N 56 W

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: 11 NW½ Date: 3-8-67

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
Receive	0-2.5 N	2.5-5 N	→	5-7.5 N	→		7.5-10 N	→			10-12.5 N	
Time												
Range												
Current	2000	2000	2000	1800	2000	2000	1400	1800	2000	2000	1400	1800
Send	2-3	1-2	4-5	3-4	2-3	1-2		4-5				
Receive	→		12.5-15 N	→				CAL				
Time												
Range												
Current	2000	2000	1400	1800	2000	2000		1000				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kaiser - Lebanon Line 11 SE½ Field date 3-8-67 Data page_____ Comp. date 3/15/67 Comp by H.D

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750	→		750-1000	→				
(C) n separation												
(D) I	1.4	1.8	1.4	2.0	1.8	1.4	2.0	2.0	1.8	1.4		
(E) Vdc (avg)	135	96	24	87	19.8	7.657	339	41.5	13.8	6.1		
(F) DCcal	1.0416	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	75	42	54	34	34	43	132	65	60	68		
(I) Vac Σ	117	87	21.5	81	18	7.2	319	38.5	12.6	5.7		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.979	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	13.0	8.0	9.3	5.2	7.7	4.1	4.1	5.5	7.2	4.8		
(O) MCF=(M-1)(10^5)/H	173	190	172	153	226	95	31	85	120	71		

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		1-2		
(B) Receive	1000-1250		→		1250-1500		→			cal		
(C) n separation												
(D) I	2.0	2.0	1.8	1.4	2.0	2.0	1.8	1.4		1000		
(E) Vdc (avg)	76	22	9.55	5.05	21.75	8.75	4.775	2.825		96		
(F) DCcal	→											
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	119	86	83	99	85	68	73	88				
(I) Vac Σ	71	20.5	8.75	4.65	20.5	8.2	4.4	2.65		94		
(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)	4.8	5.1	6.9	6.3	1.1	4.5	6.3	4.4				
(O) MCF=(M-1)(10^5)/H	40	59	83	64	13	66	86	50				

HEINRICHS GEOEXPLORATION CO.

I.P. RECEIVER NOTES

PROJECT Kauser - Gibson

LINE 11 HALF SE½ SP. ____ DATE ____

PAGE

SEND	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal
RECEIVE	1000 -	1250	→	→	1250 -	1500	→	→		1-2
RANGE	100	300	30	10	100	30	10	10		300
DC 1	75.5/76.5	22/22	9.4/9.7	4.95/5.15	22/21.5	8.8/8.7	4.75/4.8	2.8/2.85		96/96
DC 2	75.5/76.5	22/22	9.4/9.7	4.95/5.15	22/21.5	8.8/8.7	4.75/4.8	2.8/2.85		96/96
DC 3	75.5/76.5	22/22	9.4/9.7	4.9/5.2	22/21.5	8.8/8.7	4.75/4.8	2.8/2.85		96/96
DC 4				4.95/5.15						
DC 5				4.95/5.15						
DC 6										
DC 7										
DC 8										
DC AVG.	76.0	22.	9.55	5.05	21.75	8.75	4.775	2.825		
AC 1	71	20.5	8.8	4.65	20.5	8.2	4.4	2.65		94
AC 2	71	20.5	8.7	4.65	20.5	8.2	4.4	2.65		94
AC AVG.										
S.P.	-16				+1					
AC NOISE	.02				.02					
POT RES.	3800				2500					

HEINRICHS GEOEXPLORATION CO.
I.P. RECEIVER NOTES

PROJECT Kayser-Gibson
LINE 11 HALF SE½ SP. 89 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	300	300	100	300	30	10	1000	100	30	10
DC 1	135/135	96/96	24.5/23.5	87/87	19.5/20.1	7.6/7.75	340/338	41.5/41.5	13.6/14	6.1/6.15
DC 2	135/135	96/96	24.5/23.5	87/87	19.5/20.1	7.6/7.75	340/338	41.5/41.5	13.6/14	6.2/6.05
DC 3	135/135	96/96	24.5/23.5	87/87	19.5/20.1	7.6/7.75	340/338	41.5/41.5	13.6/14	6.1/6.2
DC 4										6.2/6.05
DC 5										6.0/6.3
DC 6										6.1/6.25
DC 7										6.05/6.25
DC 8										
DC AVG.	135	96.0	24.0	87	19.8	7.657	339	41.5	13.8	6.10
AC 1	117	87	21.5	81	18	7.2	319	38.5	12.6	5.7
AC 2	117	87	21.5	81	18	7.2	319	38.5	12.6	5.7
AC AVG.										
S.P.	-8	-8		+13			-5			
AC NOISE	.03	.02	.02	.02			.02			
POT RES.	3000	2000	1400	1400			2400			

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: 11 SE½ Date: 3-8-67

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
Receive	0-2.5 s	2.5-5 s	→	5-7.5 s	→		7.5-10 s		→		10-12.5 s	
Time												
Range												
Current	1400	1800	1400	2000	1800	1400	2000	2000	1800	1400	2000	2000
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	12.5-15 s		→			CAL				
Time												
Range												
Current	1800	1400	2000	2000	1800	1400		1000				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser - Gibson Line 10 NW ¼ Field date 2-4-67 Data page_____ Comp. date_____. Comp by_____

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500	→	500-750	→	→	750-1000	→	→	→		
(C) n separation	1	1	2	1	2	3	1	2	3	4		
(D) I	1.4	1.2	1.4	1.8	1.2	1.4	2.0	1.8	1.2	1.4		
(E) Vdc (avg)	89	169	30.4	124	41.25	12.5	265	27.4	13.3	4.5		
(F) DCcal	1.0309											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	49	109	67	53	106	69	98	47	86	50		
(I) Vac Σ	83	159	28.5	115	38.5	11.7	247	26	12.6	4.35		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	~~1.09~~	1.000										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	7.2	6.3	6.7	7.8	7.1	6.8	3.2	5.4	5.6	3.4		
(O) MCF=(M-1)(10^5)/H	148	33	100	147	67	99	33	15	65	68		

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	1000-1250	→	→	→	1250-1500	→	→	→		1-2		
(C) n separation	2	3	4	5	3	4	5	6				
(D) I	2.0	1.8	1.2	1.4	2.0	1.8	1.2	1.4		1.0		
(E) Vdc (avg)	77.75	18.85	8.55	4.15	24.75	8.0	3.565	2.1		97		
(F) DCcal												
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	120	81	100	80	96	69	89	65				
(I) Vac Σ	74.5	17.8	8.2	3.58	24	7.6	3.75	2.0		96		
(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)	4.4	5.9	4.3	4.3	3.1	5.3	4.9	5.0				
(O) MCF=(M-1)(10^5)/H	37	73	39	54	32	77	55	77				

Line 10 spd 1

INDUCED POLARIZATION - RECEIVER NOTES PAGE 3d

Project: Kayser-Gibson Line: 10 NW½ Int.Cal 91 Date:

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	0-250	250-500		500-750	→		750-1000	→				
Time	300	300	100	300	100	30	300	100	30	10		
DC-1	90 88	168 170	29.8 31	124 124	42 40.5	13 12	255 255	27 27.8	13.5 13.1	4.5 4.5		
DC-2	90 88	168 170	29.8 31	124 124	42 40.5	13 12	255 255	27 27.8	13.5 13.1	4.5 4.5		
Σ												
DC-3	90 88	168 170	29.8 31	124 124	42 40.5	13 12	255 255	27 27.8	13.5 13.1	4.5 4.5		
Dc-4												
Σ												
DC-AV	89	169	30.4	124	41.25	12.8	255	27.4	13.3	4.5		
AC-1	83	159	28.5	115	38.5	11.7	247	26	12.6	4.35		
AC-2	83	159	28.5	115	38.5	11.7	247	26	12.6	4.35		
Σ												
S. P.	+8	-3		+9			+13					
AC-N	.02	.03		.03			.02					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES PAGE 31

Project: Kayser-Gibson Line: 10 NW ½ Int.Cal Date:

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	1000 –	1250	→	→	1250	– 1500	→	→		1-2		
Time	100	30	30	10	100	10	10	10		300		
DC-1	78 77.5	18.5 19.2	8.7 8.4	4.15 4.15	25 24.5	8.0 8.0	3.58 3.58	2.1 2.0		9.7 9.7		
DC-2	78 77.5	18.5 19.2	8.7 8.4	4.2 4.1	25 24.5	7.95 8.05	3.97 3.99	2.1 2.1		9.7 9.7		
Σ												
DC-3	78 77.5	18.5 19.2	8.7 8.4	4.2 4.1	25 24.5	7.85 8.15	3.9 4.03	2.12 2.08				
Dc-4				4.2 4.1		8.0 8.0	3.9 3.05	2.1 2.1				
Σ												
DC-AV	77.75	18.85	8.55	4.15	24.75	8.0	3.965	2.1				
AC-1	74.5	17.8	8.2	3.58	24	7.6	3.78	2.0		9.6		
AC-2	74.5	17.8	8.2	3.98	24	7.6	3.78	2.0		9.6		
Σ												
S. P.	-6				+10							
AC-N	.03				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER + GIBSON Line: 10 NW 1/2 Date: 2-4-67

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
Receive	0-2.5 N	2.5-5 N	→	5-7.5 N	→		7.5-10 N	→			10-12 N	5
Time												
Range												
Current	1400	1200	1400	1800	1200	1400	2000	1800	1200	1400	2000	1800
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→		12.5-15 N		→			CAL				
Time												
Range												
Current	1200	1400	2000	1800	1200	1400		1000				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kaysar-Gibson Line 10SE½ Field date 2-4-67 Data page_____ Comp. date_____. Comp by_____

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250-500 →		500-750 →			750-1000 →					
(C) n separation	1	1	2	1	2	3	1	2	3	4		
(D) I	2.0	1.8	2.0	1.2	1.8	2.0	1.4	1.2	1.8	2.0		
(E) Vdc (avg)	290	107	41	120	32.5	18.6	180.5	40.5	18.75	14.3		
(F) DCcal	1.04/6											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	113	46	64	78	56	73	101	105	81	112		
(I) Vac Σ	270	101	39.5	115	31	17.6	173	38.5	17.6	13.4		
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	7.4	5.9	3.8	4.3	4.8	5.7	4.3	5.2	6.5	6.7		
(O) MCF=(M-1)(10^5)/H	66	128	59	55	86	78	43	50	80	60		

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	1000-1250 →				1250-1500 →					4-5		
(C) n separation	2	3	4	5	3	4	5	6				
(D) I	1.4	1.2	1.8	2.0	1.4	1.2	1.8	2.0		1.0		
(E) Vdc (avg)	25.5	12.25	7.25	6.8	10.45	6.7	4.8	4.9		96		
(F) DCcal												
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	57	80	63	93	58	87	73	107				
(I) Vac Σ	24	11.6	6.9	6.35	5.8	6.35	4.55	4.58		96		
(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)	6.3	5.6	5.1	7.1	6.6	5.5	5.5	7.0				
(O) MCF=(M-1)(10^5)/H	111	70	81	76	114	63	75	65				

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 32

Project: Knyser-Gibson Line: 10 SE½ Int.Cal 92 Date: 2-4-67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	0-250	250-500		500-750		→	750-1000		→			
Time	1000	300	100	300	100	30	300	100	30	30		
DC-1	290 290	107 107	41 41	120 120	32.5 32.5	18.5 18.7	182 179	41 40.	18.5 19.	14.3 14.3		
DC-2	290 290	107 107	41 41	120 120	32.5 32.5	18.5 18.7	182 179	41 40	18.5 19.	14.3 14.3		
Σ												
DC-3	290 290	107 107	41 41	120 120	32.5 32.5	18.5 18.7	182 179	41 40	18.5 19	14.3 14.3		
Dc-4												
Σ												
DC-AV	290	107	41	120	32.5	18.6	180.5	40.5	18.75	14.3		
AC-1	270	101	39.5	115	31	17.6	173	38.5	17.6	13.4		
AC-2	270	101	39.5	115	31	17.6	173	38.5	17.6	13.4		
Σ												
S. P.	+27	-21		-8			+1					
AC-N	.04	.04		.03			.03					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES

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Project: Kayser-Gibson Line: 10S1E 1/4 Int.Cal _____ Date: 2-4-67

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Rec.	1000	1250	→	→	1250	1500	→	→		4-5		
Time	100	30	10	10	30	10	10	10		300		
DC-1	25 26	12 12.5	7.3 7.2	6.6 8.0	10.7 10.2	6.8 6.6	4.7 4.9	5.2 4.6		96 96		
DC-2	25 26	12 12.5	7.3 7.2	6.7 6.9	10.7 10.2	6.8 6.6	4.65 4.95	4.7 5.1		96 96		
Σ				13.6 13.6								
DC-3	25 26	12 12.5	7.3 7.2	6.66 6.95	10.7 10.2	6.8 6.6	4.7 4.9	4.65 5.15				
Dc-4				6.7 6.9			4.7 4.9	4.7 5.1				
Σ												
DC-AV	25.5	12.25	7.25	6.8	10.45	6.7	4.8	4.9		96		
AC-1	24	11.6	6.9	6.35	9.8	6.35	4.55	4.58		96		
AC-2	24	11.6	6.9	6.35	9.8	6.35	4.55	4.58				
Σ												
S. P.	+3				-8							
AC-N	.02				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAISER-GIBSON Line: 10 SE1/2 Date: 2-4-67

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
Receive	0-2.5s	2.5-5s	5-	5-7.5s	→		7.5-10s	→			10-12.5s	
Time												
Range												
Current	2000	1800	2000	1200	1800	2000	1400	1200	1800	2000	1400	1200
Send	2-3	1-2	4-5	3-4	2-3	1-2		4-5				
Receive	→		12.5-15s		→			CAL				
Time												
Range												
Current	1800	2000	1400	1200	1800	2000		1000				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Hayner - Gibson Line 9 NW/2 spd 1 Field date 2/3/67 Data page_____ Comp. date_____. Comp by H.D.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750		→	750-1000			→		
(C) n separation												
(D) I	1.2	1.6	1.2	1.2	1.4	1.2	1.0	1.2	1.4	1.2		
(E) Vdc (avg)	55.5	404	39.25	89	58.5	14.3	69	16.8	18.5	6.2		
(F) DCcal	1.0309	→								→		
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	1.5		
(H) ρ dc=ExFxGx10^3/D	36	195	101	57	129	92	53	49	102	80		
(I) Vac Σ	52	372	36	83	54	13.4	64	15.8	17.5	5.9		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.989	→								→		
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	5.6	7.4	7.8	6.0	7.1	5.5	6.6	5.2	4.6	3.9		
(O) MCF=(M-1)(10^5)/H	155	38	77	105	55	60	125	106	45	49		

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	1000-1250		→		1250-1500		→					
(C) n separation												
(D) I	1.0	1.2	1.4	1.2	1.0	1.2	1.4	1.2		1000		
(E) Vdc (avg)	30	10.4	13.5	5.425	10.9	4.34	6.04	2.45		97		
(F) DCcal	→							→				
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	93	67	149	122	84	56	117	88				
(I) Vac Σ	28	9.8	12.7	5.18	10.1	4.03	5.72	2.33		46		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.989	→						→				
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	6.0	5.0	5.1	3.6	6.7	6.5	4.4	4.0				
(O) MCF=(M-1)(10^5)/H	65	75	34	29	80	116	38	45				

Line 9 spd 1

INDUCED POLARIZATION - RECEIVER NOTES PAGE 29

Project: Kayson-Gibson Line: 9NW½ Int.Cal 97 Date:

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	1000-1250 →				1250-1500 →					1-2		
Time	100	30	30	10	30	10	10	10		300		
DC-1	31 29	10.5 10.3	13.2 13.8	5.5 5.35	11. 10.8	4.3 4.35	6.05 6.03	2.5 2.4		97 97		
DC-2	31 29	10.5 10.3	13.2 13.8	5.5 5.35	11. 10.8	4.3 4.38	6.05 6.03	2.4 2.5		97 97		
Σ	31											
DC-3	29	10.5 10.3	13.2 13.8	5.5 5.35	11. 10.8	4.3 4.35	6.03 6.05	2.4 2.5				
Dc-4												
Σ												
DC-AV	30	10.4	13.5	5.425	10.9	4.34	6.04	2.45				
AC-1	28	9.8	12.7	5.18	10.1	4.03	5.72	2.33		96		
AC-2	28	9.8	12.7	5.18	10.1	4.03	5.72	2.33		96		
Σ	28											
S. P.	+2				-11							
AC-N	.03				.02							
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES

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Project: Knudson - Gibson Line: 9 NW½ Int.Cal _____ Date: _____

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	0-250	250-500		500-750	→		750-1000		→			
Time	100	1000	100	300	100	30	100	30	30	10		
DC-1	55 56	403 405	39.5 39	88 60	58 59	14.3 14.3	69 69	16.8 16.8	18.4 18.6	6.2 6.2		
DC-2	55 56	403 405	39.5 39	88 60	58 59	14.3 14.3	69 69	16.8 16.8	18.4 18.6	6.2 6.2		
Σ												
DC-3	55 56	403 405	39.5 39	88 90	58 59	14.3 14.3	69 69	16.8 16.8	18.4 18.6	6.2 6.2		
Dc-4												
Σ												
DC-AV	55.5	404	39.25	89	58.5	14.3	69	16.8	18.5	6.2		
AC-1	52	372	36	83	54	13.4	64.0	15.8	17.5	5.9		
AC-2	52	372	36	83	54	13.4	64.0	15.8	17.5	5.9		
Σ	52	372	36	83	54	13.4	64	15.8	17.5	5.9		
S. P.	-3	+14		-14			+7					
AC-N	.03	.03		.06			.02					
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER & GIBSON Line: 9 NW 1/2 Date: 2-3-67

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
Receive	0-2.5 N	2.5-5 N	→	5-7.5 N	→	→	7.5-10 N	→	→	→	10-12.5 N	→
Time												
Range												
Current	1200	1600	1200	1200	1400	1200	1000	1200	1400	1200	1000	1200
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	12-5-15 N		→	→		CAL				
Time												
Range												
Current	1400	1200	1000	1200	1400	1200						

1000 12 16 12

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kaiser-Kilmer Line 9 5W½ Field date 2/3/67 Data page_____ Comp. date_____. Comp by_____

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250	-500	500	-750	→	750	-1000	→	→		
(C) n separation												
(D) I	1.0	1.2	1.0	1.6	1.2	1.0	1.2	1.6	1.2	1.0		
(E) Vdc (avg)	1.020	→								→		
(F) DCcal	264	59	33	112.5	13.4	10.2	91	28.455	5.2	4.36		
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	202	38	101	54	34	78	58	55	33	67		
(I) Vac Σ	246	56.2	30.75	106	12.7	9.6	87	27	4.95	4.1		
(J) AC noise x 2												
(K) Vac(corr) =$\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	7.3	5.0	7.3	6.1	5.5	6.3	4.6	5.5	5.0	6.3		
(O) MCF=(M-1)(10^5)/H	36	132	72	113	162	81	81	100	152	94		

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	1000	-1250	→	→	1250	-1500	→	→				
(C) n separation												
(D) I	1.2	1.6	1.2	1.0	1.2	1.6	1.2	1.0		1000		
(E) Vdc (avg)	23	15.4	3.275	3.15	12.4	9.5	2.475	2.44		98		
(F) DCcal	→	→	→	→	→	→	→	→				
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	59	74	42	85	79	95	55	104				
(I) Vac Σ	21.7	14.5	3.1	2.59	11.6	9.3	2.33	2.25		98		
(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)	6.0	6.2	5.6	5.4	6.9	6.5	6.2	8.4				
(O) MCF=(M-1)(10^5)/H	102	84	133	64	87	68	113	81				

INDUCED POLARIZATION - RECEIVER NOTES

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Project: Kayser-Gibson Line: 9SE 2 Int.Cal _____ Date: _____

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Rec.	1000 -	1250	→		1250	- 1500	←	→		4-5		
Time	10	30	10	10	30	30	10	10				
DC-1	22.7 23.3	13.2 15.6	3.3 3.25	3.3 3.0	12.3 12.5	10.0 9.8	2.5 2.45	2.45 2.45		98 98		
DC-2	22.7 23.3	15.3 15.5	3.3 3.25	3.3 3.0	12.3 12.5	10.0 9.8	2.5 2.45	2.45 2.45		98 98		
Σ	23									98		
DC-3	22.7 23.3	15.2 15.6	3.15 3.4	3.3 3.0	12.0 12.8	10.0 9.8	2.5 2.45	2.43 2.5	2.45 2.45			
Dc-4								2.43 2.43				
Σ		15.4	3.275	3.15	12.4	9.9	2.475	2.44				
DC-AV	23	15.4	3.275	3.15	12.4	9.9	2.475	2.44		98		
AC-1	21.7	14.5	3.1	2.99	11.7	9.3	2.33	2.25		98		
AC-2	21.7	14.5	3.1	2.99	11.6	9.3	2.33	2.25		98		
Σ	21.7	14.5	3.1	2.99	11.65	9.3	2.33	2.25		98		
S. P.	+28				-7							
AC-N	.1				.02							
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 30

Project: Kayser-Gibson Line: 95E 1/2 Int.Cal _____ Date: _____

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	0-250	250-500		500-750		→	750-1000		→			
Time	300	100	100	300	30	30	300	100	10	10		
DC-1	265 263	59 59	32.2 33.8	113 112	13.3 13.5	10.5 9.8	91 91	29.9 27	5.05 5.35	4.5 4.23		
DC-2	265 263	59 59	32.2 33.8	113 112	13.1 13.7	10.0 10.3	91 91	30 27.2	5.05 5.35	4.6 4.1		
Σ	264	59	33	112.5	13.4	10.15	91	28.52	5.2	4.35		
DC-3	265 263	59 59	32.2 33.8	113 112	13.0 13.8	10.3 10.2	91 91	30 26.8	4.98 5.41	4.5 4.21		
Dc-4						10.3 10.2		30.1 27	5.05 5.4	4.55 4.24		
Σ		59	33	112.5	13.4	10.25	91	28.47	5.2	4.37		
DC-AV	264	59	33	112.5	13.4	10.2	91	28.495	5.2	4.36		
AC-1	246	56.2	30.8	106	12.7	9.6	87	27	4.95	4.1		
AC-2	246	56.2	30.7	106	12.7	9.6	87	27	4.95	4.1		
Σ	246	56.2	30.75	106	12.7	9.6	87	27	4.95	4.1		
S. P.	+24		-27	-11			-35					
AC-N	.03		.02	.02			.02					
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER + GIBSON Line: 9 SE 1/2 Date: 2-3-67

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
Receive	0-2.5 s	2.5-5 s	→	5-7.5 s	→		25-10 s	→			10-12.5 s	
Time												
Range												
Current	1000	1200	1000	1600	1200	1000	1200	1600	1200	1000	1200	1600
Send	2-3	1-2	4-5	3-4	2 3	1-2		4.5				
Receive	→	→	12.5-15 s					CAL				
Time												
Range												
Current	1200	1000	1200	1600	1200	1000		1000				

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Hayden-Gibson Line L 8 spd 1 NW 1/2 Field date 2/1/67 Data page_____ Comp. date_____. Comp by H.A.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750	→		750-1000		→			
(C) n separation												
(D) I	1.2	1.6	1.2	2.0	1.6	1.2	1.4	2.0	1.6	1.2		
(E) Vdc (avg)	106.5	645	68.1	685	234.5	56	85.5	41.45	27.9	11.15		
(F) DCcal	1.0309											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	68	310	175	264	453	360	47	64	135	144		
(I) Vac Σ	100	625	64.5	659	222	52.5	83	40.2	26.8	10.8		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	6.5	3.2	5.6	3.9	5.6	6.7	3.0	3.1	4.1	3.2		
(O) MCF=(M-1)(10^5)/H	96	10	32	15	12	19	64	48	30	22		

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	1000-1250		→		1250-1500		→					
(C) n separation												
(D) I	1.4	2.0	1.6	1.2	1.4	2.0	1.4	1.2		1000		
(E) Vdc (avg)	38.25	25.1	20.5	9.0	14.45	10.75	8.6	5.05		97		
(F) DCcal												
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	85	97	198	203	80	83	166	182				
(I) Vac Σ	36.5	24.1	19.65	8.65	13.8	10.35	8.3	4.9		97		
(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)	4.8	4.1	4.3	4.0	4.7	3.9	3.6	3.0				
(O) MCF=(M-1)(10^5)/H	56	42	22	20	59	47	22	16				

Line 8 spd 1

INDUCED POLARIZATION - RECEIVER NOTES

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Project: Kayser-Gibson Line: 8 NW½ Int.Cal 94 Date: 2-2-67

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	0-250	250-500		500-750	→		750-1000	→				
Time	300	1000	100	1000	300	100	300	100	100	30		
DC-1	107 106	64.5 64.5	68 68.2	685 685	236 233	56.5 55.5	86 85	41.9 41	27.9 27.9	11.0 11.3		
DC-2	107 106	64.5 64.5	68 68.2	685 685	236 233	56.5 55.5	86 85	41.9 41	27.9 27.9	11.0 11.3		
Σ												
DC-3	107 106	64.5 64.5	68 68.2	685 685	236 233	56.5 55.5	86 85	41.9 41	27.9 27.9	11.0 11.3		
Dc-4												
Σ												
DC-AV	106.5	64.5	68.1	685	234.5	56.0	85.5	41.45	27.9	11.15		
AC-1	100	62.5	64.5	660	222	52.5	83	40.2	26.8	10.8		
AC-2	100	62.5	64.5	658	222	52.5	83	40.2	26.8	10.8		
Σ				659								
S. P.	+16	-1		-14			+8					
AC-N	.04	.03		.02			.02					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 25

Project: Kayser-Gibson Line: 8 NW½ Int.Cal _____ Date: 2-2-67

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	1000-	1250	→	→	1250	-1500	→	→		1-3		
Time	100	30	30	30	30	30	30	10		300		
DC-1	38.5 38	25 25.2	20.8 20.2	9.0 9.0	14.1 14.8	10.8 10.7	8.4 8.8	5.1 5.0		97 97		
DC-2	38.5 38	25 25.2	20.8 20.2	9.0 9.0	14.1 14.8	10.8 10.7	8.4 8.8	5.1 5.0		97 97		
Σ												
DC-3	38.5 38	25 25.2	20.8 20.2	9.0 9.0	14.1 14.8	10.8 10.7	8.4 8.8	5.1 5.0				
Dc-4								5.1 5.0				
Σ												
DC-AV	38.25	25.1	20.5	9.0	14.45	10.75	8.6	5.05				
AC-1	34.5	24.1	19.7	8.7	13.8	10.4	8.3	4.9		97		
AC-2	34.5	24.1	19.6	8.6	13.8	10.3	8.3	4.9		97		
Σ			19.65	8.65		10.35						
S. P.	+9				-10							
AC-N	.02				.02							
Pot.Res.												

N 56 W

INDUCED POLARIZATION SENDER NOTES

project: KAYSER & GIBSON Line: 8 NW½ Date: 2-2-67

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
Receive	N 0-2.5	2.5-5	N →	N 5-7.5	→	→	N 7.5-10	→	→	→	N 10-12.5	—
Time												
Range												
Current	1200	1600	1200	2000	1600	1200	1400	2000	1600	1200	1400	2000
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	12.5-15 N	→	→	→		CAL				
Time												
Range												
Current	1600	1200	1400	2000	1400	1200		1000				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser - Kibson Line L-8 spd 1 5 1/2 Field date 2/2/67 Data page ~~2/2-67~~ Comp. date_____. Comp by H.D.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	34	2-3	1-2		
(B) Receive	0-250	250-500		500-750	→		750-1000		→			
(C) n separation												
(D) I	1.4	2.0	1.4	1.4	2.0	1.4	1.2	1.4	2.0	1.2		
(E) Vdc (avg)	570	187	79.5	208.5	41.75	24.75	135	36.5	14.9	9.4		
(F) DCcal	1.030	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	310	72	176	115	65	137	87	81	58	121		
(I) Vac Σ	545	177	75.5	195	40	23.5	128	34.2	14	8.7		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	4.6	5.6	5.3	5.3	4.4	5.3	5.5	6.7	6.4	8.0		
(O) MCF=(M-1)(10^5)/H	15	78	30	46	68	32	33	82	110	6.6		

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	1000-1250		→		1250-1500		→					
(C) n separation												
(D) I	1.2	1.4	2.0	1.4	1.2	1.4	2.0	1.2		1000		
(E) Vdc (avg)	29.5	14.15	7.2	5.45	12.15	7.15	3.8	2.75		97		
(F) DCcal	→											
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	76	78	56	105	78	79	51	135				
(I) Vac Σ	27.9	13.3	6.7	5.1	11.4	6.6	3.6	2.53		97		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	5.7	6.4	7.5	6.9	6.6	8.3	5.5	8.7				
(O) MCF=(M-1)(10^5)/H	75	82	134	66	85	105	108	64				

INDUCED POLARIZATION - RECEIVER NOTES

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Project: Kayser-Gibson Line: 8SE½ Int.Cal 91 Date: 2-2-67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	0-250	250-500		500-750	→		750-1000	→		→		
Time	1000	300	100	300	100	100	300	100	30	30		
DC-1	57.0 57.0	186 188	79 80	208 209	42.5 41	25.5 24	135 135	36.5 36.5	14.8 15.	9.4 9.4		
DC-2	57.0 57.0	186 188	79 80	208 209	42.5 41	25.5 24	135 135	36.5 36.5	14.8 15	9.4 9.4		
Σ	?											
DC-3	57.0 57.0	186 188	79 80	208 209	42.5 41	25.5 24	135 135	36.5 36.5	14.8 15	9.4 9.4		
Dc-4												
Σ	?											
DC-AV	57.0	187	79.5	208.5	41.75	24.75	135	36.5	14.9	9.4		
AC-1	54.5	177	75.5	198	40	23.5	128	34.2	14	8.7		
AC-2	54.5	177	75.5	198	40	23.5	128	34.2	14	8.7		
Σ	54.5	177	75.5	198	40	23.5	128	34.2	14	8.7		
S. P.	+13	-5		+2			+3					
AC-N	.02	.04		.02			.02					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES PAGE 27

Project: Kayson-Gibson Line: 8SE½ Int.Cal _____ Date: 2-2-67

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Rec.	1000-	1250	→	→	1250	-1500	→	→		4mv		
Time	100	30	10	10	30	10	10	10		300		
DC-1	30 29	14.3 14.0	7.2 7.2	5.45 5.45	12 12.3	7.0 7.3	3.75 3.95	2.7 2.8		97 97		
DC-2	30 29	14.3 14.0	7.2 7.2	5.5 5.4	12 12.3	6.95 7.3	3.75 3.95	2.7 2.8		97 97		
Σ						6.75 7.3	3.8	2.7				
DC-3	30 29	14.3 14.	7.2 7.2	5.6 5.4	12 12.3	6.95 7.35	3.9 3.8	2.8				
Dc-4				5.45 5.45		6.9 7.37	3.9 3.8					
Σ							3.9					
DC-AV	29.5	14.15	7.2	5.45	12.15	7.15	3.8	2.75		97		
AC-1	27.9	13.3	6.7	5.1	11.4	6.6	3.6	2.53		97		
AC-2	27.9	13.3	6.7	5.1	11.4	6.6	3.6	2.53		97		
Σ	27.9	13.3	6.7	5.1	11.4	6.6	3.6	2.53		97		
S. P.	-3				-5							
AC-N	.03				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER + GIBSON Line: 8 SE 1/2 Date: 2-2-67

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
Receive	0-2.5 S	2.5-5 S	→	5-7.5 S	→	→	7.5-10 S	→	→	→	10-12.5 S	
Time												
Range												
Current	1400	2000	1400	1400	2000	1400	1200	1400	2000	1200	1200	1400
Send	2-3	1-2	4-5	3 4	2-3	1 2		4-5				
Receive	→	→	12.5-15 S		→	→		CAL				
Time												
Range												
Current	2000	1400	1200	1400	2000	1200		1000				

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Kayser-Gibson Line: 7 NW ½ SE ½ Int.Cal 91 Date: 12

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	0-250	250-500		500-750	→		750-1000	→				
Time	300	300	100	300	100	30	300	100	30	10		
DC-1	94 98	145 145	34.0 34.2	130 128	32.8 32	12.6 11.7	137 135	37 40	14.4 13.7	6.5 5.9		
DC-2	94 98	145 145	34.0 34.2	130 128	32.8 32	12.6 11.7	137 135	37 40	14.4 13.7	6.5 5.9		
Σ												
DC-3	94 98	145 145	34.0 34.2	130 128	32.8 32	12.6 11.7	137 135	37 40	14.4 13.7	6.5 5.9		
Dc-4												
Σ												
DC-AV	196	145	34.1	129	32.4	12.25	136	38.5	14.05	6.225		
AC-1	91	140	31.5	123	30.5	11.3	129	36.5	13.4	5.8		
AC-2	91	140	31.5	123	30.5	11.3	127	36.5	13.4	5.8		
Σ	191	140	31.5	123	30.5	11.3	128	36.5	13.4	5.8		
S. P.	+13	-5		-3			+13					
AC-N	.02	.02		.04			.02					
Pot.Res.												

6.55
6.33 | 12.45

14.4
13
14.05 | 28.1

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Kayser-Gibson Line: 7NW½ SE½ Int.Cal _____ Date: 13

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		cal		
Rec.	1000 -	1250	→	→	1250	- 1500	→	→		4-5		
Time	100	30	10	3	30	10	10	3				
DC-1	23 23.5	9.6 9.0	4.0 3.8	2.08 1.98	15.4 15.8	7.3 6.82	3.25 3.15	1.52 1.67		1 1		
DC-2	23 23.5	9.6 9.0	4.0 3.8	2.04 2.04 1.98	15.4 15.8	7.3 6.82	3.25 3.15	1.54 1.67		1 1		
Σ				2.04 1.88				1.55 1.67				
DC-3	23 23.5	9.6 9.0	4.0 3.8	2.18 2.04	15.4 15.8	7.3 6.82	3.25 3.15	1.57 1.64		1 1		
Dc-4				2.00 2.08 1.98				1.57 1.64				
Σ												
DC-AV	23.25	9.3	3.9	203.6	15.6	7.06	3.20	1.605		1		
AC-1	22	8.7	3.7	1.86	14.8	6.65	3.02	1.49		100		
AC-2	22	8.7	3.7	1.86	14.7	6.65	3.02	1.49		110		
Σ	22	8.7	3.7	1.86	14.7	6.65	3.02	1.49		100		
S. P.	-20				+1							
AC-N	.03				.03							
Pot.Res.												

$$\begin{array}{r} 1.605 \\ 2\overline{)3.21} \\ 2 \\ 12 \end{array}$$

$$\begin{array}{r} 7.06 \\ 2\overline{)14.12} \end{array}$$

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Kayser-Gibson Line: 7 SE ½ NW ½ Int.Cal 90 Date: 14

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	0-250	250-500		500-750	→		750-1000	→				
Time	300	300	100	300	100	100	300	100	100	30		
DC-1	173 173	167 167	49 53	235 237	58 59.8	26.2 25.8	192 192	63.9 63.9	34.5 34.5	20.2 20.4		
DC-2	173 173	167 167	49 53	235 237	58 59.8	26.2 25.8	192 192	63.9 63.9	34.5 34.5	20.2 20.4		
Σ												
DC-3	173 173	167 167	49 53	235 237	57 60	26.2 25.8	192 192	63.9 63.9	34.5 34.5	20.2 20.4		
Dc-4					58 59.8							
Σ												
DC-AV	173	167	51	236	58.9	26.0	192	63.9	34.5	20.3		
AC-1	163	156	47	221	54.5	24.2	177	61	32.5	19.2		
AC-2	163	156	47	220	54.5	24.	177	60.5	32.5	19.1		
Σ	163	156	47	220.5	54.5	24.1	177	60.75	32.5	19.15		
S. P.	-4	-13		-3			+8					
AC-N	.02	.02		.02			.02					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Kayser-Gibson Line: 7SE½ NW½ Int.Cal _____ Date: 15

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	1000 -	1250	→	→	1250	-1500	→	→		1-2		
Time	100	30	30	30	30	30	30	10				
DC-1	37.8 37.5	19.5 19.8	13.6 14.5	9.5 9.0	17.8 17.9	10.8 10.9	9.4 8.5	6.45 6.59		98 98		
DC-2	37.8 37.5	19.5 19.8	13.6 14.5	9.4 9.0	17.3 17.9	10.8 10.9	9.4 8.5	6.6 6.6		98 98		
Σ				9.5				6.55				
DC-3	37.8 37.5	19.5 19.8	13.6 14.5	9.5 9.0	17.3 17.9	10.8 10.9	9.4 8.5	6.63 6.4				
Dc-4								6.9 6.4 6.7				
Σ										98		
DC-AV	37.65	19.65	14.05	9.23	17.6	10.85	8.95	6.594		98		
AC-1	35.3	18.8	13.3	8.7	16.5	10.4	8.4	6.25				
AC-2	35.3	18.8	13.3	8.7	16.4	10.4	8.4	4.2				
Σ	35.3	18.8	13.3	8.7	16.45	10.4	8.4	1.22		98		
S. P.	+20				-5							
AC-N	.02				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER+GIBSON Line: 7 - NW 1/2 SE Date: 1-30-67

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
Receive	0-2.5 N	2.5-5 N	→	5-7.5 N	→		7.5-10 N	→			10-12.5	—
Time												
Range												
Current	960	1360	960	1560	1360	960	1360	1560	1360	960	1360	1560
Send	2-3	1-2	4-5	3-4	2-3	1-2		1-2				
Receive	→	→	12.5-15 N	→	→	→		CAL				
Time												
Range												
Current	1360	960	1360	1560	1360	960		1060				

S 56 E

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER + GIBSON Line: 7 SE 1/2 NW Date: 1-31-67

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
Receive	0-2.5 S	2.5-5 S	→	5-7.5 S	→	→	7.5-10 S	→	→	→	10-12.5 S	→
Time												
Range												
Current	1560	1560	1560	1400 (caught)	1600	1400	1000	1400	1600	1400	1000	1400
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	12.5-15 S	→	→	→		CAL				
Time												
Range												
Current	1600	1400	1000	1400	1600	1400		1000				

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser-Gibson Line 7 NW 1/2 SE 1/2 Field date 1-31-67 Data page_____ Comp. date_____. Comp by H.D.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250-500		500	-750	→	750	— 1000		→		
(C) n separation												
(D) I	.96	1.36	.96	1.56	1.36	.96	1.36	1.56	1.36	.96		
(E) Vdc (avg)	~~196~~(96)	145	34.1	129	32.4	12.25	136	38.5	14.05	6.225		
(F) DCcal	1.045	→								→		
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	78	84	111	65	75	100	78	77	81	102		
(I) Vac Σ	~~194~~(91)	140	31.5	123	30.5	11.3	128	36.5	13.4	5.8		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	1.000											
(L) AC-DC cal.	~~.991~~	→								→		
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	5.5	3.6	8.2	4.9	6.2	8.4	6.3	5.5	4.9	7.3		
(O) MCF=(M-1)(10^5)/H	70	43	74	75	83	84	81	71	60	72		

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	4-5	3-4	2-3	1-2	4-5	34	2-3	1-2		Cal		
(B) Receive	1000	-1250	→	→	1250	-1500	→	→				
(C) n separation												
(D) I	1.36	1.56	1.36	.96	1.36	1.56	1.36	.96		1160		
(E) Vdc (avg)	23.25	9.3	3.9	2.036	15.6	7.06	3.2	1.605		111		
(F) DCcal	→							→				
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	54	47	45	58	90	71	65	73				
(I) Vac Σ	22	8.7	3.7	1.86	14.7	6.65	3.02	1.49		110		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.991	→						→				
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	5.7	6.9	5.4	9.5	6.1	6.2	6.0	7.7				
(O) MCF=(M-1)(10^5)/H	106	147	120	163	68	87	92	105				

Line 7 sod 1

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kaynes-Kilbron Line 7 5E 1/2 NW 1/2 Field date 1-31-67 Data page_____ Comp. date_____. Comp by H.D.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750	→		750-1000		→			
(C) n separation												
(D) I	1.56	1.56	1.56	1.4	1.6	1.4	1.0	1.4	1.6	1.4		
(E) Vdc (avg)	173	167	51	236	58.9	26.0	192	63.9	34.5	20.3		
(F) DCcal	1.020	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	85	82	100	129	113	142	147	140	165	222		
(I) Vac Σ	163	156	47	220.5	54.5	24.1	177	60.75	32.5	19.15		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	6.1	7.0	8.5	7.0	8.1	7.9	8.5	5.2	6.2	6.0		
(O) MCF=(M-1)(10^5)/H	72	85	85	54	72	56	58	37	38	27		

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	1000-1250		→		1250-1500		→					
(C) n separation												
(D) I	1.0	1.4	1.6	1.4	1.0	1.4	1.6	1.4		1.000		
(E) Vdc (avg)	37.65	19.65	14.05	9.23	17.6	10.85	8.95	6.594		98		
(F) DCcal	1.020	→										
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	115	107	134	177	135	119	150	202				
(I) Vac Σ	35.3	18.8	13.3	8.7	16.45	10.4	8.4	6.225		98		
(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)	6.7	5.7	5.6	6.1	7.0	4.3	6.5	6.0				
(O) MCF=(M-1)(10^5)/H	58	53	42	35	52	36	43	30				

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser-Kibron Line 6 NW½ SE½ Field date 1-27-67 Data page_____ Comp. date_____. Comp by_____

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250	-500	500	-750	→	750-	1000	→	→		
(C) n separation												
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	1.8	2.0	2.0	2.0		
(E) Vdc (avg)	356.5	93.5	44.75	150	20.75	14.8	177	41.51	9.2	8.04		
(F) DCcal	1.075	—								→		
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	144	38	72	60	33	60	79	67	37	65		
(I) Vac Σ	322	87.0	41.2	139	19.4	13.6	167	38.5	8.5	7.43		
(J) AC noise x 2	—											
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	—										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	10.7	7.5	8.6	7.9	7.0	8.8	6.0	7.8	8.2	8.2		
(O) MCF=(M-1)(10^5)/H	74	197	119	132	212	147	76	116	222	126		

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	1000	-1250	→	→	1250	-1500	→	→				
(C) n separation												
(D) I	1.8	2.0	2.0	2.0	1.8	2.0	2.0	2.0		1000		
(E) Vdc (avg)	36.75	20.75	6.0	5.62	23.25	16.67	5.48	5.262		93		
(F) DCcal	—							→				
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	66	84	48	79	104	134	77	119				
(I) Vac Σ	34.8	19.4	5.73	5.25	21.9	15.5	5.1	4.85		93		
(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)	5.6	7.0	4.7	7.0	6.2	7.5	7.5	8.5				
(O) MCF=(M-1)(10^5)/H	85	83	98	89	60	56	97	71				

Line 6 spd 1

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser - Gibson Line 6 SE1/2 NW1/4 Field date 1-27-67 Data page_____ Comp. date_____. Comp by_____

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-	750 →		750-	1000	→			
(C) n separation												
(D) I	1.8	2.0 →				1.8	2.0	→		1.8		
(E) Vdc (avg)	79.6	370	38.5	168	71.5	13.9	285	53	38.25	10.95		
(F) DCcal USED	1.064	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	35	148	61	67	114	62	114	85	153	97		
(I) Vac Σ	75	340	35.8	152	65	12.9	262	49	35.5	10.3		
(J) AC noise x 2	—											
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	6.1	8.8	7.5	10.5	10.0	7.8	8.8	8.2	7.7	6.3		
(O) MCF=(M-1)(10^5)/H	174	59	123	157	88	126	77	96	50	65		

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	1000-	1250 →		→	1250-1500		→	→				
(C) n separation												
(D) I	2.0	→	→	1.8	→	→	→	1.8		1000		
(E) Vdc (avg)	62	20.1	19.65	6.69	28.6	11.55	12.7	4.86		94		
(F) DCcal	→											
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	99	80	157	104	114	92	177	121				
(I) Vac Σ	57.9	18.8	18.2	6.25	26.3	10.7	11.7	4.59		93		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→								~~989~~ 1.000		
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	7.1	6.9	8.0	7.0	8.7	7.9	8.5	5.9				
(O) MCF=(M-1)(10^5)/H	72	86	51	67	76	86	48	49				

INDUCED POLARIZATION SENDER NOTES

Project: Kayser-Gibson Line: 6 NW½ SE 2 Date: 2-27-67

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1 2	4-5	3 4	2-3	1-2
Receive	7.5	10 N	—	—	10-12.5 N	—	—	—	12.5	15 N	—	—
Time												
Range												
Current	1800	2000	2000	2000	1800	2000	2000	2000	1800	2000		
Send	4-5	1-2										
Receive	CAL	CAL										
Time												
Range												
Current	1000	1000										

INDUCED POLARIZATION / SENDER NOTES

Project: Kayser-Gibson Line: 6 NW ½ SE ½ NW ¼ Date: 1-27-67

Send	3-4	2-3	1-2	2-3	1-2	1-2	4-5	3-4	4-5	2-3	3-4	4 5
Receive	5-7.5 N	→	→	2.5-5 N	→	2.5-0 N	2.5 0 S	2.5-5 S	→	5-7.5 S	→	→
Time												
Range												
Current	2000	2000	2000	2000	2000	2000	1800	2000	1800	2000	2000	1800
Send	1-2	2-3	3-4	4-5	1-2	2-3	3 4	4-5	1-2	2-3	3-4	4-5
Receive	7.5-10 S	→	→	→	10-12.5 S	→	→	→	12.5	15	→	→
Time												
Range												
Current	2000	2000	2000	1800	2000	2000	2000	1800	2000	2000	2000	1800

INDUCED POLARIZATION - RECEIVER NOTES PAGE 9

Project: Kayser-Gibson Line: GNW½ SE½ Int.Cal _____ Date: _____

							SE½					
Send	3-4	2-3	1-2	2-3	1-2	1-2	4-5	3-4	4-5	2-3	3-4	4-5
Rec.	500-750	→	→	250-500		250-0	0-250	250-500	→	500-750	→	→
Time	300	30	30	100	100	1000	100	1000	100	300	100	30
DC-1	150 150	20.9 20.5	14.8 14.8	95 92	42 47.5	355 355	79 80.2	370 370	39.5 37.5	169 167	72 71	13.4 14.4
DC-2	150 150	20.9 20.6	14.8 14.8	95 92	42 47.5	358 355	78.5 80.5	370 370	39.5 37.5	169 167	72 71	13.3 14.5
Σ							78.5					13.3 14.5
DC-3	150 150	20.9 20.6	14.8 14.8	95 92	42 47.5	358 355	80.5 78.5	370 370	39.5 37.5	169 167	72 71	13.3 14.5
Dc-4	150 150			95 92	89.5		80.5 78.5					13.4 14.4
Σ		→		→	→	→	80.5					
DC-AV	150	20.75	14.8	93.5	44.75	356.5	79.6	370	38.5	168	71.5	13.9
AC-1	139	19.4	13.6	87.0	41.2	322	75	340	35.8	152	65	12.9
AC-2	139	19.4	13.6	87.0	41.2	322	75	340	35.8	152	65	12.9
Σ												
S. P.	+26.5			-10.5		-19.5	+17.5	-20.1		-40.		
AC-N	.04			.02		.04	.02	.04		.02		
Pot.Res.												

4-5	1-2
Cal	Cal
DC	DC
93	94
93	94
93	94
93	94

AC	AC
93	93
93	93

INDUCED POLARIZATION - RECEIVER NOTES PAGE 10

Project: Kaysor-Gibson Line: 6SE½ NW½ Int.Cal 96 Date:

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5
Rec.	750 -	1000	→	→	1000	- 1250	→	→	1250	- 1500	→	→
Time	1000	100	100	30	100	30	30	10	100	30	30	10
DC-1	285 285	52.2 53.8	37.5 39.	10.3 11.6	61 63	20.7 19.5	19.8 19.5	6.7 6.68	28.2 29	11.7 11.4	12.5 12.9	4.72 5.0
DC-2	285 285	52.2 53.8	37.5 39.	10.3 11.6	61 63	20.7 19.5	19.7 19.6	6.7 6.68	28.2 29	11.7 11.4	12.5 12.9	4.72 5.0
Σ												
DC-3	285 285	52.2 53.8	37.5 39.	10.3 11.6	61 63	20.7 19.5	19.8 19.5	6.7 6.68	28.2 29	11.7 11.4	12.4 13.	4.72 5.0
Dc-4							19.8 19.5				12.4 13.	4.72 5.0
Σ												
DC-AV	285	53.0	38.25	10.95	62	20.1	19.65	6.69	28.6	11.55	12.7	4.86
AC-1	262	49	35.5	10.3	57.9	18.8	18.2	6.25	26.3	10.7	11.7	4.59
AC-2	262	49	35.5	10.3	57.9	18.8	18.2	6.25	26.3	10.7	11.7	4.59
Σ												
S. P.	+9.0				+6.0				-13.2			
AC-N	.03				.04				.02			
Pot.Res.												

OVER

Sad Station POT MAN ~~[illegible]~~ to cross fence, Fence lies ½

INDUCED POLARIZATION - RECEIVER NOTES PAGE 11

Project: Kayson-Gibson Line: 6 NW ½ SE ½ Int.Cal 96 Date:

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2
Rec.	750-1000	→	→	→	1000-1250	→	→	→	1250-1500	→	→	→
Time	300	100	30	10	100	30	10	10	100	30	10	10
DC-1	177 177	41.9 41.2	9.2 9.2	7.98 8.2	37 36.5	20.7 20.8	6.0 6.0	5.5 5.75	24 22.5	16.8 16.5	5.6 5.4	6.0 5.77
DC-2	177 177	41.9 41.2	9.2 9.2	7.98 8.2	37 36.5	20.7 20.8	6.0 6.0	5.3 5.95	24 22.5	17.2 16.3	5.35 5.65	5.2 5.3
Σ								5.3		17.3 16	5.2 5.8	5.2 5.1
DC-3	177 177	41.9 41.2	9.2 9.2	7.98 8.2	37 36.5	20.7 20.8	6.0 6.0	5.95 5.35	24 22.5	17.3 16	5.2 5.7	5.15 5.25
Dc-4				7.98 8.2				5.85 5.3		17.3 16	5.1 5.9	5.3 5.4
Σ								5.55				
DC-AV	177	41.51	9.2	8.04	36.75	20.75	6.0	5.62	23.25	16.67	5.48	5.262
AC-1	166	38.5	8.5	7.43	34.8	19.4	5.72	5.25	21.9	15.5	5.1	4.85
AC-2	167	38.5	8.5	7.43	34.8	19.4	5.73	5.25	21.9	15.5	5.1	4.85
Σ												
S. P.	-5.0				-19.2				+5.2			
AC-N	.02				.02				.04			
Pot.Res.												

over

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayan - Gabon Line 5 spd 2 ~~SE 1/2~~ NW 1/2 Field date 2/1/67 Data page_____ Comp. date_____. Comp by H.D.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750	→		750-1000	→				
(C) n separation												
(D) I	2.0	→										
(E) Vdc (avg)	173	385	73	563	162	52.1	227	88.5	43.5	18.65		
(F) DCcal	1.031											
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	67	149	113	218	250	201	88	137	168	144		
(I) Vac Σ	169	375	71	539	156	50.5	218	85	42	18.2		
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	2.4	2.7	2.8	4.5	3.8	3.2	4.1	4.1	3.6	2.5		
(O) MCF=(M-1)(10^5)/H	36	18	25	21	15	16	47	30	21	17		

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	1000-1250	→		→	1250-1500		→			1-2		
(C) n separation												
(D) I	2.0	→						→		1000		
(E) Vdc (avg)	57.9	31	19.95	9.75	32.3	20.65	15	8.26		97		
(F) DCcal												
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	89	120	154	132	125	160	203	179				
(I) Vac Σ	55.3	29.9	19.3	9.4	30.5	19.8	14.4	7.95		97		
(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)	4.7	3.7	3.4	3.7	5.9	4.3	4.2	3.9				
(O) MCF=(M-1)(10^5)/H	53	31	22	28	47	27	21	22				

Line 5 - Spd 2

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 22

Project: Kayser-Gibson Line: 5' spread II (A) Int.Cal 92 Date:

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	1750-2000	2000-2250		2250-2500		→	2500-2750		→			
Time	300	1000	100	1000	300	100	300	300	100	30		
DC-1	173 173	385 385	75 71	563 563	162 162	52.5 51.7	226 228	87 90	45 42.1	18.5 18.8		
DC-2	173 173	385 385	75 71	563 563	162 162	52.5 51.7	226 228	87 90	45 42.1	18.5 18.8		
Σ												
DC-3	173 173	385 385	75 71	563 563	162 162	52.5 51.7	226 228	87 90	45 42.1	18.5 18.8		
Dc-4						104.2						
Σ	173	385	73	563	162	52.1	227	88.5	43.55	18.65		
DC-AV												
AC-1	169	375	71	539	156	50.7	218	85	42.0	18.2		
AC-2	169	375	71	539	156	50.3	218	85	42.0	18.2		
Σ	169	375	71	539	156	50.5	218	85	42	18.2		
S. P.	+16	-1		-1			-18					
AC-N	.03	.03		.03			.02					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES PAGE 23

Project: KAYSER-GIBSON Line: 6" SPREAD II AD Int.Cal _____ Date: _____

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	2750 -	3000	→	→	3000	-3250	→	→		1-2		
Time	100	100	30	30	100	30	30	10	10	300		
DC-1	57.8 58	30.5 31.5	20.2 19.7	9.4 10.1	31.8 32.8	20 21.3	15.2 14.8	8.35 8.25	8.2 8.3	97 97		
DC-2	57.8 58	30.5 31.5	20.2 19.7	9.4 10.1	31.8 32.8	20 21.3	15.2 14.8	8.35 8.25	8.2 8.32	97 97		
Σ												
DC-3	57.8 58	30.5 31.5	20.2 19.7	9.4 10.1	31.8 32.8	20 21.3	15.2 14.8	8.4 8.1	8.4 8.1	97 97		
Dc-4	115.8	62.						8.25 8.35	8.35 8.1			
Σ	57.9	31	39.9	19.5	64.6	41.3	30.0	16.52	16.47			
DC-AV	57.9	31	19.95	9.75	32.3	20.65	15.0	8.26		97		
AC-1	55.3	29.9	19.3	9.4	30.5	19.8	14.4	7.95		97		
AC-2	55.3	29.9	19.3	9.4	30.5	19.8	14.4	7.95		97		
Σ	55.3	29.9	19.3	9.4	30.5	19.8	14.4	7.95		97		
S. P.	+12				-6							
AC-N	.03				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER & GIBSON Line: 5- SPD 2 NW/2 Date: 2-1-67

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
Receive	17.5-20 s	20-22.5 s		22.5	25.0 s	→	25-27.5 s		→		27.5	30 s
Time												
Range												
Current	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→		30-25.5 s		→			CAL				
Time												
Range												
Current	2000	2000	2000	2000	2000	2000		1000				

15 x 20

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kapper - Gibson Line 5 spd 2 Field date 2/9/67 Data page_____ Comp. date_____. Comp by H.D.

~~NW~~ 1/2 SE 1/2

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250-500		500-750	→		750-1000		→			
(C) n separation												
(D) I	2.0	→										
(E) Vdc (avg)	395	186	75	295	66.9	37.5	250	96	32.25	21.1		
(F) DCcal	1.020	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	151	71	115	113	102	143	96	147	123	161		
(I) Vac Σ	382	183	73	285	65.8	36.5	244	94	31.9	20.7		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	3.4	1.6	2.7	3.5	1.7	2.7	2.5	2.1	1.1	1.9		
(O) MCF=(M-1)(10^5)/H	23	23	24	31	17	19	26	14	9	12		

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	1000-1250		→		1250-1500		→			4-5		
(C) n separation												
(D) I	2.0	→								1000		
(E) Vdc (avg)	83.75	46	19.35	13.65	22.1	15.8	7.81	6.06		98		
(F) DCcal	→											
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	128	176	148	183	85	121	105	130				
(I) Vac Σ	80.5	44.5	18.7	13.2	21.3	15.2	7.6	5.8		98		
(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)	4.0	3.4	3.5	3.4	3.8	3.9	2.8	4.5				
(O) MCF=(M-1)(10^5)/H	31	19	24	19	45	32	27	35				

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 20

Project: Kayser-Gibson Line: 5 Spread II, 4 Int.Cal 92 Date: 2-1-67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	1750-1500	1500-1250		1250-1000 →			1000-750 →					
Time	1000	300	100	1000	100	100	300	300	100	30		
DC-1	395 395	185 187	75.5 74.5	295 295	67.8 66.0	36.5 38.5	250 250	96 96	32 32.5	21.4 20.7		
DC-2	395 395	185 187	75.5 74.5	295 295	67.8 66.0	36.5 38.5	250 250	96 96	32 32.5	21.4 20.7		
Σ										21.5 20.8		
DC-3	395 395	185 187	75.5 74.5	295 295	67.8 66.0	36.5 38.5	250 250	96 96	32 32.5	21.5 20.8		
Dc-4										21.5 20.8		
Σ												
DC-AV	395	186	75.0	295	66.9	37.5	250	96	32.25	21.1		
AC-1	382	183	73.0	285	65.8	36.5	244	94	31.9	20.8		
AC-2	382	183	73.0	285	65.8	36.5	244	94	31.9	20.7		
Σ												
S. P.	+5	-5		-14			+9					
AC-N	.03	.02		.02			.03					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 21

Project: Kayser-Gibson Line: 5 Spread II DE½ Int.Cal _____ Date: 2-1-69

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Rec.	750 -	500	→	→	500 -	250	→	→		4-5		
Time	100	100	30	30	30	30	10	10		300		
DC-1	83.7 84	46 46	19.4 19.3	13.3 14.0	22.4 21.8	15.4 16.2	7.8 7.85	6.0 6.1		98 98		
DC-2	83.7 84	46 46	19.4 19.3	13.3 14.0	22.4 21.8	15.4 16.2	7.8 7.9 7.7	5.9 6.15		98 98		
Σ							7.8	5.9 6.4				
DC-3	83.7 84	46 46	19.4 19.3	13.3 14.0	22.4 21.8	15.4 16.2	7.95 7.65	5.95 6.05				
Dc-4	83.5 83.5						7.9 7.6	6.0 6.1				
Σ							8.1 7.5					
DC-AV	83.75	46	19.35	13.65	22.1	15.8	7.81	6.06				
AC-1	81	44.5	18.7	13.2	21.4	15.2	7.6	5.8		98		
AC-2	80.5	44.5	18.7	13.2	21.3	15.2	7.6	5.8		98		
Σ												
S. P.	-4				-10							
AC-N	.04				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER & GIBSON Line: 5- 5PD. 2.5 ~~FT~~ 1/2 Date: 2-1-67

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
Receive	15-17.5 s	12.5-15 s	→	10-12.5 s	→	→	7.5-10 s	→	→	→	5-7.5 s	—
Time												
Range												
Current	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Send	2-3	1-2	4-5	3-4	2-3	1-2		4-5				
Receive	→	→	5-2.5 s					CAL				
Time												
Range												
Current	2000	2000	2000	2000	2000	2000		1000				

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser - Silver Line 5 NW1/4 Spd 1 Field date 1-26-67 Data page_____ Comp. date_____. Comp by CSL H.D.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250-500		500-750	→		750-1000	→				
(C) n separation												
(D) I	2.0	2.0	2.0	1.8	2.0	2.0	2.0	1.8	2.0	2.0		
(E) Vdc (avg)	339	187	57.5	238.5	45.5	22.5	95	37.85	15.3	10.0		
(F) DCcal	1.064	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	135	75	92	106	73	90	38	67	61	80		
(I) Vac Σ	318	175.5	53.9	226	42.9	21	89	34.8	14.4	9.2		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	6.6	6.6	6.7	5.5	6.1	7.1	6.7	8.8	6.3	8.7		
(O) MCF=(M-1)(10^5)/H	49	88	73	52	84	79	176	131	103	109		

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	1000-1250		→		1250-1500		→					
(C) n separation												
(D) I	2.0	1.8	2.0	2.0	2.0	1.8	2.0	2.0				
(E) Vdc (avg)	22.6	14.5	8.225	6.225	12.8	9.4	5.83	4.675		94		
(F) DCcal												
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	36	64	66	87	51	83	81	104				
(I) Vac Σ	20.6	13.3	7.56	5.75	11.7	8.7	5.4	4.3		94		
(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)	9.7	9.0	8.8	8.3	9.4	8.0	8.0	8.7				
(O) MCF=(M-1)(10^5)/H	269	141	133	95	184	96	99	84				

Line 5 Spd 1

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 5

Project: Mayson-Gibson Line: 5 NW½ SE½ Int.Cal 95 Date: 1-26-67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	0-250	250-500		500-750	→		750-1000		→			
Time	1000	300	100	300	100	100	300	100	30	30		
DC-1	340 338	187 187	56 59	239 238	45 46	22.5 22.5	95 95	38.2 36.5	14.8 15.8	10.1 9.9		
DC-2	340 338	187 187	56 59	239 238	45 46	22.5 22.5	95 95	38.2 36.5	14.7 15.9	9.9 10.1		
Σ									14.6 16.0			
DC-3	340 338	187 187	56 59	239 238	45 46	22.5 22.5	95 95	38.2 36.5	14.6 16.0	9.9 10.1		
Dc-4									15.9 15.7 15.2 15.6	9.9 10.1		
Σ	678	374	115	477	91	45.0	190	74.7	18.5.7	20.0		
DC-AV	339	187	57.5	238.5	45.5	22.5	95	37.85	15.3	10.0		
AC-1	319	176	53.9	226	42.9	21	89	34.8	14.4	9.2		
AC-2	318	175	53.9	226	42.9	21	89	34.8	14.4	9.2		
Σ	637	351	107.8	452	85.8	42	178	69.6	28.8	18.4		
S. P.	+10.6	-39.7		+56.3			-7.7					
AC-N	.02	.04		.04			.25					
Pot.Res.												

DC 93
93
93
93
93
93

330
325

2	1.6.3
1	1.4.4
	1.5.8
30.6	

AC 92
92

AC 310

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 6

Project: Kayser-Gibson Line: 5 NW ½ SE ½ Int.Cal _____ Date: 1-26-67

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Call		
Rec.	1000	-1250	→	→	1250	-1500				4-5		
Time	30	30	10	10	30	30	10			300		
DC-1	22.8 22.4	14.2 14.8	8.35 8.1	6.35 6.1	13.35 12.00	8.8 10.0	5.95 5.70	4.55 4.8		94 94		
DC-2	22.8 22.4	14.2 14.8	8.35 8.1	6.35 6.1	13.8 11.8	8.8 10.0	5.95 5.70	4.55 4.8		94 94		
Σ							6.00 5.75					
DC-3	22.8 22.4	14.2 14.8	8.35 8.1	6.35 6.1	13.8 11.8	8.8 10.0	5.95 5.70	4.55 4.8				
Dc-4				6.35 6.1	13.8 11.8		5.95 5.70					
Σ	45.2	29.0	16.45	12.45	102.15	18.8	58.35	9.35		188		
DC-AV	22.6	14.5	8.225	6.225	12.8	9.4	5.83	4.675		94		
AC-1	20.6	13.3	7.56	5.75	11.7	8.7	5.4	4.3		94		
AC-2	20.6	13.3	7.56	5.75	11.7	8.7	5.4	4.3		94		
Σ	41.2	26.6	15.12	11.50	23.4	17.4	10.8	8.6		188		
S. P.	+8.4				+1.3							
AC-N	.025				.04							
Pot.Res.												

OWM

N 56W

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER+GIBSON Line: 5 NW1/2 SE1/2 Date: 1-26-67

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
Receive	0-2.5 N	2.5-5 N	→	5-7.5 N	→	→	7.5-10 N	→	→	→	10-12.5 N	—
Time												
Range												
Current	2000	2000	2000	1800	2000	2000	2000	1800	2000	2000	2000	1800
Send	2-3	1-2	4-5	3-4	2-3	1-2		4-5				
Receive	→	→	12.5-15 N	→	→	→		CAL				
Time												
Range												
Current	2000	2000	2000	1800	2000	2000		1000				

NW½

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser-Gibson Line 5 SE½ Field date 1-26-67 Data page_____ Comp. date_____. Comp by CSH / H.O

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750	→		750-1000	→				
(C) n separation												
(D) I	2.0	1.8	2.0	2.0	1.8	2.0	2.0	2.0	1.8	2.0		
(E) Vdc (avg)	170.5	297	55.75	248	81.75	22.00	280	60.15	29.95	8.9		
(F) DCcal USED	1.081	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρdc=ExFxGx10^3/D	69	134	90	101	147	89	114	98	135	72		
(I) Vac Σ	162	279	52.3	235	76.2	20.3	26.5	56.5	23.5	8.3		
(J) AC noise x 2												
(K) Vac(corr) =$\sqrt{I^2 - J^2}$	1.000											
(L) AC-DC cal. USED	.995	→										
(M) ρdc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	5.2	6.5	6.6	5.5	7.3	8.4	5.7	6.5	27.4?	7.2		
(O) MCF=(M-1)(10^5)/H	75	49	73	54	50	94	50	66	203?	100		

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	1000-1250	→		→	1250-1500	→		→				
(C) n separation												
(D) I	2.0	2.0	1.8	2.0	2.0	2.0	1.8	2.0		1000		
(E) Vdc (avg)	57.15	19.95	10.6	4.55	23.65	7.8	5.86	2.57		92.5		
(F) DCcal	→						→			1.081		
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρdc=ExFxGx10^3/D	93	81	95	65	96	63	92	58				
(I) Vac Σ	54.5	18.7	9.9	4.22	22.4	8.7	5.49	2.41		92.0		
(J) AC noise x 2												
(K) Vac (corr) =$\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	→									.995		
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	4.9	6.7	7.1	7.8	5.6	?	6.7	6.6				
(O) MCF=(M-1)(10^5)/H	53	83	75	120	58		73	114				

INDUCED POLARIZATION - RECEIVER NOTES PAGE 7

Project: Kaiser-Gibson Line: 5 SE½ NW½ Int.Cal _____ Date: 1-26-67

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	0-250	250-	500	500-	750	→	750-	1000				
Time	300	1000	100	300	100	100	1000	100	100	30		
DC-1	173 168	295 297	55 56.5	249 247	83 80.5	21 23	280 280	59.8 60.5	24.2 25.7	9.3 8.5		
DC-2	173 168	295 299	55 56.5	249 247	83 80.5	21 23	280 280	59.8 60.5	24.2 25.7	9.3 8.5		
Σ												
DC-3	173 168	295 299	55 56.5	249 247	83 80.5	21 23	280 280	59.8 60.5	24.2 25.7	9.3 8.5		
Dc-4												
Σ												
DC-AV	1.705	297	55.75	248	81.75	22	280	60.15	29.95	8.9		
AC-1	162	279	52.3	235	76.2	20.3	265	56.5	23.5	8.3		
AC-2	162	279	52.3	235	76.2	20.3	265	56.5	23.5	8.3		
Σ	162	279	52.3	235	76.2	20.3	265	56.5	23.5	8.3		
S. P.	+3.3	+4.1		-5.0			+6.1					
AC-N	.02	.04		.06			.04					
Pot.Res.												

173
1680
2|3[illegible]

1755
297
2|5 94

65
[illegible]
2|111 5

183
8[illegible]
2|163.5

55.8
68.55
2|120 3

9.3
8.5
8.8
2|17[illegible]

24.2
[illegible]
2|[illegible]

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 8

Project: Kayser-Gibson Line: 5 SE½ NW½ Int.Cal _____ Date: 1-26-67

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	1000 - 1250		→		1250 - 1500		→			1-2		
Time	100	30	30	10	30	30	10	10				
DC-1	56.1 58.2	19.8 20.1	11.2 10.0	4.6 4.35	23.3 24	8.8 9.8	5.80 5.9	2.4 2.75		93 92		
DC-2	56.1 58.2	19.8 20.1	11.2 10.0	4.50 4.42 4.5	23 24.3	8.7 9.9	5.78 5.98	2.38 2.8		93 92		
Σ				4.43	22.8 24.5	8.6 10	5.7 5.9	2.5 2.62				
DC-3	56.1 58.2	19.8 20.1	11.3 9.9	4.5 5.5	22.7 24.6	8.5 10.1	5.7 6.0	2.5 2.62		93 92		
Dc-4			11.3 9.9	4.0 6.0	24.7 23.	8.5 10.1	5.65 6.0	2.5 2.62				
Σ	114.3	39.9	11.3 9.9		24.1		5.6 6.05					
DC-AV	57.15	19.95	10.6	4.35	23.65	7.8	5.86	2.57		92.5		
AC-1	54.5	18.7	9.9	4.22	22.4	8.7	5.49	2.41		92		
AC-2	54.5	18.7	9.9	4.22	22.4	8.7	5.49	2.41		92		
Σ	54.5	18.7	9.9	4.22	22.4	8.7	5.49	2.41		92		
S. P.	-18.0				-5.5							
AC-N	.62				.02							
Pot.Res.												

56

10.6
2 / 212
20
12

2.59
2 / 5.15

5.96

5.8
2 / 11.6
2
.6

5.98
2 / 11.96
10

2.36
2 / 4.73

8.8
6.6
2 / 1.5

5.0 #1
4.5

5-56 E

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER + GIBSON Line: 5 - SE1/2 NW1/2 Date: 1-26-67

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
Receive	0-2.5 S	2.5-5 S	→	5-7.5 S	→		7.5-10 S	—	—	—	10-12.5 S	—
Time												
Range												
Current	2000	1800	2000	2000	1800	2000	2000	2000	1800	2000	2000	2000
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	12.5-15 S	→	→	→		CAL				
Time												
Range												
Current	1800	2000	2000	2000	1800	2000		1000				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Gibson Line 4SP II SW Field date 1-12-67 Data page_____ Comp. date 1-13-67. Comp by_____

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	35-40	40-45	→	45-50	→	→	50-55	→	→	→		
(C) n separation	1	1	2	1	2	3	1	2	3	4		
(D) I	1500	1500	1000	1500	1500	1000	1500	1500	1000	1000		
(E) Vdc (avg)	185	147.9	47.5	401	40.53	28.1	240	83.0	3.29	7.99		
(F) DCcal	.505											
(G) Kn x 10^{-3}	1.5	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30		
(H) ρ dc=ExFxGx10^3/D	93	75	144	203	82	213	121	168	25	121		
(I) Vac Σ	175	144.6	46.6	384	40.6	27.4	230	79.0	3.52	7.84		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000									→		
(M) ρ dc/ρac=ExL/K	1.057	1.023	1.019	1.044	.998	1.026	1.043	1.051	.935	1.019		
(N) PFE=(M-1)(10^2)	5.7	2.3	1.9	4.4	-0.2	2.6	4.3	5.1	-6.5	1.9		
(O) MCF=(M-1)(10^5)/H	61	31	13	22	-2	12	36	30	-260	16		
	+1.7	+3		-6			-5.3					

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	55-60	→	→	→	60-65	→	→	→			1-2	
(C) n separation	2	3	4	5	3	4	5	6				
(D) I	1000	1000	1000	1000	1000	1000	1000	1000			1000	
(E) Vdc (avg)	45.4	29.4	5.20	2.52	21.63	26.7	—	3.44			198	
(F) DCcal												
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84				
(H) ρ dc=ExFxGx10^3/D	138	223	79	67	164	405		146				
(I) Vac Σ	44.6	28.6	4.82	2.4	21.2	26.4	—	3.44			198	
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000							→			1.000	
(M) ρdc/ρac =ExL/K	1.018	1.028	1.079	1.050	1.020	1.011		1.000				
(N) PFE=(M-1)(10^2)	1.8	2.8	7.9	5.0	2.0	1.1		0				
(O) MCF=(M-1)(10^5)/H	13	13	100	75	12	3	—	0				
	-3.4				+35.7							

LINE 4 Spl 2

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: 7-B - SW Date: 1/11/67

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Receive	35-40	40-45	→	45-50	→		50-55	→				
Time												
Range							210V	200V	220V	260V		
Current	1.5A	1.5A	1.0A	1.5A	1.5A	1.0A	1.5A	1.5A	1.0A	1.0A		
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		CAL 1-2		
Receive	55-60	→			60-65	→						
Time												
Range	140V	120V	220V	260V	140V	120V	220V					
Current	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A			1.0A		

INDUCED POLARIZATION SURVEY - RECEIVER NOTES PAGE

Project: Kayser Gibson Line: B 555W Int.Cal 88 Date:

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4		4-5
Rec.	35-40	40-45	→	45 50	→		50-55	→			
Time	300	100	30	300	30	30	300	100	3		10
DC-1	92 93	74 73.9	23.4 24.1	200 201	20.5 20	13.7 14.3	119 121	41.5 41.5	2.0 1.4		4.0 3.9
DC-2	92 93	74 73.9	23.4 24.1	200 201	20.5 20	14.3 13.7	119 121	41.5 41.5	1.05 2.7		3.8 4.25
Σ											
DC-3	92 93	74 73.9	23.4 24.1	200 201	20.3 20.4	14.0 14.1	119 121	41.5 41.5	1.95 1.33		3.8 4.25
DC-4					20.2 20.4	14.2 13.8			1.4 1.4		4.0 3.9
Σ											
DC-AV	185	147.9	47.5	401	40.53	28.1	240	83.0	3.29		7.99
AC-1	88	72.3	23.3	192	20.3	13.7	115	39.5	1.76		3.92
AC-2	87	72.3	23.3	192	20.3	13.7	115	39.5	1.76		3.92
Σ	175	144.6	46.6	384	40.6	27.4	230	79.0	3.52		7.84
S. F +	1.7	13		-6.1			-5.3				
AC-N	.25	.2		.1			.2				

INDUCED POLARIZATION SURVEY & RECEIVER NOTES PAGE

Project: Gibson Line: B5 55W Int. Cal. Line #4 Date:

Send	1-2	2-3	3-4	4-5	1-2	2-3	4-5	4-5			cal	
Rec.	55	60	→		60			→			1-2	
Time	30	30	10	3	30	30	3					
DC-1	23.7 21.7	14.4 15	2.5 2.7	1.25 1.33	10.6 1.3	13.2 13.9	1.50 1.9				99 99	
DC-2	23.7 21.7	14.4 15	2.6 2.6	1.08 1.38	10.3 6	12.9 14.1	1.65 1.92				99 99	
Σ												
DC-3	23.7 21.7	14.4 15	2.5 2.7	1.25 1.28	10.7 10.7	13.2 13.9	1.65 1.95					
DC-4	23.7 21.7		2.4 2.8	1.23 1.28	10.7 10.7	12.8 14.3	1.2 2.1					
Σ			2.5 2.7		10.4 11.3	12.8 14.3						
DC-AV.	45.4	29.4	5.20	2.52	21.63	26.7	3.44					
AC-1	22.3	14.3	2.41	1.2	10.6	13.2	1.72				99	
AC-2	22.3	14.3	2.41	1.2	10.6	13.2	1.72				99	
Σ	44.6	28.6	4.82	2.4	21.2	26.4	3.44					
S.P.	-3.4				+35.7							
AC-N	.85				1.5							

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INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project G,650N Line 4 Sp2 N55E Field date 1-12-67 Data page_____ Comp. date 1-12-67. Comp by RP.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	30-35	25-30	→	20-25	→	→	15-20	→	→	→		
(C) n separation	1	1	2	1	2	3	1	2	3	4		
(D) I	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		
(E) Vdc (avg)	84.1	123.2	47.12	287	39.04	20.89	142.0	49.56	17.08	8.25		
(F) DCcal	.5025											
(G) Kn x 10^{-3}	1.5	1.5	6.0	1.5	6.0	15	1.5	6.0	1.5	30		
(H) ρ dc=ExFxGx10^3/D	63	93	142	216	118	157	107	149	129	124		
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	83.1	118.8	45.6	275.0	37.7	20.0	132.8	45.6	16.0	7.84		
(L) AC-DC cal.	.985	→	→	→	→	→	→	→	→	→		
(M) ρ dc/ρac=ExL/K		1.021	1.018	1.028	1.020	1.029	1.060	1.071	1.051	1.037		
(N) PFE=(M-1)(10^2)		2.1	1.8	2.8	2.0	2.9	6.0	7.1	5.1	3.7		
(O) MCF=(M-1)(10^5)/H		23	13	13	17	18	56	48	40	30		
	+0.9	-4.9		-3.8			+8.4					

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	10-15	→	→	→	5-10	→	→	→			4-5	
(C) n separation	2	3	4	5	3	4	5	6				
(D) I	1000	1000	900	900	900	900	900	900			1000	
(E) Vdc (avg)	53.0	35.31	5.15	4.79	17.55	13.50	4.51	3.09			199	
(F) DCcal												
(G) Kn x 10^{-3}	6.0	15	30	52.5	15	30	52.5	84				
(H) ρ dc=ExFxGx10^3/D	160	266	86	140	147	226	132	145				
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$	48.8	32.9	4.74	4.36	16.6	12.4	4.32	3.06			196	
(L) AC-DC cal.		→	→	→	→	→	→	→				
(M) ρdc/ρac =ExL/K	1.070	1.057	1.070	1.082	1.041	1.072	1.028	.995				
(N) PFE=(M-1)(10^2)	7.0	5.7	7.0	8.2	4.1	7.2	2.8	-0.5				
(O) MCF=(M-1)(10^5)/H	44	21	81	59	28	30	21	-3				
	+6.3				-15							

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: 5-B NE Date: 1/11/67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Receive	30-35	25-30	→	20-25	→		15-20	→				
Time												
Range							260v	220v	140v	140v		
Current	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A		
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		CAL 4-5		
Receive	10-15	→			5-10	→						
Time												
Range	260v	220v	120v	120v	220v	200v	120v	120v				
Current	1.0A	1.0A	0.9A	0.9A	0.9A	0.9A	0.9A	0.9A		1.0A		

INDUCED POLARIZATION SURVEY - RECEIVER NOTES PAGE 4 SP2

Project: Kayser Gibson Line: 1 N55E Int. Cal. Date:

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	30-35	25-30	→	20-25	→	→	15-10	→	→	→		
Time	100	100	100	300	30	30	100	100	30	10		
DC-1	41.9 41.6	61.2 62.0	23.8 23.2	143 144	20.9 18.1	10.0 10.9	72.0 70.0	23.8 25.8	8.4 8.0 8.8 9.0	4.02 4.26 4.10 3.90		
DC-2	42.5 41.8	61.2 62.0	23.8 23.4	143 144	21.0 17.9	9.9 11.0	72.0 70.0	23.6 26.0	8.1 8.1 9.0 9.1	4.20 4.34 4.12 4.06		
Σ												
DC-3	42.2 42.0	61.2 62.0	23.3 23.4	143 144	21.0 18.0	9.9 11.0	72.0 70.0	23.6 26.0	8.2 8.9	4.24 4.08 3.80 4.18		
DC-4	42.4 41.8				21.3 17.8	9.9 11.0			8.0 9.1	4.46 4.16 3.98 4.04		
Σ												
DC-AV.	84.1	123.2	47.12	287	39.04	20.89	142.0	49.56	17.08	8.25		
AC-1	41.5	59.4	22.8	137.5	18.85	10.0	66.4	22.8	8.0	3.92		
AC-2	41.6	59.4	22.8	137.5	18.85	10.0	66.4	22.8	8.0	3.92		
Σ	83.1	118.8	45.6	275.0	37.7	20.0	132.8	45.6	16.0	7.84		
S.P.	+0.9	-4.1		-3.8			+8.4					
AC-N	.04	.04		.03			.02					

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Gibson (Kayser) Line: ~~4~~ 3 N/55-E, SP2 Int.Cal _____ Date: _____

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2			Cal	
Rec.	10-15	→	→	→	5-10	→	→	→			4-5	
Time	100	30	10	10	30	30	10	3			300	
DC-1	25.5 27.5	18.4 17.0	2.24 2.16 2.80 2.80	2.32 2.80 2.16 1.92	8.9 9.0 8.6 8.7	6.8 7.0	2.50 2.80 2.15 2.00	1.60 1.35 1.57 1.79			99.5 99.5	
DC-2	25.5 27.5	18.2 17.0	2.82 3.00 2.36 1.88	2.40 2.60 2.10 1.98	8.8 8.9 8.5 8.3	6.4 7.0	2.10 2.48 2.00 1.76	1.60 1.59 1.95 1.56			99.5 99.5	
Σ												
DC-3	25.5 27.5	18.5 16.9	2.22 3.00 2.78 1.86	2.42 2.86 2.22 1.94	9.0 8.9 8.9 8.8	6.5 7.0	2.60 2.82 2.12 1.78	1.43 1.57 2.02 1.68				
Dc-4		18.4 16.8	1.40 3.18 2.22 2.00	2.34 2.78 2.20 1.78	9.0 8.8	6.5 6.9	2.26 2.42 1.84 1.70	1.80 1.59 1.70 2.11				
Σ								0.89 1.76				
DC-AV	53.0	35.31	5.15	4.79	17.55	13.50	4.51	3.09			199.0	
AC-1	24.4	16.45	2.37	2.18	8.3	6.2	2.16	1.53			98.0	
AC-2	24.4	16.45	2.37	2.18	"	6.2	2.16	1.53			98.0	
Σ	48.8	32.9	4.74	4.36	16.6	12.4	4.32	3.06			196.0	
S. P.	+6.3				-15.0							
AC-N	.03				.03							

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayer-Gibson Line 4 SP1 555W Field date 1-10-67 Data page_____ Comp. date_____. Comp by R.P.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-5	5-10	→	10-15	→	→	15-20	→	→	→		
(C) n separation	1	1	2	1	2	3	1	2	3	4		
(D) I	1000	→	→	→	→	→	→	→	→	→		
(E) Vdc (avg)	180	135.5	46.5	138.0	29.76	14.4	136	26.5	6.80	3.15		
(F) DCcal	.520											
(G) Kn x 10^{-3}	1.5	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30		
(H) ρ dc=ExFxGx10^3/D	140	106	145	108	93	112	106	83	53	49		
(I) Vac Σ												
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$	170	128	44.4	125.0	28.6	13.56	123.0	24.4	6.4	2.90		
(L) AC-DC cal.	1.000											
(M) ρ dc/ρac=ExL/K	1.059	1.059	1.047	1.102	1.041	1.061	1.104	1.086	1.062	1.087		
(N) PFE=(M-1)(10^2)	5.9	5.9	4.7	10.2	4.1	6.1	10.4	8.6	6.2	8.7		
(O) MCF=(M-1)(10^5)/H	42	56	32	95	44	54	98	104	117	177		
	+8.1	+24.5		+16.4			-2.4					

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	20-25	→	→	→	25-30	→	→	→		0-5		
(C) n separation	2	3	4	5	3	4	5	6				
(D) I	1000	→	→	→	→	→	→	→		1000		
(E) Vdc (avg)	47.1	16.85	6.40	3.75	18.9	8.3	3.30			192		
(F) DCcal												
(G) Kn x 10^{-3}	6	15	30	52.5	15	30	52.5	84				
(H) ρ dc=ExFxGx10^3/D	147	132	100	102	148	129	90					
(I) Vac Σ												
(J) AC noise x 2			?									
(K) Vac (corr) $=\sqrt{I^2 - J^2}$	44.0	15.96	~~42~~ 6.2	3.54	18.0	8.02	3.28			192		
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1.073	1.055	1.033	1.060	1.050	1.035	1.006					
(N) PFE=(M-1)(10^2)	7.3	5.5	3.3	6.0	5.0	3.5	0.6					
(O) MCF=(M-1)(10^5)/H	50	42	33	59	34	27	7					
	-14.8				+19							

LINE 4 Spd 1

Kayser

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: E 5W SP1 Date: 1/10/67

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Receive	0-5	5-10	→	10-15	→		15-20	→				
Time												
Range												
Current	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A		
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		CAL 1-2		
Receive	20-25	→			25-30	→						
Time												
Range												
Current	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A		1.0A		

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Kayser Gibson Line: 9 SW SP1 Int.Cal _____ Date: _____

Send	45	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.												
Time	300	100	30	100	30	10	100	30	10	3		
DC-1	90 90	67.5 68.0	23 23.5	70 68	14.7 15.4	7.2 7.2	69. 67	14.0 12.5	3.6 3.2	1.48 1.68		
DC-2	90 90	67.5 68.0	23 23.5	70 68	14.5 15.5	7.2 7.2	69 67	14.0 12.5	3.59 3.22	1.42 1.72		
Σ					30.1 29.9 30.0							
DC-3	90 90	67.5 68.0	23 23.5	70 68	14.4 15.6	7.2 7.2	69 67	14.0 12.5	3.5 3.35	1.48 1.68		
Dc-4					14.4 15.6				3.45 3.4	1.42 1.77		
Σ					30.0							
DC-AV	180	135.5	46.5	138.0	~~29.76~~	14.4	136	26.5	6.80	3.15		
AC-1	85	64	22.2	62.5	14.3	6.78	61.5	12.2	3.2	1.45		
AC-2	85	64	22.2	62.5	14.3	6.78	61.5	12.2	3.2	1.45		
Σ	170	128	44.4	125.0	28.6	13.56	123.0	24.4	6.4	2.90		
S. P.	+8.1	+24.5		+16.4	14		-2.4					
AC-N	.25	.25		.04			.04					
Pot. Res												

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Kayser Gibson Line: 45W SP1 Int.Cal _____ Date: _____

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5			Cal	
Rec.											1-2	
Time	30	10	10	3	30	10	3	1				
DC-1	23.7 23.4	8.65 8.2	2.9 3.5	2.0 1.75	9.9 9.0	4.1 4.2	1.7 1.6				96 96	
DC-2	23.7 23.4	8.65 8.2	2.9 3.5	2.0 1.75	9.9 9.0	4.1 4.2	1.65 1.68				96 96	
Σ												
DC-3	23.7 23.4	8.65 8.2	2.9 3.5	2.0 1.75	9.8 9.9	4.1 4.2	1.65 1.65				96 96	
Dc-4							1.65 1.65					
Σ			?									
DC-AV	47.1	16.85	6.4	3.75	18.9	8.3	3.30				192	
AC-1	22	7.98	3.1	1.77	9.0	4.01	1.64				96	
AC-2	22	7.98	3.1	1.77	9.0	4.01	1.64				96	
Σ	44	15.96	6.2	3.54	18.0	8.02	3.28				192	
S. P.	-14.8				+19							
AC-N	.04				.4							
Pot. Res												

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Gibson Line 4 N.E. SP1 Field date 1-10-67 Data page_____ Comp. date 1-10-67. Comp by_____

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-500	500	-1000	1000	-1500		1500	—	2000			
(C) n separation	1	1	2	1	2	3	1	2	3	4		
(D) I	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		
(E) Vdc (avg)	70.9	88.15	24.5	125.5	20.3	9.75	248	54.25	12.95	8.02		
(F) DCcal	1.009											
(G) Kn x 10^{-3}	1.5	1.5	6	1.5	6	15	1.5	6	15	30		
(H) ρ dc=ExFxGx10^3/D	107	118	148	190	123	143	375	328	196	242		
(I) Vac Σ	67.9	83.9	23.4	117	19.3	9.00	230	51.5	12.6	7.65		
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.000											
(M) ρ dc/ρac=ExL/K	1.043	1.053	1.047	1.071	1.052	1.083	1.078	1.053	1.027	1.050		
(N) PFE=(M-1)(10^2)	4.3	5.3	4.7	7.1	5.2	8.3	7.8	5.3	2.7	5.0		
(O) MCF=(M-1)(10^5)/H	40	45	32	37	42	58	21	16	14	21		
	-50.6	-22.5		-10.9			+26.5					

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	2000-	2500			2500	- 3000					4-5	
(C) n separation	2	3	4	5	3	4	5	6				
(D) I	1000	1000	1000	1000	1000	1000	1000	1000			1000	
(E) Vdc (avg)	37.75	17.55	5.97	4.4	21.45	11.65	4.57	3.6			99	
(F) DCcal												
(G) Kn x 10^{-3}	6	15	30	52.5	15	30	52.5	84				
(H) ρ dc=ExFxGx10^3/D	228	190	181	232	325	352	242	305				
(I) Vac Σ	34.2	17.3	5.9	4.29	20.7	11.5	4.45	3.48			99	
(J) AC noise x 2												
(K) Vac (corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1.042	1.015	1.013	1.025	1.039	1.014	1.028	1.034				
(N) PFE=(M-1)(10^2)	4.2	1.5	1.3	2.5	3.9	1.4	2.8	3.4				
(O) MCF=(M-1)(10^5)/H	18	8	7	11	12	4	12	11				
	-7.3				-9.1							

Kayser

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: ~~I~~ NE SP1 Date: 1/10/67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Receive	0-5	5-10	→	10-15	→		15-20	→				
Time												
Range												
Current	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A		
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		GAL 4-5		
Receive	20-25	→			25-30	→						
Time												
Range												
Current	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A		1.0A		

INDUCED POLARIZATION - RECEIVER NOTES Line II 4 PAGE _____

Project: Kayser Gibson Line: 4NE SP1 Int.Cal _____ Date: _____

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2			cal	
Rec.												
Time	100	30	10	10	30	30	10	10			306	
DC-1	38.0 37.5	17.6 17.4	4.39 5.6	4.0 4.8	22.3 20.6	12.8 10.5	4.55 4.55	3.7 3.45			99 99	
DC-2	38.0 37.5	17.6 17.4	4.3 5.7	4.1 4.75	22.5 20.0	12.8 10.5	4.65 4.50	3.82 3.3			99 99	
Σ												
DC-3	38.0 37.5	17.8 17.3	4.39 5.6	4.15 4.7	22.8 20.2	12.8 10.5	4.55 4.55	3.98 3.2				
Dc-4	38.0 37.5	17.8 17.3	6.39 5.6	4.0 4.85	22.8 20.2	12.8 10.5	4.55 4.55	3.6				
Σ		17.6		4.15 4.32				3.6 3.6				
DC-AV	37.75	17.4 17.55	5.57	4.05 4.29	21.45	11.65	357	3.6 3.6			99	
AC-1	36.2	17.3	5.9	4.29	20.7	11.5	4.45	3.48			99.	
AC-2	36.2	17.3	5.9	4.29	20.7	11.5	4.45	3.48			99.	
Σ	36.2	17.3	5.9	4.29	20.7	11.5	4.45	3.48			99	
S. P.	7.3				+9.1							
AC-N	.03				.03							
Pot. Res												

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Kayser Gibson Line: 9 NE SP1 Int.Cal 88 Date: _____

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2	
Rec.											
Time	100	100	30	300	30	30	300	100	30	10	
DC-1	71.0 70.5	90.0 86.5	24. 25.	126 125	20.6 19.8	9.9 9.5	248 248	55.0 53.5	14.0 11.9	8.1 7.95	8.2 8.0
DC-2	71.0 71.0	90.0 86.5	24 25.	126 125	20.6 19.7	9.8 9.6	247 249	55. 53.5	14.0 11.9	8.1 7.95	7.85 8.15
Σ											
DC-3	71.0 71.0	90.0 86.5	24 25	126 125	20.7 19.6	9.8 9.6	247 249	55.0 53.0	14.0 11.9	8.1 7.95	8.1 8.0
Dc-4	71.0 71.0	90.0 86.5	24 25		20.8 19.5	9.9 9.5	247 249	55.0 53.5	13.8 12.1	8.2 8.0	
Σ											
DC-AV	70.9	88.15	24.5	125.5	20.3	9.75	248	54.25	12.95	8.02	
AC-1	67.9	83.9	23.4	117	19.3	9.00	230	51.5	12.6	7.65	
AC-2	67.9	83.9	23.4	117	19.3	9.00	230	51.5	12.6	7.65	
Σ	67.9	83.9	23.4	117	19.3	9.00	230	51.5	12.6	7.65	
S. P.	-50.6	-22.5		-10.9			+26.5				
AC-N	.01	.03		.05			.07				
Pot. Res	Put Boots ON Toggle switch									(over)	

1. CHANGE OVER MIGHTY LITE TO PULLEY
2. CHANGE OVER SMALL POWER UNIT TO 2 PRONG PLUG

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser-Kibron Line 3 spd 3 (SE ¼ NW ¼) Field date 1-31-67 Data page_____ Comp. date 2-1-67. Comp by H.O.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750	→		750-1000		→			
(C) n separation												
(D) I	2.0	2.0	2.0	2.0	2.0	2.0	1.6	2.0	2.0	2.0		
(E) Vdc (avg)	263.5	420	96	475	198.5	74.25	153	55.5	41.5	21.2		
(F) DCcal	1.031	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	1.5		
(H) ρ dc=ExFxGx10^3/D	102	162	148	184	307	287	74	86	160	164		
(I) Vac Σ	255	402	93	455	190	71.5	146	53.4	40.1	20.7		
(J) AC noise x 2												
(K) Vac(corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.989	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	2.3	3.4	2.2	3.3	3.4	2.8	3.7	2.9	2.4	1.4		
(O) MCF=(M-1)(10^5)/H	23	21	15	18	11	10	50	34	28	9		

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	1000-1250		→		1250-1500		→					
(C) n separation												
(D) I	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0		1000		
(E) Vdc (avg)	41	20.8	19.15	11.1	31.15	19.5	19.35	12.15		97		
(F) DCcal	1.031	→										
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	79	80	148	150	150	151	262	263				
(I) Vac Σ	39.5	20.3	18.6	10.7	29.9	18.6	18.5	11.7		96		
(J) AC noise x 2												
(K) Vac (corr) $=\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.989	→										
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	2.7	1.4	1.9	2.7	3.1	3.8	3.5	1.1				
(O) MCF=(M-1)(10^5)/H	34	18	13	18	21	25	13	4				

Line 3 spd 3

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 18

Project: Kaysor-Gibson Line: 3 Spread III N½ Int.Cal _____ Date: _____

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	1750-2000	2000-2250		2250	-2500 →		2500	-2750 →				
Time	1000	1000	300	1000	300	100	300	100	100	30		
DC-1	263 262	420 420	96 96	475 475	198 199	73 75.5	153 153	56 55	41.5 41.5	21.3 21.1		
DC-2	265 262	420 420	96 96	475 475	198 199	73 75.5	153 153	56 55	41.5 41.5	21.3 21.1		
Σ												
DC-3	265 262	420 420	96 96	475 475	198 199	73 75.5	153 153	56 55	41.5 41.5	21.3 21.1		
Dc-4												
Σ												
DC-AV	263.5	420	96	475	198.5	74.25	153	55.5	41.5	21.2		
AC-1	255	402	93	455	190	71.5	146	53.5	40.1	20.7		
AC-2	255	402	93	455	190	71.5	146	53.5	40.1	20.7		
Σ	255	402	93	455	190	71.5	146	53.4	40.1	20.7		
S. P.	+27	+7		-27			+5					
AC-N	.04	.02		.02			.03					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Kayser-Gibson Line: 3 Spread TM Site 1 Int.Cal _____ Date: _____

Send	4.5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Rec.	750 —	500 →			500 —	250 →				4.5		
Time	100	100	30	10	30	30	10	10		300		
DC-1	72 71	30.2 29.8	10.0 11.0	6.9 7.65	21.3 19.2	10.2 10.2	3.8 4.1	3.1 3.15		96 96		
DC-2	72 71	30.2 29.8	10.0 11.0	6.9 7.65	21.3 19.2	10.2 10.2	4.1 3.8	3.6 2.7		96 96		
Σ								3.3				
DC-3	72 71	30.2 29.8	10.0 11.0	6.9 7.65	21.3 19.2	10.2 10.2	4.1 3.8	2.95 3.1				
Dc-4								3.115 3.1				
Σ								3.10				
DC-AV	71.5	30.0	10.5	7.275	20.25	10.2	3.95	3.13				
AC-1	68.1	28.5	10.3	7.55	19.3	9.6	3.8	3.0		96		
AC-2	68.1	28.5	10.2	7.55	19.3	96	3.8	3.0		95		
Σ										95.5		
S. P.	-12				+9							
AC-N	.02				.04							
Pot.Res.												

INDUCED POLARIZATION SSLE SENDER NOTES

Project: KAYSER + GIBSON Line: 3 SPD 3 NW/2 Date: 1-31-67

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
Receive	17.5-20 S	20-22.5 S	→	22.5-25 S	→	→	25-27.5 S	→	→	→	27.5-30 S	→
Time												
Range												
Current	2000	2000	2000	2000	2000	2000	1600	2000	2000	2000	1600	2000

Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	30-32.5 S	→	→	→		CAL				
Time												
Range												
Current	2000	2000	1600	2000	2000			1000				

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser-Gibson Line 3 sod 3 ~~NW 1/2~~ SE 1/2 Field date 1-31/67 Data page_____ Comp. date 2-1-67. Comp by H.P.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250-500		500-750	→		750-1000		→			
(C) n separation												
(D) I	1.8	2.0	1.8	2.0	2.0	1.6	2.0	2.0	2.0	1.6		
(E) Vdc (avg)	382	255	8525	392	69.5	35.5	184	59.1	19.15	12.2		
(F) DCcal	1.042	→								→		
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	166	100	148	153	109	173	72	92	75	119		
(I) Vac Σ	369	245	83	378	68	35	178	57.7	18.8	11.85		
(J) AC noise x 2	—											
(K) Vac(corr) = $\sqrt{I^2 - J^2}$	—											
(L) AC-DC cal.	.995											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	3.0	3.5	2.2	3.2	1.7	.9	2.8	1.9	1.3	2.4		
(O) MCF=(M-1)(10^5)/H	18	35	15	21	16	5	39	21	17	20		

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	1000-1250		→		1250-1500		→					
(C) n separation												
(D) I	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6		1000		
(E) Vdc (avg)	71.5	30.0	10.5	7.77	20.25	10.2	3.95	3.13		96		
(F) DCcal	1.042	→						→				
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	112	117	82	133	79	80	54	86				
(I) Vac Σ	68.1	28.5	10.2	7.65	19.3	9.6	3.8	3.0		95.5		
(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)	4.4	4.7	2.4	1.0	4.4	5.7	3.4	3.8				
(O) MCF=(M-1)(10^5)/H	39	40	29	7	56	71	63	44				

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Kayser-Gibson Line: 3 Spread III ~~NW~~ SE ½ Int.Cal _____ Date: _____

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	1750-1500	1500	-1250	1250 -	1000	→	1000 -	750	→	→		
Time	1000	1000	100	1000	100	100	300	100	30	30		
DC-1	382 382	255 255	85.5 85	392 392	69 70	36 35	184 184	59.9 58.3	19 19.3	12.4 12		
DC-2	382 382	255 255	85.5 85	392 392	69 70	36 35	184 184	59.9 58.3	19 19.3	12.4 12		
Σ												
DC-3	382 382	255 255	85.5 85	392 392	69 70	36 35	184 184	59.9 58.3	19 19.3	12.4 12		
Dc-4												
Σ												
DC-AV	382	255	85.25	392	69.5	35.5	184	59.1	19.15	12.2		
AC-1	370	245	83	378	68	35	178	57.7	18.8	11.9		
AC-2	368	245	83	378	68	35	178	57.7	18.8	11.8		
Σ	369									11.85		
S. P.	+7	-13		-8			+4					
AC-N	.04	.04		.02			.02					
Pot.Res.												

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INDUCED POLARIZATION - RECEIVER NOTES

PAGE 19

Project: Kaiser - Gibson Line: 3 Spread II Int.Cal Date:

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	2750	- 3000	→		3000	- 3250		→		1-2		
Time	100	30	30	30	100	30	30	30				
DC-1	41 41	21.3 20.3	19.3 19	10.7 11.4	31 31.3	19.2 19.7	20 18.7	11.5 12.8		97 97		
DC-2	41 41	21.3 20.3	19.3 19	10.7 11.4	31 31.3	19.2 19.7	20 18.7	11.5 12.8		97 97		
Σ												
DC-3	41 41	21.3 20.3	19.3 19	10.7 11.4	31 31.3	19.2 19.7	20 18.7	11.5 12.8				
Dc-4												
Σ												
DC-AV	41	20.8	19.15	11.1	31.15	19.5	19.35	12.15		97		
AC-1	39.5	20.3	18.6	10.7	29.9	18.6	18.5	11.7		96		
AC-2	39.5	20.3	18.6	10.7	29.9	18.6	18.5	11.7		96		
Σ	39.5	20.3	18.6	10.7	29.9	18.6	18.5	11.7				
S. P.	+15				-19					96		
AC-N	.04				.04							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER+GIBSON Line: 3 SPD 3 SE 1/2 Date: 1-31-67

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
Receive	15-17.5 S	12.5-15 S	→	12.5-18.5	→	→	10-7.5 S	→	→	→	7.5-5 S	—
Time												
Range												
Current	1800	2000	1800	2000	2000	1600	2000	2000	2000	1600	2000	2000
Send	2-3	1-2	4-5	3-4	2-3	1-2		45				
Receive	→	→	5-2.5 S					CAL				
Time												
Range												
Current	2000	1600	2000	2000	2000	1600		1000				

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 2

Project Kay Gib - Yg Line 3 - Spread 2 (SE¼ NW¼) Field date 1/29/62 Data page _____ Comp. date 1/25/67 Comp by C.S.L. H.O

(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												
(C) n separation												
(D) I 3	2.0	2.0	2.0	1.8	2.0	2.0	1.4	1.8	2.0	2.0	1.4	1.8
(E) Vdc (avg) 2	196	226	34.1	820	102	19.7	23	127	408	9.28	76.5	65
(F) DCcal USED	1.075/2											
(G) Kn x 10^{-3} 1	.75	.75	3	.75	3	7.5	.75	3	7.5	15	3	7.5
(H) ρ dc=ExFxGx10^3/D ✓	40	46	27	184	82	40	66 6.6	114	82	37	88	146
(I) Vac Σ	186	206	31.4	770	95	18.6	21.8	121	38.6	8.8	73	6
(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)	5.4	9.7	8.6	6.5	7.4	5.9	5.5	5.0	5.7	5.5	4.8	4.8
(O) MCF=(M-1)(10^5)/H	135	211	319	35	90	148	83	44	70	149	55	33

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	2-3	1-2	4-5	3-4	2-3	1-2		CAL				
(B) Receive												
(C) n separation												
(D) I	2.0	2.0	1.4	1.8	2.0	2.0		1.0				
(E) Vdc (avg)	31.9	7.55	24.9	25.7	14.96	4.08		93				
(F) DCcal								1.075/2	= .5375			
(G) Kn x 10^{-3}	15	26.25	7.5	15	26.25	42						
(H) ρ dc=ExFxGx10^3/D	129	53	72	115	105	46						
(I) Vac Σ	29.4	7.2	23.6	24	14.1	3.84		93				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.								1.000				
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	8.5	4.9	5.5	7.1	6.1	6.3						
(O) MCF=(M-1)(10^5)/H	66	92	76	62	58	137						

Line 3 - Spd 2

Line 3 - Spd 2

1.5 6 15 30 52.5 84
.75 3 7.5 15 26.25 42

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 1

Project Kuyan Gib-Yay Line 3-Spread 2 Field date 1/24/67 Data page _____ Comp. date 1/25/67 Comp by C.S.L. H.D.

(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												
(C) n separation												
(D) I 3	1.4	1.8	1.4	2.0	1.8	1.4	2.0	2.0	1.8	1.4	2.0	2.0
(E) Vdc (avg) 1 2	80	91	11.63	305	45.25	8.7	140.5	81	22.8	5.65	18.85	21.05
(F) DCcal USED	1.075											
(G) Kn x 10^{-3} 1	.75	.75	3	.75	3	7.5	.75	3	7.5	15	3	7.5
(H) ρ dc=ExFxGx10^3/D	46	41	27	123	81	50	57	131	102	65	30	[illegible]
(I) Vac Σ V	74	86	11.00	285	42.8	8.3	136	76.5	21.8	5.25	17.7	19.5
(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)	8.1	5.8	5.7	7.0	5.7	4.8	3.3	5.9	4.6	7.6	6.5	7.9
(O) MCF=(M-1)(10^5)/H	176	141	211	57	70	96	58	45	45	117	217	93

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

(A) Send	3-4	4-5	1-2	2-3	3-4	4-5		C+L				
(B) Receive												
(C) n separation												
(D) I	1.8	1.4	2.0	2.0	1.8	1.4		1.0				
(E) Vdc (avg)	9.65	2.8	10.55	14.25	~~7.28~~	2.275		93				
(F) DCcal								1.075				
(G) Kn x 10^{-3}	15	26.25	7.5	15	26.25	42						
(H) ρ dc=ExFxGx10^3/D	86	56	43	115	114	73						
(I) Vac Σ	9.0	2.6	10.3	13.3	~~7.35~~	2.1		93				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.								1.000				
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	7.2	7.7	2.4	7.1		8.3						
(O) MCF=(M-1)(10^5)/H	84	138	56	62		114						

N 56 E SE ½

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER & GIBSON Line: 3 SE½ Spol 2 Date: 1-24-67

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
Receive	0-2.5 N	2.5-5 N	→	5-7.5 N	→	→	7.5-10 N	→	→	→	10-12.5	—
Time												
Range												
Current	1400	1800	1400	2000	1800	1400	2000	2000	1800	1400	2000	2000
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	12.5-15 N	→	→	→		CAL				
Time												
Range												
Current	1800	1400	2000	2000	1800	1400		1000				

INDUCED POLARIZATION - RECEIVER NOTES PAGE 1

Project: Lewis Gibson Line: 3 10 SE 1/2 Int.Cal _____ Date: 1-24-67

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	0-250	250-500		500-750	→		750-1000		→			
Time	100	300	30	1000	100	30	300	100	100	10		
DC-1	81.5 78.5	90 92	11.3 12	300 301	44.5 46	8.7 8.7	141 140	82 80	21.5 24.1	6.2 5.1		
DC-2	81.5 78.5	90 92	11.5 11.7	300 301	44.5 46	8.7 8.7	141 140	82 80	21.5 24.1	6.2 5.1		
Σ	160		233 232	601 601	90.5 90.5	17.4 17.4	181 181	162 162	45.6 45.6	11.3 11.3		
DC-3	81.5 78.5	90 92	11.3 12	300 301	44.5 46	8.7 8.7	141 140	82 80	21.5 24.1	6.2 5.1		
Dc-4			11.5 11.7		44.5 46							
Σ	160	182	233 232	601	90.5 90.5	17.4	181	162	45.6	11.3		
DC-AV	80	91	23.25	300.5	45.25	8.7	140.5	81	22.8	5.65		
AC-1	74.0	86	11	285	42.8	8.3	136	76.5	21.8	5.25		
AC-2	74.0	86	11	285	42.8	8.3	136	76.5	21.8	5.25		
Σ	74.0	86	11	28.5	42.8	8.3	136	76.5	21.8	5.25		
S. P.	+11.1	+25.8		-4.9			+3.9					
AC-N	.6	.04		.02			.04					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 2

Project: Kayser-Gibson Line: 3 N W Int.Cal _____ Date: 1-24-67

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	1000	-1250	→	→	1250	-1250	→	→		1-2		
Time	30	30	30	10	30	30	10	10		300		
DC-1	18.4 19.3	20.6 21.5	10.3 5.0	2.7 2.9	11.3 10.6	14.5 14	7.5 7.95	2.45 2.1		93 93		
DC-2	18.4 19.3	20.6 21.5	10.3 5.0	2.7 2.9	11.3 10.6	14.5 14	7.6 7.8	2.45 2.1		93 93		
Σ	37.7 37.7	42.1 42.1	19.3 19.3	5.6 5.6	21.9 21.9	28.5 28.5	7.4 8.1					
DC-3	18.4 19.3	20.6 21.5	10.3 5.0	2.7 2.9	11.3 10.6	14.5 14	7.6 8.03	2.45 2.1				
Dc-4							7.4 8.1					
Σ	37.7	42.1	19.3	5.6	21.9	28.5	15.55	4.55		186		
DC-AV	18.85	21.05	9.65	2.8	10.545	14.25	7.78	2.275				
AC-1	17.7	19.5	9.0	2.6	10.3	13.3	7.35	2.1		93		
AC-2	17.7	19.5	9.0	2.6	10.3	13.3	7.35	2.1		93		
Σ	17.7	19.5	9.0	2.6	10.3	13.3	7.35	2.1		186		
S. P.	-1.4				-.6							
AC-N	.02				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: KAYSER+GIBSON Line: 3 NW½ 50 Q2 Date: 1-24-67

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
Receive	0-2.5 s	2.5-5 s	→	5-7.5 s	→	→	7.5-10 s	→	→	→	10-12.5 s	—
Time												
Range												
Current	2000	2000	2000	1800	2000	2000	1400	1800	2000	2000	1400	1800
Send	2-3	1-2	4-5	3-4	2-3	1-2		4-5				
Receive	→	→	12.5-15 s	→	→	→		CAL				
Time												
Range												
Current	2000	2000	1400	1800	2000	2000		1000				

INDUCED POLARIZATION - RECEIVER NOTES PAGE 3

Project: Kaysar-Gibson Line: 3 NW SE spd 2 Int.Cal _____ Date: 1-24-67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	0-250	250-500		500-750		→	750-1000		→			
Time	300	100	30	1000	100	30	300	100	30	10		
DC-1	180 96	11.3 11.3	17.5 16.6	41.0 41.0	53 49	10.7 9.0	11.5 11.5	64 63	20.4 20.4	4.6 4.68		
DC-2	100 96	11.3 11.3	17.5 16.6	41.0 41.0	53 49	10.7 9.0	11.5 11.5	64 63	20.4 20.4	4.6 4.68		
Σ												
DC-3	100 96		17.5 16.6	41.0 41.0	53 49	10.7 9.0	11.5 11.5	64 63	20.4 20.4	4.6 4.68		
Dc-4	98											
Σ	196	226	34.1	820	102	19.7	23.0	127	40.8	9.28		
DC-AV												
AC-1	93	103	15.7	385	47.5	9.3	10.9	60.5	19.3	4.4		
AC-2	93	103	15.7	385	47.5	9.3	10.9	60.5	19.3	4.4		
Σ	186	206	31.4	770	95.0	18.6	218	121.0	38.6	8.8		
S. P.	+14.9	+14.2		+1.4			42.1					
AC-N	.35	.04		.02			.02					
Pot.Res.												

over

INDUCED POLARIZATION - RECEIVER NOTES PAGE 4

Project: Kagsek-Gibson Line: 35E Int.Cal Date: 1-24-67

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Rec.	1000-1250		→		1250-1500		→			4-5		
Time	100	100	30	10	30	30	10	3		300		
DC-1	39 37.5	33. 32	14.6 17.3	4.0 3.55	12.8 12.1	13.3 12.4	6.95 8.01	1.92 2.18		93 93		
DC-2	39 37.5	33. 32	14.6 17.3	4.0 3.55	12.8 12.1	13.3 12.4	6.95 8.01	1.85 2.21		93 93		
Σ												
DC-3	39 37.5	33. 32	14.6 17.3	4.0 3.55	12.8 12.1	13.3 12.4	6.95 8.01	1.98 2.07				
Dc-4								1.94 2.2				
Σ	76.5	65	31.9	7.55	24.9	25.7	14.96	4.08		186		
DC-AV												
AC-1	36.5	31.0	14.7	3.6	11.8	12.3	7.05	1.92		93		
AC-2	36.5	31.0	14.7	3.6	11.8	12.3	7.05	1.92		93		
Σ	73.0	62	29.4	7.2	23.6	24.	14.10	3.84		186		
S. P.	-7.1				-6							
AC-N	.02				.01							
Pot.Res.												

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Gibson Line #3 E½ Field date 9-23-66 Data page_____ Comp. date_____. Comp by_____

(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	0500	500	1000	1000	1500	→	1500	2000	→	→	2000	2500
(C) n separation	100	300	30	300	100	30	300	100	30	30	100	30
(D) I	1.5	→	→	→	→	→	→	→	→	→	→	→
(E) Vdc (avg) (2)	78.75	209	34.7	148	62.0	19.25	367	60.1	40.2	34.8	83.8	24.3
(F) DCcal	.532											
(G) Kn x 10^{-3} (1)	1.5	1.5	6.0	1.5	6.0	15	1.5	6.0	15.0	30.0	6.0	15.0
(H) ρ dc=ExFxGx10^3/D 3	42	111	74	79	132	102	195	128	214	370	178	1[illegible]
(I) Vac Σ	69.4	188	31.2	132	55.9	17.3	345	53.6	36.4	13.4	79.2	2[illegible].6
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.969											
(M) ρ dc/ρac=ExL/K	1.100	1077	1078	1087	1075	1078	1031	1087	1070		1025	1042
(N) PFE=(M-1)(10^2)	10.0	7.7	7.8	8.7	7.5	7.8	3.1	8.7	7.0		2.5	4.2
(O) MCF=(M-1)(10^5)/H	238	69	105	110	57	76	16	68	33		14	33

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	→	→	2500	3000	→	→		3-4				
(C) n separation	30	10	30	10				300				
(D) I	1.5	→	→	→	→	→						
(E) Vdc (avg) 2	20.5	9.05	16.65	6.65				194				
(F) DCcal	→	→	→	→								
(G) Kn x 10^{-3} 1	30.0	52.5	15.0	30.0								
(H) ρ dc=ExFxGx10^3/D 2	218	168	89	71								
(I) Vac Σ	19.2	9.0	17.4	6.0.0				188				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	.969											
(M) ρdc/ρac =ExL/K	1035	.974	.927	1.072								
(N) PFE=(M-1)(10^2) 1	3.5	-2.6	-7.2	7.2								
(O) MCF=(M-1)(10^5)/H	16			102?								

LINE 3 spd 1

$\frac{(K_n)(D_c A_x)(\cancel{DCal})}{1.5 \times}$

$(x)(194) = 188$

$x = \frac{188}{194}$

$(x)(188) = 100$

$188\ x = \frac{100}{188}$

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: #3 E.1/2 Date: 9/23/66

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Receive	0-5	5-10	→	10-15	→		15-20	→				
Time												
Range	170v	170v	160v	140v	170v	160v	140V	140v	170v	160v		
Current	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A		
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		CAL 3-4		
Receive	20-25	→			25-30	→						
Time												
Range	140v	140v	170v	160v	140v	140v				160v		
Current	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A		1.0A		

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Gibson Line: #3 E ½ Int.Cal 101 Date: 9-23-66

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
Rec.	0-500	500-1000		1000-1500		→	1500-2000			→	2000-2500	
Time	100	300	30	300	100	30	300	100	30	30	100	30
DC-1	38.7 40.0	104 105	17.0 17.7	73 75	31.0 31.0	9.8 9.5	184 183	30.0 29.5	20.5 19.7	17.5 17.3	41.8 42.0	12.8 11.5
DC-2	37.8 41.0	104 105	17.0 17.7	73 75	31.5 30.5	9.8 9.3	184 183	32.0 29.5	20.5 19.7	17.5 17.3	41.8 42.0	12.8 11.3
Σ	78.7 78.8	209 208	34.7 34.7	148 148	62.0 62.0	19.3 18.1	367 367	59.5 61.5	40.2 40.2	34.8 34.8	83.8 83.8	24.3 24.1
DC-3						10.0 9.4		31.0 29.3				13.3 10.6
Dc-4						9.6 9.7		3.08 2.83				12.3 12.4
Σ						19.4 19.3		60.3 54.1				23.9 24.7
DC-AV	78.75	209	34.7	148	62.0	19.25	367	60.1	40.2	34.8	83.8	24.3
AC-1	34.7	94	15.6	66	27.9	8.7	173	26.8	18.2	6.7	39.5	11.3
AC-2	34.7	94	15.6	66	28.0	8.6	172	26.8	18.2	6.7	39.7	11.3
Σ	69.4	188	31.2	132	55.9	17.3	345	53.6	36.4	13.4	79.2	22.6
S. P.	+30	-8		+24			+3				-4	
AC-N	.04	.04		.04			.04				.04	
Pot.Res.	2000	1500		2000			2000				200	
		P	P	P					P			*

* 12.4 12.5 12.6 11.7 12.8 11.9

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Gibson Line: #3 6 ½ Int.Cal _____ Date: 9-23-66

Send	3-4	4-5	1-2	2-3	3-4	4-5		CAL 1 AMP				
Rec.	→	→	2500	3000	→	→		3-4				
Time	30	10	30	10								
DC-1	10.2 10.3	4.8 4.3	8.1 8.4	3.25 3.35				97 97				
DC-2	10.6 9.8	4.4 4.5	8.3 8.5	3.35 3.40				97 97				
Σ	20.5 20.4	9.1 8.9	16.5 16.8	6.50 6.75								
DC-3	10.3 10.3	4.5 4.6	8.1 8.5	3.30 3.45								
Dc-4	10.3 10.2	4.1	8.2 8.5	3.05 3.50								
Σ	20.6 20.5		16.6 16.7	6.75 6.55								
DC-AV	20.5	9.05	16.65	6.65								
AC-1	9.6	4.5	8.7	30.05				94				
AC-2	9.6	4.5	8.7	30.05				94				
Σ	19.2	9.0	17.4	60.10								
S. P.			-2									
AC-N			.04									
Pot.Res.			2000									

30.40
30.35
30.25
30.35

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Gibson Jigs Line 3 W½ Field date 9/23/66 Data page_____ Comp. date 9/26/66 Comp by M.F.

(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	0-5W	5-10W	→	10-1500W	→	→	1500-2000W	→	→	→	2000-2500	→
(C) n separation	1	1	2	1	2	3	1	2	3	4	2	3
(D) I	1.5	→	→	→	→	→	→	→	→	→	→	→
(E) Vdc (avg) ①	196	78.5	32.25	202.5	25.4	15.7	211	56.0	11.36	8.26	53.5	21.6
(F) DCcal	.5102	→	→	→	→	→	→	→	→	→	→	→
(G) Kn x 10^{-3}	1.5	1.5	6.0	1.5	6.0	15	1.5	6.0	15	30	6	15
(H) ρ dc=ExFxGx10^3/D	100	40	66	103	52	80	108	114	60	84	109	103
(I) ρac Σ ②	180	70.6	30.0	184	23.4	14.4	194	50.6	10.46	7.56	50.0	19
(J) AC noise x 2	→	→	→	→	→	→	→	→	→	→	→	→
(K) Vac(corr) =$\sqrt{I^2 - J^2}$	→	→	→	→	→	→	→	→	→	→	→	→
(L) AC-DC cal.	1#	→	→	→	→	→	→	→	→	→	→	→
(M) ρ dc/ρac=ExL/K	1089	1112	1075	1101	1085	1090	1088	1107	1086	1093	1070	1090
(N) PFE=(M-1)(10^2)	8.9	11.2	7.5	10.1	8.5	9.0	8.8	10.7	8.6	9.3	7.0	9.0
(O) MCF=(M-1)(10^5)/H	89	280	114	98	163	113	81	94	143	111	64	87

1 Dc cell Apparently too high at 1.02

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	2-3	1-2	4-5	3-4	2-3	1-2			Cal			
(B) Receive	→	→	2500-3000W	→	→	→						
(C) n separation	4	5	3	4	5	6						
(D) I	→	→	→	→	→	→						
(E) Vdc (avg) ①	5.49	4.525	33.2	17.65	5.11	4.25			196			
(F) DCcal	→	→	→	→	→	→						
(G) Kn x 10^{-3} ②	30	52.5	15	30	52.5	84						
(H) ρ dc=ExFxGx10^3/D	56	81	169	180	91	121						
(I) Vac Σ	5.18	4.20	30.2	15.9	4.20	4.0			192			
(J) AC noise x 2	→	→	→	→	→	→						
(K) Vac (corr) =$\sqrt{I^2 - J^2}$	→	→	→	→	→	→						
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1060	1077	1099	1110	1087	1063						
(N) PFE=(M-1)(10^2)	6.0	7.7	9.9	11.0	8.7	6.3						
(O) MCF=(M-1)(10^5)/H	107	95	59	61	95	52						

$$e = \frac{(D_c\,col)^{.5102}\,(D_c\,Av)\,(K_m)}{\frac{1}{1.5}}$$

$$\boxed{.340}136$$

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: #3 W. 1/2 Date: 9/23/66

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Receive	0-5	5-10	→	10-15	→		15-20	→		→		
Time												
Range	130v	130v	140v	170v	140v	140v	160v	170v	140v	140v		
Current	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A		
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		CAL 2-3		
Receive	20-25	→		→	25-30	→		→				
Time												
Range	160v	170v	140v	140v	160v	170v	140v	140v		140v		
Current	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A	1.5A		1.0A		

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Gibson Line: #3 W ½ Int.Cal 101 Date: 9-23-66

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
Rec.	0-500	500-1000	1000-1500			→	1500-2000			→	2500-3000	
Time	300	100	30	300	30	30	300	100	10	10	100	90
DC-1	97 99	39.0 39.5	16.8 16.5	101 102	12.7 12.7	8.0 7.7	105 106	28.2 28.0	5.65 5.75	4.20 4.05	26.0 27.5	10.8 10.8
DC-2	97 99	39.0 39.5	16.8 16.3	101 101	12.7 12.7	7.9 7.8	105 106	28.0 27.8	5.75 5.55	4.10 4.25	26.0 27.5	10.8 10.8
Σ	196 196	78.5 78.5	33.3 33.1	202 202	25.4 25.4	15.7 15.5	211 211	56.2 55.8	11.40 11.30	8.25 8.35	53.5 55.5	
DC-3			17.3 16.0						5.20 5.75	4.15 4.00		
Dc-4			33.3						5.60 5.70	4.20 4.10		
Σ									11.45 11.30	8.15 8.10		
DC-AV	196	78.5	32.25	202.5	25.4	15.7	211	56.0	11.36	8.26	53.5	21.6
AC-1	90	35.3	15.0	92	11.7	7.3	97	25.3	5.23	3.78	25.0	9.9
AC-2	90	35.3	15.0	92	11.7	7.2	97	25.3	5.23	3.78	25.0	9.9
Σ	180	70.6	30.0	184	23.4	14.4	194	50.6	10.46	7.56	50	19.8
S. P.	+6	-4	-2				+22				-25	
AC-N	.04	.04	.04				.04				.04	
Pot.Res.	1500	1500	2000				3500				3500	

* 4.10 4.05 4.20 4.03 4.23 4.20

P P P *

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: GIBSON Line: #3 up ½ Int.Cal 100 Date: 9-23-66

Send	2-3	1-2	4-5	3-4	2-3	1-2		SKIP				
Rec.	→	→	2500	3000	→	→		2-3				
Time	10	10	30	30	10	10		300				
DC-1	2.65 2.85 2.65 2.60	2.4 2.15	16.5 16.7	8.9 8.7	2.50 2.40 2.60 2.65	2.20 2.0		98 98				
DC-2	2.80 2.65 2.60 2.90	2.35 2.4	16.3 16.9	9.0 8.7	2.50 2.80 2.80 2.40	2.20 2.05		98 98				
Σ		4.55 4.45	33.2 33.7	17.6 17.4		4.20 4.25						
DC-3	2.70 3.00	2.15 2.4			2.30 2.30 2.75 2.80	2.15 2.10						
Dc-4	2.45 2.40 3.10 2.65	4.55			2.50 2.60 2.90 2.8	4.25						
Σ												
DC-AV	5.49	4.525	33.2	17.65	5.11	4.25		196				
AC-1	2.60	2.15	15.1	8.0	2.35	2.00		96				
AC-2	2.58	2.15	15.1	7.9	2.35	2.00		96				
Σ	5.18	4.20	30.2	15.9	4.70	4.00		192				
S. P.			44									
AC-N			.04									
Pot.Res.			2000									

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

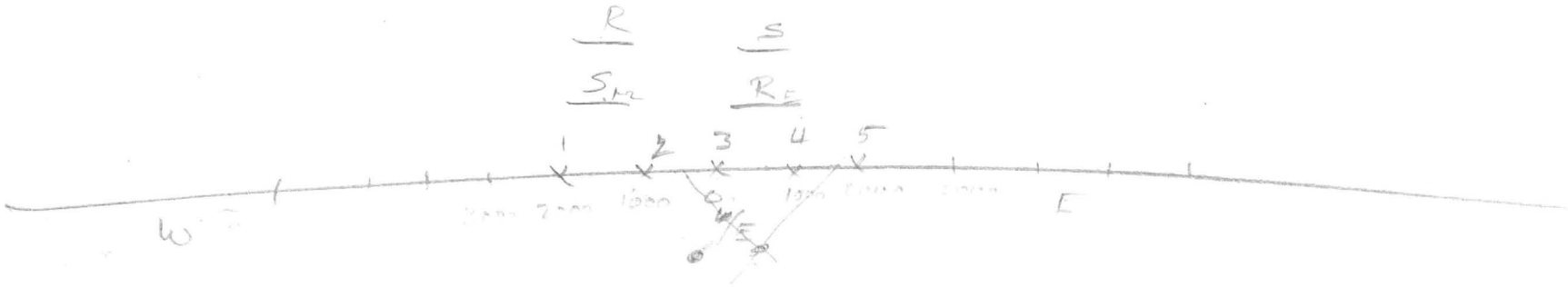
Project Gibson Line # 2 NW½ Field date 9/2/66 Data page_____ Comp. date 9/7/66. Comp by J.W.L

(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	0-5NW	5-10NW	→	10-15NW	→	→	15-20NW	→	→	→	20-25NW	→
(C) n separation	1	1	2	1	2	3	1	2	3	4	2	3
(D) I	1.5	→	→	→	→	→	→	→	→	→	→	→
(E) Vdc (avg) ①	135.9	122	33.95	115.26	35.25	13.67	174	36.67	15	6.67	51.0	16.43
(F) DCcal	.513											
(G) Kn x 10^{-3}	1.5	1.5	6	1.5	6	15	1.5	6	15	30	6	15
(H) ρdc=ExFxGx10^3/D	70	63	70	59	72	63	89	75	77	68	105	82
(I) Vac Σ ②	132.1	119.4	32.8	111.6	34.1	13.18	170	35.4	14.8	6.60	48.6	13.9
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.0											
(M) ρdc/ρac=ExL/K Ans	1029	1022	1035	1033	1034	1037	1024	1036	1014	1011	1049	1065
(N) PFE=(M-1)(10^2)	2.9	2.2	3.5	3.3	3.4	3.7	2.4	3.6	1.4	1.1	4.9	6.5
(O) MCF=(M-1)(10^5)/H	41	35	50	56	47	59	27	48	18	1.6	47	75

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	→	→	25-30NW	→	→	→						
(C) n separation	4	5	3	4	5	6						
(D) I	→	→	→	→	→	→						
(E) Vdc (avg)	9.34	4.90	27.85	11.09	6.18			195				
(F) DCcal												
(G) Kn x 10^{-3}	30	52.5	15	30	52.5							
(H) ρdc=ExFxGx10^3/D	96	88	143	114	111							
(I) Vac Σ	9.06	4.4	26.6	10.4	6.26			195				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1031	1114	1047	1066	.9877							
(N) PFE=(M-1)(10^2)	3.1	11.47	4.7	6.6	-12.8 ?							
(O) MCF=(M-1)(10^5)/H	32	130	33	58	—							

LINE 2



going E

R0-1000E - S 1-2

R1-2000E S 2-3, 1-2

going W

R0-1000W - S 4-5

R1-2000W - S 3-4, 4-5

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: 2 - W½ Date: 2 SEPT 66

Send	4.5	3.4	4.5	2.3	3.4	4.5	1.2	2.3	3.4	4.5		
Receive	0-500	5-10	→	10-15	→		15-20	→				
Time												
Range	220 V	170	220	140	170	220	150	140	170	220		
Current	1.5A	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Send	1.2	2.3	3.4	4.5	1.2	2.3	3.4	4.5		CAL		
Receive	20-25	→			25-30	→				3.4		
Time												
Range	150	140	170	220	150	140	170	220		180 V		
Current	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1 A		

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Gibson Lake Line: Line 2 W E Int. Cal _____ Date: 25-7-66

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
Rec.	0-500W	500-1000 W	1000-	1500 W	→	1500-	2000 W	→	→	→	2000-	2500
Time	100	100	30	100	30	10	300	30	30	10	100	20
DC-1	68.1 67.9 68.1 68.0	6.02 6.20	16.4 17.5 17.8 17.2	58.2 58.0 57.3 57.8	17.5 19.7	6.81 6.93 6.78 6.72	87 87	18.4 17.8 17.7 17.6	17.4 17.6	3.10 3.70 3.60 3.50	260 250	7.1 10.0
DC-2	68.1 68.0 68.0 68.0	6.20 6.02	17.8 16.5	57.9 58.3 57.3 58.0	17.7 17.6	6.72 6.91	87 87	17.7 17.5 19.7 18.7	17.6 17.4	3.60 3.10 3.05 3.10	250 260	10.0 7.5
Σ	136.2 136.9 136.1 136.0	12.2 12.2	34.2 33.7 34.3							6.70 7.20 6.65 6.80		
DC-3	58.0 57.6		16.5 16.8	57.3 58.0		6.91 6.80		17.7 17.9		3.05 3.10 2.65 3.95		8.1 8.1
Dc-4	57.6 57.9		16.8 17.5	58.0 58.0		6.80 6.93		17.9 18.8		2.65 3.95 2.58 2.95		8.2 8.5
Σ	133.6 133.5		33.3 34.3							5.10 7.90 5.23 7.90		8.1 8.1
DC-AV	135.9	122	33.95	115.26	35.25	13.67	174	36.67	15.0	6.67	51.0	16.93
AC-1	66.0	5.97	16.4	55.8	17.1	6.59	85	17.7	7.4	3.30	24.3	8.0
AC-2	66.1	5.97	16.4	55.8	17.0	6.59	85	17.6	7.4	3.30	24.3	7.9
Σ	132.1	11.94	32.8	111.6	34.1	13.18	170	35.3	14.8	6.60		
S. P.	-20	-1		+3			+1				-9	
AC-N	.04	.04		.05			.04				.05	
Pot. Res.	1K	1K		1K			1K				1K	

Pol

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Gibron Yerger Kugel Line: 2 W ½ Int.Cal _____ Date: 2 Sept 66

Send	3-4	4-5	1-2	2-3	3-4	4-5		CHL.				
Rec.	→	→	2500	3000	→	→		300	+	0		
Time	10	10	30	10	10				4.8 5.8	2.80 2.80		
DC-1	4.5 4.9 4.3 4.5	2.32 2.20 2.35 2.20	14.5 13.1	6.20 5.3 5.70 5.50	3.32.8 2.25 2.9			97 98	5.2 5.85	3.20 3.30		
DC-2	4.3 4.4 4.0 4.50	2.35 2.20 2.32 2.15	13.1 14.3	5.70 5.75 4.75 5.25	2.25 2.9 2.53 3.05			96 97	5.3 5.25	3.40 3.55		
Σ	9.2 9.32 9.5 9.42							195	5.5 4.65	2.90 3.50		
DC-3	4.4 4.4	2.28 2.20 2.60 2.00	14.3 13.8	4.75 5.05 6.10 5.70	3.75 2.82.80				5.3 4.9	2.80 3.55		
Dc-4	4.2 4.2	2.0 3.00 2.40 2.80	13.8 14.5	6.10 5.70 5.3 5.93	2.95 2.95 2.8 2.4				5.2 4.5	2.80 3.90		
Σ	9.3 9.3								5.6 5.5	3.30 3.15		
DC-AV	9.34	4.90	27.85	11.09	6.18					3.20 3.10		
AC-1	4.53	2.2	19.3	5.2	3.13			97		3.55 3.35		
AC-2	4.53	2.2	19.3	5.2	3.13			98		3.10 3.18		
Σ	9.06							195		3.35		
S. P.			+10									
AC-N			.05									
			1K									

* + o x

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project 6.bson Line # 2 SE ½ Field date 9/1/66 Data page_____ Comp. date 9/7/66. Comp by Jwl

(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	0-5 SE	5-1000 SE →		1000-1500 SE →			1500-2000 →				2000-2500	
(C) n separation	1	1	2	1	2	3	1	2	3	4	2	3
(D) I	2A →											
(E) Vdc (avg)	156	170	44.83	387	95.75	36.05	193	100.65	41.65	20.05	39.90	34.73
(F) DCcal	.518 →											
(G) Kn x 10^{-3}	1.5	1.5	6	1.5	6	15	1.5	6	15	30	6	15
(H) ρ dc=ExFxGx10^3/D	61	66	70	150	149	140	75	156	162	156	62	135
(I) ρac Σ	152	166	43.6	380	93.1	34.9	190	99.8	40.2	19.3	39.2	[illegible].2
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.0 →											
(M) ρ dc/ρac=ExL/K	1026	1024	1028	1018	1028	1033	1016	1009	1036	1039	1018	1015
(N) PFE=(M-1)(10^2)	2.6	2.4	2.8	1.8	2.8	3.3	1.6	2.9	3.6	3.9	1.8	1.5
(O) MCF=(M-1)(10^5)/H	43	36	40	12	19	24	21	6	22	25	11	11

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	2-3	1-2	4-5	3-4	2-3	1-2			Cal			
(B) Receive	→	→	2500-3000 SE →						2-3			
(C) n separation	4	5	3	4	5	6						
(D) I	→								1000			
(E) Vdc (avg)	17.00	9.79	21.0	19.85	10.92	6.69			193			
(F) DCcal	→											
(G) Kn x 10^{-3}	30	52.5	15	30	52.5	84						
(H) ρ dc=ExFxGx10^3/D	132	133	81	154	149	146						
(I) Vac Σ	16.6	9.46	20.5	19.6	10.6	6.5			193			
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1024	1035	1024	1013	1030	1029						
(N) PFE=(M-1)(10^2)	2.4	3.5	2.4	1.3	3.0	2.9						
(O) MCF=(M-1)(10^5)/H	18	26	30	8	20	20						

INDUCED POLARIZATION SENDER NOTES

Project: Gibson Line: 2-E 1/2 Date: 1 Sept

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Receive	0-5	5-10	→	10-15	→		15-20	→	→	→		
Time												
Range	200 V	180 V	200 V	220 V	180 V	200 V	300 V	230 V	180 V	200 V		
Current	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A		
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Receive	20-25	→	→	→	25-30	→	→	→		2-3		
Time												
Range	300 V	230 V	180 V	200 V	300 V	230 V	180 V	200 V		100 V		
Current	2A	2A	2A	2A	2A	2A	2A	2A		1A		

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Gibson Line: #2 S.E. 1/2 Int.Cal 94 Date: 9-1-66

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
Rec.	0-500S	500-1000S		1000-1500S →			1500-2000S →				2000-2500S →	
Time	300	300	30	300	100	30	100	100	30	30	30	30
DC-1	79 77	85 85	22.1 22.8	194 193	48.2 47.5	18.4 17.6	96 97	50.1 50.5	20.1 21.6	10.5 9.4	20 19.9	17.1 17.5
DC-2	79 77	83 85	22.8 22.0	193 194	47.5 48.3	17.6 18.5	97 96	50.5 50.2	21.6 20.0	9.4 10.9	19.9 20	17.5 17.4
Σ	156		44.4	387 387						19.9 20.3		
DC-3			22.0 22.8							10.9 9.1		17.4 17.3
Dc-4										9.1 10.9		17.3 17.4
Σ										20.0 20.0		
DC-AV	156	170	44.3	387	95.75	36.05	193	100.65	41.65	20.05	39.90	34.73
AC-1	76	83	21.8	190	46.5	17.4	95	49.9	20.1	9.6	19.6	17.1
AC-2	76	83	21.8	190	46.6	17.5	95	49.9	20.1	9.7	19.6	17.1
Σ	152	166	43.6	380	93.1	34.9	190	99.8	40.2	19.3	39.2	34.2
S. P.	+6	+13		-2			0				+12	
AC-N	.05	.04		.05			.04				.05	
Pot. Res	2K	2K		2K			2K				2K	

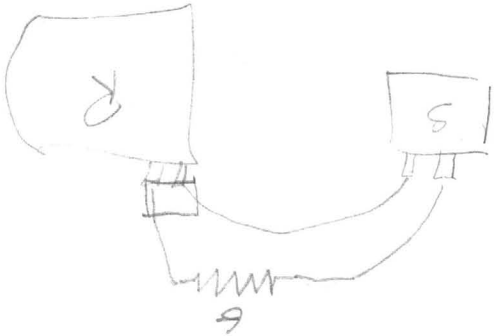
STEEP MOUNTAIN AT 2000

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Gibson Line: #2 S.E ½ Int.Cal _____ Date: 9-1-66

Send	2-3	1-2	4-5	3-4	2-3	1-2		CAL				
Rec.	→	→	2500	3000S	→	→						
Time	30	10	30	30	10	10		2-3	300R			
DC-1	8.4 8.4 8.6 8.6	5.0 4.7	10.5 10.5	9.8 10.1	5.5 5.55 5.35 5.3	3.50 3.40 3.30 3.35		96 97				
DC-2	8.6 8.6 8.2 8.2	4.7 5.1	10.5 10.5	10.1 9.7	5.35 5.6	3.30 3.35 3.30 3.30		97 96				
Σ	17 17 16.8 16.8	9.7 9.8	21 21	19.9 19.8	10.85 10.85 10.95	6.8 6.75 6.6 6.65		193				
DC-3	8.2 8.9	5.1 4.77			5.6 5.4	3.30 3.30 3.25 3.45		96 97				
Dc-4	8.9 8.4				5.4 5.55	3.25 3.45 3.38 3.35						
Σ	17.1 17.3	9.87			11.0 10.95	6.55 6.75 6.63 6.75						
DC-AV	1700	9.79	21	19.85	10.92	6.69		193				
AC-1	8.3	4.73	10.3	9.8	5.3	3.25		96				
AC-2	8.3	4.73	10.2	9.8	5.3	3.25		97				
Σ	16.6	9.46	20.5	19.6	10.6	6.50		193				
S. P.			-9									
AC÷N			.04									
Pot. Res			2K									

3.35
3.4



HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser-Gibson Line 1 ~~NWR~~ Spd 2 Field date 1-25-67 Data page_____ Comp. date_____. Comp by C.S.L. H.D.

(A) Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
(B) Receive	0-250	250-500		500-750	→		750-1000	→				
(C) n separation												
(D) I	2.0	→										
(E) Vdc (avg)	296	349	70.0	267	85	27.5	311	95.8	46.5	18.5		
(F) DCcal USED	0.532	→										
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	59	70	56	53	68	55	62	76	93	74		
(I) Vac Σ	284	332	67	248	81	26.4	294	89.6	43.8	17.4		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal. USED	0.989	→										
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	3.1	4.0	3.3	6.5	3.8	3.0	4.6	5.7	5.0	5.2		
(O) MCF=(M-1)(10^5)/H	53	57	59	123	56	55	74	99	54	70		

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	1000-	1250	→	→	1250	-1500	→	→		4-5		
(C) n separation												
(D) I	→						→	1800		1000		
(E) Vdc (avg)	51.8	33.65	23.4	11.2	28.8	20.7	15.7	7.44		188		
(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	41	67	93	78	57	83	110	92				
(I) Vac Σ	47.8	31.0	21.6	10.6	26.8	19.4	14.8	7.1		186		
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	→							→		.989		
(M) ρdc/ρac =ExL/K												
(N) PFE=(M-1)(10^2)	7.2	7.4	7.1	4.5	6.3	5.5	4.9	3.6				
(O) MCF=(M-1)(10^5)/H	176	110	76	58	111	66	45	39				

Line 1 Spd 2

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 1

Project: Kayser-Gibson Line: 1 NW 5-2 Int.Cal _____ Date: 1-25-67

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Rec.	0-250	250-500		500-750		→	750-1000			→		
Time	300	300	100	200	100	30	300	100	100	30		
DC-1	148 148	174 175	35.5 34.5	134 133	43 42	13.0 14.5	156 155	47.3 48.5	22.5 24	8.6 9.9		
DC-2	148 148	174 175	35.5 34.5	134 133	43 42	13.0 14.5	156 155	47.3 48.5	22.5 24	8.6 9.9		
Σ										18.5		
DC-3	148 148	174 175	35.5 34.5	134 133	43 42	13.0 14.5	156 155	47.3 48.5	22.5 24	8.6 9.9		
Dc-4												
Σ												
DC-AV	296	349	70.0	267	85.0	27.5	311	95.8	46.5	18.5		
AC-1	142	166	33.5	124	40.5	13.2	147	44.8	21.9	8.7		
AC-2	142	166	33.5	124	40.5	13.2	147	44.8	21.9	8.7		
Σ	284	332	67.0	248	81.0	26.4	294	89.6	43.8	17.4		
S. P.	-.6	+4.3		+7.8			-18.5					
AC-N	.02	.02		.04			.02					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 2

Project: Kaiser-Gibson Line: 1W 3 5-2 Int.Cal _____ Date: 1-25-70

Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		Cal		
Rec.	1000-1250	→	→	→	1250-1500	→	→	→		4-5		
Time	100	30	30	10	30	30	30	10				
DC-1	26.3 25.5	17.3 16.3	12.3 11.1	5.5 5.7	14.4 14.4	10.4 10.3	7.7 8.0	3.85 3.59		94 94		
DC-2	26.3 25.5	17.3 16.3	12.3 11.1	5.5 5.7	14.4 14.4	10.4 10.3	7.7 8.0	3.85 3.59		94 94		
Σ	51.8	33.6	23.4	11.2		10.5 10.3		7.44				
DC-3	26.3 25.5	17.3 16.1	12.3 11.1	5.5 5.7		10.4 10.3	7.7 8.0	3.85 3.59				
Dc-4		17.6 16.1	23.4	11.2		10.5 10.2		7.40				
Σ		33.7										
DC-AV	51.8	33.65	23.4	11.2	28.8	20.7	15.7	7.44		188		
AC-1	23.9	15.5	10.8	5.3	13.4	9.7	7.4	3.55		93		
AC-2	23.9	15.5	10.8	5.3	13.4	9.7	7.4	3.55		93		
Σ	47.8	31.0	21.6	10.6	26.8	19.4	14.8	7.10		186		
S. P.	+3.2				-6.4							
AC-N	.02				.02							
Pot.Res.												

N 56 W

INDUCED POLARIZATION SENDER NOTES

Project: _____ Line: 1 N W 2 Date: 1-25-67

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
Receive	0-2.5 N	2.5-5 N	→	5-7.5 N	→	→	7.5-10 N	→	→	→	10-12.5 N	—
Time												
Range												
Current	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Send	2-3	1-2	4-5	3-4	2-3	1-2		4-5				
Receive	→	→	12.5-15 N	→	→	→		CAL				
Time												
Range												
Current	2000	2000	2000	2000	2000	1800		1000				

NW

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser - Libron Line 15E½ Spd-2 Field date 1-25-67 Data page_____ Comp. date 1-26-67. Comp by C.S.L., H.D.

(A) Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
(B) Receive	0-250	250-500		500-750	→		750-1000		→			
(C) n separation												
(D) I	2	2	2	2	2	2	1.8	2	2	2		
(E) Vdc (avg)	329	274	64.5	726	127.3	42.1	375	173	51.4	19.1		
(F) DCcal	.543									→		
(G) Kn x 10^{-3}	.75	.75	3	.75	3	7.5	.75	3	7.5	15		
(H) ρ dc=ExFxGx10^3/D	67	56	53	148	104	86	85	141	105	78		
(I) Vac Σ	314	262	61	690	120	39.5	362	164	48	18.2		
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	unity 1											
(M) ρ dc/ρac=ExL/K												
(N) PFE=(M-1)(10^2)	4.8	4.6	5.7	5.2	6.1	6.6	3.6	5.5	7.1	4.9		
(O) MCF=(M-1)(10^5)/H	72	82	108	35	59	77	42	39	68	63		

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	1000-1250	→		→	1250-1500		→			1-2		
(C) n separation												
(D) I	1.8	2	2	2	1.8	2	2	2		1000		
(E) Vdc (avg)	115.1	66.3	23.5	10.4	33.1	24	9.85	4.68		184		
(F) DCcal								→				
(G) Kn x 10^{-3}	3	7.5	15	26.25	7.5	15	26.25	42				
(H) ρ dc=ExFxGx10^3/D	104	135	96	74	75	98	70	53				
(I) Vac Σ	111.8	63.4	22.3	9.8	31.8	23	9.40	4.4		184		
(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)	3.0	4.6	5.4	6.1	4.1	4.3	4.8	6.4				
(O) MCF=(M-1)(10^5)/H	29	34	56	86	55	44	69	121				

INDUCED POLARIZATION - RECEIVER NOTES

PAGE 3

Project: Kayserl-Gibson Line: 1SE ½ S-2 Int.Cal _____ Date: 1-25-67

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Rec.	0-250	260 -	600	500 -	750	→	750 -	1000	→	→		
Time	300	300	100	1000	100	30	300	100	100	30		
DC-1	167 162	137 137	33 31.5	363 363	64.3 63	22 20.1	187 188	88 85	27.5 23.9	9.8 9.3		
DC-2	167 162	137 137	33 31.5	363 363	64.3 63	22 20.1	187 188	88 85	27.5 23.9	9.8 9.3		
Σ	32.9					42.1	375					
DC-3	167 162		33 31.5	363 363	64.3 63	22 20.1	187 188	88 85	27.5 23.9	9.8 9.3		
Dc-4										19.1		
Σ												
DC-AV	329	274	64.5	726	127.3	42.1	375	173	51	19.1		
AC-1	157	131	30.5	345	60	19.8	181	82	24	9.1		
AC-2	157	131	30.5	345	60	19.7	181	82	24	9.1		
Σ	314	262	61.0	690	120.0	39.5	362	164	48.0	18.2		
S. P.	-17.1		+23.1	-18			-4.4					
AC-N	.02		.02	.02			.02					
Pot.Res.												

INDUCED POLARIZATION - RECEIVER NOTES PAGE 4

Project: Kayser-Gibson Line: 15 E 1/2 S-2 Int.Cal _____ Date: 1-25-67

Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		Cal		
Rec.	1000	1250	→	→	1250	1500	→	→		1-2		
Time	100	100	30	10	30	30	10	10		300		
DC-1	57.5 57.2	32.8 33.5	11.2 12.3	4.8 5.6	15.8 17.3	11.3 12.7	5.10 4.7	2.5 2.18		92 92		
DC-2	57.5 57.9	32.8 33.5	11.2 12.3	4.8 5.6	15.8 17.3	11.3 12.7	5.15 4.9	2.5 2.18		92 92		
Σ	114.7 114.7 115.4											
DC-3	57.5 57.9	32.8 33.5	11.2 12.3	4.8 5.6	15.8 17.3	11.3 12.7	5.15 4.7	2.5 2.18				
Dc-4	115.9 115.4											
Σ												
DC-AV	115.1	66.3	23.5	10.4	33.1	24.0	9.85	4.68		184		
AC-1	55.9	31.7	11.2	4.9	15.9	11.5	4.7	2.2		92		
AC-2	55.9	31.7	11.1	4.9	15.9	11.5	4.7	2.2		92		
Σ	111.8	63.4	22.3	9.8	31.8	23.0	9.40	4.40		184		
S. P.	+4.3				-6.7							
AC-N	.02				.02							
Pot.Res.												

INDUCED POLARIZATION SENDER NOTES

Project: _____ Line: 1 - SE½ NW¼ Date: 1-25-67

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
Receive	0-2.5 s	2.5-5 s	→	5-7.5 s	→	→	7.5-10 s	→	→	→	10-12.5 s	—
Time												
Range												
Current	2000	2000	2000	2000	2000	2000	1800	2000	2000	2000	1800	2000
Send	3-4	4-5	1-2	2-3	3-4	4-5		1-2				
Receive	→	→	12.5-15 s	→	→	→		CAL				
Time												
Range												
Current	2000	2000	1800	2000	2000	2000		1000				

6800
63

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Gibson Kayser Line 1 SE ½ Field date_____ Data page_____ Comp. date_____. Comp by_____

(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	0-500SE	500-1000SE	→	1000-1500SE		→	1500-2000SE			→	2000-2500SE	
(C) n separation	1	1	2	1	2	3	1	2	3	4	2	3
(D) I	1.5											→
(E) Vdc (avg)	124.37	152.3	43.2	114.1	52.03	22.57	32.9	38.2	26.05	13.40	105.4	21.7
(F) DCcal	.507											
(G) Kn x 10^{-3}	1.5	1.5	6	1.5	6	15	1.5	6	15	30	6	15
(H) ρ dc=ExFxGx10^3/D (2)	63	77	88	72	106	114	167	77	132	136	213	152
(I) Vac Σ	116.5	142	40.0	104.3	48.3	21	308	36.7	24.8	12.68	48.5	[illegible]
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.0											
(M) ρ dc/ρac=ExL/K	1068	1072	1080	1093	1080	1072	1068	1041	1050	1058	1071	1069
(N) PFE=(M-1)(10^2) x100(1)	6.8	7.2	8.0	9.3	8.0	7.2	6.8	4.1	5.0	5.8	7.1	6.9
(O) MCF=(M-1)(10^5)/H Ans	108	94	70	129	76	63	41	53	38	43	33	63

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

(A) Send	2-3	1-2	4-5	3-4	2-3	1-2			Cal			
(B) Receive	→	→	2500-3000SE			→			2.3			
(C) n separation	4	5	3	4	5	6						
(D) I						→			1000			
(E) Vdc (avg)	17.25	9.97	39.26	10.2	9.58	5.6			195			
(F) DCcal						→						
(G) Kn x 10^{-3}	30	52.5	15	30	52.5	84						
(H) ρ dc=ExFxGx10^3/D	175.0	177	199	105	173	159						
(I) Vac Σ	16.7	9.39	37.0	9.70	9.18	5.22			195			
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.						→						
(M) ρdc/ρac =ExL/K	1031	1061	1060	1051	1042	1071						
(N) PFE=(M-1)(10^2)	3.1	6.1	6.0	5.1	4.2	7.1						
(O) MCF=(M-1)(10^5)/H	18	34	30	49	24	45						

LINE 1 spd 1

$$\frac{(Dc\,Av)(\overset{.507}{Dc\,Cal})(Km)\left[\left(\frac{\cancel{\ }}{1.500}\right)\right]}{1.5\ (I)} = \left(\frac{.507}{1.5}\right)\left(\frac{(Dc\,Av)(Km)}{\ }\right)$$

$$= (.338)(Dc\,Av)(Km)$$

INDUCED POLARIZATION SENDER NOTES

Project: GIBSON Line: 1 + E ½ Date: 31 AUG 66

Send	1-2	2-3	1-2	3-4	2-3	1-2	4-5	3-4	2-3	1-2		
Receive	0-500	5-10	→	10-15	→	→	15-20	→	→	→		
Time												
Range	170V	120V	120V	110V	110V	170V	180V	110V	120V	120V		
Current	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Send	4-5	3-4	2-3	1-2	4-5	3-4	2-3	1-2		CAL		
Receive	20-25	→	→	→	25-30	→	→	→		2-3		
Time												
Range	180V	110V	120V	120V	180V	110V	120V	170V		90V		
Current	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1A		

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Gibson Line: 1 SE½ Int.Cal 95 Date: 31 Aug

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
Rec.	0-500 SE	500-1000 SE →		1000-1500 SE →			1500-2000 →				2000-2500	
~~Time~~ R	100	300	30	100	100	30	300	30	30	10	100	30
DC-1	62.2 62.1	78 75	20.8 22.4	59.1 55.0	26.5 25.7	11.0 11.6	165 164	19.3 19.9	13.5 12.5	6.6 6.82	53.5 52.0	11.5 10.5
DC-2	62.1 62.2	75 77	22.4 21.1	55.0 59.1	25.7 26.1	11.6 10.9	164 165	19.9 19.3	12.5 13.6	6.82 6.6	52.0 53.3	10.5 11.1
Σ	124.3 124.3	152 152	43.2 43.5	114.1 114.1	52.2 51.9	22.6 22.5	329 329	38.2 38.2	26.0 26.1	13.42 13.42	105.5 105.3	22.0 21.6
DC-3	62.2 62.2	77 75	21.1 22.1	59.1 55.0	26.1 26.0	10.9 11.7					53.3 52.1	11.1 10.5
Dc-4			22.1 20.8									10.5 11.1
Σ	124.4	152	43.2 42.9	114.1	52.1	22.6				13.35	105.4	21.6 21.6
DC-AV	124.37	152.3	43.2	114.1	52.03	22.57	329	38.2	26.05	13.40	105.4	21.7
AC-1	58.3	71	20.0	52.2	24.2	10.5	154	18.3	12.4	6.33	49.2	10.2
AC-2	58.2	71	20.0	52.1	24.1	10.5	154	18.4	12.4	6.35	49.3	10.1
Σ	116.5	142	40.0	104.3	48.3	21	308	36.7	24.8	12.68	98.5	20.3
S. P.	+26	-18		-15			+15				0	
AC-N	.05	.06		.05			.05				.05	
Pot. Res	1K	1K		1K			1K				1K	

+ Pol* ° Leachman Pond between 4-5

AOIT

6.6
6.75

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Line 1 Line: 1 SET Int.Cal _____ Date: 31 Aug

Gibson SE ½

Send	2-3	1-2	4-5	3-4	2-3	1-2		Cal.				
Rec.	→	→	2500	3000	→	→						
Time R	30	10	30	10	10	10		2-3				
DC-1	8.6 8.6	5.08 4.9 4.9 5.13	20.1 20.4 19.1 18.8	5.0 5.2	4.64 4.58 5.05 0	2.7 2.9		98 97	Finish on Road Addit 1/4 about 1800 ft. out.			
DC-2	8.6 8.7	4.9 5.13 5.08 4.78	19.1 20.3	5.2 5.0	5.0 4.58	2.9 2.7		97 98				
Σ	17.2 17.3	9.98 9.93 9.98 9.91	39.2 39.2 39.4	10.2 10.2	9.6 9.58 9.58	5.6 5.6		195 195				
DC-3	8.7 8.5	5.08 4.71 4.9 5.2	20.3 18.9	5.0 5.2	4.58 4.99			98 97				
Dc-4	8.6 8.7	4.9 5.13	18.9 20.4		4.99 4.58							
Σ	17.2 17.3	9.98 9.96 10.03	39.2 39.3	10.2	9.57 9.57			195				
DC-AV	17.25	9.97	39.26	10.2	9.58	5.6		195				
AC-1	8.5	4.69	18.5	4.85	4.59	2.62		98				
AC-2	8.2	4.70	18.5	4.85	4.59	2.60		97				
Σ	16.7	9.39	37.0	9.70	9.19	5.22		195				
S. P.			-4									
AC-N			.05									
Pot. Res			1K									

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Kayser Gibson Yager Line 1 NW ½ Field date 1 Sept Data page_____ Comp. date_____. Comp by_____

(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	0-5 NW	500-1000	NW →	1000-1500 NW		→	1500-2000 NW		→		2000-2500 NW	
(C) n separation	1	1	2	1	2	3	1	2	3	4	2	3
(D) I	1.5											→
(E) Vdc (avg) ①	154	129.97	43.3	228.3	31.85	17.57	180	39.3	9.12	6.80	50.9	24.8
(F) DCcal	.5102											→
(G) Kn x 10^{-3}	1.5	1.5	6	1.5	6	15	1.5	6	15	30	6	15
(H) ρ dc=ExFxGx10^3/D	79	66	88	116	65	90	92	80	47	69	165	12.6
(I) Vac Σ ②	142	121.6	40.1	217	30.1	16.3	176	38.0	8.83	6.45	79.6	23
(J) AC noise x 2												
(K) Vac(corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.	1.											
(M) ρ dc/ρac=ExL/K Ans	1085	1069	1080	1052	1058	1078	1023	1034	1033	1054	1016	1042
(N) PFE=(M-1)(10^2)	8.5	6.9	8.0	5.2	5.8	7.8	2.3	3.4	3.3	5.4	1.6	4.2
(O) MCF=(M-1)(10^5)/H	108	105	91	45	89	87	25	43	70	78	10	33

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	→	→	2500-3000 NW			→						
(C) n separation	4	5	3	4	5	6						
(D) I						→		1000				
(E) Vdc (avg)	7.07	5.88	44.49	19.16	6.12	5.69		196				
(F) DCcal						→						
(G) Kn x 10^{-3}	30	52.5	15	30	52.5	84						
(H) ρ dc=ExFxGx10^3/D	72	105	227	196	109	163						
(I) Vac Σ	6.8	5.59	43.4	17.8	5.90	5.28		196				
(J) AC noise x 2												
(K) Vac (corr) = $\sqrt{I^2 - J^2}$												
(L) AC-DC cal.												
(M) ρdc/ρac =ExL/K	1040	1052	1025	1076	1037	1078						
(N) PFE=(M-1)(10^2)	4.0	5.2	2.5	7.6	3.7	7.8						
(O) MCF=(M-1)(10^5)/H	56	50	11	39	34	48						

INDUCED POLARIZATION SENDER NOTES

project: GIBSON Line: 1-W 1/2 Date: 1 SEPT 66

Send	4-5	3-4	4-5	2-3	3-4	4-5	1-2	2-3	3-4	4-5		
Receive	0-500	5-10	→	10-15	→		15-20	→		→		
Time												
Range	190V	110V	190V	120V	110V	190V	170V	120V	110V	190V		
Current	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
Send	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5		CAL		
Receive	20-25	→			25-30	→		→		3-4		
Time												
Range	170V	120V	110V	190V	170V	110V	110V	190V		90V		
Current	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1A		

INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Gibson Line: Line 1 NWt Int.Cal _____ Date: _____

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
Rec.	0-500 NW	500-1000 NW →		1000-1500 NW →			1500 —	2000 NW →			2000-2500	
Time	3	100	30	300	30	30	300	30	10	10	100	30
DC-1	77 77	65.8 64.2	21.0 21.4 22.2 32 21.9	114 115	15.3 16.5	8.0 9.6	90 90	19.8 19.5	4.60 4.31 4.62 4.83	3.36 3.41 3.5 3.75	41.0 39.9	12.1 12.6
DC-2	77 77	64.2 65.8	22.3 21.0	115 113	16.1 16.7	9.6 8.7	90 90	19.5 19.8	4.62 4.83 4.48 4.31	3.5 3.75 3.26 3.21	39.9 41.0	12.6 12.3
Σ	154 154	130 130	43.3 43.9 43.3	229 228	31.8	17.6	180 180	39.3 39.3	9.12 9.16 9.10 9.14	6.86 6.16 6.74 6.96	80.9 80.9	
DC-3		65.8 64.1	21.0 22.1	113 115	15.7 16.4	8.7 8.8			4.48 4.81	3.26 3.21 3.42 3.37		12.3 12.5
Dc-4			22.1 21.4		16.4 15.3	8.8 8.7			4.81 4.31	3.42 3.37 3.41 3.5		
Σ	154	129.9	43.1 43.5	228	32.1 31.7	17.5 17.5			9.12	6.69 6.58 6.83 6.87		
DC-AV	154	129.97	43.3	228.3	31.85	17.57	180	39.3	9.12		80.9	24.8
AC-1	71	60.8	20.1	109	15	8.2	88	19	4.42	3.23	39.8	11.9
AC-2	71	60.8	20.	108	15.1	8.1	88	19.0	4.41	3.22	39.8	11.9
Σ	142	121.6	40.1	217	30.1	16.3	176	38.0	8.83	6.45	79.6	23.8
S. P.	-3	+2		-8			0				+9	
AC-N	.05	.05		.04			.04				.04	
Pot. Res	1K	1K		1.5K			2K				1K	

4.5
15-20
3.48
3.39
3.49
Σ 6.98
6.87
6.87

* + o

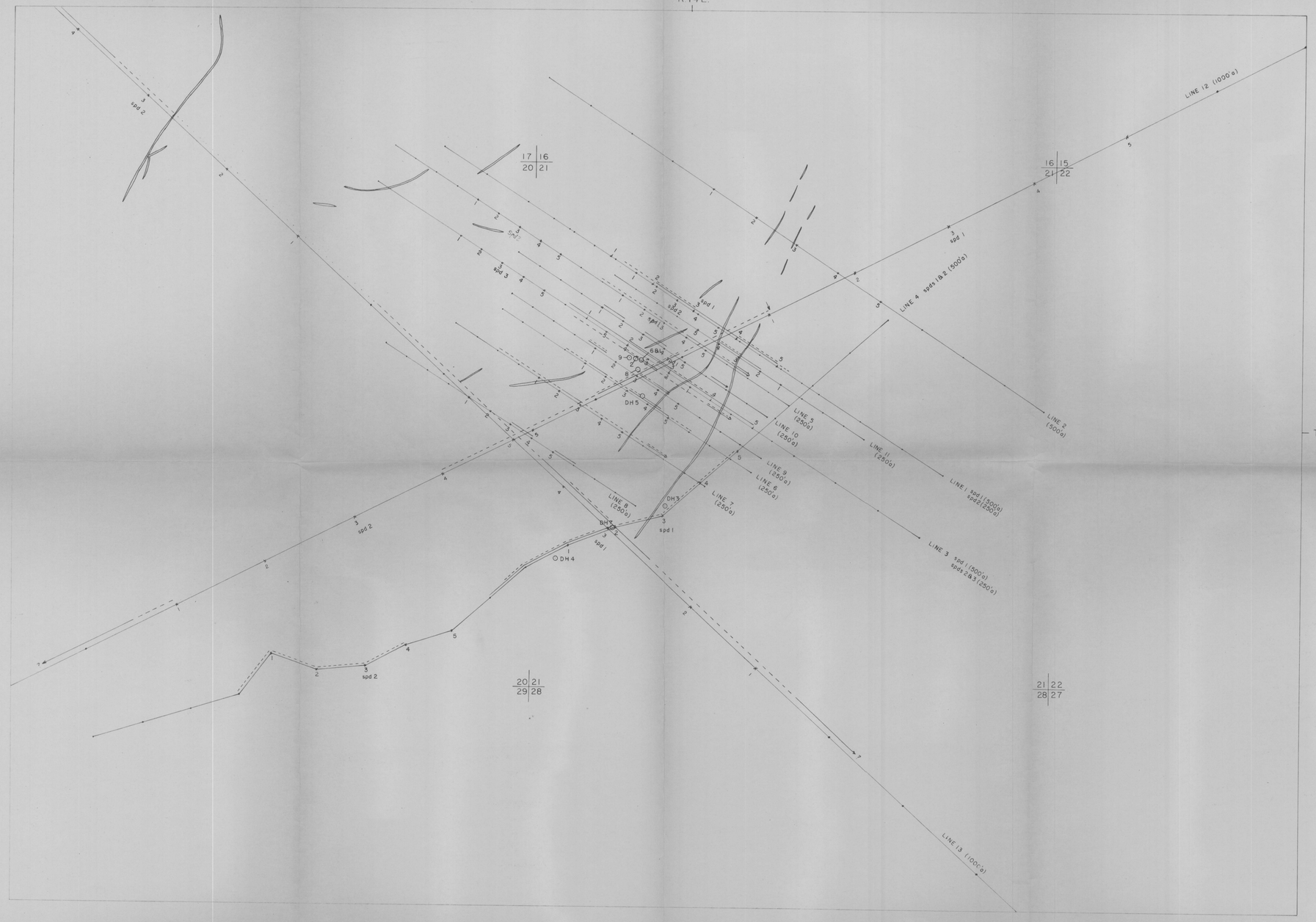
INDUCED POLARIZATION - RECEIVER NOTES

PAGE _____

Project: Gibson Line: LineNW Int.Cal 300 Date: _____

	Send	3-4	4-5	1-2	2-3	3-4	4-5		Cal				4-5
3-4	Rec.	→	→	2500	3000 NW	→	→		Cal				2.15
	Time	10	10	100	30	10			3-4				3.2
3.26	DC-1	3.61 3.06 3.41 3.81	2.15 3.15 2.78 2.75	22.6 22.1 22 21.9	9.2 9.5	3.2 3.66 2.95 2.60	3.0 3.02 2.8 3.0		98 98				
2.74 5.82													
3.59 6.33		3.41 3.81	2.78 2.75	22.1 21.9	9.5	2.95 2.60	2.8 3.0		98				
2.6 6.19	DC-2	3.22 3.10	3.10 3.08	22.6 22.6	8.9	3.2 3.05	3.05 2.4		98				
3.3 5.9	Σ	7.02 6.7 7.32 6.9	5.93 6.03 5.88 5.83	44.6 44.6 49.7 44.5	18.7 19.4	6.15 6.25 6.15 5.65	5.8 6.02 5.85 5.4						
2.87 6.27	DC-3	3.92 3.10 3.15 3.95	3.10 3.08 2.78 2.70	22.6 22.6 21.9 22.6	8.9 9.7	3.2 3.06 2.8 3.2	3.06 2.4 2.6 3.02						
3.7 6.51													
2.9 6.3	Dc-4	3.15 3.95 4.0 3.15	2.78 2.70 3.15 3.10	21.9 22.6 22.7 22.6		2.8 3.2 3.65 3.08	2.6 3.02 3.02 2.72						
3.3 6.2	Σ	7.07 7.10 7.15 7.10	5.88 5.79 5.93 5.88	44.5 45.2 44.6 45.2	19.4	6.0 6.25 6.45 6.25	5.65 5.42 5.62 5.74						
3.0 6.3	DC-AV	7.07	5.88	44.49	19.16	6.12	5.69		98				
3.5 6.5	AC-1	3.4	2.80	21.7	8.9	2.93	2.66		98				
2.5 6.0	AC-2	3.4	2.79	21.7	8.9	2.97	2.63						
3.08 5.88	Σ	6.8	5.59	43.4	17.8	5.90	5.28						
3.15 6.23	S. P.	+9		-12									
2.95 6.10	AC-N	.04		.04									
3.1 6.05	Pot. Res	1		1K									
3.0 6.1													
3.2 6.2													

grounded Fence 2000 - 3000 200' S of road



EXPLANATION

Veins

Drill hole, Unsurveyed

I P line with illustated interpretation

16 | 5
21 | 22 Section corner

RELATIVE ANOMALY STRENGTH

very weak — weak — moderate — strong

stations — electrodes — I P LINE

N

Pinal Co Ariz

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

INDUCED POLARIZATION LOCATION & INTERPRETATION PLAN
GIBSON FOR PROPERTY

PAUL KAYSER

Scale 1" = 500' | Date 4/18/67

September 18, 1968

Mr. R. B. Thompson
Boyle, Bilby, Thompson & Schoenhair
Valley National Bank Bldg.
Tucson, Arizona

Re: Paul Kayser - Haley's Mt. Project, Pinal County, Arizona.

Dear Buck:

Enclosed are two copies of the geological and geophysical report covering work done on behalf of Mr. Kayser to fulfill required assessment work on the Lehigh No. 10, Ben Butler, Virginia, Rebecca, Summit No. 2 and the Parnell Claims.

Due to the age and uncertain location of the Parnell Lode, the Summit No. 2 in particular and to a lesser degree all of the others except the Lehigh No. lo, we strongly urge that they be re-surveyed and new monuments erected as soon as possible if the ground is to be maintained. The Lehigh 10 should be in good condition as it is a new claim. We cannot be certain that we did, in fact, do the legally required work on the Parnell and Summit No. 2 because no evidence on the ground was found that they exist and there is some doubt that the location notices describe the claims correctly.

Some question exists in our mind if work is actually required on the Wedge as it may be a patented claim.

We are also enclosing two copies of our interpretation of the data which SHOULD NOT be included in the courthouse filing since the information is of a confidential nature, but is part of our complete report to Mr. Kayser.

We will be pleased to discuss this in detail should you wish to pursue the matter further.

Sincerely yours,
HEINRICHS GEOEXPLORATION CO.

E. Grover Heinrichs
Vice President

EGH:jh
Enclosures

cc w/encl: Paul Kayser

REPORT OF GEOPHYSICAL AND GEOLOGICAL SURVEY

At the request of Mr. Paul Kayser, Heinrichs Geoexploration Company conducted geological, self potential, vertical intensity magnetic and geochemical surveys on the claims listed below, located in Mineral Creek Mining District, Pinal County, Arizona, during the interim of August 29 through September 5, 1968 at a cost exceeding $700.00, in fulfillment of annual labor requirements:

	Book	Page
Lehigh No. 10	476	204
Ben Butler	10	212
Virginia	30	582
Rebecca	30	554
Summit No. 2	33	486
Parnell	10	197
Wedge	476	203

The work on each of these claims exceeded $100.00 but the total expenditure was not evenly divided on each claim.

Five lines were traversed over the claims with stations being established every 100 ft. which gave a total surface coverage of 7,200 ft. Self potential and vertical intensity magnetic readings were taken at these intervals. In addition a geochemical soil sample was also taken at each station. For a detailed location of these lines relative to the claim boundaries and points of discovery, see the attached location plan which is a part of this report.

BASIC FINDINGS

The rocks are limestones and quartzites as shown on the composite map accompanying this report. These rocks strike nearly east and dip to the south. The Ray Lead-Silver Mine is on an easterly trending fracture and the geophysical and geochemical surveys were oriented to attempt to determine if this is a controlling factor of ore deposition for all these claims.

Basic findings of the geophysics is summarized on the attached composite profiles. A ten gamma sensitivity, vertical intensity, flux gate magnetometer was used to obtain all the magnetic data on this survey. The magnetic low on Station 0+00 of several lines is attributed to iron trash near those stations.

This geological and geophysical work applies to and benefits the above listed claims. Heinrichs personnel involved in the work were Mr. Donald B. Cooley, Geologist; Mr. Paul A. Head, Geophysicist; and Mr. H. R. Moulinet, Crew Chief. Data compilation was accomplished by the Heinrichs staff under the supervision of Mr. Chris S. Ludwig, Senior Geophysicist, and the over all direction of Mr. Walter E. Heinrichs, Jr., President and General Manager of Heinrichs Geoexploration Co. and a registered Mining Engineer with over 25 years of experience.

Respectfully submitted,
HEINRICHS GEOEXPLORATION CO.

Donald B Cooley

D. B. Cooley
Geologist

P. A. Head
Geophysicist

Walter E. Heinrichs, Jr.
Registered Engineer

Registered Professional Engineer (Mining) CERTIFICATE EXPIRES WALTER E. HEINRICHS JR. DEC. 31, 1968 ARIZONA, U.S.A.

September 17, 1968
P. O. Box 5671
Tucson, Arizona 85703

INTERPRETATION

No magnetic anomalism was noted which correlates to any of the other methods used or with known geologic features.

The self potential data is not anomalous except at Station 6+00 on Line 4 and Station 4+00 on Line 5 where weak S.P. lows were detected. These do not correlate to either the geochemical or magnetic surveys, nor are they apparently related to each other. The low S.P. on Line 5 does seem to correspond to the quartzite-limestone contact. The S.P. low on Line 4 is the better of the two anomalies, and seems to correspond very nicely to the discovery location of the Parnell Lode.

At each station on all lines a soil sample was taken and subsequently analized for silver and copper. The geochemical samples taken at Line 1, Station 0+00, Line 2 Station 0+00, Line 4 Station 0+00 and Line 5 Station 0+00 may have been contaminated by mine tailings on which the samples were taken. Significant copper anomalies occur at Line 2 Station 6+00 and possibly at Line 3 Station 1+00. The only significant silver anomaly is Line 2 Station 7+00, which corresponds well with the copper high.

Although no exceptionally anomalous geophysical results were obtained, additional work is definitely needed to define the cause of the weak effects noted above. Especially important are the possible extensions on the Parnell, Ben Butler and possibly on the Virginia. The probable association of manganese with silver may make the induced polarization method useful here even in the absence of sulfides. Extensive geochemical sampling and additional geology are specifically recommended prior to formulating any specific proposals for an induced polarization survey.

Please note:

Two assumptions have been made regarding the locations of Discovery Pits on the following claims:

1. Ben Butler -- assumed discovery to be on west end line of this claim.

2. Parnell -- assumed discovery to be on the southeast end line of this claim.

The only discovery pit found in the field was that one on the Wedge Claim.

The Lehigh No. 10 Claim discovery is probably correct for this is a relatively new claim (located 1966).

The location of the Rebecca, Virginia and Ben Butler Claims was taken from Mineral Survey Plat No. 3803 A and B. The corners bearings of Lines and distances of these claims have also been assumed.

The location of the Summit No. 2 and Parnell Claims was taken from Mineral Survey No. 3804. The corner bearings of Lines and distances of these claims have also been assumed.

Respectfully submitted,
HEINRICHS GEOEXPLORATION CO.

H. R. Moulinet
Surveyer

Donald B Cooley

D. B. Cooley
Geologist

Registered Professional Engineer (Mining)
CERTIFICATE EXPIRES
WALTER E. HEINRICHS, JR.
DEC. 31, 19
ARIZONA, U. S. A.

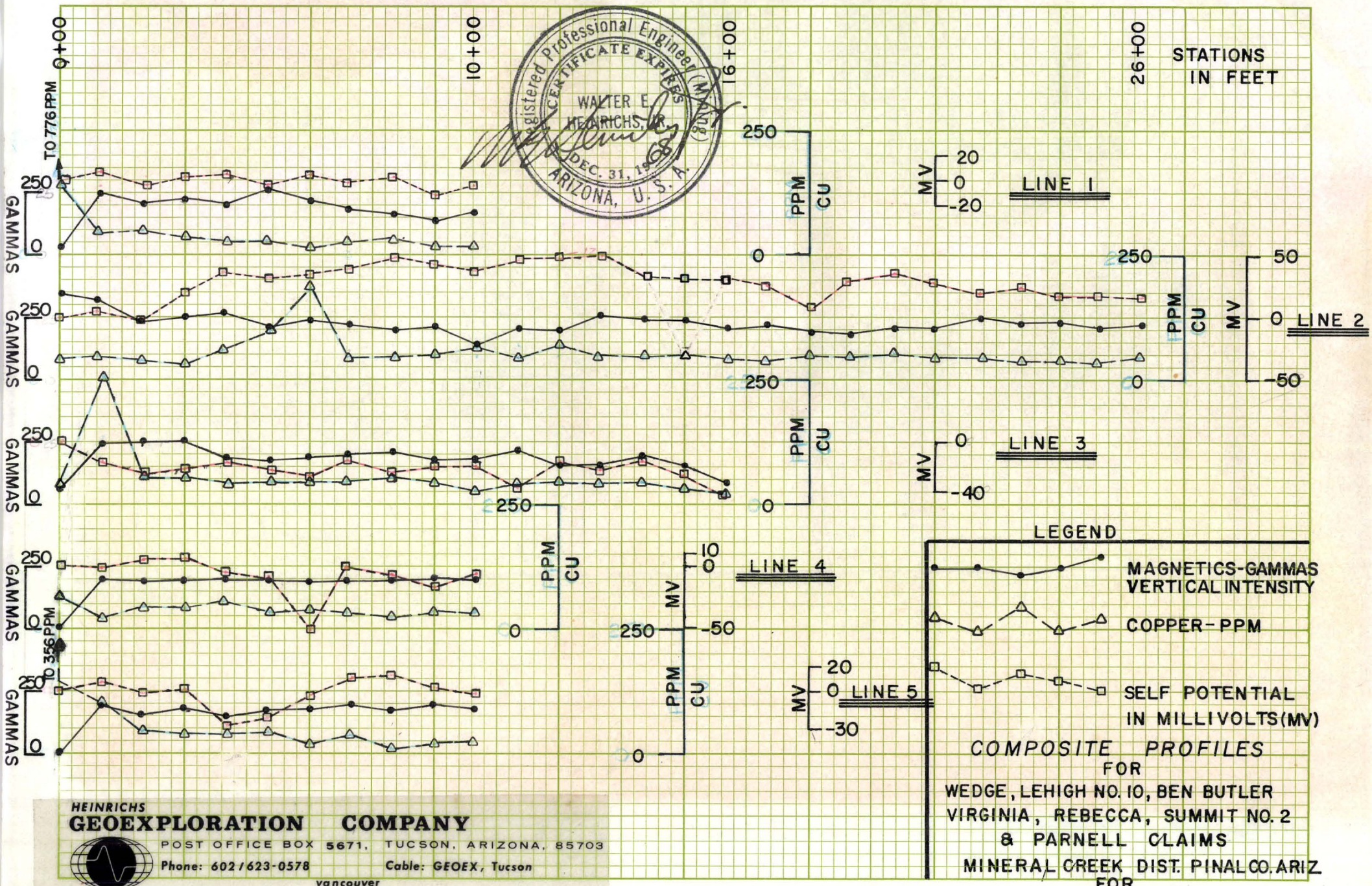
Walter E. Heinrichs, Jr.
Registered Engineer

Paul A Head
Geophysicist

Paul A Head

September 17, 1968
P. O. Box 5671
Tucson, Arizona 85703

K+E 10 X 10 TO THE INCH 46 0782
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.

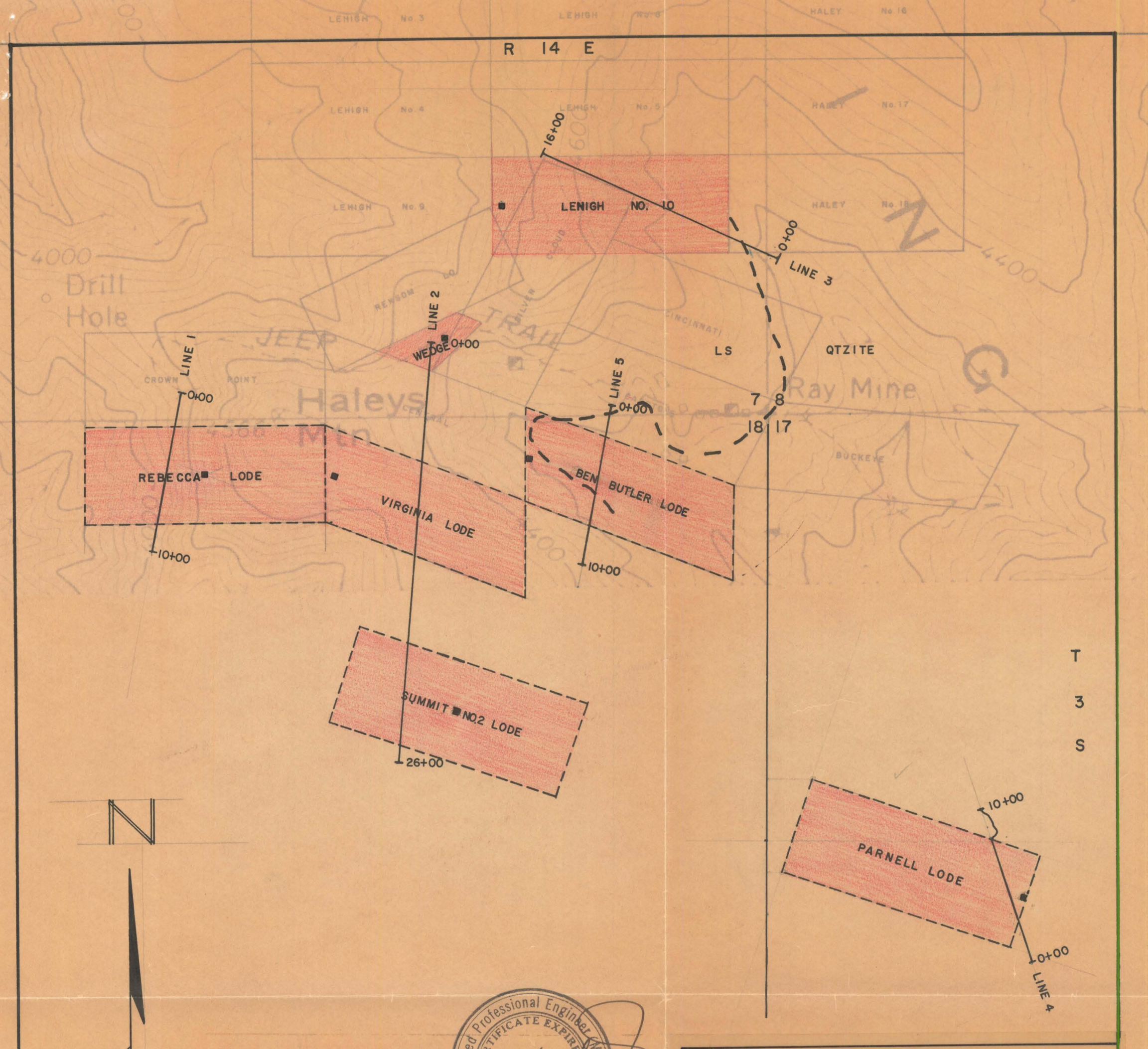


Registered Professional Engineer (Mining)
CERTIFICATE EXPIRES DEC. 31, 1968
WALTER E. HEINRICHS, JR.
ARIZONA, U.S.A.

HEINRICHS
GEOEXPLORATION COMPANY
POST OFFICE BOX 5671, TUCSON, ARIZONA, 85703
Phone: 602/623-0578 Cable: GEOEX, Tucson
geophysical engineers
vancouver
sydney

COMPOSITE PROFILES
FOR
WEDGE, LEHIGH NO. 10, BEN BUTLER
VIRGINIA, REBECCA, SUMMIT NO. 2
& PARNELL CLAIMS
MINERAL CREEK DIST. PINAL CO. ARIZ.
FOR
PAUL KAYSER

AUG-SEPT 1968



INDICATES GEOLOGICAL CONTACT

LINE 2 INDICATES TRAVERSE LINE

" POINT OF DISCOVERY

Registered Professional Engineer (Mining) CERTIFICATE EXPIRES DEC. 31, 19 68 WALTER E. HEINRICHS, JR. ARIZONA, U.S.A.

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sydney

COMPOSITE PLAN
GEOLOGICAL & GEOPHYSICAL SURVEYS
OF
WEDGE, LEHIGH NO. 10, BEN BUTLER, VIRGINIA
REBECCA, SUMMIT NO. 2, & PARNELL CLAIMS
MINERAL CREEK DIST. PINAL COUNTY, ARIZ.

FOR

PAUL KAYSER

SCALE 1" = 600' | DRAWN BY HRM | DATE SEPT 1968

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Heinricks Geoexploration Company
P. O. Box 5671
Tucson, Arizona

Work Order: B-290-68

JOB # 003062
RECEIVED 9-6-68
REPORTED 9-9-68

SAMPLE NUMBER	GOLD OZ.*	SILVER ppm.*	LEAD %	COPPER ppm	ZINC %		MOLYBDENUM %
L-1:							
0+00		6		776			
1+00		N.D.		40			
2+00		N.D.		48			
3+00		< 3		32			
4+00		< 3		24			
5+00		3		24			
6+00		3		12			
7+00		< 3		24			
8+00		< 3		28			
9+00		4		16			
10+00		5		12			
L-2:							
0+00 S		3		44			
1+00 S		N.D.		48			
2+00 S		< 3		36			
3+00 S		< 3		28			
4+00 S		3		64			
5+00 S		3		100			
6+00 S		5		184			
7+00 S		13		231			
8+00 S		< 3		44			
9+00 S		< 3		48			
10+00 S		3		64			
11+00 S		< 3		44			
12+00 S		N.D.		72			
13+00 S		< 3		48			
14+00S		< 3		44			
15+00 S		3		52			
16+00 S		N.D.		48			
17+00 S		< 3		36			

SEP 10 1968
BOX 5671 TUCSON, ARIZONA 85703
Phone (AREA 602) 623-0578

1/8
Job 290-68

CHARGE

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

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Heinrichs Geoexploration Company

JOB # 003062 Continued
RECEIVED
REPORTED

Page # 2

SAMPLE NUMBER	GOLD OZ.*	SILVER ~~OZ.*~~ ppm	LEAD %	COPPER ~~%~~ ppm	ZINC %		MOLYBDENUM %
L-2:							
18+00S		< 3		48			
19+00S		< 3		47			
20+00S		N.D.		56			
21+00S		< 3		44			
22+00S		< 3		43			
23+00S		< 3		36			
24+00S		3		32			
25+00S		3		28			
26+00S		< 3		40			
L-3:							
0+00 W		< 3		41			
1+00 W		< 3		268			
2+00 W		< 3		56			
3+00W		< 3		55			
4+00 W		< 3		36			
5+00 W		< 3		38			
6+00 W		3		44			
7+00 W		N.D.		46			
8+00 W		N.D.		56			
9+00 W		N.D.		40			
10+00 W		< 3		24			
11+00 W		< 3		36			
12+00 W		< 3		40			
13+00 W		3		36			
14+00 W		3		44			
15+00 W		3		28			
16+00 W		3		20			
L-4:							
0+00 N		9		68			
1+00 N		3		24			
2+00 N		3		40			

CHARGE

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

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PHONE 602-294-5811

Heinrichs Geoexploration Company

Page # 3

JOB # 003062 Continued
RECEIVED
REPORTED

SAMPLE NUMBER	GOLD OZ.*	SILVER ~~OZ.*~~ ppm	LEAD %	COPPER ~~%~~ ppm	ZINC %		MOLYBDENUM %
L-4:							
3+00 N		6		36			
4+00 N		< 3		56			
5+00 N		< 3		28			
6+00 N		< 3		32			
7+00 N		3		31			
8+00 N		< 3		24			
9+00 N		N.D.		32			
10+00 N		N.D.		31			
L-5:							
0+00 S		3		356			
1+00 S		N.D.		104			
2+00 S		N.D.		44			
3+00 S		N.D.		32			
4+00 S		N. D.		36			
5+00 S		< 3		38			
6+00 S		3		20			
7+00 S		N.D.		32			
8+00 S		3		12			
9+00 S		< 3		20			
10+00 S		< 3		24			

REGISTERED ASSAYER
CERTIFICATE NO. 5875
WILBUR D. WRIGHT
Date Signed 9/9
Arizona U. S. A.

CHARGE $ 134.75

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

Location Notice of Parnell Mine

Notice is hereby given that the undersigned in compliance with the requirements of this mining act of Congress approved May 10th 1872 have tthis day located and claimed fifteen hundred linear feet along the course of this land lode or vein of mineral bearing quartz and three hundred feet in width on each side of the middle of said land lode or vein situated in the Mineral Creek Mining District County of Pinal Arizona and more particular: ~~City~~ LY described as follows to-wit ~~Communting~~ COMMENCING at this monument of stones being the center of the south end line of claim and upon which this notice is posted therein three hundred feet to SW corner Thence fifeteen hundred feet to the NW corner monument of stones therein three hundred feet east to a monument of stones being the center end monument ~~therein~~ nce three hundred feet to northeast corner of said claim thence 1,500 feet to the southeast corner monument thence three hundred feet west to place of beginning this claim is situated about 3½ miles from Ray Copper Mines and one mile from McAllen Little Pittsburg Mine. Taking ~~this~~ the gulch as the western boundary line and following the contact of the quartzite and ~~kne~~ lime as center line and touches Morton boundary line on the west side ~~d~~ said boundary line being the eastern boundary side line. ?

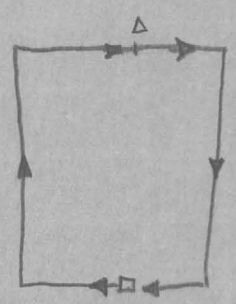
Located this 10th day of August 1886
and shall be known as the Parnell Mine
Witnesses:

William Morton Thomas Nealey ????
William Souffrien

Filed and recorded as required ~~by~~ uest of William Morton August 3 AD 1886 at 2 p.m.

? Thomas Recorder

By Charles P. Mason, Deputy



ORE RESERVE ESTIMATE
FOR
GIBSON PROPERTY

For

Mr. Paul Kayser

April 1967

By

Heinrichs Geoexploration Company
P. O. Box 5671 Tucson, Arizona 85703
Phone: 623-0578 Area Code: 602

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INTRODUCTION

At the request of Mr. Paul Kayser, Houston, Texas, Heinrichs Geoexploration Company conducted and completed an ore reserve estimate on the Gibson Area, Pinal County, Arizona, through the interim April 6-7, 1967.

The ore reserve estimates were based on assay data obtained from four drill holes which intersect a N25°E striking vein. The polygon methods of ore reserve estimation was used. Assay data sheets, polygon lay-out, ore reserve computation sheets, and structural vein sections are included.

CONCLUSIONS AND RECOMMENDATIONS

Considering the present value of possible ore, the property appears to be marginal for a small scale operation; however, since the above estimate is conservative and does not take in possible ore extensions to the north and east of drill holes 2 and 6, it is recommended that the following considerations e made.

1. A cost estimate for a possible exploration shaft located approximately 125 feet east of drill hole 6. Topography favors exploration in this manner since a shaft would only have to be 125-150 feet deep to intersect the vein, therefore, exploration and mining could commence as one operation.

2. A cost estimate to sink a shaft at drill hole 2 and mine estimated ore

3. Conduct a check of land status with laywers, considering extralateral rights of Gibson Mine holders since the Pasquale vein outcrops ontthe Gibson Property.

GEOLOGY

The mineralized portion of the Pasquale vein (quartz vein) under consideration is located in part on the Gibson Property and in part on two claims known as the Lucky Claims. The Pasquale vein has a general strike of N25°E, dipping approximately 35°NW, occupying a clearly defined fracture zone which is not conformable with the bedding of the Pinal schist (N55°W). The Pinal schist is the only rock type immediate to the Gibson Mine area.

One churn drill hole GB 2, and three diamond drill holes GB 6, 8, and 9 were drilled, intersecting the Pasquale at depths ranging from 133 feet to 397 feet. Drill holes GB 2 and 6 appear to have intersected the major portion of the mineralization, denoting a mineralized thickness of 21 feet. At GB 8 and 9 the vein thickness was less than two feet indicating the mineralized portion of the vein pinches out to the south and west. As to the character of the vein north of holes 2, 6, and 9 and east of holes 6, little is known since no drill holes are in these areas. Induced polarization information indicates that the mineralized portion of the vein north of holes 2, 6, and 9 pinches out as well as to the east of hole 6. Therefore, it appears that the mineralized portion of the Pasquale vein is pod shape in character.

As to the mineralogy of the pod, chalcopyrite comprises the copper mineralization occuring as massive lenses at the contact between the schist and the Pasquale vein. The Hanging Wall contact is favored for ore localization although occasionally high grade streaks are found within the vein. Pyrite is also found.

POSSIBLE ORE ESTIMATE

Considering the triangle formed by drill holes 2, 6, 8, and 9 a total value of $163,600.00 for copper is estimated. Since

the polygons for drill holes 8 and 9 have little value ($3,000.00) these portions of the known mineralization should be excluded from the possible ore reserves leaving a probable total value of $160,600.00. Silver was not considered in the total value estimate since the value for silver was less than $2.00 per ton.

Respectfully submitted,

HEINRICHS GEOEXPLORATION COMPANY

Harvey S. Durand
Geologist

APPROVED: _____
E. Grover Heinrichs
Vice President

Tucson, Arizona
April 7, 1967

Delivered to Ramada Inn by
Geoex for pick up April 10

COMPUTATION FOR HOLE NO. 2

Assays

Sludge samples:

	Footage	Cu	Ag	Au
	310-315	.125		
	315-320	.135		
	320-325	13.30	.6	.01
	325-330	4.50	.16	.01
Footage considered	330-335	1.35	.8	T
	335-340	.80		
	340-345	.76		
	345-350	.51		

Total width of vein from drill hole data 25 feet

Average assay for 320'-345'

5' x 13.30 = 66.5
5' x 4.50 = 22.5
5' x 1.35 = 6.75
5' x .80 = 4.0
5' x .76 = 3.8

$\frac{103.55}{25'}$ 4.14% Cu/Ton

Surface area for No. 2 Polygon 2,400 ft^2
True thickness of vein 21 ft
Area for No. 2 polygon 2,400 ft^2 x 21 ft = 50,400 ft^3

For H_2O 1 ft^3 = 62.4#
Therefore on 2.7 SpGr
1 ft^3 ore = 62.4 x 2.7 = 168.5 lbs
50,400 ft^3 x 168.5 lbs = $\frac{8,492,400 \text{ lbs ore}}{2,000 \text{ lbs/T}}$ = 4246.2 T

Assay average 4.14% Cu/T therefore 1 ton yields 828 lbs. copper

Computation for Hole No. 2 Continued April 7, 1967

82.8 lb Cu/Ton x 4246.2 tons ore = 35,158.4 lbs Cu
50.38/lb Cu x 351,585.4 = $133,602.44 for copper

COMPUTATION FOR HOLE NO. 6

Assays

		Cu	Ag	Au
Sludge samples collected	274-276' approx.	6.72	.6	.02
by Mr. L. Cox	288½-291'	14.22	1.8	.02
By Heinrichs	274-276' approx.	5.15	.4	
	290-291'	12.5		
	276-290' to 291-297'	.63	.3	.005

Total width of vein 274-297' = 23'
from drill hole data

Average assay for 274-276'		5.93	.5
Average assay for 288½-291' 290-291'	=	13.72	1.8
276-290' to 291-297'		.63	.3

Average assay for 23':
2' x 5.93 Cu = 11.86
2.5' x 13.72 Cu = 34.30 = 2.51
18.5 x .63 Cu = 11.65

Surface area for #6 polygon $800'^2$
True thickness of vein 21'
Area for #6 polygon $800'^2 \times 21' = 16{,}800'^3$

For H_2O 1 ft^3 = 62.4#
Therefore on 2.7 SpGr
1 ft^3 ore = 62.4 x 2.7# = 168.5 lbs.
Therefore 16,800 ft^3 x 168.5# = $\frac{2830{,}800 \text{ lbs. ore}}{2{,}000 \text{ lbs./T}}$ = *

*1415.4 tons ore

Assay average 2.51% Cu therefore 1 ton yields 50.2# Cu
50.2# Cu/ton x 1415.4 ton ore = 71,053 lbs. Cu
$0.38/lb. x 71,053 = $27,000.00 for copper

COMPUTATION FOR HOLE NO. 8

Assays

Core samples:

Footage	Cu	Ag	Au
274'2"-274'6"	3.9	.5	.005
274'6"-276'	.10	.2	T

Total width of vein from drill hole data 1 ft 10 inches

Average assay for 274'2"-276'

.33' x 3.9 = 1.29
1.5' x .10 = .15 — 1.44 / 1.83' = .79% Cu/Ton

Surface area for No. 8 polygon 2,950 ft^2
True thickness of vein 1 ft 6 inches
Area for No. 8 polgyon 2,950 ft^2 x 1.5 ft = 4425 ft^3

For H_2O 1 ft^3 = 62.4#
Therefore on 2.7 SpGr
1 ft^3 ore = 62.4# x 2.7# = 168.5 lbs
therefore 4425 ft^3 x 168.5 lbs = $\frac{745,612.50}{2,000 \text{ lbs/ton}}$ = 372.8 T ore

Assay average .79% Cu therefore 1 ton yields 15.8 lbs Cu/Ton
Yields 15.8 lbs Cu/Ton
15.8# Cu/Ton x 372.8 = 5890 lbs Cu
$0.38/lb x 5890 = $2,238.29 for copper

COMPUTATION FOR HOLE NO. 9

Assay

		Cu	Ag	Au
vein	396'6"-397' to 397'3"-400'	.12	.1	T
High grade	397-397'3"	.94	.3	.01

Total width of vein 396'6"-400' = 3'6"

Average assay for 3'6"

3.25' x .12 = .39
.25' x .94 = .23 = .18% Cu/Ton

Surface area for No. 9 polygon 2050 ft^2
True thickness of vein 3'3"
Area for No. 9 polygon 2050 ft^2 x 3.25' = 6662.5 ft^3

For H_2O 1 ft^3 = 62.4#
Therefore on 2.7 SpGr
1 ft^3 ore = 62.4 x 2.7# = 168.5 lbs
Therefore 6662.5 ft^3 x 168.5 lbs = $\frac{1122631\#}{2000 \text{ lbs/Ton}}$ ore = 561 Tons ore

Assay average .18% Cu therfore 1 ton yields 3.6 lbs Cu
3.6 lbs Cu/T x 561 tons ore = 2,019 lbs copper
$0.38/lb x 2,019 lbs = $767.44 for copper

GIBSON PROPERTY
ASSAY RESULTS
DRILL HOLE NO. 6

Sample No.	Footage	Cu %/Ton	Ag oz/Ton	Au oz/Ton
76	120-130'	.22	.2	T
77	130-140'	.05		
78	140-150'	.04		
79	150-160'	.05		
80	160-170'	.05		
81	170-180'	.04	.1	T
82	180-190'	.03		
83	190-200'	.03		
84	200-210'	.05		
85	210-220'	.04		
86	220-230'	.06	.1	T
87	230-240'	.05		
88	240-250'	.03		
89	250-260'	.07		
90	260-270'	.04		
	274-276'	5.15	.4	
91	276-290'to291-297' (Schist and vein material)	.63	.3	.005
	290-291' (High grade steak in vein)	12.5		
92	270-274'	.14	.2	.005
93	297-300'	.15		
94	300-310'	.43		
95	310-322'	.13		

April 7, 1967

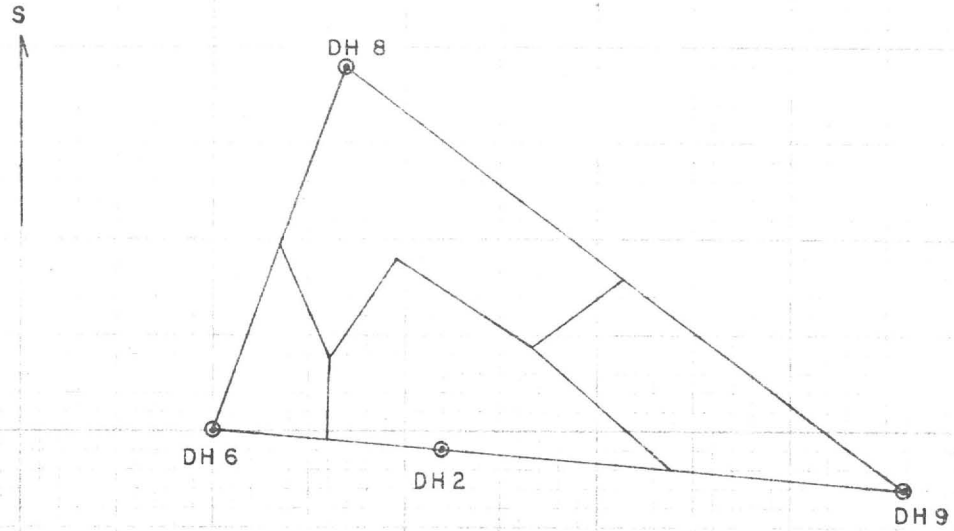
GIBSON PROPERTY
ASSAY RESULTS
DRILL HOLE NO. 8

Sample No.	Footages	Cu %/Ton	Ag Oz/Ton	Au oz/Ton
55	120-130'	.11	.2	T
56	130-140'	.23		
57	140-150'	.12		
58	150-160'	.10		
59	160-170'	.06	.1	T
60	170-180'	.05		
61	180-190'	.03		
62	190-200'	.08		
63	200-210'	.05		
64	210-220'	.07	.3	.005
65	220-230'	.09		
66	230-240'	.05		
67	240-250'	.04		
68	250-260'	.11		
69	260-270'	.06	.2	T
70	274'2"-274'6"	3.90	.5	.005
	(High grade portion of vein)			
71	244'6"-276'	.10	.2	T
	(quartz vein)			
72	270-274'2"to276-280'	.15	.2	
73	280-290'	.15		
74	290-300'	.45		
75	300-305	.13		

GIBSON PROPERTY
ASSAY RESULTS
DRILL HOLE NO. 9

Sample No.	Footage	Cu %/Ton	Ag oz/Ton	Au oz/Ton
96	396'6"-397' to 397'3"-400' (quartz vein)	.12	.1	T
	397'-397'3" (high grade)	.94	.3	.01
97	380-390'	.07		
98	390-396'6"	.05		
99	400-410'	.08		
100	410-420'	.28		

10 X 10 TO THE INCH 46 0782
KEUFFEL & ESSER CO.

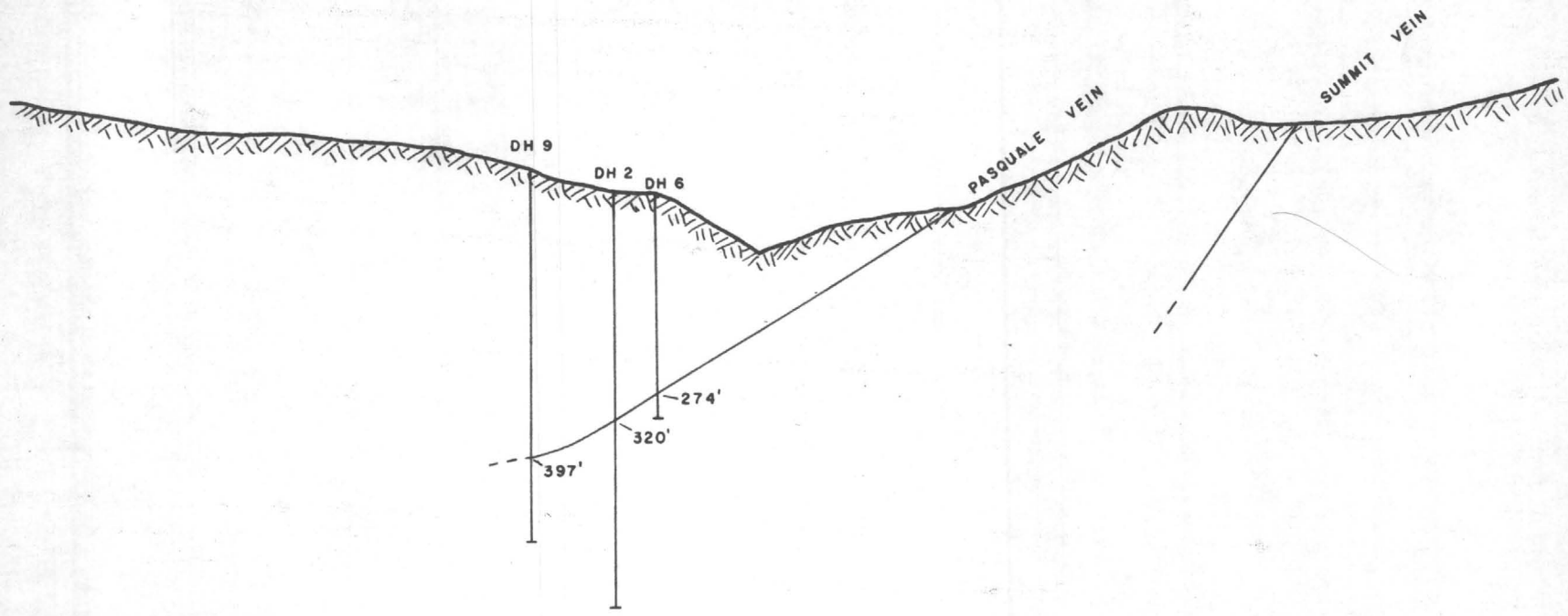


SCALE 1" = 50'

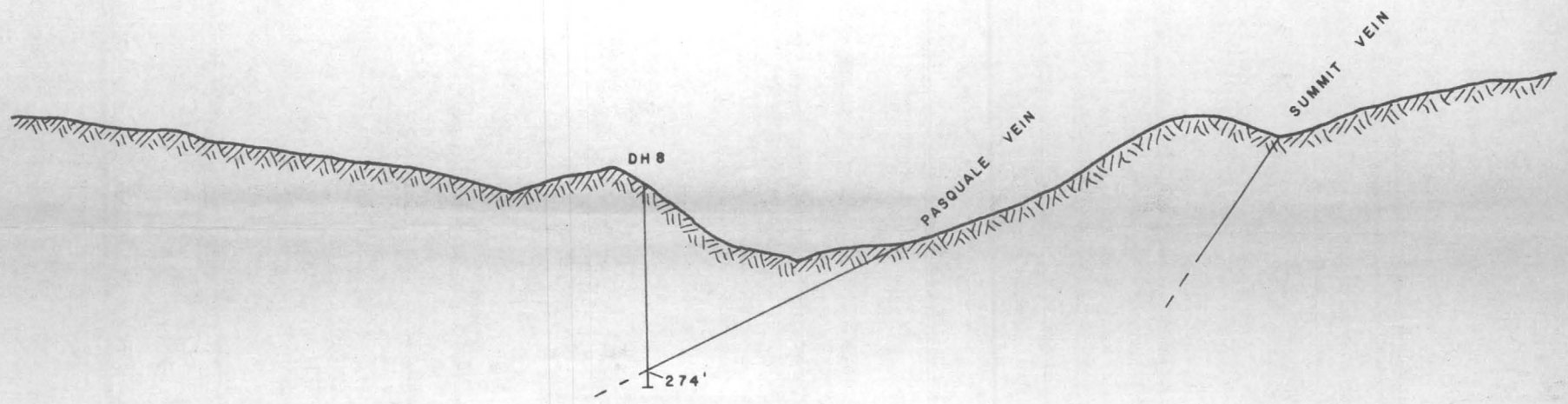
PLAN MAP OF DRILL HOLES
ORE ESTIMATE POLYGONS SHOWN

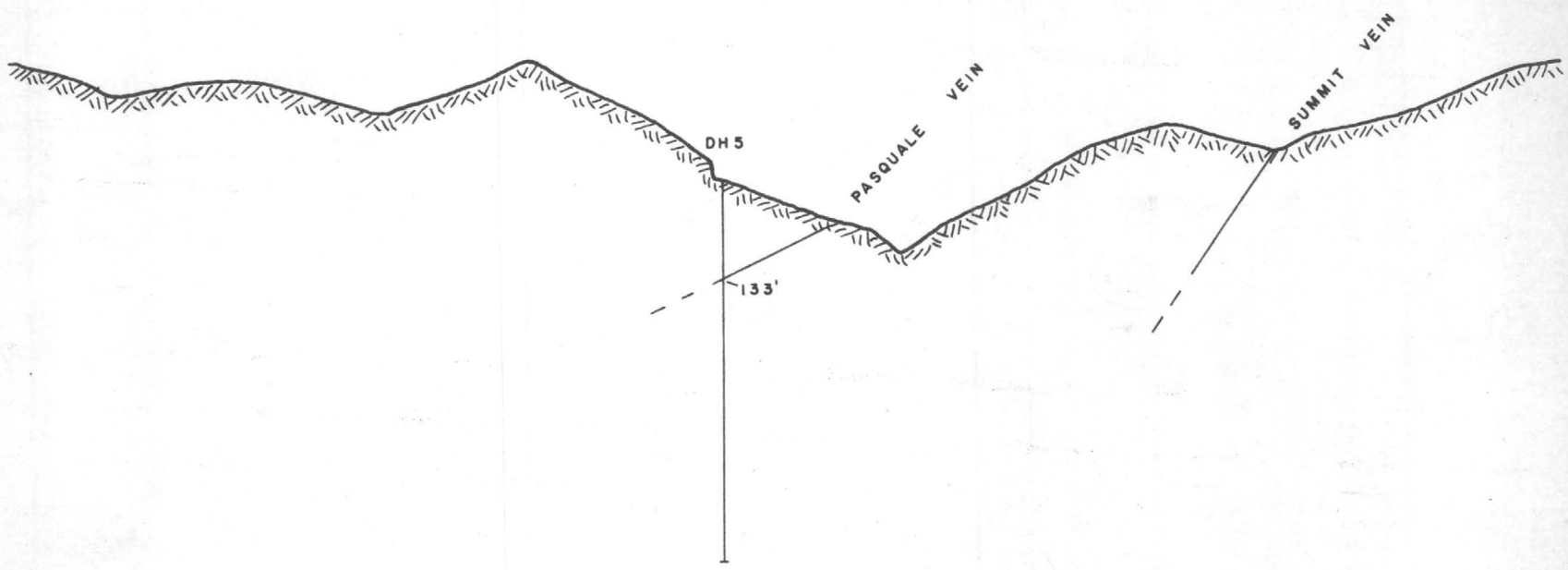
12

N85W SECTION



N56W SECTIONS

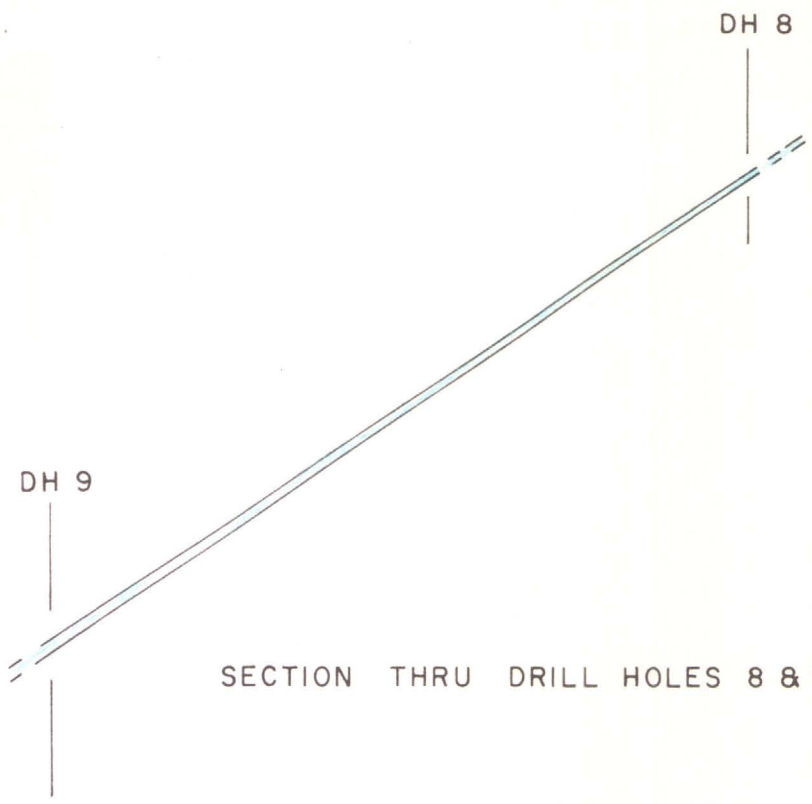




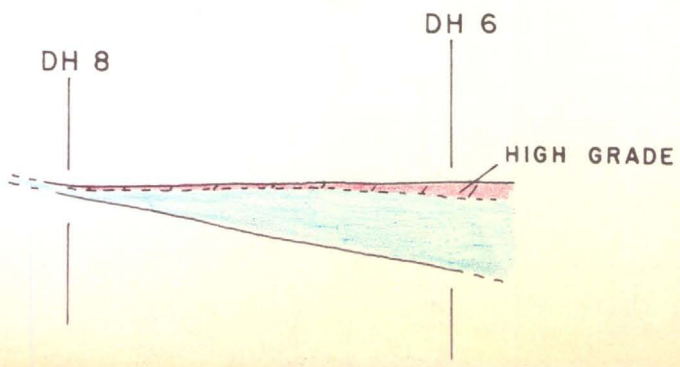
SCALE 1" = 250'

CROSS SECTIONS
GIBSON MINE
PINAL CO. ARIZONA

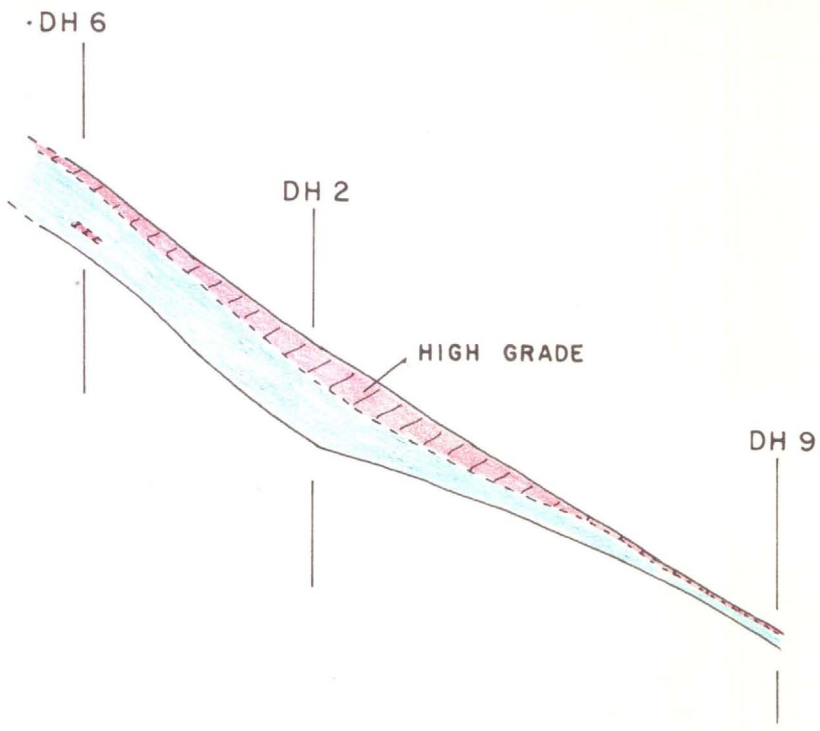
4/6/67



SECTION THRU DRILL HOLES 8 & 9



SECTION THRU DRILL HOLES 8 & 6



SECTION THRU DRILL HOLES 6, 2 & 9

SCALE 1" = 50'

SECTIONS OF PASQUALE VEIN

COPPER DEPOSITS

GIBSON PROPERTY
ASSAY RESULTS
DRILL HOLE #5

March 16, 1967

Sample No.	Footage	Copper %/Ton	Silver Oz./Ton
40	380-390'	.15	
41	390-400'	.09	0.2
42	400-410'	.03	
43	410-420'	.09	
44	420-430'	.04	
45	430-440'	.04	
46	440-450'	.05	0.1
47	450-460'	.06	
48	460-470'	.06	
49	470-480'	.40	
50	480-490'	.05	
51	490-500'	.07	0.2
52	500-510'	.04	
53	510-520'	.06	
54	520-530'	.04	

GIBSON PROPERTY
ASSAY RESULTS
DRILL HOLE NO. 5

Sample No.		Footage	Copper %/Ton	Silver Oz./Ton
1		0-10'	.04	
2		10-20'	.03	
3		20-30'	.05	
4		30-40'	.02	
5		40-50'	.04	0.10
6		50-60'	.02	
7		60-70'	.13	
8		70-80'	.05	
9		80-90'	.10	
10		90-100'	.15	0.05
11		100-110'	.03	
12		110-120'	.14	
13		120-130'	.06	
14		130-133'6"	.08	
15		140-150'	.22	
16		150-160'	.08	
17		160-170'	.08	
18		170-180'	.06	
19		180-190'	.04	
20		190-200'	.03	
21	(vein)	133'6"-140'	.85	0.35
22		200-210'	.04	
23		210-220'	.03	
24		220-230'	.08	
25		230-240'	.10	
26		240-250'	.11	0.2
27		250-260'	.08	
28		260-270'	.04	
29		270-280'	.03	
30		280-290'	.05	
31		290-300'	.08	0.1
32		300-310'	.05	
33		310-320'	.04	
34		320-330'	.04	
35		330-340'	.03	
36		340-350'	.05	0.1
37		350-360'	.08	
38		360-370'	.13	
39		370-380'	.14	

JAMES P. BOYLE
RALPH W. BILBY
B. G. THOMPSON
T. K. SHOENHAIR
HAROLD C. WARNOCK
WILLIAM A. SCANLAND
W. E. DOLPH
DAVID W. RICHTER
B. G. THOMPSON, JR.
RICHARD M. BILBY
MICHAEL A. LACAGNINA
MARVIN S. COHEN
WILLIAM C. IRVINE
CHARLES F. STOUT
THOMAS E. WILSON
PETER ECONOMIDIS

LAW OFFICES
BOYLE, BILBY, THOMPSON & SHOENHAIR
NINTH FLOOR VALLEY NATIONAL BUILDING
TUCSON, ARIZONA 85701
TELEPHONE 623-8661

KNAPP, BOYLE, BILBY & THOMPSON
1946-1954

S

OUR FILE NO.

February 29, 1968

5111.23

HEINRICHS GEOEX
GEOPHYSICAL ENGINEERS
TUCSON, ARIZONA
MAR 2 1968
BOX 5671 TUCSON, ARIZONA 85703
Phone: (AREA 602) 623-0578

Mr. Walter Heinrichs
Heinrichs Geoexploration Company
808 West Grant
Tucson, Arizona.

Dear Walter:

If possible, I would appreciate your making a copy of this map and returning it to me.

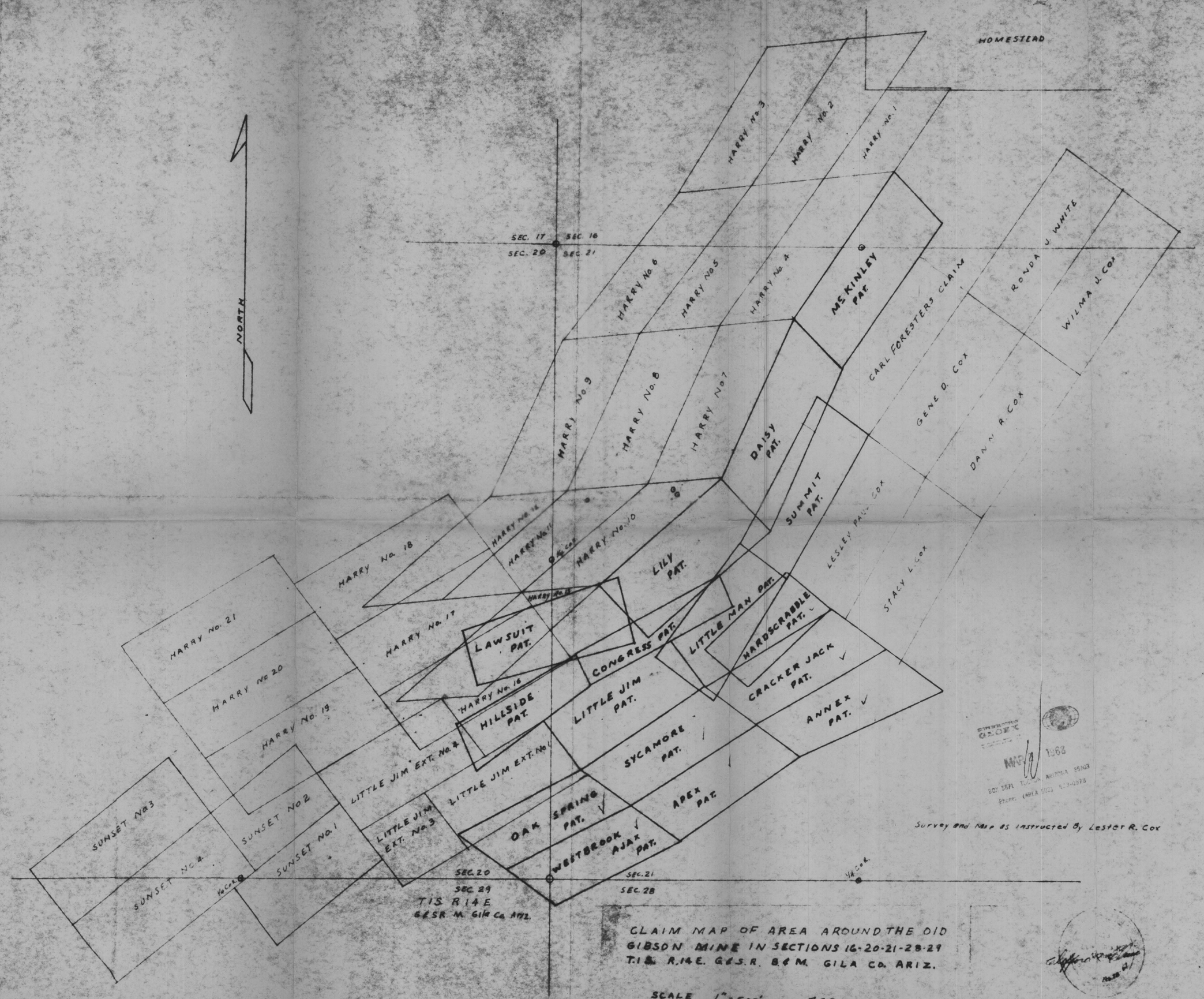
I have the black negative of this map, if you should need it for making a copy.

Sincerely,

Buck
ep

BGTjr:ep
Enclosure

Kayser Gibson



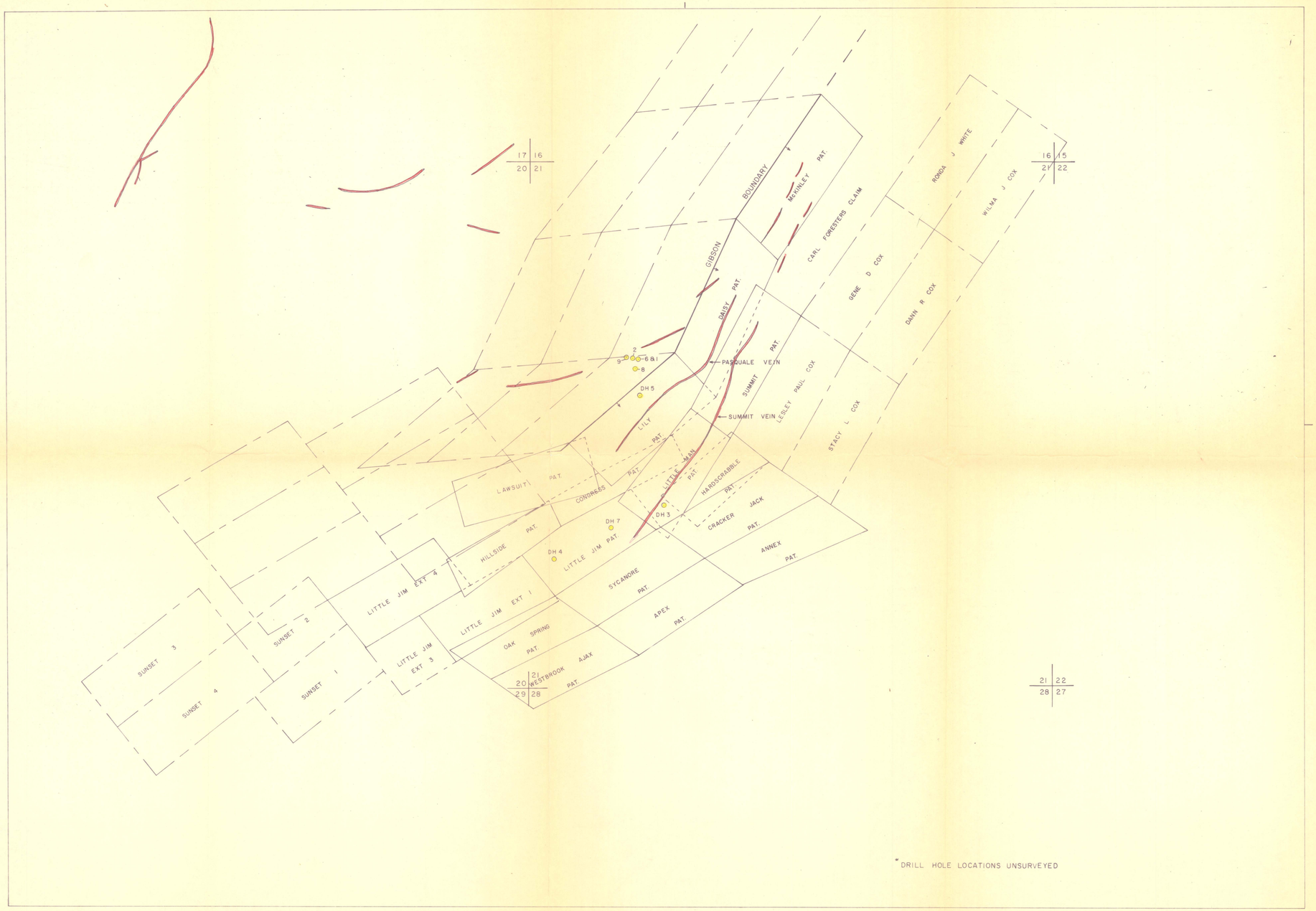
Survey and Map as instructed By Lester R. Cox

CLAIM MAP OF AREA AROUND THE OLD GIBSON MINE IN SECTIONS 16-20-21-28-29 T.1S. R.14E. G&S.R. B&M. GILA Co. ARIZ.

SCALE 1" = 500' FEB. 28 1967

North
McKinley Pat.
Carl Fosters Claim
Ronda J White
William J Cox
Gene O Cox
Dawn R Cox
Daisy Pat.
Drill Hole
Summit Pat.
Lesley Paul Cox
Stacy L Cox
1/4 Cor
Lily Pat.
Law Suit Pat.
Congress Pat.
Little Jim Pat.
Harness Pebble Pat.
Cracker Jack Pat.
Annex Pat.
Hillside Pat.
Little Jim Ext #4
Little Jim Ext #1
Little Jim Ext #3
Sycamore Pat.
Apex Pat.
Oak Spring Pat
Westbrook Ajax Pat.
Sunset #3
Sunset #4
Sunset #1
Sunset #2
1/4 Cor.
Sec. 26
Sec. 21
1/4 Cor.
Sec 29
Sec 28
T.1 S. R.14 E.
1" = 500'

ask for Recd Survey Lines
T3 other lines shown were no readings
on #2 as 595 Value comes up Pasquale
should Come in at 630±



EXPLANATION

VEINS

DRILL HOLE*

PATENTED CLAIM

UNPATENTED CLAIM

16 15 / 21 22 SECTION CORNER

N

PINAL CO. ARIZ.

*DRILL HOLE LOCATIONS UNSURVEYED

FILE COPY

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

CLAIM MAP
GIBSON PROPERTY
FOR
PAUL KAYSER

Scale 1" = 500' | Date 4/17/67