McCALLUM ROCK DRILLING

BLASTING REPORT

REVISED

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CUSTOMER NAME:	East Side Rock Products	DAY:	6	DIRECTION AND DISTANCE TO NEAREST (NON-MINE/CONSTRUCTION) RELATED STRUCTURE:	DISTANCE/FT. 685.03937	DIR. North	WEATHER: Clear
LOCATION/CITY:	Falls City	MONTH:	June	LOCATION/ADDRESS:	23132 213th Ave SE Monroe WA 98272		TEMPERATURE/°F: Hot
LOCATION/STATE:	Washington	YEAR:	2017	METHOD OF MEASUREMENT:	G.P.S.		WIND DIRECTION: N/A
BLAST LOCATION:	Bench 1			G.P.S. LOCATION (STATION/STRUCTURE):	N47°32.913 W121°54.172		
QUARRY/PIT ID.:	Raging River Quarry	TIME:	4:00 PM	G.P.S. ACCURACY +/- (STATION/STRUCTURE) /FT:	9'		WIND SPEED: None
BLAST NO.:	N/A			G.P.S. LOCATION (BLAST ZONE):	N 47°32.849' W 121°54.306'		
JOB NO. :	1868	AM/PM:	PM	G.P.S. ACCURACY +/- (BLAST ZONE)/FT.:	9'		CEILING LEVEL N/A

	1	2	3	4		1	2	3	4
TYPE OF HOLES:	Vertical (production)				BURDEN/FT. :	9'			
NO. OF HOLES:	34				SPACING/FT. :	9'			
HOLE DIAMETER/ IN. :	3 1/2"				SUBDRILL/FT. :	0'			
HOLE DEPTH/RANGE/AVG.FT. :	37' - 53' 42				MATERIAL BLASTED:	basalt			
STEMMING LENGTH/RANGE/AVG./FT. :	8' - 20' 8'				STEMMING TYPE:	1/4"minus			

			EXPLOSIVE PRODUCTS USED	SIZE	UNITS	WEIGHT/LBS.	DETONATORS USED	SIZE/FT.	QUANTITY
EXPLOSIVES COMPANY USED:	Dyno Nobel Inc.	1	ANFO P	BAG(S)	70 ea.	3500.000	MS 350	16	27
DECKING:	NO	2	ANFO WR	BAG(S)	14 ea.	700.000	EZ DET 25/350	50	8
		3	SPARTAN BOOSTER	350 G	37 ea.	27.750	EZ DET 25/350	60	23
BLASTING MACHINE USED:	R.C.B.M.	4	DYNO AP	1 1/8 X 16	30 ea.	18.750	EZ DET 25/350	80	7
		5	NONEL LEADLINE	2500' ROLL		0.024	EZTL #25	12	10
METHOD OF FIRING:	NONEL	6	BLASTEX	2 1/2 X16	216 ea.	480.000	EZTL #42	12	7
		7							
BLASTING MATS USED:	NO	8							
QUANTITY OF BLASTING MATS USED:	N/A	9							
		10							

MAX. NO. OF HOLES/DECK PER 8 MS :	1	TOTAL EXPLOSIVES USED/LBS.:	4,726.524	TOTAL NO. OF DETONATORS USED:	82
MAX. WT. OF EXPLOSIVES PER HOLE / DECK :	156				
MAX. WT. OF EXPLOSIVES PER ANY 8 MS INTERVAL :	156	TOTAL VOLUME/CUBIC YARDS :	4,770.0	SHOT RESULTS	
		ROCK DENSITY/SPECIFIC GRAVITY :	2.00	FRAGMENTATION:	MEDIUM
GROUND RESPONSE(K) FACTOR:	70	TOTAL WEIGHT/TONS :	9,540	MUCK PILE CONFIGURATION:	HEAPED
PREDICTED P.P.V.:	0.17	POWDER FACTOR/LBS./CUBIC YARDS:	0.99	FLYROCK:	NO
SCALED DISTANCE :	54.85	POWDER FACTOR/LBS./TON:	0.50	ALL HOLES DETONATED:	YES

BLASTING CREW	LICENSE NO.	B.I.C.	BLASTING CREW	LICENSE NO.	B.I.C.	BLASTING CREW	LICENSE NO.	B.I.C.
Tyler Hallett	EXUS00021692	YES						
Shelby Spahr		N/A						
Travis Martin		N/A						
		N/A						
		N/A						
		N/A						

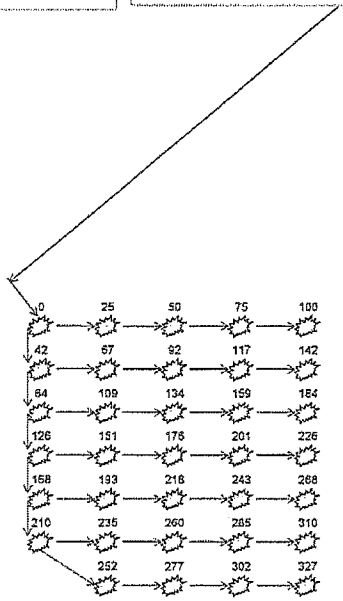
SEISMOGRAPH TYPE:	INSTANTEL	LOCATION OF SETUP:	23132 213th Ave SE Monroe WA 98272
NO. OF SEISMOGRAPHS USED :	4		
SEISMOGRAPH OPERATOR(S):	Shelby Spahr	DISTANCE FROM BLAST/FT.:	685.03937
		IF USED SEISMOGRAPH RECORD(S) ATTACHED TO BLAST REPORT	
COMPANY:	McCALLUM ROCK DRILLING	SIGNATURE OF BLASTER IN CHARGE	
COMMENTS:			

CUSTOMER NAME:	East Side Rock Products
LOCATION/CITY:	Falls City, WA
BLAST LOCATION:	Bench 1
JOB NAME/#:	Raging River Quarry
DATE:	6/6/2017

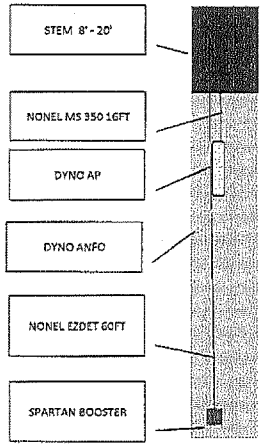
N 47°32.849' W 121°54.306'

INITIATION POINT

NORTH



HOLE PROFILE



Event Report

Date/Time	Vert at 15:51:38 June 6, 2018
Trigger Source	Geo: 0.030 in/s, Mic: 115.0 dB(L)
Range	Geo: 10.000 in/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Operator/Setup:	Brandon Babka/Station 2 .mmb

Serial Number	UM6218 V 10-81 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	July 28, 2016 by Instantel
File Name	UM6218_20180606155138.IDFW
Scaled Distance	21.8 (685.0 ft., 984.0 lb.)

GPS Location	**Latitude**	**Longitude**
Source:	000 0.000 N	000 0.000 W
Sensor1:	000 0.000 N	000 0.000 W
Distance:	000.0 ft.	

Notes

Location	Falls City WA
Client	East Side Rock
Company	Shelby Spahr / MRD
General Notes	1

Extended Notes

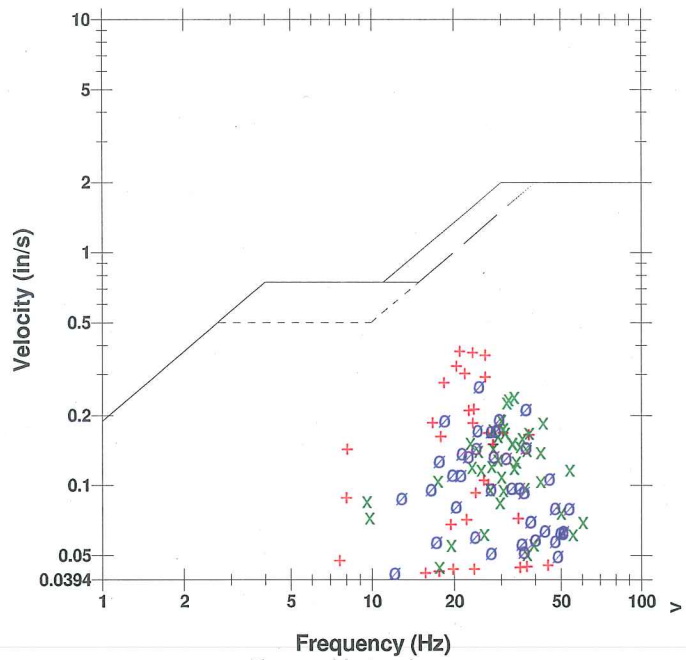
Seismograph located at N47'32.913 W121'54.172 next to tree at end of road. ac c. +/- 9'acc. +/- 9'

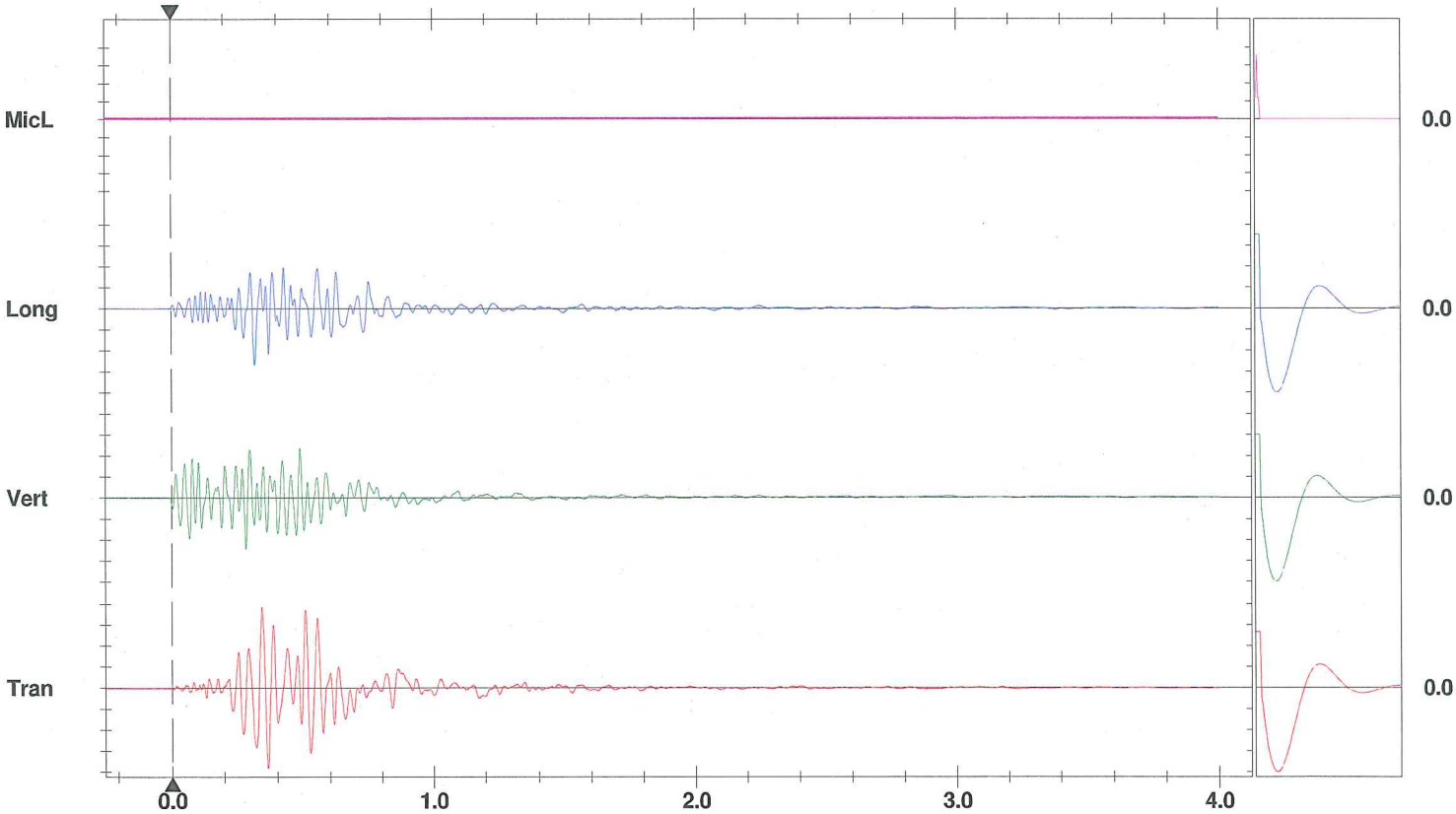
Microphone	Linear Weighting
PSPL	<88 dB(L) <.0000725 psi(L)
ZC Freq	64 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	**Vert**	**Long**	
PPV	0.385	0.242	0.269	in/s
PPV	42.72	38.68	39.59	dB
ZC Freq	21.1	33.6	25.0	Hz
Time (Rel. to Trig)	0.340	0.281	0.316	sec
Peak Acceleration	0.286	0.174	0.184	g
Peak Displacement	0.003	0.001	0.002	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.1	Hz
Overswing Ratio	3.6	3.9	3.8	

N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.000 psi(L)/div Sensor Check

Trigger =

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Event Report

Date/Time	Vert at 15:51:45 June 6, 2017
Trigger Source	Geo: 0.030 in/s, Mic: 115.0 dB(L)
Range	Geo: 10.000 in/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Operator/Setup:	Tim Fredricks/32415 322 Ave .MMB

Serial Number	UM6219 V 10-81 Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	August 2, 2016 by Instantel.
File Name	UM6219_20170606155145.IDFW
Scaled Distance	35.1 (1003.0 ft., 816.4 lb.)

GPS Location	**Latitude**	**Longitude**
Source:	000 0.000 N	000 0.000 W
Sensor1:	000 0.000 N	000 0.000 W
Distance:	000.0 ft.	

Notes

Location	Falls City WA
Client	East Side Rock
Company	Shelby Spahr / MRD
General Notes	1

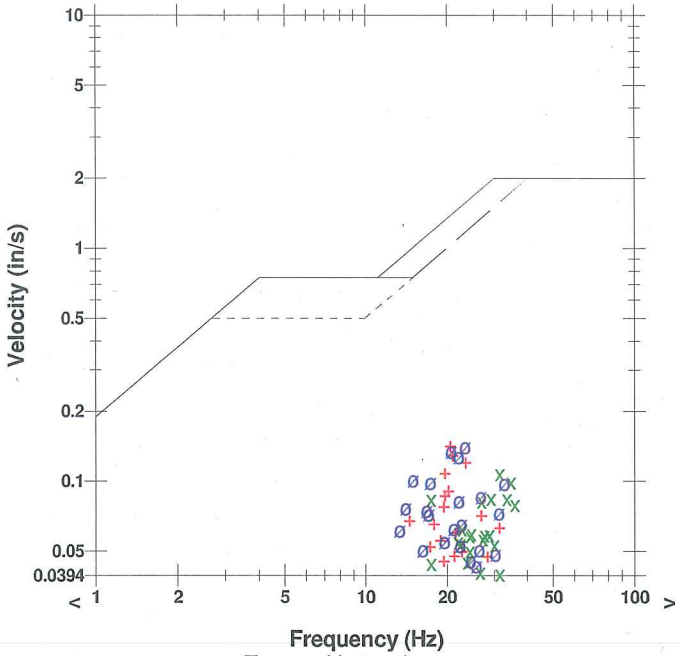
Extended Notes

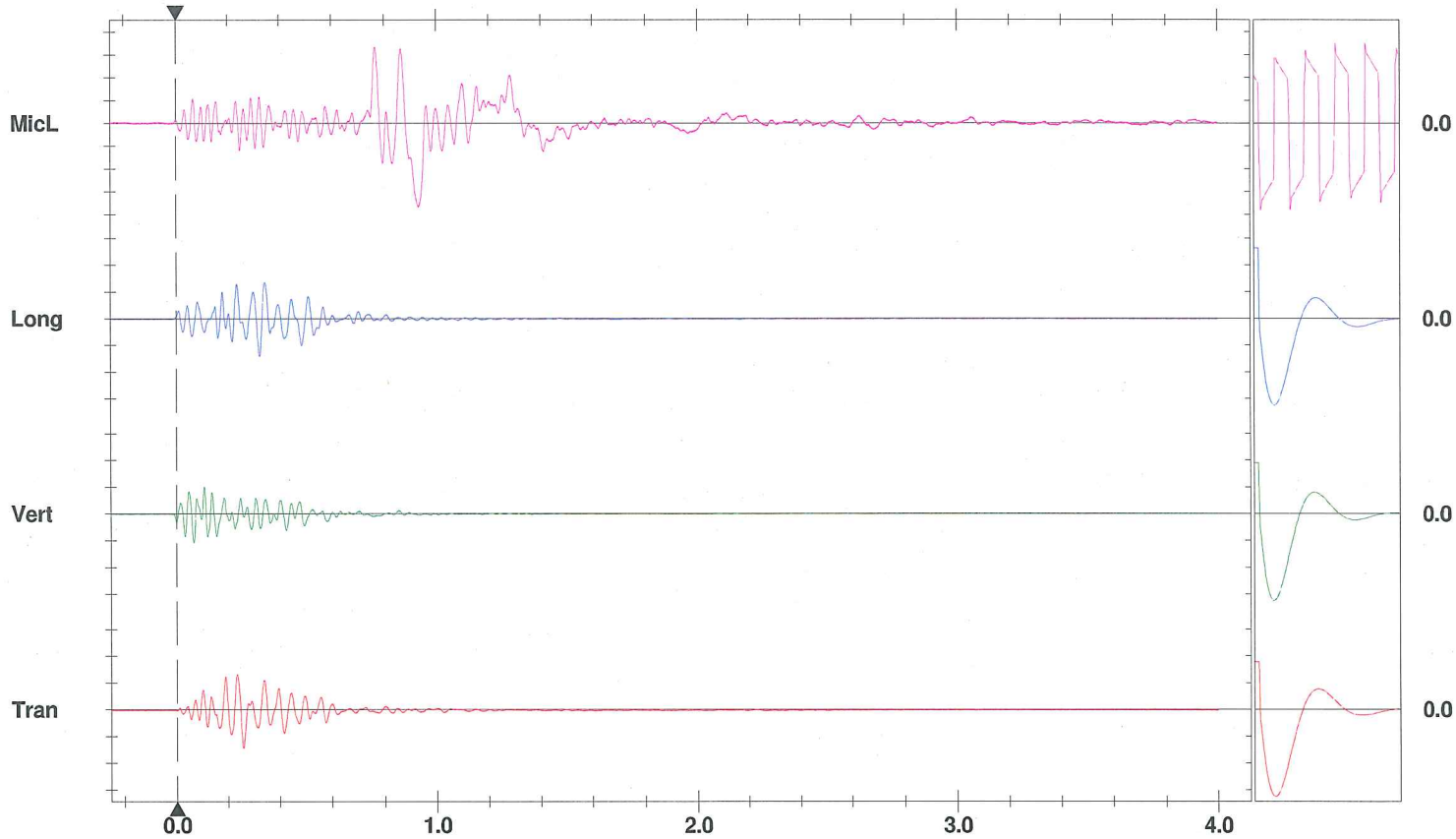
Seismograph located at N47'32.940 W121'54.494 next to tree. acc. +/- 9'acc. +/- 9'

Microphone	Linear Weighting
PSPL	108.1 dB(L) 0.001 psi(L) at 0.934 sec
ZC Freq	6.9 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 1253 mv)

	Tran	**Vert**	**Long**	
PPV	0.144	0.108	0.141	in/s
PPV	34.15	31.64	33.96	dB
ZC Freq	20.7	31.5	23.5	Hz
Time (Rel. to Trig)	0.260	0.067	0.325	sec
Peak Acceleration	0.082	0.118	0.102	g
Peak Displacement	0.002	0.001	0.001	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.3	Hz
Overswing Ratio	4.2	4.1	4.3	

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.000 psi(L)/div Sensor Check

Trigger = ▶——— ———◀

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Event Report

Date/Time	Vert at 15:51:47 June 6, 2017
Trigger Source	Geo: 0.030 in/s, Mic: 115.0 dB(L)
Range	Geo: 10.000 in/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Operator/Setup:	Brandon Babka/Station 3.mmb

Serial Number	UM8590 V 10-86 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	October 18, 2016 by Instantel
File Name	UM8590_20170606155147.IDFW
Scaled Distance	50.5 (1584.3 ft., 984.0 lb.)

GPS Location	**Latitude**	**Longitude**
Source:	000 0.000 N	000 0.000 W
Sensor1:	000 0.000 N	000 0.000 W
Distance:	000.0 ft.	

Notes

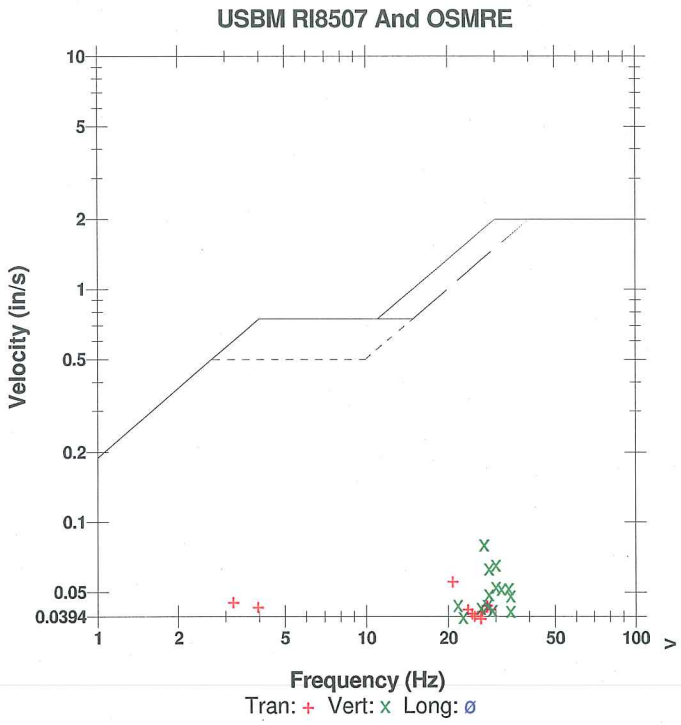
Location	Falls City WA
Client	East Side Rock
Company	Shelby Spahr / MRD
General Notes	1

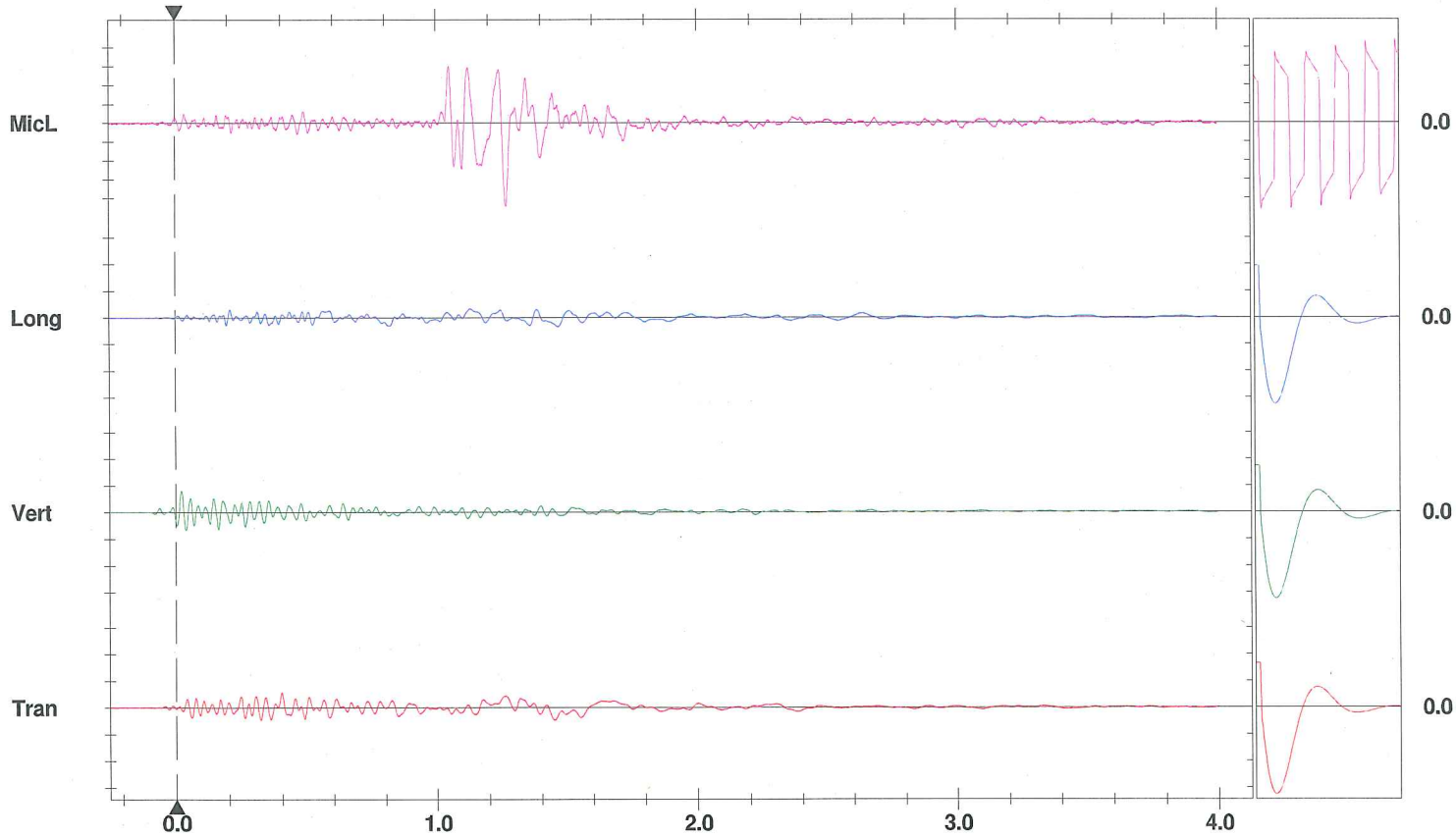
Extended Notes

Seismograph located at N47'33.086 W121'54.148 next to tree bush off road at s plit. acc. +/- 9'acc. +/- 9'

Microphone	Linear Weighting
PSPL	109.7 dB(L) 0.001 psi(L) at 1.269 sec
ZC Freq	15.3 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1271 mv)

	Tran	**Vert**	**Long**	
PPV	0.057	0.081	0.035	in/s
PPV	26.08	29.14	21.82	dB
ZC Freq	20.9	27.3	5.8	Hz
Time (Rel. to Trig)	0.397	0.023	1.468	sec
Peak Acceleration	0.046	0.053	0.033	g
Peak Displacement	0.002	0.000	0.001	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.5	Hz
Overswing Ratio	4.3	4.0	4.1	





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.000 psi(L)/div

Trigger = ▶——— ———◀

Sensor Check

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Event Report

Date/Time	Vert at 15:51:51 June 6, 2017
Trigger Source	Geo: 0.030 in/s, Mic: 115.0 dB(L)
Range	Geo: 10.000 in/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Operator/Setup:	Tim Fredericks/Station 1.mmb

Serial Number	UM8589 V 10-82 Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	October 18, 2016 by Instantel
File Name	UM8589_20170606155151.IDFW
Scaled Distance	25.2 (792.0 ft., 984.0 lb.)

GPS Location	**Latitude**	**Longitude**
Source:	000 0.000 N	000 0.000 W
Sensor1:	000 0.000 N	000 0.000 W
Distance:	000.0 ft.	

Notes

Location	Falls City WA
Client	East Side Rock
Company	Shelby Spahr / MRD
General Notes	1

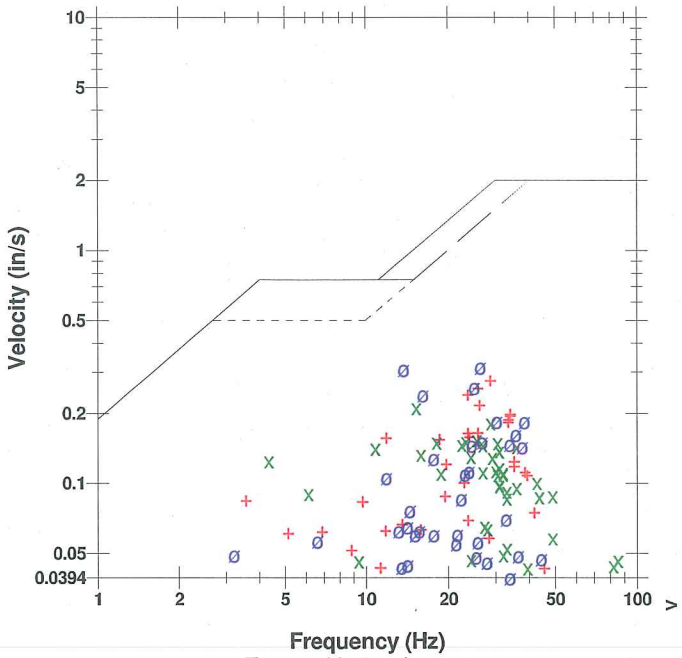
Extended Notes

Seismograph located at N47'32.804 W121'54.114 before bridge onto company property. acc. +/- 9'acc. +/- 9'

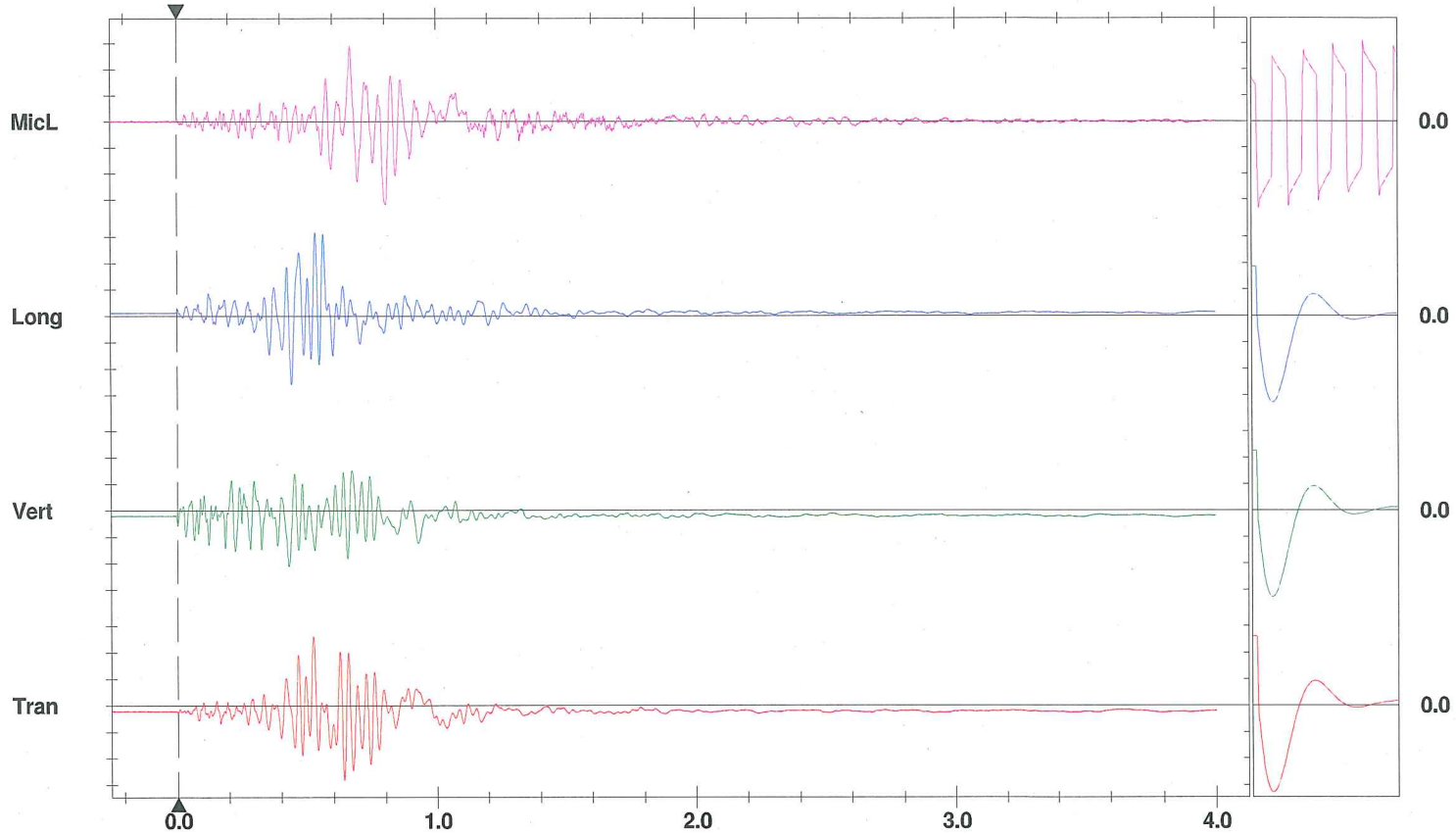
Microphone	Linear Weighting
PSPL	114.8 dB(L) 0.002 psi(L) at 0.806 sec
ZC Freq	16.8 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 1288 mv)

	Tran	Vert	Long	
PPV	0.282	0.211	0.316	in/s
PPV	40.00	37.50	40.99	dB
ZC Freq	28.8	15.3	26.6	Hz
Time (Rel. to Trig)	0.639	0.430	0.533	sec
Peak Acceleration	0.188	0.184	0.250	g
Peak Displacement	0.004	0.003	0.002	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.5	7.3	Hz
Overswing Ratio	3.5	3.6	4.0	

USBM RI8507 And OSMRE



Tran: + Vert: x Long: ø



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.001 psi(L)/div Sensor Check

Trigger = ▶——— ———◀

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