



**TERRAVISION RADAR**

**SURVEYING FOR WATER**

*[www.terravision-radar.com](http://www.terravision-radar.com)*



## **What is Terravision Radar?**

- **Terravision Radar is built on similar principles to ground-penetrating radar but is substantially more powerful, by combining up to 20MW mono-pulse, multi-frequency approach, allowing for depth penetration to up to 270m.**
- **Terravision maps the geo-electrophysical nature of the subsurface.**
- **Profiles outline features such as water bodies, geological structure, location of bedrock, paleo-environment, and contact zones.**
- **Data Collection: Fast – up to 4km of profiles a day conditions dependent.**
- **Deliver “Real Time” reporting via our operators display unit.**
- **Terravision operators can analyse and interpret data within hours of collection.**
- **Terravision is light-weight and versatile; 2 operators and up to 120kg kit (job specific) we can deploy in 4x4 vehicles & light aircraft**



## **Searching for Water:**

- Terravision can:
  - Survey on Land to find subsurface water;
  - Locate and map sub-surface water to 200m+;
  - Determine the structures that are carrying water;
  - Understand factors relating to supply and water quality.

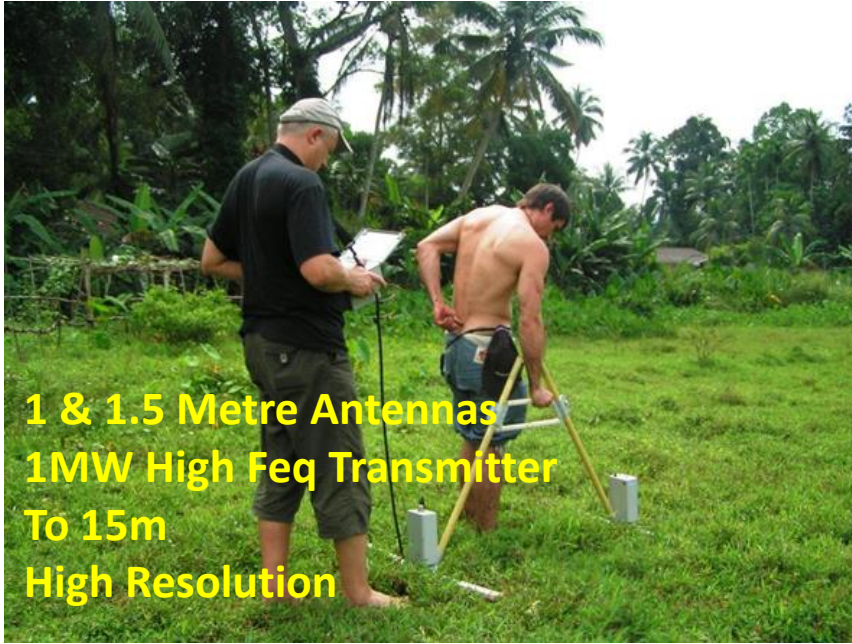
## **Environmental:**

- Terravision can find areas of pollution in the soil, especially oil contamination and pollution plumes.

## **Searching over Water:**

- Terravision can survey over water and ice to locate structures of interest.

# ON LAND



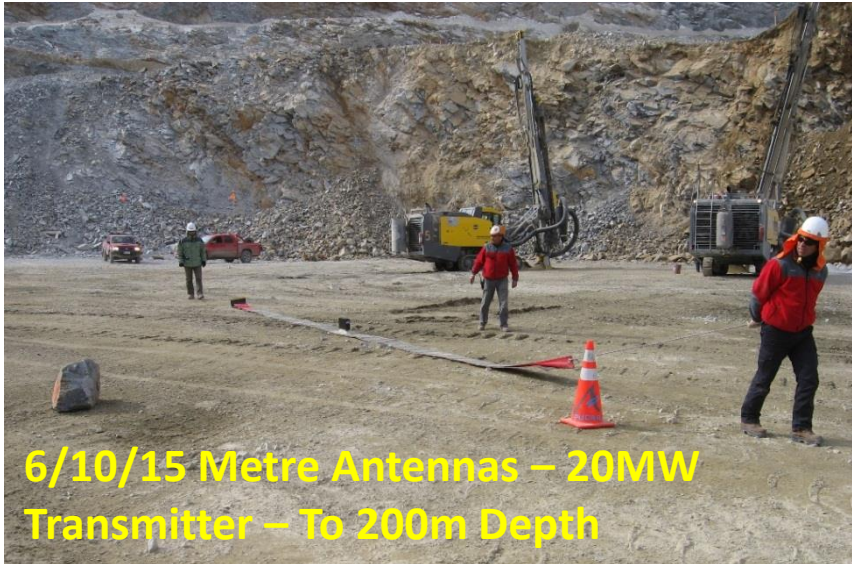
**1 & 1.5 Metre Antennas  
1MW High Freq Transmitter  
To 15m  
High Resolution**



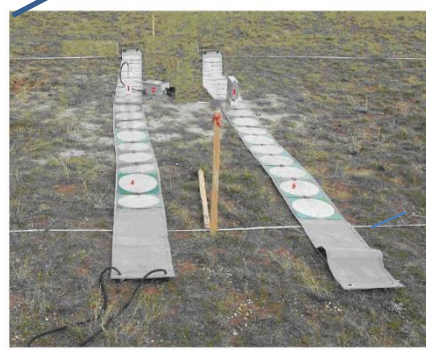
**Real Time Display – Now wi-fi to laptop  
in full colour resolution**



**3 Metre Antennas – 1 MW Transmitter –  
Low Freq - To 45m Depth**

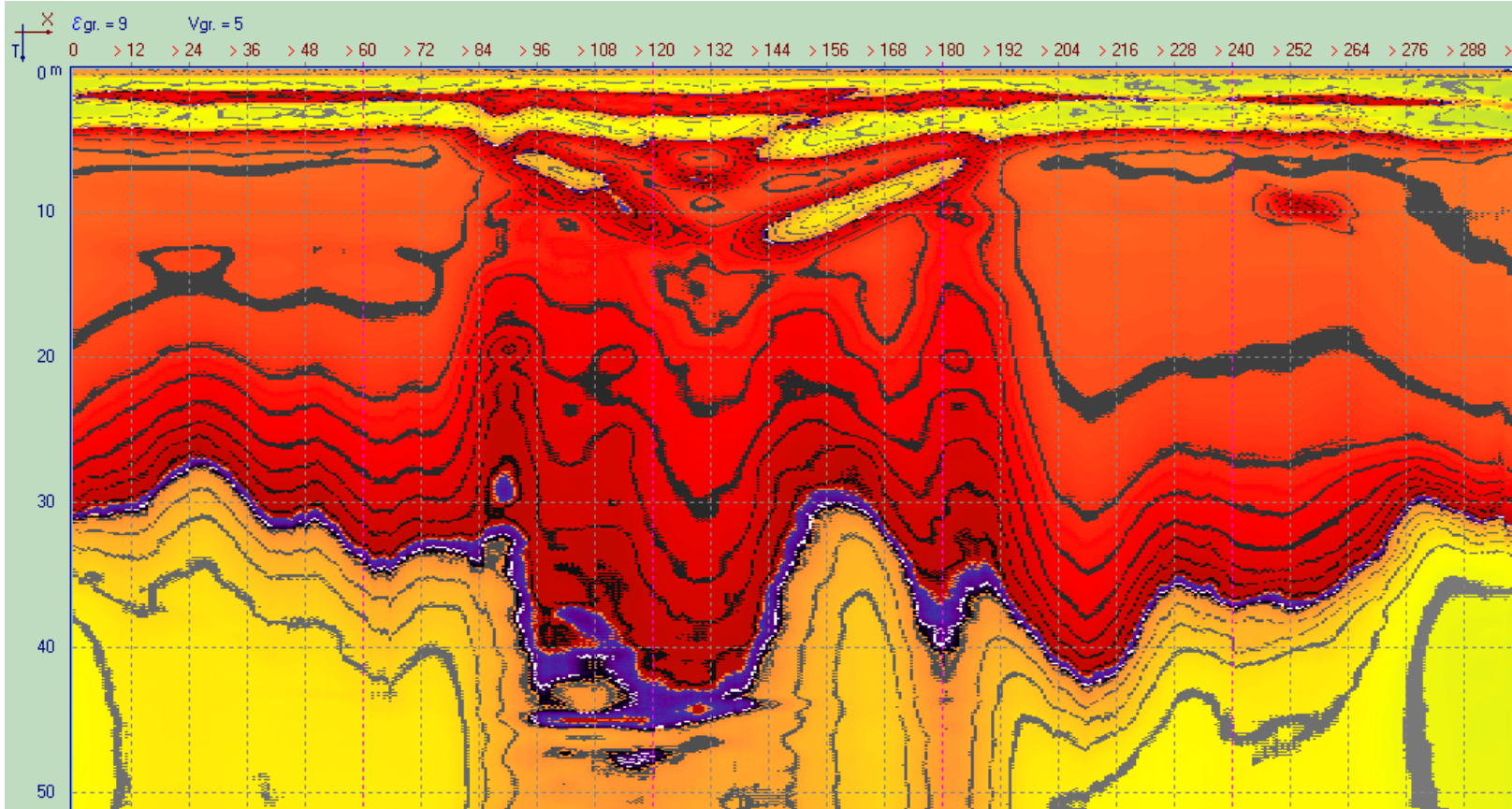


**6/10/15 Metre Antennas – 20MW  
Transmitter – To 200m Depth**



**Lightweight,  
Portable, Fast**

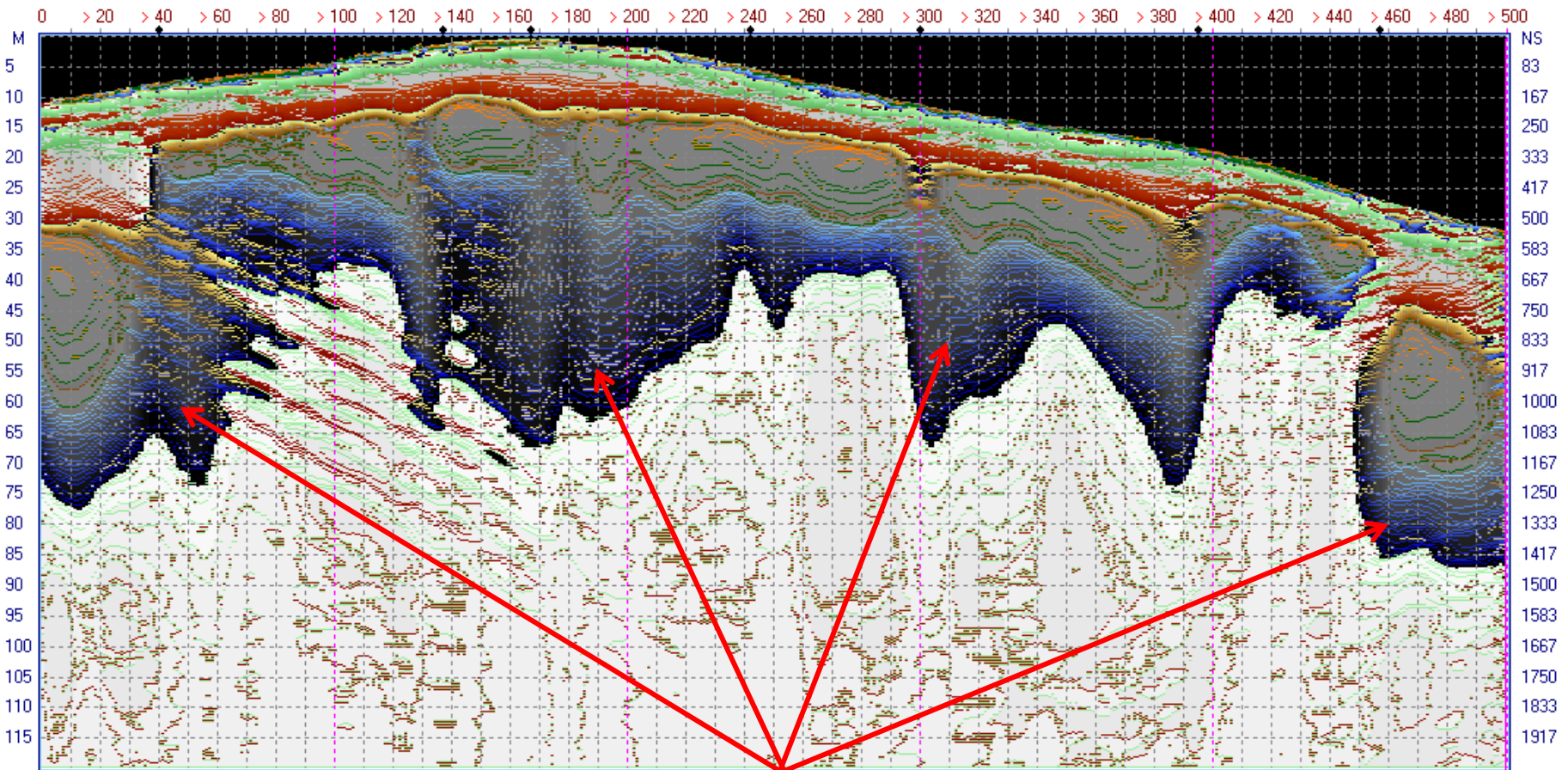




**Example of Terravision Paleo-Channel (Romania)**

Data processing of the radargram is made in such a way that the algorithmic filters are selected which best highlight the lithological (horizontal and vertical boundaries), as well as the structural heterogeneity of the profile. When selecting a setting we are guided by the known geological data to calibrate geophysical boundaries, according to the geological horizons and irregularities. *(Further Technical Details available on request)*

In the search for Water, Terravision offers unrivalled clarity of image



**Water:** In the example above, a profile shows the location of water to 90m depth.

## The Geology of Water Carrying Systems

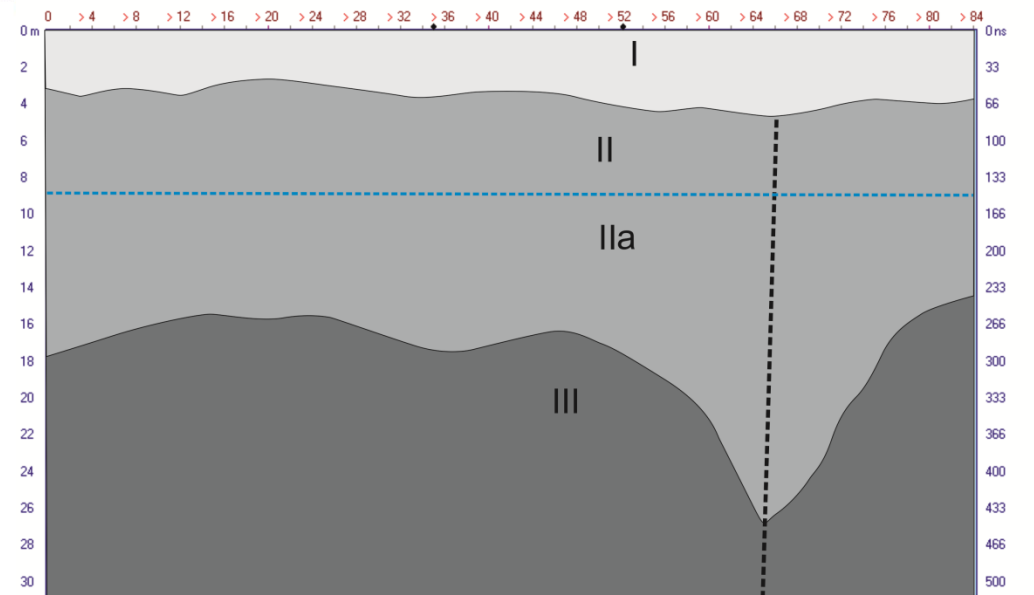
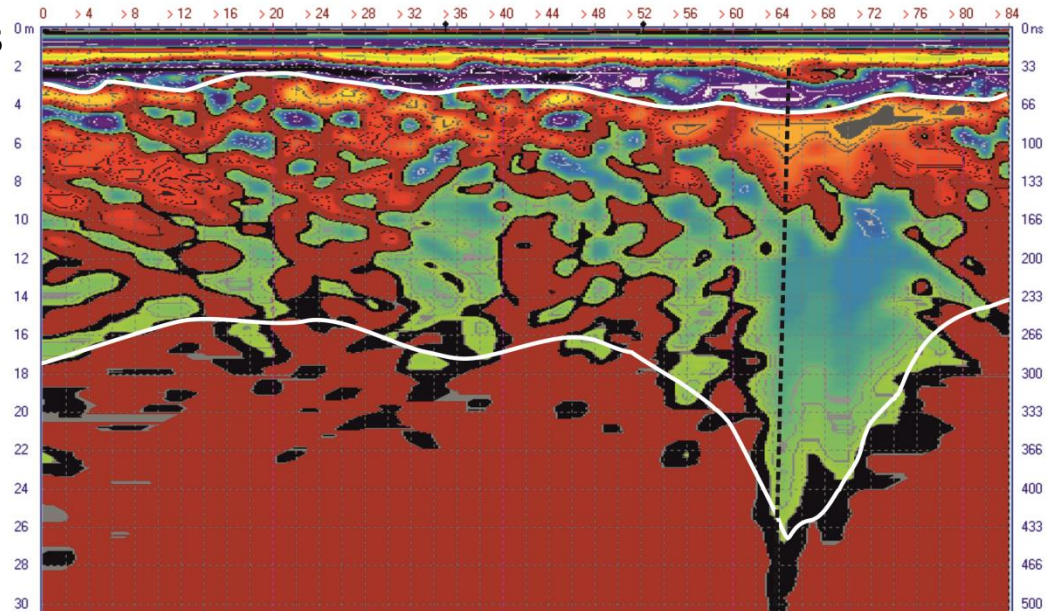
Terravision is engaged in scanning profiles for many of the worlds leading mining companies.

The experience of the Geo-technicians enables a very quick analysis of features seen by the Radar.

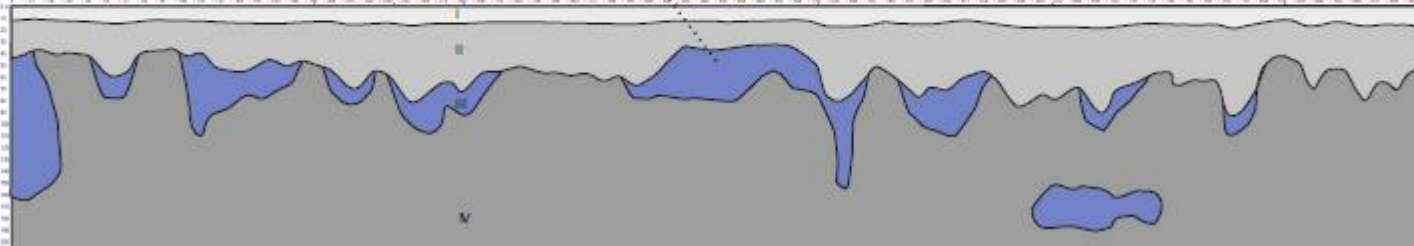
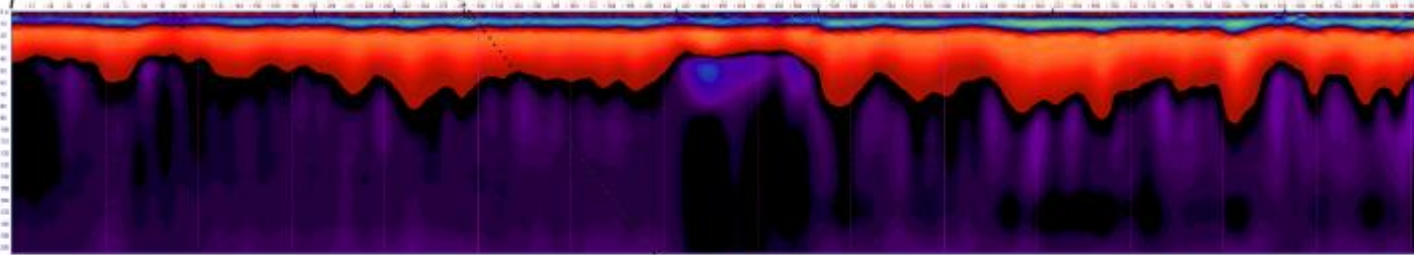
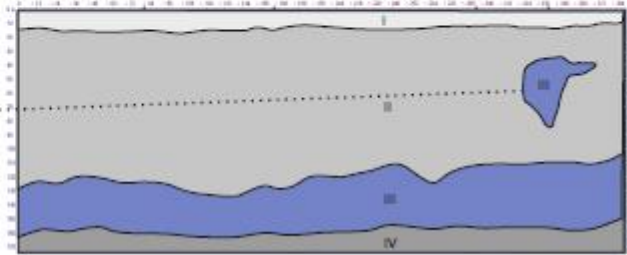
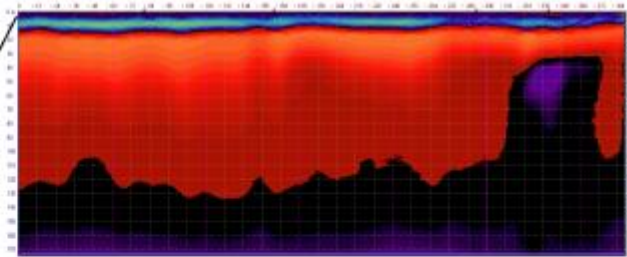
This example shows a Paleo Channel – or ancient river course, that is still actively bearing water underground.

### Schematic Legend

- I: Soil
- II: Weathered sediment
- Ila: Non-weathered sediment
- III: Bedrock

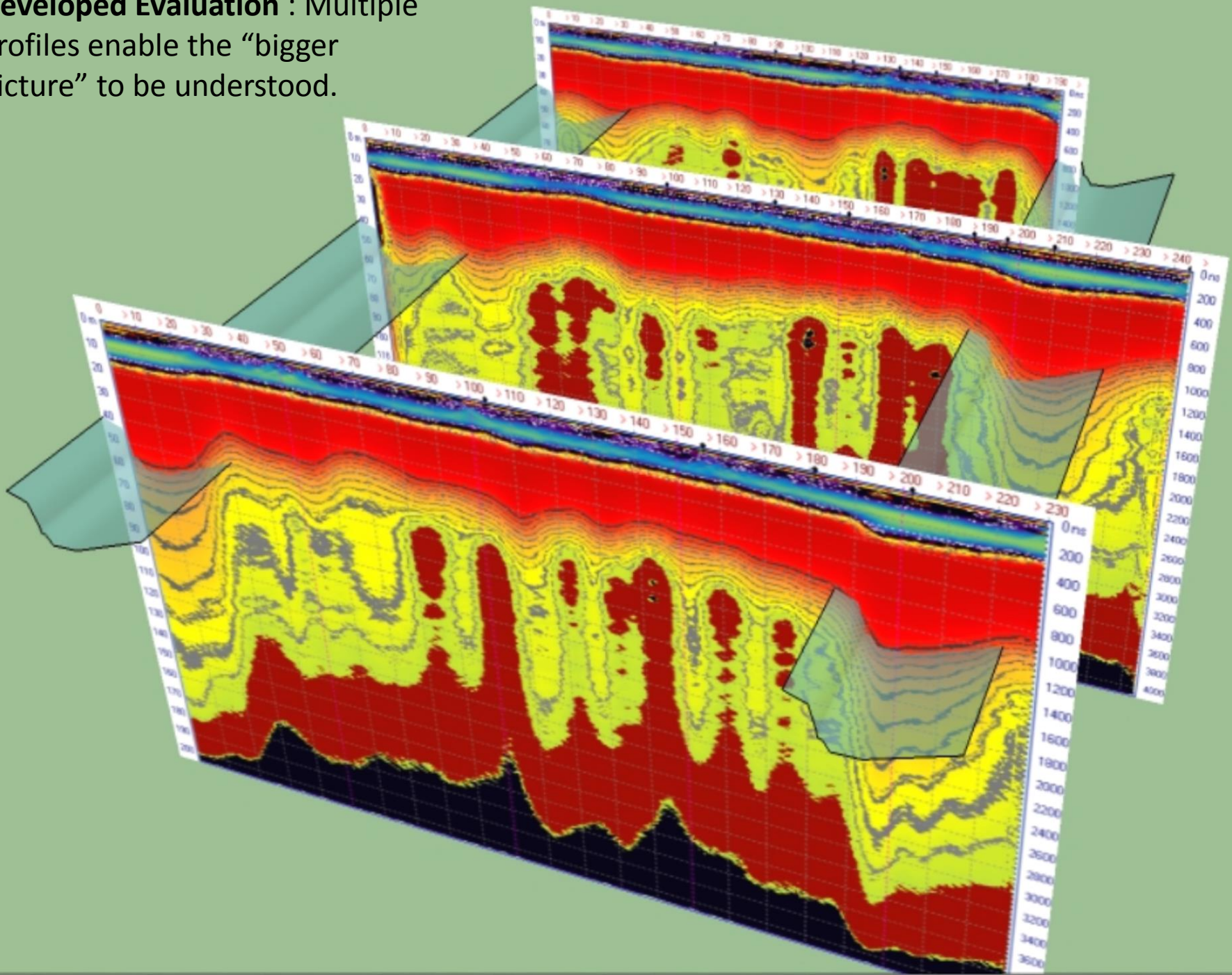




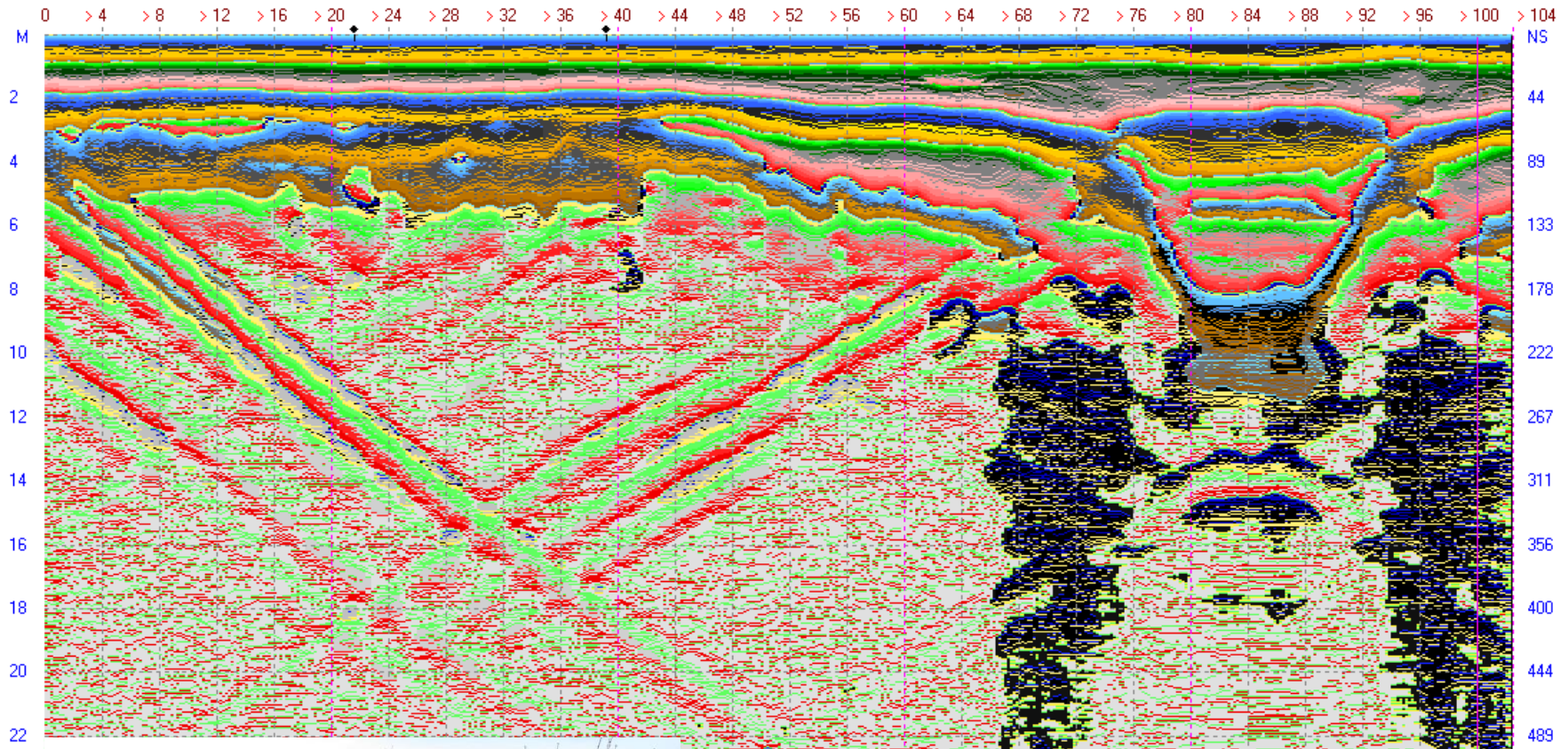


**Strategic Evaluation:**  
Profiles are carried out at wide distances for a preliminary investigation of the hydrological systems.

**Developed Evaluation :** Multiple Profiles enable the “bigger picture” to be understood.

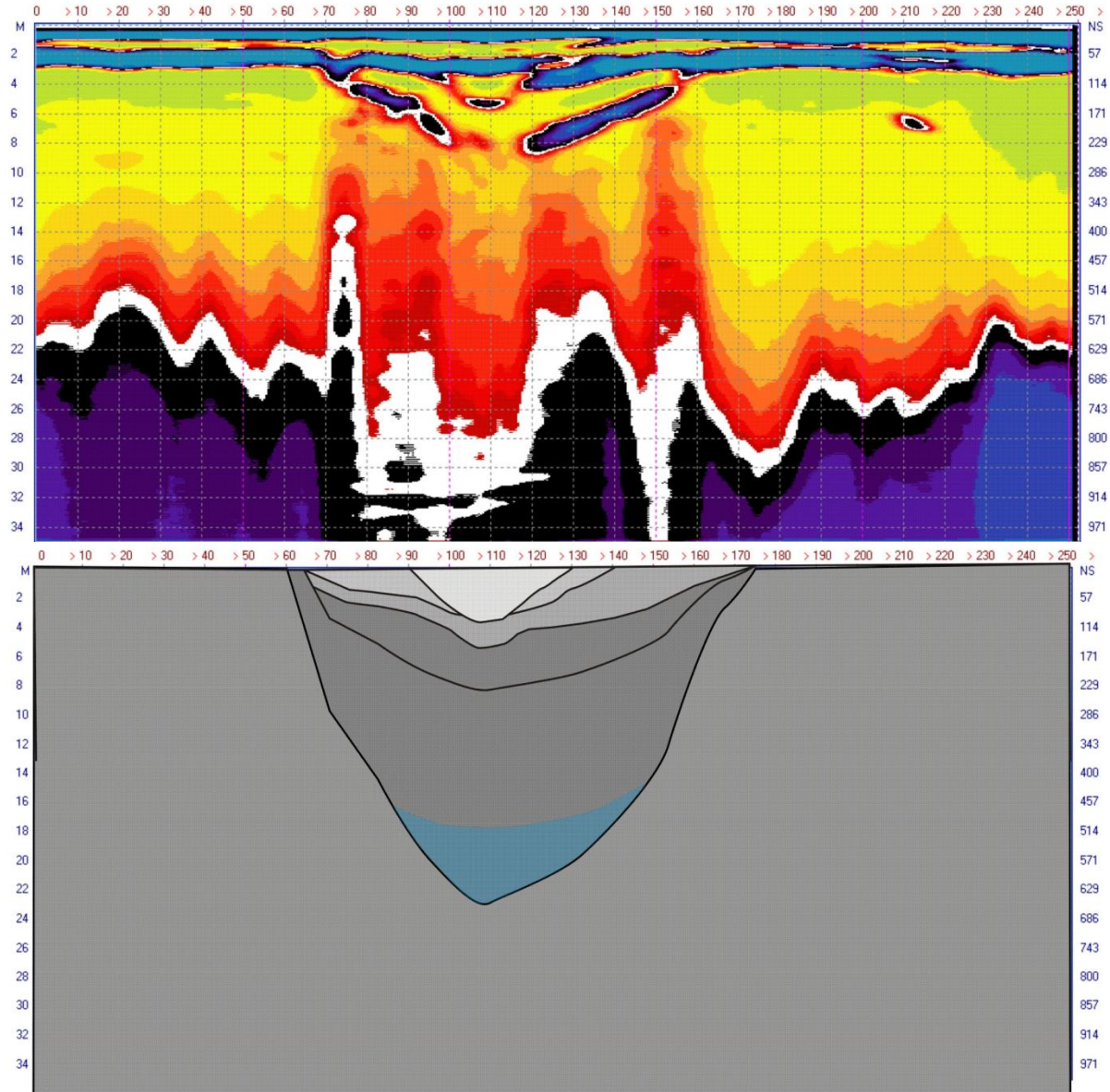




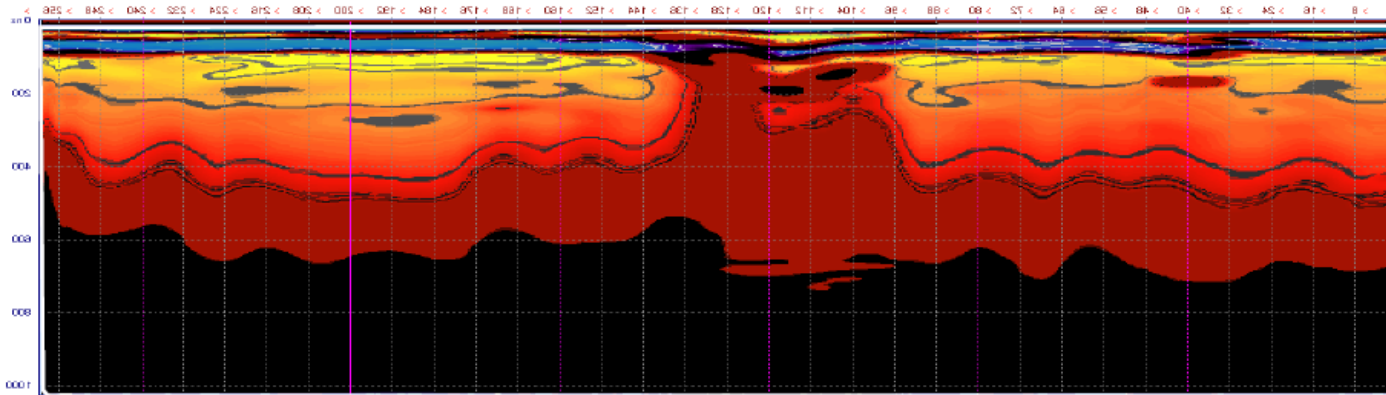


**Germany:** As a result of GPR survey, the geological structures which are characteristic for accumulating groundwater were located. Using this information, the borehole site was chosen for irrigation source.

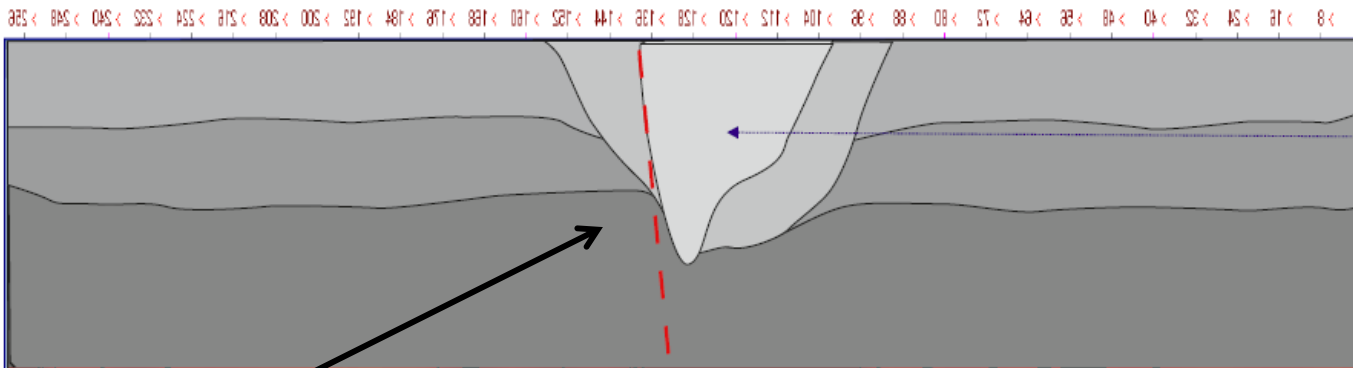
**A Paleo-river channel:** The Channel is seen here lying in sand (the yellow area) above a contact point with a coal seam (coal is black)



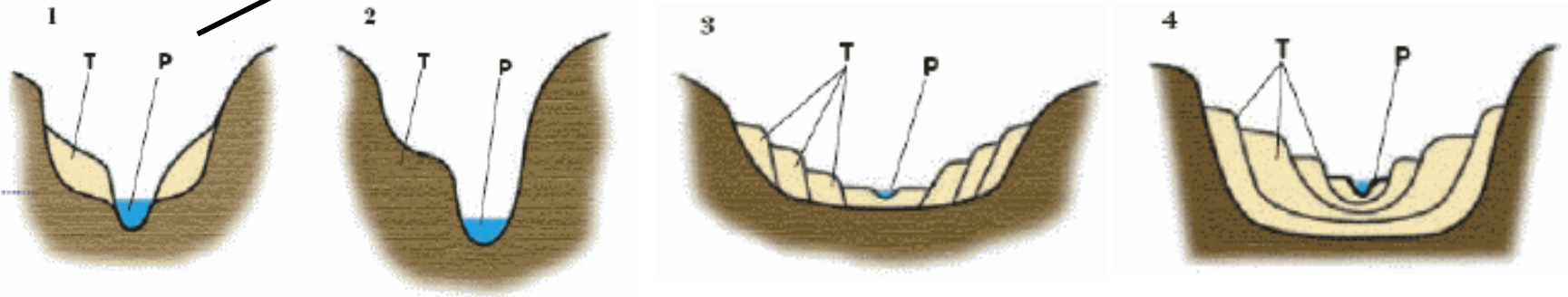


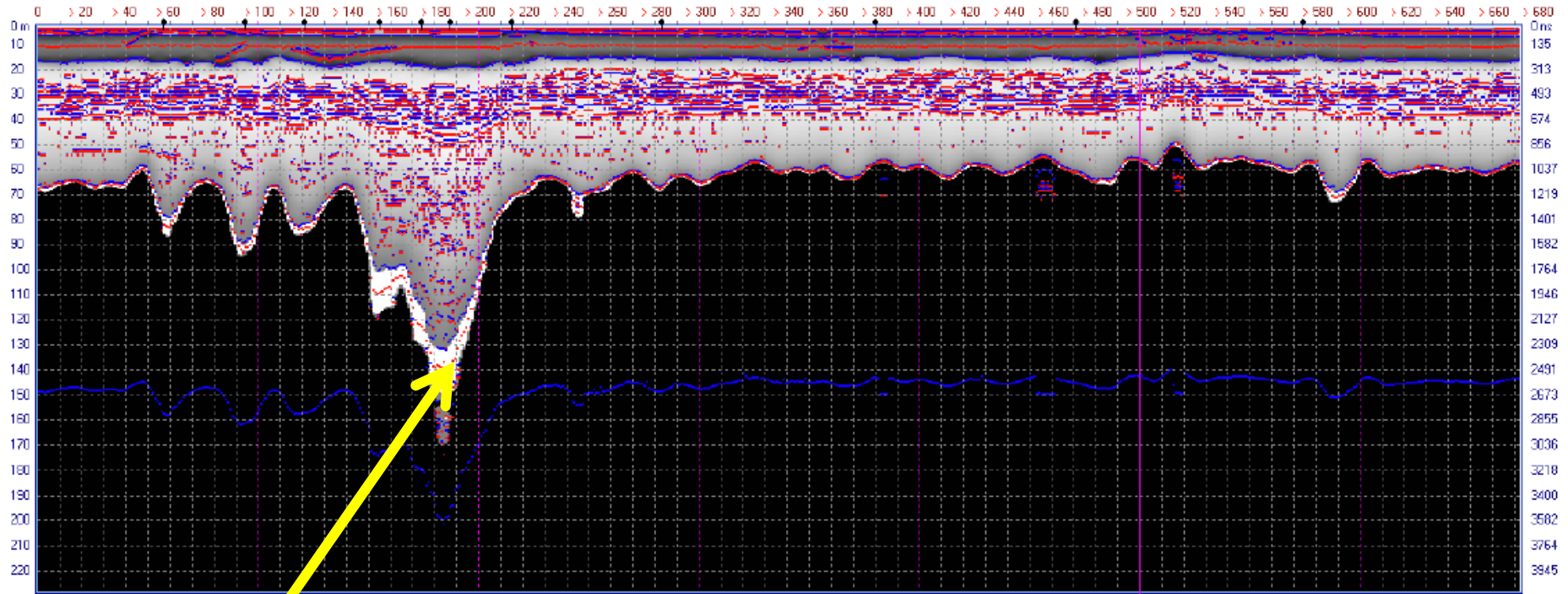


**Water in a Paleo-channel system:**  
Depth of the profile is 50m.

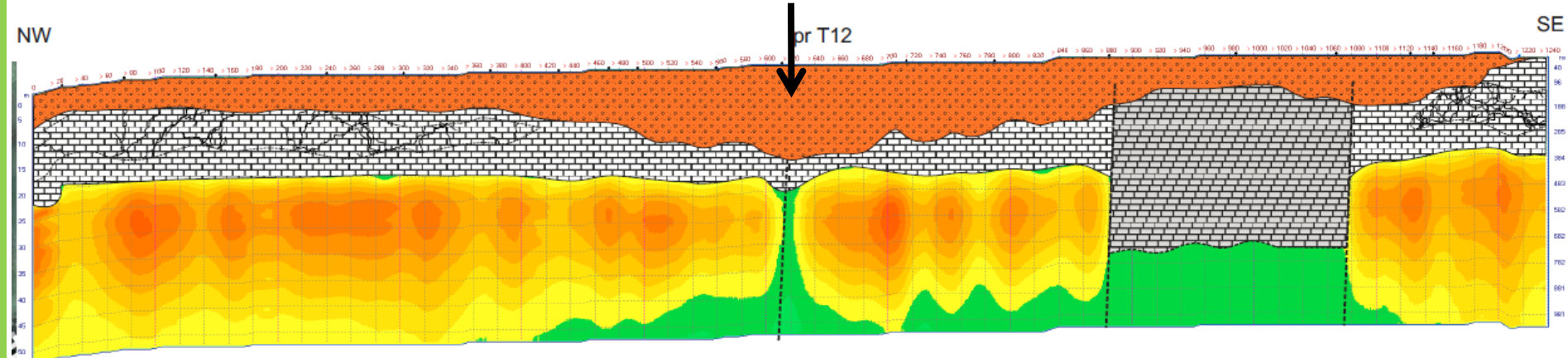


**Types of Paleo-Channel:** Here we see the water is lying in a "type 1" paleochannel system.





Water



**Profile 12** was 1,240 m long, and according to the geological map, it runs across several geological situations. Limestone outcroppings to the surface are found at the end of this profile. The lowering at the beginning of the section may be due to the proximity of a river valley or paleo-channel. From 360 m the hanging wall of the limestone gradually goes down. Further down the sedimentary cover grows thicker, and the outline of the structure resembles the profile of a paleo-valley with a fault in the center at the 620 m mark. The valley is 400 m wide and 25 m deep. The situation changes sharply further down on this section: vertical borders can be seen, which contain a zone of modified lithology and properties of the rock, this may be the fault filled with detrital (broken down) rock. This zone is 200 m wide. Contact with limestone can be seen further down this profile, and limestone outcrops to the surface at the very end of this section. We recommend drilling for water at the fault at 620 m.



RESULT.....

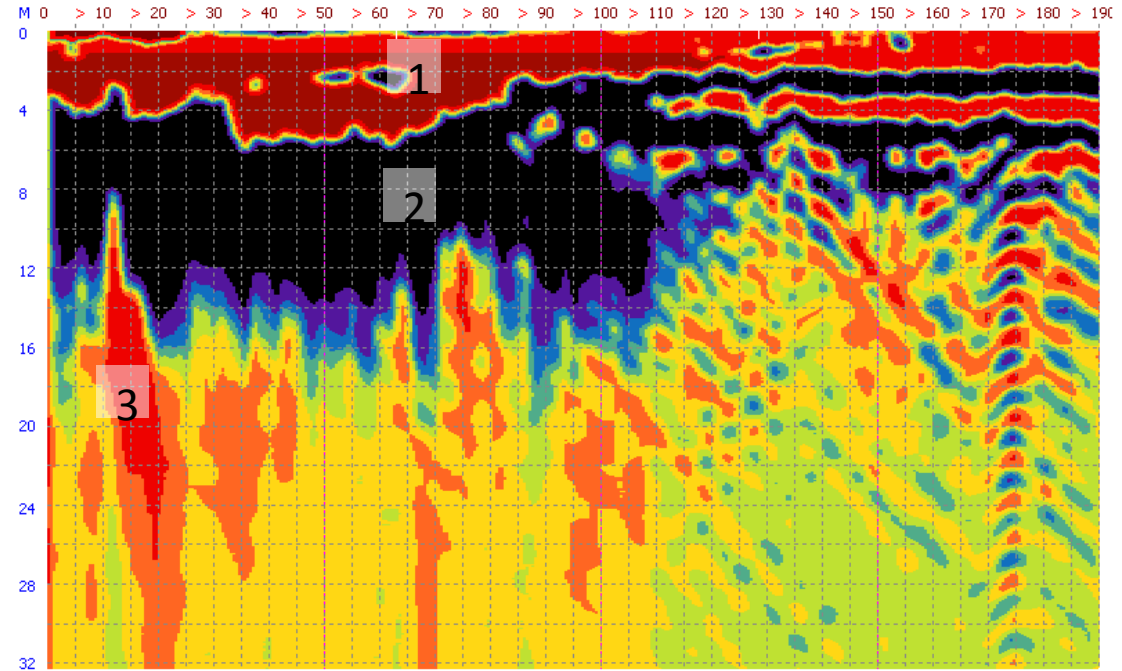




## Analysis of the environment of an oil-processed factory.

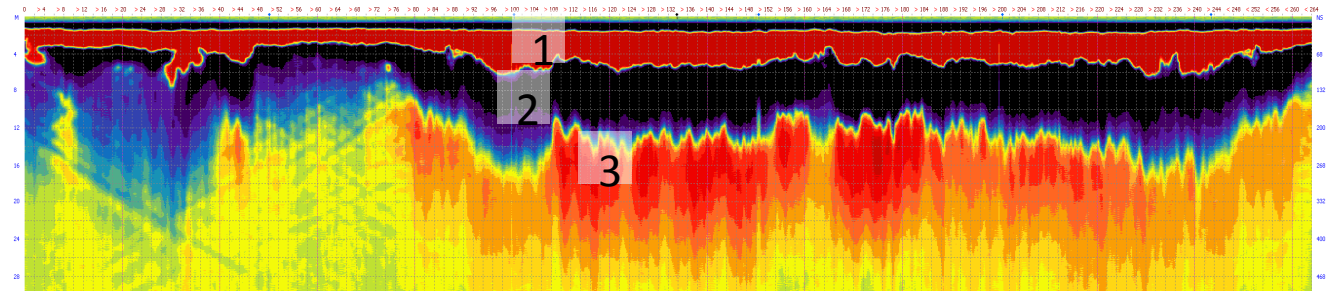


Definition and assessment of the extent of the soil contamination by oil.



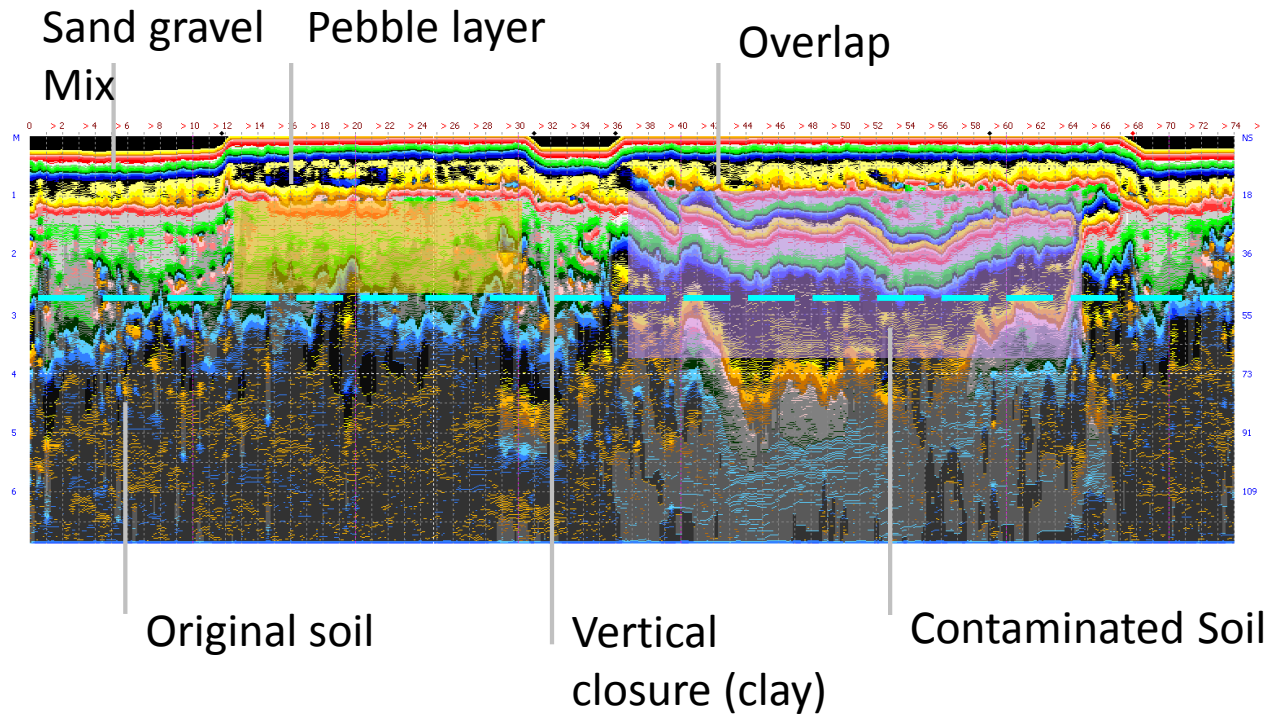
### Soil type

1. Clay mixture
2. Sand-gravel mixture, saturated by oil
3. Clay (water stop)



## Analysis of the environment of an oil factory

Differentiating between the mixing of soil with groundwater and other layers, the soil contamination was identified.





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## **CONTACT DETAILS**

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