new

VIBROMETRIC

VIBSIST-1000
CODED-IMPACT SEISMIC SOURCE

The VIBSIST-1000 is a **multi-impact, time-distributed seismic source** that uses a hydraulic hammer mounted on 4-wheel drive / 4-wheel steering **all-terrain, highly-maneuverable** vehicle with compact wheelbase and tight steering lock angles that ensure a compact turning circle with outside radius of 2.8 m.

Multi-azimuth VSP, Finland

The VIBSIST-1000 is a **safe, non-destructive and environmentally friendly high-resolution seismic source**. It is **specially designed for use in forest areas**, so that cutting trees can be avoided.

The hammer is powered through a computer controlled hydraulic regulator and produces series of impacts, delivered according to pre-programmed time functions. The recommended temperature range for operation is –25° to 50°C.

The VIBSIST-1000 source can probe 2—3 km deep in hard rocks and 1—2 km deep in sedimentary rocks.

KEY FEATURES

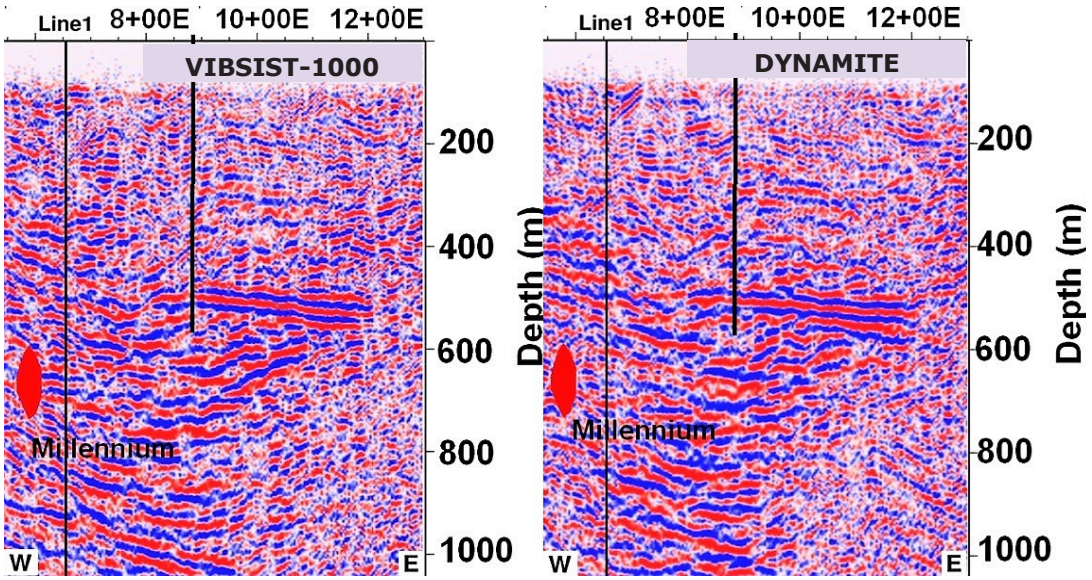
- **All terrain reflection seismic source**
- **Simultaneous multiple-source capability**
- **High productivity**
- **High resolution**
- **Rugged and mobile**
- **Minimum environmental impact**
- **Compatible with all industry-standard seismographs**

APPLICATIONS

Surface 2D & 3D and multi-offset VSP for:

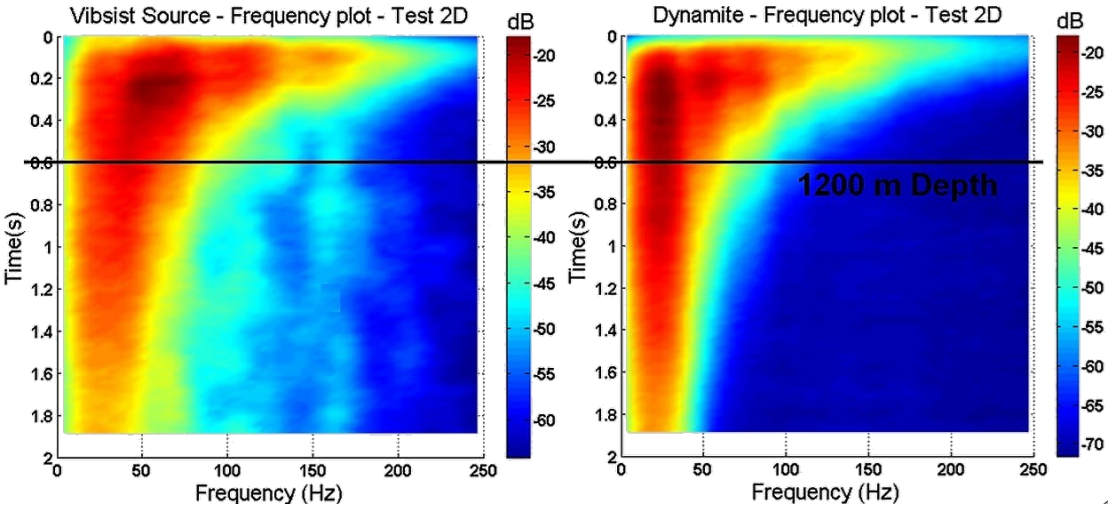
- **Mineral exploration**
- **Structural delineation at mine sites**
- **Geothermal energy**
- **Geologic storage**
- **Oil exploration**
- **Reservoir characterization**

ALL TERRAIN HIGHLY M



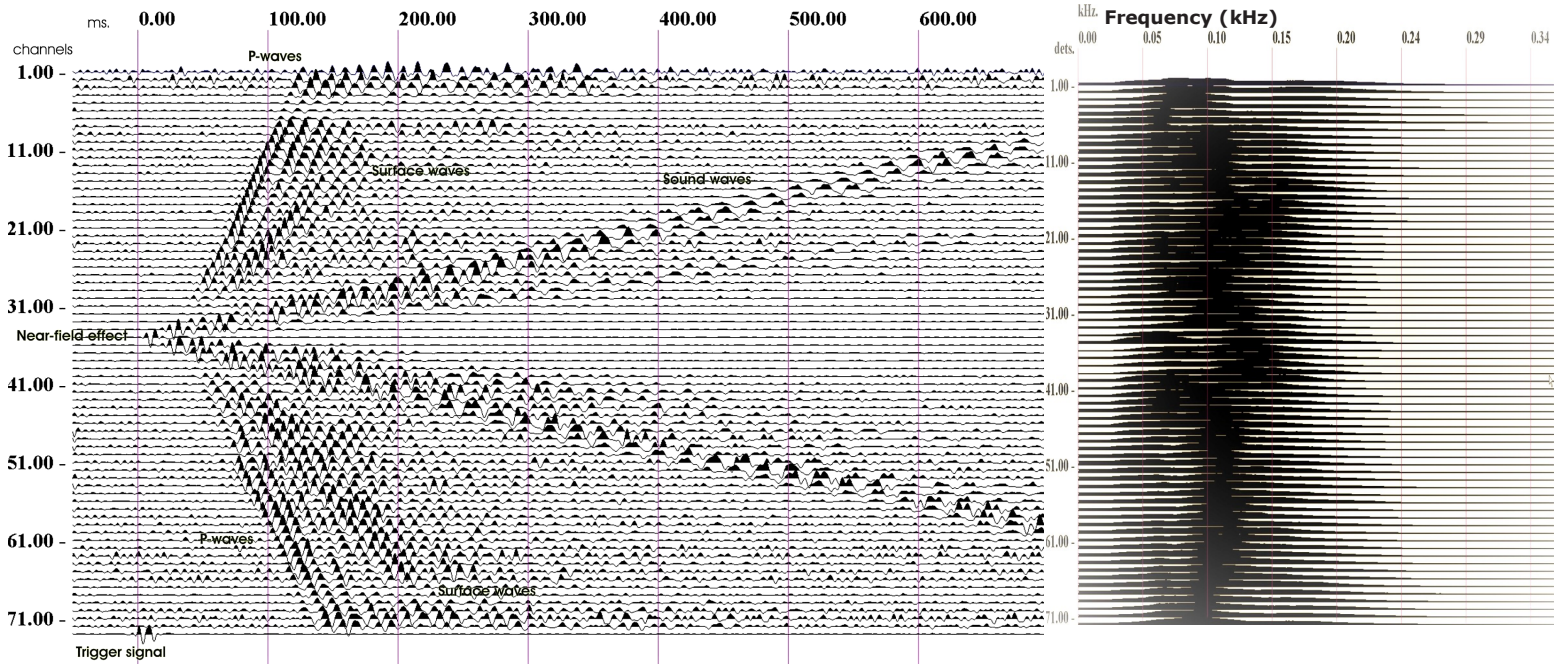
Source qualification test prior to acquisition of the Millennium 3D, Canada

2D migrated profiles



Average power spectra along the test line

Raw data source gather from the multi 2D survey at Kumba, South Africa and its Average spectra along the test line



OBILE SEISMIC SOURCE

SYSTEM MODULES

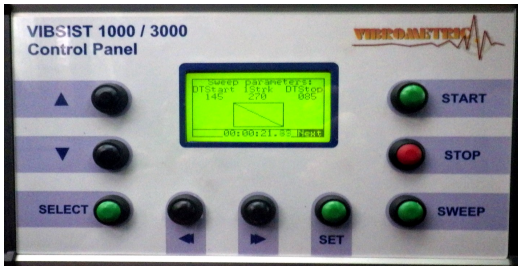
The **Ground impact assembly** is built as a sandwich of aluminum, steel and rubber plates and bells that can be customized for several specific ground conditions.

The Hydraulic impact hammer operates in accordance with the sweep control sequence, produced by a hydraulic servo-controller.

The Hydraulic servo-controller transfers to the hydraulic hammer a coded sequence provided **by a sweep control processor.**

The sweep control processor monitors the hydraulic pressure, flow and temperature and thereof regulates the impact energy and timing.

The seismic response recorded by the control processor on the **Carrier vehicle** is conveyed to the recording station by a coded radio signal. A variety of **seismographs** can be used, which include all industry-standard recording systems.



SOFTWARE

- **Control Software** used to program and operate the sweep control sequence
- **Sweep Decoder**; correlates the sweeps. This module can either be used for fast on-line monitoring or elaborate off Line processing
- **Signal Conditioning**, includes a collection of filters used for processing of the records before and/or after correlation
- **Signal Display Interface** allows the-operator to visualize the data conveniently and flexibly.

SPECIFICATIONS

Impact energy: 1000 J / impact
Energy/30s sweep: 300 kJ
Peak force: 100 kN (25000 lbf)

Frequency band: approximately 2 to 400 Hz

Repetition rate: programmable between 5 and 18 impacts per second

Programmed sweep characteristics: operator designed (graphic interface) or preset

Controller

Reads impact sequence from accelerometer placed on hammer, data on oil flow and pressure;

Adjusts and re-adjusts the flow and pressure, to obtain the pre-set value of energy at the pre-set timing

Data transmission

Radio / Cable link for trigger and pilot signal.

Impact Hammer

Hydraulic with gas accumulator
Vertical direction, adjustable stroke

Impact Plate Steel and aluminum
Area 0.6m^2

Hydraulic Valve System

Online, automatic & proportional control of flow on both input & return lines

Hydraulic Controller

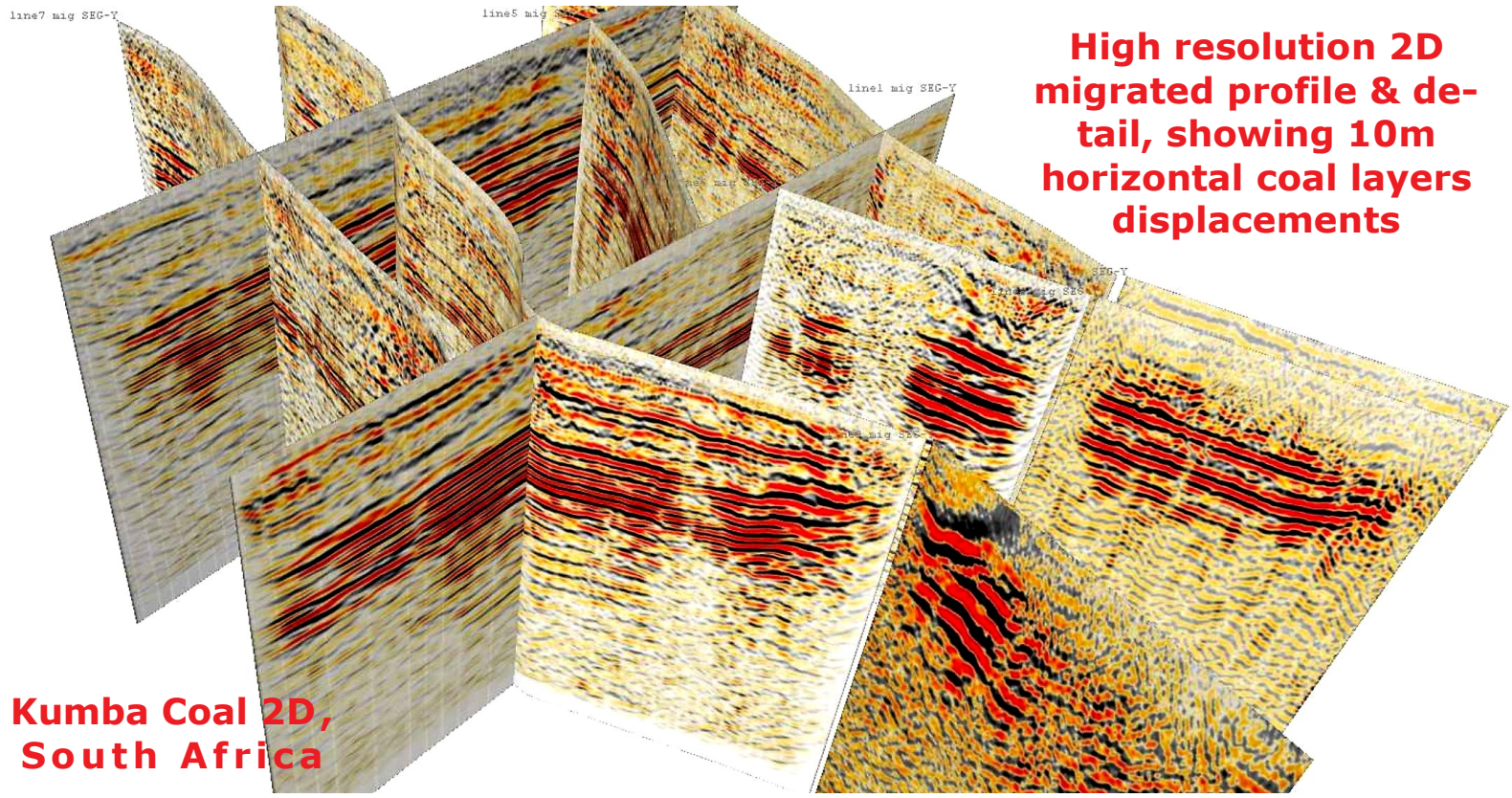
Working pressure 230 bar
Max oil flow 70 l / min

Total weight 4500kg

Dimensions 3800x1600x1800 mm (LxWxH)

Temperature (°C) -25 … +50

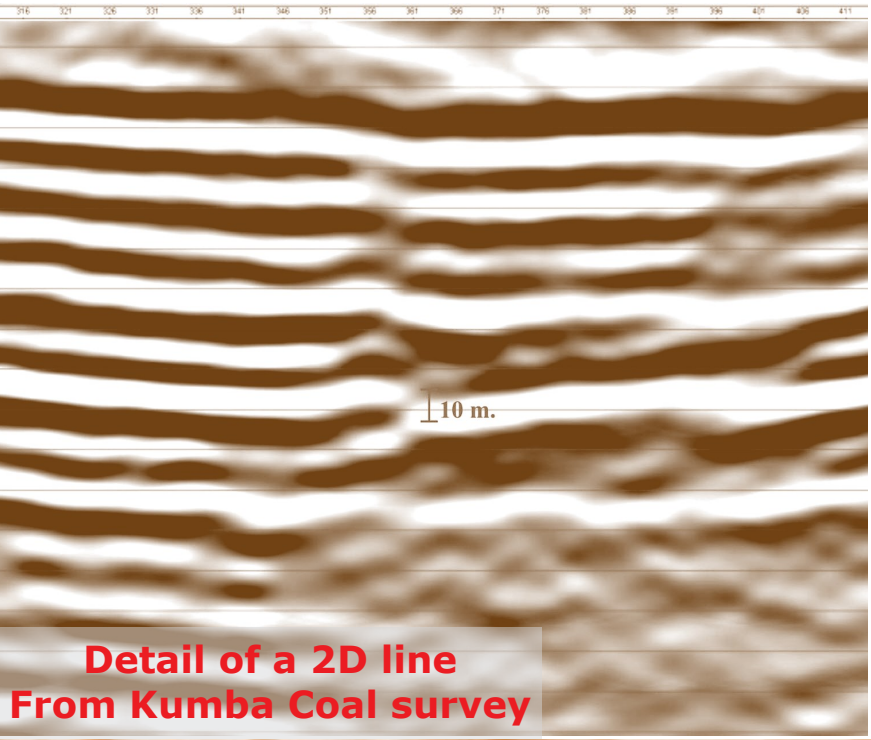
VIBSIST-1000 SEISMIC SOURCE



High resolution 2D migrated profile & detail, showing 10m horizontal coal layers displacements

Kumba Coal 2D, South Africa

The VIBSIST-1000 uses heavy-duty carrier vehicles and hammers. This makes it safe, versatile, reliable and cost effective in difficult terrain as well as in environment sensitive areas.



Detail of a 2D line From Kumba Coal survey

The VIBSIST-1000 produces wide-band seismic signals even when coupling to the ground is relatively poor.

It is best suited for operation in noisy environments.

127 Taipaleentie
Perttula, 01860
Finland

Phone: +358 9 2761418
Fax: +358 9 2761266

info@vibrometric.com
www.vibrometric.com

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