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I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE 1, HALF W, SP. 1, DATE 8/5/83

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	0-.5W	→	.5-1.0W	→	→	1-1.5W	~	~	→	1.5-2W
RANGE										
VOLTAGE	605	545	395	600	540	95	395	600	540	270
CURRENT	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A
SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	~	~	~	→	2-2.5	~	~	~	~	→
RANGE										
VOLTAGE	95	395	600	540	265	270	95	390	600	535
CURRENT	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A

FREQUENCIES 3.0-0.3

SENDER No. 9662 S | POWER UNIT ID

OPERATOR SWANSON |

RECEIVER No. 25705 R | HOURS RUN

OPERATOR ANDERS |

COMMENTS: CAL 1-2 3.0 - 0.3 HZ
0.3 AMPS

I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE 1, HALF W, SP. 1, DATE 8/5/83

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	
RECEIVE	25-3	→	→	→	→	3-3.5	→	→	→	
RANGE										
VOLTAGE	260	270	95	390	600	260	270	95	390	
CURRENT	.01 A	.05A	.05A	.25A	.25A	.05A	.25A	.05A	.25A	
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0-0.3

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705A HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE 1, HALF E, SP. 1, DATE 8/5/83

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	0-0.5	.5-1 E	1-1.5 E	1.5-2 E					2-2.5	
RANGE										
VOLTAGE	260	95	95	255	265	90	385	545	255	260
CURRENT	.25A	.25A			.25A	.25A	.25A	.25A	.25A	.25A
SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	
RECEIVE					2.5-3 E					
RANGE										
VOLTAGE	90	385	545	525	260	90	385	585	520	
CURRENT	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	

FREQUENCIES 2.0 - 0.1

SENDER No. 9662-S

OPERATOR SWANSON

RECEIVER No. 2570-S

OPERATOR ANDERS

POWER UNIT ID

HOURS RUN

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE L, HALF E, SP. 1, DATE 8/5/82

PAGE 4

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7						
RECEIVE	3-3.5 E	→	→	→						
RANGE										
VOLTAGE	90	385	580	520						
CURRENT	.25A	.25A	.25A	.25A						
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0 - 0.3

SENDER No. 9662-3 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705 C HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 3.0 - 0.3 HZ
.3 AMPS

I. P. SENDER NOTES

JOB No. 1649 AREA GRANHAM RANCH

LINE 3, HALF NW, SP. 1, DATE 8/4/83

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	25-28 NW	→	26-29 NW	→	→	31-33 NW	→	→	→	34-37 NW
RANGE										
VOLTAGE	370	275	500V	370	275	375	500	370	275	375
CURRENT	1 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A
SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	34-37 NW	→	→	→	37-40	→	→	→	→	→
RANGE										
VOLTAGE	375	500	370	275	510	375	375	495	365	275
CURRENT	1 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A

FREQUENCIES 3.0 - 0.3

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705 HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 3.0 - 0.3 HZ
CAL 1-2 1.0 - 0.1 HZ

Δ = 1.0 - 0.1 HZ

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 3, HALF NW, SP. 1, DATE 8/4/82

PAGE 2

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	6-21	2-3	3-4	4-5	2-7
RECEIVE	40-43 NW	→	→	→	→	43 NW	→	→	→	34-37
RANGE										
VOLTAGE	510	375	375	495	365	510	375	375	495	
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	1A	
SEND	7-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	4-7			→	37-40					→
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0 - 0.5

SENDER No. 7662 5	POWER UNIT ID
OPERATOR SWANSON	
RECEIVER No. 25705 2	HOURS RUN
OPERATOR ANDERS	

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 3, HALF SE, SP. 1, DATE 8/14/83

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	25-23 SE	22-17 SE	19-16 SE	16-13					13-19 SE	
RANGE										
VOLTAGE	505	370	370	500	370	370	485	355	500	370
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A
SEND	3-4	4-5	5-6	6-17	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE	13-19 SE				10-7 SE					7-4 SE
RANGE										
VOLTAGE	370	485	355	265	370	370	485	355	265	370
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A

FREQUENCIES 3.0 -0.3

SENDER No. 9662-5 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705L HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 2, HALF SE, SP. 1, DATE 8/4/85

PAGE 4

HEINRICHS GEOEX

SEND	4-5	5-6	6-7							
RECEIVE	7-4	→	→							
RANGE	1									
VOLTAGE	485	355	265							
CURRENT	1 A	1 A	1 A							
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 2.0 - 0.3

SENDER No. 9662-3 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705 HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 2.0 - 0.3 HZ
1 AMP

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 2, HALF NW, SP. 1, DATE 8/2/63

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	0-3 NW	→	3-6 NW	→	→	6-9 NW	→	→	→	9-12 NW
RANGE		Δ								
VOLTAGE	200	230	165	200	230	175	165	200	230	190
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A
SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	→	→	→	→	12-15 NW	→	→	→	→	→
RANGE	175	165	200	225	240	190	175 Δ	165	200	225
VOLTAGE	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A
CURRENT										

FREQUENCIES 3.0-0.3

SENDER No. 16625 POWER UNIT ID

OPERATOR WANSON

RECEIVER No. 25705 R HOURS RUN

OPERATOR ANDERS

COMMENTS: 3.0-0.3 CAL 1-2 1 AMP

1.0-0.1 CAL 1-2 1 AMP

Δ=1.0-0.1 HZ ALSO

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 2, HALF NW, SP. 1, DATE 8/3/83

PAGE 2

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	
RECEIVE	15-18 HW				→	18-21 HW				
RANGE			Δ							
VOLTAGE	240	190	175	165	200	240	190	175	165	
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0-0.3

SENDER No. 9662 S | POWER UNIT ID

OPERATOR SWANSON |

RECEIVER No. 2570SR | HOURS RUN

OPERATOR ANDERS |

COMMENTS:

Δ= 1.0 - 0.1 HZ ALSO

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 2, HALF SE, SP. 1, DATE 8/13/83

PAGE 3

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	0-35s	3-65s	6-95s	9-125s					12-155s	
RANGE										
VOLTAGE	235	275	175	235	190	175	160	195	235	190
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A
SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE					15-185s					18-215s
RANGE										
VOLTAGE	175	160	195	220	190	175	160	195	220	175
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A

FREQUENCIES 30-0.3

SENDER No. 766-5 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 0270-5 HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA GRAHAM RANCH

LINE 2, HALF SE, SP. 1, DATE 8/2/83

PAGE 4

HEINRICHS GEOEX

SEND	4-5	5-6	6-7							
RECEIVE	16-21 SE	→	→							
RANGE										
VOLTAGE	160	195	220							
CURRENT	3 A	3 A	3 A							
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 2.0-0.3

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 57058 HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 1 AMP

2.0-0.3 HZ

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE ____, HALF ____, SP. 1, DATE 12/1/63

PAGE 1

HEINRICHS GEOEX

SEND	0-2M	2-3	1-2	2-3	3-4	1-2	2-3	3-4	4-5	1-2
RECEIVE	0-3 MI	→	2-6 MI	→	→	6-9 SE	→	→	→	9-12 SE
RANGE	1-3	300V	155V			•				
VOLTAGE	300	300	300V	170V	180V	150V	170V	175V	155V	150V
CURRENT	1A	2A	1A							
SEND	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	→	→	→	→	12-15 SE	→	→	→	→	→
RANGE	2-3				Δ					
VOLTAGE	165V	175V	155V	115V	295V	325V	340V	300V	220V	200V
CURRENT	1A	1A	1A							

FREQUENCIES 3.0-0.3 HZ

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 176 HOURS RUN

OPERATOR ANDRUS

COMMENTS: CAL 1-2 1 AMP

3 HZ .3HZ 160V

1 AMP

1 HZ - 1 HZ

Δ = 1.0 - 0.1 HZ ALSO

RCVR 2576 CH X 325V 2A

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE 11, HALF SE, SP. 1, DATE 8/21/83

HEINRICHS GEOEX

SEND	2-3	3-4	4-5	5-6	6-7	3-4	4-5	5-6	6-7	
RECEIVE	15-18	→	→	→	→	18-21	→	→	→	
RANGE										
VOLTAGE	325V	330V	295V	220V	360V	330V	295V	220V	360V	
CURRENT										
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES

SENDER No. 92623	POWER UNIT ID
OPERATOR SWANSON	
RECEIVER No. [illegible]	HOURS RUN
OPERATOR AUBUCHON	

2 T 705 K

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE 1, HALF NW, SP. 1, DATE 8/2/83

HEINRICHS GEOEX

SEND	5-6	5-6	3-4	2-3	3-4	4-5	5-6	6-7	1-2	2-3
RECEIVE	0-3 NW	2-6 NW	6-9 NW	9-12 NW	~	~	~	~	12-15	~
RANGE										
VOLTAGE	215V	215V	330V	320V	335V	295V	220V	360	290V	320V
CURRENT	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A
SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	1-2
RECEIVE	~	~	~	~	15-18 NW	~	~	~	~	18-21
RANGE										290V
VOLTAGE	335V	295V	220V	360V	290V	320V	335V	295V	220V	2 A
CURRENT	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	

FREQUENCIES 3.0 - 0.2 HZ

SENDER No. 962 | POWER UNIT ID

OPERATOR [illegible]

RECEIVER No. 2505A | HOURS RUN

OPERATOR ANDERS

COMMENTS: 2.1 - 0.1 HZ ACC

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE ____, HALF NW, SP. 1, DATE 8/21/82

PAGE 4

HEINRICHS GEOEX

SEND	2-3	3-4	4-5							
RECEIVE	18-21	→	→							
RANGE			A							
VOLTAGE	320V	335V	295V							
CURRENT	2A	2A	2A							
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0 - 0.3 HZ

SENDER No. 2662SR | POWER UNIT ID

OPERATOR CANON

RECEIVER No. 2570SR | HOURS RUN

OPERATOR ANDERS

COMMENTS:

Δ 1.0 - 0.1 HZ ALSC

CAL 1-2 1 AMP

3.0 - 0.3 HZ

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Brenham Project

LINE C, HALF NW, SR. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-3-83

PAGE 1

HEINRICHS GEOEX

SEND		5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	Cal
RECEIVE		0-3 NW	—	3-6 NW			6-9 NW				
MULTIPLIER		10	10	10	1.0	1.0	10	1.0	1.0	1.0	2.1
PFE		0.5	0.5	0.4	0.4	0.6	1.5	1.0	1.9	2.3	0
CUR. (AMPS)		3									
POINT NO.											
SEP. (n)		1	2	1	2	3	1	2	3	4	
H. F. MV		294	140	244	80.7	48.2	212	49.2	21.6	12.9	98.5
DRIFT		10	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	882	168	732	96.8	145	63.6	57.8	64.8	83.4	
DRIFT	MCF	5.67	2.98	5.5	4.1	4.2	23.6	34.6	29.3	33.6	
S. P.		+9.2		+14.0			+16.1				
NOISE											
POT. RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1649, AREA Branham Ranch

LINE 2, HALF NW, SR. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-3-83

PAGE 2

HEINRICHS GEOEX

SEND	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE	9-12 NW					12-15 NW				
MULTIPLIER	10	1.0	1.0	1.0	1.0	10	1.0	1.0	1.0	0.1
PFE	0.1	1.8	1.7	1.4	1.5	0.3	0.5	2.4	1.9	1.5
CUR. (AMPS)	3									
POINT NO.										
SEP. (n)	1	2	3	4	5	1	2	3	4	5
H. F. MV	27.4	71.1	22.8	17.0	13.1	45.8	76.3	24.2	12.4	8.72
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $P/2\pi$	82.2	85.3	83.4	102	139	137	91.6	72.6	71.4	91.6
DRIFT MCF	1.2	21.1	20.4	13.7	10.9	3.3	5.5	23.1	25.5	16.4
S. P.	-3.6					+14.7				
NOISE										
POT RES.										
CULT & CMTS										

FENCE N 1150 (over 11 rods)

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Brandon Ranch

LINE 2, HALF NW, SP. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-3-83

PAGE 3

HEINRICHS GEOEX

SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	12-15 NW	15-18 NW					18-21 NW			
MULTIPLIER	0.1	1.0	1.0	1.0	0.1	0.1	1.0	1.0	0.1	0.1
PFE	1.9	0.3	0.4	2.3	1.7	1.4	0.5	0.6	3.2	1.8
CUR. (AMPS)	3									
POINT NO.										
SEP. (n)	6	2	3	4	5	6	3	4	5	6
H. F. MV	7.32	14.6	40.9	13.9	8.71	7.16	6.23	7.21	6.64	5.44
DRIFT	0	0	0	0	0	0	0	0		0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	123	175	123	80.4	91.5	120	192	123	69.7	91.4
DRIFT MCF	14.6	1.7	3.3	28.6	18.6	11.6	2.7	4.5	45.9	19.7
S. P.		-4.8					+9.8			
NOISE										
POT RES.										
CULT & CMTS										

1. P. RECEIVER NOTES, JOB NO. 1649, AREA Brigham Ranch

LINE 7, HALF SE, SP. 1, a = 300, BEARING

SENDER STA. 10 = ELECTRODE NO. 4, DATE 8-3-83

PAGE 4

HEINRICHS GEOEX

SEND	1-2	3-4	2-4	1-3	2-3	2-4	4-5	5-6	4-3	3-8
RECEIVE	0-3SE	3-6SE	1-6SE	9-12SE					12-15SE	
MULTIPLIER	1.0	1.0	1.0	0.1	1.0	1.0	1.0	1.0	0.1	1.0
PFE	2.0	0.4	0.8	2.0	0.6	0.8	0.5	0.2	2.0	0.7
CUR. (AMPS)	2									
POINT NO.										
SEP. (n)	2	1	1	4	1	3	3	4	4	8
H. F. MV	48.7	2.78	14.0	5.01	7.14	6.14	10.79	3.72	4.13	2.14
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c	52.4									
3.0 MV $\rho/2\pi$	1887	89.8	42	72.6	44.6	18.4	13.0	11.2	70.4	16.7
DRIFT MCF	24.2	4.5	9.5	22.6	4.1	3.3	3.9	1.8	20.4	4.5
S. P.	+6.8	+17.0	+9.6	+18.6					-5.1	
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Branham Ranch

LINE 2, HALF SE, SP. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-3-83

PAGE 5

HEINRICHS GEOEX

SEND		3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	2-4
RECEIVE		12-15SE				15-18SE					18-21SE
MULTIPLIER		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
PFE		0.4	0.4	0.7	0.7	0.7	0.5	0.5	0.3	0.7	0.6
CUR. (AMPS)		3									
POINT NO.											
SEP. (n)		4	3	2	1	6	5	4	3	2	6
H. F. MV		35.1	47.4	108.5	345	17.0	28.0	72.4	61.5	145	16.9
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	211	142	130	117	202	294	194	185	174	294
DRIFT	MCF	1.9	2.8	1.5	1.7	3.5	4.7	7.6	1.6	4	3.1
S. P.						+33.4					-4.8
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 649, AREA Bradshaw Ranch

LINE 7, HALF SE, SP. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-3-83

PAGE 6

HEINRICHS GEOEX

SEND		4-5	5-6	6-7		CAL					
RECEIVE		18-21 SE									
MULTIPLIER		1.0	1.0	1.0							
PFE		0.5	0.4	0.3		0					
CUR. (AMPS)		7				10					
POINT NO.											
SEP. (n)		5	4	3							
H. F. MV		17.6	3.0	5.1		8.7					
DRIFT		0	0	0		0					
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	185	180	174							
DRIFT	MCF	2.7	2.7	1.7							
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 149, AREA Hickey Cave

LINE 4, HALF W, SR. 1, a = 50, BEARING E-W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-5-83

PAGE 1

HEINRICHS GEOEX

SEND		5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	Roll
RECEIVE		0-0.5W	—	2.5-4W	—	—	1-1.5W	—	—	—	
MULTIPLIER		10	10	100	10	10	10	10	10	10	
PFE		0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0
CUR. (AMPS)		25	—	—	—	—	—	—	—	—	3
POINT NO.											
SEP. (n)		1	2	1	3	3	1	2	3	4	
H. F. MV		1047	410	2072	532	265	530	877	318	140	3.2
DRIFT		1W	0	0	0	0	0	0	0	0	
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	675	784	1312	1777	1530	2772	2105	1008	2160	2.7
DRIFT	MCF	1.6	1.0	0.5	0.47	0.39	1.35	0.79	0.31	0.37	3.2
S. P.		47.2		-4.5			-6.9				
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1649, AREA Hickey Cave

LINE 4, HALF W, SR. 1, a = 500, BEARING E-W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-5-83

HEINRICHS GEOEX

SEND		2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE		1.5-2W					2-2.5W				
MULTIPLIER		10	1.0	10	10	1.0	10	1.0	0.1	1.0	1.0
PFE		1.0	0.6	1.0	0.9	1.0	1.0	1.0	0.4	1.0	1.0
CUR. (AMPS)		0.25									
POINT NO.											
SEP. (n)		1	2	3	4	5	1	2	3	4	5
H. F. MV		510	48.7	222	105	66.2	105	41.6	4.92	23.4	13.5
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_C										
3.0 MV	$P/2\pi$	310	117	1392	1260	1392	63	99.8	76.5	34	272
DRIFT	MCF	3.23	5.13	0.72	0.71	0.72	15.9	10.0	13.6	2.9	3.7
S. P.		-31.4				+16.4					
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1649, AREA Hicks Cave

LINE 4, HALF NW, SP. 1, a = 50, BEARING E-W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-5-83

HEINRICHS GEOEX

SEND		6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE		2-2.5W	2.5-3W					2-3.5W			
MULTIPLIER		0.1	10	1.0	0.1	1.0	1.0	1.0	1.0	0.1	1.0
PFE		0.8	0.9	1.0	0.4	0.9	0.9	1.1	1.0	0.2	0.9
CUR. (AMPS)		0.25									
POINT NO.											
SEP. (n)		6	2	3	4	5	6	3	4	5	6
H. F. MV		8.78	11.8	61.1	8.26	56.2	78.2	69.6	34.0	5.47	39.2
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	296	283	367	99.1	1180	948	412	456	145	131.7
DRIFT	MCF	2.7	3.2	2.7	4.0	0.76	0.95	2.7	2.2	4.7	2.69
S. P.			-6.4					+3.9			
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1647, AREA Hickey Calif

LINE 4, HALF E, SP. 1, a = 500, BEARING E-W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-5-83

HEINRICHS GEOEX

PAGE 4

SEND		1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	6-7	7-8
RECEIVE		0-0.5E	0.5-1	0-1.5	1.5-2					2-2.5	
MULTIPLIER		10	10	10	10	10	10	100	100	10	10
PFE		0.6	0.1	0	0.6	0.6	0	0.6	0.4	0.6	0.7
CUR. (AMPS)		0.25									
POINT No.											
SEP. (n)		2	1	1	5	4	3	2	1	6	5
H. F. MV		747	934	378	119	176	217	5,740	10,080	114	154
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$P/2\pi$	1913	560	227	2499	212	130	13,776	6049	3830	3234
DRIFT	MCF	0.31		0	0.24	0.28	0	0.644	0.066	0.16	0.22
S. P.		+1.7	-11.1	+13.7	-1.0					+2.6	
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Hickey Cañon

LINE 4, HALF B, SR. 1, a = 50, BEARING B-4'

SENDER STA. D = ELECTRODE NO. 4, DATE 8-5-83

HEINRICHS GEOEX

PAGE 5

SEND		3-4	4-5	5-6	6-7	3-3	3-4	4-5	5-6	6-7	3-4
RECEIVE		2-2.5B	—	—	—	2.5-3B	—	—	—	—	3-3.5B
MULTIPLIER		10	100	100	100	40	1.0	10	100	100	0.1
PFE		0.1	0.7	0.6	0.4	0.9	0.3	0.8	0.7	0.5	0.3
CUR. (AMPS)		0.25	—	—	—						
POINT NO.											
SEP. (n)		4	3	2	1	6	5	4	3	2	6
H. F. MV		175	3910	5580	8790	41.5	46.7	986	4320	4920	5.09
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	2100	23460	13392	5274	1394	970	11832	7920	4608	171
DRIFT	MCF	0.048	0.03	0.045	0.076	0.65	0.31	12.064	0.089	0.11	1.8
S. P.						+30.4					-45.9
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1647, AREA Hickey Cnyn

LINE 4, HALF R, SP. 1, a = 50, BEARING R-W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-5-83

HEINRICHS GEOEX

PAGE 6

SEND		4-5	5-6	6-7		CAL					
RECEIVE		3-3.5R	—	—							
MULTIPLIER		1.0	1.0	1.0		1.0					
PFE		0.9	0.8	0.9		0					
CUR. (AMPS)		0.75	—	—		0.3					
POINT NO.											
SEP. (n)		5	4	3							
H. F. MV		754	736	826		749					
DRIFT		0	0	0		0					
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	1583	883	496							
DRIFT	MCF	0.57	0.91	1.61							
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Brenham Ranch

LINE 3, HALF NW, SP. 1, a = 300, BEARING N45W

SENDER STA. 25NW = ELECTRODE NO. 4, DATE 8-4-83

PAGE 1

HEINRICHS GEOEX

SEND		5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	CAL
RECEIVE		25-28(NW)	—	28-31	—	—	31-34	—	—	—	
MULTIPLIER		10	1.0	1.0	1.0	1.0	10	1.0	1.0	1.0	1.0
PFE		0.4	0.4	0.3	0.6	0.7	0.2	0.3	0.5	0.6	0
CUR. (AMPS)		1	—	—	—	—	—	—	—	—	1
POINT NO.											
SEP. (n)		1	2	1	2	3	1	2	3	4	
H. F. MV		205	116.7	341	84.5	46.6	187	71.5	23.6	14.9	978
DRIFT		0	0	0	0	0	0	0	0	0	
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	195	168	307	304	419	168	257	212	268	
DRIFT	MCF	2.2	2.4	1.0	2.0	1.7	1.2	1.2	2.4	2.2	
S. P.		-3.7		+8.8			-5.5				
NOISE											
POT. RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 649, AREA Brenham Reach

LINE 3, HALF NW, SR. 1, a = 3.10, BEARING N45W

SENDER STA. 75NW = ELECTRODE NO. 4, DATE 8-4-83

HEINRICHS GEOEX

SEND		3-3	3-4	4-5	5-6	6-7	4-7	3-3	3-4	4-5	5-6
RECEIVE		4-3R					3R-4R				
MULTIPLIER		1.0	1.0	1.0	0.1	0.1	1.0	1.0	1.0	1.0	0.1
PFE		0.3	0.3	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3
CUR. (AMPS)		1									
POINT NO.											
SEP. (n)		1	2	3	4	5	1	2	3	4	5
H. F. MV		147	249	195	8.09	6.28	3.14	22.3	16.8	14.9	7.05
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	122	97.5	167	14.6	19.2	28.3	27.7	15.1	26.8	27.1
DRIFT	MCF	2.3	3.4	7.4	4.1	3.0	4.1	2.5	3.3	2.2	3.6
S. P.		+9.1					+19.3				
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA BENNHAM REACH

LINE 3, HALF NW, SR 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE NO. 40, DATE 8-4-93

HEINRICHS GEOEX

SEND		6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE		~~3-4~~ 2-3	~~4-5~~ 3-4					42-46			
MULTIPLIER		0.1	1.0	1.0	0.1	0.1	0.1	1.0	1.0	0.1	0.1
PFE		0.9	0.5	0.4	0.8	0.7	0.8	0.9	1.1	0.9	0.9
CUR. (AMPS)		1									
POINT NO.											
SEP. (n)		6	2	3	4	5	6	3	4	5	6
H. F. MV		5.86	5.89	2.48	6.05	5.90	3.00	20.7	13.1	3.96	2.91
DRIFT		0	0	0	1.0 mV	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	296	212	223	109	186	154	186	236	113	197
DRIFT	MCF	3.0	2.4	1.8	5.5	3.3	5.2	4.3	4.7	8.9	4.6
S. P.			-2.9					+21.1			
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA BRANHAM RANCH

LINE 3, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE NO. 4, DATE 5-14-63

HEINRICHS GEOEX

PAGE 4

SEND		1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE		25-22	22-19	19-16	16-13					13-10	
MULTIPLIER		1.0	10	1.0	0.1	1.0	1.0	1.0	10	0.1	0.1
PFE		0.4	0.4	0.6	0.5	0.6	0.5	0.4	0.7	0.9	0.9
CUR. (AMPS)		1									
POINT NO.											
SEP. (n)		2	1	1	5	4	3	2	1	6	5
H. F. MV		74.4	7.11	48.1	54.91	14.1	11.4	42.1	121	3.57	9.37
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	768	190	433	155	254	103	152	109	271	295
DRIFT	MCF	1.5	2.1	13.9	3.2	2.4	4.9	2.6	1.8	3.3	3.0
S. P.		-3.0	+24.3	+19.3	+12.5					+10.4	
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1819, AREA BRANHAM RANCH

LINE 3, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE No. 4, DATE 8-4-83

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE	13-10				10-7					7-4
MULTIPLIER	0.1	1.0	1.0	1.0	0.1	0.1	1.0	1.0	1.0	0.1
PFE	0.8	0.7	0.6	0.5	1.1	0.6	0.8	0.6	0.7	0.8
CUR. (AMPS)	1									
POINT NO.										
SEP. (n)	4	3	2	1	6	5	4	3	2	6
H. F. MV	6.64	21.4	41.8	268	6.90	4.54	13.3	27.6	94.3	2.63
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	120	193	151	241	348	143	239	203	340	133
DRIFT MCF	6.7	3.6	4.0	2.1	3.7	4.2	3.3	7.9	2.1	6.4
S. P.					±0.5					±5.6
NOISE										
POT RES.										±20K
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 16E, AREA BRAHAM RANCH

LINE 3, HALF SE, SP. 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE No. 4, DATE 8-4-83

HEINRICHS GEOEX

SEND		4-5	5-6	6-7		1-3	1-5		cal		
RECEIVE		7-4	—	—		3-4					
MULTIPLIER		0.1	0.1	1.0					1.0		
PFE		0.8	0.8	0.8		1.1	1.0		0.8		
CUR. (AMPS)		1	1	1					1		
POINT NO.											
SEP. (n)		5	4	3							
H. F. MV		6.90	10.52	37.2		6.28	16.0		97.4		
DRIFT		0	0			0			0		
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$P/2\pi$	314	189	335							
DRIFT	MCF	3.7	4.2	2.4							
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

600 100

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Section II

LINE 1, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND	1-2	1-2	2-3	1-7	3-5	3-4	1-7	3-2?	3-4	4-5
RECEIVE	2-4?	0-3SE	—	3-6SE	—	—	6-9SE	—	—	—
MULTIPLIER		1.0	1.0	0.1	1.0	1.0	0.1	0.1	1.0	1.0
PFE	-0.0	1.7	1.0	1.0	1.6	0.8	1.7	1.9	1.3	0.8
CUR. (AMPS)		2	2	1	1	1	1	1	1	1
POINT NO.										
SEP. (n)		2	1	3	2	1	4	3	2	1
H. F. MV	93.8	23.1	99.4	9.6	11.8	50.0	2.50	4.35	10.7	4.55
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$		41.6	44.7	43.7	42.5	45.0	45	39.7	38.5	41.0
DRIFT MCF		28.9	22.4	45.7	37.7	17.3	37.8	46.5	33.7	19.5
S. P.	-8.4	-17.4		+6.1			+10.7			
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Section 11

LINE 1, HALF SE, SR. 1, a = 200, BEARING N 45 W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-7-83

HEINRICHS GEOEX

SEND		1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6
RECEIVE		9-12 NW	—	—	—	—	12-15 NW	—	—	—	—
MULTIPLIER		0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1	1.0
PFE		2.1	2.0	1.7	1.7	0.9	2.0	1.7	1.5	1.8	1.7
CUR. (AMPS)		1	1	1	1	1	2	2	2	2	2
POINT NO.											
SEP. (n)		5	4	3	2	1	6	5	4	3	2
H. F. MV		1.79	1.40	3.44	9.73	42.2	1.62	2.13	3.71	6.76	19.0
DRIFT		0	0	0	0	0	0	0	-5.4	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	40.6	34.2	31.0	35.0	38.0	40.8	33.5	29.9	30.5	34.7
DRIFT	MCF	51.7	58.5	54.9	34.3	23.7	49.0	50.7	51.9	59.4	36.1
S. P.		-11.4					+16.1				
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Section 11

LINE 1, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND		6-7	2-3	3-4	4-5	5-6	6-7	3-4	4-5	5-6	6-7
RECEIVE		17-15NW	15-13NW	—	—	—	—	18-21NW	—	—	—
MULTIPLIER		1.0	0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1
PFE		0.8	1.7	1.5	3.0	1.6	1.7	1.9	1.9	1.7	1.7
CUR. (AMPS)		2	2	2	2	2	2	2	2	2	2
POINT NO.											
SEP. (n)		1	6	5	4	3	2	6	5	4	3
H. F. MV		82.6	1.62	2.18	3.97	8.15	24.3	1.29	2.19	3.83	9.65
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	37.2	40.8	34.3	34.8	36.7	43.7	35.0	34.5	34.5	38.9
DRIFT	MCF	21.5	41.6	43.7	57.4	43.6	27.4	54.7	55.1	49.3	41.1
S. P.			+14.3					-19.0			
NOISE								3mV			
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Section 11

LINE 1, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND		5-6	5-6	3-4	2-3	3-4	4-5	5-6	6-7	1-2	2-3
RECEIVE		0-3NW	3-6NW	6-9NW	9-12NW	—	—	—	—	12-15NW	—
MULTIPLIER		1.0	1.0	1.0	1.0	1.0	0.1	0.1	0.1	1.0	1.0
PFE		1.1	1.5	0.8	0.9	1.4	1.7	1.8	1.8	1.0	1.4
CUR. (AMPS)		2	2	2	2	2	2	2	2	2	2
POINT NO.											
SEP. (n)		1	2	1	1	2	3	4	5	1	2
H. F. MV		100.2	73.1	84.7	107.5	23.6	10.24	5.56	3.47	92.7	22.0
DRIFT		0	0	0	0	0	2mv	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	45.1	41.6	39.1	48.4	42.5	46.1	50.0	54.7	40.8	39.6
DRIFT	MCF	24.4	36.1	21.0	18.6	33.0	36.9	36.0	32.9	24.5	35.4
S. P.		+1.0	-14.9	-4.9	+15.5					+0.6	
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Section 11

LINE 1, HALF NW, SP. 1, a = 300, BEARING NW SW

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-7-83

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HEINRICHS GEOEX

SEND		3-4	4-5	5-6	6-7	1-7	2-3	3-4	4-5	5-6	1-2
RECEIVE		12-13 NW	—	—	—	15-14 NW					14-21 NW
MULTIPLIER		0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1	1.0
PFE		1.6	1.8	1.8	1.7	1.0	1.8	1.7	2.0	1.8	1.0
CUR. (AMPS)		2	2							2	2
POINT NO.											
SEP. (n)		3	4	5	6	7	3	4	5	6	3
H. F. MV		8.40	4.46	3.14	2.19	22.0	8.42	4.11	2.96	2.03	10.1
DRIFT		0	0	0	-1.41	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	ρ_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	39.7	44.6	49.5	54.7	39.6	37.9	39.7	46.6	51.7	45.7
DRIFT	MCF	41.9	40.3	36.4	31.1	40.4	47.5	42.9	42.9	35.7	35.2
S. P.						+7.1					-13.9
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 6494, AREA SECTION 11

LINE 1, HALF NW, SP. 1, a = 300, BEARING N45W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-2-83

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HEINRICHS GEOEX

SEND	2-3	3-4	4-5			1-2				
RECEIVE	18-21NW					CAL				
MULTIPLIER	0.1	0.1	0.1	0.1						
PFE	1.7	1.5	1.4	1.8		0				
CUR. (AMPS)	2					1				
POINT NO.										
SEP. (n)	4	5	6							
H. F. MV	4.09	2.90	2.10	2.72		98.4				
DRIFT	0	0				0				
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_C										
3.0 MV $P/2\pi$	44.0	46.3	52.9							
DRIFT MCF	38.6	37.4	37.8							
S. P.										
NOISE										
POT RES.										
CULT & CMTS										

1-0.1

I. P. RECEIVER NOTES, JOB No. 1649, AREA Section II

LINE 1, HALF SE, SR. 1, a = 300, BEARING N 45 W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND	1-Z	1-Z	2-3	1-Z	2-3	3-4	1-Z	2-3	3-4	4-5
RECEIVE	CAL	0-3SE	—	3-6SE	—	—	6-9SE	—	—	—
MULTIPLIER		1.0	1.0	0.1	1.0	1.0	0.1	0.1	1.0	1.0
PFE	-0.0	1.2	1.0	1.0	1.6	0.8	1.7	1.9	1.3	0.8
CUR. (AMPS)		2	2	1	1	1	1	1	1	1
POINT NO.										
SEP. (n)		2	1	3	2	1	4	3	2	1
H. F. MV	98.8	23.1	99.4	4.86	11.8	50.0	35.0	43.5	10.7	45.5
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$		41.6	44.7	43.7	42.5	45.0	45	39.2	38.5	41.0
DRIFT MCF		28.9	22.4	45.7	37.7	17.8	37.8	48.5	33.7	19.5
S. P.	-22.4	-17.41		+6.1			+10.2			
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1649, AREA Section 11

LINE 1, HALF SE, SR. 1, a = 200, BEARING N 45 W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6
RECEIVE	9-12 NW	—	—	—	—	12-15 NW	—	—	—	—
MULTIPLIER	0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1	1.0
PFE	2.1	2.0	1.7	1.2	0.9	2.0	1.7	1.5	1.8	1.2
CUR. (AMPS)	1	1	1	1	1	2	2	2	2	2
POINT NO.										
SEP. (n)	5	4	3	2	1	6	5	4	3	2
H. F. MV	1.29	1.90	3.44	9.73	42.2	1.62	2.13	3.21	6.78	19.0
DRIFT	0	0	0	0	0	0	0	-5 mv	0	0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	40.6	34.2	31.0	35.0	38.0	40.8	33.5	28.9	30.5	34.2
DRIFT MCF	51.7	58.5	54.9	34.3	23.7	49.0	50.7	51.9	59.0	35.1
S. P.	-11.4					+16.1				
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No 619, AREA Section 11

LINE 1, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-2-83

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HEINRICHS GEOEX

SEND	6-7	2-3	3-4	4-5	5-6	6-7	3-4	4-5	5-6	6-7
RECEIVE	12-15NW	15-19NW	—	—	—	—	18-21NW	—	—	—
MULTIPLIER	1.0	0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1
PFE	0.8	1.7	1.5	2.0	1.6	1.2	1.9	1.9	1.7	1.6
CUR. (AMPS)	2	2	2	2	2	2	2	2	2	2
POINT NO.										
SEP. (n)	1	6	5	4	3	2	6	5	4	3
H. F. MV	87.6	1.62	2.18	3.87	8.15	24.3	1.39	2.19	3.83	8.65
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $P/2\pi$	37.2	40.8	34.3	34.8	36.7	43.7	35.0	34.5	34.5	38.9
DRIFT MCF	21.5	41.6	43.7	57.4	43.6	27.4	54.2	55.1	49.3	41.1
S. P.		+14.3					-19.0			
NOISE							3mv			
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1649, AREA Section 11

LINE 1, HALF SE, SR 1, a = 300, BEARING N45W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND	8-6	5-6	3-4	2-3	3-4	4-5	5-6	6-7	1-2	2-3
RECEIVE	0-3NW	3-6NW	6-9NW	9-12NW	—	—	—	—	12-15NW	—
MULTIPLIER	1.0	1.0	1.0	1.0	1.0	0.1	0.1	0.1	1.0	1.0
PFE	1.1	1.5	0.8	0.9	1.4	1.7	1.8	1.8	1.0	1.4
CUR. (AMPS)	2	2	2	2	2	2	2	2	2	2
POINT NO.										
SEP. (n)	1	2	1	1	2	3	4	5	1	2
H. F. MV	100.2	23.1	84.7	107.5	23.6	10.24	5.56	3.47	90.7	22.0
DRIFT	0	0	0	0	0	7mv	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $P/2\pi$	45.1	41.6	38.1	48.4	42.5	46.1	50.0	54.7	40.8	39.6
DRIFT MCF	24.4	36.1	21.0	18.6	33.0	36.9	36.0	32.9	24.5	35.4
S. P.	+1.0	-14.8	-4.9	+15.5					+0.6	
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Section 11

LINE 1, HALF NW, SR. 1, a = 300, BEARING N45W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND		3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	1-2
RECEIVE		12-15NW	—	—	—	15-18NW					18-21NW
MULTIPLIER		0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1	1.0
PFE		1.6	1.8	1.8	1.7	1.6	1.8	1.7	2.0	1.8	1.6
CUR. (AMPS)		2	2							2	2
POINT NO.											
SEP. (n)		3	4	5	6	2	3	4	5	6	3
H. F. MV		8.48	4.96	3.14	2.17	22.0	8.42	4.41	2.96	2.03	10.1
DRIFT		0	0	0	-2 mv	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$P/2\pi$	38.2	44.6	49.5	54.7	39.6	37.9	39.7	46.6	51.2	45.5
DRIFT	MCF	41.9	40.3	36.4	31.1	40.4	42.5	42.8	42.9	35.2	35.2
S. P.						+7.1					-13.9
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Section 11

LINE 1, HALF NW, SR. 1, a = 300, BEARING 1N45W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-2-83

HEINRICHS GEOEX

SEND		2-3	3-4	4-5			1-2				
RECEIVE		18-21 NW	—	—			CAL				
MULTIPLIER		0.1	0.1	0.1	0.1						
PFE		1.7	1.5	2.0	1.8		0				
CUR. (AMPS)		2					1				
POINT NO.											
SEP. (n)		4	5	6							
H. F. MV		4.089	2.94	2.10	2.12		98.4				
DRIFT		0	0				0				
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	44.0	46.3	52.9							
DRIFT	MCF	38.6	32.4	37.8							
S. P.											
NOISE											
POT RES.											
CULT & CMTS											

1-0.1

I. P. RECEIVER NOTES, JOB No. 1649, AREA BRANHAM RANCH

LINE 2, HALF NW, SR. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-3-83

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	CAL
RECEIVE	0-3 NW	—	3-6 NW	—	—	6-9 NW	—	—	—	
MULTIPLIER	10	10	10	1.0	1.0	10	1.0	1.0	1.0	0.1
PFE	0.5	0.5	0.4	0.4	0.6	1.5	2.0	1.9	2.3	0
CUR. (AMPS)	3	—	—	—	—	—	—	—	—	
POINT NO.										
SEP. (n)	1	2	1	2	3	1	2	3	4	
H. F. MV	294	140	244	80.7	48.2	212	48.2	21.6	13.9	98.5
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	88.2	168	73.2	96.8	145	63.6	57.8	64.8	83.4	
DRIFT MCF	5.67	2.98	5.5	4.1	4.2	23.6	34.6	29.3	27.6	
S. P.	+9.2		+14.0			+16.1				
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1649, AREA BRANHAM RANCH

LINE 2, HALF NW, SR. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-3-83

HEINRICHS GEOEX

SEND	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE	9-12 NW					12-15 NW				
MULTIPLIER	10	1.0	1.0	1.0	1.0	10	1.0	1.0	1.0	0.1
PFE	0.1	1.8	1.7	1.4	1.5	0.3	0.5	2.4	1.9	1.5
CUR. (AMPS)	3									
POINT NO.										
SEP. (n)	1	2	3	4	5	1	2	3	4	5
H. F. MV	274	71.1	27.8	17.0	13.1	458	76.3	24.2	12.4	8.72
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_C										
3.0 MV $\rho/2\pi$	82.2	85.3	83.4	102	138	137	91.6	72.6	74.4	91.6
DRIFT MCF	1.2	21.1	20.4	13.7	10.9	2.2	5.5	23.1	25.5	16.4
S. P.	-3.6					+14.7				
NOISE										
POT RES.										
CULT & CMTS										

FENCE N 1150 (some mill posts)

I.P. RECEIVER NOTES, JOB No. 1649, AREA BRANHAM RANCH

LINE 2, HALF NW, SR. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-3-83

HEINRICHS GEOEX

SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	12-15NW	15-18NW					18-21NW			
MULTIPLIER	0.1	10	1.0	1.0	0.1	0.1	1.0	1.0	0.1	0.1
PFE	1.8	0.3	0.4	2.3	1.7	1.4	0.5	0.6	3.2	1.8
CUR. (AMPS)	3									
POINT NO.										
SEP. (n)	6	2	3	4	5	6	3	4	5	6
H.F. MV	7.33	146	40.9	13.4	8.71	7.10	62.3	22.1	6.64	5.44
DRIFT	0	0	0	0	0	0	0	0	1mv	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	123	175	123	80.4	91.5	120	187	133	69.7	91.4
DRIFT MCF	14.6	1.7	3.3	28.6	18.6	11.6	2.7	4.5	45.9	19.7
S.P.		-4.8					+9.8			
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1649, AREA BRANHAM RANCH

LINE 2, HALF SE, SR. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-3-83

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	0-3SE	3-6SE	6-9SE	9-12SE					12-15SE	
MULTIPLIER	1.0	10	10	0.1	1.0	1.0	1.0	10	0.1	1.0
PFE	2.0	0.4	0.4	2.0	0.6	0.6	0.5	0.2	2.0	0.7
CUR. (AMPS)	3									
POINT NO.										
SEP. (n)	2	1	1	5	4	3	2	1	6	5
H. F. MV	48.7	296	140	6.91	24.4	61.4	107.9	372	4.19	14.9
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c	58.4									
3.0 MV $\rho/2\pi$	48.7	88.8	42	72.6	146	184	130	112	70.4	157
DRIFT MCF	34.2	4.5	9.5	27.6	4.1	3.3	3.9	1.8	28.4	4.5
S. P.	+6.8	+17.0	+9.6	+18.6					-5.1	
NOISE										
POT RES.										
CULT & CMTS										

I.P. RECEIVER NOTES, JOB No. 1649, AREA BEANHAM RANCH

LINE 2, HALF SE, SP. 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-3-83

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE	12-15 SE	—	—	—	15-18 SE	—	—	—	—	18-21 SE
MULTIPLIER	1.0	1.0	1.0	10	1.0	1.0	1.0	1.0	10	1.0
PFE	0.4	0.4	0.2	0.2	0.7	0.5	0.5	0.3	0.2	0.6
CUR. (AMPS)	3	—	—	—	—	—	—	—	—	—
POINT NO.										
SEP. (n)	4	3	2	1	6	5	4	3	2	6
H. F. MV	35.1	47.4	108.5	389	12.0	28.0	32.4	61.5	145	16.9
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV P/2π	211	142	130	117	202	294	194	185	174	284
DRIFT MCF	1.9	2.8	1.5	1.7	3.5	1.7	2.6	1.6	1.1	2.1
S. P.					+33.4					-4.8
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 649, AREA Branham Ranch

LINE 2, HALF SE, SR 1, a = 300, BEARING

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-3-83

HEINRICHS GEOEX

SEND	4-5	5-6	6-7		CAL					
RECEIVE	18-21 SE	—	—							
MULTIPLIER	1.0	1.0	1.0							
PFE	0.5	0.4	0.3		0					
CUR. (AMPS)	2	—	—		1.0					
POINT NO.										
SEP. (n)	5	4	3							
H. F. MV	17.6	30.0	58.1		97.7					
DRIFT	0	0	0		0					
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $P/2\pi$	185	180	174							
DRIFT MCF	2.7	2.2	1.7							
S. P.										
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1649, AREA BRAUHAM RANCH

LINE 3, HALF NW, SR. 1, a = 300, BEARING N45W

SENDER STA. 25NW = ELECTRODE NO. 4, DATE 8-4-83

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	CAL
RECEIVE	25-28NW	—	28-31	—	—	31-34	—	—	—	
MULTIPLIER	10	10	10	1.0	1.0	10	1.0	1.0	1.0	1.0
PFE	0.4	0.4	0.3	0.6	0.1	0.2	0.3	0.5	0.6	J
CUR. (AMPS)	1	—	—	—	—					1
POINT NO.										
SEP. (n)	1	2	1	2	3	1	2	3	4	
H. F. MV	205	46.7	341	84.5	46.6	187	71.5	23.6	14.9	97.8
DRIFT	0	0	0	0	0	0	0	0	0	
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV P/2π	185	168	307	304	419	168	257	212	268	
DRIFT MCF	2.2	2.4	1.0	2.0	1.7	1.2	1.2	2.4	2.2	
S. P.	-3.7		+8.8			-5.5				
NOISE										
POT. RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1649, AREA Beaham Ranch

LINE 3, HALF NW, SP. 1, a = 300, BEARING N45W

SENDER STA. 25NW = ELECTRODE No. 4, DATE 8-4-83

HEINRICHS GEOEX

SEND	2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE	34-37					37-40				
MULTIPLIER	10	1.0	1.0	0.1	0.1	10	1.0	1.0	1.0	0.1
PFE	0.3	0.3	0.4	0.6	0.6	0.3	0.7	0.5	0.6	0.8
CUR. (AMPS)	1									
POINT NO.										
SEP. (n)	1	2	3	4	5	1	2	3	3 4	5
H. F. MV	147	24.3	18.5	8.09	6.28	314	77.0	16.8	14.9	7.05
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $P/2\pi$	132	87.5	167	146	198	283	277	151	268	222
DRIFT MCF	2.3	3.4	7.4	4.1	3.0	1.1	2.5	3.3	2.2	3.6
S. P.	+9.1					+19.3				
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1649, AREA BRANHAM RANCH

LINE 3, HALF NW, SR. 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE NO. 14, DATE 8-4-83

HEINRICHS GEOEX

SEND	6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE	37-40	40-43					43-46			
MULTIPLIER	0.1	1.0	1.0	0.1	0.1	0.1	1.0	1.0	0.1	0.1
PFE	0.9	0.5	0.4	0.6	0.7	0.9	0.8	1.1	1.0.9	0.9
CUR. (AMPS)	1									
POINT NO.										
SEP. (n)	6	2	3	4	5	6	3	4	5	6
H. F. MV	5.88	58.9	24.8	6.05	5.90	3.00	20.7	13.1	3.98	3.91
DRIFT	0	0	0	1.0 mv	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $P/2\pi$	290	212	223	109	186	154	186	236	113	197
DRIFT MCF	3.0	2.4	1.8	5.5	3.8	5.2	4.3	4.7	8.9	4.6
S. P.		-2.9					+21.1			
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB NO. 1649, AREA BRANHAM RANCH

LINE 3, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE NO. 4, DATE 8/4/83

HEINRICHS GEOEX

SEND		1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE		25-22	22-19	19-16	16-13	—	—	—	—	13-10	—
MULTIPLIER		1.0	10	1.0	0.1	1.0	1.0	1.0	10	0.1	0.1
PFE		0.4	0.4	0.6	0.5	0.6	0.5	0.4	0.2	0.9	0.9
CUR. (AMPS)		1	—	—	—	—	—	—	—	—	—
POINT NO.											
SEP. (n)		2	1	1	5	4	3	2	1	6	5
H. F. MV		74.4	211	40.1	54.91	14.1	11.4	42.1	121	3.57	9.37
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	P/2π	268	190	43.3	155	254	103	152	109	271	295
DRIFT	MCF	1.5	2.1	~~13.9~~	3.2	2.4	4.9	2.6	1.8	3.3	3.0
S. P.		-3.0	+24.3	+9.3	+12.5				—	+10.4	
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1619, AREA BRANHAM RANCH

LINE 3, HALF SB, SR. 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE No. 4, DATE 8-4-83

HEINRICHS GEOEX

SEND		3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE		13-10				10-7					7-4
MULTIPLIER		0.1	1.0	1.0	10	0.1	0.1	1.0	1.0	1.0	0.1
PFE		0.8	0.7	0.6	0.5	1.1	0.6	0.8	0.6	0.7	0.9
CUR. (AMPS)		1									
POINT NO.											
SEP. (n)		4	3	2	1	6	5	4	3	2	6
H. F. MV		6.64	21.4	41.8	268	6.90	4.54	13.3	22.6	94.3	2.63
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	P/2π	120	193	151	241	348	143	239	203	340	133
DRIFT	MCF	6.7	3.6	4.0	2.1	3.2	4.2	3.3	2.9	2.1	6.6
S. P.						+0.5					+5.6
NOISE											
POT RES.											±2mV
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 165, AREA BRANHAM RANCH

LINE 3, HALF SE, SR. 1, a = 300, BEARING N45W

SENDER STA. 25 = ELECTRODE No. 4, DATE 8-4-83

HEINRICHS GEOEX

SEND		4-5	5-6	6-7		1-3	1-5		CAL		
RECEIVE		7-4	—	—		7-4					
MULTIPLIER		0.1	0.1	1.0					1.0		
PFE		0.8	0.8	0.8		1.1	1.0		0		
CUR. (AMPS)		1	1	1					1		
POINT NO.											
SEP. (n)		5	4	3							
H. F. MV		6.80	10.52	37.2		6.78	16.0		97.4		
DRIFT		0	0			0			0		
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$P/2\pi$	214	189	335							
DRIFT	MCF	3.7	4.2	2.4							
S. P.									—		
NOISE											
POT RES.											
CULT & CMTS											

600 100

I. P. RECEIVER NOTES, JOB No. 1649, AREA Hicky Cave

LINE 4, HALF W, SR. 1, a = 50, BEARING E-W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-5-83

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	CAL
RECEIVE	0-0.5w	—	0.5-1w	—	—	1-1.5w	—	—	—	
MULTIPLIER	10	10	100	10	10	10	10	10	10	1.0
PFE	0.1	0.1	0.6	0.6	0.6	0.5	0.6	0.6	0.7	0
CUR. (AMPS)	.25	—	—	—	—	—	—	—	—	.3
POINT NO.										
SEP. (n)	1	2	1	2	3	1	2	3	4	
H. F. MV	104.2	41.0	2020	532	255	536	877	318	180	30.2
DRIFT	1mV	0	0	0	0	0	0	0	0	
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	62.5	98.4	1212	1277	1530	322	2105	1908	2160	3x0
DRIFT MCF	1.6	1.0	0.5	0.47	0.39	1.55	0.29	0.31	0.32	3.23
S. P.	+12.2		-4.5			-6.9				
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1649, AREA Hickey Cave

LINE 4, HALF W, SR 1, a = 500, BEARING E-W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-5-83

HEINRICHS GEOEX

SEND		2-3	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6
RECEIVE		1.5-2W					2-2.5W				
MULTIPLIER		10	1.0	10	10	1.0	10	1.0	0.1	1.0	1.0
PFE		1.0	0.6	1.0	0.9	1.0	1.0	1.0	0.4	1.0	1.0
CUR. (AMPS)		0.25									
POINT No.											
SEP. (n)		1	2	3	4	5	1	2	3	4	5
H. F. MV		516	48.7	232	105	66.3	105	41.6	4.92	28.4	13.5
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$\rho/2\pi$	310	117	1392	1260	1392	63	99.8	29.5	341	273
DRIFT	MCF	3.23	5.13	0.72	0.71	0.72	15.9	10.0	13.6	2.9	3.7
S. P.		-31.4				+16.4					
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB NO. 1649 AREA Hicky Cave

LINE 4, HALF NW, SR. 1, a = 50, BEARING E-W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-5-83

HEINRICHS GEOEX

SEND		6-7	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5
RECEIVE		2-2.5W	2.5-3W					3-3.5W			
MULTIPLIER		0.1	10	1.0	0.1	1.0	1.0	1.0	1.0	0.1	1.0
PFE		0.8	0.9	1.0	0.4	0.9	0.9	1.1	1.0	0.2	0.9
CUR. (AMPS)		0.25									
POINT NO.											
SEP. (n)		6	2	3	4	5	6	3	4	5	6
H. F. MV		8.78	11.8	61.1	8.26	56.2	28.2	68.6	38.0	5.47	39.2
DRIFT		0	0	0	0	0	0	0	0	0	0
1.0 PFE	K_n/1000										
0.3 PFE	P_{CAL}										
0.1 PFE	PFE_c										
3.0 MV	$P/2\pi$	296	283	367	99.1	1180	948	412	456	115	1317
DRIFT	MCF	2.7	3.2	2.7	4.0	0.76	0.95	2.7	2.2	4.7	0.69
S. P.			-6.4					+3.9			
NOISE											
POT RES.											
CULT & CMTS											

I. P. RECEIVER NOTES, JOB No. 1649, AREA Hickey Canf

LINE 4, HALF E, SR. 1, α = 500, BEARING E-W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-5-83

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	0-0.5E	0.5-1	1-1.5	1.5-2					2-2.5	
MULTIPLIER	10	1.0	10	10	10	10	100	100	10	10
PFE	0.6	0.1	0	0.6	0.6	0	0.6	0.4	0.6	0.7
CUR. (AMPS)	0.25									
POINT NO.										
SEP. (n)	2	1	1	5	4	3	2	1	6	5
H. F. MV	747	934	378	119	176	217	5,740	10,080	114	154
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE P_{CAL}										
0.1 PFE PFE_c										
3.0 MV $P/2\pi$	1913	560	227	2499	2112	130	13,776	6048	3830	3234
DRIFT MCF	0.31	1.78	0	0.24	0.28	0	0.044	0.066	0.16	0.22
S. P.	+1.7	-11.1	+13.7	-1.0					+2.6	
NOISE										
POT RES.										
CULT & CMTS										

I. P. RECEIVER NOTES, JOB No. 1649, AREA Hickey Cave

LINE 4, HALF B, SR. 1, a = 50, BEARING E-W

SENDER STA. 0 = ELECTRODE No. 4, DATE 8-5-83

PAGE 5

HEINRICHS GEOEX

SEND	3-4'	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE	2-2.5R	—	—	—	2.5-3R	—	—	—	—	3-3.5R
MULTIPLIER	10	100	100	100	1.0	1.0	10	100	100	0.1
PFE	0.1	0.7	0.6	0.4	0.9	0.3	0.8	0.7	0.5	0.3
CUR. (AMPS)	0.25	—	—	—						
POINT NO.										
SEP. (n)	4	3	2	1	6	5	4	3	2	6
H. F. MV	175	3910	5580	8790	41.5	46.2	986	1,320	1,920	5.09
DRIFT	0	0	0	0	0	0	0	0	0	0
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	2100	23460	13392	5274	1394	970	11832	7920	4608	171
DRIFT MCF	0.048	0.03	0.045	0.076	0.65	0.31	0.068	0.089	0.11	1.8
S. P.					+36.4			—		-45.9
NOISE										
POT RES.										
CULT & CMTS										

Geologic Contact 3.0

I. P. RECEIVER NOTES, JOB NO. 1649, AREA Hickey Camp

LINE 4, HALF B, SR 1, a = 50, BEARING N-W

SENDER STA. 0 = ELECTRODE NO. 4, DATE 8-5-83

HEINRICHS GEOEX

SEND	4-5	5-6	6-7		CAL					
RECEIVE	3-3,5R	—	—							
MULTIPLIER	1.0	1.0	1.0		1.0					
PFE	0.9	0.8	0.8		0					
CUR. (AMPS)	0.25	—	—		0.3					
POINT NO.										
SEP. (n)	5	4	3							
H. F. MV	75.4	73.6	82.0		29.9					
DRIFT	0	0	0		0					
1.0 PFE K_n/1000										
0.3 PFE ρ_{CAL}										
0.1 PFE PFE_c										
3.0 MV $\rho/2\pi$	1583	883	496							
DRIFT MCF	0.57	0.91	1.61							
S. P.										
NOISE										
POT RES.										
CULT & CMTS										

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 3, HALF NW, SP. 1, DATE 8/4/83

PAGE 1

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	25-28 NW	→	28-31 NW	→	→	31-33 NW	→	→	→	34-37 NW
RANGE										
VOLTAGE	370	275	500V	370	275	375	500	370	275	375
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A
SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	34-37 NW	→	→	→	37-40	→	→	→	→	→
RANGE										
VOLTAGE	375	500	370	275	510	375	375	495	365	275
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A

FREQUENCIES 3.0 - 0.3

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705R HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 3.0 - 0.3 HZ
CAL 1-2 1.0 - 0.1 HZ

Δ = 1.0 - 0.1 HZ

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 3, HALF NW, SP. 1, DATE 8/4/83

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	
RECEIVE	40-43 NW	→	→	→	→	43-46 NW	→	→	→	
RANGE										
VOLTAGE	510	375	375	495	365	510	375	375	495	
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	2A	
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0 - 0.3

SENDER No. 9662 S — POWER UNIT ID

OPERATOR SWANSON

RECEIVER No 25705 R — HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1619 AREA BRANHAM RANCH

LINE 3, HALF SE, SP. 1, DATE 8/4/83

PAGE 3

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	25-22 SE	22-19 SE	19-16 SE	16-13	→	→	→	→	13-10 SE	
RANGE										
VOLTAGE	505	370	370	500	370	370	485	355	500	370
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A
SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE	13-10 SE	→	→	→	10-7 SE					7-4 SE
RANGE										
VOLTAGE	370	485	355	265	370	370	485	355	265	370
CURRENT	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A

FREQUENCIES 3.0 -0.3

SENDER No. 9662-5 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705R HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 3, HALF SE, SP. 1, DATE 8/4/83

PAGE 4

HEINRICHS GEOEX

SEND	4-5	5-6	6-7							
RECEIVE	7=SE	→	→							
RANGE										
VOLTAGE	485	355	265							
CURRENT	1A	1A	1A							
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0 - 0.3

SENDER No. 9662-S POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705 R HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 3.0 - 0.3 HZ
1 AMP

I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE 1, HALF W, SP. 1, DATE 8/5/83

HEINRICHS GEOEX

PAGE 1

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	0-.5w	→	.5-1.0w	→	→	1-1.5w	→	→	→	1.5-2w
RANGE										
VOLTAGE	605	545	395	600	540	95	395	600	540	270
CURRENT	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A
SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	→	→	→	→	2-2.5	→	→	→	→	→
RANGE										
VOLTAGE	95	395	600	540	265	270	95	390	600	535
CURRENT	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A

FREQUENCIES 3.0-0.3

SENDER No. 9662 5 POWER UNIT ID

OPERATOR SW ANSON

RECEIVER No 25705 IC HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 3.0 - 0.3 HZ
0.3 AMPS

I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE 1, HALF W, SP. 1, DATE 8/5/83

PAGE 2

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	
RECEIVE	2.5-3	→	→	→	→	3-3.5	→	→	→	
RANGE										
VOLTAGE	260	270	95	390	600	260	270	95	390	
CURRENT	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	.25A	
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0-0.3

SENDER No. 9662 S | POWER UNIT ID

OPERATOR SWANSON |

RECEIVER No. 25705R | HOURS RUN

OPERATOR ANDERS |

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE 1, HALF E, SP. 1, DATE 8/5/83

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	0-E 0.5	.5-1.0 E	1-1.5 E	1.5-2 E	→	→	→	→	2-2.5	→
RANGE										
VOLTAGE	260	95	95	255	265	90	385	585	255	260
CURRENT	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A
SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	
RECEIVE	→	→	→	→	2.5-E 3	→	→	→	→	
RANGE										
VOLTAGE	90	385	585	525	260	90	385	585	520	
CURRENT	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	.25 A	

FREQUENCIES 3.0 – 0.3

SENDER No. 9662-S — POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705R — HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA HICKEY CAVE

LINE 1, HALF E, SP. 1, DATE 8/5/83

PAGE 4

HEINRICHS GEOEX

SEND	3-4	4-5	5-6	6-7						
RECEIVE	3-3.5 E	→	→	→						
RANGE										
VOLTAGE	90	385	580	520						
CURRENT	.25A	.25A	.25A	.25A						
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0 - 0.3

SENDER No. 9662-S POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705 12 HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 3.0-0.3 HZ
.3 AMPS

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE 1, HALF SE, SP. 1, DATE 8/2/83

PAGE 1

HEINRICHS GEOEX

SEND	1-2	2-3	1-2	2-3	3-4	1-2	2-3	3-4	4-5	1-2
RECEIVE	0-3 SE	→	3-6 SE	→	→	6-9 SE	→	→	→	9-12 SE
RANGE	~~4~~	~~800~~	155V							
VOLTAGE	300	~~325~~ *	~~300~~ Δ	170V	180V	150V	170V	175V	155V	150V
CURRENT	2 A	2 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A	1 A
SEND	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	→	→	→	→	12-15 SE	→	→	→	→	→
RANGE	~~4~~				Δ					
VOLTAGE	165V	175V	155V	115V	295V	325V	340V	300V	220V	370V
CURRENT	1 A	1 A	1 A	1 A	2 A	2 A	2 A	2 A	1 A	2 A

FREQUENCIES 3.0 - 0.3 HZ

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. ~~19072 R~~ HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 1 AMP

3 HZ .3 HZ 160V 1 AMP

1 HZ .1 HZ

Δ = 1.0 - 0.1 HZ ALSO

RCVR 25705 R * 335V 2A

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE 1, HALF SE, SP. 1, DATE 8/2/83

PAGE 2

HEINRICHS GEOEX

SEND	2-3	3-4	4-5	5-6	6-7	3-4	4-5	5-6	6-7	
RECEIVE	15-18 SE →					18-21 →				
RANGE										
VOLTAGE	325V	330V	295V	220V	360V	330V	295V	220V	360V	
CURRENT	2A	2A	2A	2A	2A	2A	2A	2A	2A	
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0-0.3 HZ

SENDER No. 92625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No: ~~[illegible]~~ HOURS RUN

OPERATOR ANDERS

COMMENTS:

25705R

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE 1, HALF NW, SP. 1, DATE 8/2/83

PAGE 3

HEINRICHS GEOEX

SEND	5-6	5-6	3-4	2-3	3-4	4-5	5-6	6-7	1-2	2-3
RECEIVE	0-3 NW	3-6 NW	6-9 NW	9-12 NW	→	→	→	→	12-15	→
RANGE										
VOLTAGE	215V	215V	330V	320V	335V	295V	220V	360	290V	320V
CURRENT	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A
SEND	3-4	4-5	5-6	6-7	1-2	2-3	3-4	4-5	5-6	1-2
RECEIVE	→	→	→	→	15-18 NW	→	→	→	→	18-21
RANGE										290V
VOLTAGE	335V	295V	220V	360V	290V	320V	335V	295V	220V	2 A
CURRENT	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	

FREQUENCIES 3.0 - 0.3 HZ

SENDER No. 9662 S — POWER UNIT ID

OPERATOR SWANSON

RECEIVER No 2570 SR — HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA SEC 11

LINE 1, HALF NW, SP. 1, DATE 8/2/83

PAGE 4

HEINRICHS GEOEX

SEND	2-3	3-4	4-5							
RECEIVE	18-21	→	→							
RANGE			A							
VOLTAGE	320V	335V	295V							
CURRENT	2A	2A	2A							
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0 - 0.3 HZ

SENDER No 7662SR — POWER UNIT ID

OPERATOR SWANSON

RECEIVER No 25705R — HOURS RUN

OPERATOR ANDERS

COMMENTS:

Δ 1.0 - 0.1 HZ ALSO

CAL 1-2 1 AMP

3.0 - 0.3 HZ

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 2, HALF NW, SP. 1, DATE 8/13/83

HEINRICHS GEOEX

SEND	5-6	6-7	4-5	5-6	6-7	3-4	4-5	5-6	6-7	2-3
RECEIVE	0-3 NW	→	3-6 NW	→	→	6-9 NW	→	→	→	9-12 NW
RANGE		Δ								
VOLTAGE	200	230	165	200	230	175	165	200	230	190
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A
SEND	3-4	4-5	5-6	6 7	1-2	2-3	3-4	4-5	5-6	6-7
RECEIVE	→	→	→	→	12-15 NW	→	→	→	→	→
RANGE	175	165	200	225	240	190	175	165	200	225
VOLTAGE	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A
CURRENT										

FREQUENCIES 3.0 – 0.3

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No 25705 R HOURS RUN

OPERATOR ANDERS

COMMENTS: 3.0 – 0.3 CAL 1-2 1 AMP

1.0 – 0.1 CAL 1-2 1 AMP

Δ = 1.0 – 0.1 HZ ALSO

I. P. SENDER NOTES

JOB No. 1619 AREA BRANHAM RANCH

LINE 2, HALF NW, SP. 1, DATE 8/3/83

PAGE 2

HEINRICHS GEOEX

SEND	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	
RECEIVE	15-18 NW	→			→	18-21 NW				
RANGE			Δ							
VOLTAGE	240	190	175	165	200	240	190	175	165	
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3-0-0.3

SENDER No. 9662 S — POWER UNIT ID

OPERATOR SWANSON

RECEIVER No 2570SR — HOURS RUN

OPERATOR ANDERS

COMMENTS:

Δ = 1.0 - 0.1 HZ ALSO

I. P. SENDER NOTES

JOB NO. 1649 AREA BRANHAM RANCH

LINE 2, HALF SE, SP. 1, DATE 8/13/83

HEINRICHS GEOEX

SEND	1-2	3-4	3-4	1-2	2-3	3-4	4-5	5-6	1-2	2-3
RECEIVE	0-3SE	3-6SE	6-9SE	9-12SE	→	→	→	→	12-15SE	→
RANGE										
VOLTAGE	235	275	175	235	190	175	160	195	235	190
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A
SEND	3-4	4-5	5-6	6-7	2-3	3-4	4-5	5-6	6-7	3-4
RECEIVE	→	→	→	→	15-18SE	→	→	→	→	18-21SE
RANGE										
VOLTAGE	175	160	195	220	190	175	160	195	220	175
CURRENT	3A	3A	3A	3A	3A	3A	3A	3A	3A	3A

FREQUENCIES 3.0 - 0.3

SENDER No. 9662 S — POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705 R — HOURS RUN

OPERATOR ANDERS

COMMENTS:

I. P. SENDER NOTES

JOB No. 1649 AREA BRANHAM RANCH

LINE 2, HALF SE, SP. 1, DATE 8/13/83

PAGE 4

HEINRICHS GEOEX

SEND	4-5	5-6	6-7							
RECEIVE	18-21 SE →									
RANGE										
VOLTAGE	160	195	220							
CURRENT	3A	3A	3A							
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES 3.0-0.3

SENDER No. 96625 POWER UNIT ID

OPERATOR SWANSON

RECEIVER No. 25705R HOURS RUN

OPERATOR ANDERS

COMMENTS: CAL 1-2 1 AMP
3.0-0.3 #12

September 9, 1983

Mr. Gabriel Helday
P.O. Box 301
Tombstone, AZ 85638

Re: GEOEX #1649
Sunchief Mines
Tombstone, AZ Area

Dear Gabriel:

This letter is in response to your visit at our office on 30 August 1983. I regret not being able to get back to you sooner, but Mark has been continuously in the field and I have been preoccupied with numerous other matters thus preventing either of us giving your matters proper attention. I will take the items in the same order as discussed with you.

1. Cavern location and delineation is not a simple and clean-cut affair. As you can imagine, there are usually a number of confusion factors involved. Fortunately, in this case, the apparent target seems to be relatively close to the surface i.e. 50 feet or so. This means that a direct test by drilling may be feasible. Additional geophysics may cost as much as drilling and still would not be proof. However, additional geophysics could be done anyway if still desired. One point here is that there seems to be some confusion as to precisely where Sorrell's earlier work is located related to where our line No. 4 was run. It would be most helpful if that could be definitely resolved. Mark and I will discuss a site or sites for drilling the first chance we get. (Sta 1.25E on line 4)

2. On the line 2 area the next step is a day or two each of more SP and possibly more detailed magnetics to see if the anomalism can be verified and positively correlated with the apparent surface alteration & separated cleanly from pipe line

3. Line 1 follow up envisions repeat coverage with 1000' or longer dipoles and more power and/or perhaps moving the coverage farther to the northwest so as to get closer to bedrock.

Personally, I would like to spend one day examining the occurrences myself, but I will not be able to get away for a couple of weeks.

To some degree, costs can be tailored to fit your budget but, if all of the above were done, on items 2 and 3 about $5000 would be required - not including any drilling or more geophysics on the line four area, although, if everything else went well and early results on line 2 area were uniformly negative, then we might be able to do a little more very shallow resistivity there and still hold to $5,000.

Please keep in touch and we will do the same.

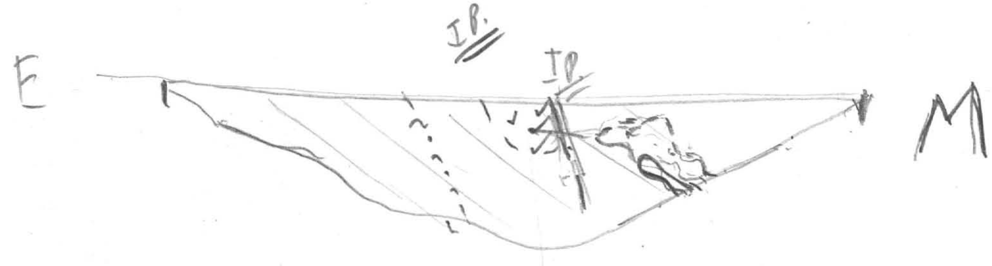
Faithfully,

WEH:mt

Walter E. Heinrichs, Jr.

Gabriel Heldoy (Sunchief Mines) 8/30/83

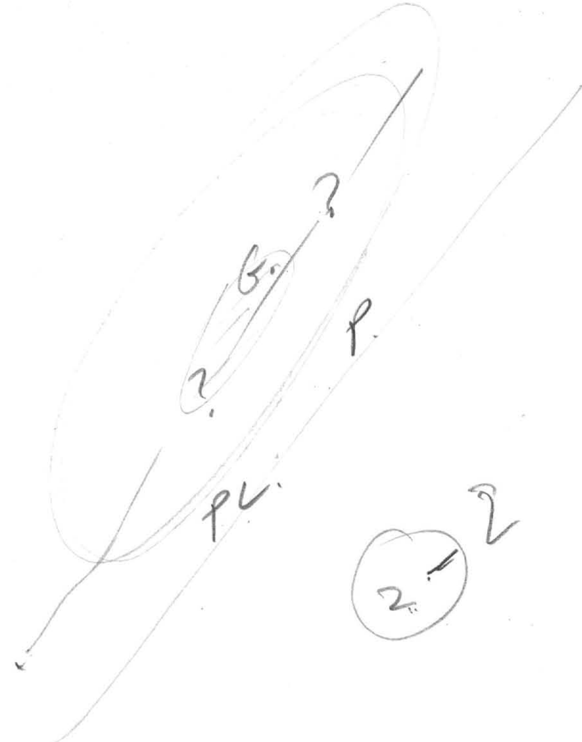
1. Where to spot a drill site & program to test line #4 cavern indication etc.
   Tombstone work. See report.
   Little more (may be ok any point? ask Mark.
   100' So of our line? Where Borrell ran his 2 lines.
2. Line 2 Pipe line // line approach.
   Considerations and justifications etc. doubtful
   more detailed SP first.
3. Line 1 follow up 1000' or longer dipoles coverage or more NW,
   so as to cross bedrock - alluvial contact.
4. Phos Altos - N.M. | Bear Creek area. (Altos Claims)
   Zone - 600' X 2000' low grade fyt. marcasite etc.,
   other similar
   Rhyolite, andesite & L.S. country rock
   Some intrusive?
   area 6000' X 4000'
5. Sheep Tanks, AZ.



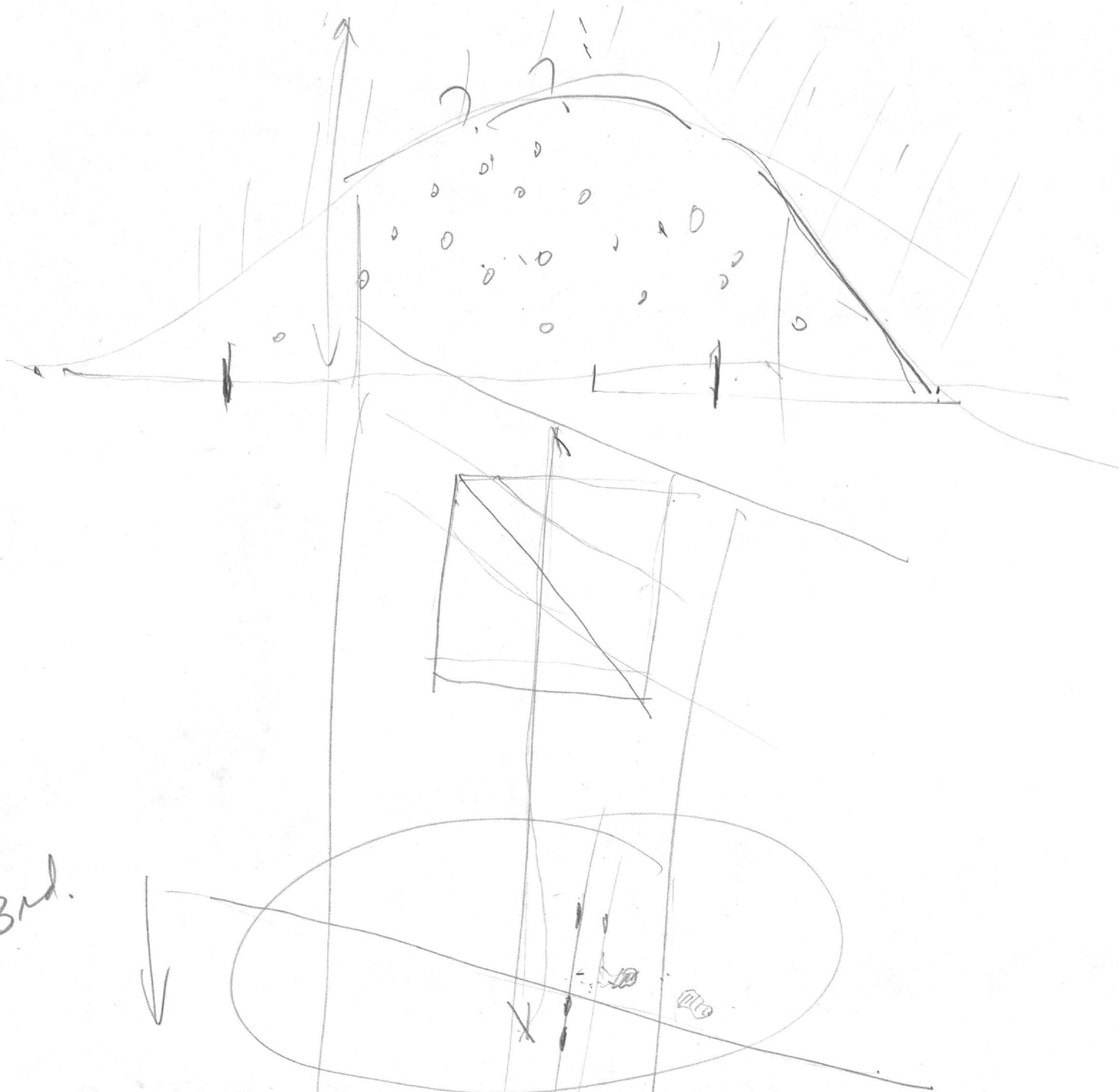
$50,000.—

A-1 pound

G. Light



2-2



① – 3rd.

HEINRICHS GEOEXPLORATION COMPANY

P.O. BOX 5964, TUCSON, ARIZONA 85703, 806 WEST GRANT ROAD, PHONE: (602) 623-0578

July 5, 1983

Mr. Gabriel Helday
P.O. Box 301
Tombstone, AZ 85638

signed contract

Re: GEOEX #1649
Proposed Geophysical
Survey, Tombstone AZ

Dear Mr. Helday:

Regarding the meeting held with you on June 29, 1983, in our offices, Heinrichs GEOEXploration Company will supply equipment and personnel to conduct a preliminary reconnaissance Induced Polarization, Resistivity, and Self Potential survey across ground near Tombstone, Arizona.

A minimum of three or more lines, utilizing 100 to 300 foot dipoles, with exact dipole length to be determined after a more thorough briefing on the area by yourself. Seven sending electrode collinear arrays will be initially employed using GEOEX Mark 7 or Mark 4 multiple frequency instrumentation. The crew may utilize motel facilities in Tombstone or other supplied accommodations.

Charges are based on per diem for personnel being $40.00 per day or at cost, whichever is greater. Three man crew rate is $55.00 per crew working hour, up to 40 hours in a 7 day period from Sunday through Saturday, including complete instrumentation and accessories. An additional $19.25 per hour will be charged for any crew labor over forty hours during a given week. Work days are estimated at 10 hours per day and 60 hours per week on the average. Vehicles are charged at $35.00 per day and 0.40 per mile.

Field or office routine data reduction when done exclusive of field operations, like at night or on weekends on the job or in Tucson is $25.00 per man hour. Directly incidental job expendable supplies and expenses such as communications, reproductions, expendable field and drafting supplies, sub-contracting, are charged at 120% of the invoiced or payroll cost including additional labor-help if needed. Standby and weathered out days are charged at one-half the working crew rate per 10 hour day, i.e. $225.00 but, only if standby and weather time cannot be otherwise made up on production work.

Approximately four days field work are estimated to be required to run the three spreads and at least one week additional for final finished report. Preliminary field data plots are usually available within a day or two after field work conclusion. Such data plots are also commonly available periodically as the field work progresses and as may be needed for planning purposes. This production estimate is based on reported vehicle accessibility to each line, that each line will be marked along a designated base line and no brushing will be needed.

Total cost of this survey is estimated at $5,000 including final report. Data will include resistivity and self potential as well as IP.

As customary, an advance statement in the amount of one-half of the estimated costs, reflecting an advance on account to defray our initial start-up expenses is enclosed. This will be allocated against subsequent detailed billings. Our receipt of this amount may serve as your notice to us to proceed. Interim billings will be submitted periodically and final billing will accompany final report.

If this proposal correctly reflects the understanding between us and meets with your approval, for our mutual convenience such may be indicated by executing as provided below on the duplicate enclosed and returning same to us.

Sincerely,

Heinrichs GEOEXploration Co. (Inc.)

Walter E. Heinrichs, Jr., President

WEH:mt
Enclosures:Statement, Copy of Proposal

Accepted and Approved: July 26 1983 (date)

by: Richard Nesbitt
Signature

Title: President

HEINRICHS GEOEXPLORATION COMPANY

P. O. BOX 5964, TUCSON, ARIZONA 85703. 806 WEST GRANT ROAD. PHONE: (602) 623-0578

STATEMENT

July 5, 1983

Mr. Gabriel Helday
P.O. Box 301
Tombstone, AZ 85638

Re: GEOEX #1649
Proposed Geophysical
Survey, Tombstone AZ

PROFESSIONAL FEES & SERVICES

Advance on Account to be allocated
against future itemized billings----------$2,500.00

Payment Received July 28, 1983

HEINRICHS
GEOEXPLORATION CO.
Box 5964 Tucson, Arizona 85703
Phone: (602) 623-0578
Cable: GEOEX

M. Turner

(301)

7:30 8:15 61,944
4:00 62,104 160

62,172 22
62,194

mile 324 + Hiway 80 Sign
then turn off (turn right) 200'
4.5 miles from main road to ranch

line in section 11 is near windmill

Center at 22NW

Mag. data for boxed in areas
on map

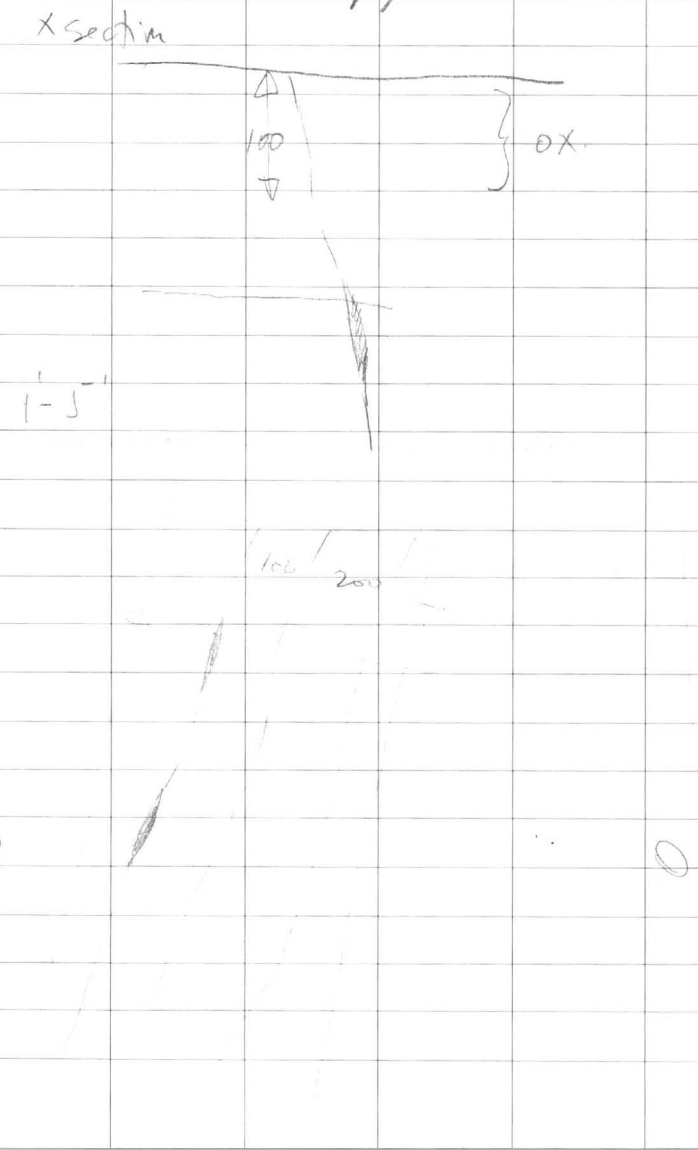
Brady unit
James Sorrell → geophysicist
who did some 100' d. poles
over an area (cave)
got ρ_a = 80,000 ohm-ft

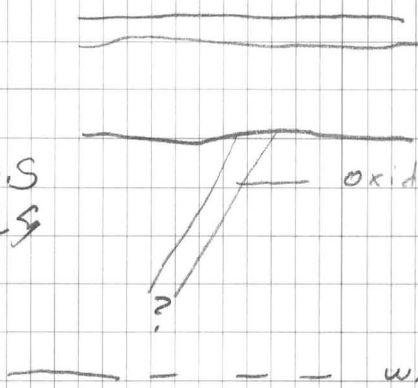
Also ran a line across small shaft
.18 Line was N E-W

Jack Branham 457-3655

Granite Country Rock

Massive Pyrite





LINE 1 N45 W SECTION A
LINE 2 N40 W

TUE Aug 2

start MILAGE 62,210

7:00 AM
8:30 PM → 13 1/2 hrs.

62,650

Wed Aug. 3

5:30 → 12 1/2
6:00

Thur. Aug. 4

6:10 → 12
6:10

Fri Aug 5

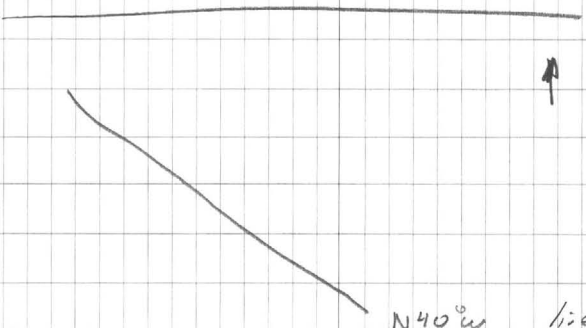
6:00
5:30 → 11 1/2

Totals

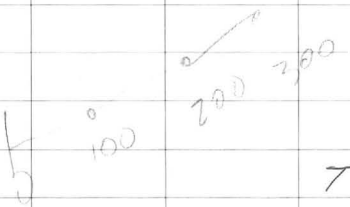
71 hrs (85 previous)
$240 Tools
880 IP grant
-31.82 less gas

Possible line #1 at end of old drill road, and will cross the pipeline. Mineralized zone with oxides, and some calcopyrite. N30E → is strike
gold 0.2

ON SAME structure AS, the structure that the IP was done ON, and with small shaft.



Line 3 on Hill Top
strike N45W
Centre - 25W



1.83

1.69

what effect

AZ	Hiking shack	944-7723
Desert Mt Sports		265-4401
Wolfgang		~~967-1669~~
		~~955-3391~~
Trail head		973-9116
Wilderness		768-7481
Sunset sports		

EM Coupling

$$d = 502.4\sqrt{\frac{\rho_a\ (\text{ohm-m})}{F}}$$

$\frac{a}{d}$ if $a/d = 0.1$ EM can be appreciable

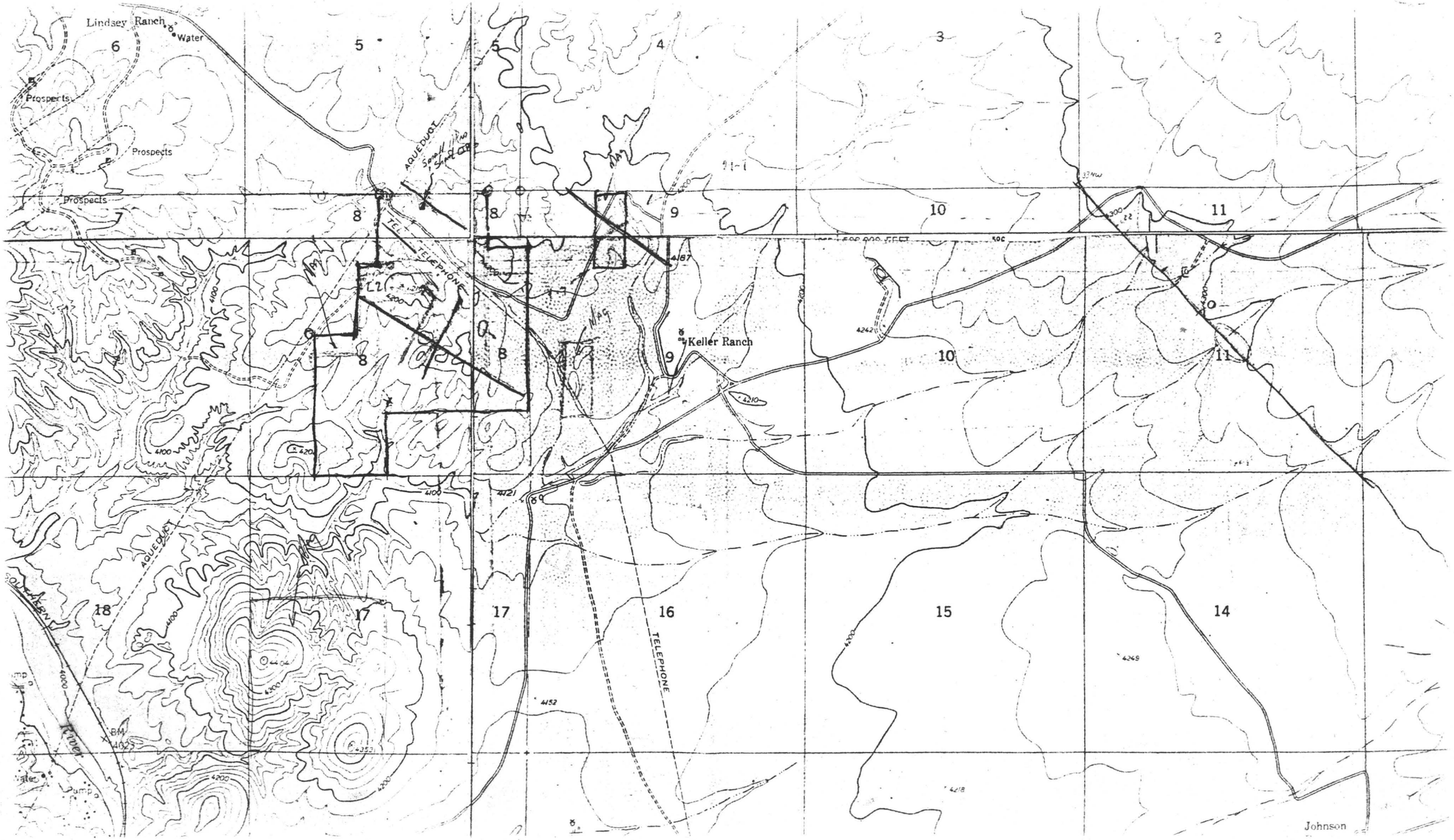
$\therefore\ a/d < 0.1$

$1m = 39.37''$ or 3.28^{ft}

0.30_{-}


Lindsey Ranch
Water
Prospects
Prospects
Prospects
AQUEDUCT
TEL
TELEPHONE
Keller Ranch
AQUEDUCT
TELEPHONE
Draw
Johnson Ranch
6
5
5
4
3
2
7
8
8
9
10
11
8
8
9
10
11
18
17
17
16
15
14
4187
4247
4210
4202
4100
4121
4152
4249
4218
4200
4300
4400
4500


Lindsey Ranch
Water
Prospects
Prospects
Prospects
AQUEDUCT
TELEPHONE
Keller Ranch
AQUEDUCT
TELEPHONE
BM
4023
River
Johnson


Lindsey Ranch
Water
Prospects
Prospects
Prospects
AQUEDUCT
TELEPHONE
Keller Ranch
AQUEDUCT
TELEPHONE
River
Johnson
6
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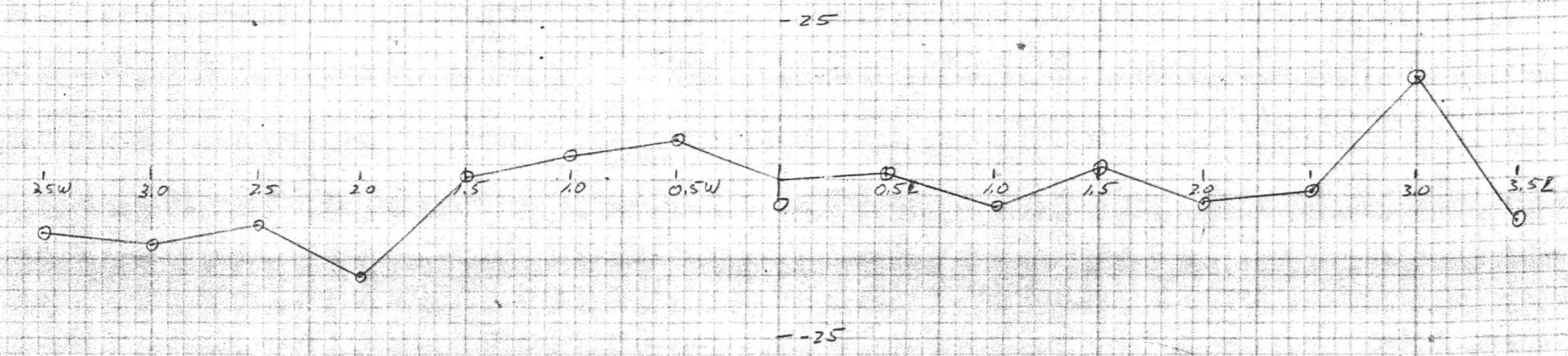
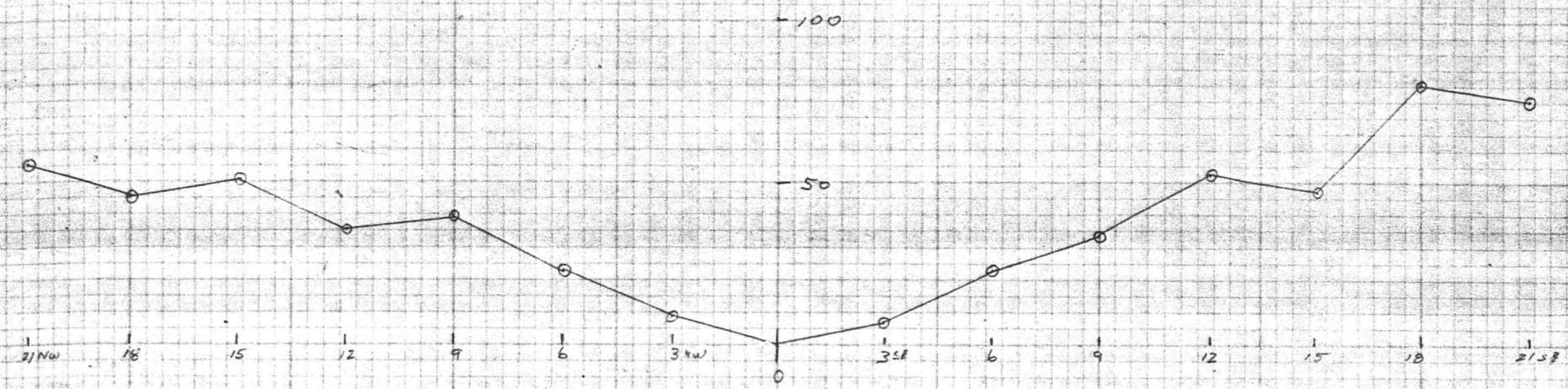
14

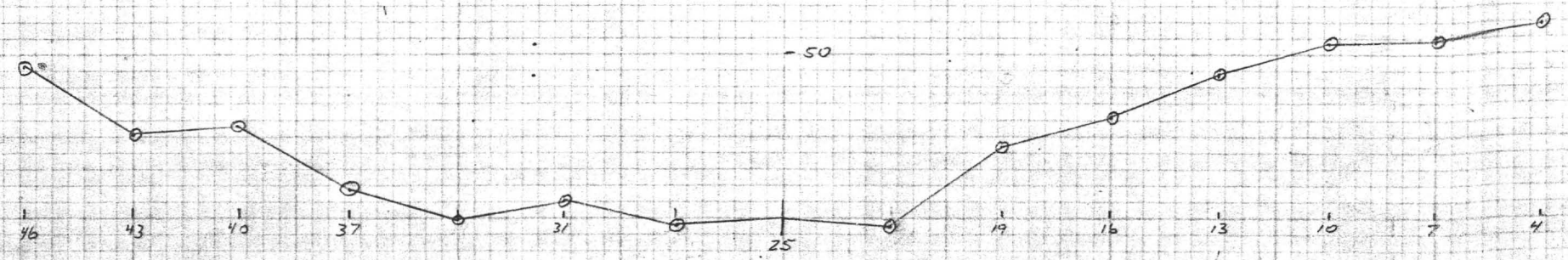
SP LINE 4



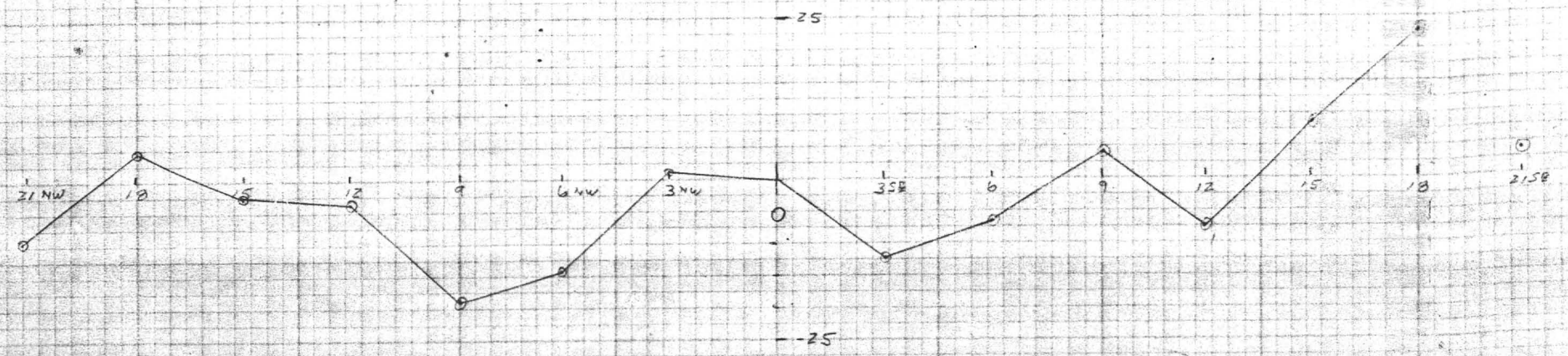
SP LINE 2



SP Line 3



SP LINE 1



KENNECOTT
GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) [illegible]

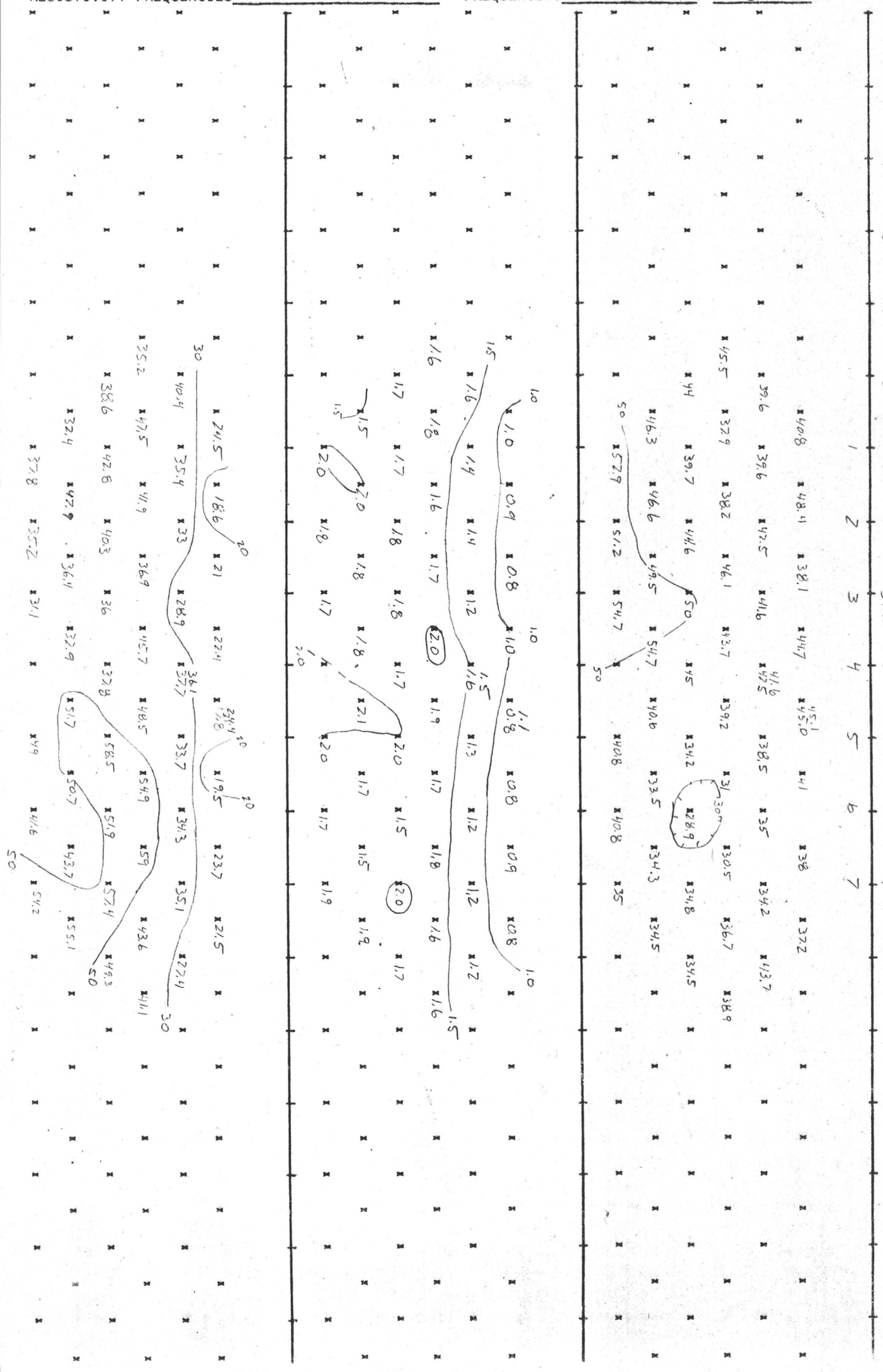
JOB # 1649 CLIENT

DATE Aug. 8, 1983 AREA Brantham Ranch (Sec. 11)

LINE# 1 SP 1 a= 300 BEARING N45W

RESISTIVITY FREQUENCIES 3.0

FREQUENCIES 3.0 & 0.3 Hz



HENLEIGH
GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5744 TUCSON, ARIZ. 85703. PH: (602) 622-0578

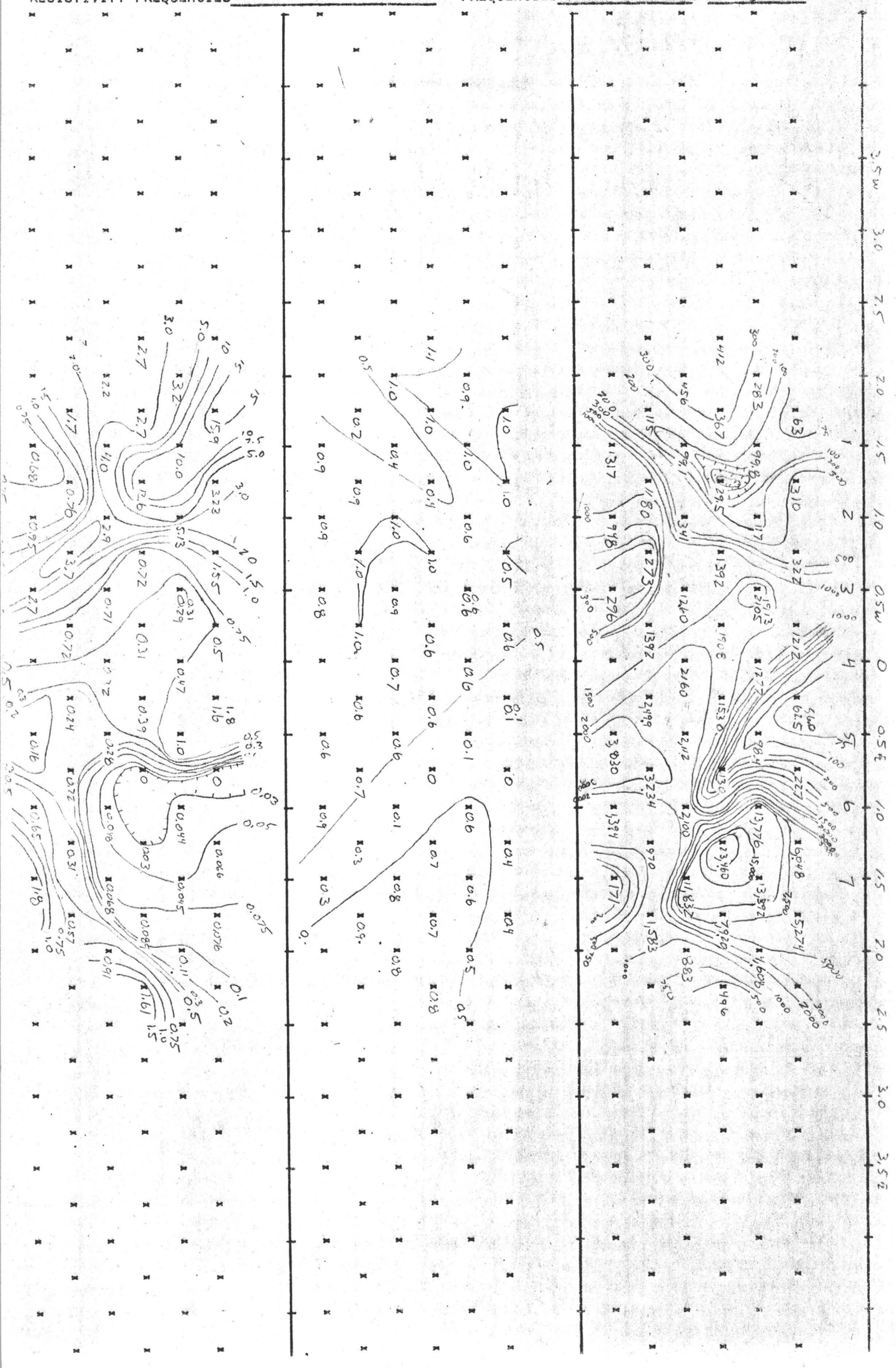
JOB # 1649 CLIENT Sunchief Mines

DATE Aug. 8, 1983 AREA Hickey Cave

LINE# 4 SP 1 a= 50 BEARING E-W

RESISTIVITY FREQUENCIES 3.0

FREQUENCIES 3.0 & 0.3 Hz



JOB # 1649 CLIENT

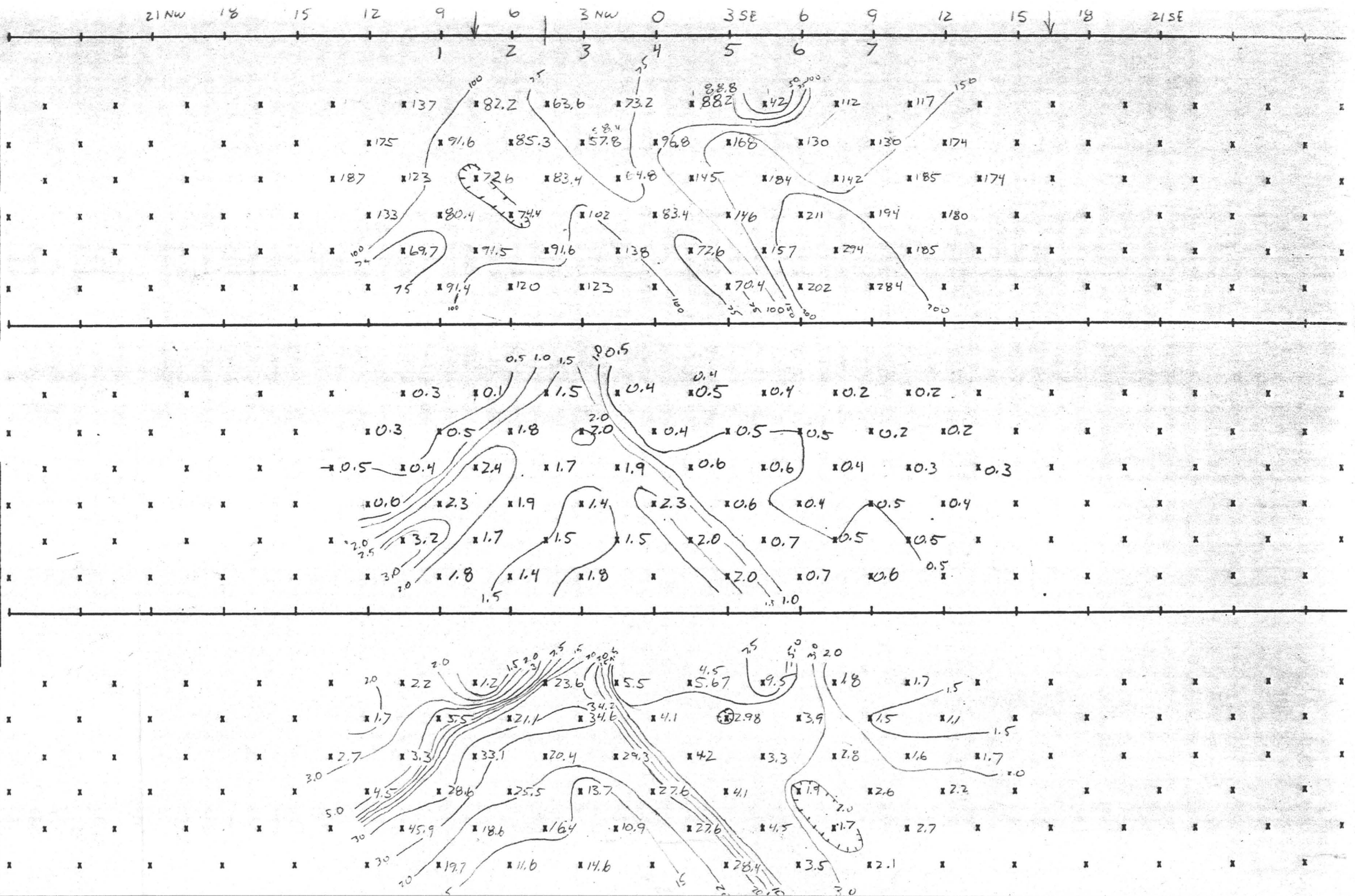
DATE 8-8-83 AREA Bonham Ranch

a= 300 BEARING N40W

LINE# 2 SP 1

FREQUENCIES 3.0 & 0.3 Hz

RESISTIVITY FREQUENCIES 3.0



GEOEX EXPLORATION COMPANY

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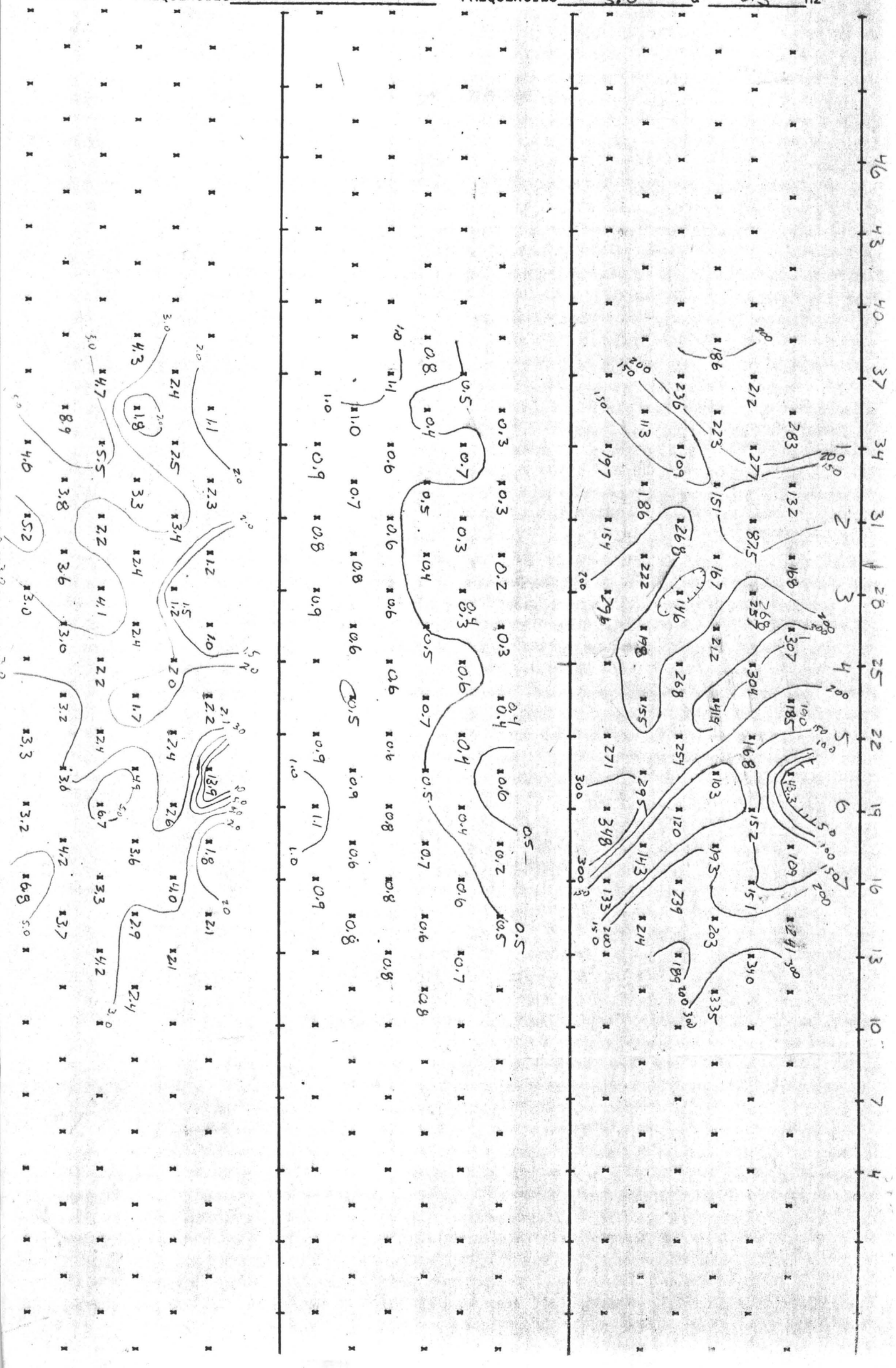
JOB # 1649 CLIENT IC

DATE 8-4-83 AREA Branham Ranch

LINE# 3 SP 1 a= 300 BEARING N45W

RESISTIVITY FREQUENCIES

FREQUENCIES 3.0 & 0.3 Hz



SP

Line 1

SE		NW
0	0	0
3	-12.4	3
6	-6.3	6
9	3.9	9
12	-7.5	12
15	8.6	15
18	22.9	18
21	3.9	21

		1
0	0	
3	1	
6	-13.8	
9	-18.7	
12	-3.2	
15	-2.6	
18	4.5	
21	-9.4	

Line 2

NW		SE
0	0	0
3	9.2	3
6	23.2	6
9	39.3	9
12	35.7	12
15	50.4	15
18	45.6	18
21	55.4	21

		2
0	0	
3	6.8	
6	23.8	
9	33.4	
12	52.0	
15	46.9	
18	80.3	
21	75.5	

NW SP SE

Line 3

25	— 0	25	— 0
28	— -3.7	22	-3.0
31	5.1	19	21.3
34	-0.4	16	30.6
37	8.7	13	43.1
40	28.0	10	53.5
43	25.1	7	54.0
46	46.2	4	59.6

Line 4

W		E	
0	— 0	0	— 0
0.5	12.2	0.5	1.7
1.0	7.7	1.0	-9.4
1.5	0.8	1.5	4.3
2.0	-30.6	2.0	-6.7
2.5	-14.2	2.5	-4.1
3.0	-20.6	3.0	32.3
3.5	-16.7	3.5	-13.6

HEINRICHS GEOEXPLORATION CO.

The Field Area is: Branham Ranch

Line Number	Page Number	Bearing	A Spacing
4	1-3	E-W	50

Volatge (mV)	Current (A)	N	Resistivity	PFE	MCF
104.2	.25	1	62.52	.1	1.59949
41	.25	2	98.4	.1	1.01626
2020	.25	1	1212	.6	.49505
532	.25	2	1276.8	.6	.469925
255	.25	3	1530	.6	.392157
536	.25	1	321.6	.5	1.55473
877	.25	2	2104.8	.6	.285063
318	.25	3	1908	.6	.314465
180	.25	4	2160	.7	.324074
516	.25	1	309.6	1	3.22997
48.7	.25	2	116.88	.6	5.13347
232	.25	3	1392	1	.718391
105	.25	4	1260	.9	.714286
66.3	.25	5	1392.3	1	.718236
105	.25	1	63	1	15.873
41.6	.25	2	99.84	1	10.016
4.92	.25	3	29.52	.4	13.5501
28.4	.25	4	340.8	1	2.93427
13.5	.26	5	272.596	1	3.66843
8.78	.25	6	295.008	.8	2.71179
118	.25	2	283.2	.9	3.17797
61.1	.25	3	366.6	1	2.72777
8.26	.25	4	99.12	.4	4.03551
56.2	.25	5	1180.2	.9	.762583
28.2	.25	6	947.52	.9	.949848
68.6	.25	3	411.6	1.1	2.6725
38	.25	4	456	1	2.19298
5.47	.25	5	114.87	.2	1.7411
39.2	.25	6	1317.12	.9	.683309

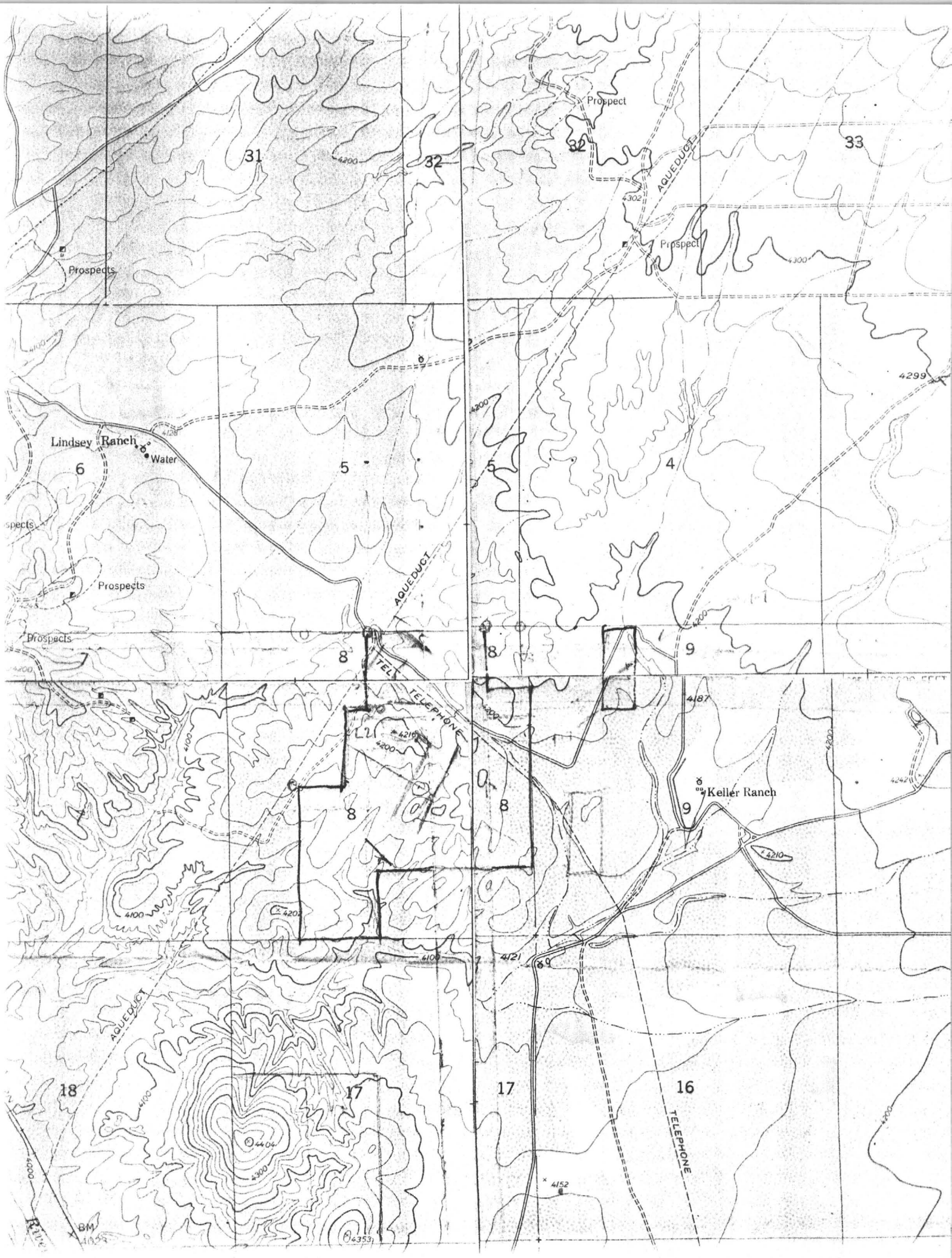
HEINRICHS GEOEXPLORATION CO.

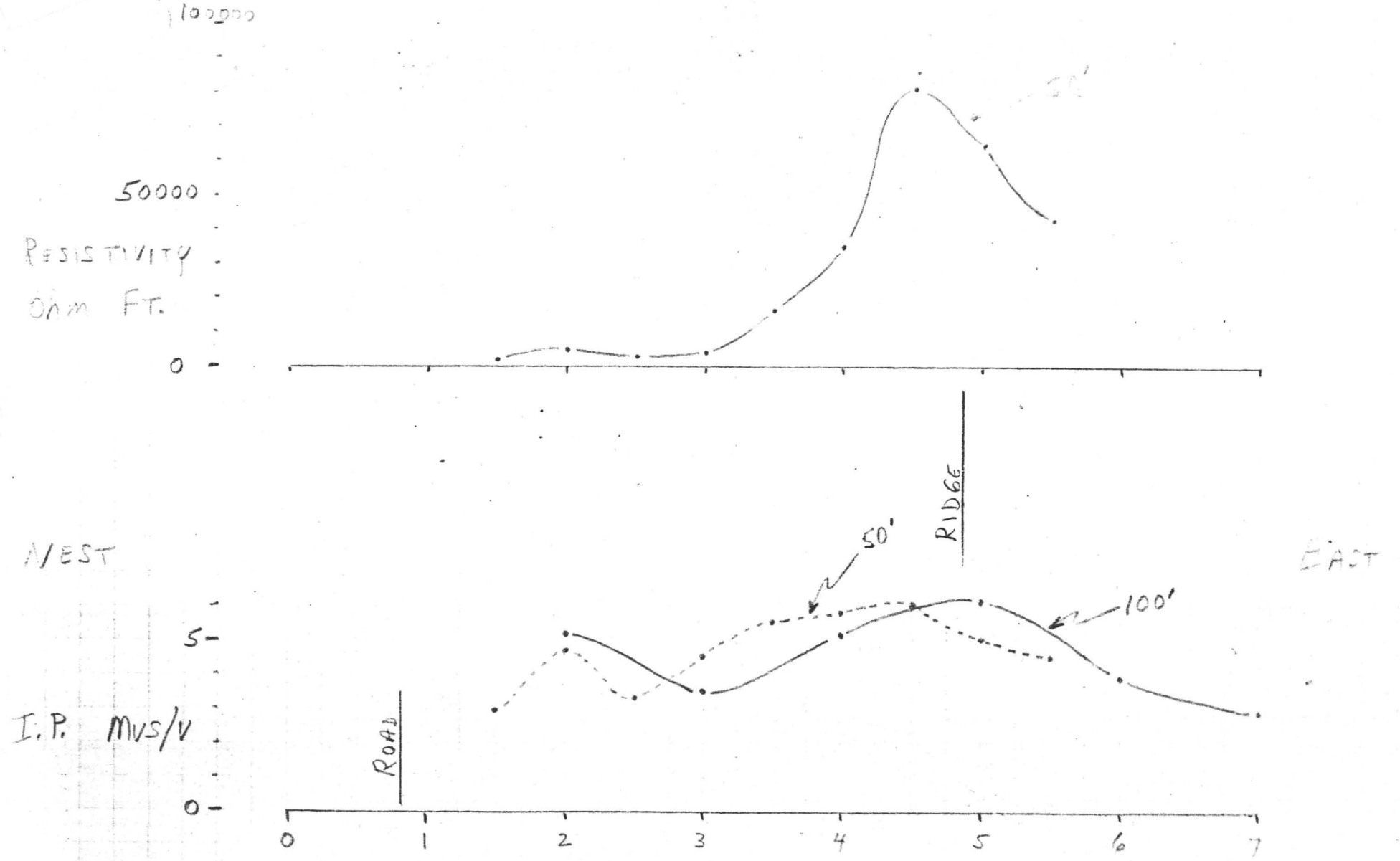
The Field Area is: Branham Ranch

Line Number	Page Number	Bearing	A Spacing
4	4-6	E-W	50

Volatge (mV)	Current (A)	N	Resistivity	PFE	MCF
797	.25	2	1912.8	.6	.313676
934	.25	1	560.4	.1	.178444
378	.25	1	226.8	0	0
119	.25	5	2499	.6	.240096
176	.25	4	2112	.6	.284091
21.7	.25	3	130.2	0	0
5740	.25	2	13776	.6	.043554
10080	.25	1	6048	.4	.0661376
114	.25	6	3830.4	.6	.156642
154	.25	5	3234	.7	.21645
175	.25	4	2100	.1	.047619
3910	.25	3	23460	.7	.029838
5580	.25	2	13392	.6	.0448029
8790	.25	1	5274	.4	.0758438
41.5	.25	6	1394.4	.9	.645439
46.2	.25	5	970.2	.3	.309215
986	.25	4	11832	.8	.0676133
1320	.25	3	7920	.7	.0883838
1920	.25	2	4608	.5	.108507
5.09	.25	6	171.024	.3	1.75414
75.4	.25	5	1583.4	.9	.568397
73.6	.25	4	883.2	.8	.905797
82.6	.25	3	495.6	.8	1.61421

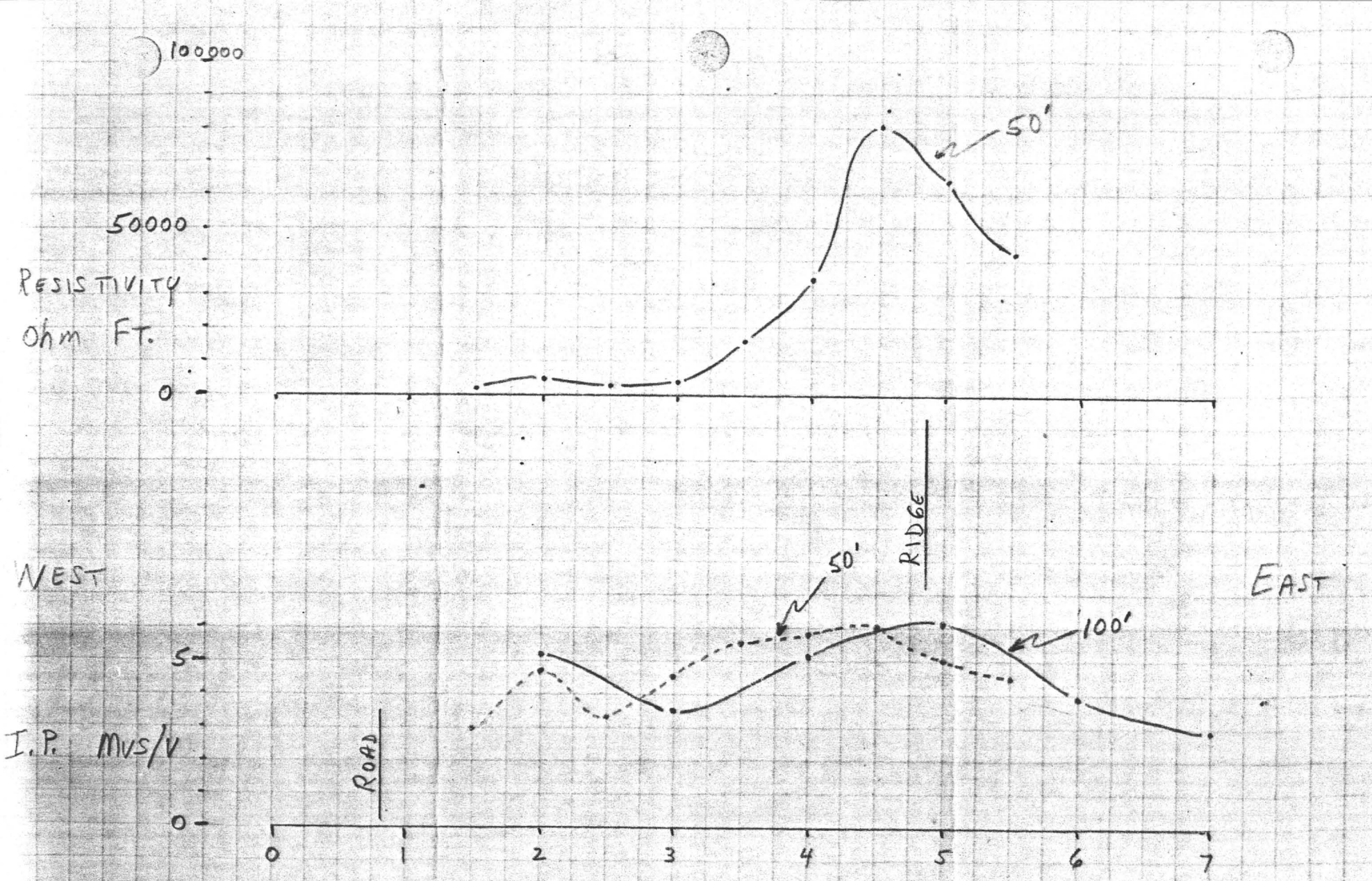

Charleston Lead Mine
Water
36
31
32
TELEPHONE
Prospects
T 20 S
T 21 S
Prospects
Ruins
Ruins
Lindsey Ranch
Water
1
6
5
5
Prospects
Prospects
Prospects
Prospects
AQUEDUCT
12
7
8
8
TELEPHONE
12
Brunckow Hill
8
8
San
Pedro
13
18
17
17
Ramp
BM
Rive


Prospect
Prospect
Prospects
Lindsey Ranch
Water
Prospects
Prospects
AQUEDUCT
AQUEDUCT
AQUEDUCT
TELEPHONE
TELEPHONE
Keller Ranch
31
32
32
33
6
5
5
4
8
8
9
8
8
9
18
17
17
16
4200
4302
4300
4299
4100
4128
4187
4215
4210
4242
4121
4404
4353
4152
BM



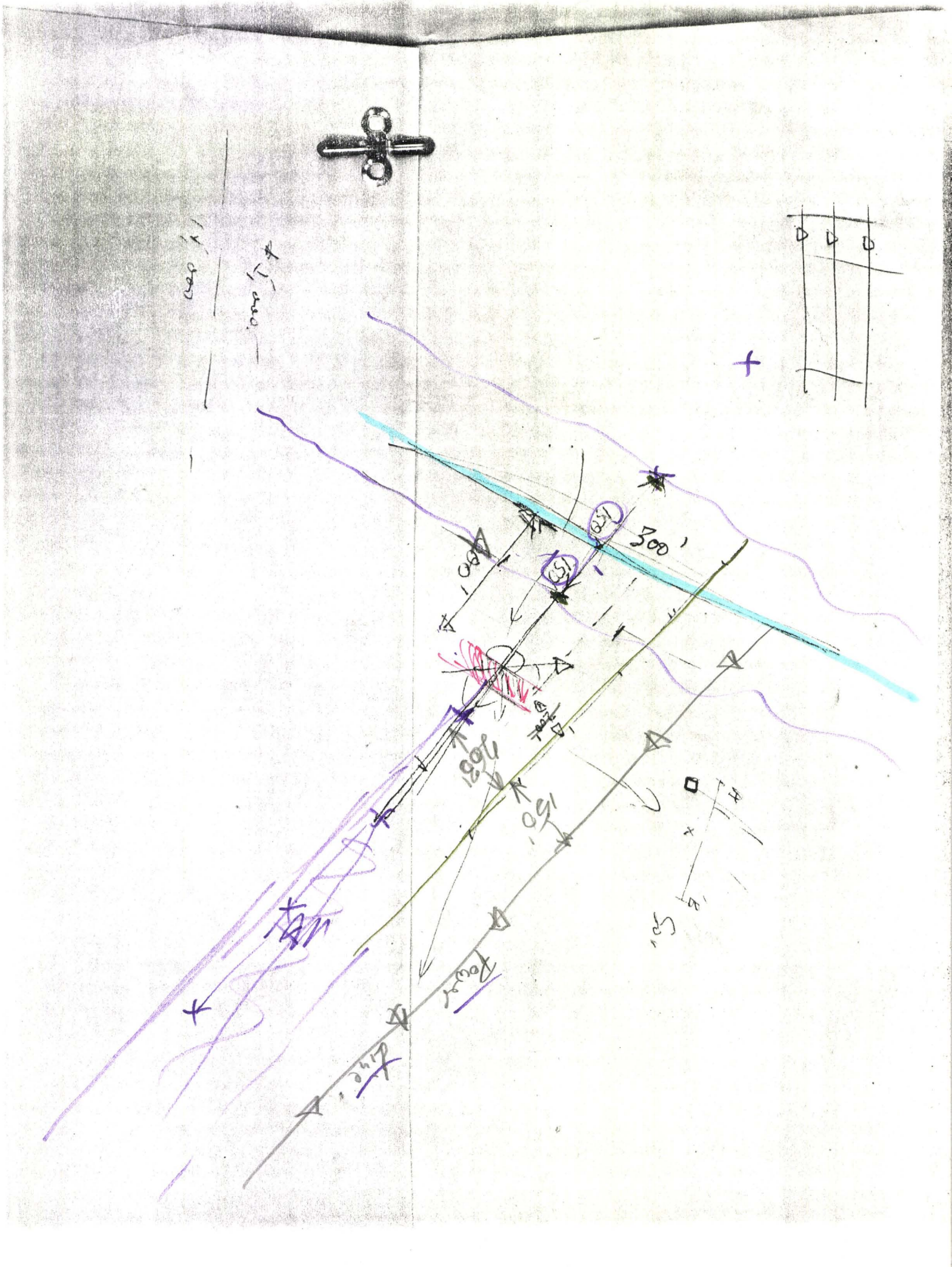
JACK BRANHAM PROPERTY CAVE AREA LINE 2

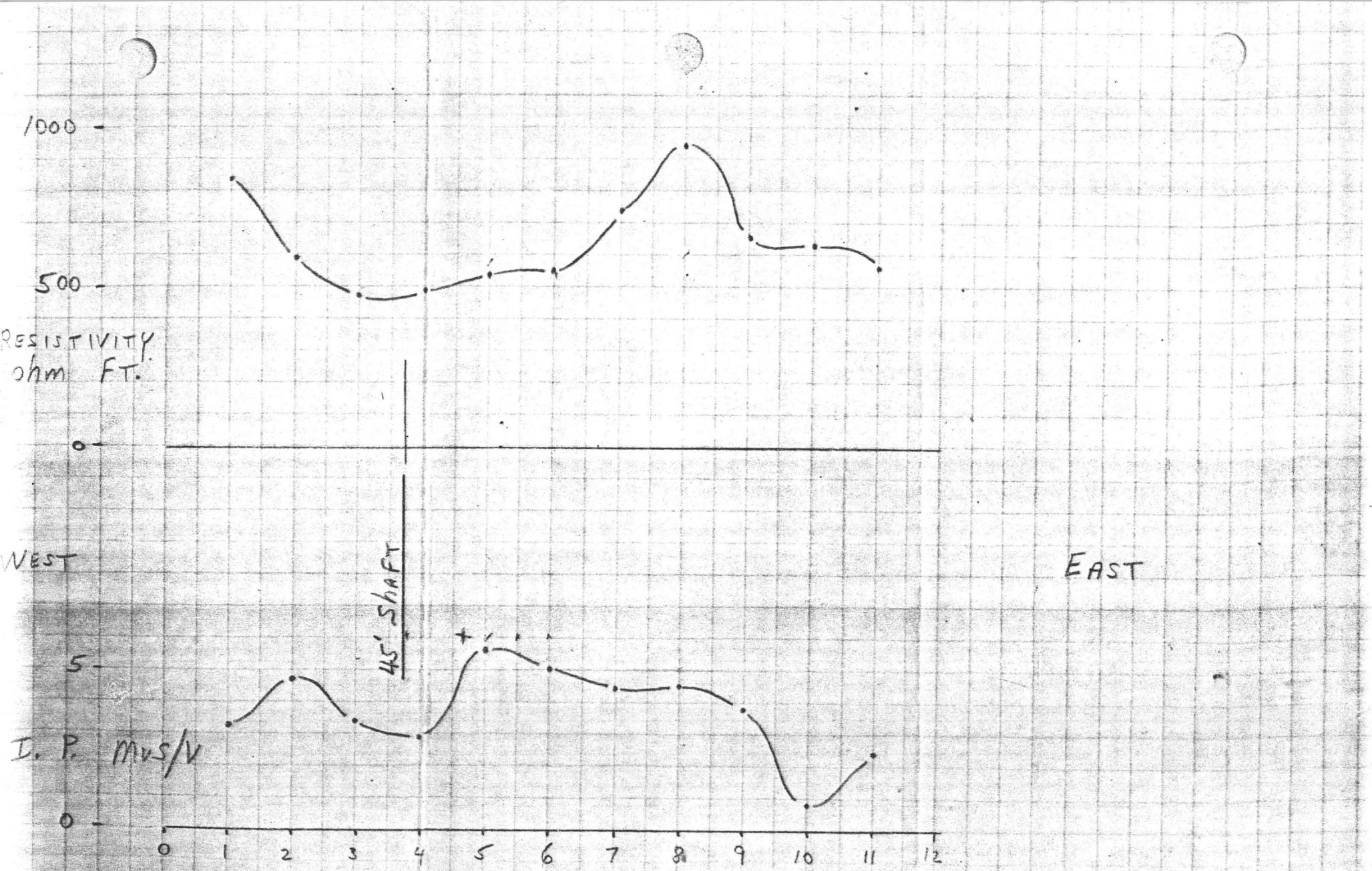
SCALE: 1" = 100 FT. MAY 1981



JACK BRANHAM PROPERTY CAVE AREA LINE 2

SCALE: 1" = 100 FT. MAY 1981


300'
150'



JACK BRANHAM PROPERTY LINE 1 SHAFT AREA NW¼ NE¼ SEC. 8

100 FT. ARRAY 1" = 200 FT. MAY 1981

Lindsey Ranch
Water
Prospects
Prospects
Prospects
AQUEDUCT
TEL
TELEPHONE
Keller Ranch
4187
4242
4210
4121
4100
4200
4300
4152
4249
4218
4404
4353
TELEPHONE
AQUEDUCT
SOUTHERN
River
BM 4025
Pump
Water
Draw
Johnson Ranch
6
5
5
4
3
2
7
8
8
9
10
11
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18
17
17
16
15
14

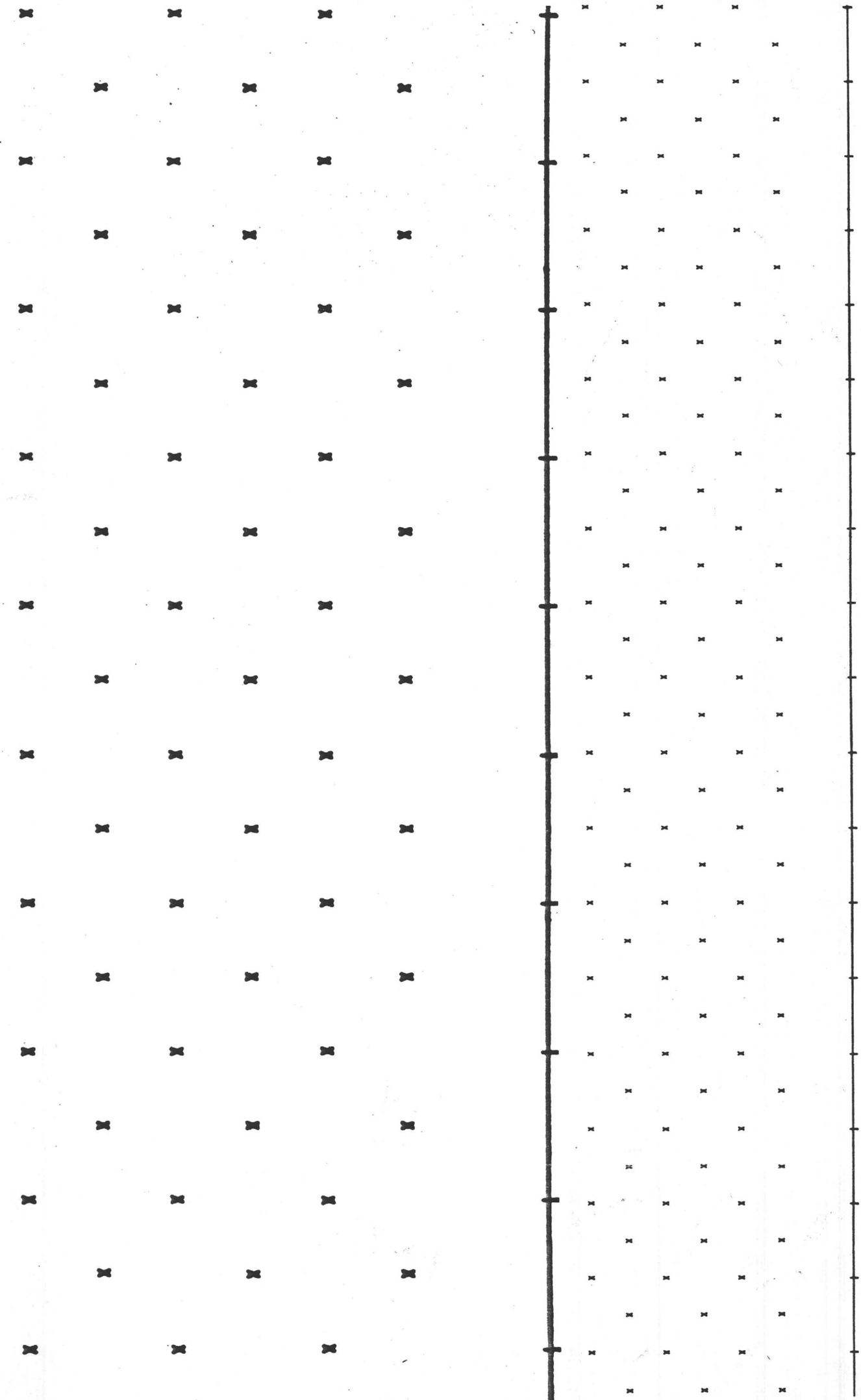
MEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

JOB #_____ CLIENT_____

DATE_____ AREA_____

LINE#_____ SP_____ a=_____ BEARING _____

RESISTIVITY FREQUENCIES_____ FREQUENCIES_____ & _____ Hz



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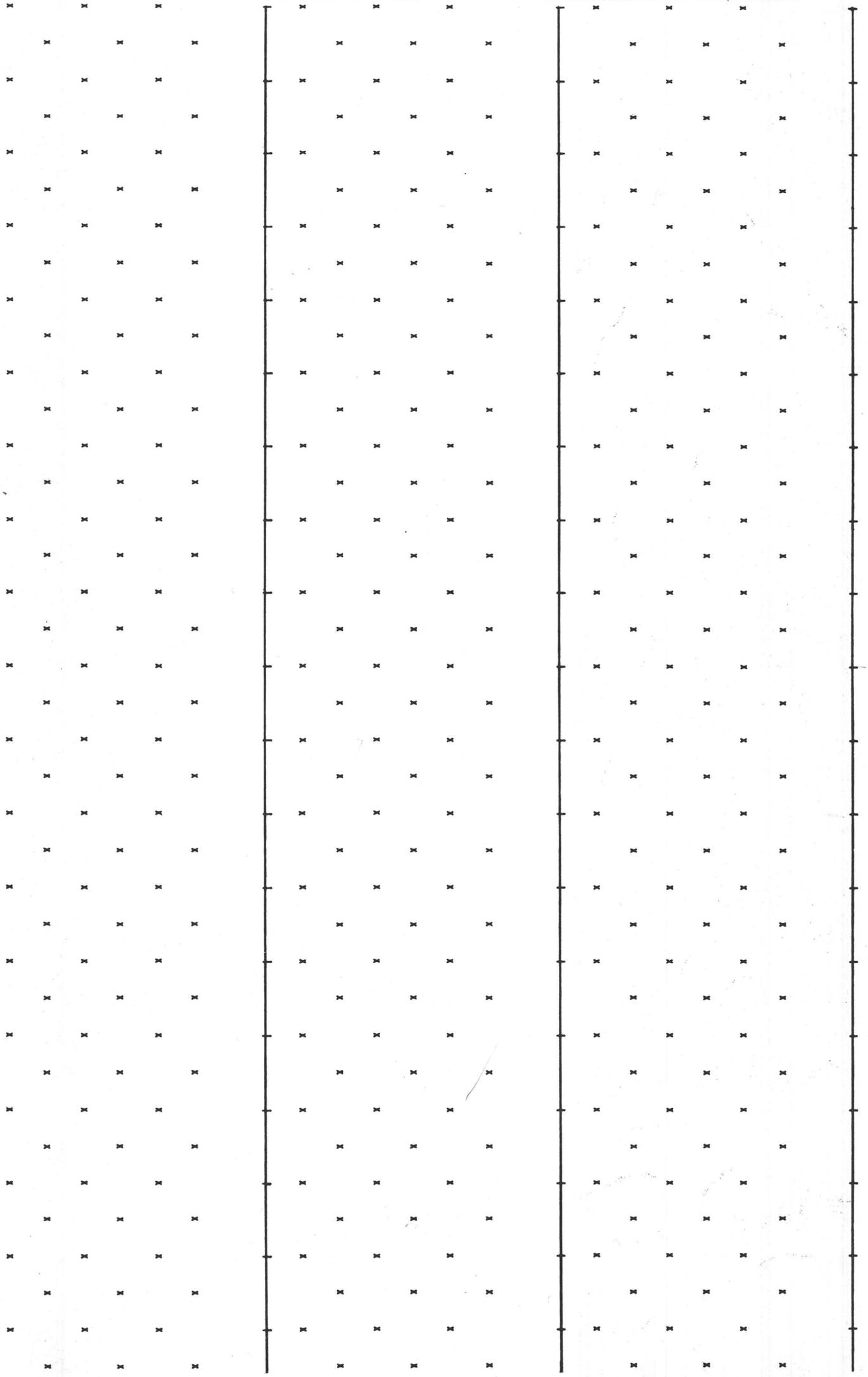
JOB #_____ CLIENT_____

DATE_____ AREA_____

LINE#_____ SP_____ a=_____ BEARING _____

RESISTIVITY FREQUENCIES_____ FREQUENCIES_____ & _____ Hz



PRELIMINARY RECONNAISSANCE
INDUCED POLARIZATION, RESISTIVITY
and
SELF POTENTIAL
GEOPHYSICAL SURVEY
of
Portions of
Sections 2, 5, 8, 17, and 18 of T21S. & R22E.

Cochise County, Arizona

August 1983

By

HEINRICHS GEOEXPLORATION COMPANY

P.O. Box 5964 Tucson, AZ 85703

GEOEX JOB #1649

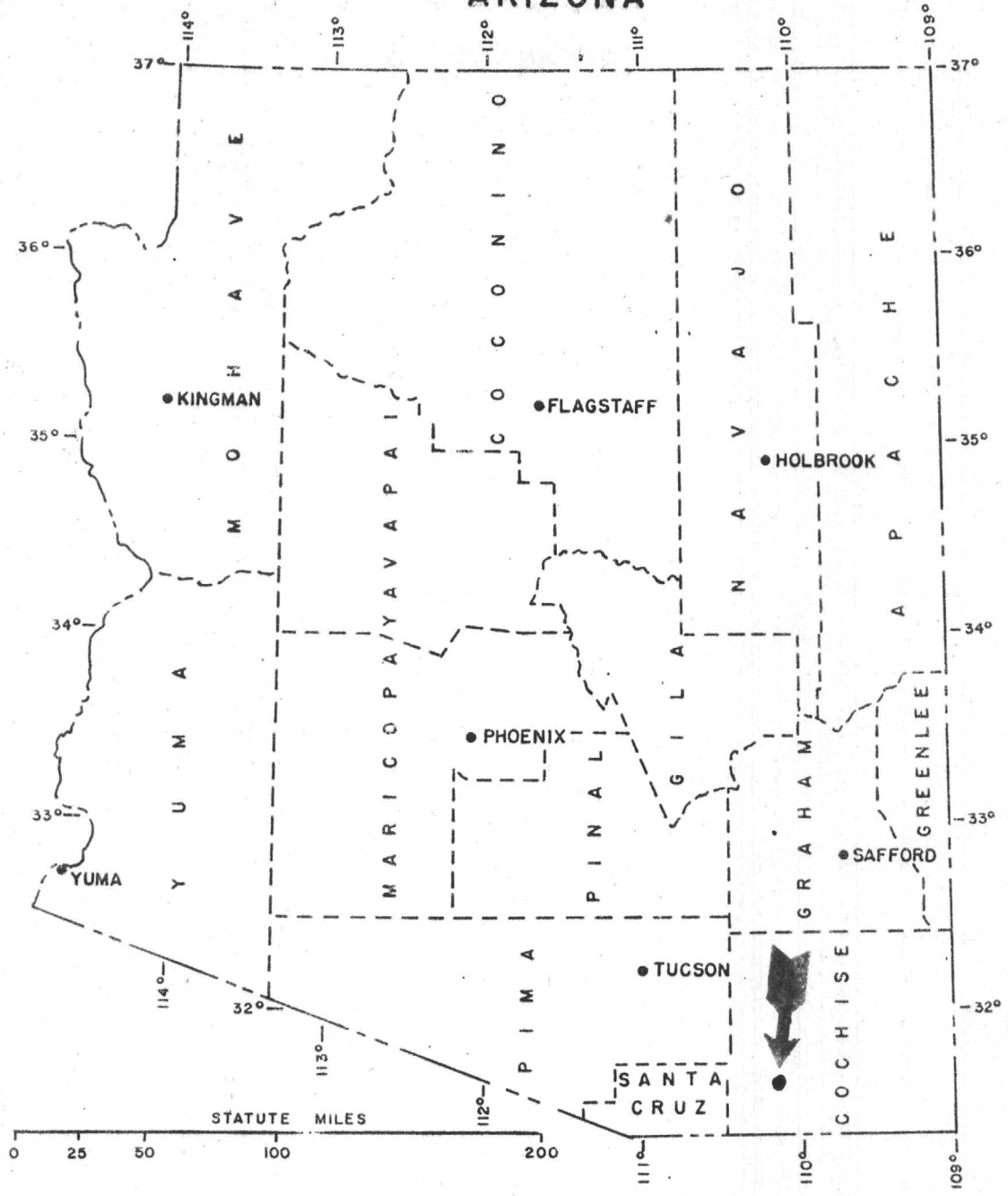
CONTENTS

Illustrations

Four Sectional Data Sheets

- Line 1
- Line 2
- Line 3
- Line 4

GENERAL LOCATION OF
T.21S., R.22E.
COCHISE COUNTY
ARIZONA



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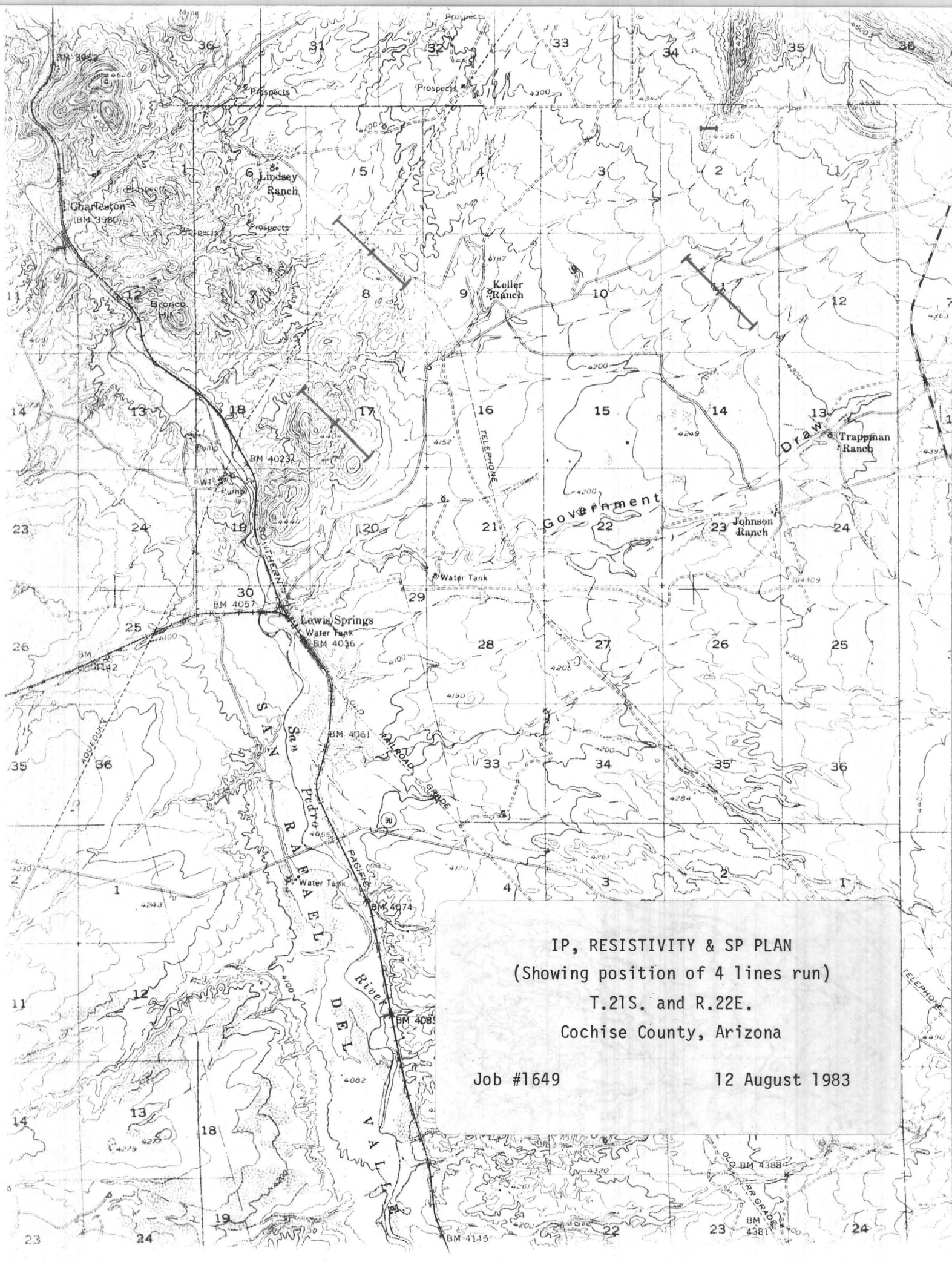


IP, RESISTIVITY & SP PLAN

(Showing position of 4 lines run)

T.21S. and R.22E.

Cochise County, Arizona

Job #1649 12 August 1983

INTRODUCTION

At the request of Mr. Gabriel Helday, Geologist for Sunchief Mining Company, Heinrichs GEOEXploration Company conducted a four line preliminary reconnaissance induced polarization (IP), resistivity, and self-potential (SP), survey in sections 2, 5, 8, 11, 17 and 18 of T.21S., R.22E., Cochise County, Arizona as mapped on the 15 minute Tombstone Quadrangle, approximately 10 miles south of Tombstone, Arizona. The area elevation ranges from 4,200 to over 4,500 feet, with mostly flat terrain. Soil development is good and conditions were moist. Floral cover was moderate and consisted mostly of mesquite, brush, and cactus. Four wheel drive access is generally good. See plan map appended to this report.

Field work was done during the interim August 2 through August 5, 1983 with Mark E. Anders, geophysicist-geologist as crew chief, assisted by David Swanson, electrical technician, Baltazar Garcia, mining engineer, and under supervision of Walter E. Heinrichs, Jr., registered professional engineer and geological engineer geophysicist.

Objective of this work was to hopefully find definite sulfide ore anomalism or at least some indications of possible ore targets for future exploration and drilling on the property. Usually, IP will delineate certain subsurface geological characteristics, and is commonly used for delineating the existence, strength, character and distribution of metallic lustered minerals such as sulfides.

PROCEDURES

GEOEX multiple frequency IP equipment involving a 4 ampere capacity Mark 7 transmitter S/N 96625 and Mark 4-C Receiver S/N 18691-R was employed. Transmitter was powered by an 8 HP Briggs gasoline engine, driving a 400 Hz-120V, 3KVA GE alternator. A routine transmitting frequency pair of 3.0 Hz and 0.3 Hz was employed. However, spectral frequency tests (utilizing a lower frequency pair, i.e.: 1.0 Hz and 0.1 Hz) done at the beginning of the survey and occasionally during the survey, indicated only slight adverse spurious coupling effects should be encountered. The collinear dipole-dipole electrode array was used with "spreads" of seven transmitting electrodes each and dipole lengths of 300' on three of the four lines and 50 foot dipoles on the fourth line. Each spread was expanded out to six dipole increments or to 6n and consisted of over fifty data points extending out to 1,200 feet in each direction from the center of the spread for dipole lengths of 300 feet and out to 200 feet from center when utilizing 50 foot dipoles.

Data results from each line or spread are presented on a "sectional" data sheet, showing successively from top to bottom: the apparent resistivity (rho over two pi) in units of ohm-feet, the percent frequency effect (PFE) (dimensionless) and the metal conduction factor (MCF) - all contoured in "sectional" form. It should be stated that these sectional presentations are conventional diagramatic representations and are not cross sections as such. For this reason, they are sometimes called pseudosections. Indirectly, of course, they do relate to the subsurface geometry and geology, but the relationships are complex and not always intuitive, (See basis of IP Method appended to this report).

Self Potential (SP) readings, taken in conjunction with the IP work are presented at the bottom of the sectional data sheets in profile form.

INTERPRETATION

Of the four lines run, three show definite resistivity interfaces and contrasts. These indicate formational changes and/or geologic structure effects such as faults.

Line 1 -- Shows resistivities that are remarkably constant across the line and of a mean value most likely representative of alluvium.

Line 2 -- A weak to moderate (2:1 approximate contrast ratio) resistivity high is beginning to show up on the far northwest end of the line, with another similar magnitude resistivity high on the southeast end of the line. The low in the center is probably mostly indicative of the pipe line (Tombstone water supply) rather than the exposed gossanous zone, but may be a combination effect of both.

Line 3 -- A weak to moderate (1:2 approximate contrast ratio) resistivity low occurs about the center of the line.

Line 4 -- Strong resistivity contrasts involving ratios from roughly 20:1 to as high as 200:1 occured, with uncommonly high resistivities observed between 1E and 2.0E positioned at depths of a maximum of 50 to 75 feet to at or very near the surface.

The PFEs show little or no contrast on three of the four lines. The general PFE background is also fairly low (0.5-0.8) which indicates very small and/or weak concentrations of sulfides, if any, and/or low or nil sulfide content overall, at least down to a depth of 600 feet or so.

Line 2 shows a definite PFE response, but this is mainly caused by the Tombstone water line that cuts across the line #2 centered at station 4.5.

While the PFE contouring shows very minor anomalism in places, what there is can most likely be entirely spurious, being simply caused by increased artificial coupling effects with depth, rather that actual increasing sulfide with depth and/or by system errors.

Self potential data on line 2 shows a broad low that is centered about station 0, while line 3 shows a small low also centered at station 0. Lines 1 & 4 show very little or no anomalous SP effects. SP lows can relate to actively oxidizing sulfides which have established a weak potential or "battery" effect in the subsurface - usually across a conducting and interconnecting zone of oxide and sulfide lying respectively both above and below the water table.

A table of average results obtained.

	High($\rho\alpha$)	Low($\rho\alpha$)	PFE	MCF
Line 1	54.7 Ω Ft	28.9 Ω Ft	1.5	32
Line 2	294 "	42.0 "	0.5	3.3
Line 3	348 "	43.3 "	0.6	3.0
Line 4	23,460 "	59.3 "	0.6	0.25

CONCLUSIONS AND RECOMMENDATIONS

No strong and obvious geophysical indications of major sulfide concentrations and especially disseminated sulfide, were encountered within the respective zones of survey coverage. These zones extend to a maximum distance of from 300' to 600' laterally on either side of each line (where a = 300') and a maximum of 600 feet deep.

On line 1 the resistivities are fairly constant across the line, with an average value of 40 ohm-feet. This is probably representative of alluvium because the exposed bedrocks of the area gave higher resistivities. The PFEs indicated little sulfide content down to a depth of at least 600 feet. The SP data on this line give little useful information. If further IP work was to be done, then larger dipoles i.e. 1000 feet might be recommended, in order to reach depths greater than 600 feet. If the line was continued along the same strike, toward the northwest, then using 300 foot dipoles might be satisfactory because of the expected thinning of the alluvium in that direction might allow for the evaluation of the underlying bedrock with such penetration capability i.e. 600 feet. However, it is also possible that a sudden and deep scarp may exist hidden under the alluvium

near the bedrock alluvial contact rather than a wedge of gradually thickening alluvium to the south. Coverage did not extend far enough to the northwest to indicate either situation.

Line 2 has a resistivity low from approximately 4.5 NW to 98E which could be due to the Tombstone pipeline but it could also be a zone of lower resistivities with no relationship to the pipeline, but is most likely a combination of effects. The PFEs show moderate anomalism that is centered about the Tombstone pipeline. Extreme care was taken to minimize the effects of the pipeline, but it still caused the majority of the anomalism. The PFE anomalism appears to be slightly skewed to the southeast. If future IP is ever done, then it would be recommended to consider a line be run parallel or sub-parallel to the oxidation zone in order to determine the character of the oxidation zone (without the pipeline effects). Also, a short experimental line could be run elsewhere across the pipe line to test for "pure" pipe line effects where adjacent oxidation zones were presumed to be absent. If anything the exposed gossan zone may have responded as a weak to moderate resistivity high but this is not absolutely clear within the data because it is virtually impossible to quantitatively segregate the "swamping out" effects of the pipe line.

Line 3 has a zone of low resistivities in the center portion of the line with higher resistivities to the NW and SE. This low zone of resistivities may be due to topographic effects rather than a geologic feature (possible fault). The PFEs are very low and with little variation across the line.

The SP data indicate a broad low on lines 2 and 3. Further evaluation of the significance of these results may justify consideration of more detailed SP (or perhaps EM, magnetics, or scintillation tests) coverage with closer station and line spacing. Detail across one or more of the existing lows, especially on Line 2, as delineated during the IP work, on 25 to 50 foot station spacing, should be done first. If response from this work appears encouraging and sufficiently definitive, then closer spaced lines and other appropriate follow up work dependent on results would also be worth considering. Such follow up work should be approached very cautiously owing to the uncertainty introduced by the pipe line proximity but, because of the exposed gossan - SP correlation, at least some follow up is recommended. Some geochem profiles across the exposed structure may be worthwhile as an alternative or complement to further geophysical considerations. Careful detailed geologic mapping should also be done. All such work should be focused on the justification for and design of a small preliminary subsurface drilling program providing that the nature of the gossan zone cannot be otherwise down graded as being non ore-associated.

Line 4 was run using 50 foot dipole spacing. Extremely high resistivities were encountered ocurring from station 1E to 2.25E and at a depth of 50-75 feet to as shallow as at or very near the surface. This could indicate a very massive silicated limestone or dolomite or, because of the known massive limestone in the region, the possibility of a cavern structure can not be left out. The PFEs show little contrast and indicate lack of sulfides down to a depth of 100 feet. The SP data is fairly flat and gives little information regarding the geology.

Based on the above, except for the SP on Line 2, nothing was encountered that indicated definite delineation of ore or of any prime drill targets. If additional IP coverage is ever contemplated, it may be desirable to consider running a test line or lines over some parts of the area with an array using longer dipoles - say, 750 feet or 1,000 feet long instead of 300 feet long.

ACKNOWLEDGMENTS

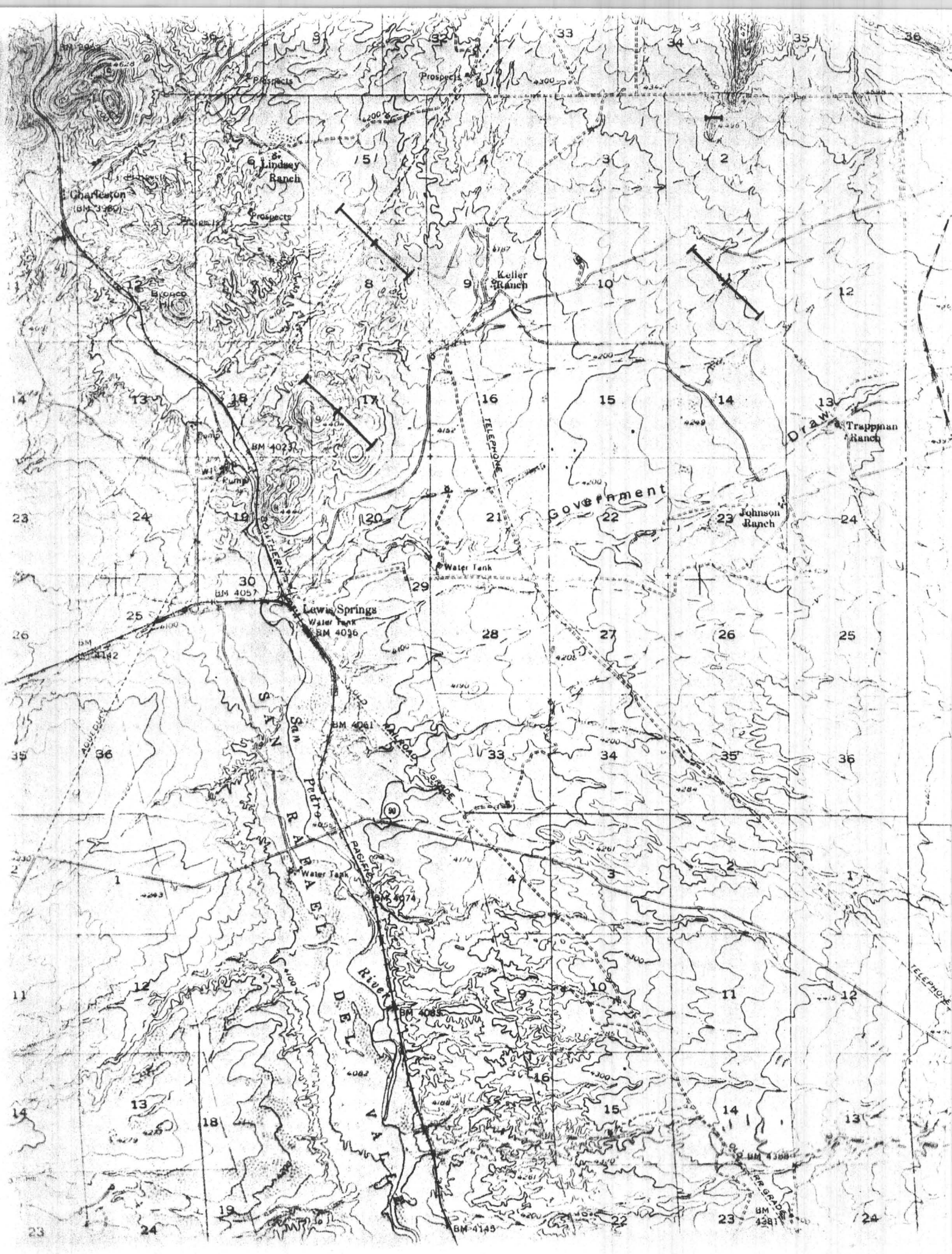
We wish to thank Gabriel Helday and Jack Branham for their complete cooperation and assistance in the field by guiding us around. All of this not only helped expedite our efforts but also allowed them to be more complete and comprehensive, and therefore we trust more useful.

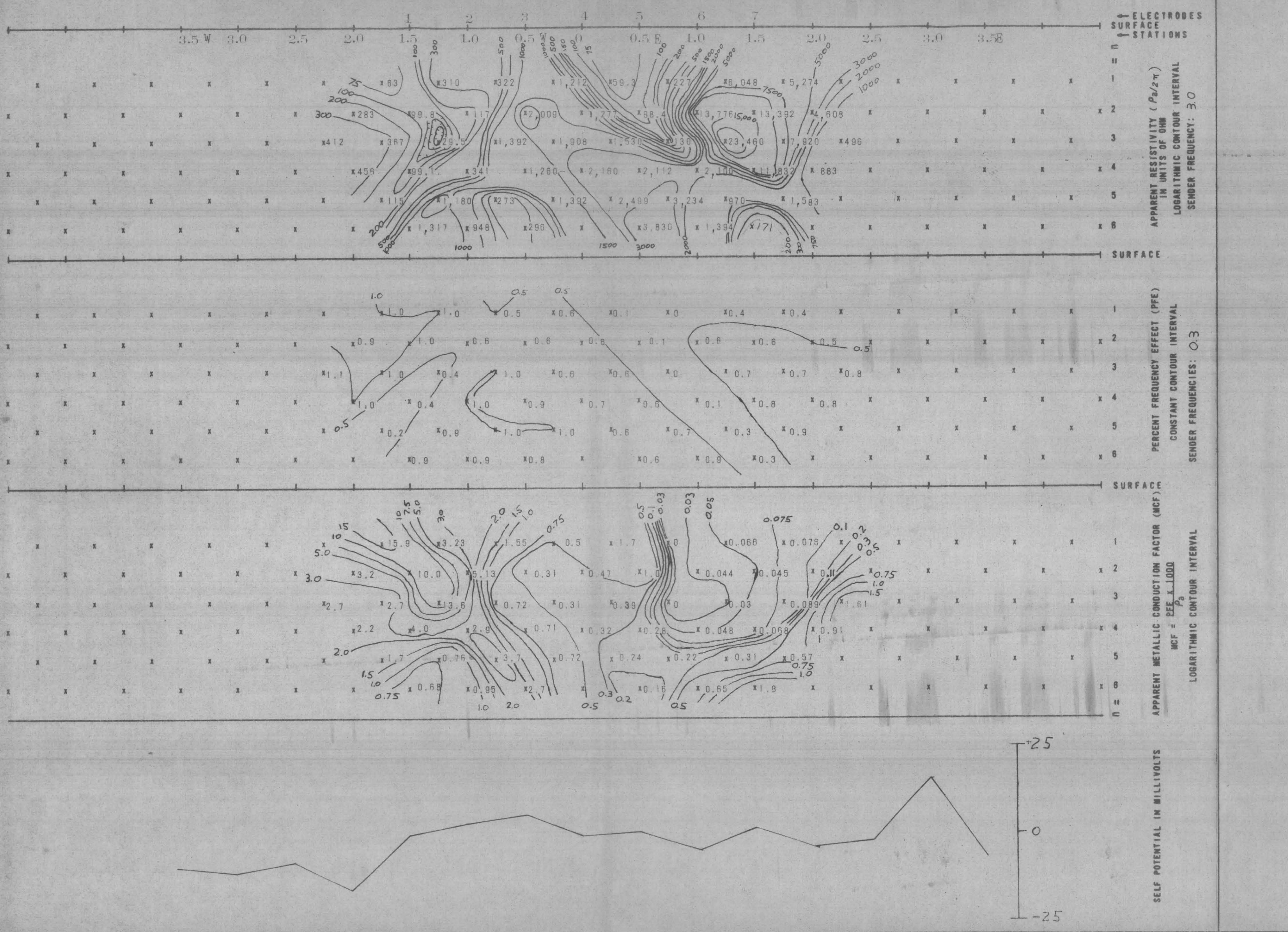
Respectfully submitted,

Heinrichs GEOExploration Co.

Mark E. Anders
Geophysicist - Geologist

Approved:


Prospects
Lindsey Ranch
Charleston
(BM 3980)
Bronco Hill
Keller Ranch
Trappman Ranch
Draw
Johnson Ranch
Government
TELEPHONE
Pump
BM 4023
Water Tank
Lewis Springs
Water Tank
BM 4036
BM 4057
BM 4061
San Pedro
RAILROAD
SAN PEDRO RIVER
DEL VALLE
River
BM 4074
BM 4085
BM 4145
BM 4388
BM 4381
ARROYO
90



LINE NO. 1
SPREAD(S) 1
BEARING W—E

INDUCED POLARIZATION TRAVERSE
SECTIONAL DATA SHEET
of

HICKEY CAVE AREA

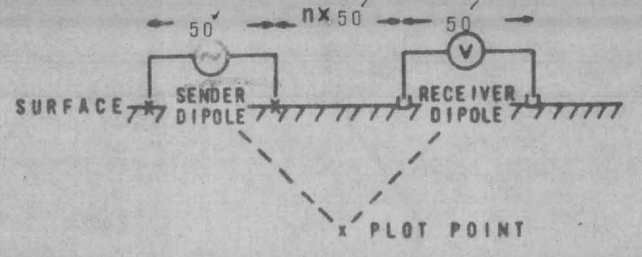
CENTER of the NORTHERN 1/2
of
SECTION 2 of T.21S. and R22E.

COCHISE COUNTY, ARIZONA

RELATIVE ANOMALY STRENGTH

VERY WEAK WEAK MODERATE STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



DATE

AUGUST 11, 1983

Job # 1649

HEINRICHS GEOEXPLORATION COMPANY

806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578

MEINRICH'S
GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

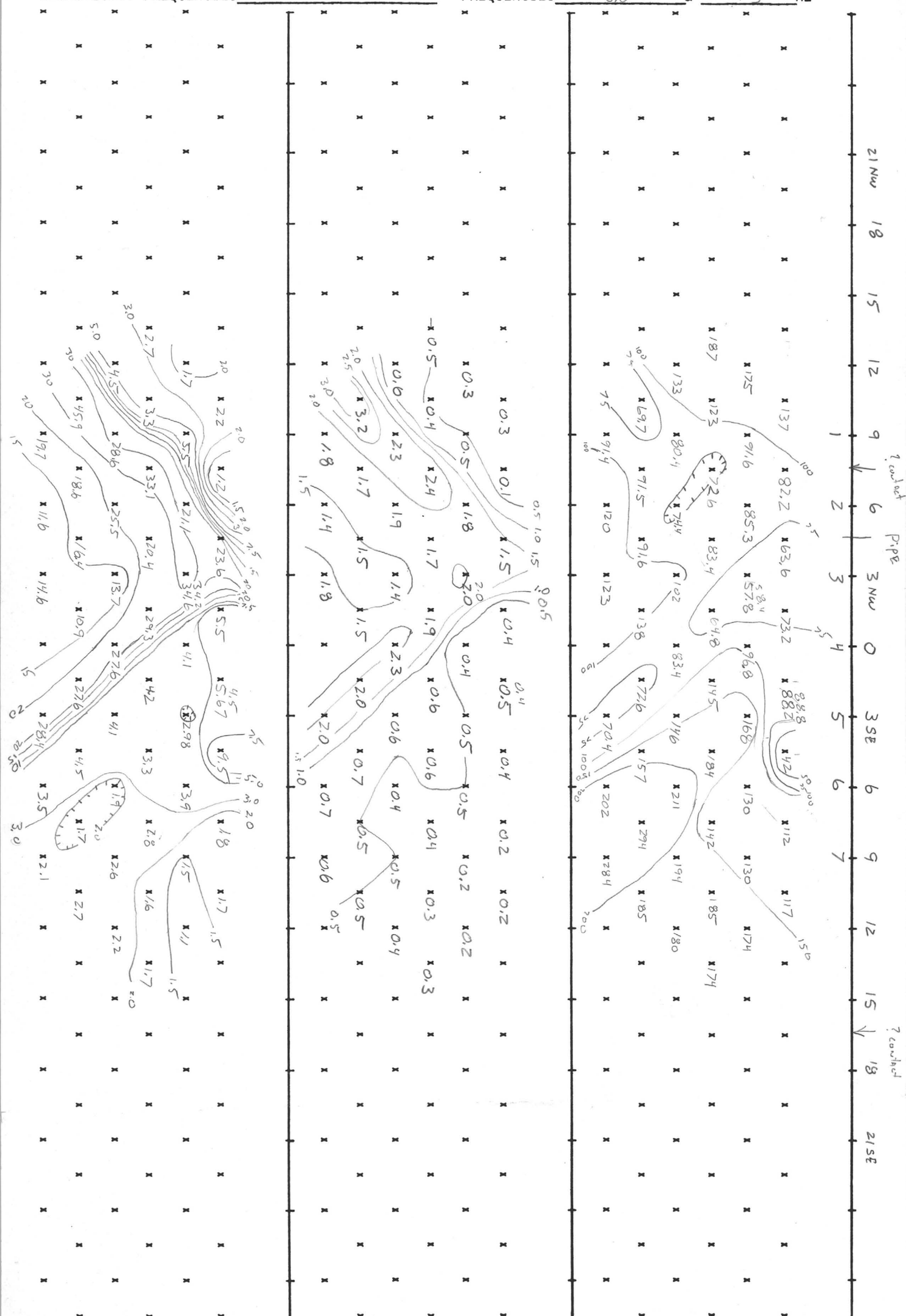
JOB # 1649 CLIENT

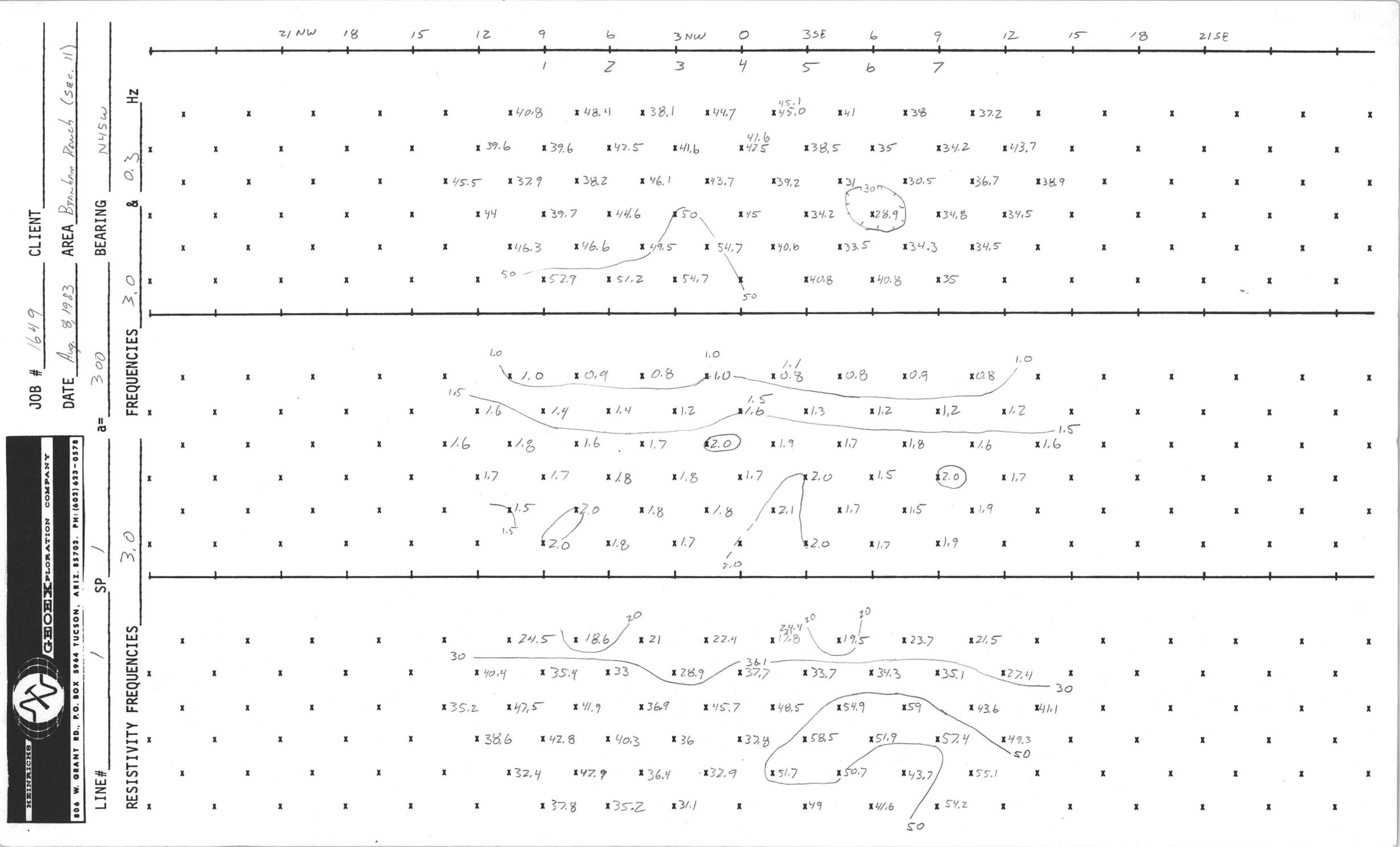
DATE 8-8-83 AREA Bonham Ranch

LINE# 2 SP 1 a= 300 BEARING N40W

RESISTIVITY FREQUENCIES 3.0

FREQUENCIES 3.0 & 0.3 Hz




JOB # 1649 CLIENT
DATE Aug. 8 1983 AREA Brushlam Ranch (Sec. 11)
a= 300 BEARING N45W
FREQUENCIES 3.0 & 0.3 Hz
LINE# 1 SP 1
RESISTIVITY FREQUENCIES 3.0
21NW 18 15 12 9 6 3NW 0 3SE 6 9 12 15 18 21SE
1 2 3 4 5 6 7
GEOEXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

HEINRICHS GEOEXPLORATION COMPANY

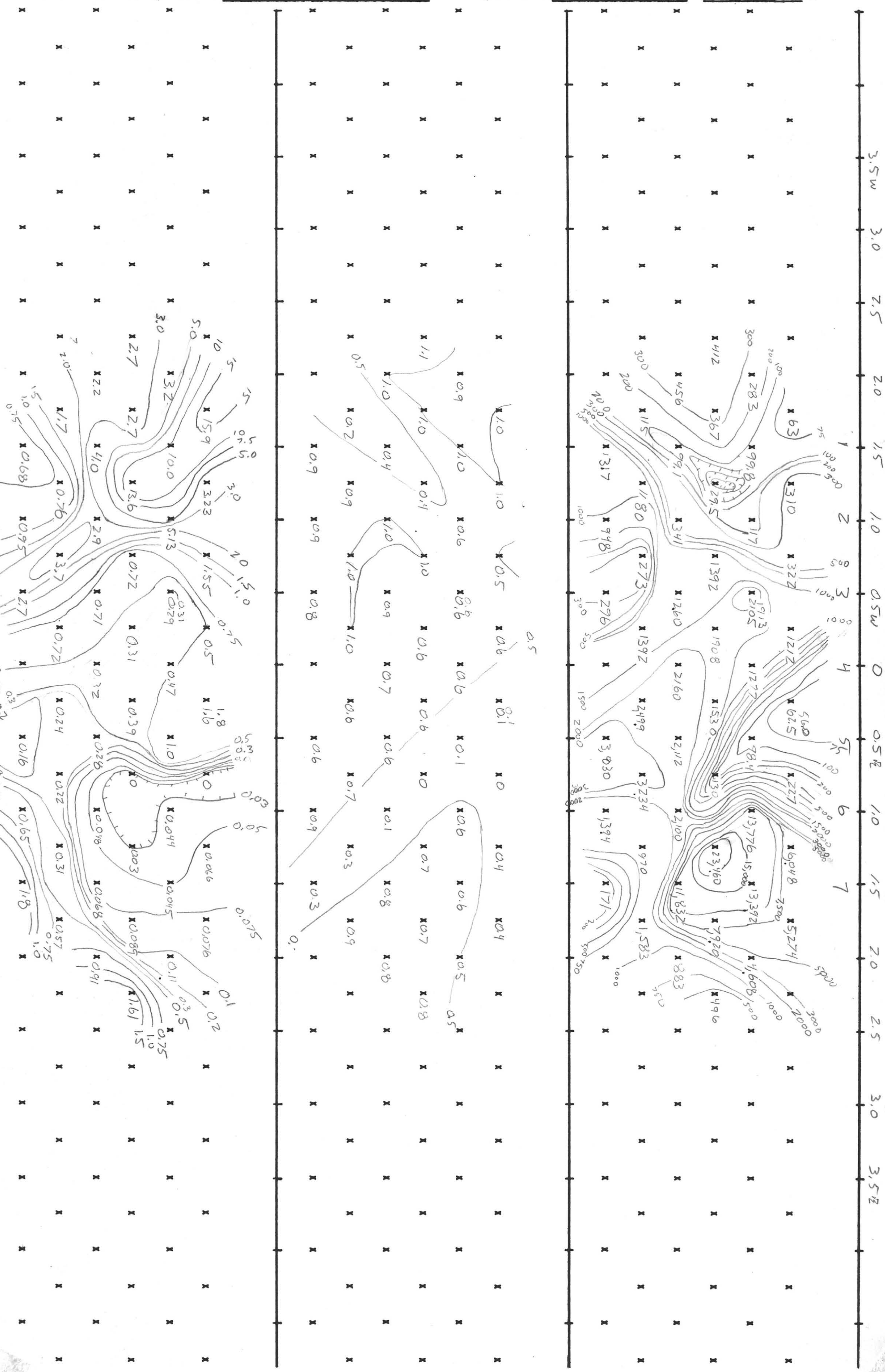
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578

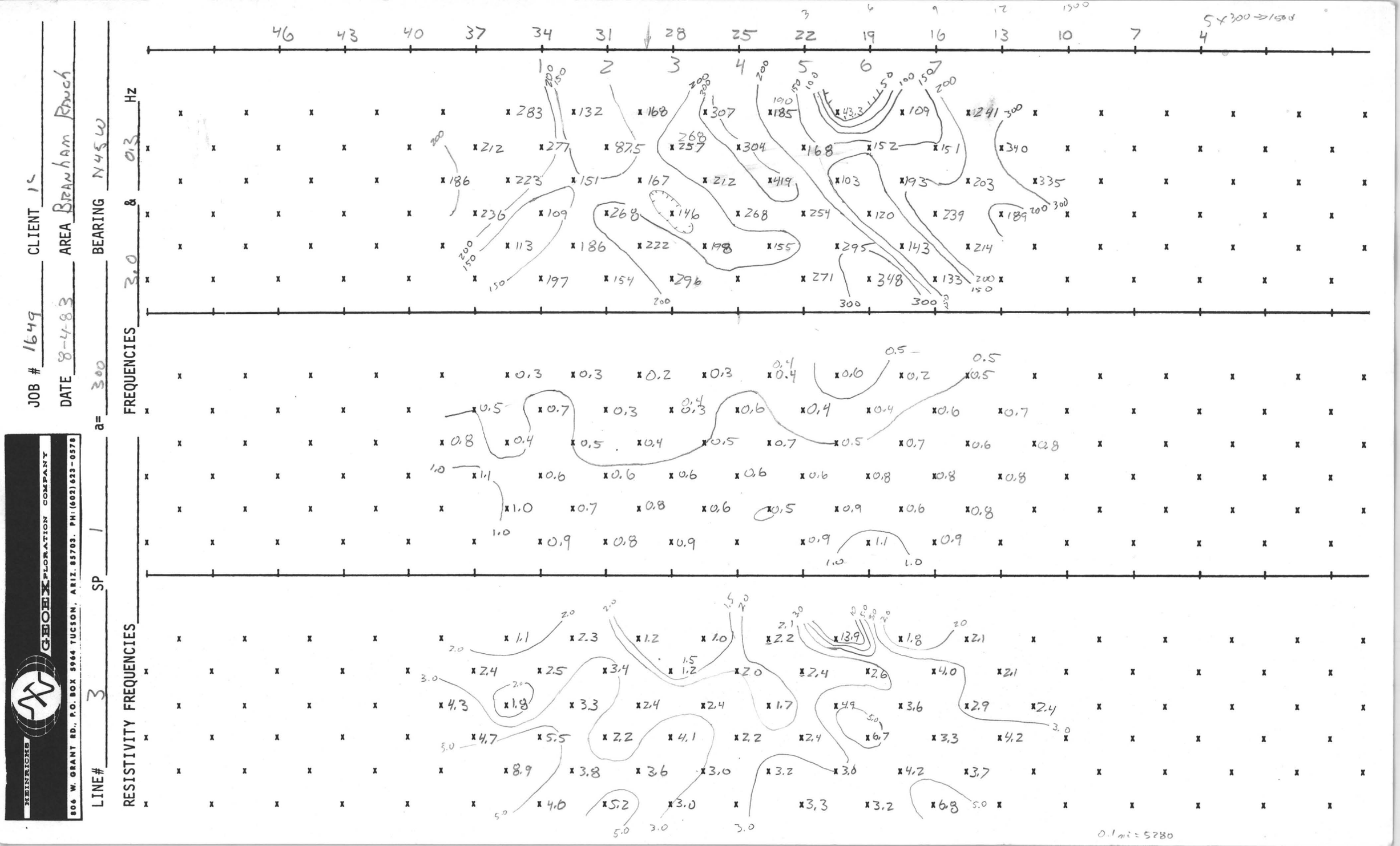
JOB # 1649 CLIENT Sunchief Mines Gabriel Heldey

DATE Aug. 8, 1983 AREA Hickey Cave

LINE# 4 SP 1 a= 50 BEARING E-W

RESISTIVITY FREQUENCIES 3.0 FREQUENCIES 3.0 & 0.3 Hz




JOB # 1649
CLIENT IC
DATE 8-4-83
AREA Branham Ranch
a= 300
BEARING N45W
LINE# 3
SP 1
FREQUENCIES 3.0 & 0.3 Hz
RESISTIVITY FREQUENCIES
HEINRICHS GEOEX EXPLORATION COMPANY
806 W. GRANT RD., P.O. BOX 5964 TUCSON, ARIZ. 85703. PH: (602) 623-0578
5 x 300 = 1500
0.1 mi = 528'

Introduction

At the request of Mr. Gabrial Helday, Geologist for Sunburst Mining Co., Heinrichs GEOEXploration Company conducted a four line preliminary reconnaissance induced polaration (IP), resistivity, and self-potential (SP), in sections 2,5,8,11,17, and 18 of T.21S., R.22E., Cochise County, Arizona as mapped on the 15 minute Tombstone Quadrangle, approximatly 10 miles south of Tombstone, Arizona. The area elevation ranges from 4,200 to over 4,500 feet, with mostly flat terrain. Soil devlopment is good and conditions were moist. Floral cover was moderate and consisted mostly of mesquite, brush, and cactus. Four wheel drive acess is generally good. See plan map appended to this report.

Field work was done during the interim August 2 through August 5, 1983 with Mark E. Anders, geophysicist-geologist as crew chief, assisted by David Swanson, electrical technecian, Baltazar Garceia, mining engineer, and under the supervision by Walter E. Heinrichs Jr., registered professional engineer - geophysicist and geologist.

Objective of this work was to hopefully find definite ore anomalism or at least some indications of possible ore targets for future exploration and drilling on the property. Usally, IP will delinate certain subsurface geological characteristics and particularly the identification, existance, strength, character and distribution of metallic lustred minerals such as sulfides.

Procedures

GEOEX multiple frequency IP equiptment involving a 4 ampere Mark 7 transmsmitter S/N9662S and Mark 4-C Reciever S/N 18691-R was employed. Transmitter was powered by a 8HP Briggs gasoline engine, driving a 400 Hz-120V, 3KVA GE alternator. A transmitting frequency pair of 3.0 and 0.3 was employed. Spectral frequency tests (utilizing a lower frequency pair, i.e.:1.0 and 0.1) done at the beginning of the survey and occasionally during the survey indicated a little adverse only slight spurious coupling effects should be encountered. The collinear dipole-dipole electrode array was used with "spreads" of seven transmitting elctrodes each and dipole lengths of 300' on three of the four lines and 50 foot dipoles on the forth line. Each spread was expanded out to six dipole increments or to 6n and consisted of over fifty data points extending out to 1,200 feet in each direction from the center of the spread for dipole lengths of 300 feet and out to 200 feet from center when utilizing the 50 foot dipoles.

Data results from each line or spread are presented on a "sectional" data sheet, showing successively from top to bottem: the apparent resistivity (ρ_a) in units of ohm-feet, the percent frequency effect (PFE) (dimensionless) and the metal conduction factor (MCF) - all contoured in "sectional" form. It should be stated that these sectional prestations are conventional diagramatic represtations and are not cross sections as such. For this reason, they are sometimes called pseudosections. Indirectly, of course, they do relate to the subsurface geometry

and geology, but the relationships are complex and not always intuitive, (See basis of IP Method appened this report).

Self Potentional (SP) readings, taken in conjunction with the IP work are presented at the bottom of the sectional data sheets in profile form.

INTERPRETATION

Of the four lines run, three show definate resistivity interfaces and contrasts. These indicate formational changes and/or a geologic structure, ~~such as fault~~ effects such as faults,

Line 1 -- Shows resistivities that are constent remarkably across the line and of a mean value most likely representative of alluvium.

Line 2 -- A ~~small~~ weak to moderate (2:1 approximate contrast ratio) resistivity high is beginning to show up on the far northwest end of the line. With another similar magnitude resistivity high on the southeast end of the line. The low in the center is probably indicative of the pipe line rather than the exposed gossanous zone.

Line 3 -- A weak to moderate (1:2 approximate contrast ratio) resistivity low occures about the center of the line.

Line 4 -- A ~~definate~~ strong uncommonly ~~very~~ high resistivities ~~occuring~~ observed between 1E and 2.0E ~~and at a depth of approximatly 50 feet~~. involving ratios from roughly 2:1 to as high as 200:1 from depths a maximum of 50 to 75 feet deep to at or very near the surface.

The PFEs show little or no contrast on three of the four lines. The general PFE backround is also fairly low (0.5-0.8) which indicates very small and/or weak concentrations of sulfides, if any, and/or low or nil sulfide content overall, at least down to a depth of 600 feet of so.

Line 2 shows a PFE response, but this appears to be caused by the Tombstone water line ~~the~~ that cuts across ~~the~~ line #2.

While the contouring PFE shows very minor anomalism in places. What there is most likely can be entirely spurious, being simply caused by increased artificial coupling effects with depth, rather than actual increasing sulfide with depth.

Self potential data on line 2 shows a broad low that is centered about station 0, while line 3 shows a small low centered at station 0. Lines 1&4 show very little SP effects. SP lows can relate to actively oxidizing sulfides which have established a weak potential or "battery" effect in the subsurface- usally across a conducting and interconnencting zone of oxide and sulfide lying respectively both above and below the water table.

~~The SP phenomenon is well documented in connection with massive sulfide deposits but, hardly documented at all in~~

connection with other geologic causes. A partial explantion of why this phomenon has not been more throughly investigated is that the SP method in general has lost its origional populaity over the years in favor of some of the newer methods and consequently many IP practicioners do not even bother to record it at all, let alone tie it across long resconnaissance spreads and plot and try to interpt it.

A table of average results obtained.

	Average	PFE	MCF
Line 1			
Line 2			
Line 3			
LIne 4			

Conclusions and Recommendations

No strong and obvious geophysical indications of major sulfide concentrations and especially disseminated sulfide, were encountered within the respective zones of survey coverage. The zones extend to a maximum distance of from 300' to 600' laterally on either side of each line (where a=300') and ~~similar distance to depth~~ a maximum of 600 feet deep.

~~Definate resistivity contrasts were noted along with minor very weak PFE responces.~~

On line 1 the resistivities are fairly constant across the line, with an average value of 40 ohm-feet probably representative of alluvium because the exposed bedrocks of the area gravels higher resistivities.

The SP data indicate a broad low on lines 2 and 3. Further significance of these results may justify (consideration of) more detailed SP (or perhaps EM, magnetics, or scintillation tests) evaluation of the coverage with closer station and line spacing. Detail across one or more of the existing lows as delineated during the IP work, on 25 to 50 foot station spacing, should be done first. If response from this work appears sufficiently definitive, then closer spaced lines would also be worth considering.

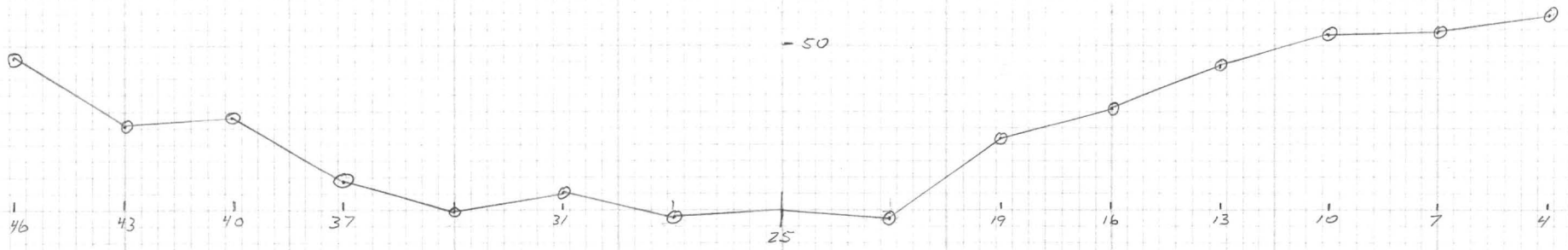
Based on the above, nothing was encountered that indicated definite delineation of ore or of any prime drill targets. Even if the geometric dimensions and associated physical contrasts with the host rocks of that ore were large enough to be detected at those depths, the maximum penetration depth of this survey was at most 600' below the surface. If additional IP coverage were contemplated, it may be desirable to consider running a test line over this area with an array using longer dipoles - say, 500 feet long instead of 300 feet long.

Acknowledgments

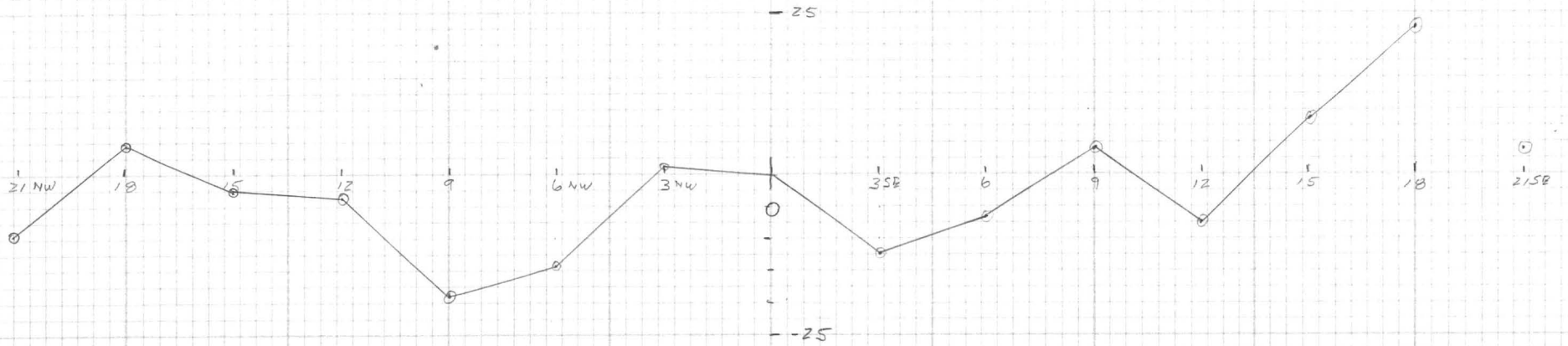
We wish to thank Gabrial Helday and Jack Branham for their complete coperation and assistance in the field by guiding us around. All of this not only helped expedite our efforts, but also alowed them to be more complete and comprehensive, and therefore we trust more useful.

Respectfully submitted,
Heinrichs GEOEXploration Company

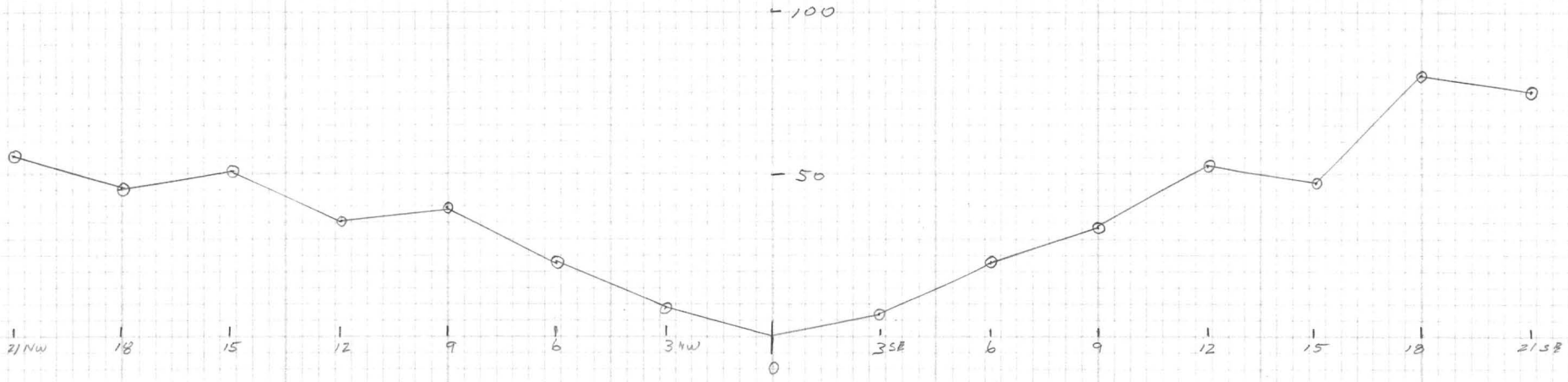
SP Line 3



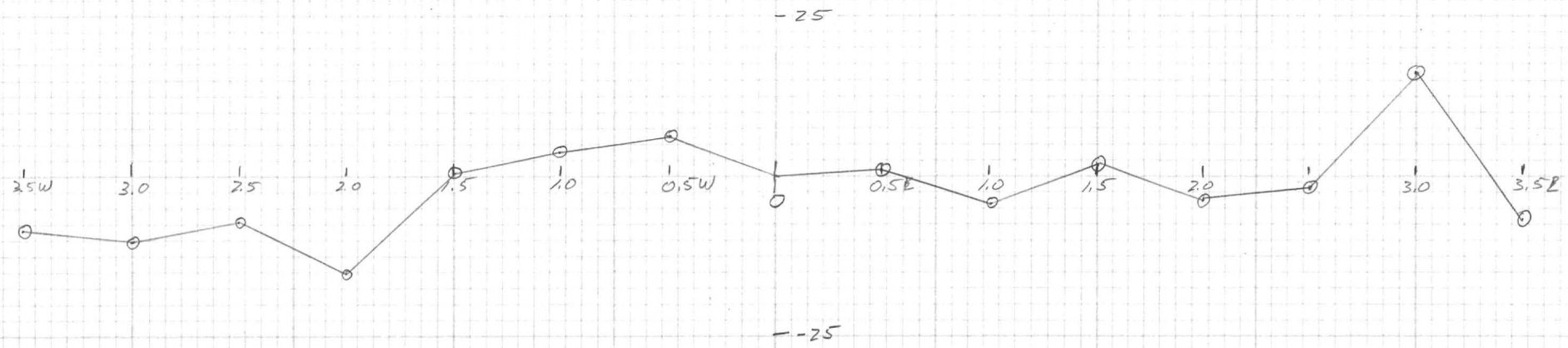
SP Line 1

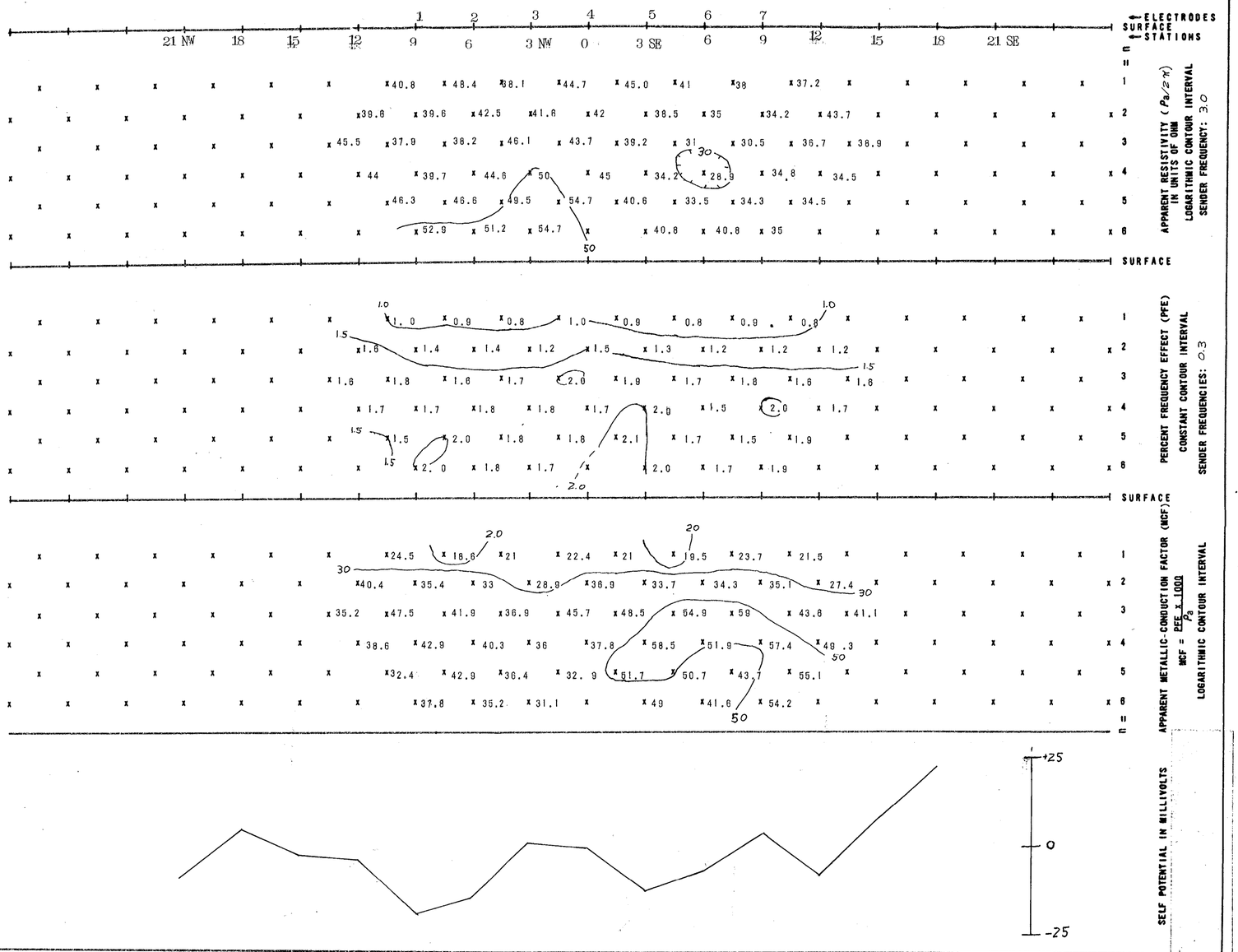


SP Line 2



SP Line 4





LINE NO.
1
SPREAD(S)
1
BEARING
N15W

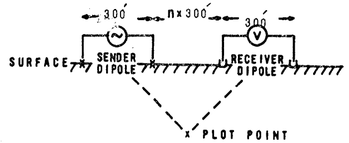
INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of

NORTHWESTERN 1/4 and the SOUTHEASTERN 1/4
of
SECTION 11, T.21S. and R.22E.
COCHISE COUNTY, ARIZONA

RELATIVE ANOMALY STRENGTH

VERY WEAK | WEAK | MODERATE | STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY

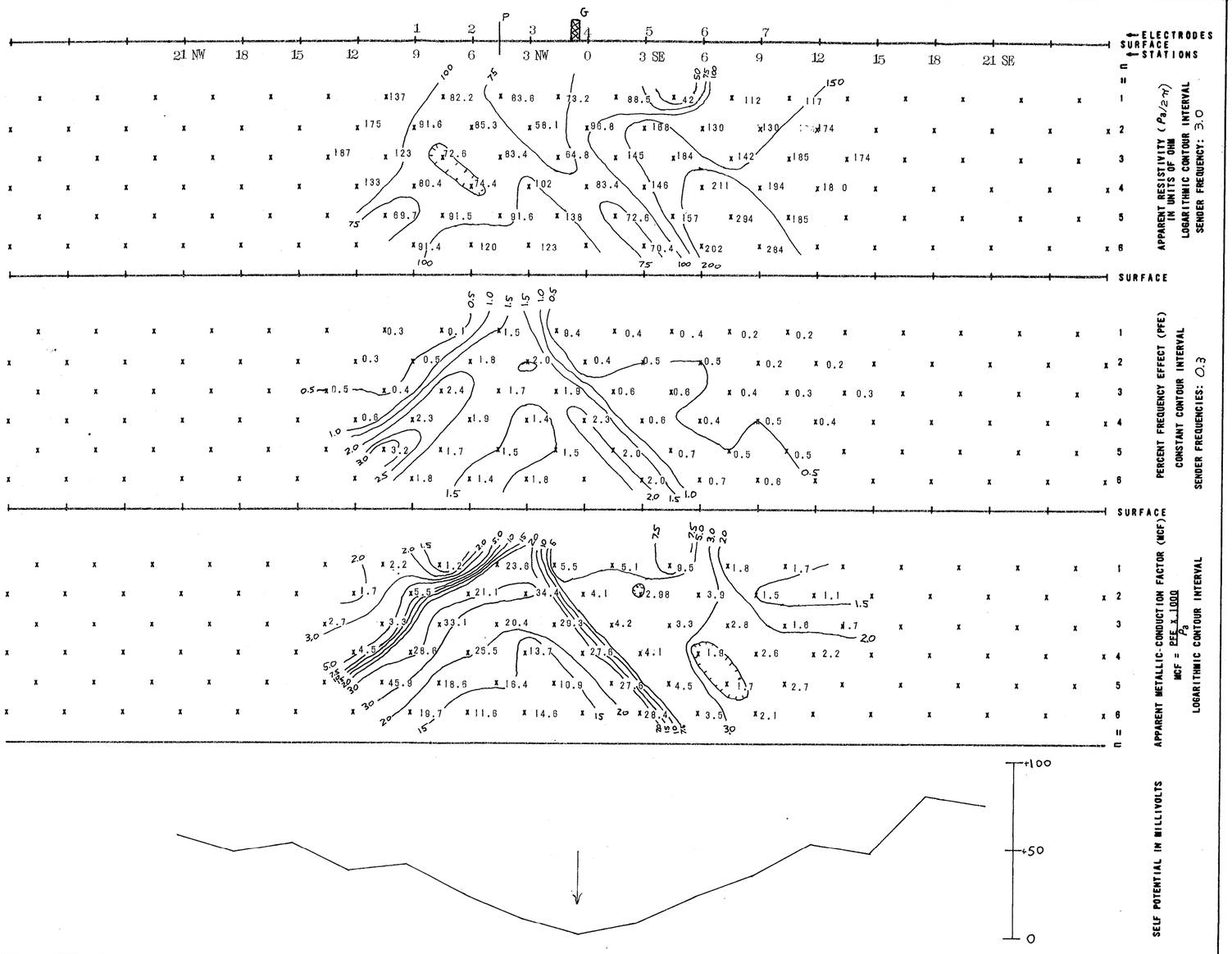


DATE

AUGUST 11, 1983

JOB # 1649

HEINRICHS GEOEXPLORATION COMPANY
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



LINE NO.
2
SPREAD(S)
1
BEARING
N 40 W

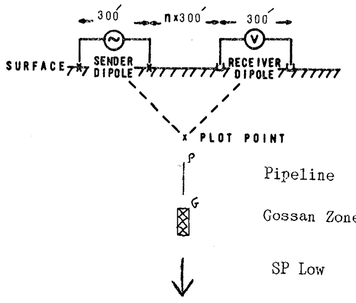
INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of

SOUTHERN 1/2 of SECTION 5
and
NORTHERN 1/2 of SECTION 8
T.21S. and R.22E.
COCHISE COUNTY, ARIZONA

RELATIVE ANOMALY STRENGTH

VERY WEAK WEAK MODERATE STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



DATE
AUGUST 11, 1983

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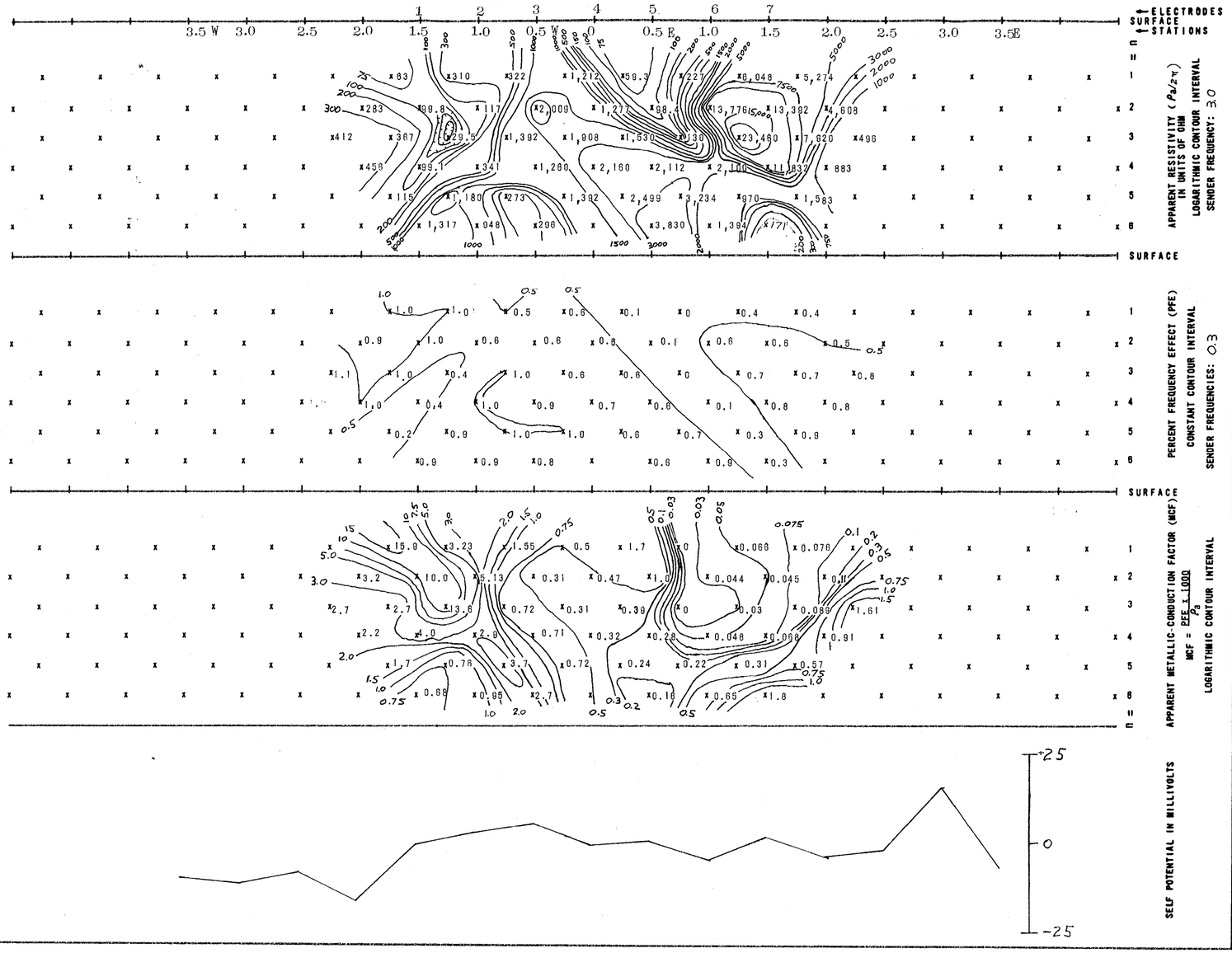
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (602)623-0578



LINE NO. 4

SPREAD(S) 1

BEARING W — E

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of

HICKEY CAVE AREA

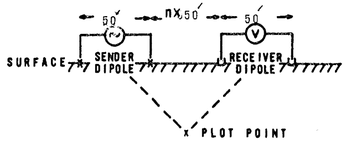
CENTER of the NORTHERN 1/2 of SECTION 2 of T.21S. and R22E.

COCHISE COUNTY, ARIZONA

RELATIVE ANOMALY STRENGTH

VERY WEAK — WEAK — MODERATE — STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



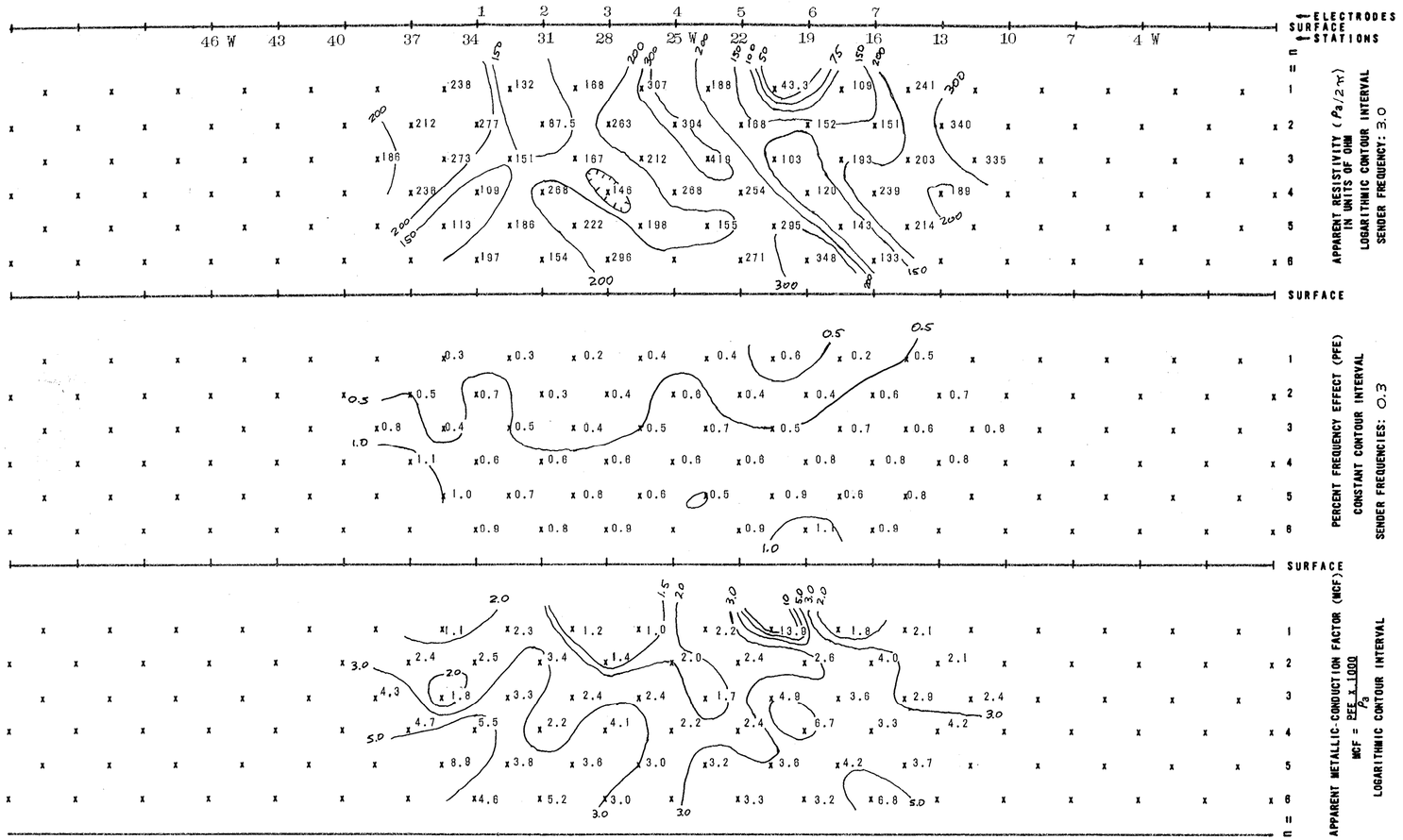
DATE

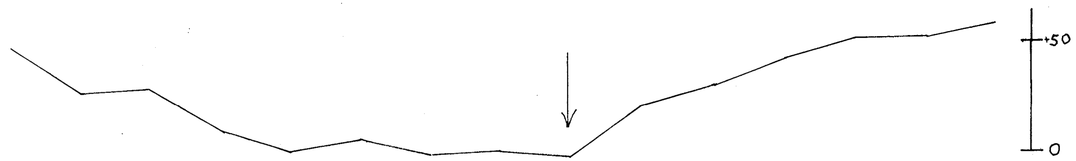
AUGUST 11, 1983

Job # 1619

HEINRICHS GEOEXPLORATION COMPANY

606 W. GRANT ROAD, POST OFFICE BOX 5864, TUCSON, ARIZ., 85703, PHONE: (602)623-0578





LINE NO.
3
SPREAD(S)
1
BEARING
N 45 W

INDUCED POLARIZATION TRAVERSE SECTIONAL DATA SHEET of

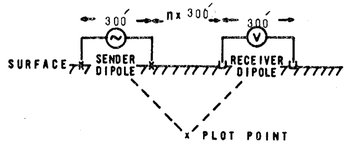
SOUTHWESTERN 1/4 of SECTION 17
and
NORTHEASTERN 1/4 of SECTION 18
T.21S. and R.22E.

COCHISE COUNTY, ARIZONA

RELATIVE ANOMALY STRENGTH

VERY WEAK | WEAK | MODERATE | STRONG

DIPOLE-DIPOLE ELECTRODE ARRAY



SP Low

DATE

AUGUST 11, 1983

Job # 1649

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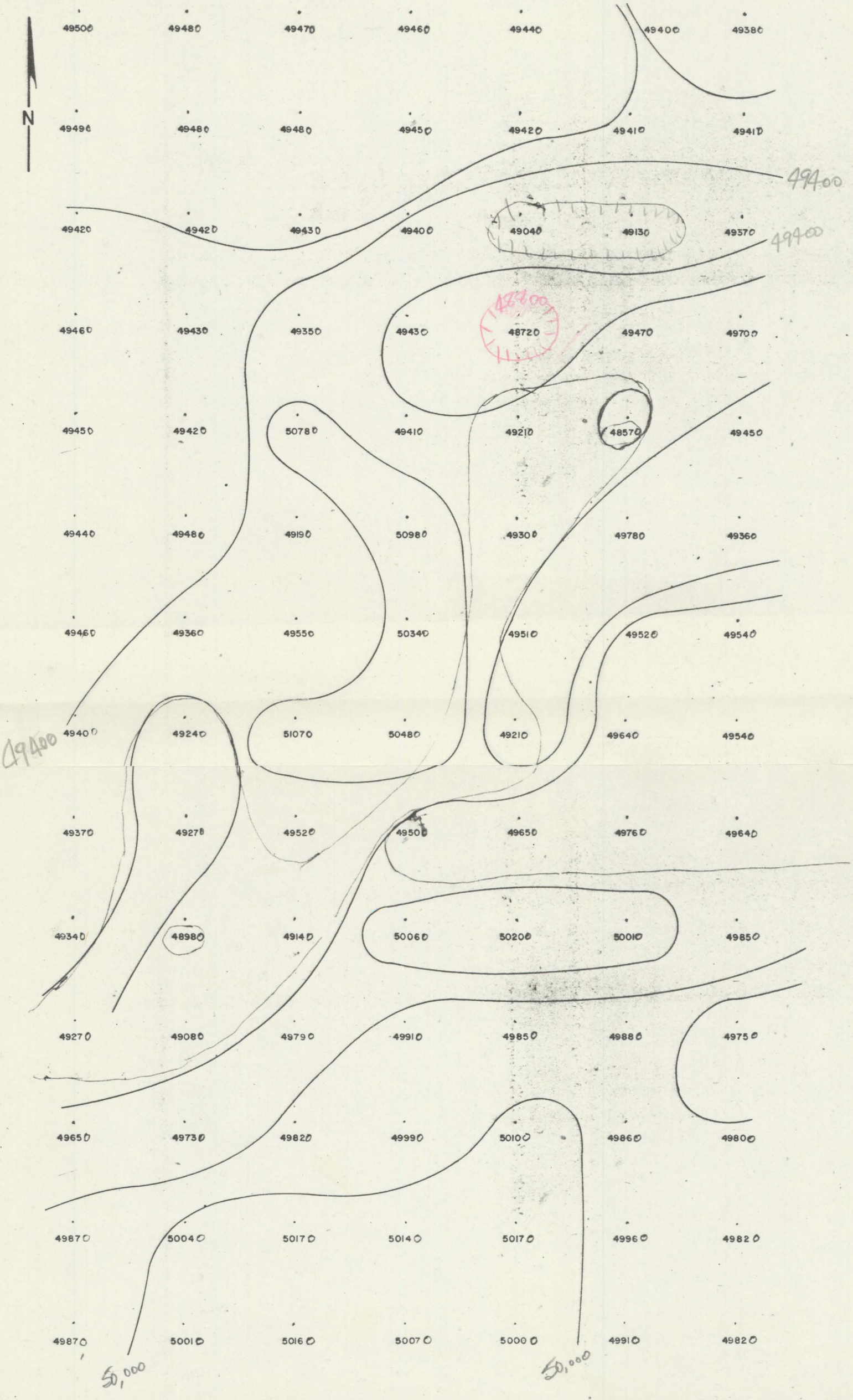
806 W. GRANT ROAD, POST OFFICE BOX 5964, TUCSON, ARIZ., 85703, PHONE: (802)823-0578



MAGNETOMETRIC SURVEY

INSTRUMENT USED: MAGNETOMETER

NAME & MODEL OF INSTRUMENT:
PORTABLE PROTON MAGNETOMETER
MODEL G 816

GAMMA SENSITIVITY: 10 GAMMA

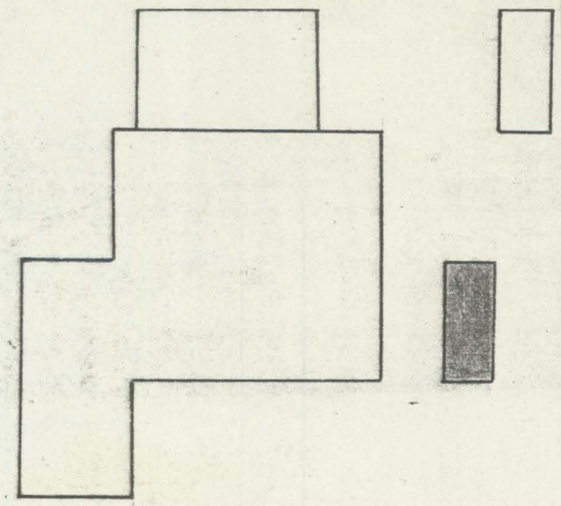
INSTRUMENT OPERATOR: JACK BRANHAM

MAPPING AND PLOTTING: G. HELDAY

SCALE: 1" = 100'

LOCATION OF SURVEY

SURVEYED AREA IS SHADED



SCALE: 1" = 2000'

MAGNETOMETRIC SURVEY

INSTRUMENT USED : MAGNETOMETER

NAME & MODEL OF INSTRUMENT:
PROTABLE PROTON MAGNETOMETER
MODEL G 816

GAMMA SENSITIVITY: 10 GAMMA

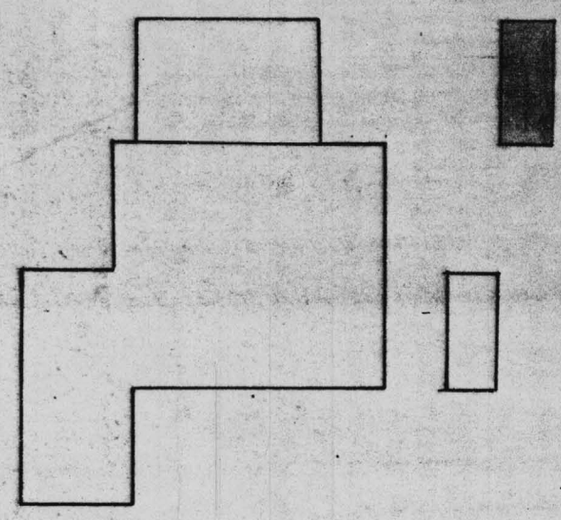
INSTRUMENT OPERATOR: JACK BRANHAM

MAPPING & PLOTTING: G. HELDAY

SCALE: 1" = 100'

LOCATION OF SURVEY

SURVEYED AREA IS SHADED



SCALE: 1" = 2000'

N

49500 49500 49500 49500

4948 4957 4939 4948 4953 4949 4954

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49500 49500

4944 4947 4945 4940 4955 4947 4945

49500 49400 49400 49500

4965 4907 4951 4932 4958 4936 4944

5007 4948 4981 4960 4916 4959 4928

4939 4971 4915 5003 4962 4953 4961

Hi

4957 4988 5010 4950 4961 4958 4984

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4943 5013 4991 4929 4954 4964 4987

4980 4958 4982 4945 4976 4983 4967

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Hi

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49500 49500 5000 5000