Data 4

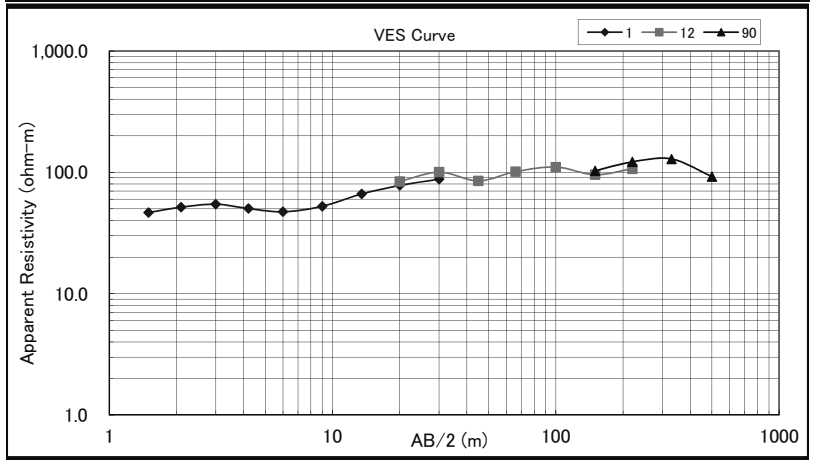
Geophysical Survey

THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.01.24	Easting (m)	567,535	Area	Melka Jilo
Site No.	BH-2	Northing (m)	980,706	Instrument: Sting	
VES No.	2-1V	Elevation (m)	1,150	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	46.6					46.6
2	2.1	1	13.1	51.6					51.6
3	3	1	27.5	54.6					54.6
4	4.2	1	54.7	50.3	50.3				50.3
5	6	1	112	47.3					47.3
6	9	1	254	52.2	52.7				52.5
7	13.5	1	572	66.0	66.6				66.3
8	20	1	1,256	77.9					77.9
9	30	1	2,828	87.8					87.8
10	20	12	95	84.0					84.0
11	30	12	226	100.2					100.2
12	45	12	521	85.9	84.2				85.1
13	66	12	1,131	100.8	101.6				101.2
14	100	12	2,609	110.3	110.5				110.4
15	150	12	5,883	93.0	94.3	99.5			95.6
16	220	12	12,666	106.9					106.9
17	150	90	715	103.0	103.1				103.1
18	220	90	1,619	121.6	122.1				121.9
19	330	90	3,732	128.6	128.8	129.1			128.8
20	500	90	8,659	88.7	93.1	94.6			92.1

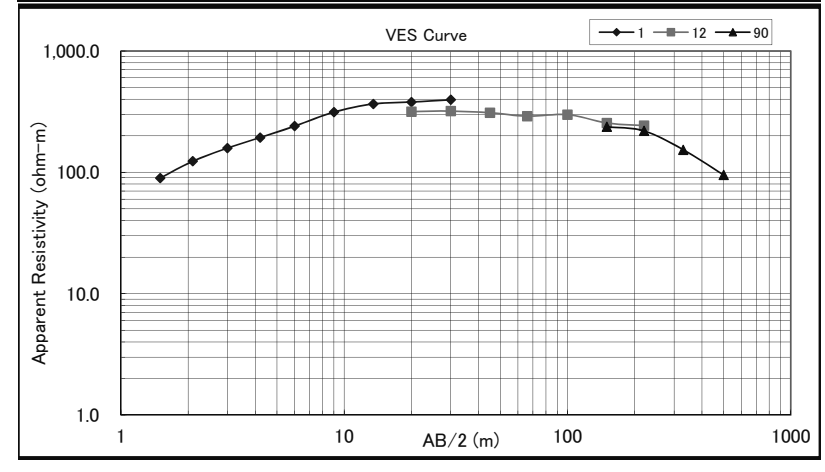


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.01.24	Easting (m)	567343	Area	Melka Jilo
Site No.	BH-2	Northing (m)	980,797	Instrument: Sting	
VES No.	2-2V	Elevation (m)	1,154	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	89.7					89.7
2	2.1	1	13.1	123.4					123.4
3	3	1	27.5	158.2					158.2
4	4.2	1	54.7	193.4					193.4
5	6	1	112	240.3					240.3
6	9	1	254	313.3					313.3
7	13.5	1	572	365.9					365.9
8	20	1	1,256	380.1	378.8				379.5
9	30	1	2,828	395.6					395.6
10	20	12	95	316.3	316.3				316.3
11	30	12	226	319.8	319.0				319.4
12	45	12	521	308.9	310.3				309.6
13	66	12	1,131	291.0	289.1				290.1
14	100	12	2,609	298.7	298.4				298.6
15	150	12	5,883	257.7	252.3				255.0
16	220	12	12,666	242.2					242.2
17	150	90	715	238.3	236.4				237.4
18	220	90	1,619	219.6					219.6
19	330	90	3,732	153.5	153.3				153.4
20	500	90	8,659	94.9	95.3				95.1

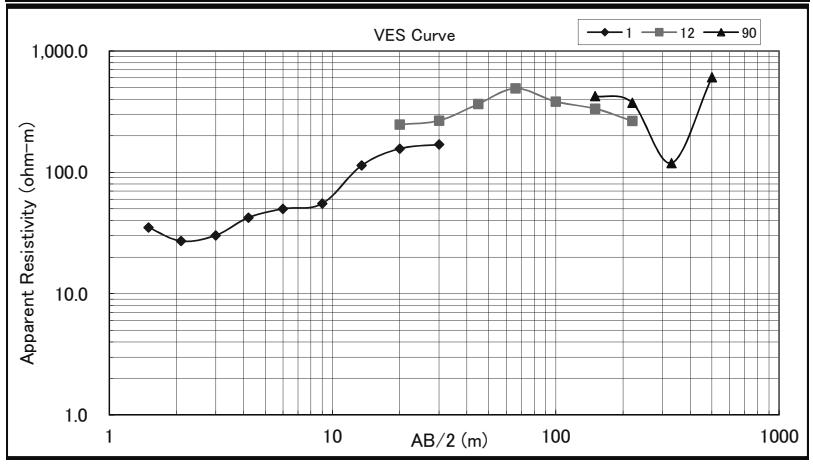


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.24	Easting (m)	589,163	Area	Metehara
Site No.	BH-3	Northing (m)	982,771	Instrument: Sting	
VES No.	3-2V	Elevation (m)	1,026	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	35.1					35.1
2	2.1	1	13.1	27.1					27.1
3	3	1	27.5	30.2					30.2
4	4.2	1	54.7	42.3					42.3
5	6	1	112	49.7	50.3				50.0
6	9	1	254	55.2					55.2
7	13.5	1	572	113.9	113.6				113.8
8	20	1	1,256	156.0	157.0				156.5
9	30	1	2,828	169.4					169.4
10	20	12	95	247.5	247.3				247.4
11	30	12	226	267.7	265.6				266.7
12	45	12	521	358.2	370.5	368.3			365.7
13	66	12	1,131	492.0	490.0				491.0
14	100	12	2,609	382.0	382.5				382.3
15	150	12	5,883	334.6					334.6
16	220	12	12,666	264.6					264.6
17	150	90	715	424.7					424.7
18	220	90	1,619	373.6	374.4				374.0
19	330	90	3,732	118.3	120.1				119.2
20	500	90	8,659	606.4					606.4

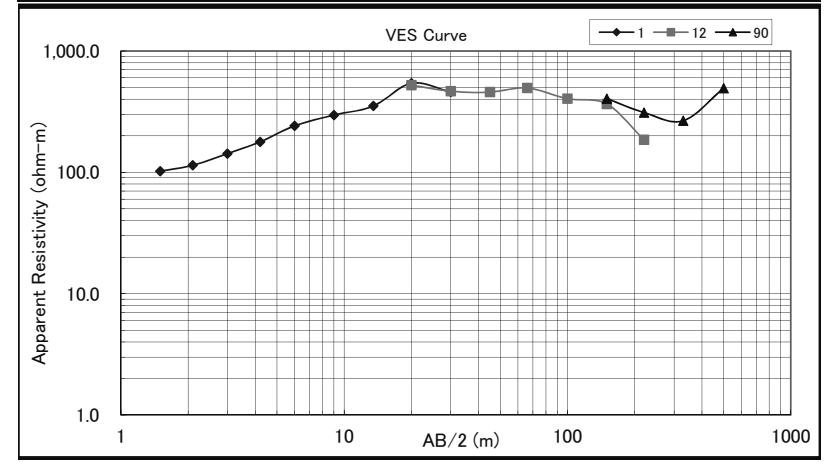


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.24	Easting (m)	589,163	Area	Metahara
Site No.	BH-3	Northing (m)	982,771	Instrument: Sting	
VES No.	3-2V	Elevation (m)	1,026	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	102.1					102.1
2	2.1	1	13.1	114.2					114.2
3	3	1	27.5	141.7	143.0				142.4
4	4.2	1	54.7	178.1					178.1
5	6	1	112	241.4					241.4
6	9	1	254	296.4					296.4
7	13.5	1	572	351.6					351.6
8	20	1	1,256	542.0					542.0
9	30	1	2,828	460	458.1				459.1
10	20	12	95	522.4					522.4
11	30	12	226	466.2					466.2
12	45	12	521	457.9					457.9
13	66	12	1,131	495.1					495.1
14	100	12	2,609	402.1	406.2				404.2
15	150	12	5,883	364.0	367.2				365.6
16	220	12	12,666	185.5					185.5
17	150	90	715	405.2					405.2
18	220	90	1,619	310.9					310.9
19	330	90	3,732	265.9					265.9
20	500	90	8,659	723.8	687.4	70.1			493.8

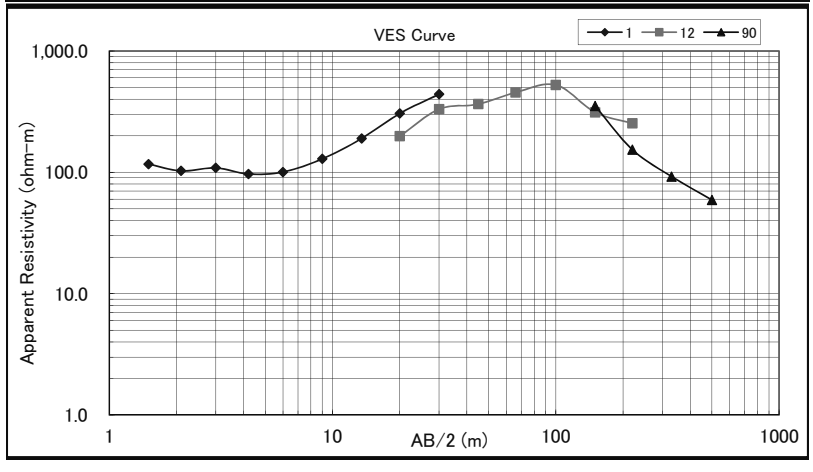


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.25	Easting (m)	589,179	Area	Metahara
Site No.	BH-3	Northing (m)	982,976	Instrument: Sting	
VES No.	3-3V	Elevation (m)	1,014	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	116.9					116.9
2	2.1	1	13.1	102.7					102.7
3	3	1	27.5	108.7					108.7
4	4.2	1	54.7	96.9					96.9
5	6	1	112	99.2	101.8				100.5
6	9	1	254	128.9					128.9
7	13.5	1	572	190.2					190.2
8	20	1	1,256	305.3					305.3
9	30	1	2,828	440					439.7
10	20	12	95	198.3					198.3
11	30	12	226	331.1					331.1
12	45	12	521	357.9	363.0	373.5			364.8
13	66	12	1,131	454.7					454.7
14	100	12	2,609	523.8	525.3				524.6
15	150	12	5,883	312.2	312.4				312.3
16	220	12	12,666	253.0					253.0
17	150	90	715	352.5					352.5
18	220	90	1,619	153.9					153.9
19	330	90	3,732	92.2					92.2
20	500	90	8,659	59.2					59.2

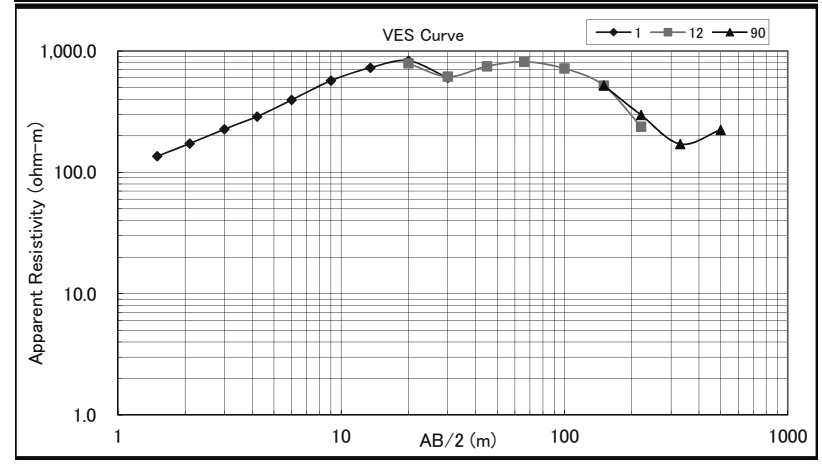


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.25	Easting (m)	589,091	Area	Metahara
Site No.	BH-3	Northing (m)	982,986	Instrument: Sting	
VES No.	3-4V	Elevation (m)	1,027	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	135.7					135.7
2	2.1	1	13.1	172.6					172.6
3	3	1	27.5	226.7					226.7
4	4.2	1	54.7	287.8					287.8
5	6	1	112	394.7					394.7
6	9	1	254	569.4					569.4
7	13.5	1	572	727.1					727.1
8	20	1	1,256	829.7					829.7
9	30	1	2,828	601					601.0
10	20	12	95	789.5					789.5
11	30	12	226	613.8					613.8
12	45	12	521	748.3					748.3
13	66	12	1,131	815.1					815.1
14	100	12	2,609	712.6	720.1				716.4
15	150	12	5,883	518.8					518.8
16	220	12	12,666	237.6					237.6
17	150	90	715	520.7					520.7
18	220	90	1,619	296.5					296.5
19	330	90	3,732	170.9	170.8				170.9
20	500	90	8,659	305.0	185.2	180.3			223.5

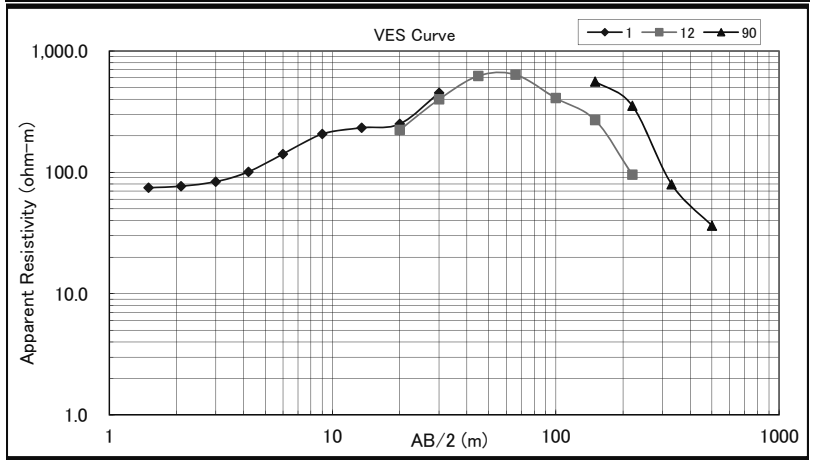


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.25	Easting (m)	589	Area	Metehara
Site No.	BH-3	Northing (m)	982,872	Instrument: Sting	
VES No.	3-5V	Elevation (m)	1,033	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	74.5					74.5
2	2.1	1	13.1	76.5	77.2				76.9
3	3	1	27.5	83.6					83.6
4	4.2	1	54.7	100.9					100.9
5	6	1	112	141.5					141.5
6	9	1	254	206.5		206.5			206.5
7	13.5	1	572	232.7					232.7
8	20	1	1,256	250.4					250.4
9	30	1	2,828	450.9					450.9
10	20	12	95	223.5					223.5
11	30	12	226	399.0					399.0
12	45	12	521	622.5					622.5
13	66	12	1,131	637.4	637.4				637.4
14	100	12	2,609	399.0	397.6	429.4			408.7
15	150	12	5,883	269.0					269.0
16	220	12	12,666	92.3	102.0	92.7			95.7
17	150	90	715	562.6	558.5				560.6
18	220	90	1,619	346.4	361.7				354.1
19	330	90	3,732	81.3	78.1				79.7
20	500	90	8,659	42.6	30.0				36.3

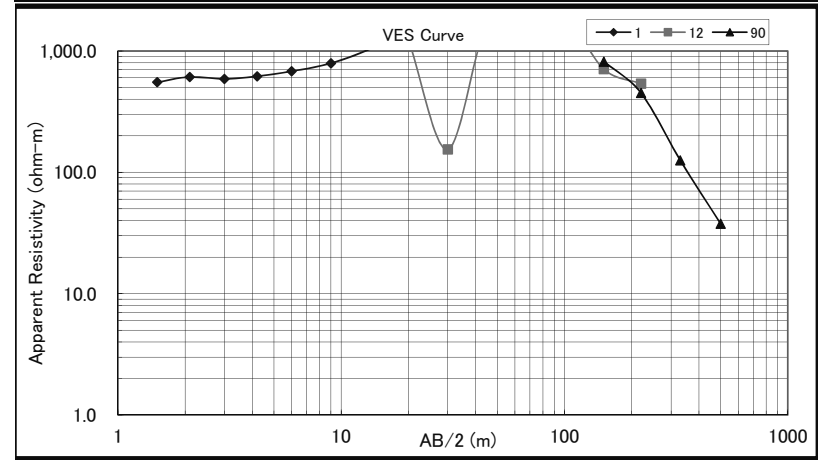


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.25	Easting (m)	589,063	Area	Metahara
Site No.	BH-3	Northing (m)	982,779	Instrument: Sting	
VES No.	3-6V	Elevation (m)	1,032	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	552.0					552.0
2	2.1	1	13.1	610.6					610.6
3	3	1	27.5	587.4					587.4
4	4.2	1	54.7	618.2					618.2
5	6	1	112	680.0	681.4				680.7
6	9	1	254	792.0					792.0
7	13.5	1	572	1,040.0					1,040.0
8	20	1	1,256	1,490.0					1,490.0
9	30	1	2,828	1,969					1,969.0
10	20	12	95	1,228.0					1,228.0
11	30	12	226	154.2					154.2
12	45	12	521	1,678.0					1,678.0
13	66	12	1,131	1,797.0					1,797.0
14	100	12	2,609	1,922.0					1,922.0
15	150	12	5,883	987.3	100.9	1,034			707.4
16	220	12	12,666	537.0					537.0
17	150	90	715	818.1					818.1
18	220	90	1,619	450.5					450.5
19	330	90	3,732	109.4	141.6				125.5
20	500	90	8,659	23.9	40.8	48.3			37.7

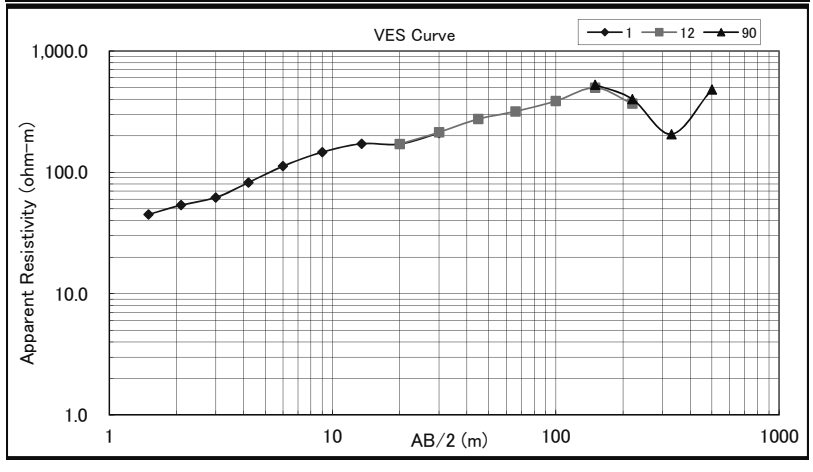


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.24	Easting (m)	589,232	Area	Metahara
Site No.	BH-3	Northing (m)	982,774	Instrument: Sting	
VES No.	3-7V	Elevation (m)	1,016	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	44.9					44.9
2	2.1	1	13.1	53.6					53.6
3	3	1	27.5	62.0					62.0
4	4.2	1	54.7	82.2					82.2
5	6	1	112	112.3					112.3
6	9	1	254	146.7					146.7
7	13.5	1	572	171.8					171.8
8	20	1	1,256	170.8	171.0				170.9
9	30	1	2,828	211					210.5
10	20	12	95	170.7					170.7
11	30	12	226	213.8					213.8
12	45	12	521	275.1					275.1
13	66	12	1,131	317.5					317.5
14	100	12	2,609	386.5					386.5
15	150	12	5,883	497.0					497.0
16	220	12	12,666	366.1	369.9				368.0
17	150	90	715	527.5					527.5
18	220	90	1,619	401.0	402.4				401.7
19	330	90	3,732	204.2	208.1				206.2
20	500	90	8,659	415.0	417.6	611.9			481.5

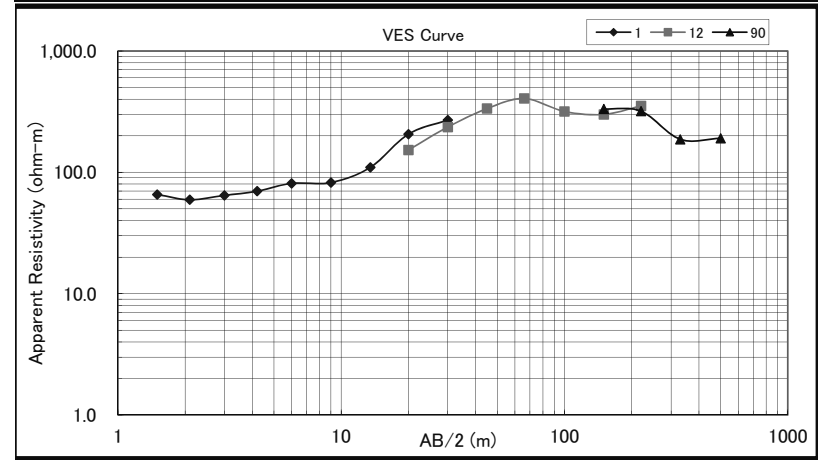


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.26	Easting (m)	589,241	Area	Metehara
Site No.	BH-3	Northing (m)	982,871	Instrument: Sting	
VES No.	3-8V	Elevation (m)	1,023	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	65.6					65.6
2	2.1	1	13.1	59.4					59.4
3	3	1	27.5	64.5					64.5
4	4.2	1	54.7	69.9					69.9
5	6	1	112	81.0					81.0
6	9	1	254	82.4	82.3				82.4
7	13.5	1	572	109.7					109.7
8	20	1	1,256	206.3					206.3
9	30	1	2,828	269.3					269.3
10	20	12	95	152.5					152.5
11	30	12	226	236.0					236.0
12	45	12	521	335.1					335.1
13	66	12	1,131	405.7					405.7
14	100	12	2,609	316.7	317.4				317.1
15	150	12	5,883	299.8					299.8
16	220	12	12,666	375.0	378.2	304.6			352.6
17	150	90	715	332.4					332.4
18	220	90	1,619	318.0	320.4				319.2
19	330	90	3,732	186.6	187.3				187.0
20	500	90	8,659	173.7	182.4	191.7	216.2		191.0

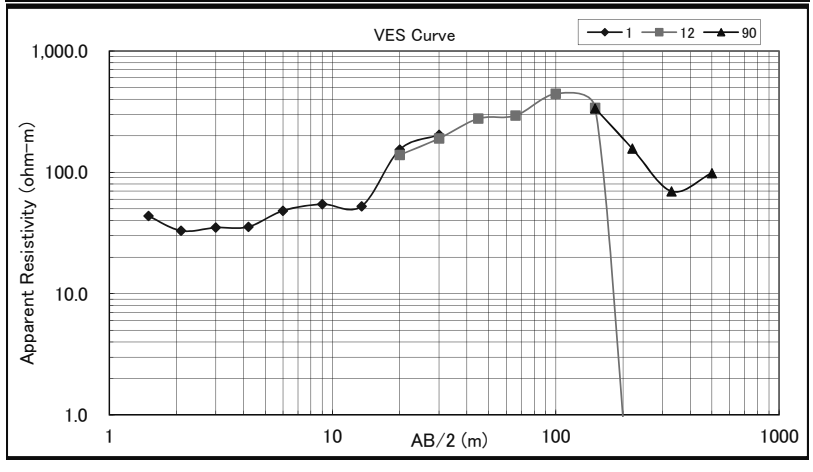


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.26	Easting (m)	589,270	Area	Metehara
Site No.	BH-3	Northing (m)	982,976	Instrument: Sting	
VES No.	3-9V	Elevation (m)	1,029	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	43.6					43.6
2	2.1	1	13.1	33.0					33.0
3	3	1	27.5	35.0					35.0
4	4.2	1	54.7	35.5					35.5
5	6	1	112	48.2					48.2
6	9	1	254	54.6					54.6
7	13.5	1	572	52.5					52.5
8	20	1	1,256	154.0	153.5				153.8
9	30	1	2,828	203.8					203.8
10	20	12	95	139.1					139.1
11	30	12	226	190.0					190.0
12	45	12	521	277.0					277.0
13	66	12	1,131	293.6					293.6
14	100	12	2,609	445.7	441.4				443.6
15	150	12	5,883	339.4					339.4
16	220	12	12,666	0.1					0.1
17	150	90	715	336.1					336.1
18	220	90	1,619	156.8					156.8
19	330	90	3,732	68.7	70.8				69.8
20	500	90	8,659	81.9	93.9	111.4	107.0		98.6

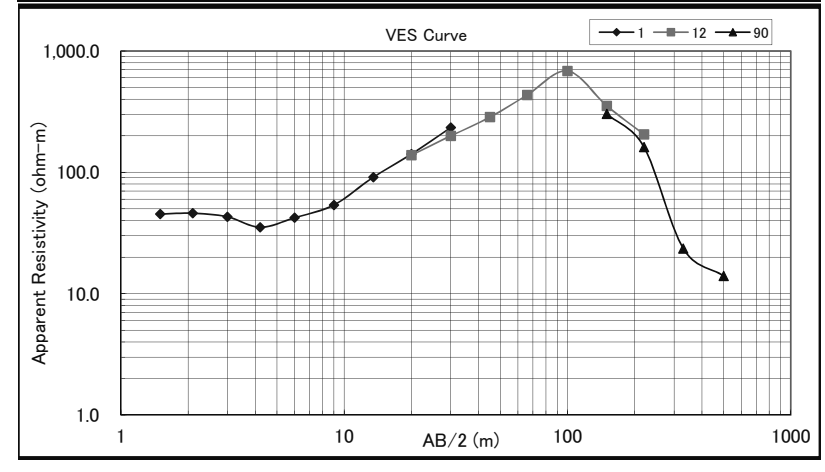


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.28	Easting (m)	589,231	Area	Metehara
Site No.	BH-3	Northing (m)	982,682	Instrument: Sting	
VES No.	3-10V	Elevation (m)	1,021	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	45.2					45.2
2	2.1	1	13.1	46.0					46.0
3	3	1	27.5	43.0	43.0				43.0
4	4.2	1	54.7	35.3	35.2				35.3
5	6	1	112	42.2					42.2
6	9	1	254	53.8					53.8
7	13.5	1	572	91.3	90.9				91.1
8	20	1	1,256	145.5	139.0	139.2			141.2
9	30	1	2,828	233	234.3				233.8
10	20	12	95	138.2					138.2
11	30	12	226	199.8	199.8				199.8
12	45	12	521	289.6	288.0	276.9			284.8
13	66	12	1,131	438.6	429.9				434.3
14	100	12	2,609	699.8	681.6	674.6	681.8		684.5
15	150	12	5,883	326.1	301.8	309.9	474.0		353.0
16	220	12	12,666	198.9	199.4	204.6	216.9		205.0
17	150	90	715	299.6	299.3	299.4	312.6		302.7
18	220	90	1,619	161.1	161.7				161.4
19	330	90	3,732	23.9	22.3	24.4			23.5
20	500	90	8,659	14.0					14.0

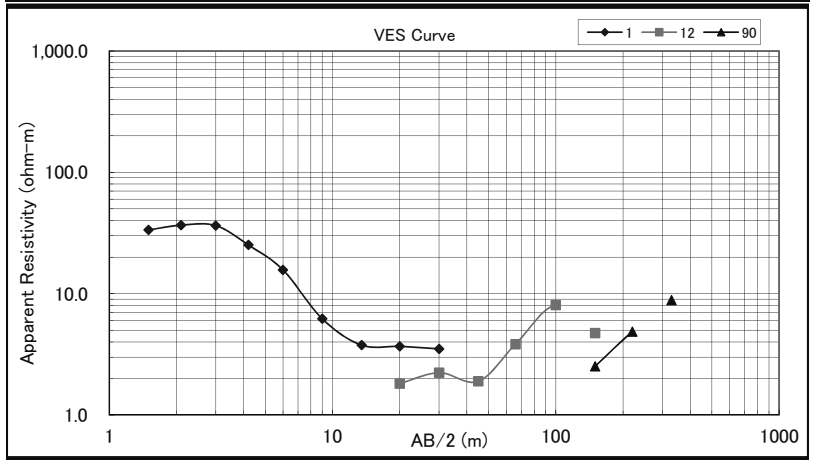


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.26	Easting (m)	601,576	Area	Metehara
Site No.	BH-5	Northing (m)	980,026	Instrument: Sting	
VES No.	5-1V	Elevation (m)	951	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	33.5					33.5
2	2.1	1	13.1	36.7					36.7
3	3	1	27.5	36.4	36.4				36.4
4	4.2	1	54.7	25.2					25.2
5	6	1	112	15.7					15.7
6	9	1	254	6.2					6.2
7	13.5	1	572	3.74	3.78				3.8
8	20	1	1,256	4.12	3.43	3.49			3.7
9	30	1	2,828	4.33	3.29	2.9			3.5
10	20	12	95	1.84	1.79				1.8
11	30	12	226	2.3	2.16				2.2
12	45	12	521	0.8267	3.16	1.69			1.9
13	66	12	1,131	1.323	5.8	5.68	2.53	5.1	3.8
14	100	12	2,609	8.5	7.6				8.1
15	150	12	5,883	13.3		0.594	0.3218		4.7
16	220	12	12,666	0.0					0.0
17	150	90	715	0.1	4.94				2.5
18	220	90	1,619	0.1	9.63				4.9
19	330	90	3,732	0.1	17.60				8.9
20	500	90	8,659						#DIV/0!

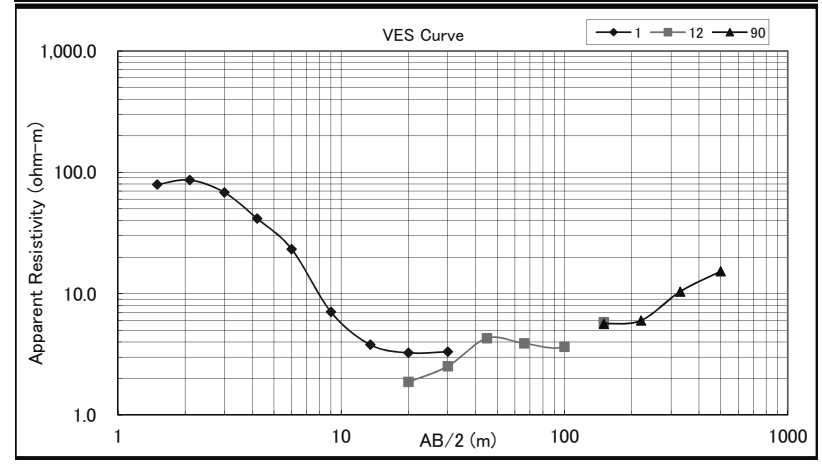


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	601,313	Area	Metehara
Site No.	BH-5	Northing (m)	979,958	Instrument: Sting	
VES No.	5-2V	Elevation (m)	959	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	79.3					79.3
2	2.1	1	13.1	86.3					86.3
3	3	1	27.5	68.2					68.2
4	4.2	1	54.7	41.6					41.6
5	6	1	112	23.3					23.3
6	9	1	254	7.06					7.1
7	13.5	1	572	3.75	3.84				3.8
8	20	1	1,256	3.25					3.3
9	30	1	2,828	3.32					3.3
10	20	12	95	1.87					1.9
11	30	12	226	2.52					2.5
12	45	12	521	4.27	4.32				4.3
13	66	12	1,131	3.864	3.91				3.9
14	100	12	2,609	3.64					3.6
15	150	12	5,883	5.82					5.8
16	220	12	12,666	0.00					0.0
17	150	90	715	5.64					5.6
18	220	90	1,619	5.99	6.03				6.0
19	330	90	3,732	10.2	10.60				10.4
20	500	90	8,659	15.2	15.40				15.3

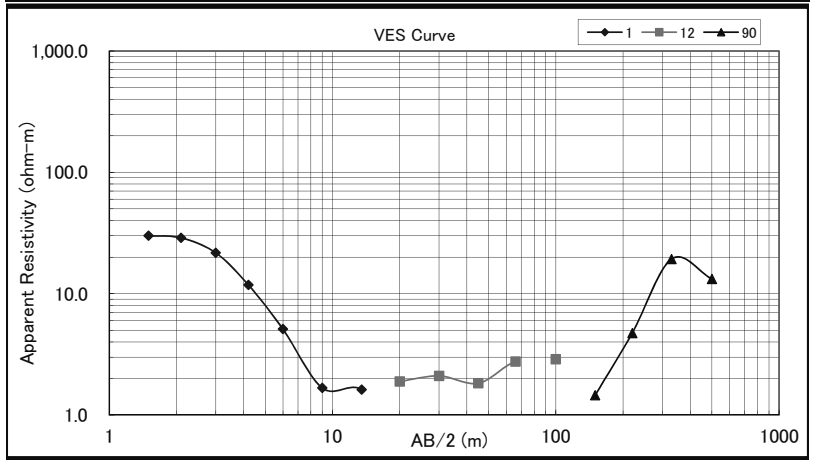


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	601,313	Area	Metehara
Site No.	BH-5	Northing (m)	979,958	Instrument: Sting	
VES No.	5-2V	Elevation (m)	959	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	30.0					30.0
2	2.1	1	13.1	28.8					28.8
3	3	1	27.5	21.70					21.7
4	4.2	1	54.7	11.8					11.8
5	6	1	112	5.1	5.1				5.1
6	9	1	254	1.65	1.69				1.7
7	13.5	1	572	1.62	1.62				1.6
8	20	1	1,256	0.676					0.7
9	30	1	2,828	0.0					0.0
10	20	12	95	1.89	1.89				1.9
11	30	12	226	2.10					2.1
12	45	12	521	1.82	1.83				1.8
13	66	12	1,131	2.73	2.77				2.8
14	100	12	2,609	2.84	2.92				2.9
15	150	12	5,883	0.0	0.0				0.0
16	220	12	12,666	0.0	0.0				0.0
17	150	90	715	0.996	1.68	1.69			1.5
18	220	90	1,619	4.65	4.82				4.7
19	330	90	3,732	18.73	19.9				19.3
20	500	90	8,659	12.8	13.6				13.2

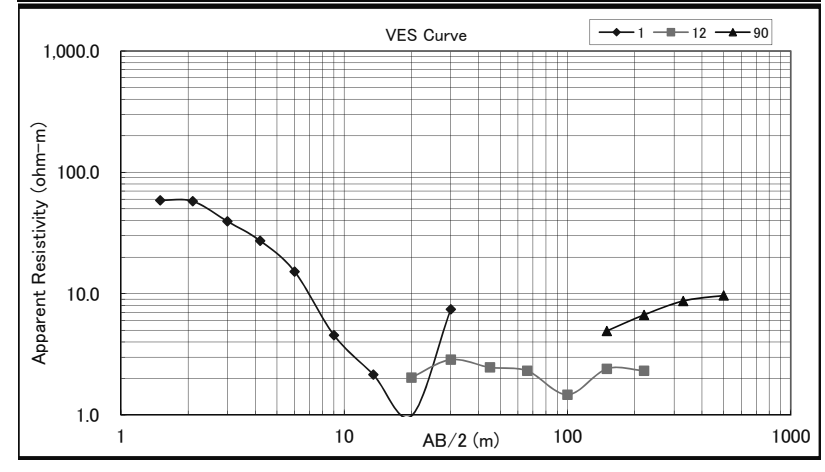


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	601,313	Area	Metehara
Site No.	BH-5	Northing (m)	979,958	Instrument: Sting	
VES No.	5-2V	Elevation (m)	959	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	58.8					58.8
2	2.1	1	13.1	57.7					57.7
3	3	1	27.5	39.4	39.4				39.4
4	4.2	1	54.7	27.3					27.3
5	6	1	112	15.2					15.2
6	9	1	254	4.53	4.56				4.5
7	13.5	1	572	2.15					2.2
8	20	1	1,256	0.982					1.0
9	30	1	2,828	13.9	0.957				7.4
10	20	12	95	2.03	2.04				2.0
11	30	12	226	2.81	2.9				2.9
12	45	12	521	2.15	2.78				2.5
13	66	12	1,131	2.31					2.3
14	100	12	2,609	1.36	1.58				1.5
15	150	12	5,883	2.4					2.4
16	220	12	12,666	2.2	2.43				2.3
17	150	90	715	6.0	4.33	4.45			4.9
18	220	90	1,619	6.68					6.7
19	330	90	3,732	8.7					8.7
20	500	90	8,659	9.2	10.10				9.7

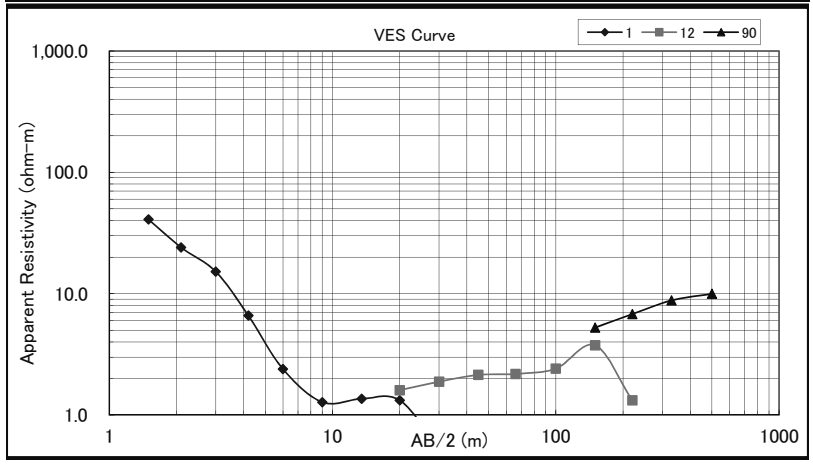


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	601,313	Area	Metehara
Site No.	BH-5	Northing (m)	979,958	Instrument: Sting	
VES No.	5-2V	Elevation (m)	959	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	40.9					40.9
2	2.1	1	13.1	24.0					24.0
3	3	1	27.5	15.2					15.2
4	4.2	1	54.7	6.58	6.6				6.6
5	6	1	112	2.4	2.40				2.4
6	9	1	254	1.26	1.29				1.3
7	13.5	1	572	1.36					1.4
8	20	1	1,256	1.24	1.40				1.3
9	30	1	2,828	0.1595	0.91				0.5
10	20	12	95	1.6					1.6
11	30	12	226	1.88					1.9
12	45	12	521	2.14					2.1
13	66	12	1,131	2.18					2.2
14	100	12	2,609	2.41					2.4
15	150	12	5,883	2.09	3.57	5.9	3.5		3.8
16	220	12	12,666	1.32					1.3
17	150	90	715	5.25					5.3
18	220	90	1,619	6.76	6.80				6.8
19	330	90	3,732	8.8					8.8
20	500	90	8,659	9.97					10.0

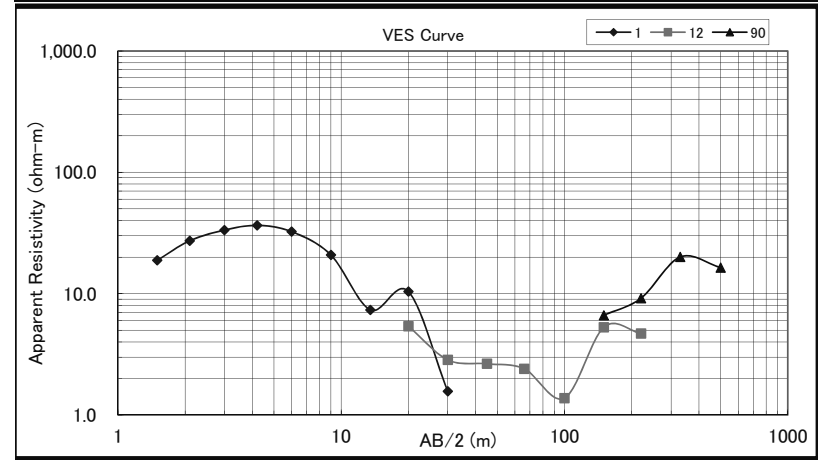


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.31	Easting (m)	601,867	Area	Metehara
Site No.	BH-5	Northing (m)	980,104	Instrument: Sting	
VES No.	5-6V	Elevation (m)	950	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	18.8					18.8
2	2.1	1	13.1	27.3					27.3
3	3	1	27.5	33.4					33.4
4	4.2	1	54.7	36.5					36.5
5	6	1	112	32.4					32.4
6	9	1	254	20.80					20.8
7	13.5	1	572	7.36	7.32				7.3
8	20	1	1,256	13.90	14.1	6.65	6.97		10.4
9	30	1	2,828	1.54	1.59				1.6
10	20	12	95	5.71	5.08				5.4
11	30	12	226	2.86	2.83				2.8
12	45	12	521	2.62	2.64	2.7			2.6
13	66	12	1,131	2.31	2.42	2.5			2.4
14	100	12	2,609	0.878	1.08	0.951	2.6		1.4
15	150	12	5,883	6.4	6.08	5.87	2.77		5.3
16	220	12	12,666	4.65	4.75				4.7
17	150	90	715	6.83	6.83		6.2		6.6
18	220	90	1,619	9.16					9.2
19	330	90	3,732	19.9	20.2				20.1
20	500	90	8,659	16.6	16.2				16.4

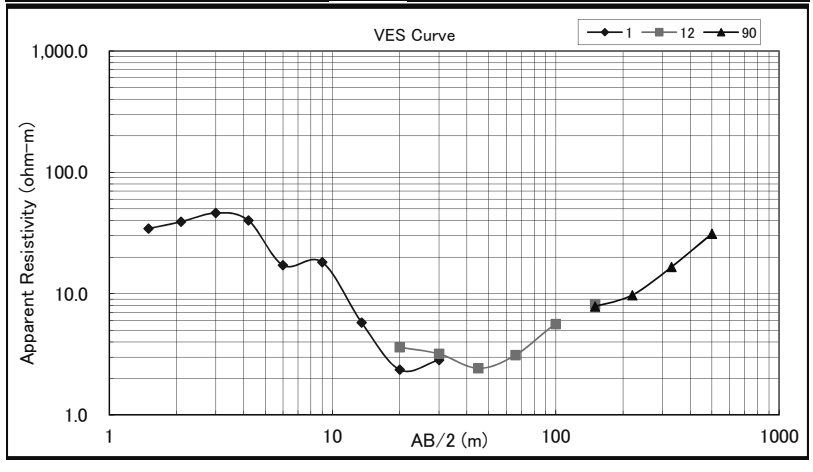


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.31	Easting (m)	601,932	Area	Metehara
Site No.	BH-5	Northing (m)	979,787	Instrument: Sting	
VES No.	5-7V	Elevation (m)	960	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	34.4					34.4
2	2.1	1	13.1	39.1					39.1
3	3	1	27.5	46.2					46.2
4	4.2	1	54.7	38.5	41.7				40.1
5	6	1	112	0.0	34.3				17.2
6	9	1	254	18.10	18.2				18.2
7	13.5	1	572	5.78					5.8
8	20	1	1,256	2.36					2.4
9	30	1	2,828	2.68	3.0				2.8
10	20	12	95	3.61	3.62				3.6
11	30	12	226	3.16	3.21				3.2
12	45	12	521	2.40	2.45				2.4
13	66	12	1,131	3.13	3.1				3.1
14	100	12	2,609	5.62					5.6
15	150	12	5,883	8.20					8.2
16	220	12	12,666	0.0					0.0
17	150	90	715	7.84					7.8
18	220	90	1,619	9.61	9.84				9.7
19	330	90	3,732	16.60					16.6
20	500	90	8,659	31.20					31.2

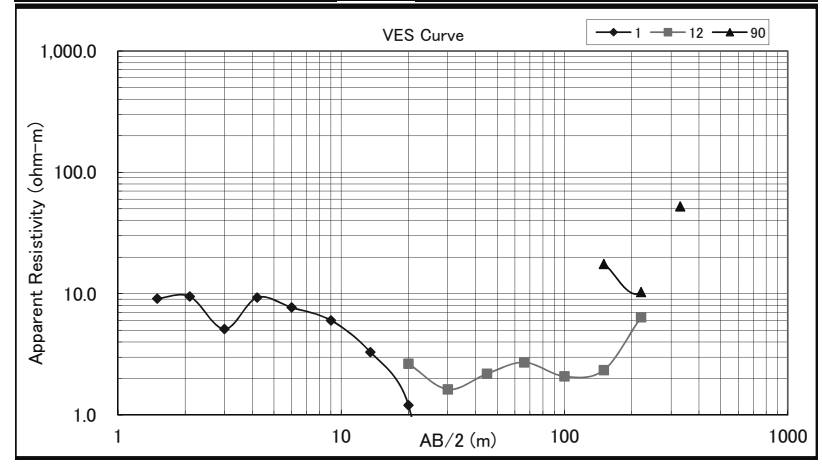


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	601,313	Area	Metehara
Site No.	BH-5	Northing (m)	979,958	Instrument: Sting	
VES No.	5-2V	Elevation (m)	959	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	9.10	9.09				9.1
2	2.1	1	13.1	9.46					9.5
3	3	1	27.5	0.00	10.20				5.1
4	4.2	1	54.7	9.33	9.21				9.3
5	6	1	112	7.67	7.71				7.7
6	9	1	254	6.00	6.04				6.0
7	13.5	1	572	3.27	3.33				3.3
8	20	1	1,256	1.17	1.24				1.2
9	30	1	2,828	0.025	0.018				0.0
10	20	12	95	2.65	2.65				2.7
11	30	12	226	1.42	1.75	1.71			1.6
12	45	12	521	2.18	2.19				2.2
13	66	12	1,131	2.58	2.85				2.7
14	100	12	2,609	2.59	1.69	1.96			2.1
15	150	12	5,883	1.99	2.6	2.45			2.3
16	220	12	12,666	6.4	6.36				6.4
17	150	90	715	18.2	17.0				17.6
18	220	90	1,619	10.3					10.3
19	330	90	3,732	42.8	53.7	60.6			52.4
20	500	90	8,659						#DIV/0!

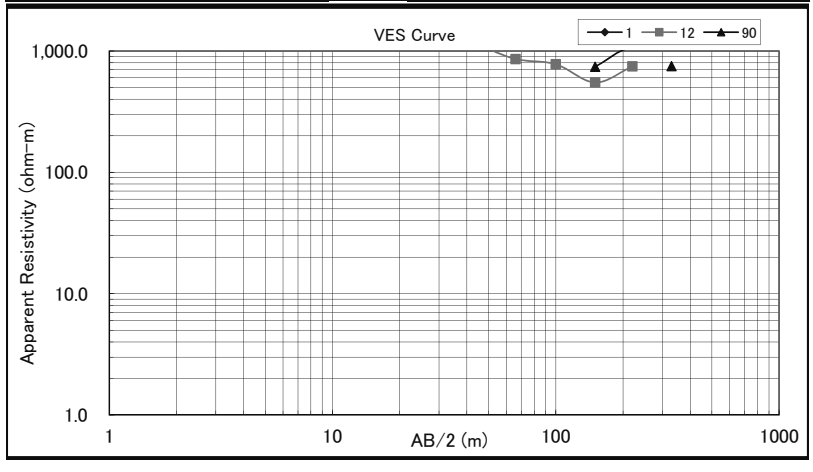


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	601,313	Area	Metehara
Site No.	BH-5	Northing (m)	979,958	Instrument: Sting	
VES No.	5-2V	Elevation (m)	959	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	2,082.0	1,937.0				2,009.5
2	2.1	1	13.1	1,455.0	1,454.0				1,454.5
3	3	1	27.5	1,090.0	1,087.0				1,088.5
4	4.2	1	54.7	1,129.0	1,129.0				1,129.0
5	6	1	112	1,275.0	1,276.0				1,275.5
6	9	1	254	1,375.0	1,376.0				1,375.5
7	13.5	1	572	1,840.0	1,840.0				1,840.0
8	20	1	1,256	1,493.0	1,497.0				1,495.0
9	30	1	2,828	1,544.0	1,598.0				1,571.0
10	20	12	95	1,353.0	1,354.0				1,353.5
11	30	12	226	1,317.0	1,321.0				1,319.0
12	45	12	521	1,104.0	1,113.0				1,108.5
13	66	12	1,131	856.4	860.3				858.4
14	100	12	2,609	788.0	765.9				777.0
15	150	12	5,883	513.8	586.1				550.0
16	220	12	12,666	745.8					745.8
17	150	90	715	741.6	738.4				740.0
18	220	90	1,619	1,043.0	1,075.0				1,059.0
19	330	90	3,732	743.8	757.8				750.8
20	500	90	8,659	0.0					0.0

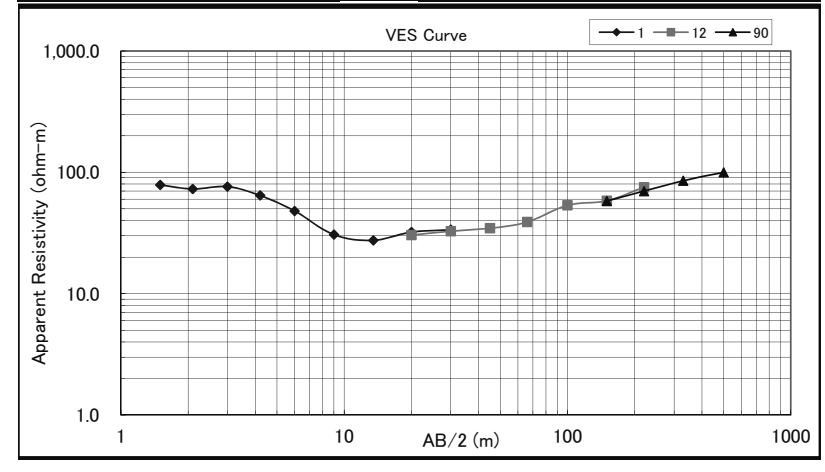


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.01.27	Easting (m)	586,782	Area	Nura Hira
Site No.	BH-7	Northing (m)	949,400	Instrument: Sting	
VES No.	7-1V	Elevation (m)	1,270	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	78.6					78.6
2	2.1	1	13.1	72.9					72.9
3	3	1	27.5	76.2					76.2
4	4.2	1	54.7	65.3	64.0	64.1			64.5
5	6	1	112	48.0					48.0
6	9	1	254	30.6					30.6
7	13.5	1	572	27.5					27.5
8	20	1	1,256	32.9	31.40				32.2
9	30	1	2,828	33.6					33.6
10	20	12	95	30.4					30.4
11	30	12	226	32.7					32.7
12	45	12	521	34.5	34.70				34.6
13	66	12	1,131	38.9	39.00				39.0
14	100	12	2,609	53.4	53.50				53.5
15	150	12	5,883	56.1	60.40				58.3
16	220	12	12,666	75.3					75.3
17	150	90	715	58.0	58.10				58.1
18	220	90	1,619	69.7	70.20				70.0
19	330	90	3,732	85.3					85.3
20	500	90	8,659	101.2	98.50				99.9

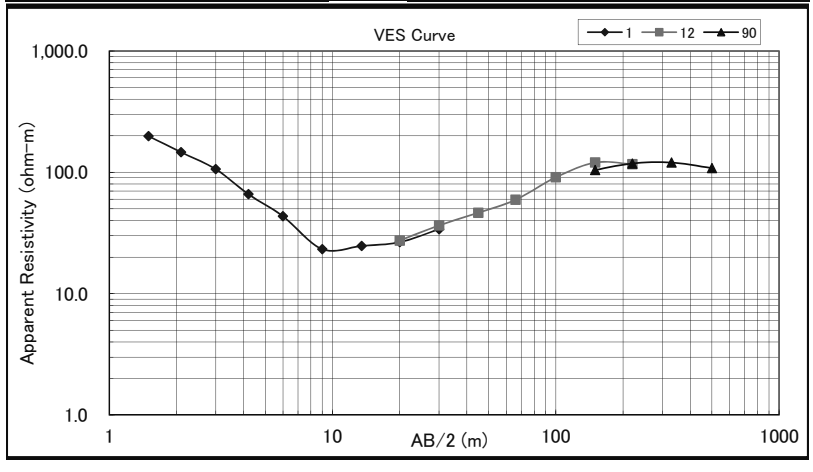


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	586,666	Area	Nura Hira
Site No.	BH-7	Northing (m)	949,561	Instrument: Sting	
VES No.	7-2V	Elevation (m)	1,272	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	198.6					198.6
2	2.1	1	13.1	146.3	146.4				146.4
3	3	1	27.5	106.1					106.1
4	4.2	1	54.7	66.0	66.1				66.1
5	6	1	112	43.4					43.4
6	9	1	254	22.9	23.6				23.3
7	13.5	1	572	23.1	24.60	25.9	25.3		24.7
8	20	1	1,256	26.4	26.70				26.6
9	30	1	2,828	33.9	34.00				34.0
10	20	12	95	27.4					27.4
11	30	12	226	36.5					36.5
12	45	12	521	45.3	47.10	46.9			46.4
13	66	12	1,131	59.4	58.80	59.8			59.3
14	100	12	2,609	90.9					90.9
15	150	12	5,883	120.3					120.3
16	220	12	12,666	96.6	136.60				116.6
17	150	90	715	104.4	104.60				104.5
18	220	90	1,619	118.1	118.30				118.2
19	330	90	3,732	118.5	121.20	121.5			120.4
20	500	90	8,659	108.3					108.3

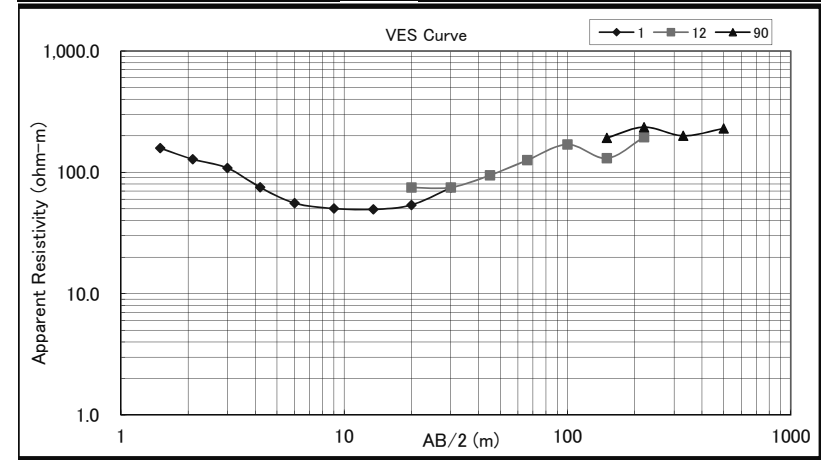


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	601,313	Area	Nura Hira
Site No.	BH-8	Northing (m)	979,958	Instrument: Sting	
VES No.	7-3V	Elevation (m)	959	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	158.1					158.1
2	2.1	1	13.1	128.1					128.1
3	3	1	27.5	108.5					108.5
4	4.2	1	54.7	75.3	75.3				75.3
5	6	1	112	55.7					55.7
6	9	1	254	50.3					50.3
7	13.5	1	572	49.5					49.5
8	20	1	1,256	53.8					53.8
9	30	1	2,828	74.5					74.5
10	20	12	95	75.0					75.0
11	30	12	226	75.0					75.0
12	45	12	521	95.2	93.90				94.6
13	66	12	1,131	125.8					125.8
14	100	12	2,609	168.8	170.20				169.5
15	150	12	5,883	117.6	136.30	137.5			130.5
16	220	12	12,666	194.5					194.5
17	150	90	715	188.9	195.00				192.0
18	220	90	1,619	233.4	237.90				235.7
19	330	90	3,732	194.8	202.20	203.0			200.0
20	500	90	8,659	221.3	234.00	233.5			229.6

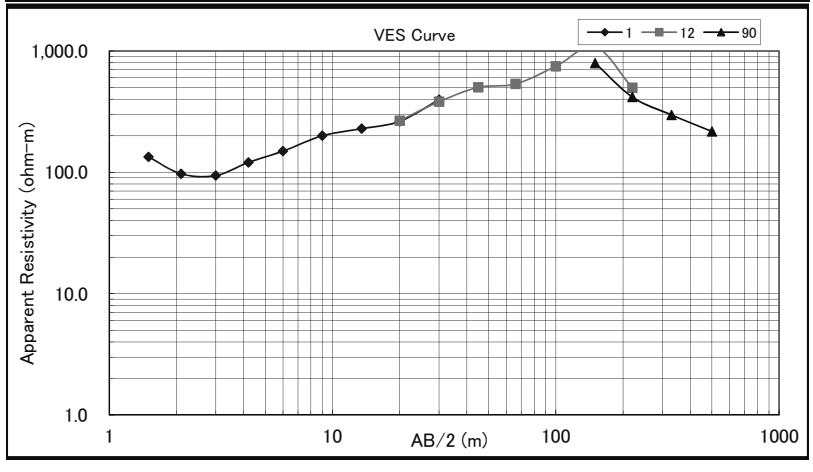


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	615,264	Area	Fate Lady
Site No.	BH-8	Northing (m)	966,413	Instrument: Sting	
VES No.	8-1V	Elevation (m)	1,222	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	134.1					134.1
2	2.1	1	13.1	97.2					97.2
3	3	1	27.5	93.9					93.9
4	4.2	1	54.7	120.6					120.6
5	6	1	112	149.3					149.3
6	9	1	254	200.0					200.0
7	13.5	1	572	228.90	228.3				228.6
8	20	1	1,256	263.40	262.5				263.0
9	30	1	2,828	397.70	395.5				396.6
10	20	12	95	266.20					266.2
11	30	12	226	384.50	378.5				381.5
12	45	12	521	505.10	497.3				501.2
13	66	12	1,131	534.40					534.4
14	100	12	2,609	746.70					746.7
15	150	12	5,883	1,077.00	1,091.0				1,084.0
16	220	12	12,666	490.00	500.3	502.8			497.7
17	150	90	715	795.00	795.0				795.0
18	220	90	1,619	416.40	418.9	417.3			417.5
19	330	90	3,732	295.60	297.7				296.7
20	500	90	8,659	225.40	209.2				217.3

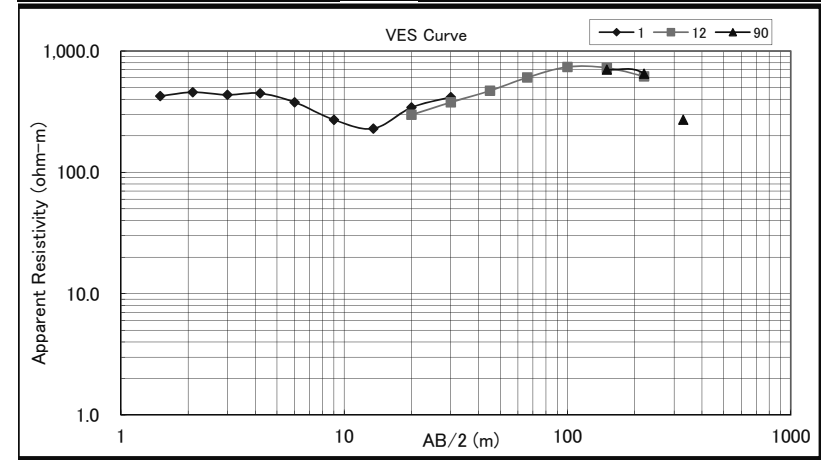


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.1	Easting (m)	615,131	Area	Fate Lady
Site No.	BH-8	Northing (m)	966,490	Instrument: Sting	
VES No.	8-2V	Elevation (m)	1,223	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	422.7	426.3				424.5
2	2.1	1	13.1	457.0					457.0
3	3	1	27.5	434.7					434.7
4	4.2	1	54.7	444.5	450.5				447.5
5	6	1	112	378.1	378.1				378.1
6	9	1	254	269.4	273.0	269.9			270.8
7	13.5	1	572	229.4	229.30				229.4
8	20	1	1,256	341.5	342.00				341.8
9	30	1	2,828	416.7	416.60				416.7
10	20	12	95	297.7					297.7
11	30	12	226	377.2	376.30				376.8
12	45	12	521	471.0	469.50				470.3
13	66	12	1,131	603.0	604.60				603.8
14	100	12	2,609	738.4					738.4
15	150	12	5,883	725.6	727.50				726.6
16	220	12	12,666	588.7	646.80				617.8
17	150	90	715	703.1	703.30				703.2
18	220	90	1,619	651.4	650.50				651.0
19	330	90	3,732	271.1	271.50				271.3
20	500	90	8,659	-185	-177.60				-177.6

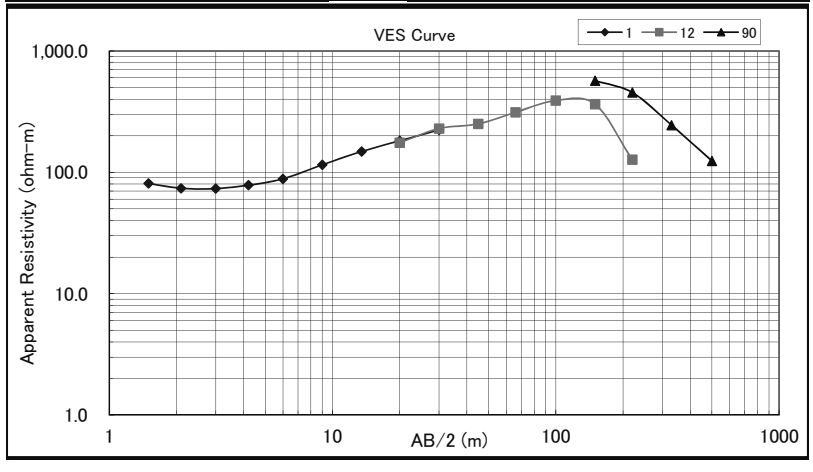


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	615,021	Area	Fate Lady
Site No.	BH-8	Northing (m)	966,593	Instrument: Sting	
VES No.	8-3V	Elevation (m)	1,223	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	81.0					81.0
2	2.1	1	13.1	73.8					73.8
3	3	1	27.5	73.4					73.4
4	4.2	1	54.7	78.3					78.3
5	6	1	112	88.3					88.3
6	9	1	254	115.2					115.2
7	13.5	1	572	148.5					148.5
8	20	1	1,256	181.9					181.9
9	30	1	2,828	223.6	223.60				223.6
10	20	12	95	175.5					175.5
11	30	12	226	230.1	228.60				229.4
12	45	12	521	250.5					250.5
13	66	12	1,131	312.0	312.50				312.3
14	100	12	2,609	390.3					390.3
15	150	12	5,883	364.4	363.10				363.8
16	220	12	12,666	110.1	130.30	140.7			127.0
17	150	90	715	567.9	568.10				568.0
18	220	90	1,619	453.1	456.70				454.9
19	330	90	3,732	299.1	218.30	217.0			244.8
20	500	90	8,659	124.5	123.70				124.1

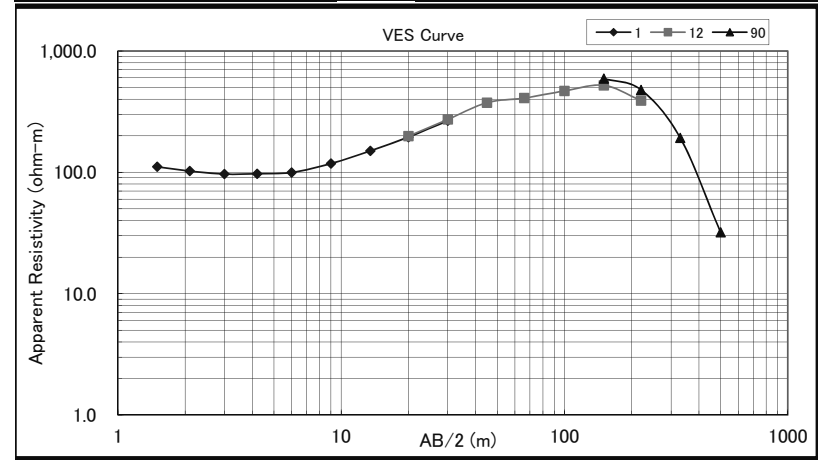


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	614,939	Area	Fate :ady
Site No.	BH-8	Northing (m)	966,467	Instrument: Sting	
VES No.	8-4V	Elevation (m)	1,226	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	110.9					110.9
2	2.1	1	13.1	102.3					102.3
3	3	1	27.5	96.7					96.7
4	4.2	1	54.7	97.3					97.3
5	6	1	112	99.7					99.7
6	9	1	254	117.9					117.9
7	13.5	1	572	150.2					150.2
8	20	1	1,256	195.0					195.0
9	30	1	2,828	265.7					265.7
10	20	12	95	198.6					198.6
11	30	12	226	272.6	272.70				272.7
12	45	12	521	374.7	375.30				375.0
13	66	12	1,131	409.2	408.90				409.1
14	100	12	2,609	469.8	466.60				468.2
15	150	12	5,883	514.9	527.80				521.4
16	220	12	12,666	390.2	389.60				389.9
17	150	90	715	592.0	593.30				592.7
18	220	90	1,619	474.4	480.80	480.6			478.6
19	330	90	3,732	188.7	195.30				192.0
20	500	90	8,659	31.6	32.40				32.0

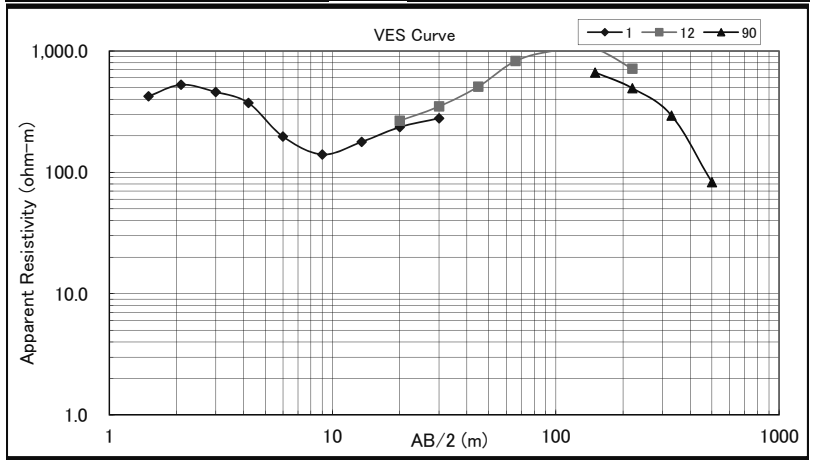


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	615,053	Area	Feta Lady
Site No.	BH-8	Northing (m)	966,365	Instrument: Sting	
VES No.	8-5V	Elevation (m)	1,225	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	423.0					423.0
2	2.1	1	13.1	526.5					526.5
3	3	1	27.5	459.2					459.2
4	4.2	1	54.7	373.5					373.5
5	6	1	112	196.7	197.3				197.0
6	9	1	254	140.3					140.3
7	13.5	1	572	178.1					178.1
8	20	1	1,256	235.5					235.5
9	30	1	2,828	278.7					278.7
10	20	12	95	266.2					266.2
11	30	12	226	348.9					348.9
12	45	12	521	507.5	508.30				507.9
13	66	12	1,131	826.3					826.3
14	100	12	2,609	1,008.0	1,009.00				1,008.5
15	150	12	5,883	1,034.0					1,034.0
16	220	12	12,666	714.3					714.3
17	150	90	715	665.3					665.3
18	220	90	1,619	493.8	494.30				494.1
19	330	90	3,732	293.2					293.2
20	500	90	8,659	72.9	92.80				82.9

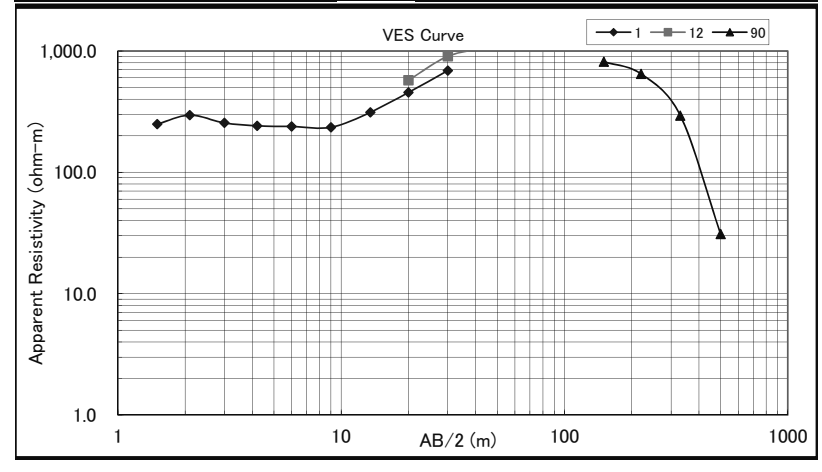


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	615,195	Area	Fate Lady
Site No.	BH-8	Northing (m)	966,306	Instrument: Sting	
VES No.	8-6V	Elevation (m)	1,221	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	249.4					249.4
2	2.1	1	13.1	295.8					295.8
3	3	1	27.5	255.1					255.1
4	4.2	1	54.7	241.5					241.5
5	6	1	112	238.5	238.7				238.6
6	9	1	254	234.8					234.8
7	13.5	1	572	311.5					311.5
8	20	1	1,256	455.1					455.1
9	30	1	2,828	688.9					688.9
10	20	12	95	573.1					573.1
11	30	12	226	901.8	903.60				902.7
12	45	12	521	1,066.0					1,066.0
13	66	12	1,131	1,225.0					1,225.0
14	100	12	2,609	1,537.0	1,542.00				1,539.5
15	150	12	5,883	1,548.0	1,576.00				1,562.0
16	220	12	12,666	1,340.0	1,339.00				1,339.5
17	150	90	715	816.2	816.30				816.3
18	220	90	1,619	634.9	652.90	655.0			647.6
19	330	90	3,732	293.3	294.00				293.7
20	500	90	8,659	31.0					31.0

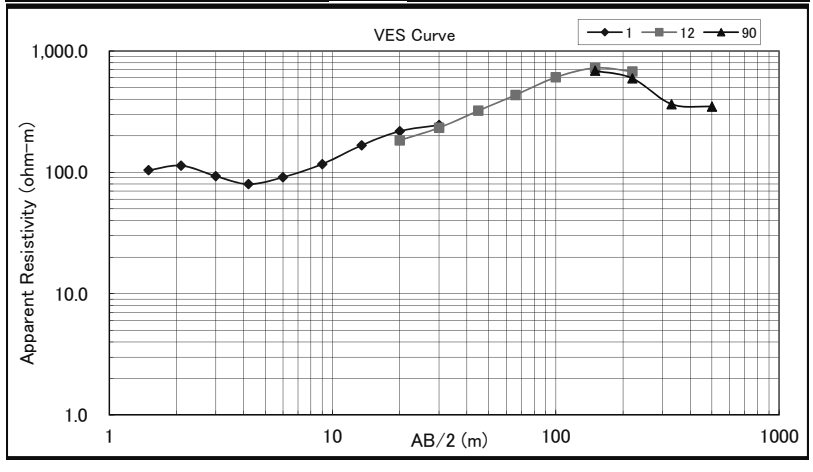


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2013.12.27	Easting (m)	615,113	Area	Fate Lady
Site No.	BH-8	Northing (m)	966,721	Instrument: Sting	
VES No.	5-2V	Elevation (m)	1,222	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	104.0					104.0
2	2.1	1	13.1	113.5					113.5
3	3	1	27.5	93.0					93.0
4	4.2	1	54.7	79.9					79.9
5	6	1	112	90.9	91.1				91.0
6	9	1	254	116.9					116.9
7	13.5	1	572	167.1					167.1
8	20	1	1,256	218.5	217.70				218.1
9	30	1	2,828	245.3					245.3
10	20	12	95	183.5					183.5
11	30	12	226	232.7					232.7
12	45	12	521	321.6					321.6
13	66	12	1,131	434.5	433.00				433.8
14	100	12	2,609	606.1					606.1
15	150	12	5,883	724.1					724.1
16	220	12	12,666	678.4					678.4
17	150	90	715	687.3					687.3
18	220	90	1,619	595.4					595.4
19	330	90	3,732	364.0	364.70				364.4
20	500	90	8,659	349.0	346.30				347.7

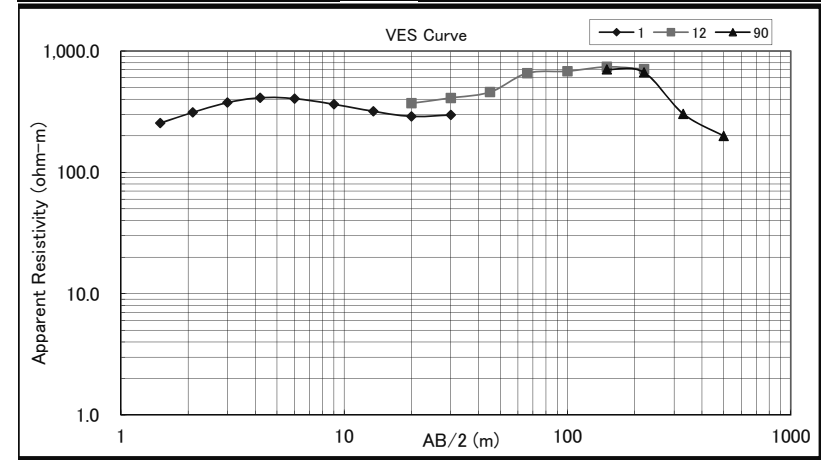


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.2	Easting (m)	615,227	Area	Fate Lady
Site No.	BH-8	Northing (m)	966,605	Instrument: Sting	
VES No.	8-8V	Elevation (m)	1,222	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	254.1					254.1
2	2.1	1	13.1	311.6					311.6
3	3	1	27.5	375.4					375.4
4	4.2	1	54.7	411.2					411.2
5	6	1	112	404.6	404.4				404.5
6	9	1	254	363.5					363.5
7	13.5	1	572	318.5					318.5
8	20	1	1,256	289.0					289.0
9	30	1	2,828	296.6					296.6
10	20	12	95	371.8	370.0				370.9
11	30	12	226	410.1					410.1
12	45	12	521	458.2					458.2
13	66	12	1,131	655.8	656.20				656.0
14	100	12	2,609	680.5	681.20				680.9
15	150	12	5,883	740.0	740.80				740.4
16	220	12	12,666	707.7					707.7
17	150	90	715	707.1					707.1
18	220	90	1,619	666.9	671.90	661.8	661.8		665.6
19	330	90	3,732	302.7	303.20				303.0
20	500	90	8,659	200.6	197.70				199.2

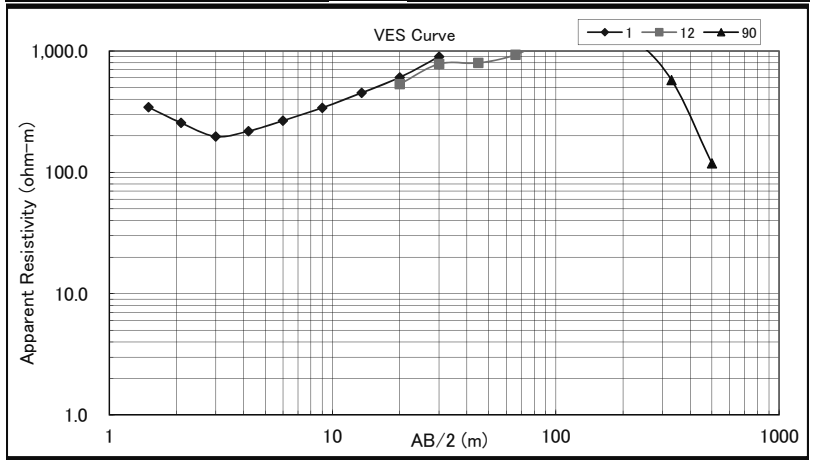


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.2	Easting (m)	615,351	Area	Fate Lady
Site No.	BH-9	Northing (m)	966,529	Instrument: Sting	
VES No.	8-9V	Elevation (m)	1,222	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	343.7					343.7
2	2.1	1	13.1	255.1					255.1
3	3	1	27.5	197.3					197.3
4	4.2	1	54.7	218.1					218.1
5	6	1	112	266.1					266.1
6	9	1	254	340.1					340.1
7	13.5	1	572	452.0					452.0
8	20	1	1,256	605.5					605.5
9	30	1	2,828	896.9	898.4				897.7
10	20	12	95	532.2	532.2				532.2
11	30	12	226	781.6					781.6
12	45	12	521	797.3					797.3
13	66	12	1,131	929.9	928.8				929.4
14	100	12	2,609	1,305.0	1,327.0				1,316.0
15	150	12	5,883	1,295.0	1,297.0				1,296.0
16	220	12	12,666	1,023.0	1,027.0				1,025.0
17	150	90	715	1,447.0	1,447.0				1,447.0
18	220	90	1,619	1,253.0	1,254.0				1,253.5
19	330	90	3,732	582.0	568.6				575.3
20	500	90	8,659	126.0	110.8				118.4

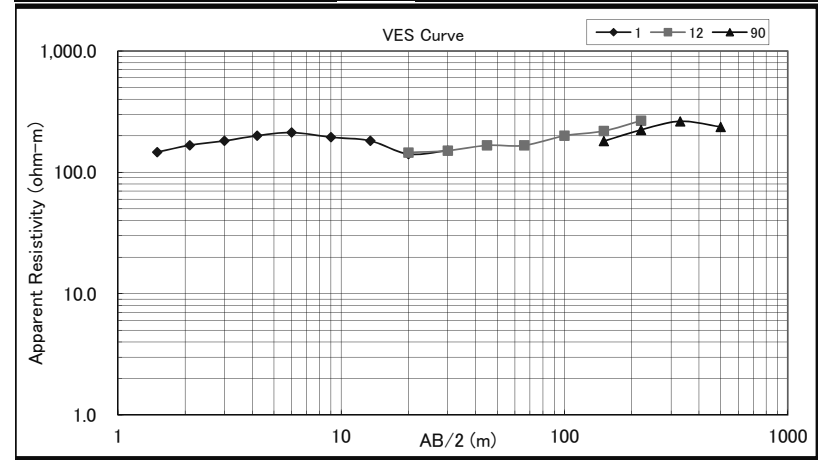


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	554,613	Area	Bofa
Site No.	BH-9	Northing (m)	936,767	Instrument: Sting	
VES No.	9-1V	Elevation (m)	1,413	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	146.6	146.6				146.6
2	2.1	1	13.1	167.0					167.0
3	3	1	27.5	181.5					181.5
4	4.2	1	54.7	200.1					200.1
5	6	1	112	212.6					212.6
6	9	1	254	194.7					194.7
7	13.5	1	572	181.5					181.5
8	20	1	1,256	141.4					141.4
9	30	1	2,828	150.9					150.9
10	20	12	95	145.4					145.4
11	30	12	226	150.9					150.9
12	45	12	521	166.4	166.90				166.7
13	66	12	1,131	166.5					166.5
14	100	12	2,609	200.1					200.1
15	150	12	5,883	219.0					219.0
16	220	12	12,666	266.5					266.5
17	150	90	715	180.7					180.7
18	220	90	1,619	223.6					223.6
19	330	90	3,732	263.6	263.30				263.5
20	500	90	8,659	228.9	244.90				236.9

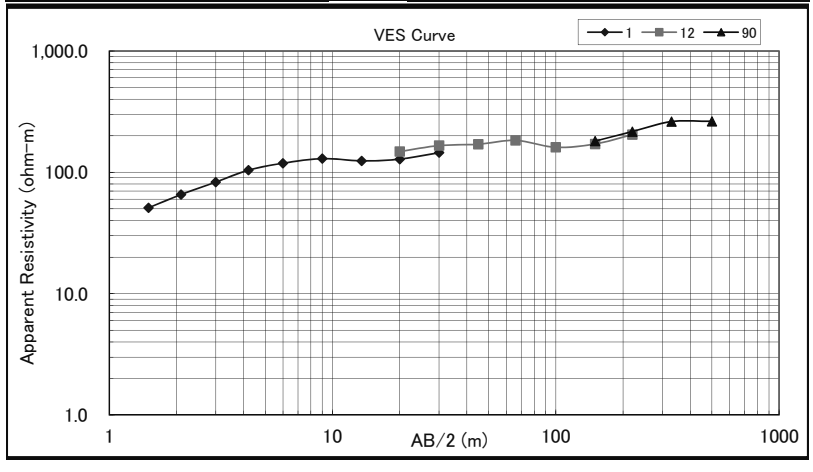


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	554,891	Area	Bofa
Site No.	BH-9	Northing (m)	936,871	Instrument: Sting	
VES No.	9-2V	Elevation (m)	1,412	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	51.0					51.0
2	2.1	1	13.1	65.6					65.6
3	3	1	27.5	83.0					83.0
4	4.2	1	54.7	104.0					104.0
5	6	1	112	118.8					118.8
6	9	1	254	129.6					129.6
7	13.5	1	572	124.2					124.2
8	20	1	1,256	128.2	128.3				128.3
9	30	1	2,828	145.2	145.2				145.2
10	20	12	95	148.0					148.0
11	30	12	226	166.1					166.1
12	45	12	521	170.2	170.4				170.3
13	66	12	1,131	183.2					183.2
14	100	12	2,609	160.6	160.8				160.7
15	150	12	5,883	171.0					171.0
16	220	12	12,666	204.4					204.4
17	150	90	715	181.0					181.0
18	220	90	1,619	216.6					216.6
19	330	90	3,732	261.9	262.0				262.0
20	500	90	8,659	263.1	263.1				263.1

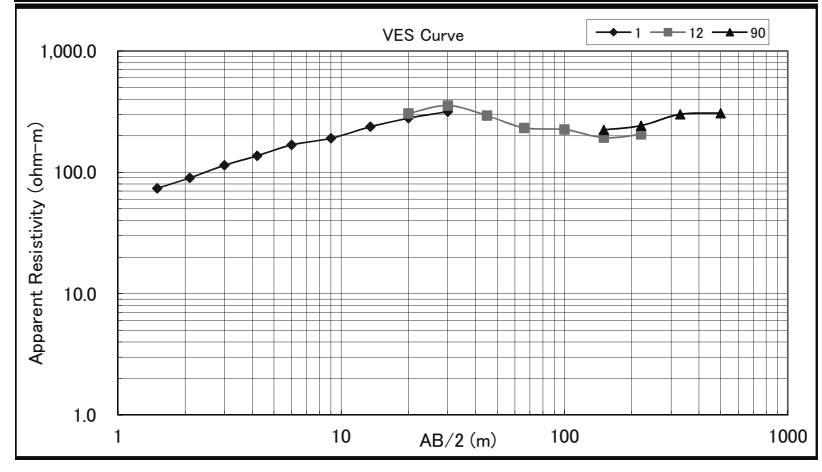


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	554,891	Area	Bofa
Site No.	BH-9	Northing (m)	936,871	Instrument: Sting	
VES No.	9-2V	Elevation (m)	1,412	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	73.8					73.8
2	2.1	1	13.1	89.9					89.9
3	3	1	27.5	114.1					114.1
4	4.2	1	54.7	136.7					136.7
5	6	1	112	168.1					168.1
6	9	1	254	190.6	190.6				190.6
7	13.5	1	572	237.1					237.1
8	20	1	1,256	279.2					279.2
9	30	1	2,828	316.2					316.2
10	20	12	95	305.3					305.3
11	30	12	226	355.0					355.0
12	45	12	521	293.5	293.5				293.5
13	66	12	1,131	232.1					232.1
14	100	12	2,609	225.1					225.1
15	150	12	5,883	192.9					192.9
16	220	12	12,666	204.9					204.9
17	150	90	715	223.6					223.6
18	220	90	1,619	242.4					242.4
19	330	90	3,732	301.0	300.7				300.9
20	500	90	8,659	307.2	307.6				307.4

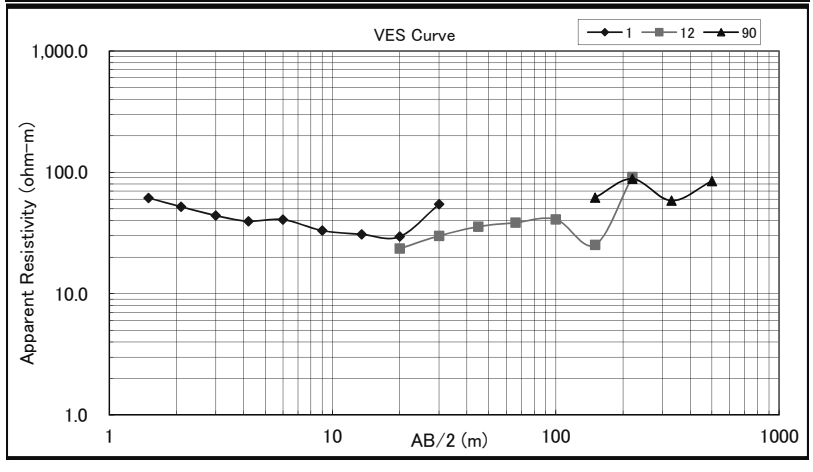


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	535,337	Area	Bofa
Site No.	BH-10	Northing (m)	922,099	Instrument: Sting	
VES No.	10-2V	Elevation (m)	1,628	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	61.5					61.5
2	2.1	1	13.1	52.0					52.0
3	3	1	27.5	44.0					44.0
4	4.2	1	54.7	39.5					39.5
5	6	1	112	40.7	40.8				40.8
6	9	1	254	33.1					33.1
7	13.5	1	572	30.8					30.8
8	20	1	1,256	29.5					29.5
9	30	1	2,828	53.8	55.2				54.5
10	20	12	95	23.4	23.6				23.5
11	30	12	226	29.9					29.9
12	45	12	521	34.5	35.3	37.2			35.7
13	66	12	1,131	38.4	38.5				38.5
14	100	12	2,609	41.3	40.6				41.0
15	150	12	5,883	20.2	20.9	34.6			25.2
16	220	12	12,666	90.5	92.5				91.5
17	150	90	715	61.9	62.0				62.0
18	220	90	1,619	88.6	88.1				88.4
19	330	90	3,732	57.9	58.9				58.4
20	500	90	8,659	85.7	83.9				84.8

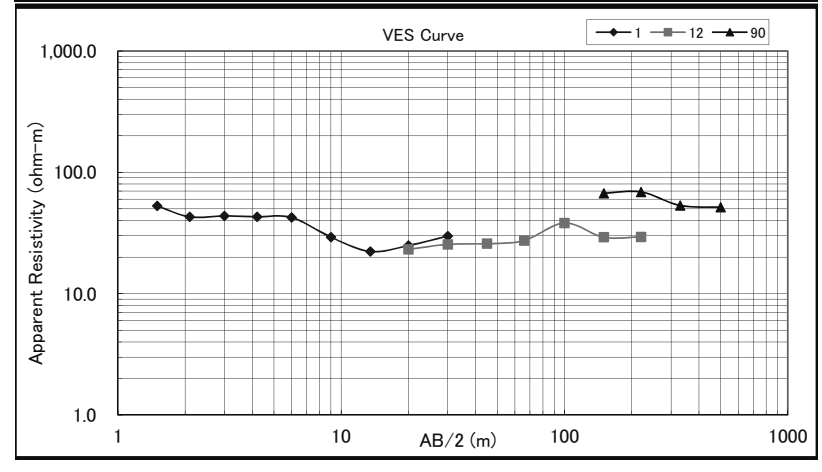


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.14	Easting (m)	535,337	Area	Dera
Site No.	BH-10	Northing (m)	922,099	Instrument: Sting	
VES No.	10-2V	Elevation (m)	1,628	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	52.8					52.8
2	2.1	1	13.1	42.9					42.9
3	3	1	27.5	43.7					43.7
4	4.2	1	54.7	43.0					43.0
5	6	1	112	42.4					42.4
6	9	1	254	28.8	29.4	29.4			29.2
7	13.5	1	572	22.2	22.30				22.3
8	20	1	1,256	24.9					24.9
9	30	1	2,828	29.7	29.9				29.8
10	20	12	95	19.8	19.8	29.9			23.2
11	30	12	226	25.5	25.4				25.5
12	45	12	521	25.6	26.0				25.8
13	66	12	1,131	27.4					27.4
14	100	12	2,609	37.7	38.7				38.2
15	150	12	5,883	29.4	28.9				29.2
16	220	12	12,666	25.5	33.2				29.4
17	150	90	715	67.2	67.1				67.2
18	220	90	1,619	74.4	65.8	66.5			68.9
19	330	90	3,732	58.4	48.1				53.3
20	500	90	8,659	52.7	50.6				51.7

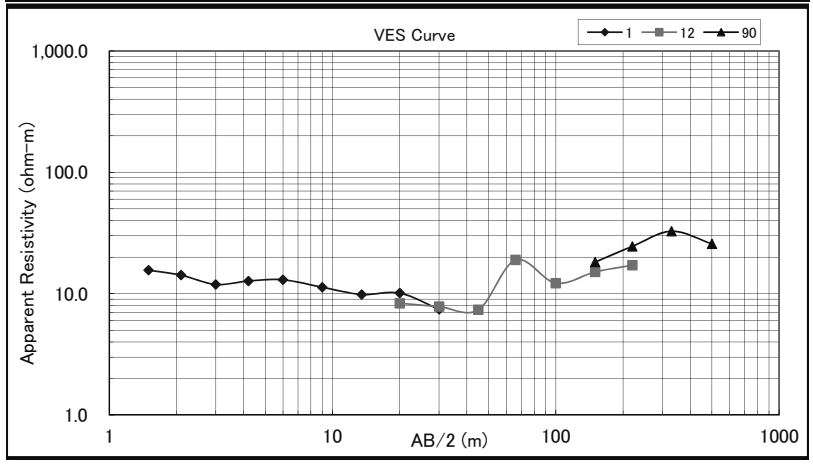


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.21	Easting (m)	552,889	Area	Sire
Site No.	BH-10	Northing (m)	915,780	Instrument: Sting	
VES No.	11-1V	Elevation (m)	1,821	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	15.6					15.6
2	2.1	1	13.1	14.2					14.2
3	3	1	27.5	11.9					11.9
4	4.2	1	54.7	12.7					12.7
5	6	1	112	13.0					13.0
6	9	1	254	11.3					11.3
7	13.5	1	572	9.76	9.92				9.8
8	20	1	1,256	10.1					10.1
9	30	1	2,828	5.4	8.32	8.52			7.4
10	20	12	95	8.32	8.34				8.3
11	30	12	226	7.82					7.8
12	45	12	521	7.34	7.37				7.4
13	66	12	1,131	19.5	19.1	18.4			19.0
14	100	12	2,609	12.1	12.3				12.2
15	150	12	5,883	15.1					15.1
16	220	12	12,666	16.8	17.5				17.2
17	150	90	715	18.2	18.2				18.2
18	220	90	1,619	24.5					24.5
19	330	90	3,732	32.7					32.7
20	500	90	8,659	29.3	22.2				25.7

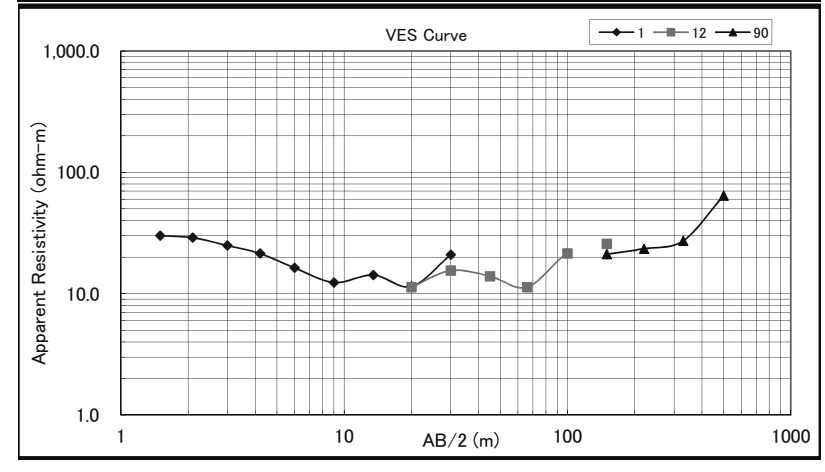


THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

VES data sheet

Date	2014.1.21	Easting (m)	553,180	Area	Sire
Site No.	BH-11	Northing (m)	915,570	Instrument: Sting	
VES No.	11-2V	Elevation (m)	1,844	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	30.0					30.0
2	2.1	1	13.1	28.9					28.9
3	3	1	27.5	24.9					24.9
4	4.2	1	54.7	21.4					21.4
5	6	1	112	16.3					16.3
6	9	1	254	12.3	12.4				12.4
7	13.5	1	572	16.5	12.00				14.3
8	20	1	1,256	10.6	12.3				11.5
9	30	1	2,828	20.9					20.9
10	20	12	95	11.3					11.3
11	30	12	226	15.5					15.5
12	45	12	521	13.9					13.9
13	66	12	1,131	11.3					11.3
14	100	12	2,609	21.8	23.5	19.0			21.4
15	150	12	5,883	19.6	25.7	31.8			25.7
16	220	12	12,666	0.0					0.0
17	150	90	715	21.1	21.2				21.2
18	220	90	1,619	29.0	17.9				23.5
19	330	90	3,732	26.7	27.6	27.5			27.3
20	500	90	8,659	64.5	64.1	64.3			64.3

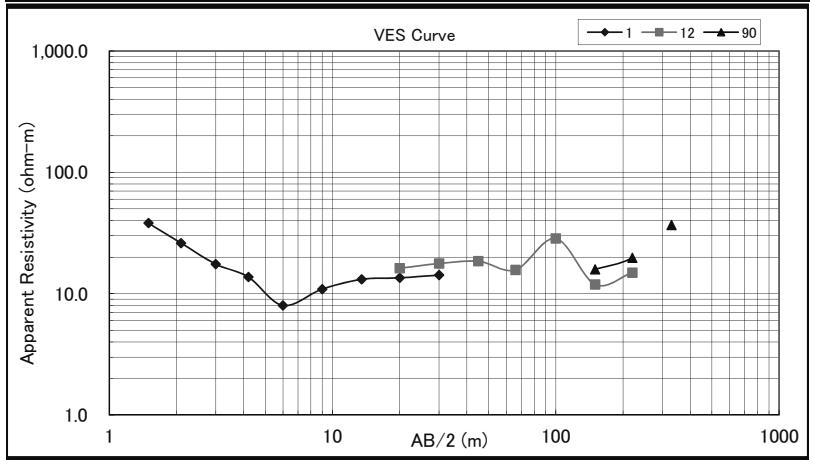


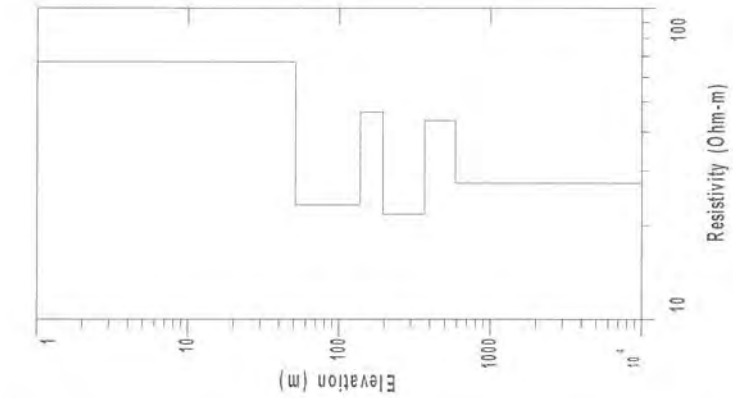
THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

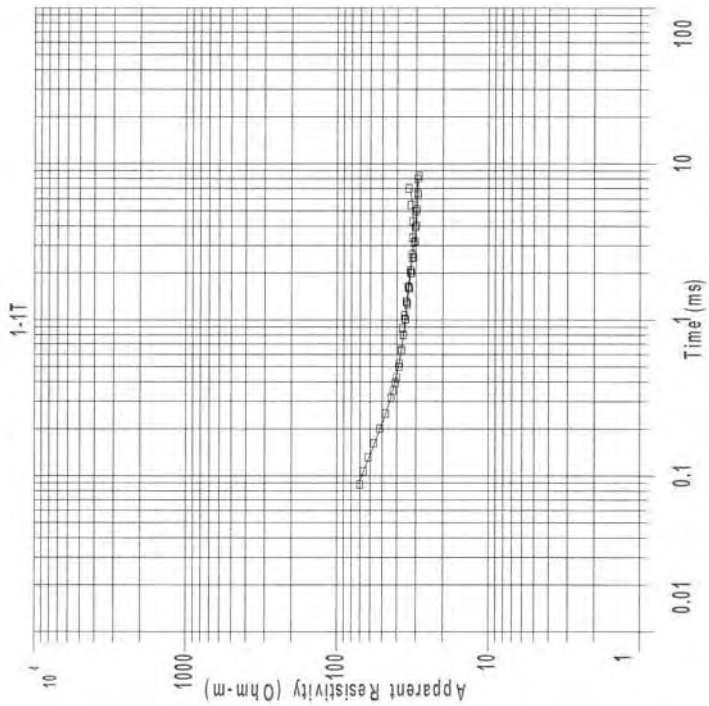
VES data sheet

Date	2014.1.21	Easting (m)	553,411	Area	Sire
Site No.	BH-11	Northing (m)	915,439	Instrument: Sting	
VES No.	11-3V	Elevation (m)	1,858	Array type: Schlumberger	

No.	AB/2	MN	K	Apparent Resistivity(ohm-m)					
				ρ1	ρ2	ρ3	ρ4	ρ5	Average
1	1.5	1	6.28	38.1					38.1
2	2.1	1	13.1	26.1					26.1
3	3	1	27.5	17.5					17.5
4	4.2	1	54.7	13.7					13.7
5	6	1	112	7.9	8.08				8.0
6	9	1	254	10.9	10.90				10.9
7	13.5	1	572	13.1					13.1
8	20	1	1,256	13.5					13.5
9	30	1	2,828	14.2					14.2
10	20	12	95	16.2	16.20				16.2
11	30	12	226	17.6	17.80				17.7
12	45	12	521	18.5					18.5
13	66	12	1,131	15.7					15.7
14	100	12	2,609	28.5					28.5
15	150	12	5,883	11.9					11.9
16	220	12	12,666	14.9					14.9
17	150	90	715	15.8	15.9				15.9
18	220	90	1,619	19.8	19.8				19.8
19	330	90	3,732	36.6	37.0				36.8
20	500	90	8,659	0.0					0.0







1-1T

Central Loop TEM

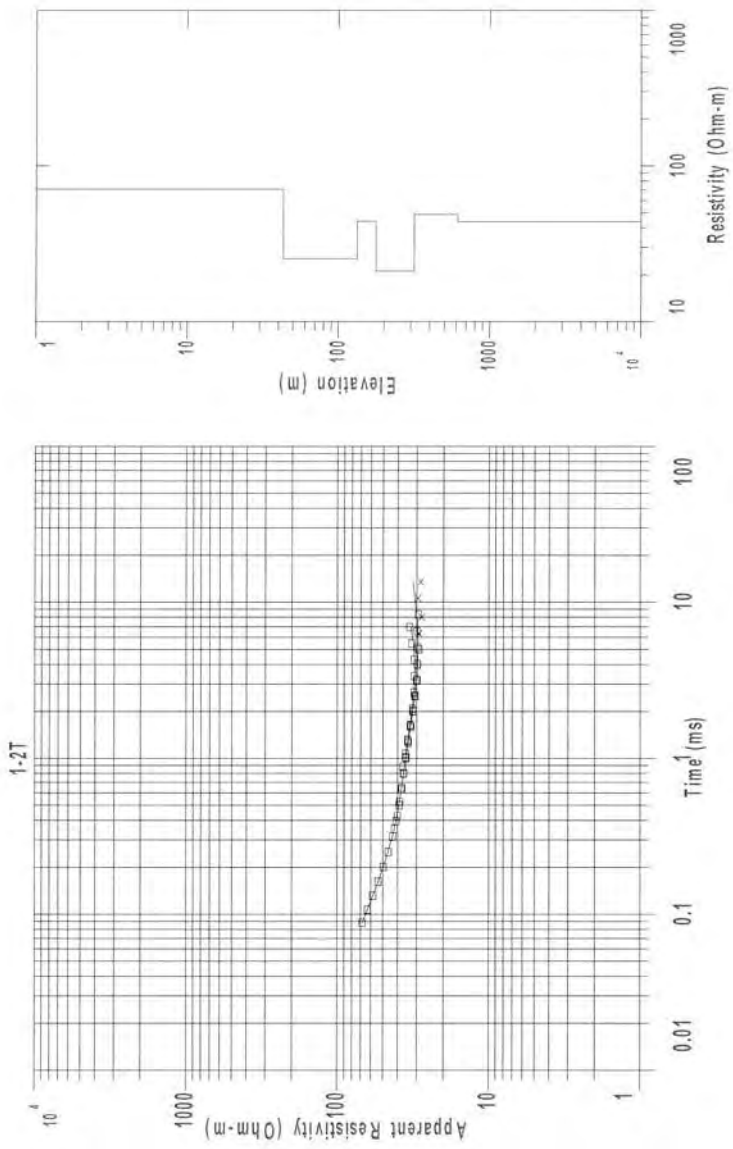
Northing: 985433.0 Easting: 542650.0 Elevation: 1742.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1742.0		
1	67.12	51.20	51.20	1690.7	0.762	3437.1
2	23.29	86.64	137.8	1604.1	3.71	2018.4
3	46.21	56.67	194.5	1547.4	1.22	2619.0
4	21.73	172.8	367.3	1374.6	7.95	3757.5
5	43.41	216.1	583.5	1158.4	4.97	9386.5
6	27.31					

ALL PARAMETERS ARE FREE

Prepared for



1-2T

Central Loop TEM

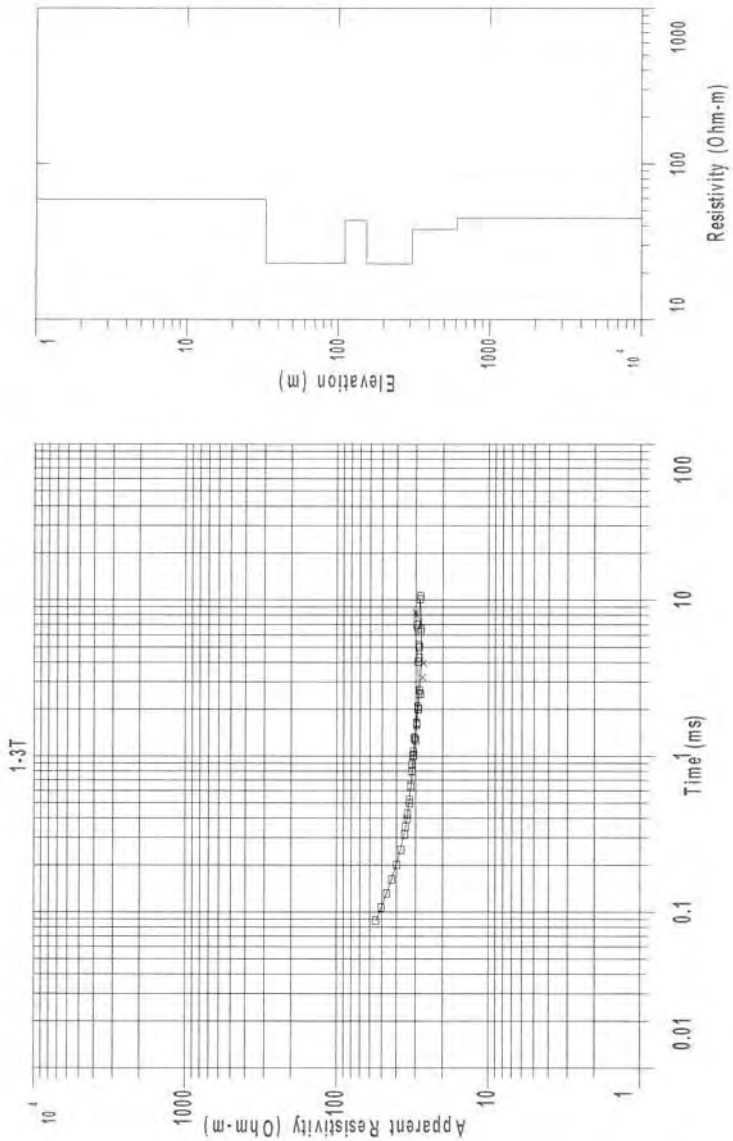
Northing: 985382.0 Easting: 542508.0 Elevation: 1762.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1762.0		
1	70.70	43.06	43.06	1718.9	0.609	3045.0
2	25.39	89.94	133.0	1628.9	3.54	2283.9
3	44.08	43.51	176.5	1585.4	0.986	1918.3
4	21.11	138.0	314.5	1447.4	6.53	2914.9
5	48.77	298.3	612.8	1149.1	6.11	14549.8
6	43.73					

ALL PARAMETERS ARE FREE

Prepared for



1-3T

Central Loop TEM

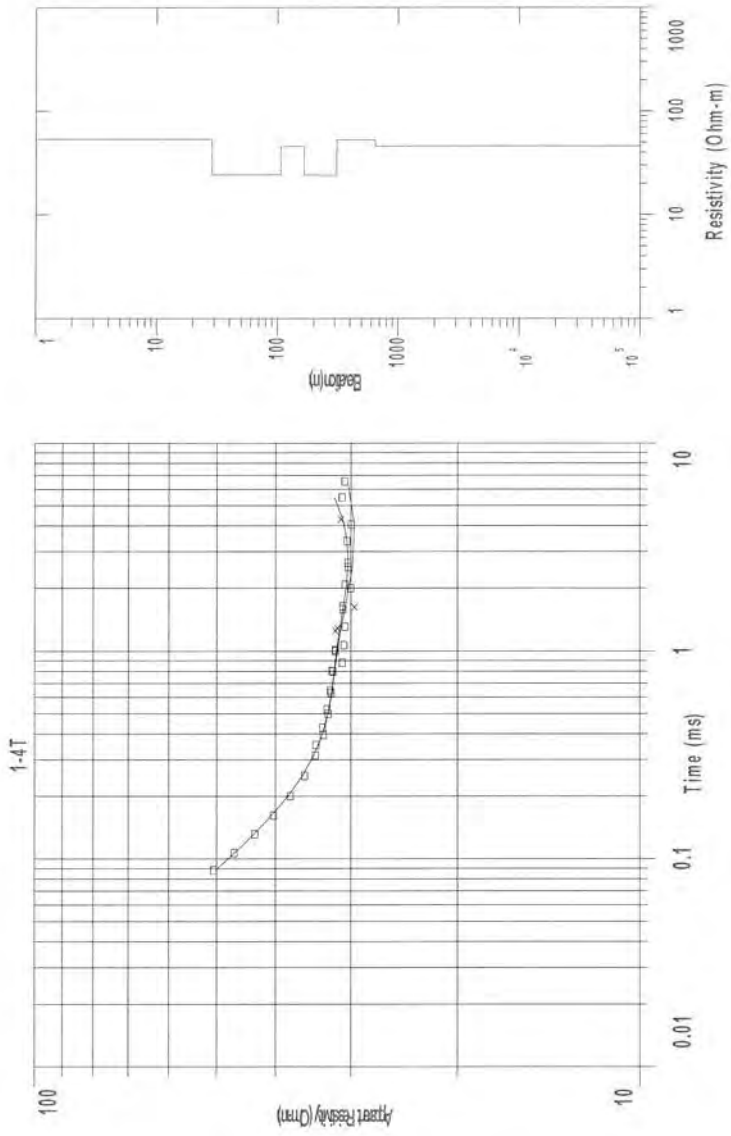
Northing: 985560.0 Easting: 542451.0 Elevation: 1743.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1743.0		
1	58.87	33.09	33.09	1709.9	0.562	1948.6
2	22.96	77.08	110.1	1632.8	3.35	1770.0
3	43.35	43.30	153.4	1589.5	0.998	1877.3
4	22.68	154.5	307.9	1435.0	6.81	3505.1
5	37.83	302.1	610.1	1132.8	7.98	11431.1
6	44.70					

ALL PARAMETERS ARE FREE

Prepared for



1-4T

Central Loop TEM

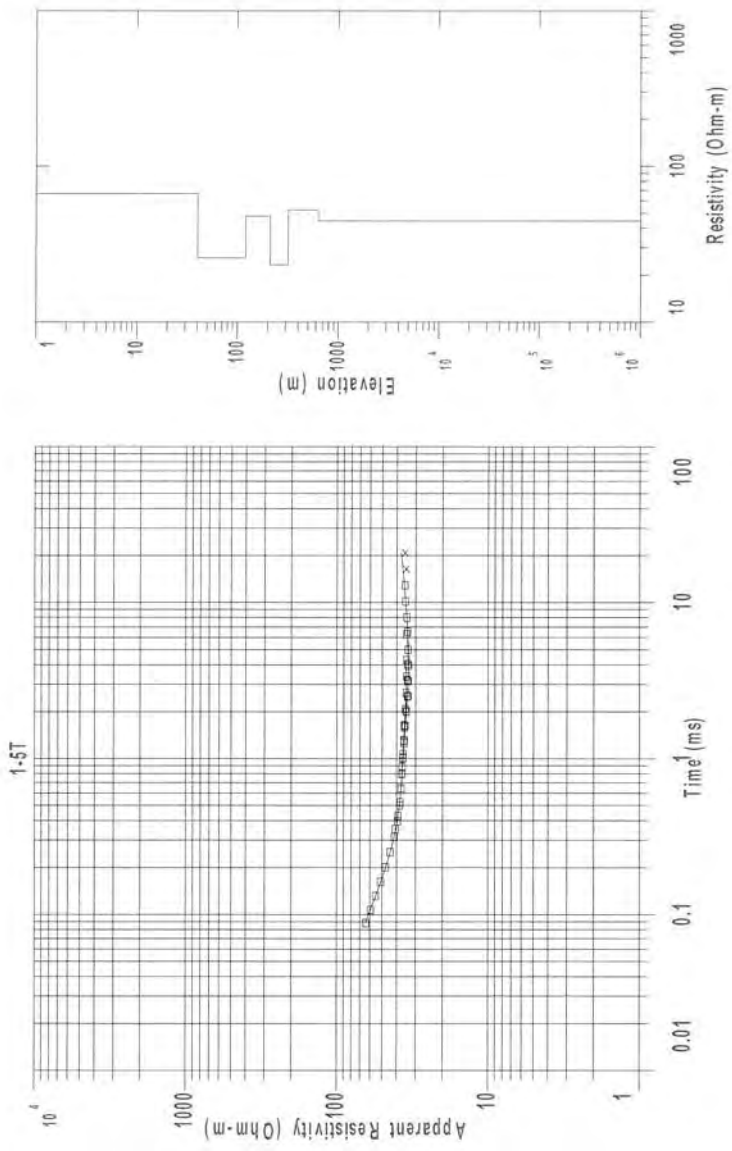
Northing: 985601.0 Easting: 542593.0 Elevation: 1738.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1738.0		
1	53.41	28.63	28.63	1709.3	0.536	1529.8
2	24.25	77.10	105.7	1632.2	3.17	1869.7
3	45.41	60.27	166.0	1571.9	1.32	2736.9
4	24.00	143.8	309.8	1428.1	5.99	3451.9
5	52.70	334.6	644.4	1093.5	6.34	17636.8
6	45.73					

ALL PARAMETERS ARE FREE

Prepared for



1-5T

Central Loop TEM

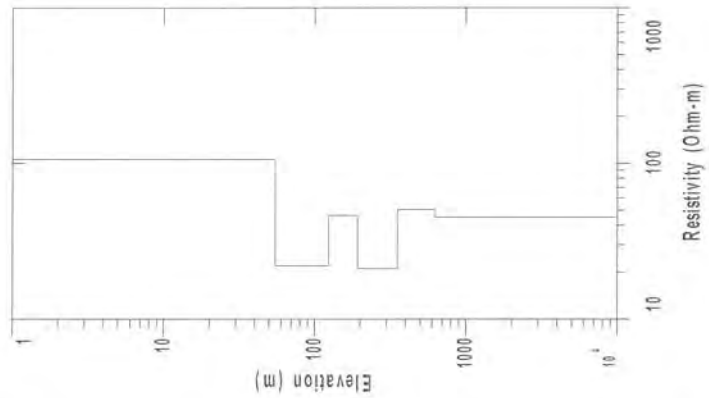
Northing: 985663.0 Easting: 542785.0 Elevation: 1735.0

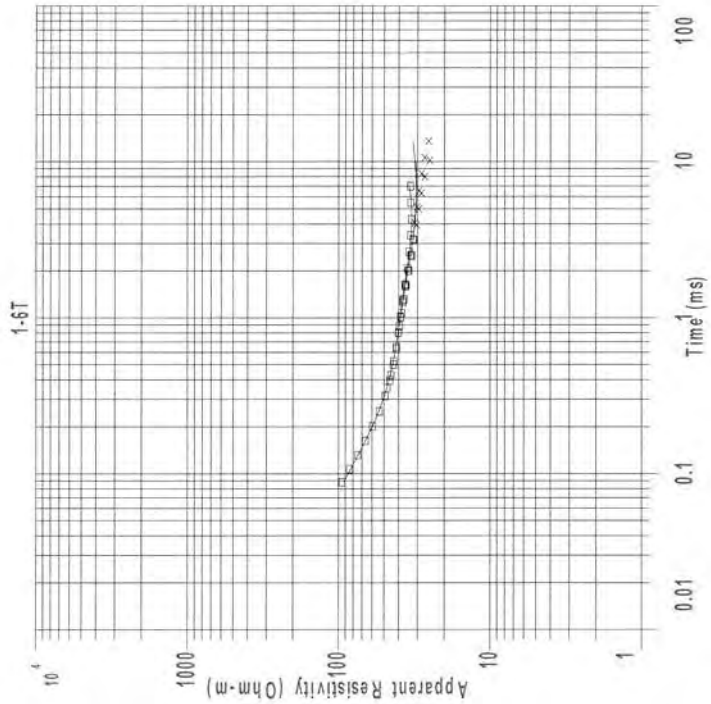
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1735.0		
1	66.75	40.11	40.11	1694.8	0.600	2677.7
2	25.77	80.90	121.0	1613.9	3.13	2085.5
3	47.87	89.93	210.9	1524.0	1.87	4305.8
4	23.27	105.9	316.8	1418.1	4.55	2465.5
5	52.38	314.2	631.0	1103.9	5.99	16459.8
6	44.65					

ALL PARAMETERS ARE FREE

Prepared for





1-6T

Central Loop TEM

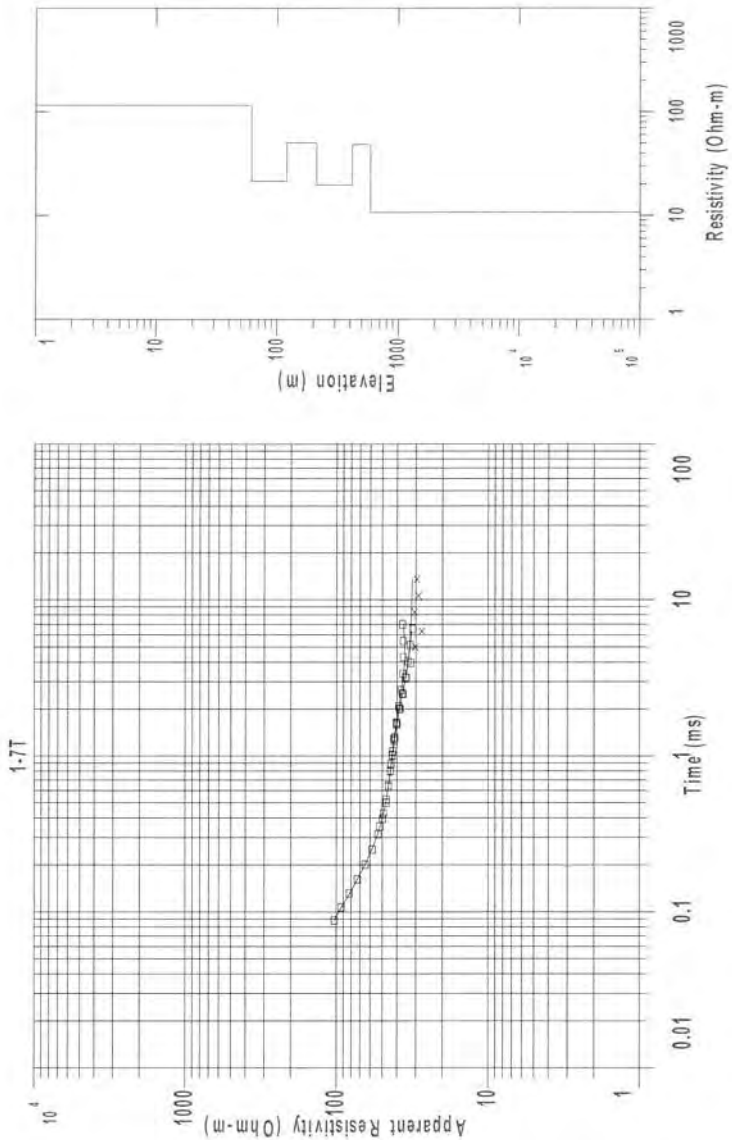
Northing: 985534.0 Easting: 542825.0 Elevation: 1750.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1750.0		
1	106.1	54.76	54.76	1695.2	0.516	5811.7
2	22.00	68.95	123.7	1626.2	3.13	1517.4
3	46.27	68.41	192.1	1557.8	1.47	3165.8
4	21.04	160.4	352.5	1397.4	7.62	3376.7
5	50.42	277.9	630.4	1119.5	5.51	14014.8
6	45.00					

ALL PARAMETERS ARE FREE

Prepared for



1-7T

Central Loop TEM

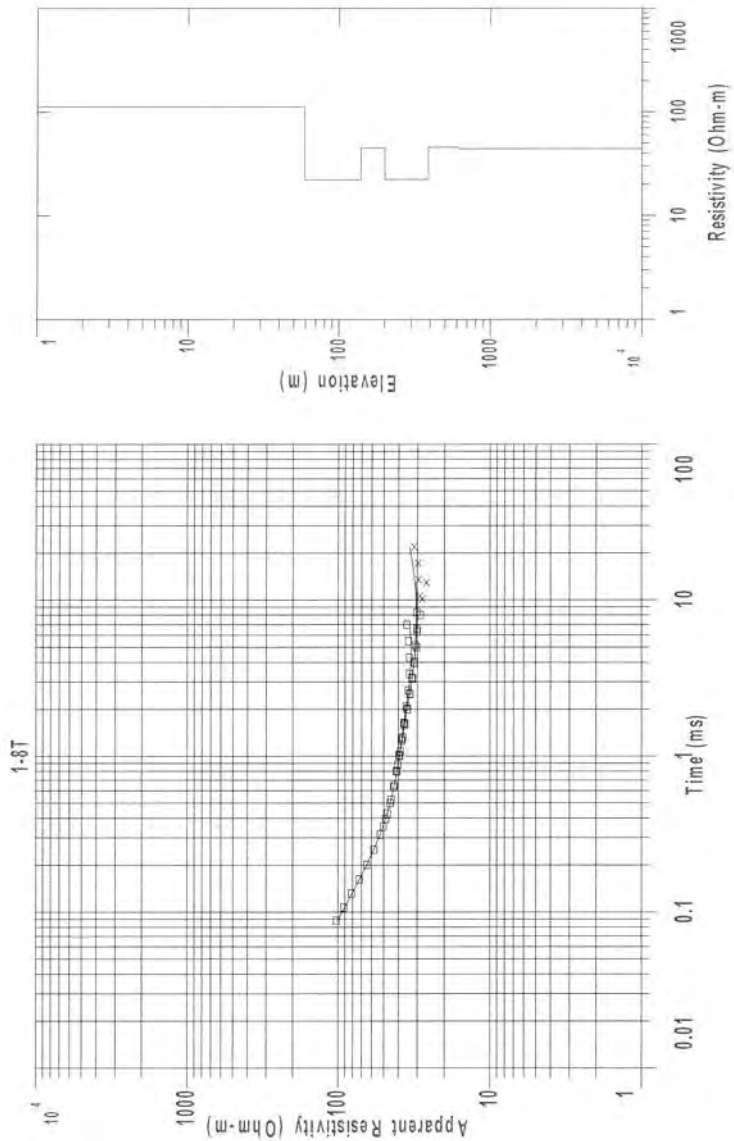
Northing: 985364.0 Easting: 542916.0 Elevation: 1770.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1770.0		
1	115.0	61.20	61.20	1708.7	0.532	7040.7
2	21.33	58.85	120.0	1649.9	2.75	1255.6
3	50.15	90.64	210.7	1559.2	1.80	4546.4
4	19.65	204.2	414.9	1355.0	10.38	4014.2
5	48.19	171.9	586.9	1183.0	3.56	8288.7
6	10.72					

ALL PARAMETERS ARE FREE

Prepared for



1-8T

Central Loop TEM

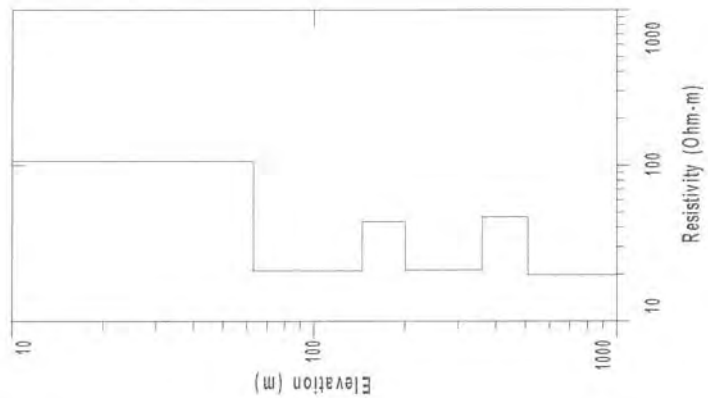
Northing: 985256.0 Easting: 542746.0 Elevation: 1762.0

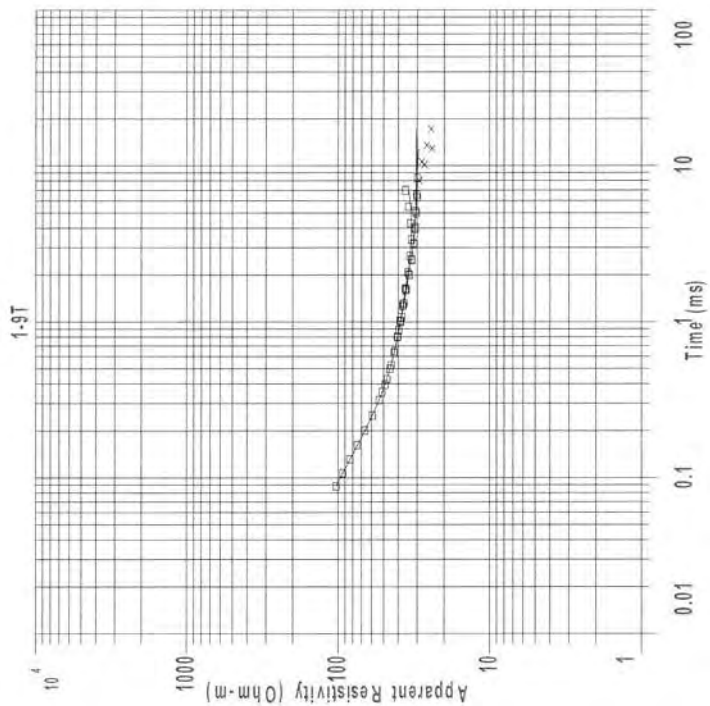
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1762.0		
1	112.1	58.92	58.92	1703.0	0.525	6606.9
2	22.16	80.35	139.2	1622.7	3.62	1781.2
3	44.83	60.88	200.1	1561.8	1.35	2729.7
4	22.25	187.2	387.3	1374.6	8.41	4166.6
5	45.65	229.8	617.2	1144.7	5.03	10494.8
6	43.92					

ALL PARAMETERS ARE FREE

Prepared for





1-9T

Central Loop TEM

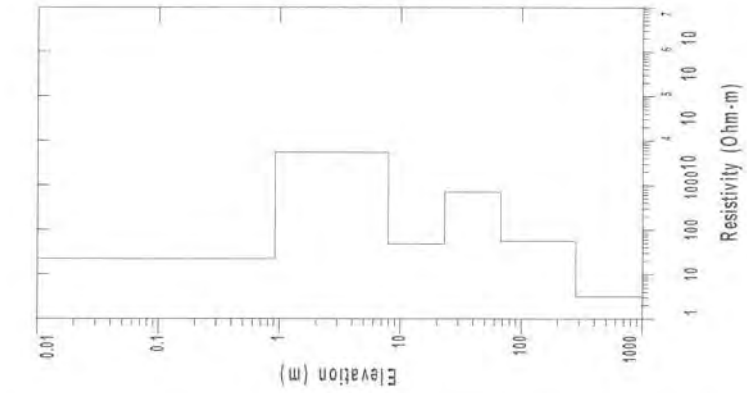
Northing: 985167.0 Easting: 542627.0 Elevation: 1770.0

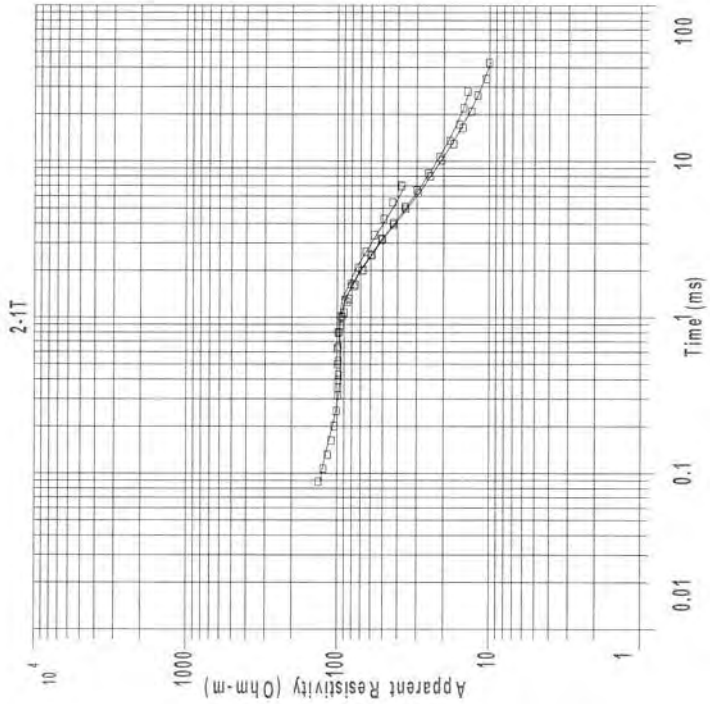
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1770.0		
1	106.6	62.94	62.94	1707.0	0.590	6713.2
2	21.06	81.53	144.4	1625.5	3.87	1717.0
3	43.52	55.69	200.1	1569.8	1.27	2423.8
4	21.34	159.8	360.0	1409.9	7.48	3411.7
5	46.53	148.6	508.6	1261.3	3.19	6918.9
6	19.80					

ALL PARAMETERS ARE FREE

Prepared for





2-1T

Central Loop TEM

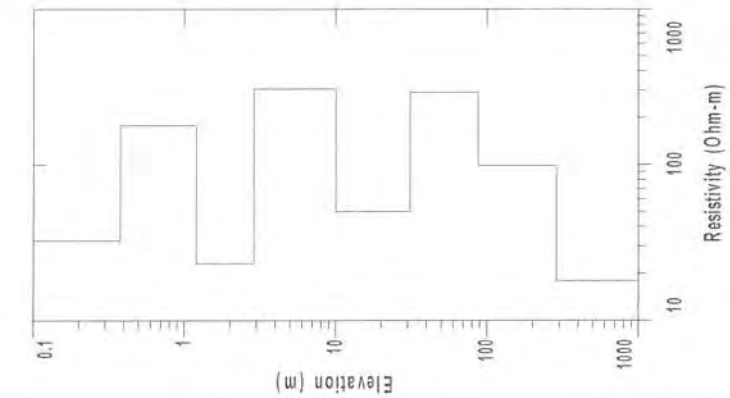
Northing: 980741.0 Easting: 567437.0 Elevation: 1151.0

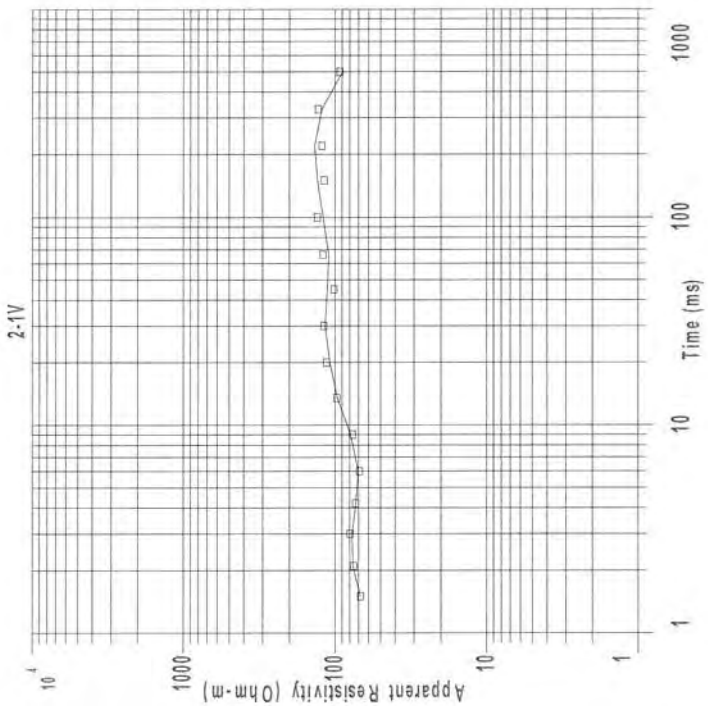
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1151.0		
1	22.04	0.918	0.918	1150.0	0.0416	20.24
2	5457.6	7.00	7.92	1143.0	0.00128	38252.8
3	47.78	15.16	23.09	1127.9	0.317	724.6
4	700.7	44.30	67.39	1083.6	0.0632	31046.9
5	55.91	212.8	280.2	870.7	3.80	11902.9
6	3.16					

ALL PARAMETERS ARE FREE

Prepared for





2-1V

Schlumberger Array

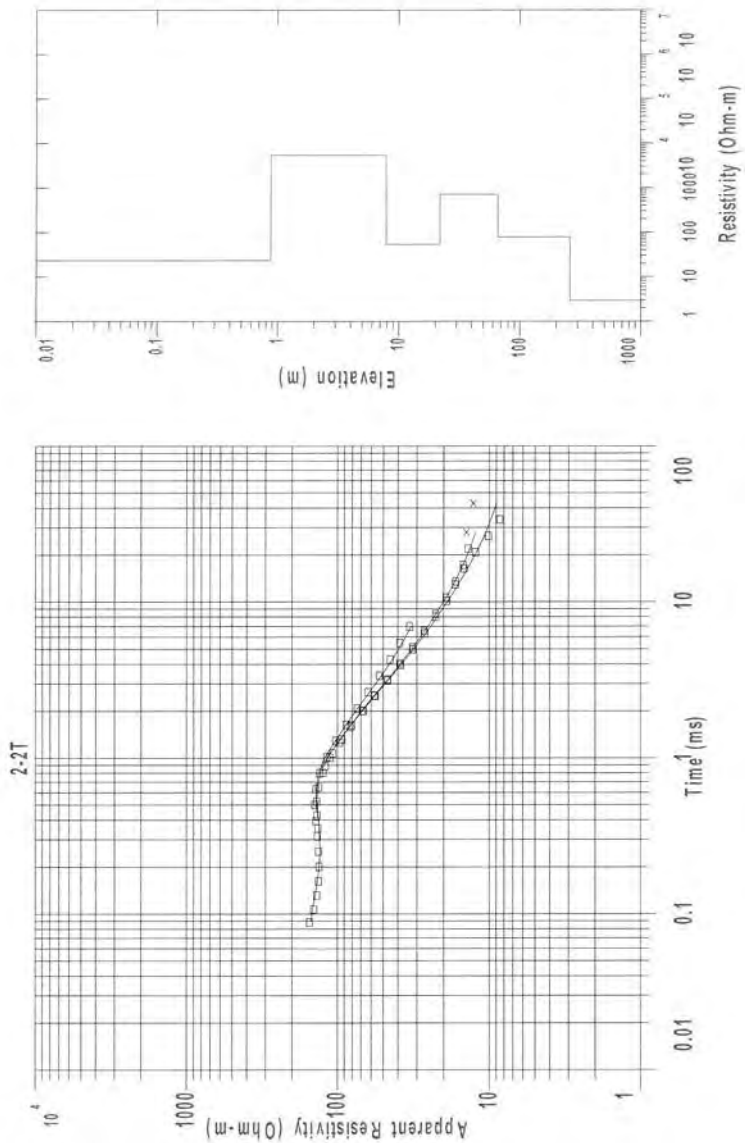
Northing: 980706.0 Easting: 567535.0 Elevation: 1150.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1150.0		
1	32.50	0.378	0.378	1149.6	0.0116	12.31
2	178.3	0.820	1.19	1148.8	0.00460	146.3
3	23.20	1.68	2.88	1147.1	0.0725	39.09
4	306.7	7.14	10.02	1139.9	0.0232	2191.0
5	50.03	21.00	31.03	1118.9	0.419	1051.1
6	291.9	56.55	87.58	1062.4	0.193	16513.1
7	98.44	199.1	286.7	863.2	2.02	19605.3
8	17.97					

ALL PARAMETERS ARE FREE

Prepared for



2-2T

Central Loop TEM

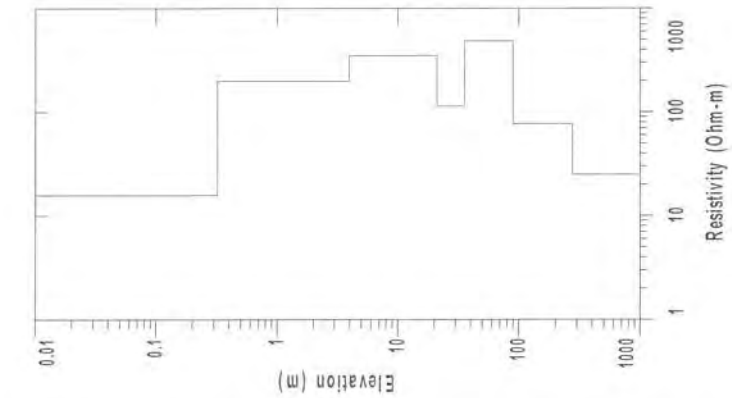
Northing: 980830.0 Easting: 567261.0 Elevation: 1156.0

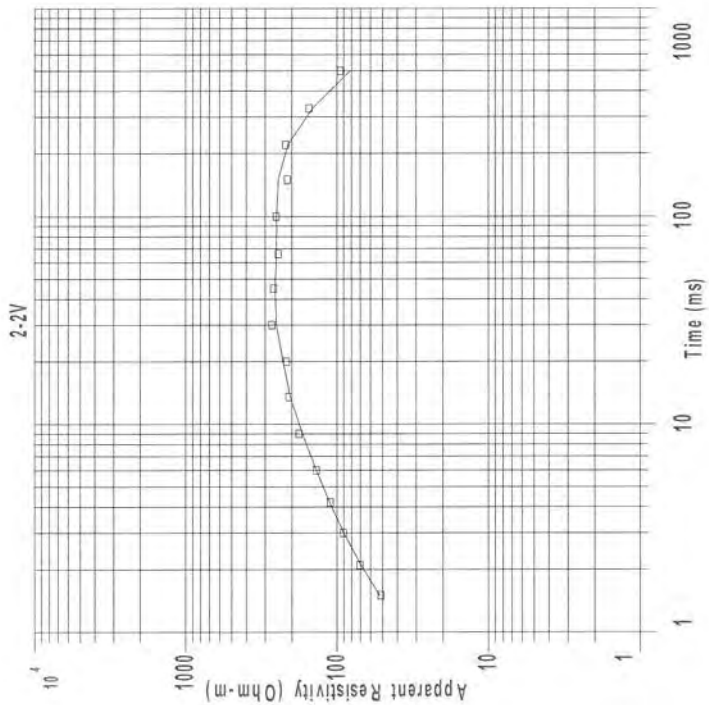
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1156.0		
1	23.39	0.878	0.878	1155.1	0.0375	20.54
2	5387.9	6.93	7.81	1148.1	0.00129	37381.8
3	53.65	14.13	21.94	1134.0	0.263	758.1
4	706.9	43.82	65.77	1090.2	0.0619	30984.2
5	78.16	192.9	258.7	897.2	2.46	15081.8
6	2.92					

ALL PARAMETERS ARE FREE

Prepared for





2-2V

Schlumberger Array

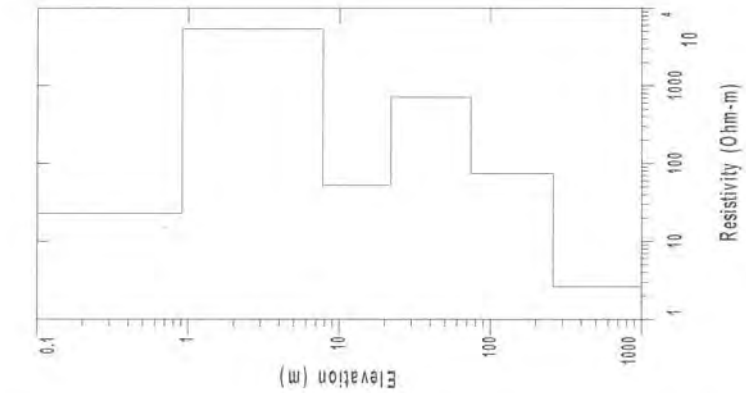
Northing: 980797.0 Easting: 567343.0 Elevation: 1154.0

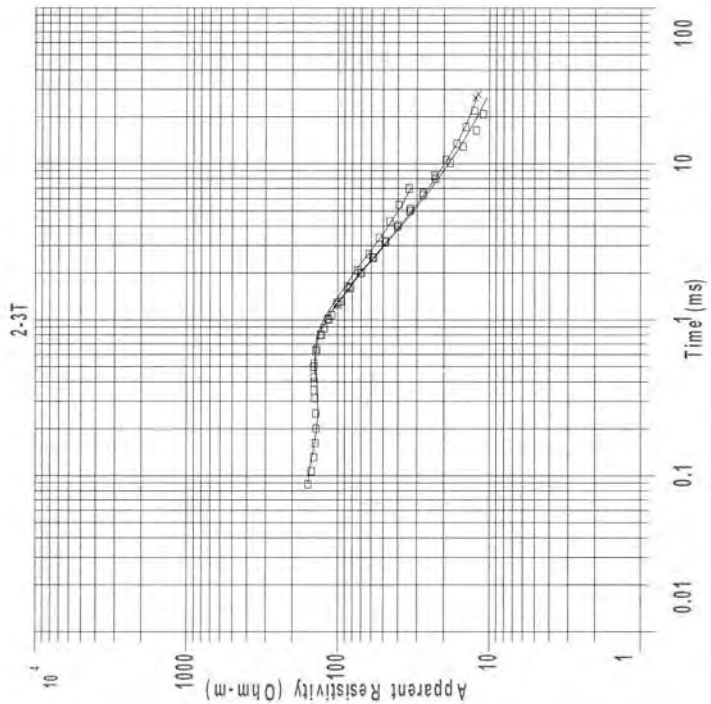
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1154.0		
1	15.71	0.321	0.321	1153.6	0.0204	5.04
2	197.9	3.66	3.98	1150.0	0.0184	724.7
3	350.0	17.17	21.15	1132.8	0.0490	6010.9
4	113.4 *	14.61 *	35.76	1118.2	0.128	1657.9
5	485.2 *	53.95 *	89.72	1064.2	0.111	26182.0
6	76.70 *	186.5 *	276.3	877.6	2.43	14312.0
7	24.98 *					

"*" INDICATES FIXED PARAMETER

Prepared for





2-3T

Central Loop TEM

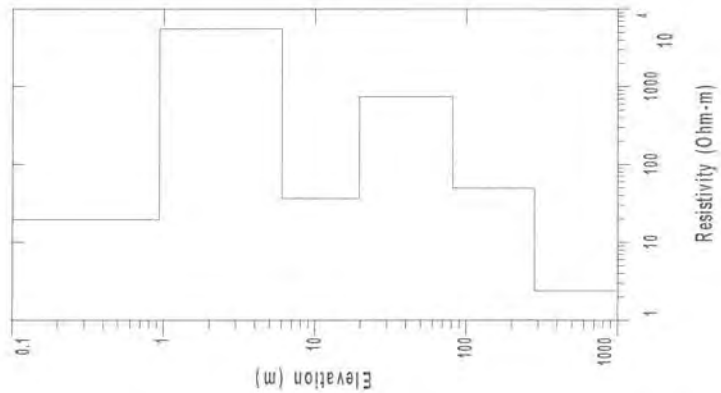
Northing: 981002.0 Easting: 567347.0 Elevation: 1150.0

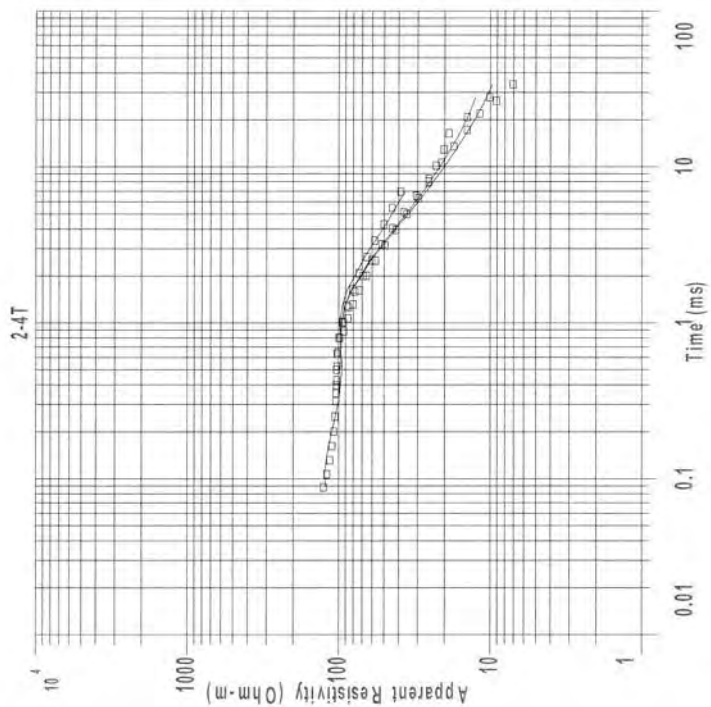
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1150.0		
1	22.87	0.908	0.908	1149.0	0.0397	20.77
2	5365.4	6.84	7.75	1142.2	0.00128	36716.6
3	52.55	14.05	21.80	1128.1	0.267	738.3
4	714.6	52.03	73.83	1076.1	0.0728	37186.0
5	74.06	186.2	260.1	889.8	2.51	13797.7
6	2.63					

ALL PARAMETERS ARE FREE

Prepared for





2-4T

Central Loop TEM

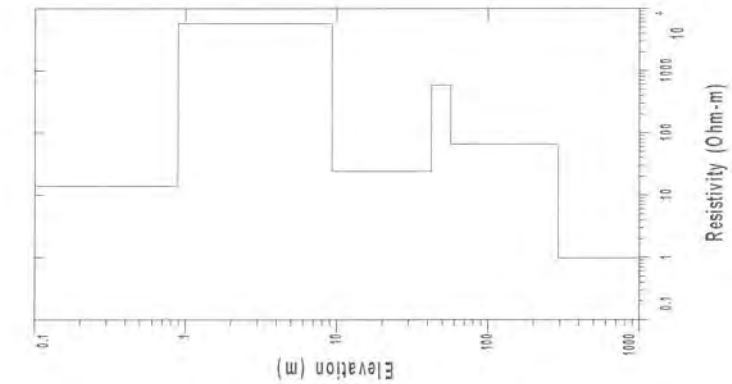
Northing: 980917.0 Easting: 567522.0 Elevation: 1148.0

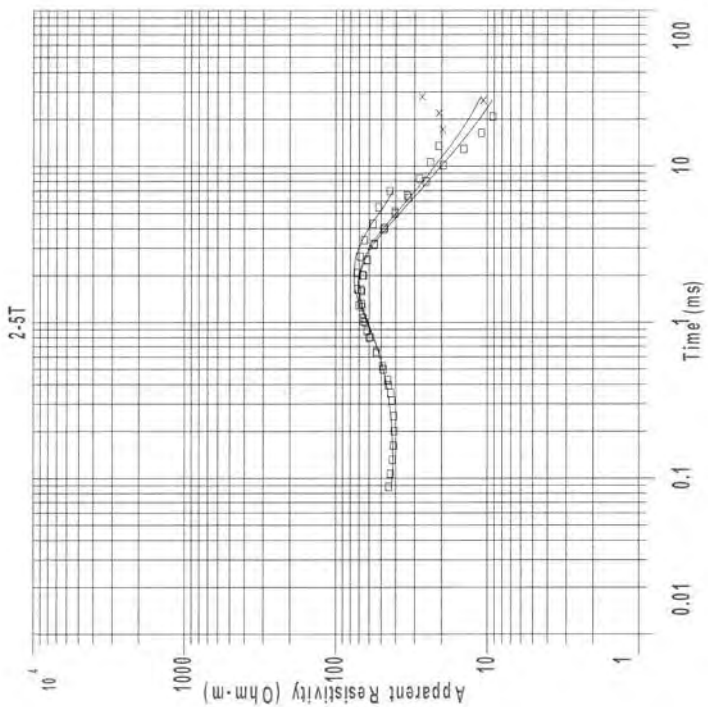
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1148.0		
1	19.46	0.933	0.933	1147.0	0.0479	18.17
2	5548.2	5.09	6.02	1141.9	0.0	28252.4
3	36.59	13.62	19.65	1128.3	0.372	498.6
4	746.7	61.96	81.61	1066.3	0.0829	46273.5
5	49.63	200.9	282.6	865.3	4.04	9976.9
6	2.37					

ALL PARAMETERS ARE FREE

Prepared for





2-5T

Central Loop TEM

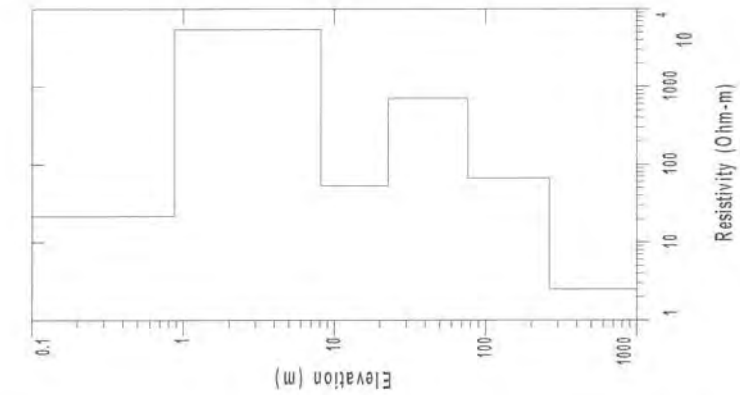
Northing: 980829.0 Easting: 567699.0 Elevation: 1148.0

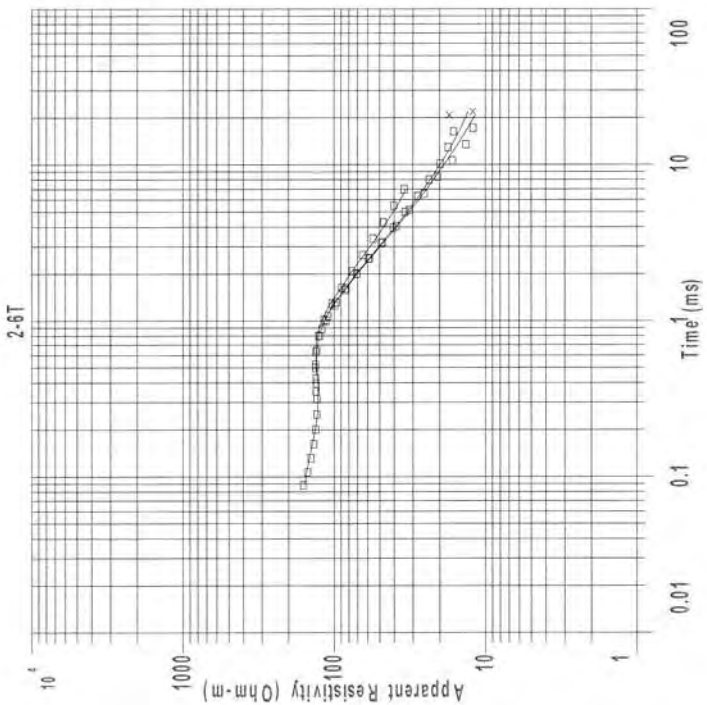
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1148.0		
1	13.92	0.891	0.891	1147.1	0.0640	12.41
2	5760.0	8.40	9.29	1138.7	0.00146	48415.6
3	24.08	32.91	42.21	1105.7	1.36	792.7
4	588.8	14.39	56.61	1091.3	0.0244	8478.8
5	65.83	235.8	292.5	855.4	3.58	15529.3
6	0.975					

ALL PARAMETERS ARE FREE

Prepared for





2-6T

Central Loop TEM

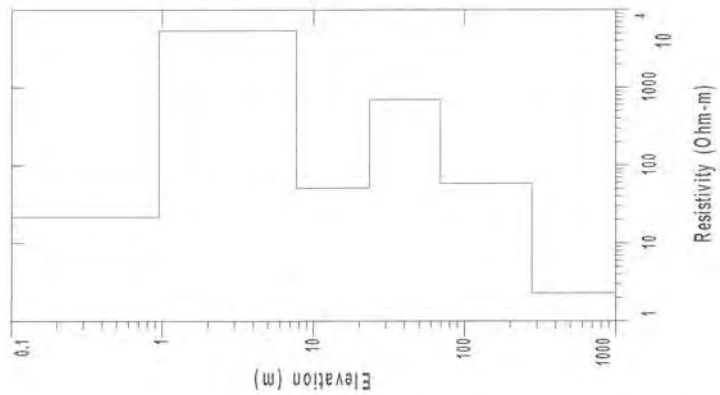
Northing: 980648.0 Easting: 567177.0 Elevation: 1161.0

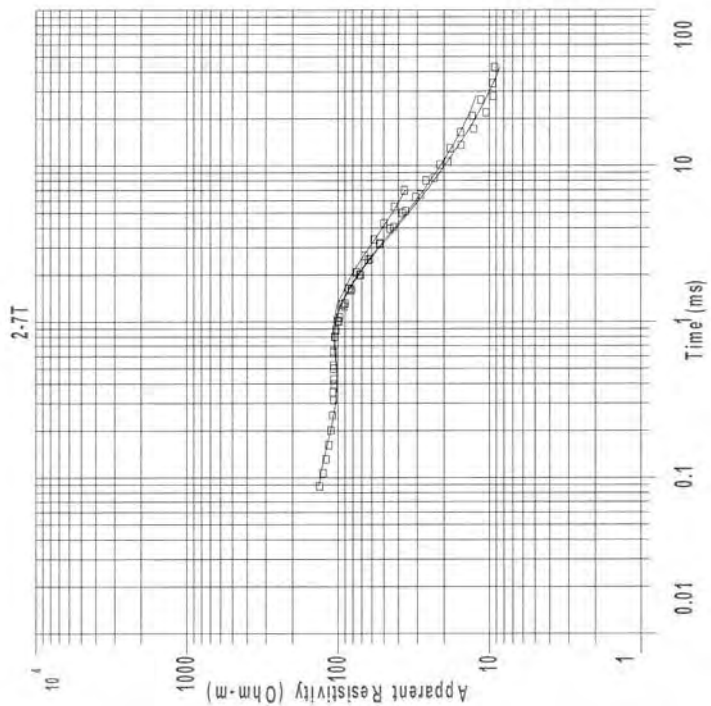
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1161.0		
1	21.53	0.873	0.873	1160.1	0.0405	18.81
2	5449.6	7.25	8.12	1152.8	0.00133	39513.0
3	52.95	14.61	22.73	1138.2	0.275	773.9
4	713.6	53.94	76.68	1084.3	0.0755	38496.0
5	66.62	186.6	263.2	897.7	2.80	12432.5
6	2.50					

ALL PARAMETERS ARE FREE

Prepared for





2-7T

Central Loop TEM

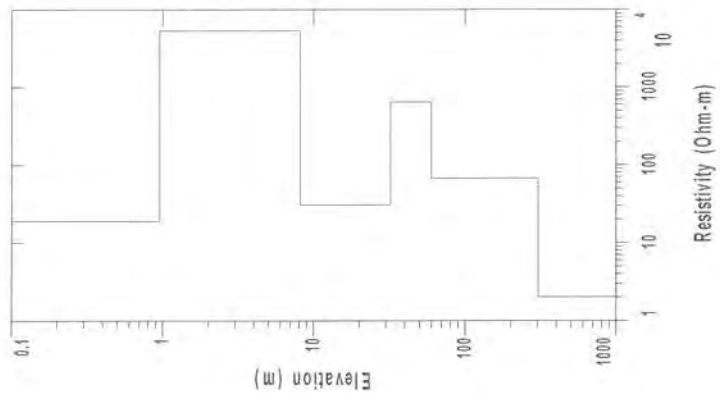
Northing: 980566.0 Easting: 567357.0 Elevation: 1154.0

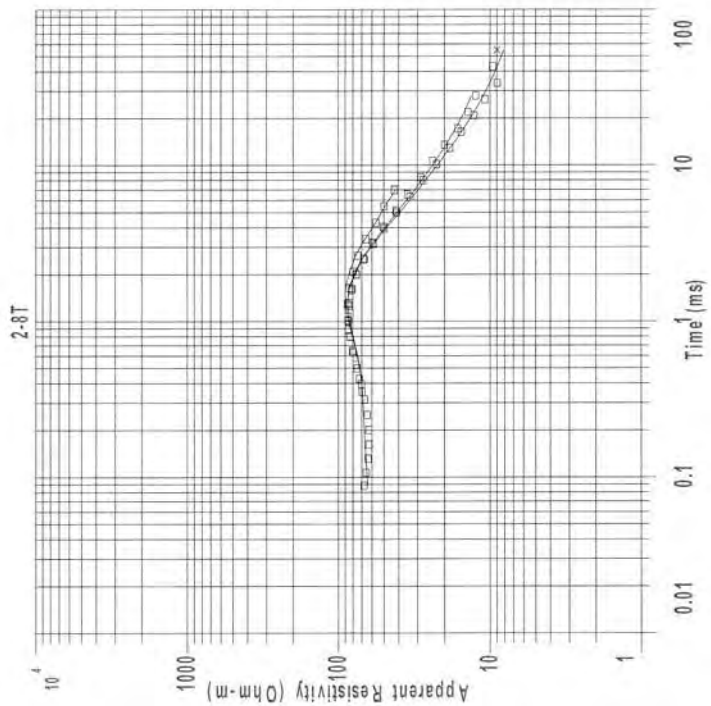
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1154.0		
1	21.65	0.951	0.951	1153.0	0.0439	20.60
2	5416.4	6.73	7.68	1146.3	0.00124	36497.9
3	50.94	15.70	23.39	1130.6	0.308	800.1
4	698.0	45.77	69.16	1084.8	0.0655	31953.4
5	58.54	209.0	278.2	875.7	3.57	12239.3
6	2.29					

ALL PARAMETERS ARE FREE

Prepared for





2-8T

Central Loop TEM

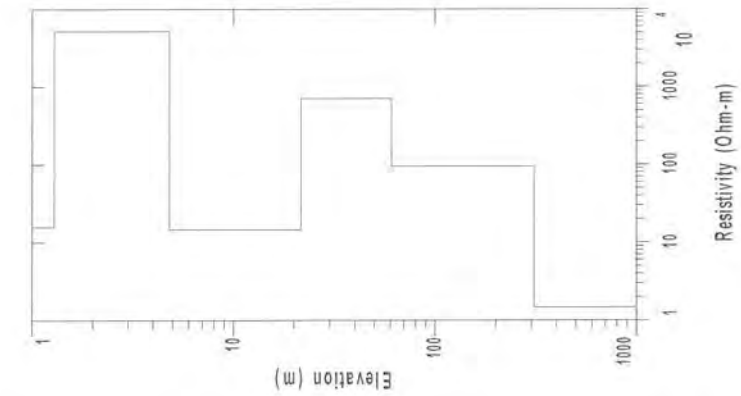
Northing: 980460.0 Easting: 567532.0 Elevation: 1153.0

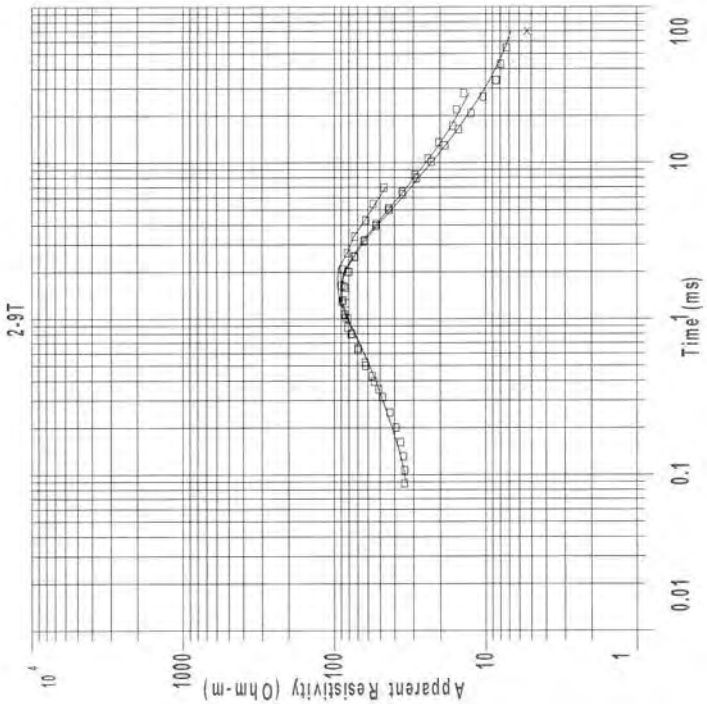
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1153.0		
1	19.06	0.954	0.954	1152.0	0.0500	18.19
2	5326.9	7.17	8.13	1144.8	0.00135	38245.6
3	30.86	23.97	32.11	1120.8	0.776	740.1
4	643.2	27.66	59.78	1093.2	0.0430	17799.7
5	67.52	244.0	303.8	849.1	3.61	16481.0
6	2.01					

ALL PARAMETERS ARE FREE

Prepared for





2-9T

Central Loop TEM

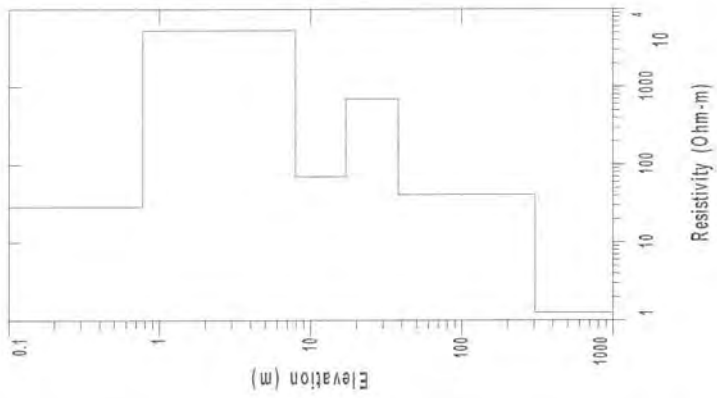
Northing: 980643.0 Easting: 567615.0 Elevation: 1148.0

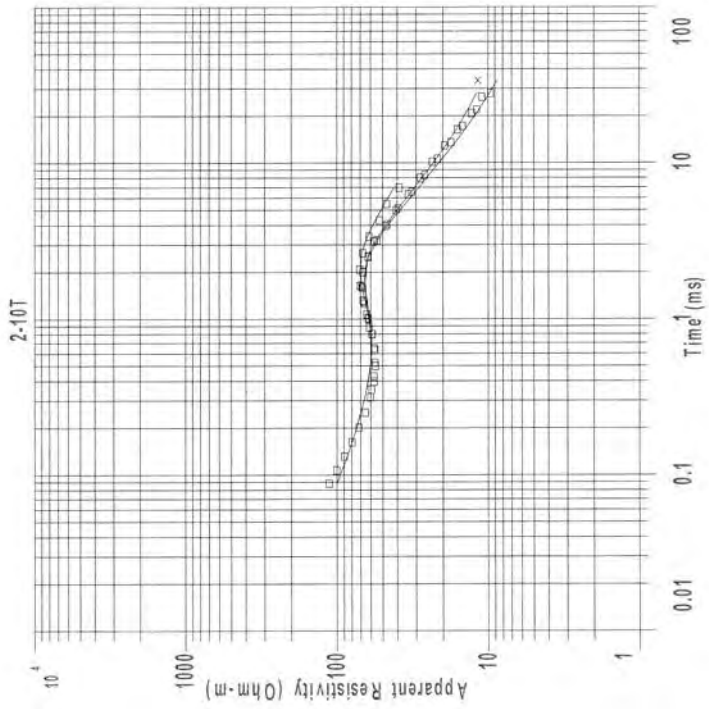
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1148.0		
1	15.72	1.28	1.28	1146.7	0.0818	20.23
2	5197.9	3.52	4.81	1143.1	0.0	18340.6
3	14.54	16.81	21.62	1126.3	1.15	244.5
4	705.7	39.02	60.65	1087.3	0.0553	27543.0
5	95.12	248.4	309.1	838.8	2.61	23636.7
6	1.47					

ALL PARAMETERS ARE FREE

Prepared for





2-10T

Central Loop TEM

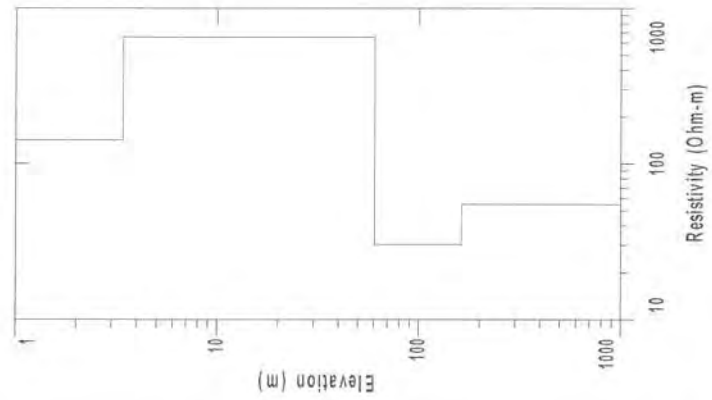
Northing: 980554.0 Easting: 567789.0 Elevation: 1146.0

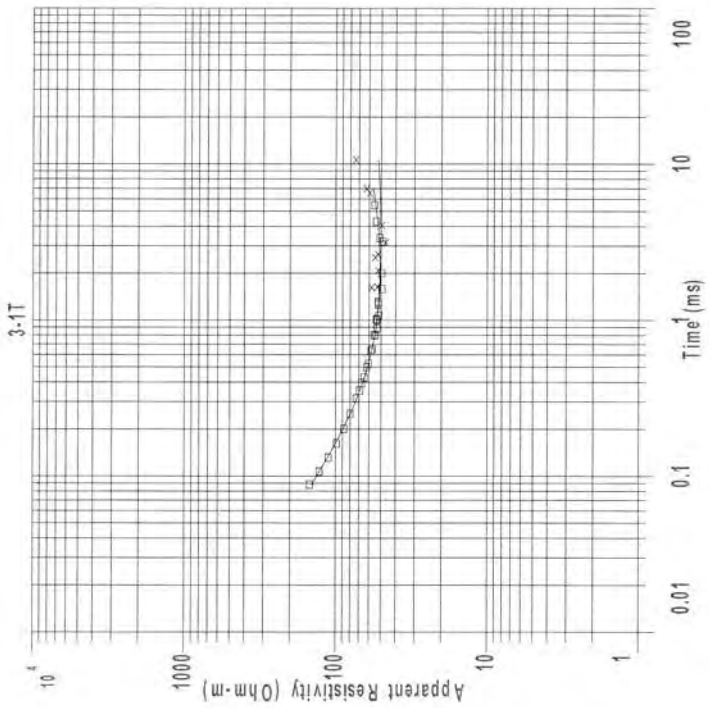
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1146.0		
1	28.73	0.774	0.774	1145.2	0.0269	22.25
2	5324.4	7.15	7.92	1138.0	0.00134	38096.0
3	70.15	9.03	16.95	1129.0	0.128	633.5
4	698.3	20.85	37.81	1108.1	0.0298	14565.7
5	41.06	266.8	304.6	841.3	6.49	10957.3
6	1.25					

ALL PARAMETERS ARE FREE

Prepared for





3-1T

Central Loop TEM

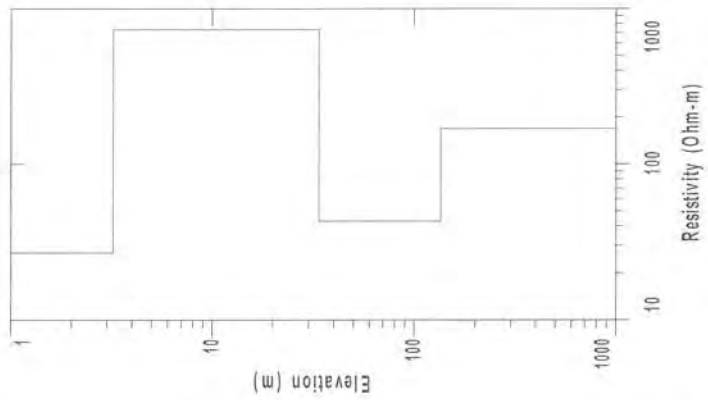
Northing: 982872.0 Easting: 589168.0 Elevation: 1027.0

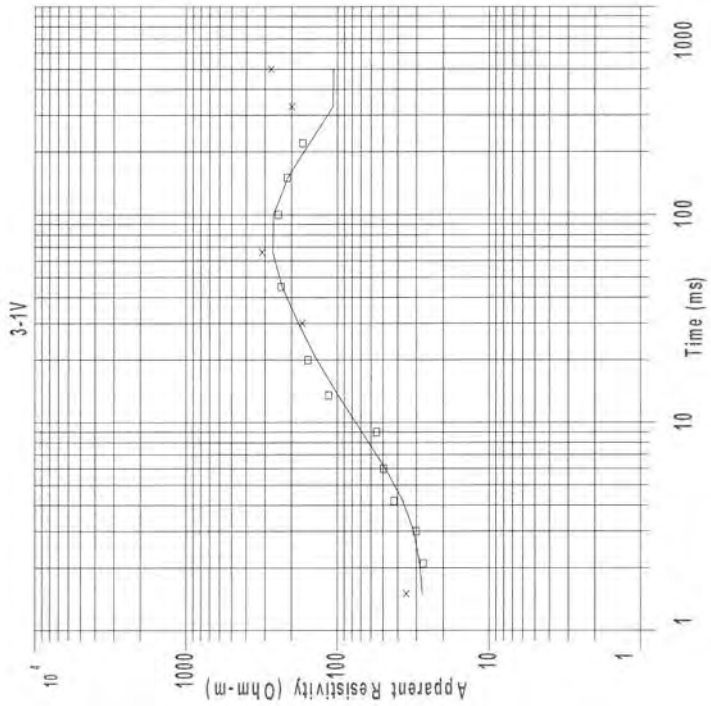
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1027.0		
1	141.5	3.40	3.40	1023.5	0.0240	481.4
2	651.4	56.94 *	60.34	966.6	0.0874	37095.6
3	30.33	102.0 *	162.4	864.5	3.36	3096.8
4	54.77					

"*" INDICATES FIXED PARAMETER

Prepared for





3-1V

Schlumberger Array

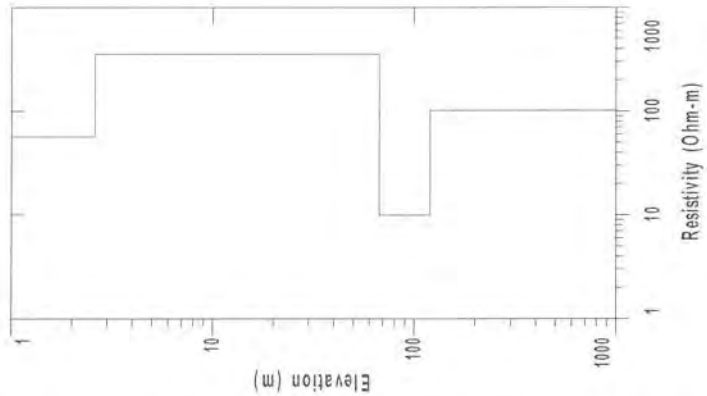
Northing: 982874.0 Easting: 589175.0 Elevation: 1026.0

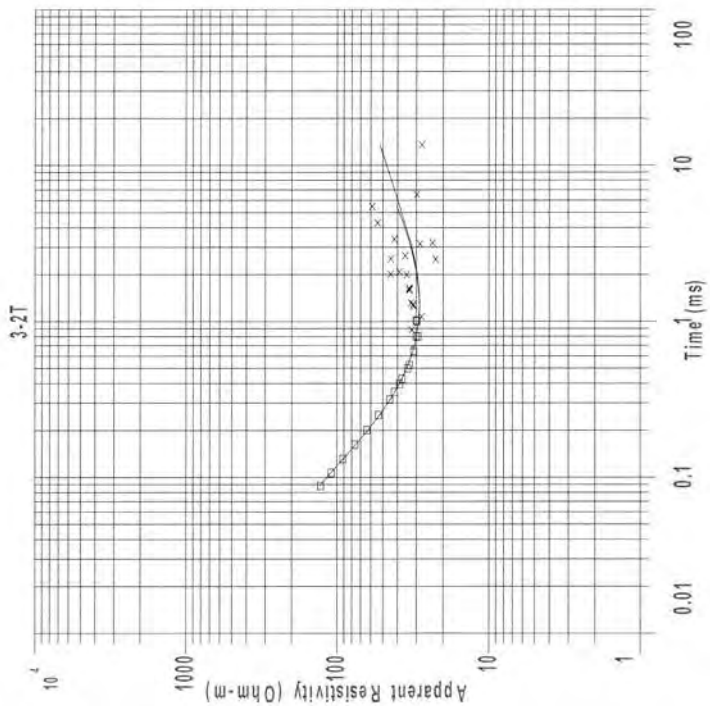
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1026.0		
1	26.94 *	3.21	3.21	1022.7	0.119	86.65
2	733.4	30.48	33.70	992.2	0.0415	22359.3
3	43.00	101.5	135.2	890.7	2.36	4367.2
4	168.7					

"*" INDICATES FIXED PARAMETER

Prepared for





3-2T

Central Loop TEM

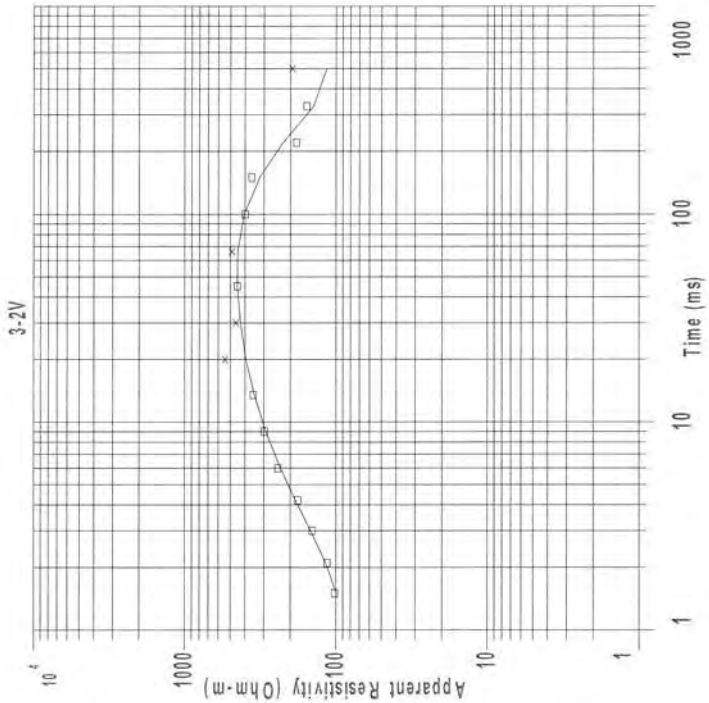
Northing: 982673.0 Easting: 589168.0 Elevation: 1032.0

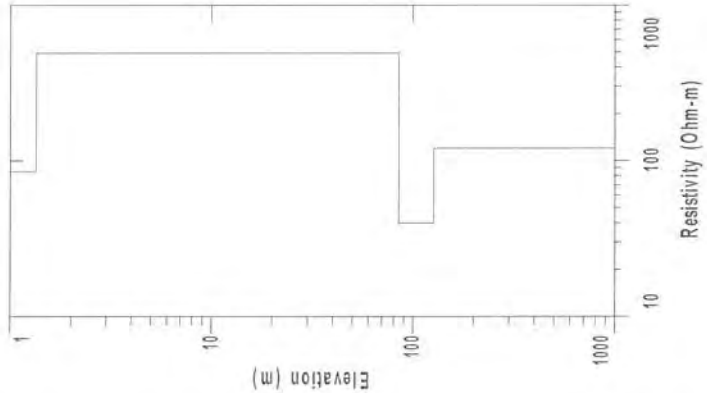
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1032.0		
1	56.32	2.61	2.61	1029.3	0.0463	147.0
2	354.3	64.48	67.09	964.9	0.182	22847.9
3	9.89	52.89	119.9	912.0	5.34	523.6
4	101.3					

ALL PARAMETERS ARE FREE

Prepared for





3-2V

Schlumberger Array

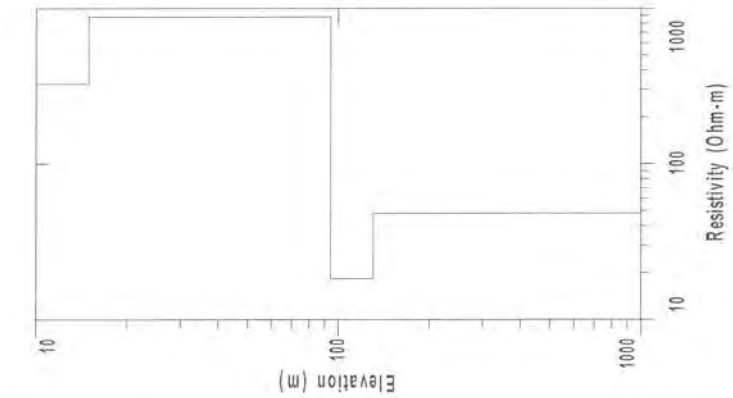
Northing: 982771.0 Easting: 589163.0 Elevation: 1026.0

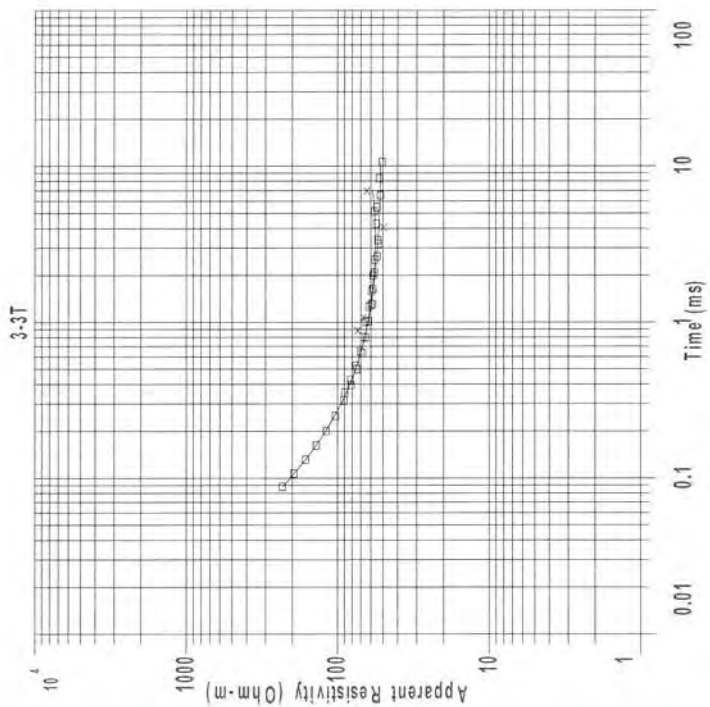
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1026.0		
1	85.33	1.34	1.34	1024.6	0.0157	114.7
2	492.3	83.56	84.91	941.0	0.169	41144.9
3	39.75	42.27	127.1	898.8	1.06	1680.5
4	120.2					

ALL PARAMETERS ARE FREE

Prepared for





3-3T

Central Loop TEM

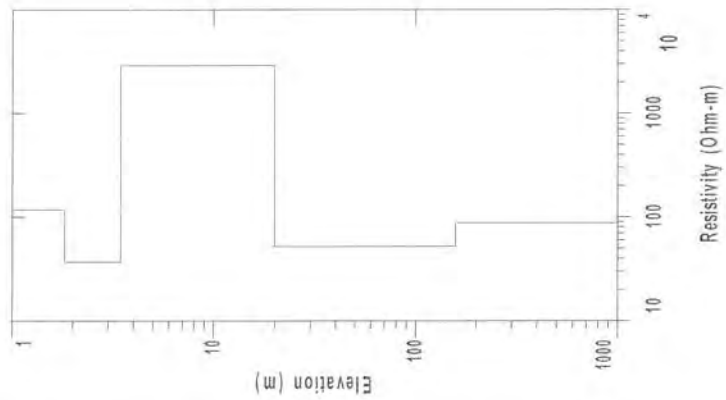
Northing: 982679.0 Easting: 588971.0 Elevation: 1041.0

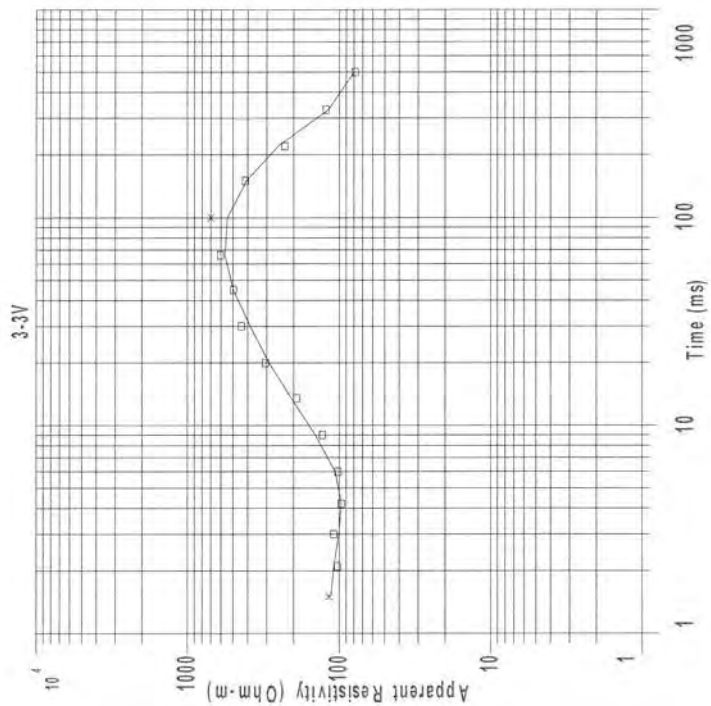
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1041.0		
1	325.7	14.92	14.92	1026.0	0.0458	4862.8
2	880.1	79.34	94.27	946.7	0.0901	69836.1
3	18.29	36.45	130.7	910.2	1.99	666.9
4	48.08					

ALL PARAMETERS ARE FREE

Prepared for





3-3V

Schlumberger Array

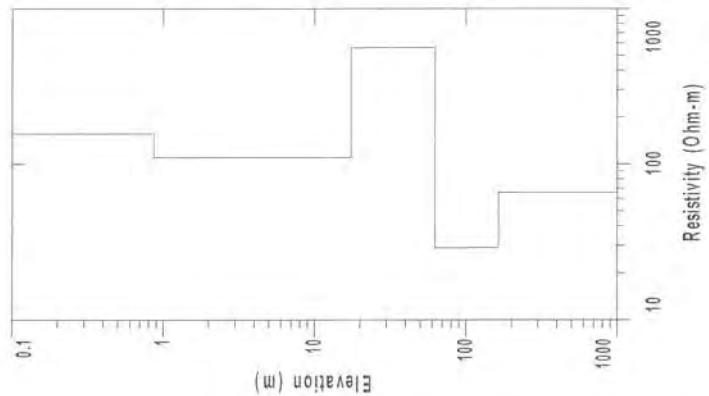
Northing: 982976.0 Easting: 589179.0 Elevation: 1014.0

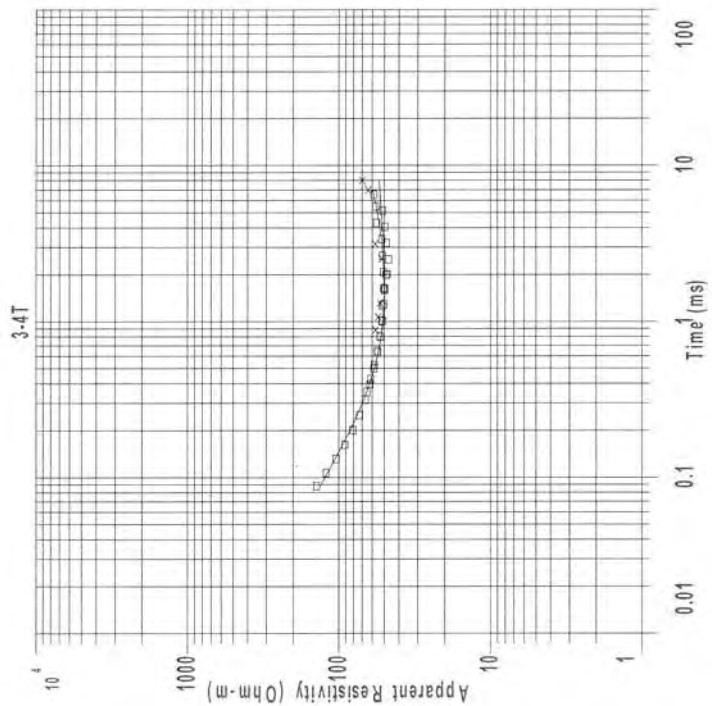
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1014.0		
1	117.7	1.81	1.81	1012.1	0.0154	214.2
2	36.92	1.63	3.45	1010.5	0.0442	60.30
3	2889.0	16.48	19.94	994.0	0.00571	47639.1
4	52.04	137.7	157.6	856.3	2.64	7167.3
5	87.64					

ALL PARAMETERS ARE FREE

Prepared for





3-4T

Central Loop TEM

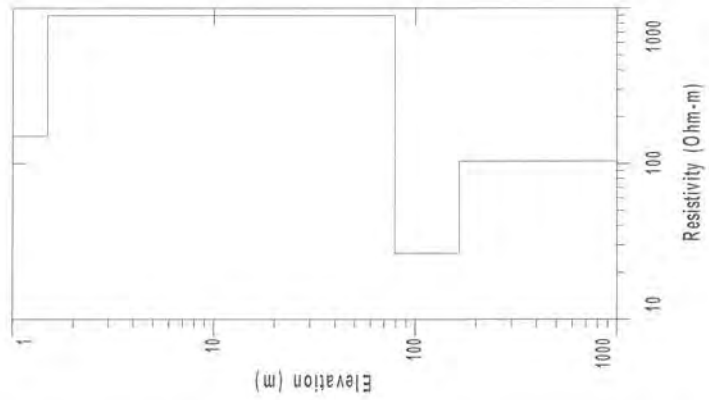
Northing: 982982.0 Easting: 589088.0 Elevation: 1034.0

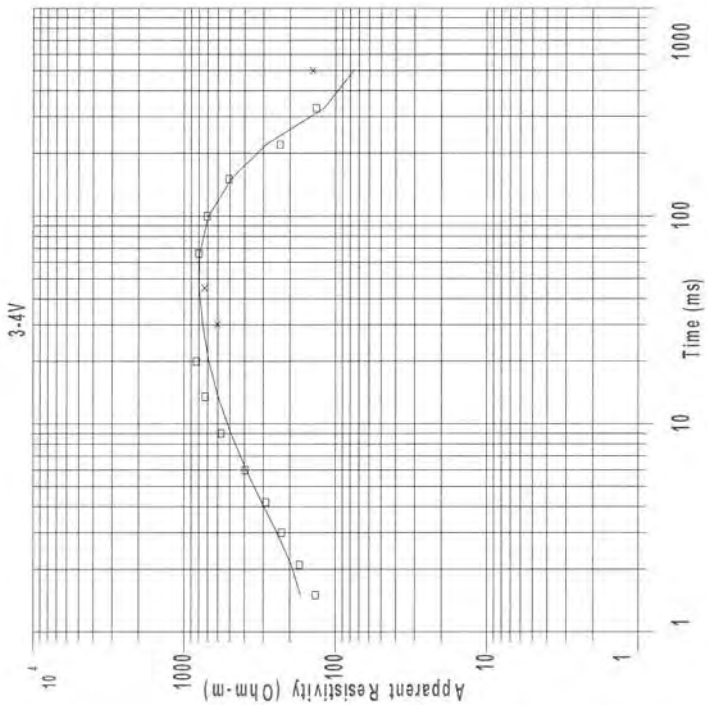
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1034.0		
1	156.6	0.861	0.861	1033.1	0.00550	135.0
2	110.2	16.59	17.45	1016.5	0.150	1829.1
3	559.5	45.10	62.55	971.4	0.0806	25235.8
4	29.00	101.3 *	163.8	870.1	3.49	2939.1
5	65.59					

"*" INDICATES FIXED PARAMETER

Prepared for





3-4V

Schlumberger Array

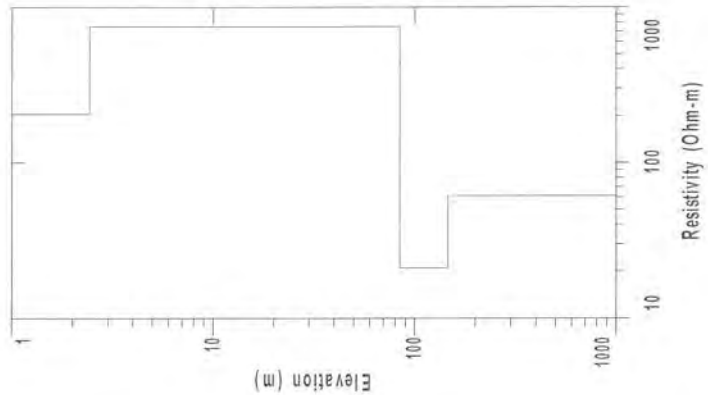
Northing: 982986.0 Easting: 589091.0 Elevation: 1027.0

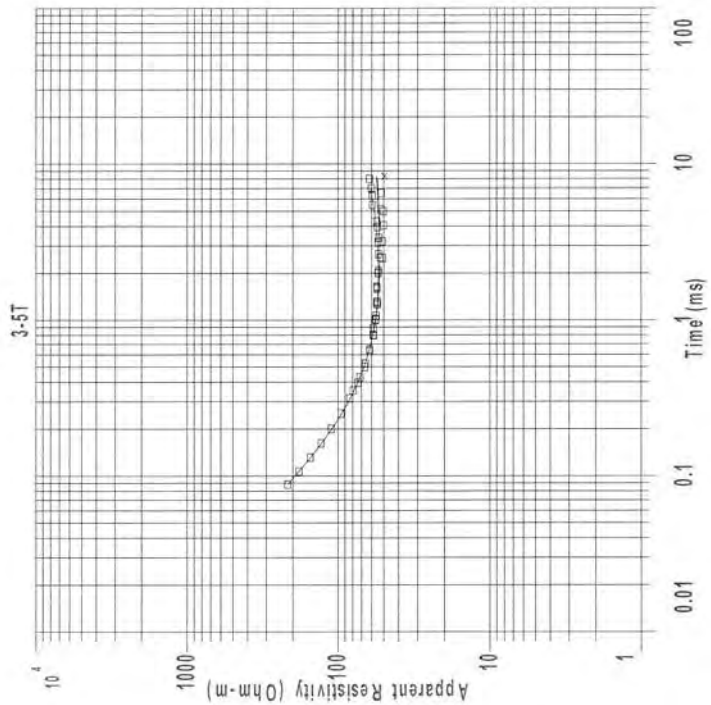
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1027.0		
1	149.9 *	1.48	1.48	1025.5	0.00991	222.8
2	895.5	77.54	79.03	947.9	0.0865	69450.4
3	26.55	86.57	165.6	861.3	3.26	2298.6
4	103.3					

"*" INDICATES FIXED PARAMETER

Prepared for





3-5T

Central Loop TEM

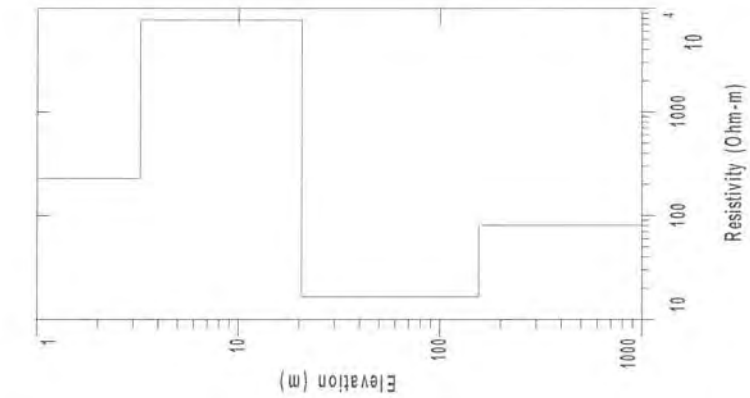
Northing: 982659.0 Easting: 589065.0 Elevation: 1027.0

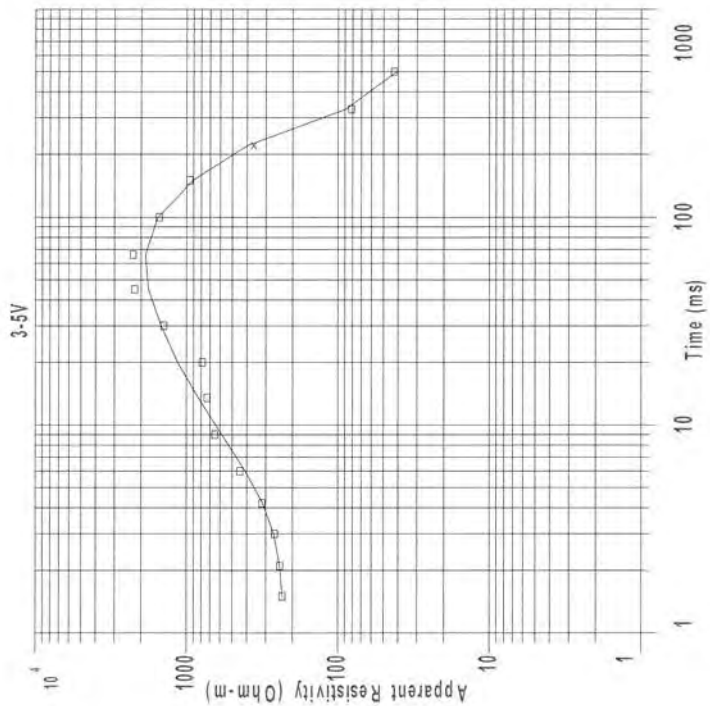
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1027.0		
1	205.4	2.42	2.42	1024.5	0.0117	497.5
2	749.1	81.87	84.29	942.7	0.109	61337.0
3	20.99	62.06	146.3	880.6	2.95	1303.0
4	61.12					

ALL PARAMETERS ARE FREE

Prepared for





3-5V

Schlumberger Array

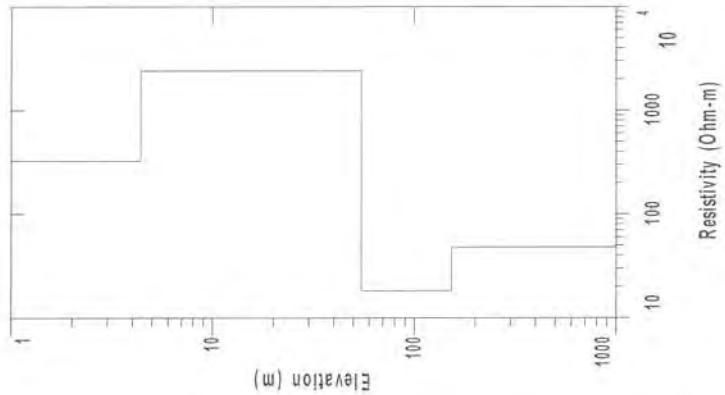
Northing: 982872.0 Easting: 589077.0 Elevation: 1033.0

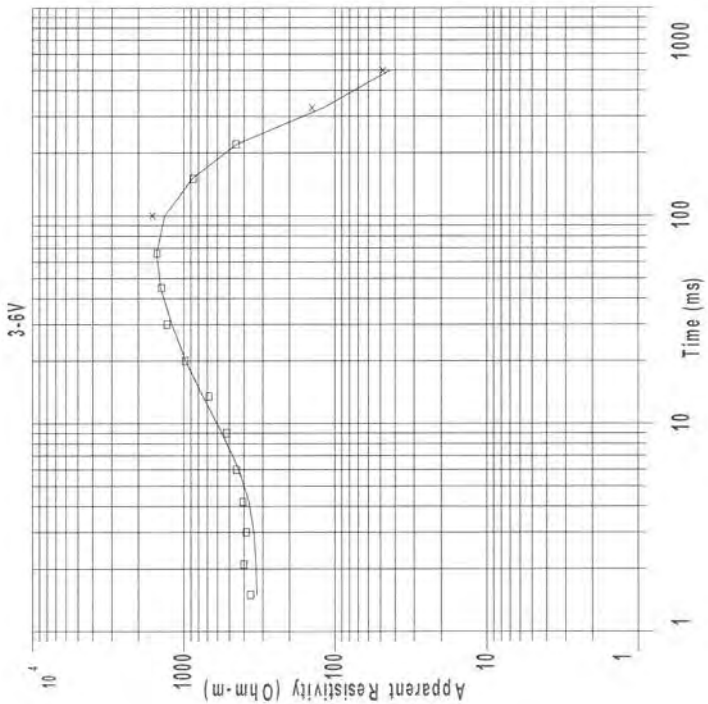
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1033.0		
1	228.4	3.24	3.24	1029.7	0.0142	741.7
2	7695.4	17.27	20.52	1012.4	0.00225	132958.9
3	16.60	135.4	155.9	877.0	8.15	2249.7
4	80.88					

ALL PARAMETERS ARE FREE

Prepared for





3-6V

Schlumberger Array

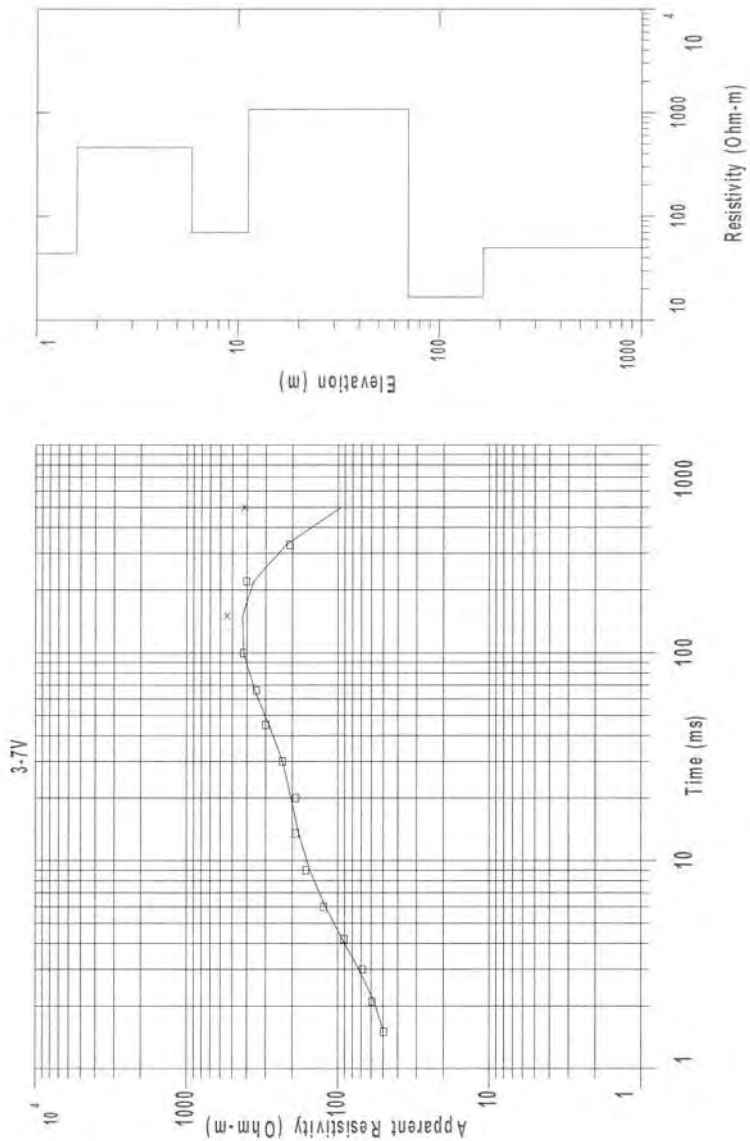
Northing: 982779.0 Easting: 589063.0 Elevation: 1032.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1032.0		
1	325.7 *	4.38	4.38	1027.6	0.0134	1428.5
2	2404.2	50.32	54.70	977.2	0.0209	120989.3
3	18.30	97.81	152.5	879.4	5.34	1790.6
4	48.06					

"*" INDICATES FIXED PARAMETER

Prepared for



3-7V

Schlumberger Array

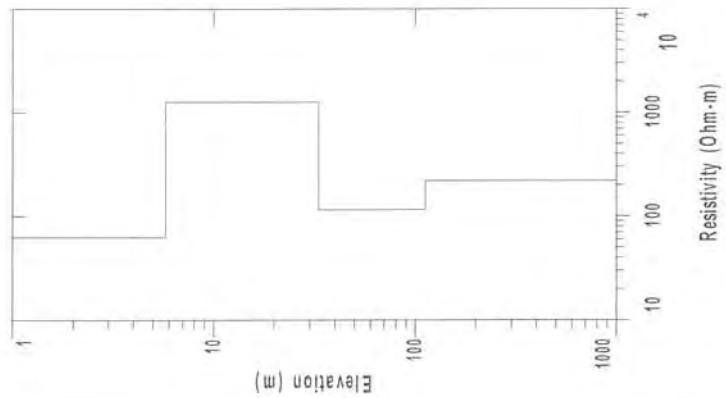
Northing: 982774.0 Easting: 589232.0 Elevation: 1016.0

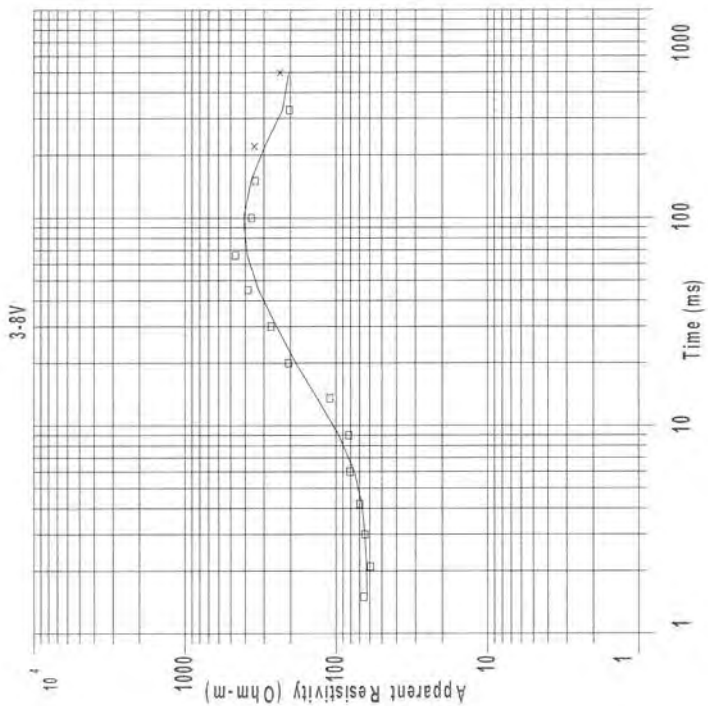
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1016.0		
1	43.85	1.58	1.58	1014.4	0.0361	69.48
2	462.0	4.28	5.86	1010.1	0.00927	1978.2
3	69.71	5.34	11.21	1004.7	0.0767	372.7
4	1075.8	58.77	69.98	946.0	0.0546	63230.9
5	16.69	95.57	165.5	850.4	5.72	1596.0
6	49.60					

ALL PARAMETERS ARE FREE

Prepared for





3-8V

Schlumberger Array

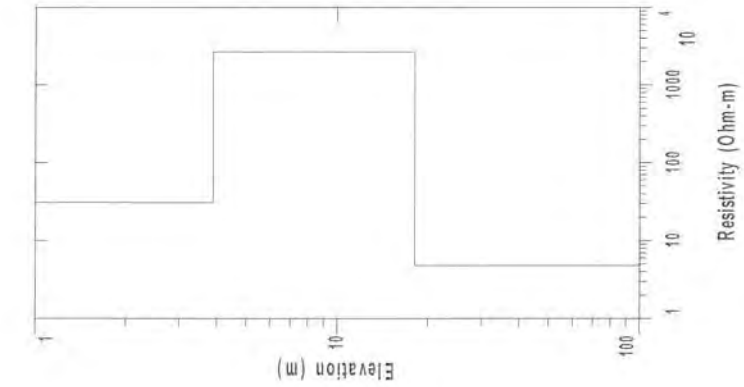
Northing: 982871.0 Easting: 589241.0 Elevation: 1023.0

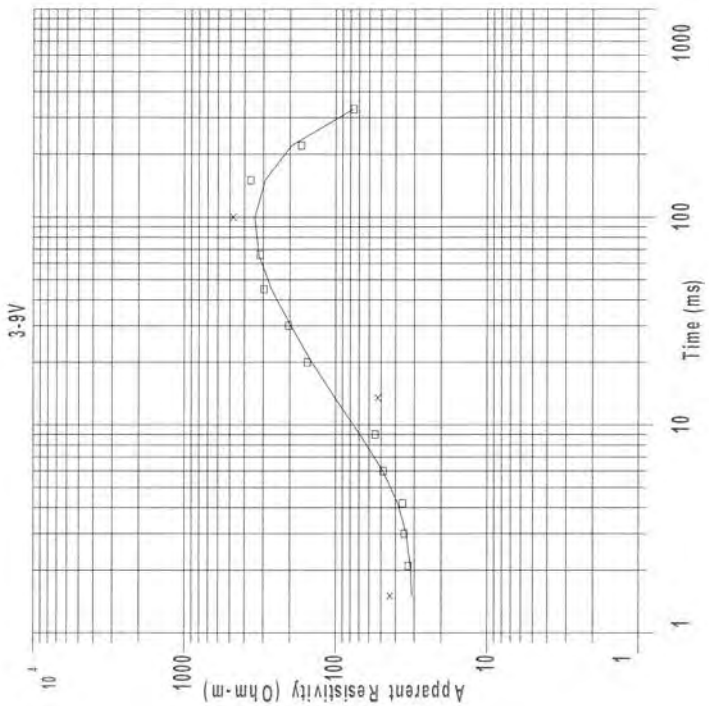
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1023.0		
1	62.46	5.76	5.76	1017.2	0.0922	359.9
2	1259.3	27.48	33.24	989.7	0.0218	34611.7
3	115.6	78.96	112.2	910.7	0.682	9135.5
4	219.2					

ALL PARAMETERS ARE FREE

Prepared for





3-9V

Schlumberger Array

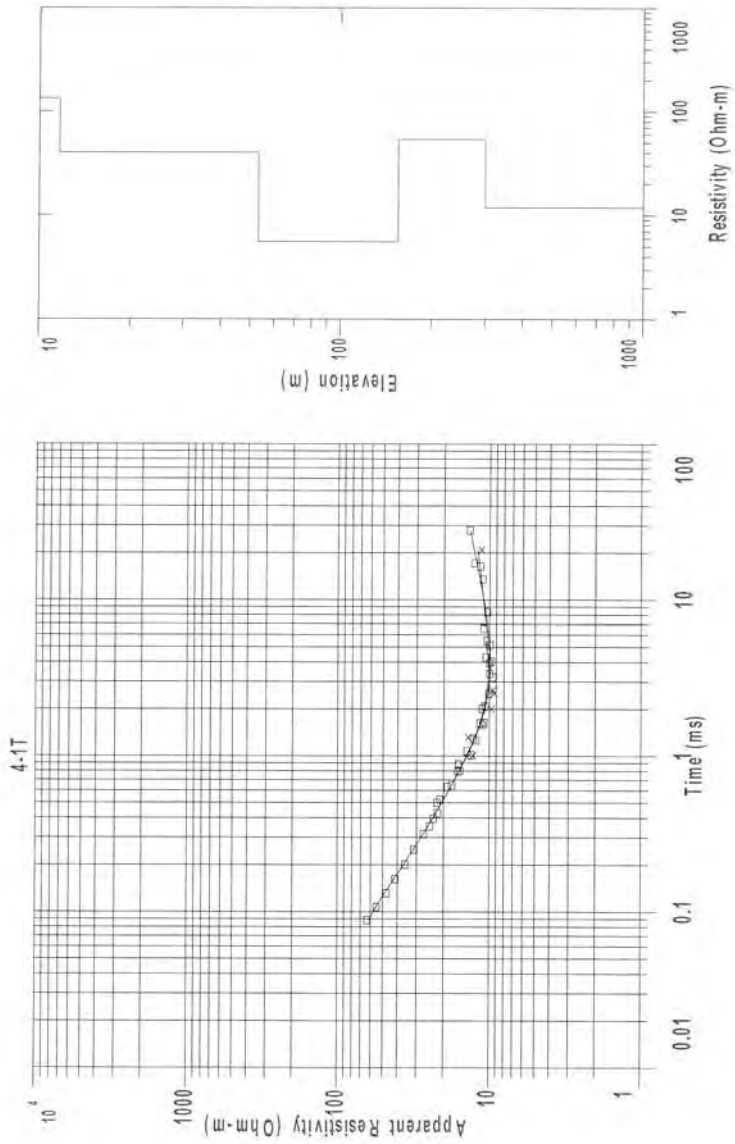
Northing: 982976.0 Easting: 589270.0 Elevation: 1029.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (m)	DEPTH	ELEVATION (m)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1029.0		
1	30.68	3.88	3.88	1025.1	0.126	119.1
2	2659.3	14.18	18.06	1010.9	0.00533	37718.3
3	4.77					

ALL PARAMETERS ARE FREE

Prepared for



4-1T

Central Loop TEM

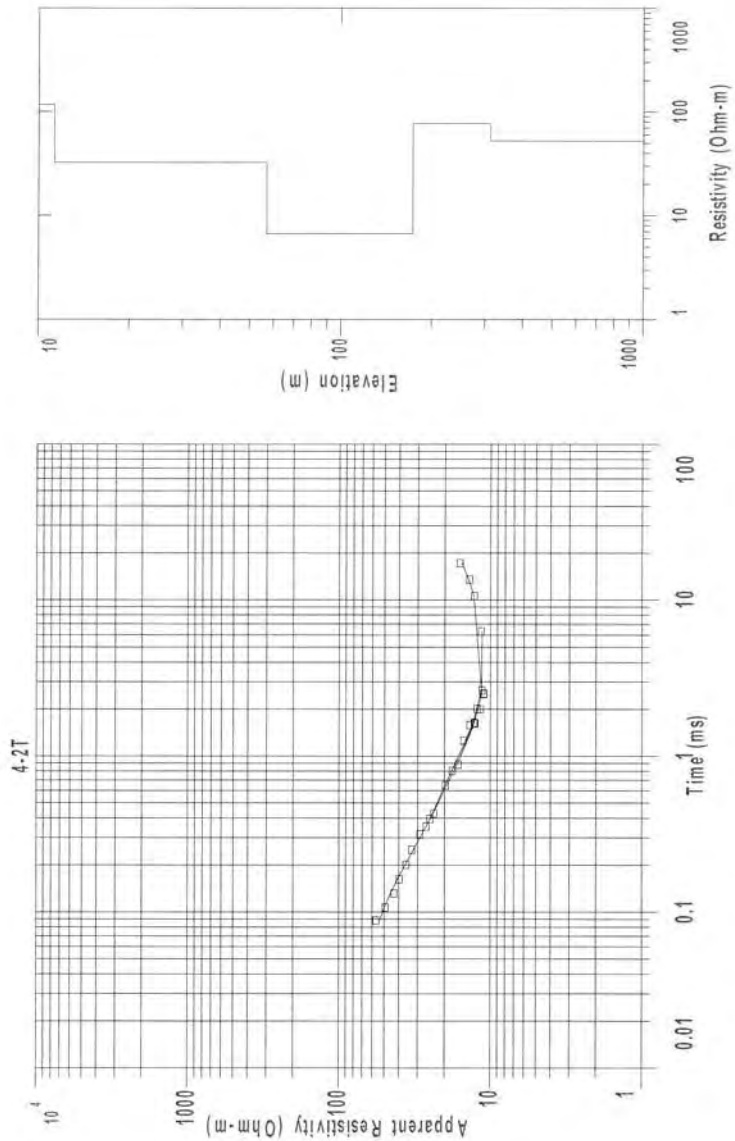
Northing: 986599.0 Easting: 598289.0 Elevation: 997.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				997.0		
1	133.1	11.67	11.67	985.3	0.0876	1553.7
2	40.13	41.53	53.20	943.7	1.03	1667.2
3	5.56	101.5	154.7	842.2	18.25	565.4
4	53.85	145.0	299.8	697.1	2.69	7811.1
5	11.87					

ALL PARAMETERS ARE FREE

Prepared for



4-2T

Central Loop TEM

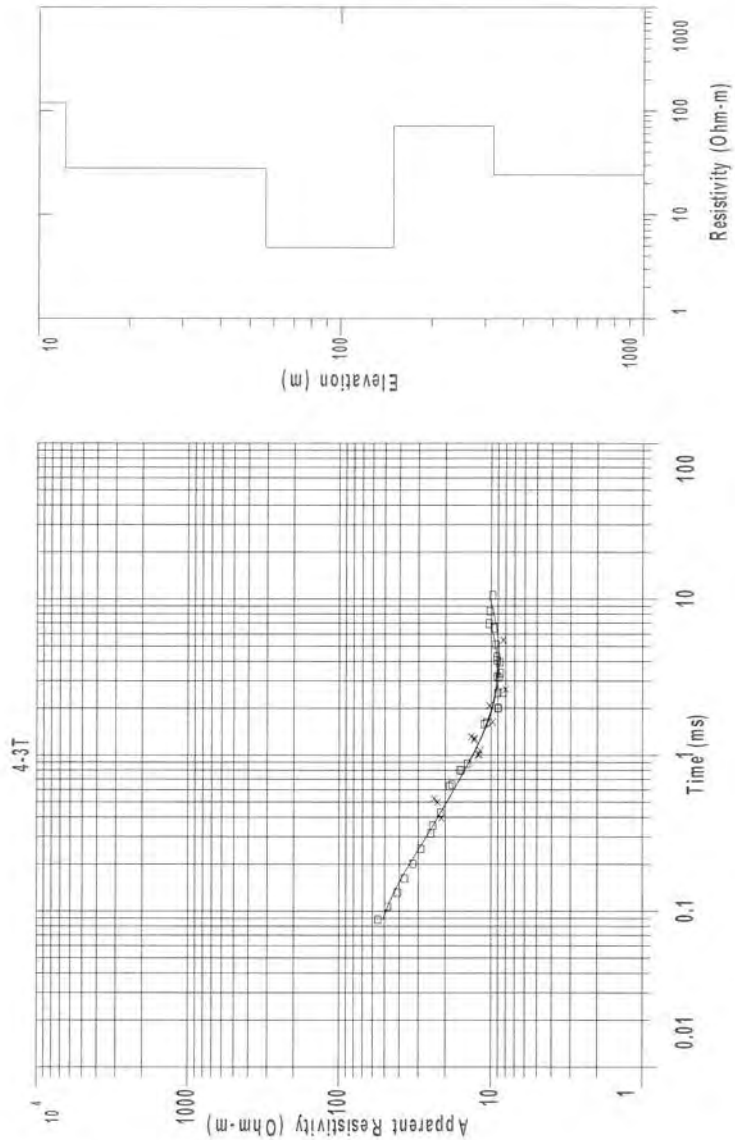
Northing: 986672.0 Easting: 598404.0 Elevation: 994.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				994.0		
1	116.7	11.26	11.26	982.7	0.0964	1315.3
2	32.45	45.75	57.02	936.9	1.41	1484.9
3	6.68	115.7	172.8	821.1	17.32	773.6
4	76.99	140.0	312.8	681.1	1.81	10785.6
5	52.33					

ALL PARAMETERS ARE FREE

Prepared for



4-3T

Central Loop TEM

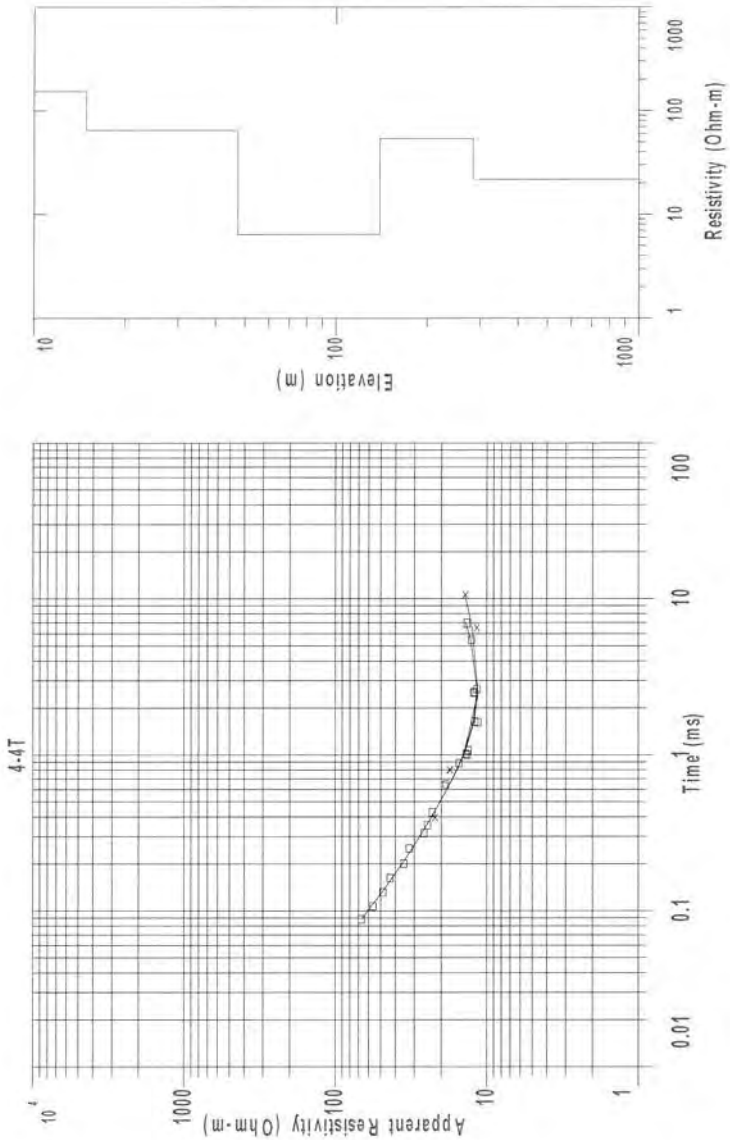
Northing: 986569.0 Easting: 598369.0 Elevation: 986.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				986.0		
1	119.6	12.21	12.21	973.7	0.102	1461.2
2	27.90	44.00	56.21	929.7	1.57	1227.7
3	4.82	92.78	149.0	836.9	19.22	447.7
4	71.11	169.3	318.3	667.6	2.38	12045.3
5	24.06					

ALL PARAMETERS ARE FREE

Prepared for



4-4T

Central Loop TEM

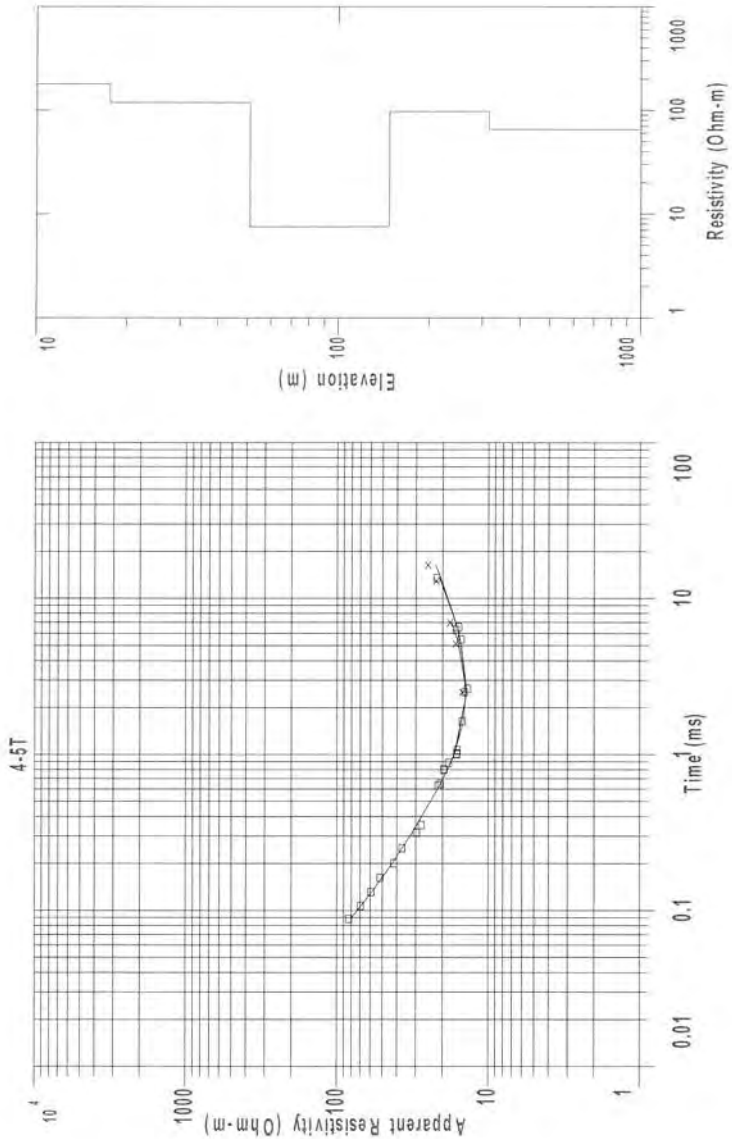
Northing: 986696.0 Easting: 598314.0 Elevation: 990.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				990.0		
1	152.8	14.88	14.88	975.1	0.0973	2274.2
2	64.35	32.39	47.28	942.7	0.503	2085.1
3	6.39	92.33	139.6	850.3	14.43	590.4
4	53.83	143.9	283.5	706.4	2.67	7747.3
5	21.67					

ALL PARAMETERS ARE FREE

Prepared for



4-5T

Central Loop TEM

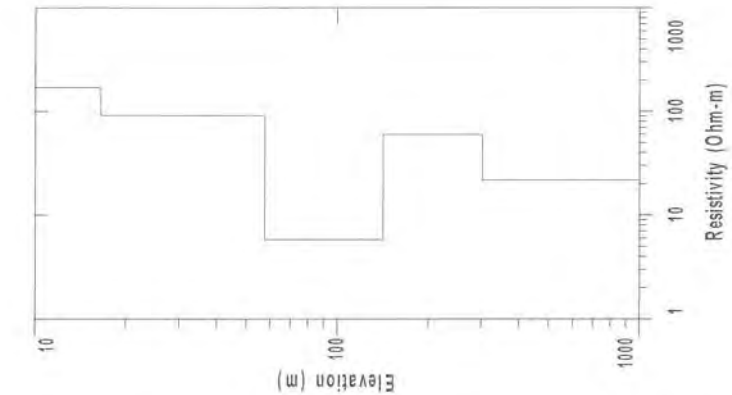
Northing: 986713.0 Easting: 598215.0 Elevation: 994.0

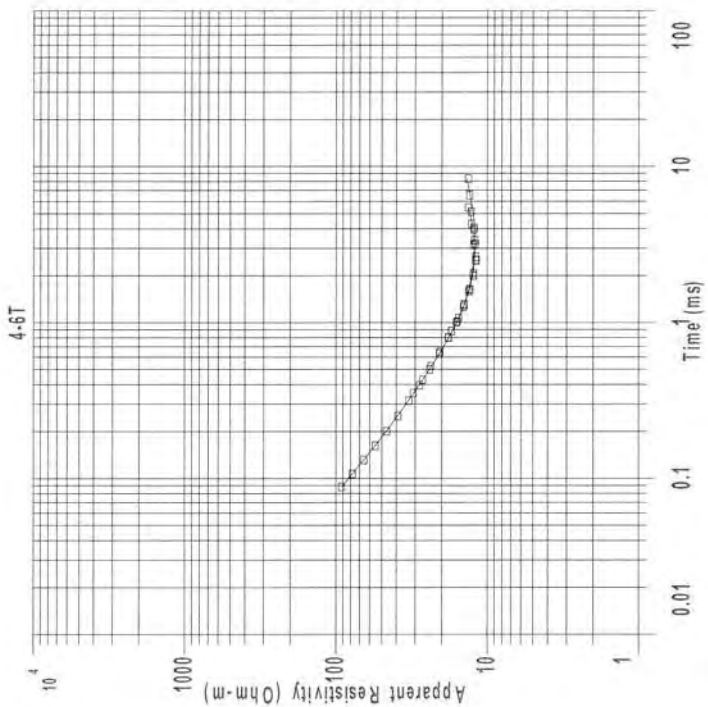
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				994.0		
1	178.2	17.49	17.49	976.5	0.0982	3118.5
2	118.6	33.38	50.88	943.1	0.281	3962.4
3	7.53	96.28	147.1	846.8	12.77	725.8
4	97.23	167.4	314.6	679.3	1.72	16284.1
5	65.05					

ALL PARAMETERS ARE FREE

Prepared for





4-6T

Central Loop TEM

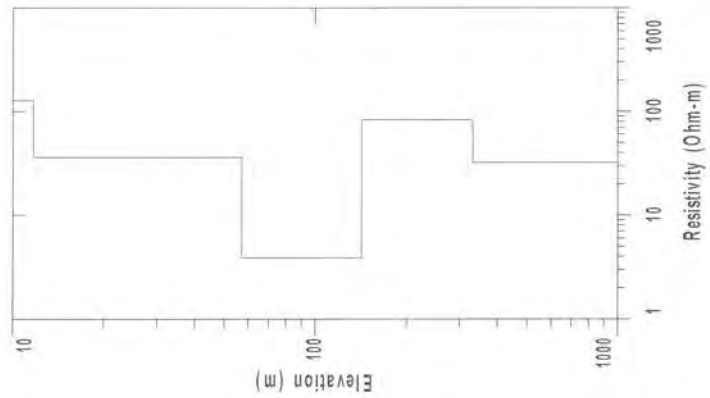
Northing: 986613.0 Easting: 598192.0 Elevation: 990.0

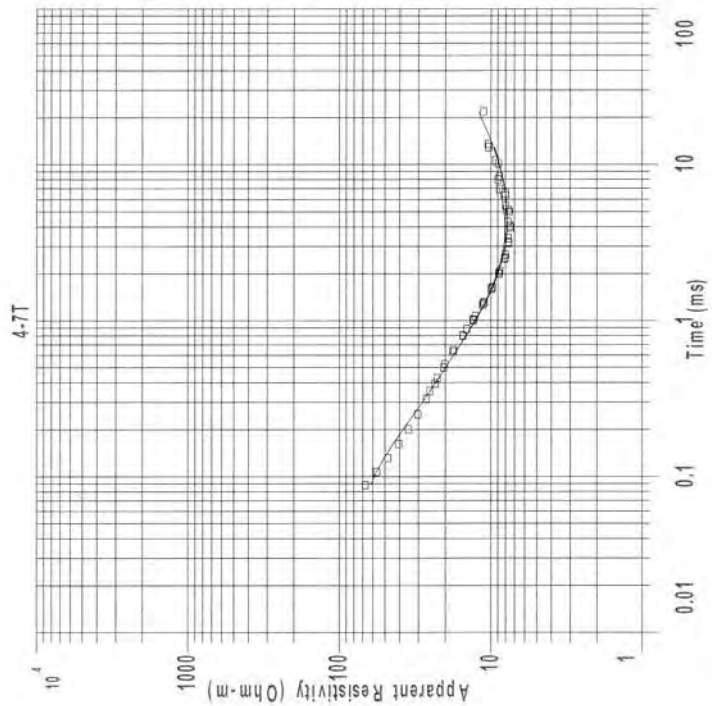
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				990.0		
1	169.3	16.50	16.50	973.4	0.0974	2795.2
2	91.20	41.18	57.68	932.3	0.451	3756.3
3	5.78	83.67	141.3	848.6	14.45	484.2
4	59.72	161.3	302.7	687.2	2.70	9639.1
5	21.86					

ALL PARAMETERS ARE FREE

Prepared for





4-7T

Central Loop TEM

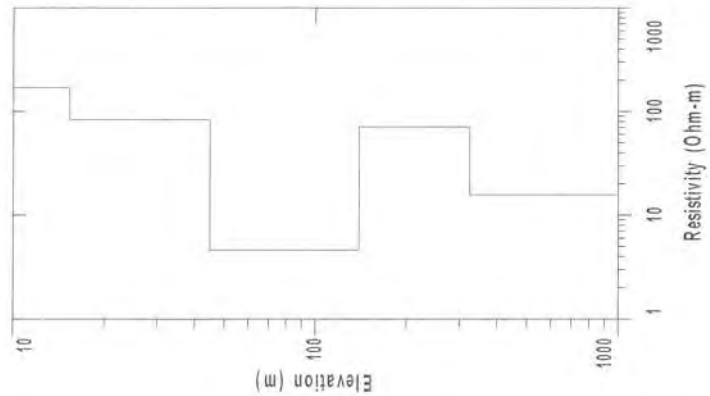
Northing: 986460.0 Easting: 598364.0 Elevation: 991.0

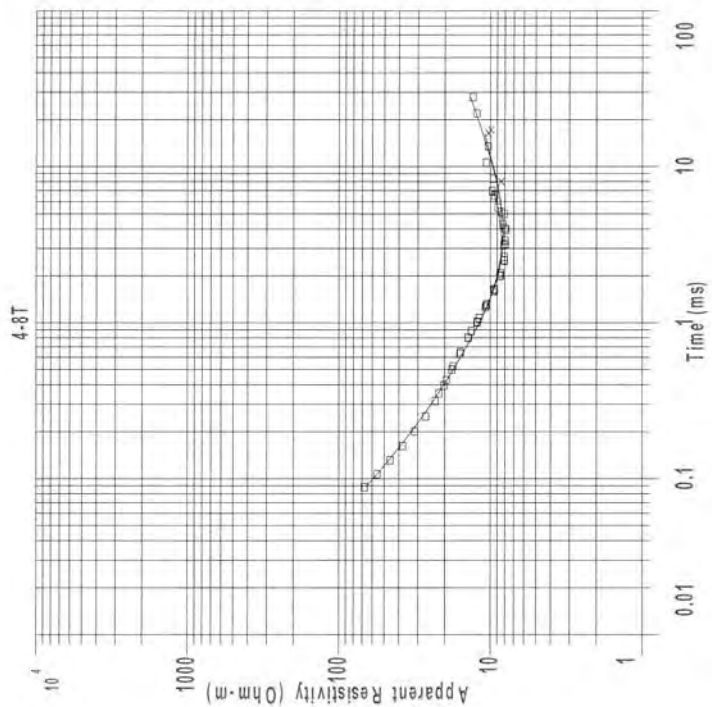
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				991.0		
1	126.9	11.66	11.66	979.3	0.0918	1481.1
2	35.89	45.47	57.14	933.8	1.26	1632.4
3	3.88	84.85	141.9	849.0	21.82	329.9
4	82.78	189.1	331.1	659.8	2.28	15661.8
5	32.14					

ALL PARAMETERS ARE FREE

Prepared for





4-8T

Central Loop TEM

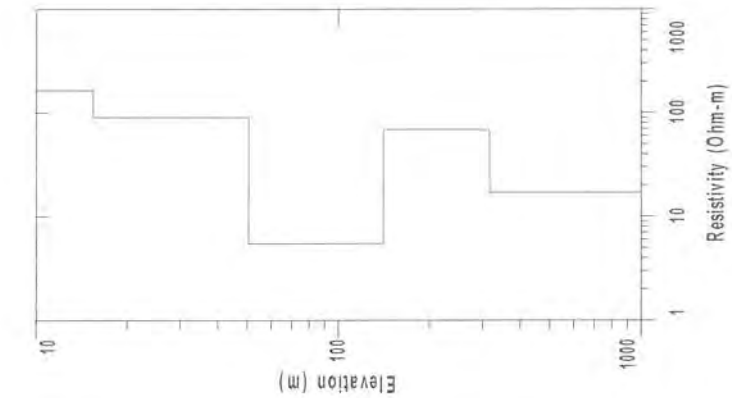
Northing: 986482.0 Easting: 598269.0 Elevation: 992.0

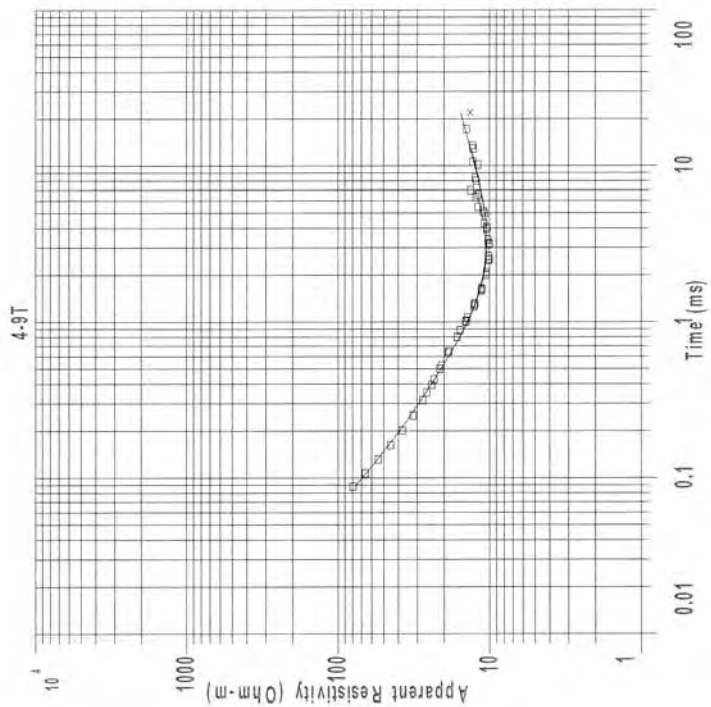
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				992.0		
1	170.1	15.34	15.34	976.6	0.0902	2610.8
2	82.86	29.45	44.79	947.2	0.355	2440.3
3	4.60	94.77	139.5	852.4	20.57	436.6
4	71.03	184.6	324.2	667.7	2.59	13118.3
5	15.75					

ALL PARAMETERS ARE FREE

Prepared for





4-9T

Central Loop TEM

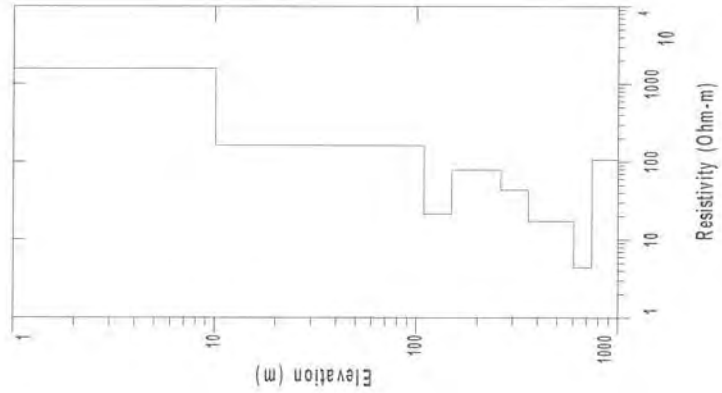
Northing: 986505.0 Easting: 598174.0 Elevation: 991.0

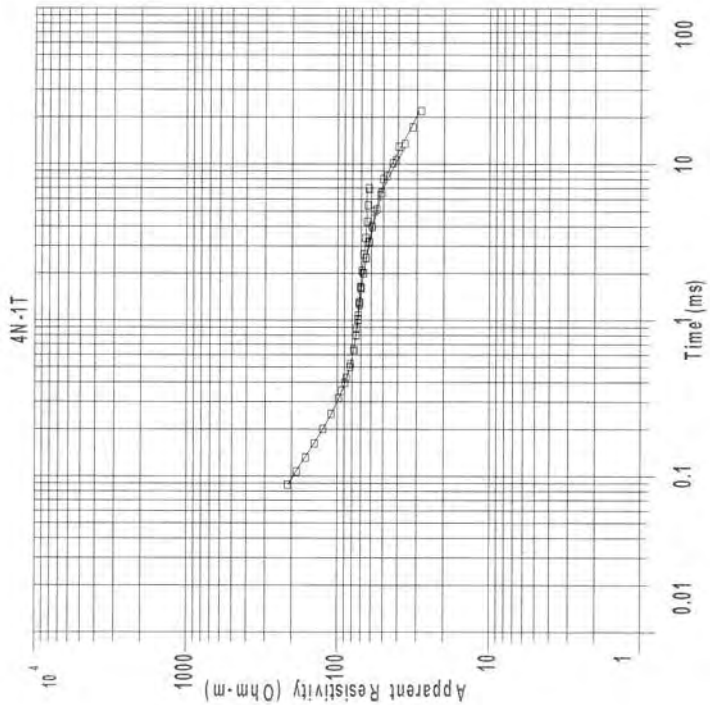
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				991.0		
1	164.2	15.43	15.43	975.5	0.0939	2535.9
2	90.55	35.04	50.48	940.5	0.387	3173.7
3	5.48	90.24	140.7	850.2	16.46	494.7
4	68.75	175.0	315.7	675.2	2.54	12035.5
5	16.97					

ALL PARAMETERS ARE FREE

Prepared for





4N-1T

Central Loop TEM

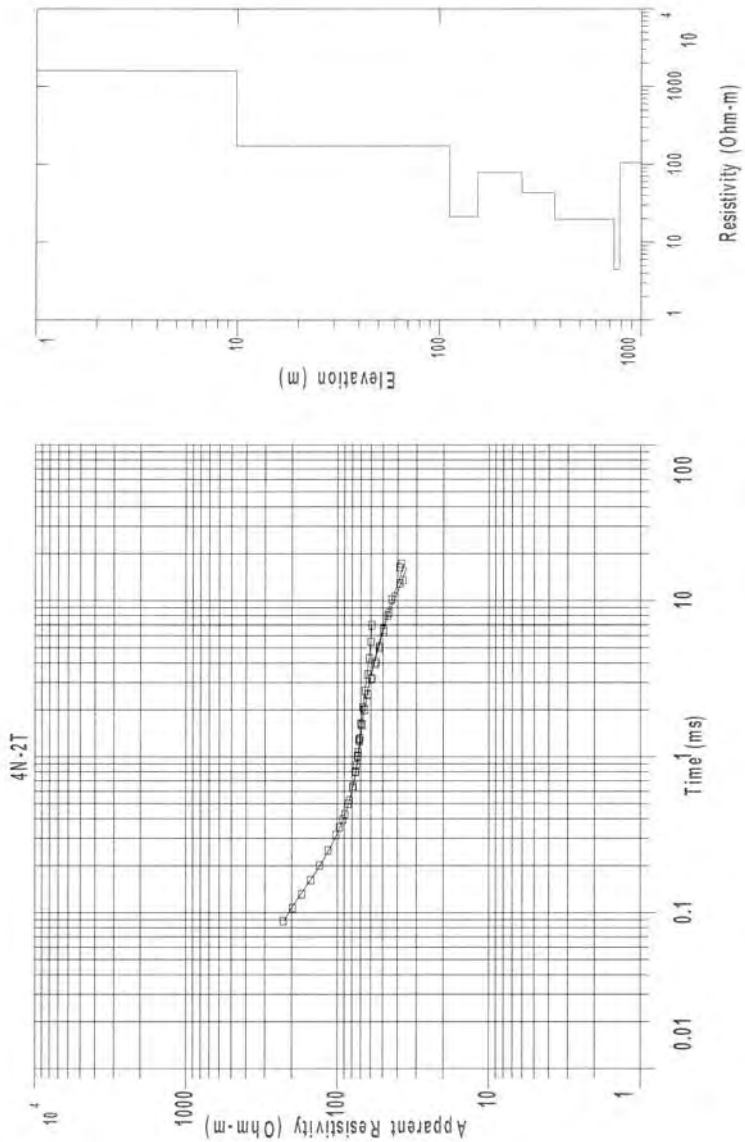
Northing: 977436.0 Easting: 587744.0 Elevation: 1052.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1052.0		
1	1568.4	10.07	10.07	1041.9	0.00642	15802.8
2	161.3	98.78	108.8	943.1	0.612	15944.2
3	21.45	40.25	149.1	902.8	1.87	863.6
4	78.35	111.9	261.0	790.9	1.42	8770.9
5	43.48	97.83	358.8	693.1	2.24	4254.3
6	17.32	245.9	604.8	447.1	14.19	4262.3
7	4.40	136.8	741.7	310.2	31.04	603.6
8	105.6					

ALL PARAMETERS ARE FREE

Prepared for



4N-2T

Central Loop TEM

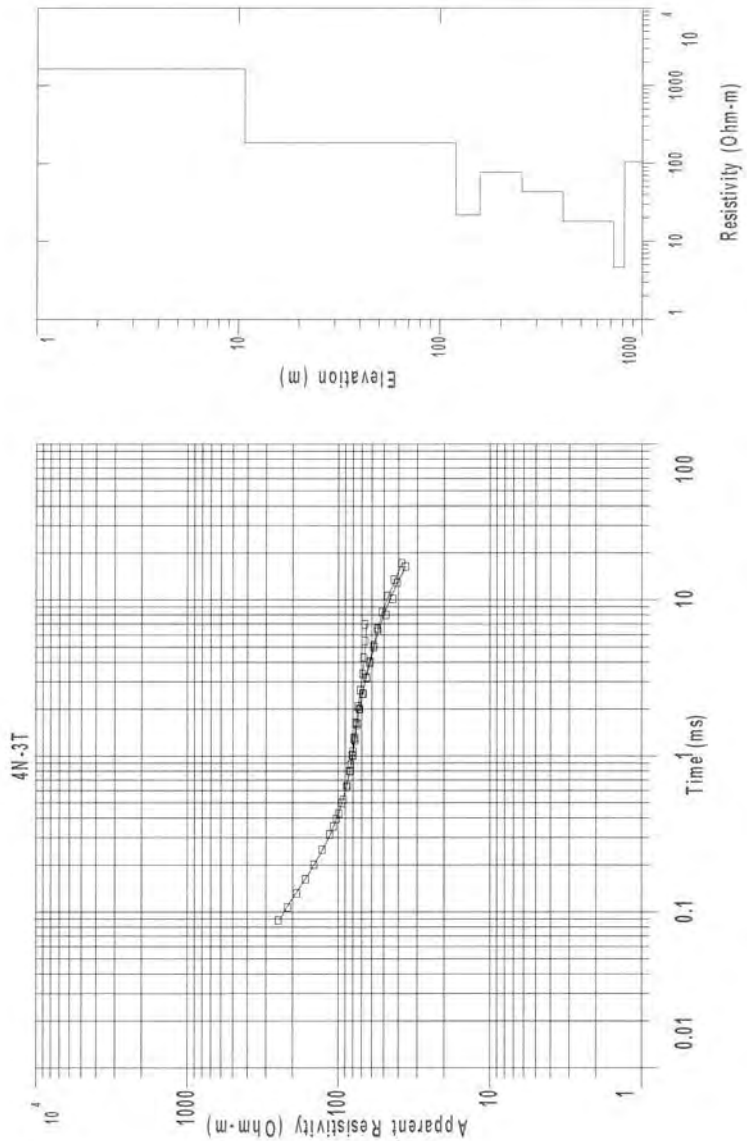
Northing: 977619.0 Easting: 587664.0 Elevation: 1044.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1044.0		
1	1588.9	9.87	9.87	1034.1	0.00621	15687.4
2	171.2	102.6	112.5	931.4	0.599	17578.9
3	21.13	42.48	155.0	888.9	2.00	898.0
4	77.98	101.9	257.0	786.9	1.30	7953.9
5	42.96	117.3	374.3	669.6	2.73	5040.8
6	19.67	362.0	736.3	307.6	18.40	7123.7
7	4.49	48.35	784.7	259.2	10.75	217.3
8	105.1					

ALL PARAMETERS ARE FREE

Prepared for



4N-3T

Central Loop TEM

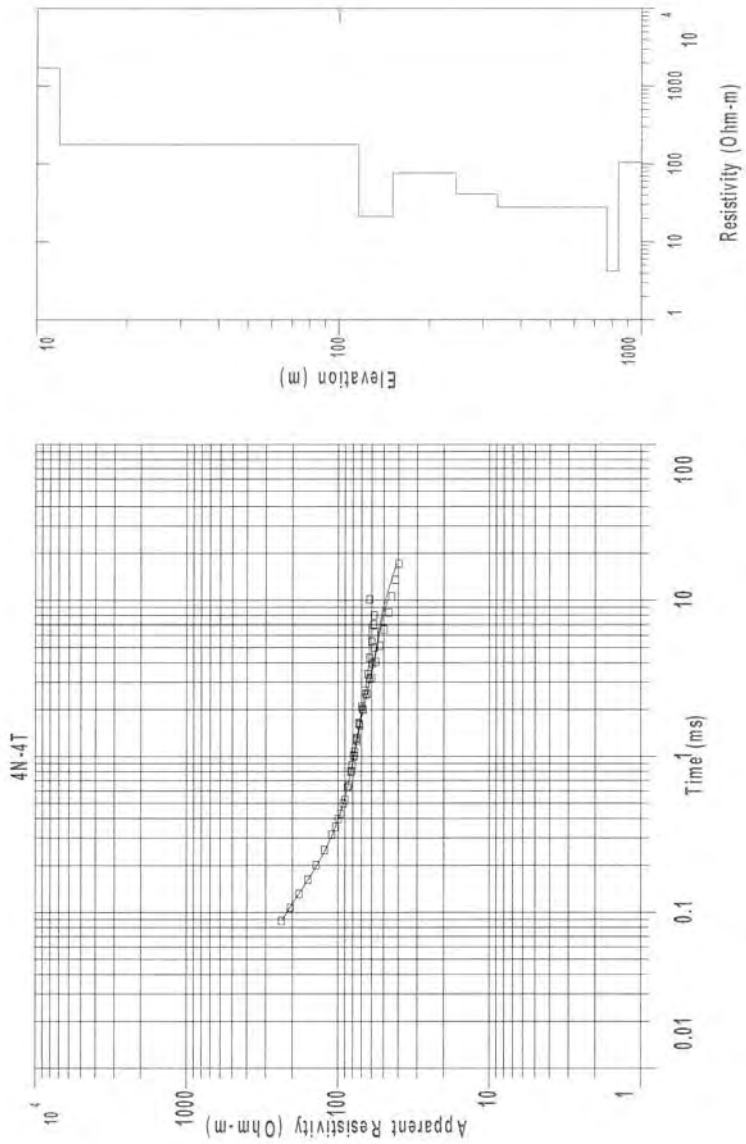
Northing: 977712.0 Easting: 587837.0 Elevation: 1055.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1055.0		
1	1648.9	10.73	10.73	1044.2	0.00651	17708.3
2	184.0	109.2	120.0	934.9	0.593	20117.1
3	21.84	37.12	157.1	897.8	1.69	810.8
4	77.04	97.04	254.1	800.8	1.25	7477.2
5	43.29	149.9	404.1	650.8	3.46	6492.5
6	18.08	318.7	722.9	332.0	17.63	5763.9
7	4.64	93.10	816.0	238.9	20.04	432.4
8	105.3					

ALL PARAMETERS ARE FREE

Prepared for



4N-4T

Central Loop TEM

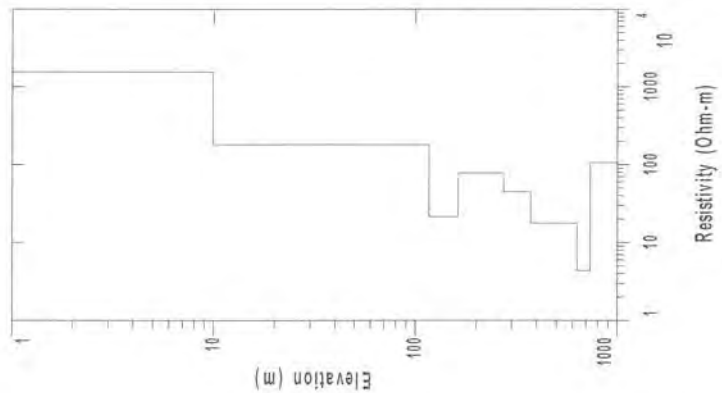
Northing: 977604.0 Easting: 587895.0 Elevation: 1056.0

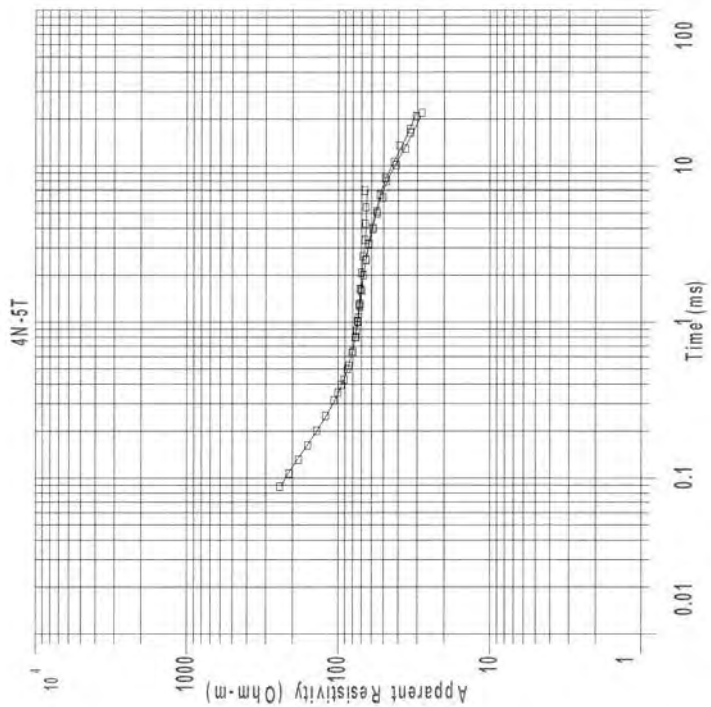
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1056.0		
1	1723.3	11.85	11.85	1044.1	0.00688	20437.9
2	177.9	104.0	115.9	940.0	0.584	18514.6
3	21.17	34.39	150.3	905.6	1.62	728.2
4	76.44	93.48	243.7	812.2	1.22	7146.1
5	41.15	90.58	334.3	721.6	2.20	3728.4
6	27.89	434.2	768.6	287.3	15.57	12112.4
7	4.21	70.62	839.2	216.7	16.76	297.4
8	104.3					

ALL PARAMETERS ARE FREE

Prepared for





4N-5T

Central Loop TEM

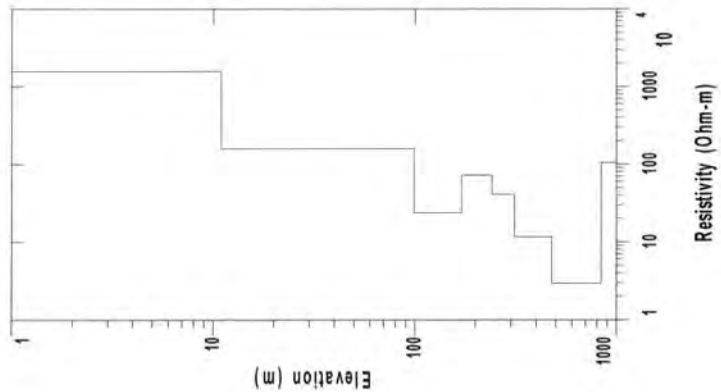
Northing: 977272.0 Easting: 587537.0 Elevation: 1053.0

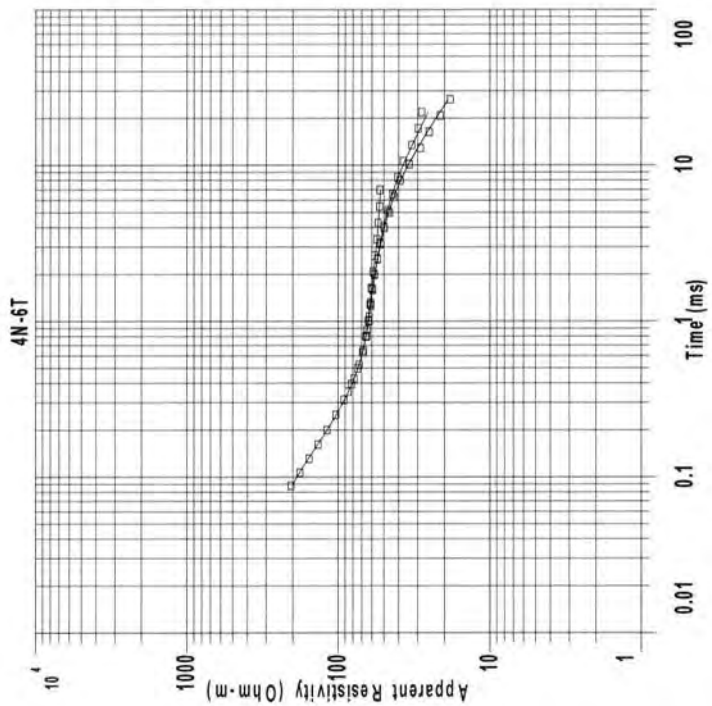
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1053.0		
1	1549.5	9.88	9.88	1043.1	0.00638	15323.7
2	179.8	106.4	116.3	936.6	0.592	19154.5
3	21.50	46.35	162.7	890.2	2.15	996.5
4	77.87	110.6	273.4	779.5	1.42	8619.5
5	44.69	98.36	371.7	681.2	2.20	4396.8
6	17.72	259.8	631.6	421.3	14.66	4605.2
7	4.37	102.9	734.5	318.4	23.51	450.4
8	105.7					

ALL PARAMETERS ARE FREE

Prepared for





4N-6T

Central Loop TEM

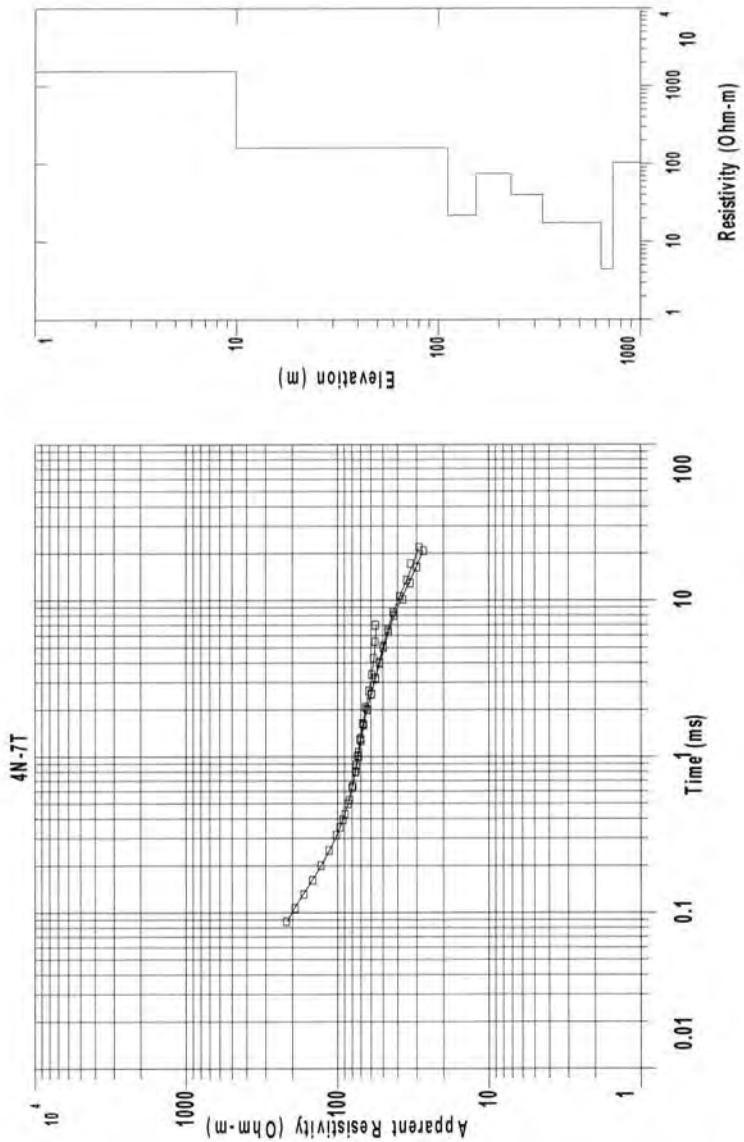
Northing: 977115.0 Easting: 587722.0 Elevation: 1045.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1045.0		
1	1596.5	10.91	10.91	1034.0	0.00683	17421.7
2	160.3	87.81	98.73	946.2	0.547	14077.5
3	24.13	71.85	170.5	874.4	2.97	1734.5
4	73.45	70.57	241.1	803.8	0.960	5184.6
5	41.72	70.56	311.7	733.2	1.69	2944.3
6	11.86	164.7	476.4	568.5	13.88	1954.8
7	2.99	361.8	838.2	206.7	120.8	1083.4
8	106.1					

ALL PARAMETERS ARE FREE

Prepared for



4N-7T

Central Loop TEM

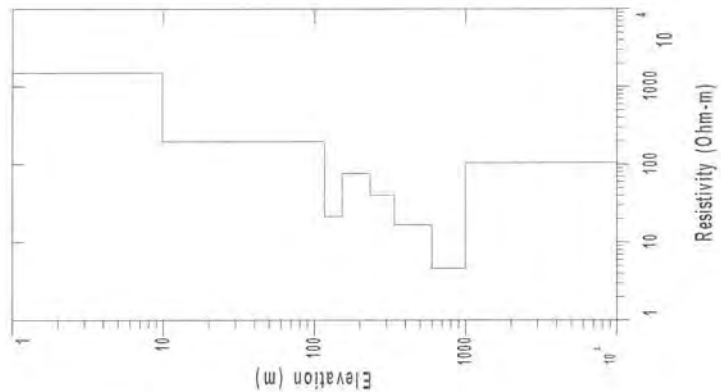
Northing: 977300.0 Easting: 587884.0 Elevation: 1054.0

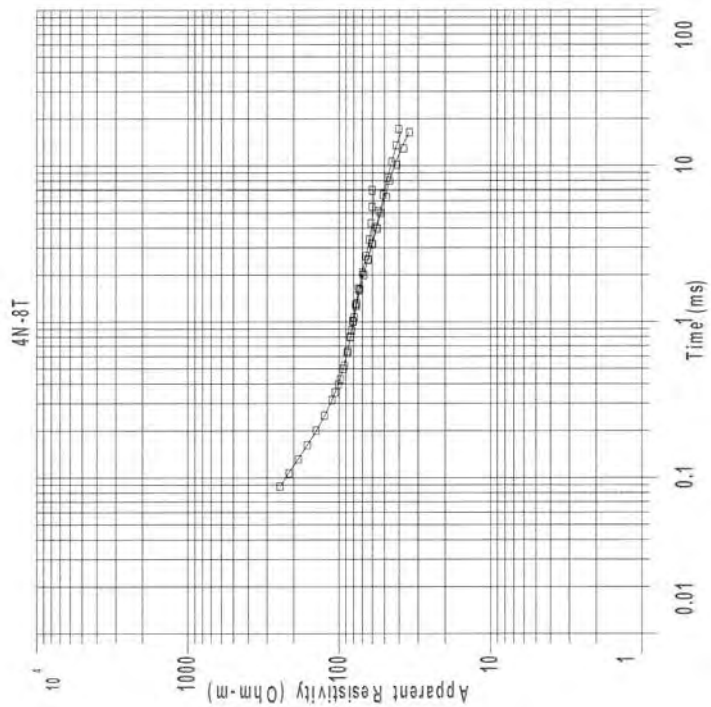
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1054.0		
1	1575.0	9.89	9.89	1044.1	0.00628	15577.5
2	163.6	101.3	111.2	942.7	0.619	16580.9
3	22.07	42.51	153.7	900.2	1.92	938.6
4	75.96	75.22	228.9	825.0	0.990	5714.3
5	40.59	98.65	327.6	726.3	2.42	4005.0
6	17.76	308.4	636.0	417.9	17.36	5479.3
7	4.52	91.58	727.6	326.3	20.24	414.2
8	105.4					

ALL PARAMETERS ARE FREE

Prepared for





4N-8T

Central Loop TEM

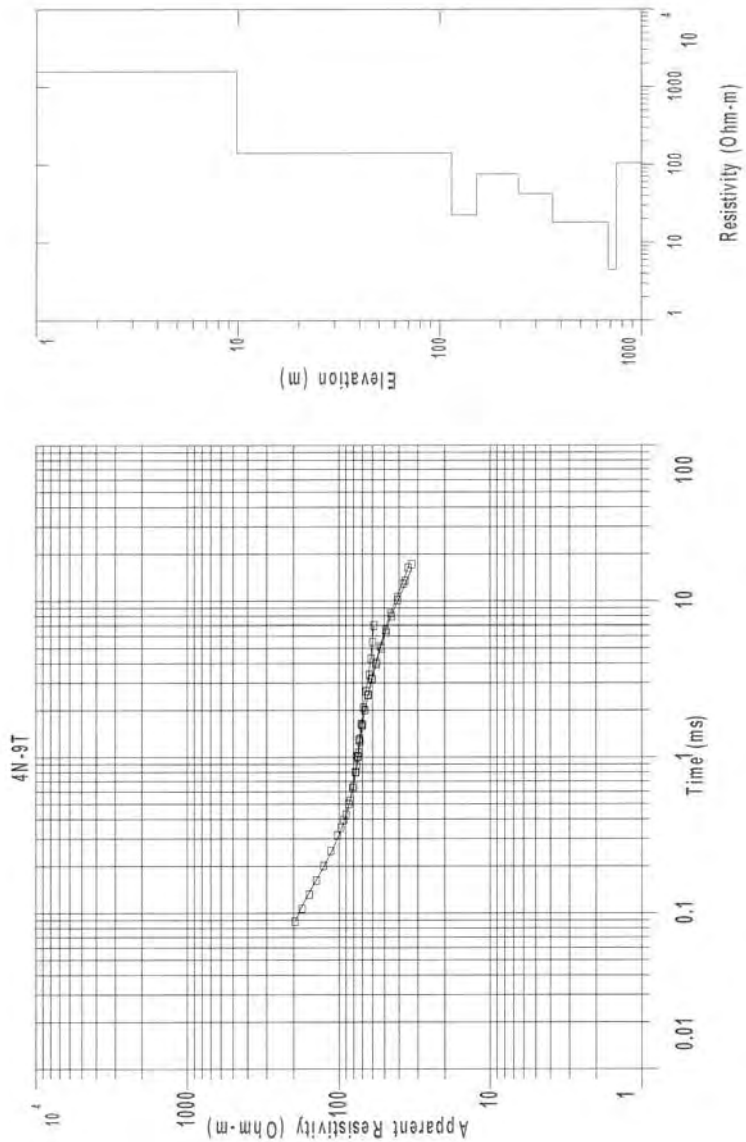
Northing: 977426.0 Easting: 588048.0 Elevation: 1055.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1055.0		
1	1508.8	9.82	9.82	1045.1	0.00651	14823.8
2	195.2	106.3	116.1	938.8	0.544	20762.8
3	21.47	36.33	152.4	902.5	1.69	780.3
4	76.23	80.90	233.3	821.6	1.06	6167.2
5	40.15	103.2	336.6	718.3	2.57	4147.6
6	16.65	259.6	596.3	458.6	15.58	4326.4
7	4.62	397.0	993.3	61.60	85.79	1836.9
8	105.2					

ALL PARAMETERS ARE FREE

Prepared for



4N-9T

Central Loop TEM

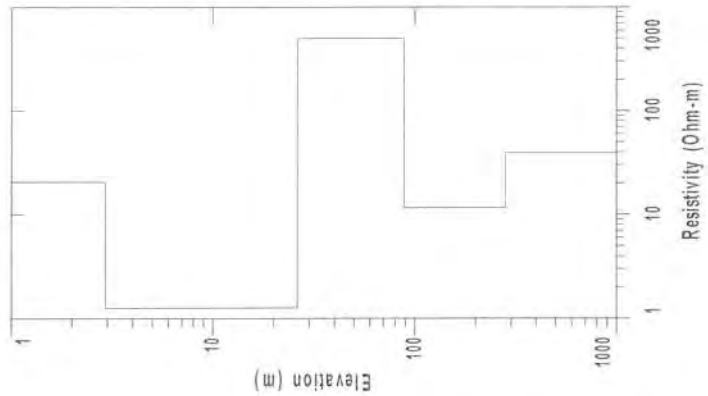
Northing: 977106.0 Easting: 586975.0 Elevation: 1049.0

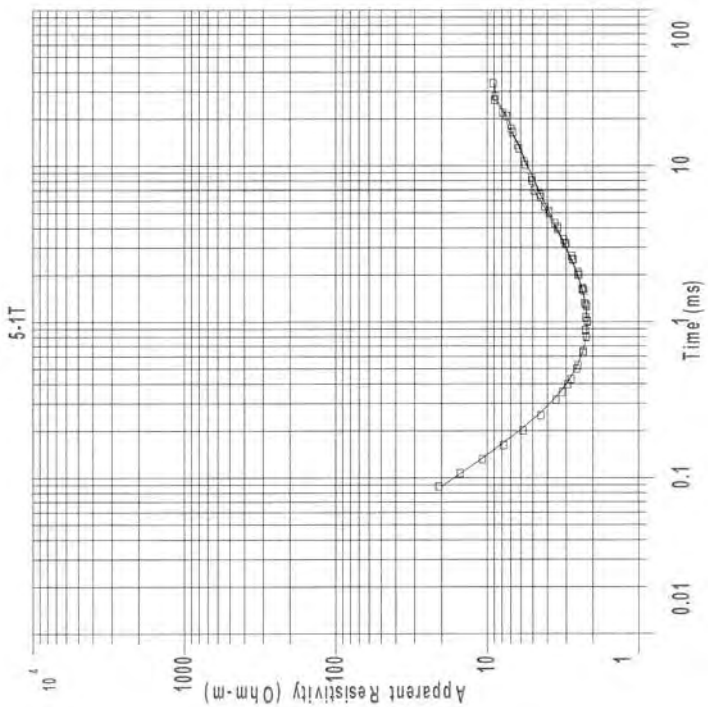
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1049.0		
1	1587.3	9.82	9.82	1039.1	0.00619	15590.7
2	140.8	104.4	114.2	934.7	0.741	14705.7
3	22.54	37.94	152.2	896.7	1.68	855.6
4	75.82	93.65	245.8	803.1	1.23	7101.6
5	42.37	116.0	361.9	687.0	2.73	4919.1
6	18.20	319.9	681.9	367.0	17.57	5824.9
7	4.49	66.85	748.8	300.1	14.86	300.6
8	105.4					

ALL PARAMETERS ARE FREE

Prepared for





5-1T

Central Loop TEM

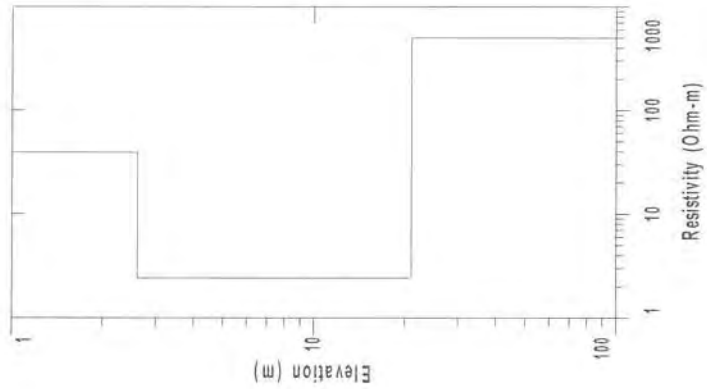
Northing: 979879.0 Easting: 601593.0 Elevation: 954.0

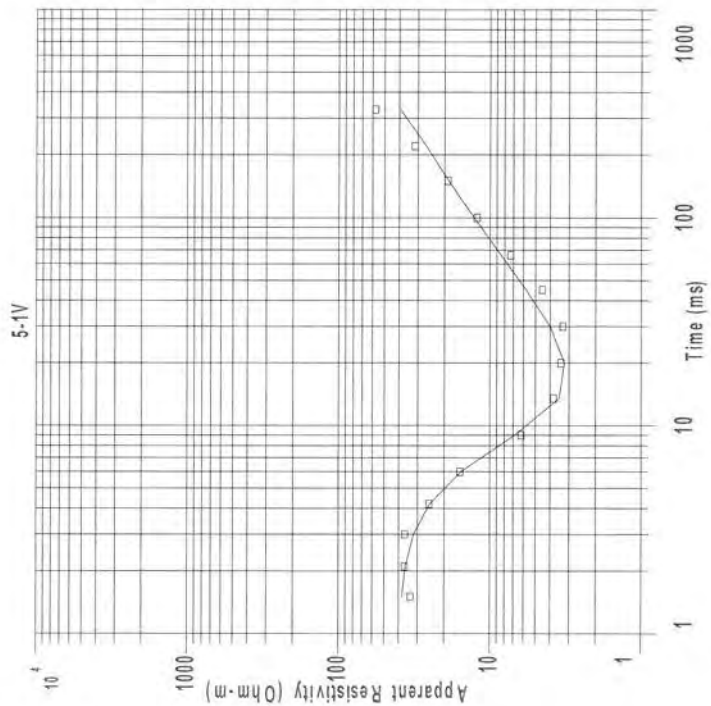
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				954.0		
1	20.64	2.92	2.92	951.0	0.141	60.38
2	1.26	23.26	26.19	927.8	18.43	29.36
3	500.0 *	62.31	88.51	865.4	0.124	31158.6
4	11.58	192.3	280.8	673.1	16.59	2228.7
5	39.23					

"*" INDICATES FIXED PARAMETER

Prepared for





5-1V

Schlumberger Array

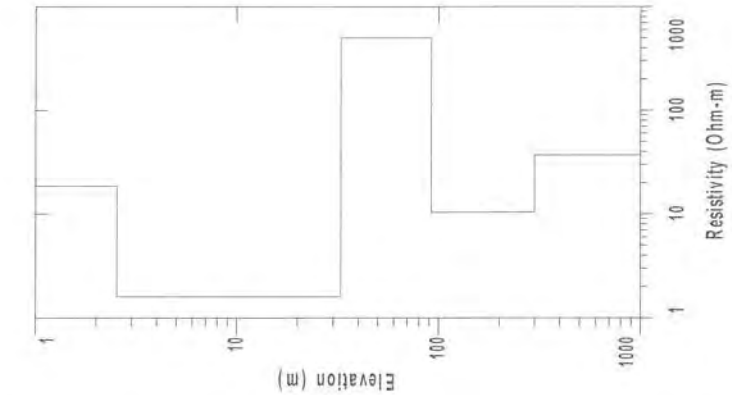
Northing: 980026.0 Easting: 601576.0 Elevation: 951.0

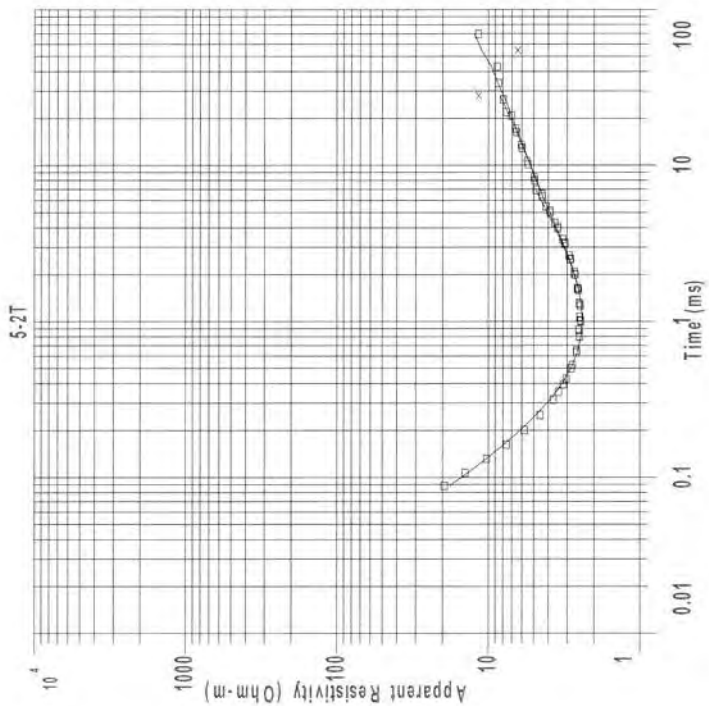
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				951.0		
1	39.16	2.60	2.60	948.3	0.0666	102.1
2	2.42	18.42	21.03	929.9	7.59	44.66
3	500.0 *					

"*" INDICATES FIXED PARAMETER

Prepared for





5-2T

Central Loop TEM

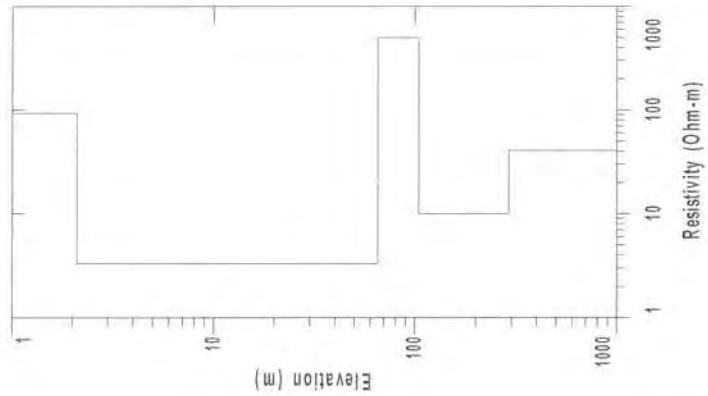
Northing: 980054.0 Easting: 601721.0 Elevation: 958.0

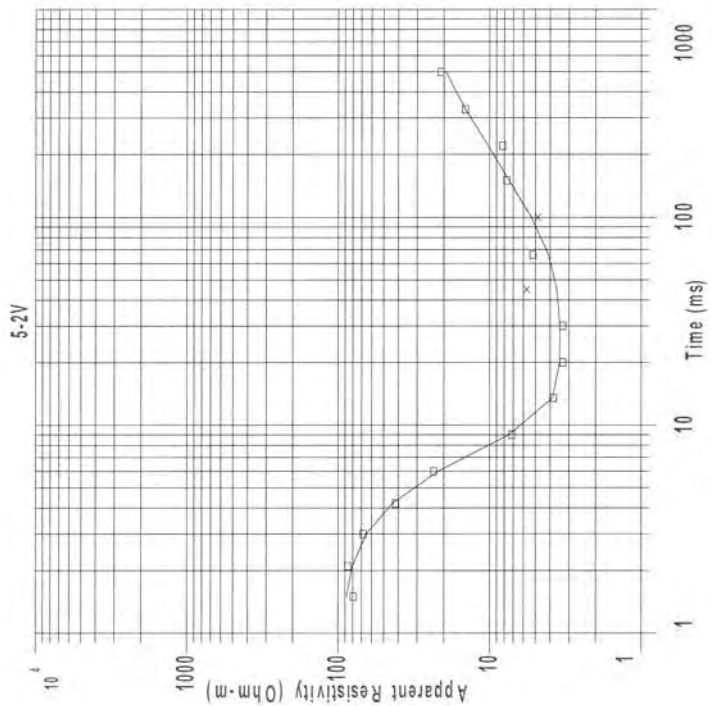
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				958.0		
1	18.54	2.53	2.53	955.4	0.136	46.98
2	1.59	30.22	32.75	925.2	18.92	48.26
3	499.9 *	59.36	92.12	865.8	0.118	29683.5
4	10.42	206.8	298.9	659.0	19.84	2155.3
5	36.97					

"*" INDICATES FIXED PARAMETER

Prepared for





5-2V

Schlumberger Array

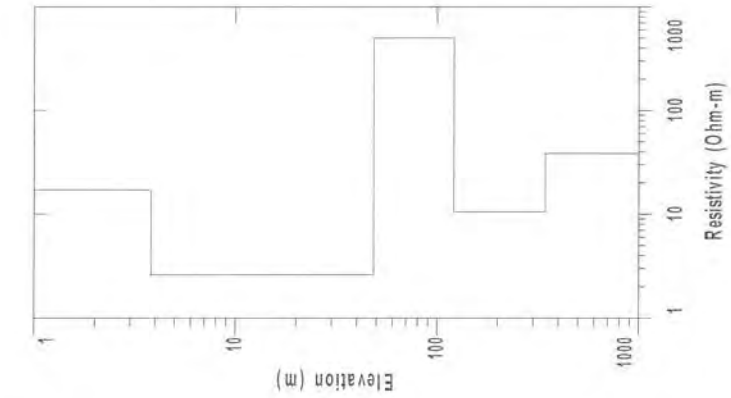
Northing: 979958.0 Easting: 601313.0 Elevation: 959.0

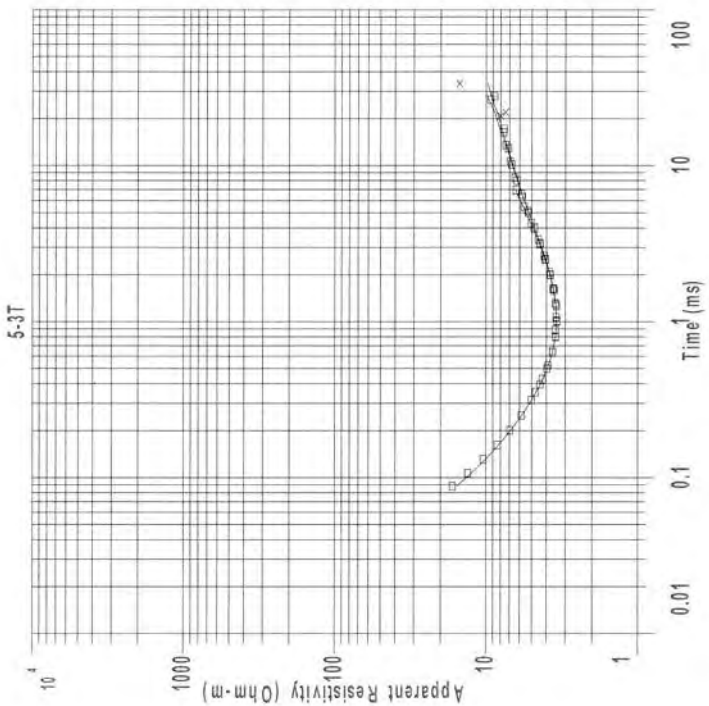
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				959.0		
1	93.17	2.11	2.11	956.8	0.0226	196.6
2	3.30	63.19	65.30	893.6	19.13	208.7
3	500.0 *	39.32	104.6	854.3	0.0786	19663.7
4	10.03	186.3	290.9	668.0	18.57	1869.5
5	40.58					

"*" INDICATES FIXED PARAMETER

Prepared for





5-3T

Central Loop TEM

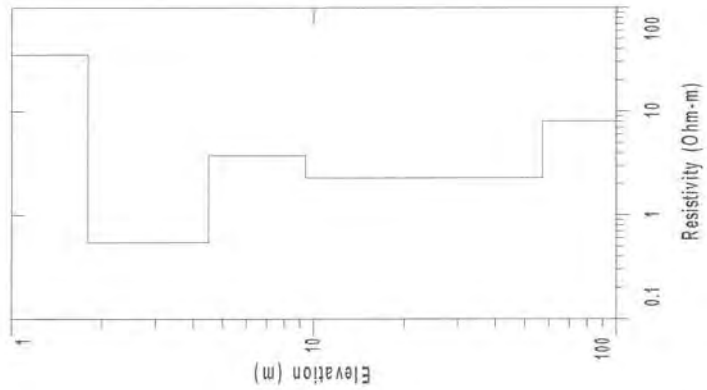
Northing: 979973.0 Easting: 601899.0 Elevation: 958.0

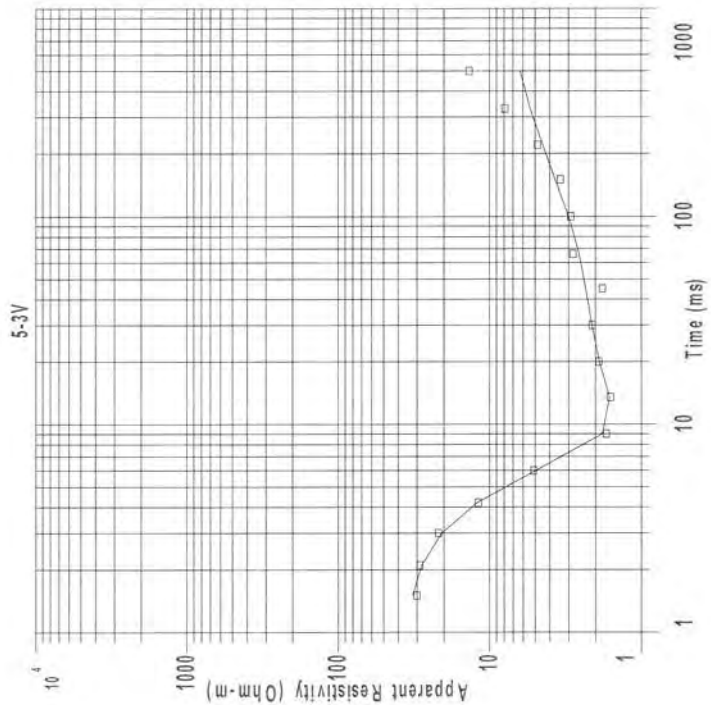
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				958.0		
1	17.10	3.81	3.81	954.1	0.223	65.30
2	2.61	44.59	48.41	909.5	17.07	116.4
3	500.0 *	72.90	121.3	836.6	0.145	36453.2
4	10.55	223.0	344.4	613.5	21.14	2353.7
5	38.50					

"*" INDICATES FIXED PARAMETER

Prepared for





5-3V

Schlumberger Array

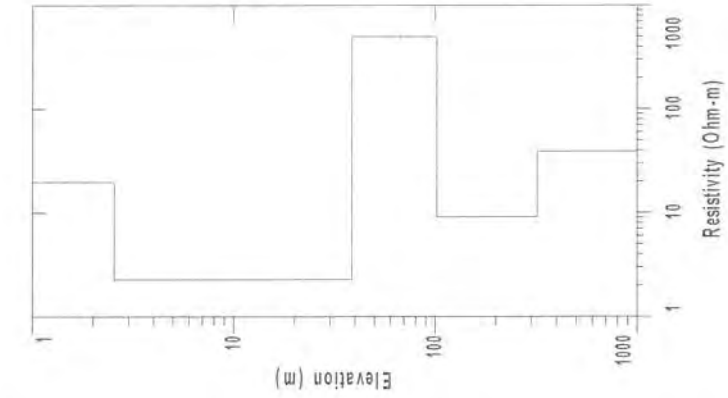
Northing: 980250.0 Easting: 601345.0 Elevation: 975.0

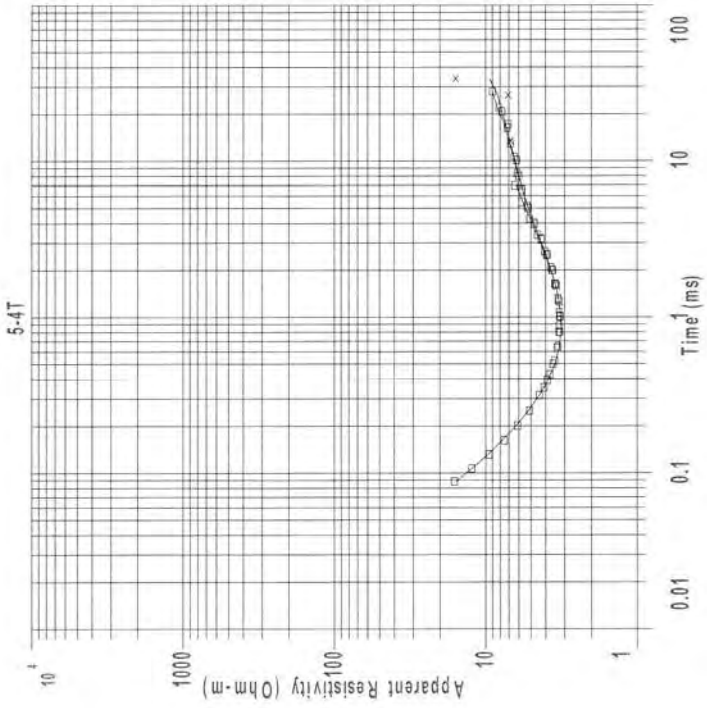
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				975.0		
1	35.15	1.79	1.79	973.2	0.0510	63.13
2	0.544	2.70	4.49	970.5	4.96	1.47
3	3.72	4.91	9.40	965.5	1.31	18.31
4	2.27	47.74	57.15	917.8	20.94	108.8
5	8.01 *					

"*" INDICATES FIXED PARAMETER

Prepared for





5-4T

Central Loop TEM

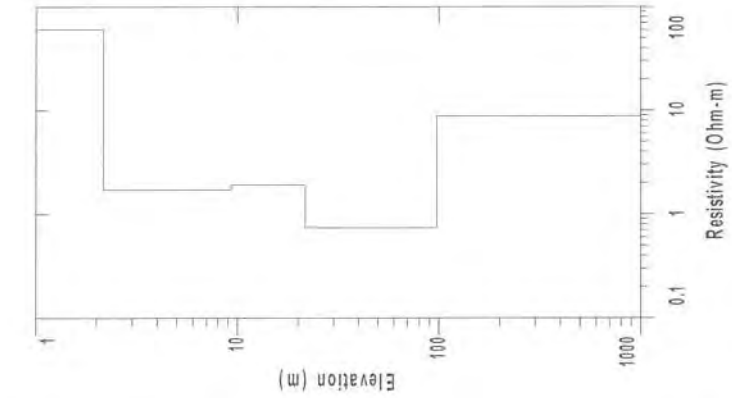
Northing: 979628.0 Easting: 601289.0 Elevation: 967.0

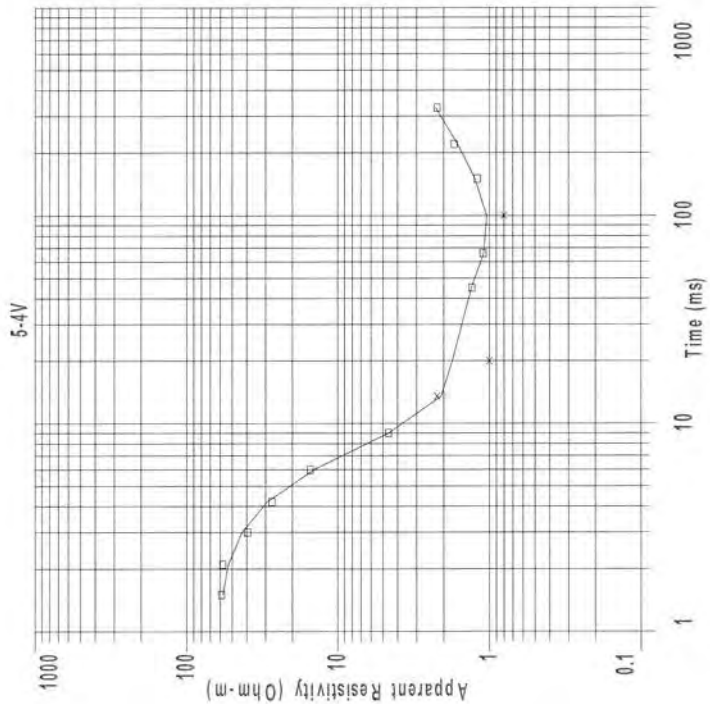
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				967.0		
1	19.75	2.54	2.54	964.4	0.128	50.26
2	2.27	36.03	38.57	928.4	15.82	82.03
3	500.0 *	63.16	101.7	865.2	0.126	31582.8
4	9.09	219.1	320.9	646.0	24.10	1993.2
5	38.93					

"*" INDICATES FIXED PARAMETER

Prepared for





5-4V

Schlumberger Array

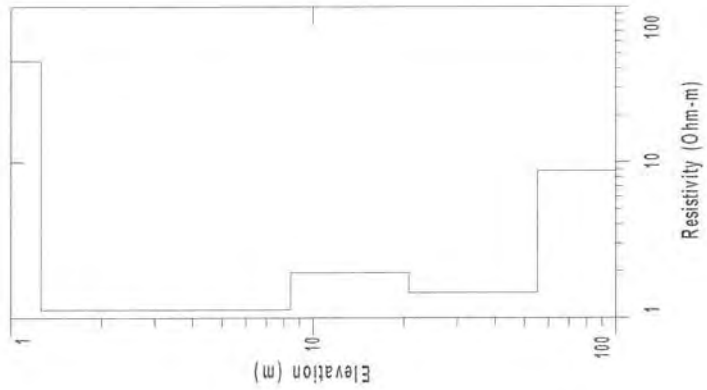
Northing: 980270.0 Easting: 601635.0 Elevation: 957.0

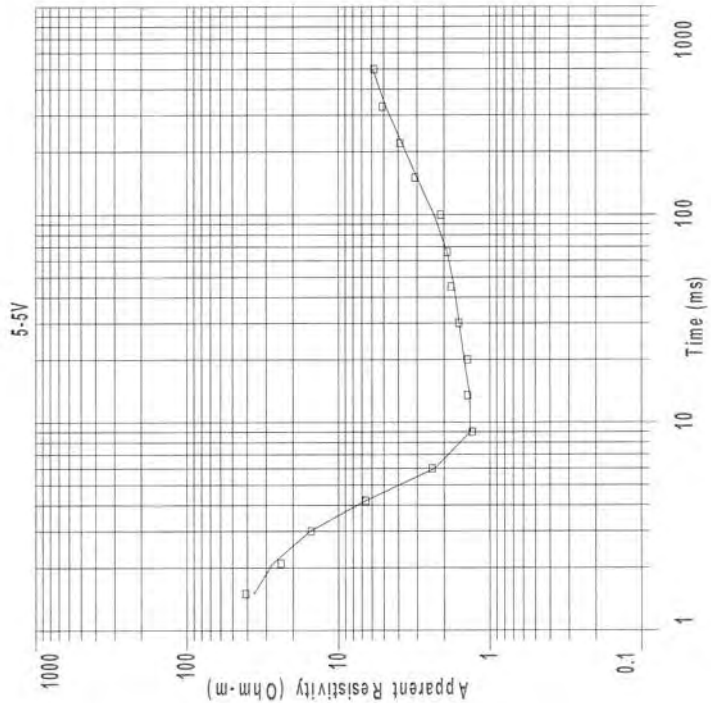
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				957.0		
1	60.85	2.15	2.15	954.8	0.0354	131.1
2	1.71	7.11	9.26	947.7	4.14	12.19
3	1.90	12.43	21.69	935.3	6.50	23.73
4	0.739	75.86	97.56	859.4	102.6	56.09
5	8.79 *					

"*" INDICATES FIXED PARAMETER

Prepared for





5-5V

Schlumberger Array

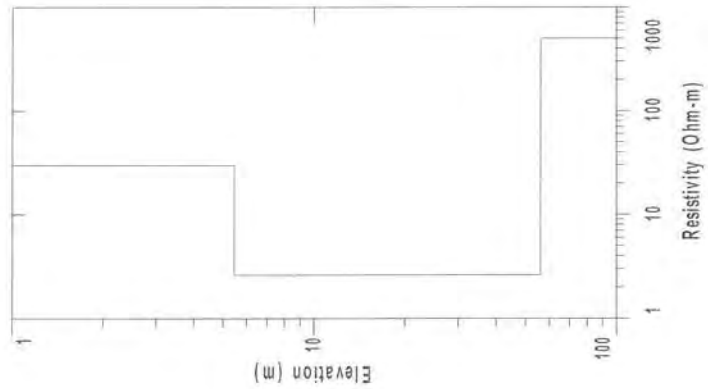
Northing: 980289.0 Easting: 601832.0 Elevation: 952.0

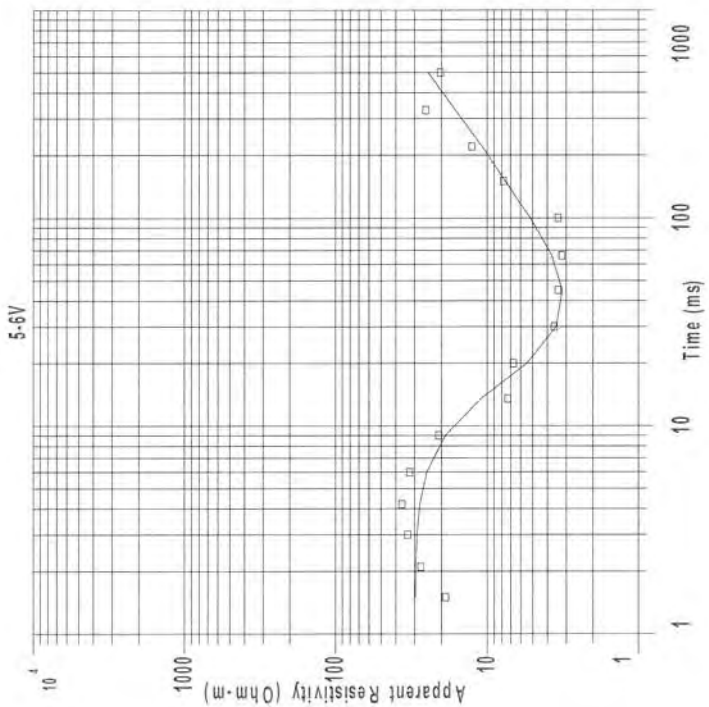
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				952.0		
1	44.73	1.26	1.26	950.7	0.0281	56.37
2	1.12	7.14	8.40	943.5	6.33	8.06
3	1.95	12.33	20.74	931.2	6.31	24.09
4	1.45	34.48	55.22	896.7	23.74	50.07
5	8.79 *					

"*" INDICATES FIXED PARAMETER

Prepared for





5-6V

Schlumberger Array

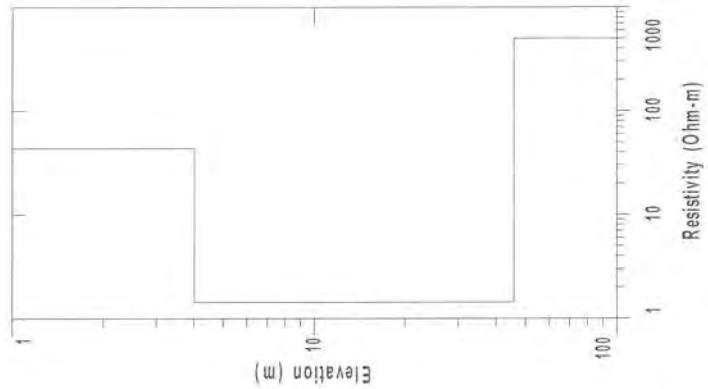
Northing: 980104.0 Easting: 601867.0 Elevation: 950.0

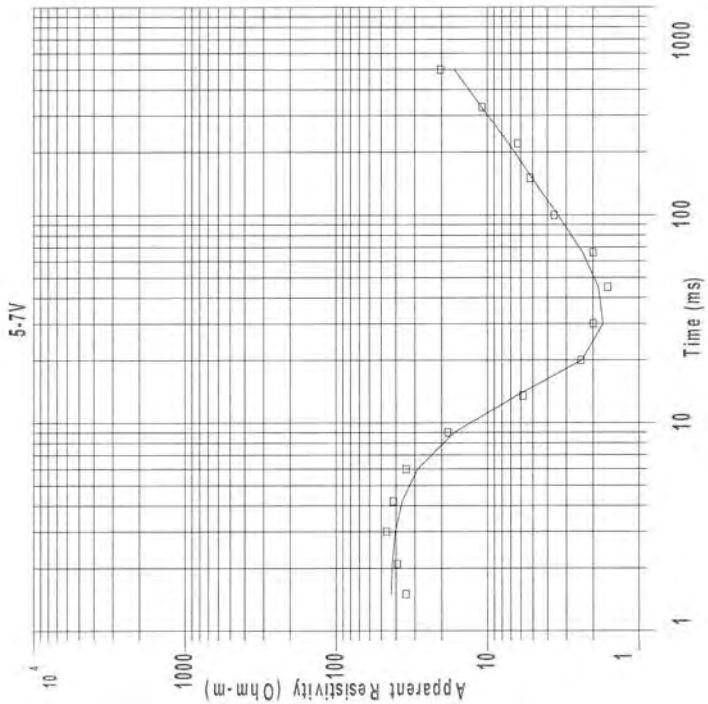
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				950.0		
1	29.83	5.45	5.45	944.5	0.182	162.7
2	2.62	50.59	56.04	893.9	19.28	132.7
3	499.9 *					

"*" INDICATES FIXED PARAMETER

Prepared for





5-7V

Schlumberger Array

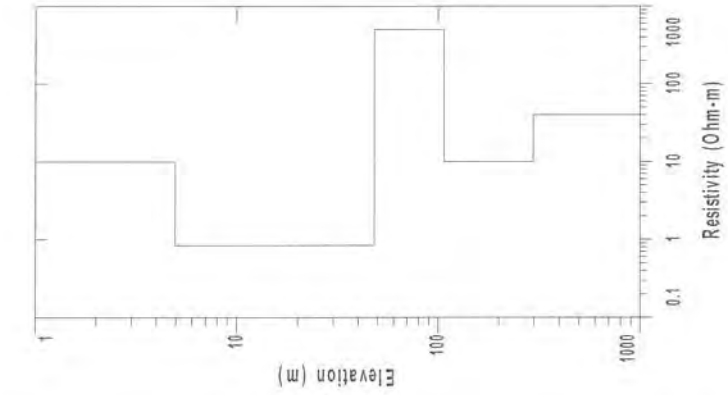
Northing: 979787.0 Easting: 601932.0 Elevation: 960.0

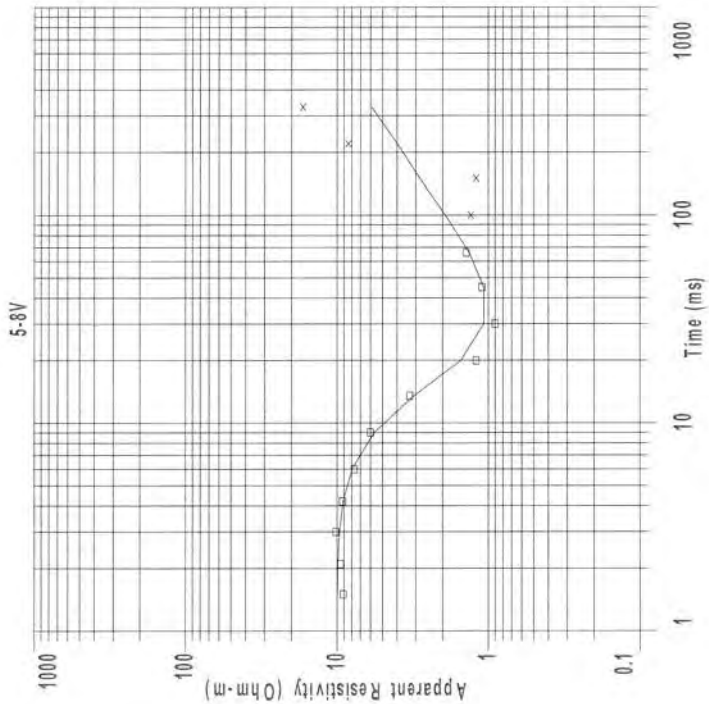
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				960.0		
1	43.54	4.01	4.01	955.9	0.0923	175.0
2	1.43	41.77	45.79	914.2	29.18	59.78
3	499.9 *					

"*" INDICATES FIXED PARAMETER

Prepared for





5-8V

Schlumberger Array

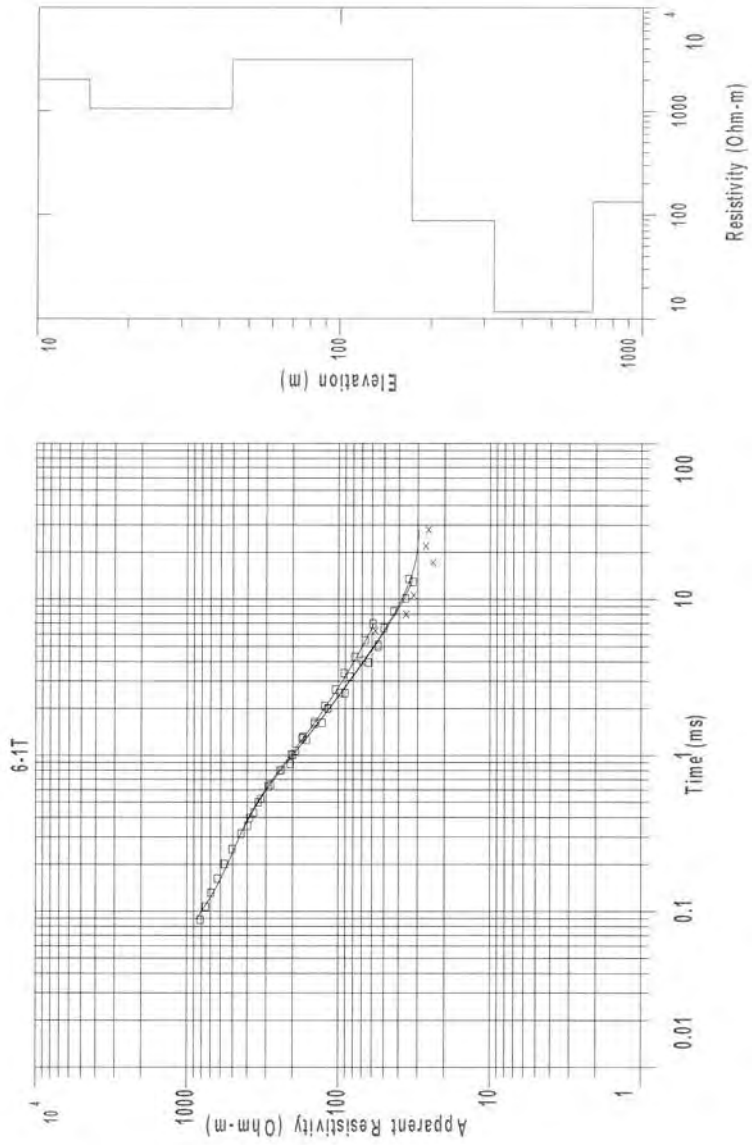
Northing: 979688.0 Easting: 601654.0 Elevation: 951.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				951.0		
1	10.02	4.95	4.95	946.0	0.493	49.60
2	0.838	43.16	48.11	902.8	51.50	36.17
3	499.9 *	58.73	106.8	844.1	0.117	29367.5
4	9.99	189.2	296.0	654.9	18.92	1892.0
5	40.01					

"*" INDICATES FIXED PARAMETER

Prepared for



6-1T

Central Loop TEM

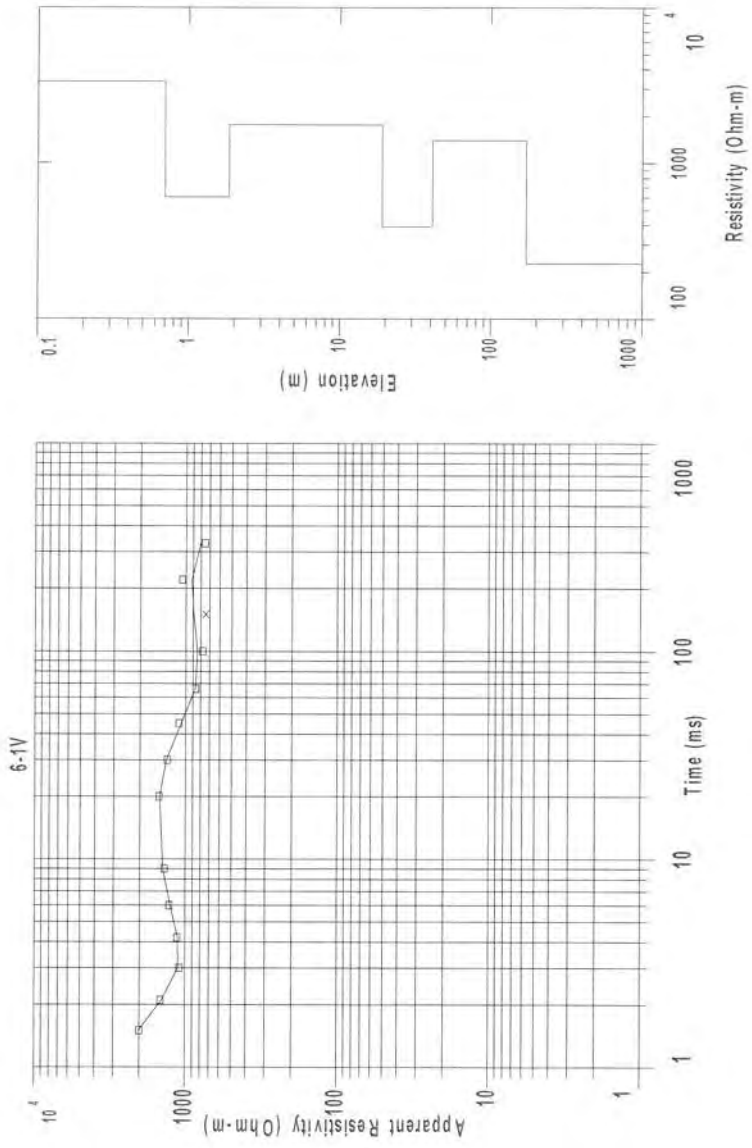
Northing: 959008.0 Easting: 554826.0 Elevation: 1316.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1316.0		
1	2006.0	14.80	14.80	1301.1	0.00738	29691.2
2	1054.8	28.97	43.77	1272.2	0.0274	30561.5
3	3133.1	128.6	172.4	1143.5	0.0410	403115.5
4	87.74	150.6	323.0	992.9	1.71	13217.6
5	11.65	362.4	685.5	630.4	31.10	4223.4
6	133.6					

ALL PARAMETERS ARE FREE

Prepared for



6-1V

Schlumberger Array

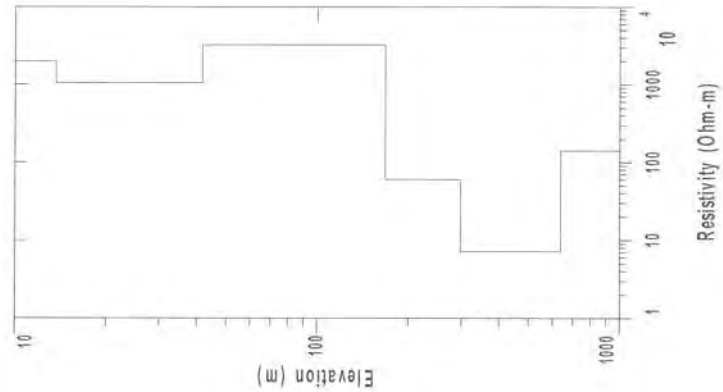
Northing: 959024.0 Easting: 554960.0 Elevation: 1319.0

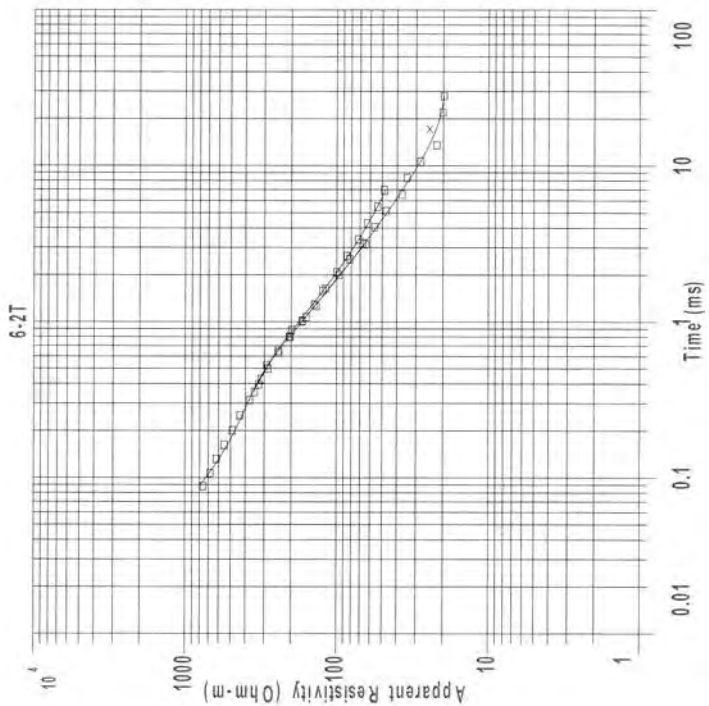
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1319.0		
1	3329.3	0.696	0.696	1318.3	0.0	2318.2
2	605.1	1.15	1.84	1317.1	0.00190	697.1
3	1758.0	17.18	19.03	1299.9	0.00978	30213.4
4	388.6	21.87	40.90	1278.0	0.0562	8501.2
5	1394.1	129.9	170.8	1148.1	0.0932	181159.1
6	226.4					

ALL PARAMETERS ARE FREE

Prepared for





6-2T

Central Loop TEM

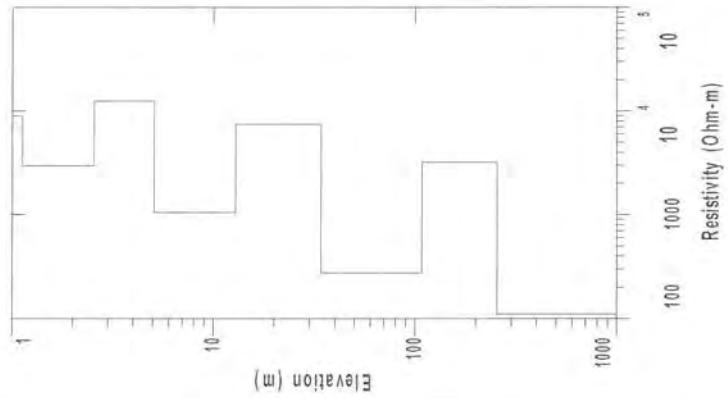
Northing: 959066.0 Easting: 554745.0 Elevation: 1315.0

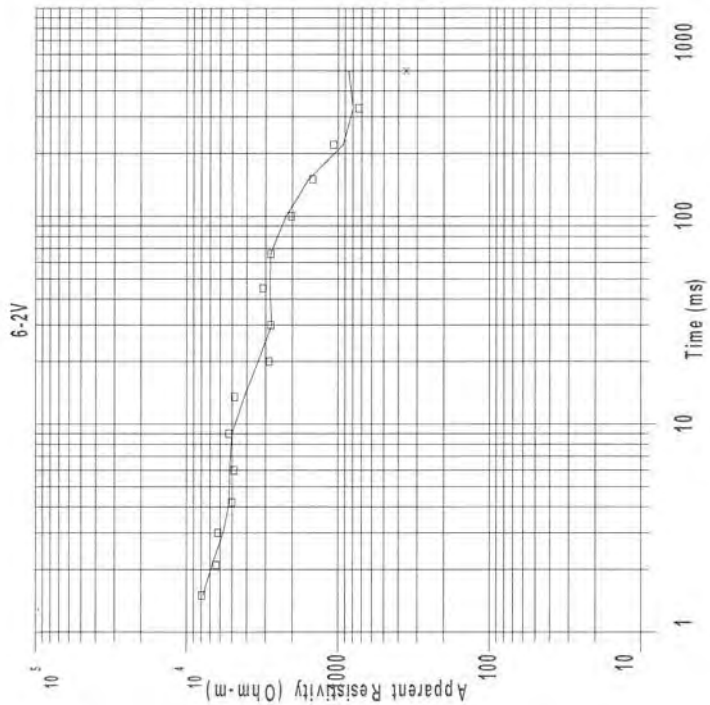
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1315.0		
1	1986.9	13.64	13.64	1301.3	0.00687	27119.1
2	1049.5	27.93	41.58	1273.4	0.0266	29316.6
3	3229.8	125.8	167.4	1147.5	0.0389	406592.3
4	60.12	129.7	297.1	1017.8	2.15	7798.6
5	7.15	341.0	638.2	676.7	47.65	2440.9
6	140.3					

ALL PARAMETERS ARE FREE

Prepared for





6-2V

Schlumberger Array

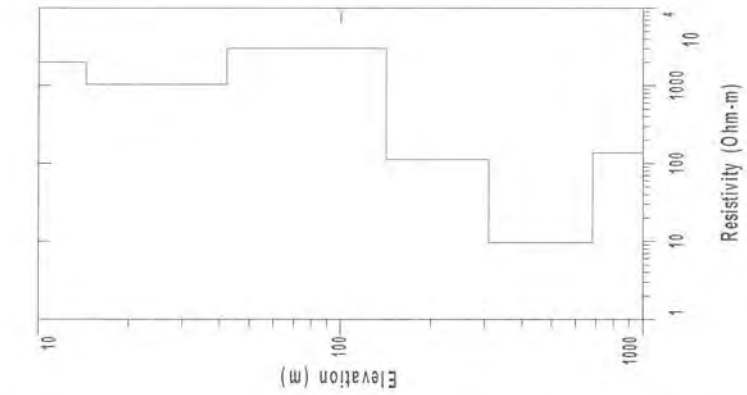
Northing: 959220.0 Easting: 554698.0 Elevation: 1314.0

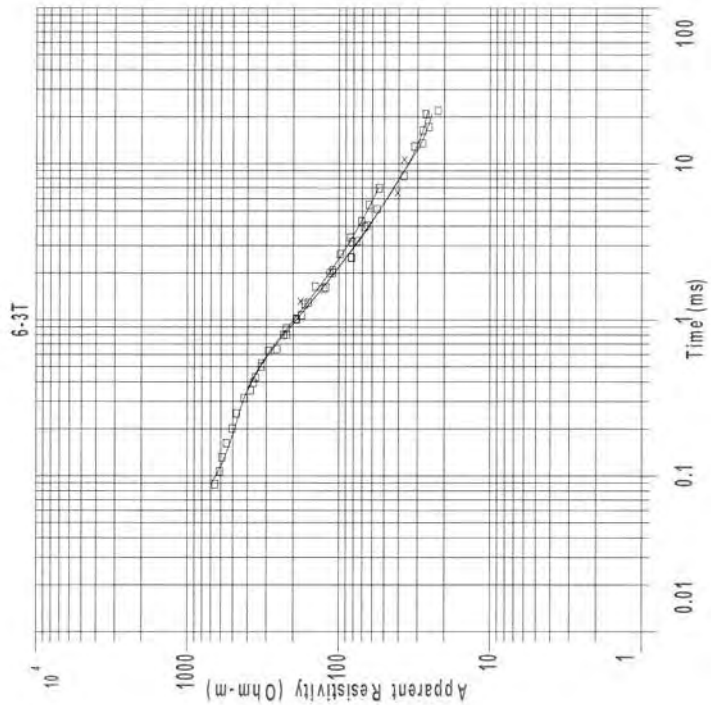
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1314.0		
1	8887.3	1.12	1.12	1312.8	0.0	9959.2
2	2944.9	1.43	2.55	1311.4	0.0	4219.9
3	12441.5	2.51	5.06	1308.9	0.0	31290.5
4	1051.6	7.81	12.88	1301.1	0.00743	8222.2
5	7444.9	21.22	34.10	1279.8	0.00285	157999.1
6	275.2	74.15	108.2	1205.7	0.269	20408.8
7	3188.4 *	146.8 *	255.1	1058.8	0.0460	468200.7
8	110.4 *					

"*" INDICATES FIXED PARAMETER

Prepared for





6-3T

Central Loop TEM

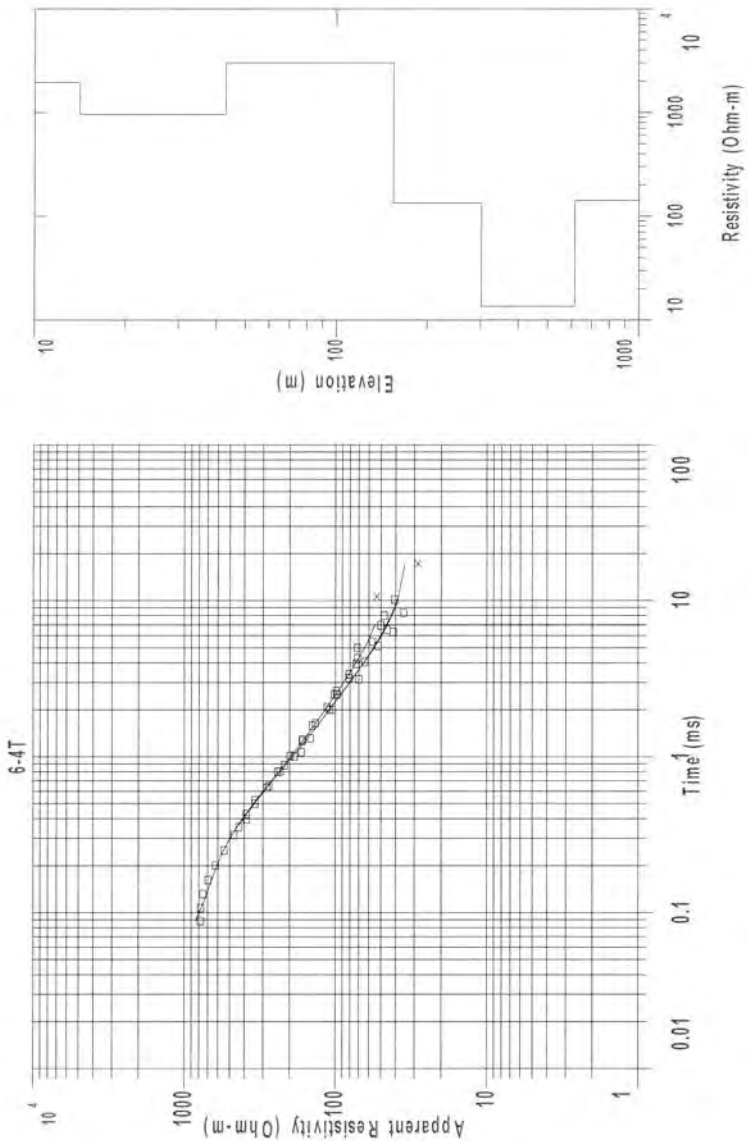
Northing: 959144.0 Easting: 554803.0 Elevation: 1315.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1315.0		
1	2002.2	14.38	14.38	1300.6	0.00718	28797.0
2	1032.0	27.58	41.96	1273.0	0.0267	28464.2
3	3029.0	99.68	141.6	1173.3	0.0329	301937.9
4	111.9	168.1	309.7	1005.2	1.50	18822.7
5	9.64	372.7	682.4	632.5	38.65	3593.5
6	137.1					

ALL PARAMETERS ARE FREE

Prepared for



6-4T

Central Loop TEM

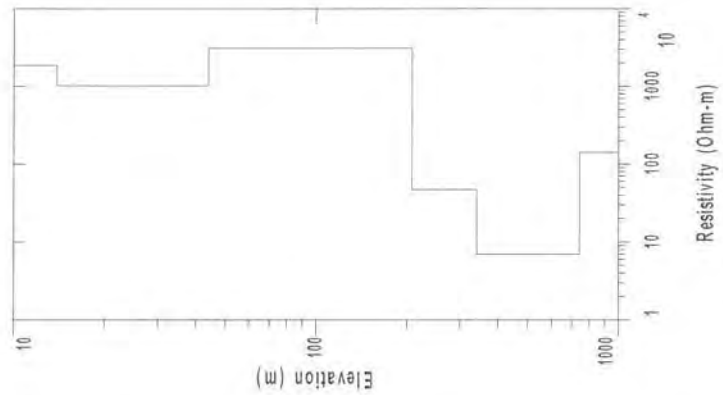
Northing: 959086.0 Easting: 554881.0 Elevation: 1316.0

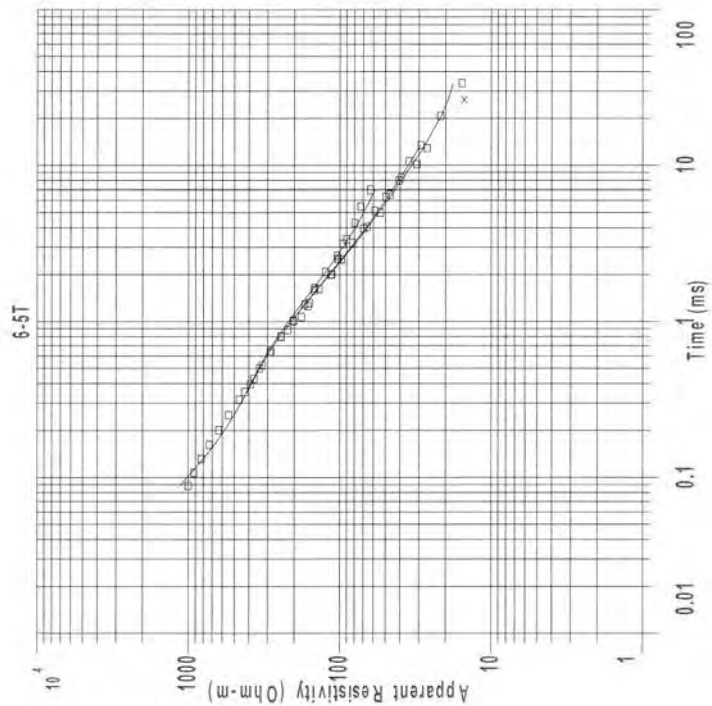
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1316.0		
1	1954.5	14.12	14.12	1301.8	0.00723	27613.2
2	954.6	28.84	42.97	1273.0	0.0302	27538.2
3	2999.3	111.2	154.2	1161.7	0.0370	333677.3
4	133.8	147.7	302.0	1013.9	1.10	19778.1
5	13.57	312.8	614.9	701.0	23.04	4249.0
6	141.9					

ALL PARAMETERS ARE FREE

Prepared for





6-5T

Central Loop TEM

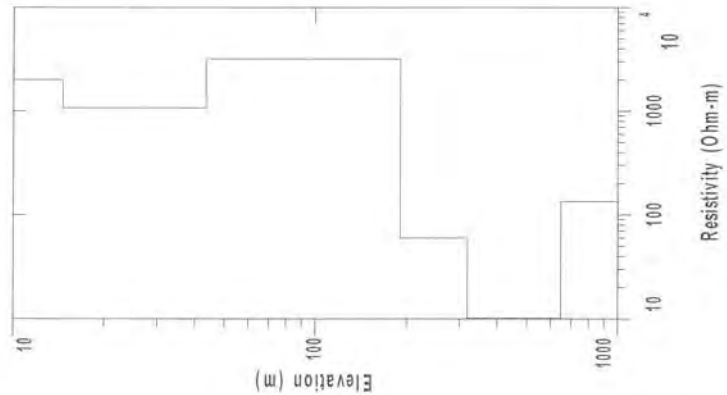
Northing: 958947.0 Easting: 554904.0 Elevation: 1318.0

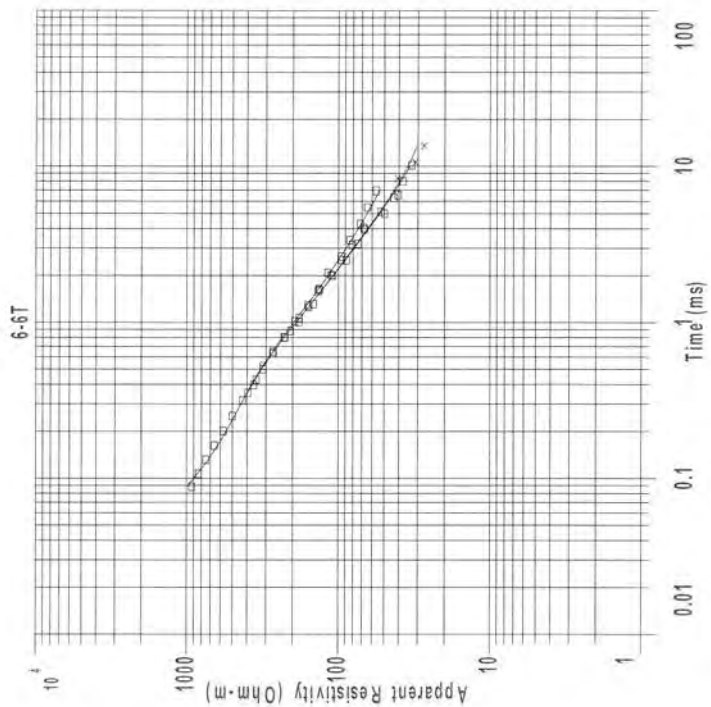
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1318.0		
1	1858.6	13.90	13.90	1304.0	0.00748	25843.2
2	1015.1	30.08	43.99	1274.0	0.0296	30541.1
3	3104.2	164.0	208.0	1109.9	0.0528	509156.9
4	47.01	132.4	340.4	977.5	2.81	6228.5
5	6.93	402.0	742.5	575.4	57.97	2788.8
6	141.9					

ALL PARAMETERS ARE FREE

Prepared for





6-6T

Central Loop TEM

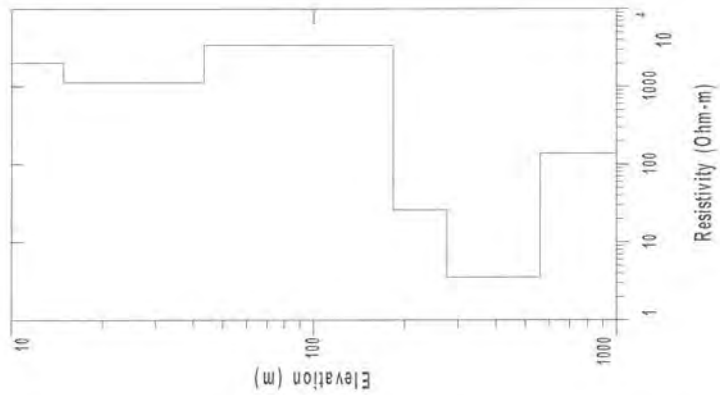
Northing: 958858.0 Easting: 554864.0 Elevation: 1319.0

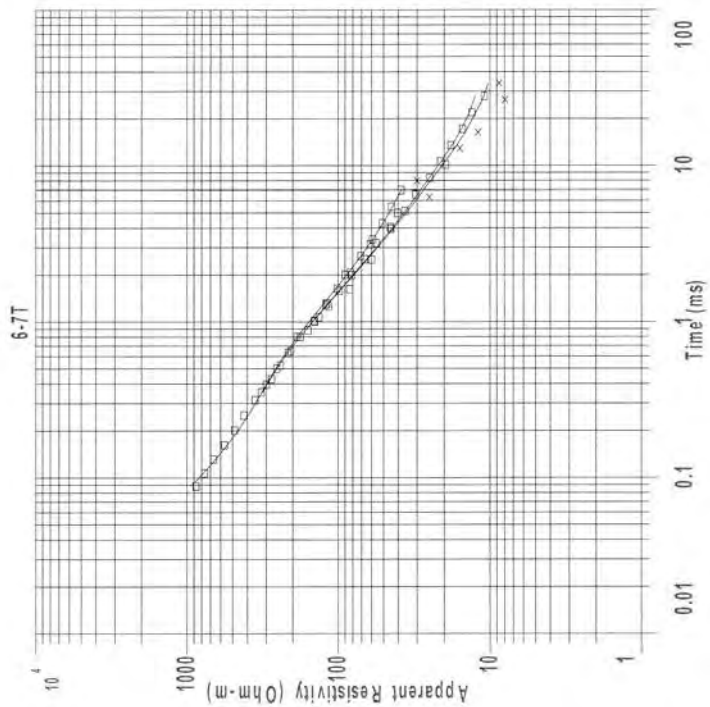
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1319.0		
1	2009.8	14.53	14.53	1304.4	0.00723	29212.8
2	1071.8	28.94	43.47	1275.5	0.0270	31023.9
3	3188.4	146.8	190.3	1128.6	0.0460	468200.8
4	59.87	128.9	319.2	999.7	2.15	7719.1
5	10.11	328.8	648.0	670.9	32.49	3326.6
6	134.1					

ALL PARAMETERS ARE FREE

Prepared for





6-7T

Central Loop TEM

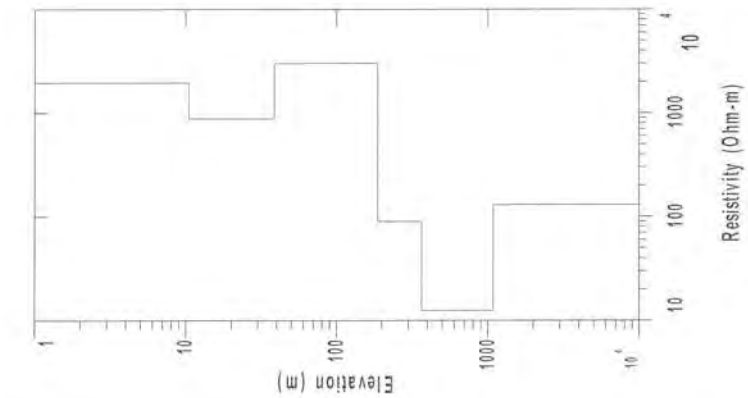
Northing: 958988.0 Easting: 554692.0 Elevation: 1333.0

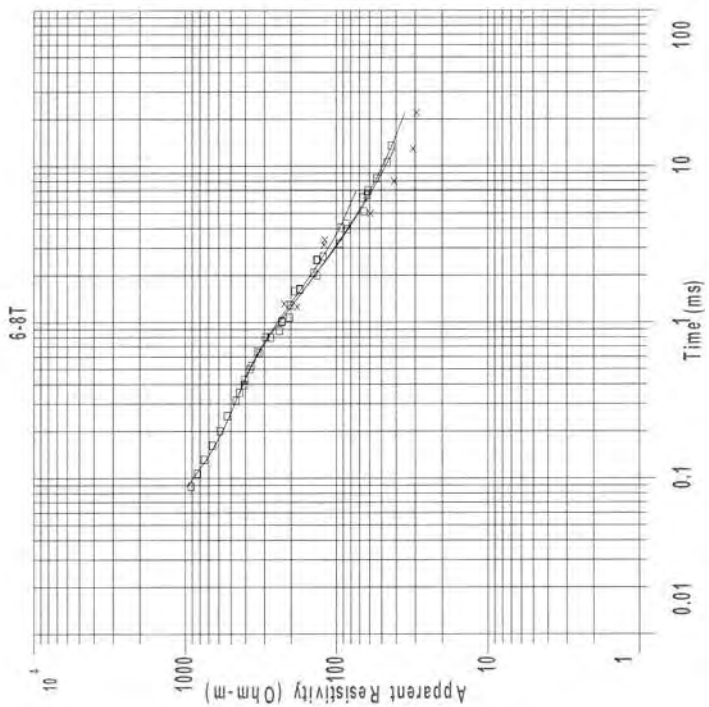
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1333.0		
1	2013.0	14.83	14.83	1318.1	0.00737	29864.4
2	1125.3	28.50	43.33	1289.6	0.0253	32075.5
3	3400.4	140.0	183.3	1149.6	0.0411	476235.5
4	25.96	92.19	275.5	1057.4	3.55	2393.5
5	3.56	283.7	559.3	773.6	79.70	1010.2
6	137.8					

ALL PARAMETERS ARE FREE

Prepared for





6-8T

Central Loop TEM

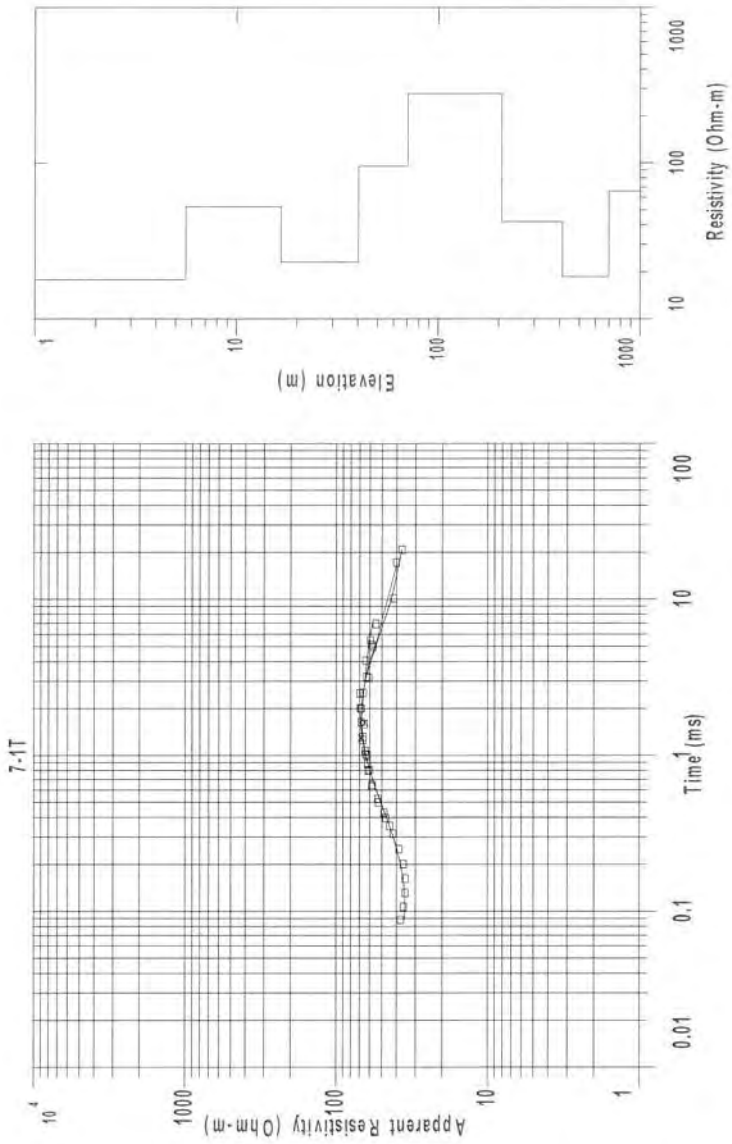
Northing: 958929.0 Easting: 554774.0 Elevation: 1323.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1323.0		
1	1951.5	10.45	10.45	1312.5	0.00536	20406.4
2	878.9	28.15	38.61	1284.3	0.0320	24747.7
3	3010.5	149.1	187.7	1135.2	0.0495	449084.0
4	89.87	177.9	365.6	957.3	1.97	15989.3
5	12.47	721.3	1087.0	235.9	57.82	8998.3
6	129.7					

ALL PARAMETERS ARE FREE

Prepared for



7-1T

Central Loop TEM

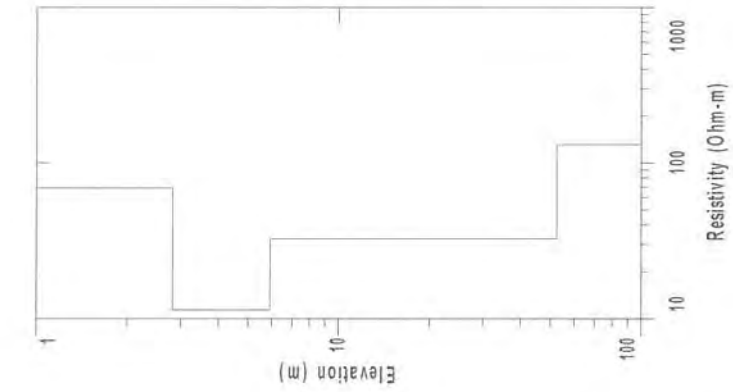
Northing: 949684.0 Easting: 586824.0 Elevation: 1271.0

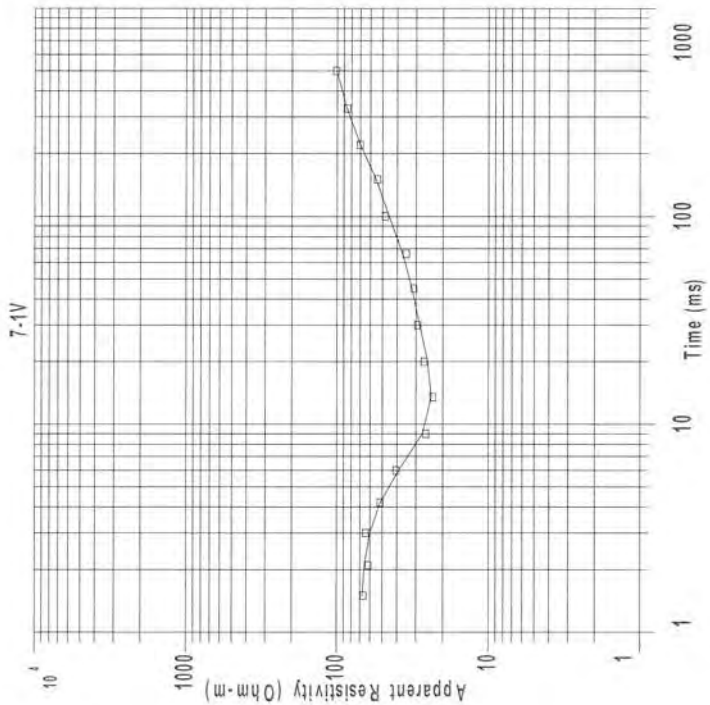
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1271.0		
1	17.79	5.60	5.60	1265.3	0.315	99.77
2	52.41	11.04	16.65	1254.3	0.210	578.9
3	23.04	23.59	40.24	1230.7	1.02	543.5
4	95.26	30.30	70.54	1200.4	0.318	2886.6
5	279.2	136.1	206.7	1064.2	0.487	38031.5
6	41.96	204.6	411.3	859.6	4.87	8588.5
7	18.62	287.5	698.9	572.0	15.43	5355.6
8	65.81					

ALL PARAMETERS ARE FREE

Prepared for





7-1V

Schlumberger Array

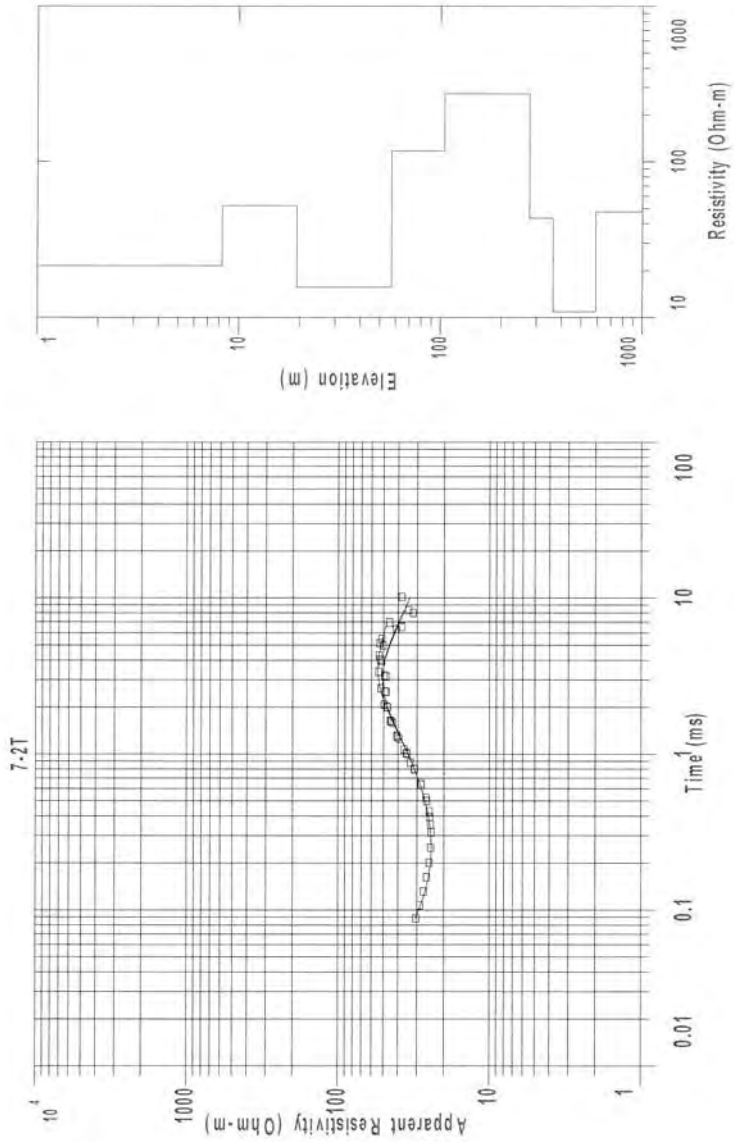
Northing: 949400.0 Easting: 586782.0 Elevation: 1270.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1270.0		
1	68.86	2.81	2.81	1267.1	0.0409	194.1
2	11.38	3.10	5.92	1264.0	0.272	35.32
3	32.50	46.58	52.50	1217.4	1.43	1514.0
4	131.4					

ALL PARAMETERS ARE FREE

Prepared for



7-2T

Central Loop TEM

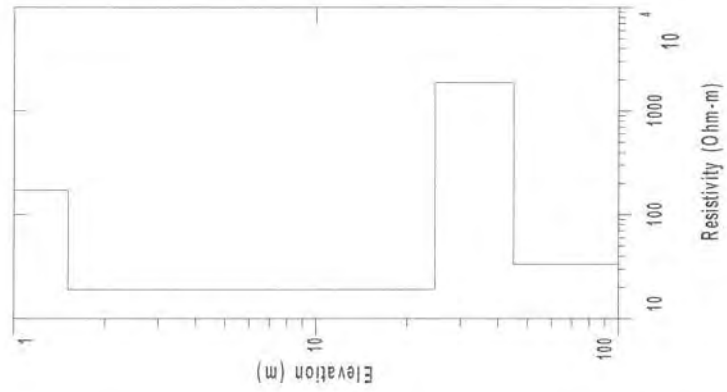
Northing: 949524.0 Easting: 586941.0 Elevation: 1272.0

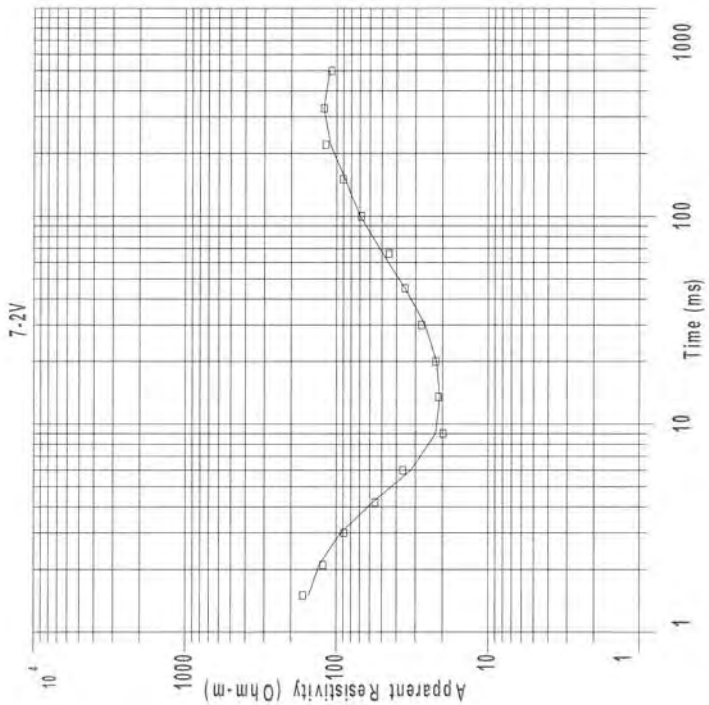
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1272.0		
1	21.46	8.27	8.27	1263.7	0.385	177.7
2	52.08	11.07	19.35	1252.6	0.212	576.8
3	15.62	37.81	57.16	1214.8	2.41	590.8
4	117.2	47.47	104.6	1167.3	0.404	5567.1
5	273.3	172.7	277.4	994.5	0.632	47228.8
6	43.38	85.89	363.3	908.6	1.97	3726.6
7	10.90	225.2	588.5	683.4	20.65	2455.0
8	47.63					

ALL PARAMETERS ARE FREE

Prepared for





7-2V

Schlumberger Array

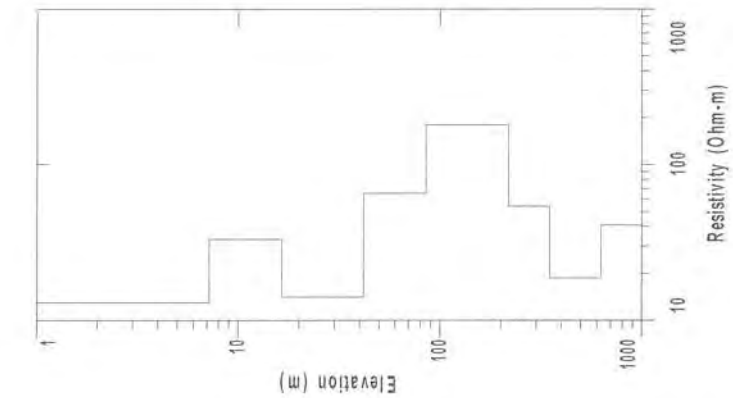
Northing: 949561.0 Easting: 586666.0 Elevation: 1272.0

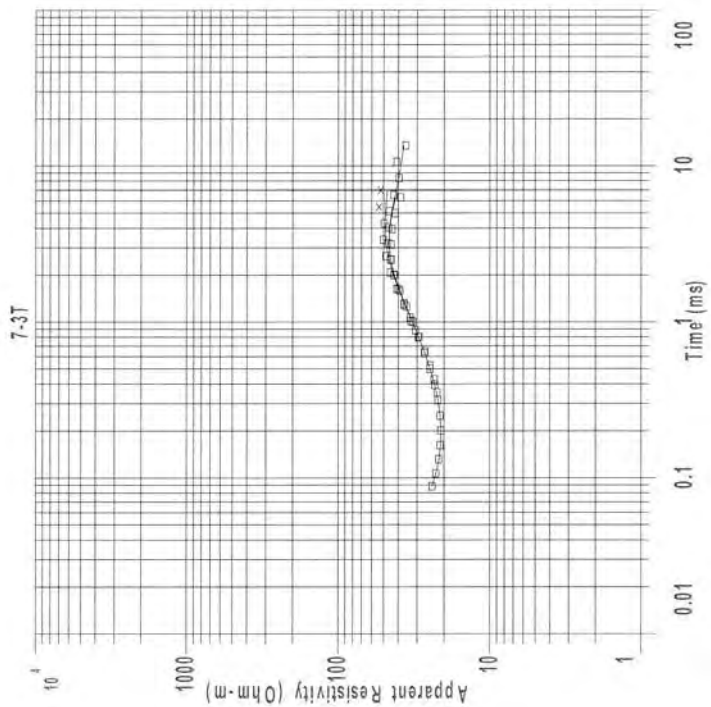
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1272.0		
1	171.4	1.51	1.51	1270.4	0.00881	259.1
2	19.00	23.19	24.70	1247.2	1.22	440.7
3	1871.3	20.28	44.99	1227.0	0.0108	37965.6
4	33.43					

ALL PARAMETERS ARE FREE

Prepared for





7-3T

Central Loop TEM

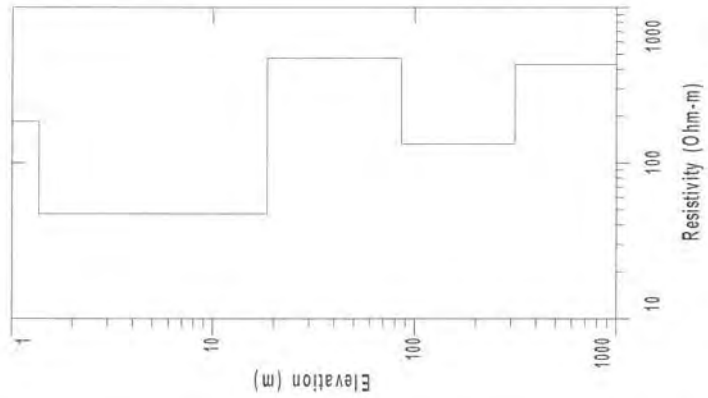
Northing: 949643.0 Easting: 587101.0 Elevation: 1270.0

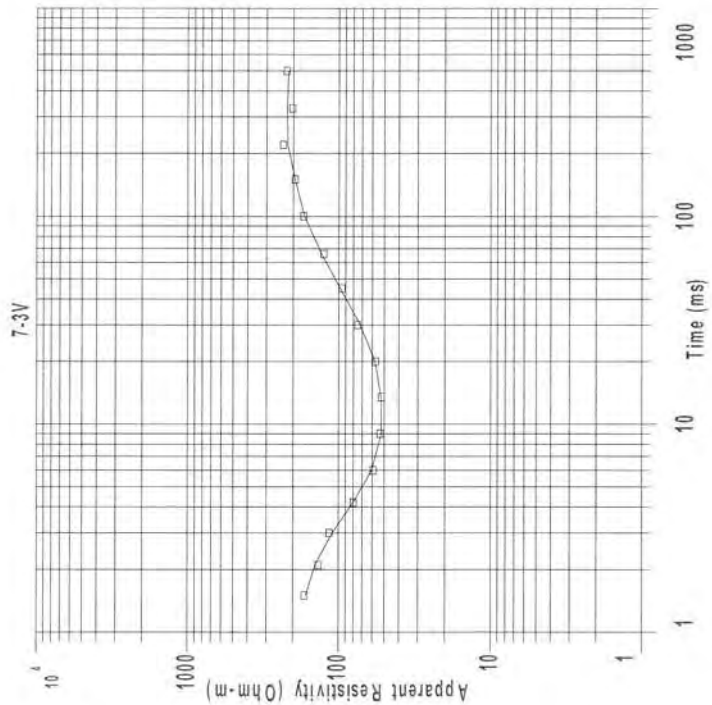
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1270.0		
1	12.96	7.17	7.17	1262.8	0.553	93.08
2	33.14	9.26	16.44	1253.5	0.279	306.9
3	14.14	25.37	41.81	1228.1	1.79	358.8
4	65.33	43.45	85.27	1184.7	0.665	2839.4
5	179.7	132.6	217.9	1052.0	0.738	23843.3
6	53.88	132.0	349.9	920.0	2.45	7114.6
7	18.64	277.5	627.5	642.4	14.88	5176.3
8	40.85					

ALL PARAMETERS ARE FREE

Prepared for





7-3V

Schlumberger Array

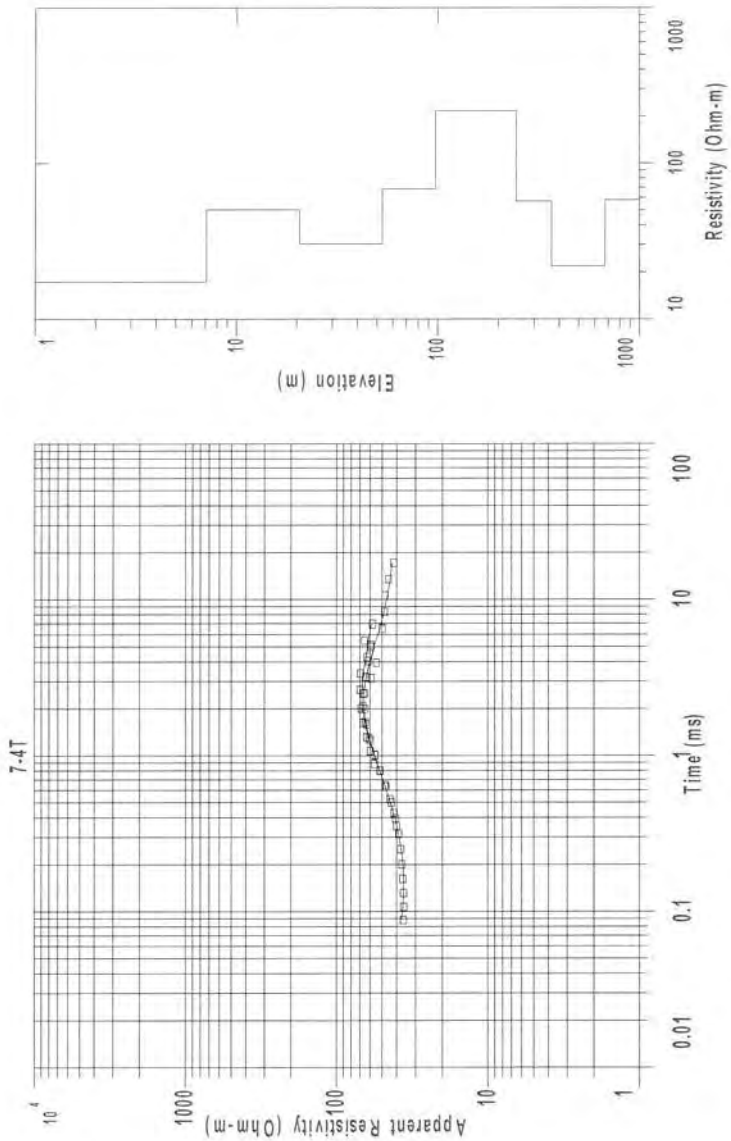
Northing: 949724.0 Easting: 586551.0 Elevation: 1271.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1271.0		
1	183.9	1.36	1.36	1269.6	0.00741	250.8
2	47.00	17.23	18.59	1252.4	0.366	810.0
3	470.4	67.36	85.96	1185.0	0.143	31694.2
4	132.2	227.6	313.6	957.3	1.72	30109.6
5	428.9					

ALL PARAMETERS ARE FREE

Prepared for



7-4T

Central Loop TEM

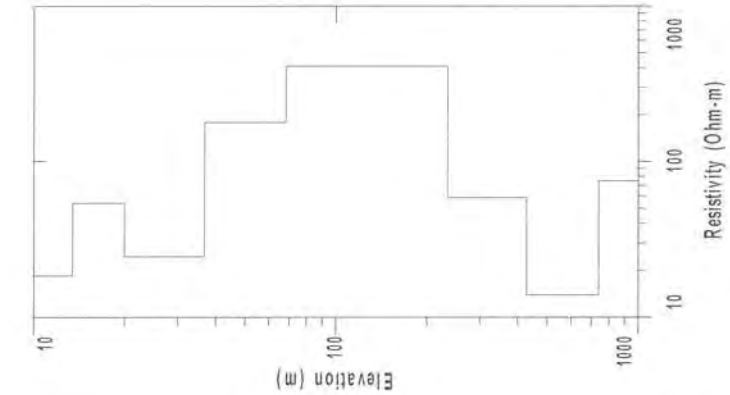
Northing: 949806.0 Easting: 586988.0 Elevation: 1282.0

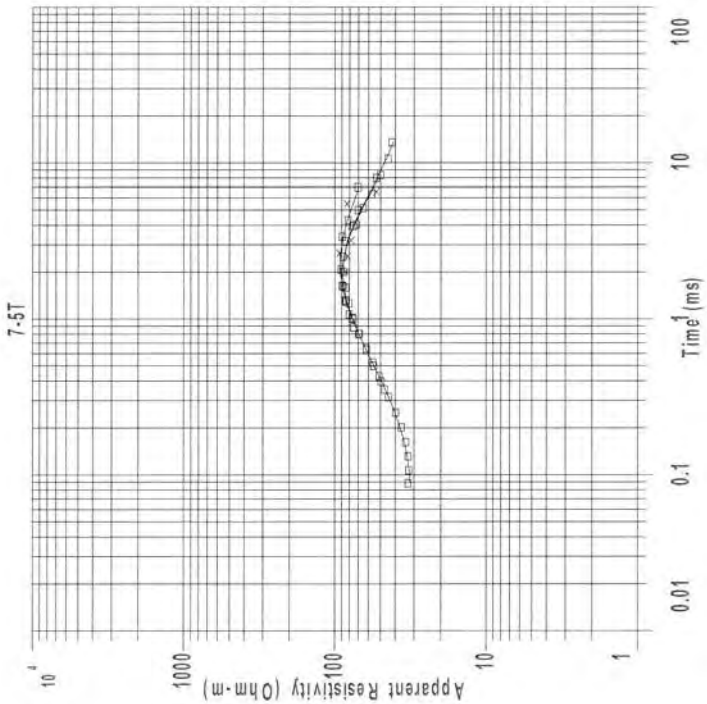
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1282.0		
1	17.29	7.06	7.06	1274.9	0.408	122.1
2	50.26	13.59	20.65	1261.3	0.270	683.1
3	30.38	32.34	53.00	1228.9	1.06	982.7
4	68.40	44.27	97.28	1184.7	0.647	3028.7
5	216.7	146.9	244.2	1037.7	0.677	31858.5
6	57.13	120.9	365.2	916.7	2.11	6913.3
7	21.88	310.8	676.0	605.9	14.20	6802.1
8	58.18					

ALL PARAMETERS ARE FREE

Prepared for





7-5T

Central Loop TEM

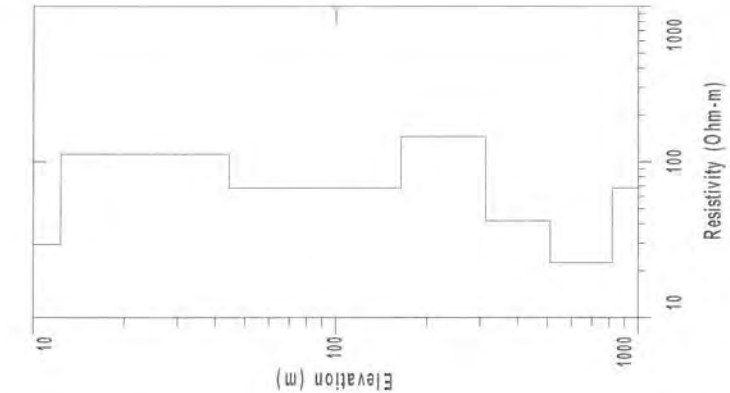
Northing: 949964.0 Easting: 586869.0 Elevation: 1280.0

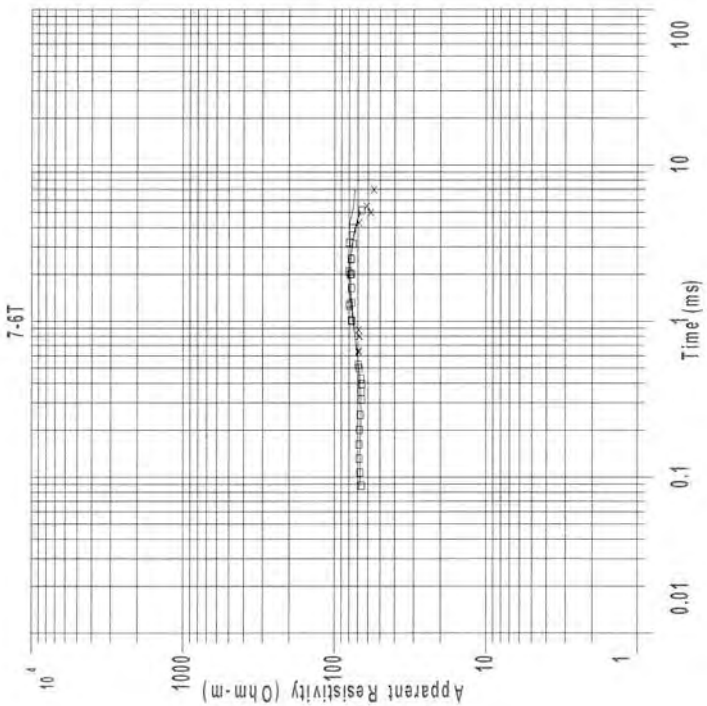
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1280.0		
1	18.43	13.42	13.42	1266.5	0.728	247.5
2	53.86	6.54	19.96	1260.0	0.121	352.4
3	24.46	16.76	36.73	1243.2	0.685	410.3
4	177.8	31.58	68.32	1211.6	0.177	5619.1
5	408.7	165.7	234.0	1045.9	0.405	67754.3
6	58.53	193.6	427.7	852.2	3.30	11334.4
7	13.92	312.0	739.7	540.2	22.41	4343.5
8	75.05					

ALL PARAMETERS ARE FREE

Prepared for





7-6T

Central Loop TEM

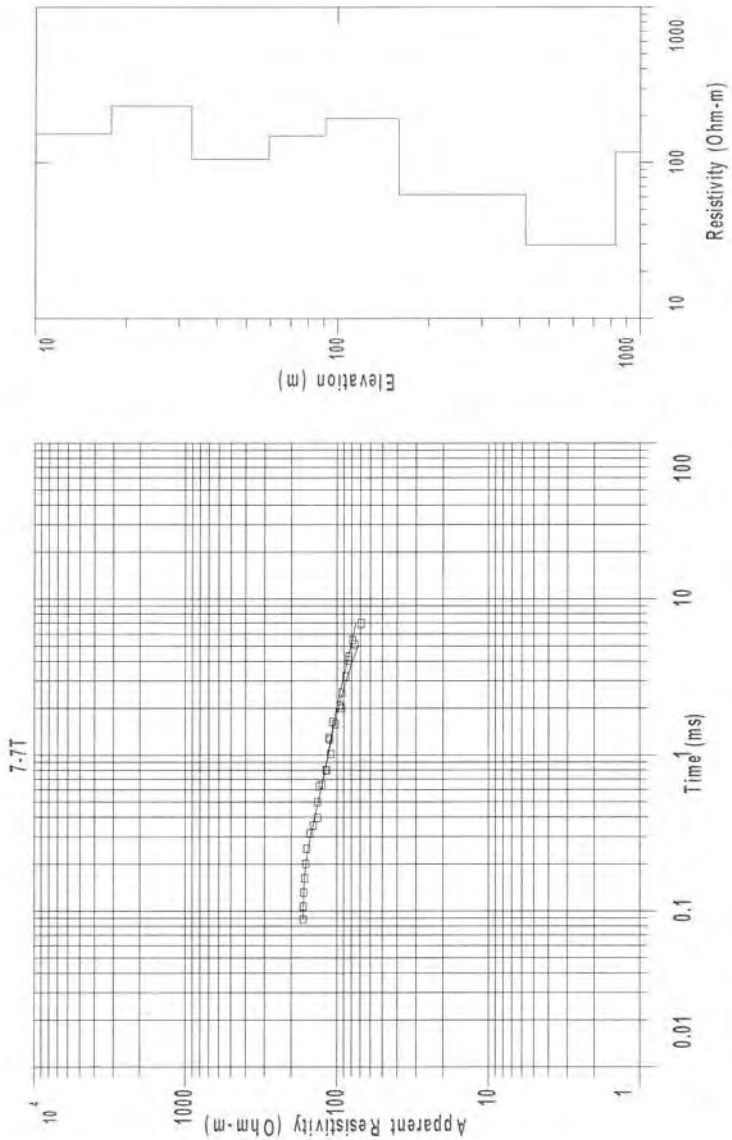
Northing: 949846.0 Easting: 586718.0 Elevation: 1270.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1270.0		
1	29.43	12.33	12.33	1257.6	0.419	363.1
2	111.8	31.98	44.31	1225.6	0.285	3578.3
3	68.01	119.9	164.2	1105.7	1.76	8158.7
4	145.0	148.9	313.2	956.7	1.02	21606.1
5	41.74	197.3	510.6	759.3	4.72	8240.3
6	22.49	307.8	818.4	451.5	13.68	6924.9
7	67.95					

ALL PARAMETERS ARE FREE

Prepared for



7-7T

Central Loop TEM

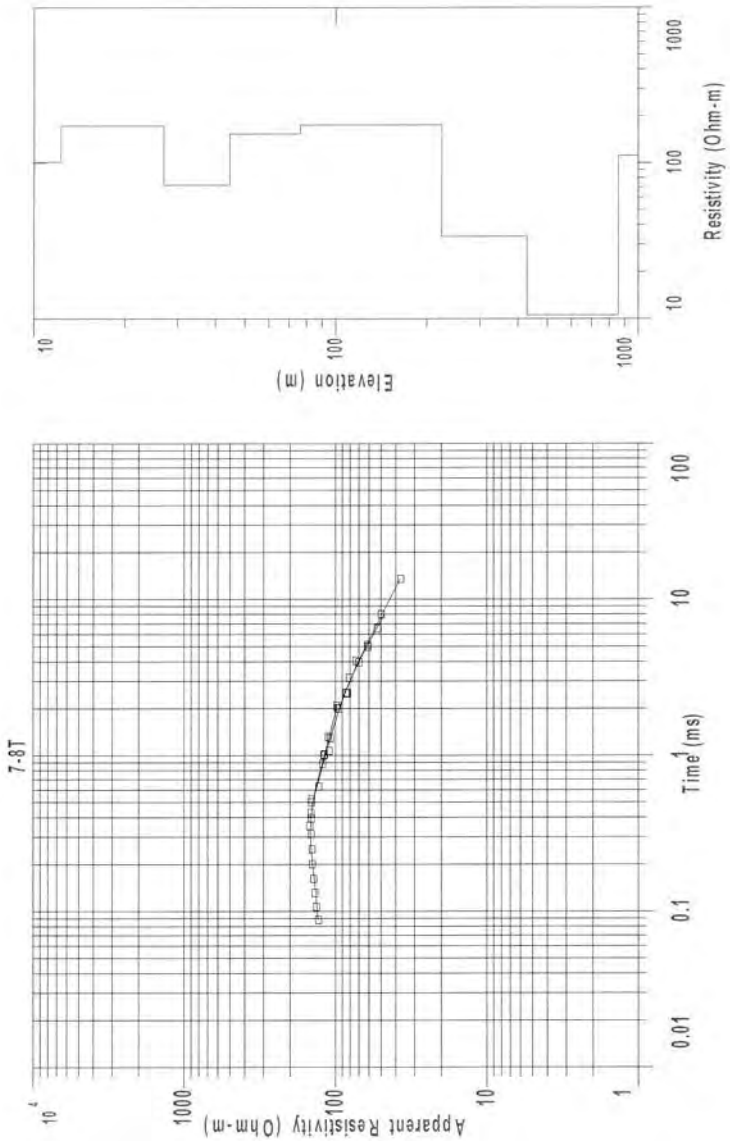
Northing: 949616.0 Easting: 586390.0 Elevation: 1295.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1295.0		
1	153.0	17.79	17.79	1277.2	0.116	2723.0
2	231.1	15.12	32.91	1262.0	0.0654	3494.5
3	105.0	26.33	59.24	1235.7	0.250	2766.3
4	148.6	31.55	90.80	1204.1	0.212	4689.2
5	192.0	68.46	159.2	1135.7	0.356	13148.0
6	62.10	259.1	418.3	876.6	4.17	16092.7
7	29.58	408.4	826.8	468.1	13.80	12081.6
8	116.2					

ALL PARAMETERS ARE FREE

Prepared for



7-8T

Central Loop TEM

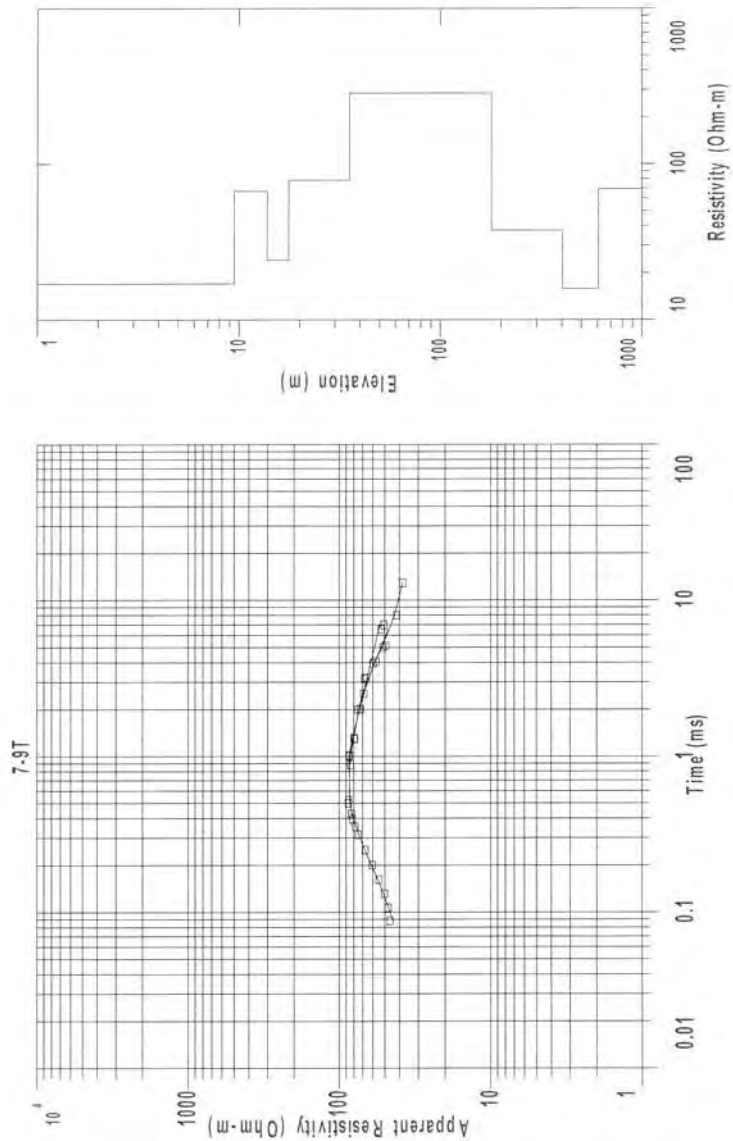
Northing: 949455.0 Easting: 586503.0 Elevation: 1294.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1294.0		
1	101.4	12.27	12.27	1281.7	0.120	1245.4
2	173.7	14.71	26.98	1267.0	0.0847	2555.8
3	72.07	17.55	44.54	1249.4	0.243	1265.4
4	153.8	31.68	76.22	1217.7	0.205	4874.5
5	175.5	147.8	224.0	1069.9	0.841	25951.4
6	33.77	204.5	428.6	865.3	6.05	6909.4
7	10.56	429.7	858.3	435.6	40.68	4538.0
8	111.2					

ALL PARAMETERS ARE FREE

Prepared for



7-9T

Central Loop TEM

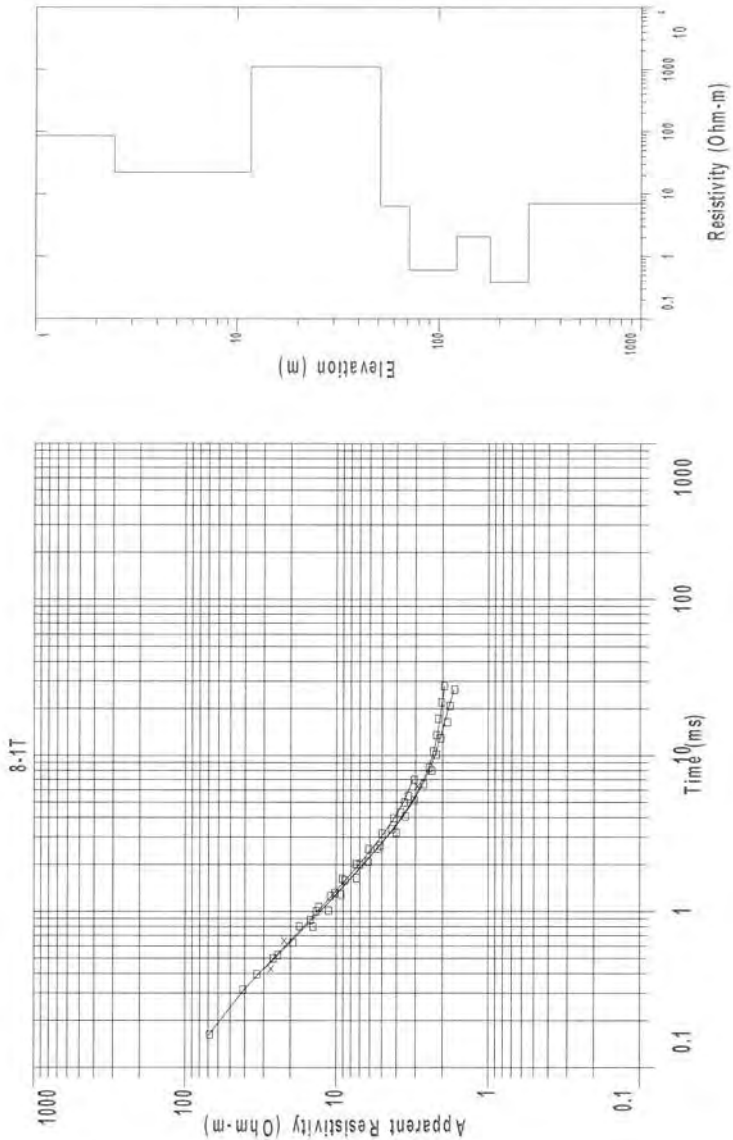
Northing: 949295.0 Easting: 586616.0 Elevation: 1288.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1288.0		
1	17.04	9.44	9.44	1278.5	0.554	160.9
2	66.77	4.31	13.76	1274.2	0.0646	288.4
3	24.12	3.85	17.62	1270.3	0.159	93.02
4	78.51	17.82	35.44	1252.5	0.226	1399.1
5	285.5	144.4	179.8	1108.1	0.505	41248.2
6	37.50	222.2	402.1	885.8	5.92	8334.8
7	15.82	206.1	608.3	679.6	13.02	3263.5
8	69.08					

ALL PARAMETERS ARE FREE

Prepared for



8-1T

Central Loop TEM

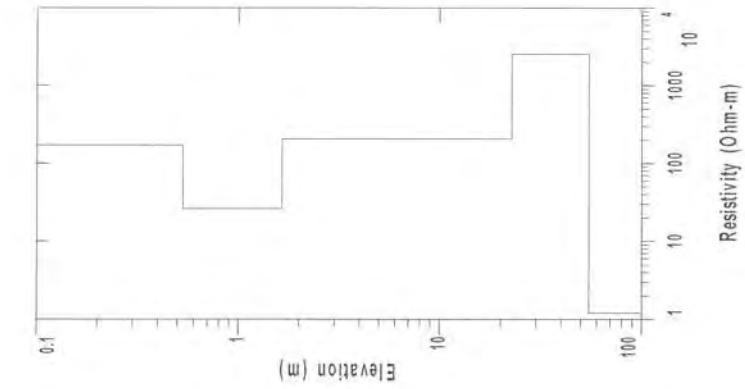
Northing: 966412.0 Easting: 615259.0 Elevation: 1222.0

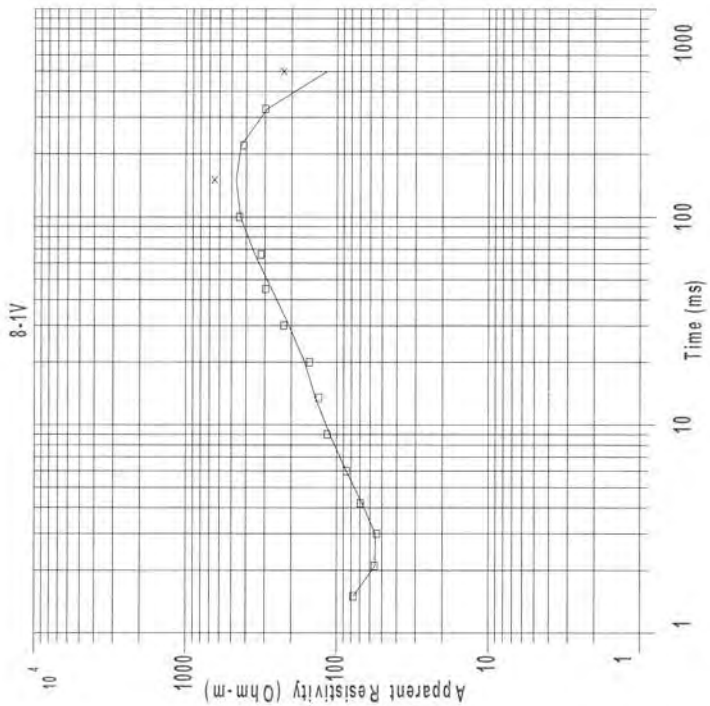
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1222.0		
1	86.05	2.44	2.44	1219.5	0.0284	210.3
2	22.23	9.24	11.69	1210.3	0.415	205.6
3	1103.2	39.47	51.16	1170.8	0.0357	43555.7
4	6.39	20.15	71.32	1150.6	3.15	128.9
5	0.600	50.92	122.2	1099.7	84.85	30.55
6	2.07	56.98	179.2	1042.7	27.45	118.2
7	0.386	97.95	277.1	944.8	253.5	37.85
8	7.04					

ALL PARAMETERS ARE FREE

Prepared for





8-1V

Schlumberger Array

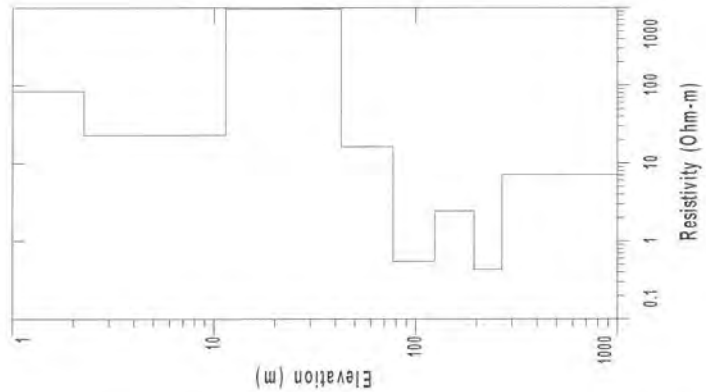
Northing: 966413.0 Easting: 615264.0 Elevation: 1222.0

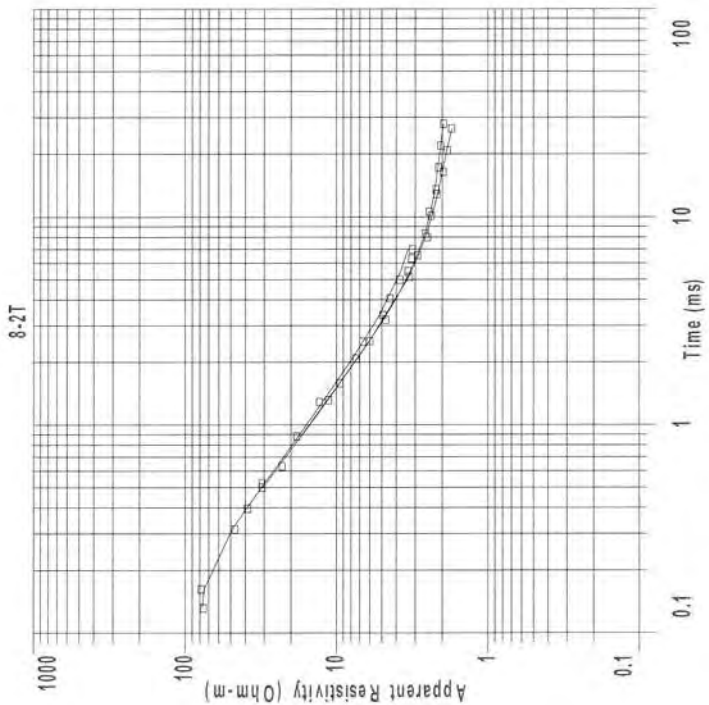
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1222.0		
1	171.6	0.529	0.529	1221.4	0.00308	90.88
2	26.29	1.11	1.64	1220.3	0.0424	29.36
3	206.4	21.06	22.71	1199.2	0.102	4349.6
4	2530.5	32.16 *	54.87	1167.1	0.0127	81391.0
5	1.20					

"*" INDICATES FIXED PARAMETER

Prepared for





8-2T

Central Loop TEM

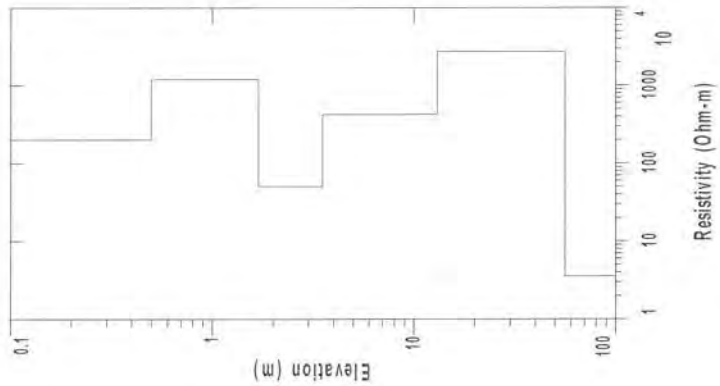
Northing: 966720.0 Easting: 615115.0 Elevation: 1222.0

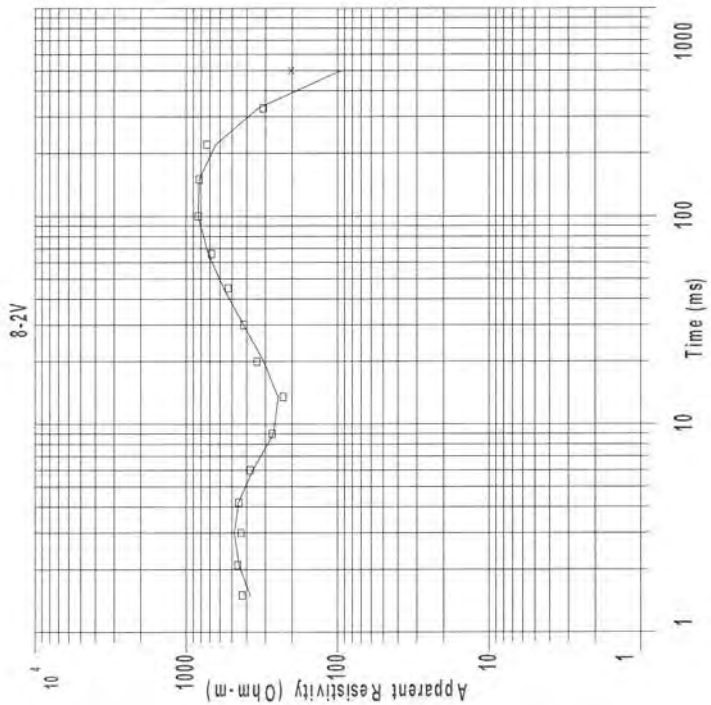
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1222.0		
1	83.83	2.25	2.25	1219.7	0.0269	189.3
2	22.93	9.12	11.37	1210.6	0.397	209.2
3	964.2	31.31	42.69	1179.3	0.0324	30192.7
4	16.27	34.64	77.33	1144.6	2.12	563.8
5	0.548	46.77	124.1	1097.8	85.23	25.67
6	2.43	70.06	194.1	1027.8	28.79	170.4
7	0.430	73.38	267.5	954.4	170.3	31.60
8	7.11					

ALL PARAMETERS ARE FREE

Prepared for





8-2V

Schlumberger Array

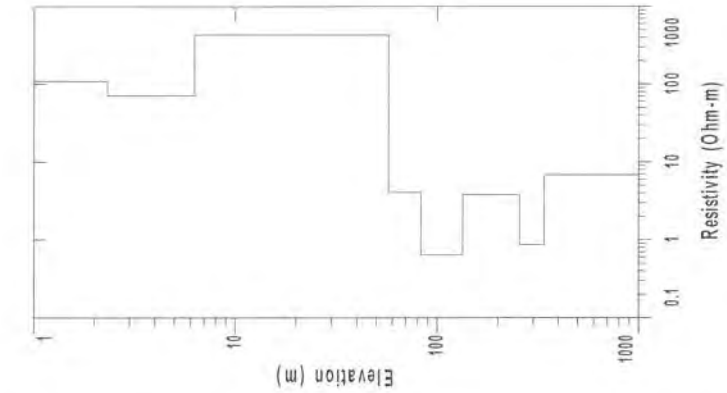
Northing: 966490.0 Easting: 615131.0 Elevation: 0.0

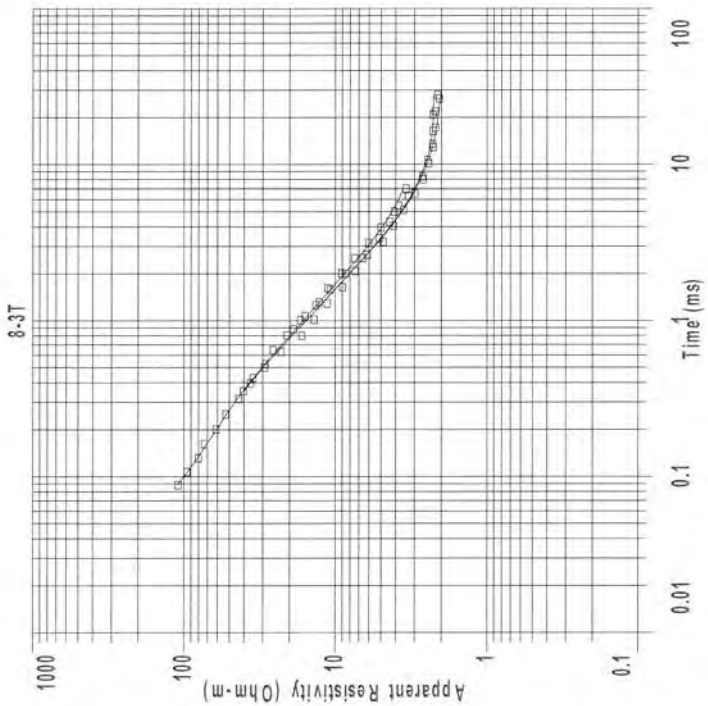
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				0.0		
1	200.6	0.497	0.497	-0.497	0.00248	99.72
2	1197.3	1.19	1.69	-1.69	0.0	1430.0
3	50.31	1.81	3.50	-3.50	0.0361	91.48
4	423.6	9.56	13.07	-13.07	0.0225	4050.5
5	2735.0	42.86	55.93	-55.93	0.0156	117224.7
6	3.53					

ALL PARAMETERS ARE FREE

Prepared for





8-3T

Central Loop TEM

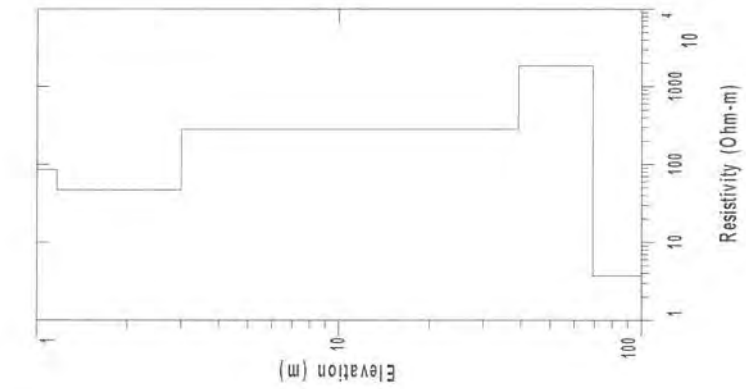
Northing: 966466.0 Easting: 614941.0 Elevation: 1226.0

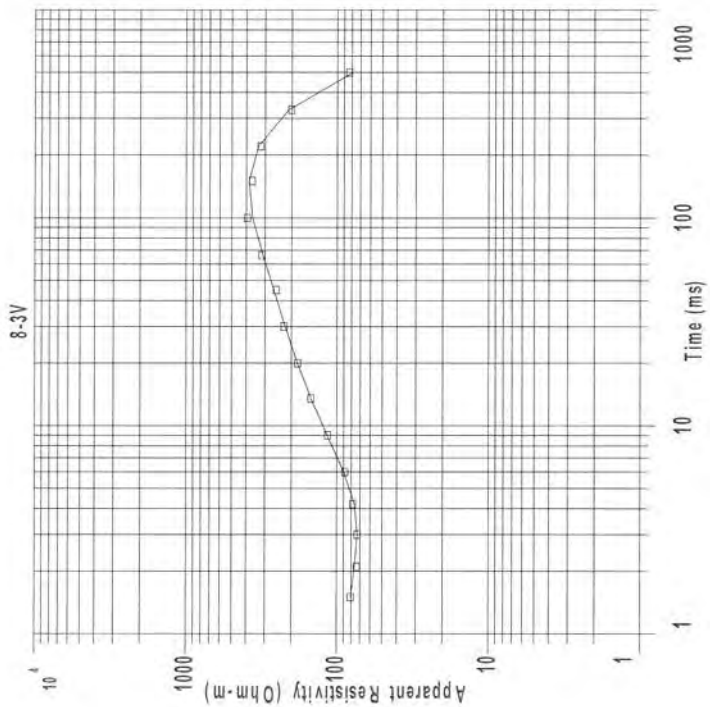
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1226.0		
1	108.7	2.32	2.32	1223.6	0.0213	252.8
2	70.80	3.92	6.25	1219.7	0.0555	278.2
3	430.9	51.05	57.31	1168.6	0.118	22004.5
4	4.05	25.66	82.98	1143.0	6.32	104.0
5	0.640	50.57	133.5	1092.4	78.97	32.38
6	3.79	122.0	255.5	970.4	32.12	463.3
7	0.865	84.01	339.5	886.4	97.10	72.67
8	6.82					

ALL PARAMETERS ARE FREE

Prepared for





8-3V

Schlumberger Array

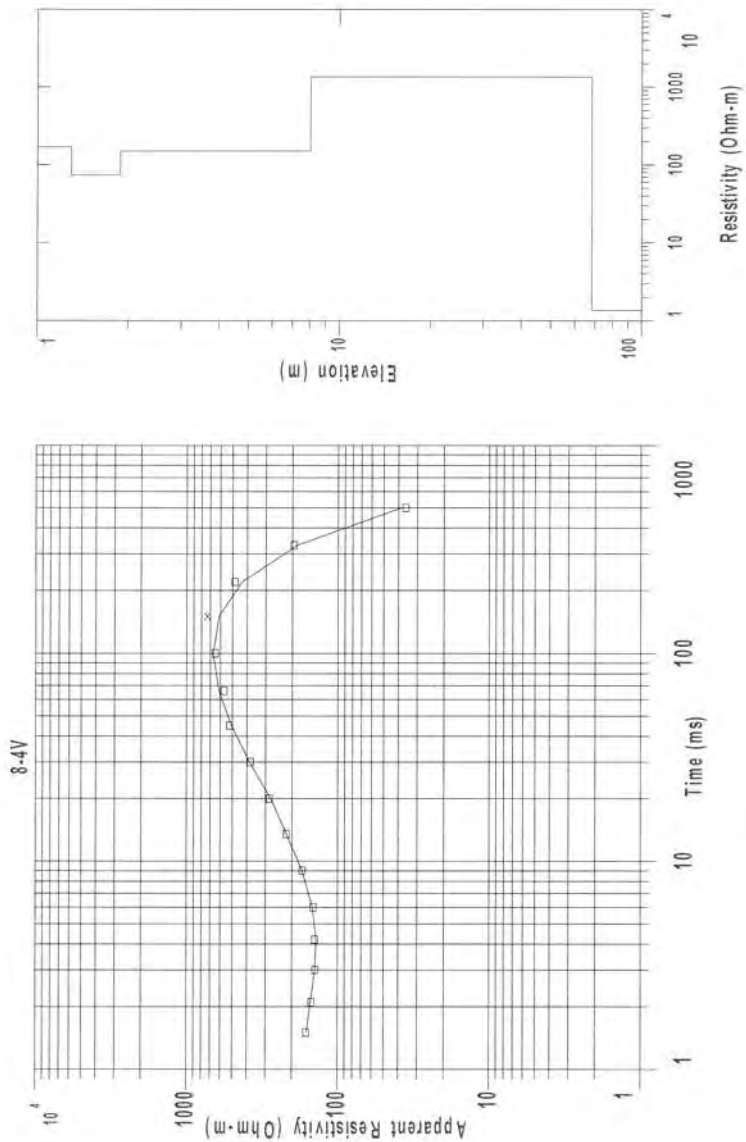
Northing: 966593.0 Easting: 615021.0 Elevation: 0.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				0.0		
1	85.91	1.16	1.16	-1.16	0.0135	100.1
2	47.09	1.83	3.00	-3.00	0.0389	86.46
3	283.1	36.20	39.20	-39.20	0.127	10252.6
4	1859.7	29.91	69.12	-69.12	0.0160	55625.3
5	3.70					

ALL PARAMETERS ARE FREE

Prepared for



8-4V

Schlumberger Array

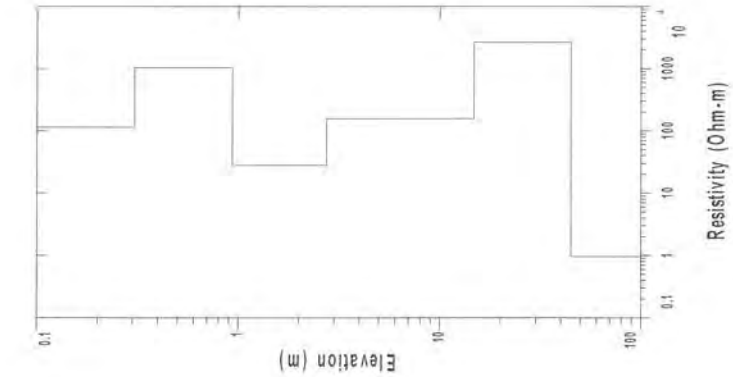
Northing: 966467.0 Easting: 614939.0 Elevation: 1226.0

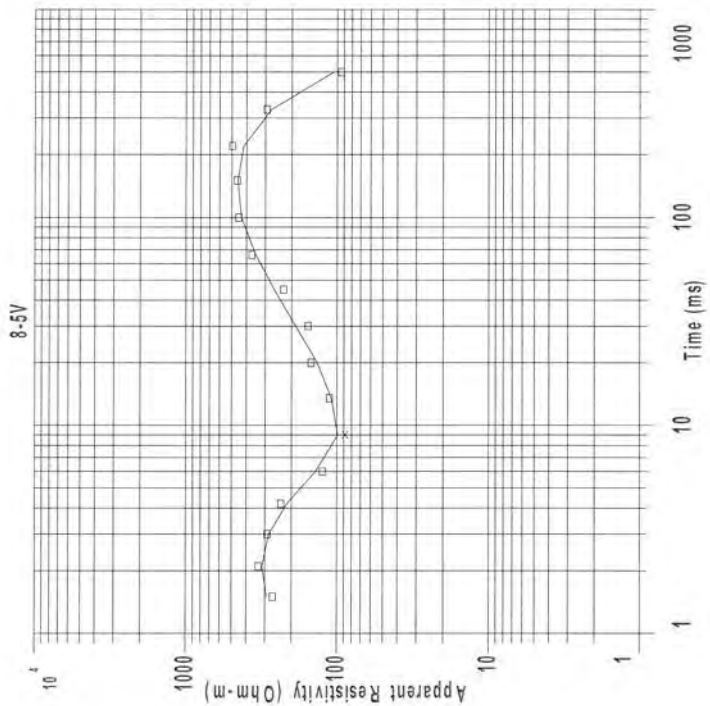
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1226.0		
1	168.6	1.29	1.29	1224.7	0.00766	217.9
2	73.96	0.587	1.87	1224.1	0.00794	43.44
3	150.1	6.13	8.01	1217.9	0.0408	921.2
4	1350.5	60.31	68.32	1157.6	0.0446	81454.3
5	1.36					

ALL PARAMETERS ARE FREE

Prepared for





8-5V

Schlumberger Array

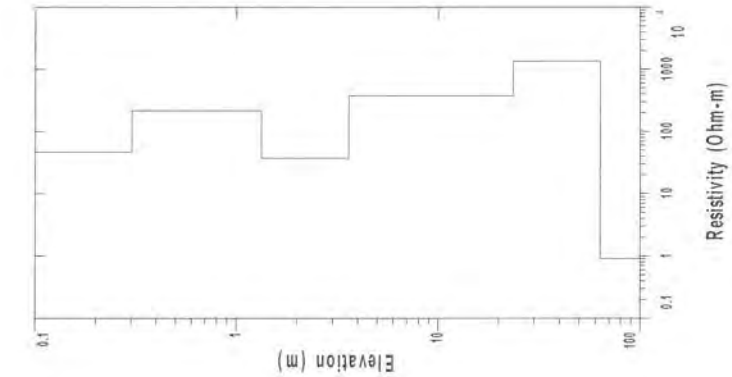
Northing: 966365.0 Easting: 615053.0 Elevation: 1225.0

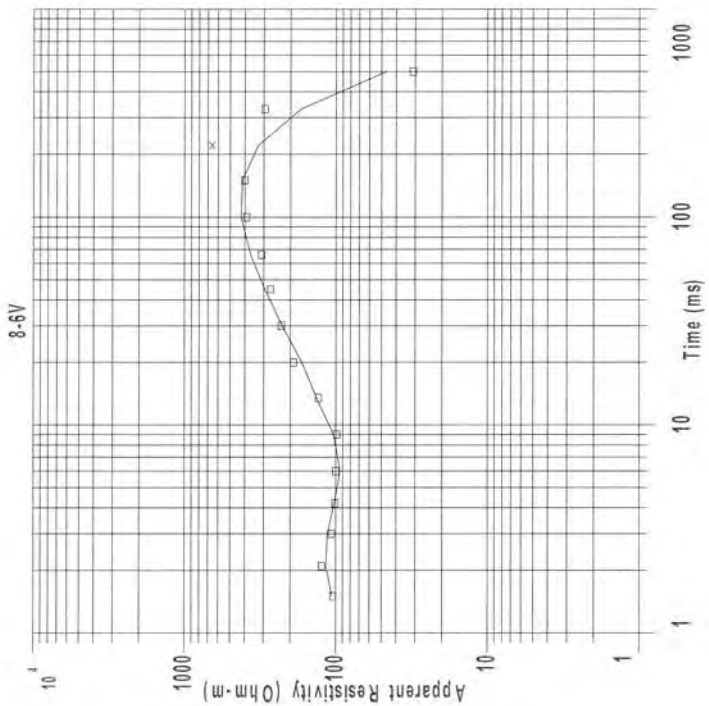
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1225.0		
1	114.2	0.305	0.305	1224.6	0.00267	34.89
2	1031.5	0.628	0.933	1224.0	0.0	648.3
3	27.79	1.81	2.75	1222.2	0.0654	50.56
4	156.3	12.05	14.81	1210.1	0.0771	1885.3
5	2646.3	29.92	44.73	1180.2	0.0113	79188.9
6	0.954					

ALL PARAMETERS ARE FREE

Prepared for





8-6V

Schlumberger Array

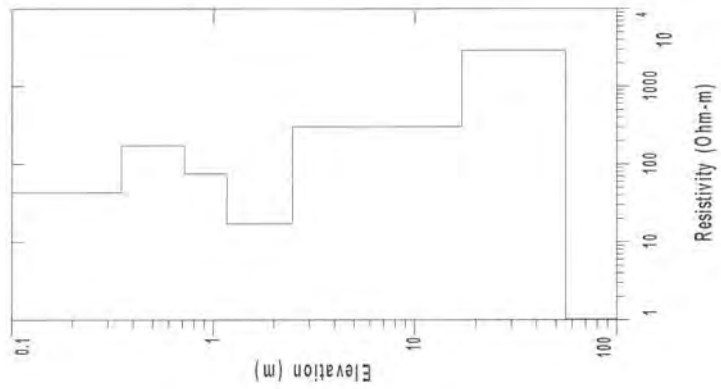
Northing: 966306.0 Easting: 615195.0 Elevation: 1221.0

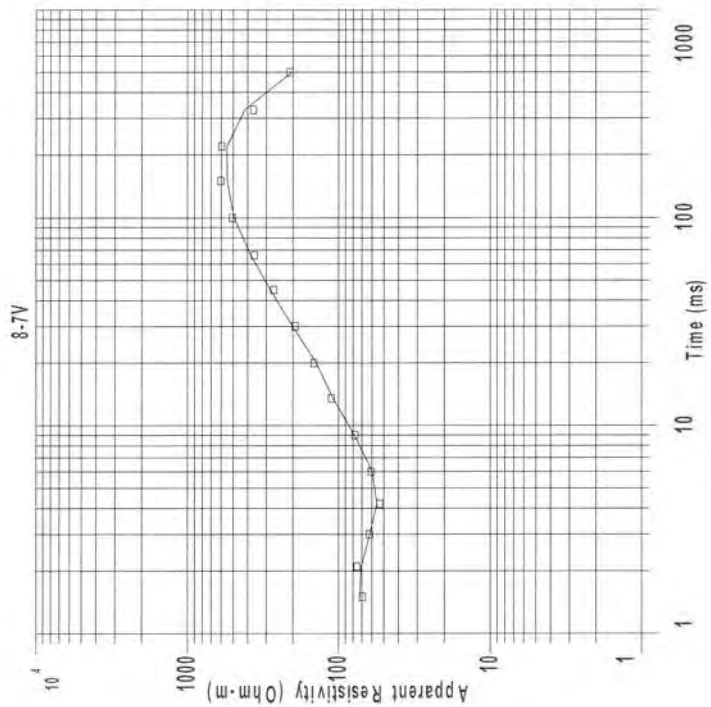
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1221.0		
1	46.51	0.302	0.302	1220.6	0.00650	14.05
2	214.2	1.02	1.32	1219.6	0.00479	219.7
3	36.94	2.27	3.59	1217.4	0.0615	83.95
4	373.7	19.91	23.51	1197.4	0.0532	7442.5
5	1345.3	39.87	63.39	1157.6	0.0296	53652.1
6	0.913					

ALL PARAMETERS ARE FREE

Prepared for





8-7V

Schlumberger Array

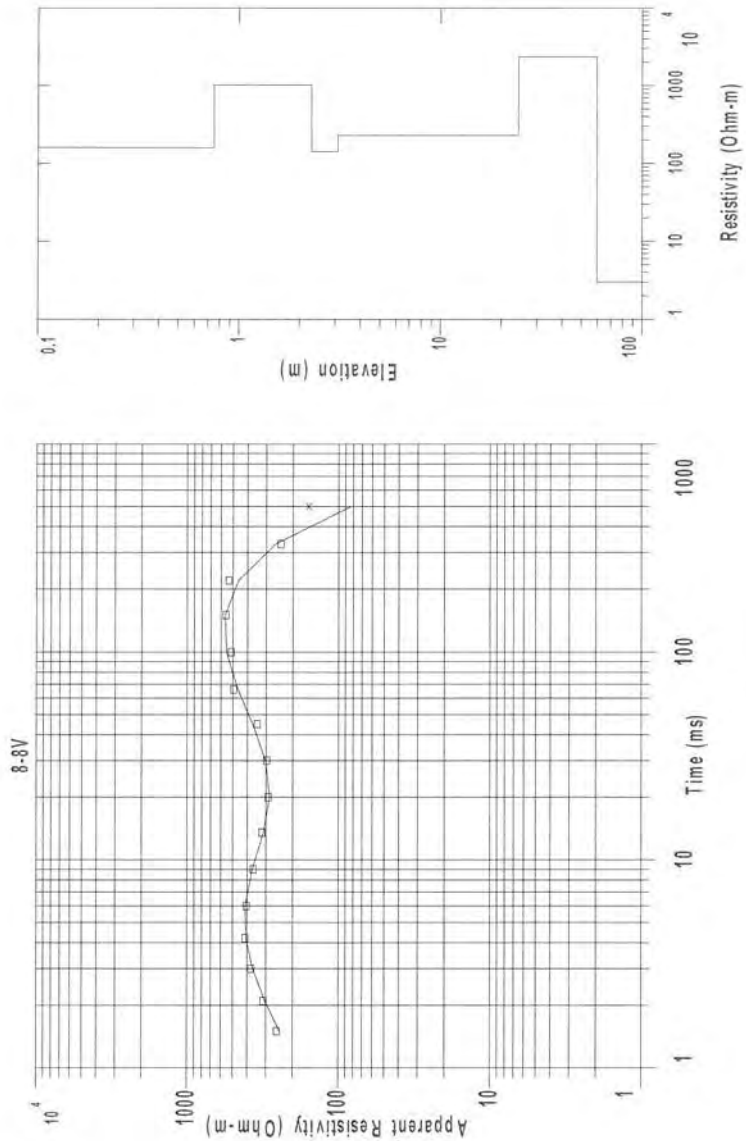
Northing: 966721.0 Easting: 615113.0 Elevation: 1222.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1222.0		
1	43.16	0.348	0.348	1221.6	0.00808	15.05
2	172.3	0.367	0.715	1221.2	0.00213	63.27
3	74.96	0.449	1.16	1220.8	0.00600	33.71
4	17.21	1.30	2.46	1219.5	0.0757	22.43
5	302.3	14.54	17.01	1204.9	0.0481	4398.0
6	2916.1	38.82	55.83	1166.1	0.0133	113220.3
7	1.02					

ALL PARAMETERS ARE FREE

Prepared for



8-8V

Schlumberger Array

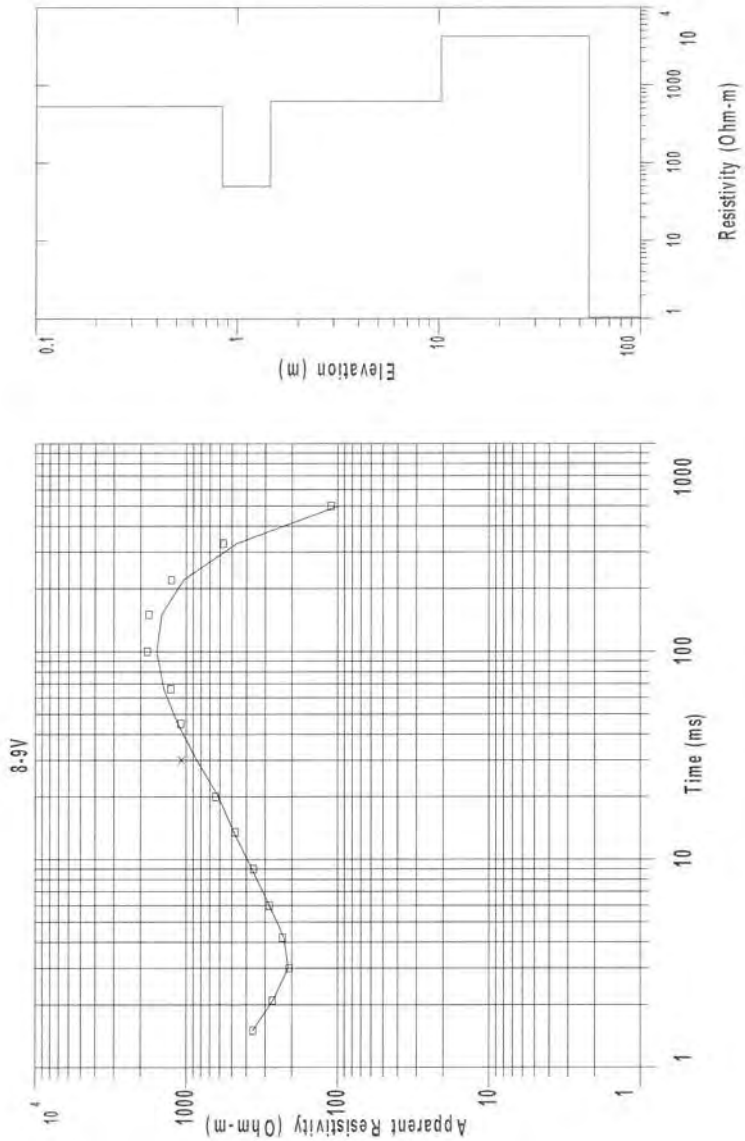
Northing: 966605.0 Easting: 615227.0 Elevation: 0.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				0.0		
1	159.9	0.749	0.749	-0.749	0.00469	119.8
2	1019.2	1.53	2.28	-2.28	0.00151	1569.5
3	141.4	0.796	3.08	-3.08	0.00563	112.7
4	229.9	21.21	24.29	-24.29	0.0922	4877.6
5	2357.9	35.28	59.58	-59.58	0.0149	83202.8
6	3.00					

ALL PARAMETERS ARE FREE

Prepared for



8-9V

Schlumberger Array

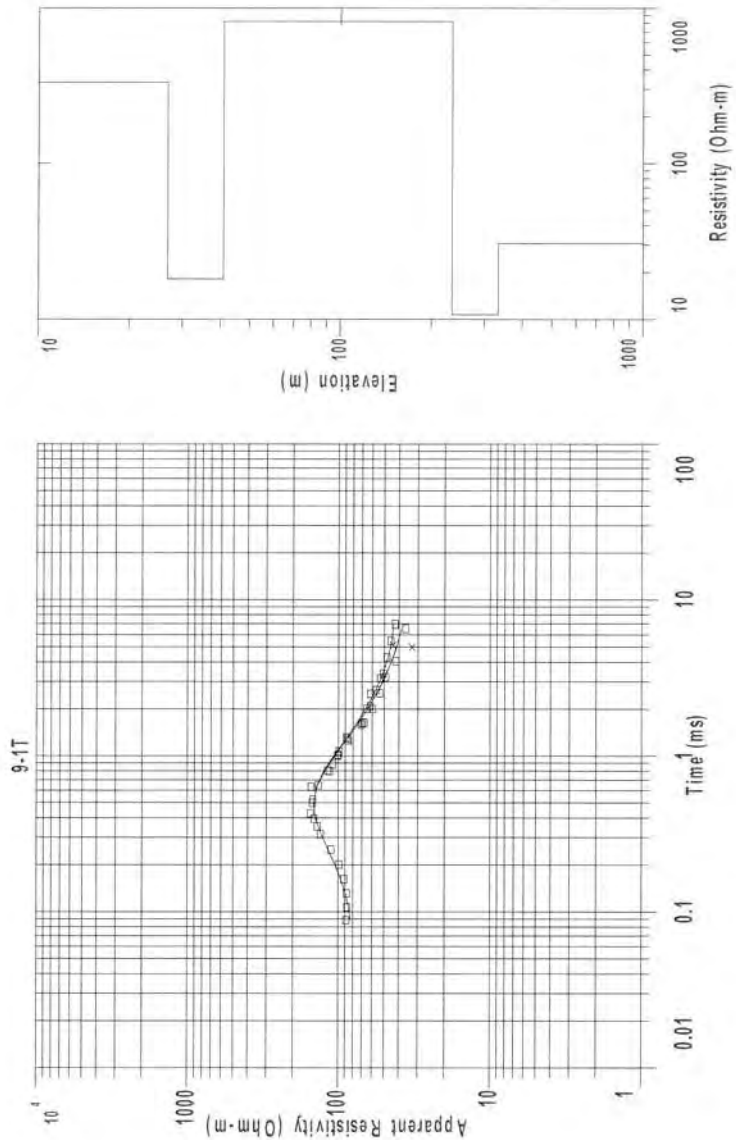
Northing: 966529.0 Easting: 615351.0 Elevation: 1222.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1222.0		
1	533.9	0.839	0.839	1221.1	0.00157	448.0
2	50.23	0.622	1.46	1220.5	0.0123	31.27
3	619.0	8.82	10.28	1211.7	0.0142	5461.6
4	4240.4	45.23	55.52	1166.4	0.0106	191819.8
5	1.03					

ALL PARAMETERS ARE FREE

Prepared for



9-1T

Central Loop TEM

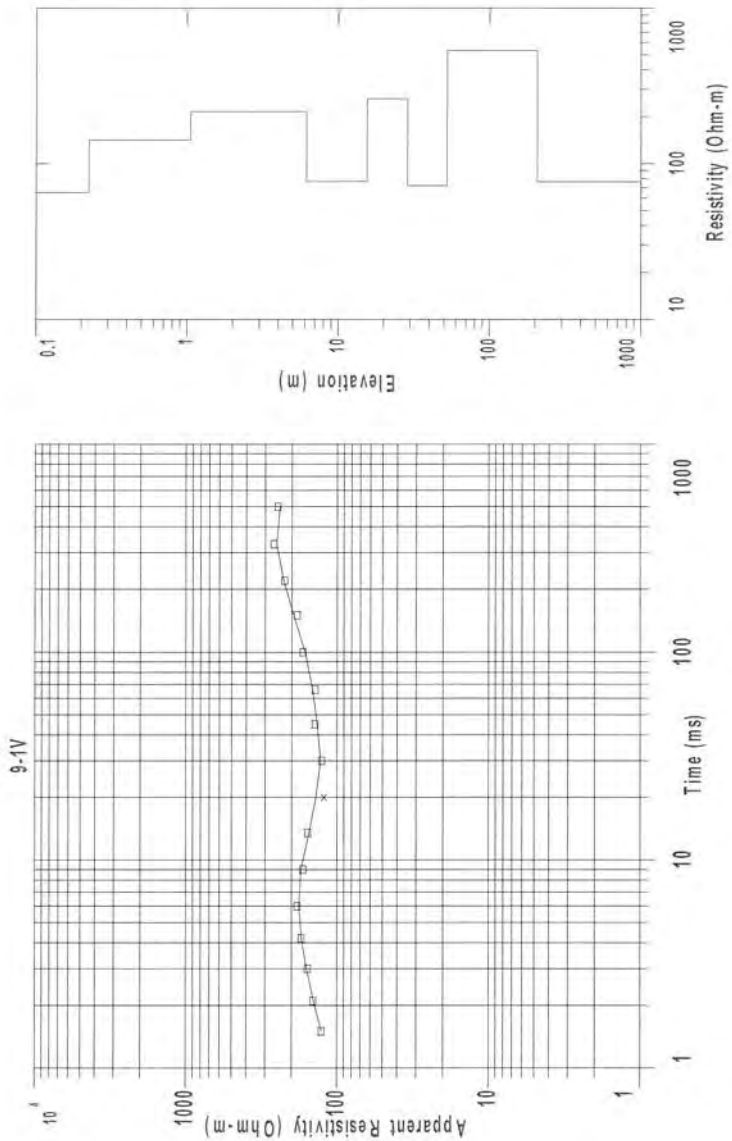
Northing: 937030.0 Easting: 554776.0 Elevation: 1413.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1413.0		
1	332.2	26.78	26.78	1386.2	0.0806	8898.4
2	18.12	14.16	40.94	1372.0	0.781	256.8
3	819.4	192.7	233.7	1179.2	0.235	157988.4
4	10.72	99.11	332.8	1080.1	9.23	1063.2
5	30.69					

ALL PARAMETERS ARE FREE

Prepared for



9-1V

Schlumberger Array

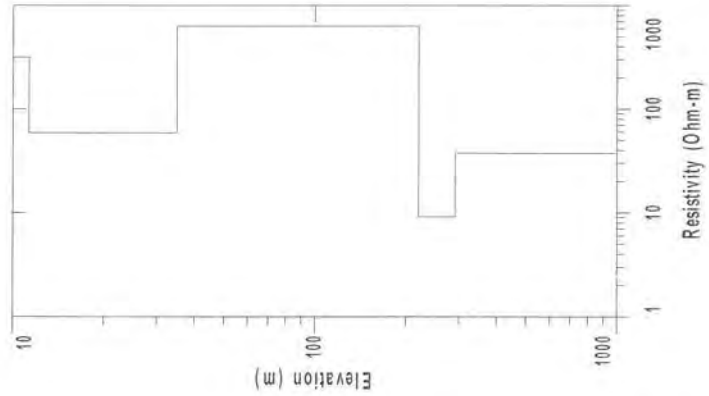
Northing: 936767.0 Easting: 554613.0 Elevation: 1413.0

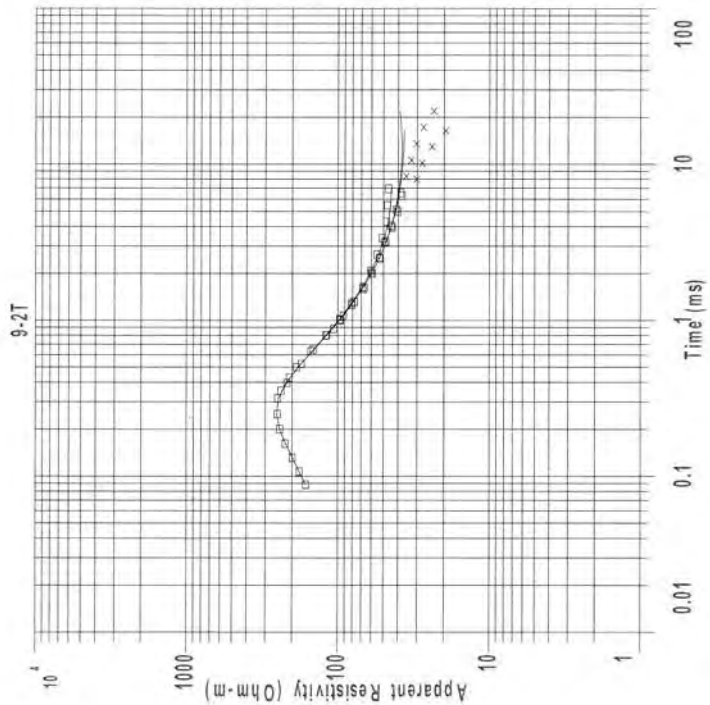
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1413.0		
1	65.14	0.223	0.223	1412.7	0.00343	14.57
2	141.6	0.833	1.05	1411.9	0.00588	118.0
3	215.7	5.11	6.16	1406.8	0.0236	1102.7
4	76.78	9.39	15.55	1397.4	0.122	721.0
5	261.2	13.18	28.74	1384.2	0.0504	3444.1
6	72.12	23.68 *	52.42	1360.5	0.328	1707.8
7	531.6 *	154.7 *	207.2	1205.7	0.291	82294.0
8	76.41 *					

"*" INDICATES FIXED PARAMETER

Prepared for





9-2T

Central Loop TEM

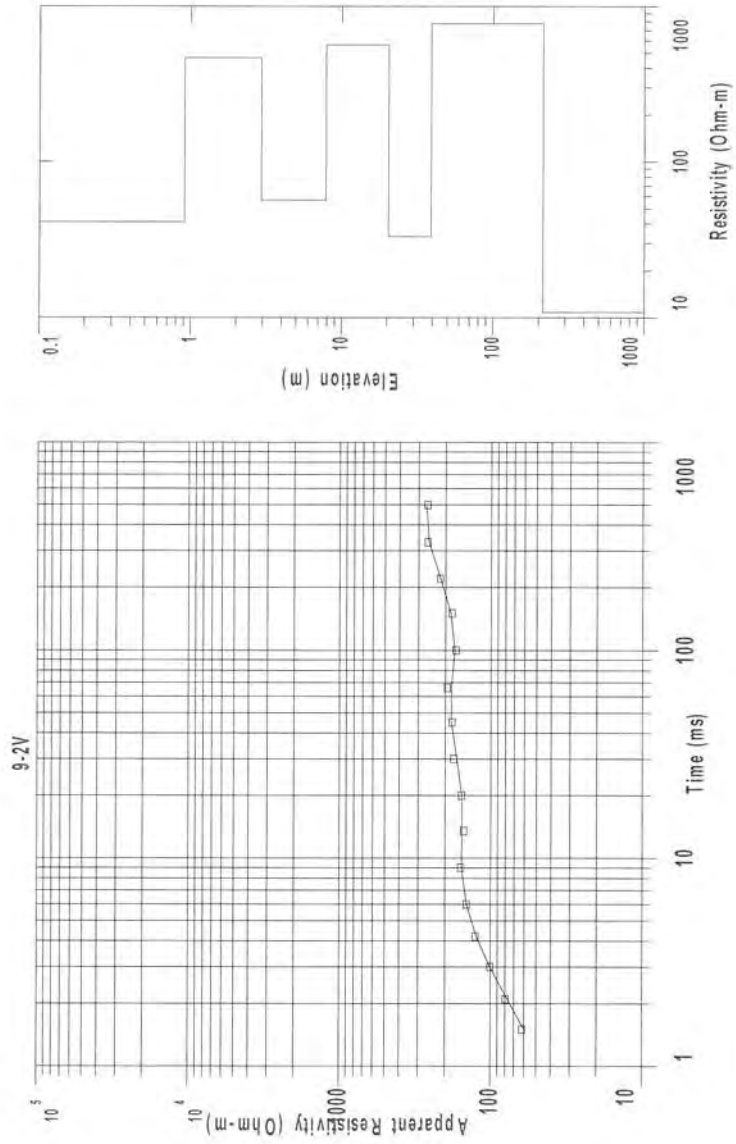
Northing: 937201.0 Easting: 555026.0 Elevation: 1410.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1410.0		
1	315.4	11.29	11.29	1398.7	0.0358	3563.8
2	58.77	23.68	34.97	1375.0	0.402	1391.9
3	631.2	185.2	220.2	1189.7	0.293	116924.8
4	9.15	70.81	291.0	1118.9	7.73	648.0
5	37.54					

ALL PARAMETERS ARE FREE

Prepared for



9-2V

Schlumberger Array

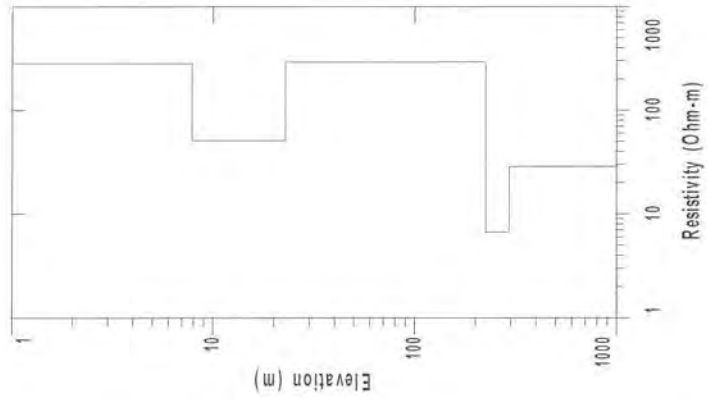
Northing: 936871.0 Easting: 554891.0 Elevation: 1412.0

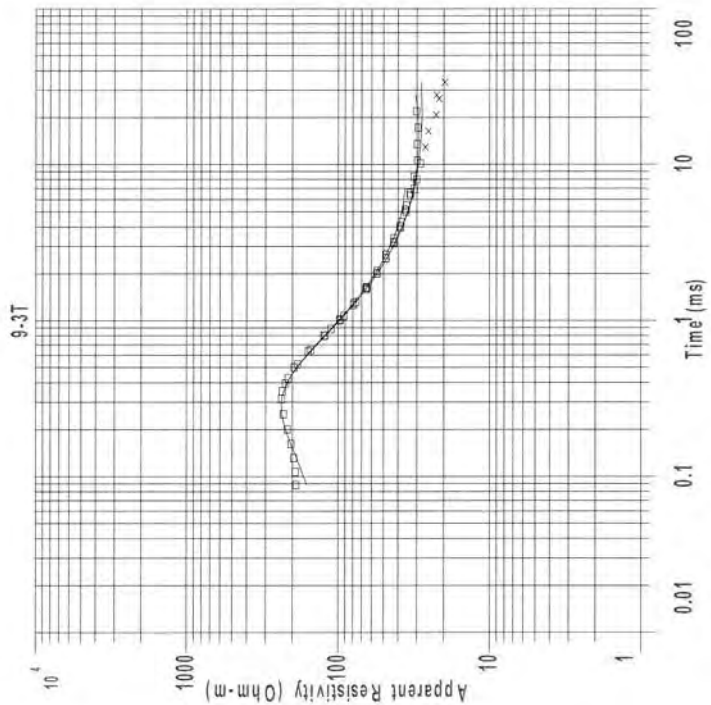
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1412.0		
1	41.05	0.907	0.907	1411.0	0.0221	37.24
2	466.1	2.02	2.93	1409.0	0.00435	944.1
3	56.80	4.95	7.88	1404.1	0.0871	281.3
4	563.4	12.54	20.42	1391.5	0.0222	7067.2
5	33.11	18.59 *	39.02	1372.9	0.561	615.9
6	772.5 *	174.8 *	213.8	1198.1	0.226	135059.0
7	10.82					

"*" INDICATES FIXED PARAMETER

Prepared for





9-3T

Central Loop TEM

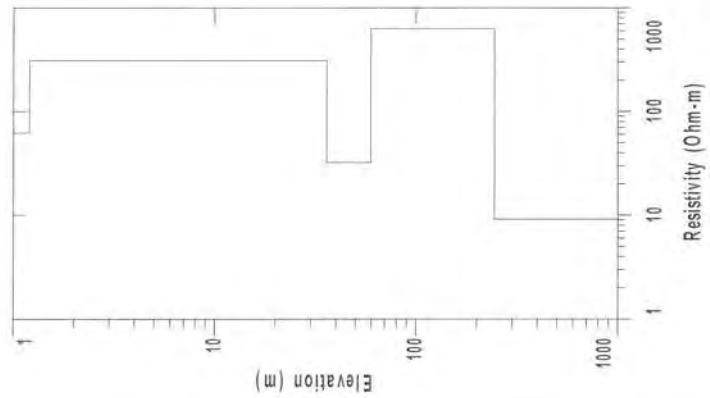
Northing: 937378.0 Easting: 554935.0 Elevation: 1408.0

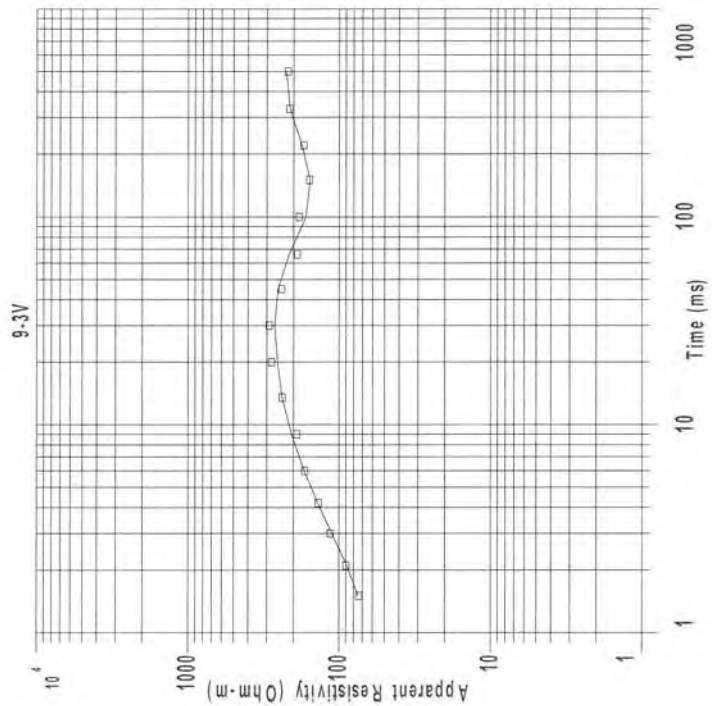
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1408.0		
1	283.0	7.86	7.86	1400.1	0.0278	2227.4
2	51.04	14.88	22.75	1385.2	0.291	759.9
3	291.4	201.9	224.7	1183.2	0.693	58866.5
4	6.64	68.49	293.2	1114.7	10.31	454.9
5	28.57					

ALL PARAMETERS ARE FREE

Prepared for





9-3V

Schlumberger Array

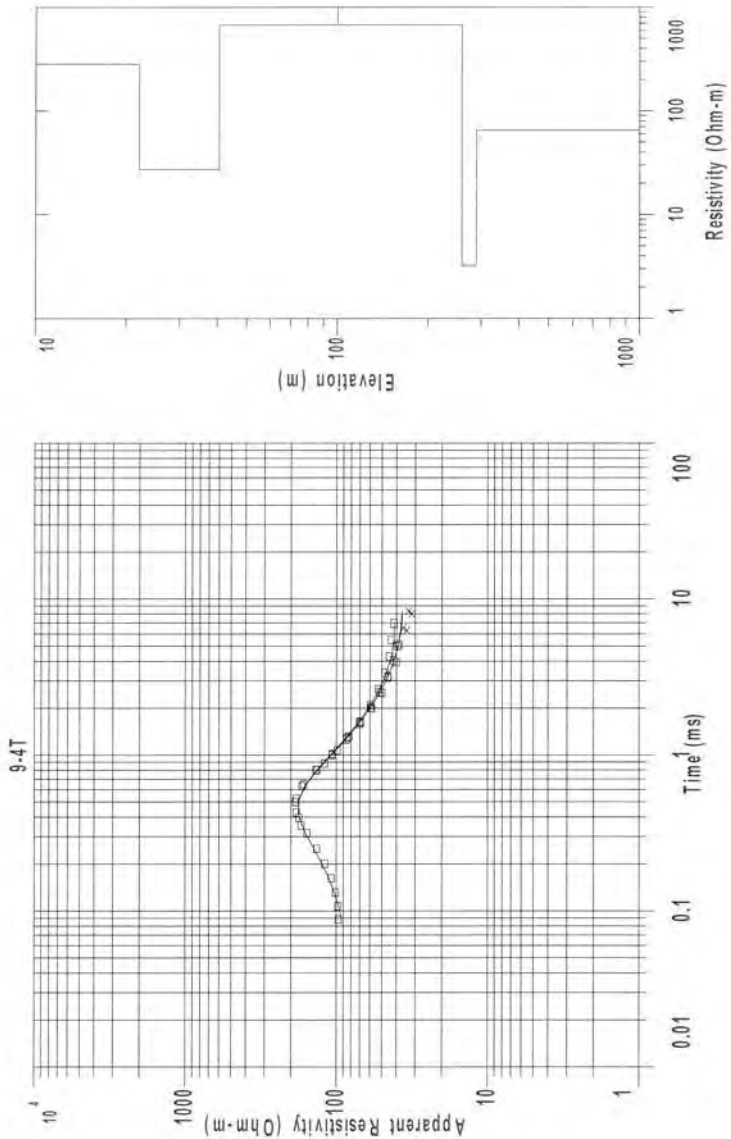
Northing: 936998.0 Easting: 555164.0 Elevation: 1408.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1408.0		
1	62.14	1.19	1.19	1406.8	0.0193	74.55
2	309.4	34.84	36.04	1371.9	0.112	10783.6
3	32.28	23.68 *	59.72	1348.2	0.733	764.4
4	631.2 *	185.2 *	244.9	1163.0	0.293	116924.8
5	9.15 *					

"*" INDICATES FIXED PARAMETER

Prepared for



9-4T

Central Loop TEM

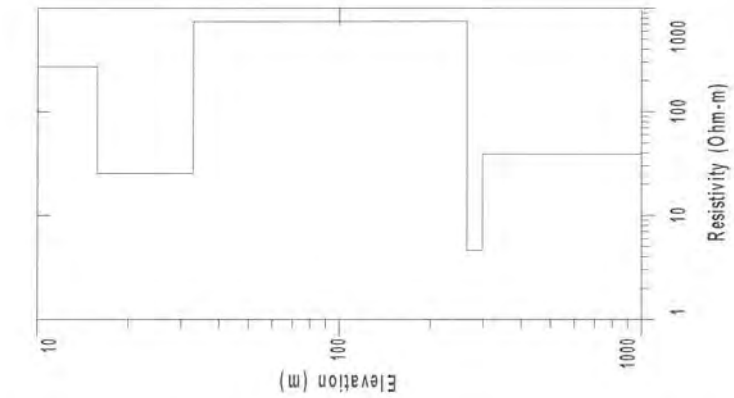
Northing: 937242.0 Easting: 554670.0 Elevation: 1416.0

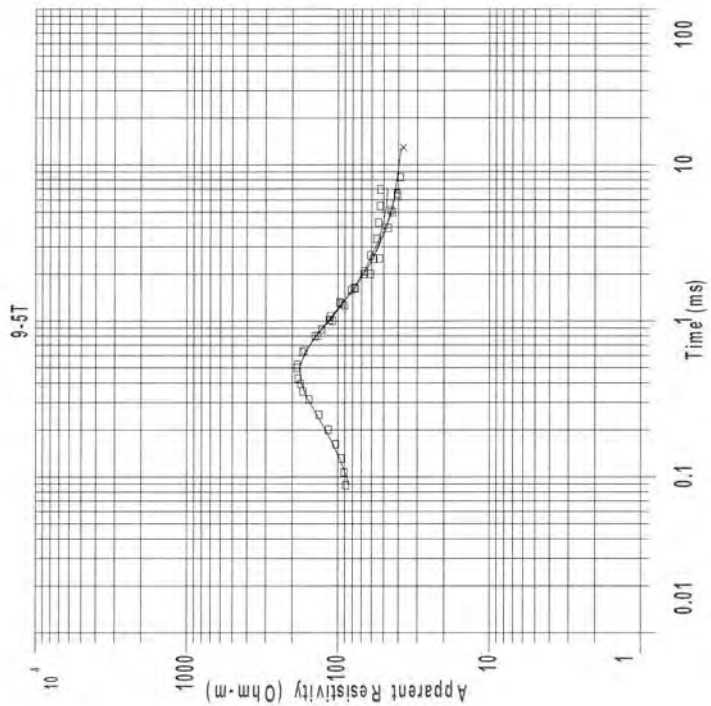
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1416.0		
1	282.6	22.10	22.10	1393.8	0.0782	6249.3
2	27.24	18.37	40.47	1375.5	0.674	500.5
3	672.5	218.1	258.6	1157.3	0.324	146746.3
4	3.24	30.76	289.4	1126.5	9.48	99.84
5	64.92					

ALL PARAMETERS ARE FREE

Prepared for





9-5T

Central Loop TEM

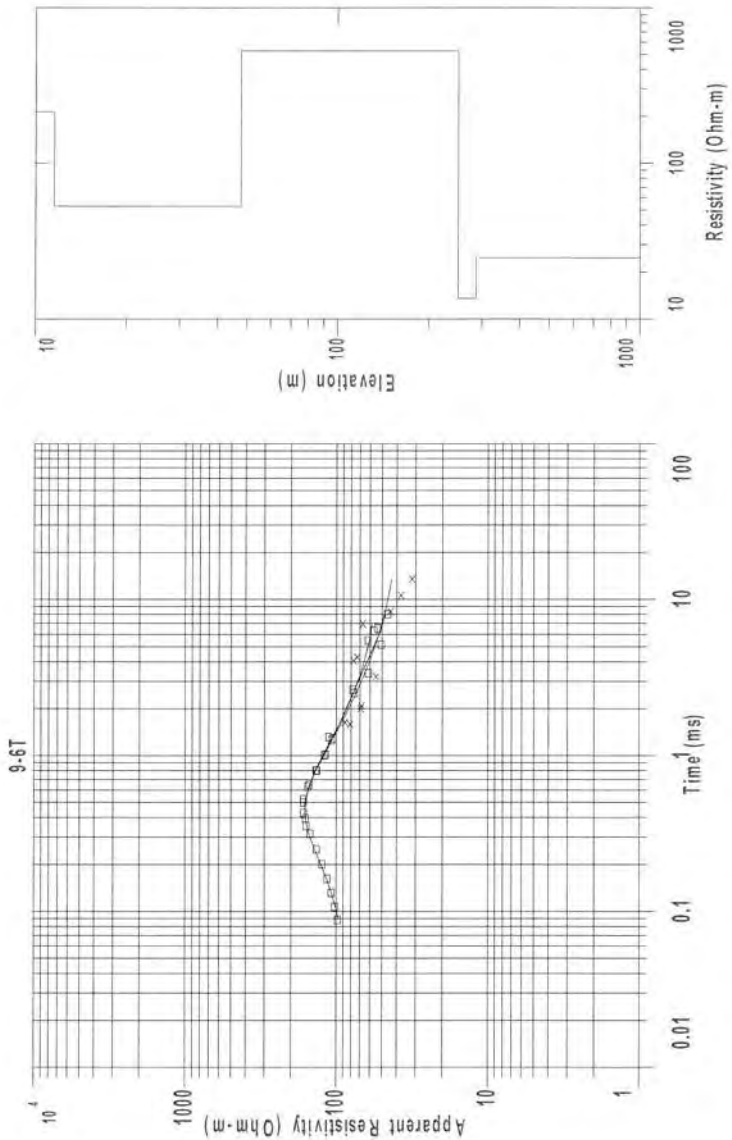
Northing: 937112.0 Easting: 554403.0 Elevation: 1415.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1415.0		
1	272.5	15.79	15.79	1399.2	0.0579	4304.4
2	25.46	17.01	32.80	1382.1	0.668	433.4
3	746.1	231.4	264.2	1150.7	0.310	172723.7
4	4.59	33.59	297.8	1117.1	7.30	154.4
5	38.95					

ALL PARAMETERS ARE FREE

Prepared for



9-6T

Central Loop TEM

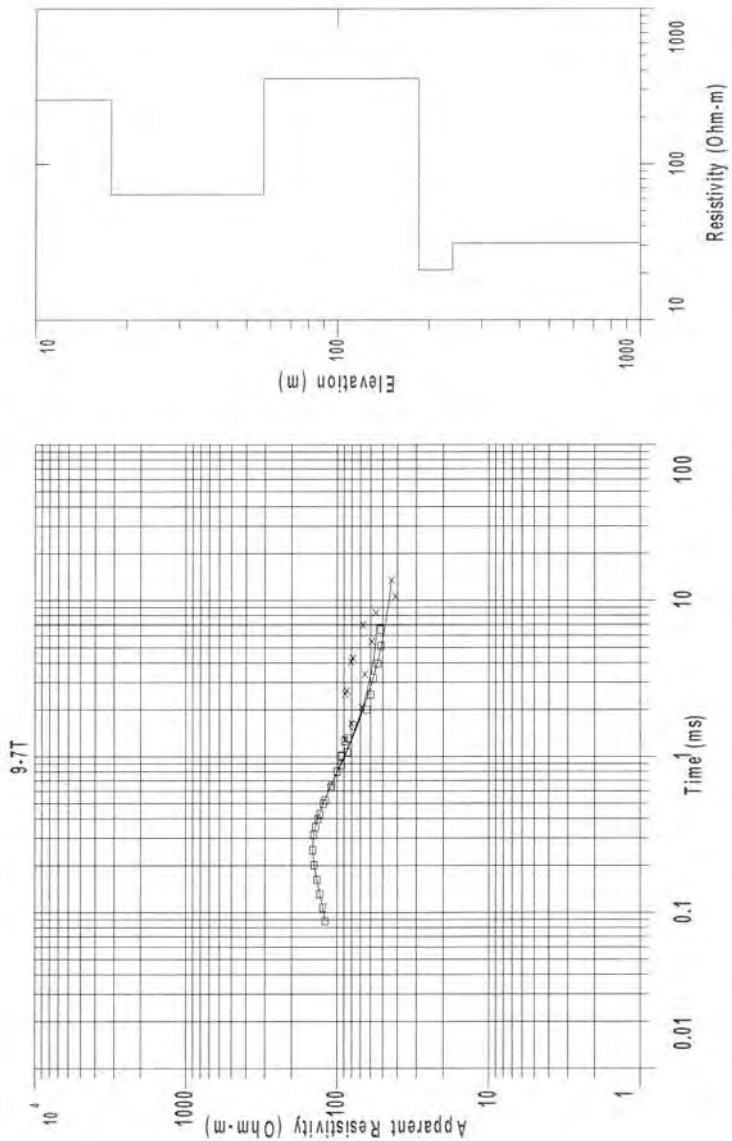
Northing: 936936.0 Easting: 554498.0 Elevation: 1412.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1412.0		
1	213.7	11.51	11.51	1400.4	0.0538	2462.2
2	52.96	36.21	47.72	1364.2	0.683	1917.9
3	527.0	202.8	250.5	1161.4	0.384	106917.9
4	13.53	36.79	287.3	1124.6	2.71	497.8
5	24.63					

ALL PARAMETERS ARE FREE

Prepared for



9-7T

Central Loop TEM

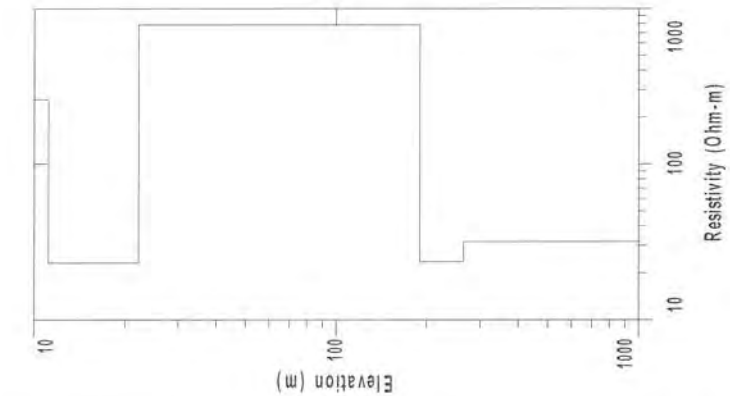
Northing: 936594.0 Easting: 554722.0 Elevation: 1415.0

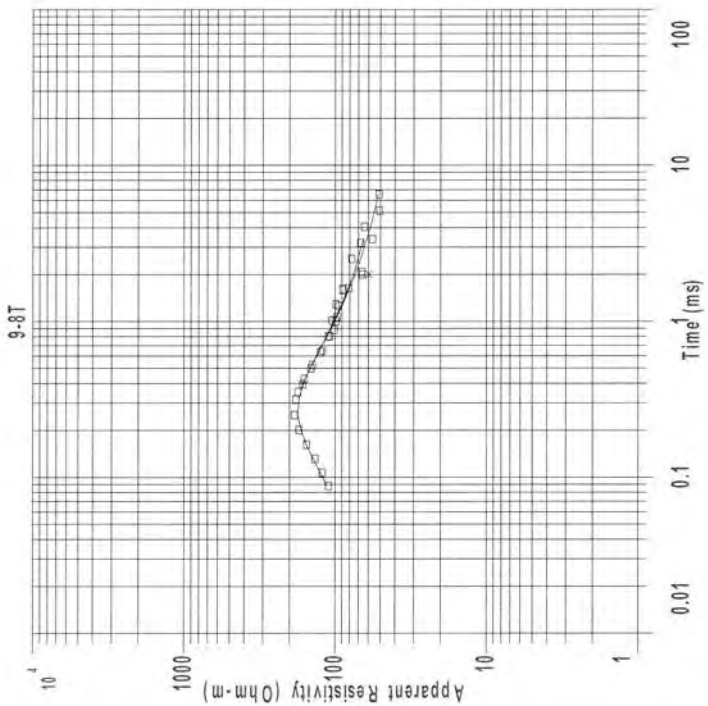
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1415.0		
1	259.5	17.70	17.70	1397.2	0.0682	4597.0
2	63.80	39.13	56.84	1358.1	0.613	2497.1
3	355.7	128.4	185.2	1229.7	0.360	45680.0
4	20.91	54.17	239.4	1175.5	2.59	1132.8
5	31.10 *					

"*" INDICATES FIXED PARAMETER

Prepared for





9-8T

Central Loop TEM

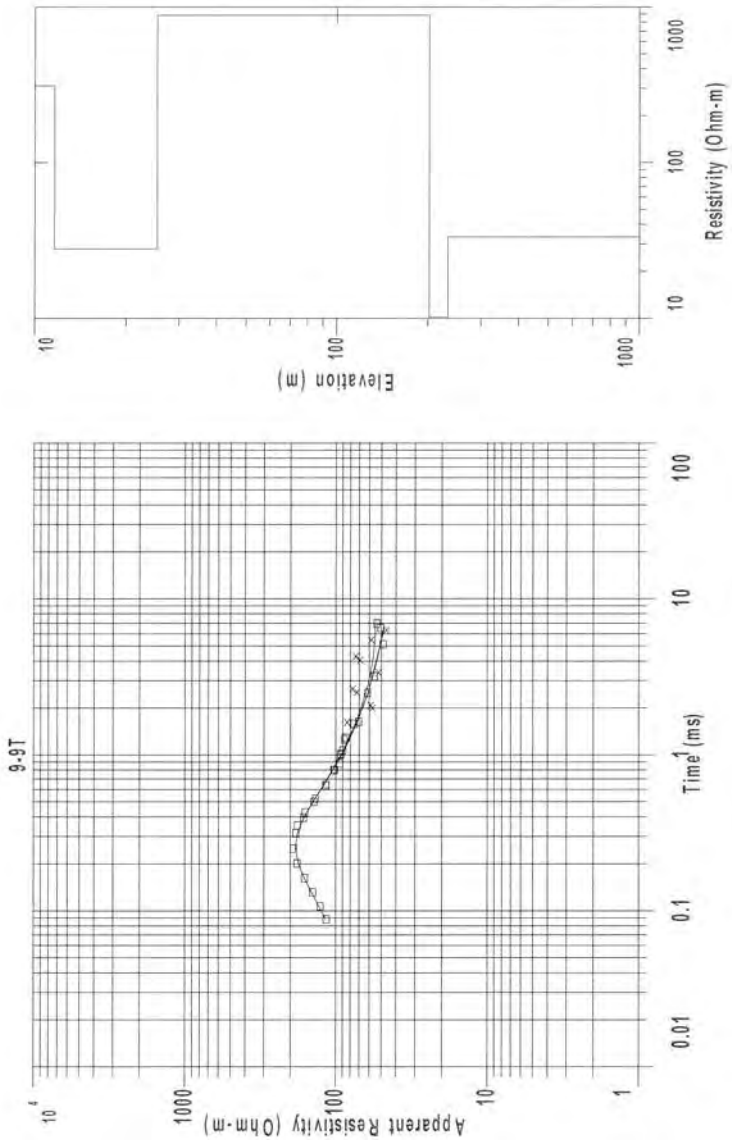
Northing: 936705.0 Easting: 554999.0 Elevation: 1412.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1412.0		
1	259.3	11.15	11.15	1400.8	0.0430	2893.7
2	23.15	11.01	22.17	1389.8	0.475	255.0
3	786.1	167.6	189.8	1222.1	0.213	131780.1
4	23.62	75.11	264.9	1147.0	3.17	1774.5
5	31.75					

ALL PARAMETERS ARE FREE

Prepared for



9-9T

Central Loop TEM

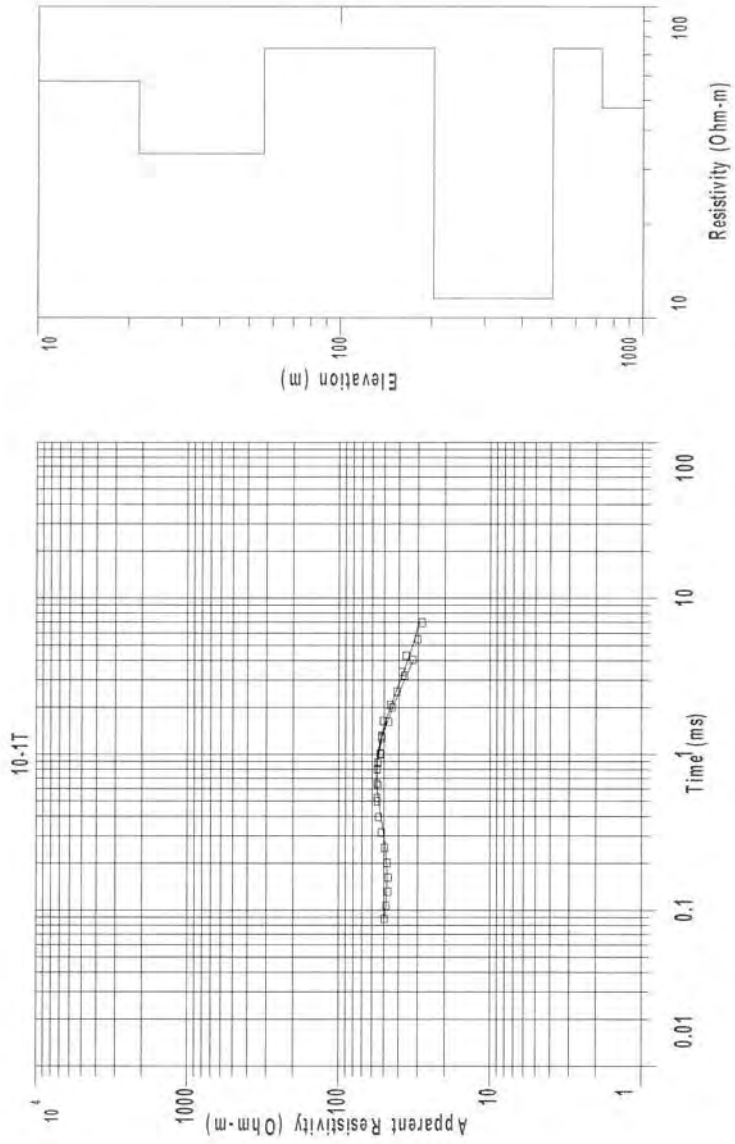
Northing: 936775.0 Easting: 555223.0 Elevation: 1405.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1405.0		
1	311.3	11.61	11.61	1393.3	0.0373	3615.9
2	27.86	13.74	25.35	1379.6	0.493	382.9
3	886.5	176.4	201.8	1203.1	0.199	156462.2
4	10.17	31.22	233.0	1171.9	3.06	317.8
5	33.32					

ALL PARAMETERS ARE FREE

Prepared for



10-1T

Central Loop TEM

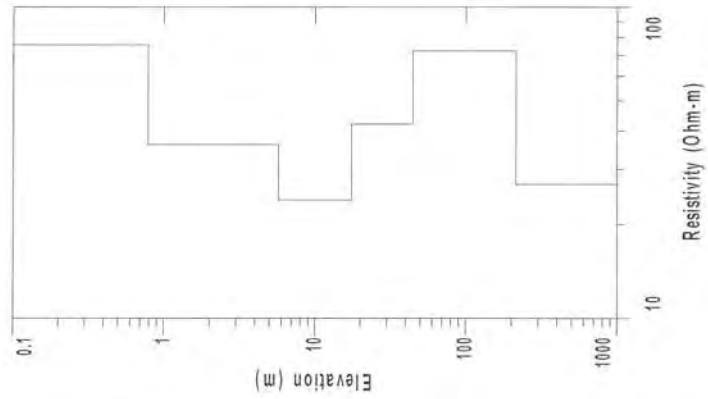
Northing: 922072.0 Easting: 535219.0 Elevation: 1629.0

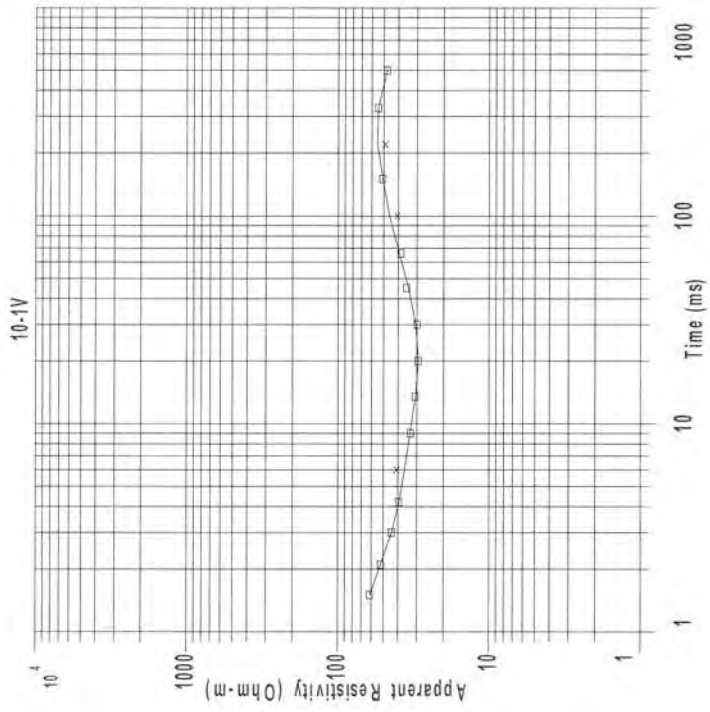
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1629.0		
1	57.44	21.52	21.52	1607.4	0.374	1236.4
2	33.59	34.23	55.75	1573.2	1.01	1150.1
3	73.26	147.3	203.0	1425.9	2.01	10794.0
4	11.52	301.2	504.3	1124.6	26.13	3472.5
5	73.32	225.6	730.0	898.9	3.07	16549.4
6	47.20					

ALL PARAMETERS ARE FREE

Prepared for





10-1V

Schlumberger Array

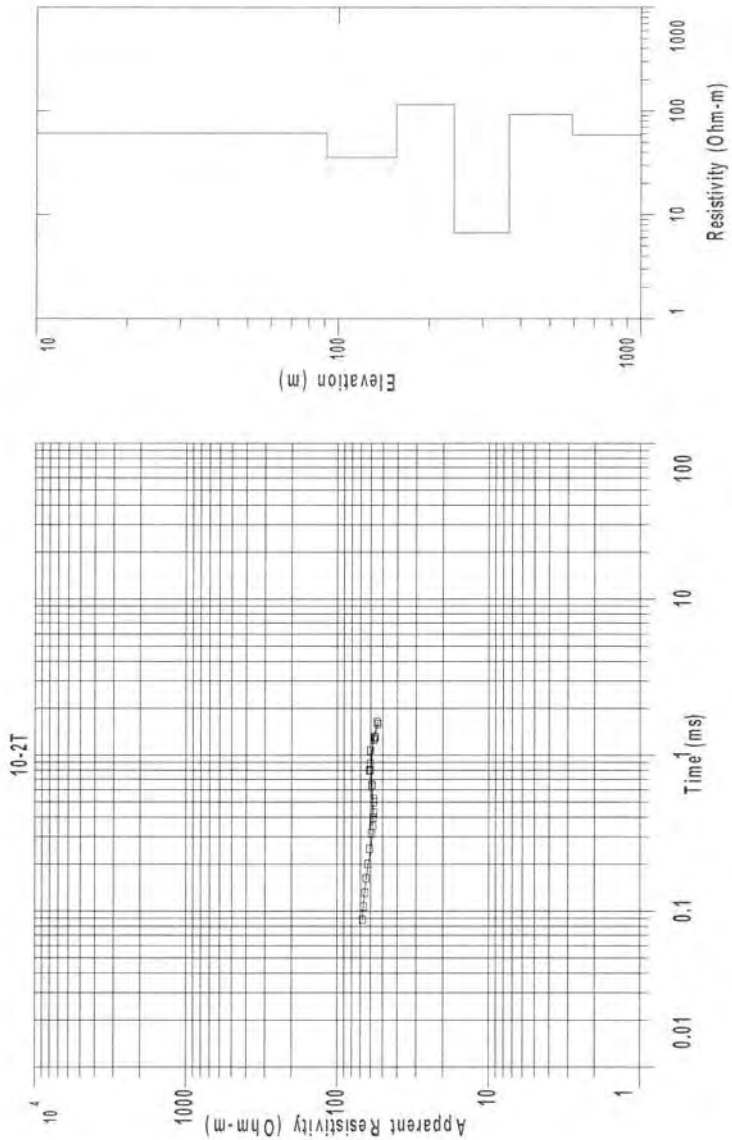
Northing: 921963.0 Easting: 535215.0 Elevation: 1635.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1635.0		
1	75.53	0.786	0.786	1634.2	0.0104	59.39
2	36.12	4.92	5.71	1629.2	0.136	177.8
3	23.98	11.74	17.45	1617.5	0.489	281.5
4	41.96	26.99	44.44	1590.5	0.643	1133.0
5	72.29	169.0	213.5	1421.4	2.33	12224.8
6	26.89					

ALL PARAMETERS ARE FREE

Prepared for



10-2T

Central Loop TEM

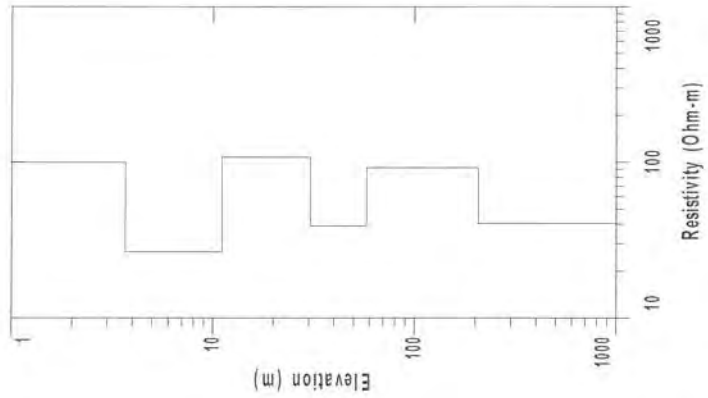
Northing: 922197.0 Easting: 535373.0 Elevation: 1628.0

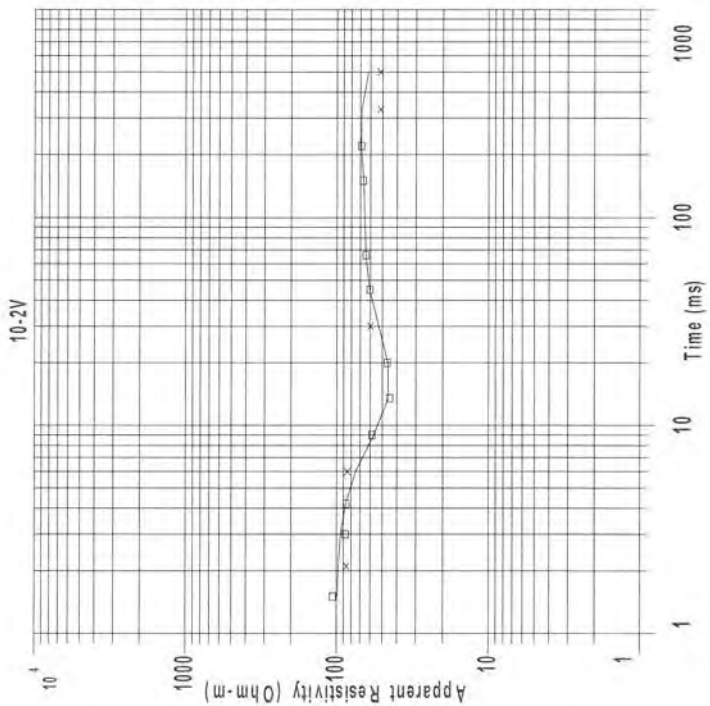
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1628.0		
1	60.91	91.46	91.46	1536.5	1.50	5571.9
2	35.60	63.82	155.2	1472.7	1.79	2272.7
3	115.0	85.55	240.8	1387.1	0.743	9839.2
4	6.68	125.1	366.0	1261.9	18.73	836.2
5	92.57	224.3	590.3	1037.6	2.42	20766.9
6	58.71					

ALL PARAMETERS ARE FREE

Prepared for





10-2V

Schlumberger Array

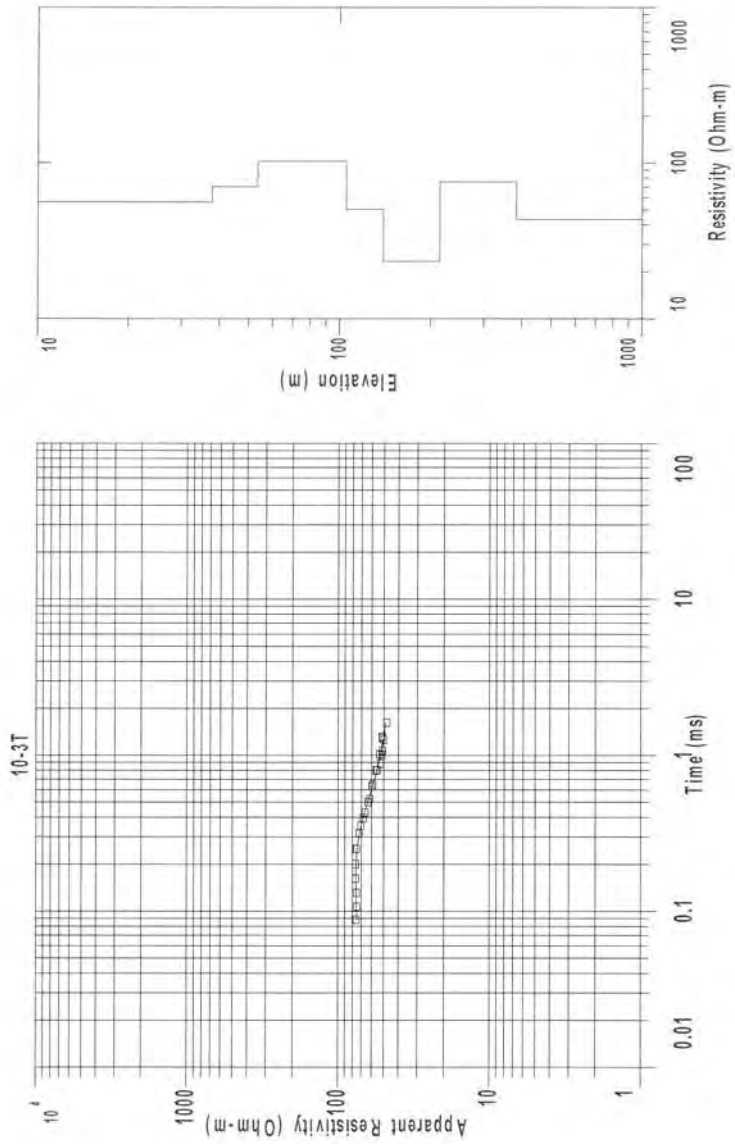
Northing: 922099.0 Easting: 535337.0 Elevation: 1628.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1628.0		
1	99.52	3.68	3.68	1624.3	0.0370	366.7
2	26.51	7.38	11.07	1616.9	0.278	195.8
3	107.6	19.43	30.50	1597.4	0.180	2091.6
4	38.90	27.37	57.87	1570.1	0.703	1065.0
5	91.96	149.2	207.1	1420.8	1.62	13728.1
6	40.35					

ALL PARAMETERS ARE FREE

Prepared for



10-3T

Central Loop TEM

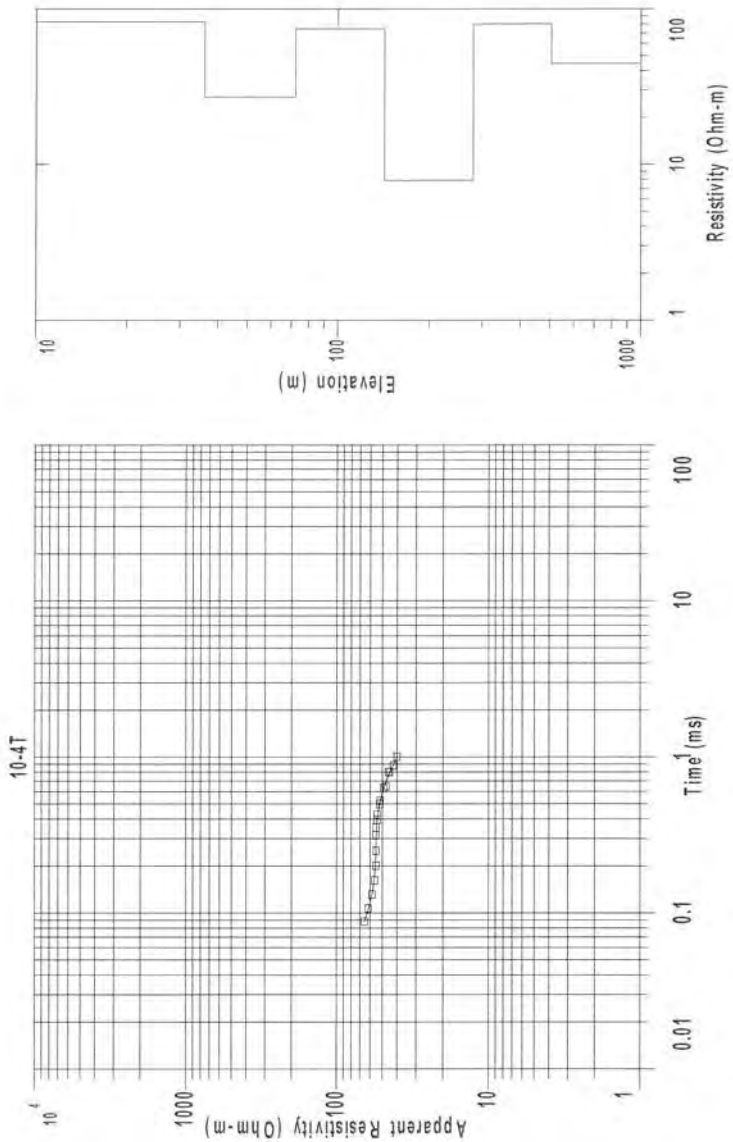
Northing: 922273.0 Easting: 535306.0 Elevation: 1627.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1627.0		
1	56.08	37.82	37.82	1589.1	0.674	2121.5
2	70.39	15.65	53.48	1573.5	0.222	1102.2
3	102.3	51.49	104.9	1522.0	0.503	5269.4
4	50.28	34.18	139.1	1487.8	0.679	1719.3
5	23.26	74.98	214.1	1412.8	3.22	1744.8
6	75.39	169.7	383.9	1243.0	2.25	12801.3
7	43.27					

ALL PARAMETERS ARE FREE

Prepared for



10-4T

Central Loop TEM

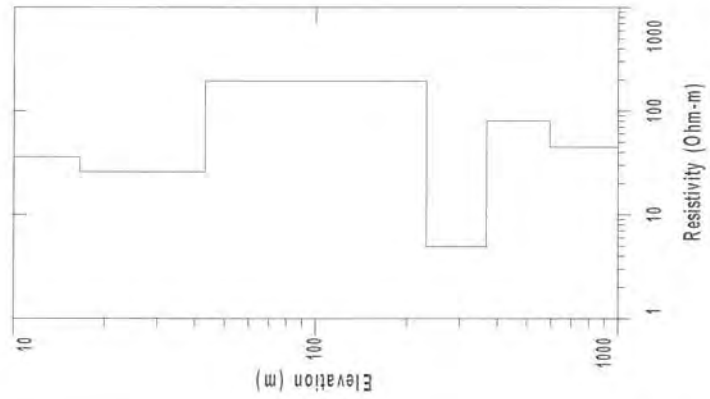
Northing: 922141.0 Easting: 535148.0 Elevation: 1630.0

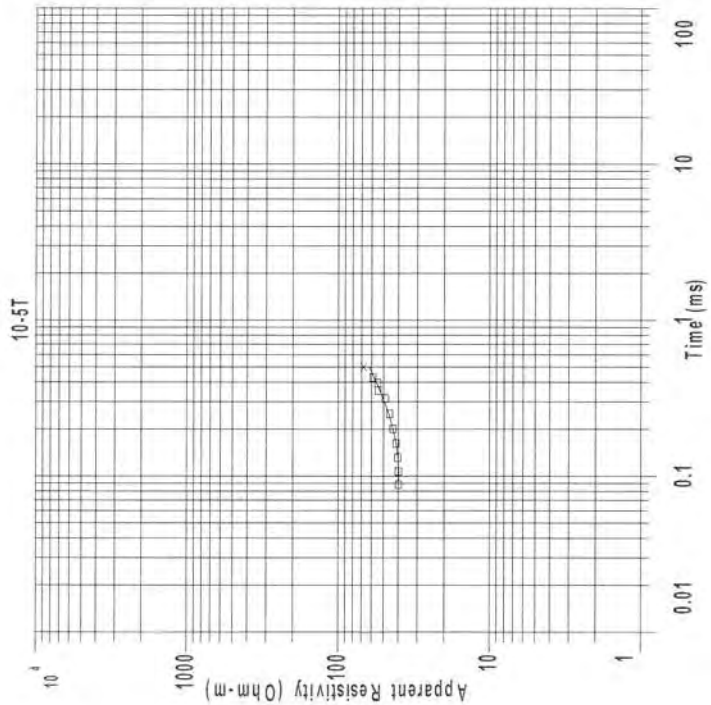
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1630.0		
1	82.59	36.15	36.15	1593.8	0.437	2986.0
2	27.07	36.02	72.18	1557.8	1.33	975.3
3	74.44	69.92	142.1	1487.8	0.939	5206.0
4	7.88	137.1	279.2	1350.7	17.38	1081.6
5	80.21	225.9	505.2	1124.7	2.81	18126.7
6	44.54					

ALL PARAMETERS ARE FREE

Prepared for





10-5T

Central Loop TEM

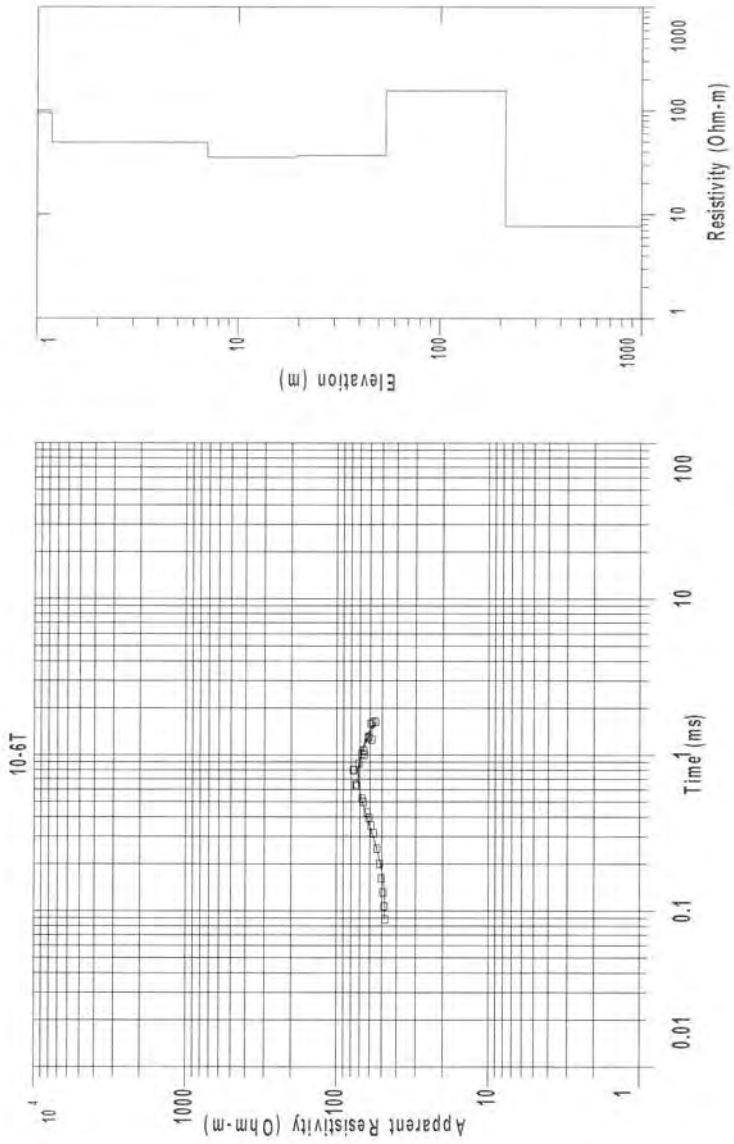
Northing: 922006.0 Easting: 535301.0 Elevation: 1632.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1632.0		
1	35.86	16.57	16.57	1615.4	0.462	594.3
2	25.72	26.44	43.01	1588.9	1.02	680.4
3	194.5	189.3	232.3	1399.6	0.973	36829.4
4	4.90	135.2	367.6	1264.3	27.59	663.3
5	79.82	227.0	594.7	1037.2	2.84	18128.6
6	44.76					

ALL PARAMETERS ARE FREE

Prepared for



10-6T

Central Loop TEM

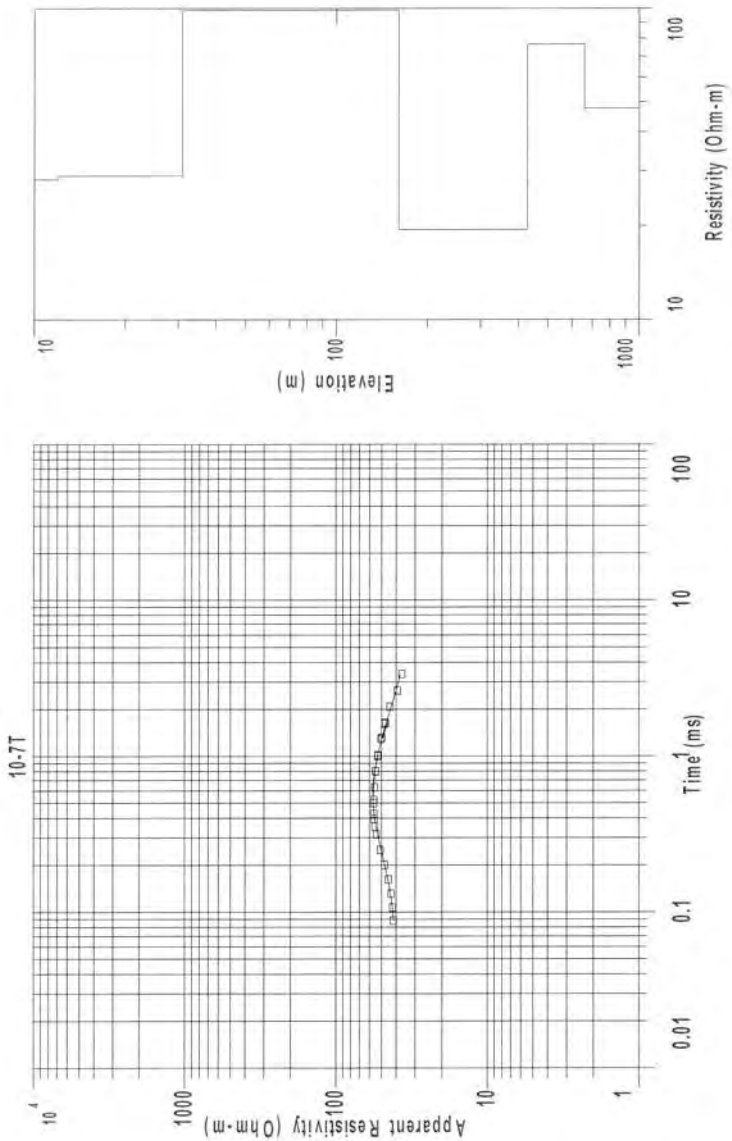
Northing: 921867.0 Easting: 535154.0 Elevation: 1639.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1639.0		
1	94.61	1.17	1.17	1637.8	0.0124	111.5
2	49.12	5.83	7.01	1631.9	0.118	286.5
3	35.21	12.61	19.62	1619.3	0.358	444.0
4	37.00	34.14	53.76	1585.2	0.922	1263.5
5	155.4	156.8	210.5	1428.4	1.00	24371.7
6	7.66					

ALL PARAMETERS ARE FREE

Prepared for



10-7T

Central Loop TEM

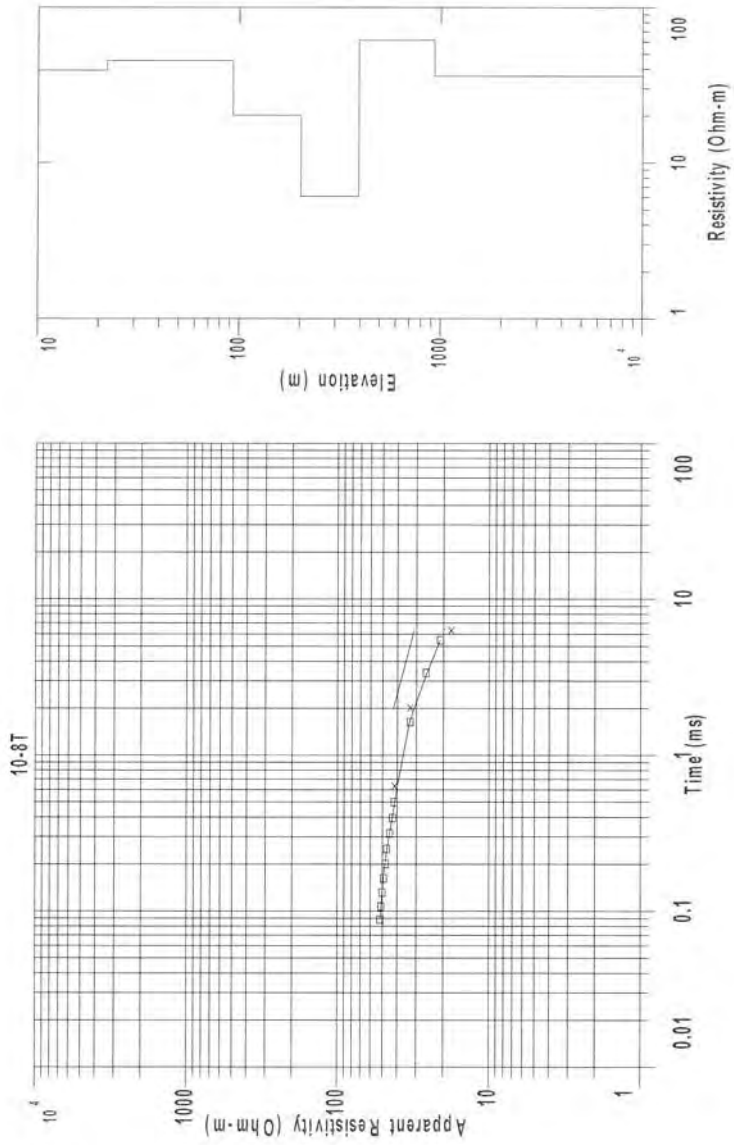
Northing: 921938.0 Easting: 535081.0 Elevation: 1633.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1633.0		
1	28.15	12.00	12.00	1620.9	0.426	338.0
2	28.95	18.90	30.90	1602.0	0.652	547.4
3	98.57	129.7	160.6	1472.3	1.31	12792.9
4	19.43	267.5	428.2	1204.7	13.76	5201.2
5	76.59	231.0	659.3	973.6	3.01	17697.5
6	47.65					

ALL PARAMETERS ARE FREE

Prepared for



10-8T

Central Loop TEM

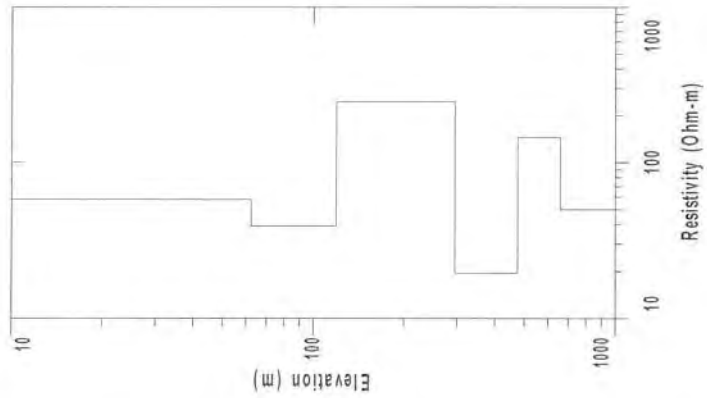
Northing: 922007.0 Easting: 535010.0 Elevation: 1626.0

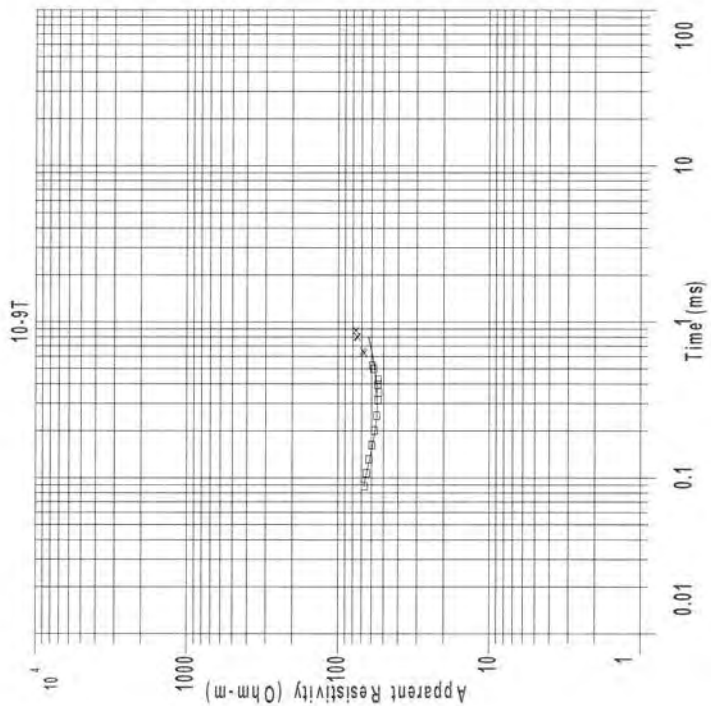
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1626.0		
1	39.25	21.99	21.99	1604.0	0.560	863.3
2	45.44	70.82	92.81	1533.1	1.55	3218.6
3	20.21	109.4	202.2	1423.7	5.41	2212.6
4	6.07	190.6	392.9	1233.0	31.40	1157.8
5	61.45	539.4	932.3	693.6	8.77	33148.2
6	36.11					

ALL PARAMETERS ARE FREE

Prepared for





10-9T

Central Loop TEM

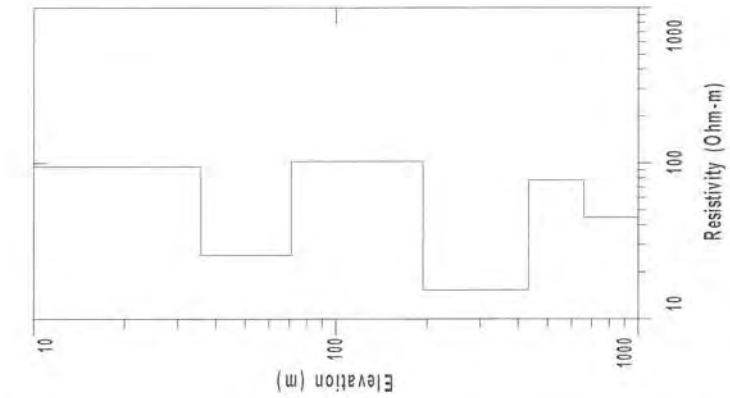
Northing: 922177.0 Easting: 535402.0 Elevation: 1623.0

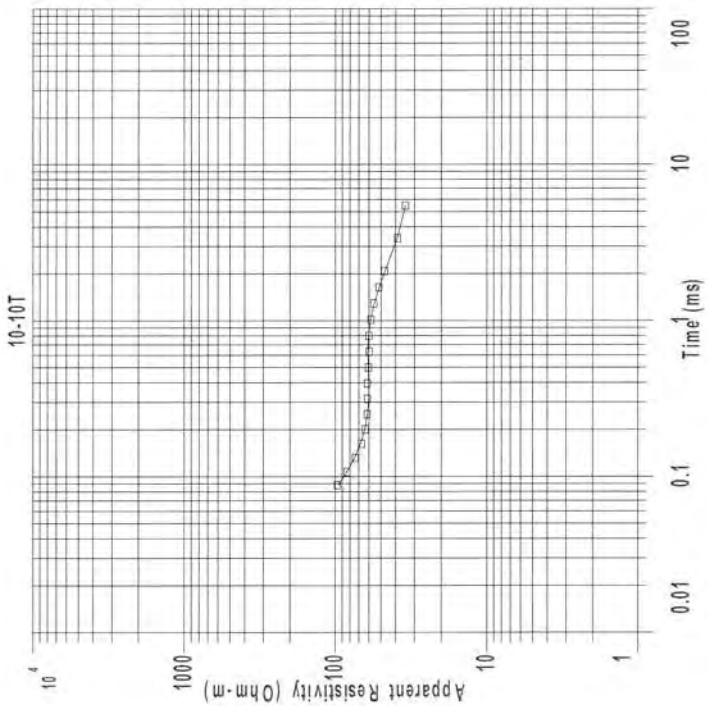
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1623.0		
1	57.99	62.35	62.35	1560.6	1.07	3615.9
2	39.17	56.62	118.9	1504.0	1.44	2218.2
3	245.6	175.3	294.2	1328.7	0.713	43055.2
4	19.50	180.6	474.9	1148.0	9.26	3524.3
5	145.4	182.7	657.6	965.3	1.25	26567.1
6	49.92					

ALL PARAMETERS ARE FREE

Prepared for





10-10T

Fixed Loop TEM

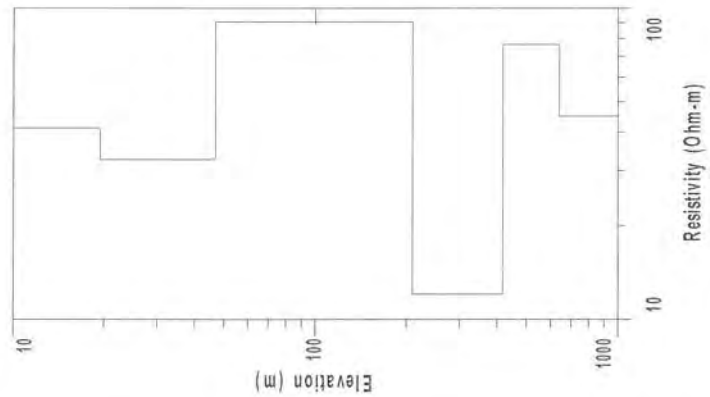
Northing: 922088.0 Easting: 535196.0 Elevation: 1628.0

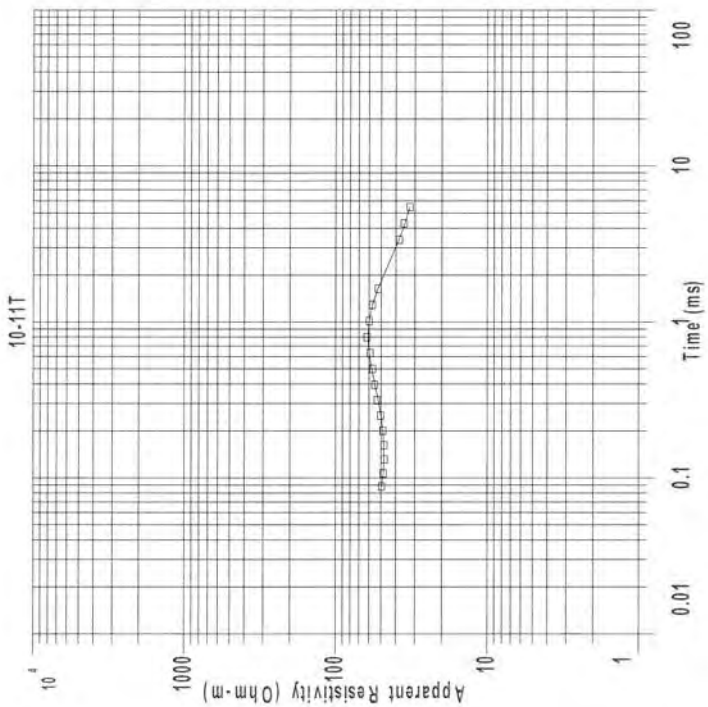
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1628.0		
1	94.76	35.70	35.70	1592.2	0.376	3384.0
2	25.59	35.31	71.02	1556.9	1.37	904.0
3	102.6	122.7	193.8	1434.1	1.19	12609.0
4	15.32	239.3	433.1	1194.8	15.61	3668.6
5	77.84	226.6	659.7	968.2	2.91	17638.7
6	44.75					

ALL PARAMETERS ARE FREE

Prepared for





10-11T

Fixed Loop TEM

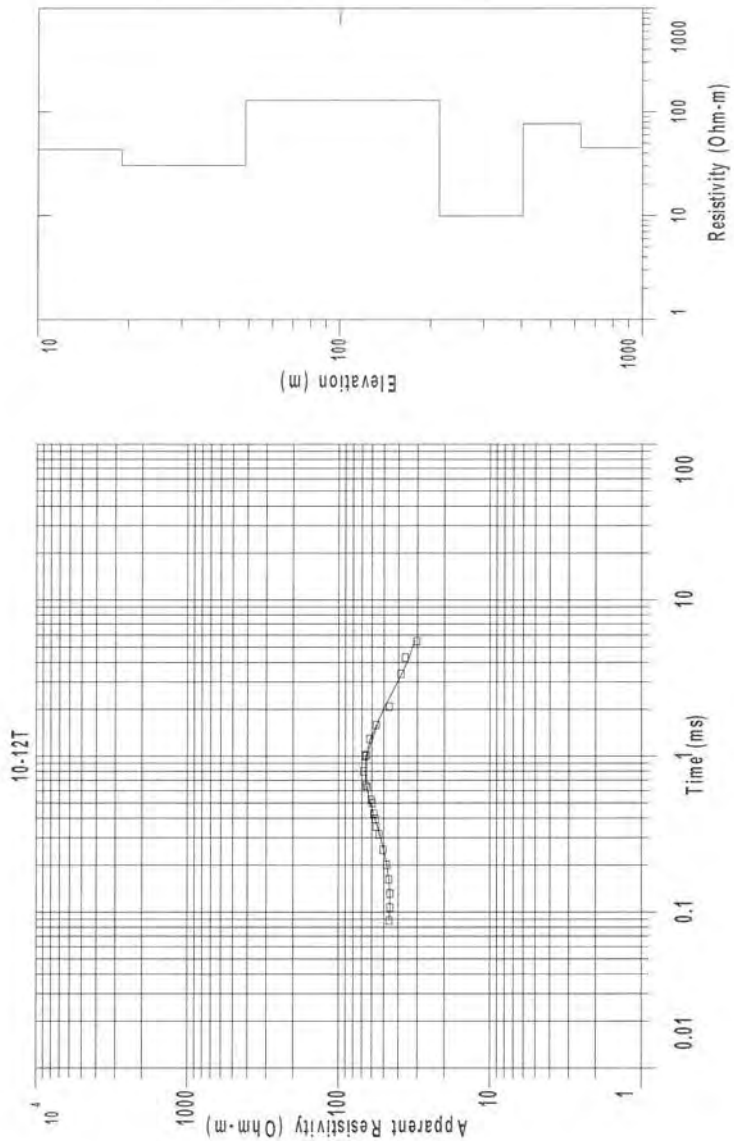
Northing: 922058.0 Easting: 535236.0 Elevation: 1630.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1630.0		
1	41.14	19.40	19.40	1610.5	0.471	798.2
2	32.60	27.40	46.80	1583.1	0.840	893.5
3	90.38	162.4	209.2	1420.7	1.79	14685.1
4	12.06	207.9	417.2	1212.7	17.23	2508.2
5	76.35	223.7	640.9	989.0	2.93	17083.2
6	44.92					

ALL PARAMETERS ARE FREE

Prepared for



10-12T

Fixed Loop TEM

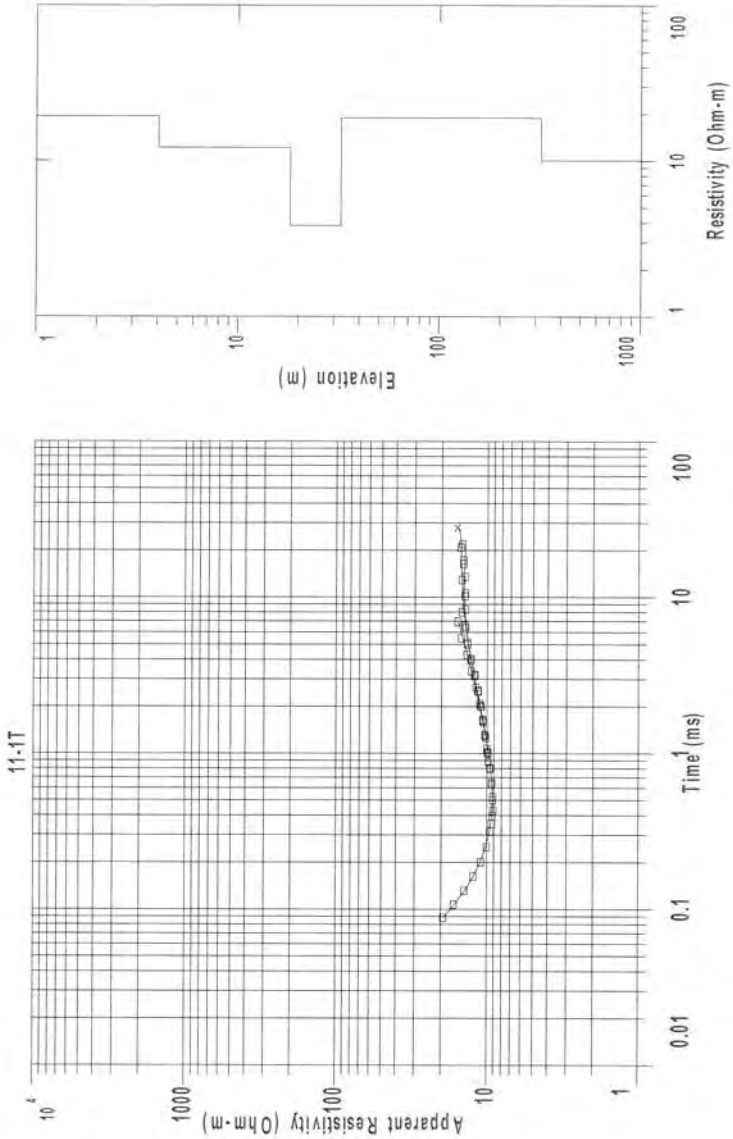
Northing: 922039.0 Easting: 535260.0 Elevation: 1631.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1631.0		
1	43.45	18.94	18.94	1612.0	0.435	823.4
2	30.47	29.70	48.65	1582.3	0.974	905.2
3	128.8	164.6	213.3	1417.6	1.27	21216.0
4	9.90	190.4	403.8	1227.1	19.22	1887.3
5	76.90	222.8	626.6	1004.3	2.89	17140.0
6	44.90					

ALL PARAMETERS ARE FREE

Prepared for



11-1T

Central Loop TEM

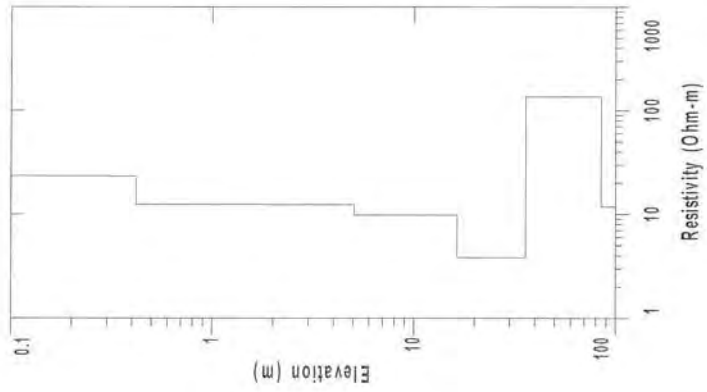
Northing: 915532.0 Easting: 552787.0 Elevation: 1813.0

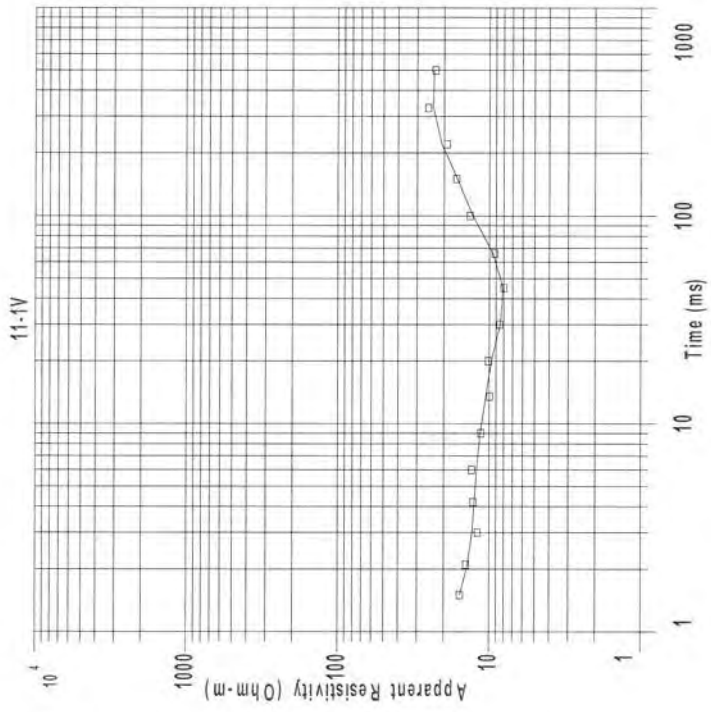
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1813.0		
1	19.23	4.03	4.03	1808.9	0.209	77.71
2	12.11	14.15	18.19	1794.8	1.16	171.4
3	3.82	14.20	32.39	1780.6	3.71	54.39
4	18.83	284.9	317.3	1495.6	15.12	5365.9
5	10.01					

ALL PARAMETERS ARE FREE

Prepared for





11-1V

Schlumberger Array

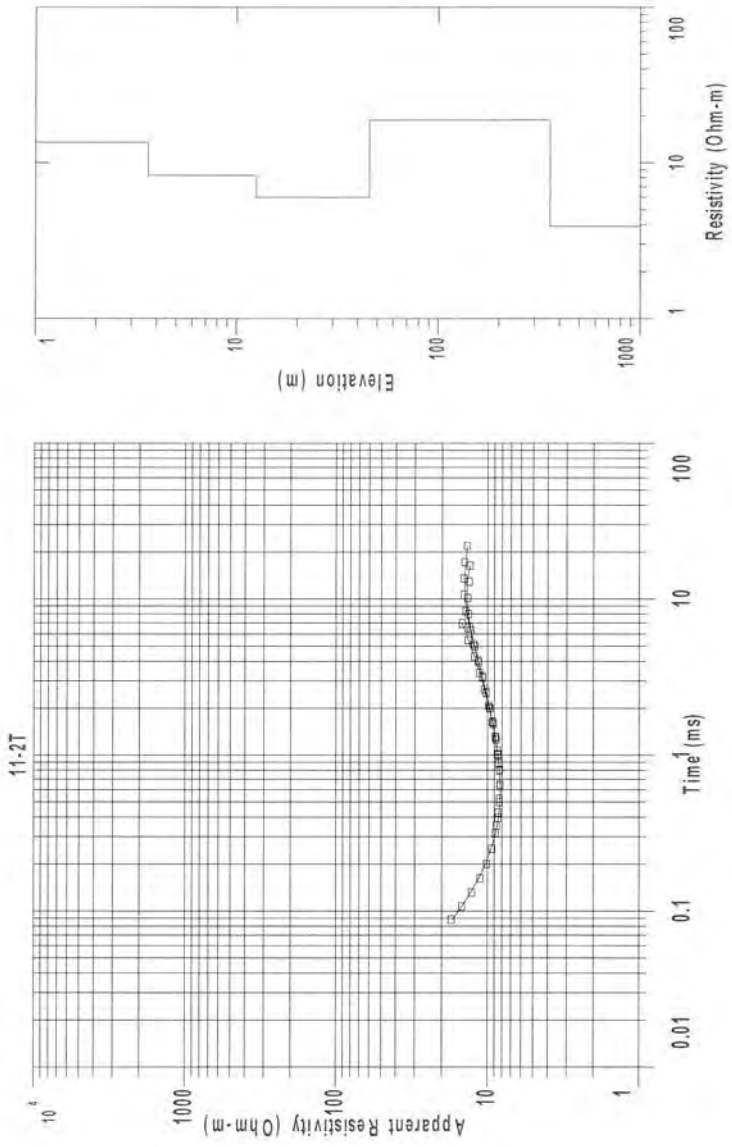
Northing: 915780.0 Easting: 552889.0 Elevation: 1821.0

Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1821.0		
1	23.33	0.417	0.417	1820.5	0.0179	9.74
2	12.39	4.64	5.05	1815.9	0.374	57.54
3	9.82	11.31	16.37	1804.6	1.15	111.2
4	3.83	19.47	35.85	1785.1	5.07	74.67
5	135.9	49.01	84.86	1736.1	0.360	6662.1
6	11.85					

ALL PARAMETERS ARE FREE

Prepared for



11-2T

Central Loop TEM

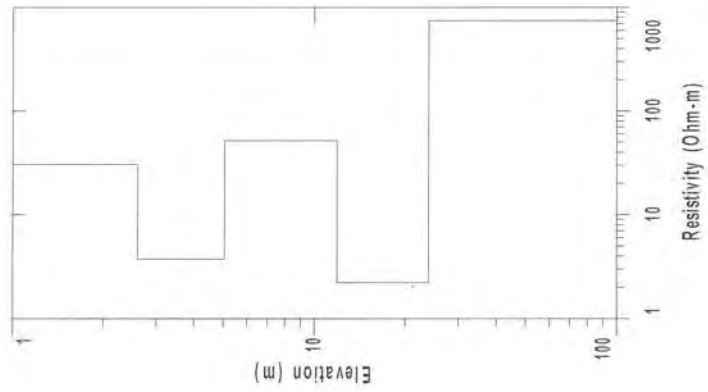
Northing: 915420.0 Easting: 552947.0 Elevation: 1832.0

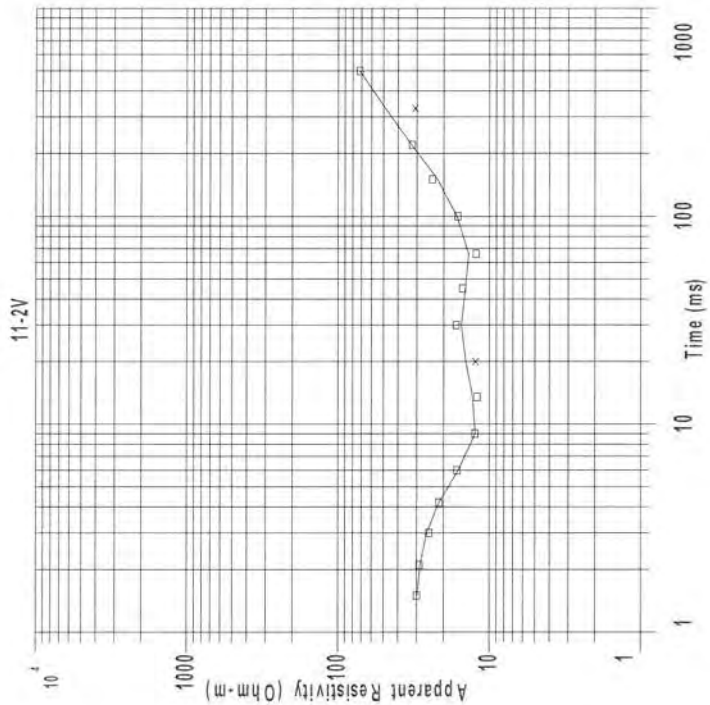
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1832.0		
1	13.50	3.61	3.61	1828.3	0.267	48.86
2	8.28	8.91	12.52	1819.4	1.07	73.79
3	5.98	33.19	45.72	1786.2	5.54	198.7
4	18.77	312.5	358.2	1473.7	16.64	5869.0
5	3.89					

ALL PARAMETERS ARE FREE

Prepared for





11-2V

Schlumberger Array

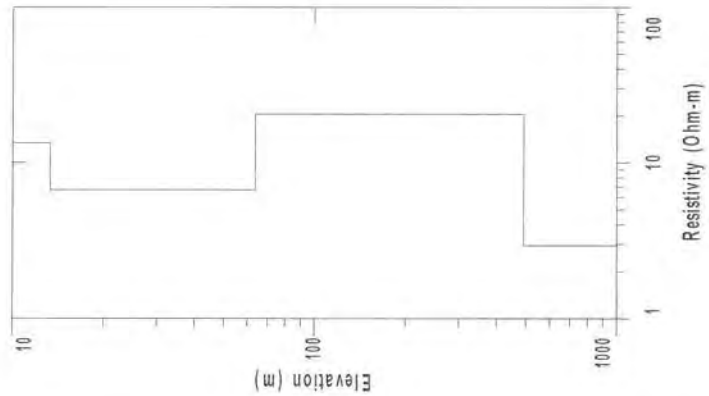
Northing: 915570.0 Easting: 553180.0 Elevation: 1844.0

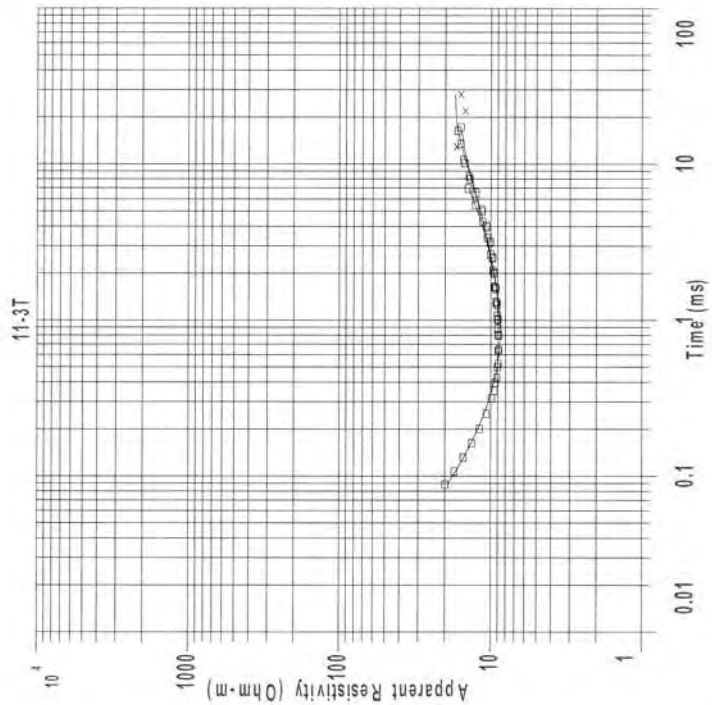
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1844.0		
1	30.50	2.60	2.60	1841.3	0.0852	79.35
2	3.75	2.44	5.04	1838.9	0.651	9.17
3	51.94	6.83	11.88	1832.1	0.131	355.0
4	2.21	11.99	23.88	1820.1	5.40	26.62
5	746.4					

ALL PARAMETERS ARE FREE

Prepared for





11-3T

Central Loop TEM

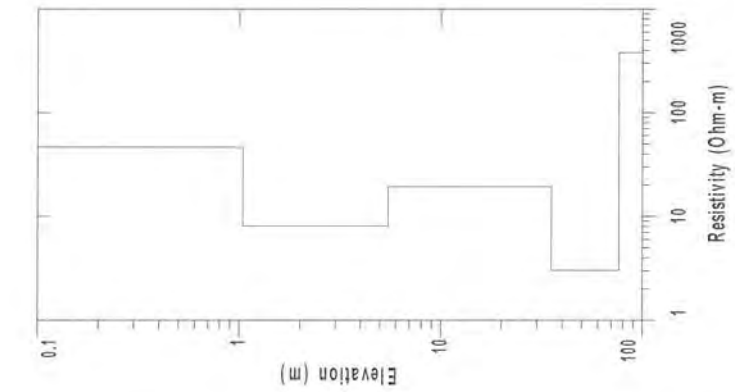
Northing: 915309.0 Easting: 553112.0 Elevation: 1847.0

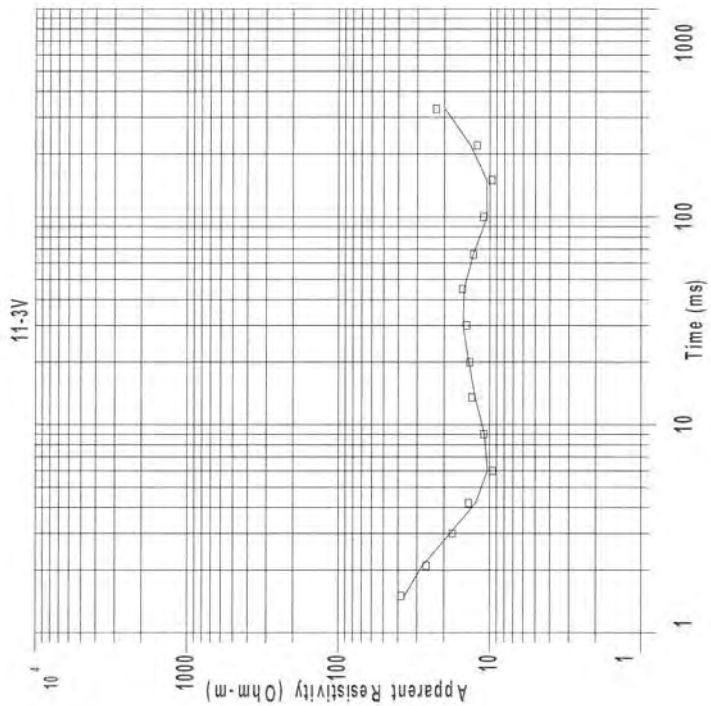
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1847.0		
1	13.39	13.30	13.30	1833.6	0.993	178.1
2	6.69	50.29	63.59	1783.4	7.51	336.7
3	20.50	427.1	490.7	1356.2	20.83	8758.2
4	2.93					

ALL PARAMETERS ARE FREE

Prepared for





11-3V

Schlumberger Array

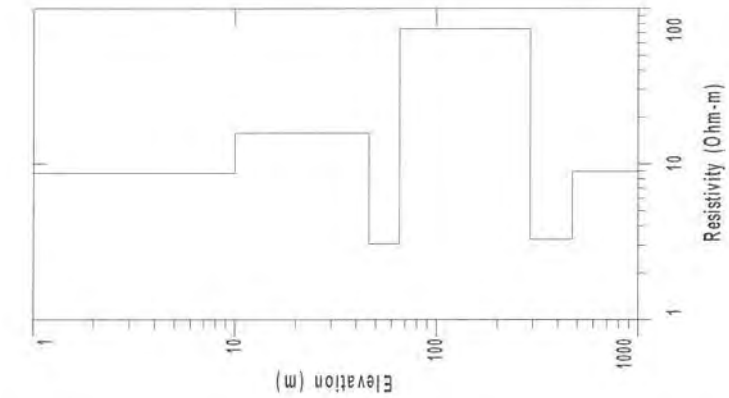
Northing: 915439.0 Easting: 553411.0 Elevation: 1858.0

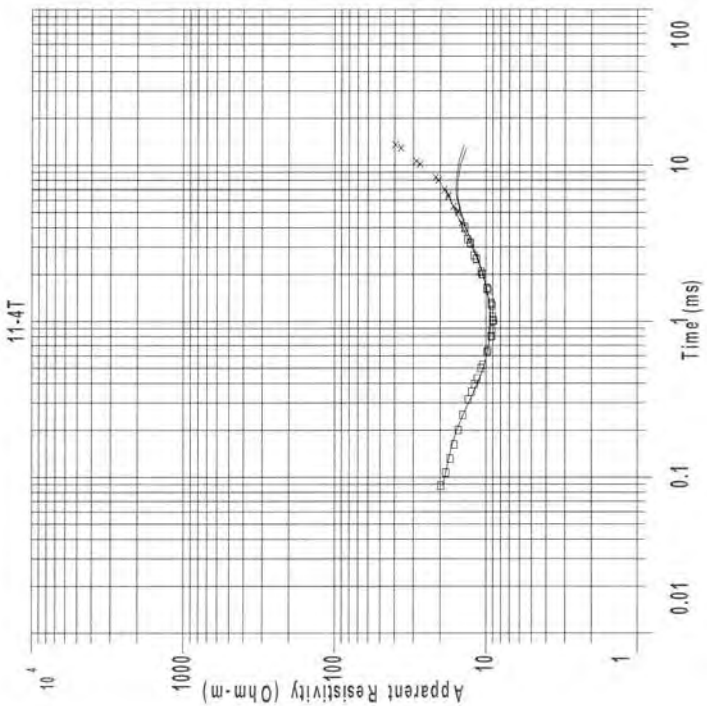
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1858.0		
1	46.36	1.03	1.03	1856.9	0.0224	48.16
2	8.05	4.45	5.49	1852.5	0.553	35.86
3	19.31	29.86	35.35	1822.6	1.54	576.9
4	3.02	41.02	76.37	1781.6	13.54	124.2
5	379.5					

ALL PARAMETERS ARE FREE

Prepared for





11-4T

Central Loop TEM

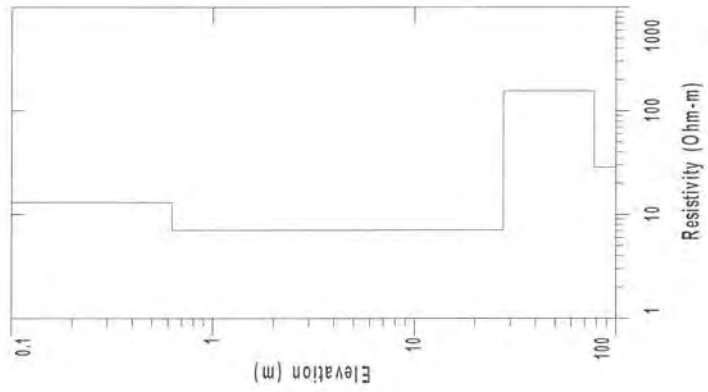
Northing: 916023.0 Easting: 553012.0 Elevation: 1819.0

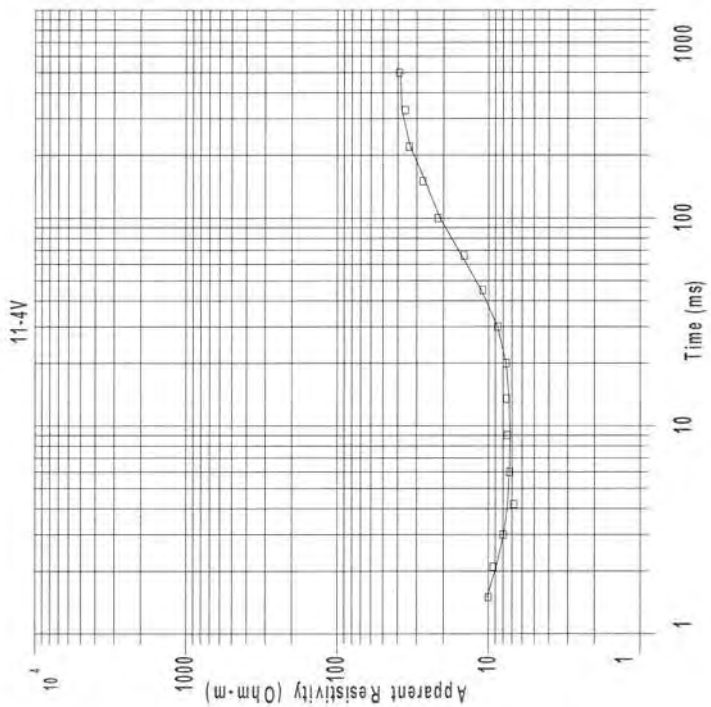
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1819.0		
1	8.72	9.99	9.99	1809.0	1.14	87.24
2	15.75	36.27	46.27	1772.7	2.30	571.3
3	3.06	19.29	65.57	1753.4	6.29	59.19
4	73.89	225.6	291.1	1527.8	3.05	16671.4
5	3.27	181.5	472.7	1346.2	55.36	595.3
6	8.94					

ALL PARAMETERS ARE FREE

Prepared for





11-4V

Schlumberger Array

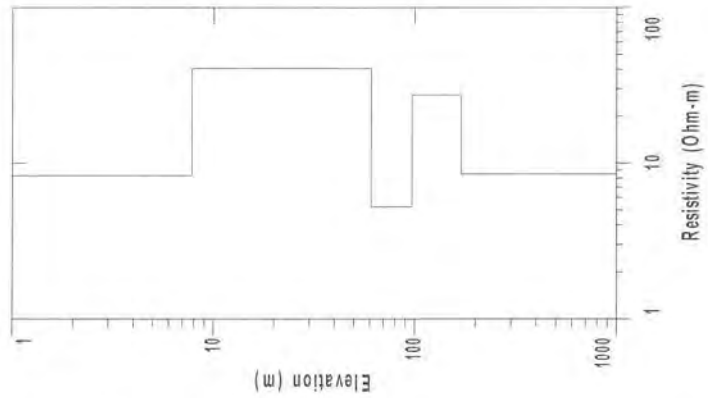
Northing: 916421.0 Easting: 552355.0 Elevation: 1796.0

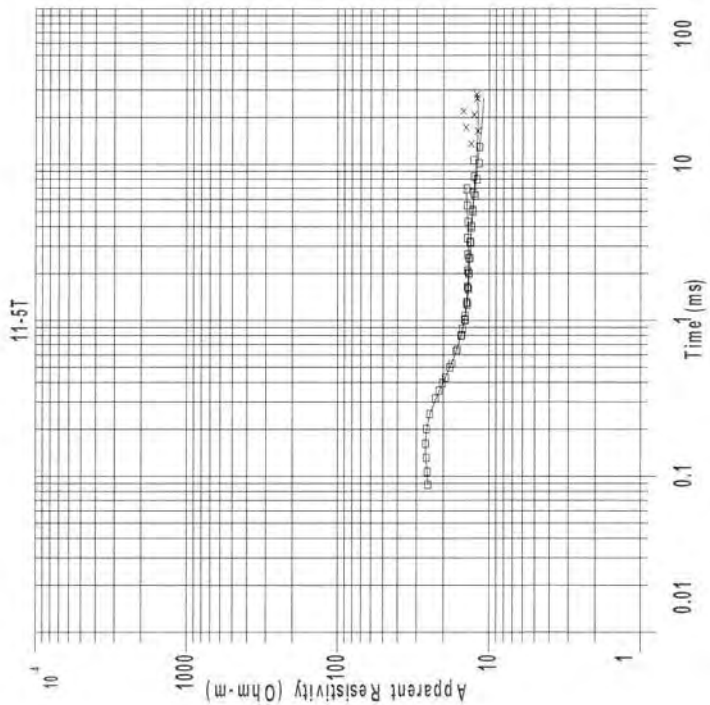
Layered Model

L #	RESISTIVITY	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1796.0		
1	13.09	0.626	0.626	1795.3	0.0478	8.20
2	7.07	27.06	27.69	1768.3	3.82	191.4
3	155.2	50.28	77.97	1718.0	0.323	7806.9
4	28.64					

ALL PARAMETERS ARE FREE

Prepared for





11-5T

Central Loop TEM

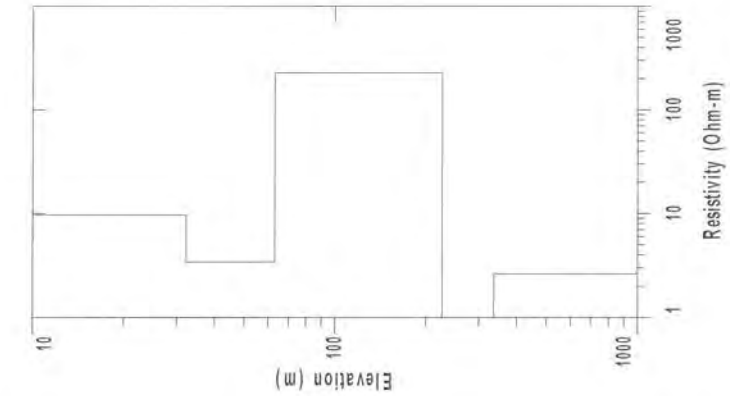
Northing: 916345.0 Easting: 553234.0 Elevation: 1817.0

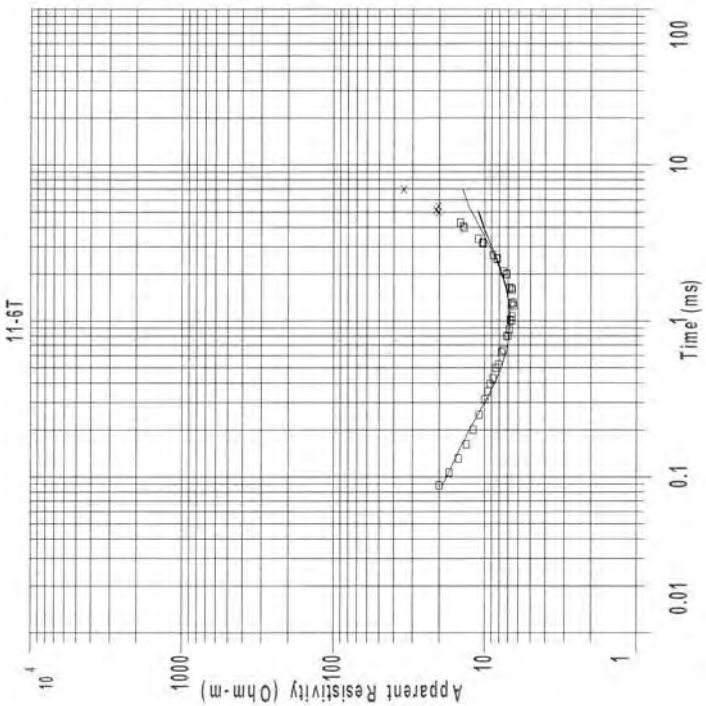
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1817.0		
1	8.28	7.79	7.79	1809.2	0.940	64.57
2	40.53	52.98	60.77	1756.2	1.30	2147.4
3	5.21	36.05	96.83	1720.1	6.90	188.2
4	27.34	73.50	170.3	1646.6	2.68	2009.7
5	8.49					

ALL PARAMETERS ARE FREE

Prepared for





11-6T

Central Loop TEM

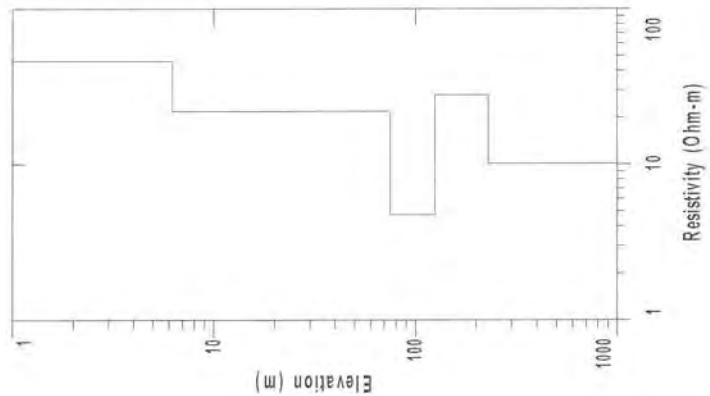
Northing: 915788.0 Easting: 553379.0 Elevation: 1842.0

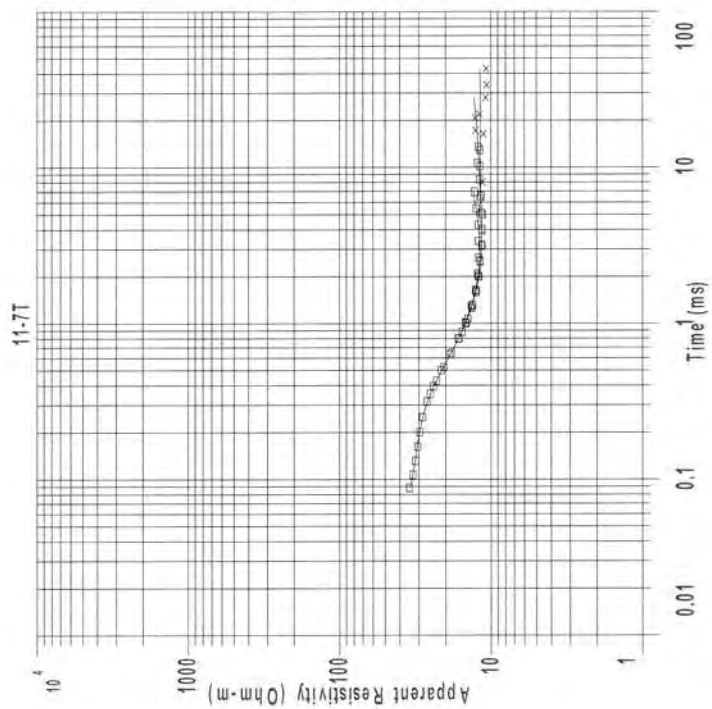
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1842.0		
1	9.66	32.21	32.21	1809.7	3.33	311.5
2	3.41	30.89	63.11	1778.8	9.04	105.4
3	227.2	163.3	226.4	1615.5	0.718	37118.8
4	1.00	109.8	336.3	1505.6	109.8	109.8
5	2.62					

ALL PARAMETERS ARE FREE

Prepared for





11-7T

Central Loop TEM

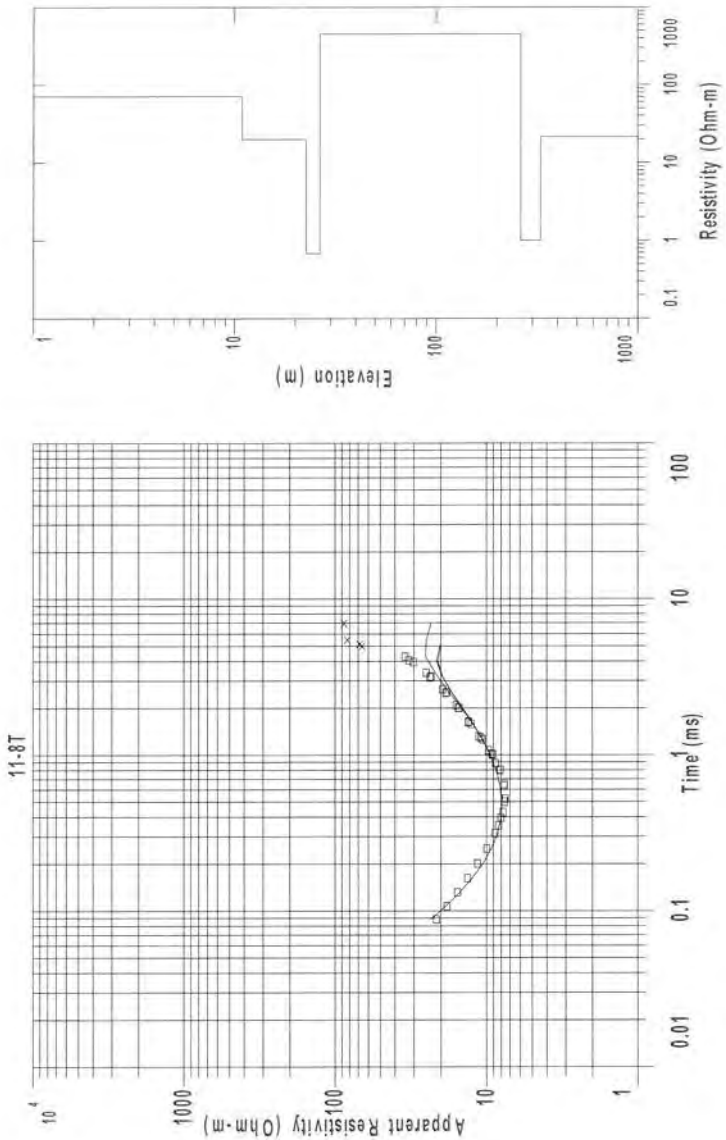
Northing: 916137.0 Easting: 553621.0 Elevation: 1838.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1838.0		
1	45.97	6.23	6.23	1831.7	0.135	286.5
2	21.84	68.56	74.79	1763.2	3.13	1497.3
3	4.73	50.00	124.7	1713.2	10.56	236.6
4	27.88	104.9	229.7	1608.2	3.76	2926.2
5	10.07					

ALL PARAMETERS ARE FREE

Prepared for



11-8T

Central Loop TEM

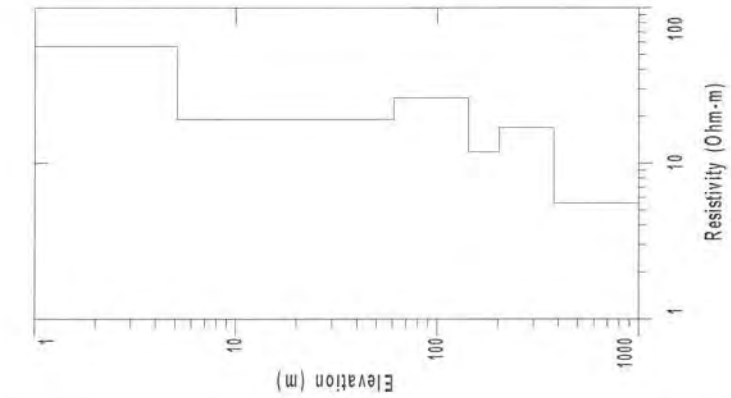
Northing: 915574.0 Easting: 553679.0 Elevation: 1859.0

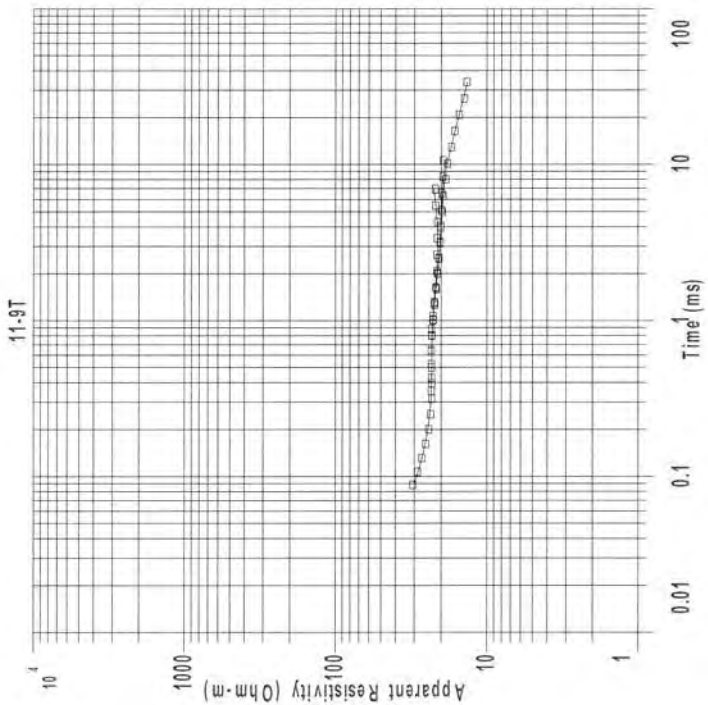
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1859.0		
1	71.18	10.89	10.89	1848.1	0.153	775.4
2	19.92	11.72	22.61	1836.3	0.588	233.5
3	0.680	3.92	26.53	1832.4	5.76	2.66
4	454.2	235.6	262.1	1596.8	0.518	107024.1
5	1.00	66.85	328.9	1530.0	66.85	66.85
6	21.37					

ALL PARAMETERS ARE FREE

Prepared for





11-9T

Central Loop TEM

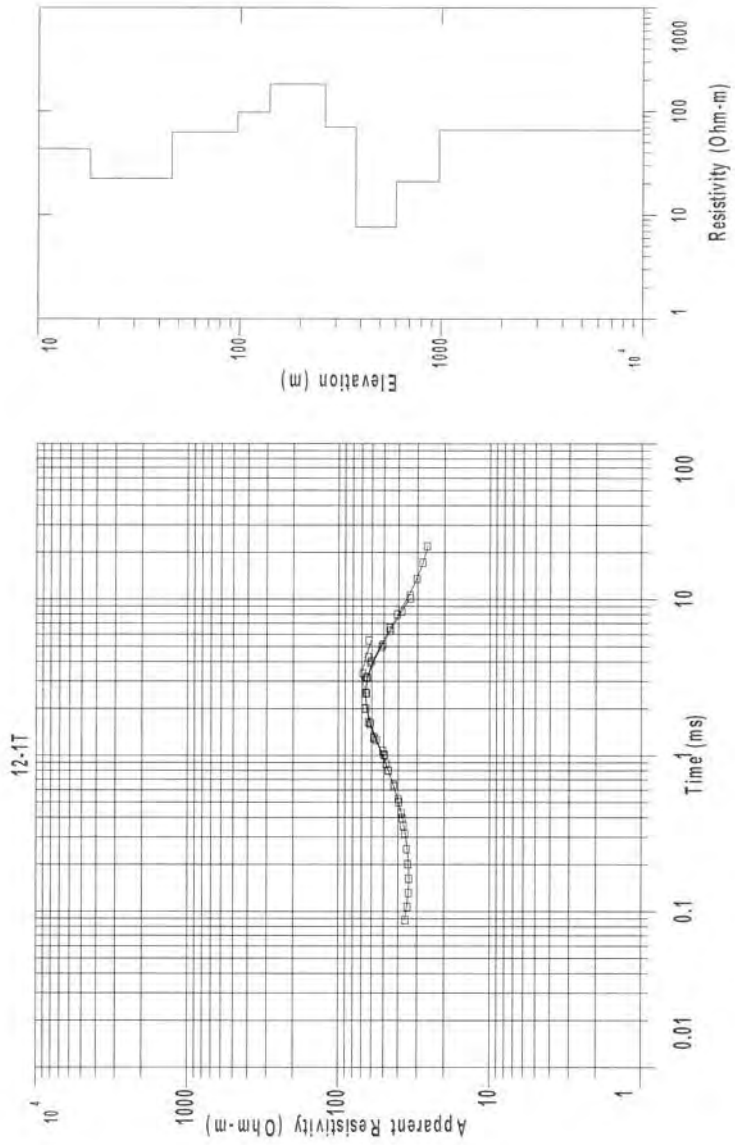
Northing: 915927.0 Easting: 553933.0 Elevation: 1859.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				1859.0		
1	56.50	5.12	5.12	1853.8	0.0906	289.5
2	19.14	55.74	60.86	1798.1	2.91	1067.4
3	26.34	82.10	142.9	1716.0	3.11	2163.2
4	11.78	60.42	203.4	1655.5	5.12	712.0
5	16.91	174.8	378.2	1480.7	10.33	2957.2
6	5.54					

ALL PARAMETERS ARE FREE

Prepared for



12-1T

Central Loop TEM

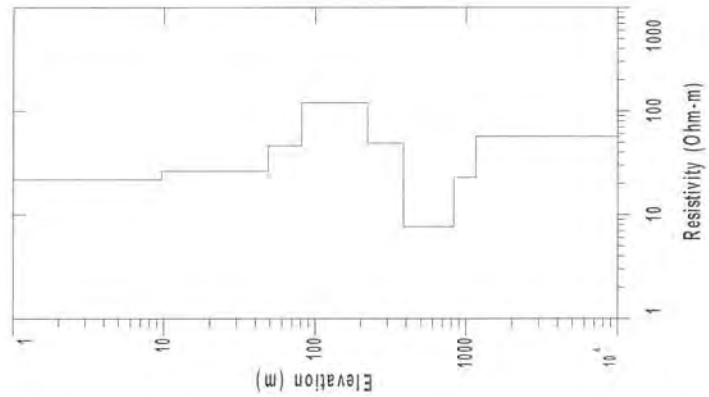
Northing: 1027358.0 Easting: 550363.0 Elevation: 2862.0

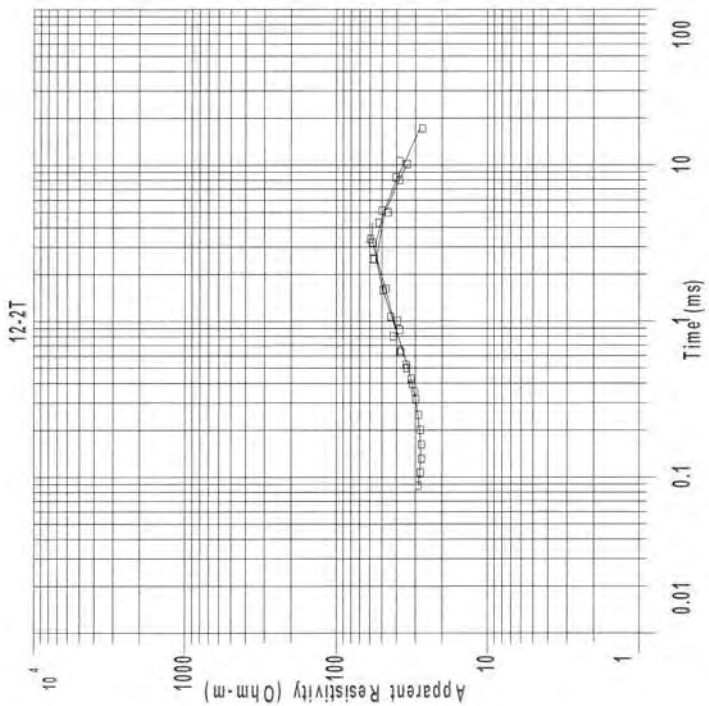
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2862.0		
1	43.23	18.04	18.04	2843.9	0.417	780.1
2	22.35	27.74	45.79	2816.2	1.24	620.2
3	62.71	51.29	97.08	2764.9	0.817	3217.0
4	97.43	42.89	139.9	2722.0	0.440	4179.2
5	182.4	125.1	265.1	2596.8	0.686	22846.4
6	69.75	112.4	377.6	2484.3	1.61	7845.0
7	7.62	219.8	597.4	2264.5	28.82	1676.4
8	20.89	378.0	975.4	1886.5	18.09	7897.1
9	65.83					

ALL PARAMETERS ARE FREE

Prepared for





12-2T

Central Loop TEM

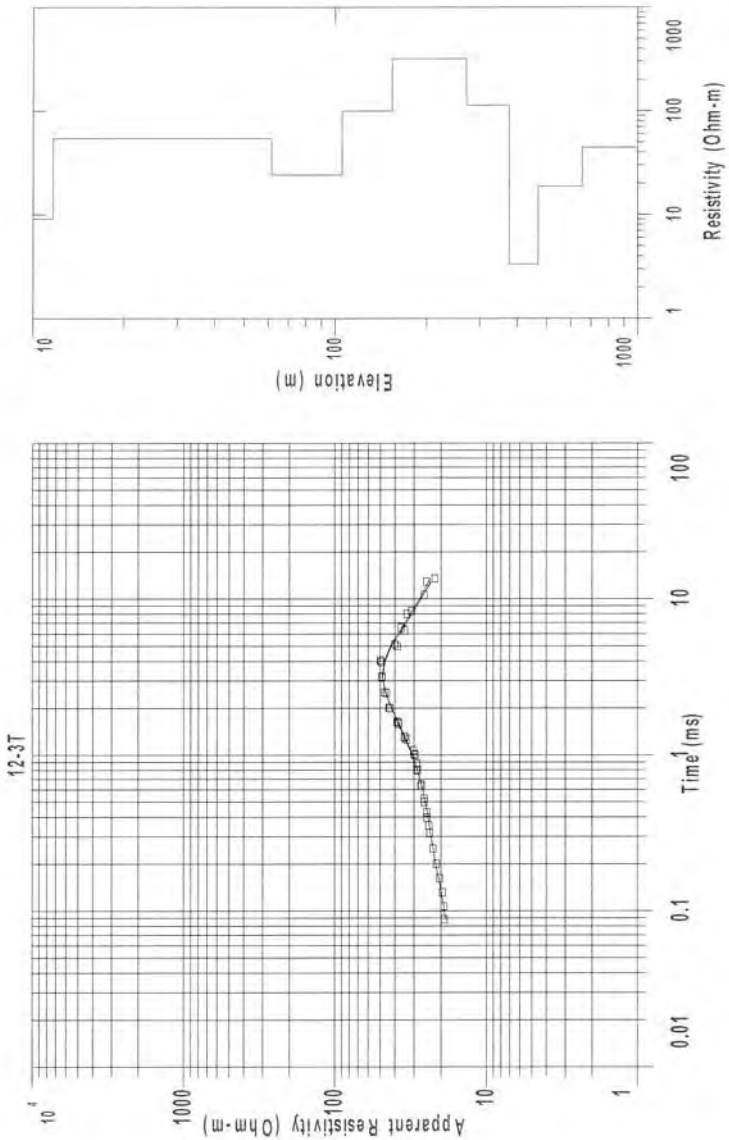
Northing: 1027552.0 Easting: 550367.0 Elevation: 2873.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2873.0		
1	21.79	9.61	9.61	2863.3	0.441	209.5
2	26.21	39.15	48.77	2824.2	1.49	1026.3
3	46.23	32.39	81.16	2791.8	0.700	1497.6
4	119.9	140.2	221.3	2651.5	1.16	16820.1
5	48.84	161.8	383.2	2489.7	3.31	7903.9
6	7.66	445.5	828.7	2044.2	58.13	3413.8
7	22.83	330.6	1159.3	1713.6	14.48	7551.3
8	56.61					

ALL PARAMETERS ARE FREE

Prepared for



12-3T

Central Loop TEM

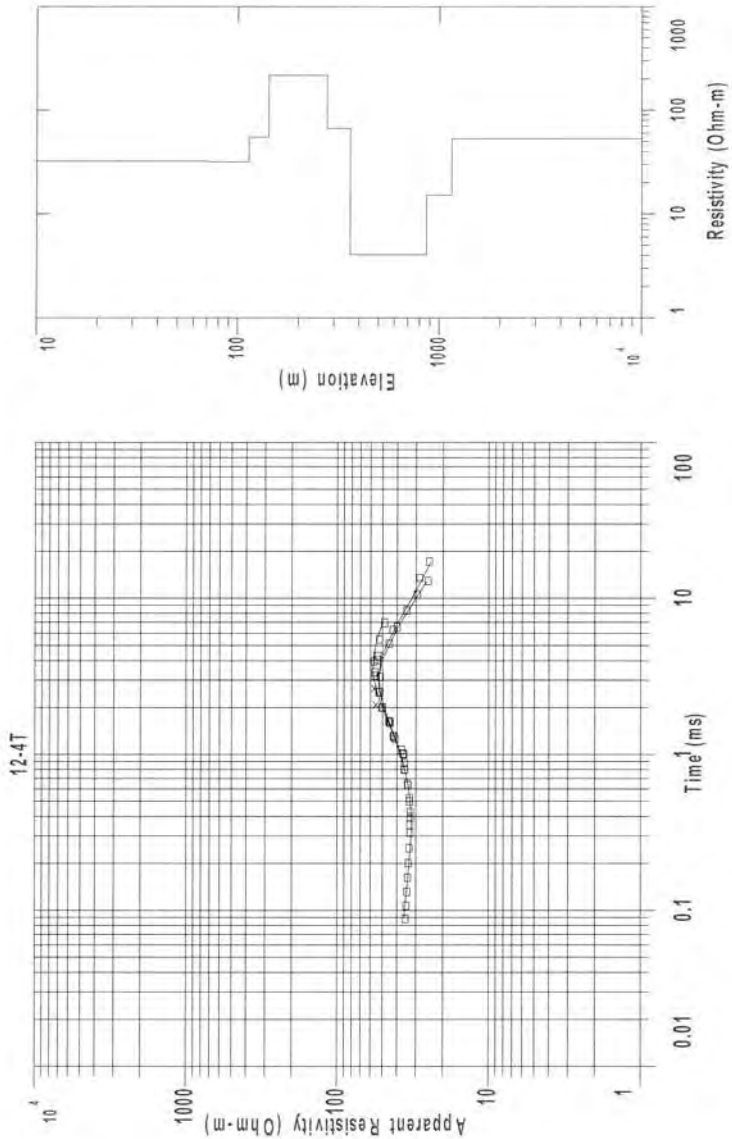
Northing: 1027555.0 Easting: 550165.0 Elevation: 2878.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2878.0		
1	9.12	11.65	11.65	2866.3	1.27	106.2
2	54.03	49.94	61.59	2816.4	0.924	2698.8
3	24.08	43.76	105.3	2772.6	1.81	1054.0
4	99.25	48.71	154.0	2723.9	0.490	4835.1
5	318.7	116.3	270.4	2607.5	0.365	37097.3
6	112.7	105.4	375.9	2502.0	0.935	11895.1
7	3.32	92.49	468.4	2409.5	27.80	307.6
8	18.77	186.2	654.6	2223.3	9.92	3497.2
9	44.23					

ALL PARAMETERS ARE FREE

Prepared for



12-4T

Central Loop TEM

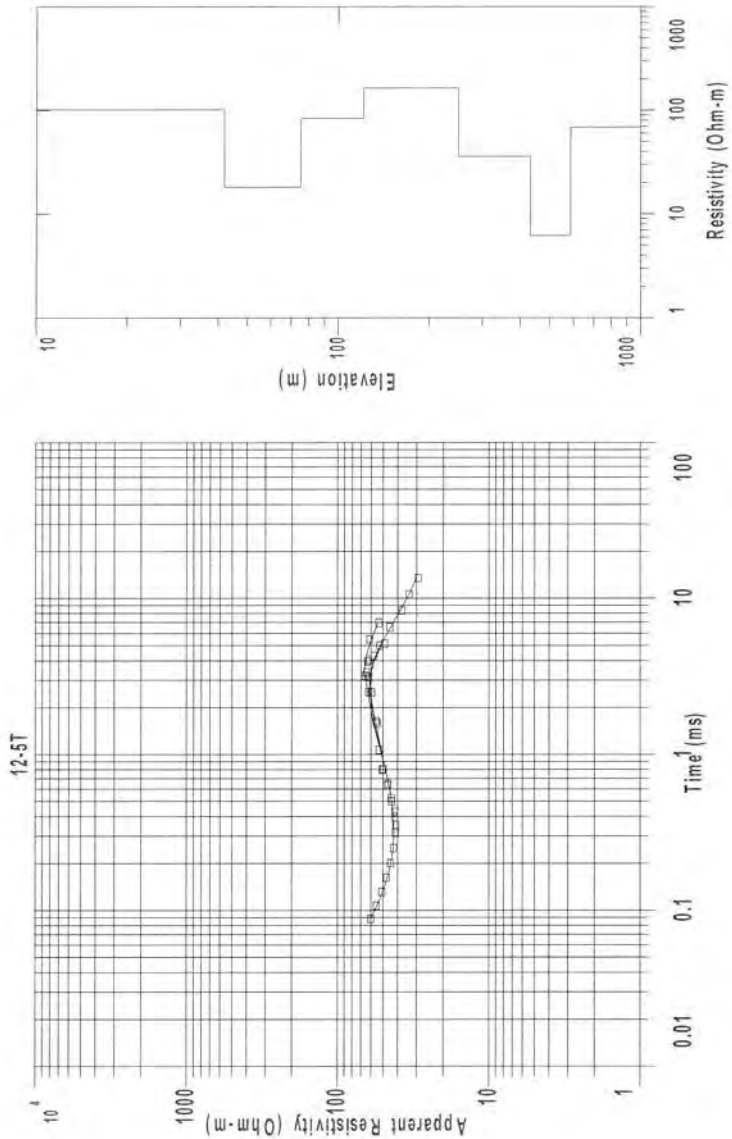
Northing: 1027360.0 Easting: 550110.0 Elevation: 2854.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2854.0		
1	32.23	72.33	72.33	2781.6	2.24	2331.9
2	31.76	40.81	113.1	2740.8	1.28	1296.4
3	54.80	28.91	142.0	2711.9	0.527	1584.6
4	216.0	134.6	276.7	2577.2	0.623	29090.4
5	66.73	84.62	361.3	2492.6	1.26	5647.9
6	4.05	503.7	865.1	1988.8	124.2	2042.6
7	15.24	288.9	1154.0	1699.9	18.94	4405.2
8	53.13					

ALL PARAMETERS ARE FREE

Prepared for



12-5T

Central Loop TEM

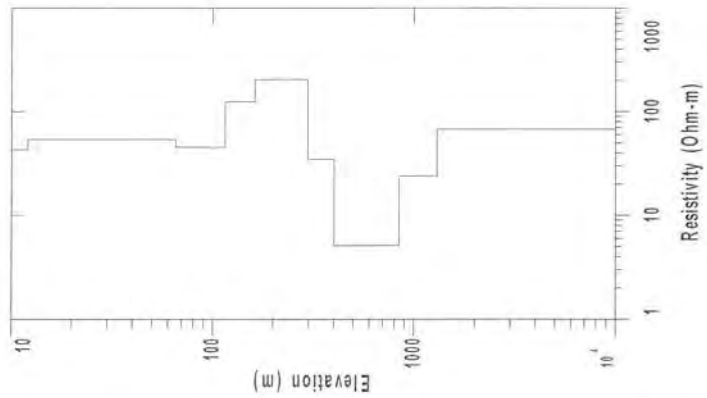
Northing: 1027159.0 Easting: 550052.0 Elevation: 2867.0

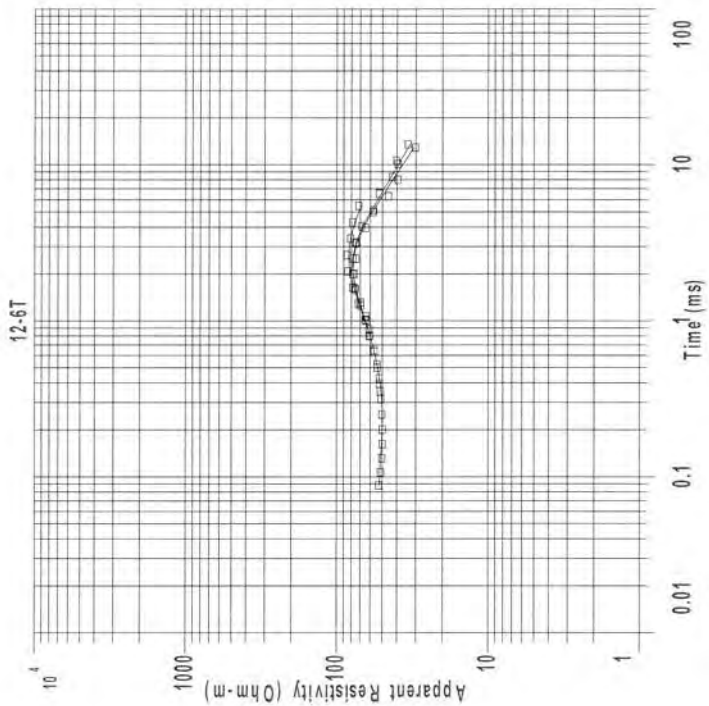
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2867.0		
1	101.3	41.92	41.92	2825.0	0.413	4249.0
2	18.15	33.17	75.10	2791.8	1.82	602.2
3	83.32	45.89	120.9	2746.0	0.550	3824.2
4	163.5	128.6	249.6	2617.3	0.786	21038.7
5	35.74	181.6	431.2	2435.7	5.08	6492.5
6	6.18	154.3	585.6	2281.3	24.95	955.3
7	68.68					

ALL PARAMETERS ARE FREE

Prepared for





12-6T

Central Loop TEM

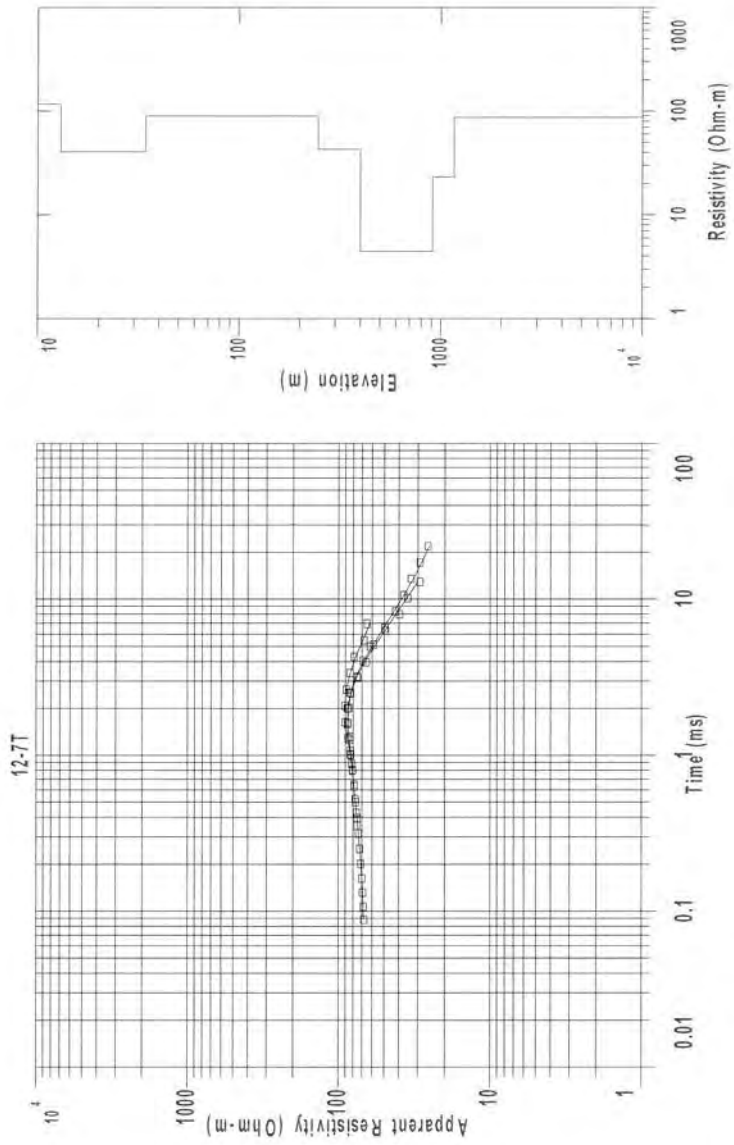
Northing: 1027155.0 Easting: 550350.0 Elevation: 2887.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2887.0		
1	42.94	12.01	12.01	2874.9	0.279	515.9
2	53.77	53.57	65.58	2821.4	0.996	2880.8
3	45.26	49.58	115.1	2771.8	1.09	2244.1
4	124.4	47.04	162.2	2724.7	0.378	5852.7
5	203.4	134.8	297.0	2589.9	0.662	27432.5
6	34.74	104.1	401.2	2485.7	2.99	3619.6
7	5.11	444.1	845.3	2041.6	86.77	2273.3
8	23.97	459.3	1304.7	1582.2	19.15	11015.6
9	67.53					

ALL PARAMETERS ARE FREE

Prepared for



12-7T

Central Loop TEM

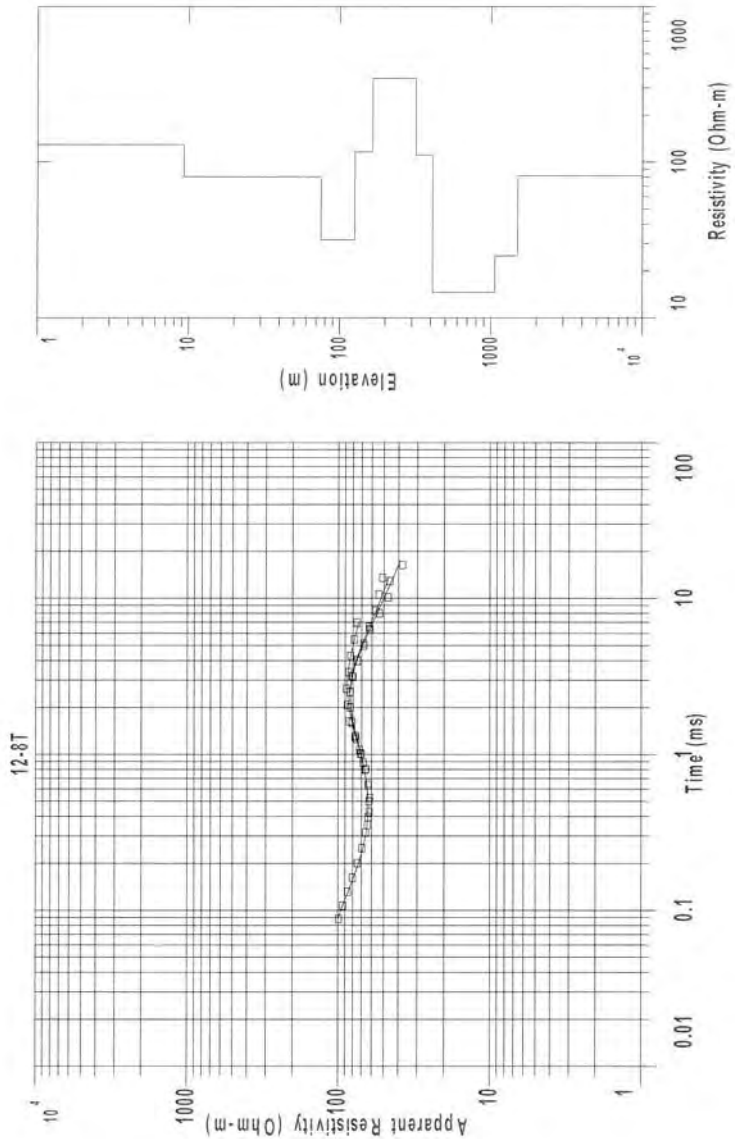
Northing: 1027141.0 Easting: 550545.0 Elevation: 2911.0

Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2911.0		
1	116.4	12.95	12.95	2898.0	0.111	1508.6
2	40.41	21.27	34.23	2876.7	0.526	859.9
3	89.42	212.7	246.9	2664.0	2.37	19024.2
4	42.85	152.2	399.2	2511.7	3.55	6526.1
5	4.43	510.3	909.5	2001.4	115.0	2264.0
6	23.20	252.9	1162.5	1748.4	10.90	5869.0
7	86.95					

ALL PARAMETERS ARE FREE

Prepared for



12-8T

Central Loop TEM

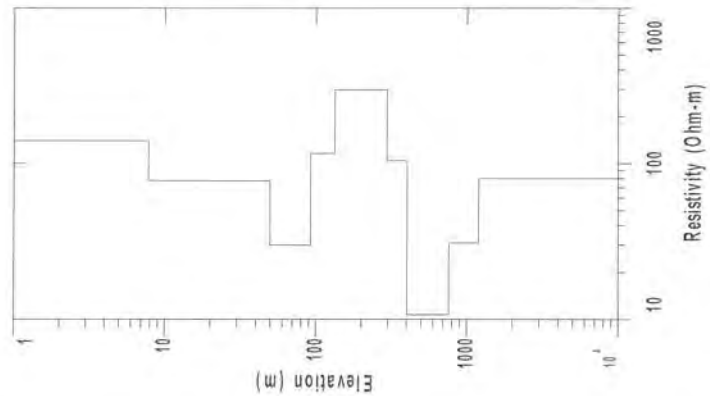
Northing: 1027539.0 Easting: 550565.0 Elevation: 2880.0

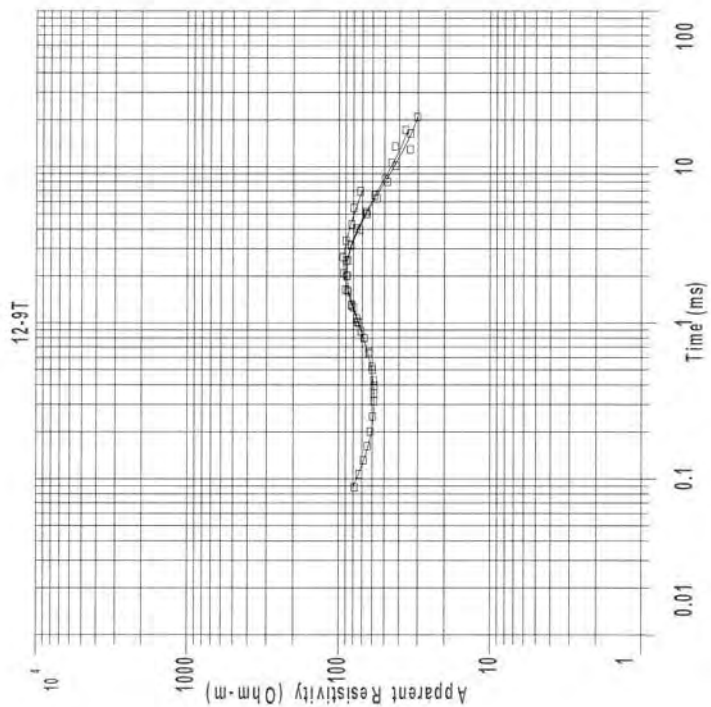
Layered Model

L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2880.0		
1	129.2	9.26	9.26	2870.7	0.0716	1197.5
2	80.25	66.01	75.27	2804.7	0.822	5298.1
3	31.69	50.49	125.7	2754.2	1.59	1600.4
4	116.0	39.03	164.8	2715.1	0.336	4529.0
5	344.8	154.6	319.4	2560.5	0.448	53326.5
6	111.1	92.15	411.5	2468.4	0.829	10242.8
7	14.57	651.2	1062.8	1817.1	44.68	9491.6
8	25.00	436.6	1499.4	1380.5	17.46	10917.0
9	81.52					

ALL PARAMETERS ARE FREE

Prepared for





12-9T

Central Loop TEM

Northing: 1027341.0 Easting: 550558.0 Elevation: 2882.0

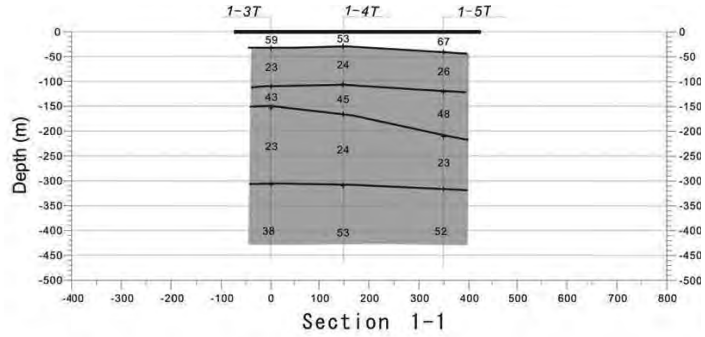
Layered Model

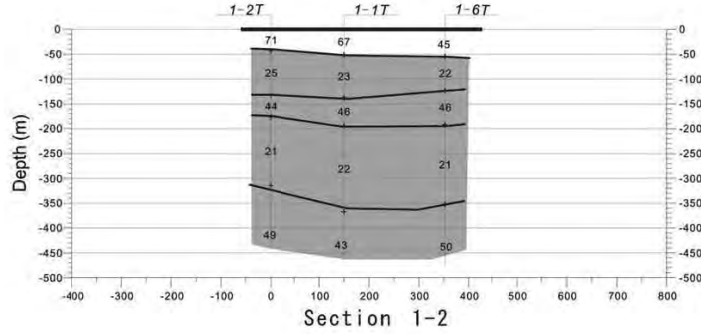
L #	RESISTIVITY (ohm-m)	THICKNESS (meters)	DEPTH	ELEVATION (meters)	LONG. COND. (Siemens)	TRANS. RES. (Ohm-m^2)
				2882.0		
1	139.9	7.80	7.80	2874.1	0.0557	1092.0
2	77.62	41.84	49.64	2832.3	0.539	3248.3
3	29.95	42.69	92.34	2789.6	1.42	1279.1
4	115.8	41.14	133.4	2748.5	0.355	4767.6
5	298.2	161.0	294.5	2587.4	0.539	48026.6
6	104.0	107.8	402.3	2479.6	1.03	11219.1
7	10.71	360.5	762.8	2119.1	33.65	3863.5
8	30.98	434.9	1197.8	1684.1	14.03	13475.8
9	80.10					

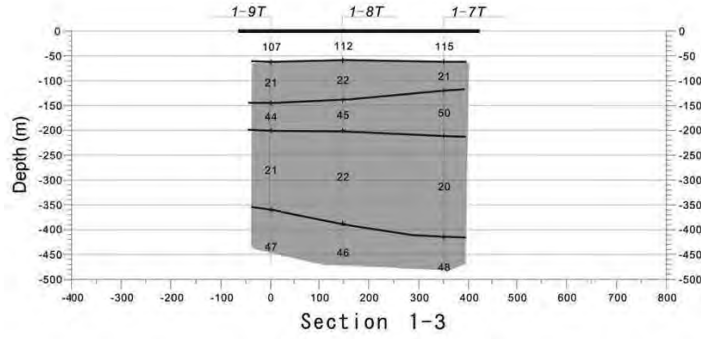
ALL PARAMETERS ARE FREE

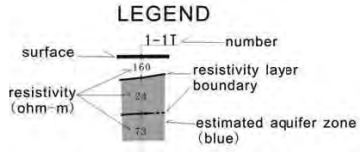
Prepared for

AWBH-1

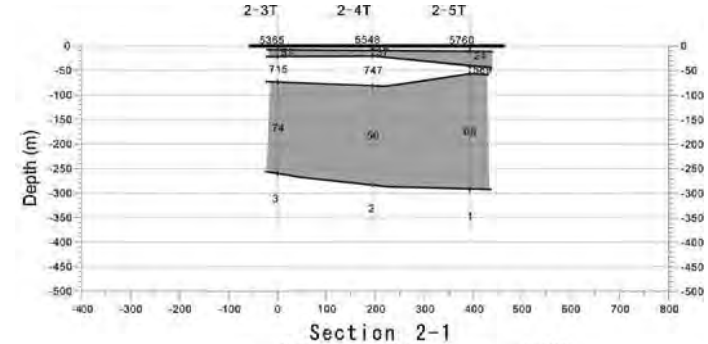

1-3T
1-4T
1-5T
Depth (m)
Section 1-1

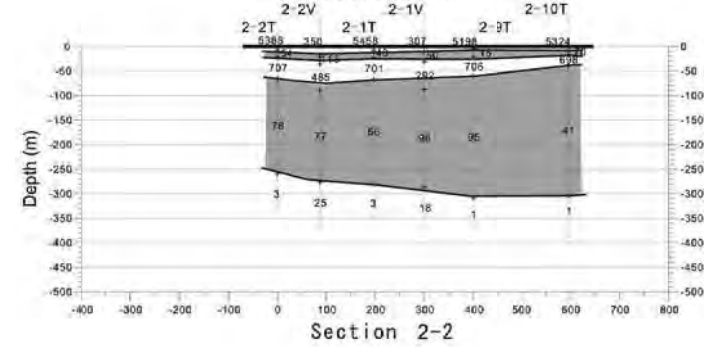

1-2T
1-1T
1-6T
Depth (m)
Section 1-2

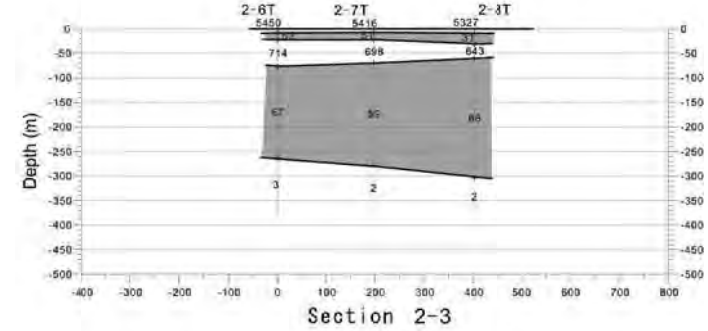

1-9T
1-8T
1-7T
Depth (m)
Section 1-3

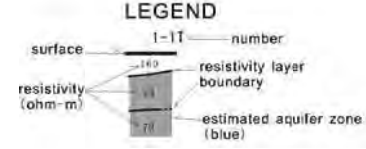

LEGEND
surface
1-1T
number
resistivity (ohm-m)
resistivity layer boundary
estimated aquifer zone (blue)

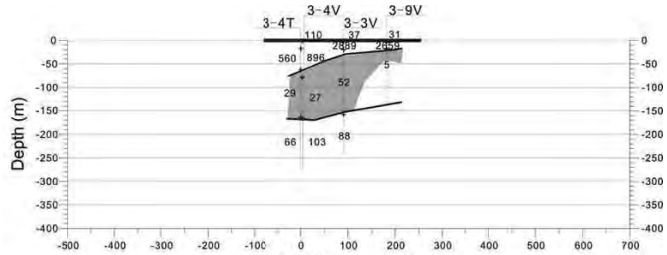
AWBH-2


2-3T
2-4T
2-5T
Depth (m)
Section 2-1

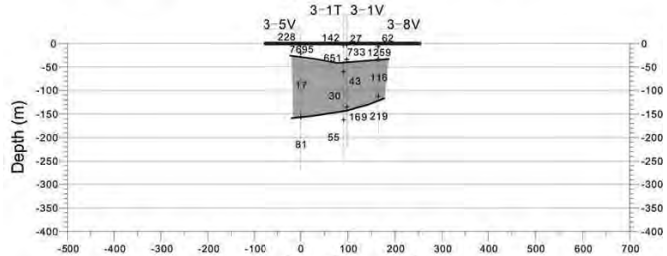

2-2V
2-1V
2-10T
2-2T
2-1T
2-9T
Depth (m)
Section 2-2


2-6T
2-7T
2-8T
Depth (m)
Section 2-3

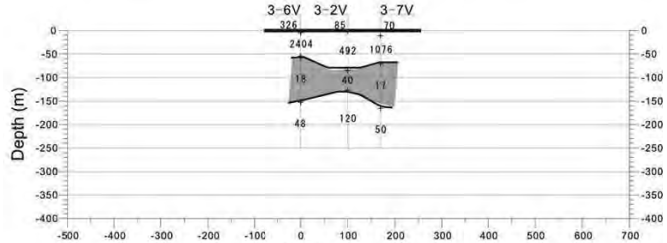

LEGEND
surface
1-1T
number
resistivity (ohm-m)
resistivity layer boundary
estimated aquifer zone (blue)



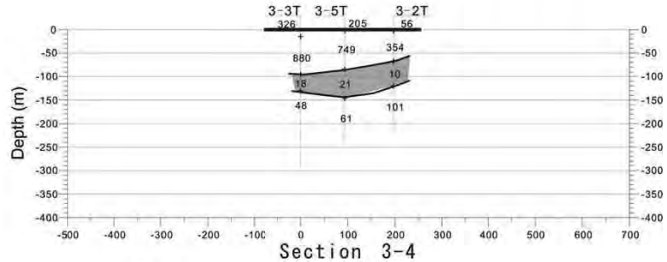
Section 3-1



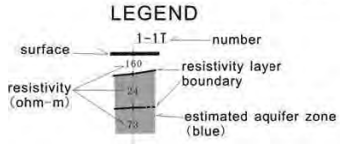
Section 3-2

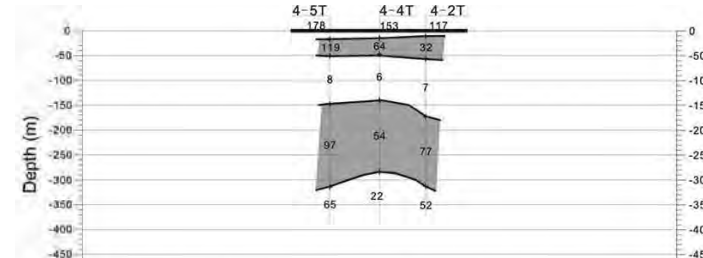


Section 3-3

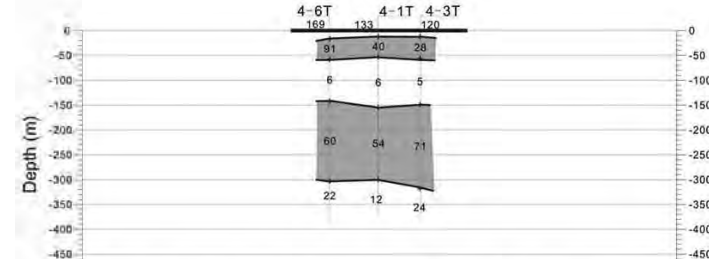


Section 3-4

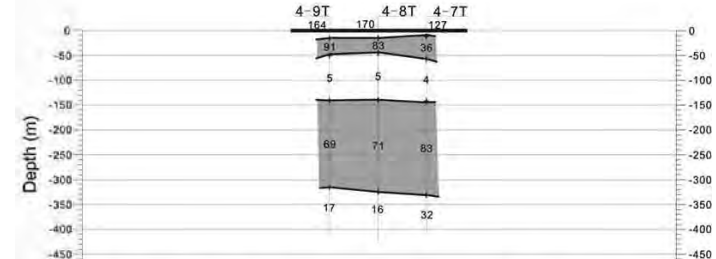




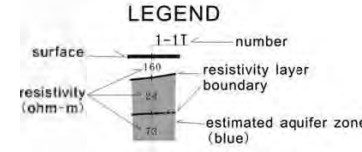
Section 4-1



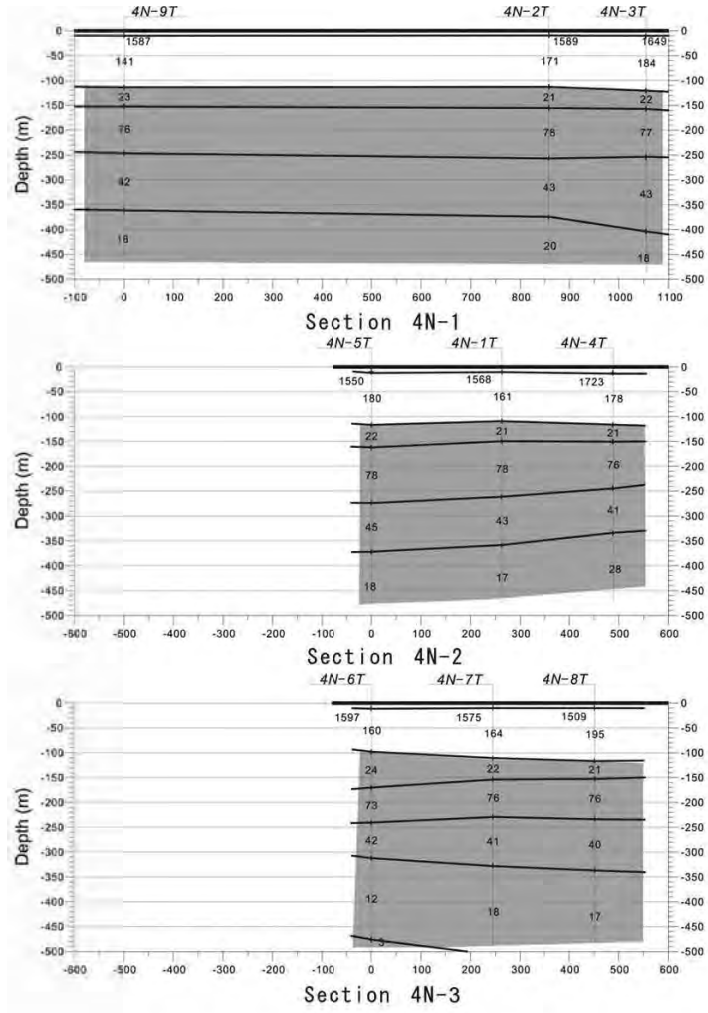
Section 4-2



Section 4-3



AWBH-4N



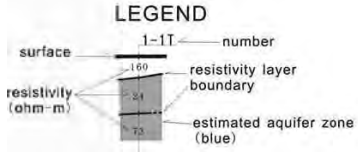
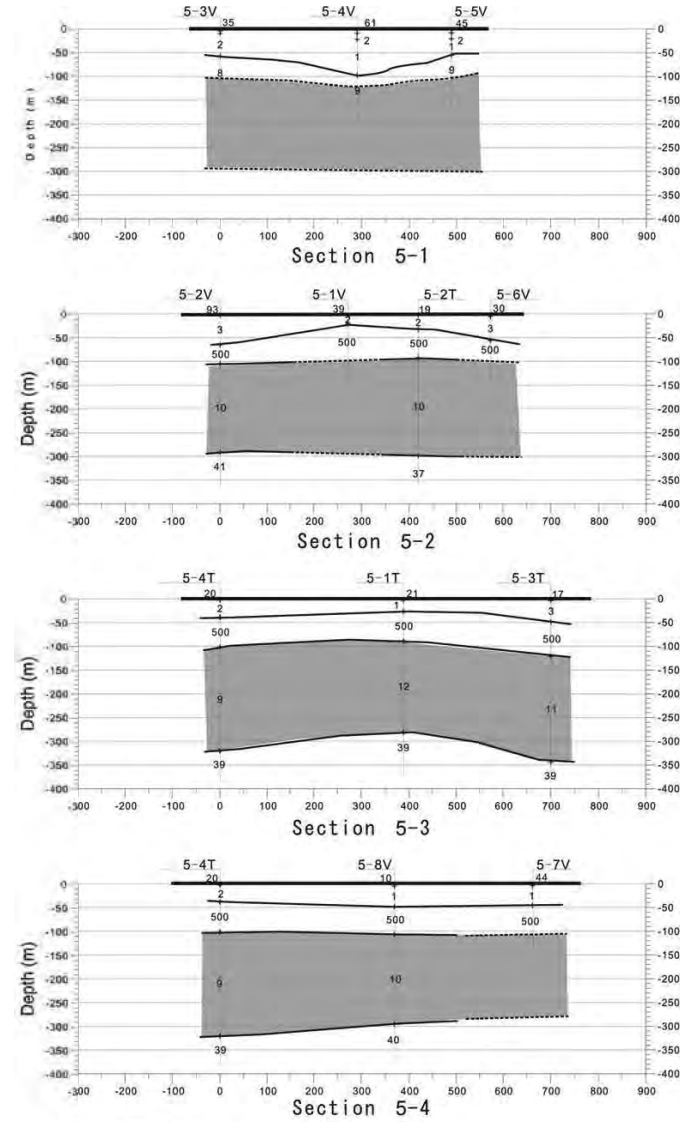
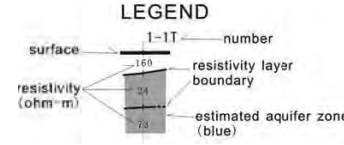
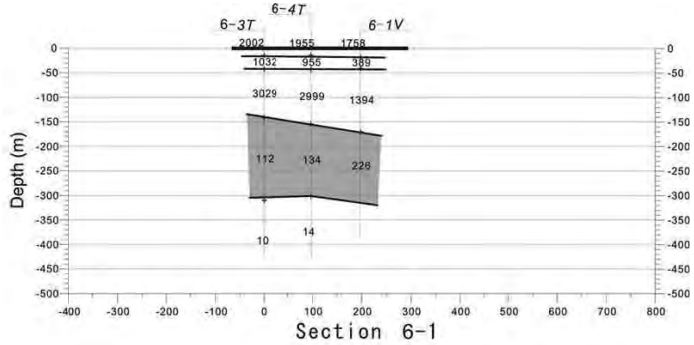


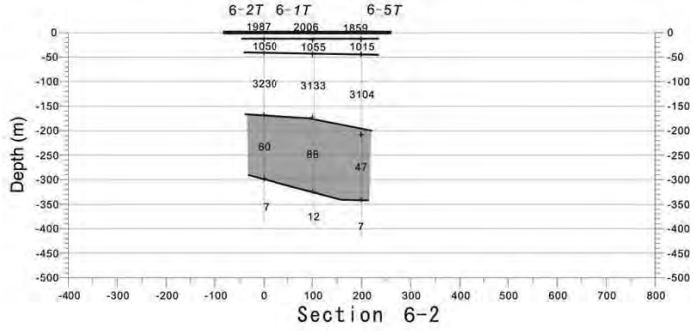
Fig. 4-1 Resistivity structure sections at site BH4N

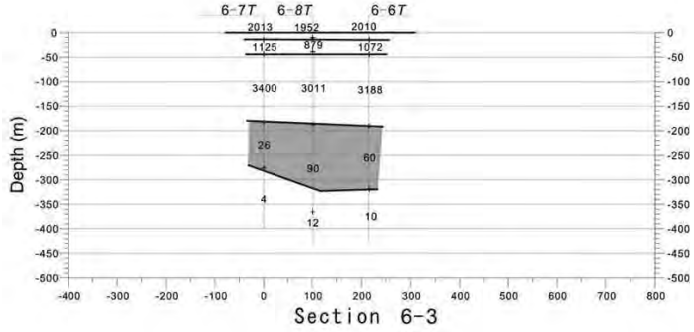
AWBH-5






6-3T
6-4T
6-1V
Depth (m)
Section 6-1


6-2T
6-1T
6-5T
Depth (m)
Section 6-2


6-7T
6-8T
6-6T
Depth (m)
Section 6-3

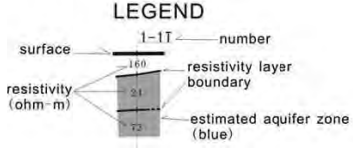
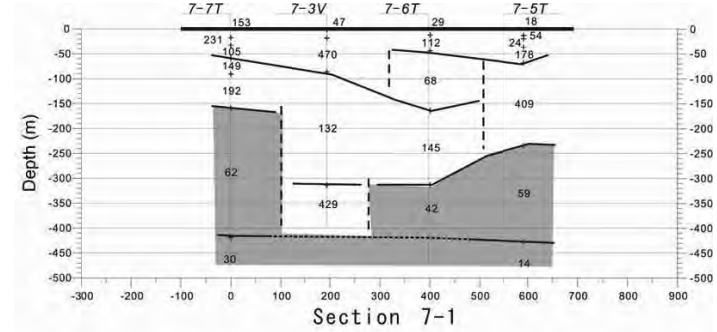
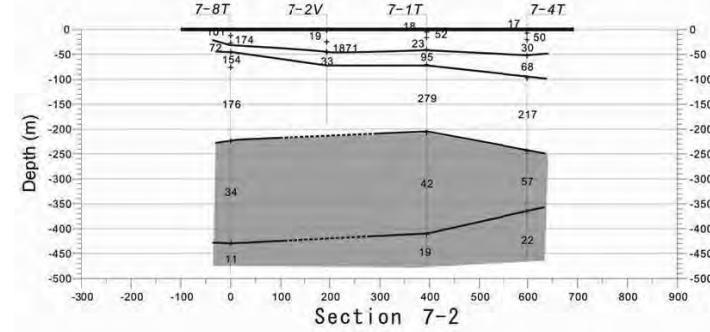
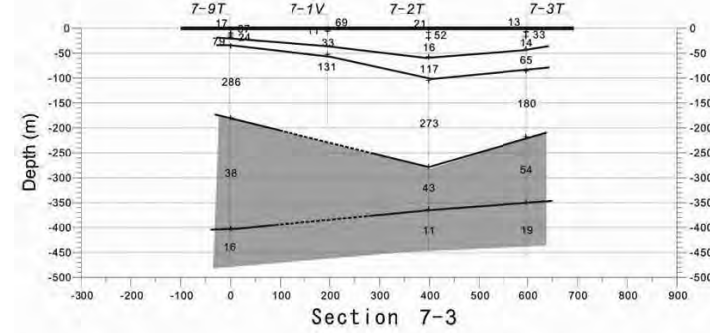
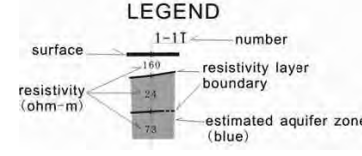

LEGEND
surface
1-1T
number
resistivity
(ohm-m)
resistivity layer
boundary
estimated aquifer zone
(blue)

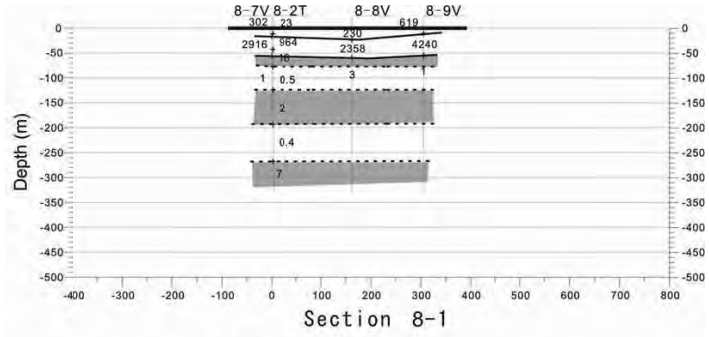
Fig.4-

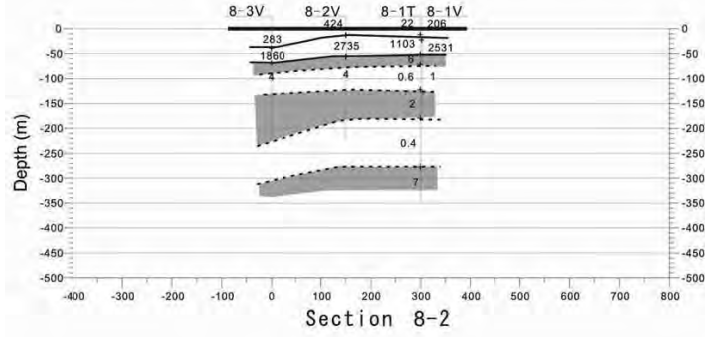

7-7T
7-3V
7-6T
7-5T
Depth (m)
Section 7-1

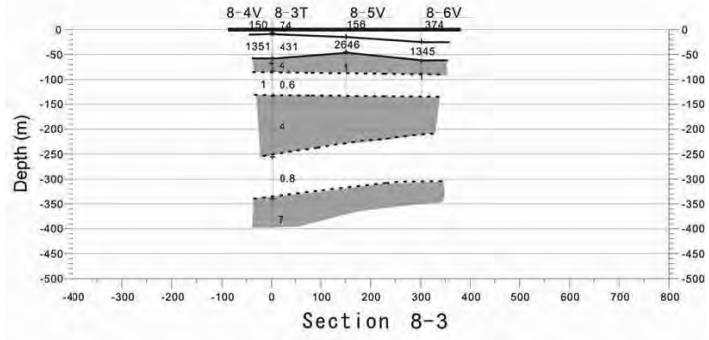

7-8T
7-2V
7-1T
7-4T
Depth (m)
Section 7-2

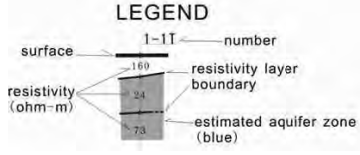

7-9T
7-1V
7-2T
7-3T
Depth (m)
Section 7-3

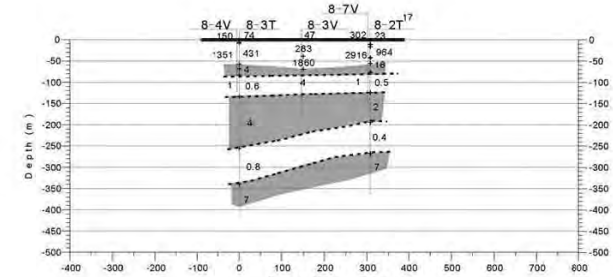

LEGEND
surface
1-1T
number
resistivity
(ohm-m)
resistivity layer
boundary
estimated aquifer zone
(blue)

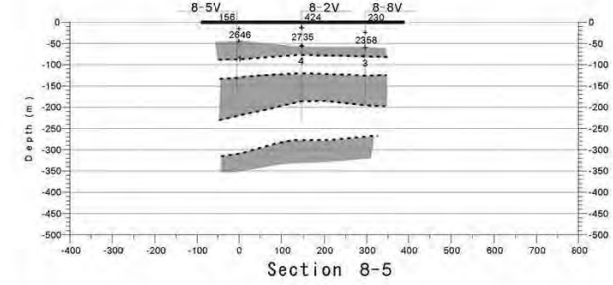


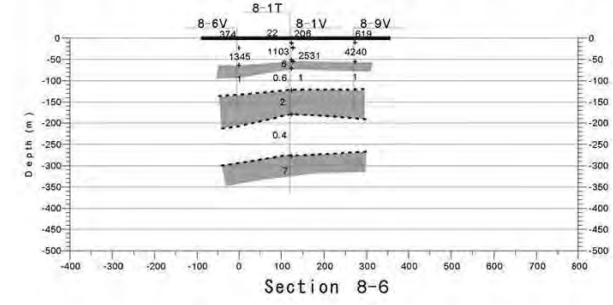












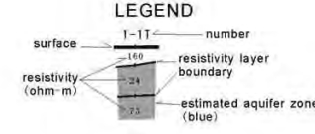
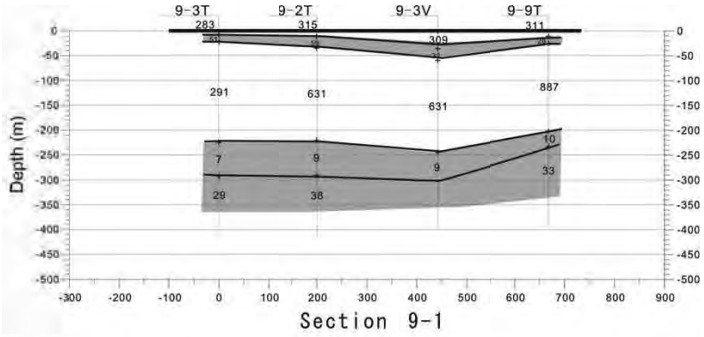
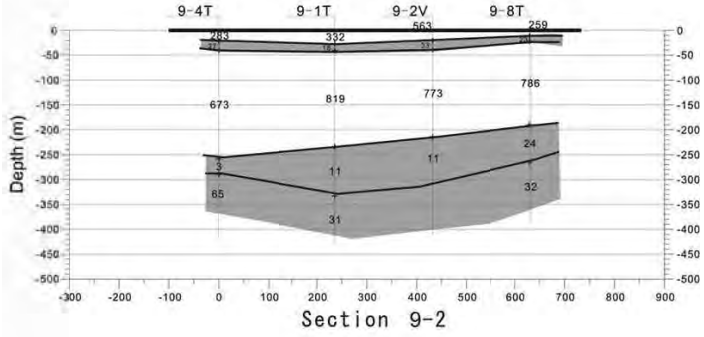
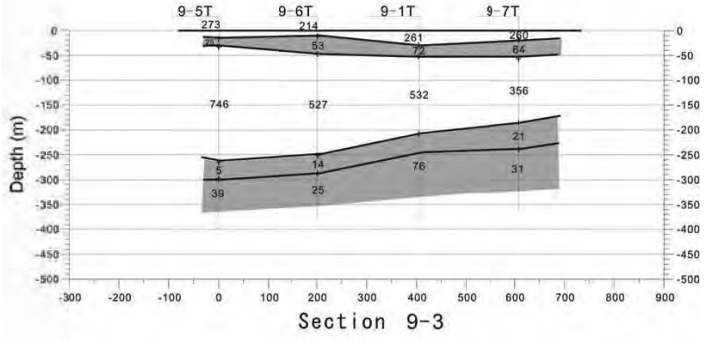
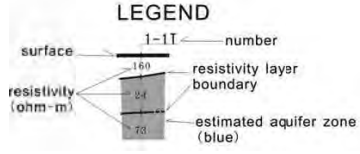


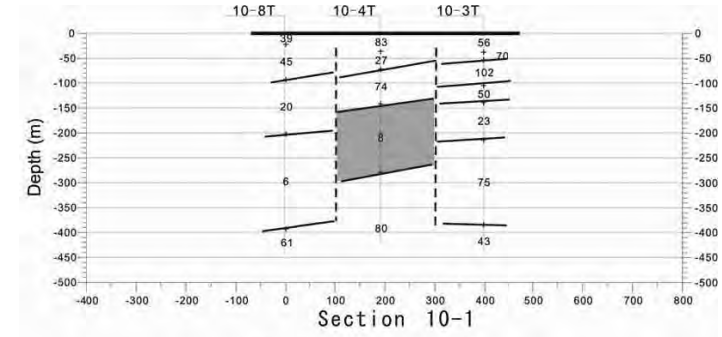
Fig. 4-1	Resistivity structure sections at Site BH(T2)
THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT IN THE MIDDLE AWASH RIVER BASIN IN THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA	
Japan International Cooperation Agency	

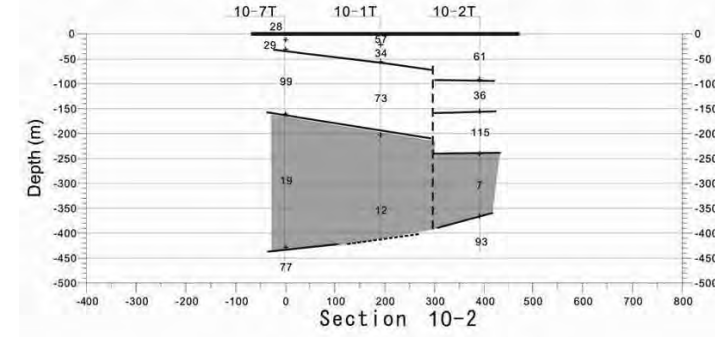

9-3T
9-2T
9-3V
9-9T
Depth (m)
Section 9-1

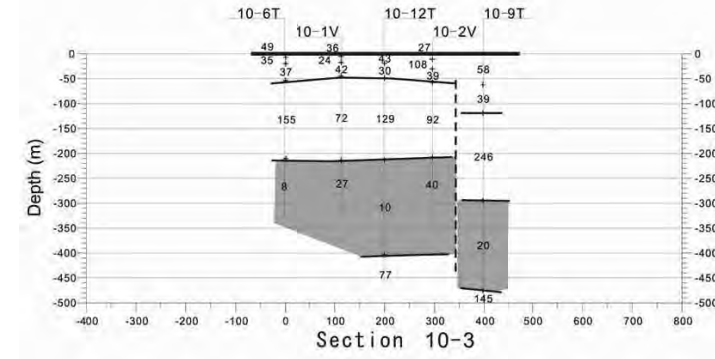

9-4T
9-1T
9-2V
9-8T
Depth (m)
Section 9-2

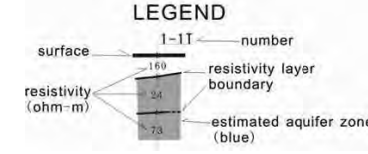

9-5T
9-6T
9-1T
9-7T
Depth (m)
Section 9-3

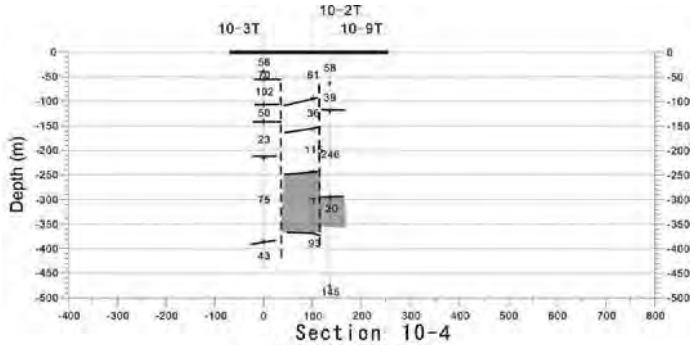

LEGEND
surface
1-1T
number
resistivity (ohm-m)
resistivity layer boundary
estimated aquifer zone (blue)

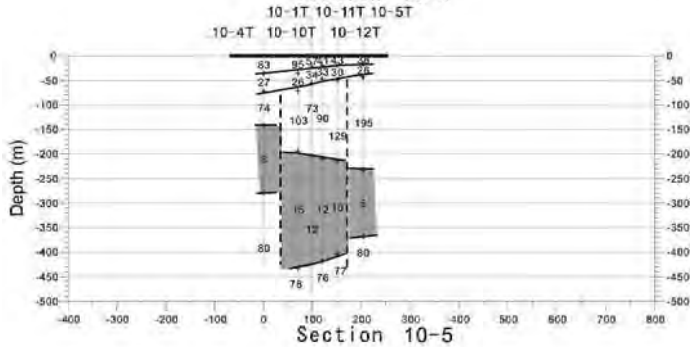

10-8T
10-4T
10-3T
Depth (m)
Section 10-1

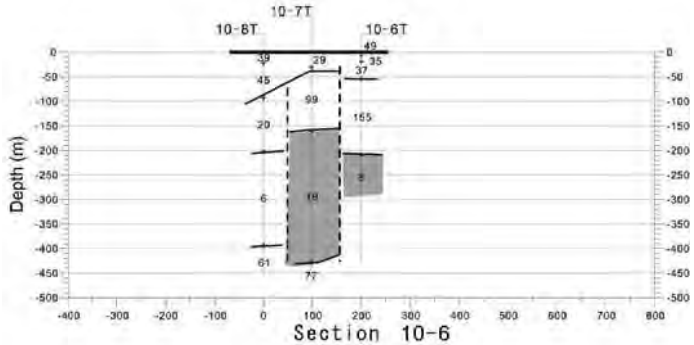

10-7T
10-1T
10-2T
Depth (m)
Section 10-2

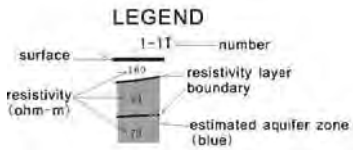

10-6T
10-1V
10-12T
10-2V
10-9T
Depth (m)
Section 10-3

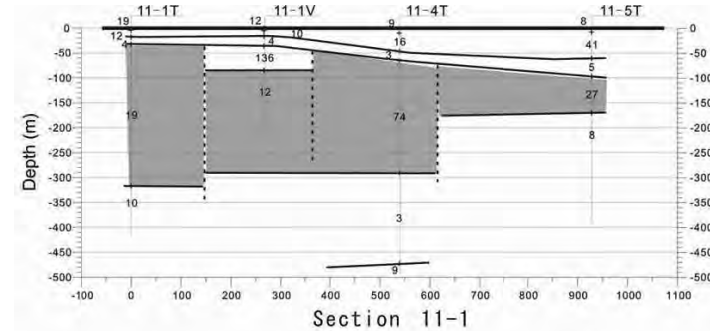

LEGEND
surface
1-1T
number
resistivity (ohm-m)
resistivity layer boundary
estimated aquifer zone (blue)

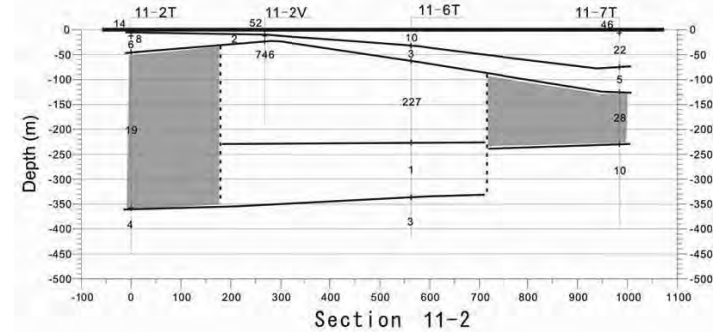

10-2T
10-3T
10-9T
Depth (m)
Section 10-4

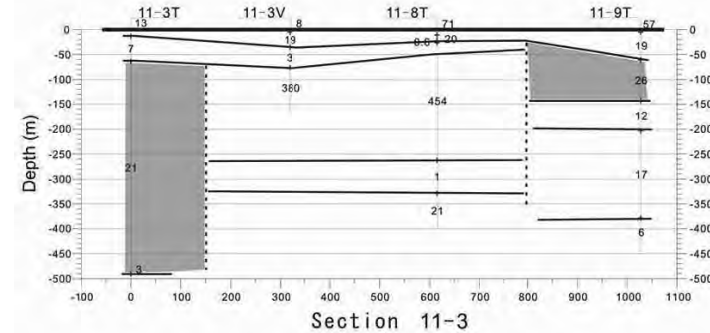

10-1T 10-11T 10-5T
10-4T 10-10T 10-12T
Depth (m)
Section 10-5

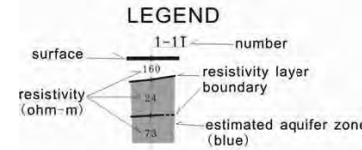

10-7T
10-8T
10-6T
Depth (m)
Section 10-6

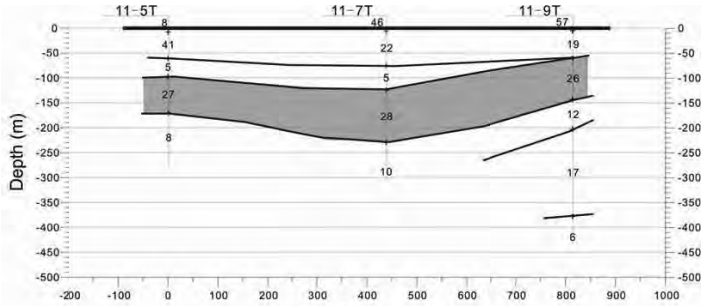

LEGEND
1-1T
number
surface
resistivity
(ohm-m)
resistivity layer
boundary
estimated aquifer zone
(blue)


11-1T
11-1V
11-4T
11-5T
Depth (m)
Section 11-1

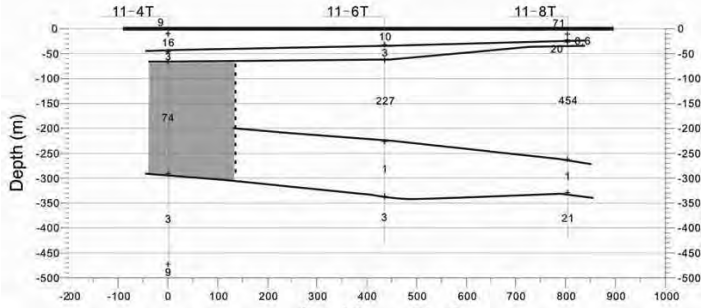

11-2T
11-2V
11-6T
11-7T
Depth (m)
Section 11-2


11-3T
11-3V
11-8T
11-9T
Depth (m)
Section 11-3

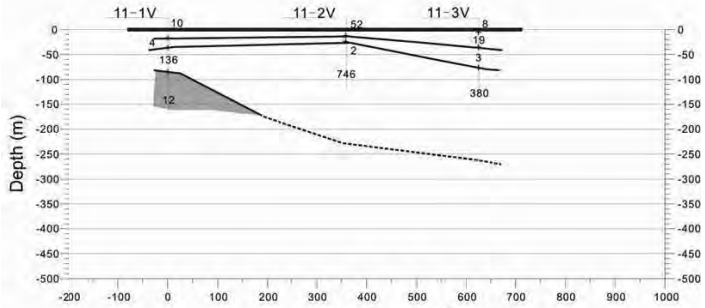

LEGEND
1-1T
number
surface
resistivity
(ohm-m)
resistivity layer
boundary
estimated aquifer zone
(blue)



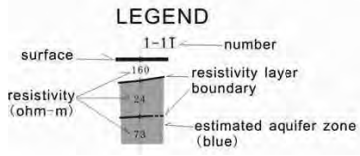
Section 11-4

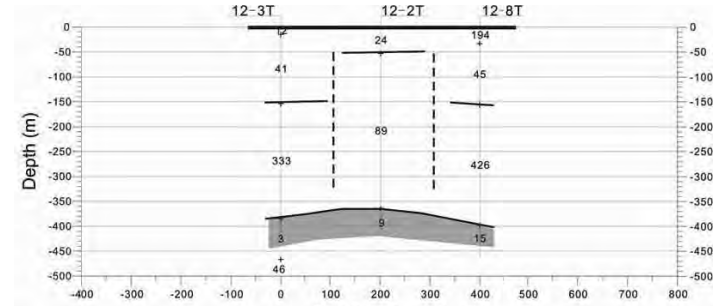


Section 11-5

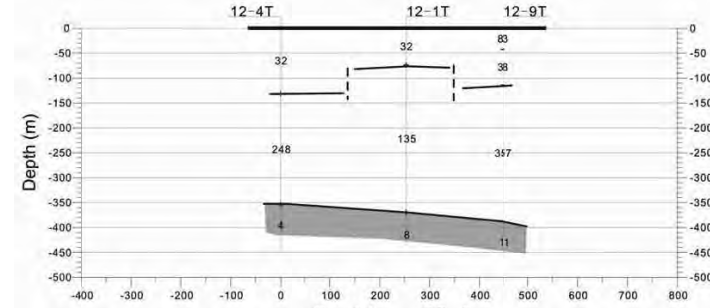


Section 11-6

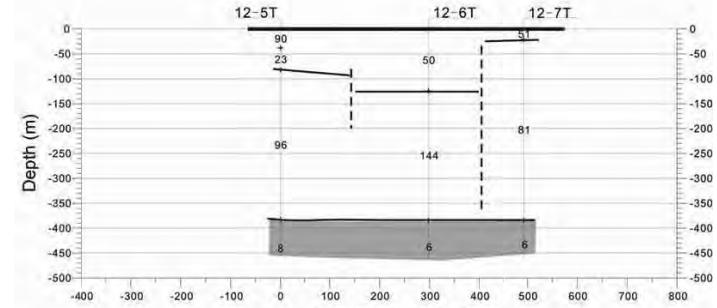




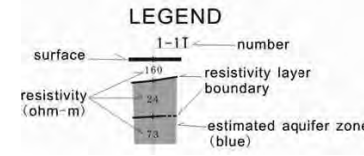
Section 12-1



Section 12-2



Section 12-3



Data 5

Data on New JICA Wells

List for Result of Drilling Point (The Project for Groundwater Resources Assessment in the Middle Awash River Basin in Ethiopia) 2015/9/7

Well Number	Name of Wareda	Name of Kebere	Namu of Village	GPS East(m)	GPS North(m)	GPS Elevation(m)	Target Drillng Depth (m)	Completion Depth (m)	Note
AW BH-1	Arerti	Kersha Amba	Bolo Silase	542642	985361	1760	250	228	
× AW BH-2	Arerti	Melka Jelo	Amora Bete	567437	980741	1151	200	**cancel**	Impossible (many collapse)
AW BH-2	Arerti	Melka Jelo	Amora Bete	567414	980822	1151	250	250	move to 74m north from the first point
AW BH-3	Metehara	Tututa	Nukusa	589167	982682	1032	200	204	
× AW BH-4	Metehara	×	×	598289	986599	997	×	×	Impossible (many collapse)
AW BH-4N		Tututa	Medeba	587754	977437	1044	220	117	Second Point
AW BH-5	Metehara	Gelcha	Addisketema	601565	980024	959	140	140	
× AW BH-6	Welenchiti	Gerinuradera	Sogudo	554730	959164	1315	200	**cancel**	Impossible (many collapse)
AW BH-6	Welenchiti	Feto	Feto	552789	958778	1357	250	247	**New Point**
AW BH-7	Merti	Abo Mesa	Lekicho	586813	949687	1239	250	250	**Dry Hole**
AW BH-8	Metehara	Fateledi	Chobii	615265	966369	1221	230	208	**Dry Hole**
AW BH-9	Welenchiti	Ararso Bero	Gerbel	555025	936983	1424	200	272	
× AW BH-10	Dera	×	×	535219	922072	1629	**400**	**cancel**	
AW BH-11	Sire	Gesala Chacha	Merfe	553313	916009	1810	250	227	
AW BH-12	Shola Gebeya	Sekoru	Dehaye	550405	1027427	2858	220	220	
						Total of Drilling Depth (m)	**3260**	**2363**	

Table Result of installation of a Self-water Level Recorder (Levelogger and Barometer) and GPS 2015/9/7

Well Number	Static Water level(m) at Seting Time			Setting up depth (GL-m)			Serial number		GPS Data			memo
	① Standaerd (m) top of well	② Heigt (m) from ground	③=①－② Revision Level (GL-m)	Levelogger S & DL (GL-minus)	Barometer (GL-minus)	Group of Barometer	Levelogger S & DL	Barometer	East	North	Altitude (m)	
AW BH-1	12.968	0.55	12.418	43m	1m	sole set up	4818743	4820810	542642	985361	1760	
AW BH-2	173.398	0.6	172.798	204m	1m	sole set up	4818748	4818609	567414	980822	1151	74m north from the first point
AW BH-3	68.214	0.24	67.974	98m	×	Group set up	4818739	481860	589167	982682	1032	
AW BH-4N	87.61	0.55	87.06	102m	×		4818740		587754	977437	1044	many collapse
AW BH-5	2.934	0.77	2.164	30m	1m		4818738		601565	980024	959	
AW BH-6	175.395	0.8	174.595	205m	1m	sole set up	4818741	4820813	552789	958778	1357	
AW BH-7	_	_	_	×	×	Group set up	×	×	586813	949687	1239	**Dry Hole**
AW BH-8	_	_	_	×	×		×		615265	966369	1221	**Dry Hole**
AW BH-9	140.51	0.4	140.11	170m	1m	sole set up	4818742	4820812	555025	936983	1424	
AW BH-11	69.705	0.6	69.105	100m	1m	sole set up	4818747	4820815	553313	916009	1810	
AW BH-12	163.86	0.5	163.36	193m	1m	sole set up	4818745	4820814	550405	1027427	2858	

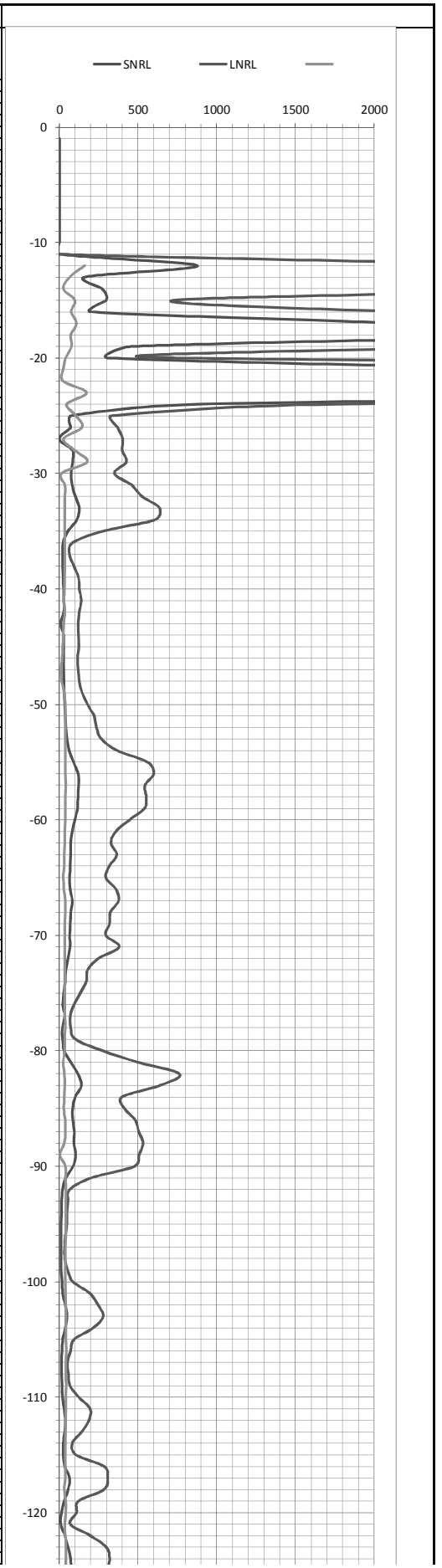
Table - Result of seting Data for Self-water Level Recorder (Levelogger and Barometer) 2015/9/7 0:00

Well Number	Startic Water level(m) at setiing Time			Seting depth (GL-m)				Serial number		Analysis by Fieid kit (simple method)					
	① Standaerd (m) top of well	② Heigt (m) from ground	③=①－② Revision Level (GL-m)	Levelogger S & DL (GL-minus)	Barometer (GL-minus)	Group of Barometer	WLR & Barometer Started Time & Date	Levelogger S & DL	Barometer	EC (mS/m)	pH	F (mg/l)	Fe (mg/l)	ORP (mV)	water temp. (℃)
AW BH-1	12.968	0.55	12.418	43m	1m	sole set up	1:00 pm 14-Apr.-2015	4818743	4820810	60.5	7.48	0.2～0.4	<0.2	214	32.1
AW BH-2	173.398	0.60	172.798	204m	1m	sole set up	1:00 pm 25-July-2015	4818748	4818609	107.9	8.1	3～8	<0.2	136	50.8
AW BH-3	68.214	0.24	67.974	98m	×	Group set up	15:00pm 5-Sep.-2014	4818739	481860	174.6	8.17	3～8	－	172	45.4
AW BH-4N	87.61	0.55	87.06	102m	×		10:10am 23-Apr.-2014	4818740		185.0	8.39	1.5～3	<0.2	128	48
AW BH-5	2.934	0.77	2.164	30m	1m		10:10:10 am 23-Apr.-2014	4818738		159.0	8.5	0.5	－	－	32.2
AW BH-6	175.395	0.8	174.595	205m	1m	sole set up	1:00 pm 25-August-2015	4818741	4820813	89.0	7.75	1.5～3	<0.2	131	42.5
AW BH-7	×	×	×	×	×	Group set up	×	×	×	×	×	×	×	×	×
AW BH-8	×	×	×	×	×		×	×		×	×	×	×	×	×
AW BH-9	140.51	0.4	140.11	170m	1m	sole set up	10:00am 27-Sep.-2014	4818742	4820812	45.6	7.63	1.5～3	－	244	33.1
AW BH-11	69.705	0.6	69.105	100m	1m	sole set up	11:00am 6-Apr.-2015	4818747	4820815	46.7	7.81	0.2～0.4	<0.2	214	28.1
AW BH-12	163.86	0.5	163.36	193m	1m	sole set up	10:00am 23-Oct.-2014	4818745	4820814	20.4	8.25	0.2～0.4	－	170	22.8

Company Name: TAM Geo-Engineering PLC	Document No. IOF/TAM G/020
Title: Electrical Logging	Issue: No.1 / Page 1 of 2

Site No. AWBH 1

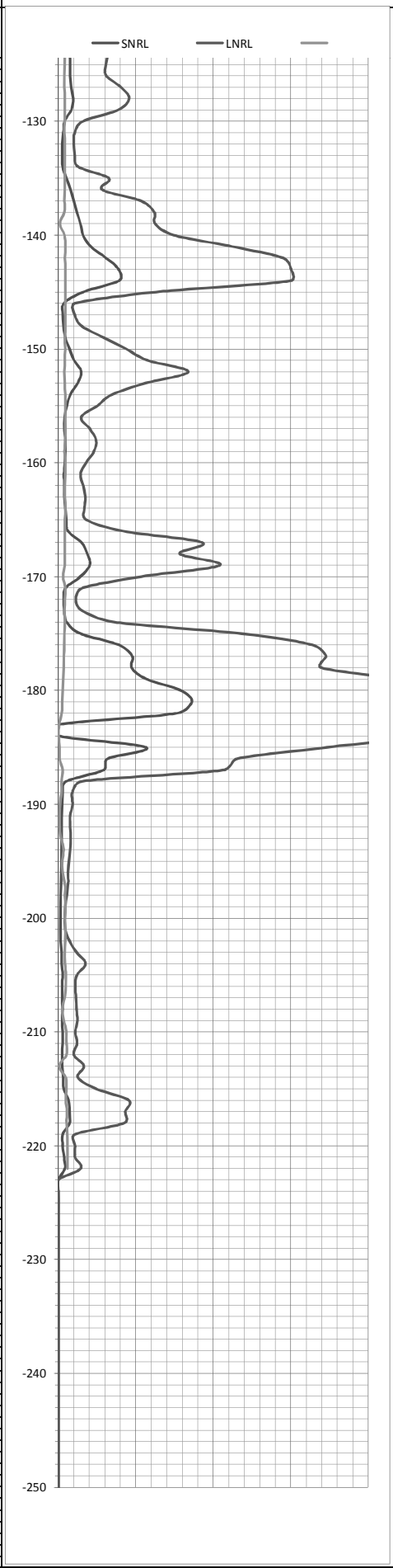
Depth (m)	Short Normal: Instrument Reading R (Ω-m)	Short Normal: R *12.56 = ρ (Ω-m)	Long Normal: Instrument Reading ρ (Ω-m)	Long Normal: R *25.12 = ρ (Ω-m)	
-1		0		0	
-2		0		0	
-3		0		0	
-4		0		0	
-5		0		0	
-6		0		0	
-7		0		0	
-8		0		0	
-9		0		0	
-10		0		0	
-11		0		0	
-12	69.9	877.944	117.5	2951.6	161.6
-13	12.92	162.2752	88.8	2230.656	65.9
-14	21.7	272.552	132	3315.84	26.5
-15	23.8	298.928	28.9	725.968	99.4
-16	16.11	202.3416	89.1	2238.192	76.5
-17	170.5	2141.48	226	5677.12	109.7
-18	253	3177.68	326	8189.12	74
-19	36.3	455.928	119.5	3001.84	77.7
-20	25	314	30.5	766.16	41.3
-21	304	3818.24	533	13388.96	24.5
-22	975	12246	1741	43733.92	24.8
-23	529	6644.24	637	16001.44	173.5
-24	70.3	882.968	70.5	1770.96	48
-25	6.21	77.9976	13.24	332.5888	106.3
-26	5.82	73.0992	14.75	370.52	145.1
-27	6.68	0	16.06	403.4272	27.3
-28	6.7	84.152	15.91	399.6592	98.8
-29	6.83	85.7848	16.97	426.2864	178
-30	5.98	75.1088	13.96	350.6752	14.21
-31	6.51	81.7656	18.29	459.4448	36.6
-32	8.14	102.2384	21	527.52	36.7
-33	10.17	127.7352	25.4	638.048	35.3
-34	8.95	112.412	24.3	610.416	34.8
-35	4.43	55.6408	11.01	276.5712	34.4
-36	1.942	24.39152	3.39	85.1568	35.1
-37	1.739	21.84184	2.57	64.5584	34.2
-38	1.86	23.3616	3.71	93.1952	35
-39	1.97	24.7432	4.87	122.3344	35.6
-40	2.28	28.6368	5.13	128.8656	32.5
-41	2.35	29.516	5.58	140.1696	29.9
-42	2.33	29.2648	5.12	128.6144	35
-43	0.799	10.03544	4.74	119.0688	28.9
-44	2.21	27.7576	4.87	122.3344	24.9
-45	2.15	27.004	5	125.6	23
-46	2.2	27.632	4.65	116.808	19.8
-47	2.19	27.5064	4.75	119.32	10.5
-48	2.27	28.5112	5.09	127.8608	16.52
-49	2.49	31.2744	5.82	146.1984	33.3
-50	2.73	34.2888	7.14	179.3568	38.6
-51	3.13	39.3128	8.83	221.8096	39.5
-52	3.48	43.7088	9.43	236.8816	40
-53	4.03	50.6168	10.64	267.2768	39.8
-54	4.95	62.172	14.66	368.2592	39.7
-55	7.27	91.3112	22.3	560.176	38.4
-56	9.53	119.6968	23.9	600.368	39.6
-57	9.87	123.9672	21.7	545.104	40.6
-58	9.48	119.0688	22	552.64	40.3
-59	9.22	115.8032	21.6	542.592	40.1
-60	7.92	99.4752	17.78	446.6336	38.1
-61	6.54	82.1424	14.31	359.4672	36.3
-62	5.87	73.7272	13.07	328.3184	34.9
-63	5.84	73.3504	14.55	365.496	32.5
-64	5.61	70.4616	12.68	318.5216	30.5
-65	5.26	66.0656	11.81	296.6672	25.4
-66	5.62	70.5872	14.31	359.4672	30.3
-67	6.62	83.1472	15.03	377.5536	37.8
-68	5.9	74.104	12.94	325.0528	37.3
-69	5.6	70.336	12.72	319.5264	36.8
-70	5.29	66.4424	11.78	295.9136	37
-71	5.53	69.4568	15.16	380.8192	36.9
-72	4.43	55.6408	9.97	250.4464	36
-73	3.47	43.5832	7.17	180.1104	34.1
-74	2.98	37.4288	6.86	172.3232	36.4
-75	2.37	29.7672	5.35	134.392	36.8
-76	1.871	23.49976	3.78	94.9536	37
-77	2.79	35.0424	2.79	70.0848	36.7
-78	1.616	20.29696	2.88	72.3456	38
-79	1.763	22.14328	4.08	102.4896	35.6
-80	2.52	31.6512	10.92	274.3104	35.7
-81	5.9	74.104	19.98	501.8976	25.4
-82	9.42	118.3152	30.4	763.648	32.5
-83	11.25	141.3	25.5	640.56	34.4
-84	8.1	101.736	15.86	398.4032	33.4
-85	6.77	85.0312	16.51	414.7312	29.4
-86	6.88	86.4128	19.25	483.56	37.9
-87	7.57	95.0792	20.1	504.912	39.2
-88	7.47	93.8232	21.2	532.544	32.6
-89	8.22	103.2432	20.2	507.424	4.3
-90	7.03	88.2968	19.06	478.7872	40.1
-91	3.36	42.2016	8.19	205.7328	40.4
-92	1.691	21.23896	2.72	68.3264	43.1
-93	1.262	15.85072	2.2	55.264	41.5
-94	1.119	14.05464	1.995	50.1144	40.9
-95	0.956	12.00736	1.94	48.7328	42
-96	0.839	10.53784	1.574	39.53888	41
-97	0.808	10.14848	1.35	33.912	39.7
-98	0.849	10.66344	1.45	36.424	39.2
-99	0.93	11.6808	2.17	54.5104	37.9
-100	1.402	17.60912	3.45	86.664	38.1
-101	1.757	22.06792	7.74	194.4288	39
-102	3.03	38.0568	9.8	246.176	40.9
-103	3.93	49.3608	11.1	278.832	40.8
-104	3.13	39.3128	8.63	216.7856	43.1
-105	1.774	22.28144	3.76	94.4512	43.2
-106	1.438	18.06128	2.87	72.0944	44.6
-107	1.186	14.89616	2.05	51.496	43.5
-108	1.224	15.37344	2.37	59.5344	42.1
-109	1.381	17.34536	2.71	68.0752	44.6
-110	1.657	20.81192	4.92	123.5904	42.1
-111	2.47	31.0232	7.81	196.1872	40.8
-112	3.2	40.192	7.49	188.1488	40.7
-113	2.75	34.54	5.72	143.6864	40.2
-114	2.03	25.4968	3.28	82.3936	40.1
-115	2.11	26.5016	4.29	107.7648	40
-116	2.86	35.9216	11.37	285.6144	38.2
-117	5.23	65.6888	12.26	307.9712	37.5
-118	4.5	56.52	11.32	284.3584	33.4
-119	2.51	31.5256	4.88	122.5856	40.7
-120	1.167	14.65752	4.39	110.2768	40.7
-121	0.795	9.9852	2.8	70.336	36.3
-122	2.92	36.6752	7.93	199.2016	37.7
-123	4.46	56.0176	11.93	299.6816	43.6
-124	5.75	72.22	12.75	320.28	42.7
-125	5.99	75.2344	12.23	307.2176	40.9
-126	6.05	75.988	12.34	309.9808	40.4



For The Consultant:
Name: _____
Position: _____
Signature: _____

For the Contractor
Name: _____
Position: _____
Signature: _____

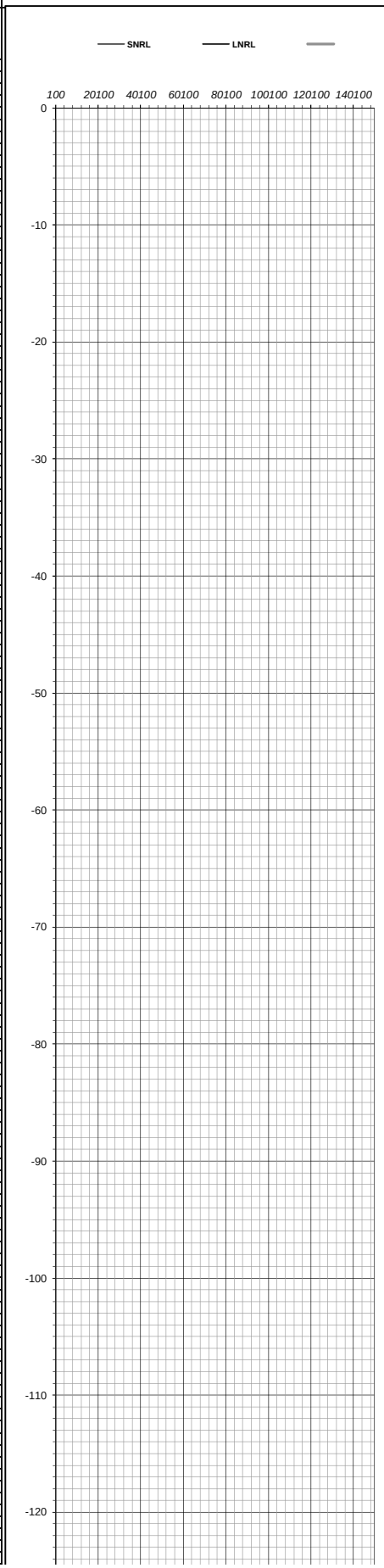
Depth (m)	Short Normal		Long Normal		
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-127	6.52	81.8912	16.08	403.9296	40
-128	7.65	96.084	18.2	457.184	42.5
-129	6.72	84.4032	15.43	387.6016	42.1
-130	3.23	40.5688	6.33	159.0096	41.2
-131	2.61	32.7816	4.22	106.0064	38.6
-132	2.11	26.5016	4.02	100.9824	42.9
-133	2.11	26.5016	4.22	106.0064	43.6
-134	2.29	28.7624	5.12	128.6144	42.3
-135	4.12	51.7472	12.99	326.3088	42.6
-136	6.25	78.5	11.25	282.6	40.7
-137	8.04	100.9824	21.3	535.056	40.5
-138	9.61	120.7016	24.7	620.464	38.2
-139	11.39	143.0584	24.9	625.488	10.06
-140	12.7	159.512	29.6	743.552	40.4
-141	16.64	208.9984	44.7	1122.864	45.2
-142	24.5	307.72	57.7	1449.424	43.7
-143	31	389.36	59.8	1502.176	46.5
-144	31.2	391.872	59.8	1502.176	45.9
-145	12.66	159.0096	25.1	630.512	46.6
-146	2.89	36.2984	4.28	107.5136	45.5
-147	2.38	29.8928	4.22	106.0064	44.1
-148	2.68	33.6608	6.08	152.7296	45.4
-149	3.6	45.216	11.69	293.6528	42.9
-150	5.75	72.22	17.45	438.344	44.7
-151	8.16	102.4896	22.9	575.248	41.9
-152	11.82	148.4592	33.4	839.008	40
-153	9.94	124.8464	22.5	565.2	41.6
-154	6.24	78.3744	13.85	347.912	44.3
-155	4.36	54.7616	10.03	251.9536	44.6
-156	3.28	41.1968	5.89	147.9568	45.1
-157	3.02	37.9312	8.07	202.7184	44.8
-158	3.65	45.844	9.72	244.1664	44.3
-159	3.6	45.216	9.17	230.3504	40.1
-160	3.36	42.2016	7.14	179.3568	45.1
-161	2.89	36.2984	5.71	143.4352	44.2
-162	3.17	39.8152	6.39	160.5168	42.4
-163	3.17	39.8152	6.96	174.8352	42.1
-164	3.6	45.216	6.73	169.0576	45.7
-165	4.12	51.7472	7.15	179.608	42.8
-166	4.98	62.5488	16.58	416.4896	43.1
-167	11.82	148.4592	36.9	926.928	42.6
-168	14.92	187.3952	31.2	783.744	41.7
-169	16.19	203.3464	41.5	1042.48	40.7
-170	11.4	143.184	21.3	535.056	30.8
-171	3.74	46.9744	6.21	155.9952	45
-172	2.77	34.7912	4.53	113.7936	43.1
-173	3.1	38.936	6.15	154.488	40
-174	4.27	53.6312	14.43	362.4816	42.2
-175	11.28	141.6768	47	1180.64	40.1
-176	31.1	390.616	65.2	1637.824	39.7
-177	38	477.28	68.8	1728.256	36.6
-178	37.7	473.512	67.5	1695.6	35.5
-179	45.2	567.712	88.6	2225.632	33.6
-180	63	791.28	112.5	2826	29.5
-181	68.7	862.872	104.4	2622.528	26.6
-182	61.1	767.416	96.3	2419.056	22.5
-183	0.312	3.91872	94.9	2383.888	5.11
-184	0.296	3.71776	94.1	2363.792	2.9
-185	45	565.2	69	1733.28	8.71
-186	25.4	319.024	45.9	1153.008	9.1
-187	23.2	291.392	42.3	1062.576	27.9
-188	3.94	49.4864	5.94	149.2128	20.6
-189	2.3	28.888	3.58	89.9296	20.4
-190	2.11	26.5016	3.67	92.1904	12.27
-191	1.726	21.67856	3.08	77.3696	7.55
-192	1.652	20.74912	3.09	77.6208	7.94
-193	1.763	22.14328	3.17	79.6304	19.44
-194	1.667	20.93752	3.02	75.8624	34.2
-195	1.633	20.51048	2.7	67.824	25.9
-196	1.553	19.50568	2.54	63.8048	28.6
-197	1.429	17.94824	2.56	64.3072	43.1
-198	1.322	16.60432	2.24	56.2688	43.5
-199	1.126	14.14256	1.813	45.54256	45
-200	1.07	13.4392	1.671	41.97552	43.5
-201	1.144	14.36864	1.791	44.98992	44
-202	1.179	14.80824	2.87	72.0944	44.8
-203	1.671	20.98776	4.66	117.0592	40.9
-204	1.829	22.97224	7.01	176.0912	42.4
-205	2.27	28.5112	4.83	121.3296	50.3
-206	1.933	24.27848	4.34	109.0208	47.7
-207	1.983	24.90648	4.55	114.296	41.1
-208	2.15	27.004	4.66	117.0592	25.3
-209	2.06	25.8736	4.95	124.344	36.5
-210	2.2	27.632	4.36	109.5232	52.2
-211	2.15	27.004	4.82	121.0784	54.1
-212	2	25.12	3.99	100.2288	53.9
-213	2.1	26.376	6.61	166.0432	5.8
-214	2.55	32.028	5.04	126.6048	47.6
-215	2.87	36.0472	9.7	243.664	52
-216	5.34	67.0704	18.07	453.9184	49.2
-217	5.78	72.5968	17.19	431.8128	55.8
-218	5.8	72.848	17.02	427.5424	53.4
-219	2.28	28.6368	4.3	108.016	58.3
-220	2.28	28.6368	4.33	108.7696	58.9
-221	2.96	37.1776	4.32	108.5184	58.8
-222	3.41	42.8296	5.76	144.6912	59.8
-223		0		0	
-224		0		0	
-225		0		0	
-226		0		0	
-227		0		0	
-228		0		0	
-229		0		0	
-230		0		0	
-231		0		0	
-232		0		0	
-233		0		0	
-234		0		0	
-235		0		0	
-236		0		0	
-237		0		0	
-238		0		0	
-239		0		0	
-240		0		0	
-241		0		0	
-242		0		0	
-243		0		0	
-244		0		0	
-245		0		0	
-246		0		0	
-247		0		0	
-248		0		0	
-249		0		0	
-250		0		0	
-251		0		0	
-252		0		0	
-253		0		0	
-254		0		0	
-255		0		0	
-256		0		0	



Company Name: TAM Geo-Engineering PLC	Document No: IOF/TAM G/030	
Title: Electrical Logging	Issue No.1	Page 1 of 2

Site No. AWBH 2

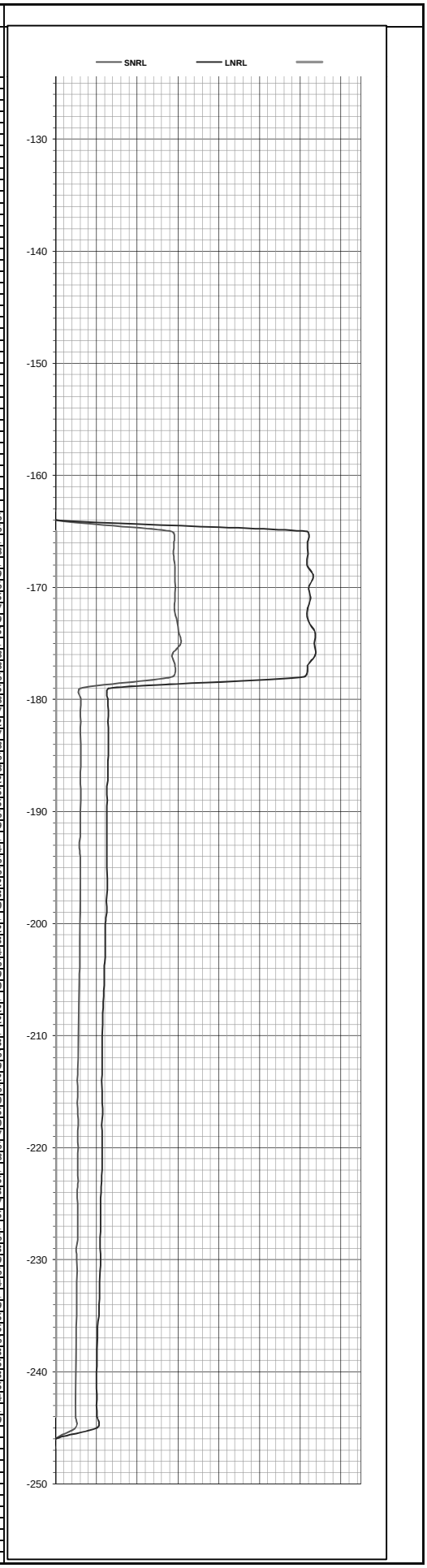
Depth (m)	Short Normal		Long Normal		
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-1		0		0	
-2		0		0	
-3		0		0	
-4		0		0	
-5		0		0	
-6		0		0	
-7		0		0	
-8		0		0	
-9		0		0	
-10		0		0	
-11		0		0	
-12		0		0	
-13		0		0	
-14		0		0	
-15		0		0	
-16		0		0	
-17		0		0	
-18		0		0	
-19		0		0	
-20		0		0	
-21		0		0	
-22		0		0	
-23		0		0	
-24		0		0	
-25		0		0	
-26		0		0	
-27		0		0	
-28		0		0	
-29		0		0	
-30		0		0	
-31		0		0	
-32		0		0	
-33		0		0	
-34		0		0	
-35		0		0	
-36		0		0	
-37		0		0	
-38		0		0	
-39		0		0	
-40		0		0	
-41		0		0	
-42		0		0	
-43		0		0	
-44		0		0	
-45		0		0	
-46		0		0	
-47		0		0	
-48		0		0	
-49		0		0	
-50		0		0	
-51		0		0	
-52		0		0	
-53		0		0	
-54		0		0	
-55		0		0	
-56		0		0	
-57		0		0	
-58		0		0	
-59		0		0	
-60		0		0	
-61		0		0	
-62		0		0	
-63		0		0	
-64		0		0	
-65		0		0	
-66		0		0	
-67		0		0	
-68		0		0	
-69		0		0	
-70		0		0	
-71		0		0	
-72		0		0	
-73		0		0	
-74		0		0	
-75		0		0	
-76		0		0	
-77		0		0	
-78		0		0	
-79		0		0	
-80		0		0	
-81		0		0	
-82		0		0	
-83		0		0	
-84		0		0	
-85		0		0	
-86		0		0	
-87		0		0	
-88		0		0	
-89		0		0	
-90		0		0	
-91		0		0	
-92		0		0	
-93		0		0	
-94		0		0	
-95		0		0	
-96		0		0	
-97		0		0	
-98		0		0	
-99		0		0	
-100		0		0	
-101		0		0	
-102		0		0	
-103		0		0	
-104		0		0	
-105		0		0	
-106		0		0	
-107		0		0	
-108		0		0	
-109		0		0	
-110		0		0	
-111		0		0	
-112		0		0	
-113		0		0	
-114		0		0	
-115		0		0	
-116		0		0	
-117		0		0	
-118		0		0	
-119		0		0	
-120		0		0	
-121		0		0	
-122		0		0	
-123		0		0	
-124		0		0	
-125		0		0	
-126		0		0	



For The Consultant:
Name: _____
Position: _____
Signature: _____

For the Contractor
Name: _____
Position: _____
Signature: _____

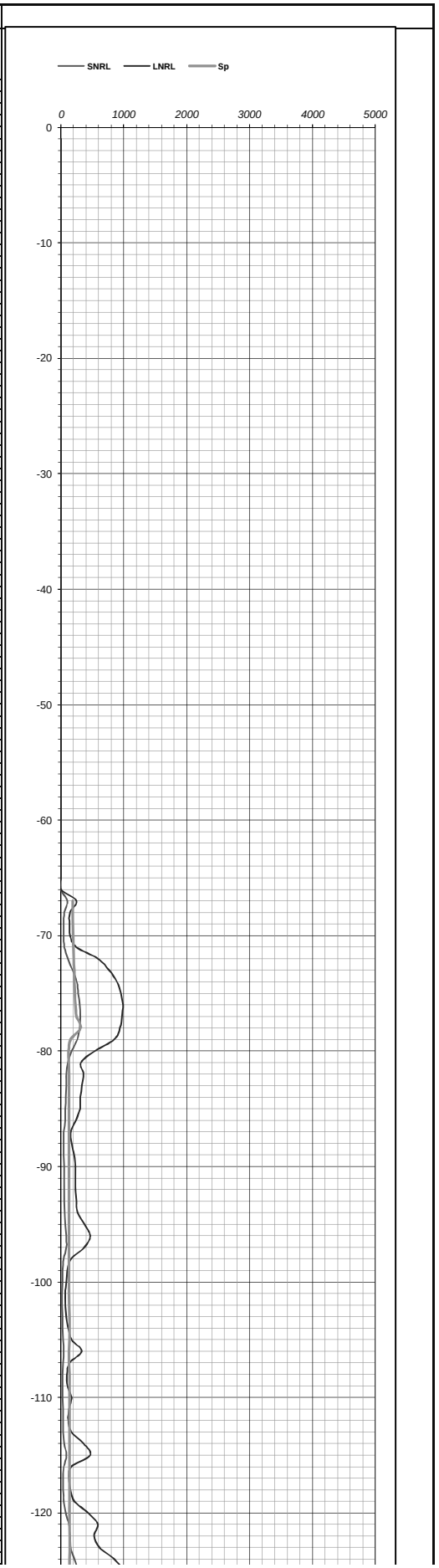
Depth (m)	Short Normal		Long Normal		
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-127		0		0	
-128		0		0	
-129		0		0	
-130		0		0	
-131		0		0	
-132		0		0	
-133		0		0	
-134		0		0	
-135		0		0	
-136		0		0	
-137		0		0	
-138		0		0	
-139		0		0	
-140		0		0	
-141		0		0	
-142		0		0	
-143		0		0	
-144		0		0	
-145		0		0	
-146		0		0	
-147		0		0	
-148		0		0	
-149		0		0	
-150		0		0	
-151		0		0	
-152		0		0	
-153		0		0	
-154		0		0	
-155		0		0	
-156		0		0	
-157		0		0	
-158		0		0	
-159		0		0	
-160		0		0	
-161		0		0	
-162		0		0	
-163		0		0	
-164		0		0	
-165	4520	56771.2	4900	123088	159.6
-166	4630	58152.8	4920	123590.4	160.6
-167	4610	57901.6	4930	123841.6	162.1
-168	4660	58529.6	4917	123515	162.8
-169	4660	58529.6	5040	126604.8	163.1
-170	4680	58780.8	4950	124344	163.9
-171	4670	58655.2	4980	125097.6	164.6
-172	4640	58278.4	4920	123590.4	165
-173	4750	59660	4940	124092.8	165.7
-174	4820	60539.2	5070	127358.4	167.9
-175	4900	61544	5060	127107.2	168.5
-176	4560	57273.6	5080	127609.6	169.1
-177	4670	58655.2	4920	123590.4	169.8
-178	4540	57022.4	4840	121580.8	170.8
-179	989	12421.84	1058	26576.96	174.6
-180	999	12547.44	1026	25773.12	175.5
-181	975	12246	1031	25898.72	176.8
-182	984	12359.04	1027	25798.24	177.7
-183	979	12296.24	1032	25923.84	179.2
-184	984	12359.04	1031	25898.72	181.7
-185	982	12333.92	1035	25999.2	182.8
-186	983	12346.48	1020	25622.4	183.6
-187	969	12170.64	1028	25823.36	184.8
-188	986	12384.16	1004	25220.48	186.2
-189	987	12396.72	1010	25371.2	187.5
-190	976	12258.56	1001	25145.12	188.5
-191	967	12145.52	1004	25220.48	189.6
-192	973	12220.88	1002	25170.24	190.9
-193	924	11605.44	1003	25195.36	192.1
-194	968	12158.08	1000	25120	193.4
-195	968	12158.08	1004	25220.48	194.6
-196	963	12095.28	1011	25396.32	196
-197	962	12082.72	1014	25471.68	197.2
-198	975	12246	998	25069.76	199.3
-199	972	12208.32	999	25094.88	200
-200	961	12070.16	974	24466.88	201
-201	954	11982.24	977	24542.24	202
-202	947	11894.32	974	24466.88	203
-203	942	11831.52	974	24466.88	204
-204	944	11856.64	953	23939.36	206
-205	932	11705.92	954	23964.48	209
-206	928	11655.68	942	23663.04	210
-207	913	11467.28	937	23537.44	211
-208	914	11479.84	924	23210.88	212
-209	903	11341.68	919	23085.28	222
-210	896	11253.76	912	22909.44	231
-211	894	11228.64	910	22859.2	233
-212	890	11178.4	911	22884.32	236
-213	879	11040.24	912	22909.44	239
-214	854	10726.24	907	22783.84	242
-215	870	10927.2	910	22859.2	246
-216	854	10726.24	915	22984.8	250
-217	876	11002.56	918	23060.16	255
-218	885	11115.6	906	22758.72	260
-219	869	10914.64	913	22934.56	267
-220	889	11165.84	915	22984.8	276
-221	865	10864.4	916	23009.92	288
-222	870	10927.2	908	22808.96	161.1
-223	881	11065.36	905	22733.6	161.5
-224	851	10688.56	888	22306.56	162.3
-225	863	10839.28	885	22231.2	162.7
-226	865	10864.4	881	22130.72	163.5
-227	868	10902.08	882	22155.84	164.1
-228	871	10939.76	876	22005.12	164.6
-229	818	10274.08	871	21879.52	165.3
-230	839	10537.84	882	22155.84	165.9
-231	840	10550.4	870	21854.4	166.6
-232	833	10462.48	864	21703.68	167.4
-233	838	10525.28	863	21678.56	169.1
-234	836	10500.16	853	21427.36	169.9
-235	822	10324.32	848	21301.76	170.5
-236	804	10098.24	824	20698.88	171.5
-237	800	10048	818	20548.16	172.6
-238	811	10186.16	814	20447.68	173.3
-239	799	10035.44	812	20397.44	173.5
-240	797	10010.32	803	20171.36	174.3
-241	789	9909.84	801	20121.12	175
-242	795	9985.2	807	20271.84	175.4
-243	791	9934.96	805	20221.6	176.1
-244	788	9897.28	813	20422.56	174.9
-245	782	9821.92	811	20372.32	
-246		0		0	
-247		0		0	
-248		0		0	
-249		0		0	
-250		0		0	
-251		0		0	
-252		0		0	
-253		0		0	
-254		0		0	
-255		0		0	
-256		0		0	



Company Name: TAM Geo-Engineering PLC	Document No: IOF/TAM G/030	
Title: Electrical Logging	Issue No.1	Page 1 of 2

Site No. AWBH 3

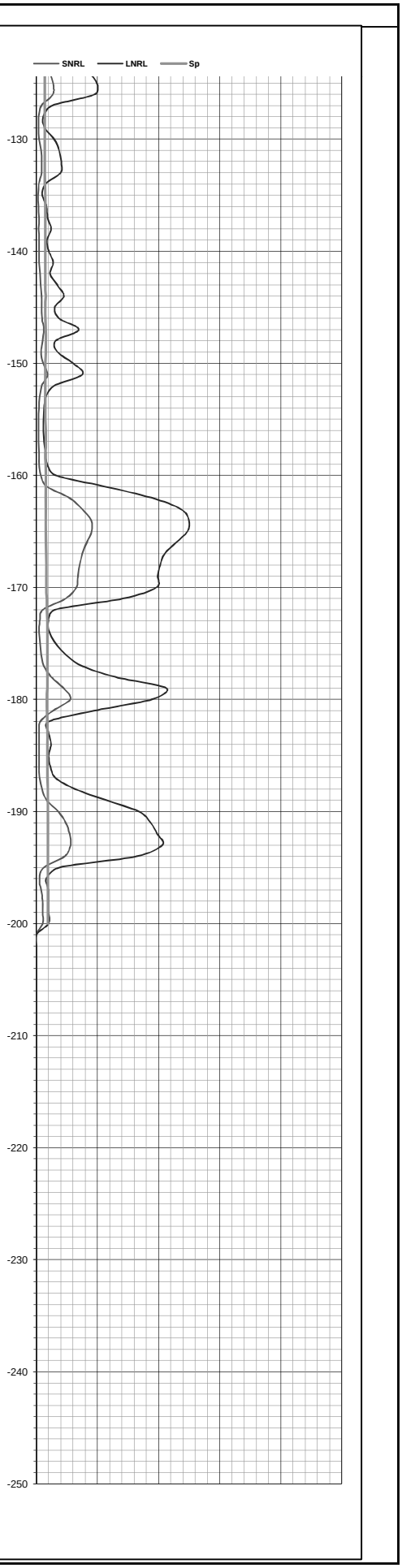
Depth (m)	Short Normal		Long Normal		Sp
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-1		0		0	
-2		0		0	
-3		0		0	
-4		0		0	
-5		0		0	
-6		0		0	
-7		0		0	
-8		0		0	
-9		0		0	
-10		0		0	
-11		0		0	
-12		0		0	
-13		0		0	
-14		0		0	
-15		0		0	
-16		0		0	
-17		0		0	
-18		0		0	
-19		0		0	
-20		0		0	
-21		0		0	
-22		0		0	
-23		0		0	
-24		0		0	
-25		0		0	
-26		0		0	
-27		0		0	
-28		0		0	
-29		0		0	
-30		0		0	
-31		0		0	
-32		0		0	
-33		0		0	
-34		0		0	
-35		0		0	
-36		0		0	
-37		0		0	
-38		0		0	
-39		0		0	
-40		0		0	
-41		0		0	
-42		0		0	
-43		0		0	
-44		0		0	
-45		0		0	
-46		0		0	
-47		0		0	
-48		0		0	
-49		0		0	
-50		0		0	
-51		0		0	
-52		0		0	
-53		0		0	
-54		0		0	
-55		0		0	
-56		0		0	
-57		0		0	
-58		0		0	
-59		0		0	
-60		0		0	
-61		0		0	
-62		0		0	
-63		0		0	
-64		0		0	
-65		0		0	
-66		0		0	
-67	8.15	102.364	9.91	248.9392	186.7
-68	4.46	56.0176	5.72	143.6864	189.3
-69	3.65	45.844	5.5	138.16	193
-70	3.5	43.96	5.83	146.4496	197.5
-71	4.53	56.8968	9.87	247.9344	201
-72	9.09	114.1704	23.5	590.32	206
-73	14.74	185.1344	30.6	768.672	214
-74	20.2	253.712	35.5	891.76	215
-75	22	276.32	38	954.56	223
-76	24.2	303.952	39.3	987.216	234
-77	24.6	308.976	38.8	974.656	253
-78	23.6	296.416	37.5	942	314
-79	20.9	262.504	33.8	849.056	156.6
-80	13.88	174.3328	21.6	542.592	125.2
-81	8.72	109.5232	12.73	319.7776	126.4
-82	6.97	87.5432	14.46	363.2352	128.2
-83	6.96	87.4176	13.43	337.3616	128.3
-84	6.64	83.3984	12.36	310.4832	127.9
-85	5.78	72.5968	12.19	306.2128	128.4
-86	5.35	67.196	9.51	238.8912	128.2
-87	3.92	49.2352	6.29	158.0048	127.4
-88	3.43	43.0808	7	175.84	127.6
-89	3.7	46.472	8.42	211.5104	127
-90	4.17	52.3752	9.15	229.848	126.6
-91	4.2	52.752	9.12	229.0944	126.6
-92	4.37	54.8872	9.36	235.1232	128
-93	4.41	55.3896	9.99	250.9488	128
-94	4.81	60.4136	10.64	267.2768	128.3
-95	5.73	71.9688	14.95	375.544	129.9
-96	6.81	85.5336	18.62	467.7344	132.6
-97	7.12	89.4272	14.98	376.2976	129.7
-98	3.45	43.332	6.44	161.7728	129.1
-99	2.49	31.2744	4.18	105.0016	126.7
-100	2.03	25.4968	3.58	89.9296	131.8
-101	1.81	22.7336	2.71	68.0752	129.6
-102	1.77	22.2312	2.88	72.3456	132.9
-103	1.929	24.22824	3.43	86.1616	137.8
-104	2.3	28.888	4.71	118.3152	136.4
-105	3	37.68	6.81	171.0672	135.4
-106	3.89	48.8584	13.19	331.3328	134.3
-107	2.95	37.052	5.61	140.9232	134.4
-108	2.42	30.3952	3.85	96.712	137.1
-109	2.38	29.8928	4.13	103.7456	136.7
-110	2.46	30.8976	6.75	169.56	136.2
-111	2.6	32.656	5.28	132.6336	136.7
-112	2.69	33.7864	4.73	118.8176	140.4
-113	2.95	37.052	6.75	169.56	138.3
-114	4.05	50.868	14.46	363.2352	138.7
-115	7.28	91.4368	18.62	467.7344	138.7
-116	3.92	49.2352	6.67	167.5504	138.9
-117	2.9	36.424	5.14	129.1168	139.8
-118	3.01	37.8056	6.21	155.9952	141.7
-119	3.92	49.2352	8.61	216.2832	140.3
-120	6.14	77.1184	17.3	434.576	139.2
-121	10.57	132.7592	23.4	587.808	141.7
-122	11.6	145.696	21	527.52	141.4
-123	12.44	156.2464	24.5	615.44	143.1
-124	17.08	214.5248	33.8	849.056	139.8
-125	21.7	272.552	39.5	992.24	141.1
-126	21.6	271.296	38.1	957.072	139.5



For The Consultant:
Name: _____
Position: _____
Signature: _____

For the Contractor
Name: _____
Position: _____
Signature: _____

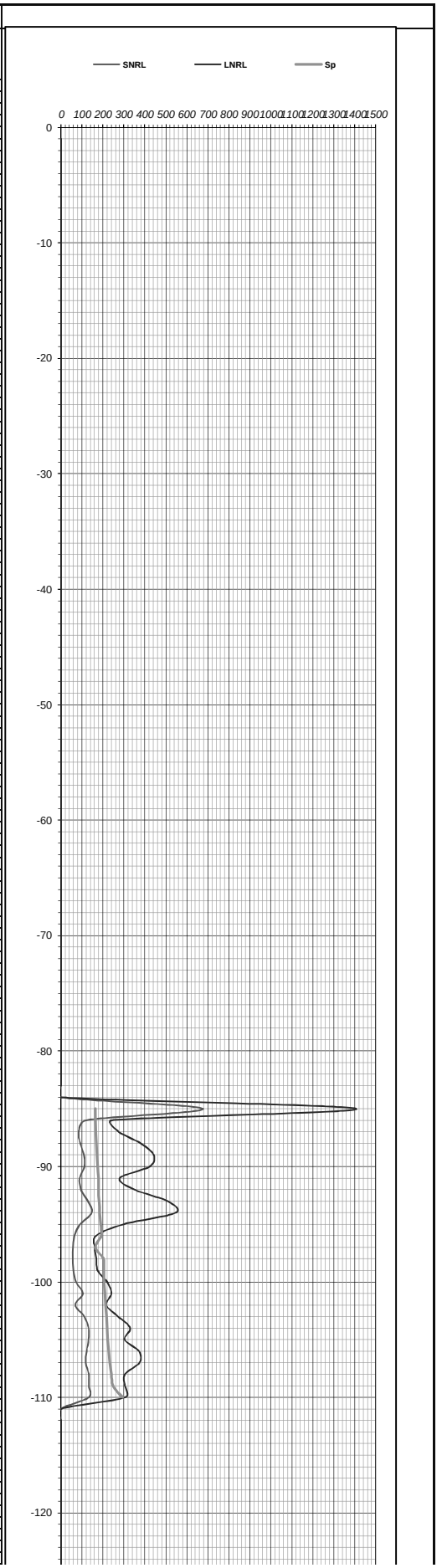
Depth (m)	Short Normal		Long Normal		Sp
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-127	6.85	86.036	10.39	260.9968	142.1
-128	3.04	38.1824	4.63	116.3056	141.8
-129	3.03	38.0568	5.4	135.648	141.4
-130	3.65	45.844	11.64	292.3968	141.4
-131	6.37	80.0072	14.83	372.5296	140.5
-132	6.94	87.1664	16.26	408.4512	139.2
-133	6.92	86.9152	15.85	398.152	140.5
-134	3.28	41.1968	5.91	148.4592	141.3
-135	2.48	31.1488	3.96	99.4752	146.4
-136	2.59	32.5304	6.7	168.304	144.2
-137	3.39	42.5784	7.28	182.8736	144.4
-138	3.18	39.9408	9.71	243.9152	148
-139	3.64	45.7184	7.01	176.0912	148.5
-140	3.67	46.0952	8.1	203.472	148
-141	3.92	49.2352	11.11	279.0832	149.8
-142	4.67	58.6552	8.97	225.3264	148.3
-143	5.81	72.9736	13.57	340.8784	147.9
-144	7.07	88.7992	17.94	450.6528	152.5
-145	6.66	83.6496	12.02	301.9424	149.3
-146	7.45	93.572	14.85	373.032	149
-147	9.67	121.4552	27.7	695.824	151.6
-148	8.02	100.7312	12.56	315.5072	153.9
-149	6.25	78.5	13.84	347.6608	154.3
-150	8.77	110.1512	23.9	600.368	151
-151	14.59	183.2504	30	753.6	147.4
-152	7.04	88.4224	11.87	298.1744	149.3
-153	4.44	55.7664	6.25	157	150.9
-154	3.45	43.332	5.12	128.6144	151.4
-155	3.14	39.4384	4.73	118.8176	151.5
-156	2.95	37.052	4.6	115.552	152.7
-157	3.1	38.936	5.05	126.856	155.1
-158	3.28	41.1968	6.12	153.7344	149.3
-159	3.66	45.9696	7.14	179.3568	152.2
-160	5.65	70.964	12.52	314.5024	153.3
-161	13.69	171.9464	44.7	1122.864	154.6
-162	42.7	536.312	74.9	1881.488	155
-163	59.5	747.32	94	2361.28	155.7
-164	71.4	896.784	99.5	2499.44	156.8
-165	72.2	906.832	98.5	2474.32	156.6
-166	65.7	825.192	91	2285.92	157.2
-167	60.1	754.856	83.6	2100.032	160.8
-168	56.5	709.64	80.7	2027.184	162.9
-169	54.1	679.496	79.2	1989.504	167.5
-170	52.4	658.144	78.4	1969.408	165.4
-171	38.1	478.536	56.5	1419.28	172.1
-172	8.56	107.5136	12	301.44	176.2
-173	4.54	57.0224	7.83	196.6896	178.4
-174	3.91	49.1096	8.56	215.0272	180.4
-175	4.77	59.9112	12.64	317.5168	182.7
-176	6.46	81.1376	19.28	484.3136	181.9
-177	9.72	122.0832	29.6	743.552	185.2
-178	19.42	243.9152	51.5	1293.68	183.6
-179	35.5	445.88	84.7	2127.664	180.1
-180	44.3	556.408	75.4	1894.048	173.2
-181	21.9	275.064	37.8	949.536	174.9
-182	4.95	62.172	7.71	193.6752	177.2
-183	3.78	47.4768	8.05	202.216	177.5
-184	3.58	44.9648	9.65	242.408	179
-185	3.59	45.0904	8.04	201.9648	180
-186	3.44	43.2064	9.17	230.3504	180
-187	4.3	54.008	12.52	314.5024	182
-188	7.53	94.5768	25.3	635.536	185.8
-189	13.6	170.816	45.6	1145.472	187.4
-190	28.5	357.96	66.8	1678.016	187.3
-191	38.3	481.048	74.4	1868.928	188.3
-192	43.3	543.848	78.8	1979.456	188.4
-193	44.7	561.432	82.1	2062.352	188
-194	36.9	463.464	65.5	1645.36	188.8
-195	9.79	122.9624	15.03	377.5536	187
-196	4.14	51.9984	6.6	165.792	187.3
-197	6.05	75.988	7.86	197.4432	190.7
-198	8.41	105.6296	7.92	198.9504	191
-199	8.43	105.8808	7.94	199.4528	191.7
-200	8.14	102.2384	7.94	199.4528	193.7
-201		0		0	
-202		0		0	
-203		0		0	
-204		0		0	
-205		0		0	
-206		0		0	
-207		0		0	
-208		0		0	
-209		0		0	
-210		0		0	
-211		0		0	
-212		0		0	
-213		0		0	
-214		0		0	
-215		0		0	
-216		0		0	
-217		0		0	
-218		0		0	
-219		0		0	
-220		0		0	
-221		0		0	
-222		0		0	
-223		0		0	
-224		0		0	
-225		0		0	
-226		0		0	
-227		0		0	
-228		0		0	
-229		0		0	
-230		0		0	
-231		0		0	
-232		0		0	
-233		0		0	
-234		0		0	
-235		0		0	
-236		0		0	
-237		0		0	
-238		0		0	
-239		0		0	
-240		0		0	
-241		0		0	
-242		0		0	
-243		0		0	
-244		0		0	
-245		0		0	
-246		0		0	
-247		0		0	
-248		0		0	
-249		0		0	
-250		0		0	
-251		0		0	
-252		0		0	
-253		0		0	
-254		0		0	
-255		0		0	
-256		0		0	



Company Name: TAM Geo-Engineering PLC	Document No: IOF/TAM G/000	
Title: Electrical Logging	Issue No.1	Page 1 of 2

Site No. AWBH-4N

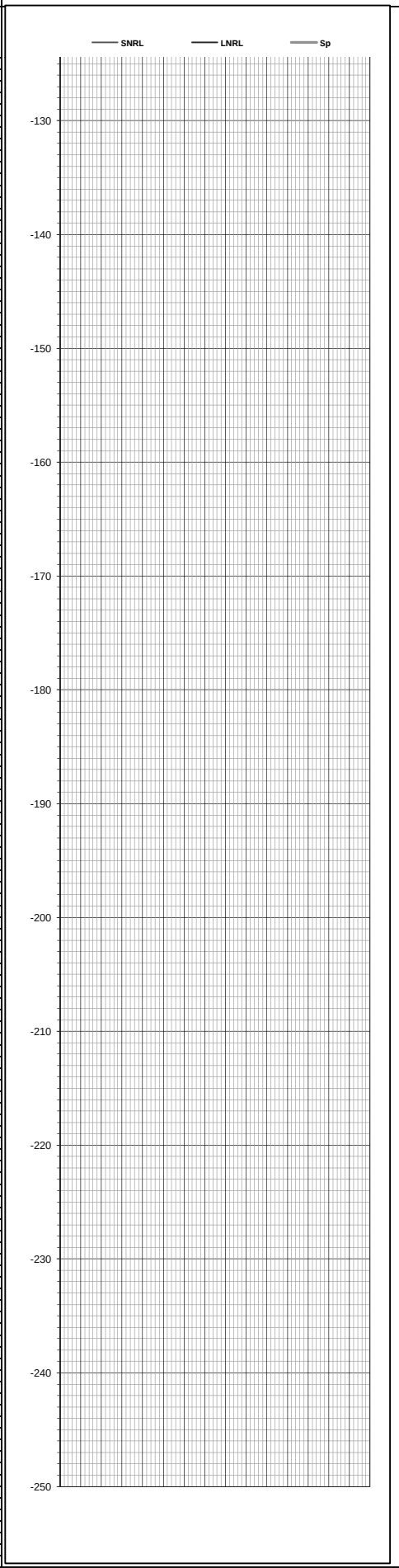
Depth (m)	Short Normal		Long Normal		Sp
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-1		0		0	
-2		0		0	
-3		0		0	
-4		0		0	
-5		0		0	
-6		0		0	
-7		0		0	
-8		0		0	
-9		0		0	
-10		0		0	
-11		0		0	
-12		0		0	
-13		0		0	
-14		0		0	
-15		0		0	
-16		0		0	
-17		0		0	
-18		0		0	
-19		0		0	
-20		0		0	
-21		0		0	
-22		0		0	
-23		0		0	
-24		0		0	
-25		0		0	
-26		0		0	
-27		0		0	
-28		0		0	
-29		0		0	
-30		0		0	
-31		0		0	
-32		0		0	
-33		0		0	
-34		0		0	
-35		0		0	
-36		0		0	
-37		0		0	
-38		0		0	
-39		0		0	
-40		0		0	
-41		0		0	
-42		0		0	
-43		0		0	
-44		0		0	
-45		0		0	
-46		0		0	
-47		0		0	
-48		0		0	
-49		0		0	
-50		0		0	
-51		0		0	
-52		0		0	
-53		0		0	
-54		0		0	
-55		0		0	
-56		0		0	
-57		0		0	
-58		0		0	
-59		0		0	
-60		0		0	
-61		0		0	
-62		0		0	
-63		0		0	
-64		0		0	
-65		0		0	
-66		0		0	
-67		0		0	
-68		0		0	
-69		0		0	
-70		0		0	
-71		0		0	
-72		0		0	
-73		0		0	
-74		0		0	
-75		0		0	
-76		0		0	
-77		0		0	
-78		0		0	
-79		0		0	
-80		0		0	
-81		0		0	
-82		0		0	
-83		0		0	
-84		0		0	
-85	53.9	676.984	56	1406.72	164.7
-86	9.47	118.9432	9.63	241.9056	164.6
-87	6.78	85.1568	10.96	275.3152	166.4
-88	7.35	92.316	15.16	380.8192	168.7
-89	8.77	110.1512	17.59	441.8608	170.6
-90	8.98	112.7888	16.87	423.7744	174.3
-91	7.14	89.6784	11.17	280.5904	178.6
-92	7.62	95.7072	13.96	350.6752	179
-93	10.21	128.2376	20.2	507.424	182.3
-94	11.73	147.3288	21.8	547.616	185.2
-95	7.35	92.316	11.93	299.6816	190
-96	5.11	64.1816	6.67	167.5504	192.3
-97	4.6	57.776	6.43	161.5216	165.2
-98	4.53	56.8968	6.71	168.5552	203
-99	4.79	60.1624	6.96	174.8352	205
-100	5.75	72.22	8.75	219.8	206
-101	8.32	104.4992	9.59	240.9008	210
-102	5.48	68.8288	8.58	215.5296	213
-103	8.89	111.6584	10.88	273.3056	217
-104	10.53	132.2568	13.16	330.5792	221
-105	10.53	132.2568	12.1	303.952	224
-106	9.73	122.2088	14.81	372.0272	228
-107	9.47	118.9432	14.89	374.0368	234
-108	10.55	132.508	12.13	304.7056	241
-109	10.56	132.6336	12.15	305.208	248
-110	10.57	132.7592	12.17	305.7104	294
-111		0		0	
-112		0		0	
-113		0		0	
-114		0		0	
-115		0		0	
-116		0		0	
-117		0		0	
-118		0		0	
-119		0		0	
-120		0		0	
-121		0		0	
-122		0		0	
-123		0		0	
-124		0		0	
-125		0		0	
-126		0		0	



For The Consultant:
Name: _____
Position: _____
Signature: _____

For the Contractor
Name: _____
Position: _____
Signature: _____

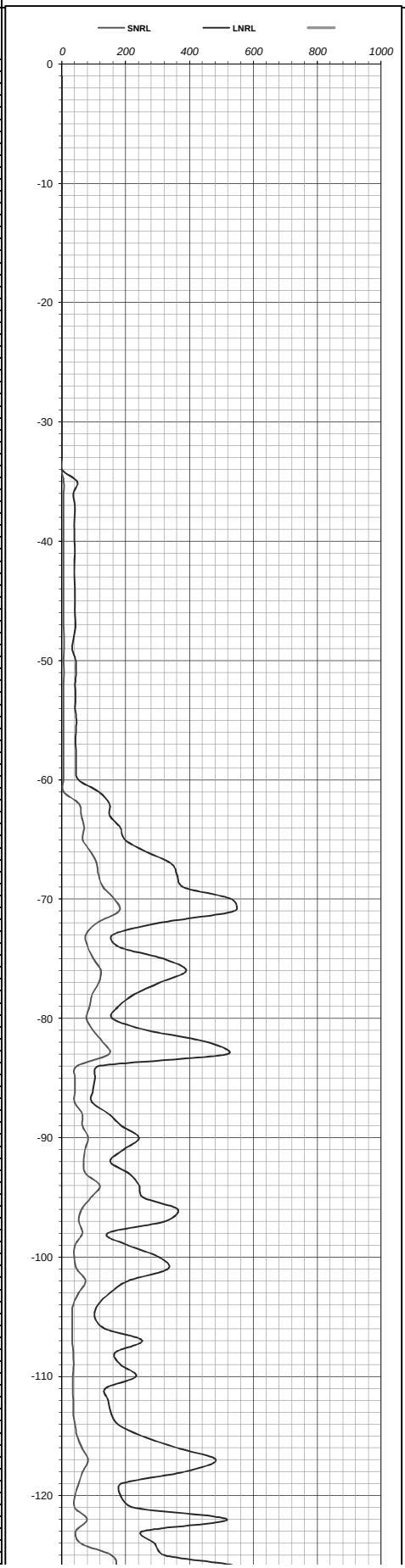
Depth (m)	Short Normal		Long Normal		Sp
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-127		0		0	
-128		0		0	
-129		0		0	
-130		0		0	
-131		0		0	
-132		0		0	
-133		0		0	
-134		0		0	
-135		0		0	
-136		0		0	
-137		0		0	
-138		0		0	
-139		0		0	
-140		0		0	
-141		0		0	
-142		0		0	
-143		0		0	
-144		0		0	
-145		0		0	
-146		0		0	
-147		0		0	
-148		0		0	
-149		0		0	
-150		0		0	
-151		0		0	
-152		0		0	
-153		0		0	
-154		0		0	
-155		0		0	
-156		0		0	
-157		0		0	
-158		0		0	
-159		0		0	
-160		0		0	
-161		0		0	
-162		0		0	
-163		0		0	
-164		0		0	
-165		0		0	
-166		0		0	
-167		0		0	
-168		0		0	
-169		0		0	
-170		0		0	
-171		0		0	
-172		0		0	
-173		0		0	
-174		0		0	
-175		0		0	
-176		0		0	
-177		0		0	
-178		0		0	
-179		0		0	
-180		0		0	
-181		0		0	
-182		0		0	
-183		0		0	
-184		0		0	
-185		0		0	
-186		0		0	
-187		0		0	
-188		0		0	
-189		0		0	
-190		0		0	
-191		0		0	
-192		0		0	
-193		0		0	
-194		0		0	
-195		0		0	
-196		0		0	
-197		0		0	
-198		0		0	
-199		0		0	
-200		0		0	
-201		0		0	
-202		0		0	
-203		0		0	
-204		0		0	
-205		0		0	
-206		0		0	
-207		0		0	
-208		0		0	
-209		0		0	
-210		0		0	
-211		0		0	
-212		0		0	
-213		0		0	
-214		0		0	
-215		0		0	
-216		0		0	
-217		0		0	
-218		0		0	
-219		0		0	
-220		0		0	
-221		0		0	
-222		0		0	
-223		0		0	
-224		0		0	
-225		0		0	
-226		0		0	
-227		0		0	
-228		0		0	
-229		0		0	
-230		0		0	
-231		0		0	
-232		0		0	
-233		0		0	
-234		0		0	
-235		0		0	
-236		0		0	
-237		0		0	
-238		0		0	
-239		0		0	
-240		0		0	
-241		0		0	
-242		0		0	
-243		0		0	
-244		0		0	
-245		0		0	
-246		0		0	
-247		0		0	
-248		0		0	
-249		0		0	
-250		0		0	
-251		0		0	
-252		0		0	
-253		0		0	
-254		0		0	
-255		0		0	
-256		0		0	



Company Name: TAM Geo-Engineering PLC	Document No: IOF/TAM G/030	
Title: Electrical Logging	Issue No.1	Page 1 of 2

Site No. Humbo (sodo) BH5

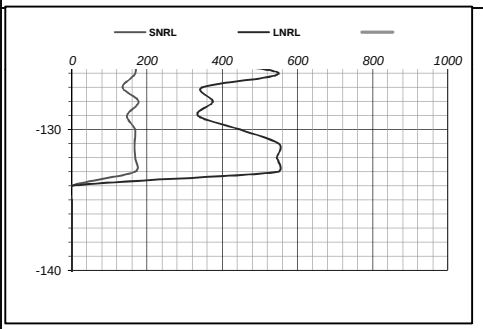
Depth (m)	Short Normal		Long Normal	
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)
-1		0		0
-2		0		0
-3		0		0
-4		0		0
-5		0		0
-6		0		0
-7		0		0
-8		0		0
-9		0		0
-10		0		0
-11		0		0
-12		0		0
-13		0		0
-14		0		0
-15		0		0
-16		0		0
-17		0		0
-18		0		0
-19		0		0
-20		0		0
-21		0		0
-22		0		0
-23		0		0
-24		0		0
-25		0		0
-26		0		0
-27		0		0
-28		0		0
-29		0		0
-30		0		0
-31		0		0
-32		0		0
-33		0		0
-34		0		0
-35	0.48	6.0288	1.92	48.2304
-36	0.492	6.17952	1.44	36.1728
-37	0.472	5.92832	1.62	40.6944
-38	0.472	5.92832	1.61	40.4432
-39	0.475	5.966	1.56	39.1872
-40	0.502	6.30512	1.6	40.192
-41	0.473	5.94088	1.64	41.1968
-42	0.489	6.14184	1.56	39.1872
-43	0.502	6.30512	1.58	39.6896
-44	0.489	6.14184	1.62	40.6944
-45	0.436	5.47616	1.68	42.2016
-46	0.49	6.1544	1.63	40.9456
-47	0.499	6.26744	1.72	43.2064
-48	0.539	6.76984	1.51	37.9312
-49	0.544	6.83264	1.29	32.4048
-50	0.515	6.4684	1.75	43.96
-51	0.519	6.51864	1.8	45.216
-52	0.494	6.20464	1.68	42.2016
-53	0.49	6.1544	1.71	42.9552
-54	0.514	6.45584	1.68	42.2016
-55	0.49	6.1544	1.82	45.7184
-56	0.489	6.14184	1.76	44.2112
-57	0.476	5.97856	1.73	43.4576
-58	0.493	6.19208	1.79	44.9648
-59	0.499	6.26744	1.8	45.216
-60	0.468	5.87808	2.08	52.2496
-61	0.451	5.66456	4.59	115.3008
-62	4.28	53.7568	5.95	149.464
-63	4.9	61.544	6	150.72
-64	5.6	70.336	7.29	183.1248
-65	5.2	65.312	7.86	197.4432
-66	7.16	89.9296	10.41	261.4992
-67	8.72	109.5232	13.63	342.3856
-68	9.19	115.4264	14.38	361.2256
-69	10.31	129.4936	15.15	380.568
-70	13.13	164.9128	21.17	531.7904
-71	14.31	179.7336	21.5	540.08
-72	8.72	109.5232	12.1	303.952
-73	6.02	75.6112	6.34	159.2608
-74	6.48	81.3888	7.13	179.1056
-75	7.93	99.6008	12.67	318.2704
-76	9.77	122.7112	15.51	389.6112
-77	9.23	115.9288	12.2	306.464
-78	7.57	95.0792	9.01	226.3312
-79	6.97	87.5432	7.05	177.096
-80	6.17	77.4952	6.32	158.7584
-81	7.83	98.3448	10.68	268.2816
-82	10.25	128.74	18.23	457.9376
-83	11.74	147.4544	20.6	517.472
-84	3.72	46.7232	4.55	114.296
-85	3.31	41.5736	4.16	104.4992
-86	3.35	42.076	3.91	98.2192
-87	3.19	40.0664	3.75	94.2
-88	5.13	64.4328	5.84	146.7008
-89	5.14	64.5584	7.44	186.8928
-90	6.59	82.7704	9.63	241.9056
-91	5.8	72.848	7.7	193.424
-92	5.44	68.3264	6.05	151.976
-93	5.94	74.6064	8.37	210.2544
-94	9.51	119.4456	9.66	242.6592
-95	7.333	92.10248	10.13	254.4656
-96	4.95	62.172	14.48	363.7376
-97	4.28	53.7568	12.93	324.8016
-98	5.13	64.4328	5.72	143.6864
-99	3.32	41.6992	8.21	206.2352
-100	3.11	39.0616	12.11	304.2032
-101	3.74	46.9744	13.21	331.8352
-102	5.94	74.6064	8.27	207.7424
-103	4.23	53.1288	6.03	151.4736
-104	2.83	35.5448	4.52	113.5424
-105	2.56	32.1536	4.11	103.2432
-106	2.63	33.0328	5.36	134.6432
-107	2.57	32.2792	10.03	251.9536
-108	2.85	35.796	6.67	167.5504
-109	2.99	37.5544	7.29	183.1248
-110	2.75	34.54	9.25	232.36
-111	2.69	33.7864	5.47	137.4064
-112	2.9	36.424	5.8	145.696
-113	2.85	35.796	6.1	153.232
-114	3.3	41.448	6.98	175.3376
-115	3.81	47.8536	9.97	250.4464
-116	5.02	63.0512	14.42	362.2304
-117	6.56	82.3936	19.22	482.8064
-118	5.24	65.8144	15.25	383.08
-119	4.25	53.38	7.41	186.1392
-120	3.33	41.8248	7.34	184.3808
-121	3.24	40.6944	8.92	224.0704
-122	6.32	79.3792	20.6	517.472
-123	3.49	43.8344	10.04	252.2048
-124	4.78	60.0368	11.6	291.392
-125	12.47	156.6232	12.8	321.536
-126	13.45	168.932	21.9	550.128



For The Consultant:
Name: _____
Position: _____
Signature: _____

For the Contractor
Name: _____
Position: _____
Signature: _____

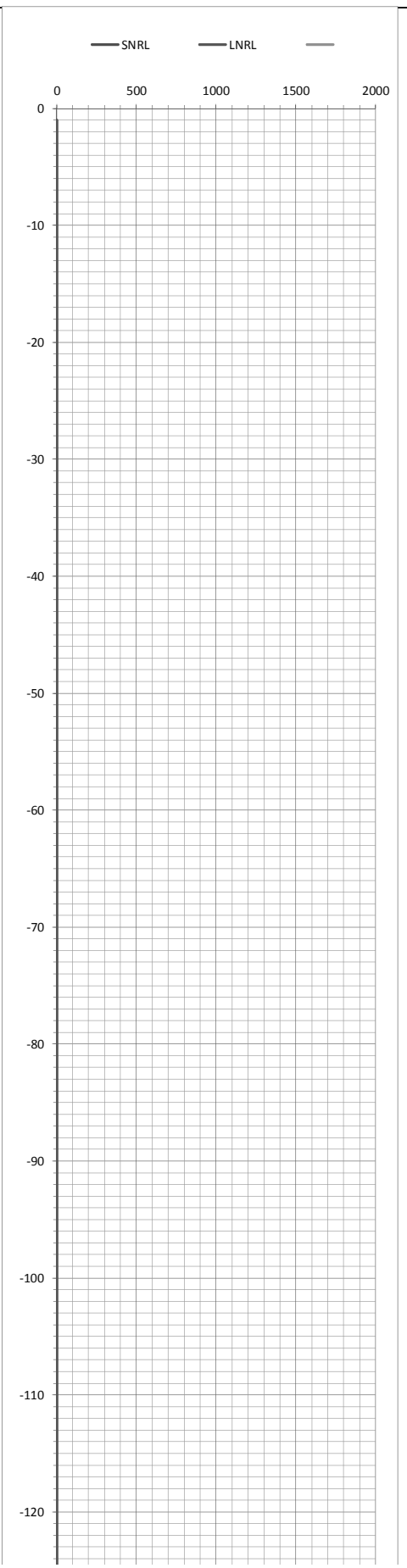
Depth (m)	Short Normal		Long Normal	
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)
-127	10.78	135.3968	13.8	346.656
-128	14.13	177.4728	14.94	375.2928
-129	11.72	147.2032	13.35	335.352
-130	13.41	168.4296	17.82	447.6384
-131	13.32	167.2992	21.9	550.128
-132	13.41	168.4296	21.7	545.104
-133	13.36	167.8016	21.8	547.616
-134		0		0
-135		0		0
-136		0		0
-137		0		0
-138		0		0
-139		0		0
-140		0		0
-141		0		0
-142		0		0
-143		0		0
-144		0		0
-145		0		0
-146		0		0
-147		0		0
-148		0		0
-149		0		0
-150		0		0
-151		0		0
-152		0		0
-153		0		0
-154		0		0
-155		0		0
-156		0		0
-157		0		0
-158		0		0
-159		0		0
-160		0		0
-161		0		0
-162		0		0
-163		0		0
-164		0		0
-165		0		0
-166		0		0
-167		0		0
-168		0		0
-169		0		0
-170		0		0
-171		0		0
-172		0		0
-173		0		0
-174		0		0
-175		0		0
-176		0		0
-177		0		0
-178		0		0
-179		0		0
-180		0		0
-181		0		0
-182		0		0
-183		0		0
-184		0		0
-185		0		0
-186		0		0
-187		0		0
-188		0		0
-189		0		0
-190		0		0
-191		0		0
-192		0		0
-193		0		0
-194		0		0
-195		0		0
-196		0		0
-197		0		0
-198		0		0
-199		0		0
-200		0		0
-201		0		0
-202		0		0
-203		0		0
-204		0		0
-205		0		0
-206		0		0
-207		0		0
-208		0		0
-209		0		0
-210		0		0
-211		0		0
-212		0		0
-213		0		0
-214		0		0
-215		0		0
-216		0		0
-217		0		0
-218		0		0
-219		0		0
-220		0		0
-221		0		0
-222		0		0
-223		0		0
-224		0		0
-225		0		0
-226		0		0
-227		0		0
-228		0		0
-229		0		0
-230		0		0
-231		0		0
-232		0		0
-233		0		0
-234		0		0
-235		0		0
-236		0		0
-237		0		0
-238		0		0
-239		0		0
-240		0		0
-241		0		0
-242		0		0
-243		0		0
-244		0		0
-245		0		0
-246		0		0
-247		0		0
-248		0		0
-249		0		0
-250		0		0
-251		0		0
-252		0		0
-253		0		0
-254		0		0
-255		0		0
-256		0		0



Company Name: TAM Geo-Engineering PLC	Document No: IOF/TAM G/000	
Title: Electrical Logging	Issue No.1	Page 1 of 2

Site No. AWBH 6

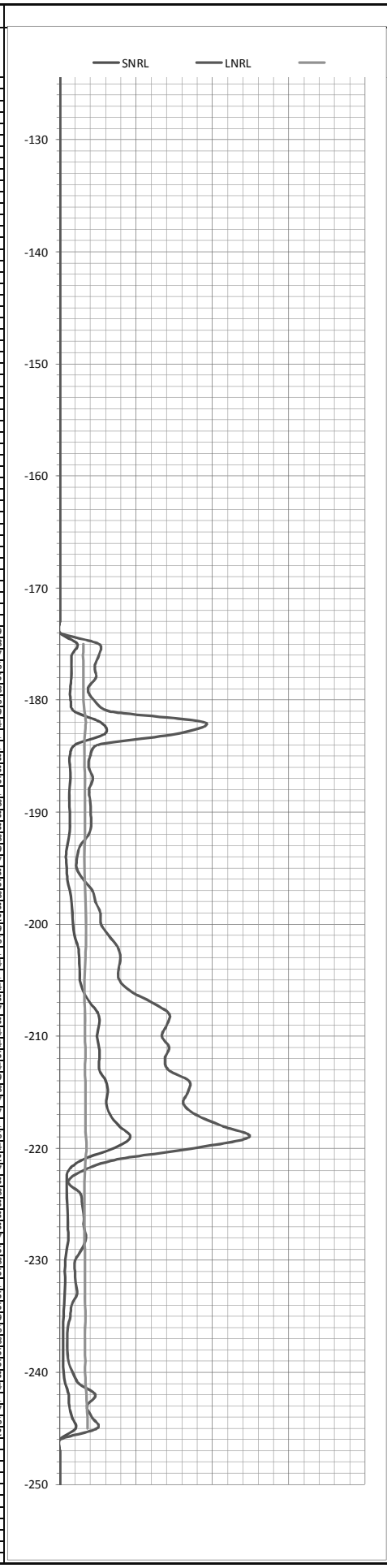
Depth (m)	Short Normal		Long Normal		
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-1		0		0	
-2		0		0	
-3		0		0	
-4		0		0	
-5		0		0	
-6		0		0	
-7		0		0	
-8		0		0	
-9		0		0	
-10		0		0	
-11		0		0	
-12		0		0	
-13		0		0	
-14		0		0	
-15		0		0	
-16		0		0	
-17		0		0	
-18		0		0	
-19		0		0	
-20		0		0	
-21		0		0	
-22		0		0	
-23		0		0	
-24		0		0	
-25		0		0	
-26		0		0	
-27		0		0	
-28		0		0	
-29		0		0	
-30		0		0	
-31		0		0	
-32		0		0	
-33		0		0	
-34		0		0	
-35		0		0	
-36		0		0	
-37		0		0	
-38		0		0	
-39		0		0	
-40		0		0	
-41		0		0	
-42		0		0	
-43		0		0	
-44		0		0	
-45		0		0	
-46		0		0	
-47		0		0	
-48		0		0	
-49		0		0	
-50		0		0	
-51		0		0	
-52		0		0	
-53		0		0	
-54		0		0	
-55		0		0	
-56		0		0	
-57		0		0	
-58		0		0	
-59		0		0	
-60		0		0	
-61		0		0	
-62		0		0	
-63		0		0	
-64		0		0	
-65		0		0	
-66		0		0	
-67		0		0	
-68		0		0	
-69		0		0	
-70		0		0	
-71		0		0	
-72		0		0	
-73		0		0	
-74		0		0	
-75		0		0	
-76		0		0	
-77		0		0	
-78		0		0	
-79		0		0	
-80		0		0	
-81		0		0	
-82		0		0	
-83		0		0	
-84		0		0	
-85		0		0	
-86		0		0	
-87		0		0	
-88		0		0	
-89		0		0	
-90		0		0	
-91		0		0	
-92		0		0	
-93		0		0	
-94		0		0	
-95		0		0	
-96		0		0	
-97		0		0	
-98		0		0	
-99		0		0	
-100		0		0	
-101		0		0	
-102		0		0	
-103		0		0	
-104		0		0	
-105		0		0	
-106		0		0	
-107		0		0	
-108		0		0	
-109		0		0	
-110		0		0	
-111		0		0	
-112		0		0	
-113		0		0	
-114		0		0	
-115		0		0	
-116		0		0	
-117		0		0	
-118		0		0	
-119		0		0	
-120		0		0	
-121		0		0	
-122		0		0	
-123		0		0	
-124		0		0	
-125		0		0	
-126		0		0	



For The Consultant:
Name: _____
Position: _____
Signature: _____

For the Contractor
Name: _____
Position: _____
Signature: _____

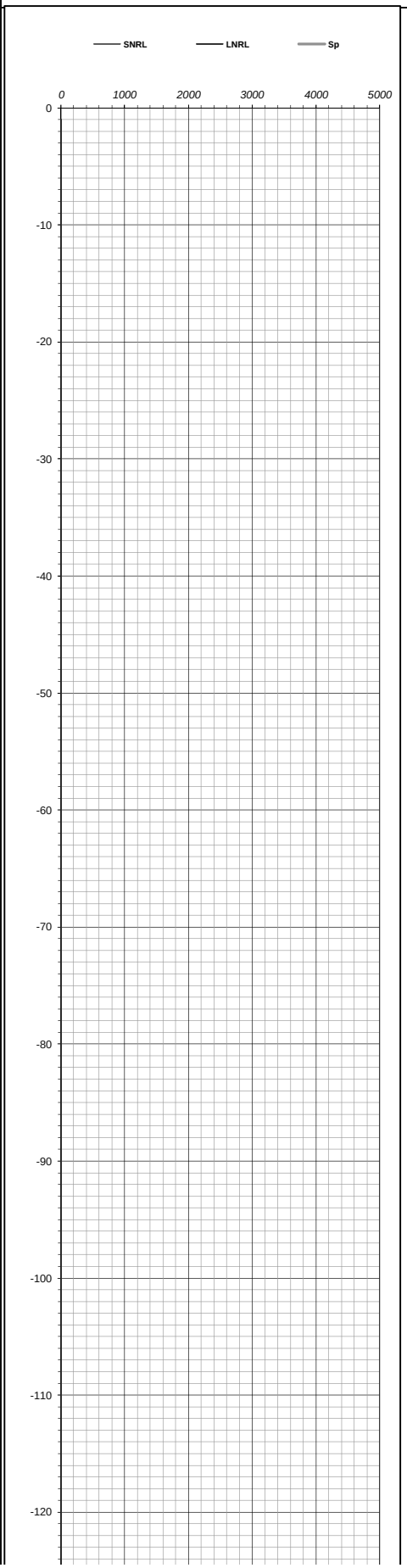
Depth (m)	Short Normal		Long Normal		
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-127		0		0	
-128		0		0	
-129		0		0	
-130		0		0	
-131		0		0	
-132		0		0	
-133		0		0	
-134		0		0	
-135		0		0	
-136		0		0	
-137		0		0	
-138		0		0	
-139		0		0	
-140		0		0	
-141		0		0	
-142		0		0	
-143		0		0	
-144		0		0	
-145		0		0	
-146		0		0	
-147		0		0	
-148		0		0	
-149		0		0	
-150		0		0	
-151		0		0	
-152		0		0	
-153		0		0	
-154		0		0	
-155		0		0	
-156		0		0	
-157		0		0	
-158		0		0	
-159		0		0	
-160		0		0	
-161		0		0	
-162		0		0	
-163		0		0	
-164		0		0	
-165		0		0	
-166		0		0	
-167		0		0	
-168		0		0	
-169		0		0	
-170		0		0	
-171		0		0	
-172		0		0	
-173		0		0	
-174		0		0	
-175	9.13	114.6728	10.19	255.9728	153.9
-176	6.2	77.872	10.17	255.4704	152.8
-177	6.15	77.244	9.1	228.592	154.7
-178	6.06	76.1136	9.42	236.6304	154.6
-179	5.41	67.9496	7.32	183.8784	153.5
-180	5.66	71.0896	8.86	222.5632	153.8
-181	7.44	93.4464	12.88	323.5456	162.6
-182	21.4	268.784	37.8	949.536	169.9
-183	23.6	296.416	30.9	776.208	164.4
-184	7.94	99.7264	9.91	248.9392	161
-185	5.26	66.0656	7.94	199.4528	161.1
-186	5.22	65.5632	7.56	189.9072	163
-187	5.52	69.3312	8.62	216.5344	165.3
-188	5.09	63.9304	7.61	191.1632	164.5
-189	4.98	62.5488	7.94	199.4528	164.1
-190	5.26	66.0656	8.02	201.4624	164.8
-191	5.26	66.0656	8.19	205.7328	165.3
-192	4.88	61.2928	7.55	189.656	166.3
-193	3.82	47.9792	5.33	133.8896	162.8
-194	3.21	40.3176	4.56	114.5472	160.9
-195	3.67	46.0952	4.42	111.0304	160.7
-196	3.9	48.984	6.03	151.4736	164.3
-197	5.15	64.684	8.47	212.7664	165.5
-198	6.13	76.9928	9.31	233.8672	169.8
-199	6.53	82.0168	10.57	265.5184	171.3
-200	6.88	86.4128	10.74	269.7888	171.2
-201	7.58	95.2048	12.72	319.5264	169.9
-202	9.49	119.1944	15.02	377.3024	171.6
-203	10.18	127.8608	15.79	396.6448	167.1
-204	10.28	129.1168	15.35	385.592	163.4
-205	10.48	131.6288	15.55	390.616	161.1
-206	12.22	153.4832	18.48	464.2176	162.4
-207	15.73	197.5688	24.1	605.392	162.3
-208	20	251.2	28.5	715.92	164.7
-209	20.5	257.48	27.9	700.848	165.3
-210	19.39	243.5384	26.6	668.192	164.4
-211	20.5	257.48	28.5	715.92	167.4
-212	20.6	258.736	27.4	688.288	167.5
-213	20.6	258.736	28.3	710.896	164
-214	24	301.44	33.7	846.544	166.9
-215	25	314	33.4	839.008	167.8
-216	24.3	305.208	32.2	808.864	166.7
-217	26.2	329.072	35.4	889.248	169.7
-218	30.8	386.848	42.2	1060.064	167.1
-219	36.8	462.208	49.4	1240.928	170.6
-220	28.2	354.192	35	879.2	175.4
-221	12.12	152.2272	15.01	377.0512	168.2
-222	4.45	55.892	6.02	151.2224	163.7
-223	3.71	46.5976	2.17	54.5104	162.3
-224	3.55	44.588	5.29	132.8848	162.8
-225	3.82	47.9792	5.84	146.7008	163
-226	4.06	50.9936	6.23	156.4976	162.3
-227	4.14	51.9984	6.25	157	163
-228	4.56	57.2736	6.84	171.8208	161.7
-229	3.53	44.3368	5.78	145.1936	164.5
-230	2.91	36.5496	4.02	100.9824	164.8
-231	2.68	33.6608	3.92	98.4704	165.5
-232	2.73	34.2888	4.08	102.4896	166.1
-233	2.63	33.0328	4.47	112.2864	165.5
-234	2.35	29.516	3.08	77.3696	164.5
-235	1.882	23.63792	2.72	68.3264	169
-236	1.719	21.59064	2.12	53.2544	164.6
-237	1.628	20.44768	1.957	49.15984	165.8
-238	1.623	20.38488	1.97	49.4864	165
-239	1.787	22.44472	2.22	55.7664	166.5
-240	2.02	25.3712	3.38	84.9056	166.3
-241	2.92	36.6752	4.98	125.0976	168.4
-242	4.61	57.9016	9.28	233.1136	176.1
-243	4.86	61.0416	7.09	178.1008	176.7
-244	6.29	79.0024	8.35	209.752	180.6
-245	8.29	104.1224	9.74	244.6688	180.2
-246		0		0	
-247		0		0	
-248		0		0	
-249		0		0	
-250		0		0	
-251		0		0	
-252		0		0	
-253		0		0	
-254		0		0	
-255		0		0	
-256		0		0	



Company Name: TAM Geo-Engineering PLC	Document No: IOF/TAM G/030	
Title: Electrical Logging	Issue No.1	Page 1 of 2

Site No. AWBH-9

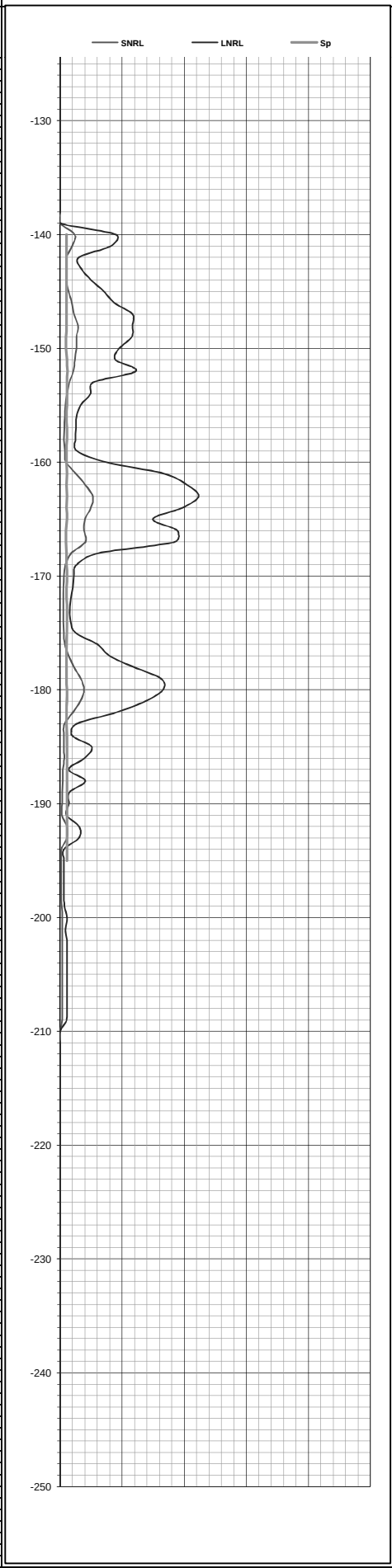
Depth (m)	Short Normal		Long Normal		Sp
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-1		0		0	
-2		0		0	
-3		0		0	
-4		0		0	
-5		0		0	
-6		0		0	
-7		0		0	
-8		0		0	
-9		0		0	
-10		0		0	
-11		0		0	
-12		0		0	
-13		0		0	
-14		0		0	
-15		0		0	
-16		0		0	
-17		0		0	
-18		0		0	
-19		0		0	
-20		0		0	
-21		0		0	
-22		0		0	
-23		0		0	
-24		0		0	
-25		0		0	
-26		0		0	
-27		0		0	
-28		0		0	
-29		0		0	
-30		0		0	
-31		0		0	
-32		0		0	
-33		0		0	
-34		0		0	
-35		0		0	
-36		0		0	
-37		0		0	
-38		0		0	
-39		0		0	
-40		0		0	
-41		0		0	
-42		0		0	
-43		0		0	
-44		0		0	
-45		0		0	
-46		0		0	
-47		0		0	
-48		0		0	
-49		0		0	
-50		0		0	
-51		0		0	
-52		0		0	
-53		0		0	
-54		0		0	
-55		0		0	
-56		0		0	
-57		0		0	
-58		0		0	
-59		0		0	
-60		0		0	
-61		0		0	
-62		0		0	
-63		0		0	
-64		0		0	
-65		0		0	
-66		0		0	
-67		0		0	
-68		0		0	
-69		0		0	
-70		0		0	
-71		0		0	
-72		0		0	
-73		0		0	
-74		0		0	
-75		0		0	
-76		0		0	
-77		0		0	
-78		0		0	
-79		0		0	
-80		0		0	
-81		0		0	
-82		0		0	
-83		0		0	
-84		0		0	
-85		0		0	
-86		0		0	
-87		0		0	
-88		0		0	
-89		0		0	
-90		0		0	
-91		0		0	
-92		0		0	
-93		0		0	
-94		0		0	
-95		0		0	
-96		0		0	
-97		0		0	
-98		0		0	
-99		0		0	
-100		0		0	
-101		0		0	
-102		0		0	
-103		0		0	
-104		0		0	
-105		0		0	
-106		0		0	
-107		0		0	
-108		0		0	
-109		0		0	
-110		0		0	
-111		0		0	
-112		0		0	
-113		0		0	
-114		0		0	
-115		0		0	
-116		0		0	
-117		0		0	
-118		0		0	
-119		0		0	
-120		0		0	
-121		0		0	
-122		0		0	
-123		0		0	
-124		0		0	
-125		0		0	
-126		0		0	



For The Consultant:
Name: _____
Position: _____
Signature: _____

For the Contractor
Name: _____
Position: _____
Signature: _____

Depth (m)	Short Normal		Long Normal		Sp
	Instrument Reading R (Ω-m)	R *12.56 = ρ (Ω-m)	Instrument Reading ρ (Ω-m)	R *25.12 = ρ (Ω-m)	
-127		0		0	
-128		0		0	
-129		0		0	
-130		0		0	
-131		0		0	
-132		0		0	
-133		0		0	
-134		0		0	
-135		0		0	
-136		0		0	
-137		0		0	
-138		0		0	
-139		0		0	
-140	18.88	237.1328	35.8	899.296	105.4
-141	15.57	195.5592	32.8	823.936	103.3
-142	8.01	100.6056	12.13	304.7056	105.6
-143	7.95	99.852	13.59	341.3808	105.7
-144	8.02	100.7312	20	502.4	107.5
-145	11.06	138.9136	28.2	708.384	107.3
-146	15.38	193.1728	34.8	874.176	106.9
-147	17.91	224.9496	46.5	1168.08	107.3
-148	23.1	290.136	46.4	1165.568	108.1
-149	21	263.76	46	1155.52	94.5
-150	20.9	262.504	38	954.56	96.4
-151	18.86	236.8816	35.5	891.76	112.4
-152	17.18	215.7808	48.7	1223.344	119.6
-153	12.07	151.5992	21.1	530.032	114.6
-154	8.71	109.3976	19.52	490.3424	115.3
-155	6.96	87.4176	13.16	330.5792	113.2
-156	6.27	78.7512	10.62	266.7744	102.6
-157	5.41	67.9496	10.36	260.2432	114.3
-158	5.24	65.8144	9.83	246.9296	113.8
-159	6.07	76.2392	10.77	270.5424	101
-160	7.8	97.968	29.5	741.04	107.9
-161	20.2	253.712	66.5	1670.48	109.1
-162	32.6	409.456	81.5	2047.28	108.9
-163	42.1	528.776	88.8	2230.656	109.6
-164	39.8	499.888	78.5	1971.92	107.9
-165	32.1	403.176	59.5	1494.64	110
-166	31	389.36	75.2	1889.024	99.5
-167	32.7	410.712	73.7	1851.344	100.1
-168	14.35	180.236	24.3	610.416	100.8
-169	7.05	88.548	10.63	267.0256	106
-170	5.25	65.94	8.92	224.0704	114.8
-171	4.38	55.0128	8.11	203.7232	103.1
-172	4.21	52.8776	7.04	176.8448	104
-173	4.011	50.37816	6.37	160.0144	116.1
-174	4.17	52.3752	6.75	169.56	116.8
-175	4.8	60.288	10.07	252.9584	112.9
-176	6.02	75.6112	24	602.88	103.7
-177	11.21	140.7976	31.6	793.792	102.8
-178	17.78	223.3168	47.2	1185.664	104.5
-179	26.7	335.352	64.7	1625.264	101
-180	30.8	386.848	66	1657.92	111.3
-181	26.1	327.816	54.8	1376.576	110.1
-182	16.4	205.984	35.7	896.784	106.6
-183	5.69	71.4664	10.4	261.248	108.8
-184	4.84	60.7904	7.63	191.6656	110.9
-185	4.62	58.0272	20.3	509.936	110.7
-186	5.51	69.2056	15.74	395.3888	109.8
-187	3.71	46.5976	5.6	140.672	109.4
-188	3.44	43.2064	16.2	406.944	111.2
-189	2.97	37.3032	6.03	151.4736	110.7
-190	2.75	34.54	5.66	142.1792	111.1
-191	2.36	29.6416	4.11	103.2432	110.3
-192	8.74	109.7744	12.22	306.9664	112.5
-193	8.91	111.9096	12.23	307.2176	113
-194	1.877	23.57512	2.58	64.8096	112.1
-195	1.841	23.12296	2.55	64.056	112.5
-196	1.809	22.72104	2.61	65.5632	
-197	1.763	22.14328	2.4	60.288	
-198	1.796	22.55776	2.55	64.056	
-199	2.02	25.3712	2.9	72.848	
-200	3.13	39.3128	4.47	112.2864	
-201	2.94	36.9264	3.51	88.1712	
-202	2.94	36.9264	4.51	113.2912	
-203	2.91	36.5496	4.53	113.7936	
-204	2.95	37.052	4.54	114.0448	
-205	2.94	36.9264	4.55	114.296	
-206	2.91	36.5496	4.42	111.0304	
-207	2.99	37.5544	4.5	113.04	
-208	2.98	37.4288	4.49	112.7888	
-209	2.98	37.4288	4.33	108.7696	
-210		0		0	
-211		0		0	
-212		0		0	
-213		0		0	
-214		0		0	
-215		0		0	
-216		0		0	
-217		0		0	
-218		0		0	
-219		0		0	
-220		0		0	
-221		0		0	
-222		0		0	
-223		0		0	
-224		0		0	
-225		0		0	
-226		0		0	
-227		0		0	
-228		0		0	
-229		0		0	
-230		0		0	
-231		0		0	
-232		0		0	
-233		0		0	
-234		0		0	
-235		0		0	
-236		0		0	
-237		0		0	
-238		0		0	
-239		0		0	
-240		0		0	
-241		0		0	
-242		0		0	
-243		0		0	
-244		0		0	
-245		0		0	
-246		0		0	
-247		0		0	
-248		0		0	
-249		0		0	
-250		0		0	
-251		0		0	
-252		0		0	
-253		0		0	
-254		0		0	
-255		0		0	
-256		0		0	

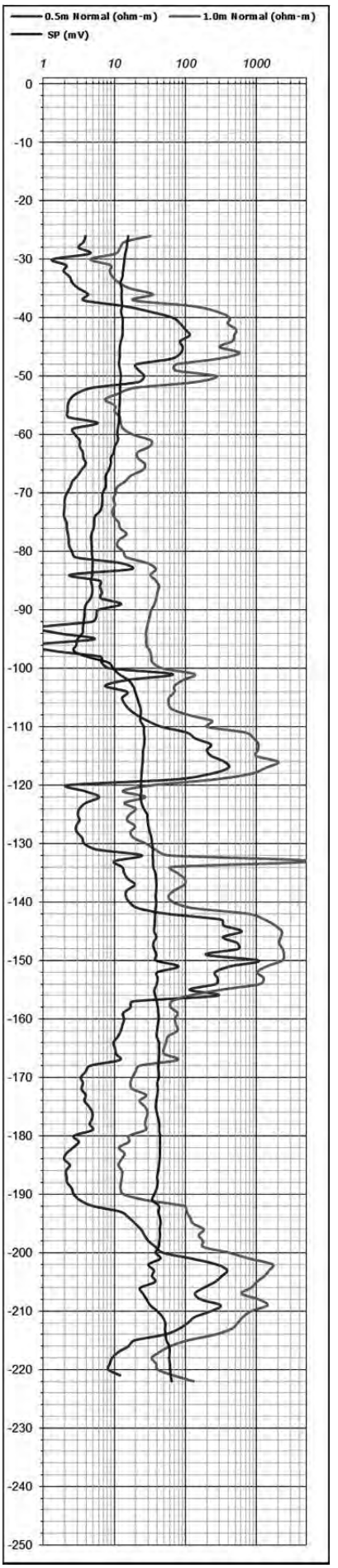


AWBH-11

Depth (m)	0.5m Normal (ohm-m)
26	3.93
27	3.69
28	3.15
29	4.52
30	1.34
31	2.09
32	1.93
33	2.36
34	2.56
35	3.15
36	4.28
37	3.65
38	13.63
39	32.91
40	66.13
41	84.59
42	99.22
43	114.11
44	84.15
45	91.19
46	85.78
47	64.31
48	20.03
49	22.11
50	26.31
51	21.73
52	4.80
53	2.91
54	2.37
55	2.20
56	2.19
57	2.26
58	5.77
59	2.61
60	2.80
61	3.26
62	3.25
63	3.59
64	3.66
65	3.96
66	3.45
67	3.04
68	2.56
69	2.39
70	2.15
71	2.00332
72	1.99076
73	1.96564
74	1.95308
75	2.12264
76	2.14148
77	2.21684
78	2.28592
79	2.30476
80	2.53712
81	2.85112
82	12.51604
83	17.4584
84	2.355
85	6.22976
86	6.23604
87	6.66308
88	6.48724
89	12.42184
90	5.90948
91	5.5892
92	4.8984
93	0.84152
94	1.65792
95	5.21868
96	0.67196
97	1.37532
98	6.36164
99	6.594
100	8.61616
101	65.98396
102	14.8836
103	7.41668
104	15.072
105	12.874
106	13.816
107	16.1396
108	20.77424
109	29.516
110	46.0952
111	105.6296
112	137.532
113	226.708
114	200.332
115	231.732
116	356.076
117	401.92
118	232.8624
119	73.162
120	2.1666

Depth (m)	1.0m Normal (ohm-m)
26	15.67
27	15.21
28	14.89
29	14.21
30	13.81
31	13.54
32	13.21
33	12.99
34	12.15
35	12.67
36	12.55
37	12.65
38	12.8
39	12.36
40	13.01
41	13.08
42	13.01
43	12.99
44	12.31
45	11.9
46	11.86
47	11.8
48	11.61
49	12.03
50	12.31
51	12.1
52	12
53	11.99
54	11.92
55	11.81
56	11.62
57	11.6
58	11.54
59	11.09
60	11.03
61	11.16
62	10.11
63	9.80
64	8.90
65	8.90
66	8.31
67	7.55
68	7.54
69	7.50
70	6.81
71	6.78
72	6.70
73	6.33
74	5.31
75	5.21
76	5.10
77	4.75
78	4.71
79	4.80
80	4.80
81	4.90
82	4.95
83	4.91
84	4.89
85	4.67
86	4.87
87	4.88
88	4.61
89	3.99
90	3.81
91	3.79
92	3.69
93	3.61
94	3.55
95	3.01
96	2.91
97	2.69
98	4.12
99	8.21
100	9.61
101	11.7
102	15.67
103	18.3
104	19.6
105	20.9
106	22.1
107	23.5
108	23.4
109	23.2
110	25.9
111	26
112	26.5
113	26.3
114	25.3
115	25.1
116	24.9
117	24.4
118	24.1
119	23.8
120	23.6

Depth (m)	SP (mV)
26	15.67
27	15.21
28	14.89
29	14.21
30	13.81
31	13.54
32	13.21
33	12.99
34	12.15
35	12.67
36	12.55
37	12.65
38	12.8
39	12.36
40	13.01
41	13.08
42	13.01
43	12.99
44	12.31
45	11.9
46	11.86
47	11.8
48	11.61
49	12.03
50	12.31
51	12.1
52	12
53	11.99
54	11.92
55	11.81
56	11.62
57	11.6
58	11.54
59	11.09
60	11.03
61	11.16
62	10.11
63	9.80
64	8.90
65	8.90
66	8.31
67	7.55
68	7.54
69	7.50
70	6.81
71	6.78
72	6.70
73	6.33
74	5.31
75	5.21
76	5.10
77	4.75
78	4.71
79	4.80
80	4.80
81	4.90
82	4.95
83	4.91
84	4.89
85	4.67
86	4.87
87	4.88
88	4.61
89	3.99
90	3.81
91	3.79
92	3.69
93	3.61
94	3.55
95	3.01
96	2.91
97	2.69
98	4.12
99	8.21
100	9.61
101	11.7
102	15.67
103	18.3
104	19.6
105	20.9
106	22.1
107	23.5
108	23.4
109	23.2
110	25.9
111	26
112	26.5
113	26.3
114	25.3
115	25.1
116	24.9
117	24.4
118	24.1
119	23.8
120	23.6



AWBH-11

121	3.84336	121	13.08752	121	23.9
122	6.09788	122	27.2552	122	23.3
123	3.98152	123	13.91648	123	24.1
124	3.2342	124	19.95784	124	25.8
125	3.05208	125	16.40336	125	29
126	3.22792	126	15.08456	126	29.3
127	2.8888	127	19.50568	127	30
128	2.95788	128	16.84296	128	31.5
129	3.52308	129	18.6516	129	33.1
130	3.78056	130	28.0088	130	34
131	5.66456	131	37.5544	131	34.9
132	24.3036	132	57.6504	132	34.4
133	9.93496	133	5727.36	133	35
134	12.874	134	61.0416	134	35.1
135	13.6904	135	76.616	135	37.6
136	15.386	136	97.2144	136	38.3
137	19.4052	137	96.712	137	39
138	14.9464	138	69.708	138	38.7
139	14.5068	139	57.3992	139	37.8
140	16.2024	140	66.6936	140	38.7
141	20.98148	141	124.8464	141	37.9
142	54.636	142	763.648	142	37.3
143	317.768	143	1308.752	143	37.1
144	341.632	144	1821.2	144	36.8
145	617.324	145	2260.8	145	36.2
146	335.98	146	2179.16	146	38.8
147	535.684	147	2066.12	147	35.2
148	550.128	148	2317.32	148	36.2
149	194.052	149	2424.08	149	38.9
150	1069.484	150	2285.92	150	38.5
151	422.644	151	1381.6	151	79.9
152	260.62	152	1019.872	152	40
153	281.344	153	1259.768	153	40.6
154	269.412	154	1136.68	154	39.5
155	113.8564	155	311.488	155	36.5
156	280.8416	156	112.2864	156	37.4
157	17.898	157	63.428	157	39.3
158	16.956	158	62.172	158	40.8
159	13.2508	159	77.7464	159	41.7
160	13.6904	160	70.48672	160	42.1
161	12.9996	161	74.104	161	40.7
162	12.30252	162	76.9928	162	39.7
163	11.17212	163	56.3944	163	39.3
164	9.71516	164	53.5056	164	42.3
165	10.1736	165	49.8632	165	42.5
166	10.5504	166	50.3656	166	42.6
167	11.9948	167	77.3696	167	42.2
168	4.53416	168	22.52008	168	41.4
169	3.93756	169	19.88248	169	41.9
170	3.37236	170	17.84776	170	42.1
171	3.611	171	16.78016	171	40.1
172	3.44144	172	17.94824	172	40.9
173	3.95012	173	27.946	173	40
174	3.78684	174	22.64568	174	38.7
175	4.396	175	26.8784	175	38.2
176	4.88584	176	29.3904	176	39.3
177	4.867	177	27.8832	177	41.2
178	4.49648	178	26.8784	178	42.9
179	4.92352	179	27.2552	179	42.7
180	2.68156	180	16.014	180	43.8
181	3.15884	181	16.02656	181	43.8
182	2.62504	182	11.59288	182	43.6
183	2.11008	183	13.89136	183	43.7
184	1.96564	184	12.53488	184	43.3
185	2.355	185	11.37936	185	42.3
186	2.07868	186	12.82376	186	41.4
187	2.12892	187	12.77352	187	39.8
188	2.1666	188	12.33392	188	40.6
189	2.512	189	12.20832	189	39.3
190	2.67528	190	13.3764	190	36.3
191	3.27188	191	27.632	191	34.1
192	4.98632	192	95.456	192	42.4
193	12.246	193	103.1176	193	41.6
194	15.9512	194	116.3056	194	43.7
195	19.5936	195	127.8608	195	44.6
196	23.6756	196	179.7336	196	43.20
197	26.4388	197	153.1064	197	43.90
198	30.144	198	176.5936	198	42.70
199	37.8056	199	177.2216	199	42.00
200	48.1676	200	409.456	200	38.10
201	121.6436	201	792.536	201	44.20
202	272.552	202	1670.48	202	30.20
203	384.964	203	1507.2	203	35.80
204	322.792	204	1283.632	204	33.80
205	259.992	205	1001.032	205	37.20
206	180.864	206	833.984	206	23.10
207	135.648	207	612.928	207	25.20
208	165.164	208	1081.416	208	28.50
209	312.116	209	1419.28	209	31.90
210	227.964	210	837.752	210	40.20
211	135.02	211	643.072	211	47.60
212	108.0788	212	542.592	212	51.90
213	81.5144	213	448.392	213	51.60
214	50.9308	214	261.248	214	52.40
215	19.2168	215	107.388	215	53.80
216	15.8256	216	61.0416	216	59.00
217	11.34796	217	42.9552	217	59.90
218	9.26928	218	33.6608	218	58.90
219	8.6036	219	38.6848	219	60.40
220	8.20168	220	40.82	220	60.70
221	12.0576	221	67.9496	221	61.60
222	17.0816	222	130.2472	222	64.00

WELL DRILLING DATA at Site No-1

Well No.	AWBH-1	Drilling Diameter	254 mm	Static Water Level	18.95 m
Location	Arerti	Casing Diameter	152 mm	Water Struck at	40,76,112,176,188 m
Easting	542642	Drilling Depth	m	Drilling method	DTH ,Air Rotary
Northing	985361	Well Depth	m		
Altitude	1769 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	**Rhyolitic Tuff** moderately weathred and sligthly fractured , medium to fine grained	Whitish			Surface casing up to 4 m	0
3	**Rhyolitic Tuff** moderately weathred and fractured medium to coarse grained	Light Grey	12			
5						5
10			10			10
15			35			15
20					Static water level ▽	20
22	**Welded Tuff** fine grained crystalline massive		35			
25						25
30			75			30
35			80			35
40			18 / 23		First(1) Water Strike zone	40
45	**Welded Tuff** medium to coarse grained highly weathred and moderately fractured water bearing	Light Grey	10			45
50						50

WELL DRILLING DATA at Site No-1

Well No.	AWBH-1	Drilling Diameter	254 mm	Static Water Level	18.95 m
Location	Arerti	Casing Diameter	152 mm	Water Struck at	40,76,112,176,188 m
Easting	542642	Drilling Depth	m	Drilling method	DTH ,Air Rotary
Northing	985361	Well Depth	m		
Altitude	1769 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
51	**Welded Tuff** moderately welded medium to fine grained crystalline	Light Grey	23			
55						55
60			42			60
65			50			65
70			30			70
75	**Rhyolitic Tuff** medium grained moderately weathred and sligthly fractured	Light Grey				75
76			20			
80	**Welded Tuff** coarse grained highly weathred and fractured water bearing	Light Grey			Second(2) Water Strike Zone	80
82			15			
85	**Basalt** fine grained moderately weathred massive	Light Grey				85
88			98			
90	**Basalt** massive	Dark Grey				90
94	slighty weathred and fractured medium to coarse grained		140			
95	**Volcanic Sand** moderately weathred fine grained well sorted	Light Grey				95
98						
100	**Basalt** medium to coarse grained	Light Grey	23			100

WELL DRILLING DATA at Site No-1

Well No.	AWBH-1	Drilling Diameter	254 mm	Static Water Level	18.95 m
Location	Arerti	Casing Diameter	152 mm	Water Struck at	40,76,112,176,188 m
Easting	542642	Drilling Depth	m	Drilling method	DTH ,Air Rotary
Northing	985361	Well Depth	m		
Altitude	1769 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
	moderately fractured & highly weathred					
102	water bearing		15			
	Basalt	Light Grey				
	massive					
105	fine grained					105
	slightly weathred		145			
110						110
112			46		Third(3) Water Strike Zone	
	Basalt	Dark Grey				
	medium to coarse grained		30			
115	highly to moderately weathred and					115
	moderately fractured		30			
	water bearing					
			146			
120			110			120
122			45			
	Basalt	Dark Grey				
	massive					
125	fine grained					125
			322			
			359			
130						130
			220			
133						
	Basalt	Light Red	65			
135	highly weathred					135
	fine grained					
137	massive					
	Basalt	Dark Grey				
139	fine grained , massive		253			
140	**Volcanic Sand**	Light Grey				140
	highly weathred					
	medium to fine grained					
	basaltic origin		377			
144			110			
145	**Basalt**	Dark Grey	220			145
	sligthly fractured					
	medium grained ,medium grained		180			
	Volcanic Sand	Light Red				
149	highly weathred ,fine grained					
150	**Basalt**	Dark Grey				150

WELL DRILLING DATA at Site No-2

Well No.	AWBH-2	Drilling Diameter	254 mm	Static Water Level	*173.70* m
Location	Melka Jilo	Casing Diameter	152 mm	Water Struck at	m
Easting	567410	Drilling Depth	m	Drilling method	DTH & AIR ROTAR
Northing	980819	Well Depth	m		
Altitude	1159 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
1	**Top Soil**	Dark Grey			Surface Casing 6 m long 11" in diam.	
	Rhyolitic Tuff	Light Grey			installed after drilling 12" in diam.	
	fine to medium grained				clay bit up to depth of 6m	
	moderately fractured					
5	moderately welded		2			5
			6			
10						10
15			10			15
20			5			20
			5			
25						25
			5			
30						30
33			7			
34	**Tuff**	Light Red				
35	very loss ,very fine grained					35
	highly weathred					
	Pumacious Tuff	Light Grey				
	moderately weathred		1			
	medium grained					
40						40
			2			
45						45
			2			
48						
	Tuff	Light Yellow				
50	moderately welded					50

WELL DRILLING DATA at Site No-2

Well No.	AWBH-2	Drilling Diameter	254 mm	Static Water Level	*173.70* m
Location	Melka Jilo	Casing Diameter	152 mm	Water Struck at	m
Easting	567410	Drilling Depth	m	Drilling method	DTH & AIR ROTAR
Northing	980819	Well Depth	m		
Altitude	1159 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
52	moderately weathred and fractured medium grained		1			
	Volcanic Sediment highly weathred fine to medium grained	Light Grey to Whitish				
55	poorly sorted					55
			2			
60						60
			3			
65						65
66	**Ignimbrite** moderately weathred and fractured coarse grained	Light Grey	8			
	Ignimbrite medium to fine grained	Light Green				
70	massive		9			70
72						
	Volcanic Sediemnt moderately weathred medium to fine grained	Light Grey				
75	poorly sorted containes mainly glassy volcanic material		6			75
80			2			80
84			3			
85	**Basalt** highly fractured and moderately weathred coarse grained	Light Grey				85
			21			
90						90
92						
	Vesicular Basalt coarse to medium grained highly fractured and weathred	Light Grey	15			
95	max. grain size diam. 4cm					95
			7			
100						100

WELL DRILLING DATA at Site No-2

Well No.	AWBH-2	Drilling Diameter	254 mm	Static Water Level	*173.70* m
Location	Melka Jilo	Casing Diameter	152 mm	Water Struck at	m
Easting	567410	Drilling Depth	m	Drilling method	DTH & AIR ROTAR
Northing	980819	Well Depth	m		
Altitude	1159 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
			8			
105						105
			7			
110						110
			23			
115						115
117			45			
	Aphanitic Basalt highly fractured and slightly weathred max. grain size 5cm	Greyish				
120	medium to coarse grained		20			120
124						
125	**Tuff Breccia** highly weathred medium to fine grained sandy to gravely grain size	Light Grey	23			125
130						130
			22			
135			20			135
	Aphanitic Basalt moderately fractured and weathred medium to coarse grained	Greyish				
140			22			140
			13			
145						145
			16			
150						150

WELL DRILLING DATA at Site No-3

Well No.	AWBH-3	Drilling Diameter	254 mm	Static Water Level	67.70 m
Location	Nukusa	Casing Diameter	152 mm	Water Struck at	73,90,108&16 m
Easting	589167	Drilling Depth	200.00 m	Drilling method	Mud Circulation
Northing	982682	Well Depth	m		
Altitude	1027 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	**Top Soil**	Light Grey				0
2	silty clay , very fine grained				Surface casing up to14 m after	
	Volcanic Sand	Dark Grey			drilling by 14" tri-cone bit up to	
4	moderately sorted		43		14 m depth then grouted with	
5	vesicular basalt in origin				cement	5
	moderately weathred		30			
	medium grained					
	Vesicular Basalt	Dark Grey	35			
	highly weathred & moderately fractured		68			
10	medium grained					10
11	Circulation loss ,No samlpe recoverd		150		To seal the circulation loss area	
	Vesicular Basalt	Light Grey	155		they grouted with cement and drilled	
	slightly fractured		205		again from 8 - 11 m depth	
	massive		231			
15	medium to fine grained		210			15
			145			
			152			
18			225			
	Vesicular Basalt	Light Grey	225			
20	moderately weathred		145			20
21	medium to fine grained		149			
	Vesicular Basalt	Light Grey				
	boulder in grain size					
24	highly weathred and fractured		139			
25	max grain size 5 cm in diam.					25
	coarse to medium grained		205		Drilling from 21-35 m is by DTH	
	No sample recovered,Because of				drilling system after filled with cement	
	circulation loss from depth of				from 13-21 m depth	
29	24-29 m		201			
30						30
			30			
	Scoracious Basalt	Reddish				
35	moderately weathred and fractured		27			35
	Basalt					
	Massive		215			
	from 35 m to 87 m depth					
			292			
40						40
			395			
			345			
45			87			45
			115			
			83			
50						50

WELL DRILLING DATA at Site No-3

Well No.	AWBH-3	Drilling Diameter	254 mm	Static Water Level	67.70 m
Location	Nukusa	Casing Diameter	152 mm	Water Struck at	73,90,108&16 m
Easting	589167	Drilling Depth	200.00 m	Drilling method	Mud Circulation
Northing	982682	Well Depth	m		
Altitude	1027 m				

Depth	Geology	Drill Rate (min/rod)	Well Structure	Remark	Depth
50		135			50
55					55
		535			
60					60
		510			
65					65
				Static water level ▽	
		585			
70					70
73					
	Basalt				
75	highly weathred and fractured	580		Drilling from 75 m to 204 m is using	75
				8" tri-cone bit	
80		604			80
		170			
85					85
87		155			
	Welded Tuff				
	moderately to slightly welded tuff				
90	**from 87 m to 111m depth**				90
		80			
95					95
		80			
		88			
100					100

WELL DRILLING DATA at Site No-3

Well No.	AWBH-3	Drilling Diameter	254 mm	Static Water Level	67.70 m
Location	Nukusa	Casing Diameter	152 mm	Water Struck at	73,90,108&16 m
Easting	589167	Drilling Depth	200.00 m	Drilling method	Mud Circulation
Northing	982682	Well Depth	m		
Altitude	1027 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
			89			
105			35			105
			40			
110	**highly weathred and fractured Welded Tuff**					110
111	from 108m to 111 m depth		15			
	Welded Tuff		77			
	highly to moderately welded tuff					
	massive to slightly fractured		130			
115	from 111 m to 154 m depth					115
			170			
			90			
120			107			120
			204			
			143			
125						125
			388			
			245			
			423			
130						130
			317			
135			165			135
			81			
			318			
140						140
			112			
			140			
145						145
			149			
150			113			150

WELL DRILLING DATA at Site No-4N

Well No.	AWBH-4N	Drilling Diameter	254 mm	Static Water Level	87.00 m
Location	Metehara	Casing Diameter	152 mm	Water Struck at	105 and 110 m
Easting	587760	Drilling Depth	220.00 m	Drilling method	Mud circulation
Northing	977438	Well Depth	m		
Altitude	1039 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
1	**Top Soil**	Brownish				
	Clayish,very fine		376		Surface casing installed up to 30 m depth after rimming by 17" tri-cone bit up to 30 m ,then grouted with cement	
	Vesicular Basalt	Light Grey				
	massive		590			
5	fine grained					5
	Vesicular Basalt	Grey	540			
	moderately weathred		194			
	fine grained		76			
	silty to sandy grain size		450			
10						10
	Vesicular Basalt		512			
12	massive		220			
	Ash Deposite				Very soft formation from 12-18 m depth probably very loss tuff or ash deposite	
	highly weathred					
15						15
18			4			
	Welded Tuff					
20	moderately welded					20
			302			
			166			
25						25
			354			
30			330			30
			156			
35						35
			214			
			243			
40						40
			361			
	Welded Tuff					
	moderately weathred and fractured					
45			168			45
			85			
50						50

WELL DRILLING DATA at Site No-4N

Well No.	AWBH-4N	Drilling Diameter	254 mm	Static Water Level	87.00 m
Location	Metehara	Casing Diameter	152 mm	Water Struck at	105 and 110 m
Easting	587760	Drilling Depth	220.00 m	Drilling method	Mud circulation
Northing	977438	Well Depth	m		
Altitude	1039 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
			230			
55						55
			95			
60						60
65						65
66			84			
	Welded Tuff moderately welded					
70			238			70
			182			
75						75
			463			
80			540			80
84			274			
85	**Welded Tuff** moderately weathred and fractured probabaly first water strike zone				Static water level ▽	85
88			91			
90	**Welded Tuff** moderately welded					90
			250			
95						95
92			335			
	Volcanic Sand moderately weathred collapsable formation					
100			24			100

WELL DRILLING DATA at Site No-4N

Well No.	AWBH-4N	Drilling Diameter	254 mm	Static Water Level	87.00 m
Location	Metehara	Casing Diameter	152 mm	Water Struck at	105 and 110 m
Easting	587760	Drilling Depth	220.00 m	Drilling method	Mud circulation
Northing	977438	Well Depth	m		
Altitude	1039 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
	Probabaly second water strike zone					
103			145			
	Volcanic Sand moderately weathred					
105						105
			160		From 10 m depth to 110 m circulation loss ,no sample recovered	
110			90			110
115						115
120						120
125						125
130						130
135						135
140						140
145						145
150						150

WELL DRILLING DATA at Site No-5

Well No.	AWBH-5	Drilling Diameter	254 mm	Static Water Level	4.00 m
Location	Addis Ketema	Casing Diameter	152 mm	Water Struck at	31and 58 m
Easting	601565	Drilling Depth	140.00 m	Drilling method	Mud Circulation
Northing	980024	Well Depth	140.00 m		
Altitude	959 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
	Top Soil Very fine grained, Silty clay	Light Yellow			Surface casing up to 35 m length and 12" in diam. Steel casing then grouted with cement	
2						
	Tuff moderately welded moderately weathred	Light Yellow			Static Water Level ▽	
5						5
	medium grained					
8						
	Circulation loss No sample recovered					
10						10
	Tuff slightly welded sandy sized medium to fine grained	Light Yellow				
15						15
17						
	Tuff very loss (powder like) moderately weathred	Light Yellow				
20						20
	fine grained					
25						25
30						30
31					First Water Strike zone	
	Basaltic Tuff fine to medium grained sand to silty grain size moderately sorted	Light Yellow to Light Grey				
35						35
	fine to medium grained					
37						
	Tuff slightly welded highly weathred	Light Yellow				
40						40
	fine to medium grained					
45						45
50						50

WELL DRILLING DATA at Site No-5

Well No.	AWBH-5	Drilling Diameter	254 mm	Static Water Level	4.00 m
Location	Addis Ketema	Casing Diameter	152 mm	Water Struck at	31and 58 m
Easting	601565	Drilling Depth	140.00 m	Drilling method	Mud Circulation
Northing	980024	Well Depth	140.00 m		
Altitude	959 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
55						55
58					Second Water Strike Zone	
	Porphyrtic Basalt moderately fractured and weathred	Greyish				
60						60
	coarse grained water bearing zone					
64						
65	**Porphyritic Basalt** medium grained crystalline and massive	Greyish				65
70						70
75						75
	Volcanic Sand fine grained well sorted moderately weathred basaltic tuff in origin	Light Grey				
80						80
84						
85						85
90						90
	Volcanic Sand moderately sorted medium to fine grained slightly weathred basaltic origin	Light Grey				
95						95
100						100

WELL DRILLING DATA at Site No-5

Well No.	AWBH-5	Drilling Diameter	254 mm	Static Water Level	4.00 m
Location	Addis Ketema	Casing Diameter	152 mm	Water Struck at	31and 58 m
Easting	601565	Drilling Depth	140.00 m	Drilling method	Mud Circulation
Northing	980024	Well Depth	140.00 m		
Altitude	959 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
105						105
109						
110	**Volcanic Sand** silty volcanic sand very fine grained highly weathred baslatic origin	Light Brown				110
114						
115	**Volcanic Sand** moderately sorted basaltic origin fine grained	Dark Grey				115
120						120
125						125
126						
130	**Volcanic Sand** moderately weathred silty to sandy grain size poorly sorted	Light Grey				130
133						
135	**Volcanic Sand** slightly sorted very fine to fine grained silty to fine sand in grain size	Dark Grey				135
140					Drilling is done 0 - 140 m depth mud circulation drilling system using 10" in diam. Tri-cone clay bit	140

WELL DRILLING DATA at Site No-6

Well No.	AWBH-6	Drilling Diameter	254 mm	Static Water Level	175.01 m
Location	Welenchiti	Casing Diameter	152 mm	Water Struck at	194,200,220&23(m
Easting	552785	Drilling Depth	247.00 m	Drilling method	Mud Circulation & DTH
Northing	958779	Well Depth	m		
Altitude	1357 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	**Top Soil** silty clay very fine grained	Light Grey			Surface casing up to 10 m depth installed after drilling with 14" diam. tri-cone bit.	0
5						5
6						
8	**Tuff** Very loss, very fine grained	Light Yellow	200			
10	**Rhyolite** massive , fine grained	Light White				10
13	**Rhyolite** maasive , medium grained moderately fractured	Light White				
15	**Basalt** massive fine grained slightly weathred	Light Grey	60 435			15
18						
20	**Basalt** medium to fine grained slightly weathred	Greyish				20
25			200			25
30			180			30
35						35
40			175			40
42			152 46			
45	**Basalt** massive fine grained	Light Grey				45
47						
50	**Volcanic Sand** very fine grained ,silty grain size moderately weathred	Greyish	425 95 16			50

WELL DRILLING DATA at Site No-6

Well No.	AWBH-6	Drilling Diameter	254 mm	Static Water Level	175.01 m
Location	Welenchiti	Casing Diameter	152 mm	Water Struck at	194,200,220&23(m
Easting	552785	Drilling Depth	247.00 m	Drilling method	Mud Circulation & DTH
Northing	958779	Well Depth	m		
Altitude	1357 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50	basaltic origin		240			50
	Trachytic Basalt	Light Grey				
	massive , crystalline ,slightly fractured		572			
54	medium grained					
55	**Vesicular Basalt**	Greyish	90			55
	highly weathred					
	moderately fractured					
	coarse grained					
59			356			
60	**Trachytic Basalt**	Light Grey				60
	massive					
	medium to fine grained					
			383			
65			306			65
66						
	Trachytic Basalt	Greyish				
68	moderately weathred ,fine grained		240			
	Volcanic Sediment	Greyish				
70	medium to coarse grained		40			70
	highly weathred					
	Basalt	Light Grey				
73	medium to fine grained					
74	massive ,slightly fractured		180			
75	**Rhyolite**	Greyish				75
76	moderately fractured					
	massive		420			
	coarse grained					
79	some obsidian		430			
80	**Rhyolite**	Greyish				80
	medium to fine grained					
	moderately weathred & fractured					
	some obsidian					
84	**Rhyolite**	Light Grey				
85	massive ,crystalline	to				85
	coarse grained	Light Green				
	moderately fractured					
88	**Rhyolite**	Greyish	510			
	moderately weathred ,slightly fractured					
90	medium to fine grained					90
91	**Tuff**	Light Yellow				
	moderately weathred					
	Very fine grained					
	Clay	Greyish	540			
95	Very fine grained					95
	highly weathred					
	Vesicular Basalt	Greyish				
	highly weathred&moderately fractured		355			
	medium to fine grained					
100	**Vesicular Basalt**	Dark Grey	180			100

WELL DRILLING DATA at Site No-6

Well No.	AWBH-6	Drilling Diameter	254 mm	Static Water Level	175.01 m
Location	Welenchiti	Casing Diameter	152 mm	Water Struck at	194,200,220&23(m
Easting	552785	Drilling Depth	247.00 m	Drilling method	Mud Circulation & DTH
Northing	958779	Well Depth	m		
Altitude	1357 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
101	medium to fine grained		67			
	massive		80			
	Basalt	Light Grey				
	medium to fine grained					
105	moderately weathred and slighhtly					105
	fractured		650			
	Rhyolite	Light Grey	520			
	medium to coarse grained					
	moderately fractured		510			
110	massive ,crytalline					110
	No Sample Recovered	Greyish				
112	Circulation Loss		120			
	Rhyolitic Tuff	Light Grey	105			
114	highly weathred & moderately fractured					
115	medium to fine grained					115
116	**No Sample Recovered**		280			
	Circulation Loss					
	Rhyolitic Tuff	Light Grey	230			
	highly weathred & moderately fractured					
120	medium grained		225			120
	Rhyolite	Greyish	130			
	fine grained ,massive					
123	**No Sample Recovered**		60		Drilling by mud circulation from	
	Circulation Loss				0 to 123 m depth	
125	**Rhyolite**	Light Grey				125
	medium to fine grained		140			
127	moderately weathred & fractured					
	Vesicular Basalt	Greyish				
	coarse grained					
130	highly weathred & fractured					130
	max. grain size 4 cm					
			52			
135						135
			9		From 126 m drilling by DTH	
					drilling system	
			12			
140						140
			150			
145			6			145
			20			
150						150

WELL DRILLING DATA at Site No-7

Well No.	AWBH-7	Drilling Diameter	254 mm	Static Water Level	- m
Location	Abo Mesa (Lekicho)	Casing Diameter	152 mm	Water Struck at	- m
Easting	586813	Drilling Depth	251.00 m	Drilling method	DTH drilling system
Northing	949687	Well Depth	m	**Dry well**	
Altitude	1239 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
1	**Top Soil** silty clay , very fine grained	Dark Grey			Surface casing up to 14 m installed after drilling with 12 inch hammer bit up to 14 m using DTH drilling system	
	~~**Basaltic Tuff**~~ **Ryolitic slightly welded tuff** highly weathred very loss tuff and fine grained					
5	basaltic origin some boulders max. grain size 5 cm Dino Ignimbrite		3			5
			5			
10						10
			7			
15						15
			3			
20						20
			2			
25						25
			2			
30						30
			3			
35						35
			4			
40						40
	Volcanic Ash and pumice very fine grained powder like very loss	Whitish	2			
45						45
			2			
48						
	Tuff weathred,powder like	Light Yellow				
50						50

WELL DRILLING DATA at Site No-7

Well No.	AWBH-7	Drilling Diameter	254 mm	Static Water Level	- m
Location	Abo Mesa (Lekicho)	Casing Diameter	152 mm	Water Struck at	- m
Easting	586813	Drilling Depth	251.00 m	Drilling method	DTH drilling system
Northing	949687	Well Depth	m	**Dry well**	
Altitude	1239 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
	very loss Very fine grained Dino Ignimbrite non~slightly welded		2			
55						55
			3			
60			5			60
62						
	Vesicular Basalt highly weathred and slightly fractured medium to coarse grained	Dark Grey				
65			11			65
	max. grain size 4 cm Bofa basalts					
			12			
70						70
			8			
75						75
			5			
80						80
			13			
85						85
88			20			
90	**Volcanic Sand and Gravel** sub-rounded to angular grain shape	Whitish to				90
	very fine to medium grained gravel basaltic origin silty to gravely grain size	Light Grey	16			
95	Bofa basalts, tuff-breccia or auto-brecciated lava					95
			20			
100						100

WELL DRILLING DATA at Site No-7

Well No.	AWBH-7	Drilling Diameter	254 mm	Static Water Level	- m
Location	Abo Mesa (Lekicho)	Casing Diameter	152 mm	Water Struck at	- m
Easting	586813	Drilling Depth	251.00 m	Drilling method	DTH drilling system
Northing	949687	Well Depth	m	**Dry well**	
Altitude	1239 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
			15			
105						105
			15			
110						110
			15			
115						115
			12			
120			11			120
124						
125	**Volcanic Sediment**	Greyish	9			125
	highly weathred					
	medium to coarse grained					
	gravely grain size					
	poorly sorted					
130	vesicular basaltic origin		19			130
	Volcanic Sand	Light Yellow				
	well sorted					
	medium grained					
	basaltic origin		14			
135	slightly weathred					135
	Bofa basalts, tuff-breccia or auto-brecciated lava					
			15			
140						140
	Basalt	Dark Grey				
	moderately fractured & slightly					
	weathred		9			
	medium to coarse grained					
145	Bofa basalts					145
			10			
150						150

WELL DRILLING DATA at Site No-8

Well No.	AWBH-8	Drilling Diameter	254 mm	Static Water Level	m
Location	Fateledy	Casing Diameter	156 mm	Water Struck at	m
Easting	615265	Drilling Depth	230.00 m	Drilling method	Mud and DTH
Northing	966396	Well Depth	m		
Altitude	1221 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	**Tuff (Top Soil)**	Light Yellow				0
2	very fine grained,clayish,sticky				Surface casing installed 11 m after	
	Volcanic Sediment	Light Grey			drilling up to 11 m depth by 12"	
4	highly weathred				hammer bit from 0-7 m using	
5	medium to coarse grained				12" tri-cone bit mud circulation	5
	sandy grain size , rhyolitic origin		80		from 7-11 m by 12" hammer bit	
7	**Rhyolitic Tuff**	Light Yellow			DTH drilling system	
	coarse grained ,highly fractured	to				
	gravely grain size	Light Grey				
10	**Volcanic Sand**	Light Grey	180			10
11	medium grained					
	poorly sorted					
	rhyolitic tuff origin					
14	**Volcanic Sediemnt**	Light Grey				
15	boulder grain size		10			15
	highly fractured					
	max. grain size 7 cm					
	rhyolitic origin					
	Volcanic Sand	Light Grey				
20	medium grained		30			20
	moderately weathred					
	moderetly sorted					
	rhyolitic origin					
	Rhyolite	Light Grey	15			
25	moderately fractured and weathred					25
	medium to coarse grained					
			4			
30						30
	Rhyolite	Light Grey				
	medium to coarse grained					
	highly fratured		5			
	gravely grain size					
35	some pyroclastic pumice and tuff					35
	braccia					
			10			
40						40
42						
	No Sample recovered		10			
	there is circulation loss from 42 - 51 m					
45						45
			25			
					Drilling from 11 m to 51 m by DTH	
					drilling system using 10" hammer	
50					bit	50

WELL DRILLING DATA at Site No-8

Well No.	AWBH-8	Drilling Diameter	254 mm	Static Water Level	m
Location	Fateledy	Casing Diameter	156 mm	Water Struck at	m
Easting	615265	Drilling Depth	230.00 m	Drilling method	Mud and DTH
Northing	966396	Well Depth	m		
Altitude	1221 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
51						
	Trachyte moderately fractured and slightly to moderately weathred medium to coarse grained	Light Grey	25			
55						55
	max. grain size 2cm		25			
60						60
			30			
65						65
			19			
70			20			70
75			30			75
			20			
80						80
			36			
85						85
			30			
90						90
			21			
95						95
			32			
100						100

WELL DRILLING DATA at Site No-8

Well No.	AWBH-8	Drilling Diameter	254 mm	Static Water Level	m
Location	Fateledy	Casing Diameter	156 mm	Water Struck at	m
Easting	615265	Drilling Depth	230.00 m	Drilling method	Mud and DTH
Northing	966396	Well Depth	m		
Altitude	1221 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
			15			
105						105
			30			
110						110
			30			
115						115
			21			
120						120
			30			
125			14			125
			11			
130						130
	Rhyolitic Tuff Breccia and Pumice moderately to slightly welded tuff moderately weathred and fractured medium grained	Light Red to Greyish	15			
135						135
139			11			
140	**Rhyolite** medium grained moderately weathred and slightly fracturd	Greyish				140
145			24			145
146						
149	**Rhyolite** moderately weathred and fractured coarse grained	Light Grey	13			
150	**Rhyolite**	Dark Grey				150

WELL DRILLING DATA at Site No-9

Well No.	AWBH-9	Drilling Diameter	254 mm	Static Water Level	147.00 m
Location	Bofa	Casing Diameter	152 mm	Water Struck at	221,224,239 & 246 m
Easting	555025	Drilling Depth	272.00 m	Drilling method	DTH
Northing	936983	Well Depth	m		
Altitude	1416 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	**Tuff** very loss very fine grained	Light Yellow			Surface casing up to 7 m installed and grouted with cement	0
5			300			5
8						
10	**Ignimbrite** slightly fractured medium to fine grained	Light Green				10
12						
14	**Ash** very fine and powder like	Light Grey	150			
15	**Tuff** slightly welded moderately weathred fine to medium grianed	Light Yellow				15
18						
20	**Pumacious Tuff** medium to coarse grained moderately weathred	Light Yellow	40			20
25	**Basaltic Tuff** medium grained moderately to highly weathred	Light Grey to Dark Grey				25
26			30			
30	**Basalt** medium to coarse grained moderately weathred and fractured	Light Grey				30
35			135			35
40			75			40
44			15			
45	**Basalt** medium to fine grained slightly fractured massive	Light Grey				45
50			60			50

WELL DRILLING DATA at Site No-9

Well No.	AWBH-9	Drilling Diameter	254 mm	Static Water Level	147.00 m
Location	Bofa	Casing Diameter	152 mm	Water Struck at	221,224,239 & 246 m
Easting	555025	Drilling Depth	272.00 m	Drilling method	DTH
Northing	936983	Well Depth	m		
Altitude	1416 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
			300			
55						55
			36			
60						60
			35			
63						
65	**Vesicular Basalt** highly fractured and slightly weathre	Light Grey to Light Red				65
	coarse grained and gravely grain size Max. grain size 4cm		45			
70						70
			100			
75						75
80			45			80
	Basalt slightly fractured medium to fine grained	Light Grey				
85						85
			70			
90						90
			95			
94						
95	**Bsasalt** medium to coarse grained moderately fractured and weathred	Light Grey				95
			75			
100						100

WELL DRILLING DATA at Site No-9

Well No.	AWBH-9	Drilling Diameter	254 mm	Static Water Level	147.00 m
Location	Bofa	Casing Diameter	152 mm	Water Struck at	221,224,239 & 246 m
Easting	555025	Drilling Depth	272.00 m	Drilling method	DTH
Northing	936983	Well Depth	m		
Altitude	1416 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
104			90			
105	**Rhyolitic Tuff** medium to fine grained moderately weathred	Light Grey				105
110			125			110
115						115
			105			
120						120
	Volcanic Sand poorly sorted medium grained moderately sorted	Light Grey	110			
125						125
129			40			
130	**Tuff** very fine grained (powder like) lossly welded	Light Yellow				130
135			270			135
136						
137	**Volcanic Sand** medium to fine grained sandy grain size	Light Grey	55			
138						
140	**Vesicular Basalt** highly fractured and moderately weathred	Light Grey				140
	Tuff moderately weathred very fine grained	Light Grey	210			
145						145
146	lossly welded		120			
	Volcanic Sand poorly sorted medium to fine grained moderately weathred	Light Grey			SWL 147 B.G.L ▽	
150						150

WELL DRILLING DATA at Site No-11

Well No.	AWBH-11	Drilling Diameter	254 mm	Static Water Level	m
Location	Sire	Casing Diameter	152 mm	Water Struck at	87,95,104,121,172 m
Easting	553313	Drilling Depth	m	Drilling method	DTH and Mud
Northing	916009	Well Depth	m		
Altitude	1838 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0	**Clay Soil** very fine grained, sticky	Black	19		Surface casing up to 23 m of 12" in diameter and grouted with cement	0
3	**Tuff** very loss very fine grained	Yellowish				
5						5
7						
8	**Clay**	Black	60			
10	**Tuff** very fine very loss slightly weathred	Light Yellow				10
			18			
15						15
16						
20	**Volcanic Sediment** highly weathred coarse grained gravel to boulder grain size max. grain size 5 cm in diameter angular to sub-rounded in grain shape basalt and welded tuff in origin	Light Grey	27			20
25						25
			20			
30						30
32			27			
34	**Tuff** very loss and sticky	Light Grey to Light Yellow				
35						35
36	**Volcanic Sediment** highly weathred gravel grain size basalt and welded tuff in origin	Light Grey	45			
40	**Ignimbrite** slightly fractured medium to coarse grained	Light Green				40
			68			
45						45
50			47			50

WELL DRILLING DATA at Site No-11

Well No.	AWBH-11	Drilling Diameter	254 mm	Static Water Level	m
Location	Sire	Casing Diameter	152 mm	Water Struck at	87,95,104,121,172 m
Easting	553313	Drilling Depth	m	Drilling method	DTH and Mud
Northing	916009	Well Depth	m		
Altitude	1838 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
51						
	Clay intercaleted with Basalt	Light Grey			Static Water Level	
	higly weathred basalt	to				
	gravel grain size basalt	Light Yellow				
55	clay sticky and ball type grain shape					55
			37			
60						60
62						
	Ignimbrite	Light Green	32			
	medium to fine grained					
65	slightly weathred and fractured					65
			34			
70						70
72						
	Clay	Light Brown				
	highly weathred					
75	sub-rounded to rounded grain shape		37			75
80						80
81			37			
	Volcanic Sediment	Light Brown				
	highly weathred					
	medium to fine grained					
85	Rhyolitic origin					85
87			27		First Water Strike Zone	
	Volcanic Sediment	Light Red				
	highly weathred					
90	medium to fine grained					90
	rhyolitic origin					
93	water bearing					
	Volcanic Sand	Light Grey	23			
	highly weathred weathred					
95	fine grained				Second Water Strike Zone	95
	well sorted					
	Rhyolite	Light Grey				
98	slightly fractured					
	moderately fractured		36			
100	water bearing					100

WELL DRILLING DATA at Site No-11

Well No.	AWBH-11	Drilling Diameter	254 mm	Static Water Level	m
Location	Sire	Casing Diameter	152 mm	Water Struck at	87,95,104,121,172 m
Easting	553313	Drilling Depth	m	Drilling method	DTH and Mud
Northing	916009	Well Depth	m		
Altitude	1838 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
	Volcanic Sand	Light Grey				
	highly weathred					
	medium to fine grained					
104	well sorted				Third Water Strike Zone	
105	**Rhyolite**	Greyish	75			105
	medium to fine grained					
	water bearing					
	moderately weathred and slightly					
109	fractured					
110	**Volcanic Sand**					110
	highly weathred		133			
	medium to fine grained					
	some clay interclated with the volcanic					
	sand					
115	Volcanic sand light grey in color					115
	Clay light yellow in color					
			115			
120						120
121			250			
	Scouracious Basalt	Light Red			Fourth Water strike zone	
	slightly fractured and highly weathred					
	medium grained					
125	wate bearing		180			125
	125-126 m Basalt,massive&light grey					
	Scouracious Basalt from 126-138 m		250			
130						130
			75			
135			60			135
138						
	Basalt	Light Grey	60			
140	moderately weathred&slightly fractured					140
	medium grained					
142						
	Basalt	Grey				
	massive					
145	medium grain size					145
			480			
			145			
150						150

WELL DRILLING DATA at Site No-12

Well No.	AWBH-12	Drilling Diameter	254 mm	Static Water Level	m
Location	Sokoru	Casing Diameter	152 mm	Water Struck at	180,190 & 20 m
Easting	550405	Drilling Depth	219.00 m	Drilling method	DTH
Northing	1027427	Well Depth	m		
Altitude	2870 m				

Depth	Geology	Colour	Drill time (min/rod)	Well Structure	Remark	Depth
0						0
1	**Top Soil** clay	Light Grey			Surface casing up to 2 m after drilling using 14" in diameter tri-cone bit	
	Volcanic Sand fine grained well sorted ,moderately weathred	Light Grey	320			
5	**Basalt** moderately weathred & highly fractured coarse grained maximum grain size 6 cm	Dark Grey	587			5
10			9			10
15						15
	Welded Tuff medium to coarse grained highly weathred & moderately fractured	Light Yellow	20			
20						20
			20			
25						25
26						
	Rhyolitic Tuff moderately weathred fine to medium grained	Light Grey	10			
30						30
			10			
35						35
40			30			40
42			20			
	Scoracious Basalt moderately weathred & fractured medium grained	Light Grey				
45						45
	Welded Tuff highly weathred & moderately fractured medium to fine grained	Light Yellow	10			
50						50

WELL DRILLING DATA at Site No-12

Well No.	AWBH-12	Drilling Diameter	254 mm	Static Water Level	m
Location	Sokoru	Casing Diameter	152 mm	Water Struck at	180,190 & 20 m
Easting	550405	Drilling Depth	219.00 m	Drilling method	DTH
Northing	1027427	Well Depth	m		
Altitude	2870 m				

Depth	Geology		Drill Rate (min/rod)	Well Structure	Remark	Depth
50						50
52			28			
	Volcanic Sand moderately weathred well sorted	Light Grey				
55	medium grained					55
			27			
60						60
	Basalt moderately fractured &slightly weathred medium grained	Light Grey	34			
65						65
	Basalt highly weathred and fractured medium to coarse grained gravel grain size	Ligh Red	32			
70						70
75			26			75
80						80
			22			
85						85
			22			
90						90
			19			
95						95
			26			
100						100

WELL DRILLING DATA at Site No-12

Well No.	AWBH-12	Drilling Diameter	254 mm	Static Water Level	m
Location	Sokoru	Casing Diameter	152 mm	Water Struck at	180,190 & 20' m
Easting	550405	Drilling Depth	219.00 m	Drilling method	DTH
Northing	1027427	Well Depth	m		
Altitude	2870 m				

Depth	Geology	Colour	Drill Rate (min/rod)	Well Structure	Remark	Depth
100						100
105			27			105
110						110
			25			
115						115
			24			
120						120
123			23			
125	**Trachytic Basalt** moderately fractured and slightly	Light Grey				125
	weathred medium to coarse grained					
			47			
130						130
135			35			135
136	**Volcanic Sand** fine grined basaltic origin	Light Grey				
140	**Basalt** highly weathred and slightly fractured	Reddish				140
	medium to coarse grained the color is altered to reddish		17			
145						145
148			19			
150	**Clay** very fine grained	Reddish				150

PRE-TEST DATA SHEET
SHEET No. : 1/1

Date: 5 April 2014

Location: Arerti Site No.: 1
GPS Reading: 542642 E, 985361 N
Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m
Static Groundwater Level (FToC*) 12.77 m Screen Length: 36.00 m
Pump Type: Submersible Casing stick up: 0.80 m
Pump Setting: 83.50 m, Discharge (Q): 12.09 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	F mg/l	Temp. (℃)
		0	0	12.77	0.00				
			1	34.80	22.03				
			2	39.92	27.15				
			4	44.21	31.44				
			6	46.06	33.29				
			8	46.97	34.20				
			10	47.58	34.81				
			12	48.02	35.25				
			14	48.43	35.66				
			16	48.72	35.95				
			18	48.93	36.16				
			20	49.14	36.37				
			25	49.53	36.76				
			30	49.78	37.01				
			35	45.38	32.61				
			40	45.49	32.72				
			45	45.53	32.76				
			50	45.47	32.70				
			55	46.00	33.23				
		1	60	46.03	33.26				
			70	46.28	33.51				
			80	46.53	33.76				
			90	46.64	33.87				
			100	46.85	34.08				
			110	46.92	34.15				
		2	120	47.08	34.31				

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 1/5

Date: 6 April 2014

Location: Arerti Site No.: 1
GPS Reading: 542642 E, 985361 N
Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m
Static Groundwater Level (FToC*): 13.97 m Screen Length: 36.00 m
Pump Type: Submersible Casing stick up: 0.80 m
Pump Setting: 83.50 m, Discharge (Q): 10.18 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
6-Apr-14	11:00	0	0	13.97	0.00			
			1	16.23	2.26			
			2	19.08	5.11			
			4	22.61	8.64			
			6	24.93	10.96			
			8	26.08	12.11			
			10	28.98	15.01			
			12	30.15	16.18			
			14	33.04	19.07			
			16	35.10	21.13			
			18	38.01	24.04			
			20	40.12	26.15			
			25	42.27	28.30			
			30	44.11	30.14			
			35	45.29	31.32			
			40	46.77	32.80			
			45	47.68	33.71			
			50	48.05	34.08			
			55	49.01	35.04			
	10:00	1	60	49.73	35.76			
			70	50.04	36.07			
			80	50.20	36.23			
			90	50.35	36.38			
			100	50.59	36.62			
			110	50.67	36.70			
	11:00	2	120	50.84	36.87			

STEP-DRAWDOWN TEST DATA SHEET

Date: 6 April 2014

SHEET No. : 2/5

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.97 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): 11.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
6-Apr-14	11:00	0	0	50.84	36.87			
			1	51.02	37.05			
			2	51.16	37.19			
			4	51.29	37.32			
			6	51.47	37.50			
			8	51.50	37.53			
			10	51.54	37.57			
			12	51.55	37.58			
			14	51.59	37.62			
			16	51.62	37.65			
			18	51.64	37.67			
			20	51.66	37.69			
			25	51.72	37.75			
			30	51.78	37.81			
			35	51.83	37.86			
			40	51.87	37.90			
			45	51.92	37.95			
			50	51.98	38.01			
			55	52.01	38.04			
	12:00	3	60	52.05	38.08			
			70	52.17	38.20			
			80	52.23	38.26			
			90	52.28	38.31			
			100	52.36	38.39			
			110	52.43	38.46			
	13:00	4	120	52.50	38.53			

STEP-DRAWDOWN TEST DATA SHEET

Date: 6 April 2014

SHEET No. : 3/5

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.97 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): 11.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
6-Apr-14	13:00	0	0	52.50	38.53			
			1	52.68	38.71			
			2	52.71	38.74			
			4	52.78	38.81			
			6	52.84	38.87			
			8	52.86	38.89			
			10	52.87	38.90			
			12	52.88	38.91			
			14	52.89	38.92			
			16	52.90	38.93			
			18	52.91	38.94			
			20	52.92	38.95			
			25	52.95	38.98			
			30	52.98	39.01			
			35	53.00	39.03			
			40	53.03	39.06			
			45	53.06	39.09			
			50	53.07	39.10			
			55	53.10	39.13			
	14:00	5	60	53.14	39.17	545	7.49	31.8
			70	53.20	39.23			
			80	53.24	39.27			
			90	53.32	39.35			
			100	53.36	39.39			
			110	53.42	39.45			
	15:00	6	120	53.45	39.48	529	7.37	32.1

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 4/5

Date: 6 April 2014

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.97 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): 12.09 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
6-Apr-14	15:00	0	0	53.45	39.48			
			1	53.65	39.68			
			2	53.77	39.80			
			4	53.80	39.83			
			6	53.85	39.88			
			8	53.88	39.91			
			10	53.90	39.93			
			12	53.92	39.95			
			14	53.94	39.97			
			16	53.96	39.99			
			18	53.97	40.00			
			20	53.99	40.02			
			25	54.01	40.04			
			30	54.04	40.07			
			35	54.06	40.09			
			40	54.10	40.13			
			45	54.13	40.16			
			50	54.15	40.18			
			55	54.17	40.20			
	16:00	7	60	54.18	40.21	528	7.57	31.17
			70	54.22	40.25			
			80	54.25	40.28			
			90	54.28	40.31			
			100	54.33	40.36			
			110	54.37	40.40			
	17:00	8	120	54.40	40.43			

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 5/5

Date: 6 April 2014

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.97 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): 9.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
6-Apr-14	17:00	0	0	54.40	40.43			
			1	53.13	39.16			
			2	52.88	38.91			
			4	52.04	38.07			
			6	51.50	37.53			
			8	51.30	37.33			
			10	50.90	36.93			
			12	50.70	36.73			
			14	50.60	36.63			
			16	50.40	36.43			
			18	50.20	36.23			
			20	50.08	36.11			
			25	50.03	36.06			
			30	50.02	36.05			
			35	50.00	36.03			
			40	49.98	36.01			
			45	49.97	36.00			
			50	49.97	36.00			
			55	49.98	36.01			
	18:00	9	60	49.98	36.01	533	7.38	31.6
			70	50.01	36.04			
			80	50.03	36.06			
			90	50.06	36.09			
			100	50.08	36.11			
			110	50.09	36.12			
	19:00	10	120	50.10	36.13	524	7.55	31.1

CONTINUOUS PUMPING TEST DATA SHEET

Date: 7 April 2015

SHEET No. : 1/3

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ¢ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.86 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): 12.09 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
7-Apr-15	6:00	0	0	13.86	0			
			1	28.10	14.24			
			2	31.25	17.39			
			3	38.54	24.68			
			4	42.56	28.70			
			5	45.06	31.20			
			6	47.04	33.18			
			8	47.87	34.01			
			10	48.30	34.44			
			15	48.67	34.81			
			20	49.00	35.14			
			25	49.59	35.73			
			30	50.18	36.32			
			35	50.45	36.59			
			40	50.73	36.87			
			45	50.89	37.03			
			50	51.15	37.29			
			55	51.27	37.41			
7-Apr-15	7:00	1	60	51.42	37.56	513	7.39	29.8
			70	51.70	37.84			
			80	51.91	38.05			
			90	52.10	38.24			
			100	52.32	38.46			
			110	52.47	38.61			
7-Apr-15	8:00	2	120	52.59	38.73	522	7.35	32.1
			140	52.84	38.98			
			160	53.07	39.21			

CONTINUOUS PUMPING TEST DATA SHEET

Date: 7 April 2015

SHEET No. : 2/3

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ¢ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.86 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): 12.09 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
7-Apr-15	9:00	3	180	53.23	39.37	529	7.22	33.1
			210	53.45	39.59			
7-Apr-15	10:00	4	240	53.60	39.74	521	7.56	32.20
			270	53.75	39.89			
7-Apr-15	11:00	5	300	53.82	39.96	525	7.35	31.90
			330	53.91	40.05			
7-Apr-15	12:00	6	360	53.99	40.13	527	7.52	31.80
7-Apr-15	13:00	7	420	54.13	40.27	528	7.40	32.00
7-Apr-15	14:00	8	480	54.26	40.40	527	7.51	32.40
7-Apr-15	15:00	9	540	54.47	40.61	533	7.5	31.90
7-Apr-15	16:00	10	600	54.68	40.82	522	7.4	31.80
7-Apr-15	17:00	11	660	54.78	40.92	529	7.38	31.50
7-Apr-15	18:00	12	720	54.86	41.00	528	7.38	31.8
7-Apr-15	19:00	13	780	55.05	41.19	521	7.53	31.10
7-Apr-15	20:00	14	840	55.14	41.28	526	7.52	31.20
7-Apr-15	21:00	15	900	55.32	41.46	522	7.54	30.70
7-Apr-15	22:00	16	960	55.55	41.69	522	7.50	30.00
7-Apr-15	23:00	17	1020	55.56	41.70	519	7.39	30.80
8-Apr-15	0:00	18	1080	55.70	41.84	520	7.05	30.00
8-Apr-15	1:00	19	1140	55.96	42.10	525	7.51	29.90
8-Apr-15	2:00	20	1200	56.06	42.20	519	7.58	29.30
8-Apr-15	3:00	21	1260	56.09	42.23	523	7.45	29.50
8-Apr-15	4:00	22	1320	56.20	42.34	521	7.49	29.90
8-Apr-15	5:00	23	1380	56.32	42.46	515	7.60	28.60
8-Apr-15	6:00	24	1440	56.36	42.50	522	7.45	28.70

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 3/3

Date: 8 April 2015

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.86 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): 12.09 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
8-Apr-15	8:00	26	1560	56.56	42.70	523	7.2	32.5
8-Apr-15	10:00	28	1680	56.60	42.74	525	7.43	31.90
8-Apr-15	12:00	30	1800	56.74	42.88	531	7.54	32.30
8-Apr-15	14:00	32	1920	57.07	43.21	526	7.32	32.40
8-Apr-15	18:00	36	2160	57.22	43.36	528	7.65	30.80
8-Apr-15	22:00	40	2400	57.52	43.66	530	7.59	28.20
9-Apr-15	2:00	44	2640	57.87	44.01	521	7.67	28.80
9-Apr-15	6:00	48	2880	58.06	44.20	523	7.45	29.20

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 9 April 2015

Location: Arerti Site No.: 1

GPS Reading: 542642 E, 985361 N

Well No.: AWBH-1 Well Depth: 228.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 114 - 126 , 174 - 192 and 198 - 204 m

Static Groundwater Level (FToC*): 13.86 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 83.50 m, Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
9-Apr-15	6:00		0	2880		58.06	44.20
			1	2881	2881	26.17	12.31
			2	2882	1441	24.81	10.95
			4	2884	721	23.83	9.97
			6	2886	481	22.47	8.61
			8	2888	361	21.43	7.57
			10	2890	289	20.72	6.86
			12	2892	241	20.01	6.15
			14	2894	207	19.58	5.72
			16	2896	181	18.98	5.12
			18	2898	161	18.67	4.81
			20	2900	145	18.34	4.48
			25	2905	116	18.01	4.15
			30	2910	97	17.69	3.83
			35	2915	83	17.39	3.53
			40	2920	73	17.16	3.30
			45	2925	65	16.93	3.07
			50	2930	59	16.71	2.85
09-Apr-15	7:00	1	60	2940	49	16.50	2.64
			70	2950	42	16.29	2.43
			80	2960	37	16.08	2.22
			90	2970	33	15.87	2.01
			100	2980	30	15.67	1.81
			110	2990	27	15.45	1.59
9-Apr-15	8:00	2	120	3000	25	15.22	1.36
			150	3030	20	15.09	1.23
9-Apr-15	9:00	3	180	3060	17	14.93	1.07
			210	3090	15	14.77	0.91
9-Apr-15	10:00	4	240	3120	13	14.59	0.73
			270	3150	12	14.43	0.57
9-Apr-15	11:00	5	300	3180	11	14.27	0.41

PRE-TEST DATA SHEET
SHEET No. : 1/1

Date: 20 July 2015

Location: Melka Jelo Site No.: 2

GPS Reading: 567414 E, 980822 N

Well No.: AWBH-2 Well Depth: 240.60 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 194.2 - 211.6 and 217.4 - 234.8 m

Static Groundwater Level (FToC*): 174.78 m Screen Length: 34.80 m

Pump Type: Submersible Casing stick up: 0.94 m

Pump Setting: 213.20 m, Discharge (Q): 6.25 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	(min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
20-Jul-15	13:16	0	0	174.78	0.00			
			1	174.83	0.05			
			2	174.83	0.05			
			4	174.85	0.07			
			6	174.85	0.07			
			8	174.85	0.07			
			10	174.85	0.07			
			12	174.85	0.07			
			14	174.85	0.07			
			16	174.86	0.08			
			18	174.86	0.08			
			20	174.87	0.09			
			25	174.88	0.10			
			30	174.89	0.11			
			35	174.90	0.12			
			40	174.90	0.12			
			45	174.90	0.12			
			50	174.91	0.13			
			55	174.91	0.13			
20-Jul-15	14:16	1	60	174.91	0.13	1021	7.89	50.3
			70	174.91	0.13			
			80	174.92	0.14			
			90	174.92	0.14			
			100	174.91	0.13			
			110	174.91	0.13			
20-Jul-15	15:16	2	120	174.91	0.13	1080	8.02	51

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/2

Date: 21 July 2015

Location: Melka Jelo Site No.: 2

GPS Reading: 567414 E, 980822 N EL=1151m

Well No.: AWBH-2 Well Depth: 240.60 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 194.2 - 211.6 and 217.4 - 234.8 m

Static Groundwater Level (FToC 174.79 m Screen Length: 34.80 m

Pump Type: Submersible Casing stick up: 0.94 m

Pump Setting: 213.20 m, Discharge (Q): 6.25 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	(min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	F mg/l	Temp. (℃)
21-Jul-15	11:00	0	0	174.79	0.00				
			1	174.84	0.05				
			2	174.84	0.05				
			3	174.84	0.05				
			4	174.84	0.05				
			5	174.84	0.05				
			6	174.84	0.05				
			7	174.84	0.05				
			8	174.84	0.05				
			9	174.84	0.05				
			10	174.84	0.05				
			12	174.84	0.05				
			14	174.84	0.05				
			16	174.85	0.06				
			18	174.85	0.06				
			20	174.85	0.06				
			25	174.85	0.06				
			30	174.87	0.08				
			35	174.87	0.08				
			40	174.88	0.09				
			45	174.88	0.09				
			50	174.88	0.09				
			55	174.88	0.09				
21-Jul-15	12:00	1	60	174.89	0.10	1090	7.92		50.6
			70	174.89	0.10				
			80	174.89	0.10				
			90	174.90	0.11				
			100	174.90	0.11				
			110	174.90	0.11				
21-Jul-15	13:00	2	120	174.90	0.11	1076	7.86		50.8
			140	174.90	0.11				

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/2

Date: 21 July 2015

Location: Melka Jelo Site No.: 2
GPS Reading: 567414 E, 980822 N
Well No.: AWBH-2 Well Depth: 240.60 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 194.2 - 211.6 and 217.4 - 234.8 m
Static Groundwater Level (FToC*): 174.79 m Screen Length: 34.80 m
Pump Type: Submersible Casing stick up: 0.94 m
Pump Setting: 213.20 m, Discharge (Q): 6.25 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	F	Temp.
		(hour)	(min)			(µS/m)		mg/l	(°C)
			160	174.91	0.12				
21-Jul-15	14:00	3	180	174.91	0.12	1094	8.01		50.20
			200	174.91	0.12				
			220	174.91	0.12				
21-Jul-15	15:00	4	240	174.91	0.12	1084	7.9		50.30
			260	174.89	0.10				
			280	174.89	0.10				
21-Jul-15	16:00	5	300	174.89	0.10	1032	7.82		50.40
			330	174.89	0.10				
21-Jul-15	17:00	6	360	174.89	0.10	1097	7.92		50.07
			390	174.89	0.10				
21-Jul-15	6:00	7	420	174.90	0.11	1085	7.79		50.60
			450	174.90	0.11				
21-Jul-15	19:00	8	480	174.90	0.11	1098	7.81		50.60
21-Jul-15	20:00	9	540	174.90	0.11	1096	7.51		50.60
21-Jul-15	21:00	10	600	174.90	0.11	1097	7.90		50.60
21-Jul-15	22:00	11	660	174.91	0.12	1089	7.36		50.60
21-Jul-15	23:00	12	720	174.91	0.12	1084	7.80		50.50
22-Jul-15	0:00	13	780	174.91	0.12	1091	7.61		50.50
22-Jul-15	1:00	14	840	174.91	0.12	1086	7.80		50.40
22-Jul-15	2:00	15	900	174.91	0.12	1086	7.71		50.50
22-Jul-15	3:00	16	960	174.91	0.12	1084	7.80		50.40
22-Jul-15	4:00	17	1020	174.91	0.12	1096	7.66		50.40
22-Jul-15	5:00	18	1080	174.91	0.12	1090	7.77		50.20
22-Jul-15	6:00	19	1140	174.91	0.12	1086	7.91		50.30
22-Jul-15	7:00	20	1200	174.91	0.12	1092	7.99		50.00
22-Jul-15	8:00	21	1260	174.92	0.13	1083	7.88		50.50
22-Jul-15	9:00	22	1320	174.92	0.13	1080	8.02		50.50
22-Jul-15	10:00	23	1380	174.92	0.13	1084	7.83		50.90
22-Jul-15	11:00	24	1440	174.92	0.13	1090	7.93		50..8

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 22 July 2015

Location: Melka Jelo Site No.: 2
GPS Reading: 567414 E, 980822 N

Well No.: AWBH-2 Well Depth: 240.60 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 194.2 -211.6 and 217.4 - 234.8 m
Static Groundwater Level (FToC*): 174.79 m Screen Length: 34.80 m
Pump Type: Submersible Casing stick up: 0.94 m
Pump Setting: 213.20 m, Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
22-Jul-15	11:00 AM		0	1440		174.92	0.13
			1	1441	1441	174.86	0.07
			2	1442	721	174.86	0.07
			3	1443	481	174.87	0.08
			4	1444	361	174.87	0.08
			5	1445	289	174.87	0.08
			6	1446	241	174.87	0.08
			7	1447	207	174.87	0.08
			8	1448	181	174.86	0.07
			9	1449	161	174.86	0.07
			10	1450	145	174.85	0.06
			12	1452	121	174.85	0.06
			14	1454	104	174.85	0.06
			16	1456	91	174.85	0.06
			18	1458	81	174.84	0.05
			20	1460	73	174.83	0.04
			25	1465	59	174.83	0.04
			30	1470	49	174.82	0.03
			35	1475	42	174.82	0.03
			40	1480	37	174.81	0.02
			45	1485	33	174.81	0.02
			50	1490	30	174.81	0.02
			55	1495	27	174.80	0.01
22-Jul-15	12:00	1	60	1500	25	174.80	0.01
			70	1510	22	174.80	0.01
			80	1520	19	174.80	0.01
			90	1530	17	174.79	0.00

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/3

Date: 8 August 2014

Location: Metehara Site No.: **3**
GPS Reading: 589167 E, 982682 N

Well No.: AW BH-3 Well Depth: 191.00 m, Well Diameter: ¢ 6 "
Screen Depth(s): 145.52 - 156.96 , 162.4 - 168.4 , and 174.12 - 185.56 m
Static Groundwater Level (FToC*): 68.56 m Screen Length: 29 m
Pump Type: Submersible Casing stick up: 0.70 m
Pump Setting: 142.50 m, Discharge (Q): 6.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(µS/m)		(℃)
8-Aug-14	11:30		0	68.56	0			
			1	68.60	0.04			
			2	68.60	0.04			
			3	68.60	0.04			
			4	68.60	0.04			
			5	68.60	0.04			
			6	68.60	0.04			
			8	68.60	0.04			
			10	68.60	0.04			
			15	68.60	0.04			
			20	68.60	0.04			
			25	68.60	0.04			
			30	68.60	0.04			
			35	68.60	0.04			
			40	68.60	0.04			
			45	68.60	0.04			
			50	68.60	0.04			
			55	68.60	0.04			
8-Aug-14	0:30	1	60	68.60	0.04	1349	7.97	43.6
			70	68.59	0.03			
			80	68.59	0.03			
			90	68.59	0.03			
			100	68.59	0.03			
			110	68.59	0.03			
8-Aug-14	1:30	2	120	68.59	0.03	1333	7.96	43.7
			140	68.59	0.03			
			160	68.58	0.02			

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/3

Date: 8 August 2014

Location: Metehara Site No.: **3**
GPS Reading: 589167 E, 982682 N

Well No.: AW BH-3 Well Depth: 191.00 m, Well Diameter: ¢ 6 "
Screen Depth(s): 145.52 - 156.96 , 162.4 - 168.4 and 174.12 -185.56 m
Static Groundwater Level (FToC*): 68.56 m Screen Length: 29 m
Pump Type: Submersible Casing stick up: 0.70 m
Pump Setting: 145.20 m, Discharge (Q): 6.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(µS/m)		(℃)
8-Aug-14	2:30	3	180	68.580	0.020	1353	8.00	44.00
			210	68.570	0.010			
8-Aug-14	3:30	4	240	68.570	0.010	1367	8.07	43.10
			270	68.564	0.004			
8-Aug-14	4:30	5	300	68.564	0.004	1366	8.07	43.70
			330	68.564	0.004			
8-Aug-14	5:30	6	360	68.560	0.000	1363	8.07	43.60
8-Aug-14	6:30	7	420	68.560	0.000	1367	8.09	43.00
8-Aug-14	7:30	8	480	68.560	0.000	1371	8.12	42.80
8-Aug-14	8:30	9	540	68.567	0.007	1380	8.11	42.30
8-Aug-14	9:30	10	600	68.567	0.007	1373	8.10	43.40
8-Aug-14	10:30	11	660	68.567	0.007	1384	8.11	42.30
8-Aug-14	11:30	12	720	68.567	0.007	1371	8.12	43.20
9-Aug-14	0:30	13	780	68.567	0.007	1376	8.07	43.30
9-Aug-14	1:30	14	840	68.567	0.007	1376	8.17	42.20
9-Aug-14	2:30	15	900	68.567	0.007	1373	8.11	41.90
9-Aug-14	3:30	16	960	68.567	0.007	1371	8.13	42.10
9-Aug-14	4:30	17	1020	68.567	0.007	1371	8.22	42.20
9-Aug-14	5:30	18	1080	68.567	0.007	1376	8.14	43.40
9-Aug-14	6:30	19	1140	68.567	0.007	1386	8.20	42.20
9-Aug-14	7:30	20	1200	68.564	0.004	1372	8.14	43.40
9-Aug-14	8:30	21	1260	68.564	0.004	1373	8.14	42.50
9-Aug-14	9:30	22	1320	68.564	0.004	1374	8.13	43.00
9-Aug-14	10:30	23	1380	68.560	0.000	1373	8.07	43.10
9-Aug-14	11:30	24	1440	68.563	0.003	1217	8.10	43.90

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 3/3

Date: 9 August 2014

Location: Metehara Site No.: 3

GPS Reading: 589167 E, 982682 N

Well No.: AW BH-3 Well Depth: 191.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 145.52 - 156.96 , 162.4 - 168.4 and 174.12 - 185.56 m

Static Groundwater Level (FToC*): 68.52 m Screen Length: 29.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: 142.50 m, Discharge (Q): 6.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
9-Aug-14	13:30	26	1560	68.542	0.02	1370	8.12	43.9
9-Aug-14	15:30	28	1680	68.540	0.02	1374	8.01	44.10
9-Aug-14	17:30	30	1800	68.540	0.02	1385	8.14	43.60
9-Aug-14	19:30	32	1920	68.540	0.02	1385	8.22	42.70
9-Aug-14	23:30	36	2160	68.540	0.02	1387	8.18	42.70
10-Aug-14	3:30	40	2400	68.540	0.02	1376	8.20	42.90
10-Aug-14	7:30	44	2640	68.547	0.03	1388	8.17	42.70
10-Aug-14	11:30	48	2880	68.543	0.02	1370	8.22	43.50

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 10 August 2014

Location: Metehara Site No.: 3

GPS Reading: 589167 E, 982682 N

Well No.: AW BH-3 Well Depth: 191.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 145.52 - 156.96 , 162.4 - 168.4 and 174.12 -185.56 m

Static Groundwater Level (FToC*): 68.52 m Screen Length: 29.00 m

Pump Type: Submersible Casing stick up: 0.70 m

Pump Setting: 142.50 m, Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
10-Aug-14	11:30		0	2880		68.54	0.02
			1	2881	2881	68.54	0.02
			2	2882	1441	68.53	0.01
			4	2884	721	68.52	0.00
			6	2886	481	68.51	
			8	2888	361	68.51	

PRE-TEST- 4N
SHEET No. : 1/1

Date: 19 April 2015

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.92 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 11.12 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
19-Apr-15	12:00	0	0	87.92	0.00			
			1	89.10	1.18			
			2	89.10	1.18			
			4	89.09	1.17			
			6	89.10	1.18	664	8.17	48.2
			8	89.10	1.18			
			10	89.08	1.16			
			12	89.08	1.16			
			14	89.07	1.15			
			16	89.07	1.15			
			18	89.07	1.15			
			20	89.07	1.15			
			25	89.07	1.15			
			30	89.07	1.15			
			35	89.06	1.14			
			40	89.06	1.14			
			45	89.06	1.14			
			50	89.05	1.13			
			55	89.05	1.13			
19-Apr-15	13:00	1	60	89.05	1.13	692	8.26	48.23
			70	89.04	1.12			
			80	89.03	1.11			
			90	89.02	1.10			
			100	89.02	1.10			
			110	89.01	1.09			
19-Apr-15	14:00	2	120	89.00	1.08			

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 1/5

Date: 20 April 2015

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.95 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 9.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
20-Apr-15	10:10	0	0	87.95	0.00			
			1	89.10	1.15			
			2	89.10	1.15			
			4	89.08	1.13			
			6	89.00	1.05			
			8	89.00	1.05			
			10	88.99	1.04			
			12	88.99	1.04			
			14	88.99	1.04			
			16	88.99	1.04			
			18	88.99	1.04			
			20	88.97	1.02			
			25	88.97	1.02			
			30	88.97	1.02			
			35	88.97	1.02			
			40	88.97	1.02			
			45	88.95	1.00			
			50	88.94	0.99			
			55	88.94	0.99			
	11:10	1	60	88.94	0.99	1449	8.27	47.7
			70	88.93	0.98			
			80	88.93	0.98			
			90	88.93	0.98			
			100	88.92	0.97			
			110	88.92	0.97			
	12:10	2	120	88.92	0.97	1476	8.26	47.54

STEP-DRAWDOWN TEST DATA SHEET

Date: 20 April 2015

SHEET No. : 2/5

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.95 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 10.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
20-Apr-15	12:10	0	0	88.92	0.97			
			1	88.98	1.03			
			2	88.99	1.04			
			4	88.99	1.04			
			6	88.98	1.03			
			8	88.98	1.03			
			10	88.98	1.03			
			12	88.98	1.03			
			14	88.98	1.03			
			16	88.98	1.03			
			18	88.98	1.03			
			20	88.98	1.03			
			25	88.98	1.03			
			30	88.99	1.04			
			35	88.99	1.04			
			40	88.99	1.04			
			45	88.99	1.04			
			50	89.00	1.05			
			55	89.00	1.05			
	13:10	3	60	89.00	1.05	1468	8.29	47.9
			70	89.01	1.06			
			80	89.01	1.06			
			90	89.01	1.06			
			100	89.02	1.07			
			110	89.02	1.07			
	14:10	4	120	89.02	1.07	1472	8.27	48.1

STEP-DRAWDOWN TEST DATA SHEET

Date: 20 April 2015

SHEET No. : 3/5

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.95 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 11.12 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
20-Apr-15	14:10	0	0	89.02	1.07			
			1	89.06	1.11			
			2	89.07	1.12			
			4	89.06	1.11			
			6	89.06	1.11			
			8	89.07	1.12			
			10	89.06	1.11			
			12	89.06	1.11			
			14	89.07	1.12			
			16	89.07	1.12			
			18	89.07	1.12			
			20	89.07	1.12			
			25	89.06	1.11			
			30	89.07	1.12			
			35	89.07	1.12			
			40	89.07	1.12			
			45	89.07	1.12			
			50	89.07	1.12			
			55	89.07	1.12			
	15:10	5	60	89.07	1.12	1472	8.29	47.8
			70	89.08	1.13			
			80	89.08	1.13			
			90	89.08	1.13			
			100	89.08	1.13			
			110	89.08	1.13			
	16:10	6	120	89.08	1.13	1488	8.27	47.7

STEP-DRAWDOWN TEST DATA SHEET

Date: 20 April 2015

SHEET No. : 4/5

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.95 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 10.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
20-Apr-15	16:10	0	0	89.08	1.13			
			1	89.08	1.13			
			2	89.08	1.13			
			4	89.07	1.12			
			6	89.07	1.12			
			8	89.08	1.13			
			10	89.08	1.13			
			12	89.08	1.13			
			14	89.08	1.13			
			16	89.08	1.13			
			18	89.08	1.13			
			20	89.08	1.13			
			25	89.06	1.11			
			30	89.06	1.11			
			35	89.06	1.11			
			40	89.06	1.11			
			45	89.06	1.11			
			50	89.06	1.11			
			55	89.07	1.12			
	17:10	7	60	89.07	1.12	1490	8.25	47.9
			70	89.07	1.12			
			80	89.08	1.13			
			90	89.08	1.13			
			100	89.09	1.14			
			110	89.08	1.13			
	18:10	8	120	89.08	1.13	1471	8.35	46.4

STEP-DRAWDOWN TEST DATA SHEET

Date: 20 April 2015

SHEET No. : 5/5

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.95 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 9.30 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
20-Apr-15	18:10	0	0	89.08	1.13			
			1	88.96	1.01			
			2	88.97	1.02			
			4	88.97	1.02			
			6	88.96	1.01			
			8	88.96	1.01			
			10	88.96	1.01			
			12	88.96	1.01			
			14	88.96	1.01			
			16	88.96	1.01			
			18	88.96	1.01			
			20	88.96	1.01			
			25	88.96	1.01			
			30	88.96	1.01			
			35	88.96	1.01			
			40	88.97	1.02			
			45	88.96	1.01			
			50	88.96	1.01			
			55	88.96	1.01			
	19:10	9	60	88.96	1.01	1492	8.33	47.5
			70	88.96	1.01			
			80	88.96	1.01			
			90	88.96	1.01			
			100	88.96	1.01			
			110	88.97	1.02			
	20:10	10	120	88.97	1.02	1476	8.36	47

CONTINUOUS PUMPING TEST DATA SHEET

Date: 21 April 2015

SHEET No. : 1/2

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC 87.91 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 11.12 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	F	Temp.
		(hour)	(min)			(μS/m)		mg/l	(℃)
21-Apr-15	10:10	0	0	87.91	0.00				
			1	89.09	1.18				
			2	89.08	1.17				
			3	89.09	1.18				
			4	89.08	1.17				
			5	89.07	1.16				
			6	89.07	1.16				
			7	89.07	1.16				
			8	89.07	1.16				
			9	89.06	1.15				
			10	89.06	1.15				
			12	89.06	1.15				
			14	89.06	1.15				
			16	89.05	1.14				
			18	89.05	1.14				
			20	89.06	1.15				
			25	89.06	1.15				
			30	89.07	1.16				
			35	89.08	1.17				
			40	89.07	1.16				
			45	89.07	1.16				
			50	89.07	1.16				
			55	89.07	1.16				
21-Apr-15	11:10	1	60	89.07	1.16	1481	8.35		47.6
			70	89.06	1.15				
			80	89.06	1.15				
			90	89.06	1.15				
			100	89.06	1.15				
			110	89.06	1.15				
21-Apr-15	12:10	2	120	89.06	1.15	1490	8.26		47.7
			140	89.05	1.14				

CONTINUOUS PUMPING TEST DATA SHEET

Date: 21 April 2015

SHEET No. : 2/2

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.91 m Screen Length: 18.00 m

Pump Type: Submersible Casing stick up: 0.85 m

Pump Setting: 93.20 m, Discharge (Q): 11.12 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	F	Temp.
		(hour)	(min)			(μS/m)		mg/l	(℃)
			160	89.05	1.14				
21-Apr-15	13:10	3	180	89.09	1.18	1481	8.22		48.10
			200	89.06	1.15				
			220	89.06	1.15				
21-Apr-15	14:10	4	240	89.06	1.15	1491	8.24		48.10
			260	89.06	1.15				
			280	89.05	1.14				
21-Apr-15	15:10	5	300	89.05	1.14	14.91	8.25		48.10
			330	89.05	1.14				
21-Apr-15	16:10	6	360	89.05	1.14	1521	8.25		48.10
			390	89.05	1.14				
21-Apr-15	17:10	7	420	89.06	1.15	1479	8.27		47.10
			450	89.07	1.16				
21-Apr-15	18:10	8	480	89.07	1.16	1487	8.35		47.10
21-Apr-15	19:10	9	540	89.07	1.16	1472	8.28		46.70
21-Apr-15	20:10	10	600	89.07	1.16	1489	8.40		46.50
21-Apr-15	21:10	11	660	89.07	1.16	1491	8.27		47.30
21-Apr-15	22:10	12	720	89.07	1.16	1486	8.32		47.20
21-Apr-15	23:10	13	780	89.07	1.16	1489	8.29		47.10
22-Apr-15	0:10	14	840	89.07	1.16	1469	8.30		47.30
22-Apr-15	1:10	15	900	89.08	1.17	1458	8.26		47.20
22-Apr-15	2:10	16	960	89.08	1.17	1457	8.28		47.10
22-Apr-15	3:10	17	1020	89.08	1.17	1451	8.23		46.90
22-Apr-15	4:10	18	1080	89.08	1.17	1448	8.25		47.00
22-Apr-15	5:10	19	1140	89.09	1.18	1456	8.24		47.30
22-Apr-15	6:10	20	1200	89.09	1.18	1449	8.40		47.50
22-Apr-15	7:10	21	1260	89.04	1.13	1506	8.26		47.50
22-Apr-15	8:10	22	1320	89.10	1.19	1502	8.30		47.70
22-Apr-15	9:10	23	1380	89.10	1.19	1536	8.26		47.70
22-Apr-15	10:10	24	1440	89.10	1.19	1532	8.30		47.70

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 22 April 2015

Location: Metehara Site No.: 4N
GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 95.6 - 113 m
Static Groundwater Level (FToC*): 87.91 m Screen Length: 18.00 m
Pump Type: Submersible Casing stick up: 0.85 m
Pump Setting: 93.20 m, Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
22-Apr-15	10:10:00 AM		0	1440		89.10	
			1	1441	1441	87.81	
			2	1442	721	87.83	
			3	1443	481	87.87	
			4	1444	361	87.89	
			5	1445	289	87.90	
			6	1446	241	87.90	
			7	1447	207	87.90	
			8	1448	181	87.90	
			9	1449	161	87.90	
			10	1450	145	87.90	
			12	1452	121	87.90	
			14	1454	104	87.90	
			16	1456	91	87.90	
			18	1458	81	87.90	
			20	1460	73	87.90	
			25	1465	59	87.91	

PRE-TEST 4 HRs DATA SHEET

Date: 9 November 2014

Location: Metehara Site No.: 4N
GPS Reading: 587754 E, 977437 N
Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 95.6 - 113 m
Static Groundwater Level (FToC*): 87.57 m Screen Length: 17.40 m
Pump Type: Submersible Casing stick up: 0.52 m
Pump Setting: 91.00 m, Discharge (Q): 4.43 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (mS/m)	pH	Temp. (ºC)
		(hour)	(min)					
9-Nov-14	8:30	0	0	87.57	0.00			
			1	87.70	0.13			
			2	87.70	0.13			
			4	87.70	0.13			
			6	87.70	0.13			
			8	87.70	0.13			
			10	87.70	0.13			
			12	87.70	0.13			
			14	87.70	0.13			
			16	87.70	0.13			
			18	87.70	0.13			
			20	87.70	0.13			
			25	87.70	0.13			
			30	87.70	0.13			
			35	87.71	0.14			
			40	87.71	0.14			
			45	87.77	0.20			
			50	87.77	0.20			
			55	87.77	0.20			
9-Nov-14	9:30	1	60	87.77	0.20	178.8	8.3	47.9
			70	87.77	0.20			
			80	87.77	0.20			
			90	87.77	0.20			
			100	87.77	0.20			
			110	87.77	0.20			
9-Nov-14	10:30	2	120	87.77	0.20	180	8.4	47.8
			140	87.77	0.20			
			160	87.77	0.20			
9-Nov-14	11:30	3	180	87.76	0.19	180.6	8.34	47.40
			210	87.75	0.18			
9-Nov-14	12:30	4	240	87.75	0.18	180	8.42	47.00

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/3

Date: 11 November 2014

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.63 m Screen Length: 17.40 m

Pump Type: Submersible Casing stick up: 0.52 m

Pump Setting: 91.00 m, Discharge (Q): 4.43 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(mS/m)		(ºC)
11-Nov-14	10:00	0	0	87.63	0.00			
			1	87.77	0.14			
			2	87.77	0.14			
			3	87.77	0.14			
			4	87.77	0.14			
			5	87.77	0.14			
			6	87.77	0.14			
			8	87.77	0.14			
			10	87.77	0.14			
			15	87.76	0.13			
			20	87.76	0.13			
			25	87.76	0.13			
			30	87.76	0.13			
			35	87.76	0.13			
			40	87.76	0.13			
			45	87.76	0.13			
			50	87.76	0.13			
			55	87.76	0.13			
11-Nov-14	11:00	1	60	87.76	0.13	180.3	8.2	44.5
			70	87.76	0.13			
			80	87.76	0.13			
			90	87.76	0.13			
			100	87.76	0.13			
			110	87.76	0.13			
11-Nov-14	12:00	2	120	87.76	0.13	182.1	8.31	45.7
			140	87.76	0.13			
			160	87.75	0.12			

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/3

Date: 11 November 2014

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.63 m Screen Length: 17.40 m

Pump Type: Submersible Casing stick up: 0.52 m

Pump Setting: 91.00 m, Discharge (Q): 4.43 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(mS/m)		(ºC)
11-Nov-14	13:00	3	180	87.75	0.12	190.10	8.30	44.20
			210	87.75	0.12			
11-Nov-14	14:00	4	240	87.75	0.12	188.50	8.27	45.00
			270	87.75	0.12			
11-Nov-14	15:00	5	300	87.75	0.12	185.10	8.10	45.50
			330	87.76	0.13			
11-Nov-14	16:00	6	360	87.75	0.12	182.60	8.31	44.15
11-Nov-14	17:00	7	420	87.77	0.14	183.00	8.34	45.80
11-Nov-14	18:00	8	480	87.78	0.15	187.30	8.35	43.50
11-Nov-14	19:00	9	540	87.78	0.15	198.00	8.30	44.10
11-Nov-14	20:00	10	600	87.78	0.15	195.50	8.33	44.15
11-Nov-14	21:00	11	660	87.77	0.14	197.16	8.29	45.00
11-Nov-14	22:00	12	720	87.77	0.14	189.30	8.35	46.10
11-Nov-14	23:00	13	780	87.77	0.14	195.32	8.31	45.15
12-Nov-14	0:00	14	840	87.77	0.14	193.25	8.45	44.60
12-Nov-14	1:00	15	900	87.77	0.14	185.20	8.29	44.30
12-Nov-14	2:00	16	960	87.78	0.15	188.39	8.60	45.10
12-Nov-14	3:00	17	1020	87.78	0.15	193.35	8.45	44.20
12-Nov-14	4:00	18	1080	87.78	0.15	195.25	8.35	44.50
12-Nov-14	5:00	19	1140	87.77	0.14	193.15	8.20	44.15
12-Nov-14	6:00	20	1200	87.77	0.14	189.10	8.33	45.07
12-Nov-14	7:00	21	1260	87.77	0.14	185.07	8.35	44.15
12-Nov-14	8:00	22	1320	87.77	0.14	188.60	8.31	44.09
12-Nov-14	9:00	23	1380	87.77	0.14	183.11	8.35	46.06
12-Nov-14	10:00	24	1440	87.77	0.14	182.40	8.39	47.00

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 3/3

Date: 12 November 2014

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.63 m Screen Length: 17.40 m

Pump Type: Submersible Casing stick up: 0.52 m

Pump Setting: 91.00 m, Discharge (Q): 4.43 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(mS/m)		(ºC)
12-Nov-14	12:00	26	1560	87.75	0.12	184.5	8.33	47.10
12-Nov-14	14:00	28	1680	87.75	0.12	185.5	8.34	46.40
12-Nov-14	16:00	30	1800	87.75	0.12	186.7	8.33	46.85
12-Nov-14	18:00	32	1920	87.75	0.12	195.3	8.34	47.02
12-Nov-14	22:00	36	2160	87.75	0.12	189.3	8.30	46.50
13-Nov-14	2:00	40	2400	87.75	0.12	193	8.35	46.59
13-Nov-14	6:00	44	2640	87.75	0.12	190.1	8.32	46.10
13-Nov-14	10:00	48	2880	87.75	0.12	182	8.40	47.00

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 1/3

Date: 14 November 2014

Location: Metehara Site No.: 4N

GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 115 m

Static Groundwater Level (FToC*): 87.63 m Screen Length: 17.40 m

Pump Type: Submersible Casing stick up: 0.52 m

Pump Setting: 91.00 m, Discharge (Q): 3.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(mS/m)		(℃)
14-Nov-14	8:45	0	0	87.63	0.00			
			1	87.75	0.12			
			2	87.69	0.06			
			4	87.69	0.06			
			6	87.69	0.06			
			8	87.69	0.06			
			10	87.69	0.06			
			12	87.69	0.06			
			14	87.69	0.06			
			16	87.69	0.06			
			18	87.68	0.05			
			20	87.68	0.05			
			25	87.68	0.05			
			30	87.68	0.05			
			35	87.68	0.05			
			40	87.68	0.05			
			45	87.68	0.05			
			50	87.68	0.05			
			55	87.67	0.04			
14-Nov-14	9:45	1	60	87.67	0.04	184.2	8.36	47.3
			70	87.67	0.04			
			80	87.67	0.04			
			90	87.67	0.04			
			100	87.67	0.04			
			110	87.67	0.04			
14-Nov-14	10:45	2	120	87.66	0.03	183.1	8.33	47.6

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 2/3

Date: 14 November 2014

Location: Metehara Site No.: 4N
GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 95.6 - 113 m
Static Groundwater Level (FToC*): 87.63 m Screen Length: 17.40 m
Pump Type: Submersible Casing stick up: 0.52 m
Pump Setting: 91.00 m, Discharge (Q): 3.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(mS/m)		(℃)
14-Nov-14	10:45	0	0	87.66	0.03			
			1	87.70	0.07			
			2	87.70	0.07			
			4	87.70	0.07			
			6	87.71	0.08			
			8	87.71	0.08			
			10	87.71	0.08			
			12	87.71	0.08			
			14	87.71	0.08			
			16	87.71	0.08			
			18	87.71	0.08			
			20	87.71	0.08			
			25	87.70	0.07			
			30	87.70	0.07			
			35	87.71	0.08			
			40	87.71	0.08			
			45	87.71	0.08			
			50	87.70	0.07			
			55	87.70	0.07			
14-Nov-14	11:45	1	60	87.70	0.07	183.2	8.36	47
			70	87.70	0.07			
			80	87.70	0.07			
			90	87.70	0.07			
			100	87.70	0.07			
			110	87.70	0.07			
14-Nov-14	12:45	2	120	87.70	0.07	182.7	8.39	47.1

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 3/3

Date: 14 November 2014

Location: Metehara Site No.: 4N
GPS Reading: 587754 E, 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 95.6 - 113 m
Static Groundwater Level (FToC*): 87.63 m Screen Length: 17.40 m
Pump Type: Submersible Casing stick up: 0.52 m
Pump Setting: 91.00 m, Discharge (Q): 4.43 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(mS/m)		(℃)
14-Nov-14	12:45	0	0	87.70	0.07			
			1	87.74	0.11			
			2	87.75	0.12			
			4	87.75	0.12			
			6	87.75	0.12			
			8	87.74	0.11			
			10	87.75	0.12			
			12	87.75	0.12			
			14	87.75	0.12			
			16	87.75	0.12			
			18	87.75	0.12			
			20	87.75	0.12			
			25	87.75	0.12			
			30	87.75	0.12			
			35	87.74	0.11			
			40	87.74	0.11			
			45	87.74	0.11			
			50	87.74	0.11			
			55	87.75	0.12			
14-Nov-14	13:45	1	60	87.74	0.11	182.3	8.35	46.3
			70	87.75	0.12			
			80	87.75	0.12			
			90	87.74	0.11			
			100	87.74	0.11			
			110	87.74	0.11			
14-Nov-14	14:45	2	120	87.74	0.11	182.2	8.35	46.7

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 13 November 2014

Location: Site No.: 4N

GPS Reading: 587754 E 977437 N

Well No.: AWBH-4N Well Depth: 115.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 95.6 - 113 m

Static Groundwater Level (FToC*): 87.63 m Screen Length: 17.40 m

Pump Type: Submersible Casing stick up: 0.52 m

Pump Setting: 91.00 m Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t'] (hour)	(min)	Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
13-Nov-14	10:00		0	2880		87.75	0.12
			1	2881	2881	87.58	-0.05
			2	2882	1441	87.58	-0.05
			4	2884	721	87.59	-0.04
			6	2886	481	87.59	-0.04
			8	2888	361	87.59	-0.04
			10	2890	289	87.60	-0.03
			12	2892	241	87.61	-0.02
			14	2894	207	87.62	-0.01
			16	2896	181	87.62	-0.01
			18	2898	161	87.62	-0.01
			20	2900	145	87.62	-0.01
			25	2905	116	87.62	-0.01
			30	2910	97	87.62	-0.01
			35	2915	83	87.63	0.00

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 1/5

Date: 31 March 2014

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.92 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 6.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	(min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
31-Mar-14	8:00	0	0	2.92	0.00			
			1	10.20	7.28			
			2	21.30	18.38			
			3	23.41	20.49			
			4	24.52	21.60			
			5	27.31	24.39			
			6	29.10	26.18			
			7	30.15	27.23			
			8	31.26	28.34			
			9	31.93	29.01			
			10	32.21	29.29			
			12	33.41	30.49			
			14	34.53	31.61			
			16	35.63	32.71			
			18	36.73	33.81			
			20	37.54	34.62			
			25	38.67	35.75			
			30	39.43	36.51			
			35	40.25	37.33			
			40	42.31	39.39			
			45	44.27	41.35			
			50	45.87	42.95			
			55	47.29	44.37			
31-Mar-14	9:00	1	60	49.02	46.10	1584	8.5	33.6
			70	49.02	46.10			
			80	49.02	46.10			
			90	49.04	46.12			
			100	49.03	46.11			
			110	49.02	46.10			
31-Mar-14	10:00	2	120	49.02	46.10	1579	8.13	33.7

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 March 2014

SHEET No. : 2/5

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.92 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 7.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
31-Mar-14	10:00	0	0	49.02	0.00			
			1	49.09	0.07			
			2	49.19	0.17			
			3	49.19	0.17			
			4	49.19	0.17			
			5	49.19	0.17			
			6	49.22	0.20			
			7	49.29	0.27			
			8	49.29	0.27			
			9	49.32	0.30			
			10	49.82	0.80			
			12	50.20	1.18			
			14	50.89	1.87			
			16	52.53	3.51			
			18	52.53	3.51			
			20	52.91	3.89			
			25	53.10	4.08			
			30	53.30	4.28			
			35	53.37	4.35			
			40	53.38	4.36			
			45	53.40	4.38			
			50	53.43	4.41			
			55	53.45	4.43			
31-Mar-14	11:00	1	60	53.50	4.48	1571	8.13	34.3
			70	53.60	4.58			
			80	53.65	4.63			
			90	53.72	4.70			
			100	53.77	4.75			
			110	53.82	4.80			
31-Mar-14	12:00	2	120	53.85	4.83	1534	8.05	34.7

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 March 2014

SHEET No. : 3/5

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.92 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 8.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
31-Mar-14	12:00	0	0	53.85	0.00			
			1	54.93	1.08			
			2	55.85	2.00			
			3	56.19	2.34			
			4	56.39	2.54			
			5	56.50	2.65			
			6	56.58	2.73			
			7	56.63	2.78			
			8	56.63	2.78			
			9	56.66	2.81			
			10	56.68	2.83			
			12	56.75	2.90			
			14	56.82	2.97			
			16	56.84	2.99			
			18	56.88	3.03			
			20	56.92	3.07			
			25	56.98	3.13			
			30	57.00	3.15			
			35	57.05	3.20			
			40	57.10	3.25			
			45	57.12	3.27			
			50	27.13	-26.72			
			55	57.14	3.29			
31-Mar-14	13:00	1	60	57.17	3.32	1574	8.22	34.5
			70	57.20	3.35			
			80	57.80	3.95			
			90	58.42	4.57			
			100	58.87	5.02			
			110	59.27	5.42			
31-Mar-14	14:00	2	120	60.90	7.05	1577	8.16	34.7

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 March 2014

SHEET No. : 4/5

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.92 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 9.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
31-Mar-14	14:00	0	0	60.90	0.00			
			1	65.50	4.60			
			2	66.80	5.90			
			3	67.58	6.68			
			4	68.30	7.40			
			5	68.85	7.95			
			6	69.20	8.30			
			7	69.70	8.80			
			8	69.73	8.83			
			9	69.76	8.86			
			10	69.80	8.90			
			12	69.76	8.86			
			14	69.76	8.86			
			16	69.78	8.88			
			18	69.89	8.99			
			20	70.08	9.18			
			25	70.15	9.25			
			30	70.25	9.35			
			35	70.35	9.45			
			40	70.36	9.46			
			45	70.44	9.54			
			50	70.46	9.56			
			55	70.46	9.56			
31-Mar-14	15:00	1	60	70.47	9.57	1296	8.5	34.2
			70	70.50	9.60			
			80	70.48	9.58			
			90	70.48	9.58			
			100	70.56	9.66			
			110	70.65	9.75			
31-Mar-14	16:00	2	120	70.68	9.78	1590	8.22	35.3

STEP-DRAWDOWN TEST DATA SHEET

Date: 31 March 2014

SHEET No. : 5/5

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.92 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 10.80 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
31-Mar-14	16:00	0	0	70.68	0.00			
			1	72.60	1.92			
			2	74.92	4.24			
			3	76.66	5.98			
			4	76.97	6.29			
			5	77.47	6.79			
			6	77.75	7.07			
			7	77.94	7.26			
			8	78.05	7.37			
			9	78.15	7.47			
			10	78.33	7.65			
			12	78.35	7.67			
			14	78.40	7.72			
			16	78.44	7.76			
			18	78.46	7.78			
			20	78.50	7.82			
			25	78.57	7.89			
			30	78.66	7.98			
			35	78.74	8.06			
			40	78.75	8.07			
			45	78.83	8.15			
			50	78.90	8.22			
			55	78.96	8.28			
31-Mar-14	17:00	1	60	78.96	8.28	1519	8.3	34.2
			70	79.15	8.47			
			80	79.28	8.60			
			90	79.43	8.75			
			100	79.54	8.86			
			110	79.63	8.95			
31-Mar-14	18:00	2	120	79.72	9.04	1513	8.4	34.5

CONTINUOUS PUMPING TEST DATA SHEET

Date: 1 April 2014

SHEET No. : 1/3

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.90 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 7.60 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
1-Apr-14	6:00	0	0	2.90	0			
			1	13.30	10.40			
			2	16.40	13.50			
			3	18.32	15.42			
			4	19.70	16.80			
			5	20.37	17.47			
			6	21.43	18.53			
			7	22.61	19.71			
			8	23.75	20.85			
			9	24.57	21.67			
			10	25.63	22.73			
			12	27.52	24.62			
			14	28.46	25.56			
			16	29.54	26.64			
			18	30.57	27.67			
			20	31.73	28.83			
			25	33.26	30.36			
			30	34.67	31.77			
			35	35.73	32.83			
			40	36.56	33.66			
			45	37.81	34.91			
			50	38.62	35.72			
			55	39.67	36.77			
1-Apr-14	7:00	1	60	40.51	37.61	1521	8.2	34.2
			70	42.58	39.68			
			80	43.71	40.81			
			90	44.68	41.78			
			100	45.27	42.37			
			110	46.73	43.83			
1-Apr-14	8:00	2	120	47.81	44.91	1517	8.4	35.3
			140	49.21	46.31			

CONTINUOUS PUMPING TEST DATA SHEET

Date: 1 April 2014

SHEET No. : 2/3

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.90 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 7.60 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
			160	50.37	47.47			
1-Apr-14	9:00	3	180	51.24	48.34			
			200	51.34	48.44			
			220	51.44	48.54			
1-Apr-14	10:00	4	240	51.45	48.55	1521	8.24	33.90
			260	51.40	48.50			
			280	51.44	48.54			
1-Apr-14	11:00	5	300	51.44	48.54	1491	8.18	33.70
			330	51.44	48.54			
1-Apr-14	12:00	6	360	51.47	48.57	1553	8.18	34.30
			390	51.59	48.69			
1-Apr-14	13:00	7	420	51.68	48.78	1563	8.2	35.60
			450	51.80	48.90			
1-Apr-14	14:00	8	480	51.85	48.95	1547	8.17	34.40
1-Apr-14	15:00	9	540	51.95	49.05	1537	8.16	33.70
1-Apr-14	16:00	10	600	52.35	49.45	1539	8.70	34.80
1-Apr-14	17:00	11	660	52.33	49.43	1570	8.32	34.30
1-Apr-14	18:00	12	720	52.40	49.50	1563	8.23	35.00
1-Apr-14	19:00	13	780	52.55	49.65	1568	8.24	33.40
1-Apr-14	20:00	14	840	53.52	50.62	1551	8.20	32.30
1-Apr-14	21:00	15	900	53.61	50.71	1550	8.31	34.10
1-Apr-14	22:00	16	960	53.72	50.82	1548	8.23	35.20
1-Apr-14	23:00	17	1020	53.80	50.90	1537	8.30	33.20

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 3/3

Date: 2 April 2014

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.90 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): 7.60 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
2-Apr-14	8:00	26	1560	54.69	51.79	1551	8.3	34.5
2-Apr-14	10:00	28	1680	54.73	51.83	1553	8.23	33.20
2-Apr-14	12:00	30	1800	53.90	51.00	1557	8.27	34.20
2-Apr-14	14:00	32	1920	53.96	51.06	1592	8.28	34.30
2-Apr-14	16:00	36	2160	54.10	51.20	1563	8.1	34.30
2-Apr-14	20:00	40	2400	54.30	51.40	1559	8.2	35.10
3-Apr-14	0:00	44	2640	54.58	51.68	1561	8.23	34.30
3-Apr-14	4:00	48	2880	54.73	51.83	1557	8.21	33.40

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 3 April 2014

Location: Metehara Site No.: 5

GPS Reading: 601565 E, 980024 N

Well No.: AWBH-5 Well Depth: 140.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 94.24 - 99.96 , 105.68 - 117.12 and 122.84 - 134.28 m

Static Groundwater Level (FToC*): 2.90 m Screen Length: 28.60 m

Pump Type: Submersible Casing stick up: 0.80 m

Pump Setting: 90.00 m, Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
3-Apr-14	6:00		0	2880		54.73	51.83
			1	2881	2881	38.20	35.30
			2	2882	1441	15.37	12.47
			4	2884	721	8.47	5.57
			6	2886	481	4.53	1.63
			8	2888	361	2.90	0.00

PRE-TEST DATA SHEET

Date: 9 August 2015

SHEET No. : 1/1

Location: Welenchiti Site No.: 6

GPS Reading: 552789 E, 958778 N

Well No.: AWBH-6 Well Depth: 243.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.74 - 207.5 and 219.34 - 237.1 m

Static Groundwater Level (FToC*): 175.91 m Screen Length: 35.52 m

Pump Type: Submersible Casing stick up: 1.00 m

Pump Setting: 213.00 m, Discharge (Q): 6.25 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (µS/m)	pH	Temp. (℃)
9-Aug-15	14:00	0	0	175.91	0.00			
			1	177.08	1.17			
			2	177.08	1.17			
			4	177.09	1.18			
			6	177.10	1.19			
			8	177.11	1.20			
			10	177.12	1.21			
			12	177.13	1.22			
			14	177.13	1.22			
			16	177.13	1.22			
			18	177.13	1.22			
			20	177.14	1.23			
			25	177.15	1.24			
			30	177.15	1.24			
			35	177.16	1.25			
			40	177.17	1.26			
			45	177.17	1.26			
			50	177.17	1.26			
			55	177.17	1.26			
9-Aug-15	15:00	1	60	177.17	1.26	848	7.68	43
			70	177.17	1.26			
			80	177.17	1.26			
			90	177.17	1.26			
			100	177.17	1.26			
			110	177.17	1.26			
9-Aug-15	16:00	2	120	177.18	1.27	863	7.76	43.1

STEP-DRAWDOWN TEST DATA SHEET

Date: 10 August 2015

SHEET No. : 1/3

Location: Welenchiti Site No.: 6

GPS Reading: 552789 E, 958778 N

Well No.: AWBH-6 Well Depth: 243.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.74 - 207.5 and 219.34 - 237.1 m

Static Groundwater Level (FToC*): 175.42 m Screen Length: 35.52 m

Pump Type: Submersible Casing stick up: 0.64 m

Pump Setting: 213.00 m, Discharge (Q): 5.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (µS/m)	pH	Temp. (℃)
10-Aug-15	11:00	0	0	175.42	0.00			
			1	176.42	1.00			
			2	176.42	1.00			
			4	176.22	0.80			
			6	176.23	0.81			
			8	176.22	0.80			
			10	176.22	0.80			
			12	176.22	0.80			
			14	176.22	0.80			
			16	176.20	0.78			
			18	176.21	0.79			
			20	176.21	0.79			
			25	176.25	0.83			
			30	176.27	0.85			
			35	176.26	0.84			
			40	176.26	0.84			
			45	176.26	0.84			
			50	176.26	0.84			
			55	176.26	0.84			
10-Aug-15	12:00	1	60	176.26	0.84	869	7.71	42.8
			70	176.26	0.84			
			80	176.26	0.84			
			90	176.26	0.84			
			100	176.26	0.84			
			110	176.24	0.82			
10-Aug-15	13:00	2	120	176.24	0.82	872	7.76	43

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 2/3

Date: 10 August 2015

Location: Welenchiti Site No.: 6

GPS Reading: 552789 E, 958778 N

Well No.: AWBH-6 Well Depth: 243.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.74 - 207.5 and 219.34 - 237.1 m

Static Groundwater Level (FToC*): 175.42 m Screen Length: 35.52 m

Pump Type: Submersible Casing stick up: 0.64 m

Pump Setting: 213.00 m, Discharge (Q): 5.80 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
10-Aug-15	13:00	0	0	176.24	0.82			
			1	176.43	1.01			
			2	176.43	1.01			
			4	176.44	1.02			
			6	176.44	1.02			
			8	176.44	1.02			
			10	176.44	1.02			
			12	176.44	1.02			
			14	176.44	1.02			
			16	176.45	1.03			
			18	176.45	1.03			
			20	176.45	1.03			
			25	176.45	1.03			
			30	176.44	1.02			
			35	176.44	1.02			
			40	176.44	1.02			
			45	176.44	1.02			
			50	176.44	1.02			
			55	176.44	1.02			
10-Aug-15	14:00	3	60	176.44	1.02	862	7.71	42.8
			70	176.44	1.02			
			80	176.44	1.02			
			90	176.44	1.02			
			100	176.44	1.02			
			110	176.44	1.02			
10-Aug-15	15:00	4	120	176.44	1.02	867	7.8	43.1

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 3/3

Date: 10 August 2015

Location: Welenchiti Site No.: 6

GPS Reading: 552789 E, 958778 N

Well No.: AWBH-6 Well Depth: 243.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.74 - 207.5 and 219.34 - 237.1 m

Static Groundwater Level (FToC*): 175.42 m Screen Length: 35.52 m

Pump Type: Submersible Casing stick up: 0.64 m

Pump Setting: 213.00 m, Discharge (Q): 6.25 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
10-Aug-15	15:00	0	0	176.44	1.02			
			1	176.58	1.16			
			2	176.58	1.16			
			4	176.58	1.16			
			6	176.58	1.16			
			8	176.58	1.16			
			10	176.58	1.16			
			12	176.58	1.16			
			14	176.58	1.16			
			16	176.58	1.16			
			18	176.58	1.16			
			20	176.58	1.16			
			25	176.58	1.16			
			30	176.58	1.16			
			35	176.58	1.16			
			40	176.58	1.16			
			45	176.59	1.17			
			50	176.59	1.17			
			55	176.59	1.17			
	16:00	5	60	176.59	1.17	840	7.61	43.1
			70	176.59	1.17			
			80	176.59	1.17			
			90	176.59	1.17			
			100	176.59	1.17			
			110	176.59	1.17			
	17:00	6	120	176.59	1.17	845	7.61	43.2

RECOVERY TEST OF SDT DATA SHEET

Date: 10 August 2015

SHEET No. : 1/1

Location: Welenchiti Site No.: 6

GPS Reading: 552789 E, 958778 N

Well No.: AWBH-6 Well Depth: 243.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.74 - 207.5 and 219.34 - 237.1 m

Static Groundwater Level (FToC*): 175.42 m Screen Length: 35.52 m

Pump Type: Submersible Casing stick up: 0.64 m

Pump Setting: 213.00 m, Discharge (Q): _ L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t'] (hour)	(min)	Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
			0	720		176.59	1.17
			1	721	721	175.17	-0.25
			2	722	361	175.21	-0.21
			3	723	241	175.30	-0.12
			4	724	181	175.37	-0.05
			5	725	145	175.37	-0.05
			6	726	121	175.37	-0.05
			7	727	104	175.37	-0.05
			8	728	91	175.38	-0.04
			9	729	81	175.38	-0.04
			10	730	73	175.38	-0.04

CONTINUOUS PUMPING TEST DATA SHEET

Date: 11 August 2015

SHEET No. : 1/2

Location: Welenchiti Site No.: 6

GPS Reading: 552789 E, 958778 N

Well No.: AWBH-6 Well Depth: 243.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.74 - 207.5 and 219.34 - 237.1 m

Static Groundwater Level (FToC 175.46 m Screen Length: 35.52 m

Pump Type: Submersible Casing stick up: 0.64 m

Pump Setting: 213.00 m, Discharge (Q): 6.25 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	(min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	F mg/l	Temp. (℃)
11-Aug-15	9:00	0	0	175.46	0.00				
			1	176.57	1.11				
			2	176.59	1.13				
			3	176.60	1.14				
			4	176.60	1.14				
			5	176.60	1.14				
			6	176.60	1.14				
			7	176.60	1.14				
			8	176.60	1.14				
			9	176.60	1.14				
			10	176.60	1.14				
			12	176.60	1.14				
			14	176.60	1.14				
			16	176.60	1.14				
			18	176.60	1.14				
			20	176.60	1.14				
			25	176.60	1.14				
			30	176.60	1.14				
			35	176.60	1.14				
			40	176.60	1.14				
			45	176.60	1.14				
			50	176.60	1.14				
			55	176.60	1.14				
11-Aug-15	10:00	1	60	176.60	1.14	878	7.66		43.2
			70	176.60	1.14				
			80	176.59	1.13				
			90	176.59	1.13				
			100	176.59	1.13				
			110	176.59	1.13				
11-Aug-15	11:00	2	120	176.59	1.13	884	7.67		42.9
			140	176.59	1.13				

CONTINUOUS PUMPING TEST DATA SHEET

Date: 11 August 2015

SHEET No. : 2/2

Location: Welenchiti Site No.: 6

GPS Reading: 552789 E, 958778 N

Well No.: AWBH-6 Well Depth: 243.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.74 - 207.5 and 219.34 - 237.1 m

Static Groundwater Level (FToC*): 175.46 m Screen Length: 35.52 m

Pump Type: Submersible Casing stick up: 0.64 m

Pump Setting: 213.00 m, Discharge (Q): 6.25 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	F	Temp.
		(hour)	(min)			(μS/m)		mg/l	(℃)
			160	176.59	1.13				
11-Aug-15	12:00	3	180	176.59	1.13	876	7.66		42.70
			200	176.59	1.13				
			220	176.59	1.13				
11-Aug-15	13:00	4	240	176.59	1.13	880	7.69		43.30
			260	176.57	1.11				
			280	176.57	1.11				
11-Aug-15	14:00	5	300	176.57	1.11	882	7.66		43.00
			330	176.57	1.11				
11-Aug-15	15:00	6	360	176.57	1.11	879	7.63		43.00
			390	176.56	1.10				
11-Aug-15	16:00	7	420	176.56	1.10	888	7.65		42.90
			450	176.56	1.10				
11-Aug-15	17:00	8	480	176.56	1.10	889	7.66		43.00
11-Aug-15	18:00	9	540	176.56	1.10	889	7.75		42.80
11-Aug-15	19:00	10	600	176.57	1.11	887	7.70		42.70
11-Aug-15	20:00	11	660	176.58	1.12	892	7.67		42.40
11-Aug-15	21:00	12	720	176.59	1.13	890	7.76		42.30
11-Aug-15	22:00	13	780	176.59	1.13	888	7.77		42.20
11-Aug-15	23:00	14	840	176.59	1.13	892	7.76		42.40
12-Aug-15	0:00	15	900	176.59	1.13	888	7.75		42.50
12-Aug-15	1:00	16	960	176.59	1.13	889	7.77		42.60
11-Aug-15	2:00	17	1020	176.59	1.13	887	7.74		42.50
11-Aug-15	3:00	18	1080	176.57	1.11	886	7.76		42.30
11-Aug-15	4:00	19	1140	176.57	1.11	888	7.77		42.50
11-Aug-15	5:00	20	1200	176.57	1.11	889	7.75		42.20
11-Aug-15	6:00	21	1260	176.57	1.11	887	7.70		42.40
		22	1320						
		23	1380						
		24	1440						

PRE-TEST DATA SHEET

Date: 20 September 2014

SHEET No. : 1/1

Location: Bofa Site No.: 9

GPS Reading: 555025 E, 936983 N

Well No.: AWBH-9 Well Depth: 265.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 242-259 and 224 - 236 m

Static Groundwater Level (FToC*) 139.65 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.65 m

Pump Setting: 180.00 m, Discharge (Q): 4.40 L/s

* FToC: From Top of Casing 380.16 m3/day

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drowdoun (GL-m)	Sc		
		(hour)	(min)					
		0	0	139.65				
			1	155.80	16.15	0.00	m3/day/m	
			2	159.37	19.72	0.00	m3/day/m	
			3	163.42	23.77	0.00	m3/day/m	
			4	165.82	26.17	0.00	m3/day/m	
			5	166.18	26.53	0.00	m3/day/m	
			6	166.90	27.25	0.00	m3/day/m	
			7	167.46	27.81	0.00	m3/day/m	
			8	167.86	28.21	0.00	m3/day/m	
			9	168.22	28.57	0.00	m3/day/m	
			10	168.54	28.89	0.00	m3/day/m	
			12	169.15	29.50	0.00	m3/day/m	
			14	169.26	29.61	0.00	m3/day/m	
			16	169.70	30.05	0.00	m3/day/m	
			18	170.24	30.59	0.00	m3/day/m	
			20	170.56	30.91	0.00	m3/day/m	
			25	171.02	31.37	0.00	m3/day/m	
			30	171.47	31.82	0.00	m3/day/m	
			35	171.90	32.25	0.00	m3/day/m	
			40	172.30	32.65	0.00	m3/day/m	
			45	172.60	32.95	0.00	m3/day/m	
			50	172.87	33.22	0.00	m3/day/m	
			55	173.05	33.40	0.00	m3/day/m	
		1	60	173.22	33.57	0.00	m3/day/m	
			70	173.42	33.77	0.00	m3/day/m	
			80	173.72	34.07	0.00	m3/day/m	
			90	174.00	34.35	0.00	m3/day/m	
			100	174.14	34.49	0.00	m3/day/m	
			110	174.50	34.85	0.00	m3/day/m	
		2	120	174.72	35.07	0.00	m3/day/m	
			140	174.81	35.16	0.00	m3/day/m	
			160	174.91	35.26	0.00	m3/day/m	
		3	180	174.91	35.26	0.00	m3/day/m	
			200	175.05	35.40	0.00	m3/day/m	
			220	175.17	35.52	0.00	m3/day/m	
		4	240	175.30	35.65	0.00	m3/day/m	

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 1/3

Date: 25 September 2014

Location: Bofa Site No.: 9
GPS Reading: 555025 E, 936983 N
Well No.: AWBH-9 Well Depth: 265.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 224 - 236 and 242 - 259 m
Static Groundwater Level (FToC*): 140.45 m Screen Length: 30.00 m
Pump Type: Submersible Casing stick up: 0.65 m
Pump Setting: 192.00 m, Discharge (Q): 2.50 L/s
* FToC: From Top of Casing 150 L/sec

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s]	EC	pH	Temp.
		(hour)	(min)		(m)	(μS/m)		(ºF)
25-Sep-14	7:00	0	0	140.45	0.00			
			1	146.25	5.80			
			2	148.37	7.92			
			3	148.96	8.51			
			4	149.12	8.67			
			5	149.37	8.92			
			6	149.49	9.04			
			7	149.53	9.08			
			8	149.67	9.22			
			9	149.75	9.30			
			10	149.83	9.38			
			12	149.98	9.53			
			14	150.13	9.68			
			16	150.21	9.76			
			18	150.35	9.90			
			20	150.52	10.07			
			25	151.15	10.70			
			30	151.37	10.92			
			35	151.52	11.07			
			40	151.69	11.24			
			45	151.78	11.33			
			50	152.20	11.75			
			55	152.48	12.03			
25-Sep-14	8:00	1	60	152.78	12.33	530	8.34	90

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 2/3

Date: 25 September 2014

Location: Bofa Site No.: 9
GPS Reading: 555025 E, 936983 N
Well No.: AWBH-9 Well Depth: 265.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 224 - 236 and 242 - 259 m
Static Groundwater Level (FToC*): 140.45 m Screen Length: 30.00 m
Pump Type: Submersible Casing stick up: 0.65 m
Pump Setting: 192.00 m, Discharge (Q): 3.00 L/s
* FToC: From Top of Casing 180 L/sec

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s]	EC	pH	Temp.
		(hour)	(min)		(m)	(μS/m)		(ºF)
25-Sep-14	8:00	0	0	152.78	12.33			
			1	154.82	14.37			
			2	155.44	14.99			
			3	155.90	15.45			
			4	156.07	15.62			
			5	156.40	15.95			
			6	156.45	16.00			
			7	156.50	16.05			
			8	156.55	16.10			
			9	156.57	16.12			
			10	156.59	16.14			
			12	156.80	16.35			
			14	156.98	16.53			
			16	157.20	16.75			
			18	157.43	16.98			
			20	157.63	17.18			
			25	158.15	17.70			
			30	158.48	18.03			
			35	158.84	18.39			
			40	159.15	18.70			
			45	159.44	18.99			
			50	159.69	19.24			
			55	159.92	19.47			
25-Sep-14	9:00	1	60	160.10	19.65	525	8.48	90.01

STEP-DRAWDOWN TEST DATA SHEET
SHEET No. : 3/3

Date: 25 September 2014

Location: Bofa Site No.: 9

GPS Reading: 555025 E, 936983 N

Well No.: AWBH-9 Well Depth: 265.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 224 - 236 and 242 - 259 m

Static Groundwater Level (FToC*): 140.45 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.65 m

Pump Setting: 192.00 m, Discharge (Q): 3.50 L/s

* FToC: From Top of Casing 210 L/sec

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(ºF)
25-Sep-14	9:00	0	0	160.10	19.65			
			1	162.70	22.25			
			2	163.65	23.20			
			3	164.08	23.63			
			4	164.23	23.78			
			5	164.40	23.95			
			6	164.60	24.15			
			7	164.70	24.25			
			8	164.85	24.40			
			9	164.98	24.53			
			10	165.10	24.65			
			12	165.32	24.87			
			14	165.51	25.06			
			16	165.68	25.23			
			18	165.83	25.38			
			20	165.98	25.53			
			25	166.32	25.87			
			30	166.60	26.15			
			35	166.85	26.40			
			40	167.05	26.60			
			45	167.26	26.81			
			50	167.44	26.99			
			55	167.60	27.15			
25-Sep-14	10:00	1	60	167.74	27.29	523	8.54	90.05

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/3

Date: 21 September 2014

Location: Bofa Site No.: 9

GPS Reading: 555025 E, 936983 N

Well No.: AWBH-9 Well Depth: 265.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 224 - 236 and 242 - 259 m

Static Groundwater Level (FToC*): 139.92 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.65 m

Pump Setting: 192.00 m, Discharge (Q): 3.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(ºF)
21-Sep-14	10:00	0	0	139.92	0.00			
			1	155.60	15.68			
			2	160.26	20.34			
			3	163.15	23.23			
			4	164.70	24.78			
			5	165.45	25.53			
			6	165.70	25.78			
			7	165.10	25.18			
			8	161.40	21.48			
			9	160.20	20.28			
			10	159.45	19.53			
			12	159.20	19.28			
			14	159.30	19.38			
			16	159.58	19.66			
			18	159.67	19.75			
			20	159.93	20.01			
			25	160.50	20.58			
			30	162.20	22.28			
			35	163.20	23.28			
			40	163.67	23.75			
			45	164.20	24.28			
			50	164.66	24.74			
			55	164.96	25.04			
21-Sep-14	11:00	1	60	165.30	25.38	547	8.84	91
			70	165.82	25.90			
			80	166.25	26.33			
			90	166.87	26.95			
			100	167.02	27.10			
			110	167.22	27.30			
21-Sep-14	12:00	2	120	167.44	27.52	538	8.57	91.3
			140	167.82	27.90			

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/3

Date: 21 September 2014

Location: Bofa Site No.: 9

GPS Reading: 555025 E, 936983 N

Well No.: AWBH-9 Well Depth: 265.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 224 - 236 and 242 - 259 m

Static Groundwater Level (FToC*): 139.92 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.65 m

Pump Setting: 192.00 m, Discharge (Q): 3.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(ºF)
			160	168.20	28.28			
21-Sep-14	13:00	3	180	168.36	28.44	536	8.59	91.70
			200	168.58	28.66			
			220	168.77	28.85			
21-Sep-14	14:00	4	240	168.95	29.03	541	8.67	93.10
			260	169.10	29.18			
			280	169.24	29.32			
21-Sep-14	15:00	5	300	169.42	29.50	544	8.52	93.30
			330	169.62	29.70			
21-Sep-14	16:00	6	360	169.78	29.86	536	8.51	90.70
			390	169.93	30.01			
21-Sep-14	17:00	7	420	170.09	30.17	523	8.88	89.00
			450	170.26	30.34			
21-Sep-14	18:00	8	480	170.36	30.44	526	8.57	89.00
21-Sep-14	19:00	9	540	170.47	30.55	543	8.53	90.10
21-Sep-14	20:00	10	600	170.56	30.64	537	8.61	91.20
21-Sep-14	21:00	11	660	170.67	30.75	541	8.56	92.10
21-Sep-14	22:00	12	720	170.75	30.83	536	8.53	90.30
21-Sep-14	23:00	13	780	170.84	30.92	532	8.52	92.10
22-Sep-14	0:00	14	840	170.96	31.04	534	8.53	93.00
22-Sep-14	1:00	15	900	171.11	31.19	528	8.54	91.20
22-Sep-14	2:00	16	960	171.23	31.31	531	8.51	90.10
22-Sep-14	3:00	17	1020	171.34	31.42	536	8.57	93.30
22-Sep-14	4:00	18	1080	171.43	31.51	533	8.52	91.20
22-Sep-14	5:00	19	1140	171.54	31.62	535	8.56	91.30
22-Sep-14	6:00	20	1200	171.63	31.71	534	8.53	90.20
22-Sep-14	7:00	21	1260	171.71	31.79	536	8.51	91.30
22-Sep-14	8:00	22	1320	171.82	31.90	535	8.52	92.10
22-Sep-14	9:00	23	1380	171.93	32.01	543	8.53	93.40
22-Sep-14	10:00	24	1440	172.12	32.20	540	8.46	91.60

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 3/3

Date: 22 September 2014

Location: Bofa Site No.: 9

GPS Reading: 555025 E, 936983 N

Well No.: AWBH-9 Well Depth: 265.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 224 - 236 and 242 - 259 m

Static Groundwater Level (FToC*): 139.92 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.65 m

Pump Setting: 192.00 m, Discharge (Q): 3.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(ºF)
22-Sep-14	12:00	26	1560	172.32	32.40	541	8.31	91.8
22-Sep-14	14:00	28	1680	172.63	32.71	543	8.45	92.70
22-Sep-14	16:00	30	1800	172.80	32.88	538	8.57	91.70
22-Sep-14	18:00	32	1920	173.08	33.16	533	8.04	90.80
22-Sep-14	22:00	36	2160	173.45	33.53	535	8.05	92.10
23-Sep-14	2:00	40	2400	173.76	33.84	534	8.04	91.20
23-Sep-14	6:00	44	2640	174.06	34.14	533	8.05	90.30
23-Sep-14	10:00	48	2880	174.57	34.65	517	8.79	91.20

RECOVERY TEST DATA SHEET

Date: 23 September 2014

SHEET No. : 1/1

Location: Bofa Site No.: 9

GPS Reading: 555025 E 936983 N

Well No.: Well Depth: m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 224 - 236 and 242 - 259 m

Static Groundwater Level (FToC*): 139.92 m Screen Length: 30.00 m

Pump Type: Submersible Casing stick up: 0.65 m

Pump Setting: 192.00 m Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t'] (hour)	(min)	Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
23-Sep-14	10:00		0	2880		174.57	34.65
			1	2881	2881	154.55	14.63
			2	2882	1441	153.70	13.78
			3	2883	961	153.40	13.48
			4	2884	721	153.25	13.33
			5	2885	577	152.94	13.02
			6	2886	481	152.70	12.78
			7	2887	412	152.40	12.48
			8	2888	361	152.14	12.22
			9	2889	321	151.83	11.91
			10	2890	289	151.41	11.49
			12	2892	241	150.70	10.78
			14	2894	207	150.16	10.24
			16	2896	181	149.62	9.70
			18	2898	161	149.15	9.23
			20	2900	145	148.69	8.77
			25	2905	116	147.77	7.85
			30	2910	97	147.06	7.14
			35	2915	83	146.06	6.14
			40	2920	73	146.00	6.08
			45	2925	65	145.62	5.70
			50	2930	59	145.29	5.37
			55	2935	53	144.97	5.05
23-Sep-14	11:00	1	60	2940	49	144.75	4.83
			70	2950	42	144.37	4.45
			80	2960	37	143.90	3.98
			90	2970	33	143.67	3.75
			100	2980	30	143.51	3.59
			110	2990	27	143.30	3.38
23-Sep-14	12:00	2	120	3000	25	143.14	3.22
			140	3020	22	142.85	2.93
			160	3040	19	142.62	2.70
23-Sep-14	13:00	3	180	3060	17	142.42	2.50
			200	3080	15	142.25	2.33
			220	3100	14	142.10	2.18
23-Sep-14	14:00	4	240	3120	13	142.00	2.08
			260	3140	12	141.90	1.98

PRE-TEST DATA SHEET

Date: 1 April 2015

SHEET No. : 1/1

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*) 69.89 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): 10.19 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	(min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (µS/m)	pH	F mg/l	Temp. (℃)
		0	0	69.89	0.00				
			1	77.60	7.71				
			2	78.04	8.15				
			4	78.89	9.00				
			6	79.05	9.16				
			8	79.34	9.45				
			10	79.75	9.86				
			12	79.80	9.91				
			14	79.84	9.95				
			16	79.86	9.97				
			18	79.88	9.99				
			20	79.92	10.03				
			25	79.94	10.05				
			30	79.96	10.07				
			35	79.97	10.08				
			40	79.98	10.09				
			45	80.00	10.11				
			50	80.02	10.13				
			55	80.05	10.16				
		1	60	80.07	10.18	461	7.64		29.1
			70	80.12	10.23				
			80	80.12	10.23				
			90	80.12	10.23				
			100	80.13	10.24				
			110	80.13	10.24				
		2	120	80.15	10.26				

STEP-DRAWDOWN TEST DATA SHEET

Date: 1 April 2015

SHEET No. : 1/5

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.89 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): 8.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
1-Apr-14	12:55	0	0	69.89	0.00			
			1	77.02	7.13			
			2	77.04	7.15			
			4	77.10	7.21			
			6	77.12	7.23			
			8	77.14	7.25			
			10	77.15	7.26			
			12	77.17	7.28			
			14	77.18	7.29			
			16	77.18	7.29			
			18	77.18	7.29			
			20	77.20	7.31			
			25	77.22	7.33			
			30	77.23	7.34			
			35	77.25	7.36			
			40	77.25	7.36			
			45	77.25	7.36			
			50	77.26	7.37			
			55	77.27	7.38			
	13:55	1	60	77.28	7.39	460	7.67	29.7
			70	77.30	7.41			
			80	77.31	7.42			
			90	77.33	7.44			
			100	77.33	7.44			
			110	77.35	7.46			
	14:55	2	120	77.38	7.49	465	7.69	29.3

STEP-DRAWDOWN TEST DATA SHEET

Date: 1 April 2015

SHEET No. : 2/5

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.89 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.31 m

Pump Setting: 122.50 m, Discharge (Q): 9.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (℃)
		(hour)	(min)					
1-Apr-14	14:55	0	0	77.38	7.49			
			1	77.92	8.03			
			2	77.93	8.04			
			4	77.96	8.07			
			6	77.95	8.06			
			8	77.96	8.07			
			10	77.96	8.07			
			12	77.97	8.08			
			14	77.98	8.09			
			16	77.98	8.09			
			18	77.98	8.09			
			20	77.98	8.09			
			25	77.99	8.10			
			30	77.99	8.10			
			35	78.00	8.11			
			40	78.00	8.11			
			45	78.01	8.12			
			50	78.02	8.13			
			55	78.02	8.13			
	15:55	3	60	78.02	8.13	464	7.89	28.6
			70	78.03	8.14			
			80	78.04	8.15			
			90	78.04	8.15			
			100	78.07	8.18			
			110	78.07	8.18			
	16:55	4	120	78.08	8.19	466	7.97	28.8

STEP-DRAWDOWN TEST DATA SHEET

Date: 1 April 2015

SHEET No. : 3/5

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.89 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): 10.19 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s]	EC	pH	Temp.
		(hour)	(min)		(m)	(μS/m)		(℃)
1-Apr-14	16:55	0	0	78.08	8.19			
			1	79.00	9.11			
			2	79.10	9.21			
			4	79.12	9.23			
			6	79.13	9.24			
			8	79.13	9.24			
			10	79.13	9.24			
			12	79.14	9.25			
			14	79.14	9.25			
			16	79.16	9.27			
			18	79.16	9.27			
			20	79.16	9.27			
			25	79.17	9.28			
			30	79.19	9.30			
			35	79.20	9.31			
			40	79.20	9.31			
			45	79.21	9.32			
			50	79.22	9.33			
			55	79.23	9.34			
	17:55	5	60	79.23	9.34	465	7.65	28.7
			70	79.25	9.36			
			80	79.25	9.36			
			90	79.25	9.36			
			100	79.26	9.37			
			110	79.28	9.39			
	18:55	6	120	79.29	9.40			

STEP-DRAWDOWN TEST DATA SHEET

Date: 1 April 2015

SHEET No. : 4/5

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.89 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): 9.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s]	EC	pH	Temp.
		(hour)	(min)		(m)	(μS/m)		(℃)
1-Apr-14	18:55	0	0	79.29	9.40			
			1	79.20	9.31			
			2	79.17	9.28			
			4	79.15	9.26			
			6	79.06	9.17			
			8	79.01	9.12			
			10	78.95	9.06			
			12	78.84	8.95			
			14	78.64	8.75			
			16	78.58	8.69			
			18	78.58	8.69			
			20	78.58	8.69			
			25	78.55	8.66			
			30	78.56	8.67			
			35	78.56	8.67			
			40	78.57	8.68			
			45	78.57	8.68			
			50	78.56	8.67			
			55	78.57	8.68			
	19:55	7	60	78.58	8.69	466	8.02	28.3
			70	78.59	8.70			
			80	78.58	8.69			
			90	78.59	8.70			
			100	78.60	8.71			
			110	78.60	8.71			
	20:55	8	120	78.61	8.72	460	7.7	28.1

STEP-DRAWDOWN TEST DATA SHEET

Date: 1 April 2015

SHEET No. : 5/5

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.89 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): 8.50 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
1-Apr-14	20:55	0	0	78.61	8.72			
			1	78.05	8.16			
			2	77.50	7.61			
			4	77.48	7.59			
			6	77.47	7.58			
			8	77.45	7.56			
			10	77.41	7.52			
			12	77.39	7.50			
			14	77.39	7.50			
			16	77.38	7.49			
			18	77.37	7.48			
			20	77.36	7.47			
			25	77.30	7.41			
			30	77.28	7.39			
			35	77.28	7.39			
			40	77.26	7.37			
			45	77.24	7.35			
			50	77.21	7.32			
			55	77.20	7.31			
	21:55	9	60	77.20	7.31	469	7.72	28.5
			70	77.16	7.27			
			80	77.16	7.27			
			90	77.15	7.26			
			100	77.15	7.26			
			110	77.14	7.25			
	22:55	10	120	77.14	7.25	470	7.73	28.4

CONTINUOUS PUMPING TEST DATA SHEET

Date: 2 April 2015

SHEET No. : 1/3

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.86 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): 10.19 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
2-Apr-15	10:00	0	0	69.86	0			
			1	77.60	7.74			
			2	78.49	8.63			
			3	78.64	8.78			
			4	78.71	8.85			
			5	78.73	8.87			
			6	78.75	8.89			
			8	78.76	8.90			
			10	78.80	8.94			
			15	78.83	8.97			
			20	78.87	9.01			
			25	78.88	9.02			
			30	78.89	9.03			
			35	78.90	9.04			
			40	78.91	9.05			
			45	78.92	9.06			
			50	78.93	9.07			
			55	78.95	9.09			
2-Apr-15	11:00	1	60	78.95	9.09	465	7.82	29.2
			70	78.96	9.10			
			80	78.98	9.12			
			90	78.98	9.12			
			100	78.99	9.13			
			110	79.00	9.14			
2-Apr-15	12:00	2	120	79.00	9.14	466	7.84	29.1
			140	79.03	9.17			
			160	79.04	9.18			

CONTINUOUS PUMPING TEST DATA SHEET

Date: 2 April 2015

SHEET No. : 2/3

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.86 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): 10.91 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
2-Apr-15	13:00	3	180	79.06	9.20	470	7.63	29.5
			210	79.08	9.22			
2-Apr-15	14:00	4	240	79.10	9.24	465	7.65	29.40
			270	79.13	9.27			
2-Apr-15	15:00	5	300	79.15	9.29	470	7.64	29.70
			330	79.17	9.31			
2-Apr-15	16:00	6	360	79.17	9.31	467	7.77	29.60
2-Apr-15	17:00	7	420	79.20	9.34	475	7.73	29.50
2-Apr-15	18:00	8	480	79.23	9.37	472	7.84	29.00
2-Apr-15	19:00	9	540	79.25	9.39	467	7.92	27.60
2-Apr-15	20:00	10	600	79.28	9.42	466	7.82	28.00
2-Apr-15	21:00	11	660	79.31	9.45	469	7.98	28.30
2-Apr-15	22:00	12	720	79.33	9.47	466	7.92	27
2-Apr-15	23:00	13	780	79.35	9.49	465	7.88	27.50
3-Apr-15	0:00	14	840	79.36	9.50	463	7.91	27.20
3-Apr-15	1:00	15	900	79.38	9.52	464	7.90	27.30
3-Apr-15	2:00	16	960	79.39	9.53	462	7.90	26.80
3-Apr-15	3:00	17	1020	79.40	9.54	470	7.96	26.60
3-Apr-15	4:00	18	1080	79.42	9.56	464	7.71	26.90
3-Apr-15	5:00	19	1140	79.45	9.59	466	7.72	27.00
3-Apr-15	6:00	20	1200	79.45	9.59	465	7.87	27.70
3-Apr-15	7:00	21	1260	79.47	9.61	465	7.81	27.50
3-Apr-15	8:00	22	1320	79.48	9.62	464	7.85	27.50
3-Apr-15	9:00	23	1380	79.49	9.63	469	7.58	28.90
3-Apr-15	10:00	24	1440	79.50	9.64	467	7.91	28.70

CONTINUOUS PUMPING TEST DATA SHEET

Date: 3 April 2015

SHEET No. : 3/3

Location: Sire Site No.: 11

GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 125 - 143 and 161 - 179 m

Static Groundwater Level (FToC*): 69.86 m Screen Length: 36.00 m

Pump Type: Submersible Casing stick up: 0.91 m

Pump Setting: 122.50 m, Discharge (Q): _ L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(℃)
3-Apr-15	12:00	26	1560	79.50	9.64	464	7.96	28.7
3-Apr-15	14:00	28	1680	79.50	9.64	444	7.88	28.80
3-Apr-15	16:00	30	1800	79.52	9.66	470	7.74	29.60
3-Apr-15	18:00	32	1920	79.54	9.68	474	7.65	29.30
3-Apr-15	22:00	36	2160	79.59	9.73	469	7.88	27.80
4-Apr-15	2:00	40	2400	79.60	9.74	463	7.98	27.10
4-Apr-15	6:00	44	2640	79.62	9.76	464	7.71	27.40
4-Apr-15	10:00	48	2880	79.66	9.80	468	7.76	28.20

RECOVERY TEST DATA SHEET
SHEET No. : 1/1

Date: 4 April 2015

Location: Sire Site No.: 11
GPS Reading: 553313 E, 916009 N

Well No.: AWBH-11 Well Depth: 227.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 125 - 143 and 161 - 179 m
Static Groundwater Level (FToC*): 69.86 m Screen Length: 30.00 m
Pump Type: Submersible Casing stick up: 0.91 m
Pump Setting: 122.50 m, Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t'] (hour)	(min)	Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
4-Apr-15	10:00		0	2880		79.66	9.80
			1	2881	2881	70.60	0.74
			2	2882	1441	69.53	-0.33
			4	2884	721	69.98	0.12
			6	2886	481	69.96	0.10
			8	2888	361	69.95	0.09
			10	2890	289	69.95	0.09
			12	2892	241	69.94	0.08
			14	2894	207	69.94	0.08
			16	2896	181	69.94	0.08
			18	2898	161	69.93	0.07
			20	2900	145	69.93	0.07
			25	2905	116	69.93	0.07
			30	2910	97	69.92	0.06
			35	2915	83	69.92	0.06
			40	2920	73	69.92	0.06
			45	2925	65	69.92	0.06
			50	2930	59	69.92	0.06
04-Apr-15	11:00	1	60	2940	49	69.92	0.06
			70	2950	42	69.92	0.06

PRE-TEST(30 Min.)

Date: 21 October 2014

Location: Sokoru Site No.: 12
GPS Reading: 550405 E, 1027427 N
Well No.: AWBH-12 Well Depth: 220.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m
Static Groundwater Level (FToC*): 163.72 m Screen Length: 22.88 m
Pump Type: Submersible Casing stick up: 0.42 m
Pump Setting: 186.00 m, Discharge (Q): 5.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	(min)	Water Level (GL - m)	Drawdown, [s] (m)			
21-Oct-14	11:30	0	0	163.72	0.00			
			1	164.74	1.02			
			2	164.44	0.72			
			4	164.45	0.73			
			6	164.46	0.74			
			8	164.46	0.74			
			10	164.47	0.75			
			12	164.47	0.75			
			14	164.47	0.75			
			16	164.47	0.75			
			18	164.47	0.75			
			20	164.47	0.75			
			25	164.47	0.75			
21-Oct-14	12:00		30	164.47	0.75			

PRE-TEST 4 HRs DATA SHEET

Date: 18 October 2014

Location: Sokoru Site No.: 12
GPS Reading: 550405 E, 1027427 N
Well No.: AWBH-12 Well Depth: 220.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m
Static Groundwater Level (FToC*): 163.71 m Screen Length: 22.88 m
Pump Type: Submersible Casing stick up: 0.42 m
Pump Setting: 198.00 m, Discharge (Q): 5.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)			
18-Oct-14	14:10	0	0	163.71	0.00			
			1	165.65	1.94			
			2	165.65	1.94			
			3	165.66	1.95			
			4	165.68	1.97			
			5	165.70	1.99			
			6	165.73	2.02			
			7	165.77	2.06			
			8	165.81	2.10			
			9	165.84	2.13			
			10	165.85	2.14			
			12	165.86	2.15			
			14	165.88	2.17			
			16	165.89	2.18			
			18	165.90	2.19			
			20	165.90	2.19			
			25	165.88	2.17			
			30	165.86	2.15			
			35	165.86	2.15			
			40	165.89	2.18			
			45	165.88	2.17			
			50	165.89	2.18			
			55	165.88	2.17			
18-Oct-14	15:10	1	60	165.88	2.17			
			70	165.85	2.14			
			80	165.85	2.14			
			90	165.85	2.14			
			100	165.85	2.14			
			110	165.84	2.13			
18-Oct-14	16:10	2	120	165.84	2.13			
			140	165.84	2.13			
			160	165.82	2.11			
18-Oct-14	17:10	3	180	165.82	2.11			
			200	165.80	2.09			
			220	165.80	2.09			
18-Oct-14	18:10	4	240	165.80	2.09			

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 1/3

Date: 19 October 2014

Location: Sokoru Site No.: 12
GPS Reading: 550405 E, 1027427 N
Well No.: AWBH-12 Well Depth: 220.00 m, Well Diameter: ϕ 6.00 "
Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m
Static Groundwater Level (FToC*): 163.71 m Screen Length: 22.88 m
Pump Type: Submersible Casing stick up: 0.42 m
Pump Setting: 198.00 m, Discharge (Q): 5.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t] (hour)	Elapsed Time, [t] (min)	Water Level (GL - m)	Drawdown, [s] (m)	EC (μS/m)	pH	Temp. (ºC)
19-Oct-14	11:00	0	0	163.71	0.00			
			1	165.58	1.87			
			2	165.60	1.89			
			3	165.63	1.92			
			4	165.66	1.95			
			5	165.70	1.99			
			6	165.72	2.01			
			8	165.74	2.03			
			10	165.74	2.03			
			15	165.75	2.04			
			20	165.76	2.05			
			25	165.77	2.06			
			30	165.77	2.06			
			35	165.77	2.06			
			40	165.77	2.06			
			45	165.77	2.06			
			50	165.77	2.06			
			55	165.77	2.06			
19-Oct-14	12:00	1	60	165.77	2.06	218	7.53	23.67
			70	165.77	2.06			
			80	165.77	2.06			
			90	165.77	2.06			
			100	165.77	2.06			
			110	165.77	2.06			
19-Oct-14	13:00	2	120	165.77	2.06			
			140	165.77	2.06	196	8.66	23.61
			160	165.77	2.06			

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 2/3

Date: 19 October 2014

Location: Sokoru Site No.: 12

GPS Reading: 550405 E, 1027427 N

Well No.: AWBH-12 Well Depth: 220.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m

Static Groundwater Level (FToC*): 163.71 m Screen Length: 22.88 m

Pump Type: Submersible Casing stick up: m

Pump Setting: 198.00 m, Discharge (Q): 5.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(ºC)
19-Oct-14	14:00	3	180	165.77	2.06	195	8.6	23.94
			210	165.77	2.06			
19-Oct-14	15:00	4	240	165.76	2.05	191	8.65	23.50
			270	165.76	2.05			
19-Oct-14	16:00	5	300	165.76	2.05	204	8.8	24.78
			330	165.76	2.05			
19-Oct-14	17:00	6	360	165.76	2.05	203	8.5	24.22
19-Oct-14	18:00	7	420	165.77	2.06	203	8.60	24.17
19-Oct-14	19:00	8	480	165.78	2.07	202	8.6	24.22
19-Oct-14	20:00	9	540	165.79	2.08	203	8.5	24.22
19-Oct-14	21:00	10	600	165.80	2.09	203	8.6	24.22
19-Oct-14	22:00	11	660	165.80	2.09	202	8.6	24.22
20-Oct-14	23:00	12	720	165.81	2.10	203	8.6	24.22
20-Oct-14	0:00	13	780	165.82	2.11	199	8.50	24.72
20-Oct-14	1:00	14	840	165.83	2.12	200	8.60	24.10
20-Oct-14	2:00	15	900	165.84	2.13	203	8.50	24.22
20-Oct-14	3:00	16	960	165.85	2.14	200	7.89	24.72
20-Oct-14	4:00	17	1020	165.86	2.15	202	7.91	24.22
20-Oct-14	5:00	18	1080	165.87	2.16	199	7.87	24.72
20-Oct-14	6:00	19	1140	165.88	2.17	200	7.91	24.22
20-Oct-14	7:00	20	1200	165.88	2.17	199	7.89	24.22
20-Oct-14	8:00	21	1260	165.88	2.17	200	8.50	24.22
20-Oct-14	9:00	22	1320	165.89	2.18	201	8.50	23.90
20-Oct-14	10:00	23	1380	165.89	2.18	201	7.73	23.10
20-Oct-14	11:00	24	1440	165.89	2.18	204	7.76	23.70

CONTINUOUS PUMPING TEST DATA SHEET
SHEET No. : 3/3

Date: 20 October 2014

Location: Sokoru Site No.: 12

GPS Reading: 550405 E, 1027427 N

Well No.: AWBH-12 Well Depth: 220.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m

Static Groundwater Level (FToC*): 163.71 m Screen Length: 22.88 m

Pump Type: Submersible Casing stick up: 0.42 m

Pump Setting: 198.00 m, Discharge (Q): 5.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(μS/m)		(ºC)
20-Oct-14	13:00	26	1560	165.89	2.18	200	7.98	23.3
20-Oct-14	15:00	28	1680	165.88	2.17	193	7.86	22.50
20-Oct-14	17:00	30	1800	165.88	2.17	193	7.9	22.50
20-Oct-14	19:00	32	1920	165.88	2.17	192	8.3	23.60
20-Oct-14	23:00	36	2160	165.88	2.17	190	8.57	22.40
21-Oct-14	3:00	40	2400	165.89	2.18	186	8.6	21.60
21-Oct-14	7:00	44	2640	165.89	2.18	181	8.6	21.40
21-Oct-14	23:00	48	2880	165.89	2.18	205	8.74	24.00

CONTINUOUS PUMPING TEST 10 HRs DATA SHEET

Date: 21 October 2014

SHEET No. : 1/1

Location: Sokoru Site No.: 12

GPS Reading: 550405 E, 1027427 N

Well No.: AWBH-12 Well Depth: 220.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m

Static Groundwater Level (FToC*): 163.71 m Screen Length: 22.88 m

Pump Type: Submersible Casing stick up: 0.42 m

Pump Setting: 186.00 m, Discharge (Q): 5.00 L/s

* FToC: From Top of Casing

Date	Time	Elapsed Time, [t]		Water Level (GL - m)	Drawdown, [s] (m)	EC	pH	Temp.
		(hour)	(min)			(µS/m)		(ºC)
21-Oct-14	12:20	0	0	163.71	0.00			
			1	164.40	0.69			
			2	164.41	0.70			
			4	164.41	0.70			
			6	164.41	0.70			
			8	164.42	0.71			
			10	164.42	0.71			
			12	164.42	0.71			
			14	164.42	0.71			
			16	164.42	0.71			
			18	164.42	0.71			
			20	164.42	0.71			
			25	164.42	0.71			
			30	164.42	0.71			
			35	164.42	0.71			
			40	164.42	0.71			
			45	164.42	0.71			
			50	164.41	0.70			
			55	164.41	0.70			
21-Oct-14	13:20	1	60	164.41	0.70	200	8.5	22.6
			70	164.41	0.70			
			80	164.42	0.71			
			90	164.42	0.71			
			100	164.42	0.71			
			110	164.42	0.71			
21-Oct-14	14:20	2	120	164.42	0.71	198	8.65	23.4
			140	164.42	0.71			
			160	164.42	0.71			
21-Oct-14	15:20	3	180	164.41	0.70	201	8.5	22.6
			210	164.41	0.70			
21-Oct-14	16:20	4	240	164.41	0.70	202	8.5	22.1
			270	164.41	0.70			
21-Oct-14	17:20	5	300	164.42	0.71	203	8.65	23.1
			330	164.42	0.71			
21-Oct-14	18:20	6	360	164.42	0.71	200	8.6	22.6
21-Oct-14	19:20	7	420	164.42	0.71	202	8.65	22.8
21-Oct-14	20:20	8	480	164.42	0.71	201	8.6	23.1
21-Oct-14	21:20	9	540	164.42	0.71	203	8.5	22.6
21-Oct-14	22:20	10	600	164.42	0.71	200	8.6	23.6

RECOVERY TEST DATA SHEET

Date: 21 October 2014

SHEET No. : 1/1

Location: Sokoru Site No.: 12

GPS Reading: 550405 E 1027427 N

Well No.: AWBH-12 Well Depth: m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m

Static Groundwater Level (FToC*): 163.71 m Screen Length: 22.88 m

Pump Type: Submersible Casing stick up: 0.42 m

Pump Setting: 198.00 m Discharge (Q): - L/s

* FToC: From Top of Casing

Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
21-Oct-14	10:00		0	2880		165.89	2.18
			1	2881	2881	163.35	-0.36
			2	2882	1441	163.48	-0.23
			4	2883	721	163.74	0.03
			6	2884	481	163.74	0.03

RECOVERY TEST DATA SHEET

Date: 21 October 2014

SHEET No. : 1/1

Location: Sokoru

Site No.: 12

GPS Reading: 555025 E 936983 N

Well No.: AWBH-12 Well Depth: 220.00 m, Well Diameter: ϕ 6.00 "

Screen Depth(s): 189.83 - 195.55 and 201.27 - 218.43 m

Static Groundwater Level (FToC*): 163.71 m Screen Length: 22.88 m

Pump Type: Submersible Casing stick up: 0.42 m

Pump Setting: 186.00 m Discharge (Q): - L/s

* FToC: From Top of Casing

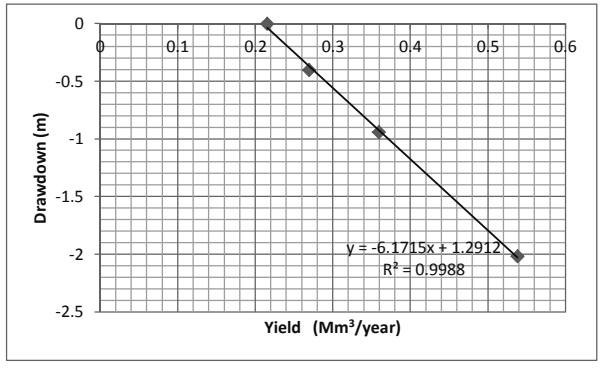
Date	Time	Time since Pumping Stopped, [t']		Time since Pumping Started, [t] (min)	Time Ratio, [t/t']	Water Level (GL - m)	Residual Drawdown, [s'] (m)
		(hour)	(min)				
21-Oct-14	22:20		0	2880		164.42	0.71
			1	2881	2881	163.42	-0.29
			2	2882	1441	163.48	-0.23
			3	2883	961	163.55	-0.16
			4	2884	721	163.63	-0.08
			5	2885	577	163.74	0.03
			6	2886	481	163.72	0.01
			7	2887	412	163.71	0.00

Data 6

"Yield vs Drawdown"
by Mathematical Model

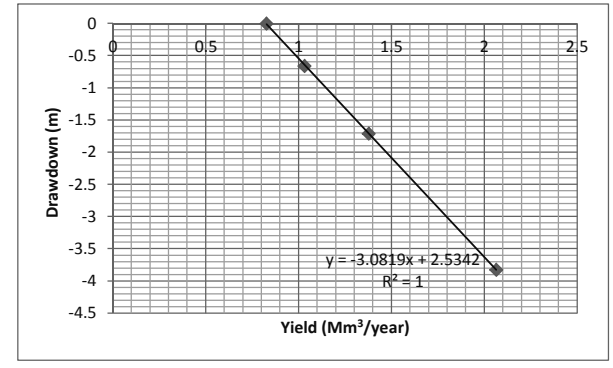
SB5-R

Yield Mm3/year X	Drawdown m Y
0.215	0
0.269	−0.402
0.359	−0.939
0.538	−2.017



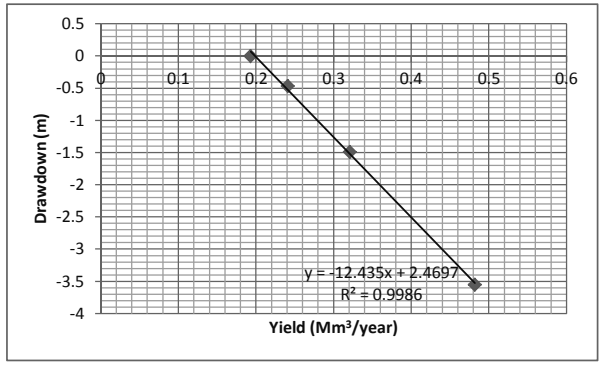
SB2-L

Yield Mm3/year X	Drawdown m Y
0.826	0
1.032	−0.659
1.376	−1.708
2.064	−3.824



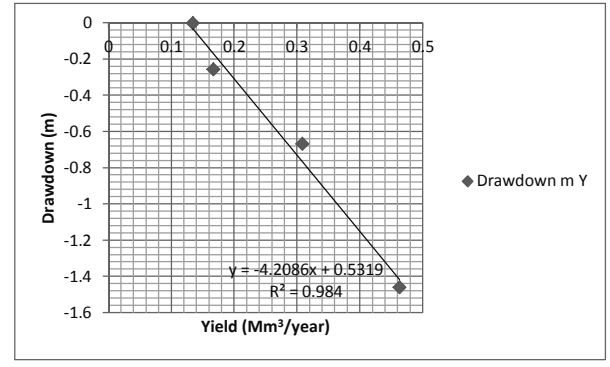
SB-BSK

Yield Mm3/year X	Drawdown m Y
0.193	0
0.241	−0.466
0.321	−1.488
0.482	−3.549



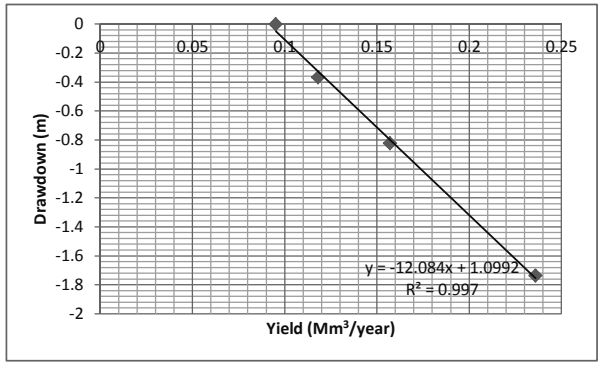
SB3-R

Yield Mm3/year X	Drawdown m Y
0.134	0
0.167	−0.257
0.308	−0.668
0.463	−1.459



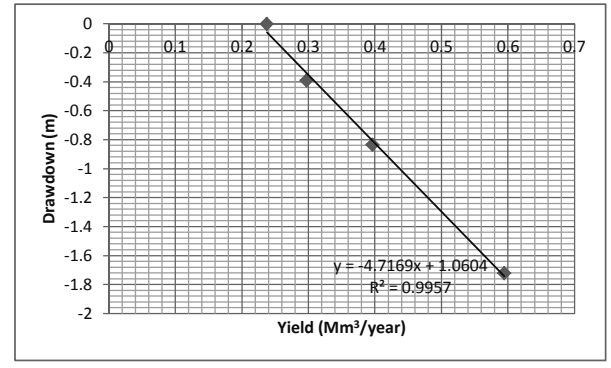
SB3-L

Yield	Drawdown
Mm3/year	m
X	Y
0.095	0
0.118	−0.3685
0.157	−0.823
0.236	−1.735



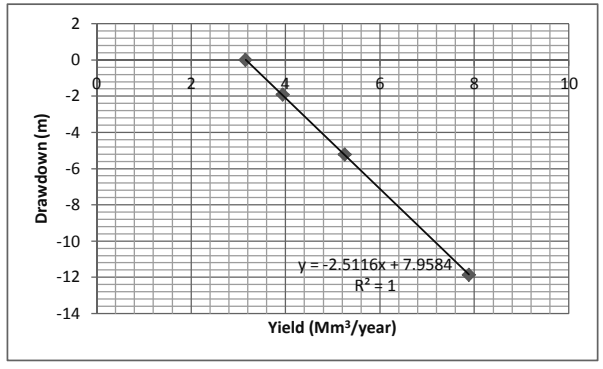
SB5-L

Yield	Drawdown
Mm3/year	m
X	Y
0.237	0
0.297	−0.392
0.396	−0.834
0.594	−1.721



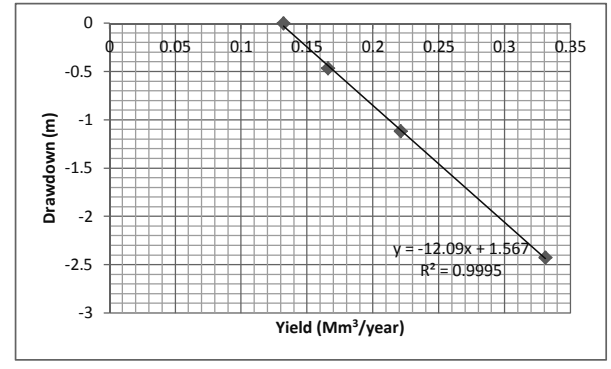
SB4-L-D

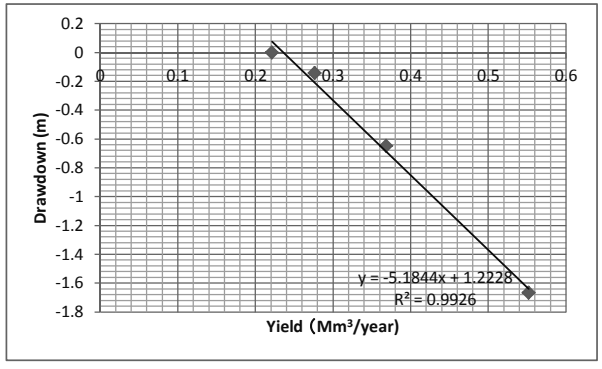
Yield	Drawdown
Mm3/year	m
X	Y
3.154	0
3.942	−1.912
5.256	−5.2215
7.884	−11.8573



SB4-R

Yield	Drawdown
Mm3/year	m
X	Y
0.132	0
0.166	−0.467
0.221	−1.117
0.331	−2.425



Yield	Drawdown
Mm3/year	m
X	Y
0.221	0
0.276	−0.141
0.368	−0.647
0.552	−1.667

SB-BSK-W