DATA SET: BIES14V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 14
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 705.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.644 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			705.0		
1	16.84	0.375	704.6	0.0222	6.32
2	237.6	3.15	701.4	0.0132	751.1
3	57.64				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	4.536	16.845	47.063
	2	190.747	237.698	278.035
	3	53.757	57.644	60.512
THICK	1	0.092	0.375	1.128
	2	2.543	3.160	4.382
DEPTH	1	0.092	0.375	1.128
	2	2.943	3.535	4.737

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	60.00	58.62	2.28
2	2.00	71.00	72.81	-2.55
3	2.50	84.00	84.98	-1.17
4	3.00	93.00	95.34	-2.51
5	4.00	113.0	111.3	1.47
6	5.00	129.0	122.0	5.38

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
7	6.00	137.0	128.5	6.14
8	8.00	136.0	132.7	2.37
9	10.00	136.0	129.7	4.58
10	12.00	129.0	123.3	4.39
11	15.00	113.0	111.8	0.984
12	20.00	88.00	95.15	-8.13
13	25.00	80.00	83.82	-4.77
14	30.00	76.90	76.79	0.135
15	25.00	79.20	76.30	3.65
16	30.00	70.00	69.90	0.135
17	40.00	64.00	63.59	0.626
18	50.00	61.70	61.04	1.05
19	60.00	61.00	59.84	1.88

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.50				
P 2	0.01	0.84			
P 3	0.01	-0.01	0.99		
T 1	-0.48	-0.07	0.00	0.48	
T 2	-0.04	0.22	0.04	0.07	0.62
	P 1	P 2	P 3	T 1	T 2

* *

DATA SET: BIES15V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 15
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 710.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.271 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			710.0		
1	33.62	0.406	709.5	0.0121	13.68
2	182.6	6.41	703.1	0.0351	1172.0
3	70.61				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	2.488	33.627	71.597
	2	160.217	182.647	208.387
	3	62.006	70.618	75.205
THICK	1	0.032	0.407	0.943
	2	5.144	6.417	8.516
DEPTH	1	0.032	0.407	0.943
	2	5.614	6.824	8.882

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	77.00	72.74	5.52
2	2.00	86.00	86.00	-0.00635
3	2.50	96.00	96.55	-0.573
4	3.00	102.0	105.0	-2.95
5	4.00	111.0	117.3	-5.71
6	5.00	124.0	125.3	-1.05

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
7	6.00	127.0	130.2	-2.52
8	8.00	134.0	133.8	0.125
9	10.00	135.0	132.2	2.00
10	12.00	134.0	127.9	4.54
11	15.00	125.0	119.0	4.76
12	20.00	106.0	104.0	1.84
13	25.00	95.00	92.25	2.89
14	30.00	77.80	84.00	-7.97
15	25.00	98.00	100.9	-2.97
16	30.00	85.10	91.88	-7.97
17	40.00	77.00	81.74	-6.16
18	50.00	77.00	77.11	-0.143
19	60.00	78.99	74.81	5.28

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	T 1	T 2
P 1	0.51				
P 2	0.00	0.97			
P 3	0.01	-0.01	0.97		
T 1	-0.48	-0.03	-0.01	0.46	
T 2	-0.01	0.05	0.05	0.05	0.86

*

*

DATA SET: BIES18V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 18
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 712.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.299 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			712.0		
1	35.40	1.13	710.8	0.0319	40.01
2	272.2	2.63	708.2	0.00969	718.0
3	86.28	8.44	699.7	0.0978	728.7
4	46.31				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	19.566	35.405	44.547
	2	185.764	272.221	584.578
	3	51.855	86.284	127.195
	4	39.908	46.315	50.820
THICK	1	0.539	1.130	1.571
	2	1.468	2.638	5.829
	3	3.132	8.445	15.967
DEPTH	1	0.539	1.130	1.571
	2	2.702	3.768	6.908
	3	7.262	12.213	19.520

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	39.00	38.45	1.38
2	2.00	44.00	45.34	-3.06

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	52.00	52.53	-1.02
4	3.00	59.00	59.37	-0.637
5	4.00	72.00	71.18	1.12
6	5.00	84.00	80.34	4.35
7	6.00	89.00	87.14	2.08
8	8.00	90.00	95.22	-5.80
9	10.00	95.00	98.11	-3.28
10	12.00	108.0	97.78	9.46
11	15.00	98.00	93.95	4.12
12	20.00	82.00	84.35	-2.87
13	25.00	72.00	74.76	-3.83
14	30.00	65.50	66.69	-1.82
15	25.00	85.10	89.37	-5.01
16	30.00	78.30	79.72	-1.82
17	40.00	67.50	66.35	1.70
18	50.00	63.80	58.71	7.97
19	60.00	55.90	54.38	2.70
20	80.00	50.00	50.32	-0.648
21	100.0	45.60	48.67	-6.74

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.86						
P 2	-0.05	0.56					
P 3	0.04	0.17	0.43				
P 4	0.00	-0.01	0.00	0.98			
T 1	-0.18	-0.16	0.10	0.00	0.74		
T 2	0.00	0.34	0.27	0.00	0.04	0.30	
T 3	0.03	-0.06	0.26	0.06	0.04	0.07	0.34
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES181V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 18-1
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 712.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.738 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			712.0		
1	35.99	0.675	711.3	0.0187	24.29
2	342.6	2.25	709.0	0.00659	773.9
3	147.7	7.55	701.5	0.0511	1116.2
4	69.09				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	3.416	35.992	55.567
	2	247.617	342.652	588.025
	3	97.680	147.730	192.673
	4	59.517	69.100	74.068
THICK	1	0.058	0.675	1.105
	2	1.355	2.259	4.854
	3	4.526	7.556	13.418
DEPTH	1	0.058	0.675	1.105
	2	2.037	2.934	5.519
	3	7.652	10.490	16.151

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	56.72	57.06	-0.611
2	2.00	67.40	70.64	-4.81

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	82.33	82.79	-0.564
4	3.00	94.92	93.39	1.60
5	4.00	113.7	110.3	2.91
6	5.00	128.8	122.6	4.84
7	6.00	134.8	131.2	2.66
8	8.00	141.1	140.2	0.594
9	10.00	135.8	142.3	-4.74
10	12.00	140.3	140.4	-0.104
11	15.00	137.8	133.7	2.90
12	20.00	112.7	119.5	-6.06
13	15.00	155.3	154.3	0.624
14	20.00	130.0	137.8	-6.06
15	25.00	123.2	122.2	0.730
16	30.00	112.6	109.5	2.75
17	40.00	97.48	92.20	5.40
18	50.00	80.73	82.66	-2.39
19	40.00	102.0	93.93	7.90
20	50.00	82.24	84.21	-2.39
21	60.00	77.66	78.85	-1.53
22	80.00	74.34	73.94	0.531
23	100.0	68.65	71.97	-4.84

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	T 1	T 2	T 3
P 1	0.57						
P 2	-0.02	0.60					
P 3	0.00	0.19	0.52				
P 4	0.00	-0.01	-0.01	0.98			
T 1	-0.45	-0.13	0.06	0.00	0.49		
T 2	-0.02	0.26	0.28	0.00	0.02	0.20	
T 3	0.03	-0.10	0.26	0.05	0.03	0.08	0.43

* *

DATA SET: BIES19V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 19
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 710.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.246 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			710.0		
1	20.91	0.727	709.2	0.0347	15.21
2	357.5	1.47	707.7	0.00412	526.4
3	129.6	18.22	689.5	0.140	2362.5
4	49.47				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	8.185	20.910	32.757
	2	207.360	357.553	734.460
	3	97.680	129.651	155.967
	4	38.225	49.475	56.983
THICK	1	0.254	0.728	1.219
	2	0.572	1.472	2.781
	3	13.228	18.222	31.813
DEPTH	1	0.254	0.728	1.219
	2	1.356	2.200	3.473
	3	15.200	20.422	34.704

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	39.00	38.92	0.200
2	2.00	48.00	49.05	-2.18

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA*	SYNTHETIC	DIFFERENCE (percent)
3	2.50	59.00	58.49	0.850
4	3.00	67.00	67.06	-0.0923
5	4.00	83.00	81.63	1.64
6	5.00	96.00	93.23	2.87
7	6.00	104.0	102.4	1.53
8	8.00	113.0	115.1	-1.93
9	10.00	119.0	122.7	-3.18
10	12.00	124.0	127.0	-2.43
11	15.00	127.0	129.4	-1.93
12	20.00	140.0	127.9	8.58
13	25.00	123.0	123.2	-0.209
14	30.00	113.0	117.1	-3.67
15	40.00	102.0	103.9	-1.89
16	50.00	89.00	91.73	-3.07
17	60.00	82.00	81.69	0.374
18	80.00	72.00	68.08	5.43
19	100.0	58.40	60.63	-3.82

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.89						
P 2	-0.06	0.62					
P 3	0.01	0.00	0.97				
P 4	0.00	0.01	-0.01	0.99			
T 1	-0.12	-0.10	0.02	0.01	0.86		
T 2	0.02	0.44	0.05	0.01	0.05	0.37	
T 3	-0.01	-0.03	0.03	0.02	-0.02	-0.02	0.94
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES191V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 19-1
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 711.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.566 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			711.0		
1	26.41	0.654	710.3	0.0247	17.27
2	221.1	13.32	697.0	0.0602	2947.6
3	57.17				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	7.774	26.414	41.599
	2	190.631	221.144	259.493
	3	44.649	57.179	62.061
THICK	1	0.182	0.654	1.071
	2	10.809	13.329	19.803
DEPTH	1	0.182	0.654	1.071
	2	11.555	13.983	20.448

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	47.66	49.89	-4.68
2	2.00	61.27	61.83	-0.925
3	2.50	76.59	72.70	5.06
4	3.00	80.99	82.48	-1.84
5	4.00	107.0	99.22	7.26
6	5.00	113.2	112.9	0.247

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
7	6.00	126.5	124.1	1.82
8	8.00	143.5	141.2	1.60
9	10.00	158.2	152.6	3.49
10	12.00	165.0	160.0	2.99
11	15.00	162.7	165.5	-1.72
12	20.00	153.8	164.5	-6.99
13	25.00	160.3	156.3	2.49
14	30.00	145.5	144.9	0.355
15	40.00	121.3	121.0	0.192
16	50.00	107.0	101.5	5.11
17	60.00	93.12	87.59	5.93
18	80.00	72.00	72.01	-0.0163
19	100.0	58.40	65.20	-11.65

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.57				
P 2	-0.03	0.91			
P 3	0.00	-0.02	0.97		
T 1	-0.45	-0.07	0.00	0.50	
T 2	0.03	0.12	0.05	0.08	0.81
	P 1	P 2	P 3	T 1	T 2

* *

DATA SET: BIES22V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 22
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 711.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.993 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			711.0		
1	25.62	0.530	710.4	0.0207	13.58
2	715.3	2.18	708.2	0.00306	1565.7
3	90.94	7.26	701.0	0.0798	660.5
4	80.62				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	5.838	25.623	46.674
	2	447.388	715.370	1675.408
	3	59.069	90.948	146.164
	4	74.455	80.620	87.832
THICK	1	0.122	0.530	0.981
	2	0.920	2.189	3.996
	3	1.458	7.263	17.428
DEPTH	1	0.122	0.530	0.981
	2	1.454	2.719	4.525
	3	4.241	9.982	20.112

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	53.70	55.72	-3.77
2	2.00	66.80	71.34	-6.81

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	83.00	85.64	-3.18
4	3.00	98.80	98.54	0.253
5	4.00	123.7	120.3	2.71
6	5.00	145.7	137.1	5.83
7	6.00	158.8	149.7	5.72
8	8.00	171.6	164.3	4.24
9	10.00	174.0	168.8	2.95
10	12.00	167.3	167.0	0.177
11	15.00	147.8	157.7	-6.74
12	20.00	128.3	137.1	-6.87
13	25.00	121.0	118.4	2.13
14	30.00	104.3	104.2	0.0867
15	40.00	89.10	87.23	2.09
16	50.00	80.20	79.22	1.21
17	50.00	94.00	92.85	1.21
18	60.00	87.20	88.25	-1.21
19	80.00	87.40	84.38	3.45
20	100.0	79.20	82.87	-4.64

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.51						
P 2	0.00	0.51					
P 3	0.01	0.11	0.41				
P 4	0.01	-0.01	0.05	0.98			
T 1	-0.49	-0.06	0.04	0.01	0.50		
T 2	-0.03	0.44	0.20	-0.01	0.00	0.42	
T 3	0.01	-0.01	0.13	0.03	0.01	0.01	0.05
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES221V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 22-1
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 713.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.066 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			713.0		
1	24.36	0.606	712.3	0.0248	14.77
2	493.3	3.09	709.3	0.00627	1525.6
3	213.2	8.84	700.4	0.0414	1885.5
4	60.25				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	10.304	24.370	40.066
	2	363.632	493.348	762.078
	3	138.847	213.272	321.222
	4	54.907	60.258	66.130
THICK	1	0.246	0.606	1.027
	2	1.575	3.092	4.950
	3	5.809	8.841	14.938
DEPTH	1	0.246	0.606	1.027
	2	2.221	3.699	5.438
	3	9.280	12.540	18.056

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	53.70	54.22	-0.980
2	2.00	66.80	69.38	-3.87

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	83.00	83.60	-0.724
4	3.00	98.80	96.77	2.04
5	4.00	123.7	120.1	2.86
6	5.00	145.7	139.8	4.00
7	6.00	158.8	156.3	1.56
8	8.00	171.6	180.8	-5.39
9	10.00	189.7	196.4	-3.57
10	12.00	209.1	205.3	1.79
11	15.00	215.0	209.6	2.51
12	20.00	206.2	201.9	2.04
13	25.00	181.8	185.5	-2.01
14	30.00	165.0	166.6	-0.982
15	40.00	130.1	131.9	-1.45
16	50.00	113.2	106.9	5.55
17	60.00	85.64	90.54	-5.72
18	80.00	74.56	73.95	0.805
19	100.0	67.57	67.43	0.195

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	T 1	T 2	T 3
P 1	0.65						
P 2	-0.09	0.85					
P 3	0.02	0.00	0.77				
P 4	0.01	0.00	-0.01	1.00			
T 1	-0.37	-0.11	0.02	0.01	0.61		
T 2	0.04	0.23	0.28	0.01	0.07	0.27	
T 3	-0.01	-0.07	0.08	0.01	-0.02	0.04	0.90

* *

DATA SET: BIES281V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 28-1
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 715.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 2.962 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			715.0		
1	93.27	0.488	714.5	0.00524	45.56
2	363.9	0.676	713.8	0.00186	246.3
3	1051.1	10.51	703.3	0.0100	11049.3
4	168.4	18.95	684.3	0.112	3194.4
5	15.59				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	51.603	93.276	141.422
	2	230.434	363.971	551.370
	3	948.392	1051.143	1218.614
	4	123.771	168.485	332.316
	5	9.913	15.594	20.922
THICK	1	0.247	0.489	0.854
	2	0.418	0.677	1.036
	3	8.222	10.512	12.004
	4	13.798	18.960	24.154
DEPTH	1	0.247	0.489	0.854
	2	0.934	1.165	1.497
	3	9.486	11.677	13.120
	4	25.394	30.637	35.267

No.	SPACING	RHO-A (ohm-m)	DIFFERENCE

* *

	(m)	DATA	SYNTHETIC	(percent)
1	1.50	164.8	171.1	-3.76
2	2.00	204.5	211.1	-3.23
3	2.50	248.7	248.3	0.145
4	3.00	288.0	282.7	1.82
5	4.00	353.8	343.6	2.90
6	5.00	410.7	395.0	3.84
7	6.00	467.1	438.2	6.18
8	8.00	523.9	504.3	3.72
9	10.00	544.5	548.6	-0.738
10	12.00	554.0	575.5	-3.87
11	15.00	569.2	590.9	-3.79
12	20.00	540.0	570.7	-5.69
13	25.00	520.9	518.5	0.455
14	30.00	457.6	453.6	0.871
15	25.00	567.2	568.7	-0.269
16	30.00	501.8	497.5	0.871
17	40.00	360.8	356.9	1.09
18	60.00	166.8	166.4	0.297
19	80.00	78.69	78.18	0.637
20	60.00	175.3	173.5	1.06
21	80.00	82.06	81.53	0.637
22	100.0	41.31	43.02	-4.13

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.49								
P 2	0.16	0.09							
P 3	-0.02	0.03	0.87						
P 4	0.01	0.01	-0.05	0.21					
P 5	0.00	0.00	0.01	-0.01	0.28				
T 1	-0.43	-0.18	-0.04	0.00	0.00	0.42			
T 2	-0.05	-0.08	-0.09	0.01	-0.01	0.12	0.13		
T 3	0.01	-0.01	0.16	0.25	-0.04	0.04	0.12	0.73	
T 4	0.01	0.01	-0.07	0.21	0.30	-0.01	-0.03	0.08	0.67
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

*

*

DATA SET: BIES36V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 36
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 717.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 2.696 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			717.0		
1	65.67	0.580	716.4	0.00883	38.10
2	1464.8	6.23	710.1	0.00426	9132.5
3	87.94	21.95	688.2	0.249	1931.0
4	51.93				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	30.955	65.678	108.320
	2	1120.948	1464.808	2087.707
	3	62.520	87.941	132.681
	4	39.468	51.936	61.829
THICK	1	0.267	0.580	0.973
	2	4.118	6.235	8.570
	3	10.657	21.958	53.565
DEPTH	1	0.267	0.580	0.973
	2	4.821	6.815	9.071
	3	17.167	28.773	60.781

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	131.3	131.5	-0.174
2	2.00	168.2	168.9	-0.471

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	207.8	204.3	1.68
4	3.00	236.0	237.3	-0.556
5	4.00	298.1	296.7	0.458
6	5.00	354.7	347.8	1.92
7	6.00	391.7	391.3	0.0966
8	8.00	445.2	457.2	-2.71
9	10.00	493.6	498.9	-1.07
10	12.00	514.0	520.5	-1.28
11	15.00	515.7	524.6	-1.74
12	20.00	477.1	484.2	-1.50
13	25.00	434.6	417.7	3.87
14	30.00	356.7	347.4	2.60
15	40.00	243.3	230.3	5.31
16	50.00	147.6	154.6	-4.79
17	50.00	172.2	180.4	-4.79
18	60.00	127.7	128.7	-0.785
19	80.00	86.30	82.62	4.25
20	100.0	65.80	67.00	-1.82

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.58						
P 2	-0.06	0.92					
P 3	0.04	-0.06	0.77				
P 4	0.00	0.01	-0.02	0.94			
T 1	-0.43	-0.07	0.03	0.00	0.55		
T 2	0.04	0.09	0.10	-0.01	0.05	0.89	
T 3	0.04	0.02	0.27	0.18	0.04	-0.06	0.24
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES37V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 37
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 713.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.511 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			713.0		
1	28.61	1.23	711.7	0.0431	35.28
2	788.7	4.86	706.9	0.00617	3836.4
3	88.30	12.98	693.9	0.147	1146.5
4	55.06				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	20.681	28.613	34.295
	2	536.537	788.752	1823.555
	3	56.798	88.303	153.761
	4	42.327	55.067	69.876
THICK	1	0.864	1.233	1.520
	2	2.211	4.864	7.617
	3	7.161	12.984	42.859
DEPTH	1	0.864	1.233	1.520
	2	3.516	6.097	8.811
	3	13.449	19.081	48.592

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	35.10	33.89	3.42
2	2.00	39.40	40.98	-4.02

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	47.50	48.98	-3.13
4	3.00	55.80	57.26	-2.62
5	4.00	70.40	73.46	-4.35
6	5.00	86.50	88.58	-2.40
7	6.00	101.0	102.4	-1.43
8	8.00	127.9	126.4	1.15
9	10.00	149.8	145.6	2.85
10	12.00	168.3	160.5	4.63
11	15.00	186.1	175.8	5.52
12	20.00	196.3	186.9	4.76
13	25.00	193.6	185.9	3.97
14	30.00	177.1	177.7	-0.392
15	40.00	147.1	153.0	-4.02
16	50.00	122.6	127.6	-4.13
17	30.00	196.2	198.0	-0.966
18	40.00	163.7	170.4	-4.15
19	50.00	136.6	142.2	-4.13
20	60.00	120.3	118.8	1.18
21	80.00	91.00	88.45	2.80

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.84						
P 2	-0.04	0.52					
P 3	0.02	0.13	0.15				
P 4	0.02	-0.03	0.13	0.71			
T 1	-0.18	-0.08	0.05	0.03	0.79		
T 2	0.01	0.44	0.19	0.03	0.04	0.44	
T 3	0.01	0.01	0.09	0.20	0.03	0.05	0.08
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES39V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 39
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 716.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.910 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			716.0		
1	51.57	0.795	715.2	0.0154	41.02
2	399.0	11.48	703.7	0.0287	4581.6
3	86.57	4.43	699.2	0.0511	383.5
4	61.06				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	17.240	51.574	80.245
	2	335.524	399.006	481.772
	3	23.782	86.572	281.155
	4	50.720	61.064	69.964
THICK	1	0.230	0.796	1.372
	2	8.713	11.483	14.583
	3	0.942	4.430	30.700
DEPTH	1	0.230	0.796	1.372
	2	10.085	12.278	15.079
	3	13.713	16.708	41.682

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	65.50	65.89	-0.600
2	2.00	80.10	80.97	-1.09

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	98.70	95.25	3.48
4	3.00	111.3	108.3	2.66
5	4.00	130.3	131.0	-0.541
6	5.00	147.2	149.7	-1.71
7	6.00	160.2	165.2	-3.13
8	8.00	185.1	188.5	-1.84
9	10.00	203.1	203.8	-0.367
10	12.00	213.2	213.0	0.0561
11	15.00	214.8	218.3	-1.64
12	20.00	207.0	211.7	-2.30
13	25.00	207.5	194.7	6.16
14	30.00	186.6	173.7	6.87
15	30.00	210.3	195.8	6.87
16	40.00	138.8	150.5	-8.47
17	40.00	156.3	169.5	-8.47
18	50.00	124.0	131.2	-5.84
19	60.00	110.9	105.8	4.54
20	80.00	87.10	80.13	7.99
21	100.0	66.10	70.37	-6.46

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.91						
P 2	-0.01	0.99					
P 3	-0.01	-0.01	0.03				
P 4	0.00	0.00	0.00	1.00			
T 1	-0.10	-0.02	-0.01	0.00	0.89		
T 2	0.02	0.01	0.14	0.00	0.02	0.96	
T 3	-0.01	-0.01	0.02	0.01	-0.02	0.06	0.03
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES40V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 40
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 717.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 1.566 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			717.5		
1	84.24	0.883	716.6	0.0104	74.46
2	925.1	10.26	706.3	0.0111	9501.2
3	117.4	9.87	696.4	0.0841	1159.8
4	60.42				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	65.407	84.241	102.861
	2	856.345	925.164	1012.718
	3	61.283	117.441	193.210
	4	56.386	60.429	64.864
THICK	1	0.661	0.884	1.118
	2	9.015	10.270	11.517
	3	5.320	9.876	16.530
DEPTH	1	0.661	0.884	1.118
	2	10.032	11.154	12.386
	3	17.002	21.030	27.266

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	119.4	119.2	0.118
2	2.00	145.6	147.8	-1.56

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	176.7	176.3	0.221
4	3.00	204.8	203.2	0.750
5	4.00	251.5	251.9	-0.183
6	5.00	294.5	294.1	0.121
7	6.00	329.5	330.5	-0.321
8	8.00	385.7	388.5	-0.739
9	10.00	432.6	429.8	0.633
10	12.00	457.6	457.3	0.0477
11	15.00	474.7	477.8	-0.670
12	20.00	480.6	472.4	1.70
13	25.00	446.7	437.4	2.09
14	30.00	383.7	389.2	-1.44
15	40.00	293.7	289.3	1.52
16	50.00	211.0	209.0	0.923
17	40.00	326.2	319.9	1.96
18	50.00	233.3	231.1	0.923
19	60.00	160.8	169.4	-5.38
20	80.00	103.8	104.4	-0.592
21	100.0	80.30	79.57	0.899

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	T 1	T 2	T 3
P 1	0.93						
P 2	-0.02	0.98					
P 3	-0.01	-0.03	0.09				
P 4	0.00	0.00	0.01	0.98			
T 1	-0.08	-0.03	-0.02	0.00	0.91		
T 2	0.02	0.02	0.16	0.00	0.03	0.95	
T 3	-0.02	-0.04	0.10	0.08	-0.03	0.07	0.16

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DATA SET: BIES411V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 41-1
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 717.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 2.547 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			717.0		
1	114.4	1.69	715.3	0.0148	194.3
2	629.6	0.903	714.3	0.00144	569.0
3	1832.9	6.39	708.0	0.00349	11718.3
4	116.6	22.34	685.6	0.191	2606.8
5	53.83				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	102.314	114.471	125.050
	2	334.645	629.667	1392.686
	3	1291.661	1832.932	3388.056
	4	72.221	116.666	204.937
	5	36.023	53.836	69.912
THICK	1	1.423	1.698	1.952
	2	0.364	0.904	1.965
	3	3.515	6.393	9.395
	4	10.604	22.345	45.793
DEPTH	1	1.423	1.698	1.952
	2	2.198	2.602	3.555
	3	6.290	8.995	11.891
	4	19.830	31.339	54.572

No.	SPACING	RHO-A (ohm-m)	DIFFERENCE

* *

	(m)	DATA	SYNTHETIC	(percent)
1	1.50	113.2	112.4	0.670
2	2.00	121.1	124.6	-2.93
3	2.50	140.1	140.2	-0.100
4	3.00	165.8	157.9	4.77
5	4.00	199.2	196.0	1.58
6	5.00	235.8	233.8	0.818
7	6.00	266.3	269.5	-1.18
8	8.00	325.2	332.4	-2.18
9	10.00	376.7	383.6	-1.80
10	6.00	310.8	328.2	-5.56
11	8.00	391.1	404.7	-3.49
12	10.00	458.7	467.0	-1.80
13	12.00	526.2	515.9	1.94
14	15.00	584.7	566.7	3.06
15	20.00	631.4	603.2	4.45
16	25.00	616.2	597.3	3.07
17	30.00	571.2	565.7	0.954
18	40.00	470.3	469.4	0.208
19	50.00	363.2	369.1	-1.63
20	40.00	442.5	438.2	0.955
21	50.00	339.1	344.6	-1.63
22	60.00	257.2	265.8	-3.32
23	80.00	162.3	161.5	0.513
24	100.0	108.8	108.6	0.119

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.93								
P 2	0.00	0.01							
P 3	-0.02	0.03	0.53						
P 4	0.02	0.00	0.05	0.17					
P 5	0.01	0.00	-0.04	0.19	0.54				
T 1	-0.08	-0.09	-0.08	0.04	0.01	0.88			
T 2	0.01	-0.01	0.01	0.02	0.00	0.08	0.01		
T 3	0.02	0.02	0.45	0.14	0.01	0.06	0.04	0.49	
T 4	0.01	0.00	-0.02	0.14	0.29	0.01	0.00	0.03	0.18
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

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DATA SET: BIES58V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 58
COUNTY: Ostallgaeu AZIMUTH: 90
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 715.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.950 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			715.0		
1	135.1	1.62	713.3	0.0120	220.2
2	354.4	4.27	709.0	0.0120	1514.5
3	52.61	5.92	703.1	0.112	311.8
4	137.5	6.61	696.5	0.0480	909.3
5	49.69				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	115.596	135.142	152.678
	2	267.472	354.497	485.429
	3	27.792	52.615	68.388
	4	74.457	137.537	206.524
	5	41.567	49.691	56.016
THICK	1	1.135	1.630	2.351
	2	2.879	4.272	6.641
	3	4.340	5.927	11.443
	4	1.351	6.612	11.616
DEPTH	1	1.135	1.630	2.351
	2	4.966	5.902	7.952
	3	10.199	11.829	17.437
	4	14.470	18.441	23.779

No. SPACING RHO-A (ohm-m) DIFFERENCE

* *

	(m)	DATA	SYNTHETIC	(percent)
1	1.50	109.1	112.3	-3.02
2	2.00	116.8	119.0	-1.96
3	2.50	128.7	126.9	1.32
4	3.00	132.5	135.1	-1.99
5	4.00	139.8	149.7	-7.10
6	5.00	157.3	160.3	-1.95
7	6.00	167.1	166.8	0.174
8	8.00	178.8	169.4	5.23
9	10.00	177.8	163.0	8.29
10	12.00	161.1	152.0	5.60
11	15.00	131.5	133.2	-1.32
12	20.00	107.4	106.0	1.29
13	25.00	85.70	87.58	-2.19
14	30.00	73.10	75.99	-3.95
15	25.00	110.1	112.2	-1.96
16	30.00	93.70	97.40	-3.95
17	40.00	78.90	81.23	-2.96
18	50.00	74.00	72.41	2.14
19	60.00	69.70	66.54	4.52
20	80.00	60.60	59.42	1.94
21	100.0	48.30	55.70	-15.32

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.98								
P 2	-0.01	0.76							
P 3	0.01	0.02	0.12						
P 4	0.01	-0.07	0.11	0.33					
P 5	0.00	0.00	-0.03	0.06	0.97				
T 1	-0.05	-0.19	0.08	0.01	0.00	0.71			
T 2	0.02	0.30	0.20	0.15	0.00	0.24	0.52		
T 3	0.00	-0.02	-0.02	0.08	0.05	-0.02	-0.02	0.04	
T 4	0.00	-0.04	0.05	0.22	0.06	0.00	0.07	0.06	0.15

* *

DATA SET: BIES59V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 59
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 715.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.731 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			715.0		
1	30.73	0.779	714.2	0.0253	23.94
2	990.5	3.67	710.5	0.00371	3642.6
3	41.01	6.00	704.5	0.146	246.4
4	87.75	7.67	696.8	0.0874	673.2
5	40.97				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	6.962	30.735	43.784
	2	626.617	990.546	2262.806
	3	16.536	41.014	76.276
	4	49.136	87.756	230.634
	5	21.954	40.972	46.818
THICK	1	0.170	0.779	1.119
	2	1.463	3.677	5.756
	3	2.046	6.010	16.353
	4	5.202	7.671	47.219
DEPTH	1	0.170	0.779	1.119
	2	2.282	4.457	6.487
	3	6.286	10.466	21.021
	4	13.996	18.138	57.376

No.	SPACING	RHO-A (ohm-m)	DIFFERENCE

* *

	(m)	DATA	SYNTHETIC	(percent)
1	1.50	48.20	48.41	-0.452
2	2.00	59.80	62.15	-3.92
3	2.50	73.30	75.69	-3.26
4	3.00	86.40	88.64	-2.59
5	4.00	109.5	112.3	-2.64
6	5.00	132.8	133.2	-0.307
7	6.00	149.5	151.1	-1.09
8	8.00	178.8	178.8	-0.0542
9	10.00	203.8	197.1	3.28
10	12.00	216.3	207.4	4.07
11	15.00	223.3	211.8	5.11
12	20.00	209.5	200.5	4.28
13	25.00	180.8	178.3	1.33
14	30.00	149.8	153.9	-2.74
15	25.00	211.3	208.7	1.20
16	30.00	175.3	180.1	-2.74
17	40.00	120.6	130.7	-8.38
18	50.00	85.10	97.32	-14.36
19	60.00	71.30	76.76	-7.67
20	80.00	55.40	56.96	-2.83
21	100.0	48.00	49.40	-2.91

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.59								
P 2	-0.02	0.53							
P 3	0.01	0.06	0.08						
P 4	0.03	0.00	0.09	0.36					
P 5	0.01	0.00	-0.09	0.17	0.78				
T 1	-0.42	-0.07	0.03	0.04	0.00	0.56			
T 2	-0.01	0.46	0.10	0.06	0.00	0.03	0.48		
T 3	-0.01	-0.03	-0.05	-0.03	0.11	-0.02	-0.05	0.04	
T 4	0.02	-0.01	0.04	0.26	0.20	0.02	0.03	0.00	0.20
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

*

*

DATA SET: BIES60V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 60
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 718.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 2.469 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			718.5		
1	105.0	0.764	717.7	0.00727	80.24
2	1003.2	3.99	713.7	0.00398	4006.3
3	96.79	23.36	690.3	0.241	2261.3
4	40.27				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	24.867	105.031	142.678
	2	765.372	1003.233	1466.746
	3	82.574	96.795	159.170
	4	33.111	40.280	49.861
THICK	1	0.171	0.764	1.081
	2	2.572	3.993	5.444
	3	13.258	23.362	32.080
DEPTH	1	0.171	0.764	1.081
	2	3.411	4.757	6.160
	3	16.889	28.120	36.990

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	158.7	158.0	0.431
2	2.00	194.5	195.5	-0.523

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	230.3	230.2	0.00280
4	3.00	261.2	261.3	-0.0631
5	4.00	313.7	312.4	0.392
6	5.00	356.7	350.1	1.82
7	6.00	386.2	376.3	2.55
8	8.00	407.0	400.7	1.54
9	10.00	400.2	398.4	0.470
10	12.00	356.6	379.7	-6.49
11	15.00	322.2	336.9	-4.58
12	20.00	253.3	259.8	-2.58
13	25.00	200.5	197.1	1.69
14	30.00	157.0	152.5	2.81
15	25.00	228.0	223.2	2.09
16	30.00	177.8	172.7	2.81
17	40.00	117.9	115.9	1.66
18	50.00	86.90	89.15	-2.59
19	60.00	72.20	74.56	-3.27
20	80.00	59.70	59.15	0.913
21	100.0	52.00	51.50	0.948

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.58						
P 2	-0.01	0.64					
P 3	0.03	-0.04	0.81				
P 4	-0.01	0.01	-0.05	0.71			
T 1	-0.43	-0.11	0.04	0.00	0.51		
T 2	0.00	0.38	0.12	0.00	0.09	0.55	
T 3	-0.01	0.00	0.22	0.34	-0.02	-0.07	0.39
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES61V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 61
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 721.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 6.152 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			721.5		
1	180.4	0.772	720.7	0.00428	139.4
2	864.1	6.88	713.8	0.00796	5946.3
3	86.62	15.52	698.3	0.179	1344.9
4	77.93	8.89	689.4	0.114	693.1
5	21.90				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	37.541	180.477	279.272
	2	718.118	864.195	1226.216
	3	57.123	86.629	174.980
	4	34.427	77.931	139.331
	5	8.977	21.901	29.110
THICK	1	0.131	0.773	1.377
	2	4.333	6.881	8.590
	3	11.271	15.525	25.783
	4	4.507	8.894	18.864
DEPTH	1	0.131	0.773	1.377
	2	5.352	7.653	9.267
	3	18.757	23.178	33.532
	4	26.967	32.073	42.799

No.	SPACING	RHO-A (ohm-m)	DIFFERENCE

* *

	(m)	DATA	SYNTHETIC	(percent)
1	1.50	235.0	233.2	0.755
2	2.00	265.2	278.0	-4.83
3	2.50	318.7	318.2	0.147
4	3.00	358.6	352.9	1.56
5	4.00	417.7	407.9	2.35
6	5.00	454.7	447.0	1.70
7	6.00	486.2	473.5	2.60
8	8.00	504.0	497.8	1.21
9	10.00	493.7	494.7	-0.195
10	12.00	467.5	473.7	-1.33
11	15.00	408.2	423.7	-3.81
12	20.00	306.1	327.6	-7.03
13	25.00	240.6	243.6	-1.27
14	30.00	186.8	180.6	3.30
15	40.00	108.0	105.9	1.90
16	30.00	219.1	213.5	2.52
17	40.00	127.7	125.2	1.90
18	50.00	78.10	83.36	-6.73
19	60.00	64.40	61.80	4.03
20	80.00	33.10	41.34	-24.90
21	100.0	35.00	32.32	7.63

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.64								
P 2	-0.03	0.87							
P 3	0.02	-0.08	0.59						
P 4	0.00	-0.01	0.12	0.16					
P 5	0.00	0.00	-0.16	0.11	0.41				
T 1	-0.40	-0.11	-0.01	-0.01	0.00	0.46			
T 2	0.03	0.15	0.19	-0.01	0.03	0.13	0.79		
T 3	0.00	-0.01	0.10	0.27	0.28	-0.01	-0.01	0.49	
T 4	0.00	0.00	0.05	0.14	0.14	0.00	-0.01	0.25	0.13
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

* *

DATA SET: BIES62V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 62
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 724.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.888 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			724.0		
1	124.7	0.692	723.3	0.00555	86.36
2	543.2	5.77	717.5	0.0106	3138.8
3	95.84	10.61	706.9	0.110	1017.7
4	33.35				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	23.823	124.752	189.162
	2	464.016	543.208	704.024
	3	57.412	95.849	238.652
	4	21.136	33.358	40.204
THICK	1	0.110	0.692	1.185
	2	3.898	5.778	7.208
	3	5.651	10.618	23.752
DEPTH	1	0.110	0.692	1.185
	2	4.588	6.471	7.903
	3	11.964	17.089	29.814

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	184.5	186.5	-1.10
2	2.00	227.8	221.0	2.98

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	250.6	250.4	0.0447
4	3.00	281.7	275.0	2.39
5	4.00	305.7	311.8	-2.01
6	5.00	332.1	335.7	-1.10
7	6.00	343.5	349.7	-1.83
8	8.00	348.7	356.3	-2.18
9	10.00	342.7	343.8	-0.323
10	12.00	321.2	320.5	0.214
11	15.00	279.2	277.2	0.695
12	20.00	207.7	206.8	0.419
13	25.00	155.8	152.0	2.38
14	30.00	114.9	113.7	1.01
15	40.00	65.40	70.68	-8.08
16	30.00	125.4	121.5	3.05
17	40.00	69.90	75.55	-8.08
18	60.00	52.50	45.39	13.53
19	80.00	35.50	38.19	-7.58

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.61						
P 2	-0.02	0.88					
P 3	0.02	-0.07	0.33				
P 4	0.00	0.01	-0.04	0.92			
T 1	-0.43	-0.10	0.00	0.00	0.44		
T 2	0.02	0.16	0.29	-0.01	0.12	0.71	
T 3	0.01	-0.06	0.27	0.15	-0.02	0.05	0.50
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES63V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 63
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 725.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 7.199 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			725.0		
1	102.8	0.650	724.3	0.00633	66.93
2	1317.7	2.84	721.5	0.00216	3748.1
3	80.03	6.09	715.4	0.0761	487.8
4	26.73				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	6.726	102.824	184.202
	2	825.829	1317.715	2478.565
	3	32.002	80.033	204.167
	4	23.503	26.739	30.025
THICK	1	0.044	0.651	1.223
	2	1.516	2.844	4.508
	3	2.859	6.095	12.379
DEPTH	1	0.044	0.651	1.223
	2	2.230	3.495	5.104
	3	6.791	9.591	15.510

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	161.0	170.5	-5.92
2	2.00	214.1	213.2	0.390

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	244.8	251.4	-2.72
4	3.00	279.7	284.6	-1.74
5	4.00	330.2	336.7	-1.98
6	5.00	370.7	371.6	-0.259
7	6.00	397.2	392.0	1.32
8	8.00	408.0	399.8	2.00
9	10.00	400.2	378.8	5.33
10	12.00	362.0	342.9	5.26
11	15.00	300.2	280.0	6.71
12	20.00	188.8	185.4	1.78
13	25.00	116.4	119.2	-2.46
14	30.00	72.50	78.37	-8.09
15	25.00	140.1	139.3	0.538
16	30.00	84.70	91.55	-8.09
17	40.00	45.10	48.07	-6.60
18	50.00	42.40	34.39	18.86
19	60.00	31.00	29.96	3.34
20	80.00	24.80	27.59	-11.28
21	80.00	25.40	28.26	-11.28
22	100.0	29.70	27.61	7.01

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.53						
P 2	0.01	0.56					
P 3	0.01	0.03	0.06				
P 4	0.01	-0.01	0.00	0.97			
T 1	-0.47	-0.08	0.04	0.01	0.50		
T 2	-0.03	0.43	0.12	0.00	0.07	0.53	
T 3	0.05	-0.05	0.11	0.06	0.07	0.12	0.31
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES631V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 63-1
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 723.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 7.031 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			723.5		
1	149.2	0.453	723.0	0.00304	67.74
2	1364.9	2.84	720.2	0.00208	3879.7
3	141.7	7.80	712.3	0.0550	1106.4
4	19.79				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	109.805	149.288	208.865
	2	1129.800	1364.938	2101.085
	3	68.585	141.710	191.921
	4	15.875	19.792	26.159
THICK	1	0.328	0.454	0.655
	2	2.056	2.842	3.703
	3	4.054	7.808	8.744
DEPTH	1	0.328	0.454	0.655
	2	2.538	3.296	4.141
	3	7.722	11.104	12.436

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	262.2	266.1	-1.51
2	2.00	314.6	324.0	-3.00

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	365.0	370.9	-1.63
4	3.00	405.3	408.0	-0.652
5	4.00	451.8	456.9	-1.11
6	5.00	486.8	478.6	1.70
7	6.00	477.6	480.1	-0.529
8	8.00	452.7	445.3	1.65
9	10.00	401.8	386.7	3.77
10	12.00	351.1	323.5	7.84
11	15.00	265.2	238.7	10.02
12	20.00	138.3	139.3	-0.753
13	15.00	332.1	292.0	12.05
14	20.00	169.2	170.4	-0.753
15	25.00	92.09	101.3	-10.08
16	30.00	53.77	63.81	-18.69
17	40.00	30.82	32.53	-5.57
18	40.00	35.22	37.18	-5.57
19	50.00	28.41	26.43	6.95

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.39						
P 2	0.06	0.46					
P 3	-0.05	0.10	0.10				
P 4	0.00	-0.03	0.05	0.24			
T 1	-0.39	-0.07	0.05	0.02	0.39		
T 2	-0.08	0.40	0.15	0.02	0.08	0.44	
T 3	-0.03	0.00	0.14	0.26	0.06	0.10	0.40
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES64V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 64
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 726.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 6.606 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			726.5		
1	210.0	1.03	725.4	0.00493	217.6
2	777.9	7.82	717.6	0.0100	6087.5
3	120.3	10.44	707.1	0.0867	1256.1
4	29.07				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	110.921	210.031	281.746
	2	644.560	777.958	1028.264
	3	46.690	120.316	204.287
	4	22.617	29.079	35.948
THICK	1	0.420	1.036	1.730
	2	5.707	7.825	10.010
	3	4.251	10.440	15.987
DEPTH	1	0.420	1.036	1.730
	2	7.117	8.861	10.860
	3	14.485	19.301	24.317

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	203.0	228.0	-12.36
2	2.00	317.2	261.6	17.50

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	283.2	294.9	-4.09
4	3.00	317.0	325.3	-2.62
5	4.00	360.7	375.5	-4.11
6	5.00	406.2	412.9	-1.67
7	6.00	439.5	440.0	-0.116
8	8.00	476.0	470.0	1.25
9	10.00	497.1	476.5	4.13
10	12.00	494.6	466.7	5.63
11	15.00	443.1	432.7	2.32
12	20.00	346.7	354.2	-2.18
13	25.00	268.2	275.2	-2.60
14	30.00	198.0	208.7	-5.43
15	25.00	311.2	319.2	-2.54
16	30.00	229.6	242.0	-5.43
17	40.00	138.6	138.2	0.243
18	50.00	89.40	84.04	5.99
19	60.00	59.10	57.30	3.04
20	80.00	34.40	37.82	-9.96

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.83						
P 2	-0.03	0.88					
P 3	0.01	-0.02	0.06				
P 4	0.00	-0.02	0.01	0.90			
T 1	-0.24	-0.13	0.01	-0.02	0.57		
T 2	0.04	0.14	0.18	0.01	0.16	0.80	
T 3	0.00	-0.08	0.08	0.14	-0.03	0.15	0.20
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

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DATA SET: BIES65V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 65
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 720.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 5.509 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			720.0		
1	96.99	0.642	719.3	0.00663	62.35
2	234.1	2.82	716.5	0.0120	662.1
3	1853.1	4.68	711.8	0.00253	8674.3
4	129.2	6.63	705.2	0.0513	858.2
5	40.95	5.21	699.9	0.127	213.7
6	107.2	9.60	690.3	0.0896	1030.3
7	66.95				

ALL PARAMETERS ARE FREE

No.	SPACING (m)	RHO-A (ohm-m) DATA	RHO-A (ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	1.50	136.5	138.9	-1.79
2	2.00	161.1	158.5	1.55
3	2.50	177.3	176.1	0.637
4	3.00	194.0	192.3	0.850
5	4.00	224.8	222.8	0.862
6	5.00	253.3	252.5	0.290
7	6.00	275.2	281.6	-2.35
8	8.00	322.7	335.8	-4.03
9	10.00	368.2	381.2	-3.53
10	12.00	404.0	416.2	-3.03
11	15.00	441.7	450.3	-1.94
12	20.00	473.7	467.4	1.32
13	25.00	485.5	451.6	6.98
14	30.00	459.0	417.7	8.98
15	40.00	371.0	332.9	10.25
16	50.00	224.3	255.1	-13.75

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No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
17	60.00	182.0	195.7	-7.54
18	80.00	125.0	126.0	-0.845
19	100.0	99.22	95.64	3.60

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.69											
P 2	0.05	0.71										
P 3	-0.01	0.01	0.51									
P 4	0.00	0.01	0.06	0.01								
P 5	0.00	0.01	0.02	0.01	0.02							
P 6	0.00	0.02	0.01	0.01	0.04	0.11						
P 7	0.00	0.02	-0.01	0.00	0.05	0.24	0.76					
T 1	-0.35	-0.22	0.01	0.00	0.00	0.01	0.01	0.26				
T 2	0.10	-0.18	-0.06	0.03	0.04	0.05	0.02	0.00	0.78			
T 3	0.00	0.01	0.48	0.07	0.03	0.03	0.01	0.01	0.07	0.48		
T 4	0.00	0.01	0.02	0.01	0.01	0.03	0.05	0.00	0.03	0.03	0.01	
T 5	0.00	-0.01	-0.01	-0.01	-0.01	-0.02	0.00	0.00	-0.02	-0.02	-0.01	0
T 6	0.00	0.01	0.00	0.01	0.02	0.06	0.15	0.00	0.02	0.01	0.02	-0
	P 1	P 2	P 3	P 4	P 5	P 6	P 7	T 1	T 2	T 3	T 4	

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*

DATA SET: BIES66V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 66
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 720.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.010 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			720.0		
1	120.3	0.818	719.1	0.00680	98.45
2	396.6	10.17	709.0	0.0256	4036.1
3	354.0	22.98	686.0	0.0649	8137.6
4	175.4	7.50	678.5	0.0428	1317.0
5	25.90				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	48.100	120.314	166.082
	2	359.265	396.699	442.657
	3	286.229	354.018	418.982
	4	89.268	175.419	340.275
	5	21.462	25.908	30.636
THICK	1	0.258	0.818	1.319
	2	7.541	10.174	14.785
	3	17.199	22.986	27.111
	4	3.725	7.508	13.942
DEPTH	1	0.258	0.818	1.319
	2	8.361	10.993	15.602
	3	30.891	33.979	38.379
	4	38.234	41.487	45.850

No.	SPACING	RHO-A (ohm-m)	DIFFERENCE

* *

	(m)	DATA	SYNTHETIC	(percent)
1	1.50	171.2	165.5	3.31
2	2.00	180.1	191.4	-6.29
3	2.50	209.5	214.6	-2.46
4	3.00	234.5	234.6	-0.0559
5	4.00	270.2	266.1	1.51
6	5.00	298.7	289.4	3.08
7	6.00	313.7	307.0	2.13
8	8.00	331.7	330.7	0.278
9	10.00	353.0	345.1	2.22
10	12.00	361.5	353.7	2.13
11	15.00	366.6	360.1	1.75
12	20.00	366.0	360.5	1.49
13	25.00	338.1	353.7	-4.61
14	30.00	316.2	342.5	-8.34
15	40.00	314.2	312.4	0.545
16	30.00	329.5	357.4	-8.47
17	40.00	327.7	326.0	0.545
18	50.00	307.7	288.6	6.20
19	60.00	262.2	249.5	4.82
20	80.00	166.5	177.9	-6.85
21	100.0	123.3	123.5	-0.178
22	80.00	178.8	168.9	5.50
23	100.0	117.1	117.3	-0.178
24	120.0	82.40	82.41	-0.0140
25	150.0	50.60	52.79	-4.34
26	150.0	51.10	53.32	-4.34
27	200.0	35.00	34.52	1.35

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.71								
P 2	-0.02	0.96							
P 3	0.01	0.05	0.86						
P 4	0.00	-0.01	0.02	0.02					
P 5	0.00	0.01	-0.05	0.00	0.91				
T 1	-0.36	-0.06	0.06	-0.01	0.01	0.46			
T 2	0.00	0.00	0.12	0.06	0.02	0.01	0.15		
T 3	0.00	-0.03	0.06	0.13	0.07	-0.03	0.31	0.72	
T 4	0.00	-0.01	0.00	0.02	0.01	0.00	0.06	0.13	0.02
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

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DATA SET: BIES661V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 66-1
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 722.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.587 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			722.0		
1	84.42	0.607	721.3	0.00719	51.27
2	259.9	9.74	711.6	0.0374	2533.0
3	255.3	10.15	701.4	0.0397	2593.6
4	39.13				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	37.098	84.425	122.506
	2	238.355	259.940	287.309
	3	154.912	255.398	379.666
	4	31.363	39.139	47.914
THICK	1	0.206	0.607	1.055
	2	7.423	9.745	13.632
	3	5.425	10.155	14.311
DEPTH	1	0.206	0.607	1.055
	2	8.035	10.352	14.234
	3	16.737	20.508	26.609

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	127.9	132.2	-3.42
2	2.00	144.6	152.1	-5.22

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No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	168.1	168.1	-0.0212
4	3.00	189.3	180.9	4.41
5	4.00	210.7	199.7	5.19
6	5.00	228.8	212.5	7.10
7	6.00	225.2	221.4	1.64
8	8.00	226.8	232.3	-2.38
9	10.00	226.7	237.5	-4.76
10	12.00	229.5	239.3	-4.27
11	15.00	229.1	237.8	-3.80
12	20.00	233.5	228.0	2.34
13	30.00	199.3	194.0	2.70
14	40.00	165.3	155.3	6.06
15	50.00	118.6	121.8	-2.71
16	60.00	88.14	96.26	-9.22
17	80.00	68.51	65.82	3.92
18	100.0	50.80	52.16	-2.68

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	T 1	T 2	T 3
P 1	0.72						
P 2	-0.01	0.98					
P 3	0.02	0.04	0.49				
P 4	0.00	0.00	-0.07	0.94			
T 1	-0.37	-0.04	0.07	0.00	0.45		
T 2	0.01	0.01	0.33	0.05	0.02	0.34	
T 3	0.00	-0.03	0.21	0.09	-0.03	0.31	0.36

* *

DATA SET: BIES662V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 66-2
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 720.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.931 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			720.5		
1	119.3	1.40	719.0	0.0118	168.2
2	1010.8	6.19	712.8	0.00613	6263.4
3	109.8	27.89	685.0	0.253	3065.3
4	45.16				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	95.509	119.379	140.399
	2	767.630	1010.819	1506.456
	3	76.389	109.898	171.443
	4	26.491	45.169	63.996
THICK	1	1.054	1.409	1.825
	2	3.989	6.196	8.747
	3	14.595	27.893	75.207
DEPTH	1	1.054	1.409	1.825
	2	5.677	7.606	10.017
	3	22.094	35.498	82.980

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	146.8	141.8	3.44
2	2.00	161.1	162.4	-0.855

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No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	177.3	186.4	-5.17
4	3.00	199.7	211.5	-5.91
5	4.00	267.6	259.7	2.93
6	5.00	307.7	302.5	1.68
7	6.00	339.2	339.0	0.0840
8	8.00	406.7	394.5	3.01
9	10.00	442.2	429.7	2.83
10	12.00	454.7	448.4	1.38
11	15.00	461.2	453.3	1.69
12	20.00	424.2	423.4	0.166
13	25.00	353.7	372.7	-5.34
14	30.00	307.7	318.6	-3.56
15	40.00	249.6	227.7	8.76
16	50.00	161.8	166.6	-2.96
17	60.00	122.5	128.3	-4.79
18	80.00	92.50	88.50	4.32
19	100.0	69.16	70.41	-1.81

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	T 1	T 2	T 3
P 1	0.90						
P 2	-0.04	0.69					
P 3	0.02	-0.05	0.55				
P 4	-0.01	0.00	0.07	0.58			
T 1	-0.13	-0.14	0.03	-0.01	0.80		
T 2	0.04	0.34	0.21	-0.04	0.13	0.55	
T 3	0.00	-0.03	0.24	0.36	-0.01	-0.02	0.33

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DATA SET: BIES67V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 67
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 718.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.586 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			718.5		
1	285.3	0.780	717.7	0.00273	222.7
2	313.7	5.44	712.2	0.0173	1709.3
3	676.3	11.61	700.6	0.0171	7853.3
4	327.7	21.17	679.4	0.0646	6941.2
5	45.47				

ALL PARAMETERS ARE FREE

No.	SPACING (m)	RHO-A (ohm-m) DATA	RHO-A (ohm-m) SYNTHETIC	DIFFERENCE (percent)
1	1.50	268.5	273.0	-1.67
2	2.00	272.7	277.4	-1.70
3	2.50	288.2	281.3	2.38
4	3.00	294.6	284.7	3.35
5	4.00	298.5	290.8	2.55
6	5.00	295.7	297.2	-0.532
7	6.00	299.2	304.4	-1.73
8	8.00	311.2	320.8	-3.08
9	10.00	336.2	338.9	-0.788
10	12.00	351.7	356.6	-1.37
11	15.00	379.2	379.6	-0.111
12	20.00	407.7	404.4	0.788
13	25.00	433.2	413.3	4.59
14	30.00	434.1	409.8	5.58
15	40.00	394.6	380.3	3.61
16	60.00	271.2	289.8	-6.87
17	40.00	425.6	411.3	3.35
18	60.00	293.2	313.4	-6.87

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No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
19	80.00	214.0	223.2	-4.33
20	100.0	154.0	157.7	-2.41
21	120.0	114.6	114.7	-0.163
22	100.0	151.7	157.4	-3.78
23	120.0	114.4	114.5	-0.163
24	150.0	80.00	79.02	1.22
25	200.0	52.70	56.83	-7.85

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4
P 1	0.98								
P 2	0.00	0.99							
P 3	0.00	-0.01	0.80						
P 4	0.00	0.01	0.16	0.19					
P 5	0.00	0.00	-0.01	-0.02	0.98				
T 1	-0.07	-0.04	-0.04	0.03	0.00	0.06			
T 2	0.02	-0.03	-0.17	0.12	-0.01	0.04	0.79		
T 3	0.00	0.01	0.21	0.26	0.01	0.03	0.14	0.37	
T 4	-0.01	0.01	-0.10	0.17	0.04	0.02	0.01	0.31	0.47

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DATA SET: BIES671V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 67-1
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 718.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 2.060 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			718.5		
1	79.74	0.468	718.0	0.00587	37.33
2	935.9	7.39	710.6	0.00790	6919.7
3	243.5	30.62	680.0	0.125	7459.5
4	48.86				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	40.152	79.741	137.209
	2	846.788	935.922	1188.835
	3	203.953	243.596	328.714
	4	36.949	48.869	72.588
THICK	1	0.230	0.468	0.890
	2	4.759	7.393	9.291
	3	22.209	30.623	38.426
DEPTH	1	0.230	0.468	0.890
	2	5.606	7.862	9.691
	3	28.213	38.484	47.609

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	178.2	179.1	-0.508
2	2.00	220.0	223.8	-1.74

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	263.5	263.5	-0.0281
4	3.00	301.6	298.9	0.885
5	4.00	358.0	358.5	-0.143
6	5.00	421.7	405.8	3.76
7	6.00	453.2	443.0	2.23
8	8.00	496.1	493.6	0.493
9	10.00	516.2	519.9	-0.723
10	12.00	528.7	528.6	0.0131
11	15.00	512.0	519.5	-1.48
12	20.00	473.2	473.9	-0.136
13	25.00	429.8	417.0	2.98
14	15.00	592.0	611.9	-3.34
15	20.00	547.7	558.1	-1.89
16	25.00	506.2	491.1	2.98
17	40.00	330.5	328.8	0.508
18	50.00	258.8	261.4	-0.997
19	60.00	207.0	214.0	-3.38
20	80.00	148.7	151.1	-1.62
21	100.0	111.4	112.6	-1.08
22	80.00	154.3	147.8	4.23
23	100.0	109.0	110.1	-1.08

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.56						
P 2	-0.04	0.98					
P 3	0.00	-0.02	0.94				
P 4	-0.01	-0.02	-0.10	0.74			
T 1	-0.45	-0.05	-0.01	-0.01	0.53		
T 2	0.04	0.03	0.06	0.07	0.05	0.92	
T 3	0.00	0.01	0.08	0.18	0.01	-0.06	0.86
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES672V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 67-2
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 718.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.523 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			718.0		
1	64.53	0.473	717.5	0.00733	30.52
2	736.2	23.69	693.8	0.0321	17443.6
3	149.7	4.85	688.9	0.0324	726.6
4	25.45				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	15.553	64.534	122.795
	2	695.001	736.211	793.373
	3	41.261	149.715	390.177
	4	12.806	25.453	43.317
THICK	1	0.112	0.473	0.907
	2	21.458	23.694	25.952
	3	1.375	4.854	12.701
DEPTH	1	0.112	0.473	0.907
	2	22.084	24.167	26.355
	3	26.805	29.021	35.947

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	150.5	148.8	1.07
2	2.00	179.3	186.0	-3.78

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	217.1	219.3	-1.02
4	3.00	246.3	249.0	-1.12
5	4.00	300.0	300.0	-0.0317
6	5.00	349.2	342.0	2.04
7	6.00	371.7	376.9	-1.38
8	8.00	426.7	430.8	-0.976
9	10.00	489.0	469.4	3.99
10	12.00	522.2	497.0	4.83
11	15.00	548.5	523.6	4.54
12	20.00	561.9	540.8	3.74
13	25.00	524.2	535.1	-2.08
14	20.00	628.5	613.4	2.39
15	25.00	594.5	606.9	-2.08
16	30.00	550.5	583.2	-5.95
17	40.00	464.0	506.2	-9.09
18	50.00	413.7	414.5	-0.192
19	60.00	340.0	326.9	3.84
20	80.00	189.3	191.6	-1.21
21	100.0	110.6	111.4	-0.769
22	80.00	198.3	187.3	5.51
23	100.0	108.1	108.9	-0.769

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.55						
P 2	-0.02	1.00					
P 3	0.00	0.00	0.00				
P 4	-0.03	-0.01	-0.01	0.71			
T 1	-0.45	-0.02	0.00	-0.04	0.54		
T 2	0.02	0.00	0.05	0.04	0.02	0.99	
T 3	0.00	0.00	0.00	0.02	0.00	0.04	0.00
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES68V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 68
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 718.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 8.416 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			718.5		
1	138.1	0.966	717.5	0.00700	133.5
2	557.0	15.46	702.0	0.0277	8613.2
3	124.7	10.28	691.7	0.0825	1282.9
4	304.7	13.54	678.2	0.0444	4126.8
5	33.58				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	42.411	138.128	204.626
	2	465.421	557.085	611.564
	3	26.573	124.703	245.983
	4	59.481	304.748	481.094
	5	27.276	33.581	53.154
THICK	1	0.213	0.967	1.680
	2	13.388	15.461	23.390
	3	5.364	10.288	25.644
	4	2.701	13.542	21.062
DEPTH	1	0.213	0.967	1.680
	2	14.396	16.428	24.190
	3	22.145	26.716	41.593
	4	33.626	40.258	57.754

No.	SPACING	RHO-A (ohm-m)	DIFFERENCE

* *

	(m)	DATA	SYNTHETIC	(percent)
1	1.50	180.1	181.9	-1.02
2	2.00	211.8	211.7	0.0336
3	2.50	245.6	240.6	1.99
4	3.00	275.0	267.0	2.87
5	4.00	317.6	311.4	1.94
6	5.00	346.2	346.2	0.0147
7	6.00	364.7	373.7	-2.45
8	8.00	393.5	412.9	-4.95
9	10.00	417.6	437.5	-4.77
10	12.00	431.5	451.9	-4.74
11	15.00	447.5	460.4	-2.88
12	20.00	467.8	451.6	3.46
13	25.00	482.7	426.5	11.64
14	30.00	467.2	393.9	15.67
15	40.00	337.1	325.4	3.44
16	50.00	227.6	266.1	-16.92
17	60.00	191.1	218.9	-14.59
18	80.00	158.8	153.0	3.61
19	100.0	116.3	111.1	4.43
20	120.0	86.95	83.90	3.49
21	150.0	50.14	60.08	-19.84

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.79								
P 2	-0.02	0.97							
P 3	0.01	0.01	0.08						
P 4	-0.01	-0.03	-0.02	0.20					
P 5	0.00	0.00	-0.10	0.06	0.85				
T 1	-0.27	-0.05	0.02	-0.04	0.00	0.61			
T 2	0.03	0.05	0.19	0.18	-0.01	0.08	0.82		
T 3	-0.01	-0.02	-0.05	0.13	0.11	-0.03	0.03	0.11	
T 4	-0.01	-0.03	-0.04	0.22	0.12	-0.04	0.14	0.15	0.24
	P 1	P 2	P 3	P 4	P 5	T 1	T 2	T 3	T 4

* *

DATA SET: BIES681V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 68-1
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 718.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 2.808 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			718.0		
1	102.1	0.709	717.2	0.00694	72.46
2	660.3	33.70	683.5	0.0510	22256.6
3	38.84				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	24.678	102.190	142.470
	2	629.660	660.380	692.573
	3	19.847	38.848	68.477
THICK	1	0.158	0.709	1.028
	2	30.905	33.703	37.006
DEPTH	1	0.158	0.709	1.028
	2	31.664	34.412	37.705

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	174.3	174.5	-0.0924
2	2.00	215.0	213.1	0.862
3	2.50	247.2	248.2	-0.409
4	3.00	272.6	279.4	-2.52
5	4.00	336.1	332.2	1.14
6	5.00	381.1	374.7	1.65

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
7	6.00	432.1	409.5	5.21
8	8.00	444.2	462.3	-4.06
9	10.00	489.0	499.6	-2.17
10	12.00	522.2	526.4	-0.795
11	15.00	548.5	553.3	-0.870
12	20.00	554.0	575.5	-3.87
13	25.00	587.2	579.8	1.26
14	30.00	587.2	572.2	2.55
15	40.00	540.0	533.8	1.15
16	50.00	456.8	477.2	-4.45
17	60.00	432.1	413.5	4.28
18	80.00	300.6	292.6	2.65
19	100.0	192.3	199.7	-3.86

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

	P 1	P 2	P 3	T 1	T 2
P 1	0.59				
P 2	-0.01	0.98			
P 3	-0.01	-0.02	0.09		
T 1	-0.43	-0.03	-0.02	0.52	
T 2	0.02	0.02	0.13	0.03	0.96

* *

DATA SET: BIES682V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 68-2
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 719.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 4.745 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			719.5		
1	194.5	1.28	718.2	0.00662	250.6
2	576.7	16.66	701.5	0.0288	9608.3
3	137.5	19.15	682.3	0.139	2634.7
4	32.04				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	154.799	194.518	236.429
	2	525.186	576.713	676.040
	3	75.271	137.557	252.786
	4	24.366	32.048	38.824
THICK	1	0.903	1.289	1.746
	2	13.149	16.661	19.951
	3	11.728	19.154	30.774
DEPTH	1	0.903	1.289	1.746
	2	14.890	17.949	21.224
	3	31.182	37.103	47.400

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	233.3	221.1	5.23
2	2.00	237.2	243.7	-2.74

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	RHO-A (ohm-m) SYNTHETIC	DIFFERENCE (percent)
3	2.50	265.7	268.2	-0.930
4	3.00	275.0	292.3	-6.32
5	4.00	317.6	335.1	-5.54
6	5.00	368.1	369.7	-0.457
7	6.00	399.3	397.2	0.528
8	8.00	447.6	436.5	2.47
9	10.00	454.8	461.0	-1.35
10	12.00	447.6	475.4	-6.21
11	15.00	477.7	483.7	-1.25
12	20.00	467.8	473.9	-1.28
13	25.00	482.7	446.1	7.58
14	30.00	426.2	408.8	4.06
15	40.00	337.1	326.4	3.16
16	50.00	227.6	251.4	-10.45
17	60.00	191.1	191.3	-0.115
18	80.00	114.0	113.2	0.623
19	100.0	78.43	73.38	6.43
20	120.0	49.72	53.76	-8.13
21	150.0	42.25	41.33	2.17

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.80						
P 2	-0.02	0.97					
P 3	0.00	-0.02	0.13				
P 4	0.00	0.00	-0.02	0.86			
T 1	-0.26	-0.05	-0.02	0.00	0.59		
T 2	0.03	0.04	0.26	-0.02	0.08	0.85	
T 3	-0.02	-0.04	0.15	0.20	-0.06	0.11	0.39
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES76V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 76
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 725.00
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 2.093 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			725.0		
1	177.0	0.879	724.1	0.00496	155.6
2	853.1	5.27	718.8	0.00618	4498.7
3	374.6	12.15	706.6	0.0324	4554.8
4	21.08				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	111.165	177.084	202.807
	2	768.433	853.122	982.483
	3	298.637	374.665	475.378
	4	16.469	21.083	24.369
THICK	1	0.488	0.879	1.080
	2	4.239	5.273	6.465
	3	10.354	12.157	13.999
DEPTH	1	0.488	0.879	1.080
	2	5.149	6.152	7.315
	3	16.590	18.309	20.143

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	204.3	211.2	-3.37
2	2.00	246.6	250.3	-1.52

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	292.7	287.1	1.88
4	3.00	329.6	319.9	2.92
5	4.00	373.6	373.4	0.0483
6	5.00	419.7	413.2	1.54
7	6.00	442.2	442.0	0.0352
8	8.00	457.0	474.9	-3.91
9	10.00	481.2	484.2	-0.642
10	12.00	480.5	478.3	0.443
11	15.00	477.2	452.5	5.17
12	20.00	378.0	390.0	-3.19
13	25.00	325.7	323.4	0.681
14	30.00	259.5	262.2	-1.04
15	40.00	166.5	165.6	0.507
16	30.00	310.1	312.1	-0.652
17	40.00	198.2	197.1	0.507
18	50.00	123.6	122.4	0.919
19	60.00	77.40	77.80	-0.527
20	80.00	38.40	38.62	-0.591

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.75						
P 2	-0.04	0.85					
P 3	0.03	0.05	0.49				
P 4	0.00	0.02	-0.14	0.66			
T 1	-0.31	-0.13	0.08	0.01	0.53		
T 2	0.02	0.19	0.34	0.00	0.11	0.32	
T 3	0.00	-0.10	0.17	0.19	-0.04	0.12	0.77
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *

DATA SET: BIES761V

CLIENT: Stadtwerke Kaufbeuren DATE: Sept. 95
LOCATION: Ebenhofen SOUNDING: 76-1
COUNTY: Ostallgaeu AZIMUTH: 0
PROJECT: Wasserschutzgebiet Ebenhofen EQUIPMENT: G41
ELEVATION: 723.50
SOUNDING COORDINATES: X: 0.0000 Y: 0.0000

Schlumberger Configuration

FITTING ERROR: 3.210 PERCENT

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
			723.5		
1	246.9	0.693	722.8	0.00281	171.1
2	781.6	4.02	718.7	0.00514	3142.5
3	264.0	16.14	702.6	0.0611	4262.8
4	29.63				

ALL PARAMETERS ARE FREE

PARAMETER BOUNDS FROM EQUIVALENCE ANALYSIS

	LAYER	MINIMUM	BEST	MAXIMUM
RHO	1	113.593	246.931	345.517
	2	690.301	781.670	889.681
	3	210.649	264.068	308.748
	4	21.368	29.639	34.120
THICK	1	0.274	0.693	1.151
	2	3.235	4.020	5.357
	3	14.378	16.143	20.352
DEPTH	1	0.274	0.693	1.151
	2	4.018	4.714	6.007
	3	19.107	20.857	25.415

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
1	1.50	366.7	363.6	0.841
2	2.00	407.7	418.3	-2.61

* *

No.	SPACING (m)	RHO-A (ohm-m) DATA	SYNTHETIC	DIFFERENCE (percent)
3	2.50	463.2	462.8	0.102
4	3.00	496.7	497.5	-0.157
5	4.00	547.7	543.7	0.718
6	5.00	579.2	566.7	2.14
7	6.00	579.2	573.4	0.993
8	8.00	571.0	556.3	2.59
9	10.00	510.7	518.5	-1.51
10	12.00	456.8	474.5	-3.85
11	15.00	426.1	410.9	3.55
12	20.00	331.3	326.0	1.62
13	25.00	273.6	264.3	3.39
14	30.00	213.8	217.4	-1.68
15	40.00	145.5	149.4	-2.70
16	50.00	104.1	104.3	-0.242
17	60.00	82.13	75.48	8.08
18	80.00	44.45	47.10	-5.98

PARAMETER RESOLUTION MATRIX:
"F" INDICATES FIXED PARAMETER

P 1	0.66						
P 2	0.00	0.89					
P 3	0.03	-0.03	0.65				
P 4	0.00	0.01	-0.09	0.87			
T 1	-0.40	-0.10	0.03	0.01	0.39		
T 2	-0.01	0.18	0.32	0.03	0.13	0.43	
T 3	0.00	-0.05	0.12	0.10	-0.03	0.01	0.88
	P 1	P 2	P 3	P 4	T 1	T 2	T 3

* *