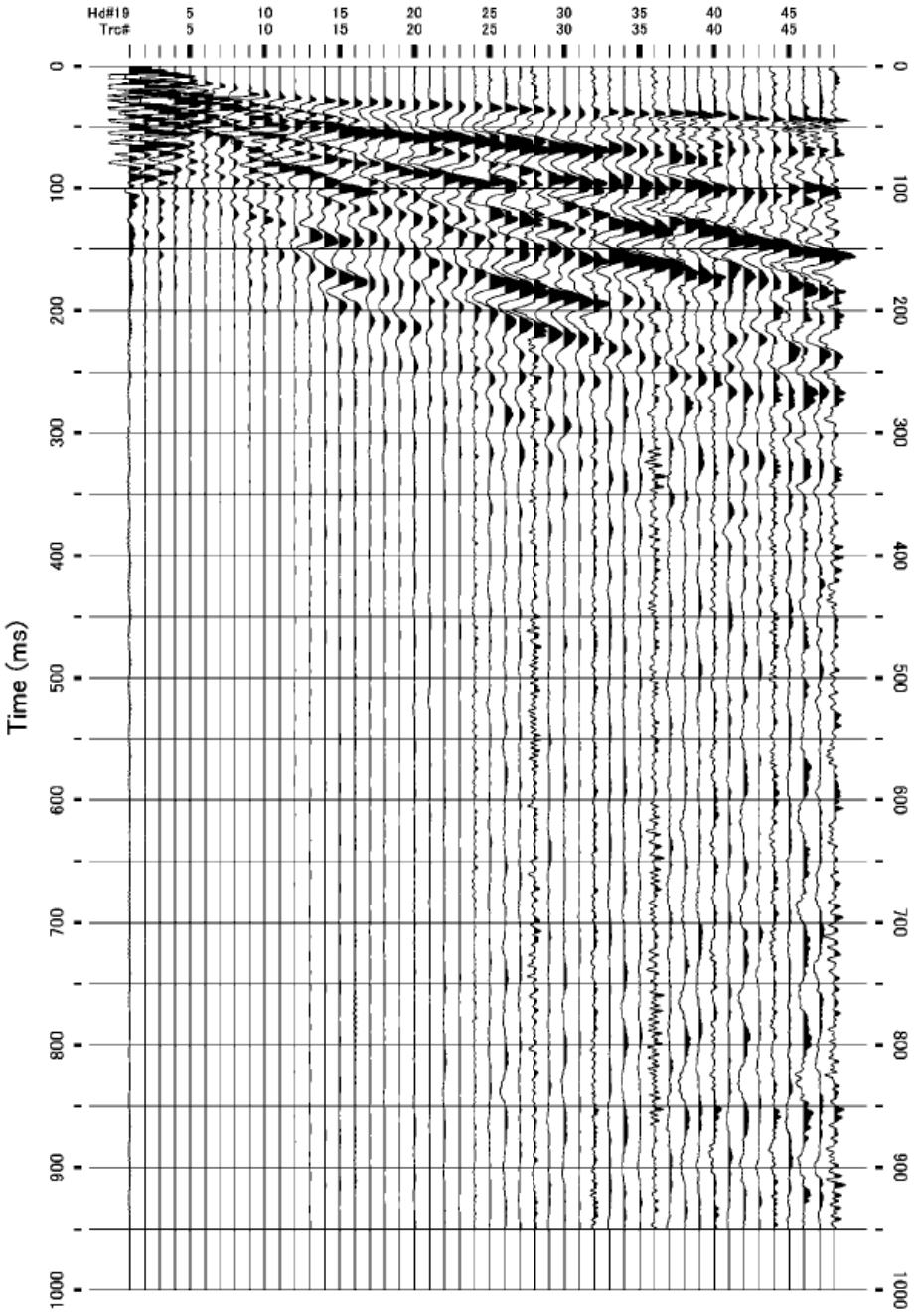
Field data (Surface wave shot record) : UB_20



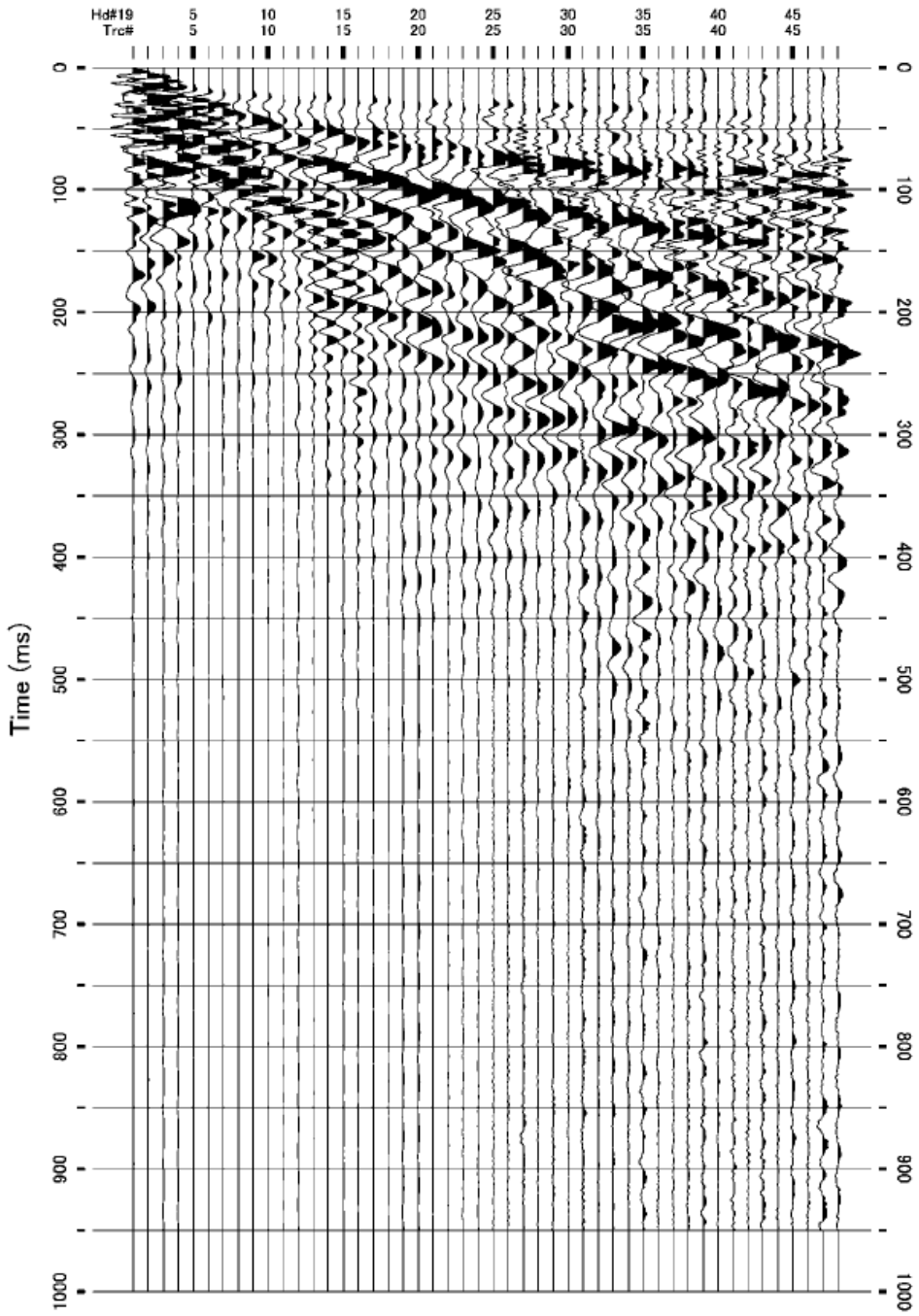
Field data (Surface wave shot record) : UB_21



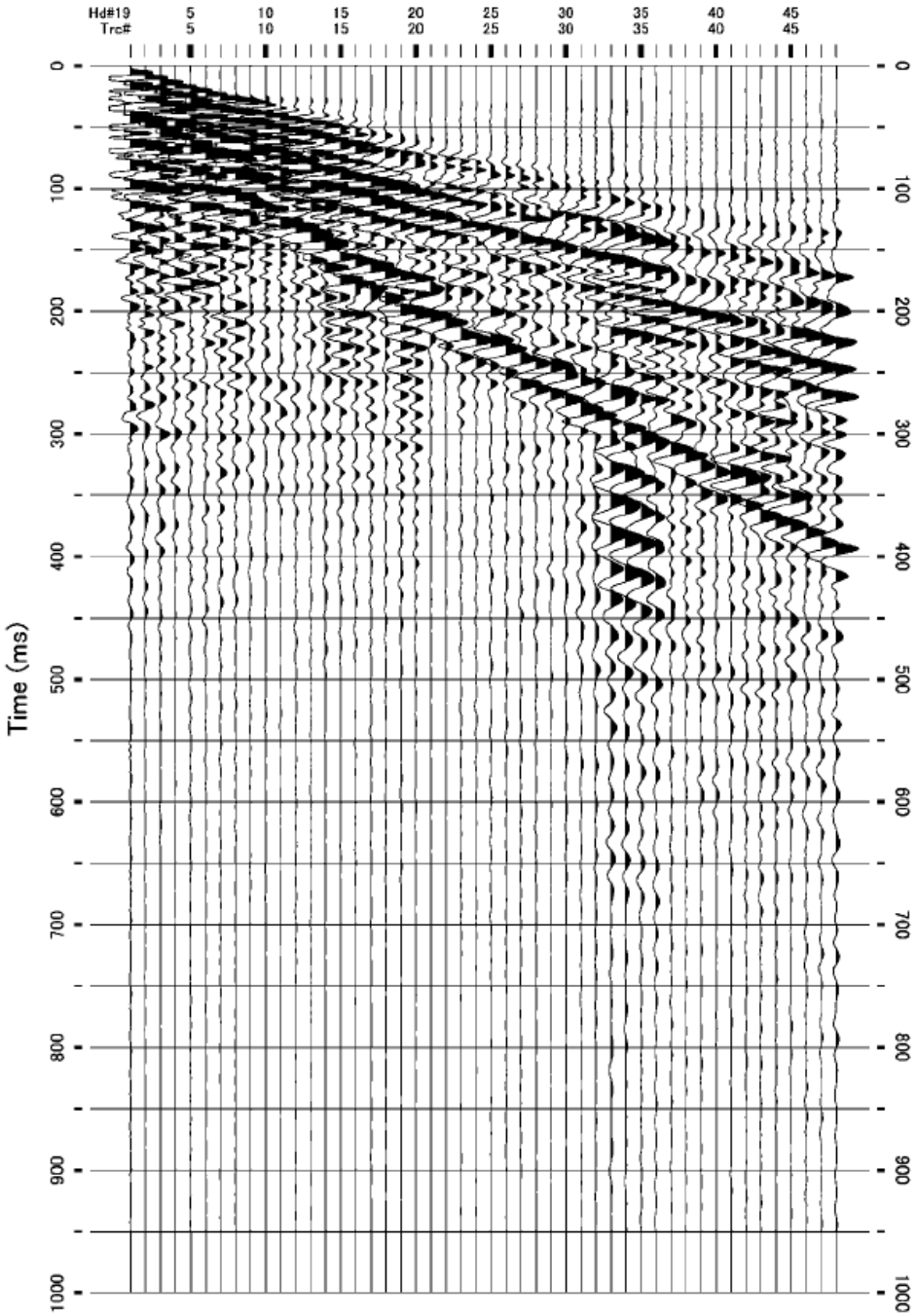
Field data (Surface wave shot record) : UB_22



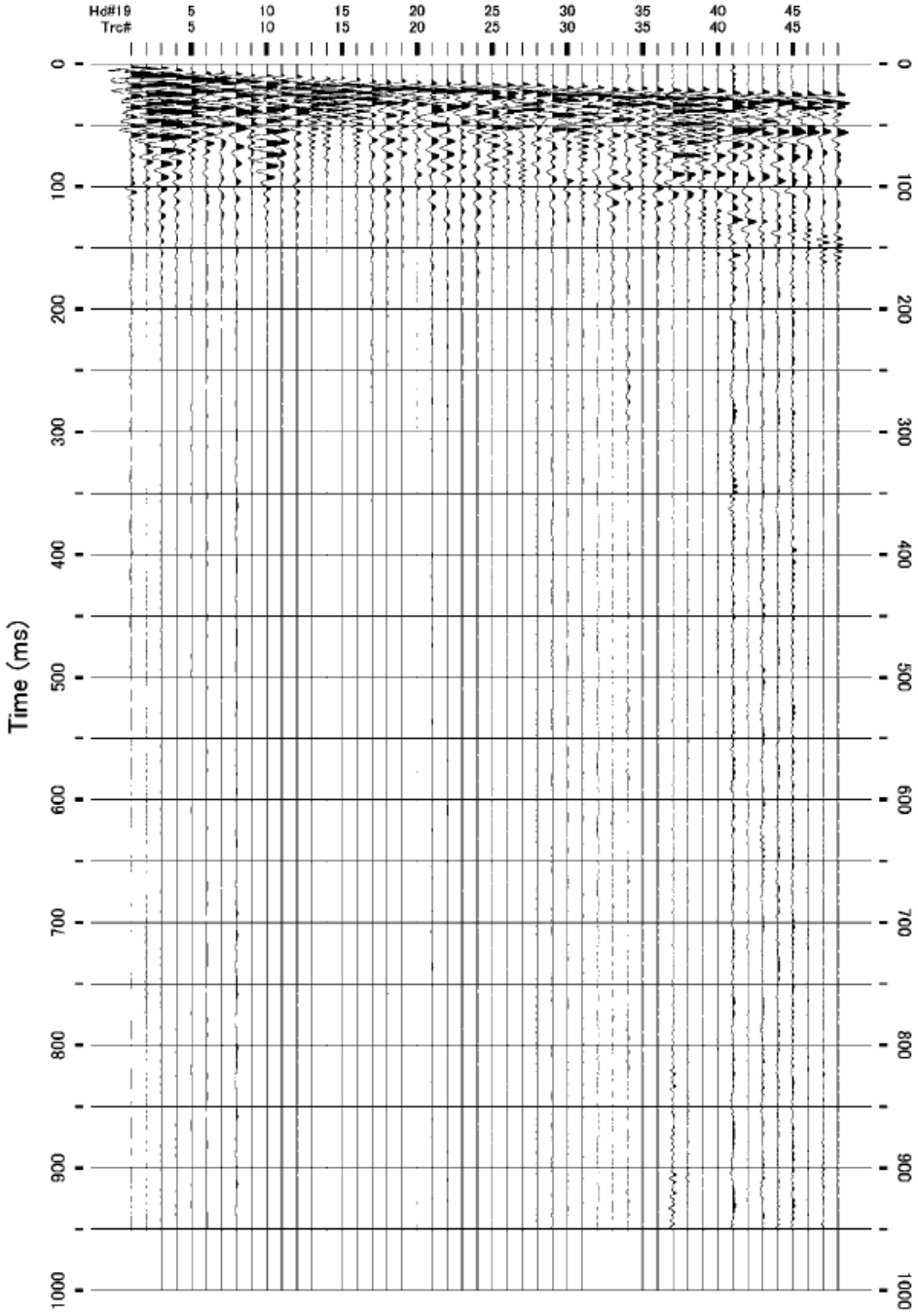
Field data (Surface wave shot record) : UB_23



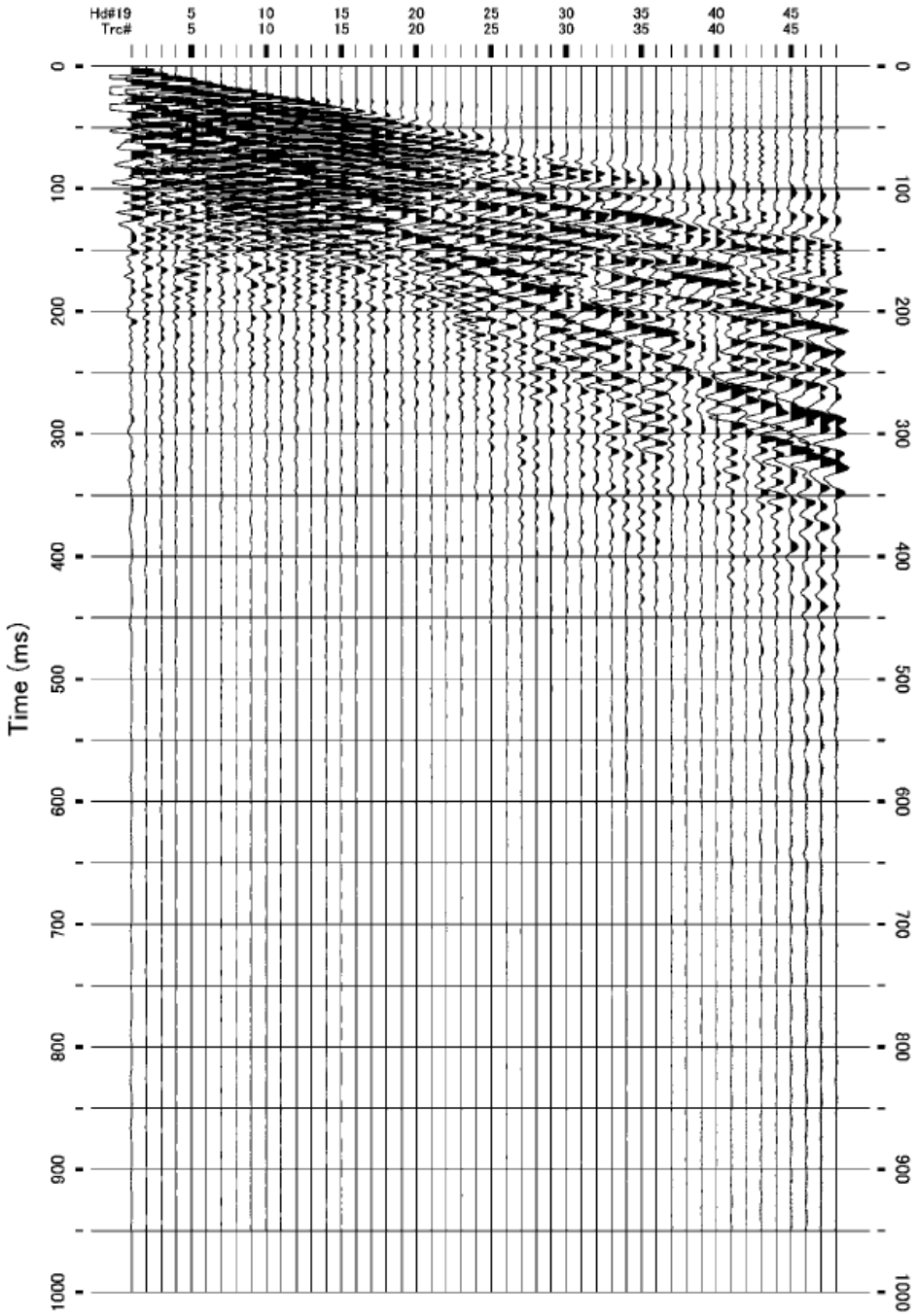
Field data (Surface wave shot record) : UB_24



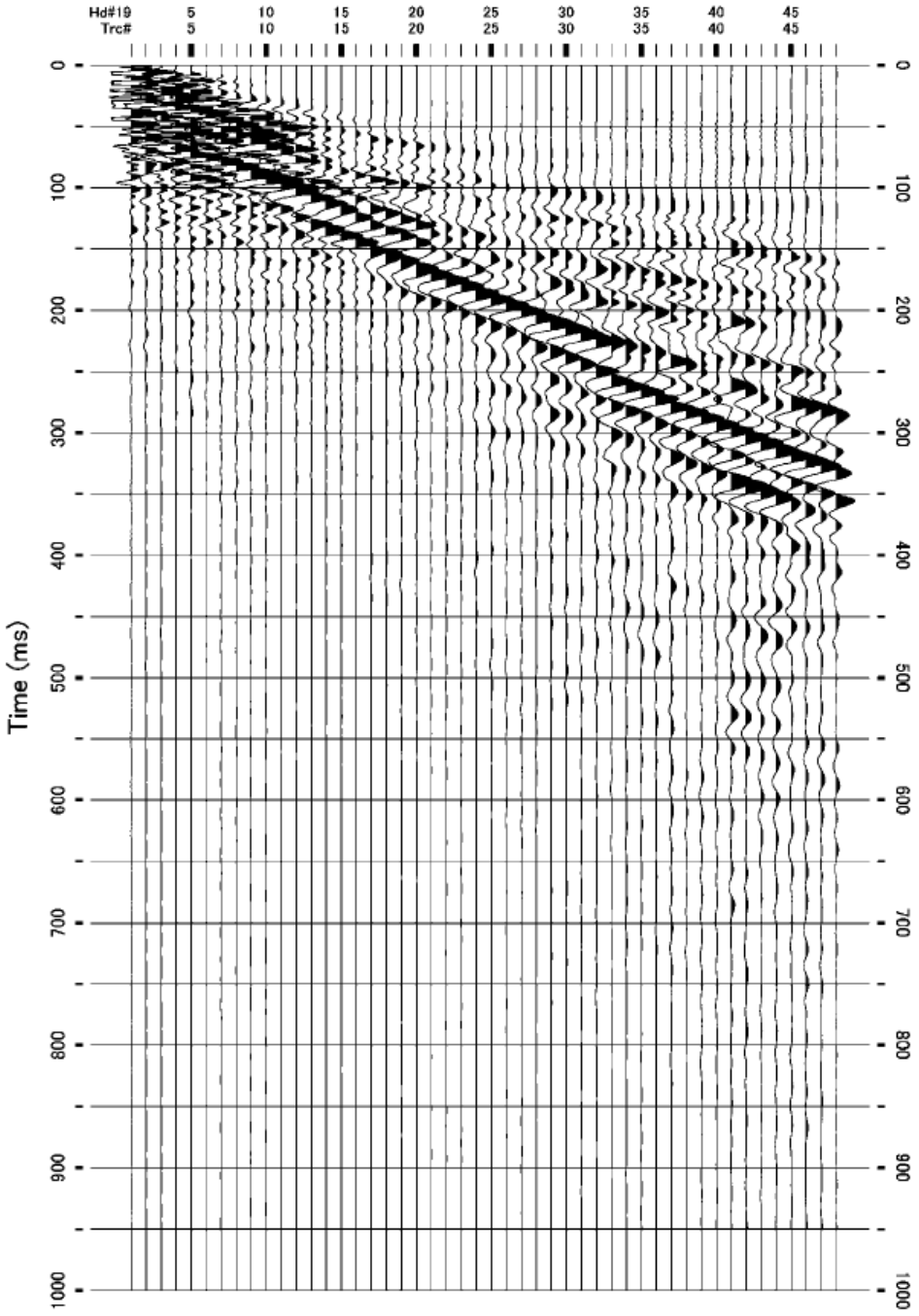
Field data (Surface wave shot record) : UB_25



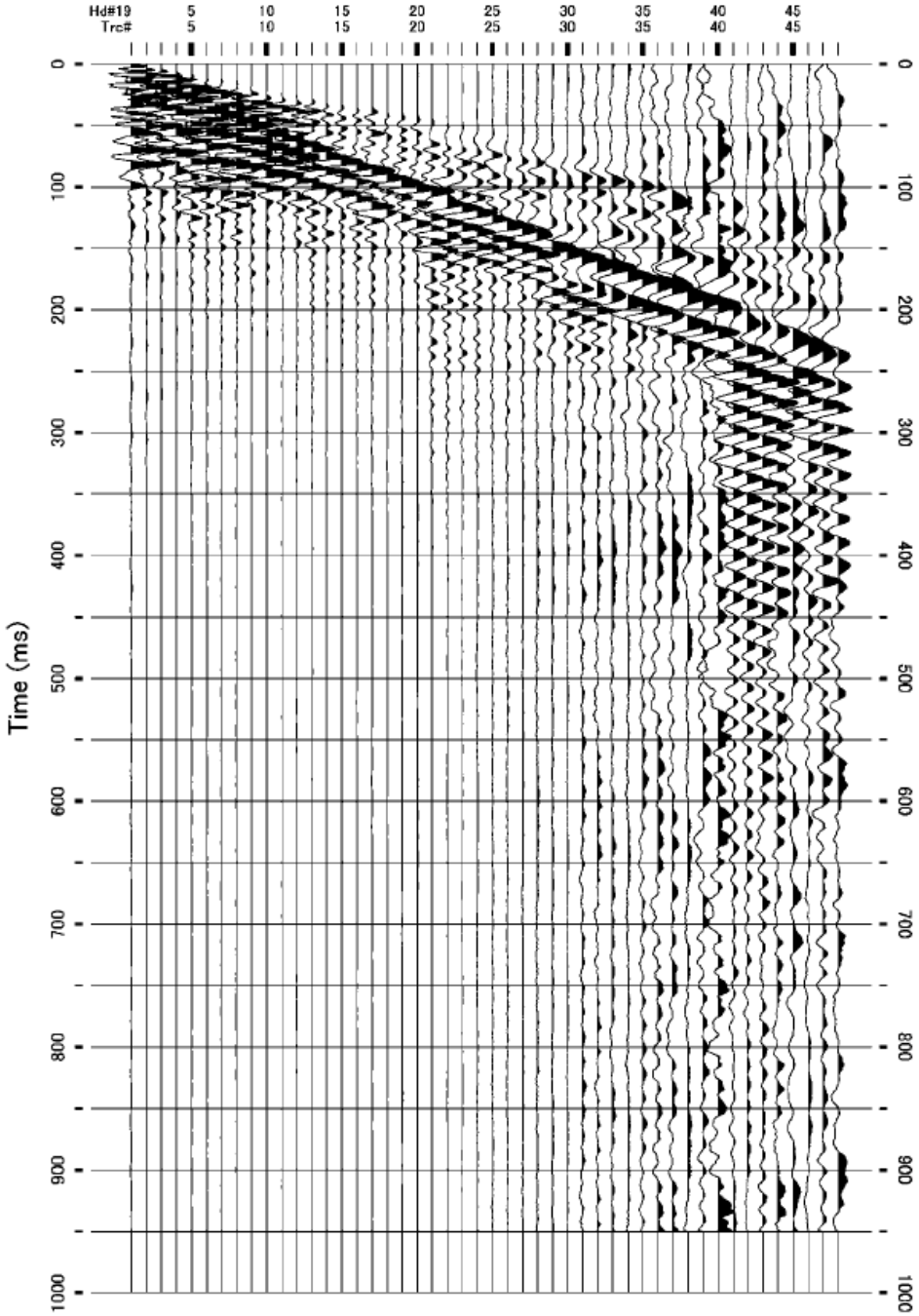
Field data (Surface wave shot record) : UB_26



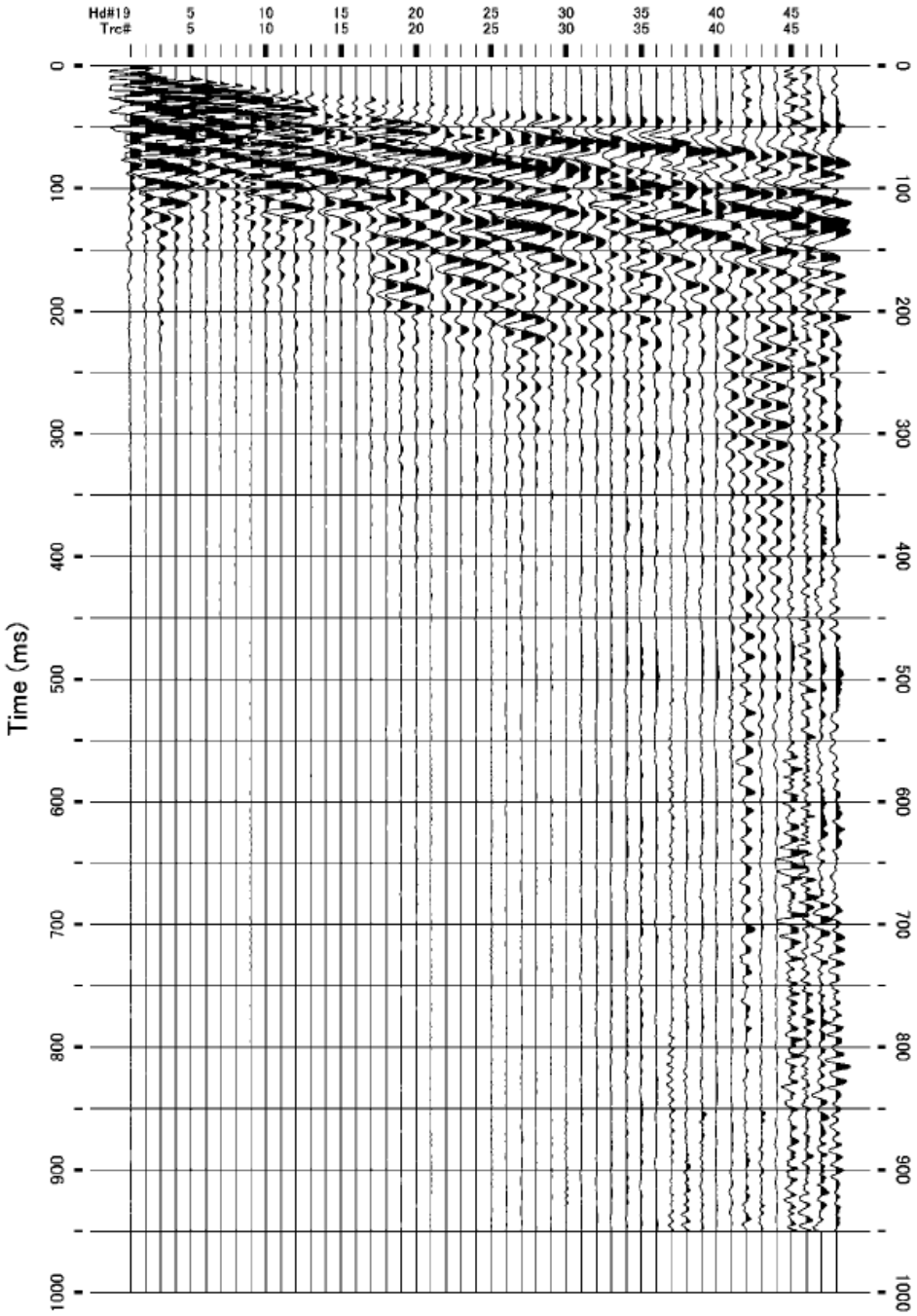
Field data (Surface wave shot record) : UB_27



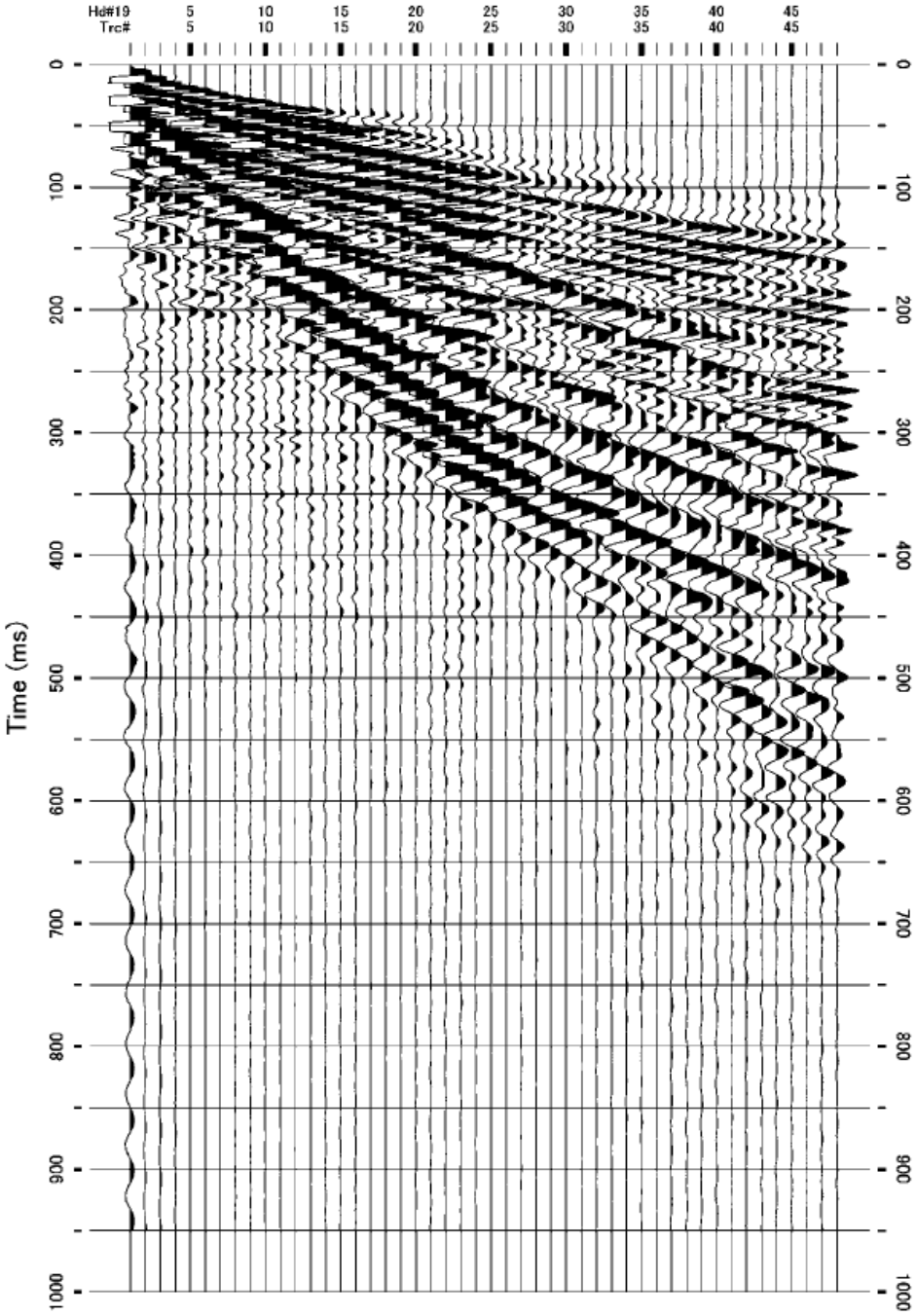
Field data (Surface wave shot record) : UB_28



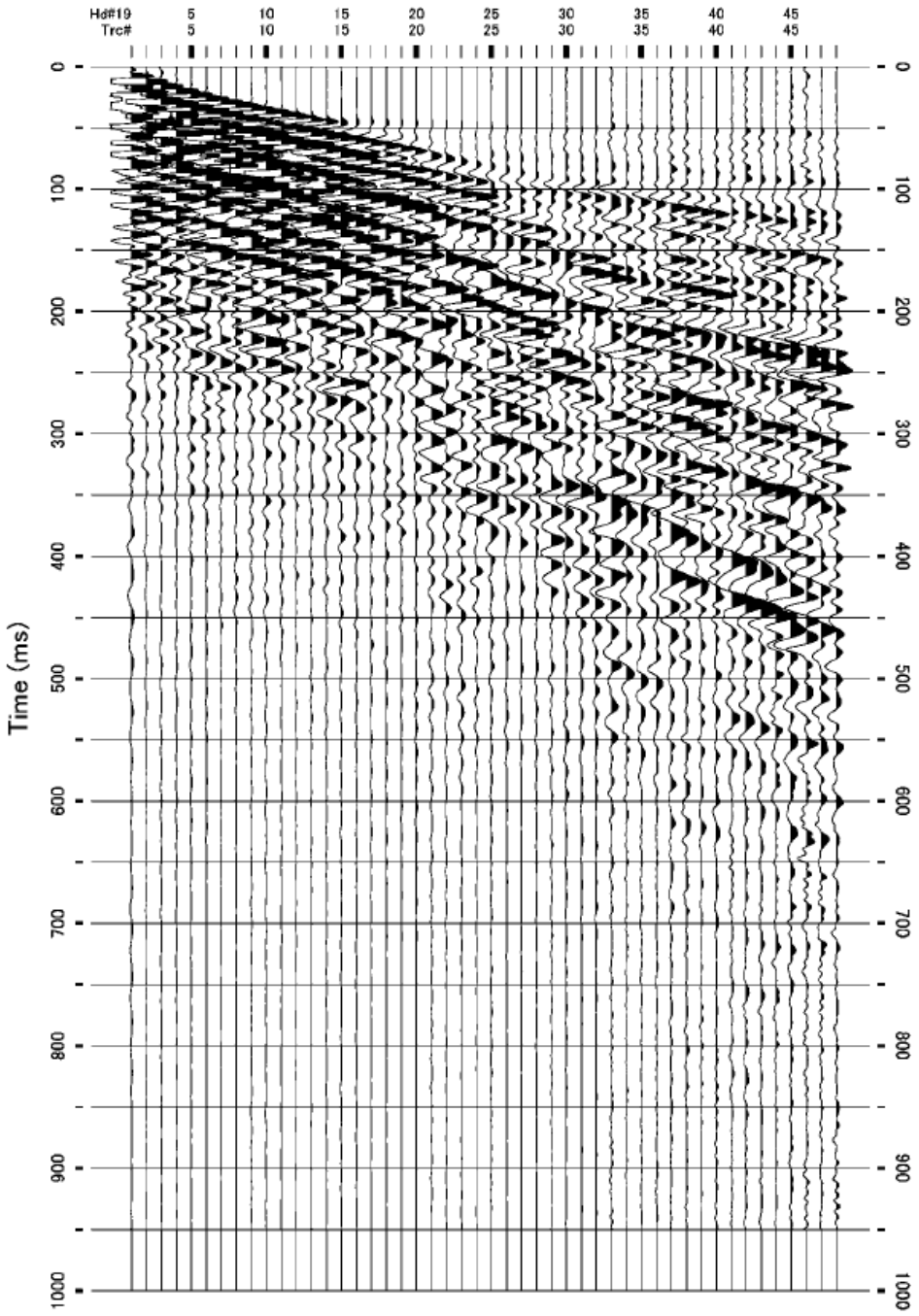
Field data (Surface wave shot record) : UB_29



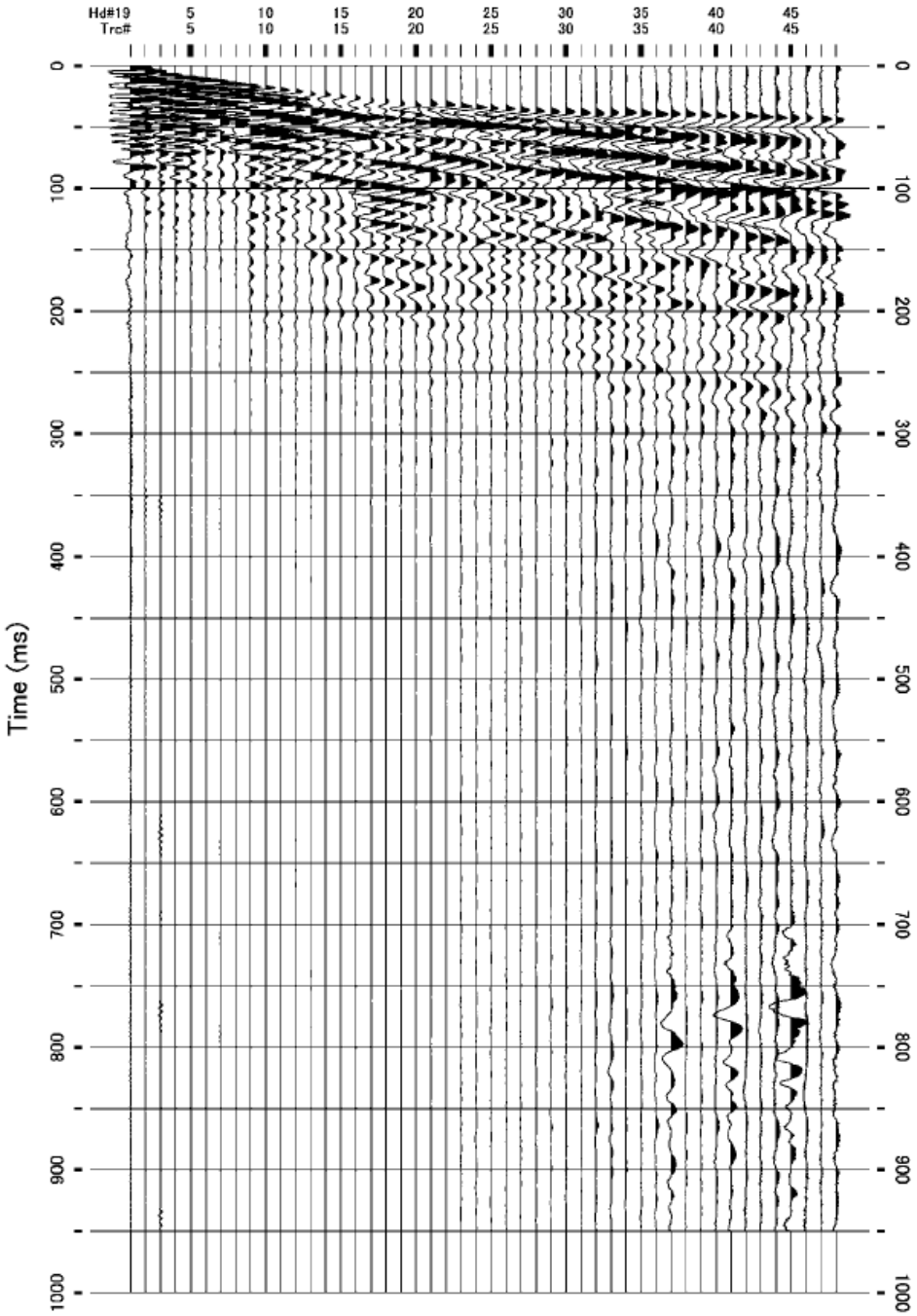
Field data (Surface wave shot record) : UB_30



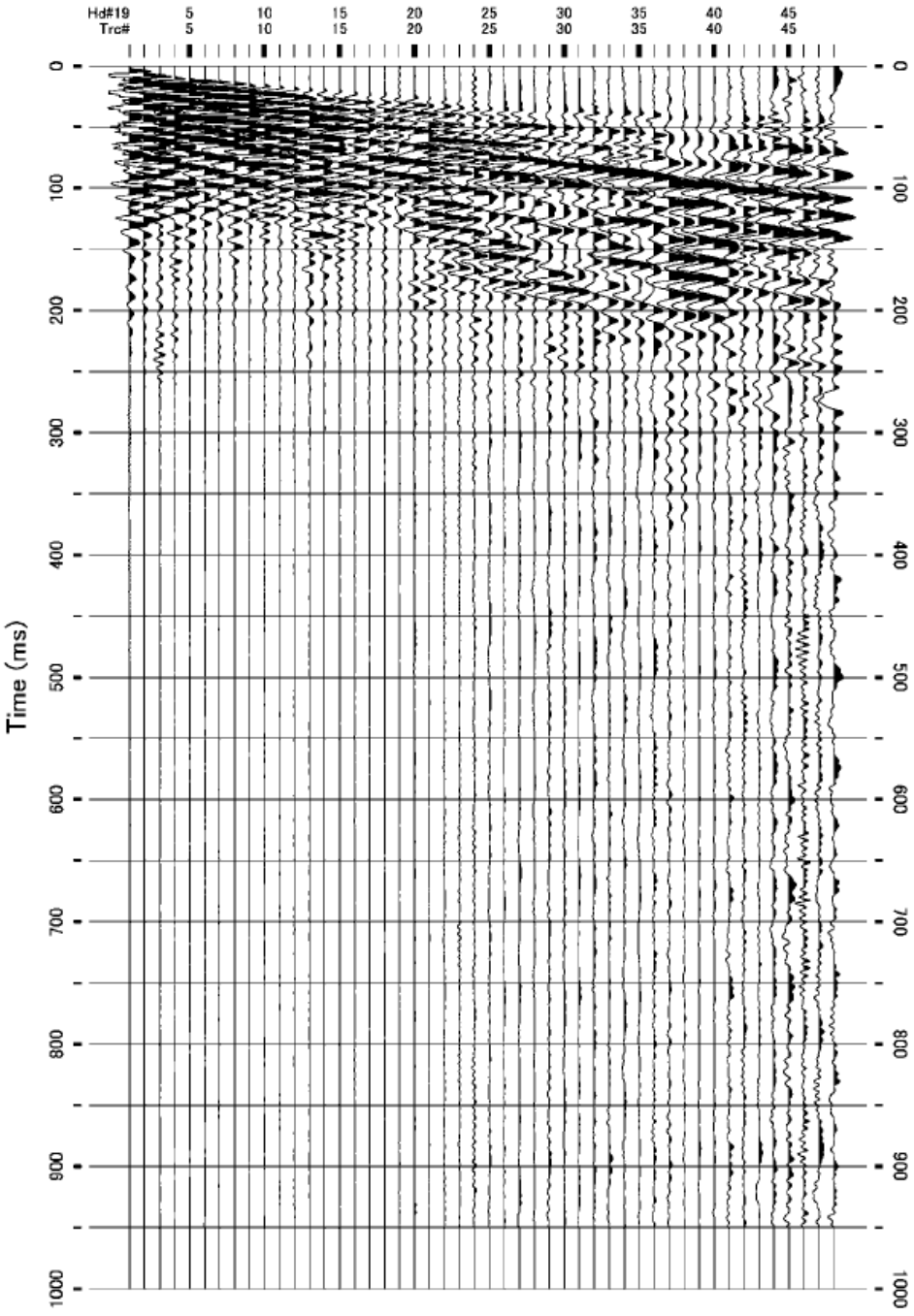
Field data (Surface wave shot record) : UB_31



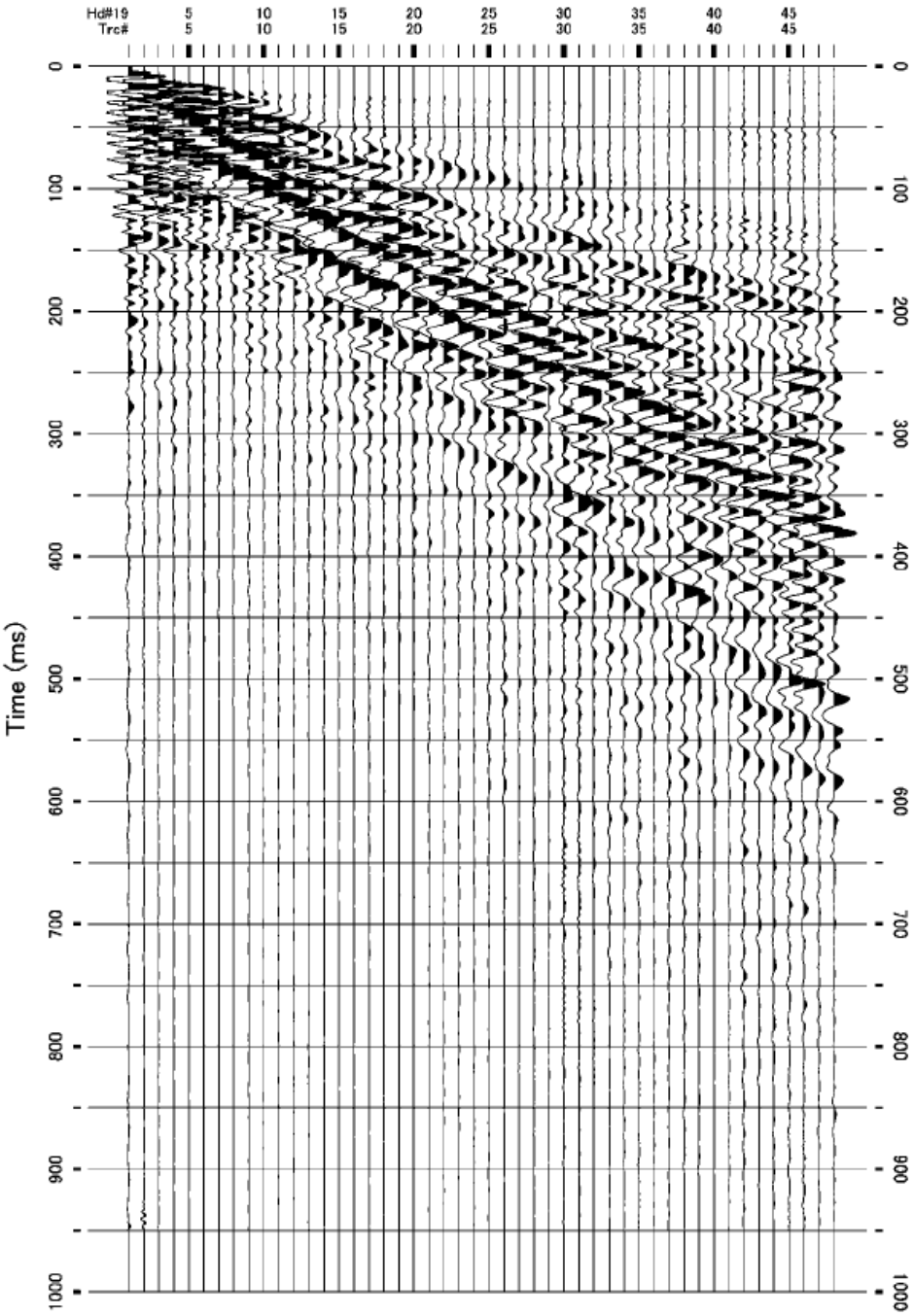
Field data (Surface wave shot record) : UB_32



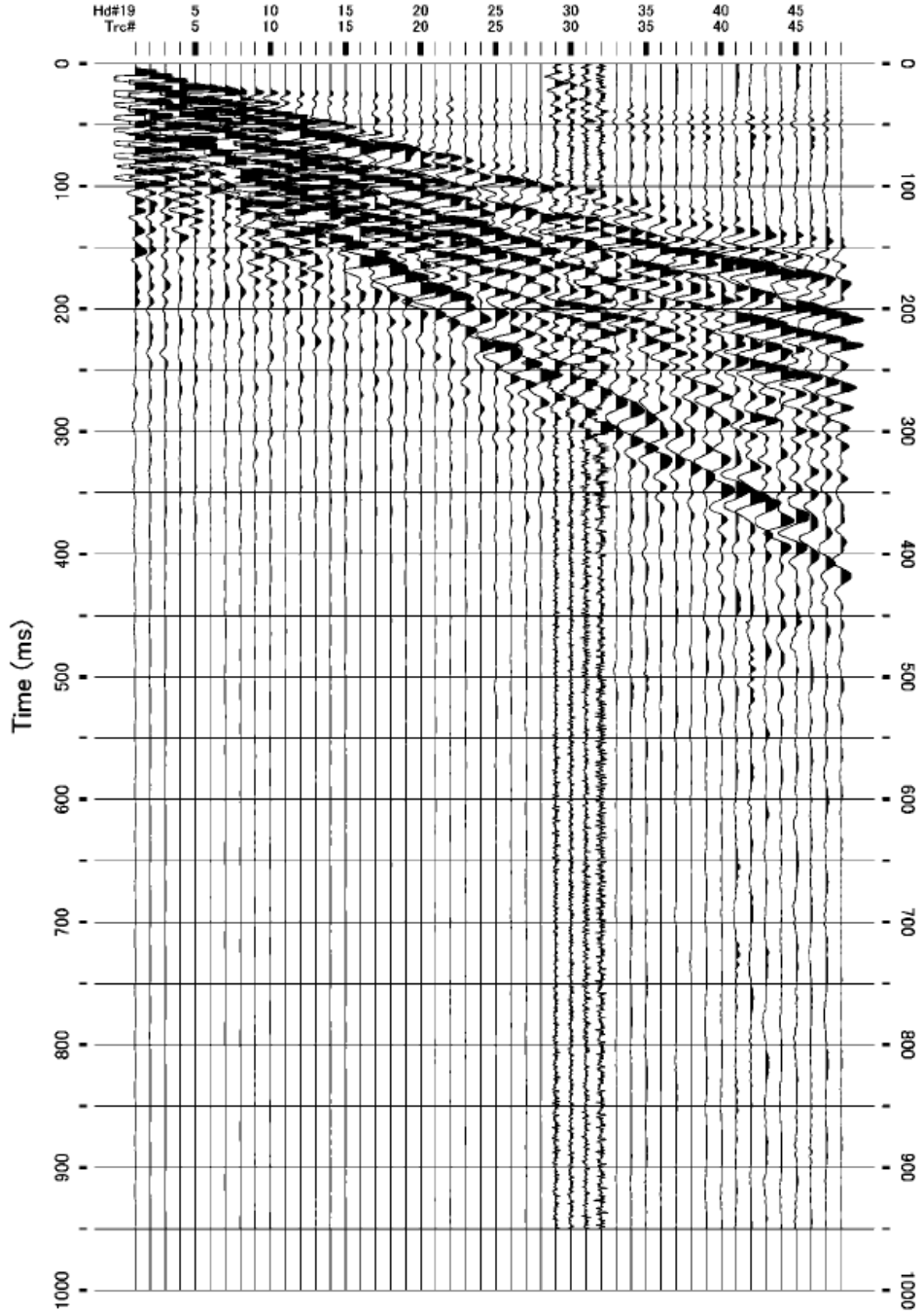
Field data (Surface wave shot record) : UB_33



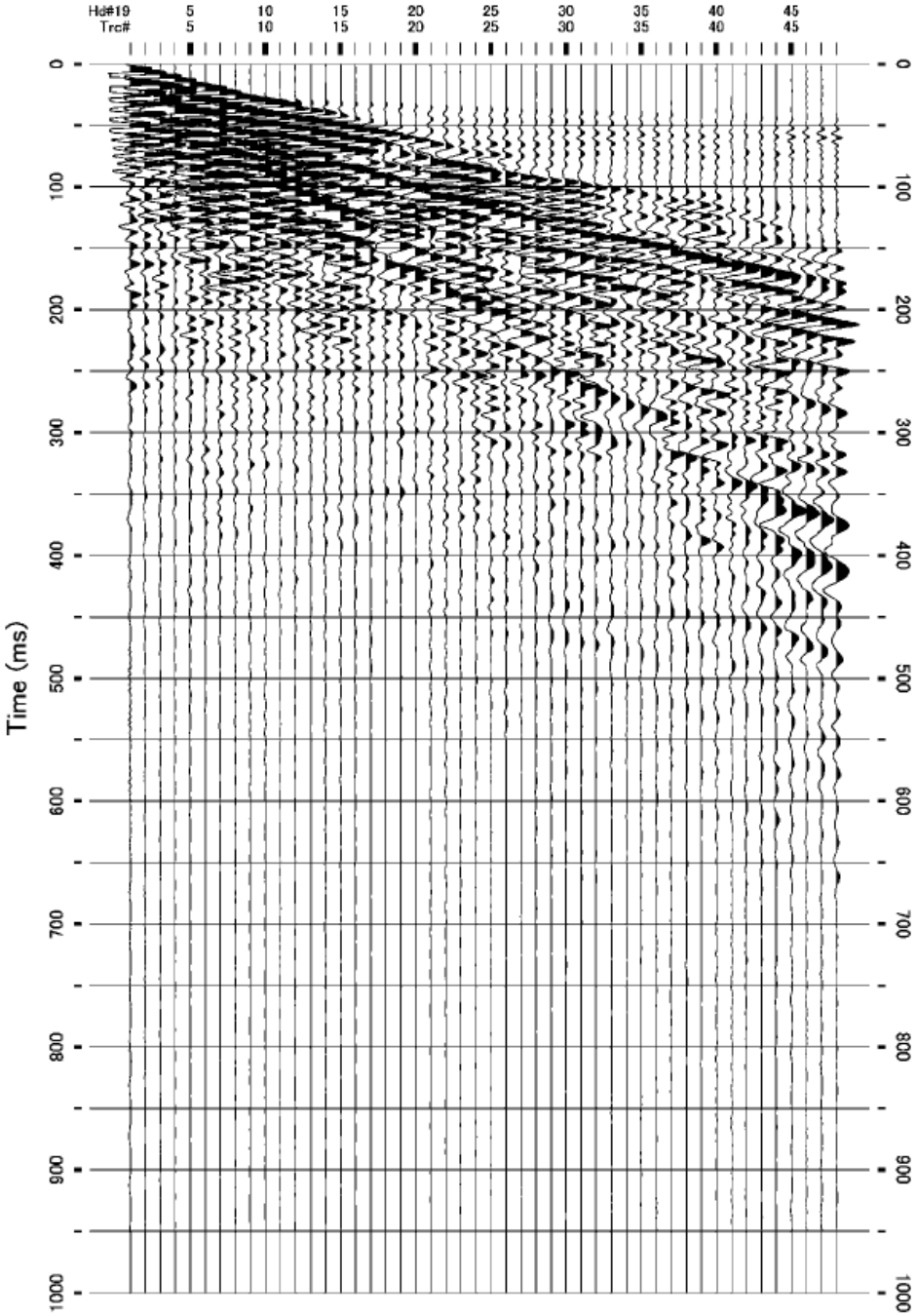
Field data (Surface wave shot record) : UB_34



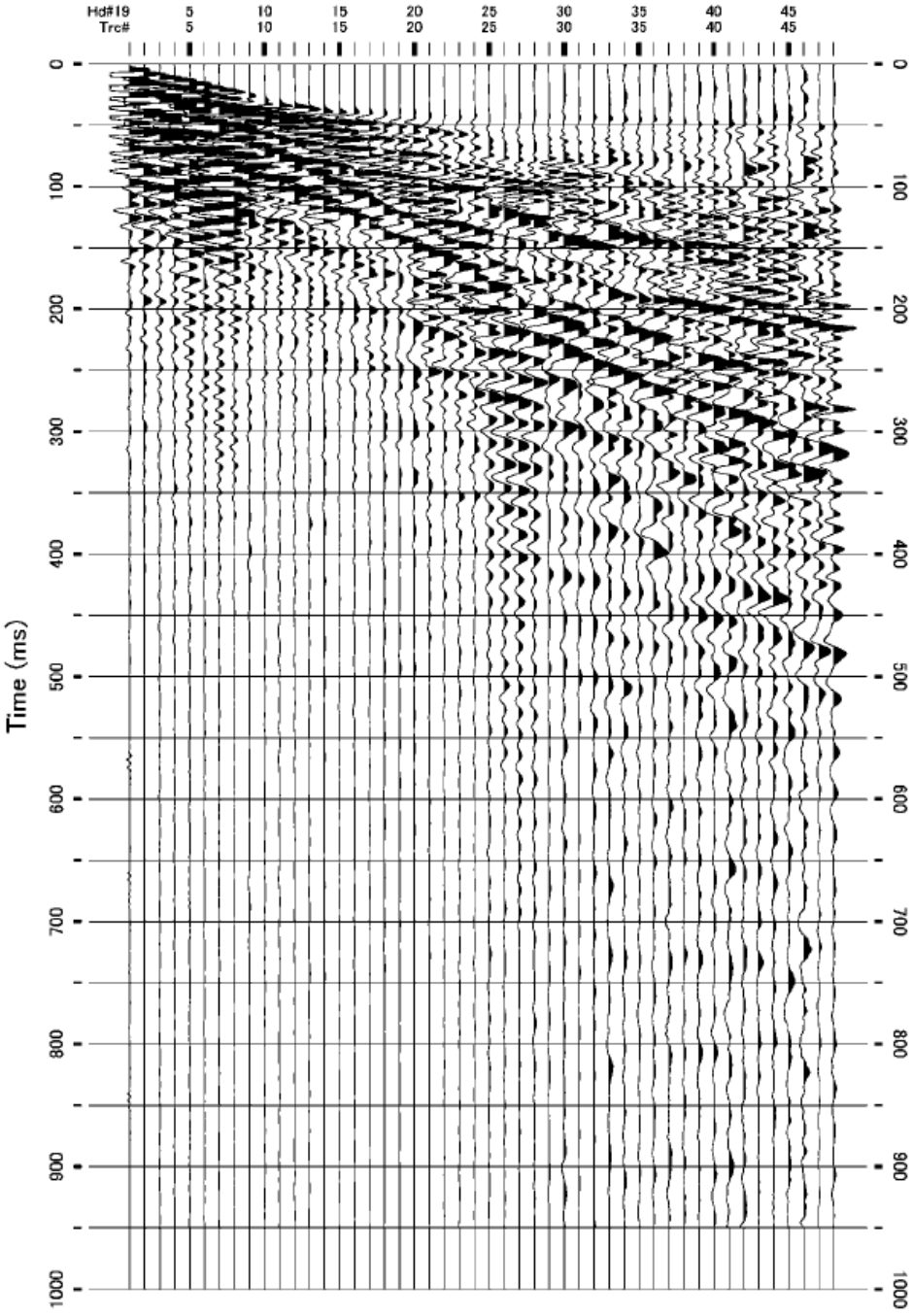
Field data (Surface wave shot record) : UB_35



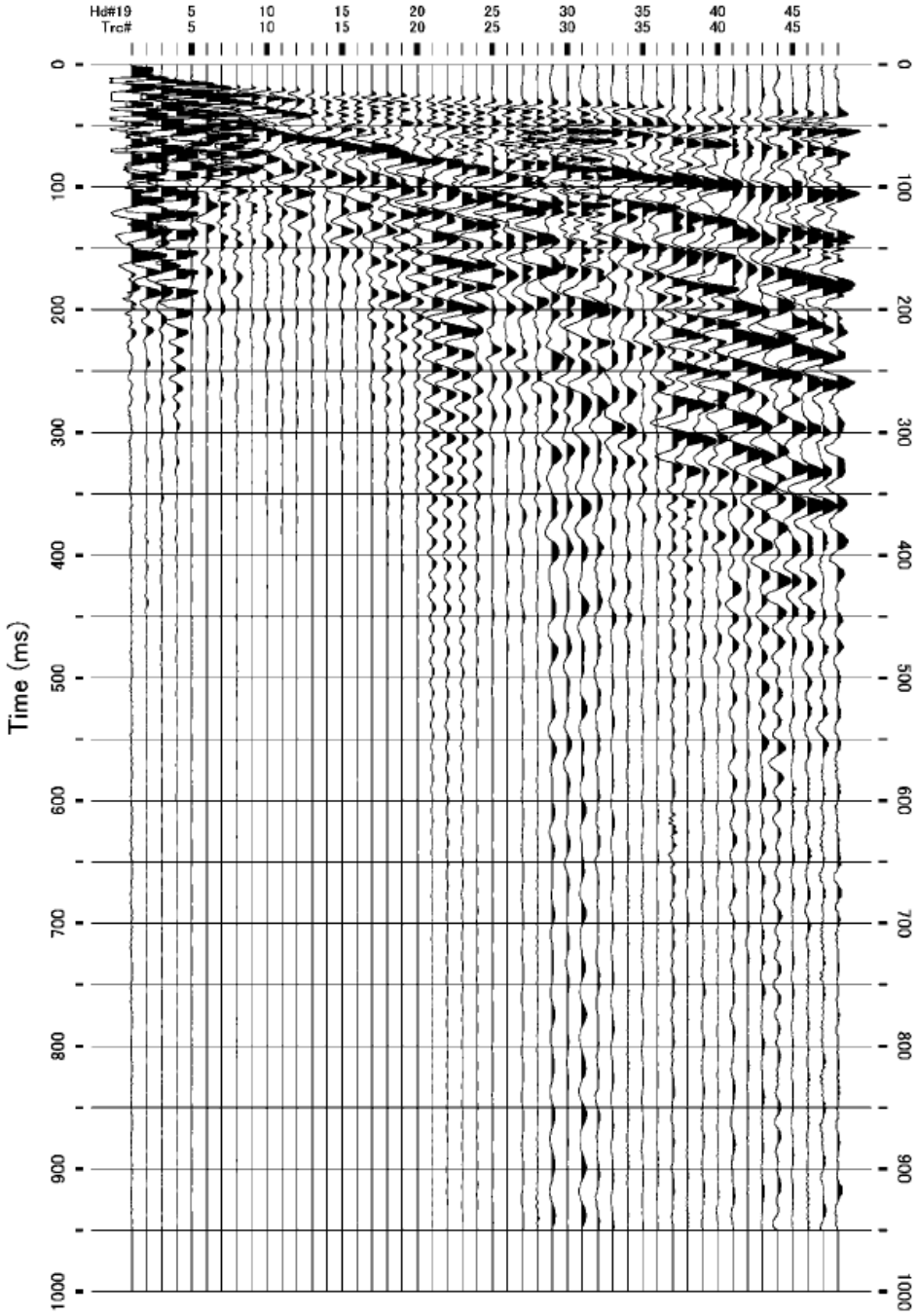
Field data (Surface wave shot record) : UB_36



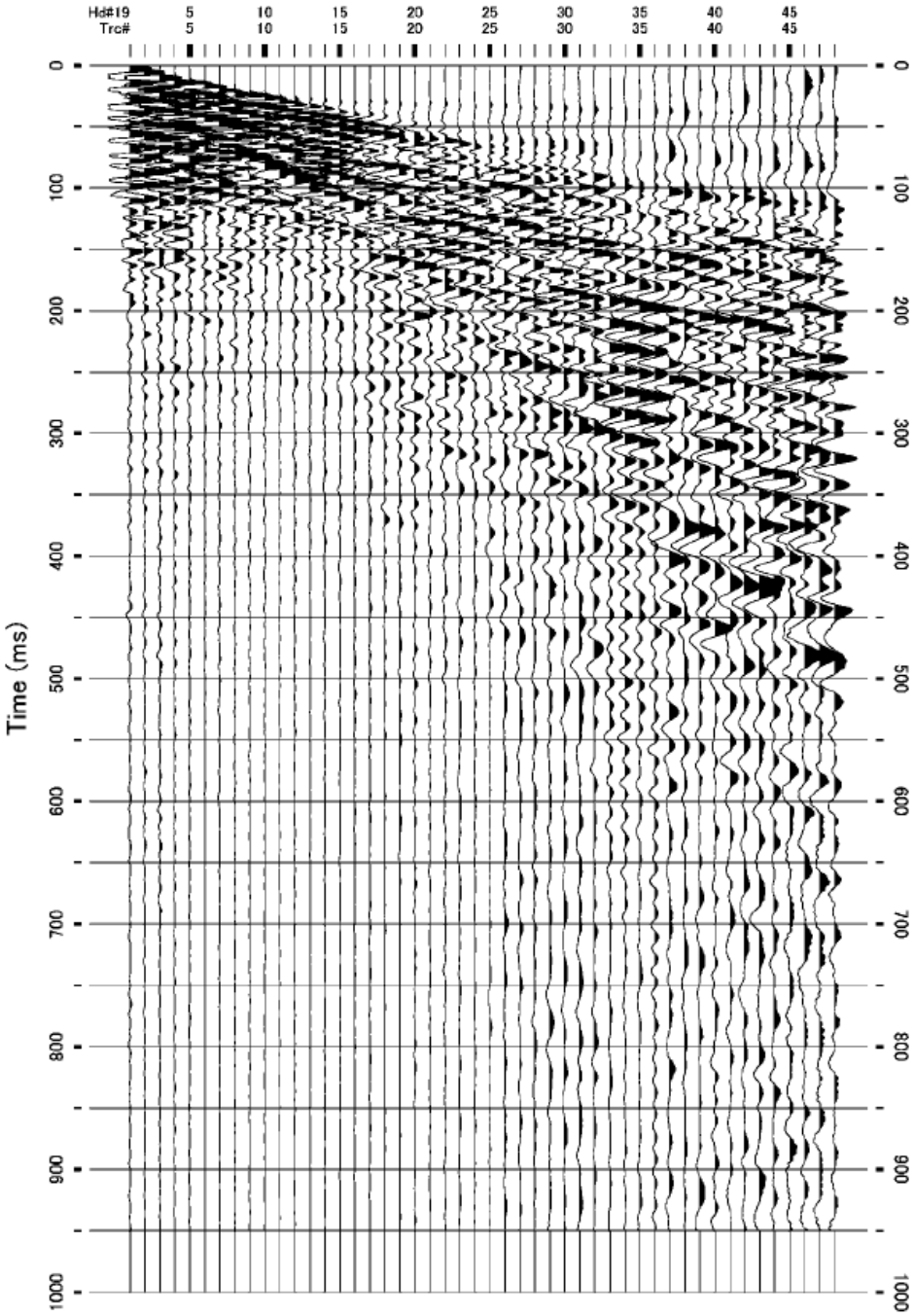
Field data (Surface wave shot record) : UB_37



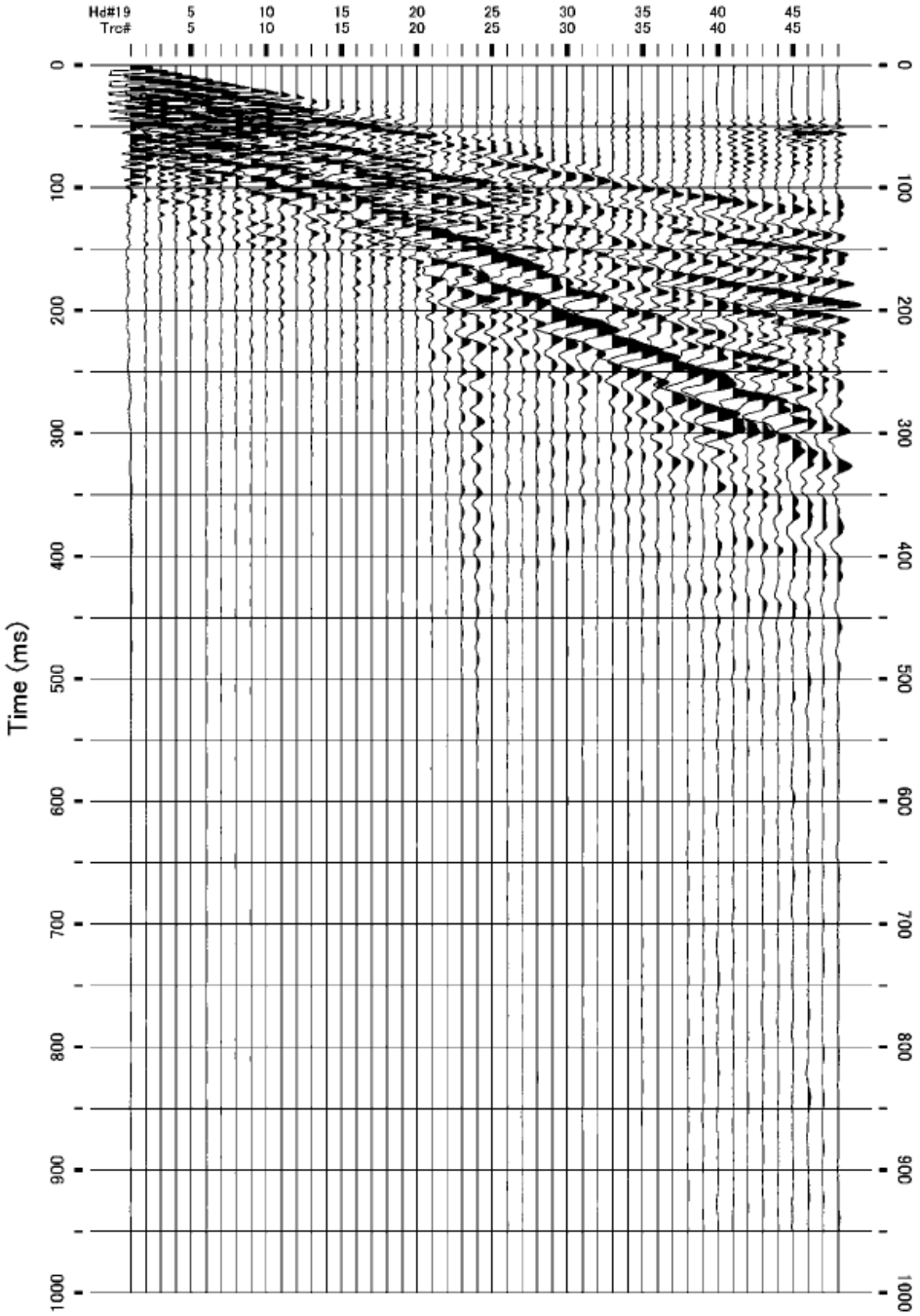
Field data (Surface wave shot record) : UB_Bo_01



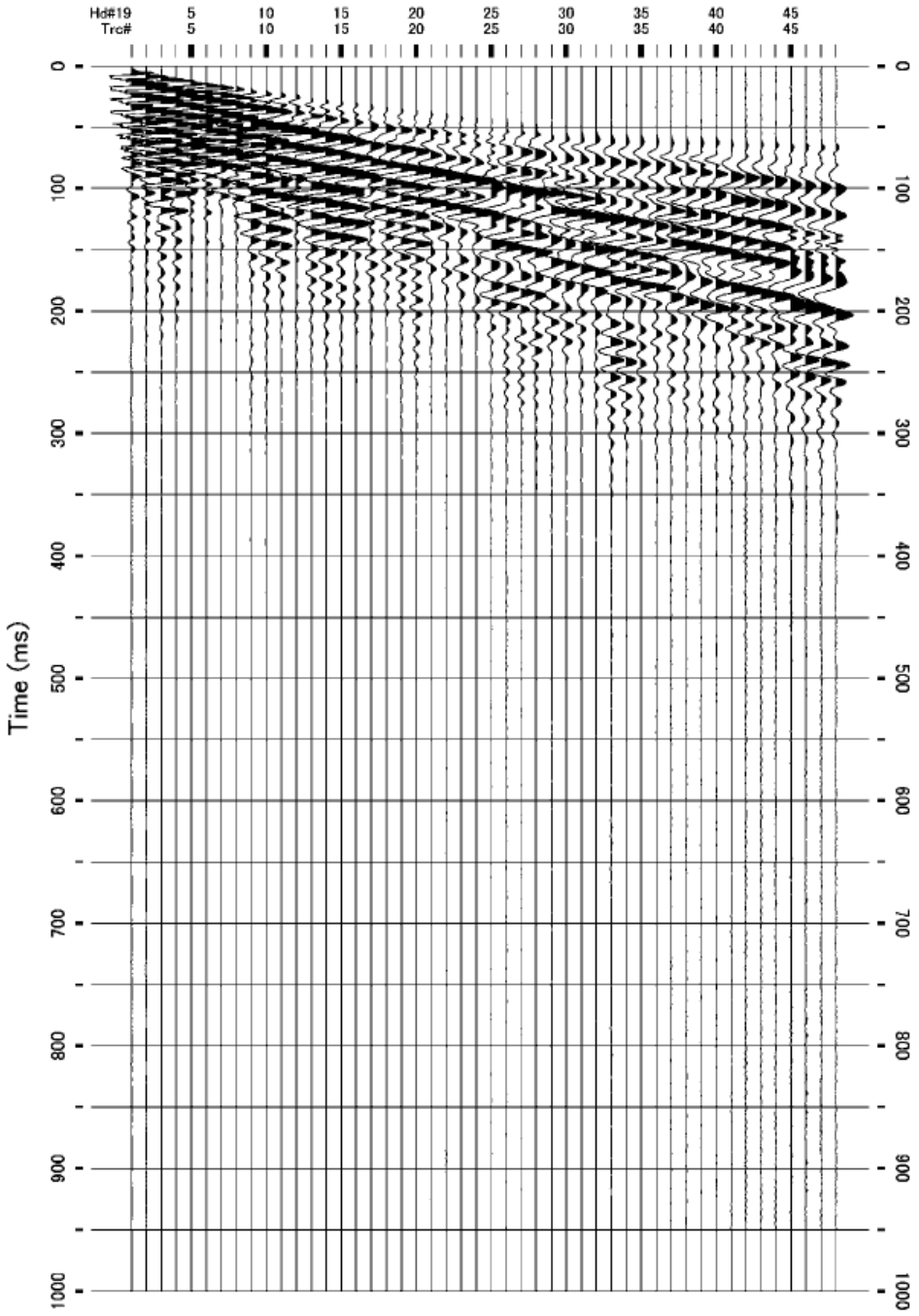
Field data (Surface wave shot record) : UB_Bo_02



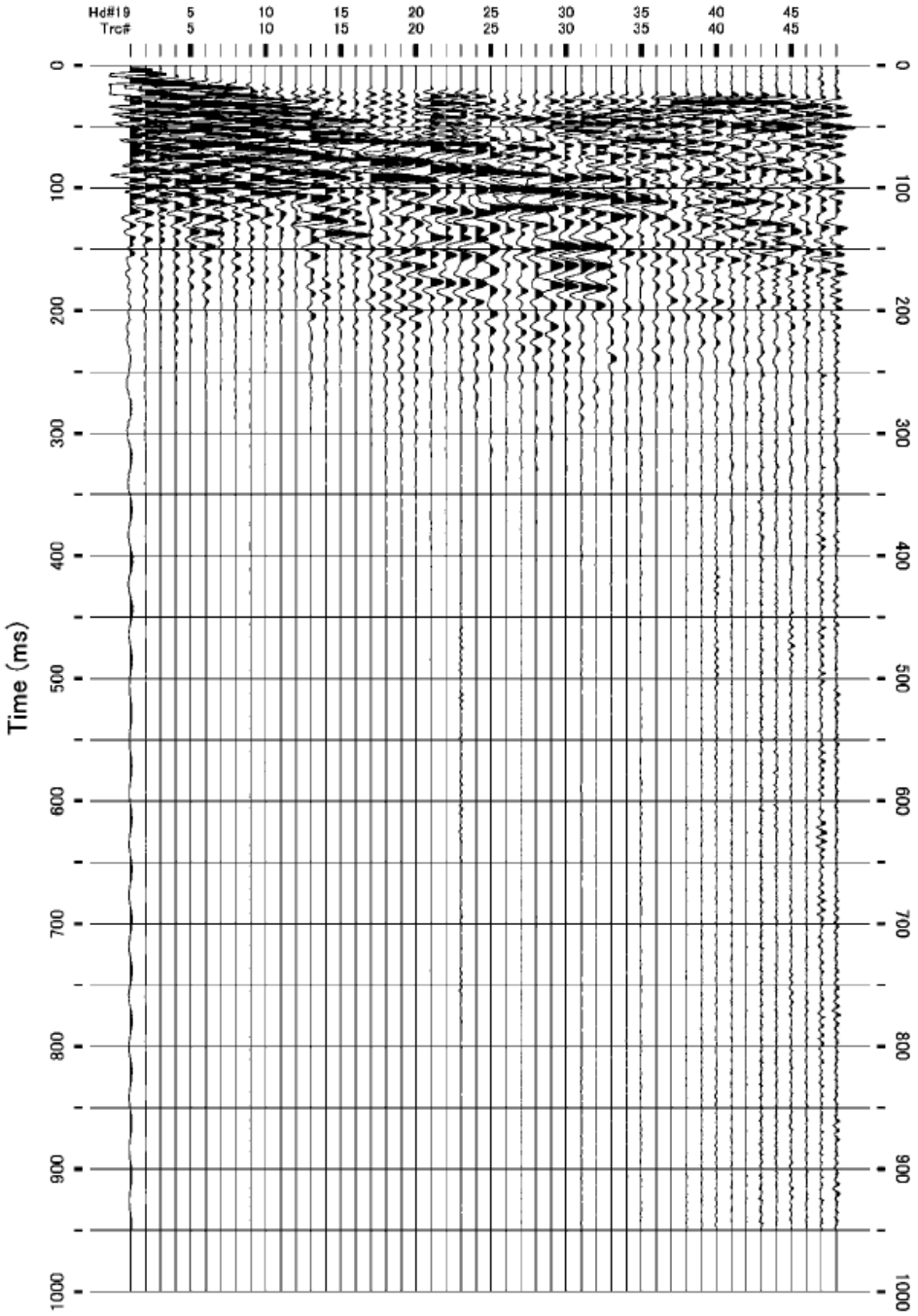
Field data (Surface wave shot record) : UB_Bo_03



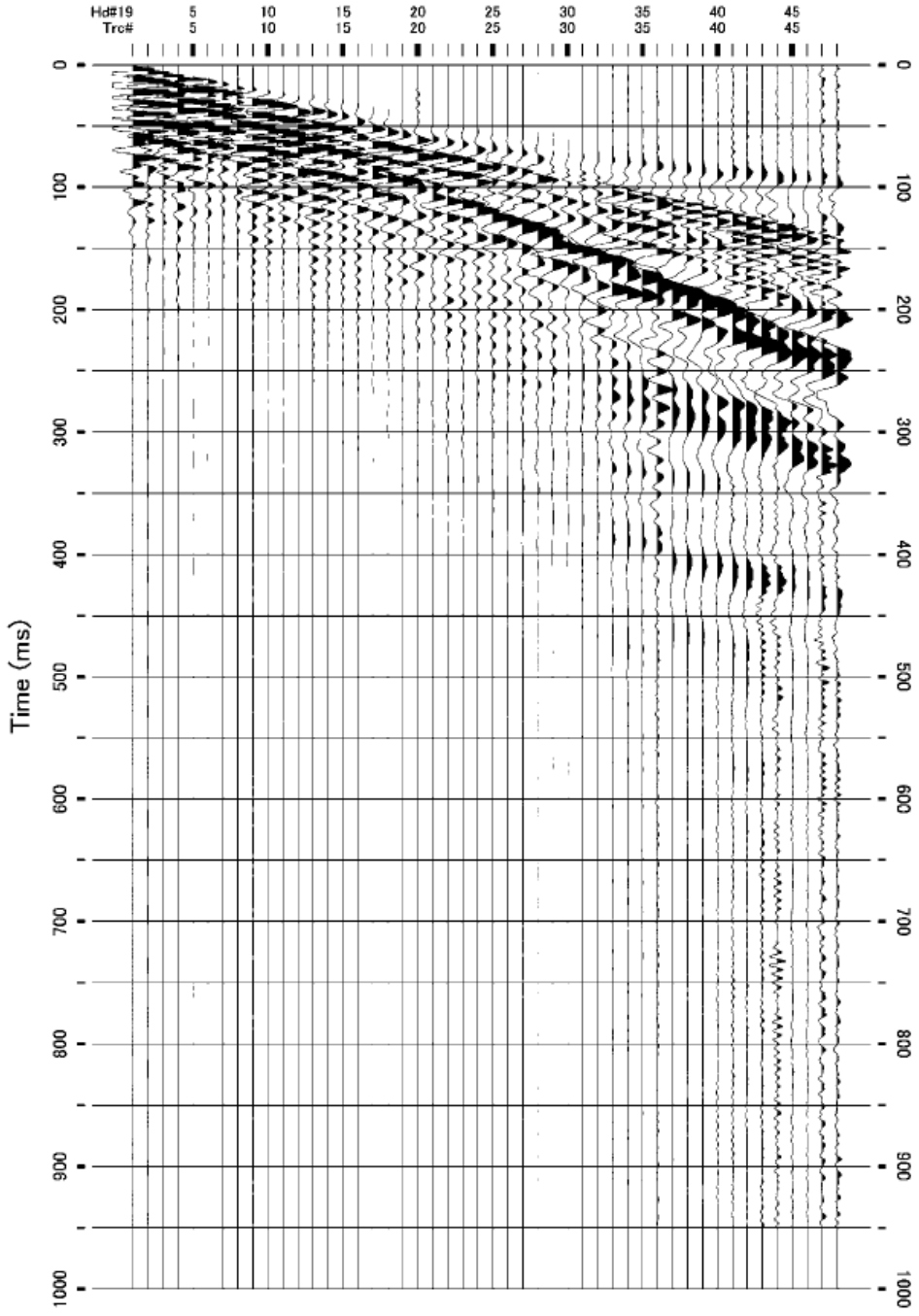
Field data (Surface wave shot record) : UB_Bo_04



Field data (Surface wave shot record) : BI_01



Field data (Surface wave shot record) : BI_02



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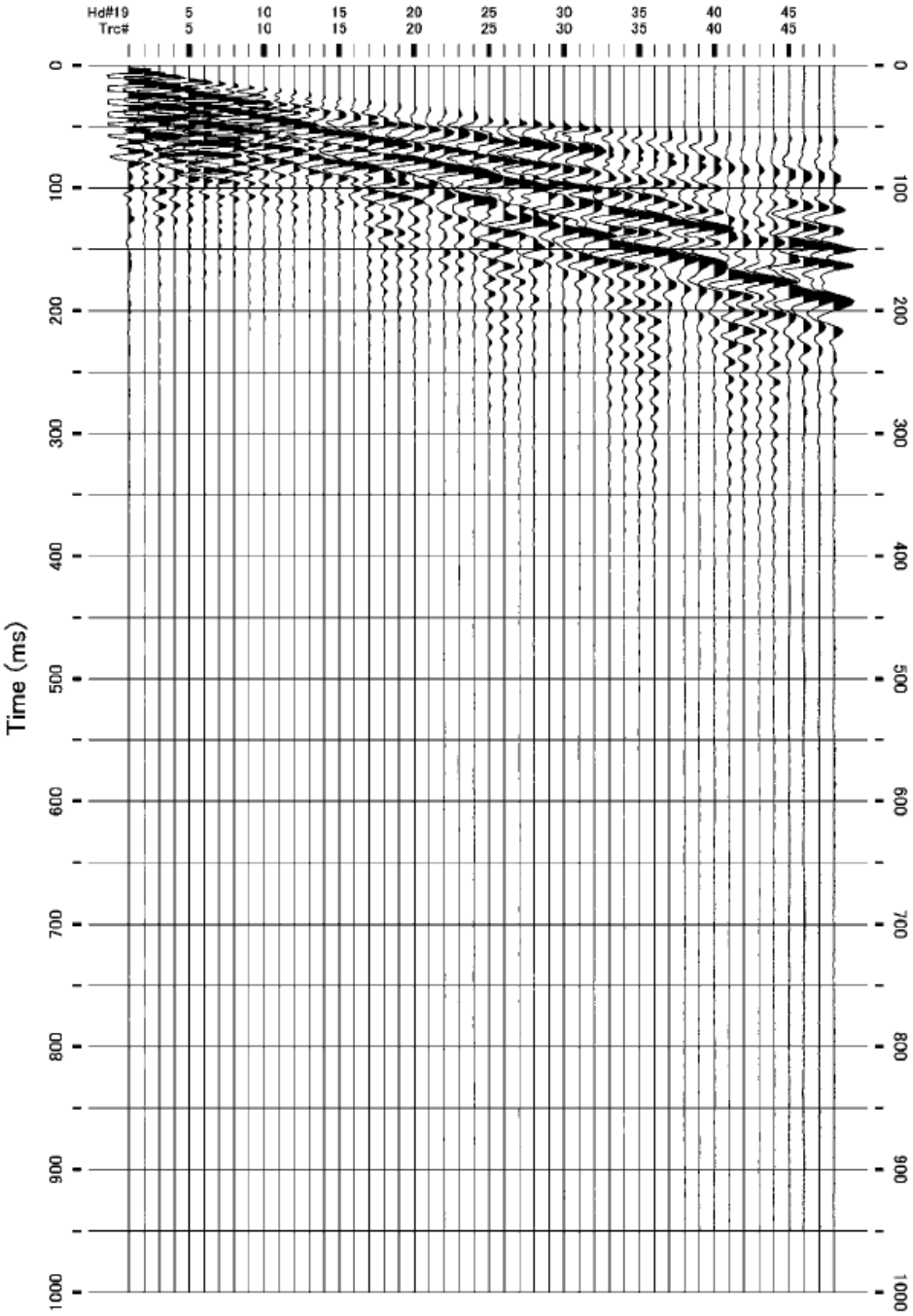
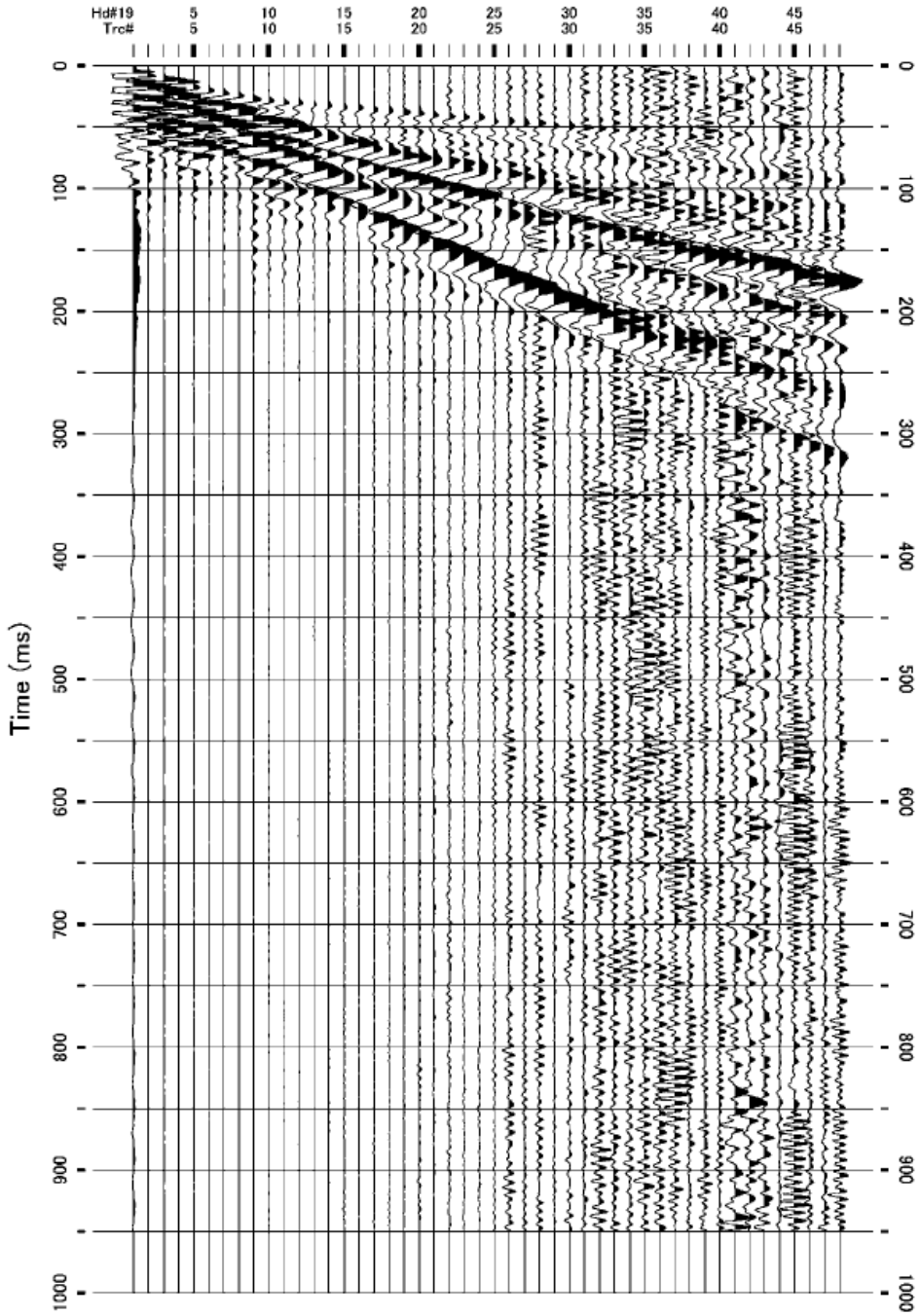
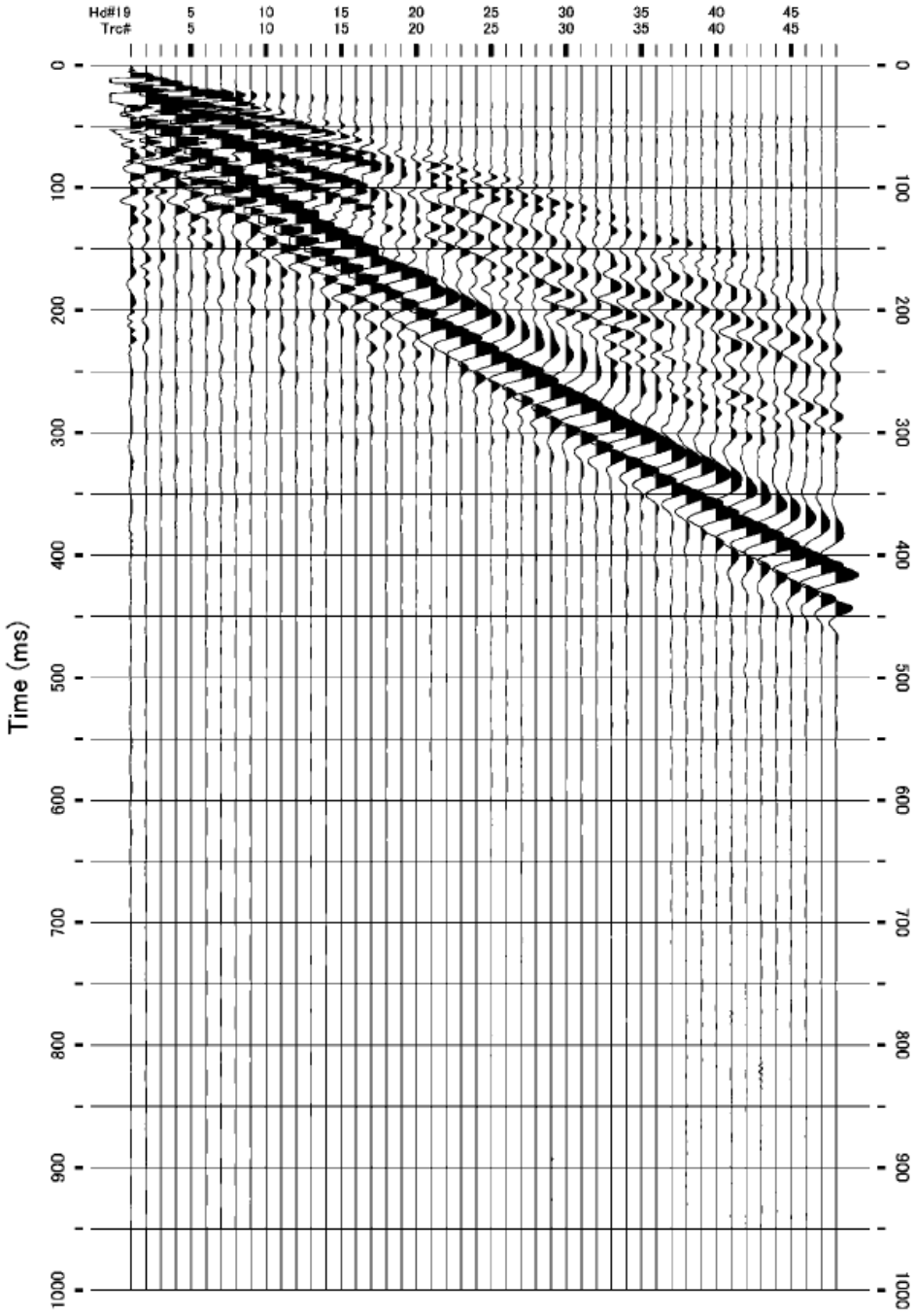


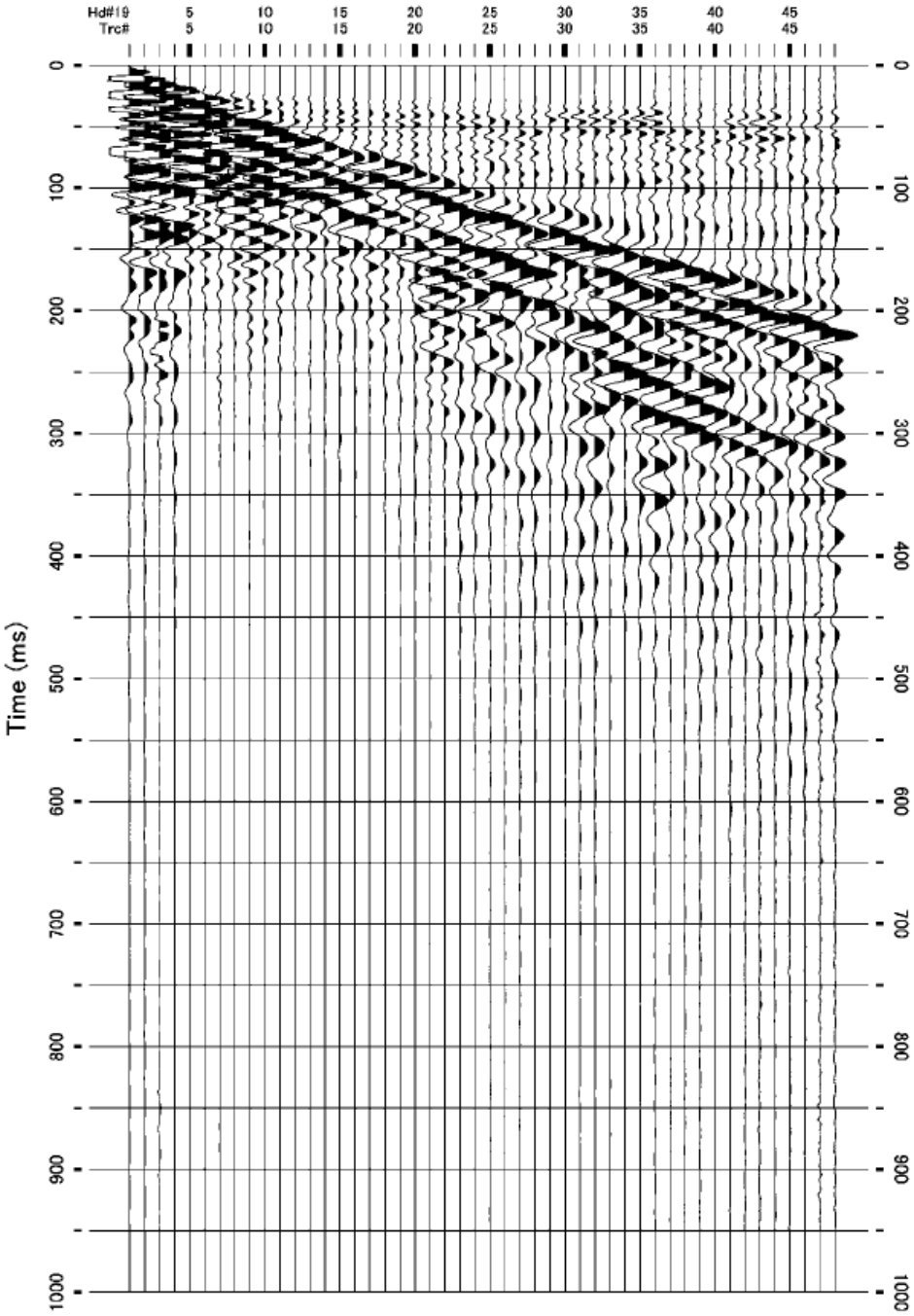
Field data (Surface wave shot record) : BR_01



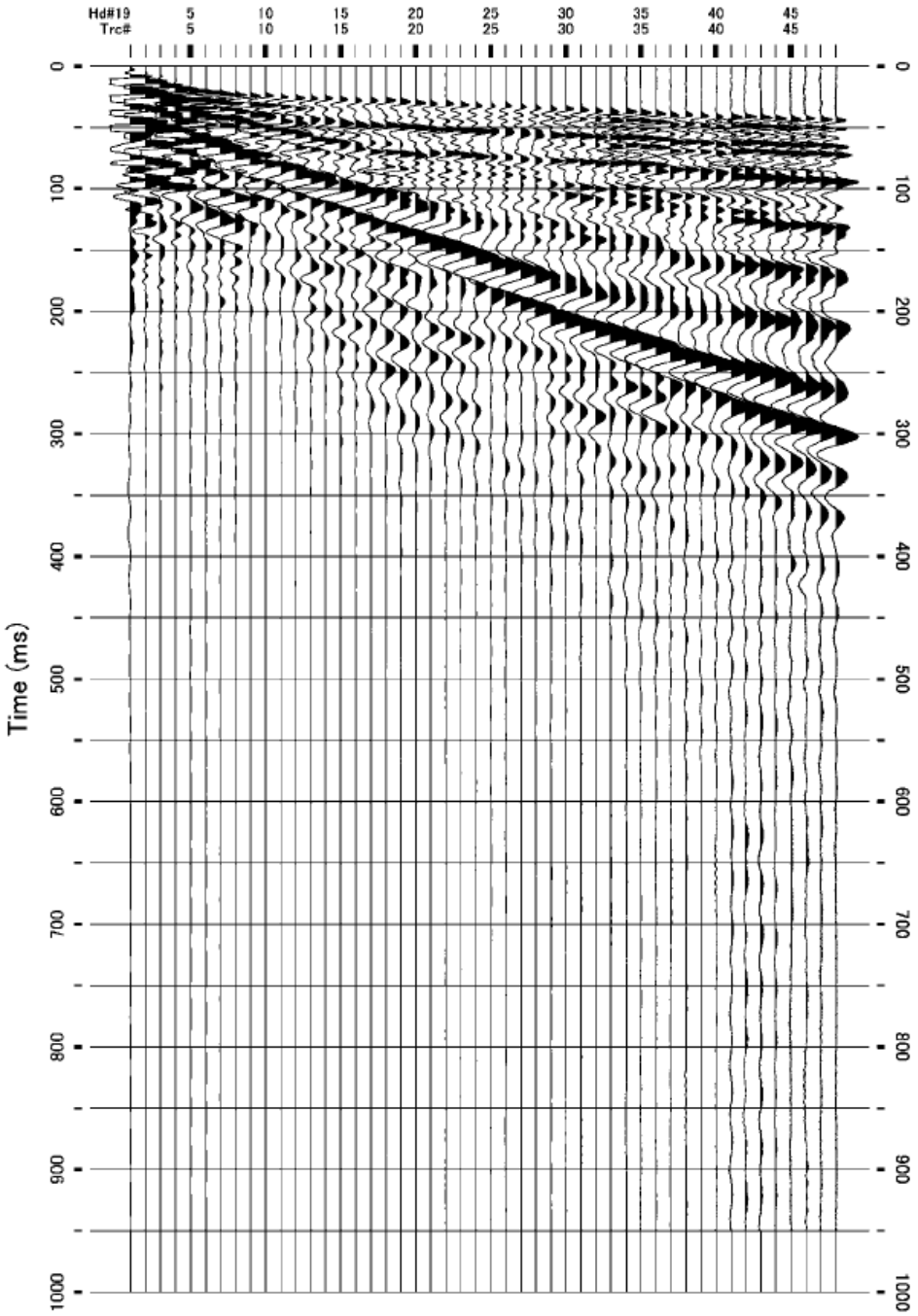
Field data (Surface wave shot record) : BR_02



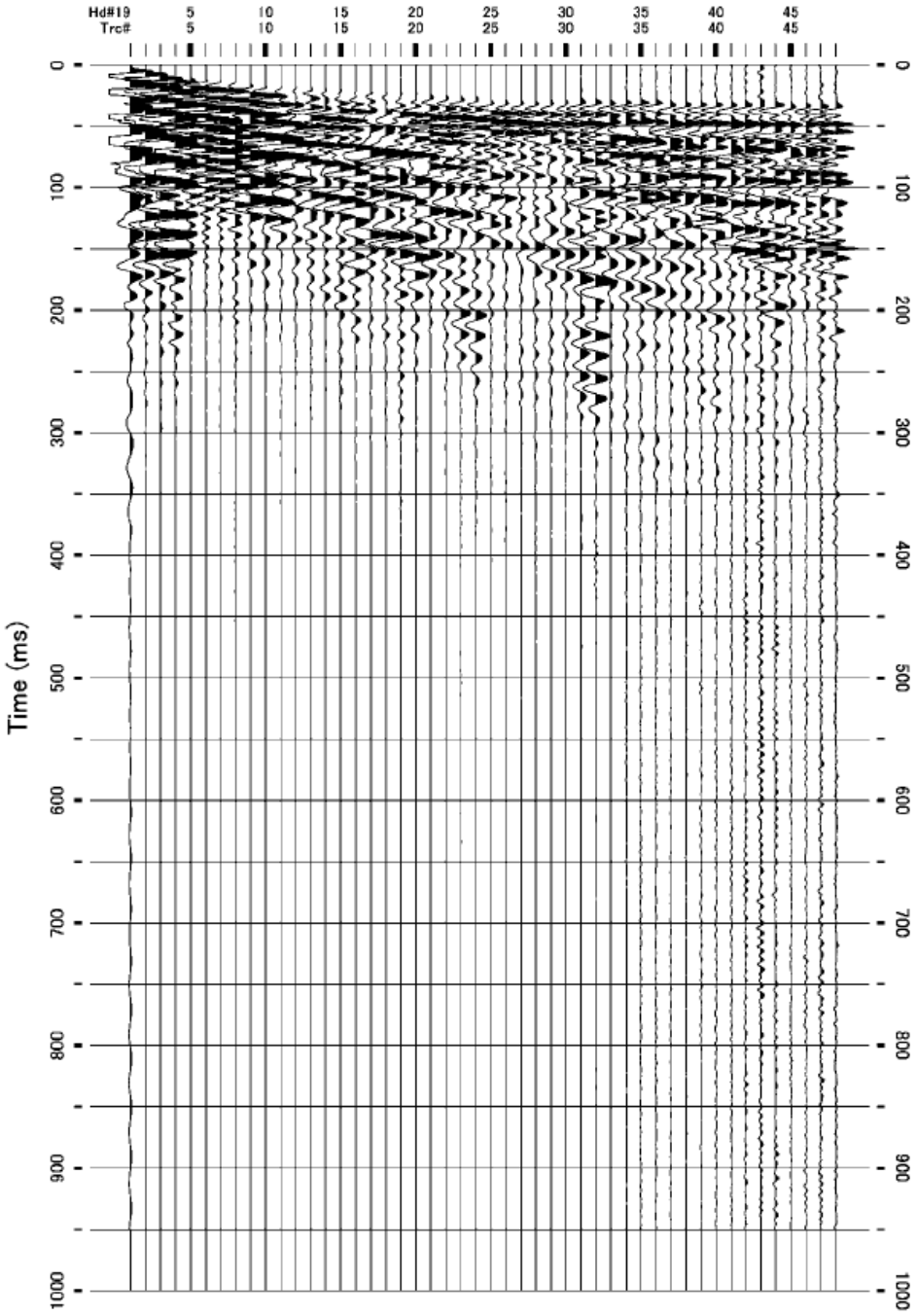
Field data (Surface wave shot record) : BR_03



Field data (Surface wave shot record) : NH_01



Field data (Surface wave shot record) : NH_02



Field data (Surface wave shot record) : NH_03

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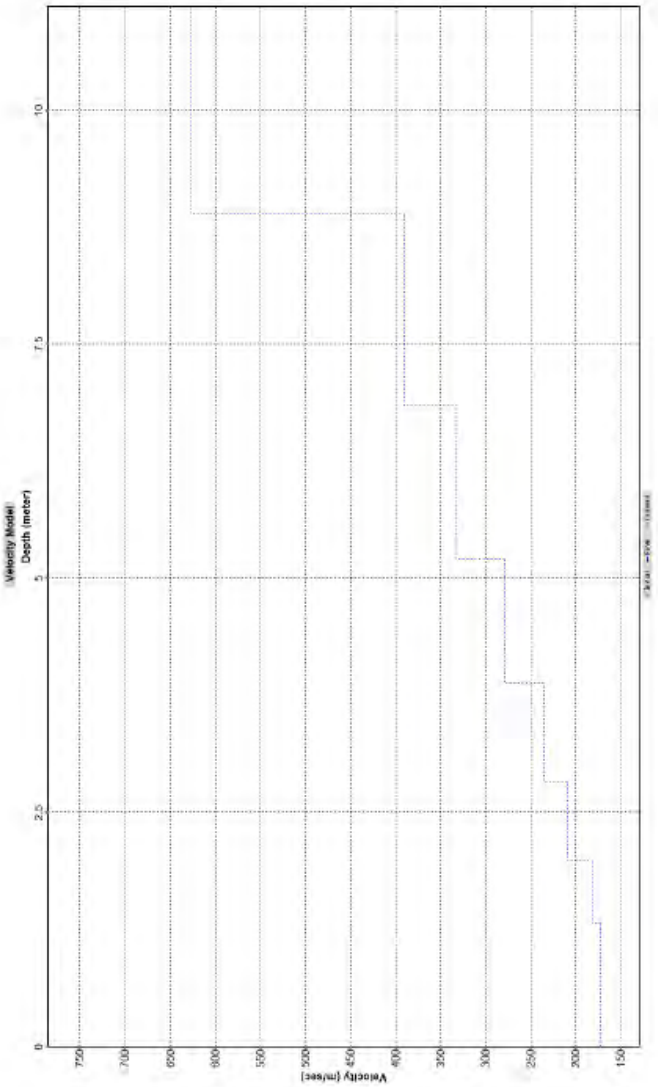
S-wave layer model (Surface wave) : UB_01



first velocity model (apparent velocity:Vs)		
1	0.34	172.3
2	0.78	172.3
3	1.31	171.8
4	1.99	180.8
5	2.83	209.2
6	3.88	235.3
7	5.19	278.9
8	6.83	332.1
9	8.89	390.4
10	-	628.3

first velocity model (apparent velocity:Vs)		
1	0.47	214.6
2	1.06	214.6
3	1.79	225.8
4	2.71	224.4
5	3.86	256.9
6	5.30	309.4
7	7.09	371.9
8	9.33	442.4
9	12.13	508.0
10	–	801.1

S-wave layer model (Surface wave) : UB_02

first velocity model (apparent velocity:Vs)		
1	0.27	242.7
2	0.61	242.7
3	1.04	242.7
4	1.57	242.7
5	2.24	255.6
6	3.07	275.2
7	4.11	304.9
8	5.41	350.2
9	7.04	394.5
10	–	630.4

S-wave layer model (Surface wave) : UB_03

first velocity model (apparent velocity:Vs)		
1	0.22	244.33
2	0.494	244.33
3	0.838	244.33
4	1.267	244.33
5	1.804	244.33
6	2.474	252.22
7	3.313	280.95
8	4.361	309.53
9	5.671	310.53
10	–	427.74

S-wave layer model (Surface wave) : UB_04

first velocity model (apparent velocity:Vs)		
1	0.205	243.91
2	0.461	243.91
3	0.781	243.91
4	1.182	243.91
5	1.682	243.86
6	2.308	241.63
7	3.09	239.47
8	4.067	261.35
9	5.289	263.28
10	-	398.92

S-wave layer model (Surface wave) : UB_05

first velocity model (apparent velocity:Vs)		
1	0.207	188.69
2	0.467	188.69
3	0.791	188.69
4	1.196	188.69
5	1.702	192.92
6	2.336	210.62
7	3.127	234.06
8	4.116	275.95
9	5.352	326.92
10	–	529.89

S-wave layer model (Surface wave) : UB_06

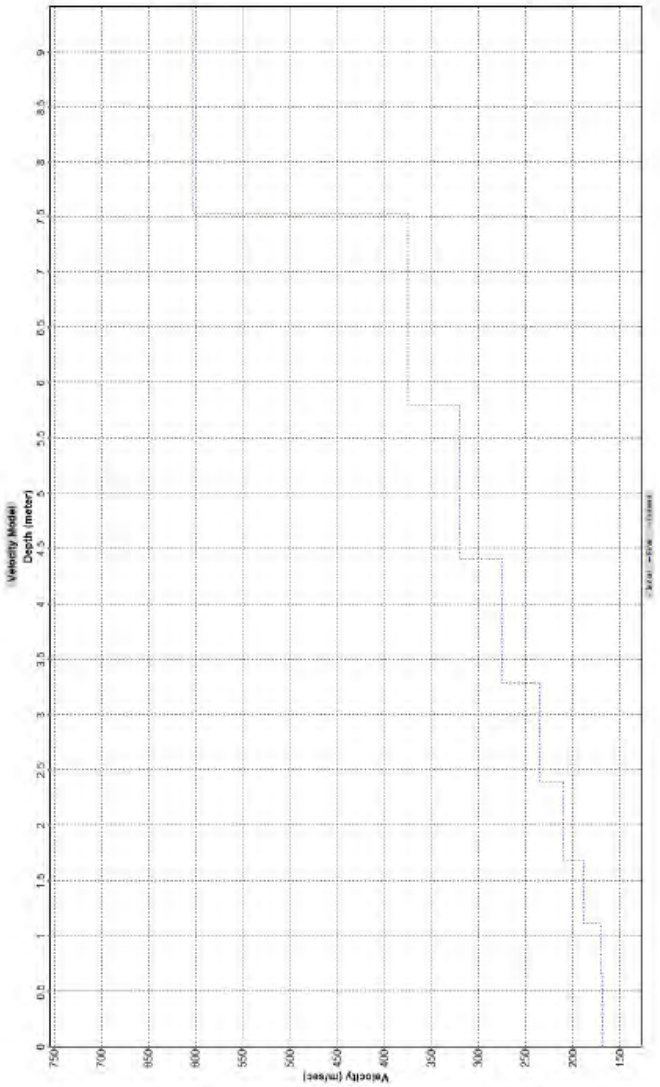
first velocity model (apparent velocity:Vs)		
1	0.28	289.1
2	0.63	289.1
3	1.07	289.1
4	1.62	289.1
5	2.30	289.0
6	3.16	303.3
7	4.23	320.7
8	5.56	342.8
9	7.23	401.0
10	–	647.8

S-wave layer model (Surface wave) : UB_07

first velocity model (apparent velocity:Vs)		
1	1.148	271.6
2	2.58	293.6
3	4.38	313.7
4	6.62	362.0
5	9.42	449.4
6	12.92	536.5
7	17.29	634.9
8	22.77	775.6
9	29.61	964.0
10	–	1598.7

S-wave layer model (Surface wave) : UB_08

S-wave layer model (Surface wave) : UB_09

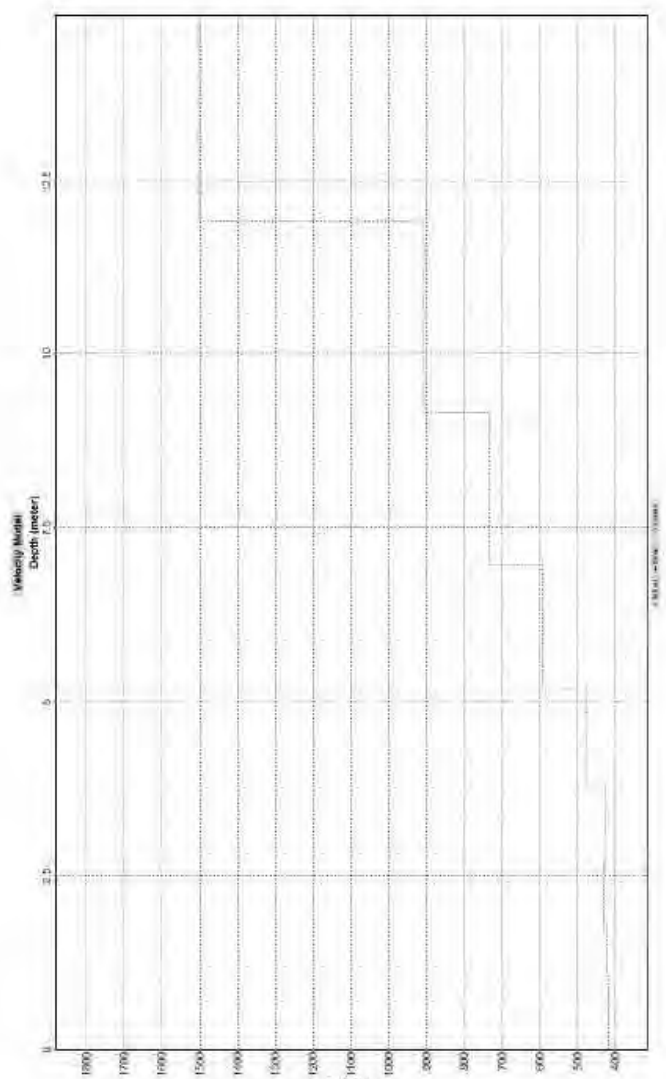


first velocity model (apparent velocity:Vs)		
1	0.29	169.3
2	0.66	169.3
3	1.11	170.2
4	1.68	188.3
5	2.40	209.9
6	3.29	235.6
7	4.40	274.4
8	5.79	319.6
9	7.53	374.3
10	-	603.4

first velocity model (apparent velocity:Vs)		
1	0.536	228.44
2	1.205	228.62
3	2.042	229.23
4	3.088	263.03
5	4.396	303.98
6	6.031	342.12
7	8.074	372.94
8	10.62	410.5
9	13.82	454.91
10	–	716.71

S-wave layer model (Surface wave) : UB_10

S-wave layer model (Surface wave) : UB_11



first velocity model (apparent velocity:Vs)		
1	0.46	420.6
2	1.04	420.6
3	1.76	422.8
4	2.66	433.1
5	3.79	425.8
6	5.20	477.6
7	6.96	592.0
8	9.16	734.3
9	11.91	911.2
10	-	1503.7

first velocity model (apparent velocity:Vs)		
1	0.23	408.3
2	0.51	408.3
3	0.86	408.3
4	1.30	408.3
5	1.86	408.3
6	2.55	406.6
7	3.41	434.5
8	4.49	466.2
9	5.83	531.4
10	–	852.5

S-wave layer model (Surface wave) : UB_12

first velocity model (apparent velocity:Vs)		
1	0.71	253.9
2	1.59	252.1
3	2.69	262.1
4	4.06	301.0
5	5.78	369.8
6	7.93	471.4
7	10.62	615.7
8	13.98	782.5
9	18.18	978.0
10	–	1615.8

S-wave layer model (Surface wave) : UB_13

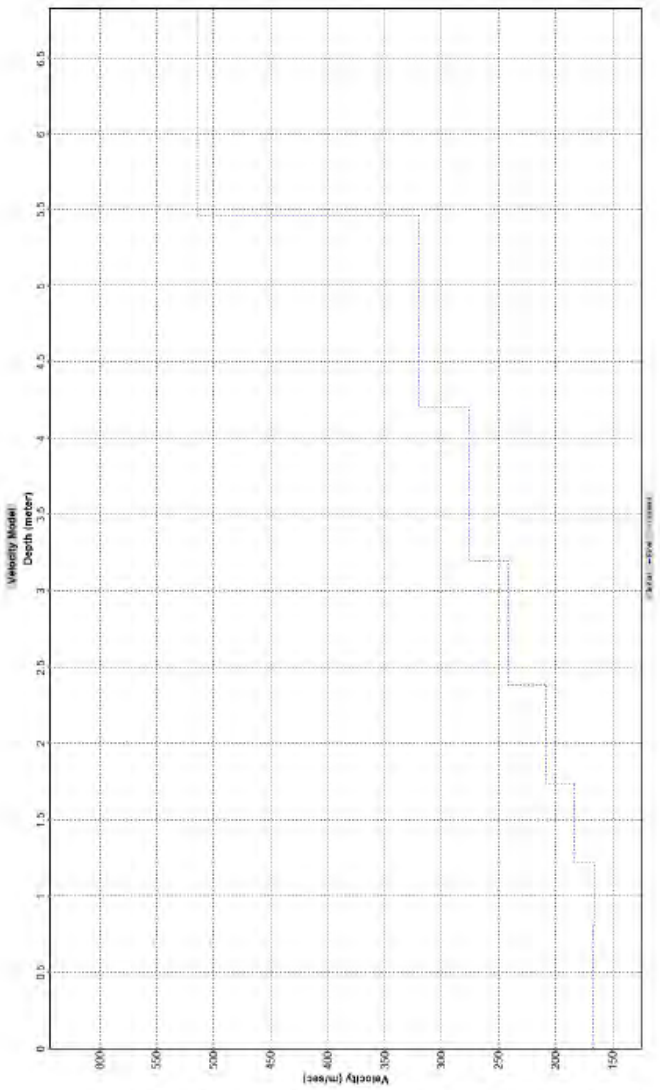
first velocity model (apparent velocity:Vs)		
1	0.64	486.6
2	1.44	486.6
3	2.44	486.6
4	3.68	494.8
5	5.24	558.2
6	7.19	622.6
7	9.63	674.6
8	12.68	761.6
9	16.49	874.0
10	–	1398.8

S-wave layer model (Surface wave) : UB_14

first velocity model (apparent velocity:Vs)		
1	0.17	223.5
2	0.39	223.5
3	0.66	223.5
4	0.99	223.5
5	1.41	223.5
6	1.93	209.8
7	2.59	226.3
8	3.41	252.3
9	4.43	286.9
10	–	459.6

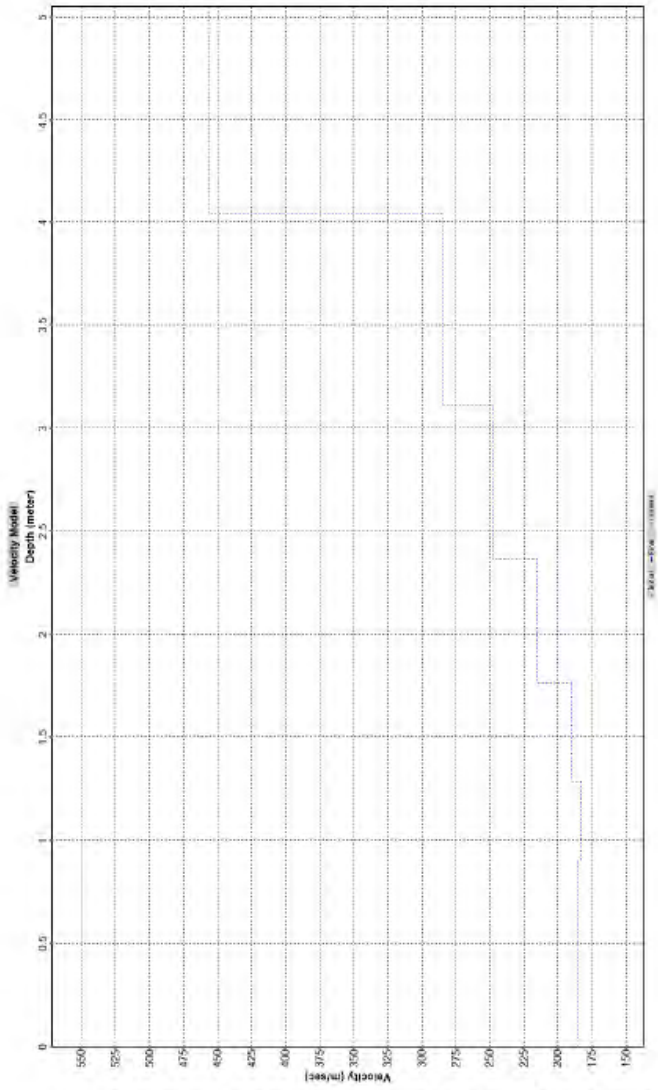
S-wave layer model (Surface wave) : UB_15

S-wave layer model (Surface wave) : UB_16



first velocity model (apparent velocity:Vs)		
1	0.21	166.6
2	0.48	166.6
3	0.81	166.6
4	1.22	165.9
5	1.74	183.6
6	2.38	208.7
7	3.19	241.0
8	4.20	275.4
9	5.46	319.4
10	-	514.7

S-wave layer model (Surface wave) : UB_17



first velocity model (apparent velocity:Vs)		
1	0.16	185.3
2	0.35	185.3
3	0.60	185.3
4	0.90	185.3
5	1.29	182.7
6	1.76	190.1
7	2.36	215.3
8	3.11	247.7
9	4.04	285.4
10	–	457.2

first velocity model (apparent velocity:Vs)		
1	0.27	164.75
2	0.60	164.75
3	1.02	164.75
4	1.54	173.10
5	2.19	198.45
6	3.00	236.71
7	4.02	280.72
8	5.29	336.12
9	6.88	400.36
10	–	648.74

S-wave layer model (Surface wave) : UB_18

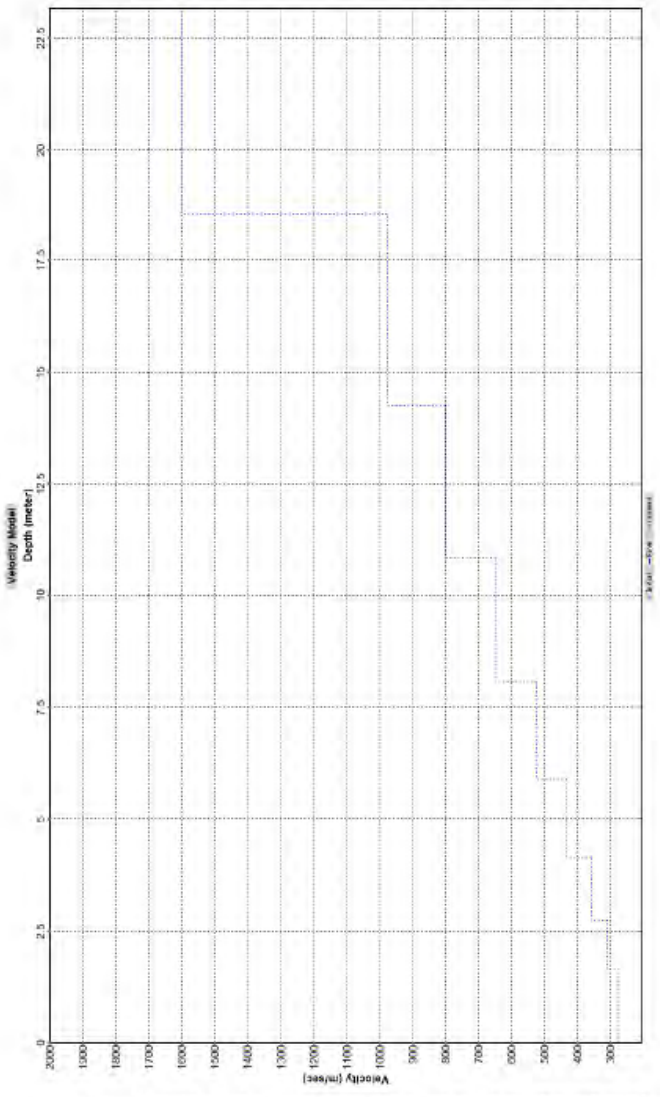
first velocity model (apparent velocity:Vs)		
1	0.50	333.7
2	1.13	333.7
3	1.92	347.2
4	2.90	404.9
5	4.13	465.1
6	5.67	561.5
7	7.59	665.0
8	9.99	784.1
9	12.98	957.9
10	–	1581.6

S-wave layer model (Surface wave) : UB_19

first velocity model		
(apparent velocity:Vs)		
1	0.13	276.5
2	0.29	276.5
3	0.49	276.5
4	0.75	276.5
5	1.06	276.5
6	1.46	269.9
7	1.95	227.2
8	2.57	252.1
9	3.34	299.8
10	–	488.1

S-wave layer model (Surface wave) : UB_20

S-wave layer model (Surface wave) : UB_21



first velocity model (apparent velocity:Vs)		
1	0.72	274.1
2	1.62	275.7
3	2.74	310.2
4	4.14	358.2
5	5.90	432.2
6	8.09	523.5
7	10.83	648.0
8	14.25	801.1
9	18.54	978.2
10	–	1600.6

first velocity model (apparent velocity:Vs)		
1	0.71	239.0
2	1.59	242.8
3	2.69	248.6
4	4.07	285.7
5	5.79	368.4
6	7.94	480.4
7	10.64	601.7
8	14.00	746.8
9	18.21	923.8
10	–	1526.5

S-wave layer model (Surface wave) : UB_22

first velocity model (apparent velocity:Vs)		
1	1.23	295.7
2	2.76	302.9
3	4.68	355.6
4	7.08	380.2
5	10.08	439.6
6	13.82	510.7
7	18.51	611.0
8	24.36	724.2
9	31.68	840.8
10	–	1347.9

S-wave layer model (Surface wave) : UB_23

first velocity model (apparent velocity:Vs)		
1	0.56	227.3
2	1.25	228.5
3	2.12	266.9
4	3.20	319.3
5	4.56	381.9
6	6.25	451.2
7	8.37	568.1
8	11.02	722.9
9	14.33	892.8
10	–	1469.5

S-wave layer model (Surface wave) : UB_24

first velocity model (apparent velocity:Vs)		
1	0.36	207.9
2	0.81	207.9
3	1.38	207.9
4	2.08	215.5
5	2.96	244.4
6	4.07	280.8
7	5.44	323.7
8	7.17	374.0
9	9.32	436.7
10	–	702.9

S-wave layer model (Surface wave) : UB_25

first velocity model (apparent velocity:Vs)		
1	0.63	326.1
2	1.42	326.1
3	2.40	318.0
4	3.63	330.5
5	5.16	376.7
6	7.08	456.4
7	9.48	571.6
8	12.48	735.5
9	16.23	938.5
10	-	1574.0

S-wave layer model (Surface wave) : UB_26

first velocity model (apparent velocity:Vs)		
1	0.29	265.4
2	0.65	265.4
3	1.11	265.4
4	1.67	252.2
5	2.38	250.1
6	3.27	275.5
7	4.37	312.1
8	5.76	348.7
9	7.49	371.3
10	–	564.6

S-wave layer model (Surface wave) : UB_27

first velocity model (apparent velocity:Vs)		
1	0.37	238.2
2	0.82	238.2
3	1.39	250.2
4	2.10	226.0
5	2.99	245.2
6	4.11	274.7
7	5.50	313.0
8	7.24	349.2
9	9.41	391.2
10	–	621.1

S-wave layer model (Surface wave) : UB_28

first velocity model (apparent velocity:Vs)		
1	0.31	234.9
2	0.70	234.9
3	1.19	234.9
4	1.80	234.5
5	2.56	236.6
6	3.51	234.8
7	4.70	228.7
8	6.19	236.4
9	8.05	263.8
10	–	417.4

S-wave layer model (Surface wave) : UB_29

first velocity model (apparent velocity:Vs)		
1	1.09	248.0
2	2.45	260.7
3	4.15	297.0
4	6.28	343.8
5	8.94	413.2
6	12.27	507.7
7	16.42	636.5
8	21.62	789.3
9	28.11	970.3
10	–	1627.2

S-wave layer model (Surface wave) : UB_30

first velocity model (apparent velocity:Vs)		
1	0.29	136.9
2	0.66	136.9
3	1.11	141.0
4	1.68	171.8
5	2.39	204.5
6	3.28	237.9
7	4.39	275.1
8	5.78	318.8
9	7.52	373.5
10	–	602.5

S-wave layer model (Surface wave) : UB_31

first velocity model (apparent velocity:Vs)		
1	1.05	317.2
2	2.37	337.4
3	4.01	378.0
4	6.06	422.8
5	8.63	482.4
6	11.84	560.6
7	15.85	660.5
8	20.86	797.8
9	27.12	969.5
10	–	1593.0

S-wave layer model (Surface wave) : UB_32

first velocity model (apparent velocity:Vs)		
1	0.78	343.8
2	1.76	345.7
3	2.98	334.8
4	4.51	349.5
5	6.41	416.3
6	8.80	515.8
7	11.78	626.2
8	15.51	763.6
9	20.17	961.9
10	-	1617.7

S-wave layer model (Surface wave) : UB_33

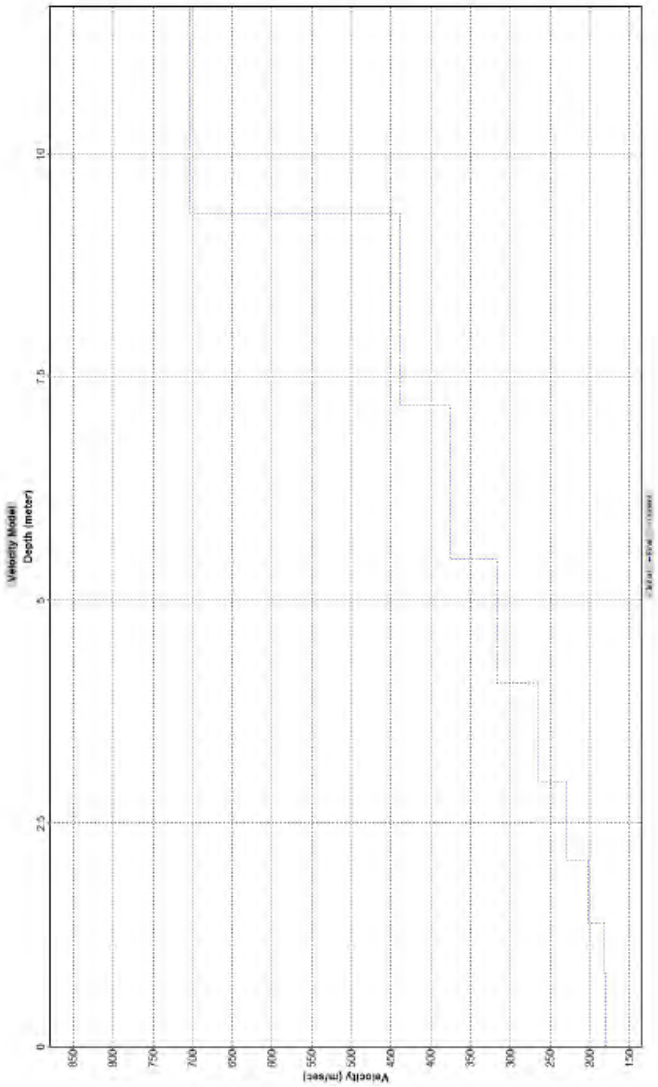
first velocity model (apparent velocity:Vs)		
1	1.00	224.7
2	2.25	231.9
3	3.81	310.1
4	5.76	302.9
5	8.20	407.6
6	11.25	509.0
7	15.06	631.5
8	19.82	800.2
9	25.77	981.2
10	-	1621.5

S-wave layer model (Surface wave) : UB_34

first velocity model (apparent velocity:Vs)		
1	0.14	169.4
2	0.30	169.4
3	0.51	169.4
4	0.78	169.4
5	1.11	169.4
6	1.52	167.4
7	2.03	182.7
8	2.67	209.9
9	3.48	244.5
10	-	393.4

S-wave layer model (Surface wave) : UB_35

S-wave layer model (Surface wave) : UB_36



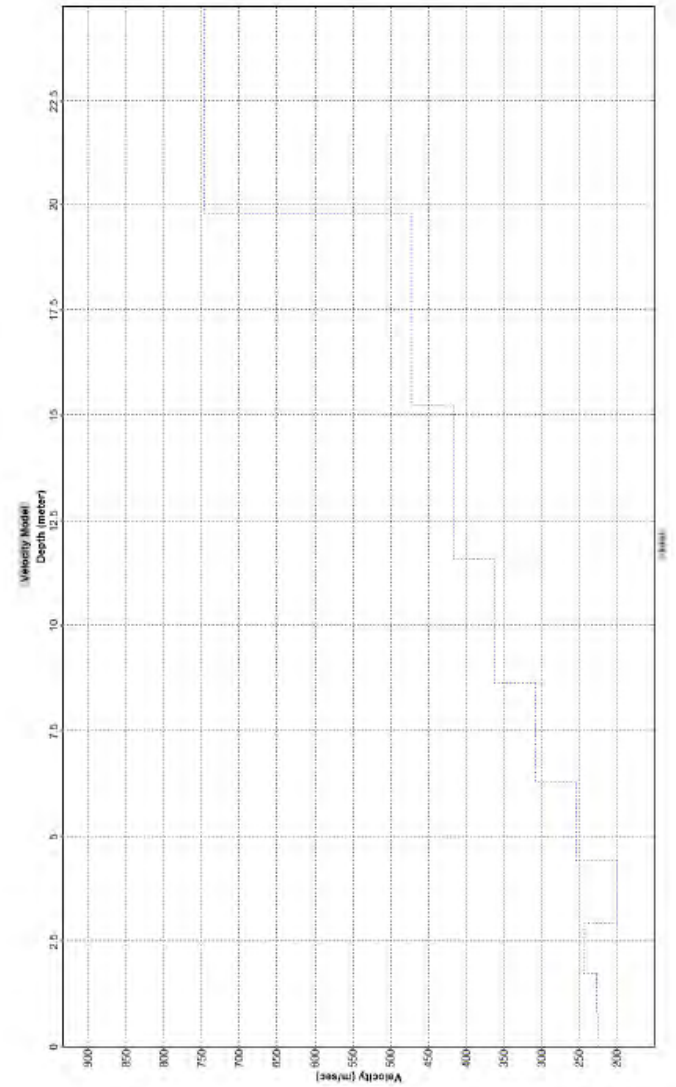
first velocity model
(apparent velocity:Vs)

1	0.36	179.6
2	0.81	179.6
3	1.38	181.5
4	2.08	201.2
5	2.97	228.8
6	4.07	265.1
7	5.45	317.0
8	7.17	375.6
9	9.32	438.2
10	-	703.2

first velocity model (apparent velocity:Vs)		
1	0.34	175.4
2	0.77	175.4
3	1.31	175.9
4	1.99	198.6
5	2.83	229.6
6	3.88	264.7
7	5.19	301.0
8	6.83	342.3
9	8.88	375.7
10	-	586.2

S-wave layer model (Surface wave) : UB_37

S-wave layer model (Surface wave) : UB_Bo_01



first velocity model
(apparent velocity:Vs)

	depth	Velocity
	bottom (m)	(m/sec)
1	0.767	224.7
2	1.726	226.8
3	2.925	244.3
4	4.424	200.8
5	6.297	255.0
6	8.638	308.3
7	11.565	362.4
8	15.224	417.7
9	19.797	472.3
10	-	746.6

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.283	523.6
2	0.637	523.6
3	1.08	523.6
4	1.633	523.6
5	2.325	523.6
6	3.19	523.6
7	4.27	522.8
8	5.621	595.9
9	7.31	699.0
10	–	–

S-wave layer model (Surface wave) : UB_Bo_02

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.189	235.1
2	0.425	235.1
3	0.72	235.1
4	1.089	235.1
5	1.551	235.1
6	2.127	235.1
7	2.848	236.6
8	3.749	258.8
9	4.875	298.9
10	–	482.7

S-wave layer model (Surface wave) : UB_Bo_03

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.35	182.8
2	0.788	182.8
3	1.335	189.4
4	2.019	213.3
5	2.873	231.9
6	3.942	262.8
7	5.277	315.1
8	6.947	378.1
9	9.033	448.0
10	-	724.0

S-wave layer model (Surface wave) : UB_Bo_04

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.51	362.0
2	1.14	362.0
3	1.94	371.2
4	2.93	336.6
5	4.17	340.9
6	5.72	361.7
7	7.65	366.1
8	10.07	374.5
9	13.10	398.2
10	–	617.6

S-wave layer model (Surface wave) : BI_01

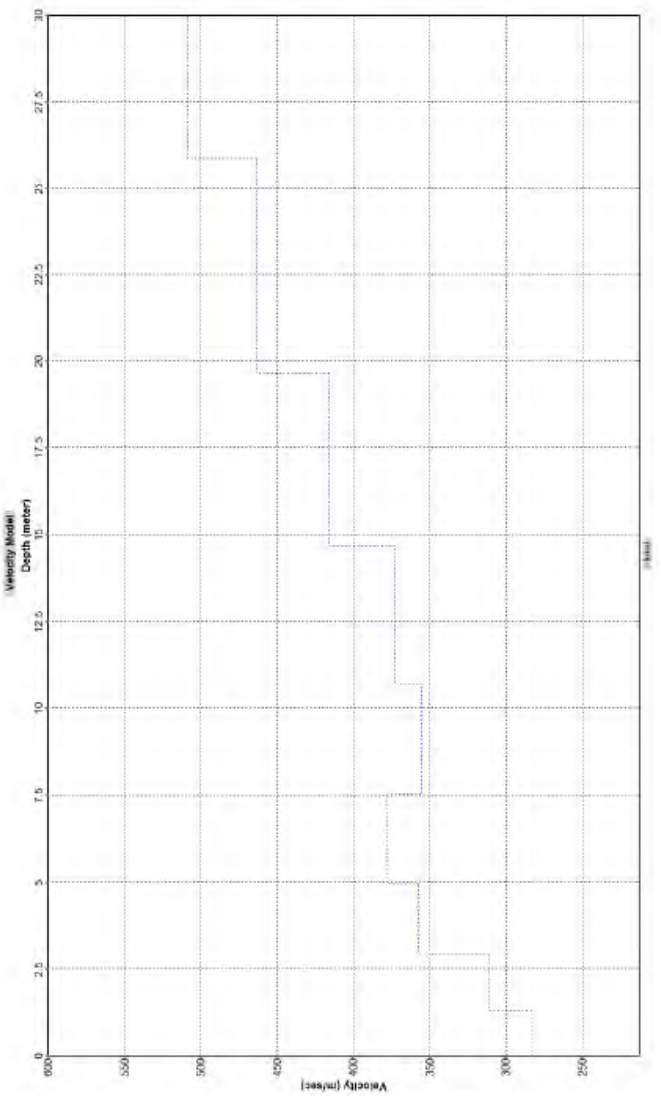
first velocity model (apparent velocity:Vs)		
1	0.34	267.8
2	0.766	267.8
3	1.297	276.49
4	1.962	338.03
5	2.793	421.49
6	3.831	526.83
7	5.129	648.33
8	6.752	803.34
9	8.78	989.36
10	–	1632.9

S-wave layer model (Surface wave) : BI_02

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.573	206.0
2	1.289	206.0
3	2.185	206.0
4	3.304	207.6
5	4.703	212.4
6	6.452	234.6
7	8.638	258.5
8	11.37	283.9
9	14.786	311.9
10	–	487.9

S-wave layer model (Surface wave) : BI_03

S-wave layer model (Surface wave) : BR_01



first velocity model
(apparent velocity:Vs)

	depth	Velocity
	bottom (m)	(m/sec)
1	1.304	283.1
2	2.934	310.9
3	4.971	357.5
4	7.517	377.8
5	10.7	354.9
6	14.679	372.6
7	19.653	415.9
8	25.87	463.4
9	33.641	508.2
10	-	793.0

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.652	201.0
2	1.468	201.0
3	2.484	214.1
4	3.757	244.2
5	5.347	269.7
6	7.336	304.6
7	9.821	344.9
8	12.928	395.5
9	16.812	449.8
10	-	713.3

S-wave layer model (Surface wave) : BR_02

first velocity model (apparent velocity:Vs)		
1	0.34	148.4
2	0.76	148.9
3	1.29	159.4
4	1.95	170.4
5	2.77	189.1
6	3.80	210.9
7	5.09	230.2
8	6.70	246.1
9	8.72	264.6
10	–	410.8

S-wave layer model (Surface wave) : BR_03

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.172	208.4
2	0.387	208.4
3	0.655	208.4
4	0.991	220.7
5	1.411	205.8
6	1.936	208.2
7	2.591	236.4
8	3.411	289.1
9	4.436	348.4
10	–	564.6

S-wave layer model (Surface wave) : NH_01

first velocity model (apparent velocity:Vs)		
	depth	Velocity
	bottom (m)	(m/sec)
1	0.867	226.6
2	1.95	243.6
3	3.304	301.0
4	4.996	368.8
5	7.112	450.4
6	9.756	542.0
7	13.062	636.5
8	17.194	704.7
9	22.359	742.0
10	–	–

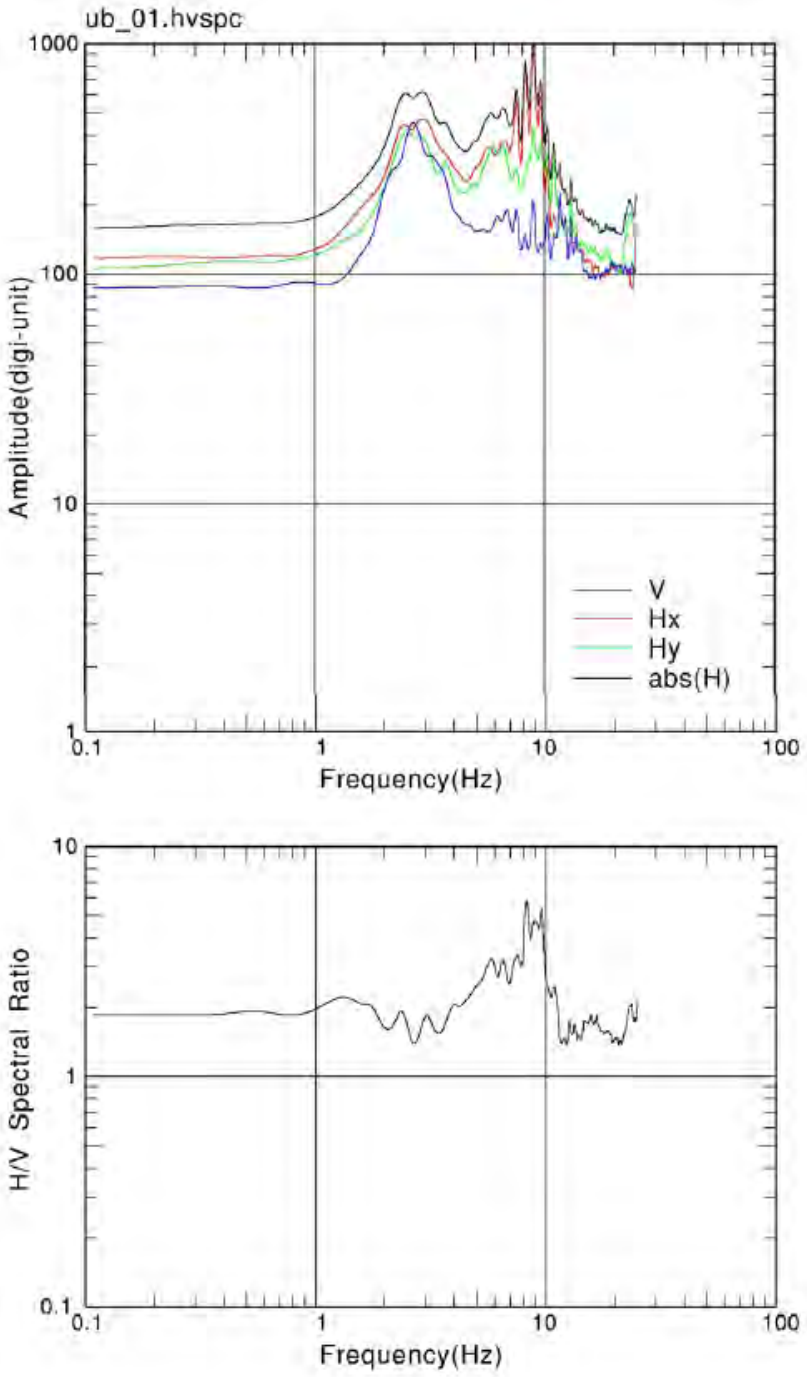
S-wave layer model (Surface wave) : NH_02

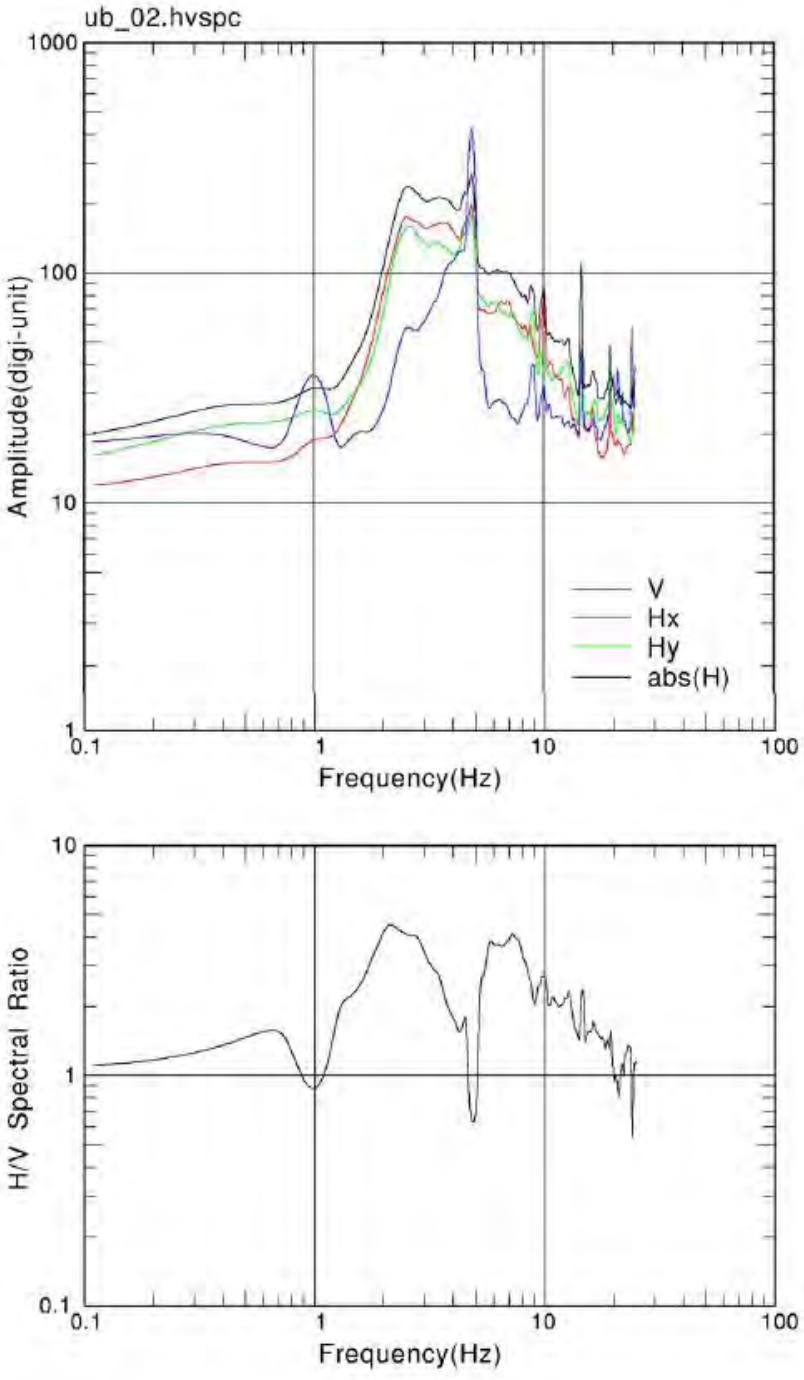
first velocity model (apparent velocity:Vs)		
1	0.56	281.7
2	1.26	282.3
3	2.13	297.7
4	3.22	337.9
5	4.58	400.5
6	6.28	489.8
7	8.41	603.1
8	11.07	757.9
9	14.40	972.9
10	–	1625.3

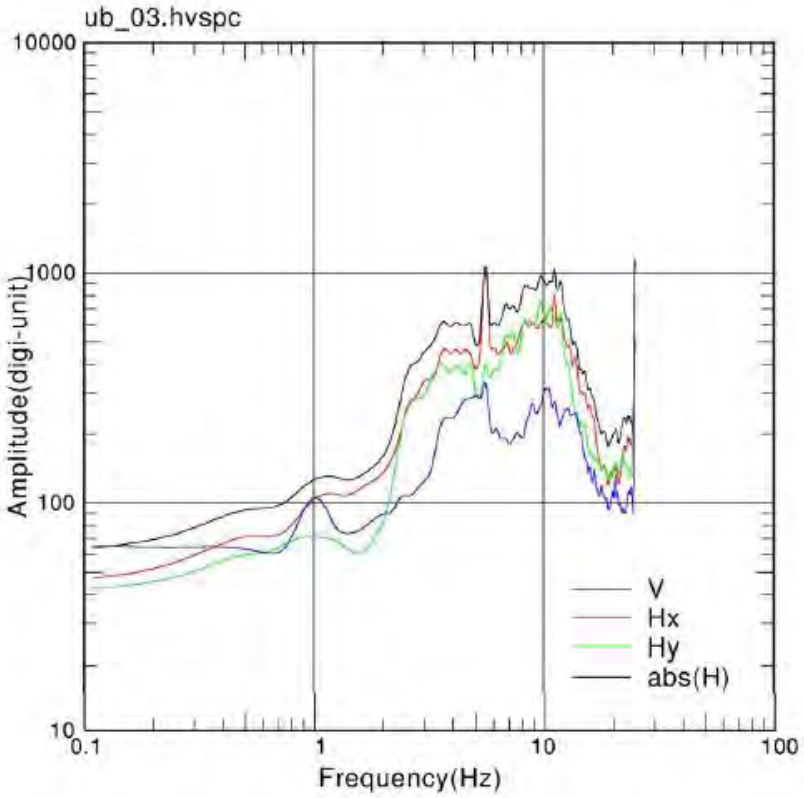
S-wave layer model (Surface wave) : NH_03

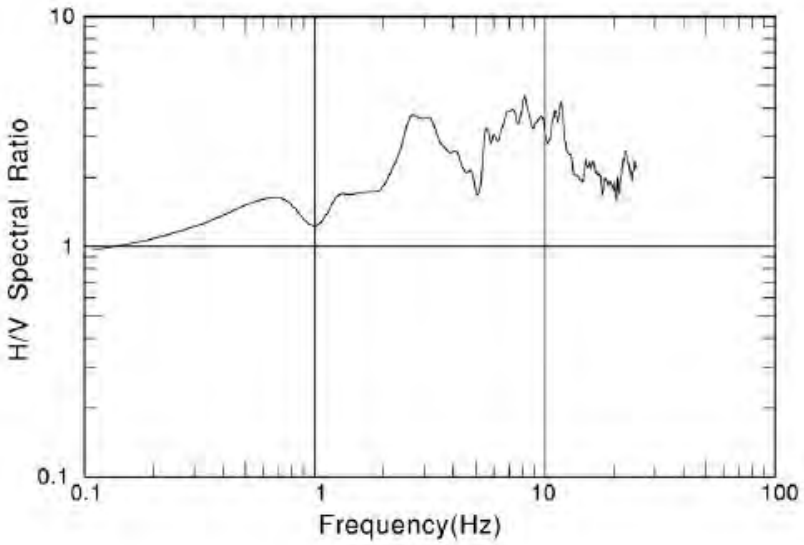
1.3.6 Бичил чичиргээг хэмжих

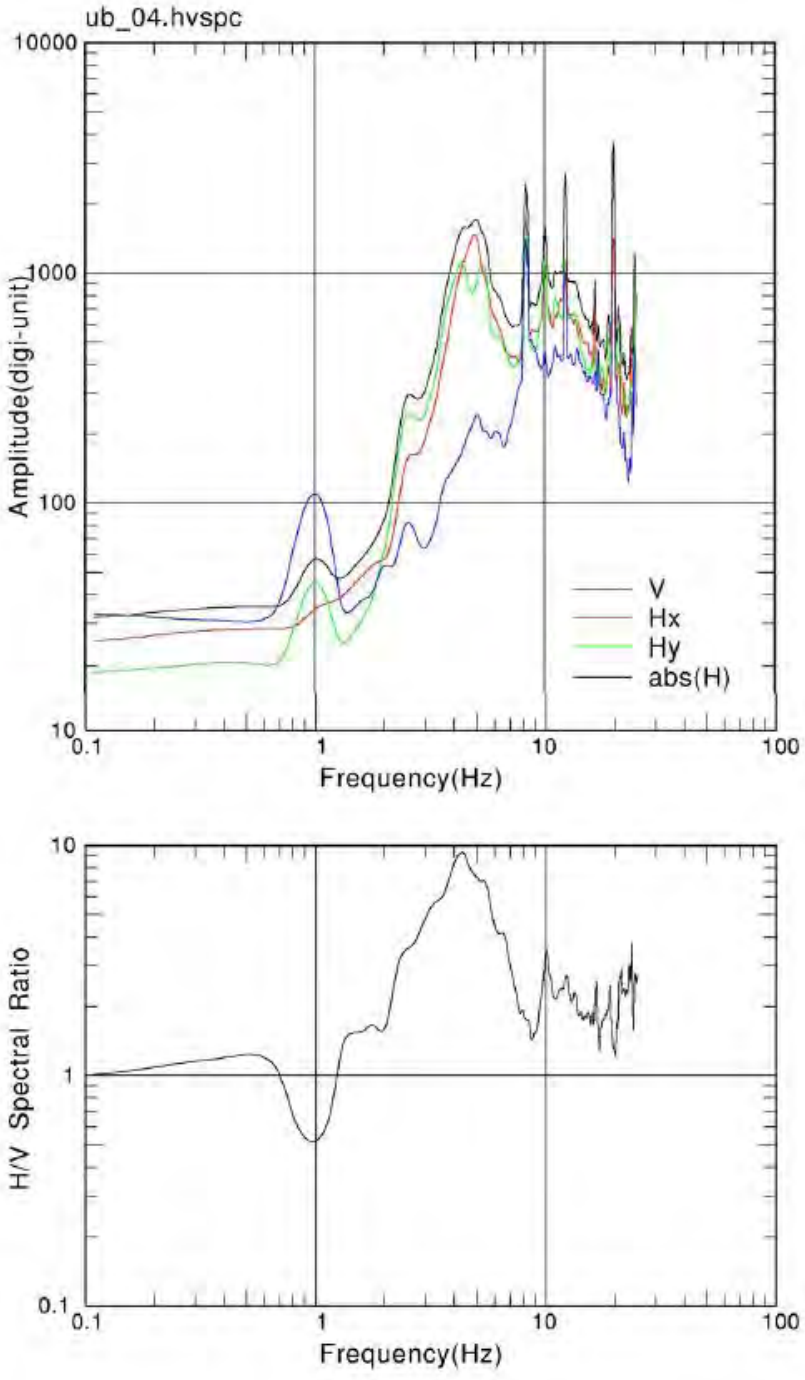
(1) H/V (Босоо ба хэвтээ бүрэлдэхүүн)

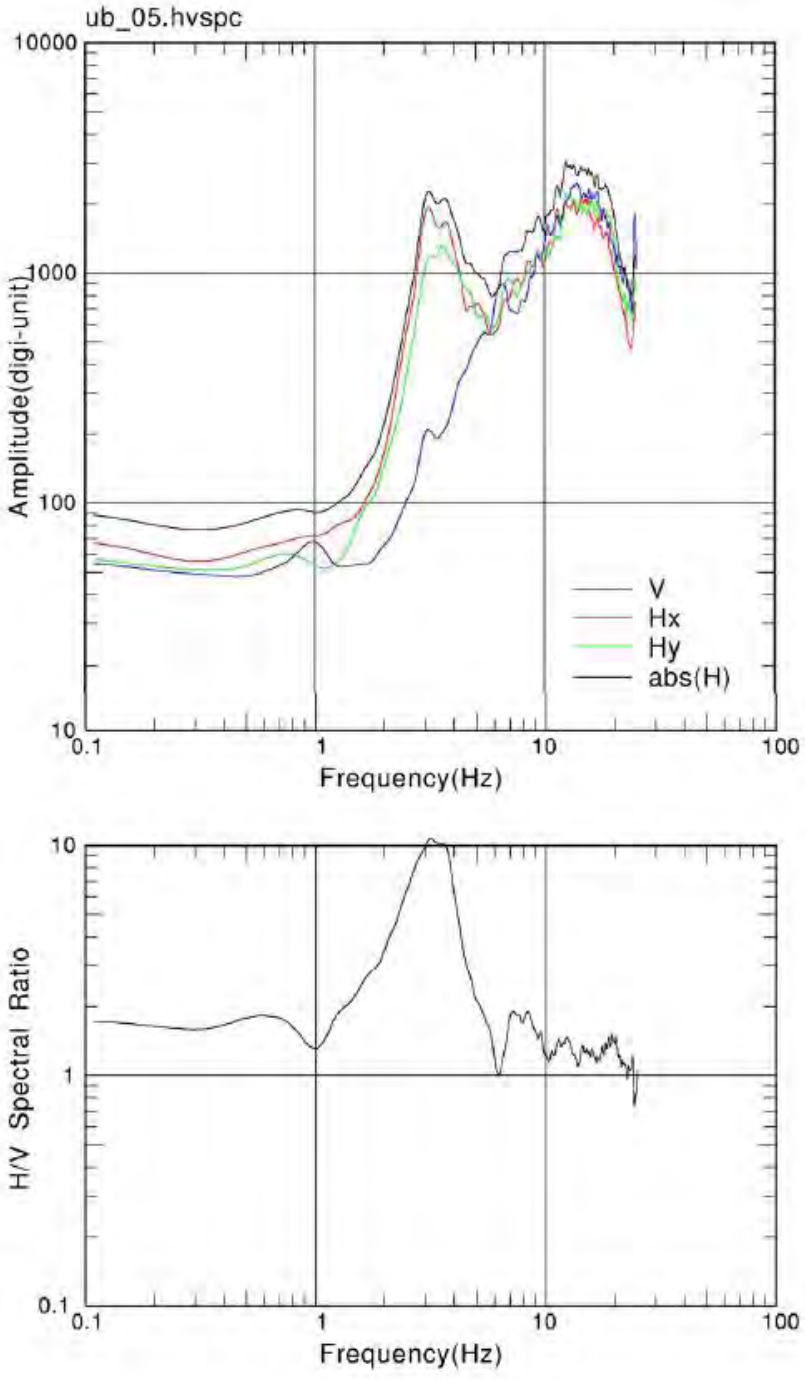


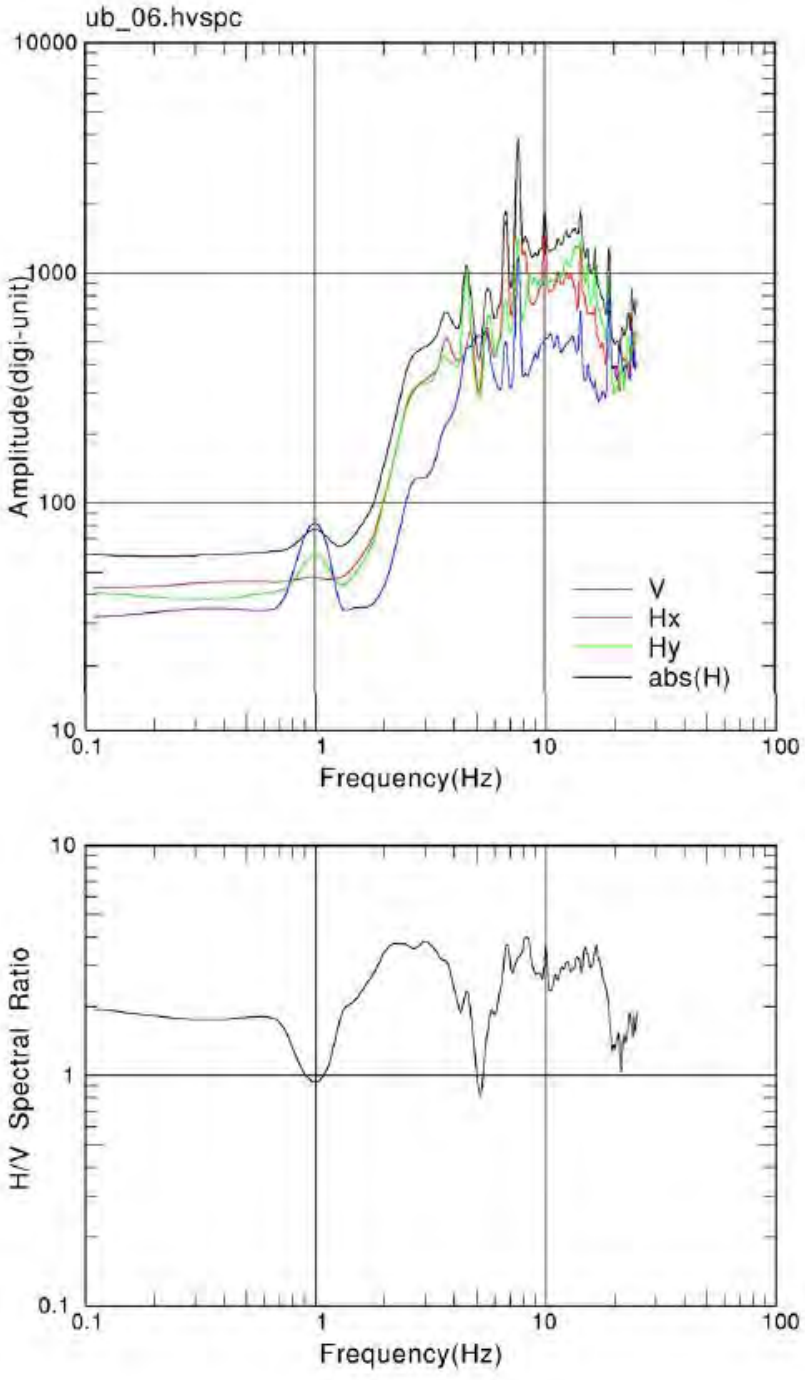

ub_02.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_03.hvspc
10000
1000
100
10
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)


10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)


ub_04.hvspc
Amplitude(digi-unit)
10000
1000
100
10
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_05.hvspc
10000
1000
100
10
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)


ub_06.hvspc
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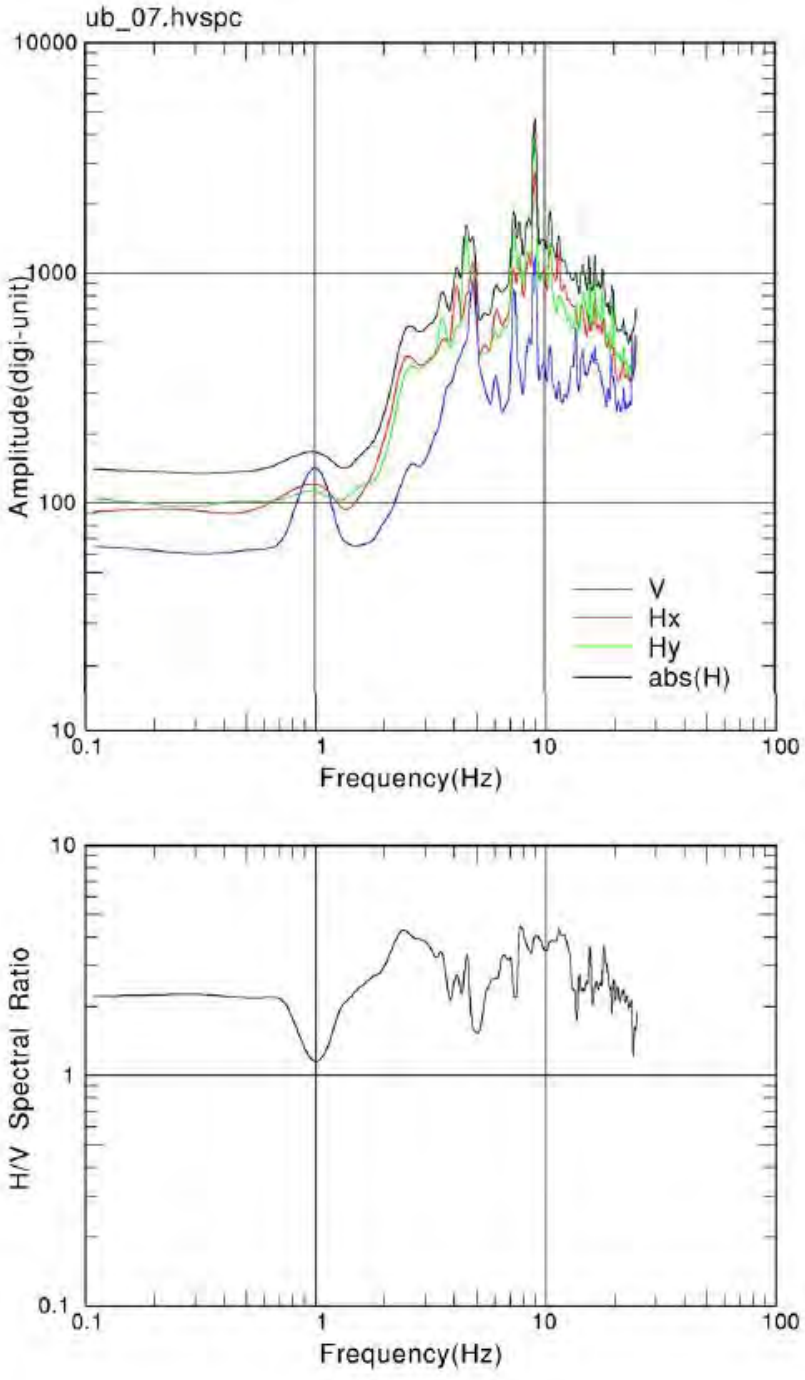
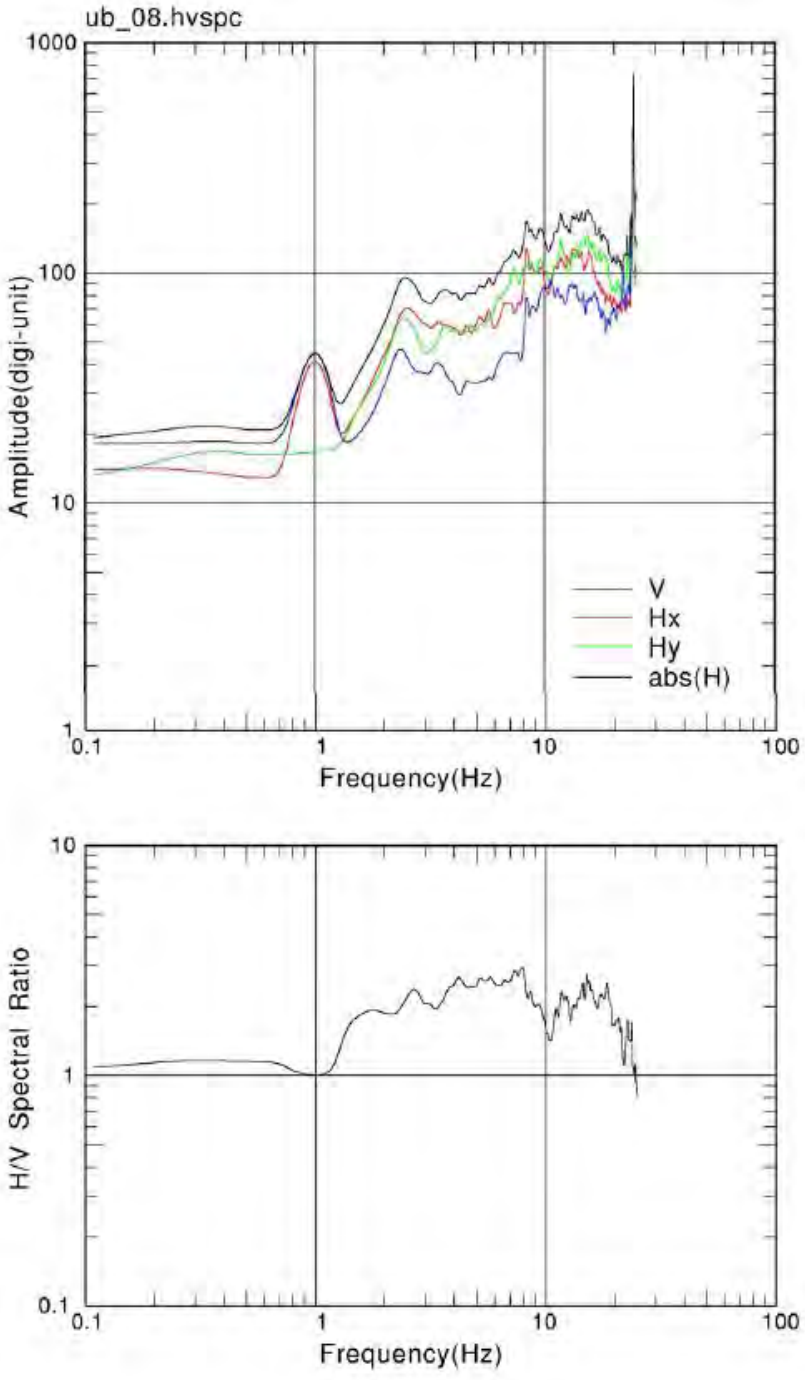
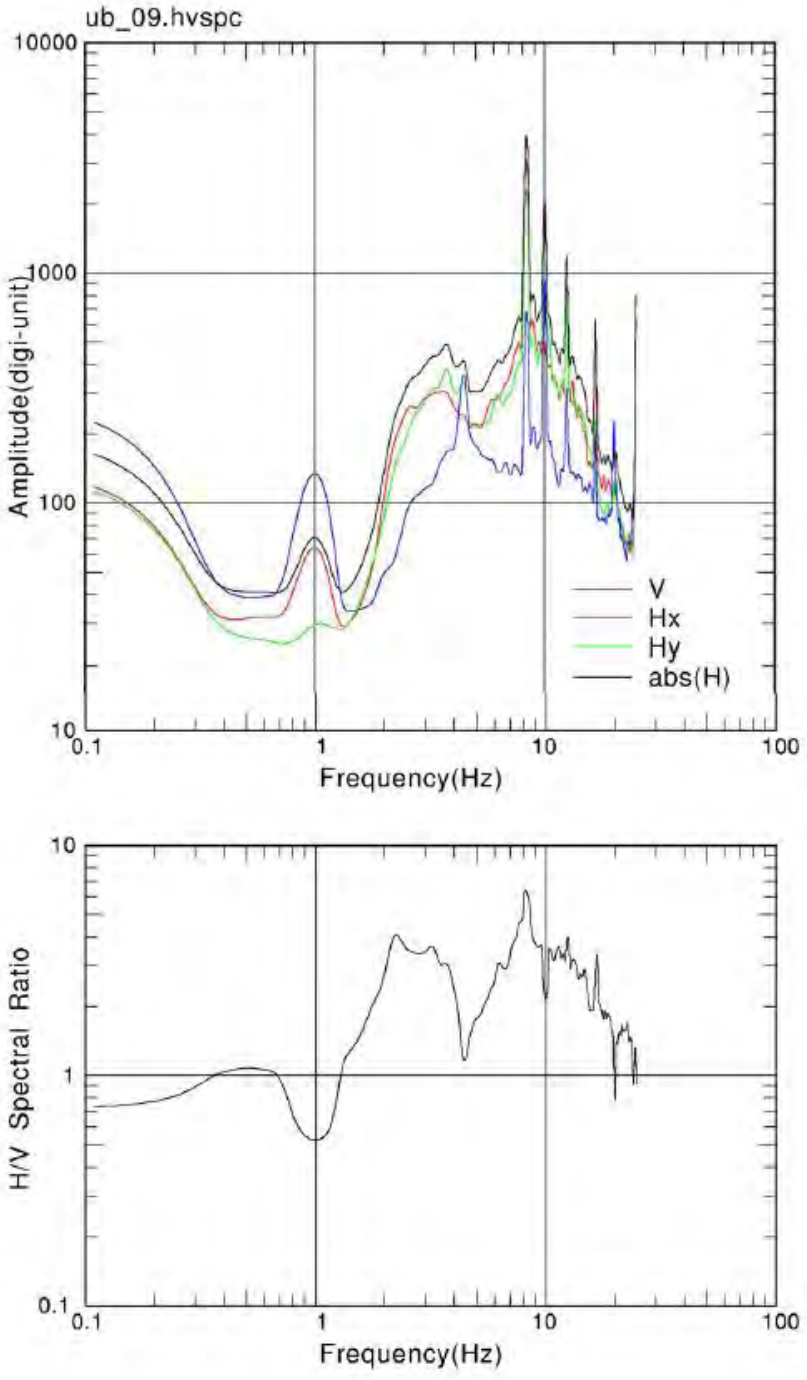
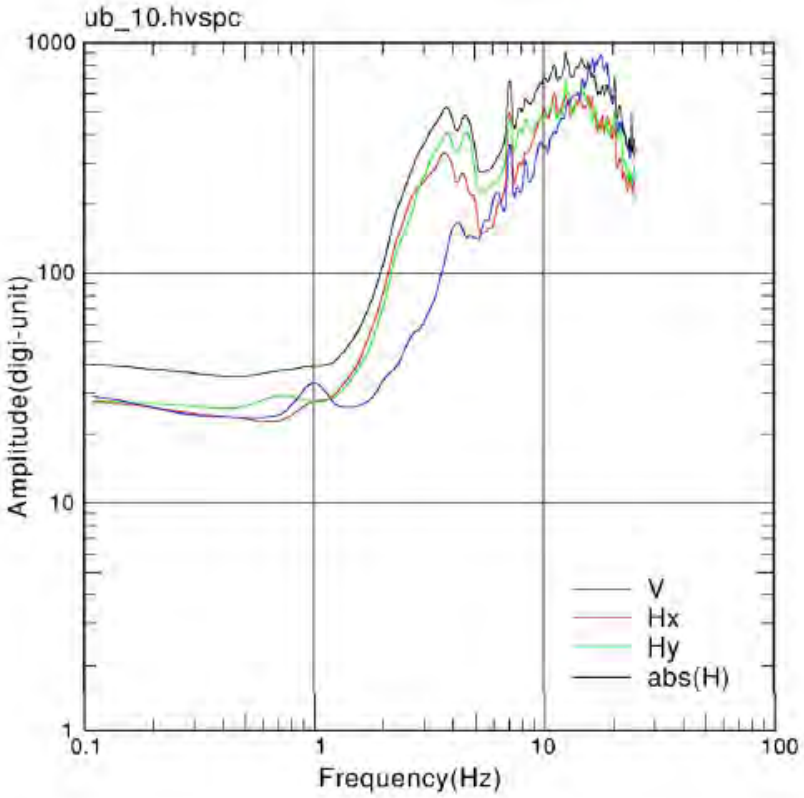
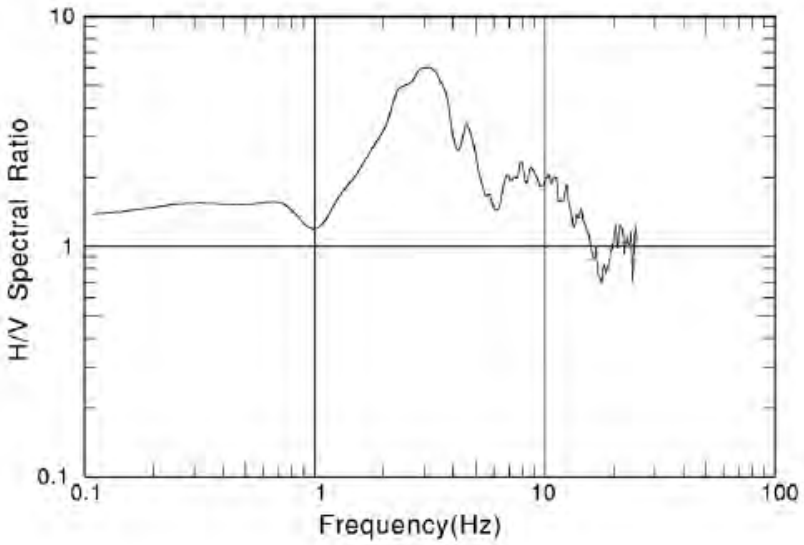
1000
100
10
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)

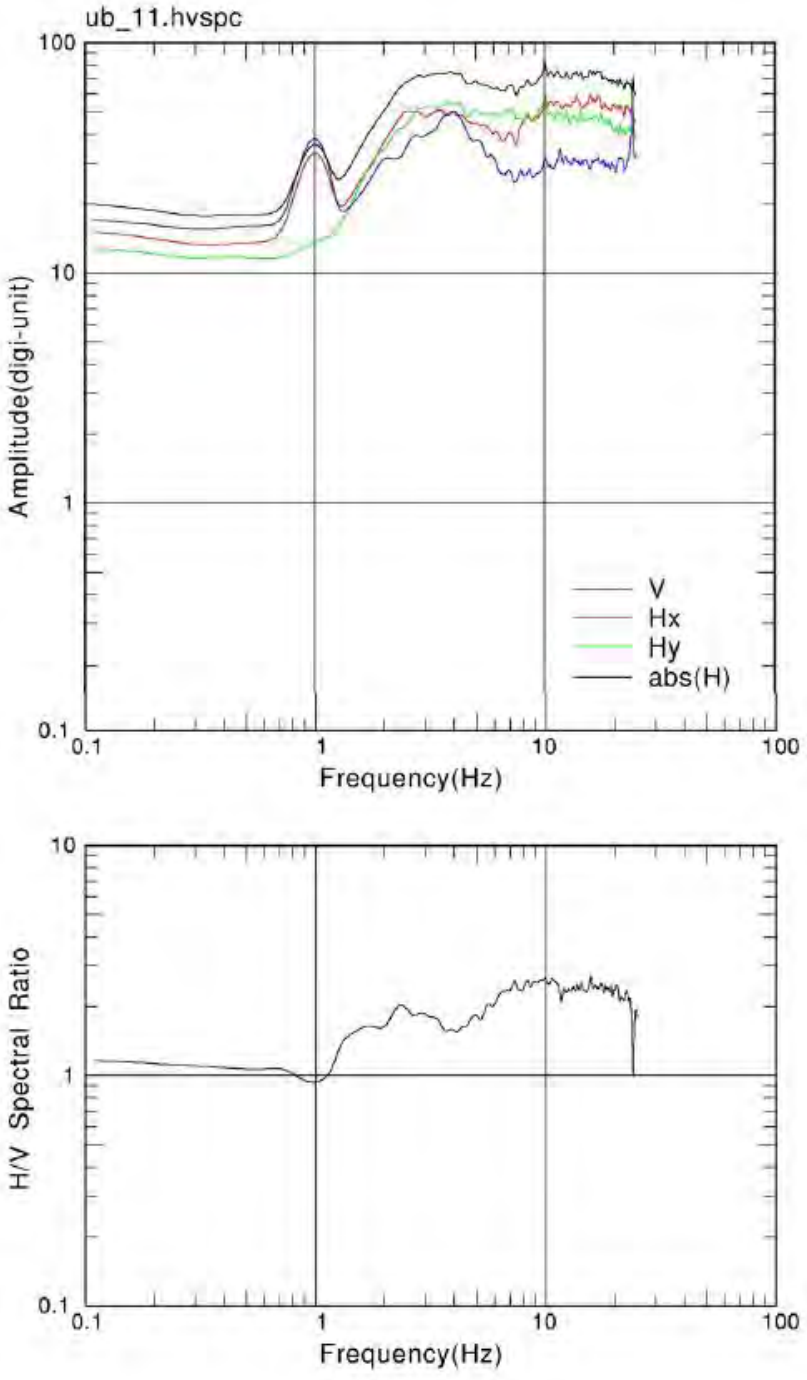

ub_07.hvspc
10000
1000
100
10
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)

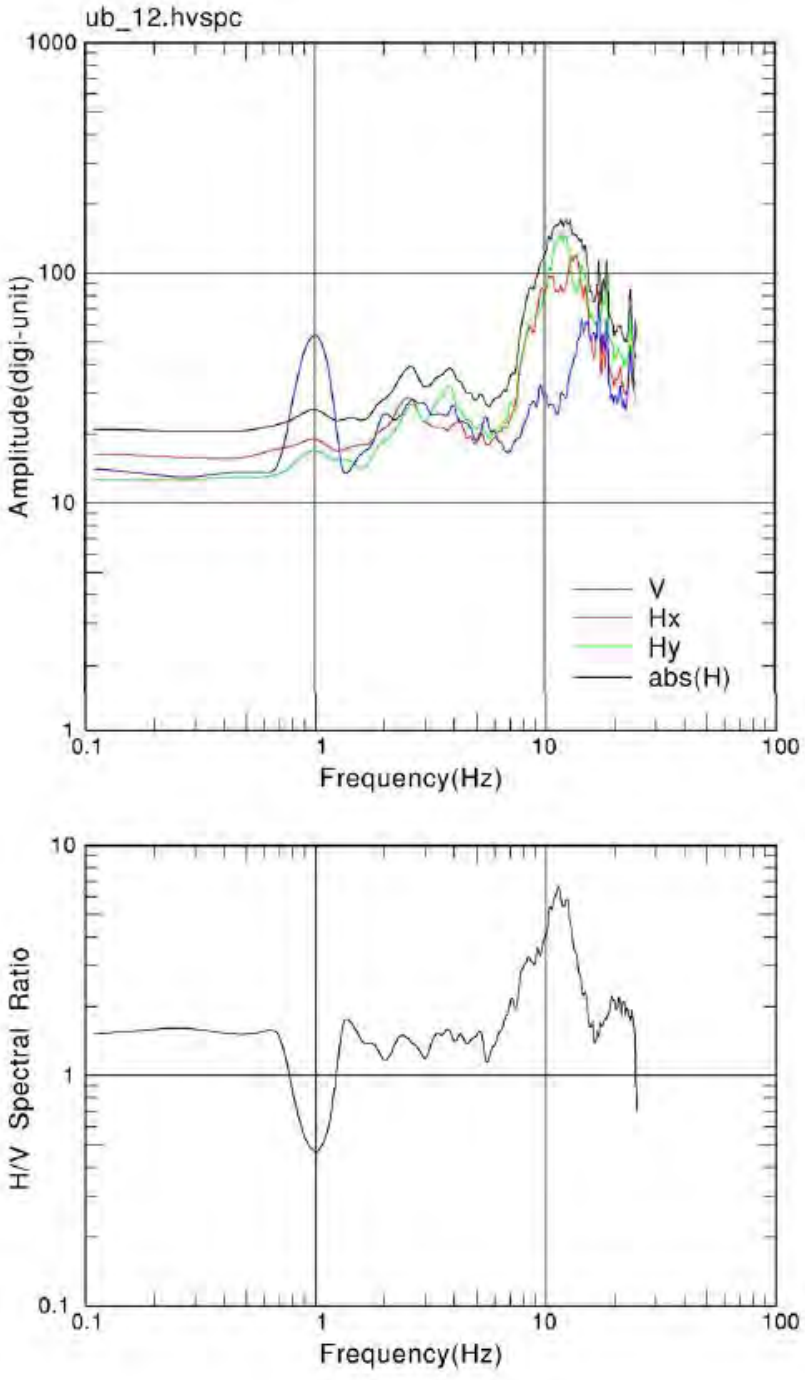

ub_08.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

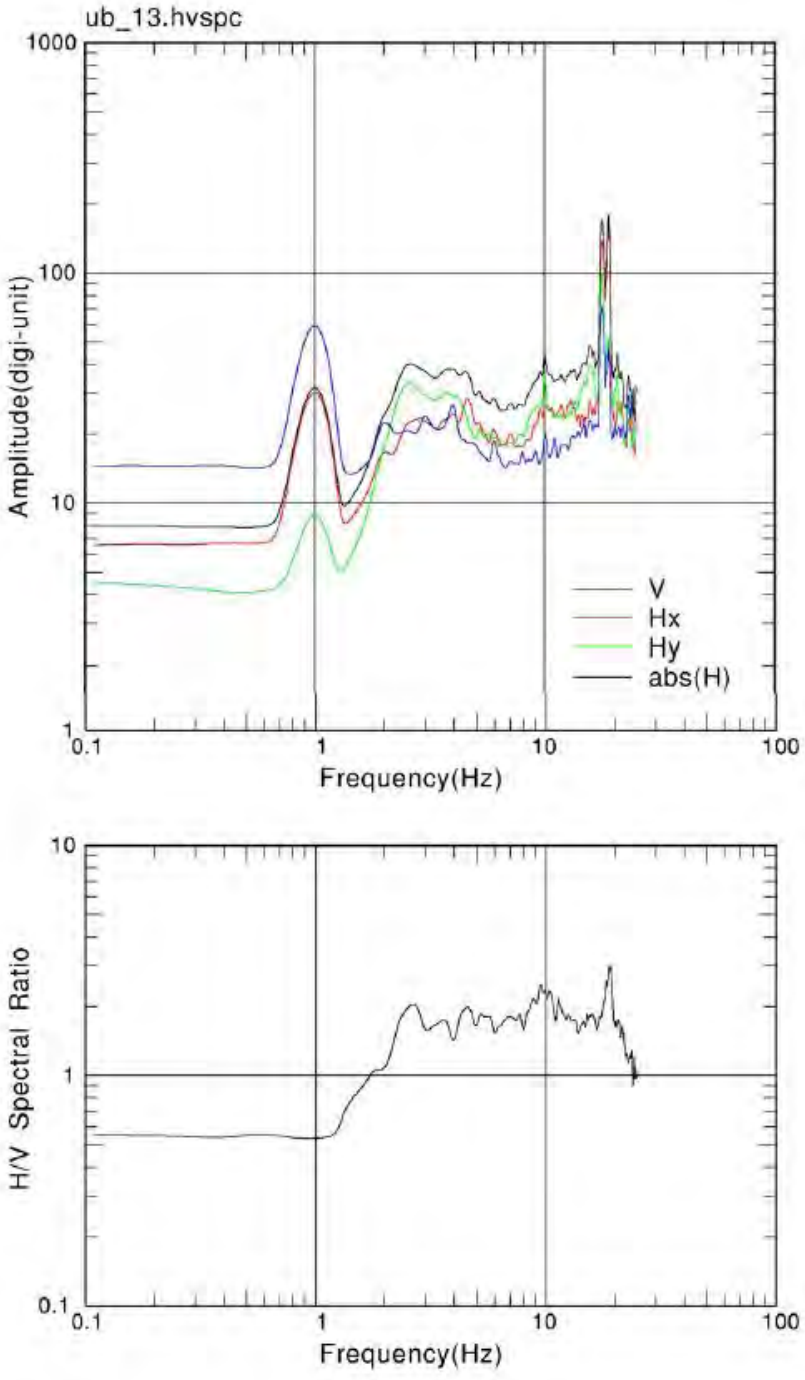

ub_09.hvspc
Amplitude(digi-unit)
10000
1000
100
10
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

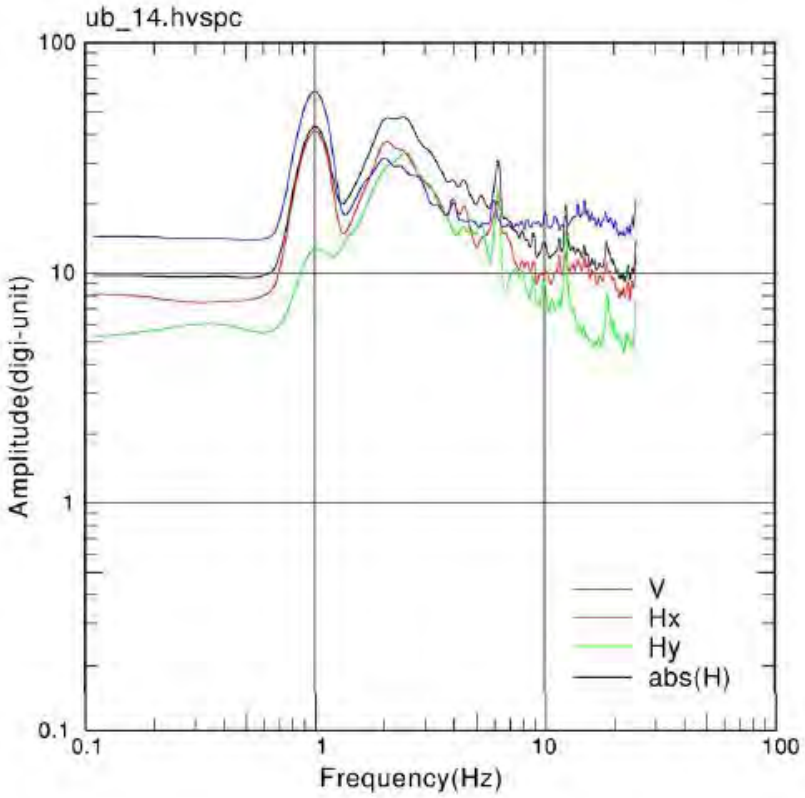

ub_10.hvspc
1000
100
10
1
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)


10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)


ub_11.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_12.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_13.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_14.hvspc
Amplitude(digi-unit)
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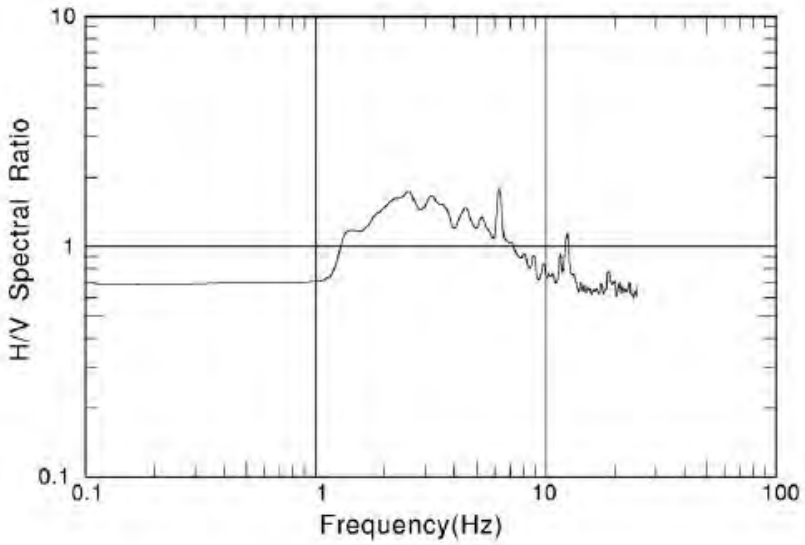
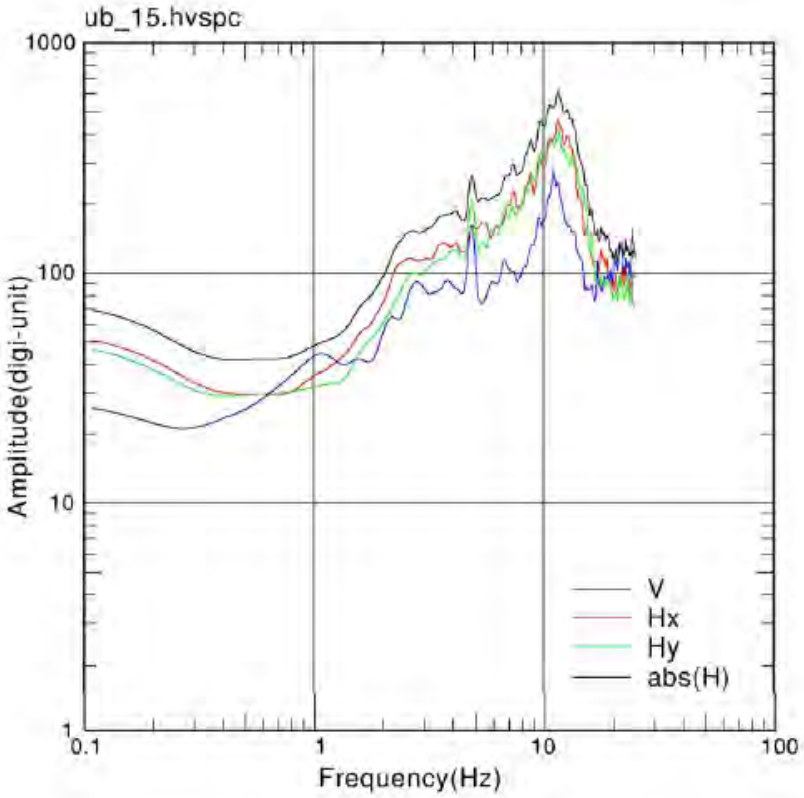
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)


H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_15.hvspc
1000
100
10
1
Amplitude(digi-unit)
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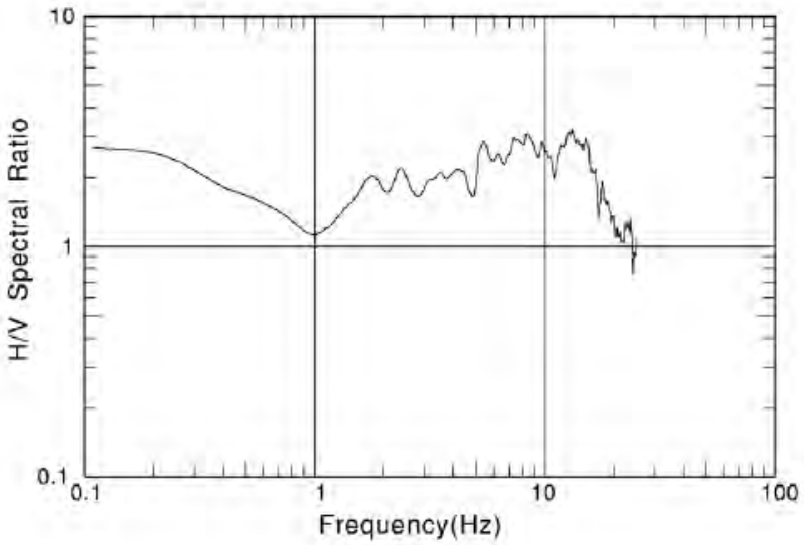
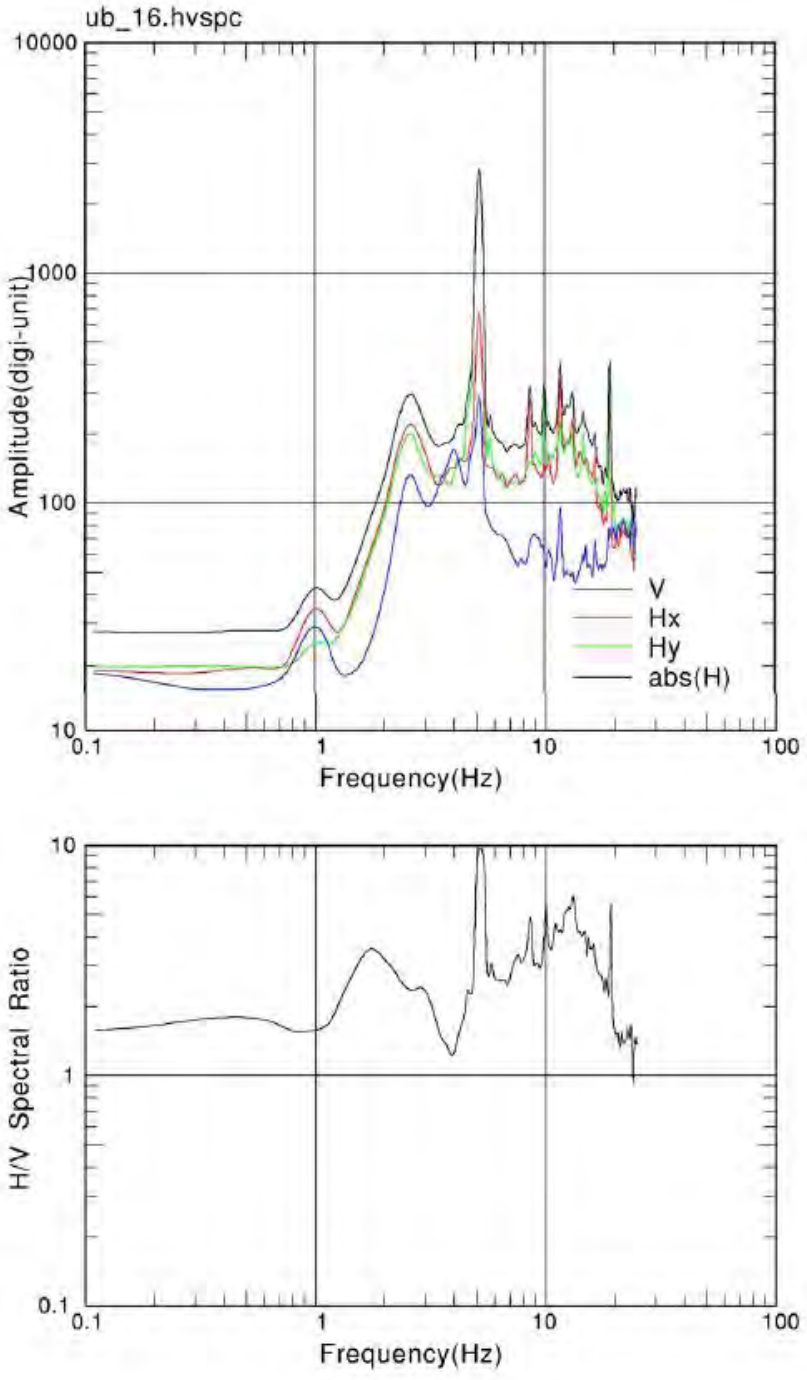
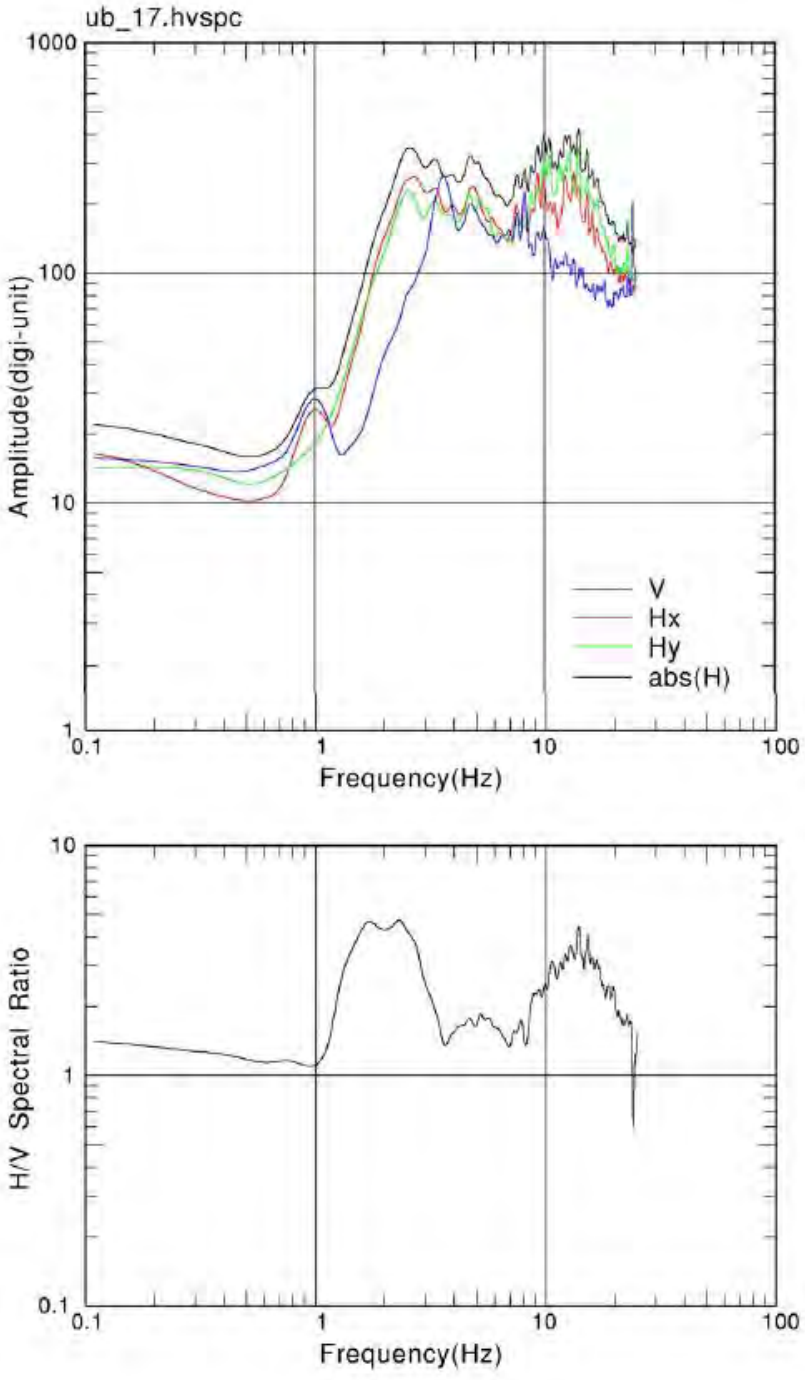
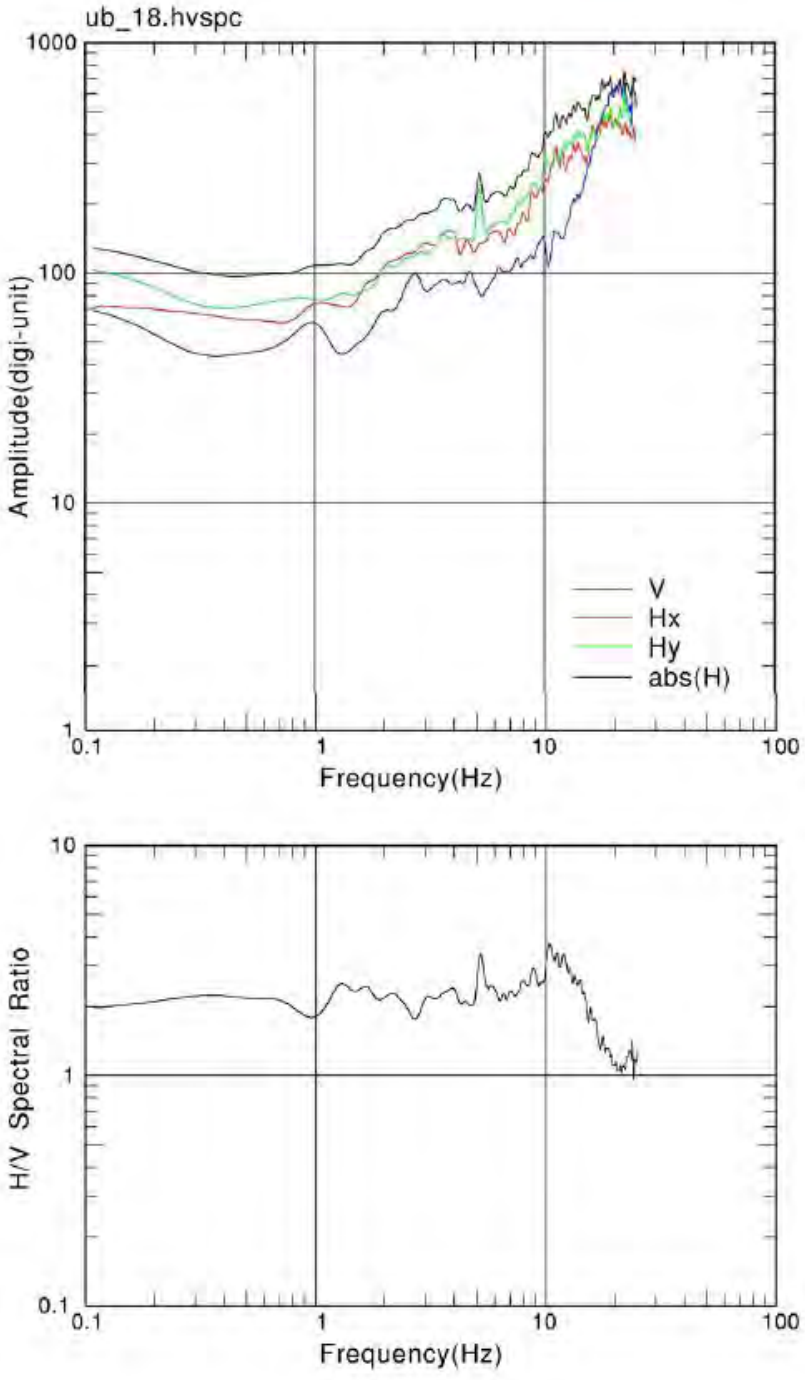
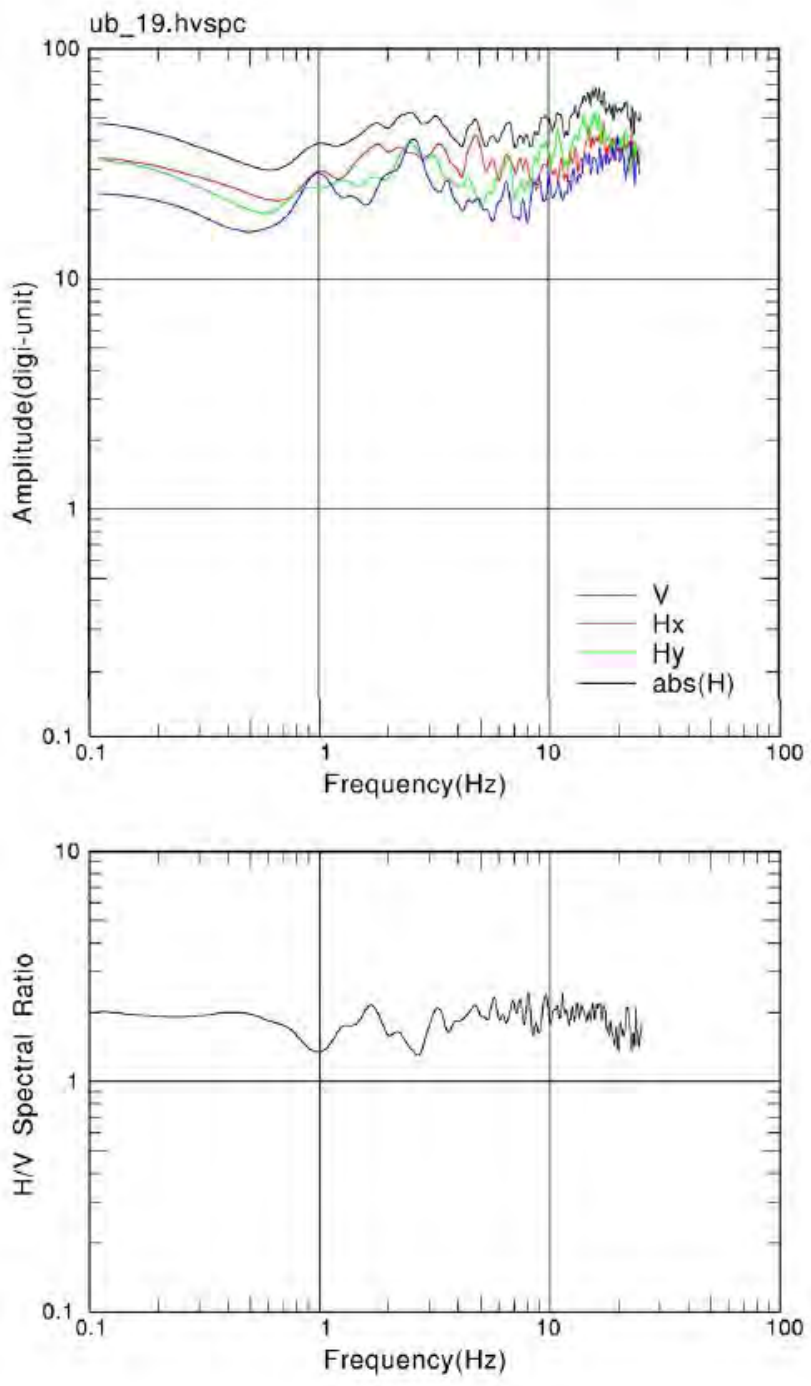
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)


10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)


ub_16.hvspc
Amplitude(digi-unit)
10000
1000
100
10
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_17.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


ub_18.hvspc
1000
100
10
1
Amplitude(digi-unit)
V
Hx
Hy
abs(H)
0.1
1
10
100
Frequency(Hz)
10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)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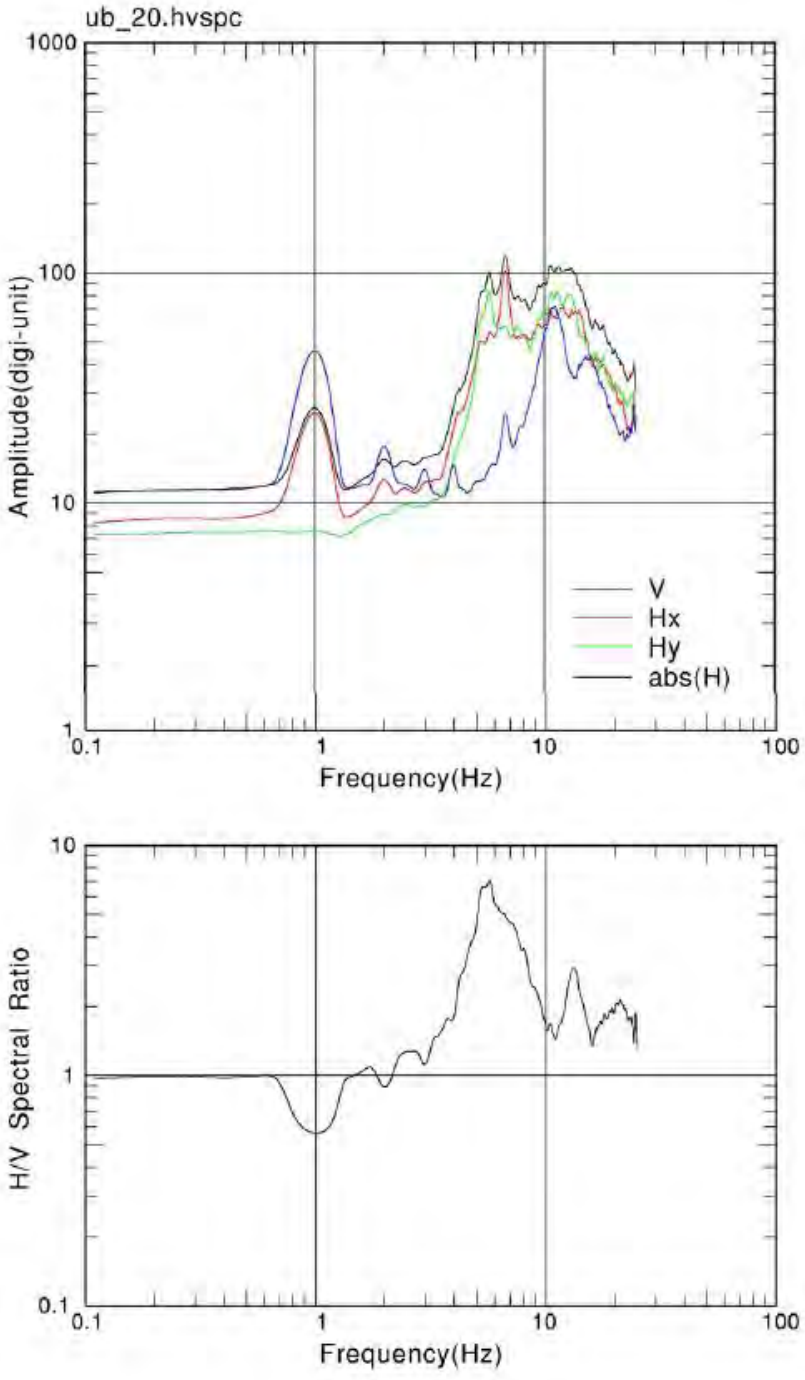
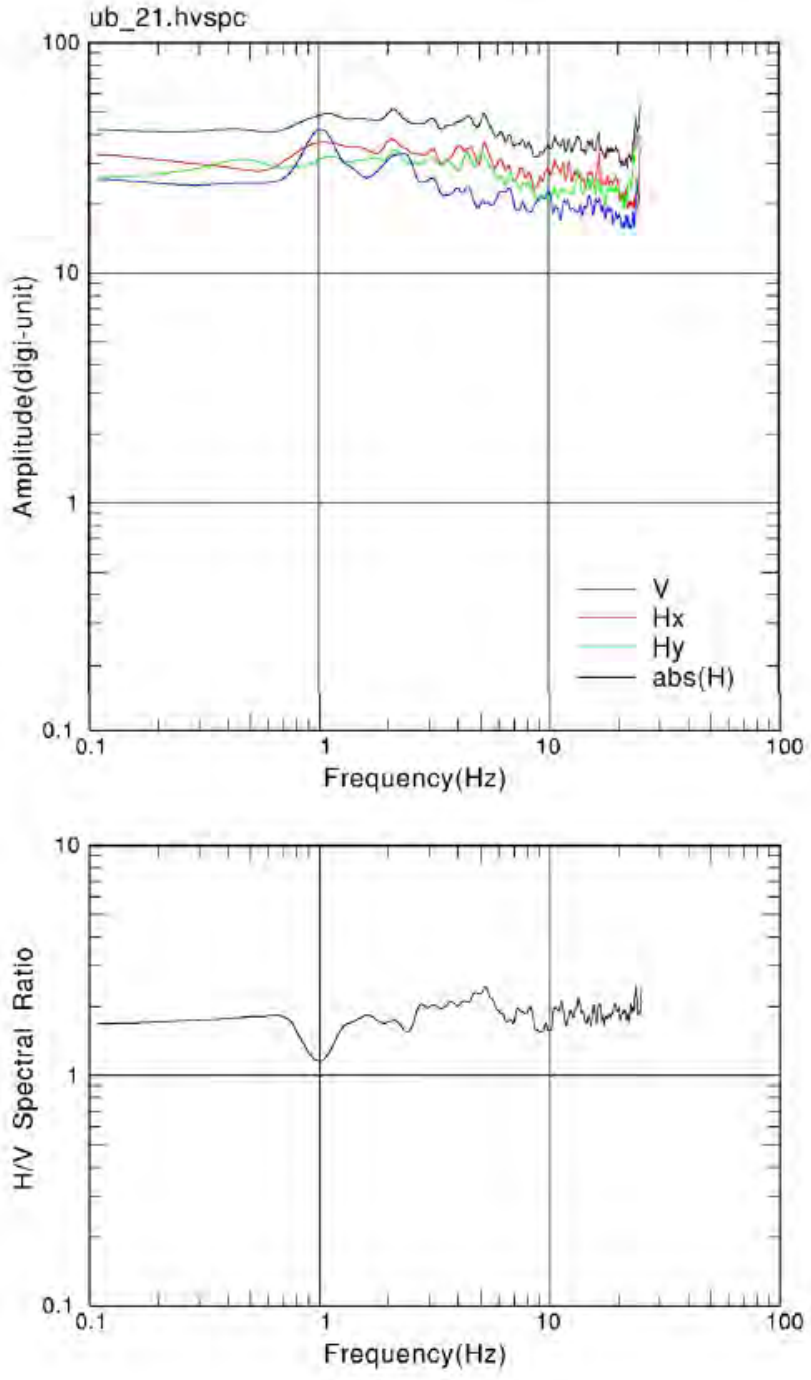
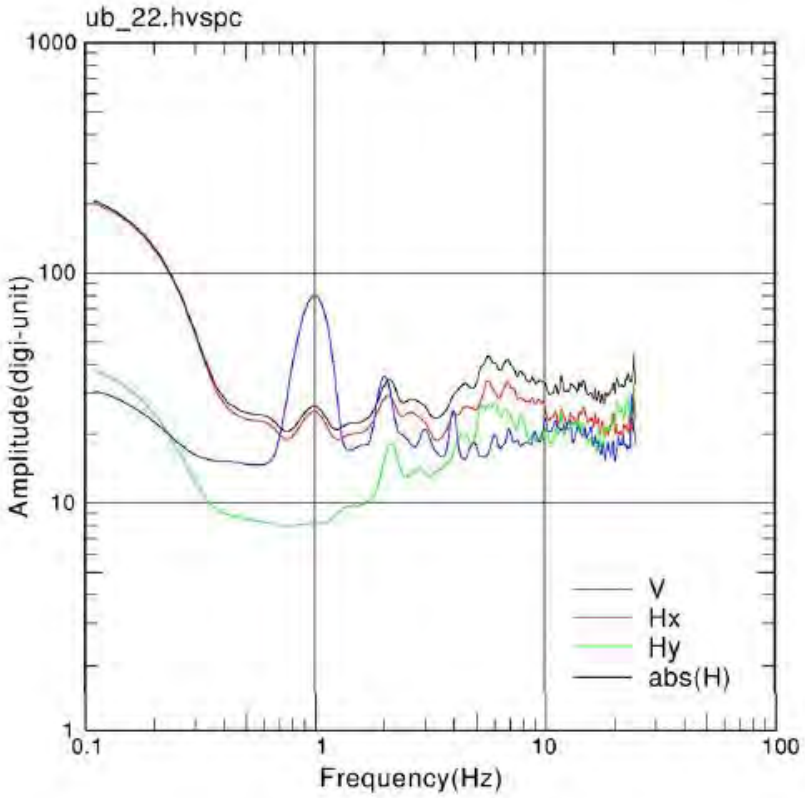
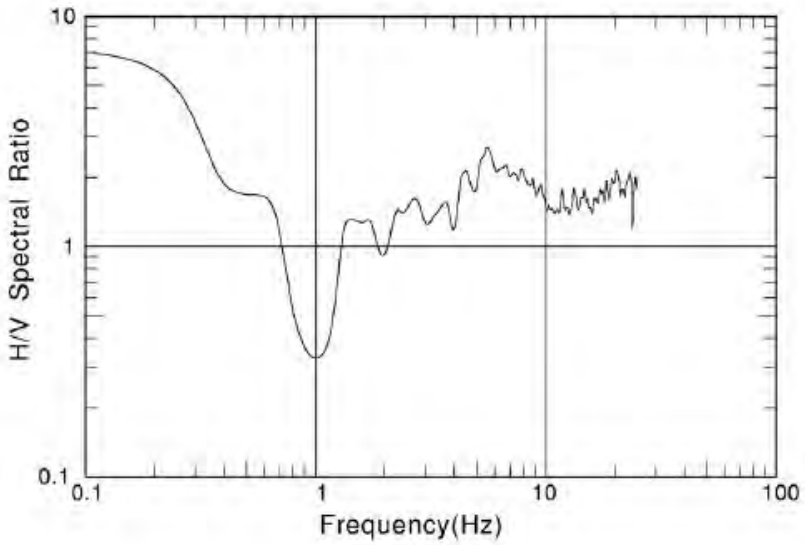
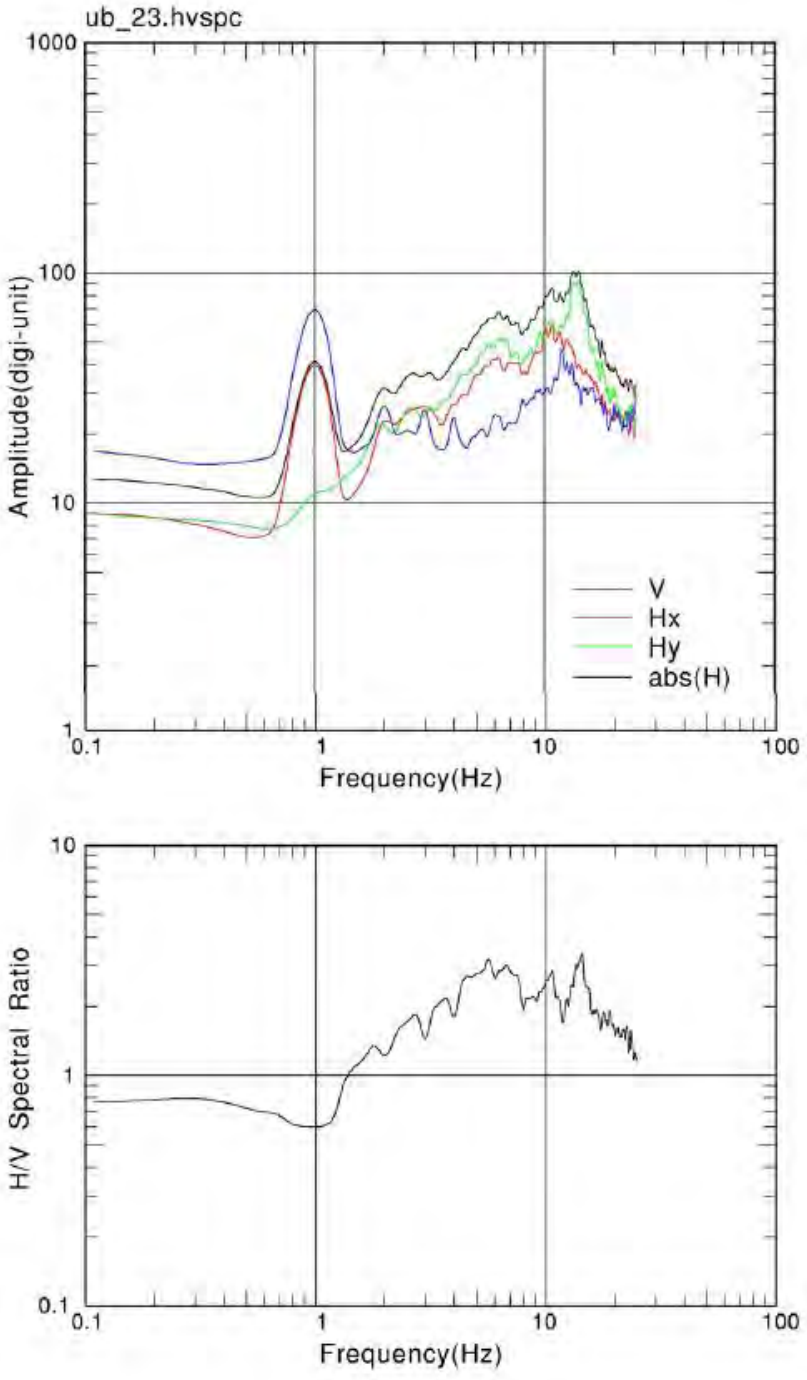
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

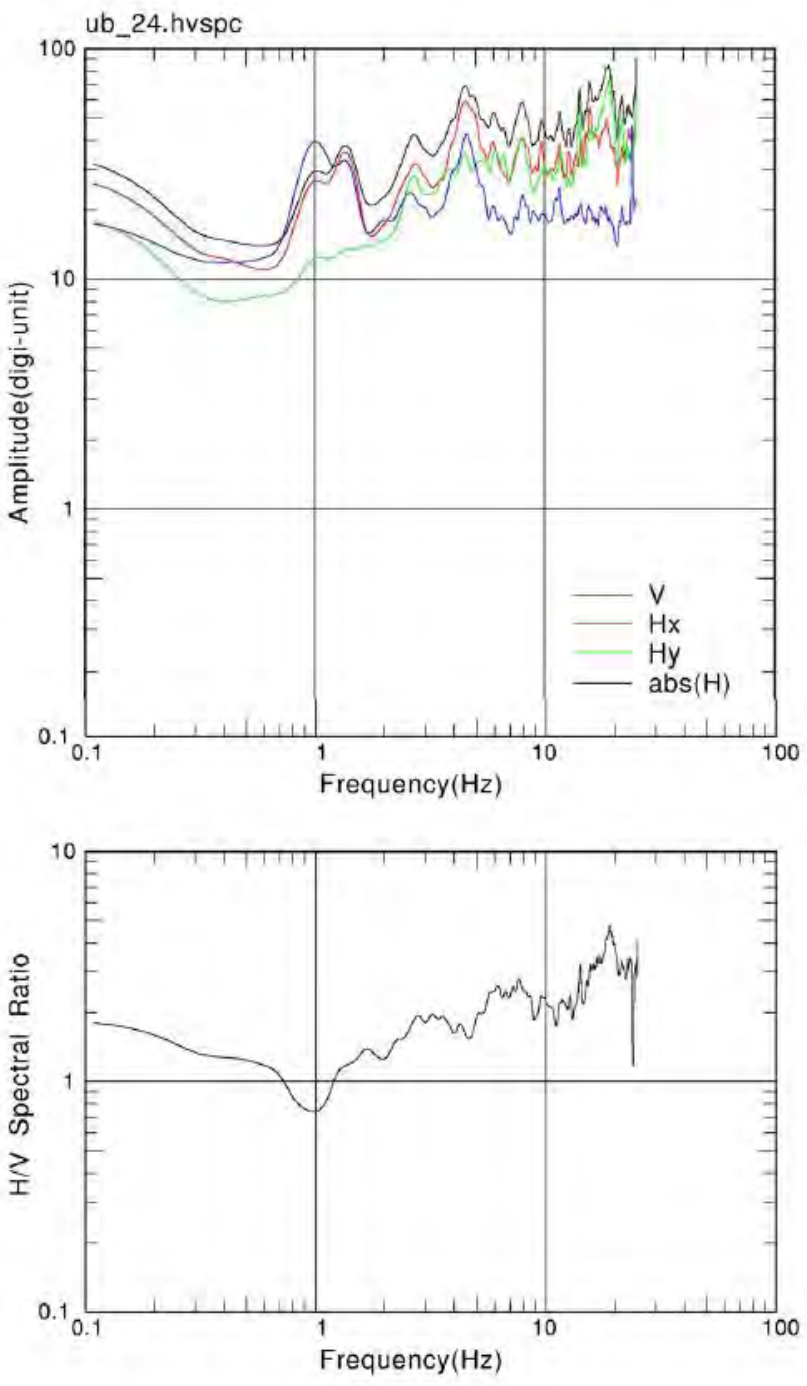

ub_20.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

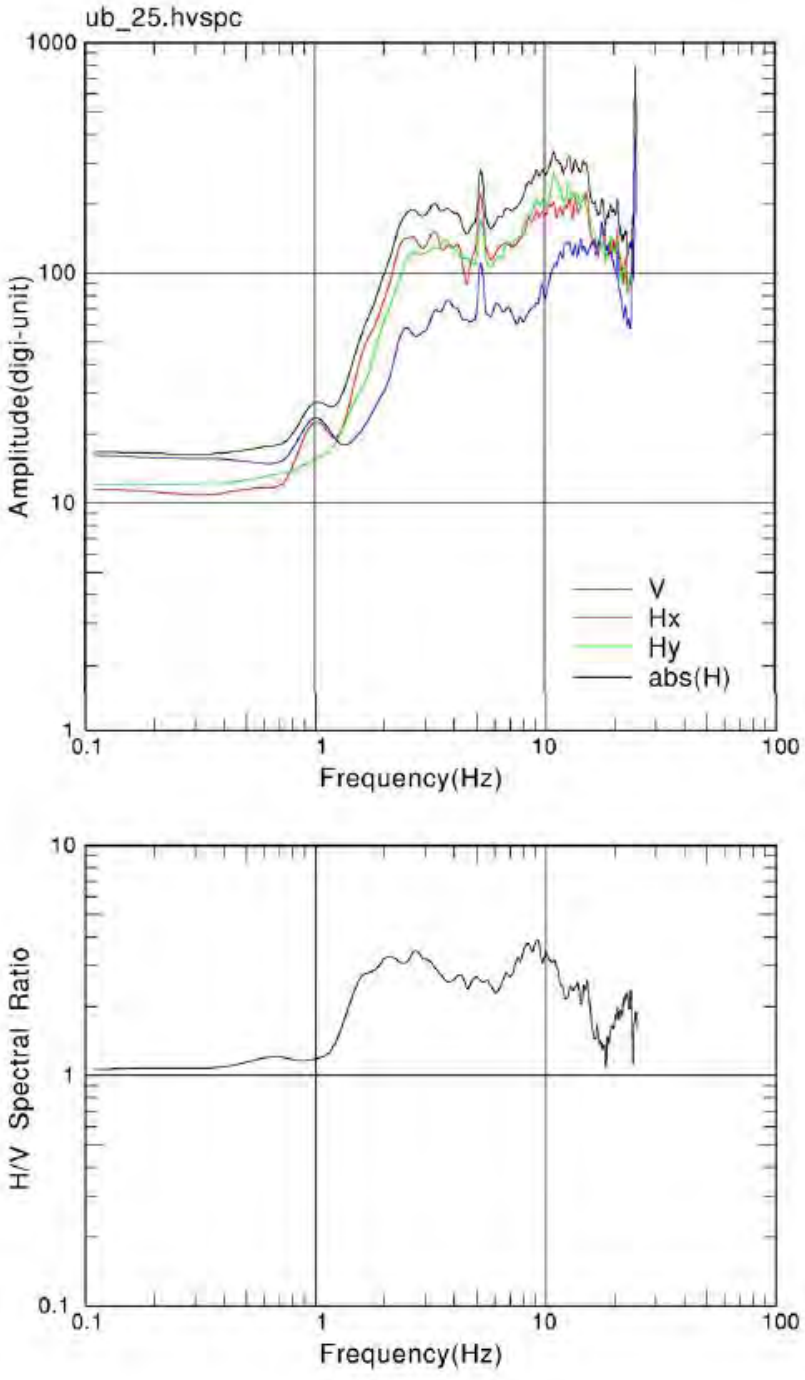

ub_21.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

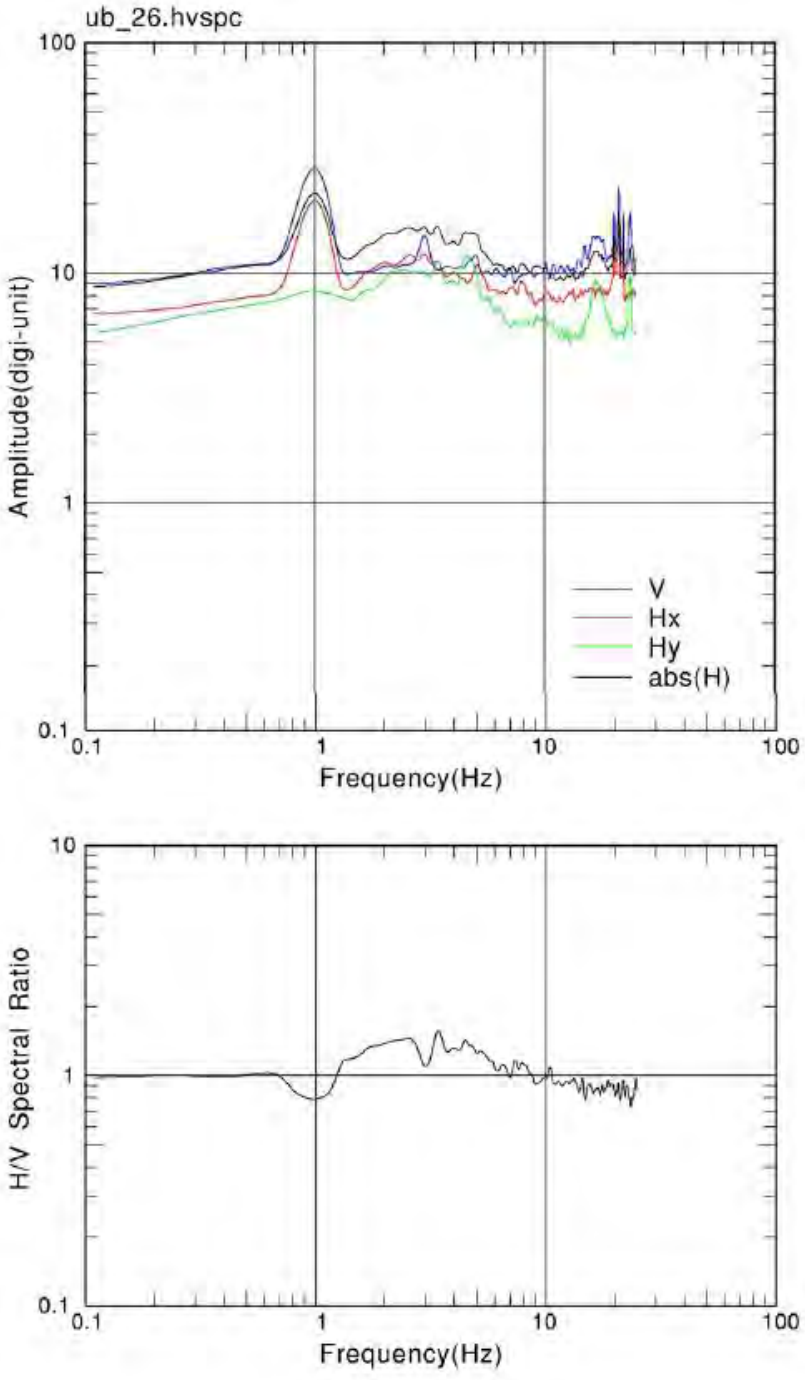

ub_22.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)

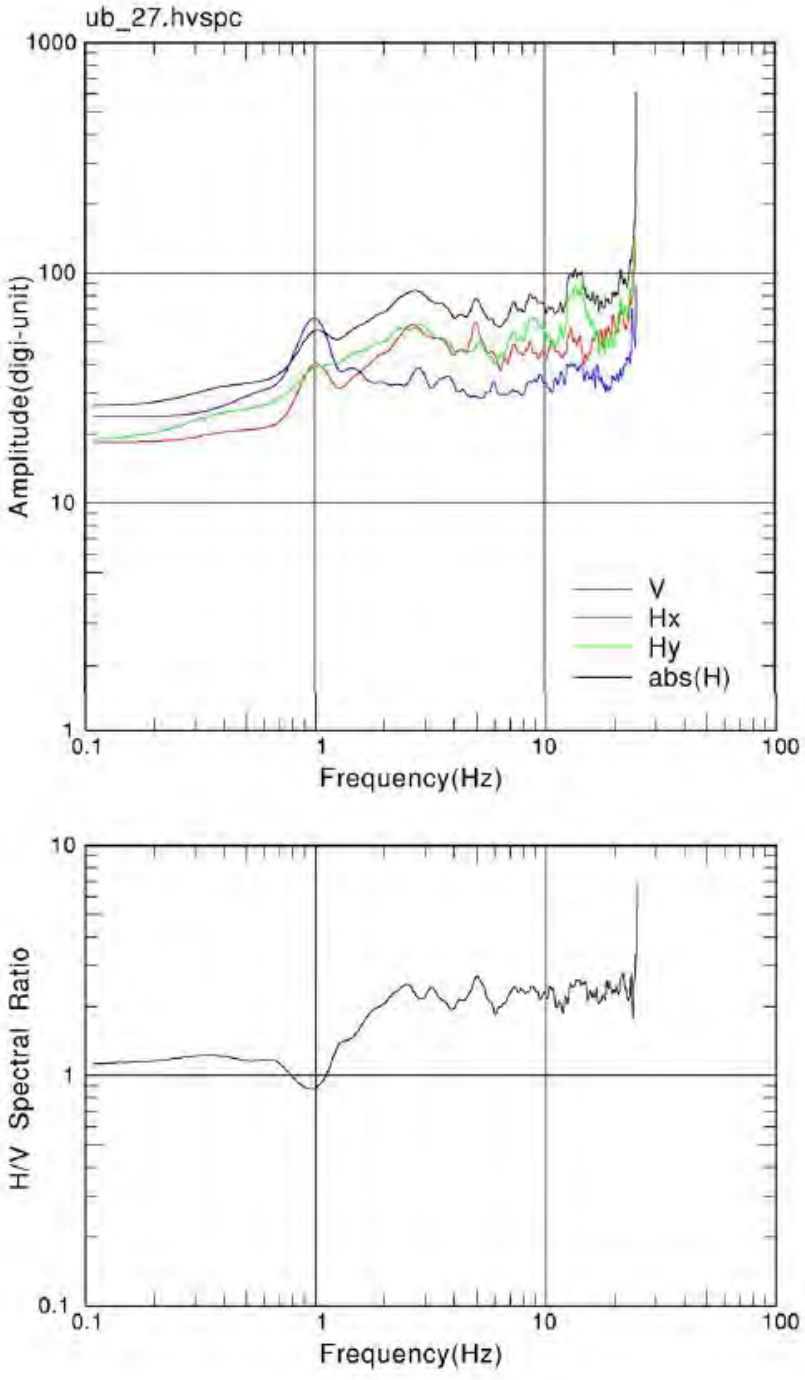

H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

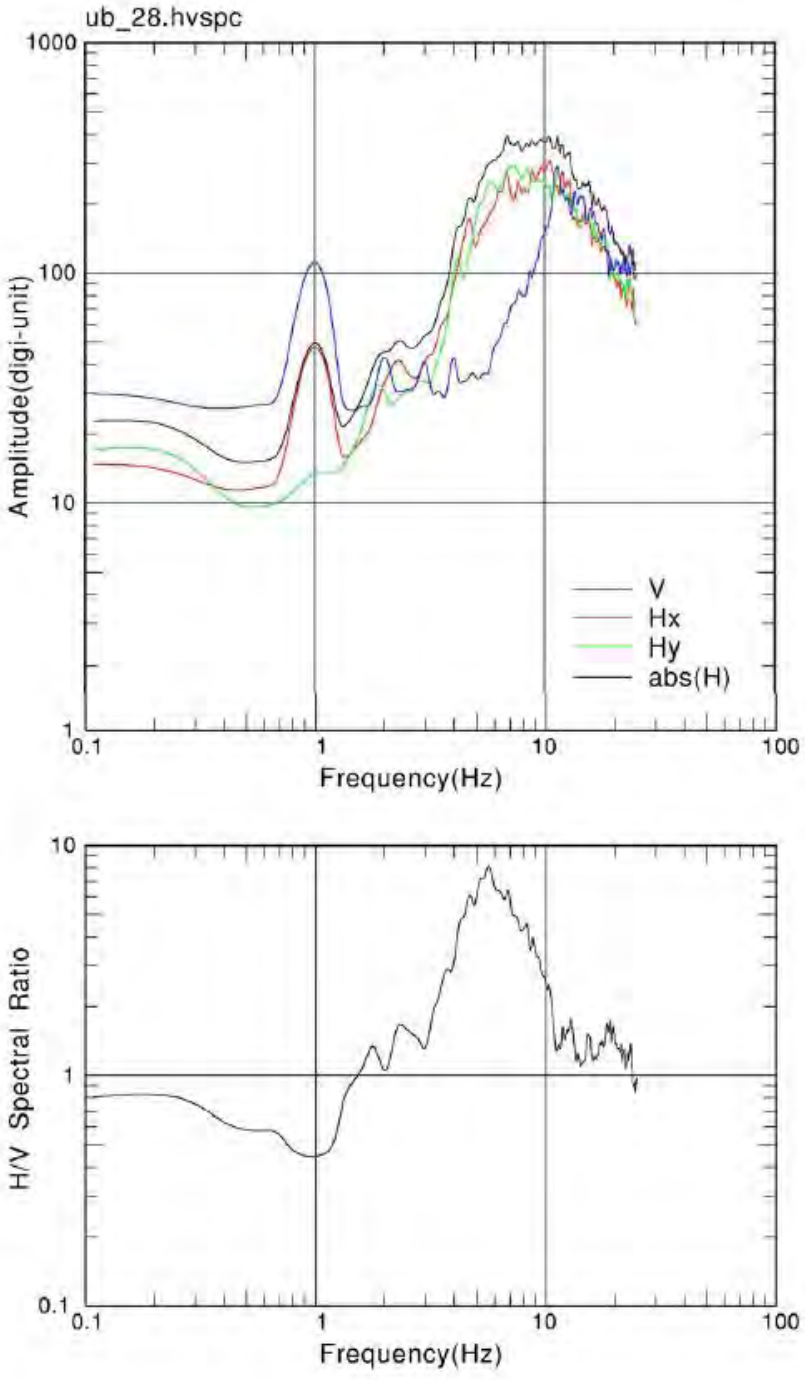

ub_23.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

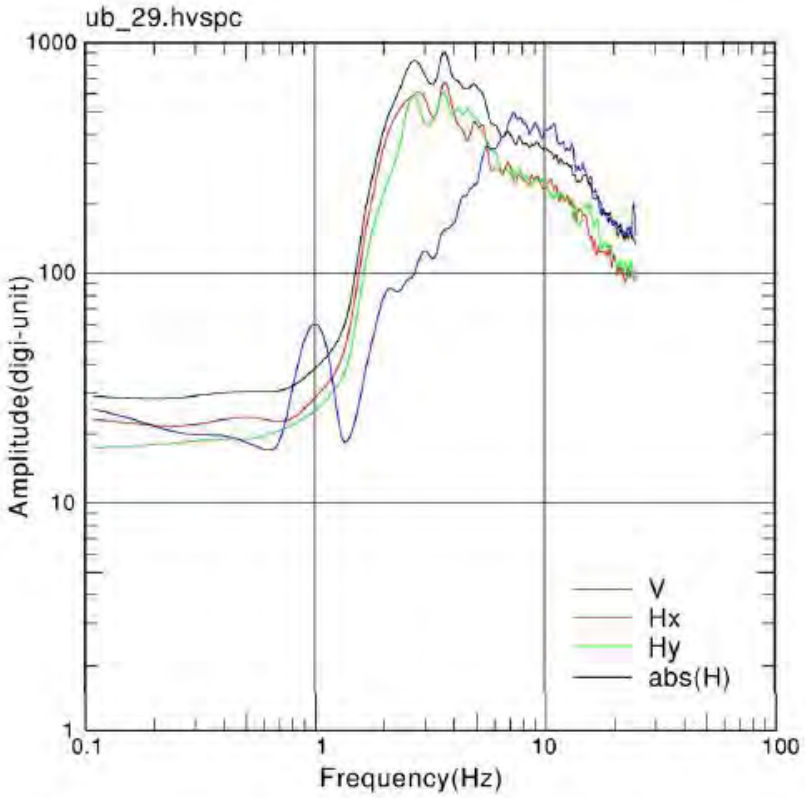

ub_24.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

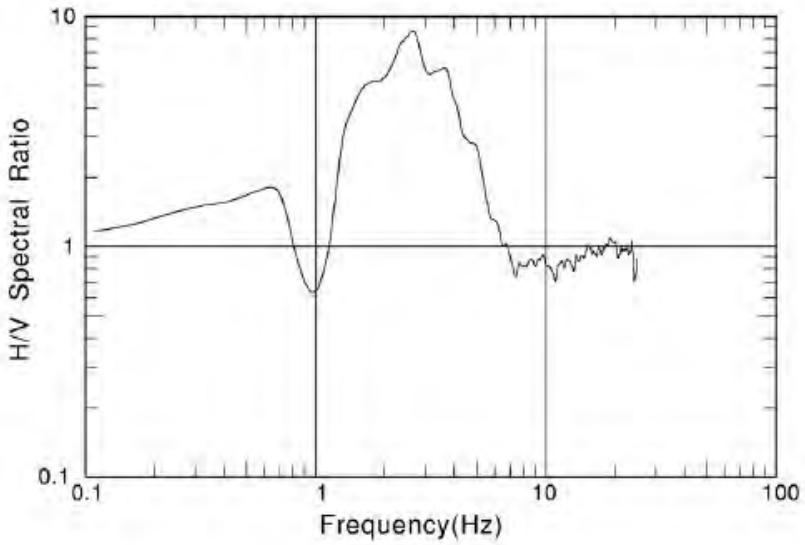

ub_25.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

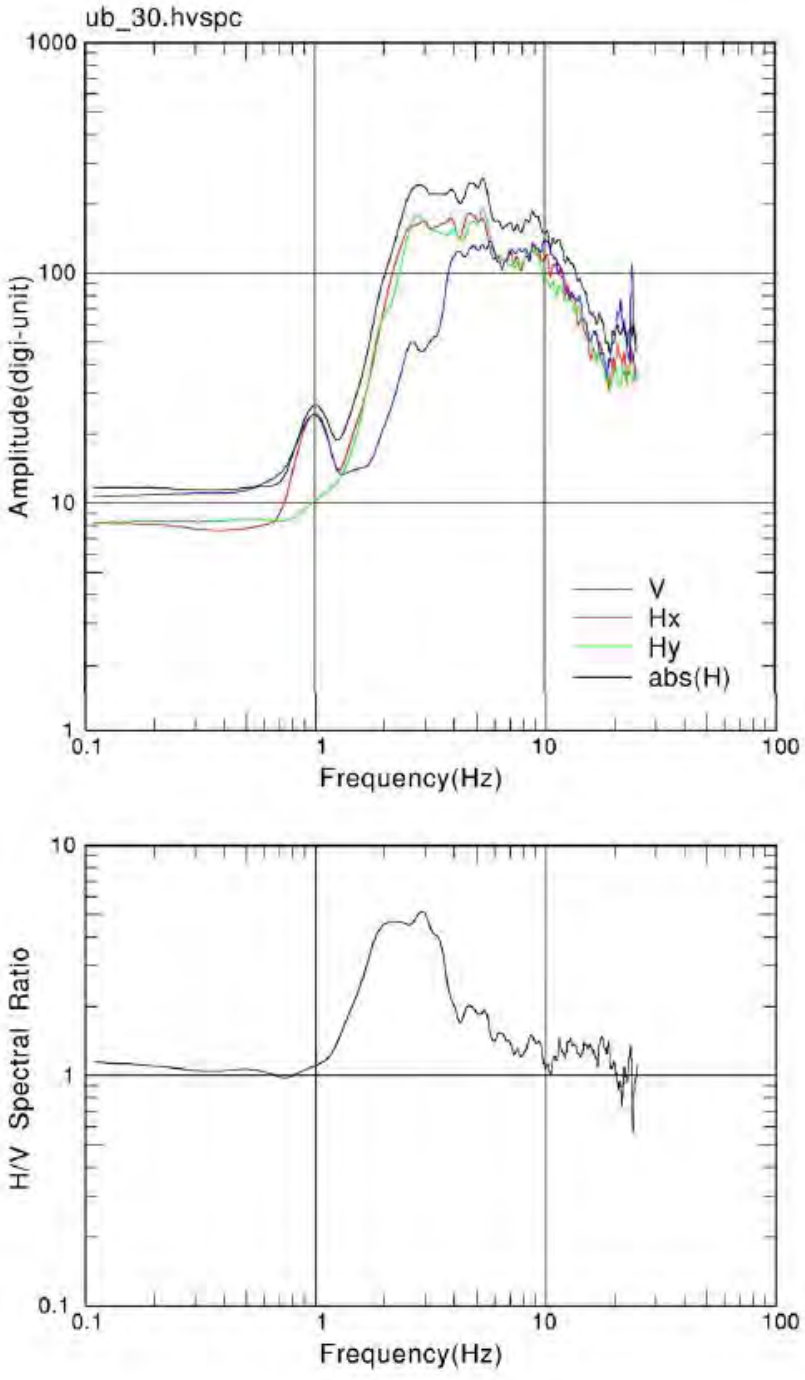

ub_26.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

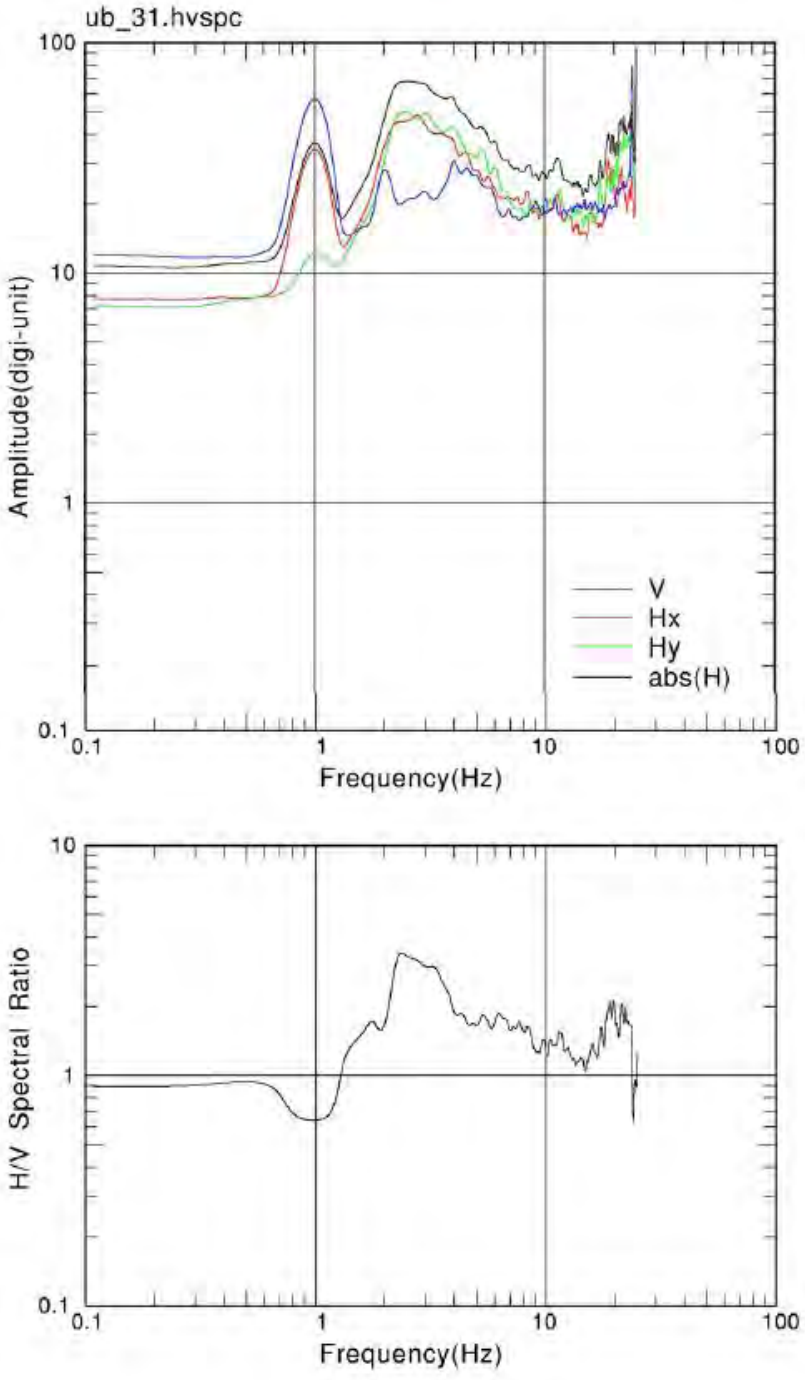

ub_27.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

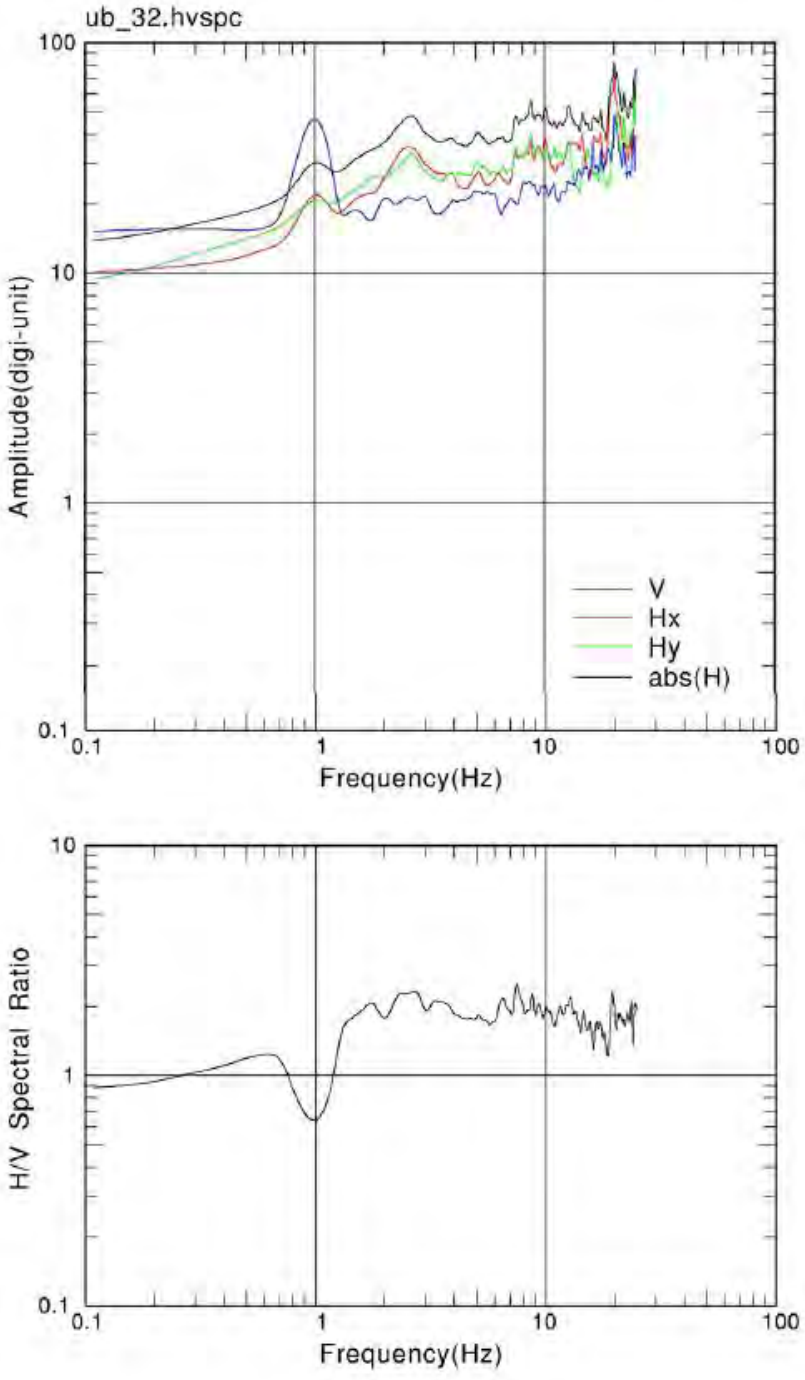

ub_28.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

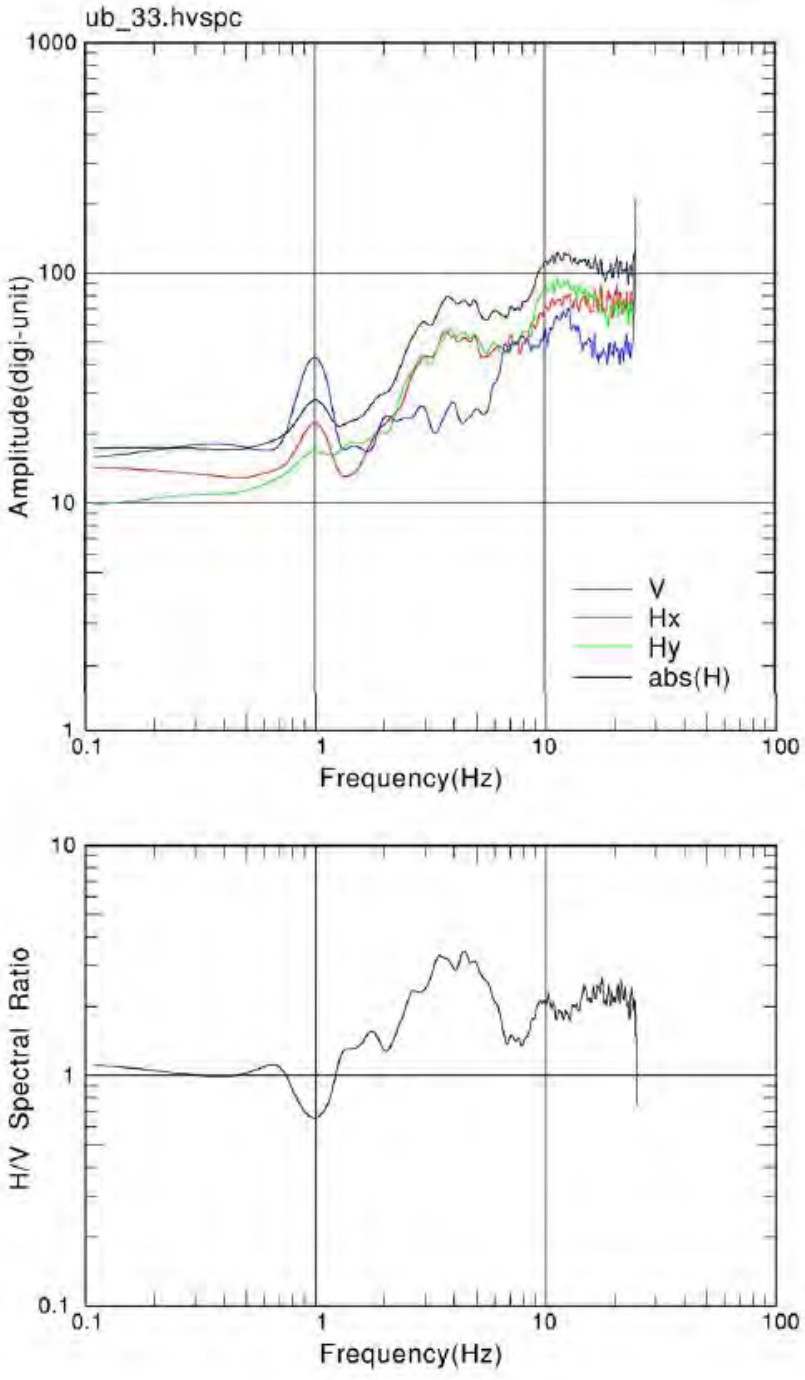

ub_29.hvspc
1000
100
10
1
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)

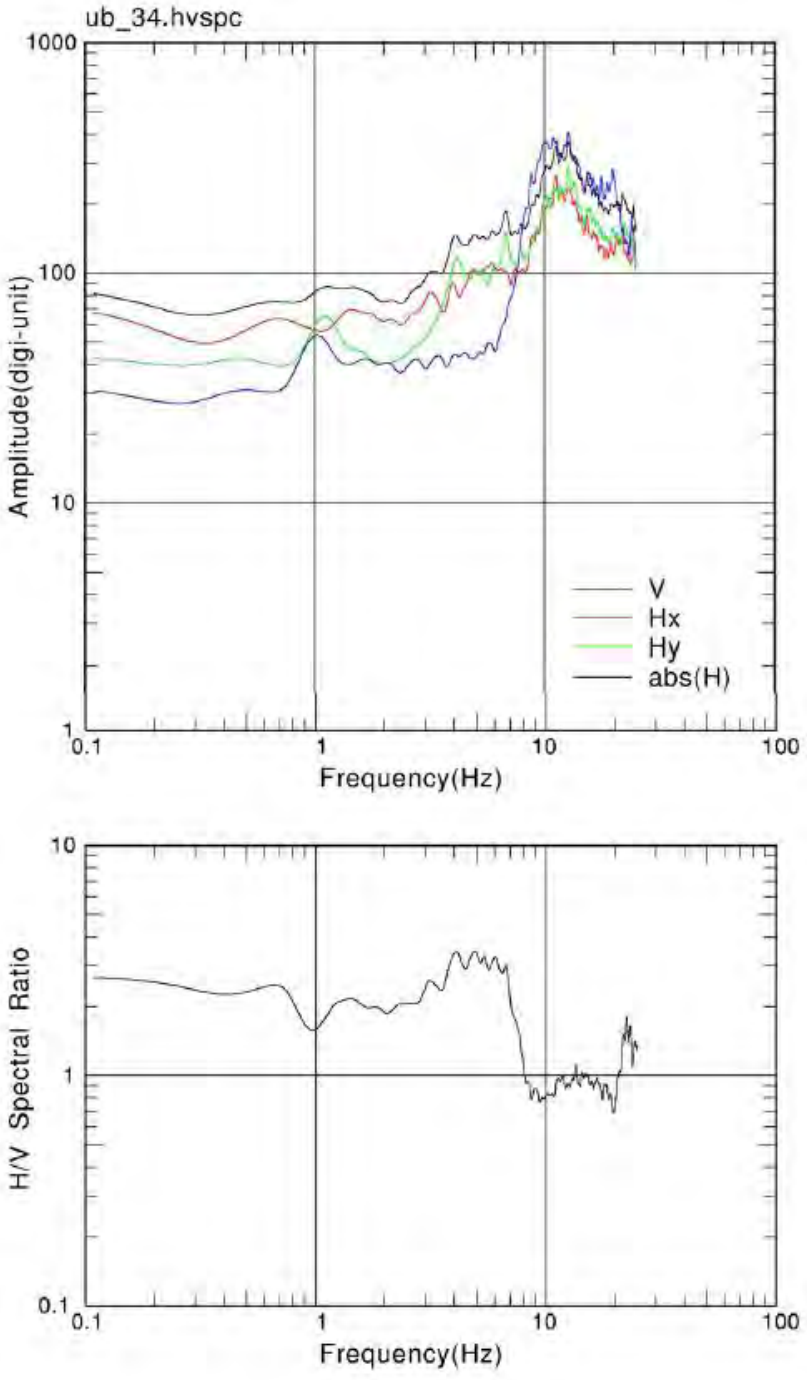

10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)

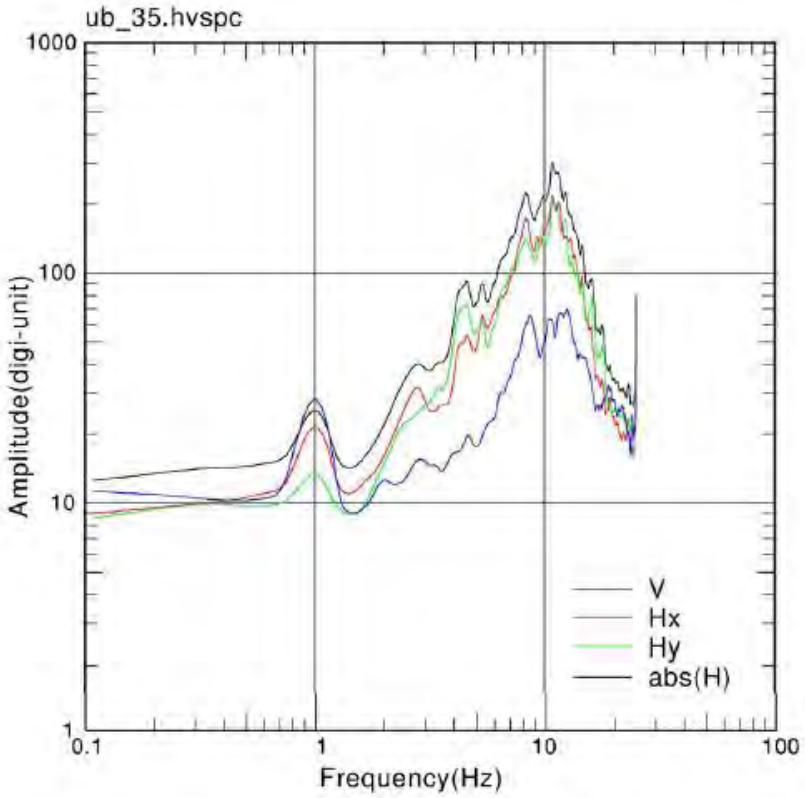

ub_30.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

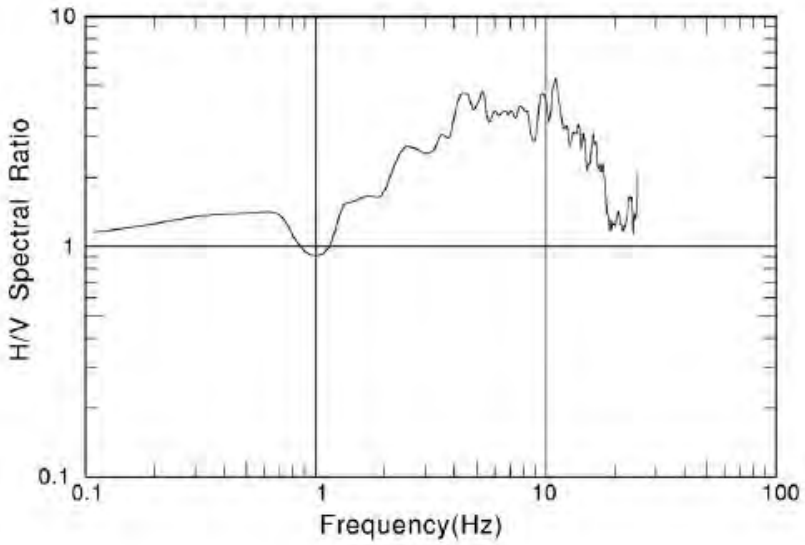

ub_31.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

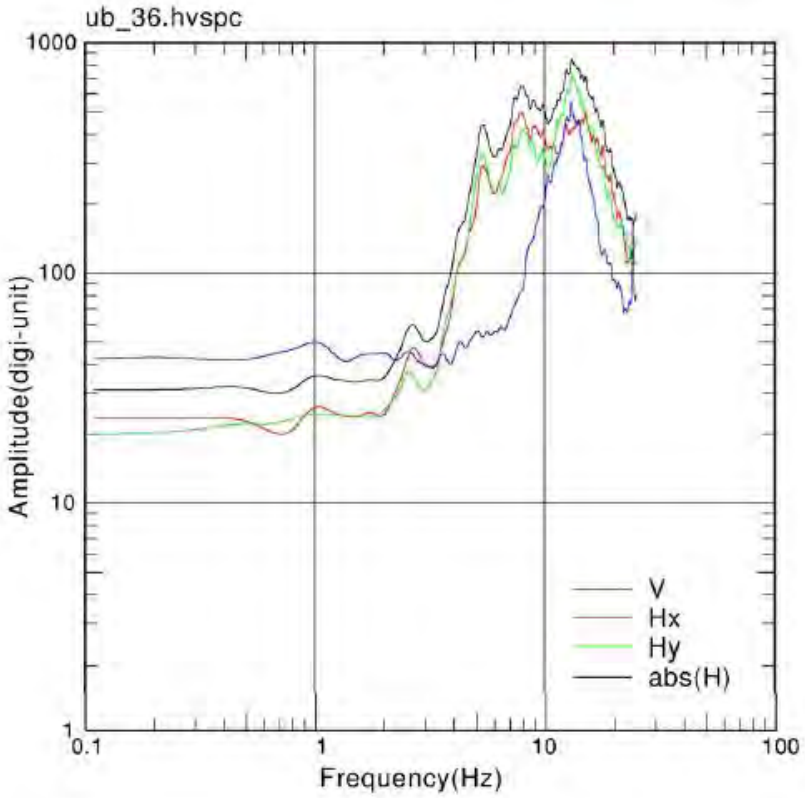

ub_32.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

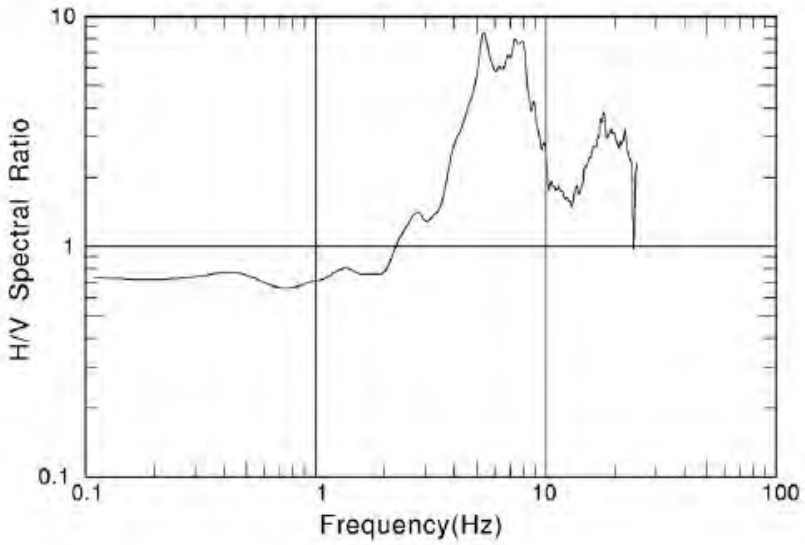

ub_33.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

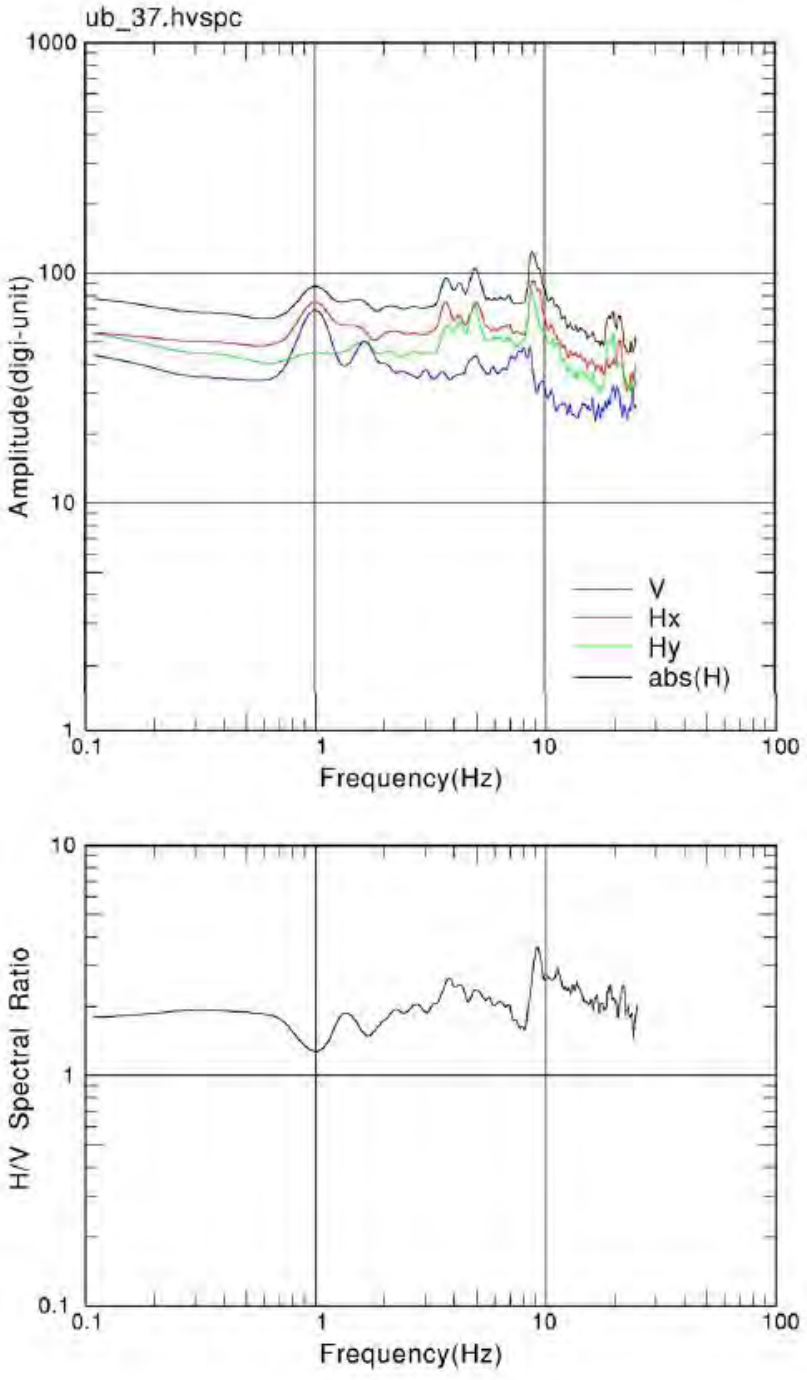

ub_34.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

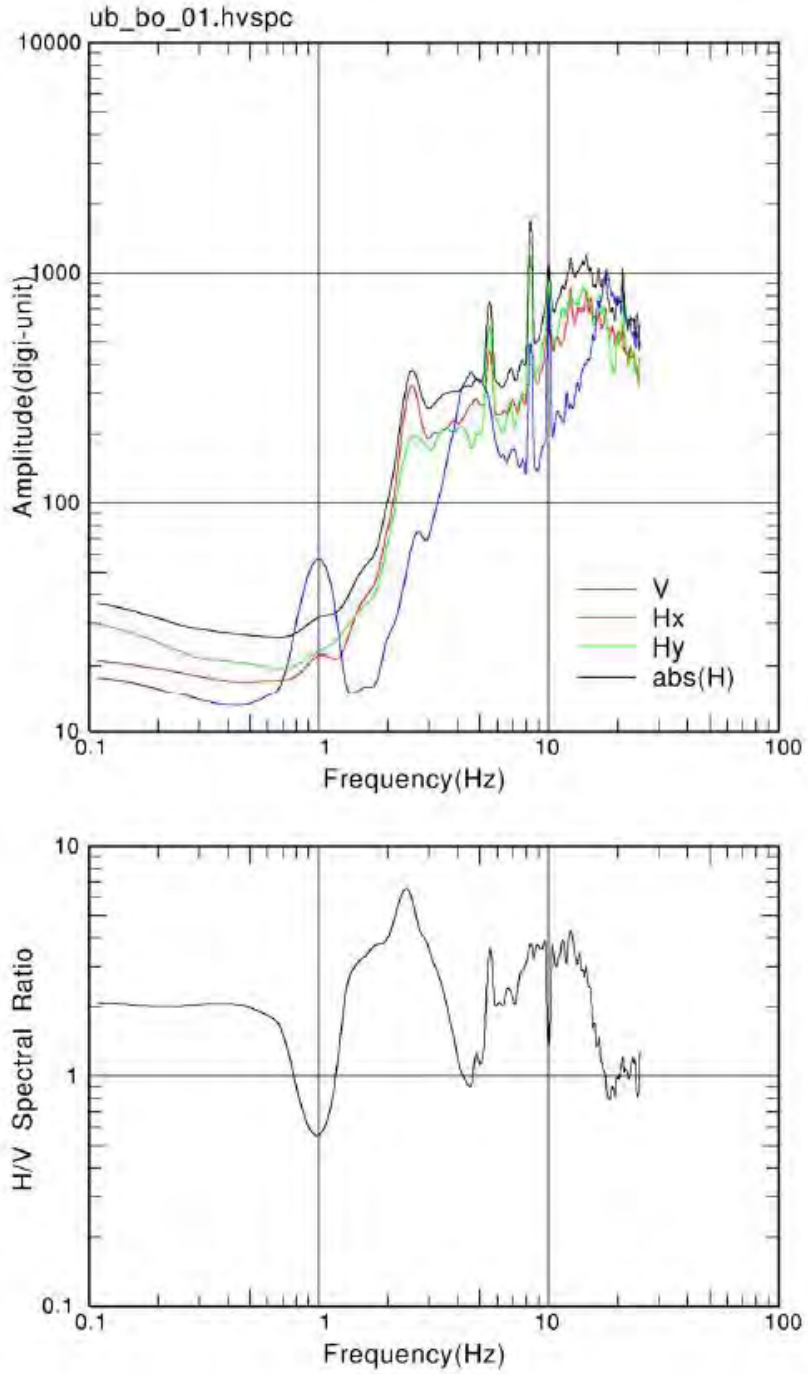

ub_35.hvspc
1000
100
10
1
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)

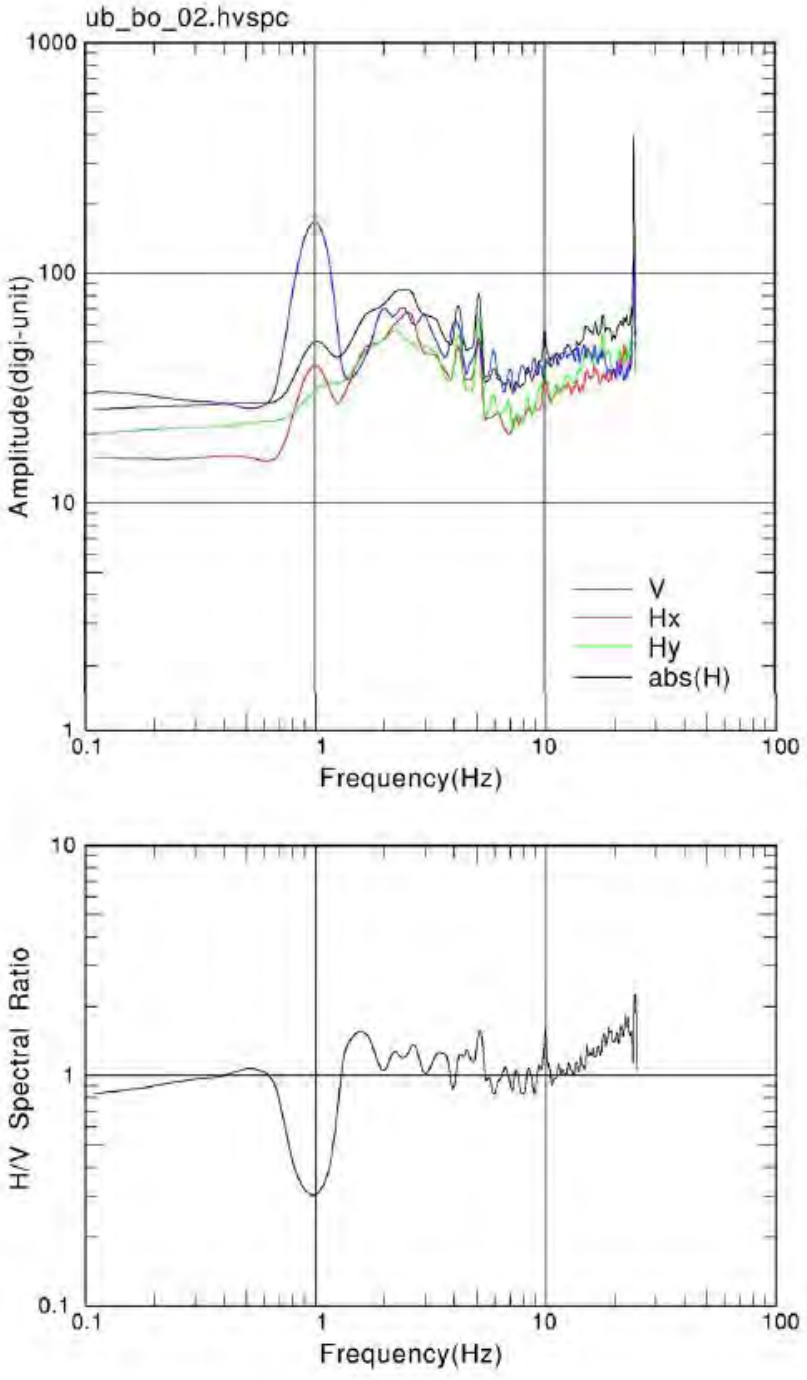

10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)

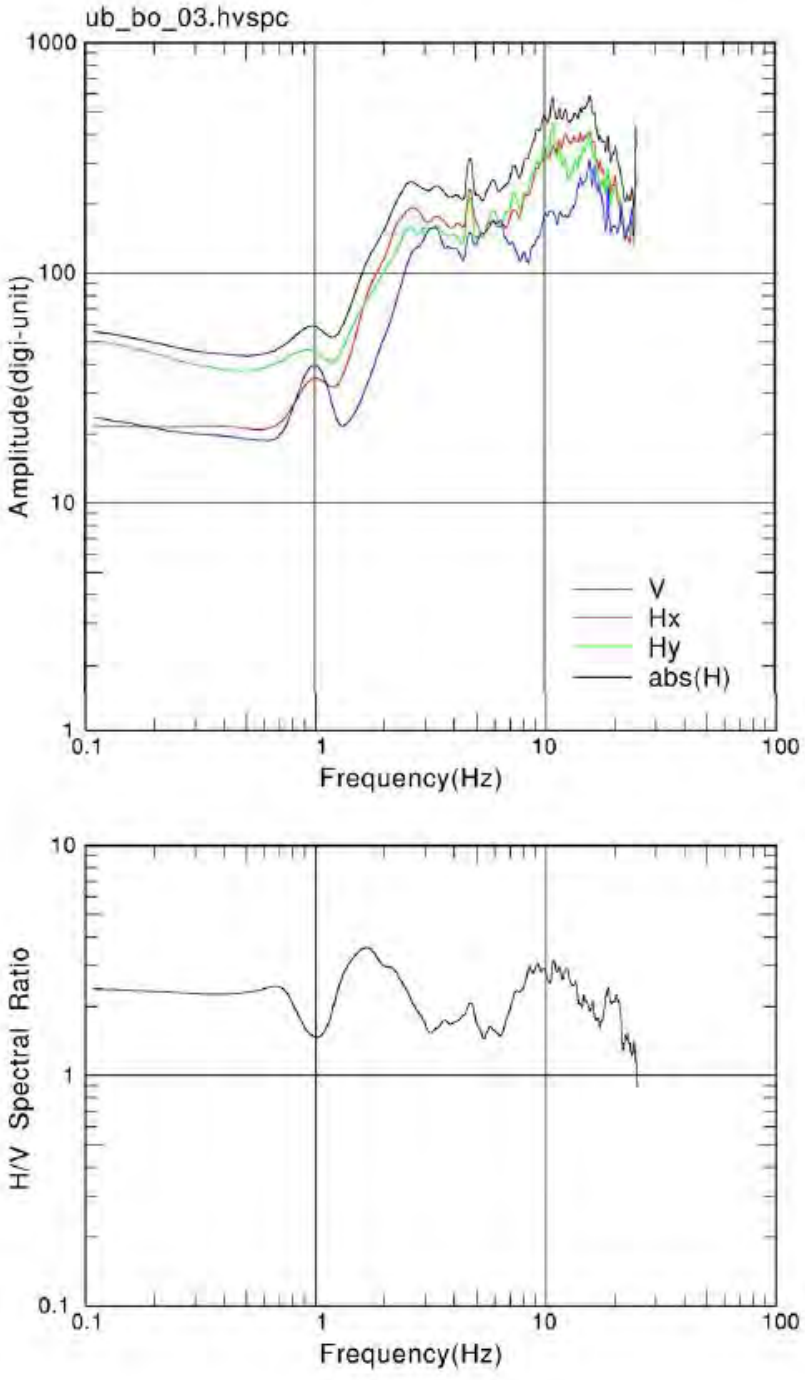

ub_36.hvspc
1000
100
10
1
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)

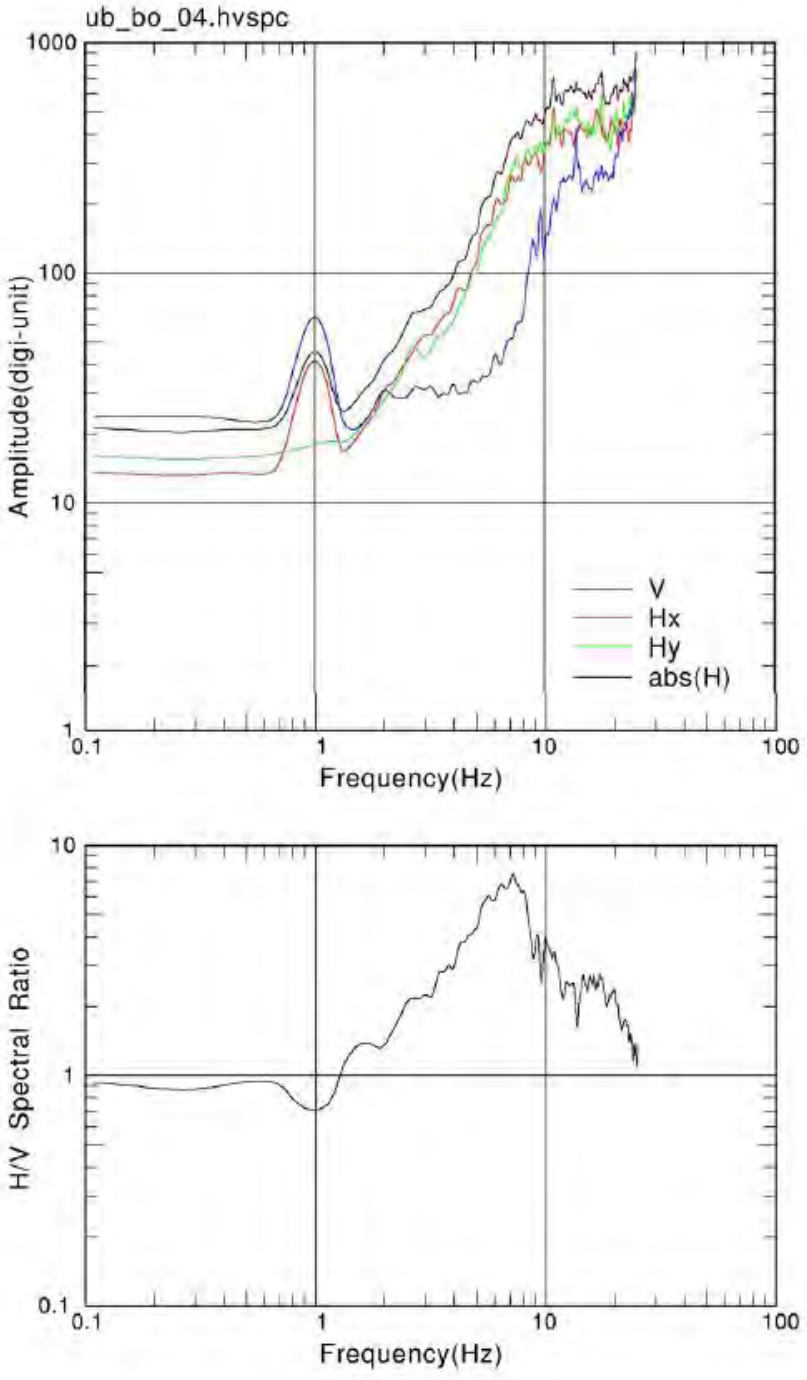

10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)

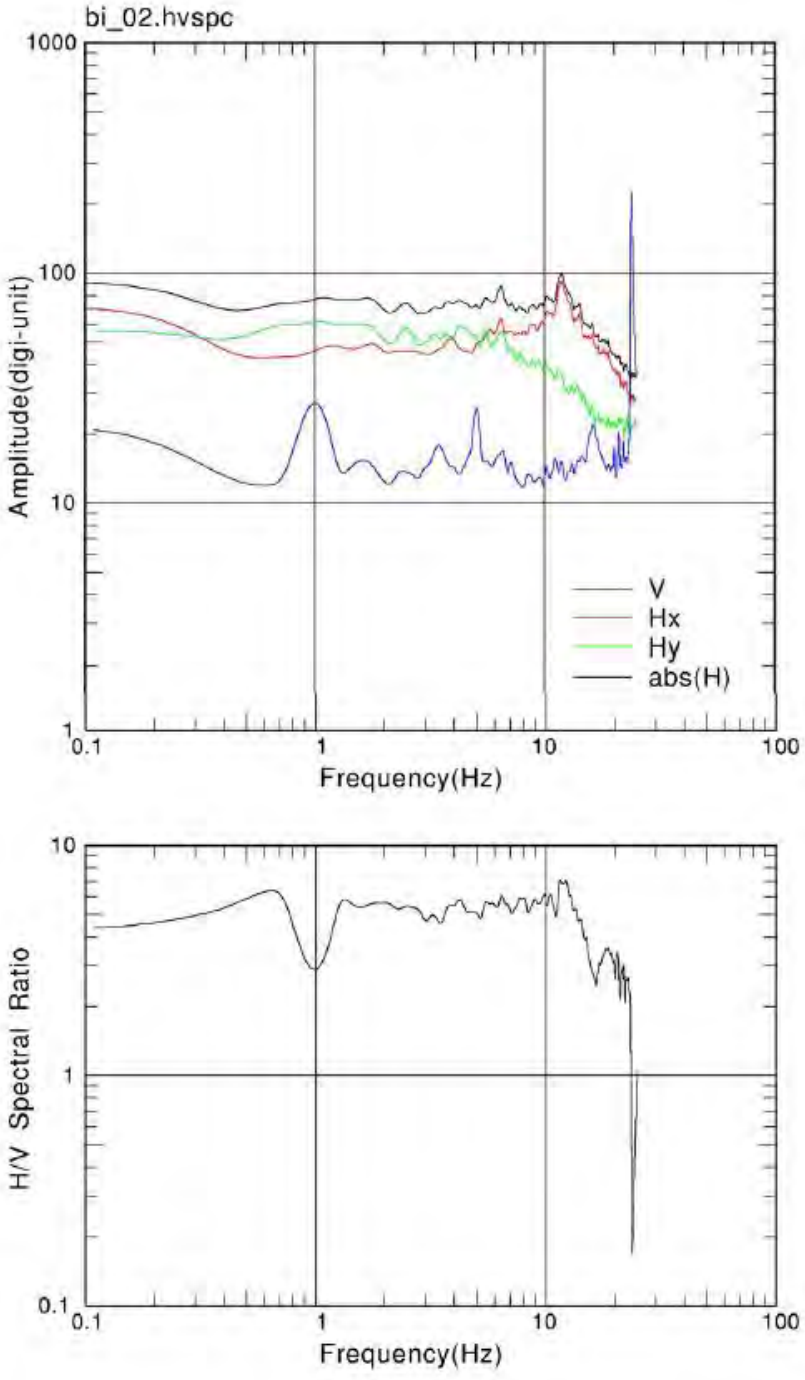

ub_37.hvspc
1000
100
10
1
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)

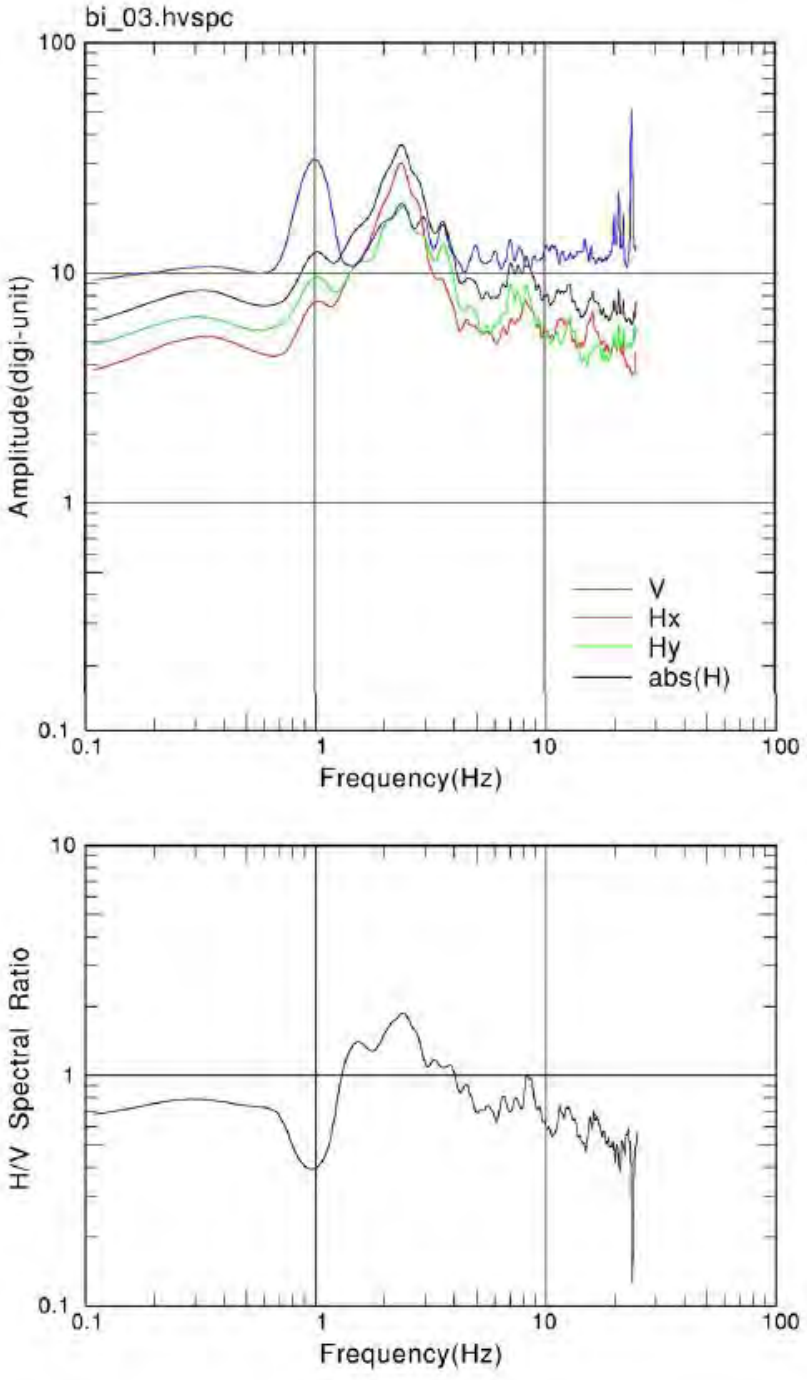

ub_bo_01.hvspc
Amplitude(digi-unit)
10000
1000
100
10
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

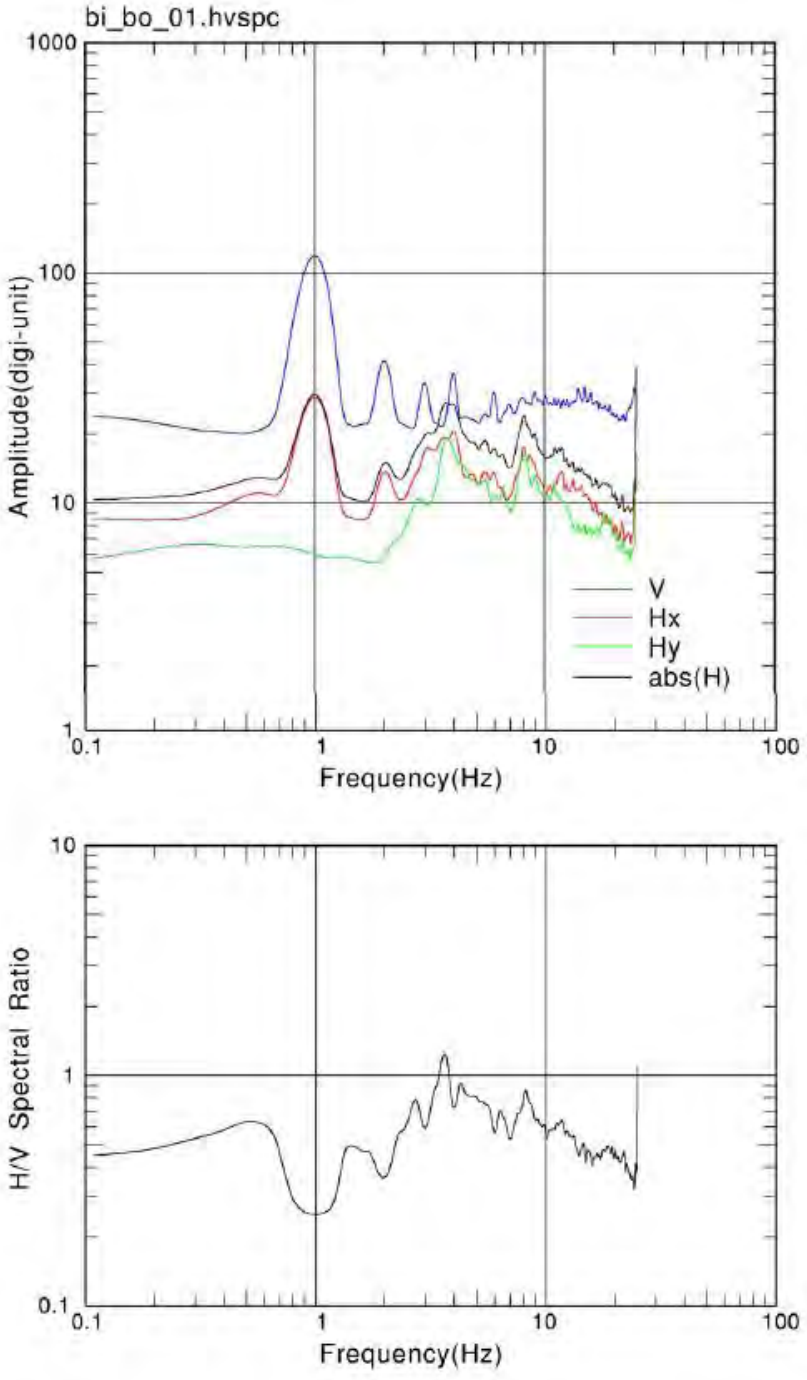

ub_bo_02.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

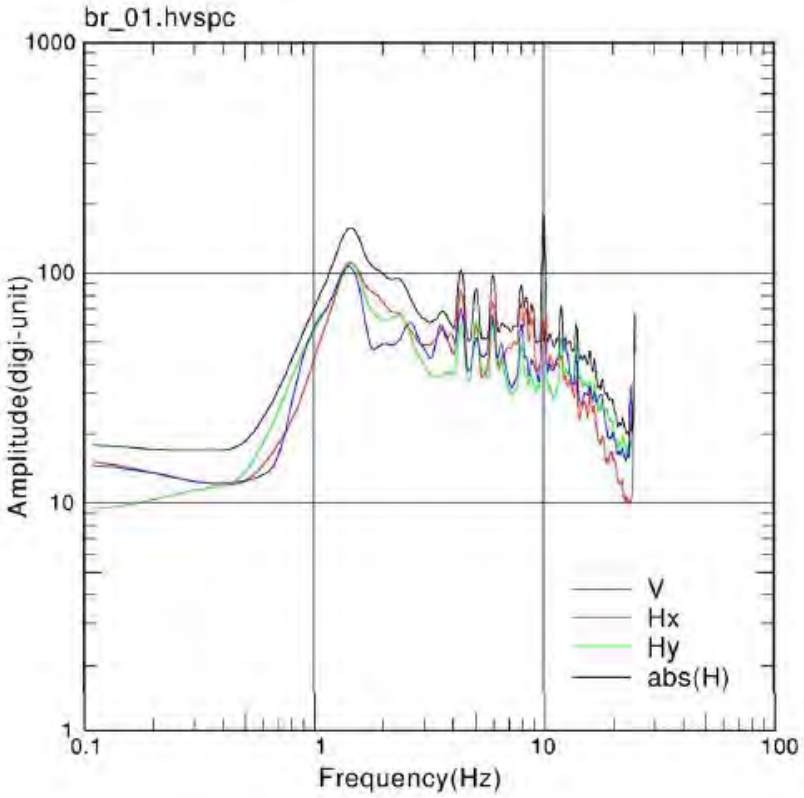

ub_bo_03.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

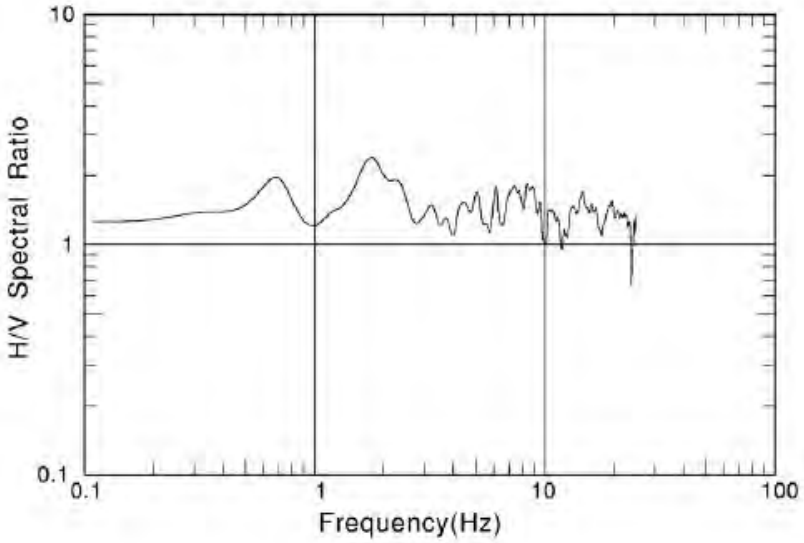

ub_bo_04.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

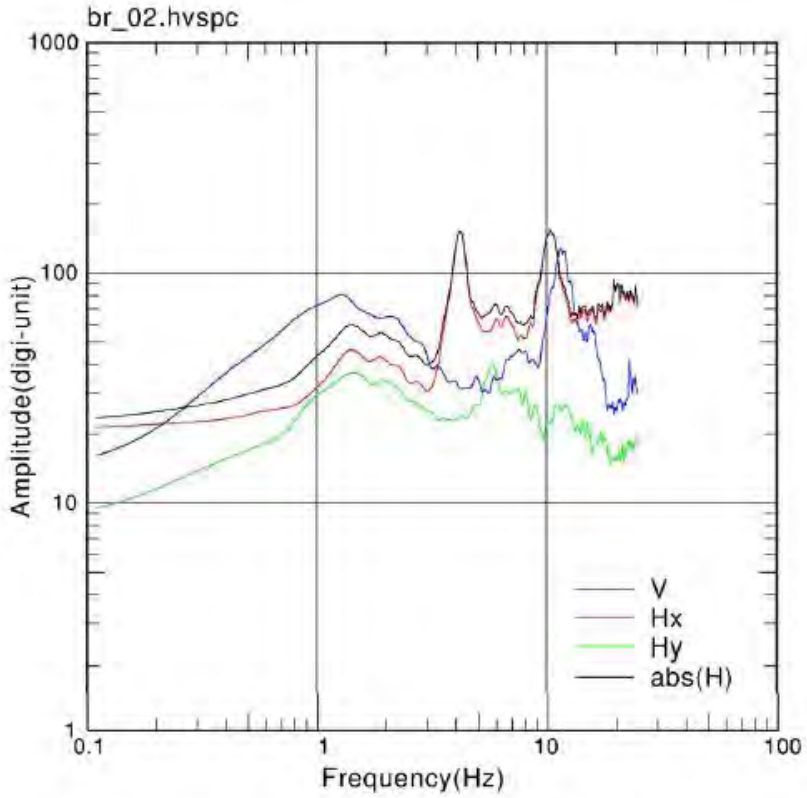

bi_02.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

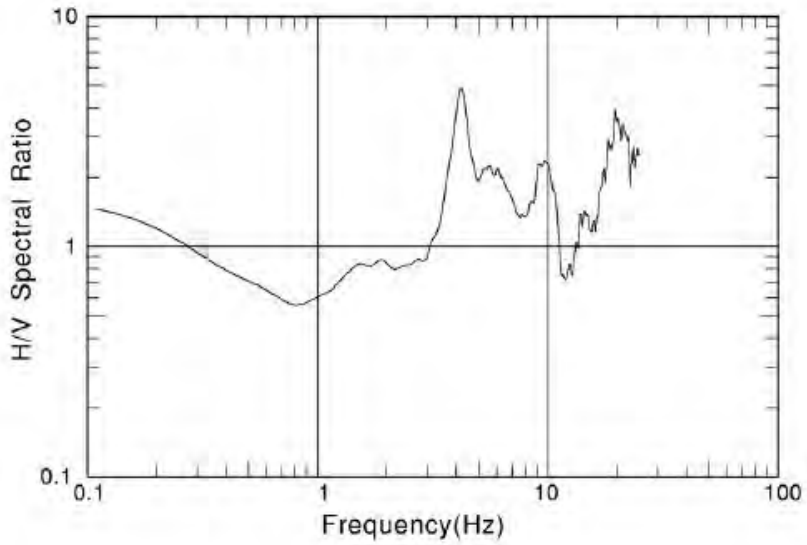

bi_03.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

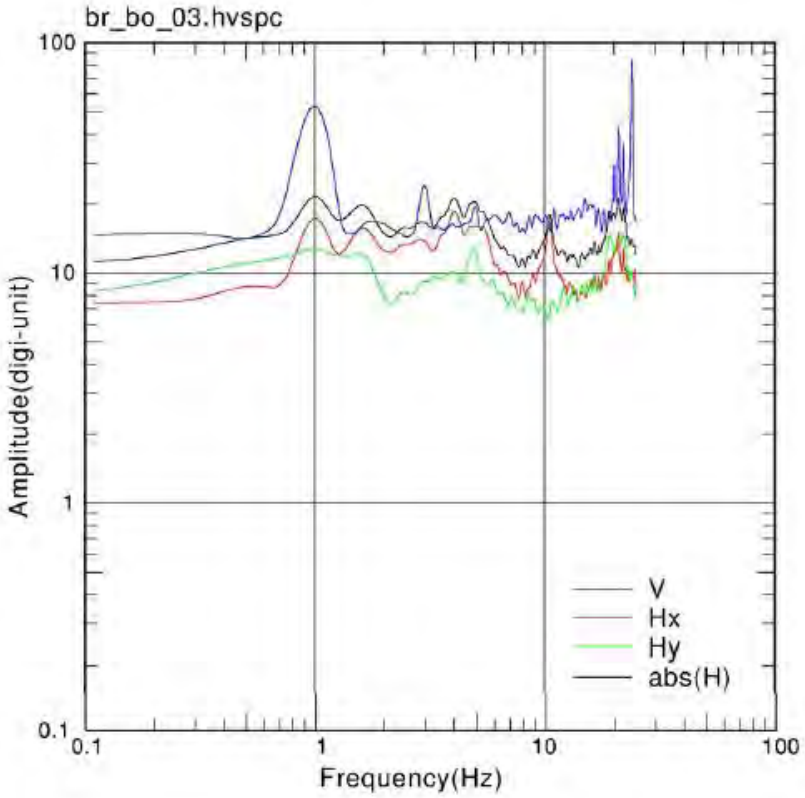

bi_bo_01.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)
H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

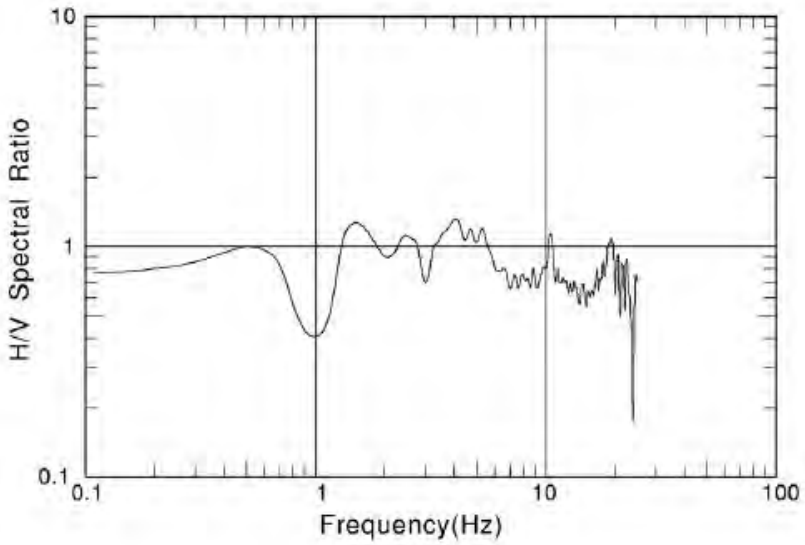

br_01.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)

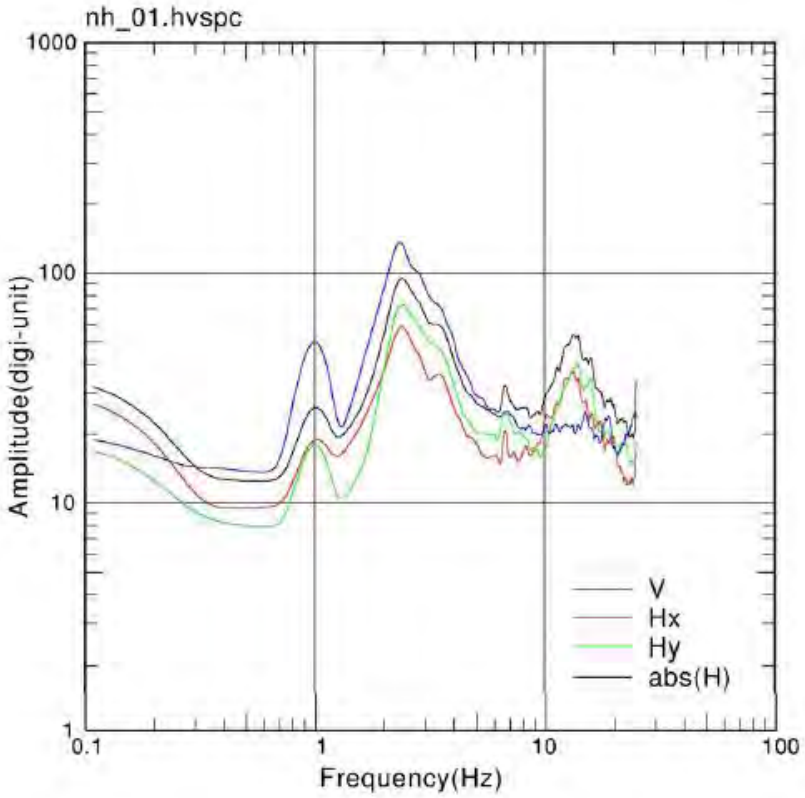

H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

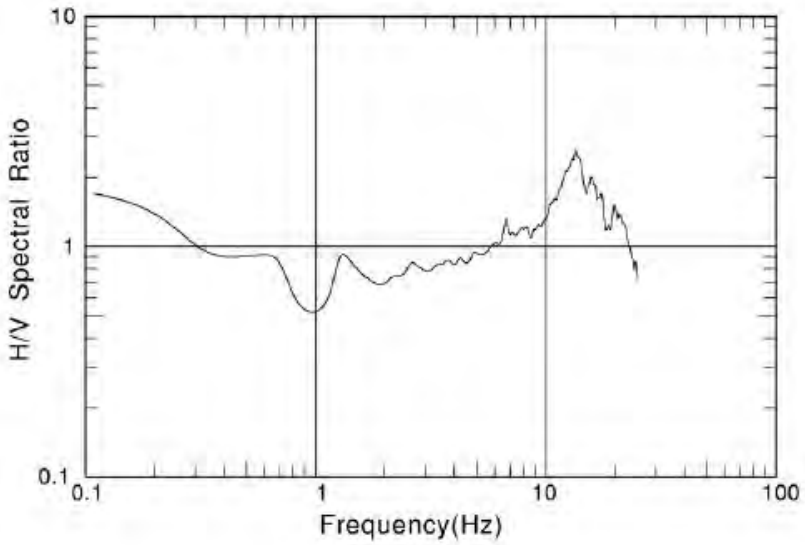

br_02.hvspc
1000
100
10
1
Amplitude(digi-unit)
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)

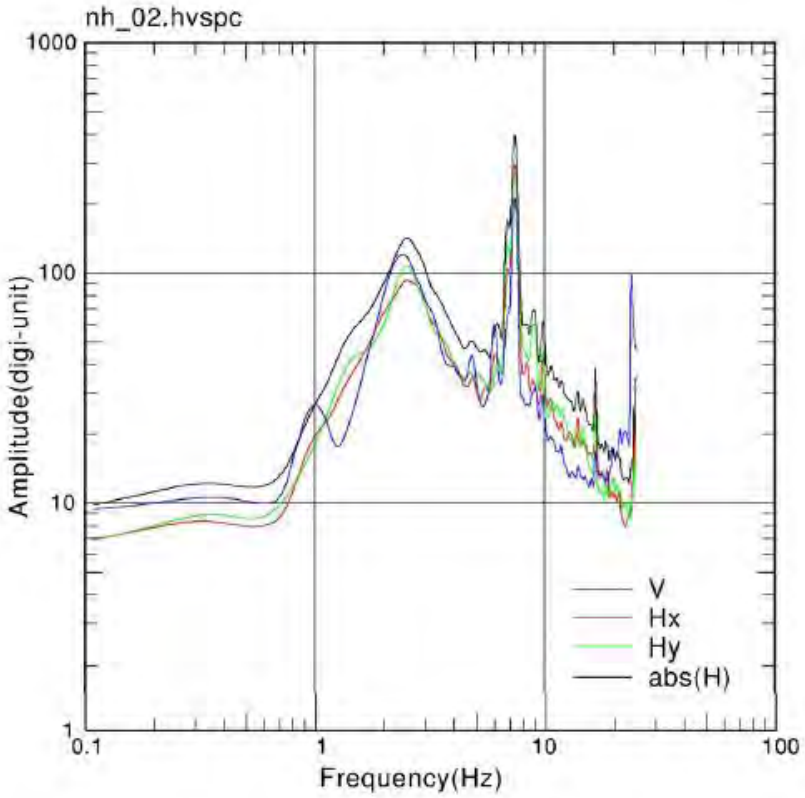

10
1
0.1
H/V Spectral Ratio
0.1
1
10
100
Frequency(Hz)

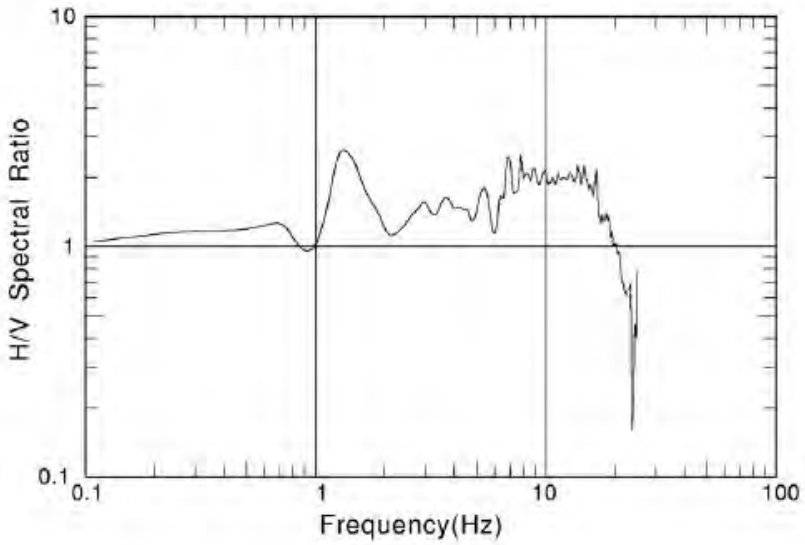

br_bo_03.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)

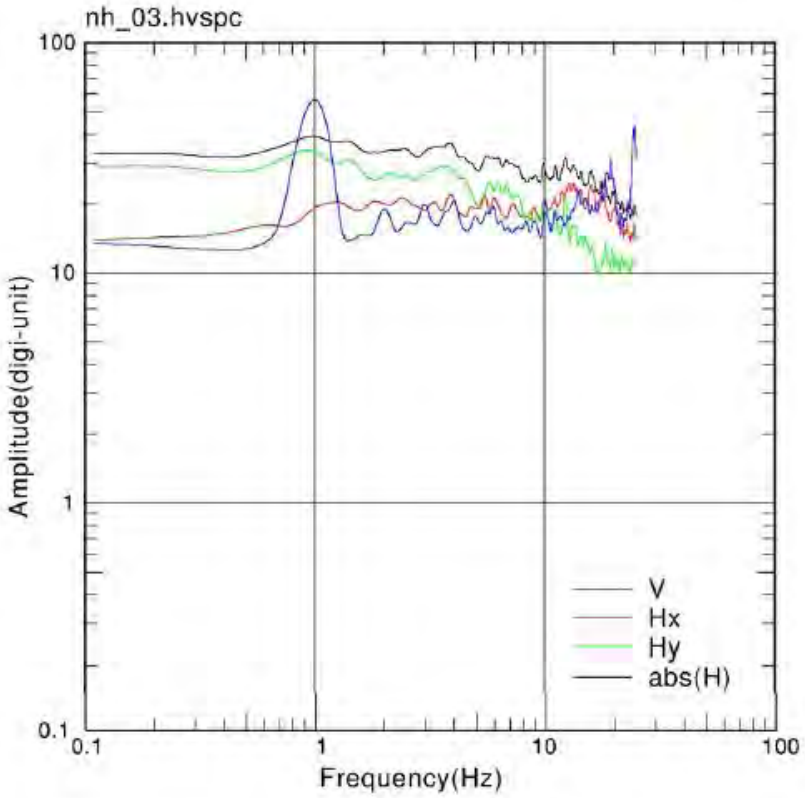

H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)

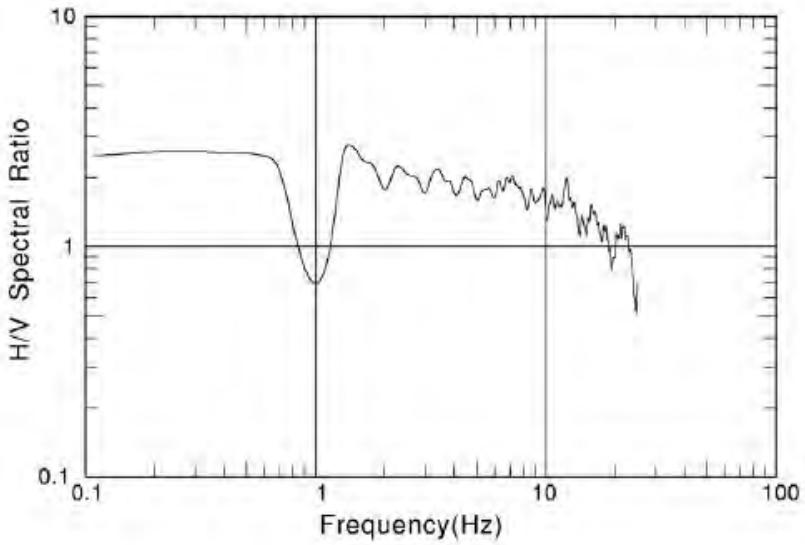

nh_01.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)


H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


nh_02.hvspc
Amplitude(digi-unit)
1000
100
10
1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)


H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)


nh_03.hvspc
Amplitude(digi-unit)
100
10
1
0.1
0.1
1
10
100
Frequency(Hz)
V
Hx
Hy
abs(H)


H/V Spectral Ratio
10
1
0.1
0.1
1
10
100
Frequency(Hz)