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Application of Georadar and Goelectric methodes to estimate the shallow structures

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ABSTRACT

The aim of this research consists of the study the possibility of using the geophysical methods to estimate the shallow geological structures and to show the detailed lithological changes.

The goelectric and georadar methods have been implemented in an area at Torgau city in Germany.

These methods have been applied on polluted aquiferes. Also geotechnical study has been implemented in this area to compare the geophysical results.

The results show high resolution in both methods to estimate the underground geological structures. By the integrated both methods, the horizontal and vertical changes of these structures have been estimated with high accuracy

Key words: Goelectric, Georadar, Goelectric Tomography

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.(Beblo 1997& Knödel, Krummel, Lange 1997)

(Fruhirth, Müller 1994 & Binda, Colla, Saisi, Valle

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.(Trinks, Wachsmuth 2001)

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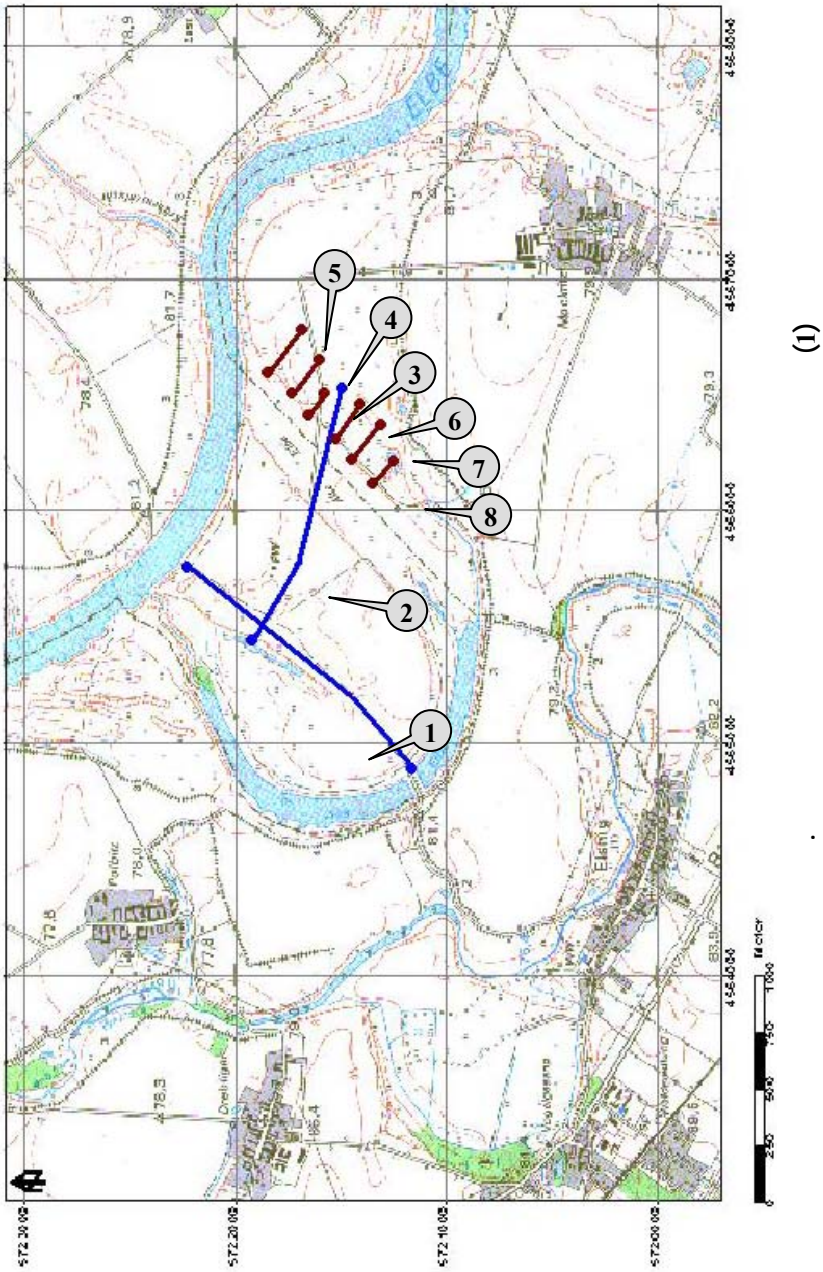
.(Fathy 1999)

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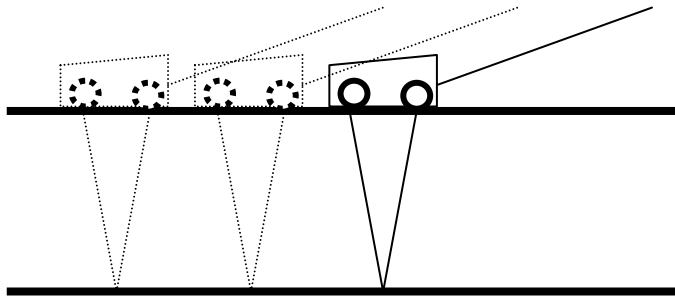


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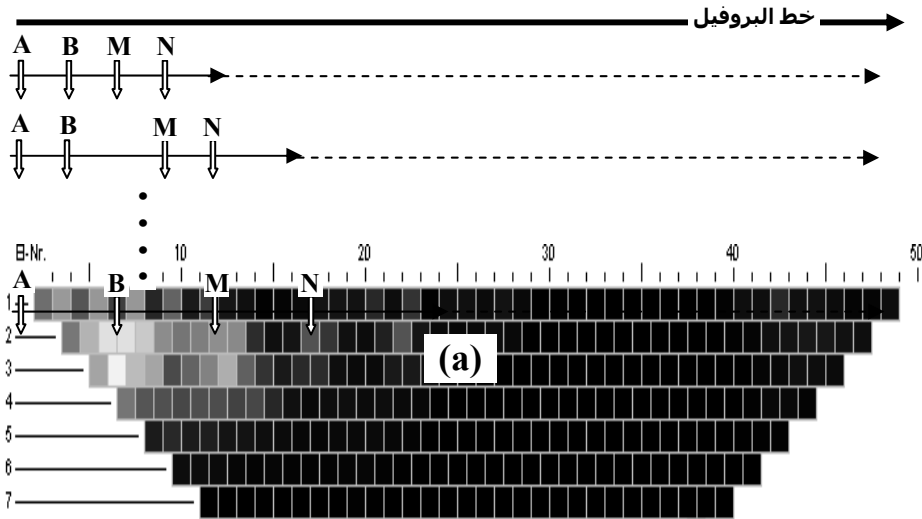
(Sandmeier 1997)

- 1- Stacking
- 2- Marker interpolation
- 3- Gain
- 4- Fk-Filter
- 5- Deconvolution
- 6- Frequency Filtering

(Geotom)

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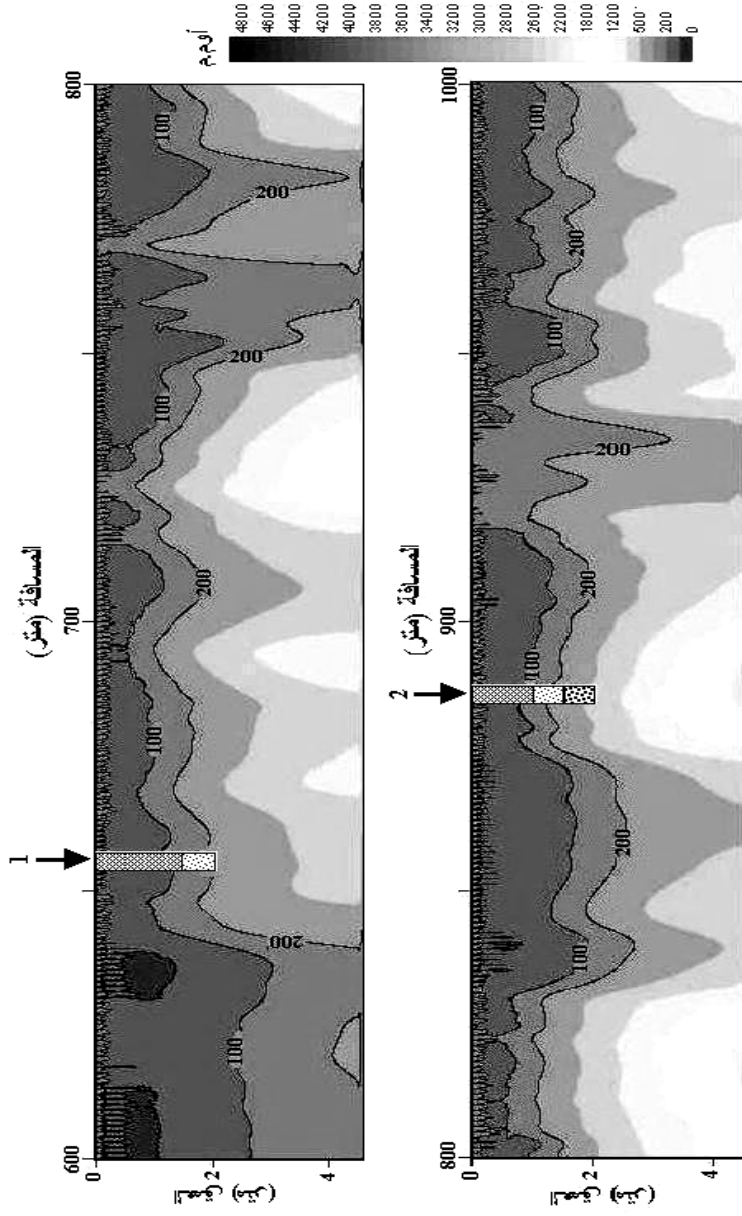


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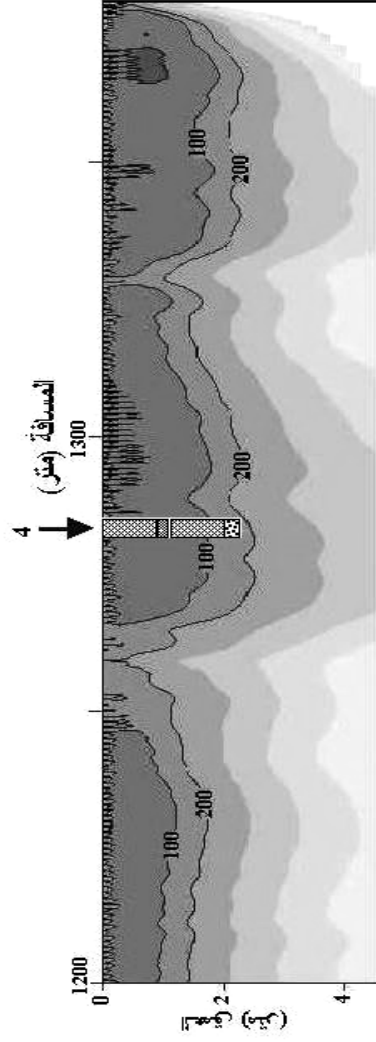
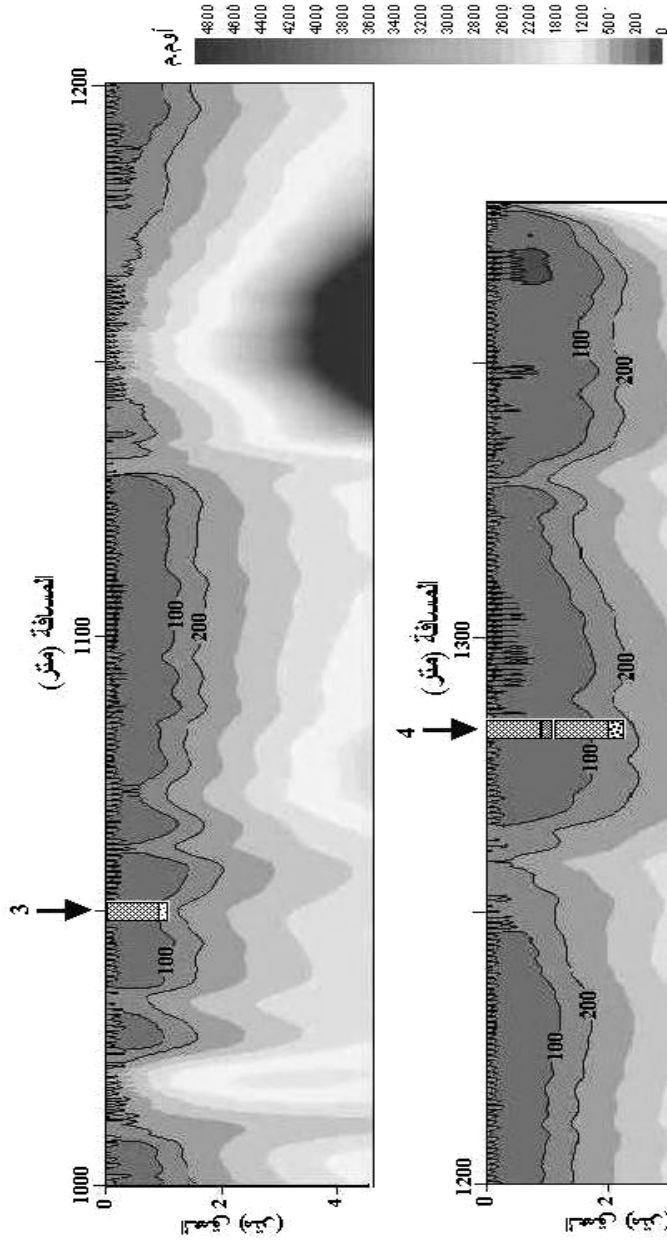
- b . - a

(b)

Iteration 30 : (Dankwardt, 1995) Elt-Prof

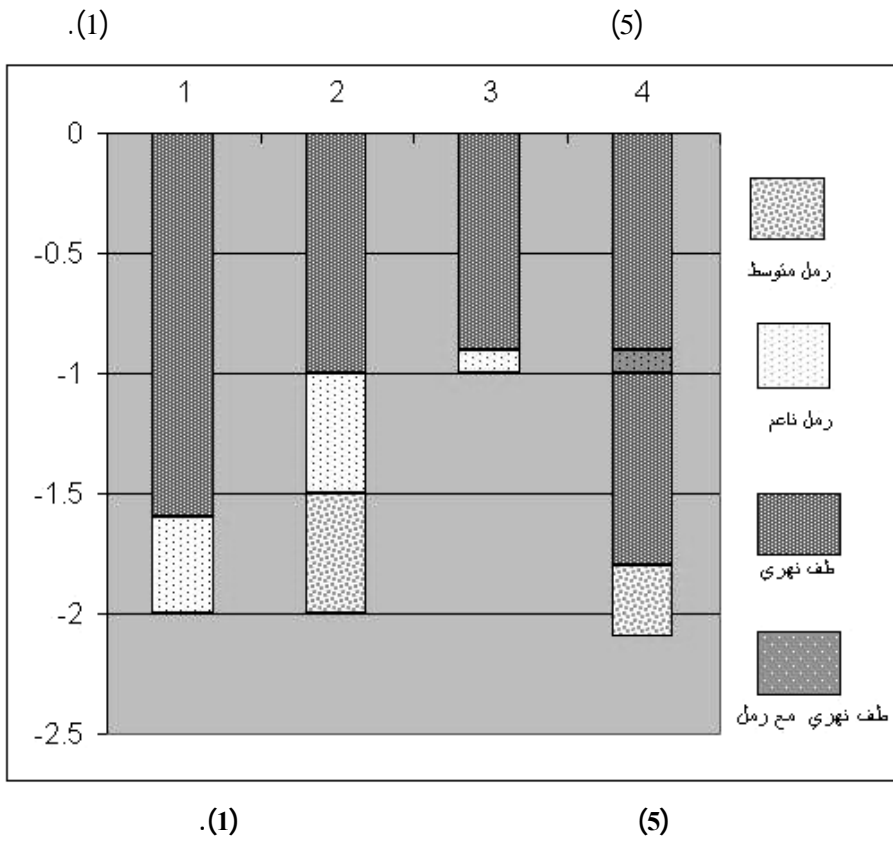


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(4)



(8,7,6,5,4,3)

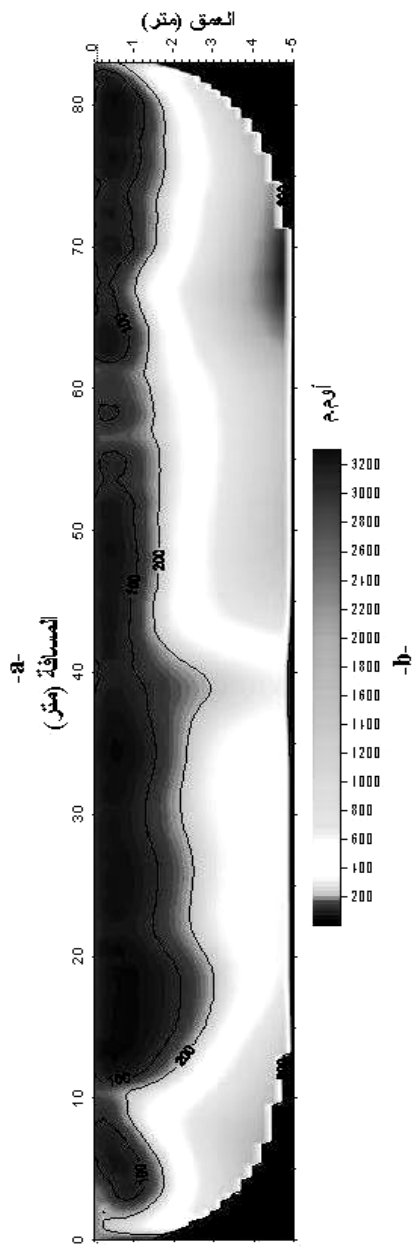
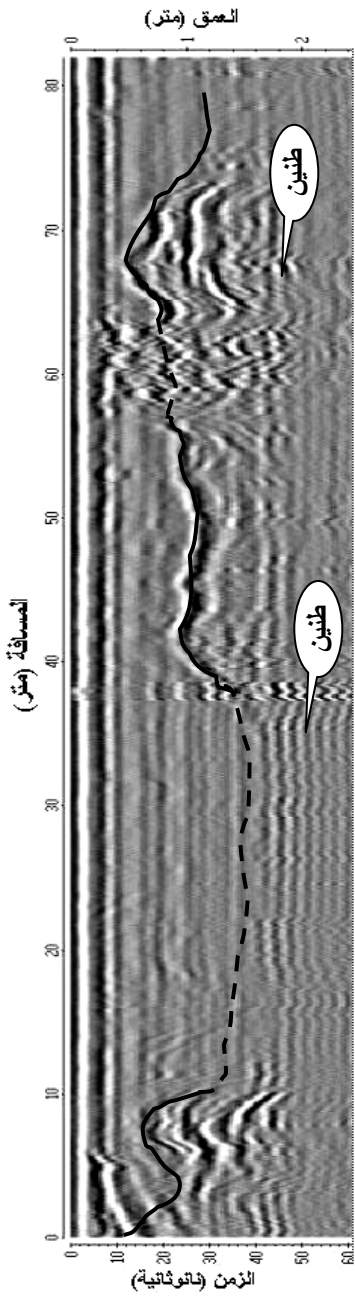
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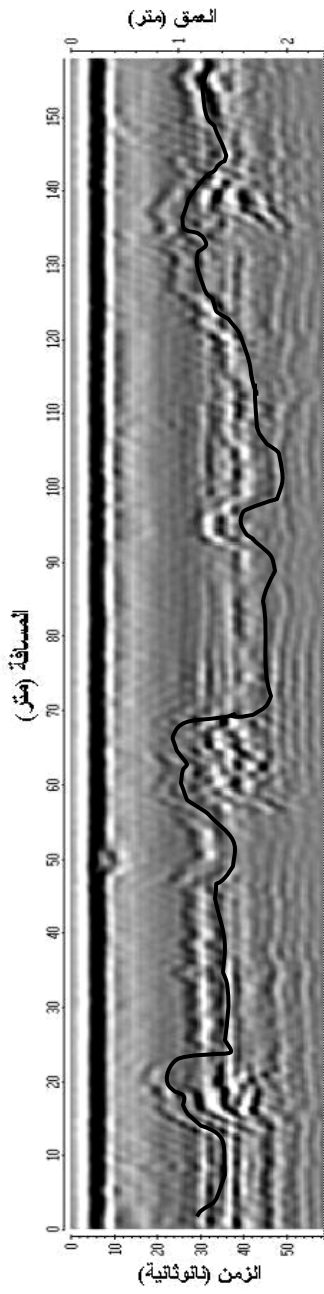
(8 7 6)

83

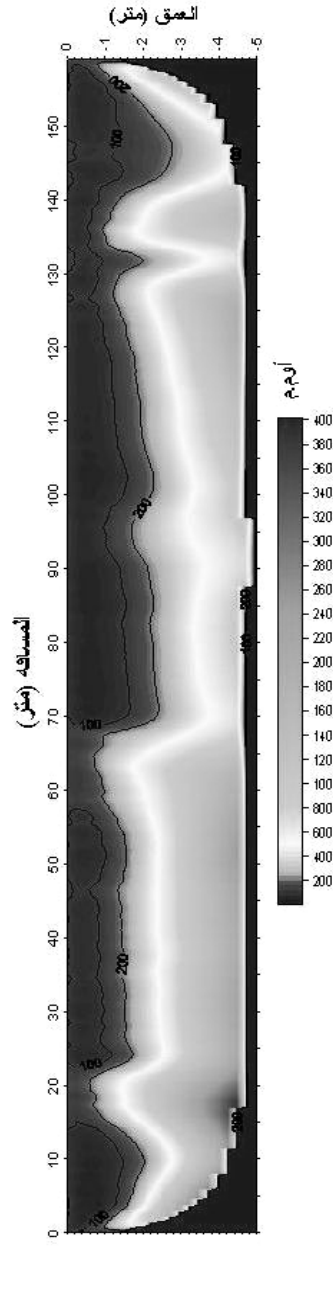
183 160



(3) (6)
 -a- مقطع جيوداردي -b- مقطع جيوكهربائي



- a -



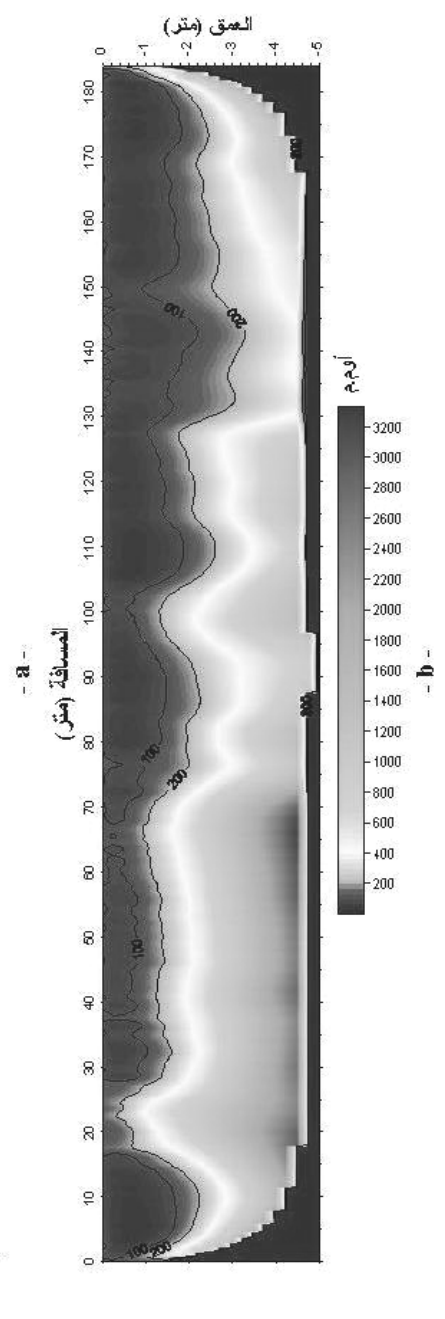
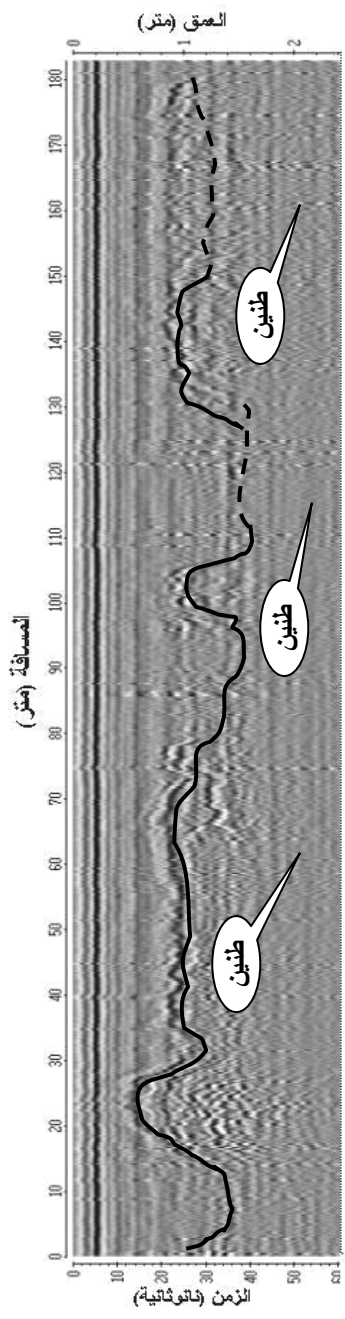
- b -

(4)

(7)

- b -

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(5) (8) - a -

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(6) (3)

(6-b)

(6-a)

40 13

60

(7) (4)

(8) (5)

(8-a)

(7-a)

(8,7,6)

-1

-2

-3

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