

Parameters of cross-section

№ of layers	p resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	29.3	24	-	-
2	21	10	0.05	4
3	50	10	0.47	13
4	85	82	in the second seco	-

Fig. 9 Comparison of field data with mathematical modeling for station no 11







№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	22.3	24		
2	26	19	0.05	4
3	51	6	0.48	15
4	115	82	-	-

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Fig. 10 Comparison of field data with mathematical modeling for station no 13





Parameters of cross-section

№ of layers	p resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	21.3	24		
2	24	19	0.05	4
3	51	6	0.51	22
4	115	82		jiini (

Fig. 11 Comparison of field data with mathematical modeling for station no 14





Parameters	of	cross-section
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№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	22	25	_	
2	26	20	0.05	4
3	51	2	0.42	11-12

Fig. 12 Comparison of field data with mathematical modeling for station no 15





Parameters	of	cross-	section
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№ of layers	ρ resistivity	h thickness, m	τdecay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	24	24	-	
2	26	25	0.05	4
3	50	2	0.48	22

Fig. 13 Comparison of field data with mathematical modeling for station no 16





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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	22	24	-	-
2	24	21	0.05	4
3	50	6	0.46	21
4	105	82	-	pu i

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Fig. 14 Comparison of field data with mathematical modeling for station no 17



Parameters of cross-section

№ of layers	ρ resistivity (Q·m)	h thickness, m	τ decay	η polarizability
1	23	24	-	
2	26	15	0.05	4
3	50	6	0.38	4?

Fig. 15 Comparison of field data with mathematical modeling for station no 8







Parameters of cross-section

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	24	0.5	-	-
2	14	21	-	-
3	18	36	-	
4	30	16	-	6m.

Fig.16 Comparison of field data with mathematical modeling for station no 7





Parameters of cross-section

№ of layers	p resistivity	h thickness, m	τdecay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	34	1	-	
2	15	17	-	-
3	18	2	am	-
4	36	10		-

Fig. 17 Comparison of field data with mathematical modeling for staion no 5







№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	34	1	-	-
2	25	. 17		-
3	18	3	-	-
4	20	5	-	-
5	115	82	-	-

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Fig. 18 Comparison of field data with mathematical modeling for station no 6





- Stations -

Fig. 19 Geoelectrical cross section showing the distribution of resistivity values for the stations of area 1





Fig. 19 a Geoelectrical cross section showing the distribution of polarizability values for the stations of area 1. Highest polarizability is correlated to high hydrocarbon pollution





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Polarizability [%]



Fig. 20 Contoured plan of area 1 showing the changes in polarizability (hydrocarbon content) across the area



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-	№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
		$(\Omega \cdot m)$		constant (msec)	(%)
	1	10	13	-	-
	2	33	9	64	-
	3	48	6	0.8	15





TDEM 2

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	15	12		-
2	33	9	0.8	5





TDEM 3

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	11.5	11	-	-
2	33	9	-	-
3	48	7	1.2	4

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TDEM 4

№ of layers	ρ resistivity (Ω·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	12	10		-
2	33	9	-	-
3	48	10	1.2-1.4	3

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TDEM 5

№ of layers	p resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	8	8.5	da .	jater
2	33	4	1.2	3





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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
191	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	6	4.5	-	-
2	33	4	1.4	10
3	43	1	1.2	15
4	40	28		







TDEM	7
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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	9.6	3.4	-	-
2	33	4	ви	-
3	43	2	DM .	-
4	40	28	ED.	





TDEM 8

№ of layers	ρ resistivity ($Ω$ ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	10	8		





TDEM 9

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	10.5	16	-	909
2	43	3	0.7	25

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TDEM 10

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	(Ω·m)		constant (msec)	(%)
1	13.5	10	-	-
2	28	14	0.8	2
3	48	10	1.0	14

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TDEM 10a

№ of layers	p resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	13.5	10	-	-
2	32	13	-	-
3	48	11	1.2	12



№ of layers	p resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	13.5	10	in the second	
2	53	7	0.8	11





TDEM 12 (?? too big polarization)

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (insec)	(%)
1	14	11.5		
2	33	3	08	35





TDEM	12
	1.7

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	14	13.5	-	~
2	33	2	0.8	1
3	48	3	1.2	10-12







FDEM	13a
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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	14	13.5	-	-
2	33	5	-	
3	48	5		-

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TDEM 14

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	12	8	-	-
2	33	4	1.2	3-6







TDEM 15

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	14	12	-	
2	33	1	0.6	2





TDEM 15a

TDEM 15a

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	15.5	10	-	_
2	33	11		
3	43	2	-	-





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			-	****	<- /

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	11	10		-
2	33	4	-	-
3	43	2	48	







TDEM 15c

TDEM 15c

	№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
1		(Ω·m)		constant (msec)	(%)
	1	9	12	-	init
	2	33	4		-



№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	9.5	13	-	-
2	33	13	0.8	8
3	48	10	0.8	36





TDEM 17

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	10.5	12.3	-	-
2	53	2.5	0.7	24





TDEM 18

№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	14.5	9	-	
2	- 33	12	in the second	-
3	48	8	1.2	13

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TDEM 1	[9
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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	14.5	8.5	free	jan
2	33	8	4r8	-
3	48	7	1.2	11.5





TDEM 20

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	(Ω·m)		constant (msec)	(%)
1	12	10	0.65	10
2	33	4	0.5	20?

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TDEM 22 (distortion?)

	p resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	Not possible		But not	
2	receive	good misfit	polarization	-

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TDEM 23

TDEM 23

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	(Ω·m)		constant (msec)	(%)
1	16.5	9	-	-
2	33	15	1.4	29

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TDEM 24

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	14	11	-	ųūs
2	33	17	0.8	4
3	48	10	0.25	25





TDEM 24a

TDEM	24a
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№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	14	22	Ang	-
2	33	17	0.8	4
3	48	10	1.2	25







TDEM 24b

TDEM 24b

	1			
№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	10.5	11	-	
2	33	16	0.8	10
3	48	8	1.2	25

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TDEM 25

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	(Ω·m)		constant (msec)	(%)
1	12.5	18	-	-
2	33	5	0.8	24





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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	(Ω·m)		constant (msec)	(%)
1	10.5	8	-	-
2	33	7	-	-
3	48	8	1.2	2





TDEM 26a

№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	10.5	8	-	**
2	33	7	-	
3	48	8	1.2	3

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TDEM 26b

TDEM 2	6	b
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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	5.5	10	-	-
2	33	1	-	-



TDEM 26c

№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	5.5	2	-	-
2	13.5	4	-	
3	33	10	-	-





TDEM 26d

TDEM	26d
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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
-	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	5.5	10	-	pa.
2	33	5	0.6	5









Time [s]

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TDEM :	30
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№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	6.5	15	0.15	15
2	23	1	1.2	16

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TDEM 31

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	8	11	-	-
2	33	4	-	-
3	48	6	1.2	15





TDEM 31a

TDEM 31a

№ of layers	ρ resistivity	h thickness, m	τdecay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	7	10		· · · · · · · · · · · · · · · · · · ·
2	33	4	-	-
3	48	6	1.2	14

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TDEM 31b

TDEM 31b perhabs distortion.

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	6.5	15	0.8	40



№ of layers	ρ resistivity	h thickness, m	τdecay	η polarizability
	$(\Omega \cdot m)$		constant (msec)	(%)
1	14.5	12		-
2	33	4		-
3	48	6	1.2	12







№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	10.5	9	-	-
2	33	3	-	-
3	48	8	1.2	3



TDEM 36

№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	16.5	7.5	- 1 - 1 - 1 - 1	1
2	33	10		
3	48	5	1.2	~7

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TDEM 36a

TDEM 36a

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	16.5	7.5	-	
2	33	10	-	-
3	48	7	1.4	5





TDEM 37

№ of layers	ρ resistivity	h thickness, m	τdecay	η polarizability
	(Ω·m)		constant (msec)	(%)
1	7.5	10	-	-
2	23	2	0.8	9

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TDEM 38

№ of layers	ρ resistivity	h thickness, m	τ decay	η polarizability
	$(\Omega \cdot \mathbf{m})$		constant (msec)	(%)
1	7.53	10	-	init.
2	23	2	0.8	4



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TDEM 39

№ of layers	ρ resistivity (Ω ·m)	h thickness, m	τ decay constant (msec)	η polarizability (%)
1	10.5	9.5	-	-
2	33	8	-	-
3	48	7	1.2	3





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