

## SURVEY INFORMATION

*Date:* 2024/01/29

*Client:* Comune di Monteverdi Marittimo

## PLACE INFORMATION

*Place ID:* Monteverdi H10

*Address:* piazza

*Latitude:* 43°, 155599

*Longitude:* 10°, 710016

*Coordinate system:* WGS84

*Elevation:* 475 m

*Weather:* nuvoloso

*Notes:* -

## STATION INFORMATION

*Station code:* 10

*Model:* SARA GEOBOX

*Sensor:* SARA SS45 (external 4.5 Hz sensors)

*Notes:* -

## PHOTOGRAPHIC REFERENCES



## SIGNAL AND WINDOWING

*Sampling frequency:* 300 Hz

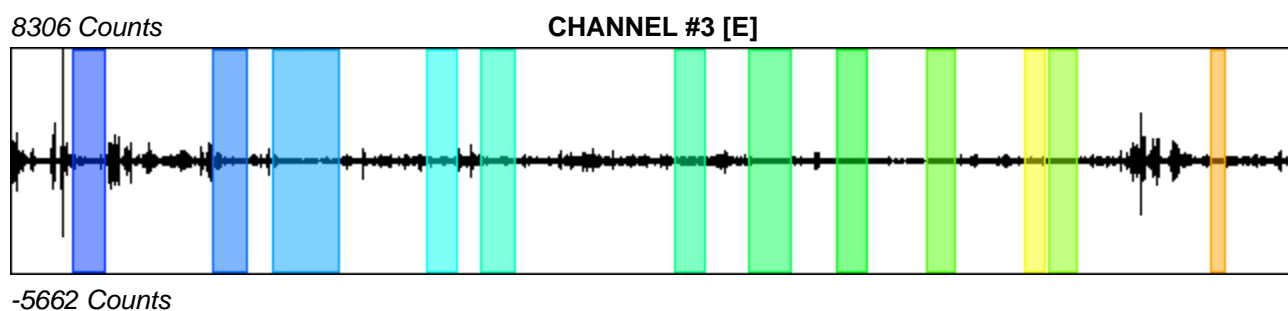
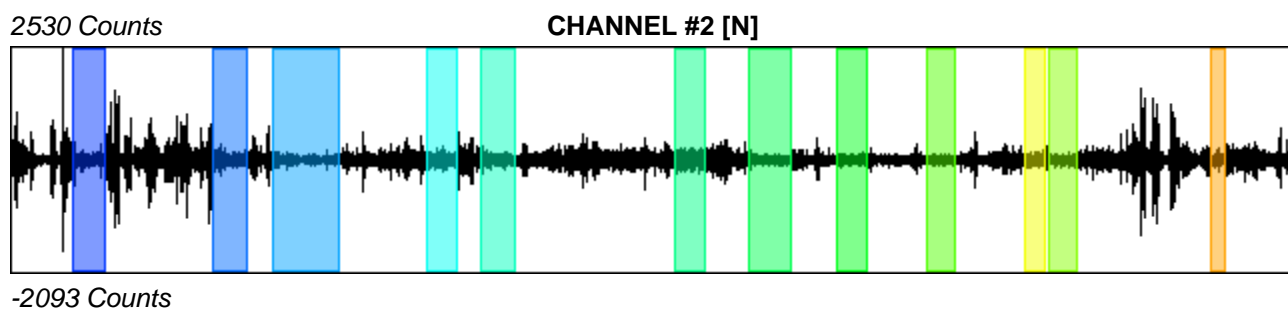
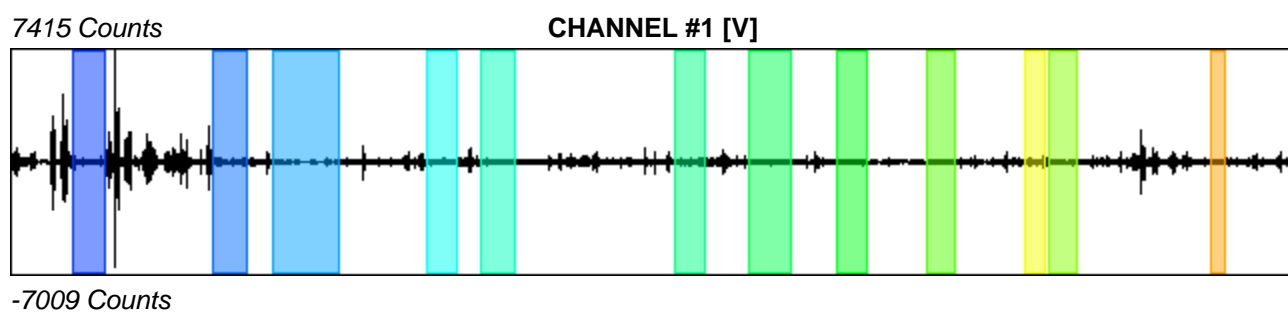
*Recording start time:* 2024/03/01 09:41:56

*Recording length:* 33.33 min

*Windows count:* 12

*Average windows length:* 50.51

*Signal coverage:* 30.31%



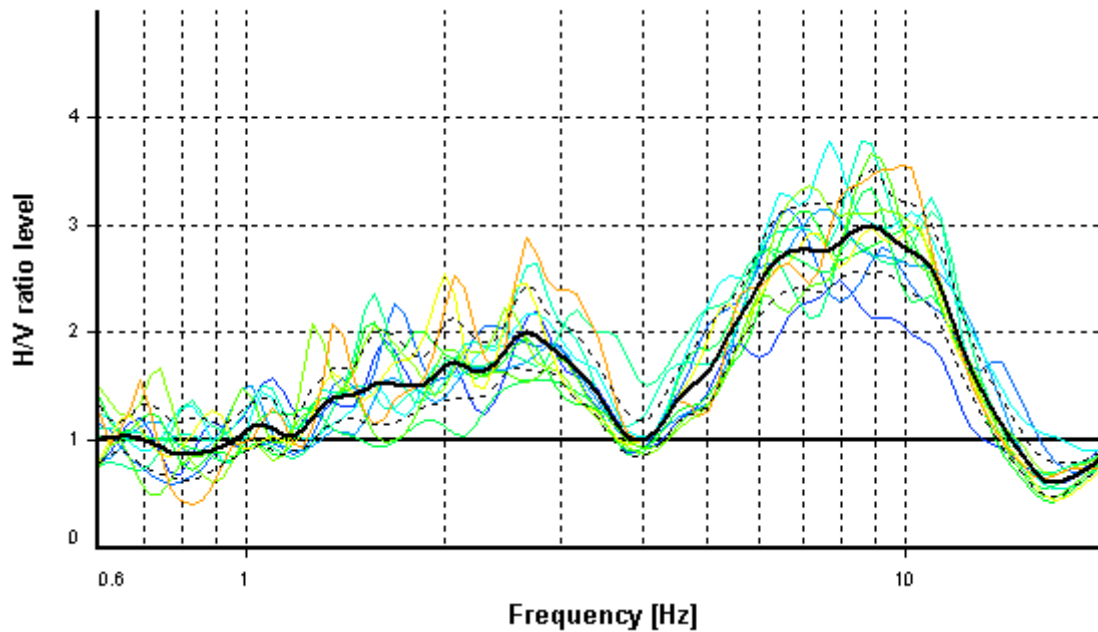
## HVSR ANALYSIS

*Tapering:* Enabled (Bandwidth = 5%)

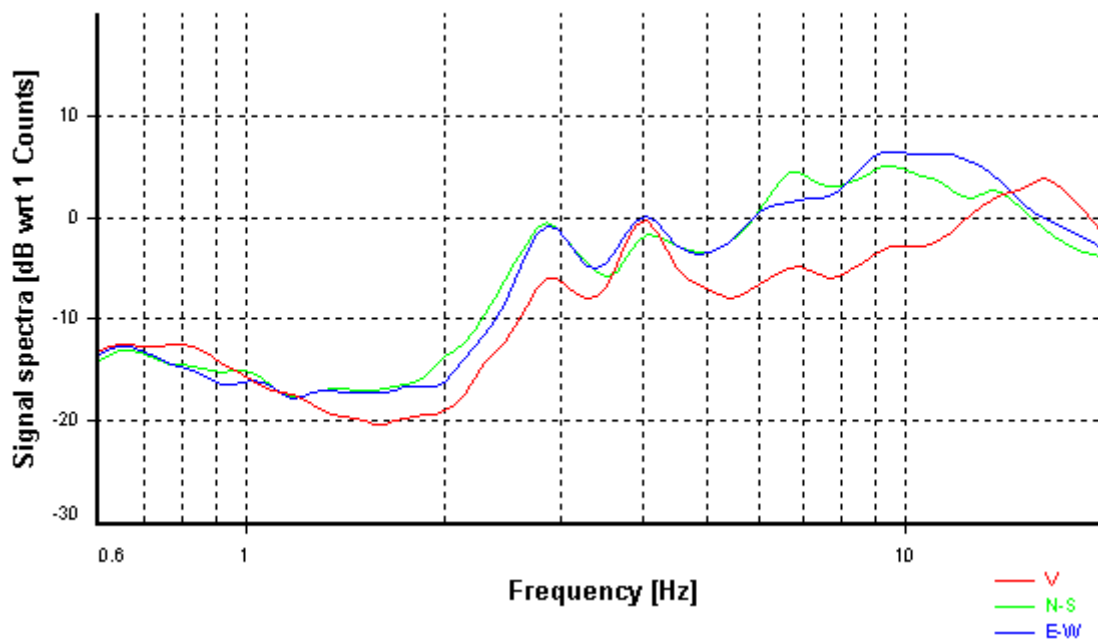
*Smoothing:* Konno-Ohmachi (Bandwidth coefficient = 40)

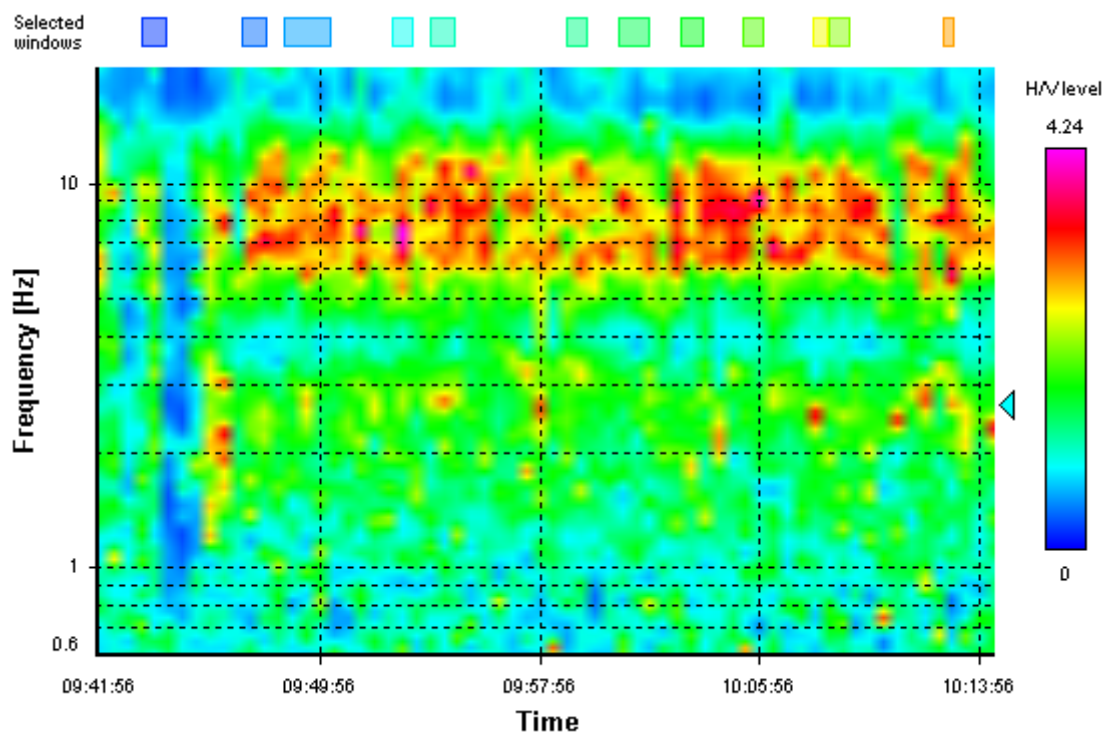
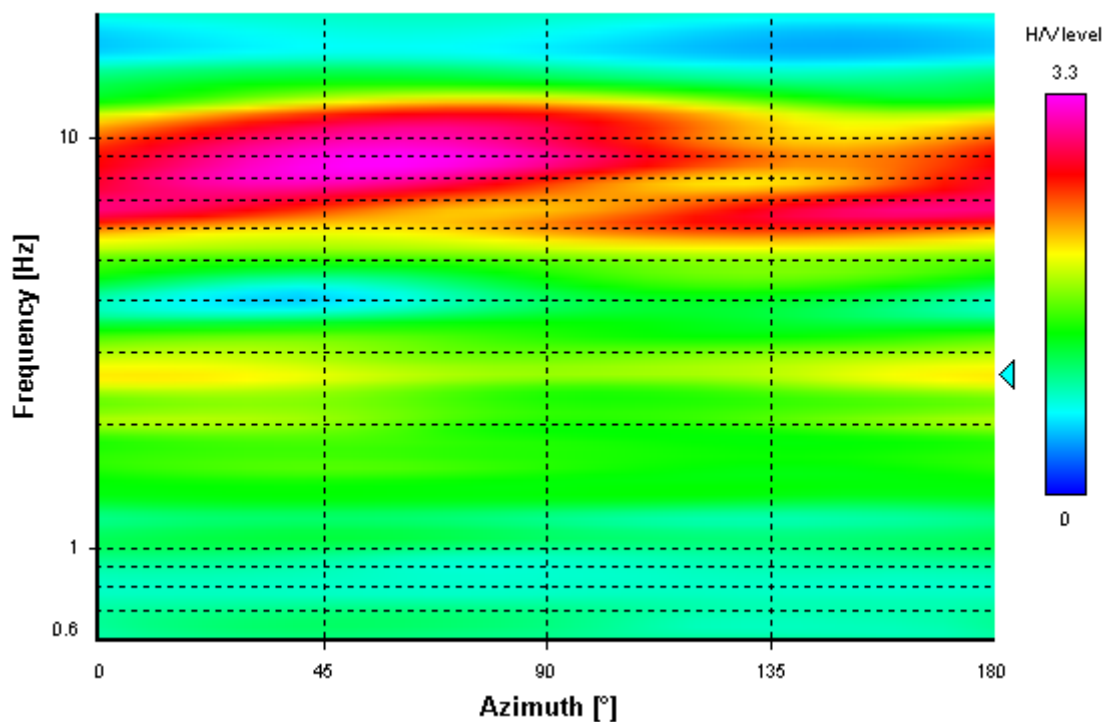
*Instrumental correction:* Disabled

### HVSR average



### Signal spectra average



**HVSR time-frequency analysis (30 seconds windows)****HVSR directional analysis**

## SESAME CRITERIA

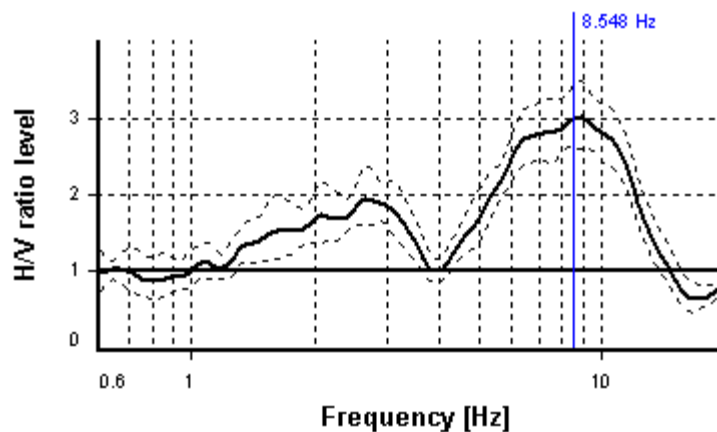
$f_0$  primo contatto con bedrock

**Selected  $f_0$  frequency**

**8.548 Hz**

**$A_0$  amplitude = 2.988**

**Average  $f_0$  =  $8.379 \pm 1.278$**



HVSR curve reliability criteria		
$f_0 > 10 / L_w$	14 valid windows (length > 1.17 s) out of 14	OK
$n_c(f_0) > 200$	5896.89 > 200	OK
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$	Exceeded 0 times in 39	OK
HVSR peak clarity criteria		
$\exists f \text{ in } [f_0/4, f_0] \mid A_{H/V}(f) < A_0/2$	4.51815 Hz	OK
$\exists f^+ \text{ in } [f_0, 4f_0] \mid A_{H/V}(f^+) < A_0/2$	13.54632 Hz	OK
$A_0 > 2$	2.99 > 2	OK
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	3.61% <= 5%	OK
$\sigma_f < \varepsilon(f_0)$	1.27822 >= 0.42738	NO
$\sigma_A(f_0) < \theta(f_0)$	1.14887 < 1.58	OK
Overall criteria fulfillment		OK

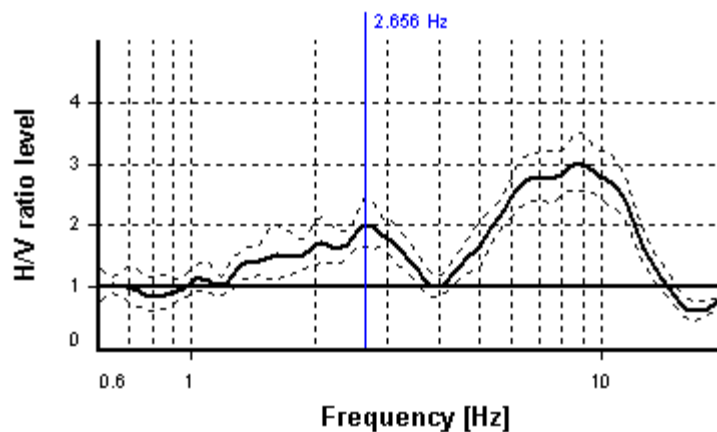
## SESAME CRITERIA

**Selected  $f_0$  frequency**

**2.656 Hz**

**$A_0$  amplitude = 2.009**

**Average  $f_0 = 2.542 \pm 0.403$**



HVSR curve reliability criteria		
$f_0 > 10 / L_w$	12 valid windows (length > 3.77 s) out of 12	OK
$n_c(f_0) > 200$	1609.94 > 200	OK
$\sigma_A(f) < 2$ for $0.5f_0 < f < 2f_0$	Exceeded 0 times in 39	OK
HVSR peak clarity criteria		
$\exists f \text{ in } [f_0/4, f_0] \mid A_{H/V}(f) < A_0/2$	0.95088 Hz	OK
$\exists f^+ \text{ in } [f_0, 4f_0] \mid A_{H/V}(f^+) < A_0/2$	3.9213 Hz	OK
$A_0 > 2$	2.01 > 2	OK
$f_{\text{peak}}[A_{H/V}(f) \pm \sigma_A(f)] = f_0 \pm 5\%$	3.48% <= 5%	OK
$\sigma_f < \varepsilon(f_0)$	0.40311 >= 0.1328	NO
$\sigma_A(f_0) < \theta(f_0)$	1.22369 < 1.58	OK
Overall criteria fulfillment		OK