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VERTICAL INTENSITY

MAGNETIC SURVEY

FOR

F + S

JALANDER No 5792

BASE % I.P. LINE 1

S 26 W

MONTIERTH

TERRELL

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N E ½ (2)

FAS
MAG SURVEY
I.P. LINE 1
3- -67

STA	TIME	RANGE	POLARITY	READ	COMMENTS
0/0	4:12	1	+	120	BASE
100 NE	4:15	1	+	125	
200	4:16	1	+	122	
300	4:17	1	+	122	
400	4:18	1	+	120	
500	4:18	1	+	118	
600	4:20	1	+	120	
700	4:20	1	+	122	
800	4:21	1	+	118	
900	4:22	1	+	128	
1000	4:23	1	+	144	CAR BOD 50'
1100	4:24	1	+	130	
1200	4:25	1	+	120	
1300	4:25	1	+	127	
1400	4:26	1	+	115	
1500	4:27	1	+	113	
1600	4:27	1	+	115	
1700	4:28	1	+	118	
1800	4:28	1	+	123	
1900	4:29	1	+	132	
2000	4:29	1	+	138	
2100	4:30	1	+	148	
2200	4:30	1	+	172	
2300	4:31	1	+	152	
2400	4:31	1	+	118	
2500	4:32	1	+	102	
2600	4:32	1	+	87	
2700	4:33	1	+	108	
2800	4:34	1	+	105	
2900	4:34	1	+	104	
3000	4:35	1	+	84	

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3180	4:37	1	+	58		
3200						
0/0	4:58	1	+	120		

①

S W ½

F+S
MAG SURVEY
I.P. LINE 1
3- -67

TR.MK. REG. U.S. PAT. OFF.

STA	TIME	RANGE	POLARITY	READ	COMMENTS
0/0	3:08	1	+	120	BASE
100SW	3:15	1	+	118	
200	3:17	1	+	122	
300	3:18	1	+	122	
400	3:20	1	+	124	DH 75' NW
500	3:21	1	+	127	
600	3:22	1	+	118	
700	3:23	1	+	115	
800	3:24	1	+	118	
900	3:25	1	+	110	
1000	3:26	1	+	112	
1100	3:27	1	+	112	
1200	3:28	1	+	115	
1300	3:29	1	+	112	FENCE 50' N.
1400	3:31	1	+	110	
1500	3:32	1	+	108	
1600	3:33	1	+	115	
1700	3:34	1	+	104	
1800	3:35	1	+	106	
1900	3:36	1	+	122	
2000	3:37	1	+	123	
2100	3:38	1	+	138	
2200	3:39	1	+	130	
2300	3:40	1	+	114	
2400	3:41	1	+	115	
2500	3:41	1	+	112	CLAIM COR. 15' SW
2600	3:42	1	+	108	
2700	3:43	1	+	128	POT STA.
2800	3:44	1	+	124	
2900	3:45	1	+	138	
3000	3:45	1	+	110	

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NW½ Line 1

Computed By H.R.M. 19 MAY 1967

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Sta	Pol	Rang	Time	Read	+ 550
0/0	+	1	1:46	65	1200
3100	+	1	2:12	112	1670
3200	+	1	2:12	68	1230
3300	+	1	2:13	68	1230
3400	+	1	2:14	74	1290
0/0	+	1	2:31	65	1200
700					
800					
900					
1000					
1100					
1200					
1300					
1400	+	1	1:59	57	1120
1500	+	1	2:00	58	1130
1600	+	1	2:01	62	1170
1700	+	1	2:02	66	1210
1800	+	1	2:02	72	1270
1900	+	1	2:02	74	1290
2000	+	1	2:03	80	1350
2100	+	1	2:03	105	1600
2200	+	1	2:04	128	1830
2300	+	1	2:05	112	1670
2400	+	1	2:06	62	1170
2500	+	1	2:07	26	810
2600	+	1	2:08	23	780
2700	+	1	2:09	50	1050
28	+	1	2:10	45	1000
4259	+	1	2:10	50	1050
30	+	1	2:11	56	1110

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[redacted]
F.A.S.
5-16-67

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STA	POL	RANGE	TIME	READ	+590
0/0	+	1	1:01	64	1230
100	+	1	1:02	70	1290
200	+	1	1:03	77	1360
300	+	1	1:04	112	1710
400	+	1	1:04	112	1710
500	+	1	1:05	63	1220
600	+	1	1:06	58	1170
700	+	1	1:07	62	1210
800	+	1	1:07	60	1190
900	+	1	1:08	55	1140
1000	+	1	1:08	60	1190

SE 1/2

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ELECTRODE 2 SPREAD 1 % S-59-W

F+S I.P. LINE 2

MAGNETICS

5-16-67

TR.MK. REG. U.S. PAT. OFF.

STA	POL	RANGE	TIME	READ	
0	+	1	12:18	64	1230 BASE 2000 SW
100	+	1	12:19	60	1190
200	+	1	12:20	78	1370
300	+	1	12:21	68	1270
400	+	1	12:22	124	1830
500	+	1	1222	133	1920 ct ele H.Z
600	+	1	1224	132	1890
700	+	1	1224	86	1450 FC 15-pt
800	+	1	1225	110	1690
900	+	1	1226	95	1540
1000	+	1	1227	76	1350
1100	+	1	1228	102	1610
1200	+	1	1228	92	1510
1300	+	1	1229	84	1430
1400	+	2	1230	88	3230
1500	+	1	1232	96	1550
1600	+	1	1233	48	1070
1700	+	1	1234	42	1010
1800	+	1	1236	117	1760
1900	+	1	1237	88	1470
2000	+	1	1238	106	1650

NW 1/2

N 32° W

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F & S contracting

Chris 4/4/67

Send one Report to
MacAllister & one to Shea

Phone call from Shea today

SM

1500
1250

Kino Peak area 5/8/67

Mr. Allister – for F & S Con

Friday or Monday unless notified

Nelson knows also

Magnetic

Will call today or tomorrow if change

→ Butt a 250' Dipole spd to SW of Line 1

→ Run one 250' X spd. at 205W (our survey)

→ Run ½ 250' spd with info centered at 22NE (our survey) along old line

→ Run 100' mag along I.P. lines where giving new coverage.

Cover mag survey to NE as far as cross small o/c and 25° NE bearing

∴ 2½ spreads 250 a

+ 3250' mag + NE correction ≈ 3000'

F & S (Mr. Shea) called: 4/4/67

1- Copy to Ed-Medlesits

Report.

Air Mail Thursday latest.

WWM & E.G.H.

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT F+S

LINE 1 HALF NE SP. 1 DATE 3-30

PAGE 1

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	0-250N	250-500N		500-750N	→		750-1000N		—	—
RANGE										
VOLTAGE										
CURRENT	500	400	500	350	400	500	600	350	400	500
SEND	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		4-5
RECEIVE	1000-1250N		→		1250	1500N				CAL
RANGE										
VOLTAGE										
CURRENT	600	350	400	500	600	350	400			

FREQUENCIES .05 3.0

SENDER NO. MK1 26315

OPERATOR MONTIERTH

RECEIVER NO.

OPERATOR HURLEY

COMMENTS:

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT F-S (1910)
LINE 1 HALF NE SP. DATE

PAGE 10

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	0-250	250-500		500-750	→		750-1000	→		→
RANGE	1000	100	30	100	10	10	100	30	10	10
DC 1	346/345	42/43	10.6/11	46/46	79.5/79.5	5.15/5.4	49.5/49.5	10.6/10.9	2.35/2.35	2.1/2.15
DC 2	345/345	42/43	10.6/11	46/46	79.5/79.5	5.15/5.4	49.5/49.5	10.6/10.9	2.35/2.35	2.1/2.15
DC 3	345/345	42/43	10.6/11	46/46	79.5/79.5	5.15/5.4	49.5/49.5	10.6/10.9	2.35/2.35	2.1/2.15
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	345	42.5	10.8	46.0	7.95	5.27	49.5	10.75	2.35	2.125
AC 1	335	42	10.6	44.5	7.8.5	5.2	48	10.5	2.3	2.1
AC 2	335	42	10.6	44.5	7.8.5	5.18	48	10.5	2.3	2.1
AC AVG.	335	42.0	10.6	44.5	7.85	5.19	48.0	10.5	2.30	2.10
S.P.	+3	+26		+18			+22			
AC NOISE	.02	.02		.02			.02			
POT RES.										

4.06
4.06
4.06
4.02
4.08
4.13
4.06
4.09
4.06
4.07
4.06
4.02
4.06

4.056
2.028

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT F-S (AJO)
LINE 1 HALF NE SP. ____ DATE ____

PAGE

SEND	4-5	3-4	2-3	1-2	4-5	5-6	2-3	1-2		0a0
RECEIVE	1000-	1250	→	→	1250	-1500	→	→		4-5
RANGE	30	10	3	3	10	3	1	1		100
DC 1	16.2/16.5	5.0/5.2	1.33/1.35	1.27/1.2	4.8/4.6	2.02/2.04				49.8/49.8
DC 2	16.2/16.5	5.0/5.2	1.35/1.30	1.27/1.2	4.8/4.6	2.02/2.04				49.8/49.8
DC 3	16.2/16.5	5.0/5.2	1.4/1.25	1.27/1.2	4.8/4.6	1.98/2.1				49.8/49.8
DC 4			1.34/1.35	1.27/1.2		2.03/2.03				
DC 5			1.3/1.36			2.06/2.0				
DC 6			1.35/1.34			2.07/1.99				
DC 7			1.35/1.34			2.03/2.02				
DC 8										
DC AVG.	16.35	5.10	1.336	1.235	4.70	2.028				49.8
AC 1	16.1	4.95	1.31	1.2	4.55	1.98	.60	.62		49.5
AC 2	16.1	4.95	1.30	1.2	4.55	1.98				49.5
AC AVG.	16.10	4.95	1.305	1.20	4.55	1.98	0.60	0.62		49.5
S.P.	-29					+23				
AC NOISE	.02					.03				
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT F-S (1950)
LINE 1 HALF SW SP. ____ DATE ____

PAGE

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	0-250	250-500		500-750		→	750-1000			→
RANGE	100	1000	30	100	100	10	100	30	30	10
DC 1	70.2/70.2	240/240	13/13	39/38	32/32	5.1/5.1	42/41	10.2/10.0	8.7/8.8	3.35/3.4
DC 2	70.2/70.2	240/240	13/13	39/38	32/32	5.1/5.1	42/41	10.2/10	8.7/8.8	3.35/3.4
DC 3	70.2/70.2	240/240	13/13	39/38	32/32	5.1/5.1	42/41	10.2/10	8.7/8.8	3.35/3.4
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	70.2	240	13.0	38.5	32.0	5.10	41.5	10.1	8.75	3.38
AC 1	69.2	230	12.8	38	31.5	5.05	41	10	8.7	3.35
AC 2	69.2	230	12.8	38	31.5	5.03	40.5	10	8.6	3.35
AC AVG.	69.2	230	12.8	38.0	31.5	5.04	40.8	10.0	8.65	3.35
S.P.	+10	-10		+23			-2			
AC NOISE	.02	.02		.02			.01			
POT RES.										

4.12
4.12
2.12
4.14
2.11
4.12
3.14
6.50
2.12
3.13
3.12
2.11
1.12
2.
6.12

3.52
3.53
3.57
3.38
3.55
3.60
3.52
3.62
3.52
3.37
3.53
3.63
3.50
3.10
2.50

76.

3.51

1.75

PAGE

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT F-S (A50)

LINE 1 HALF SW SP. ____ DATE ____

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		1-2
RECEIVE	1000-1250		→		1250-1500		→			
RANGE	30	10	10	3	10	10	10	3		100
DC 1	8.9/8.9	3.7/3.75	6.2/6.4	2.07/2.05	6.2/6.2	2.7/2.62	4.85/4.8	1.8/1.77		50/50
DC 2	8.5/8.9	3.7/3.75	6.2/6.4	2.07/2.05	6.2/6.2	2.7/2.65	4.85/4.8	1.85/1.68		50/50
DC 3	8.9/8.0	3.7/3.75	6.2/6.4	2.07/2.02	6.2/6.2	2.7/2.65	4.85/4.8	1.7/1.85		50/50
DC 4	8.5/8.9			2.1/2.04		2.7/2.65	4.85/4.8	1.75/1.77		
DC 5				2.05/2.07				1.85/1.67		
DC 6				2.08/2.04				1.7/1.83		
DC 7				2.07/2.05				1.8/1.7		
DC 8				2.07/2.05				1.6/1.9		
DC AVG.	8.90	3.73	6.30	2.06	6.20	2.675	4.83	1.755		
AC 1	8.9	3.7	6.25	2.03	6.05	2.63	4.75	1.73		49.9
AC 2	8.8	3.7	6.25	2.03	6.05	2.6	4.75	1.73		49.9
AC AVG.	8.85	3.70	6.25	2.03	6.05	2.615	4.75	1.73		
S.P.	+6				+1					
AC NOISE	.02				.02					
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT K+S

LINE 1 HALF SW SP. 1 DATE 3-30

PAGE 2

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	0-250s	250-500s	500-750s	→	750-1000s	→				
RANGE										
VOLTAGE										
CURRENT	600	350	600	400	350	600	500	400	350	600
SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		1-2
RECEIVE	1000-1250s	→			1250-1500s	→				CAL
RANGE										
VOLTAGE										
CURRENT	500	400	350	600	500	400	350	600		500

FREQUENCIES .05 3.0

SENDER NO. MK1 2631S

OPERATOR MONTIERTH

RECEIVER NO.

OPERATOR HURLEY

COMMENTS:

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project F&S - Kino Peak Line 1 - NE ½ Field date 3/30/67 Data page_____ Comp. date 4/1/67. Comp by C.S.L.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4
(B) Receive	0-2.5 NE	2.5-5.0 →		5.0-7.5 →			7.5-10.0	NE →			10.0-12.5 →	
(C) n separation												
(D) I	.5	.4	.5	.35	.4	.5	.6	.35	.4	.5	.6	.35
(E) Vdc (avg)	34.5	42.5	10.8	46.0	7.95	5.27	49.5	10.75	2.35	2.125	16.35	5.10
(F) DCcal	1.004											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15	3	7.5
(H) ρ dc=ExFxGx10^3/D	520	80	65	99	60	79	62	93	44	64	82	110
(I) Vac Σ	33.5	42.0	10.6	44.5	7.85	5.19	48.0	10.5	2.30	2.10	16.10	4.95
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.994											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	2.3	0.7	1.2	2.8	0.8	0.9	2.4	1.8	1.5	0.7	0.9	2.4
(O) MCF=(M-1)(10^5)/H	4	9	18	28	13	11	39	19	34	11	11	22

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	2-3	1-2	4-5	3-4	2-3	1-2		C 46				
(B) Receive	→	→	12.5-15.0 NE		→			4-5				
(C) n separation												
(D) I	.4	.5	.6	.35	.4	.5		500				
(E) Vdc (avg)	1.336	1.235	4.70	2.028	6.6	0.62		49.8				
(F) DCcal	→							1.004				
(G) Kn x 10^{-3}	15	26.25	7.5	15	26.25	42						
(H) ρ dc=ExFxGx10^3/D	50	65	59	87	40	52						
(I) Vac Σ	1.305	1.20	4.55	1.98				49.5				
(J) AC noise x 2												
(K) Vac (corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	→							.994				
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	1.7	2.2	2.8	1.9								
(O) MCF=(M-1)(10^5)/H	34	34	47	22								

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project F&S - Kimrey Line 1 - SW½ Field date 3/30/67 Data page_____ Comp. date 4/1/67 Comp by C.S.L.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3
(B) Receive	0-2.5 SW	2.5-5	→	5-7.5	→	→	7.5-10	→	→	→	10-12.5	→
(C) n separation												
(D) I	.6	.35	.6	.4	.35	.6	.5	.4	.35	.6	.5	.4
(E) Vdc (avg)	70.2	2.40	13.0	38.5	22.0	5.10	41.5	10.1	8.75	3.38	8.90	3.72
(F) DCcal	1.000											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15	3	7.5
(H) ρ dc=ExFxGx10^3/D	88	514	65	72	274	64	62	76	187	84	53	70
(I) Vac Σ	69.2	2.30	12.8	38.0	31.5	5.04	40.8	10.0	8.65	3.35	8.85	3.70
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.998											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	1.1	4.0	1.3	1.1	1.3	0.9	1.5	0.8	1.0	0.7	0.4	0.6
(O) MCF=(M-1)(10^5)/H	12	8	20	15	5	14	24	11	5	8	8	9

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	3-4	4-5	1-2	2-3	3-4	4-5		CAL				
(B) Receive	→	→	12.5	15.0 SW	→	→		1-2				
(C) n separation												
(D) I	.35	.6	.5	.4	.35	.6		500				
(E) Vdc (avg)	6.30	2.06	6.20	2.675	4.83	1.755		50.0				
(F) DCcal	→	→	→	→	→	→		1.000				
(G) Kn x 10^{-3}	15	26.25	7.5	15	26.25	42						
(H) ρ dc=ExFxGx10^3/D	270	90	93	100	363	123						
(I) Vac Σ	6.25	2.03	6.05	2.615	4.75	1.73		49.9				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	→	→	→	→	→	→		.998				
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	0.6	1.2	2.3	2.1	1.5	1.2						
(O) MCF=(M-1)(10^5)/H	2	13	25	21	4	10						

Spread 2 S.W. END

PAGE 2

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT F+S

LINE 1 HALF NE SP. 2 SW DATE 5-17

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	15-17.5	12.5-15	→	10-12.5	→	→	7.5-10	→	→	→
RANGE										
VOLTAGE	370	390	370	380	390	370	360	380	330	370
CURRENT	800	700	800	700	700	800	500	700	600	800
SEND	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		4-5
RECEIVE	5-7.5	→	→	→	2.5-5	→	→	→		CAL
RANGE										
VOLTAGE	360	380	330	370	360	380	330	370		360
CURRENT	500	700	600	800	500	700	600	800		500

FREQUENCIES .05 3.0

SENDER NO. 2631 S

OPERATOR MONTIERTH

RECEIVER NO.

OPERATOR HURLEY

COMMENTS:

PAGE

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT Eds

LINE 1 HALF NE SP. 2 DATE 5-17

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	0-250	250-	500	500	-750	→	750-	1000	→	→
RANGE	300	300	30	1000	100	10	300	100	10	10
DC 1	105/106	85/85	51/50.3	410/410	30.2/29.9	7.98/8.1	124/126	52/56	6.17/6.57	3.0/2.99
DC 2	105/106	85/85	51/50.3	410/410	30.2/29.9	7.98/8.1	124/126	52/56	6.17/6.57	3.0/2.99
DC 3	105/106	85/85	51/50.3	410/410	30.2/29.9	7.98/8.1	124/126	52/56	6.17/6.57	3.0/2.99
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	211	170	102.3	820	60.1	16.08	250	108	12.74	5.99
AC 1	104	84	50.2	405	30.1	7.98	126	54.4	6.4	3.0
AC 2	104	84	50.2	405	30.1	7.98	130	~~55.5~~	6.4	3.0
AC AVG.	208	168	100.4	810	60.2	15.96	~~256~~	~~109.9~~	12.8	6.0
S.P.	-20	-11		-1			202	108.8		
AC NOISE	.105	.101		.103			.104			
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT FYS

LINE 1 HALF NE SP. 2 DATE 5-16

PAGE

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	0-250	250-500		500-750		→	750-1000		→	
RANGE	100	100	30	100	30					
DC 1	65.1/65.3	55/54.3	9.5/8.6	258/258	21.4/19.2					
DC 2	65.1/65.3	55/54.3	9.5/8.6	258/258	21.4/19.2					
DC 3	65.1/65.3	55/54.3	9.5/8.6	258/258	21.4/19.2					
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	130.4	109.3	18.1							
AC 1	63.8	55.5	9.2	260	20.7					
AC 2	63.8	55.5	9.2	261	20.7					
AC AVG.										
S.P.	-26	+26								
AC NOISE	.05	.8								
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Fds
LINE 1 HALF NE SP. 2 DATE 5-17

PAGE

SEND	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal
RECEIVE	1000	1250	→	→	1250	1500	→	→		4-5
RANGE	100	100	3	3	10	10	3	1		100
DC 1	49.5/51.9	35/38.5	1.87/1.84	1.14/1.23	5.45/5.58	4.58/4.8	.54/.88			48.1/48.1
DC 2	49.5/51.9	35/38.5	1.84/1.85	1.06/1.34	5.45/5.58	4.58/4.8	.87/1.04			48.1/48.1
DC 3	49.5/51.9	35/38.5	1.94/1.83	1.12/1.29	5.45/5.58	4.58/4.8	.91/.96			48.1/48.1
DC 4	49.5/51.9		2.05/1.79	1.02/1.30			.90/1.01			
DC 5			2.1/1.7	1.05/1.20			.85/1.04			
DC 6			2.16/1.83	1.06/1.31			.90/.99			
DC 7			1.9/1.63	1.0/1.37			.89/1.03			
DC 8			1.82/2.0	1.13/1.25			.83/1.1			
DC AVG.	101.8	73.5	1.8/2.05	1.08/1.29	11.03	9.78	.52/.97			96.2
AC 1	51	36.7	1.89	1.16	5.43	4.85	.93	.7		48
AC 2	51	36.7	1.89	1.16	5.42	4.83	.93			47.9
AC AVG.	102	73.4	3.78	2.32	10.85	9.68	1.86	1.4?		95.9
S.P.	-15				-16					
AC NOISE	102				103					
POT RES.								-62		

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT #4 S

LINE 1 HALF SW SP. 2 DATE

PAGE 1

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	17.5-20	20-22.5	→	22.5-25	→	→	25-27.5	→	→	→
RANGE										
VOLTAGE	375	310	375	320	310	375	250	320	310	375
CURRENT	500	500	500	500	500	500	500	500	500	500
SEND	1-2	2-3	3-4	4 5	1-2	2-3	3-4	4-5	1-2	2-3
RECEIVE	22.5 30	→	→	→	30-32.5	→	→	→	CAL	CAL
RANGE										
VOLTAGE	250	320	310	375	250	320	310	375	250	
CURRENT	500	500	500	500	500	500	500	500	500	500

FREQUENCIES .05 3.0

SENDER NO. 26315

OPERATOR MONTIERTH

RECEIVER NO.

OPERATOR HURLEY

COMMENTS:

PAGE

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT E+S
LINE 1 HALF SW SP. 2 DATE 5-16

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	0-250	250-500		500-750		→	750-1000			→
RANGE	300	100	30	100	30	10	100	30	10	10
DC 1	81/81	67.7/67.8	14.2/14.3	47.8/48.4	14.1/14.3	4.61/4.68	45/44.7	10.4/11.1	5:42/5:39	2.05/2.38
DC 2	81/81	67.7/67.8	14.2/14.3	47.8/48.4	14.1/14.3	4.61/4.68	45/44.7	10.4/11.1	5:42/5:39	2.05/2.38
DC 3	81/81	67.7/67.8	14.2/14.3	47.8/48.4	14.1/14.3	4.61/4.68	45/44.7	10.4/11.1	5:42/5:39	2.05/2.38
DC 4										2.05/2.38
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	162	135.5	28.5	96.2	28.4	9.29	89.7	21.5	10.81	4.43
AC 1	82	66.3	14.1	47.6	14	4.58	44	10.6	5.38	2.17
AC 2	82	66.3	14	47.8	13.9	4.58	44	10.6	5.37	2.17
AC AVG.	164	132.6	28.1	95.4	27.9	9.16	88	21.2	10.75	4.34
S.P.	-30	+4		-24			+21			
AC NOISE	.02	.05		.03			.03			
POT RES.	2.2	1.94	95.6							

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT F&S

LINE 1 HALF SW SP. 2 DATE 5-16

PAGE

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	Cal	Cal
RECEIVE	1000	1250	→	→	1250	1500	→	→	1-2	2-3
RANGE	30	10	10	30	10	3	3	1	100	100
DC 1	9.7/5.9	4.13/4.1	2.4/2.5	1.16/1.24	3.0/2.57	1.44/1.58	1.02/1.07		48.7/48.3	48.5/48.3
DC 2	9.7/5.9	4.13/4.1	2.4/2.5	1.16/1.24	3.0/2.57	1.40/1.6	1.01/1.09		48.3/48.3	48.5/48.3
DC 3	9.7/5.9	4.13/4.1	2.4/2.5	1.17/1.22	3.0/2.57	1.42/1.59	1.03/1.06		48.3/48.3	48.5/48.3
DC 4	9.7/5.9			1.19/1.2		1.44/1.57	1.05/1.05			
DC 5				1.19/1.2		1.44/1.58	1.04/1.05			
DC 6				1.22/1.7		1.40/1.63	1.02/1.07			
DC 7						1.42/1.58	1.01/1.08			
DC 8						1.40/1.62	1.03/1.06			
DC AVG.	19.6	8.23	4.9	2.39	5.97	3.00	2.095			
AC 1	9.6	4.01	2.4	1.16	3.0	1.45	1.03	.565	96.6	97.0
AC 2	9.6	4.01	2.4	1.16	2.99	1.46	1.03		48.2	48.3
AC AVG.	19.2	8.02	4.8	2.32	5.99	2.92	2.06	1.13	48.2	48.3
S.P.	-7				+26				96.4	96.6
AC NOISE	.03				.04			-10		
POT RES.										

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project F&S Line 1 - NE½ Field date 5/17/67 Data page_____ Comp. date 5/19/67 Comp by C.S.L.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive												
(C) n separation												
(D) I	.8	.7	.8x3.16	.7	.7	.8	.5	.7	.6	.8		
(E) Vdc (avg)	211	170	101.3	820	60.1	16.08	250	108.0	12.74	5.99		
(F) DCcal	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(G) Kn x 10^{-3}	0.520											
(H) ρ dc=ExFxGx10^3/D	103	95	62	457	134	78	195	241	83	58		
(I) Vac Σ	208	168	100.4	810	60.2	15.96	252	108.8	12.80	6.00		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal. USED	1.010											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	2.5	2.2	1.9	2.2	0.8	1.8	0.2	0.3	0.5	0.8		
(O) MCF=(M-1)(10^5)/H	24	23	31	5	6	23	1	1	6	14		

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		CAL		
(B) Receive												
(C) n separation												
(D) I	.5	.7	.6	.8	.5	.7	.6	.8		5.00		
(E) Vdc (avg)	101.8	73.5	3.82	2.31	11.03	9.78	1.89	—		96.2		
(F) DCcal										.520		
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	318	410	50	39	86	109	43	38				
(I) Vac Σ	102.0	73.4	3.78	2.32	10.85	9.68	1.86	1.47		~~95.9~~		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	0.8	1.1	2.1	0.6	2.7	2.0	2.6	—				
(O) MCF=(M-1)(10^5)/H	3	3	42	15	31	18	66	—				

93 86
2.3
25

$$\frac{1.225 \times 4.67}{10.25 \times 0.48} \cong \frac{1 \times 5}{10 \times 100} = \frac{5}{10}$$

.005

$$\frac{5}{.000}$$

$$\frac{6}{10^{-6}}$$

.00006

$$\frac{5}{10}$$

.1

.01

.001

.00001

0.0000582

$$\frac{5}{8 \times 10^{-4}} = \frac{5 \times 10^{0}}{8 \times 10^{-4}} = \frac{5}{8} \times 10^{0-4} = \frac{5}{8} \times 10^{-4}$$

0.00006

9.11×10^{-31}

1.26×10^{3}

$$\begin{array}{r} .00006 \\ 5000\overline{)\,300000} \\ 4\ 0 \end{array}$$

9.101

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project F & S Line 1- 5W ½ Field date 5/16/67 Data page_____ Comp. date 5/19/67 Comp by C.S.L.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive												
(C) n separation												
(D) I	0.5											
(E) Vdc (avg)	162	135.5	28.5	96.2	28.4	9.29	89.7	21.5	10.81	4.43		
(F) DCcal	.517											
(G) Kn x 10^{-3}	0.75	0.75	3	.75	3	2.5	.75	3	2.5	1.5		
(H) ρdc=ExFxGx10^3/D	126	105	88	75	88	72	70	67	84	69		
(I) Vac Σ	164	132.6	28.1	95.4	27.9	9.16	88	21.2	10.75	4.34		
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.010											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	[illegible]	2.2	2.4	1.8	2.8	2.4	3.0	2.4	1.6	3.1		
(O) MCF=(M-1)(10^5)/H	-2	30	27	28	32	33	43	36	19	45		

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		C.L.		
(B) Receive												
(C) n separation												
(D) I										500		
(E) Vdc (avg)	19.6	8.23	4.9	2.49	5.97	3.005	2.095	—	—	96.8		
(F) DCcal										.517		
(G) Kn x 10^{-3}	3	2.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	61	64	76	65	46	47	57	49				
(I) Vac Σ	19.2	8.02	4.8	2.32	5.99	2.92	2.06	1.13?		96.6		
(J) AC noise x 2												
(K) Vac (corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	3.1	3.6	3.1	4.0	0.7	3.9	2.7	—				
(O) MCF=(M-1)(10^5)/H	51	56	41	62	15	83	47	—				

Line 1
Spread 3

PAGE 5

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT F + S

LINE 3 HALF SW SP. 1 DATE 5-17

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1 2	2-3	3-4	4-5
RECEIVE	0-2.5 SW	2.5-5 SW		5-7.5	SW →		7.5-10	SW →		
RANGE										
VOLTAGE	330	320	350	340	320	350	330	340	320	350
CURRENT	900	1000	1000	1000	1000	1000	600	1000	1000	1000
SEND	1-2	2-3	3-4	4-5	1-2	2 3	3-4	4-5		1-2
RECEIVE	10-12.5 SW		→		12.5-15 SW		→			CHL
RANGE										
VOLTAGE	330	340	320	350	330	340	320	350		
CURRENT	600	1000	1000	1000	1000	1000	1000	1000		500

FREQUENCIES _____ _____

SENDER NO.

OPERATOR

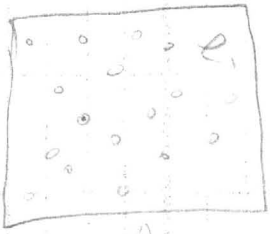
RECEIVER NO.

OPERATOR

COMMENTS: 0
-11
-35
-41
-74
-85
-99

3.11
3.06
2.96
3.04
3.04
3.04
.04
.04
.04

1.71
1.68
71
80
76
75
75
75
75
71
74
~~74~~
81



$\rho_2 << \ell_1$

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT F85 SW
LINE 3 HALF SW SP. DATE

PAGE

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE										
RANGE	100	300	100	300	30	10	300	100	10	10
DC 1	62.5/63.3	103/103	22/21	141/145	14/14	4.75/4.85	95/96	33/35	4.85/4.8	2.01/2.1
DC 2	62.5/63.3	103/103	22/21	141/145	14/14	4.75/4.85	95/96	33/35	4.85/4.8	2.01/2.1
DC 3	62.5/63.3	103/103	22/21	141/145	14/14	4.75/4.85	95/96	33/35	4.85/4.8	2.01/2.1
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	125.8	206	43.0	286	28.0	9.60	191	68.0	9.75	4.10
AC 1	60.3	99	20.7	136	13.5	4.63	92	32.5	4.4	2.0
AC 2	60.3	99	20.7	136	13.5	4.63	92	32.5	4.4	2.0
AC AVG.	120.6	198	41.4	272	27.0	9.26	184	65.0	9.28	4.00
S.P.	-11	-24		-6			-33			
AC NOISE	.12	.09		.09			.075			
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT FJ5W

LINE J HALF SP. DATE

PAGE

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal
RECEIVE										1-2
RANGE	100	30	10	3	30	10	3	3		
DC 1	26/27	18/17.4	3.0/3.02	1.8/1.5	10/10.7	8.2/8.0	1.48/1.62	.86/.85		47/47
DC 2	26/27	18/17.4	3.0/3.02	1.85/1.45	10/10.7	8.2/8.0	1.44/1.52	.93/.88		47/47
DC 3	26/27	18/17.4	3.0/3.02	1.5/1.4	10/10.7	8.2/8.0	1.52/1.52	.52/.84		
DC 4				1.9/1.4			1.52/1.52	.91/.84		
DC 5							1.52/1.52	.51/.84		
DC 6								.87/.84		
DC 7										
DC 8										
DC AVG.	53	35.4	6.02	3.31	20.7	16.20	3.05	1.74		94
AC 1	25.8	17.1	2.92	1.58	10	7.79	1.46	.84		45.5
AC 2	25.8	17.1	2.92	1.58	10	7.79	1.46	.84		45.5
AC AVG.	51.6	34.2	5.84	3.16	20.0	15.58	2.92	1.68		91
S.P.	+29				-54					
AC NOISE	.065				.05					
POT RES.										

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

(15p3)

Page_____

Project F & S Line 3 - SW Field date 5/17/62 Data page_____ Comp. date 5/18/62. Comp by C.S.L.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive												
(C) n separation												
(D) I	.9	1.0	1.0	1.0	1.0	1.0	0.6	1.0	1.0	1.0		
(E) Vdc (avg)	125.8	206	43.0	286	28.0	9.60	191	68	9.75	4.10		
(F) DCcal	.532	→										
(G) Kn x 10^{-3}	0.75	0.75	3	0.75	3	7.5	0.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	56	82	69	114	45	38	127	109	39	33		
(I) Vac Σ	120.6	198	41.4	272	27.0	9.26	184	65	9.28	400		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	0.968	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	1.0	0.7	0.5	1.8	0.4	0.4	0.5	1.3	1.7	-0.5		
(O) MCF=(M-1)(10^5)/H	18	9	7	16	9	11	4	12	44	-15		

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		CAL		
(B) Receive										1-2		
(C) n separation												
(D) I	0.6	1.0	1.0	1.0	→					.5		
(E) Vdc (avg)	53.0	35.4	6.02	3.31	20.7	16.20	3.05	1.79		94		
(F) DCcal	→									.532		
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	141	141	48	46	83	129	43	39				
(I) Vac Σ	51.6	34.2	5.84	3.16	20.0	15.58	2.92	1.68		51		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	0.968	→								.968		
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	-0.4	0.2	-0.2	1.4	0.2	0.7	1.1	0.3				
(O) MCF=(M-1)(10^5)/H	-4	1	-4	30	2	5	26	8				

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT F+S
LINE I HALF SW SP. ____ DATE 3-30

SEND	4-5	4-6	4-7	4-8		2-3				
RECEIVE	SET 1	2	3	4		CAL				
RANGE										
VOLTAGE										
CURRENT	600	600	700	800		500				
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES .05 3.0
SENDER NO. MKI 26315
OPERATOR MONTIERTH
RECEIVER NO.
OPERATOR HURLEY

COMMENTS:
EXPANDER LINE 1

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT S-F (DSO)

LINE 1 EXT HALF ____ SP. 88 DATE 3-30-6

PAGE

SEND	1	2	3	4						Cal
RECEIVE	250	500	750	1000						23
RANGE	30	30	30	10						49/49
DC 1	13.2/12.6	9.6/9.7	10/9.9	4.6/4.6						49/49
DC 2	13.2/12.6	9.6/9.7	10/10	4.6/4.6						49/49
DC 3	13.2/12.6	9.6/9.7	10/10	4.6/4.6						
DC 4	13.2/12.6	9.6/9.7	10/10	4.6/4.6						
DC 5			10/10	4.6/4.6						
DC 6										
DC 7										
DC 8										
DC AVG.	12.9	9.65	9.99	4.6						
AC 1	12.6	9.5	9.6	4.48						48.2
AC 2	12.6	9.5	9.6	4.43						48.
AC AVG.	12.6	9.5	9.6	4.43						
S.P.	-11	-10	-1	-4						
AC NOISE	.06	.02	.03	.02						
POT RES.										

STA	TIME	Range & Blasity	Read	Comments
IN	12:02	+1	123	

HEINRICHS GEOEXPLORATION CO.

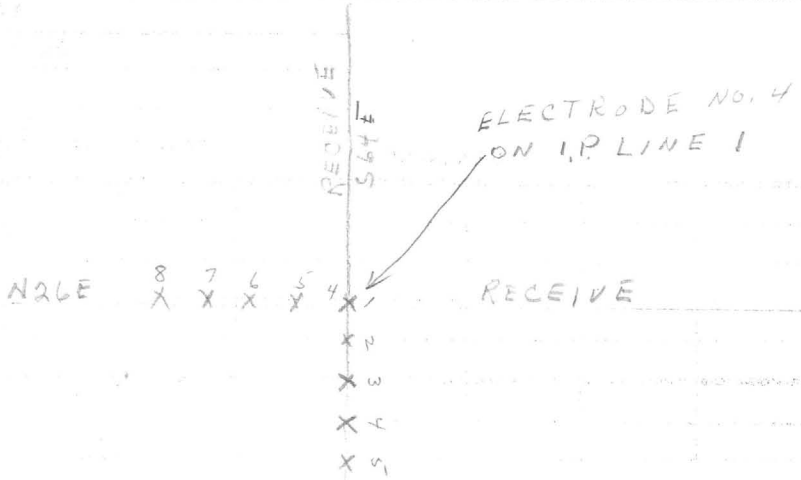
I. P. SENDER NOTES

PROJECT F+S
LINE 2 HALF SE SP. EXP. DATE 3-31

SEND	1-2	1-3	1-4	1-5		1-2				
RECEIVE	SET 1	2	3	4		CAL				
RANGE										
VOLTAGE										
CURRENT	800	600	700	700		500				
SEND										
RECEIVE										
RANGE										
VOLTAGE										
CURRENT										

FREQUENCIES .05 3.0
SENDER NO. MK1 26315
OPERATOR MONTIERTH
RECEIVER NO.
OPERATOR HURLEY

COMMENTS:
EXPANDER No. 2 S64E
SET UP ARRAY ON BACK


RECEIVE
SEND
ELECTRODE NO. 4
ON I.P LINE 1
NOLE
8 7 6 5 4 1
RECEIVE
2
3
4
5

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT F-S (AJO)
LINE 2EXD HALF ____ SP. 92 DATE 2-5-67

PAGE

SEND	1	2	3	4						Cal
RECEIVE	250	500	750	1000	n=2					100
RANGE	100	100	30	10		.5 .4	3.71	.15		45.5/48.5
DC 1	42/42	40/39.	11.5/11	2.9/3.2		.2 .4	4			48.5/48.5
DC 2	42/42	40/39.	11.2/11.3	2.9/3.2		.5 .5				48.5/48.5
DC 3	42/42	40/39.	11.3/11	2.9/3.2		.6 .5				
DC 4	42/42	40/39	11.4/11.3	3.0/3.0		.3				
DC 5		40/39	11.5/11	3.0/2.9		.4				
DC 6			11.4/11	3.1/2.8		.7				
DC 7			11.4/11	3.05/2.8		.6				
DC 8			11.5/11	3.4/2.6		.5				
DC AVG.	42.0	39.5	11.24	3.01		.4				48.5
AC 1	41	38.5	11	2.85		.4				48.3
AC 2	41	38.5	10.8	2.85						48.3
AC AVG.	41.0	38.5	10.9	2.85						48.3
S.P.	0	-29	+26	-10		Over for note				
AC NOISE	.02	.02	.03	.03						
POT RES.										

KHST STATION POT MAN MOVE TO THE NORTH
TO MISS FENCE - 100' FROM FENCE

Kino Peak

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project F & S Line Expander 1&2 Field date_____ Data page_____ Comp. date 3/31/67 Comp by C. L.

	#2						#1					
(A) Send	1-2	1-3	-4	1-5	CAL		4-5	4-6	4-7	4-8	CAL	
(B) Receive		range wrong?			1-2						2-3	
(C) n separation												
(D) I	.8	.6	.7	.7	500		.6	.6	.7	.8	500	
(E) Vdc (avg)	42.0	39.5	11.24	3.01	48.5		12.9	9.65	9.99	4.60	49.0	
(F) DCcal					1.030						1.020	
(G) Kn x 10^{-3}	3	6	9	12			3	6	9	12		
(H) ρ dc=ExFxGx10^3/D	163	~~40~~ 129	149	53.3			66	98	131	70		
(I) Vac Σ	41.0	38.5	10.9	2.85	48.3		12.6	9.50	9.60	4.43	48.1	
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.997										~~.981~~ use .997	
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	2.0	2.3	2.9	5.2			2.0	1.2	3.8	3.5		
(O) MCF=(M-1)(10^5)/H	12	~~6~~ 18	19	97			30	12	29	50		
	250'	500'	750'	1000'			250'	500'	750'	1000'		

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send												
(B) Receive												
(C) n separation												
(D) I												
(E) Vdc (avg)												
(F) DCcal												
(G) Kn x 10^{-3}												
(H) ρ dc=ExFxGx10^3/D												
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac (corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)												
(O) MCF=(M-1)(10^5)/H												

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT F + S

LINE 2 HALF NW SP. 1 DATE 5-17

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	0-2.5 N	2.5-5 NW	→	5-7.5 N	NW	→	7.5-10	NW	→	→
RANGE										
VOLTAGE	375	330	375	300	330	375	330	300	330	375
CURRENT	600	800	600	1000	800	600	600	1000	800	600
SEND	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		4-5
RECEIVE	10-12.5 NW	→	→	→	12.5-15 NW	→	→	→		CAL
RANGE										
VOLTAGE	330	300	330	375	330	300	330	375		270
CURRENT	600	1000	800	600	600	1000	800	600		500

FREQUENCIES .05 3.0

SENDER NO. 2631 5

OPERATOR MONTIERTH

RECEIVER NO.

OPERATOR HURLEY

COMMENTS:

Ya Ud. a trabajar
mañana

10.75	10.60	5.00
.35	.55	5.15
.35	.50	5.10
.70	.65	4.70
.35	.75	4.65
.40	.55	5.05
.35	.65	5.30
	.79	5.20
	.69	5.00
		5.00
	.70	5.20
	.65	5.30
	.55	5.05
	.55	4.90
	.55	4.87
	.50	75.47
	9.25	
	15	15

615

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT F & S
LINE 2 HALF N59W SP. 1 DATE 5-17

PAGE

SEND	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2
RECEIVE	0-250	250-500		500-750		→	750-1000		→	
RANGE	100	300	100	300	100	30	300	100	30	10
DC 1	55/55.7	100/58	26.2/24.5	90/90	26.8/26	8.3/8.2	54/53	27.3/26.5	11.2/10	4.01/4.0
DC 2	55/55.7	100/58	26.2/24.5	90/90	26.8/26	8.3/8.6	54/53	27.3/26.5	11.2/10	4.01/4.0
DC 3	55/55.7	100/58	26.2/24.5	90/90	26.8/26	8.3/8.6	54/53	27.3/26.5	11.2/10	4.01/4.0
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	118.7	198	50.8	180	51.8	16.9	187	53.8	21.2	8.01
AC 1	58.5	98	25.3	88	25.6	8.4	93	26.5	10.5	3.9
AC 2	58.5	97	25.3	88	25.6	8.3	92	26.5	10.5	3.9
AC AVG.	117.0	195	50.6	176	51.2	16.7	185	53.0	21.0	7.80
S.P.	+33	-35		+5			-49			
AC NOISE	.05	.2		.04			.35			
POT RES.										

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT F+S

LINE 2 HALF N59W SP. 1 DATE 5-17

PAGE

SEND	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		4-5
RECEIVE	1000-1250		→	→	1250-1500		→	→		4-5
RANGE	100	30	10	10	30	10	10			10
DC 1	27.5/27	11.7/11.4	5.3/5.05	2.0/2.1	10.6/10.7	5.15/5.45	2.65/2.35			48.5/48.5
DC 2	27.5/27	11.7/11.4	5.3/5.05	2.0/2.1	10.6/10.7	5.1/5.4	2.8/2.3			48.5/48.5
DC 3	27.5/27	11.7/11.4	5.25/5.1	2.0/2.1	10.6/10.7	5.25/5.5	2.4/2.25			48.5/48.5
DC 4			5.3/5.05			5.05/5.6	2.4/2.5			
DC 5						5.19/5.5	2.7/2.3			
DC 6						5.2/5.45	2.7/2.5			
DC 7						5.1/5.45	2.8/2.25			
DC 8						5.1/5.4	2.65/2.2			97.0
DC AVG.	54.9	23.1	10.35	4.10	21.3	10.62	5.03			47.5
AC 1	27.5	11.5	5.1	2.03	10.6	5.2	2.45			47.5
AC 2	27.3	11.5	5.1	2.03	10.6	5.2	2.45			
AC AVG.	54.6	23.0	10.2	4.06	21.2	10.4	4.90			95.8
S.P.	+74				-88					
AC NOISE	.6				.8					
POT RES.										

S59E

PAGE 4

HEINRICHS GEOEXPLORATION CO.

I. P. SENDER NOTES

PROJECT _____

LINE 2 HALF SE SP. 1 DATE 5-17

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	0-2.5 SE	2.5-5 SE	→	5-7.5 SE	→	→	7.5-10 SE	→	→	→
RANGE										
VOLTAGE	330	300	330	330	300	330	375	330	300	330
CURRENT	600	1000	600	800	1000	600	600	800	1000	600
SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		1-2
RECEIVE	10-12.5 SE	→	→	→	12.5-15 SE	→	→	→		CAL
RANGE										
VOLTAGE	375	330	300	330	375	330	300	330		300
CURRENT	600	800	1000	600	600	800	1000	600		500

FREQUENCIES _____ _____

SENDER NO.

OPERATOR

RECEIVER NO.

OPERATOR

COMMENTS:

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT F & S
LINE 2 HALF 3.59 ESP. 1 DATE

PAGE

SEND	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5
RECEIVE	0-250	250 -	500	500 -	750	→	750 -	1000	→	→
RANGE	100	300	100	300	100	30	100	100	30	10
DC 1	7.3/7.3	112/115	30.5/28.5	98/99	26/25.2	98/5.0	8.19/8.25	2.45/2.37	9.5/10.5	4.5/4.33
DC 2	7.3/7.3	112/115	30.5/28.5	98/99	26/25.2	98/5.0	8.15/8.25	2.45/2.37	9.5/10.5	4.5/4.33
DC 3	7.3/7.3	112/115	30.5/28.5	98/99	26/25.2	98/5.0	8.19/8.25	2.45/2.37	9.5/10.5	4.5/4.33
DC 4										
DC 5										
DC 6										
DC 7										
DC 8										
DC AVG.	14.6	227	60.0	197	51.2	18.8	16.44	4.82	20.4	8.83
AC 1	7.1	111	29.5	96	24.7	9.3	8.19	2.43	10	4.4
AC 2	7.1	111	29.5	96	24.7	9.3	8.23	2.45	9.7	4.42
AC AVG.	14.2	222	59.0	192	49.4	18.6	16.42	4.88	19.7	8.82
S.P.	-4	+2		-23			-4		?	5.8
AC NOISE	.12	.15		.2			.08			
POT RES.										

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT FDS
LINE 2 HALF S&SE SP. 1 DATE

PAGE

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		avl
RECEIVE	1000-1250				1250-1500					1-2
RANGE	30	10	10	3	10	10	3	1		100
DC 1	14.2/14.4	7.4/7.75	4.0/3.6	1.91/1.53	4.6/4.4	2.6/3.4	1.7/1.75			47.9/48
DC 2	14.2/14.4	7.4/7.75	4.0/3.6	1.91/1.53	4.6/4.4	2.6/3.4	1.7/1.75			47.9/48
DC 3	14.2/14.4	7.4/7.75	4.0/3.6	1.73/1.70	4.6/4.4	2.6/3.4	1.7/1.75			47.9/48
DC 4				1.93/1.81			1.7/1.75			
DC 5				1.95/1.83						
DC 6				1.95/1.75						
DC 7				2.1/1.75						
DC 8				2.0/1.75						
DC AVG.	28.6	15.19	7.6	1.91/1.59	9.00	6.0	3.45	—		95.9
AC 1	14	7.43	3.65	1.83 3.11	4.37	2.8	1.65	.86		46.5
AC 2	14	7.43	3.65	1.83	4.38	2.8	1.65			46.5
AC AVG.	28.0	14.86	7.30	3.66	8.75	5.6	3.30	1.72		93.0
S.P.	-32				-5			?		
AC NOISE	105				.1					
POT RES.										

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project F & S Line 2 - NW½ Field date 5/17/67 Data page_____ Comp. date 5/19/67 Comp by C.S.L.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive												
(C) n separation												
(D) I	.6	.8	.6	1.0	.8	.6	.6	1.0	.8	.6		
(E) Vdc (avg)	118.7	198	50.8	180	51.8	16.9	187	53.8	21.2	8.01		
(F) DCcal	.515											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	76	96	131	70	100	109	120	83	102	103		
(I) Vac Σ	117.0	195	50.6	176	51.2	16.7	185	53.0	21.0	7.80		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	1.5	1.5	0.4	2.3	1.2	1.2	1.1	1.5	1.0	2.7		
(O) MCF=(M-1)(10^5)/H	20	16	3	33	12	11	9	18	10	26		

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		CAL		
(B) Receive												
(C) n separation												
(D) I	.6	1.0	.8	.6	.6	1.0	.8	.6		500		
(E) Vdc (avg)	54.9	23.1	10.35	4.10	21.3	10.62	5.03			97.0		
(F) DCcal										.515		
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25					
(H) ρ dc=ExFxGx10^3/D	141	89	100	92	137	82	85					
(I) Vac Σ	54.6	23.0	10.20	4.06	21.2	10.4	4.90			95.8		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.										98.8		
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	0.5	0.4	1.5	1.0	0.5	2.1	2.7					
(O) MCF=(M-1)(10^5)/H	4	4	15	11	4	26	32					

X50 1667

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

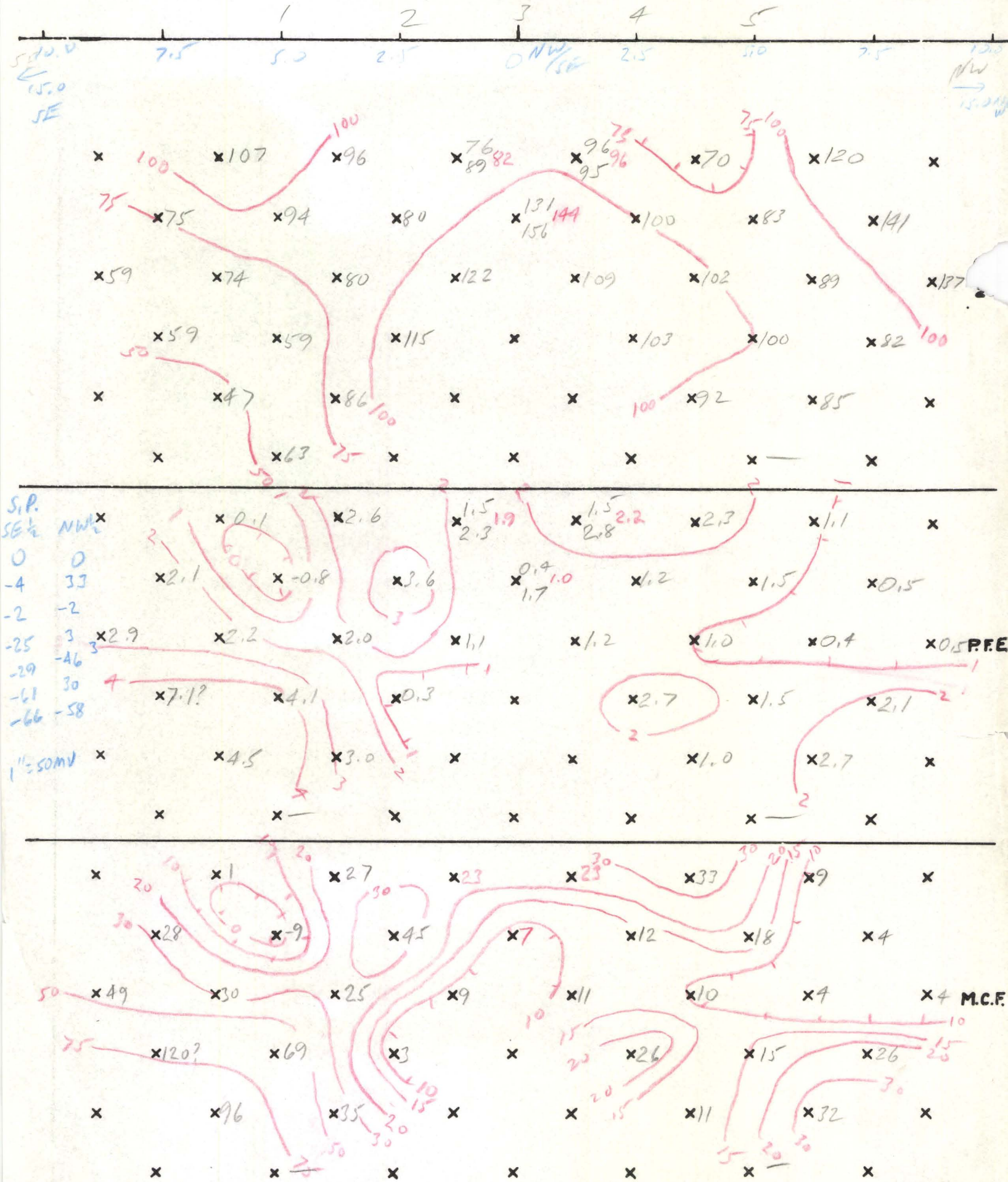
Project F & S Line 2 SE ½ Field date 5/12/62 Data page_____ Comp. date 5/21/62. Comp by C.S.L.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive												
(C) n separation												
(D) I	.6	1.0	.6	.8	1.0	.6	.6	.8	1.0	.6		
(E) Vdc (avg)	14.6	227	60.0	197	51.2	18.8	164.4	48.2	20.4	8.83		
(F) DCcal	.521											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	1.5		
(H) ρ dc=ExFxGx10^3/D	95	89	156	96	80.	122	107	94	80	115		
(I) Vac Σ	142	222	59.0	192	49.4	18.6	164.2	48.6	~~19.7~~ 20.0	8.88		
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal. USED	1.000											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	2.8	2.3	1.7	2.6	3.6	1.1	0.1	-0.8	2.0	0.3		
(O) MCF=(M-1)(10^5)/H	29	26	11	27	45	9	1	-9	25	3		

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

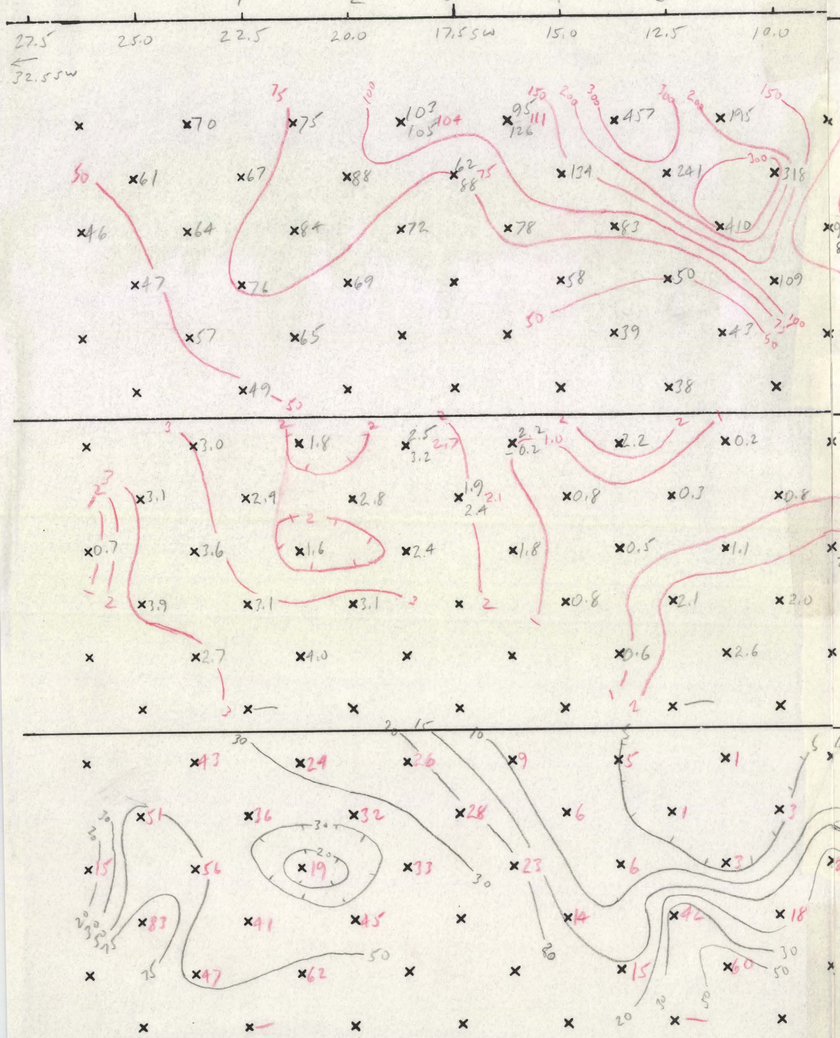
(A) Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		CAL		
(B) Receive												
(C) n separation												
(D) I	.6	.8	1.0	.6	.6	.8	1.0	.6		500		
(E) Vdc (avg)	28.6	15.19	7.6	3.77	9.00	6.0	3.45			95.9		
(F) DCcal										.521		
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	75	74	59	86	59	59	47	63				
(I) Vac Σ	28.0	14.86	7.3	3.66	8.75	5.6	3.30	1.72		93.0		
(J) AC noise x 2												
(K) Vac (corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.										~~.470~~	1.000	
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	2.1	2.2	4.1	3.0	2.9	7.1?	4.5	—				
(O) MCF=(M-1)(10^5)/H	28	30	69	35	49	120?	96	—				

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING S 58° W



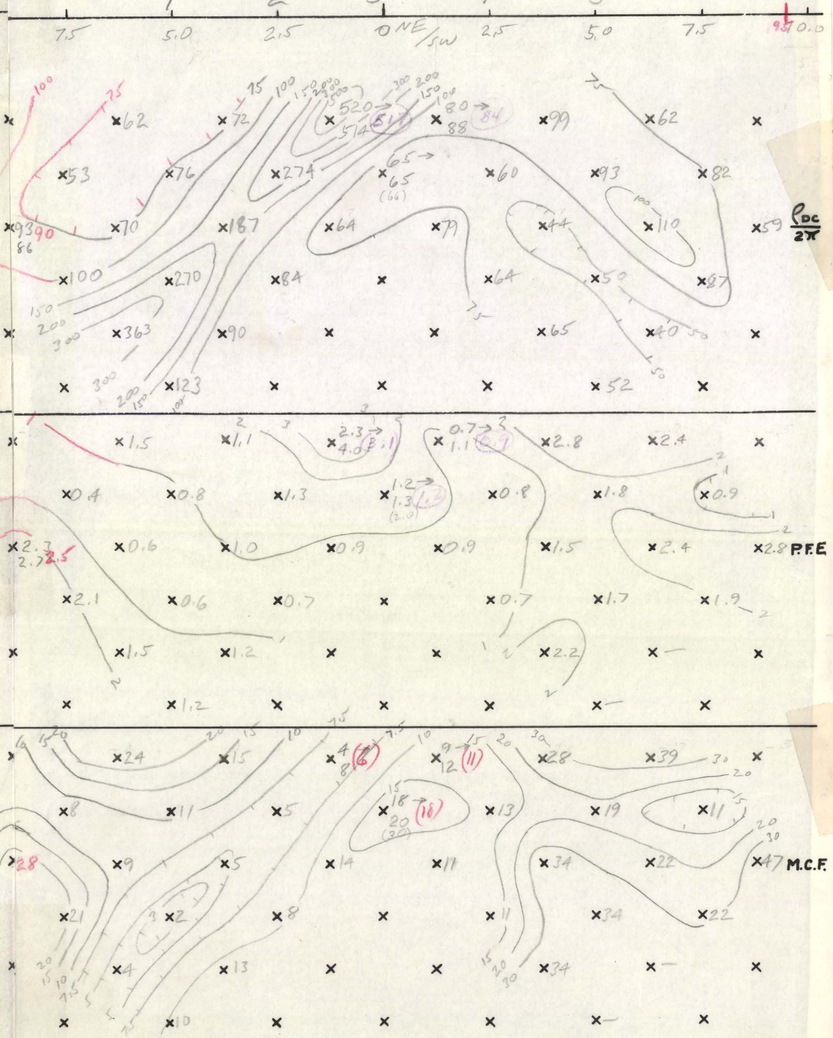
AREA F & S Kino Peak LINE 2 a = 250' SCALE: 1" = 250' DATE: May, 67

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING _____



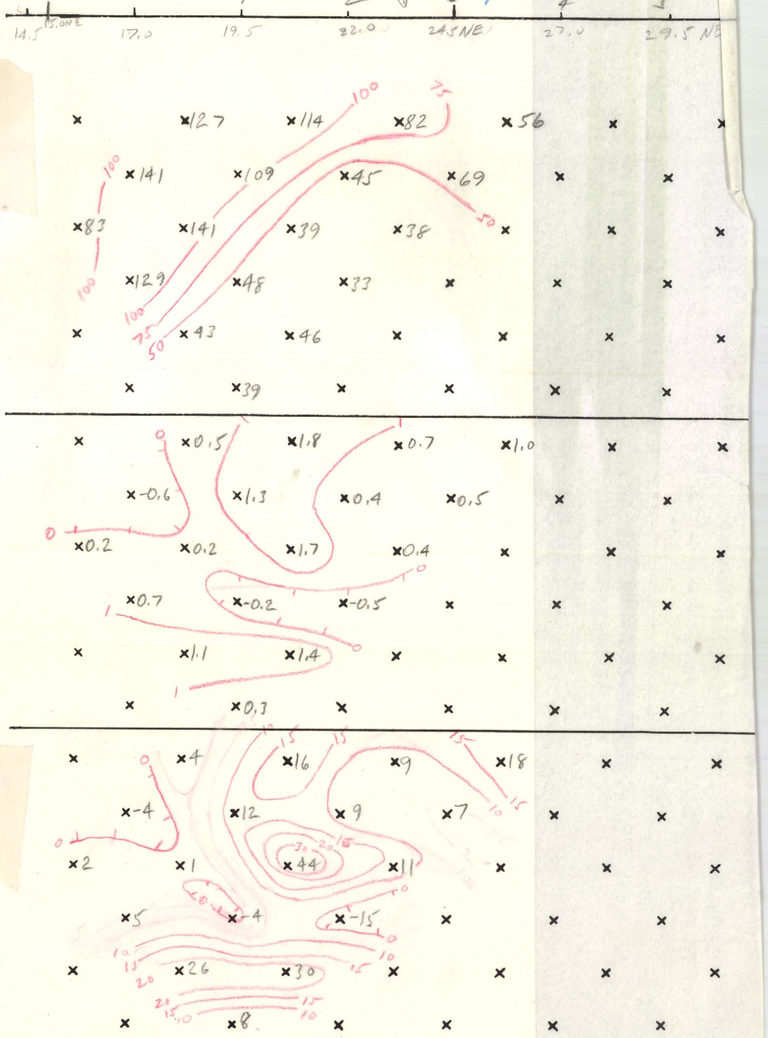
AREA Kino Peak LINE _____ a = ' SCALE: _____ DATE: _____

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, LOOKING N65° W



#5 no Peak LINE 1 a = 250 ' SCALE: 1" = 250' DATE: 4/1/67

HEINRICHS GEOEX. INDUCED POLARIZATION SECTIONAL DATA PLOT, NO



AREA _____ LINE _____ a = ' SCALE: _____

April 7, 1967

Mr. E. P. Shea
F. & S. Contracting Company
1300 Chicago Street
Butte, Montana

Re: I.P. and Magnetic Survey, Kino Peak Area, Pima County, Arizona

Dear Mr. Shea:

This letter is in reference to the reconnaissance induced polarization and magnetic survey we ran over your property near Kino Peak, Ajo Mining District, Pima County, Arizona from March 28 to March 31, 1967.

The work consists of one spread (Line 1) of 250 foot dipole induced polarization traverse and a crossed expander (Expanders 1 and 2) plus a 6000 foot long, 100 foot station vertical intensity Jalander hand magnetometer line along and past the I.P. traverse.

The I.P. line gave 3000 feet of surface coverage consisting of 1750 feet of subsurface plotted data and was oriented N26°E centered on the area of interest. The crossed expander had a fixed point at station 2.5NE (the inside current electrode on an n=2 dipole-dipole array) and was expanded from 250 foot "a" spacing to 1000 feet in 250 foot steps down the I.P. line with the receiver to the SW (Expander 1) and to the SE at right angles to the line (Expander 2). The induced polarization was done with the dual frequency system on sending frequencies of 0.05 and 3.0 cycles per second. For details of location see the plan. A "Basis of Induced Polarization Method" is also included.

The induced polarization line results show only background frequency effects indicating no significant concentrations of sulfides in the vicinity of the line in the zone from about 50

April 7, 1967

Mr. E. P. Shea
1300 Chicago Stree

to 300 feet below surface. The self potentials also show only minor background variations again indicating a lack of near surface sulfides.

The resistivities show a high resistivity zone between 0 NE/SW and 2.5 NE, perhaps representing a more highly silicified portion of the "skarn breccia".

The I.P. crossed expander was likely getting response from as deep as 1,000 feet but shows only a very minor increase in polarization effects with depth. This could mean that strong sulfides are present below 1,000 feet or laterally away from the expander or simply that there are only very minor quantities of sulfide associated with this prospect.

Additional I.P. would be needed to write this prospect off; but at least in the area surveyed to date, the results are negative.

The magnetics show several interesting features. The 100 gamma level change near station 6 SW likely represents the westernmost NNE trending fault zone. The 1100+ gamma anomaly north of station 17.5 NE is probably related to the Tertiary volcanics outcropping nearby but being covered with alluvium, more magnetics would be needed to show continuity between outcrop and buried anomaly source. If this anomaly is not caused by volcanics it could be of possible economic importance and should be surveyed in more detail with additional magnetics and I.P.

Three other several hundred gamma anomalies appear on the line at 10 NE, 21 SW, and 26 SW, any of which could be important and have no obvious cause based on the geology map.

Even with the negative I.P. response, we believe this to be a good prospect and worthy of additional work. Parallel north-south 500 foot dipole lines spaced about 1000 feet apart, run on and near the area of interest are recommended. Several 1,000 foot dipole lines could be run to test for deeper sulfide zones. Magnetics should be done at least along the I.P. lines.

The results of this survey are presented on a sectional data sheet for Line 1 showing apparent resistivity, percent frequency effect and metallic conduction factor contoured in section and self potential and vertical magnetic intensity in profile form. The complete magnetic profile is presented separately as well as the expander data. A plan location overlay to the geologic map is also included.

If we can be of further assistance, or if you have any questions, please let us know.

Very truly yours,

HEINRICHS GEOEXPLORATION COMPANY

Chris S. Ludwig

Chris S. Ludwig
Senior Geophysicist

APPROVED_____
E. Grover Heinrichs
Vice President

Via certified mail #782796
CSL:jc
Enclosures: Sectional Data Sheet, Plan Location Overlay of the Geologic Map, Vertical Intensity Magnetic Profile, I.P. Expanders 1 & 2, Basis of I.P. Method, Statement
cc: Mr. E. O. McAllister

39
5
2/19.5/ 81-50

May 24, 1967

Mr. E. P. Shea
F. & S. Contracting Company
1300 Chicago Street
Butte, Montana

Re: I.P. and Magnetic follow-up of March 1967 Survey, Kino Peak Area, Pima County, Arizona

Dear Mr. Shea:

This letter relates to the follow-up induced polarization and magnetic work we ran over your Kino Peak Area, Ajo Mining District, Pima County, Arizona during the interim May 15 to May 17, 1967.

This additional work consists of two and one-half spreads of 250 foot colinear dipole induced polarization coverage giving 8,000 total feet of new coverage of which 4,500 feet are subsurface plotted data. Additional 100 foot station magnetics consist of 3,000 feet along I.P. Line 2 and 2,000 feet on the NE portion of I.P. Line 1 correcting the previous survey.

The I.P. work was done with the dipole-dipole array on the dual frequency system using 0.05 and 3.0 cycles per second as sending frequencies tying in with the previous work. Magnetic coverage was on 100 foot stations using a Jalander hand-held vertical intensity magnetometer and was linked in with the initial work. Spread 2, Line 1 is the SW extension of Line 1 and was run to cross several magnetic anomalies. Line 2 was run across Line 1 at Station 20SW on a magnetic crossover and was angled and centered to cross favorable geology to the northwest at Mr. Nelson's request. Line 1, Spread 3 was centered so as to gain information over a strong magnetic high near Station

22NE. A revised location plan shows all coverage and the corrected survey. The Line 1 section was revised to show the two new spreads and corrected magnetics. The Line 2 I.P. sectional data sheet also shows the corresponding magnetic profile.

Geoex personnel involved in the field work were R. Montierth, geophysical crew chief, W. Hurley and B. Terrell, technical assistants. Report, computation and compilation by the Tucson Geoex staff under the supervision of Chris S. Ludwig, Senior Geophysicist.

The new I.P. coverage failed to locate any significant sulfide anomalism although two areas of higher background were seen. One zone is from about 20.0SW to 25.0SW on Line 1 and the other is on the SE end of Line 2; in fact, they could well be the same zone as both have very similar resistivities. These higher background areas could possibly represent minor sulfides (less than 1% by volume) or perhaps, just a rock type with a higher non-sulfide response.

No drilling is recommended over these zones unless the geology is quite favorable because of the low amplitude of anomalism.

The strong magnetic anomaly near Station 22NE on the previous work repeated even somewhat stronger (1,050 gammas) on the corrected survey and I.P. Line 1, Spread 3 was therefore centered on the corrected line. The magnetic anomaly correlates with an electrical interface between Stations 22.0 NE and 24.5NE with more conductive material to the NE, but shows no I.P. anomalism.

The magnetics on the NE end of the old Line 1 and the corrected survey give enough trend information to indicate

an ENE-WSW strike on the strong anomaly correlating with the strike on the outcrop at 22.0 NE.

The magnetic anomaly at Station 20SW, Line 1 also relates to an electrical interface near 17.5SW with more conductive material to the SW.

A very narrow 2,300 gamma magnetic anomaly peaks at 9.0 NW on Line 2 with no obvious electrical correlation. This is possibly a volcanic dike and quite shallow and narrow.

We still believe there is merit in electrically surveying this area at a greater depth, say on at least a 500 or 750 foot dipole to give good, solid interpretable penetration in excess of 500 feet. Oxidation can be fairly deep in the Ajo District and we believe it is essential for optimum drilling and overall appraisal considerations to not be too conservative or too hasty in analyzing the depth aspects of favorable prospects. If any blanket type enrichment occurred even at relatively shallow depth, it might not be detected until somewhat deeper "bites" than 250 feet were achieved. Another reason is that it is sometimes possible to barely detect strippable sulfide at 400 feet deep even with 1,000 foot dipoles under certain conditions. We do not recommend abandoning an area with such encouraging surface indications without at least one or two deep or at least deeper probes or setups, one possibly in a NW-SE traverse centered near the center of the present coverage.

If we can be of further assistance, please let us know.

Very truly yours,

HEINRICHS GEOEXPLORATION COMPANY

Chris S. Ludwig

Chris S. Ludwig
Senior Geophysicist

APPROVED: Walter E. Heinrichs, Jr.

Walter E. Heinrichs, Jr.
President & General Manager

Enclosures: Induced Polarization & Magnetic Location Plan (revised May, 1967), Sectional Data Sheets, Lines 1 & 2.
cc: Mr. E. O. McAllister

March 23, 1967

Mr. Walter E. Heinrichs, Jr.
Heinrichs Geoexploration Company
P. O. Box 5671
Tucson, Arizona 85703

Re: Kino Peak Project, Proposed
I.P. and Magnetic Survey,
Pima County, Arizona

Dear Walt:

You are herewith authorized to proceed with the geophysical project in Sections 17 and 18, T14S, R6W, G.S. & R.M., Kino Peak, Ajo District, Pima County, Arizona as outlined in your letter to me dated March 21, 1967.

Please advise Mr. E. P. Shea (whose address is given below) when you wish to start so that he may have someone on the property when your crew arrives.

Billing and results should be sent to the attention of Mr. E. P. Shea, F. & S. Contracting Company, 1300 Chicago Street, Butte, Montana. Please send me a copy of the results, also.

If the project should be extended beyond the present scope, it is agreed that billings submitted each two weeks will be promptly paid.

The geophysical crews will work only in areas designated by the F. & S. Contracting Company and as the client, F. & S. Contracting Company will assume all trespass liability.

The work is estimated to take three to four days in the field and the total project will consume one week from start to finish including a brief report. The report will consist of the sectional data sheets plotted and the magnetic data plotted in profile form and a letter summarizing the work done and an interpretation of the results.

Total estimated cost of the surveys will be $1,500.00 based on the following rates:

3 man I.P. crew	$250.00/day
2 man magnetic crew	150.00/day plus expenses

Normal standard expenses added are those directly incidental to the job and include: Vehicles - $10.00/day and $0.12/mile. Living cost averages $10.00 to $15.00/man day. Base maps, report and work map reproductions and miscellaneous supplies at our cost. Communications at our cost. Travel, weather, and standby time at 1/2 daily rate. Weather standby time when possible is made up.

For short jobs, one crew day in the field usually requires about the equivalent of one staff day in the office to compile, interpret, and report.

Please indicate your understanding and agreement to the above by signing and dating in the space provided.

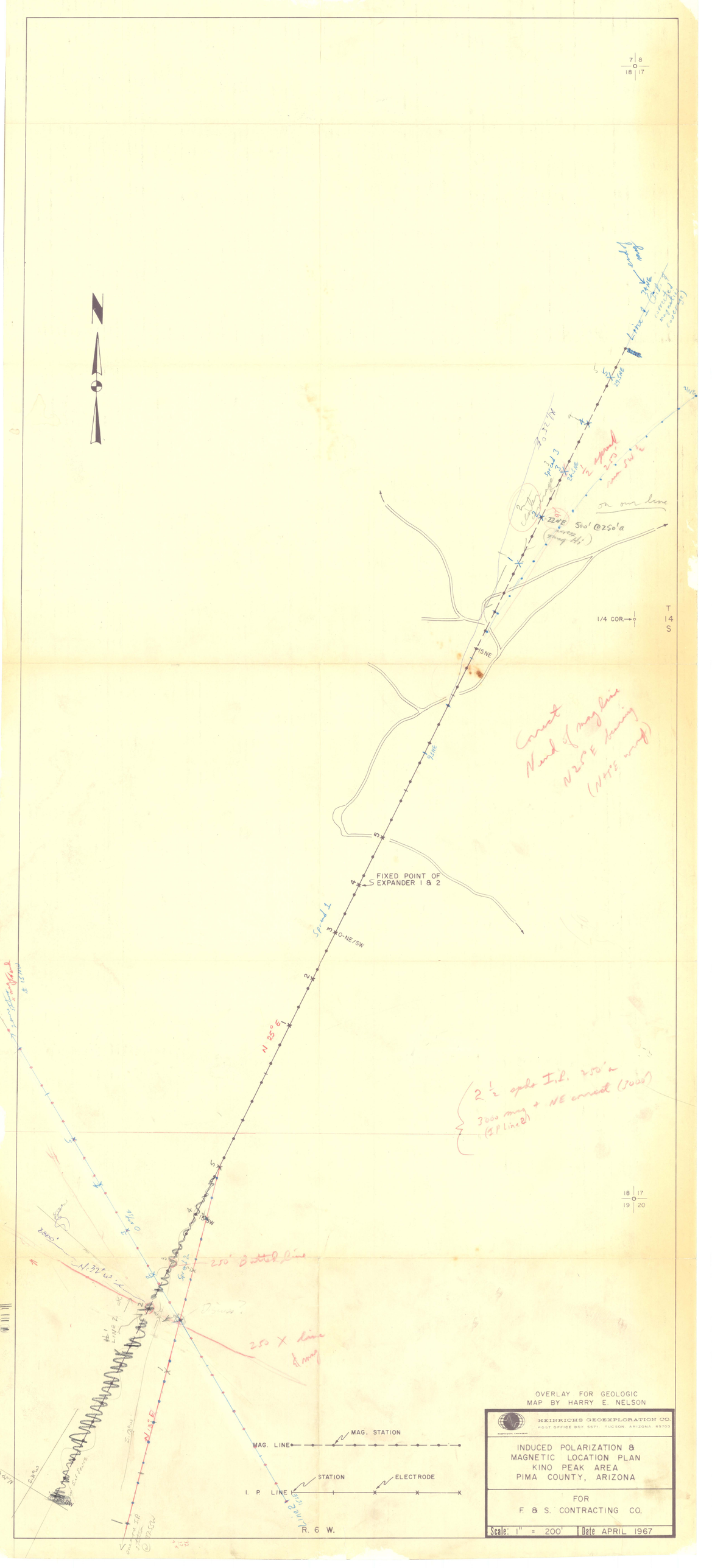
Very truly yours,

E. O. McAllister

Walter E. Heinrichs, Jr.

MAR 23 1967

Date



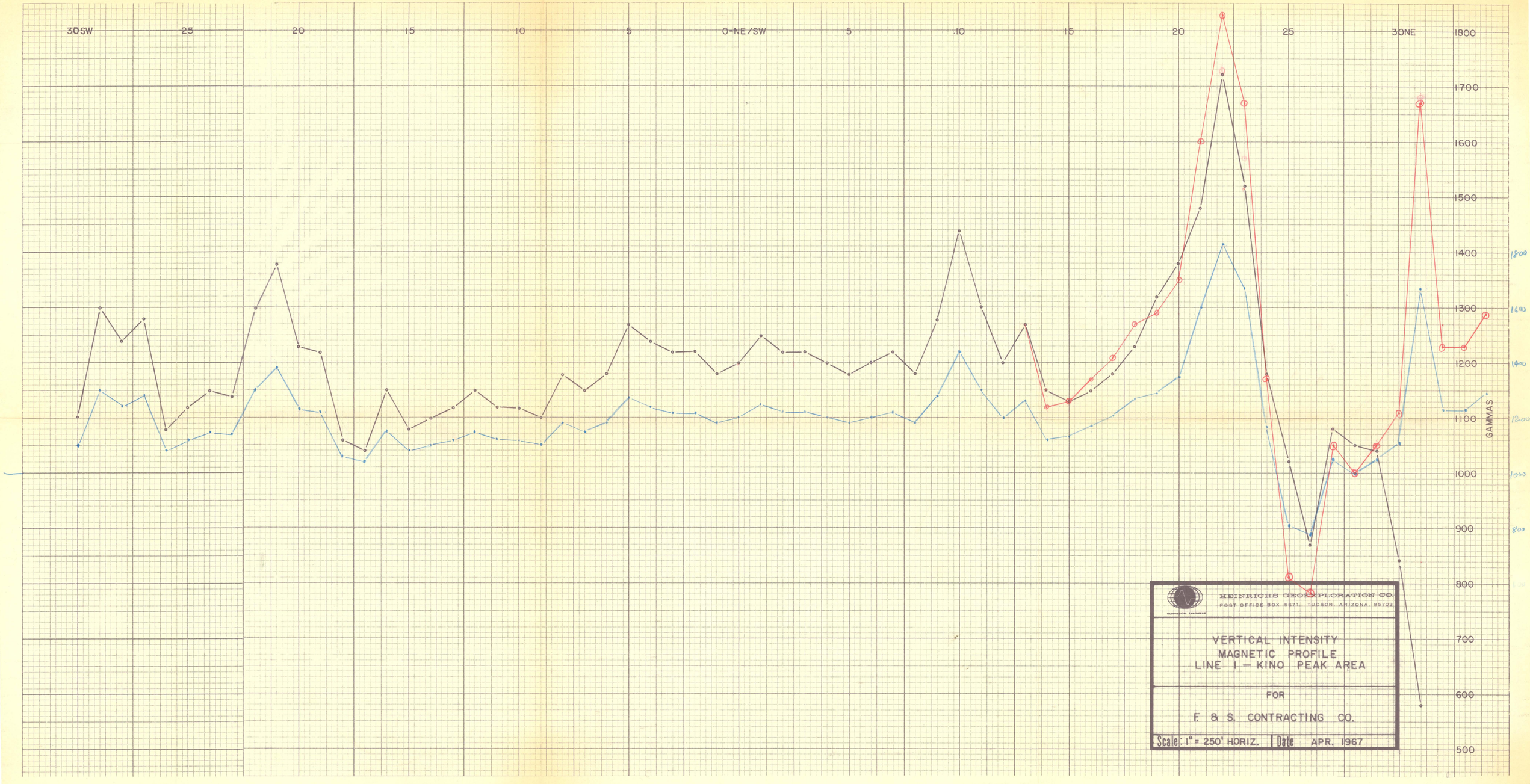
OVERLAY FOR GEOLOGIC MAP BY HARRY E. NELSON

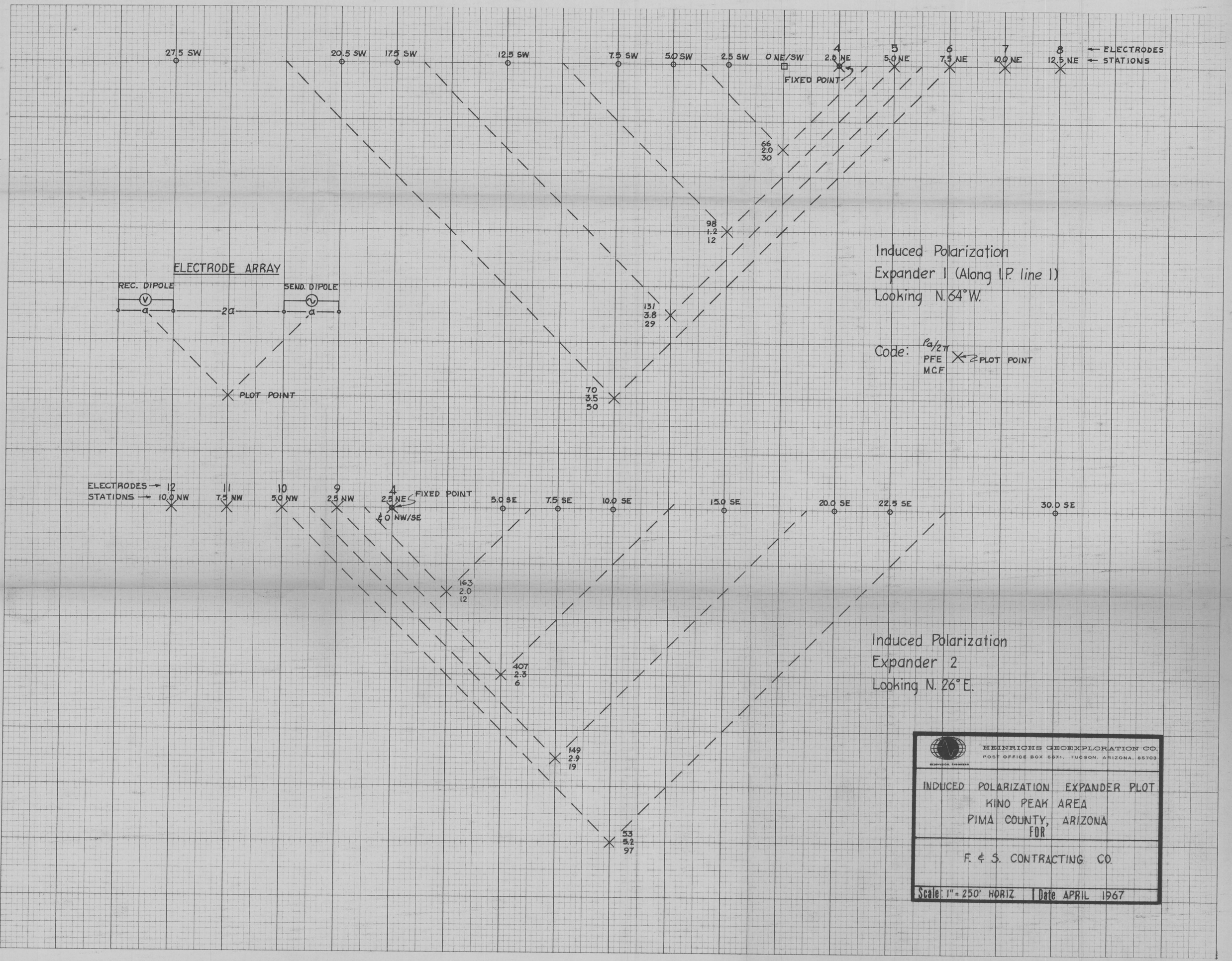
HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5671, TUCSON, ARIZONA 85703

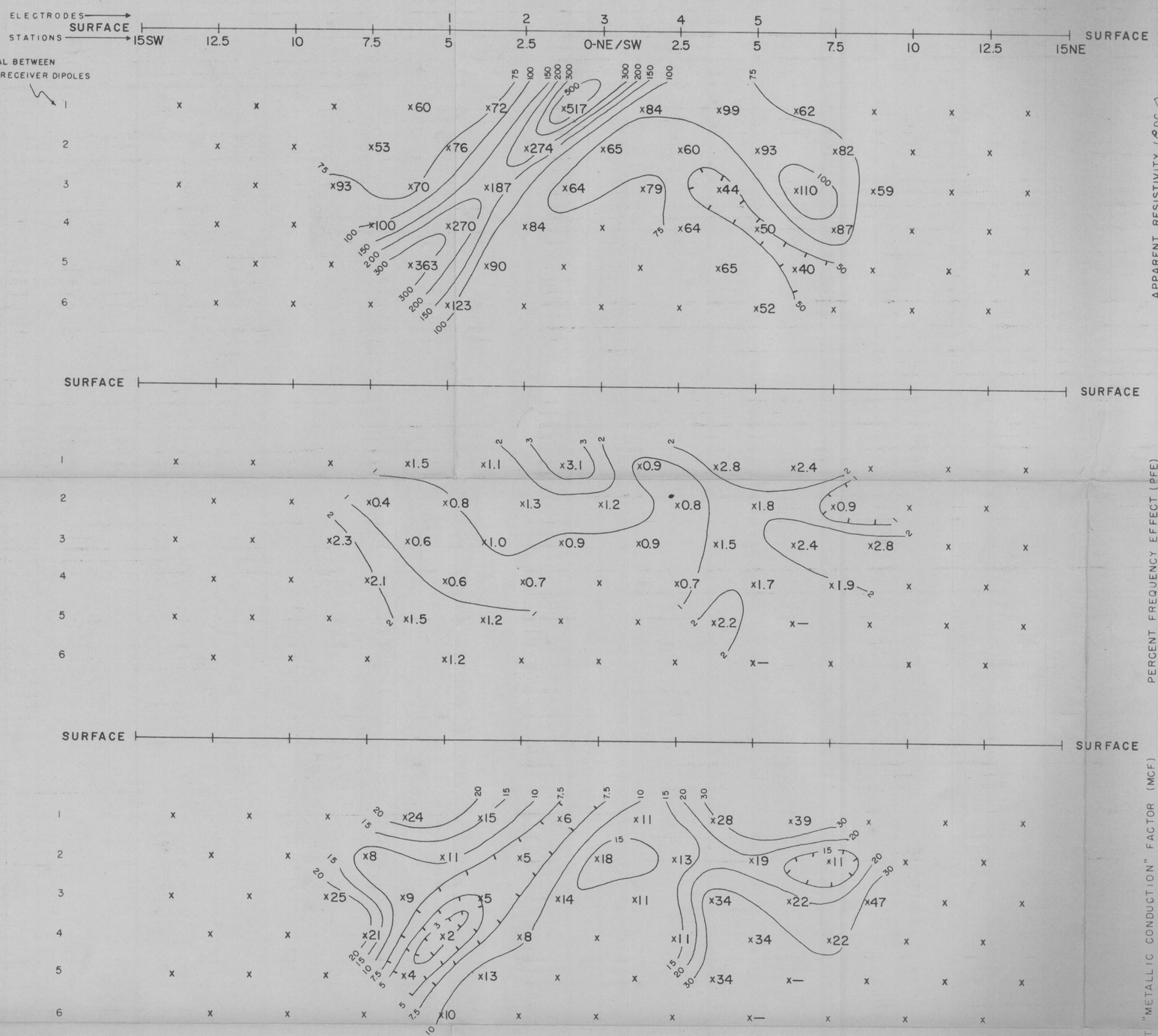
INDUCED POLARIZATION & MAGNETIC LOCATION PLAN
KINO PEAK AREA
PIMA COUNTY, ARIZONA

FOR
F. & S. CONTRACTING CO.

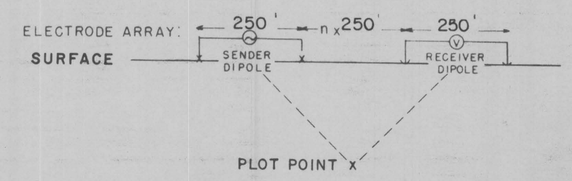
Scale: 1" = 200' | Date: APRIL 1967


30SW
25
20
15
10
5
0-NE/SW
5
10
15
20
25
30NE
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
GAMMAS
1800
1600
1400
1200
1000
800
HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5871, TUCSON, ARIZONA 85703
VERTICAL INTENSITY
MAGNETIC PROFILE
LINE 1 – KINO PEAK AREA
FOR
F. & S. CONTRACTING CO.
Scale: 1" = 250' HORIZ.
Date APR. 1967

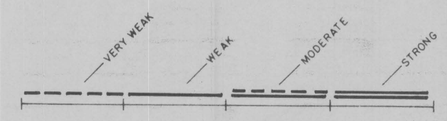

27.5 SW
20.5 SW
17.5 SW
12.5 SW
7.5 SW
5.0 SW
2.5 SW
0 NE/SW
4
2.5 NE
5
5.0 NE
6
7.5 NE
7
10.0 NE
8
12.5 NE
← ELECTRODES
← STATIONS
FIXED POINT
66
2.0
30
98
1.2
12
131
3.8
29
70
3.5
50
ELECTRODE ARRAY
REC. DIPOLE
SEND. DIPOLE
a
2a
a
PLOT POINT
Induced Polarization
Expander 1 (Along I.P. line 1)
Looking N. 64° W.
Code:
ρa/2π
PFE
M.C.F.
← PLOT POINT
ELECTRODES → 12
STATIONS → 10.0 NW
11
7.5 NW
10
5.0 NW
9
2.5 NW
4
2.5 NE
FIXED POINT
0 NW/SE
5.0 SE
7.5 SE
10.0 SE
15.0 SE
20.0 SE
22.5 SE
30.0 SE
163
2.0
12
407
2.3
6
149
2.9
19
53
5.2
97
Induced Polarization
Expander 2
Looking N. 26° E.
HEINRICHS GEOEXPLORATION CO.
GEOPHYSICAL ENGINEERS
POST OFFICE BOX 5671, TUCSON, ARIZONA, 85703
INDUCED POLARIZATION EXPANDER PLOT
KINO PEAK AREA
PIMA COUNTY, ARIZONA
FOR
F. & S. CONTRACTING CO.
Scale: 1" = 250' HORIZ.
Date APRIL 1967



EXPLANATION



RELATIVE ANOMALY STRENGTH



LOOKING N 64° W

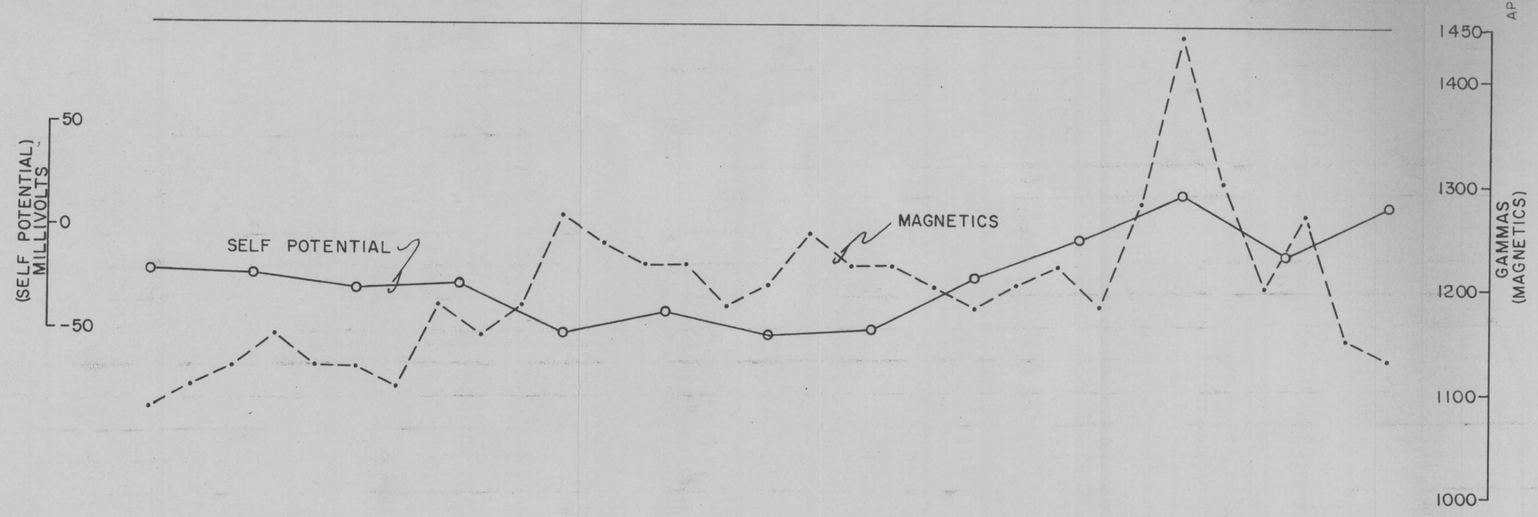
GEOEX

KINO PEAK AREA

SECTIONAL DATA SHEET
LINE NO. 1
INDUCED POLARIZATION TRAVERSE

HEINRICHS GEOEXPLORATION COMPANY
SCALE: 1" = 250' DATE: APR 1967

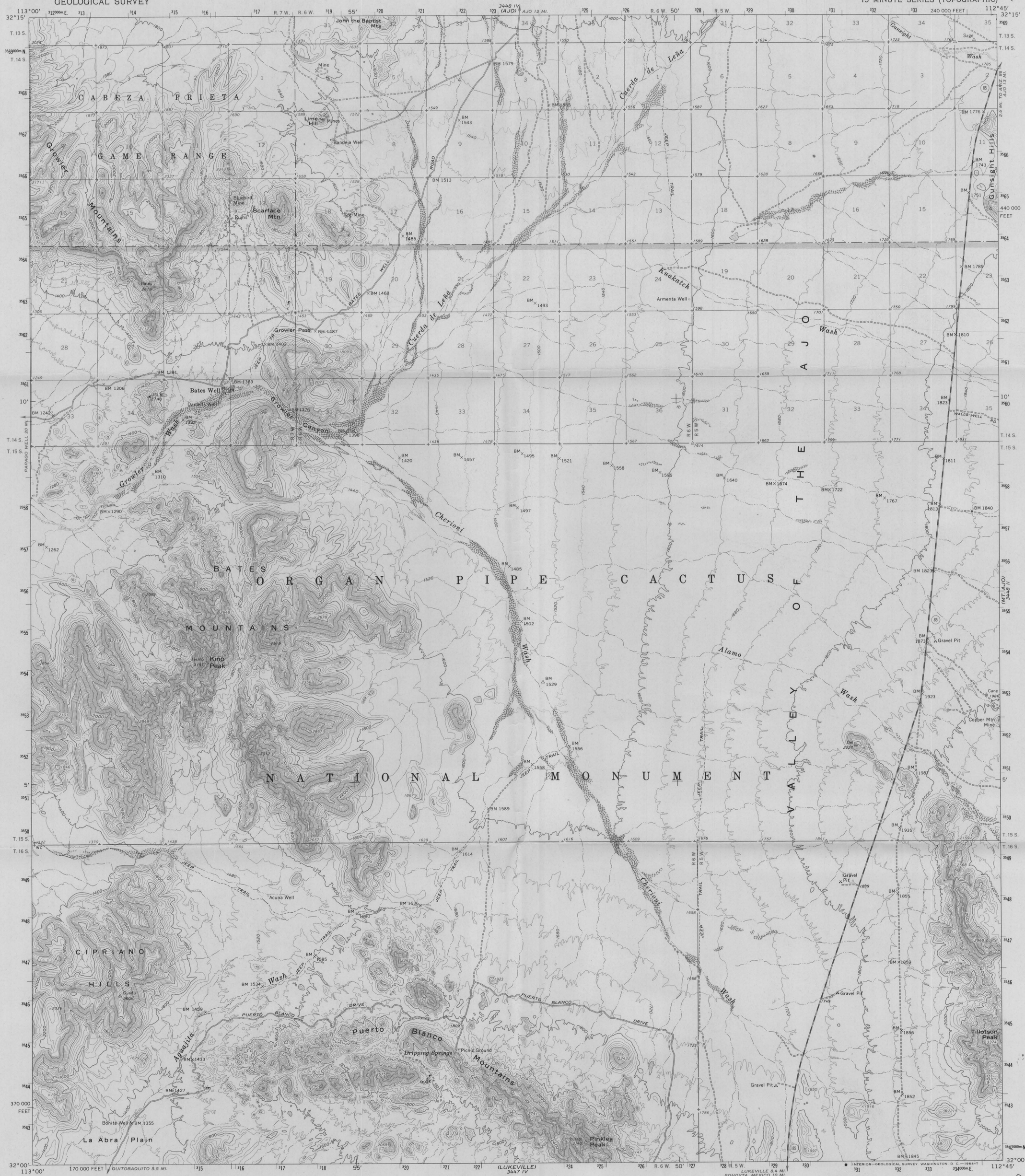
FOR
F. & S. CONTRACTING CO.



HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

KINO PEAK QUADRANGLE
ARIZONA–PIMA CO.
15 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1961. Field checked 1963

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

Where omitted, land lines have not been established

UTM GRID AND 1963 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:62500

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

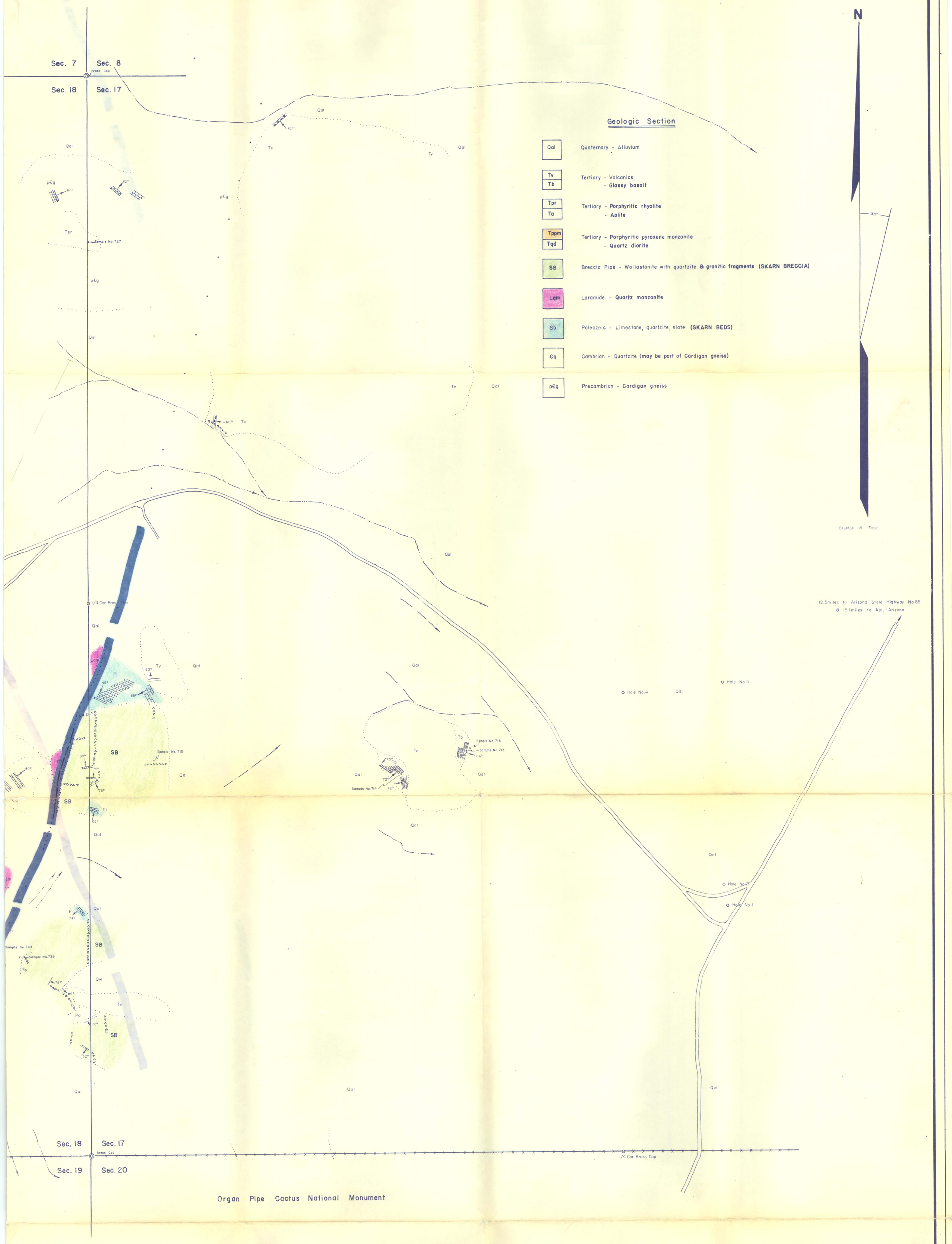
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Medium-duty — Light-duty
Unimproved dirt
State Route

KINO PEAK, ARIZ.
N3200—W11245/15

1963

AMS 3448 III —SERIES V798



IC MAP
ila & Salt River Meridian
Quadrangle
g District
ty, Arizona

00 600 700 800 900 1000
in Feet

March 1966, January 1967

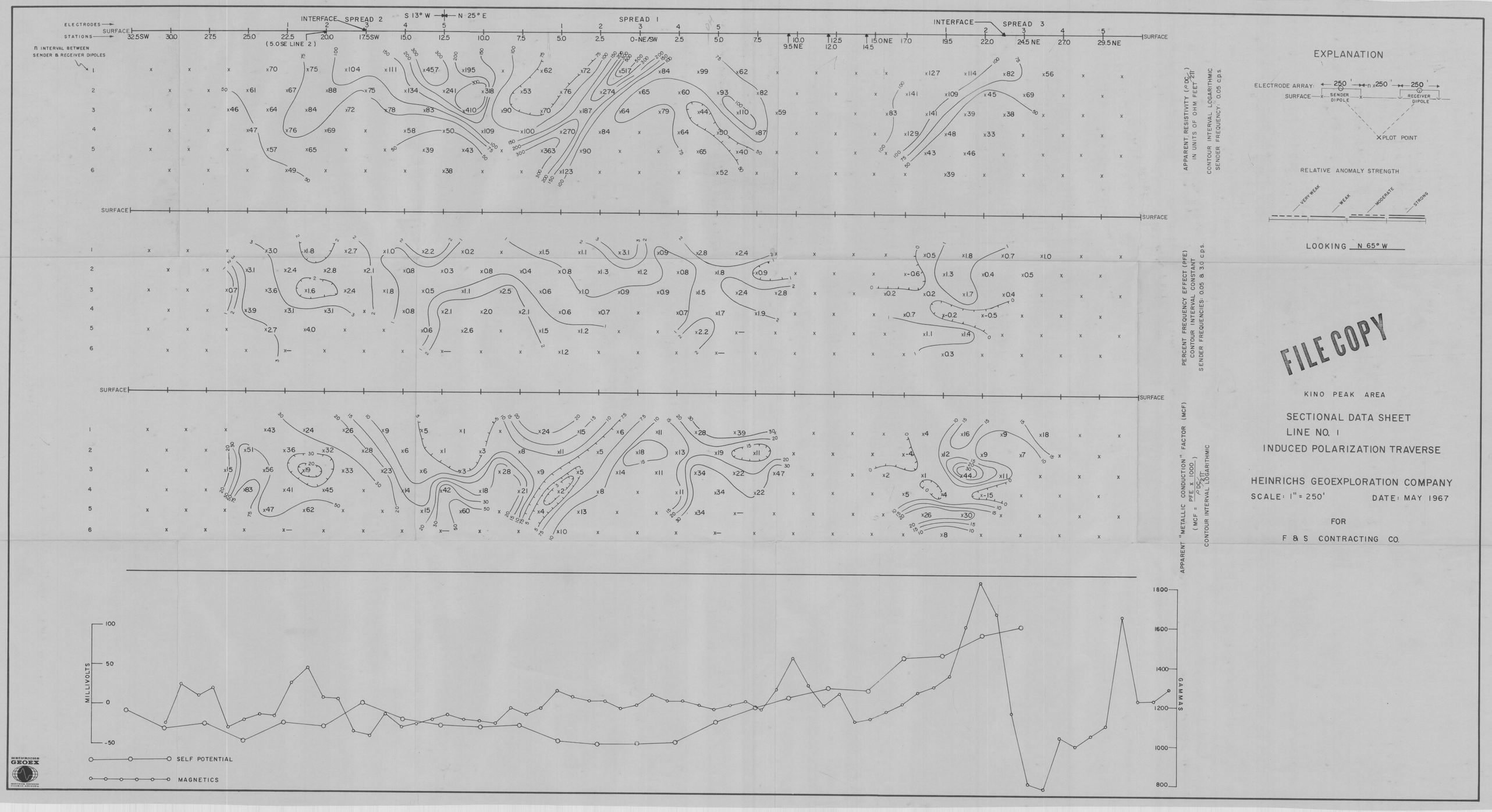
Harry E. Nelson

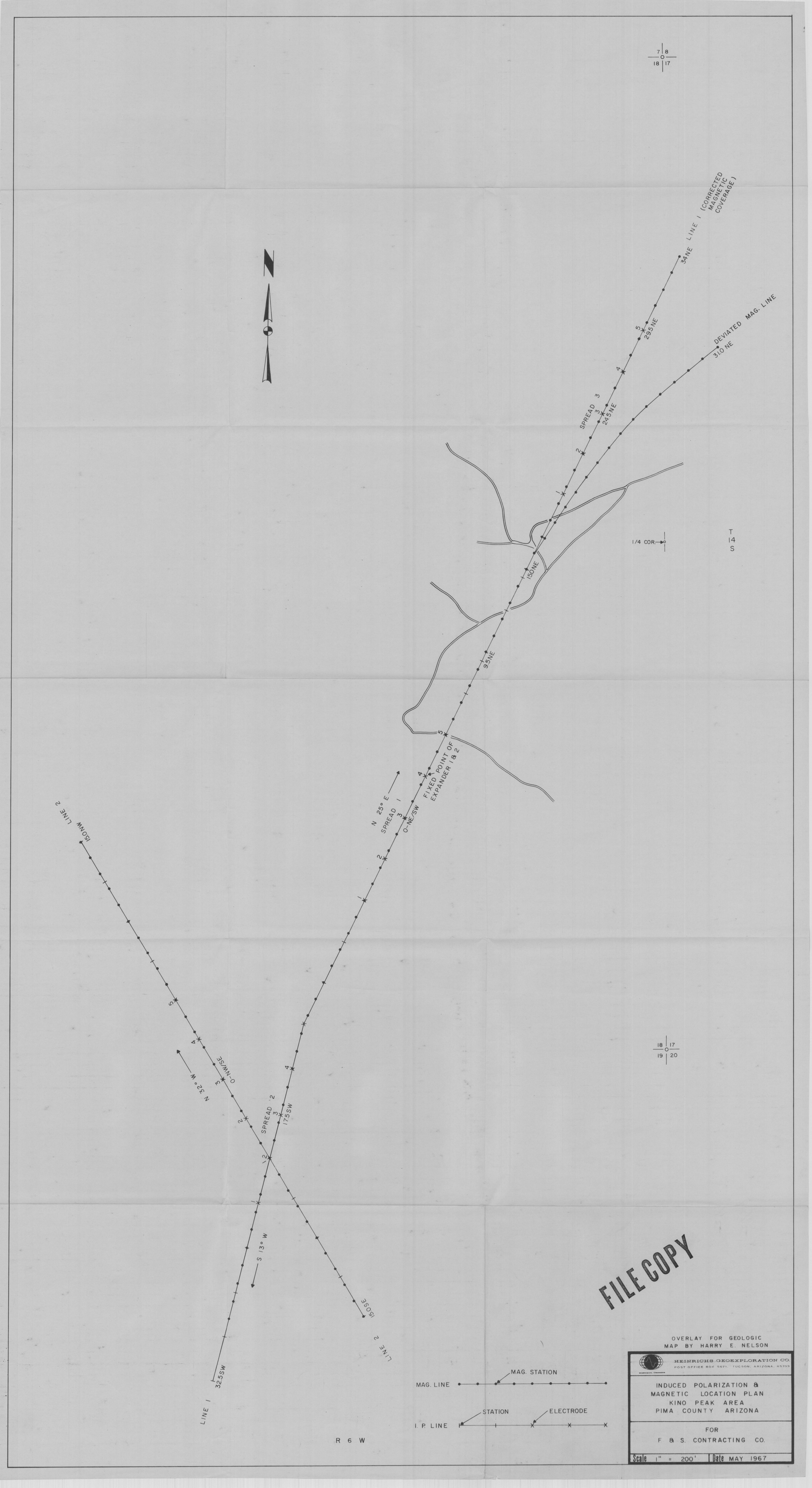
Plate 4

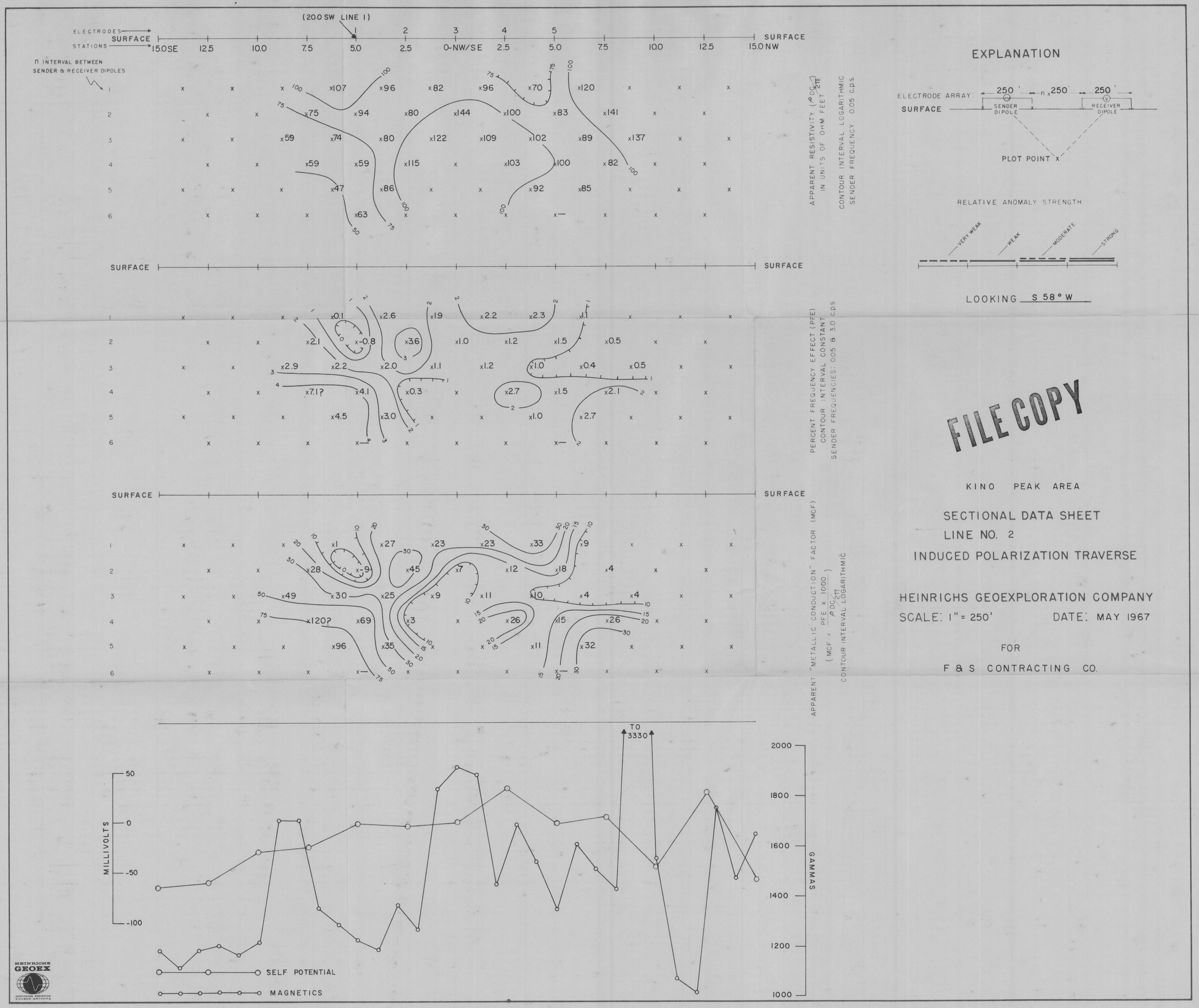
GEOLOG
Sec.17 & 18, T.14S., R.6W., G
Kino Peak
Ajo Minir
Pima Coun

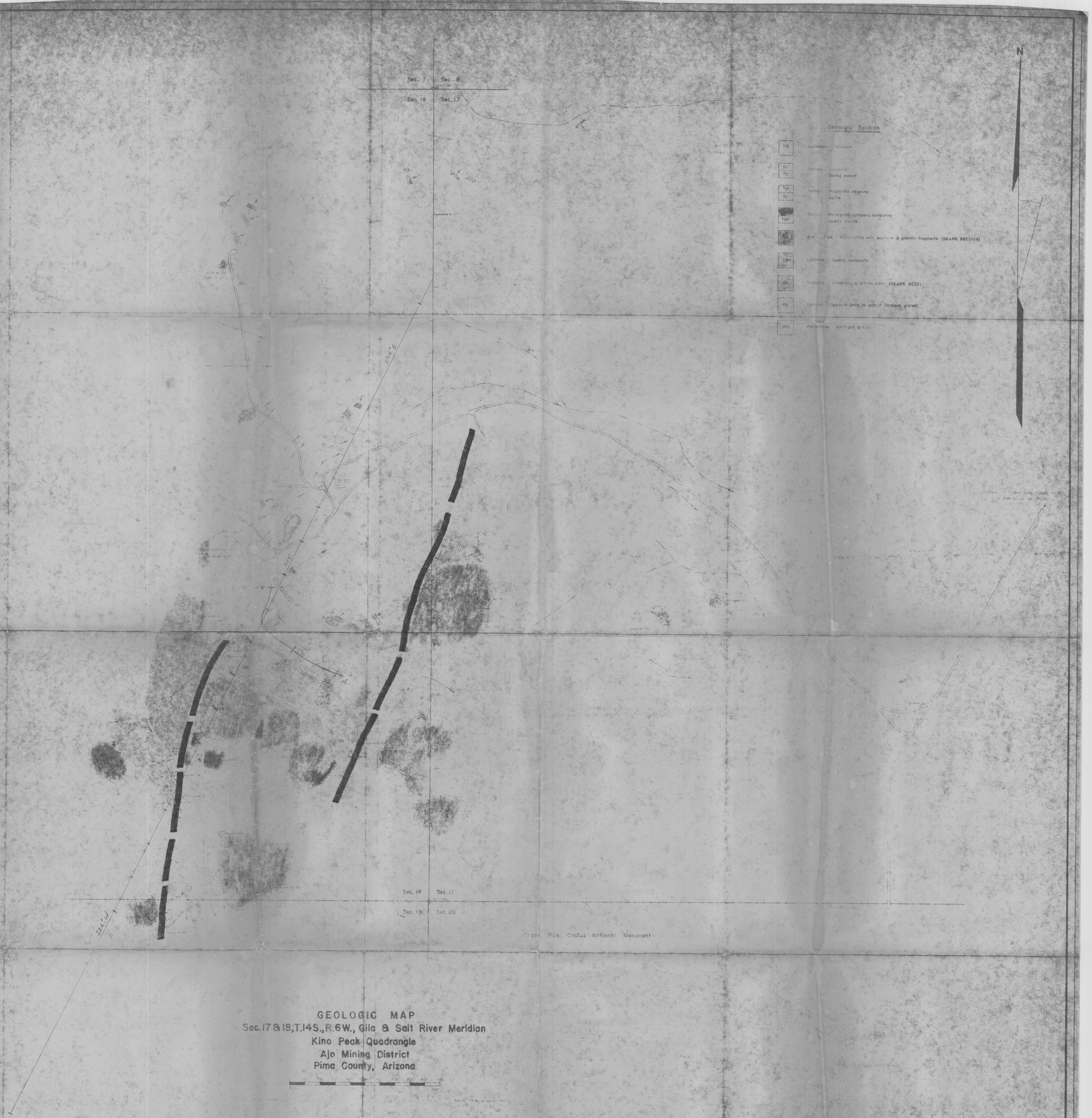
0 100 200 300 400
Scale

Harry E. Nelson


ELECTRODES
STATIONS
SURFACE
INTERFACE SPREAD 2
S 13° W — N 25° E
SPREAD 1
INTERFACE SPREAD 3
(5.0 SE LINE 2)
0-NE/SW
9.5 NE
12.0
14.5
15.0 NE
24.5 NE
29.5 NE
n INTERVAL BETWEEN SENDER & RECEIVER DIPOLES
APPARENT RESISTIVITY (ρDC) IN UNITS OF OHM FEET
CONTOUR INTERVAL, LOGARITHMIC
SENDER FREQUENCY: 0.05 c.p.s.
PERCENT FREQUENCY EFFECT (PFE)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES: 0.05 & 3.0 c.p.s.
APPARENT "METALLIC CONDUCTION" FACTOR (MCF)
(MCF = PFE x 1000 / ρDC)
CONTOUR INTERVAL, LOGARITHMIC
EXPLANATION
ELECTRODE ARRAY: 250' n x 250' 250'
SENDER DIPOLE
RECEIVER DIPOLE
PLOT POINT
RELATIVE ANOMALY STRENGTH
VERY WEAK
WEAK
MODERATE
STRONG
LOOKING N 65° W
FILE COPY
KINO PEAK AREA
SECTIONAL DATA SHEET
LINE NO. 1
INDUCED POLARIZATION TRAVERSE
HEINRICHS GEOEXPLORATION COMPANY
SCALE: 1" = 250'
DATE: MAY 1967
FOR
F & S CONTRACTING CO.
MILLIVOLTS
GAMMAS
SELF POTENTIAL
MAGNETICS
HEINRICHS GEOEX


7 | 8
18 | 17
N
LINE 1 (CORRECTED MAGNETIC COVERAGE)
3.4NE
DEVIATED MAG. LINE
3.1 NE
2.9.5NE
SPREAD 3
2.4.5NE
1/4 COR.
T 14 S
15.0NE
9.5NE
FIXED POINT OF EXPANDER 1 & 2
N 25° E
SPREAD 1
0-NE-SW
LINE 2
18 | 17
19 | 20
N 32° W
0-NW/SE
SPREAD 2
17.5SW
S 13° W
16.0SE
LINE 2
LINE 1
32.5SW
R 6 W
MAG. LINE
MAG. STATION
I. P. LINE
STATION
ELECTRODE
FILE COPY
OVERLAY FOR GEOLOGIC MAP BY HARRY E. NELSON
HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5671 · TUCSON, ARIZONA 85703
INDUCED POLARIZATION & MAGNETIC LOCATION PLAN
KINO PEAK AREA
PIMA COUNTY ARIZONA
FOR
F & S. CONTRACTING CO.
Scale 1" = 200'
Date MAY 1967


(20.0 SW LINE 1)
ELECTRODES
SURFACE
STATIONS
15.0SE 12.5 10.0 7.5 5.0 2.5 0-NW/SE 2.5 5.0 7.5 10.0 12.5 15.0 NW
n INTERVAL BETWEEN SENDER & RECEIVER DIPOLES
APPARENT RESISTIVITY (ρ_{DC}) IN UNITS OF OHM FEET
CONTOUR INTERVAL LOGARITHMIC
SENDER FREQUENCY: 0.05 c.p.s.
PERCENT FREQUENCY EFFECT (PFE)
CONTOUR INTERVAL CONSTANT
SENDER FREQUENCIES: 0.05 & 3.0 c.p.s
APPARENT "METALLIC CONDUCTION" FACTOR (MCF)
(MCF = PFE x 1000 / ρ_{DC})
CONTOUR INTERVAL LOGARITHMIC
EXPLANATION
ELECTRODE ARRAY:
250' n x 250' 250'
SENDER DIPOLE
RECEIVER DIPOLE
PLOT POINT x
RELATIVE ANOMALY STRENGTH
VERY WEAK
WEAK
MODERATE
STRONG
LOOKING S 58° W
FILE COPY
KINO PEAK AREA
SECTIONAL DATA SHEET
LINE NO. 2
INDUCED POLARIZATION TRAVERSE
HEINRICHS GEOEXPLORATION COMPANY
SCALE: 1" = 250'
DATE: MAY 1967
FOR
F & S CONTRACTING CO.
TO 3330
MILLIVOLTS
50
0
-50
-100
GAMMAS
2000
1800
1600
1400
1200
1000
SELF POTENTIAL
MAGNETICS
HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS TUCSON ARIZONA



GEOLOGIC MAP
Sec.17 & 18, T.14S., R.6W., Gila & Salt River Meridian
Kino Peak Quadrangle
Ajo Mining District
Pima County, Arizona

Plate 4