TEC-25

LITHOLOGIC LOG

Project: Alum

Hole: 51-29 (1186-47)

Elevation: 5020 Date Drilled: 3/21/83

Location: NW NW S29T1NR38½E Method: Rotary/air/mud

Geologist: Huntsman/Pilkington Gamma:

Depth (m)	Description
0 - 1	Alluvium Assorted volcanic and Paleozoic gravels.
1 - 418	Lower Esmeralda Fm (Unit F) 1- 43 Light orange, fine-grained tuffaceous siltstone, considerable iron staining as limonite, some clay minerals developed from devitrification of the ash component. 43-207 Medium gray to greenish gray fine-grained tuffaceous siltstone, minor quartz fracture fillings, trace of pyrite. Strong clay layer at 113m and 204m. 207-225 Dark gray fine-grained laminated tuffaceous siltstone, considerable clay mineral development. 225-418 Medium gray to greenish gray tuffaceous siltstones with increasing siliceous layers. From 311 meters increasingly clayey with strong clay layers at 314m, 352m and 418m.
418 - 581	Lower Esmeralda Fm (unit E) Dark gray edgewise conglomerate (breccia) with angular clasts up to 20mm long of black siltstone, gray phyllitic siltstone and cherts cemented with calcite. Considerable pyrite as dissmentions and fracture fillings.

LITHOLOGIC LOG

Project: Alum

Hole: ~~Alum 51-29~~ 1186-47

Elevation: 5020'

Date Drilled: 3/21/83

Location: NWNWS29T1NR381/2E

Method: air/mud/rotary

Geologist: Bill Huntsman

Gamma:

Depth (m)	Description
0- 40 0-12.1	Assorted volcanic gravels
40- 140 12.1-42.6	Siltstone - Light yellow, soft, moderate secondary oxidation in the form of limonite, moderate amounts of clays that are slightly sticky.
140- 350 42.6-106.7	Siltstone - Medium to dark gray, layered with hard and soft stringers causing bit to gum up.
350- 440 106.7-134.1	Siltstone - Medium gray, very fine, minor clays, trace weak limonite staining, soft formation.
440- 540 134.1-164.6	Siltstone - Layered, medium to dark gray, very fine, minor clays, good drilling, soft formation.
540- 560 164.6-170.7	Siltstone - Dark green gray, very fine, slightly waxey, soft with minor clays, layered silts with trace small quartz vein.
560- 640 170.7-195.1	Siltstone - As above with trace hemitite staining in one zone, a little thicker quartz vein than the above, trace pyrite.
640- 660 195.1-201.2	Siltstone - Medium to dark gray and some dark green gray, trace of weak hemitite staining, trace pyrite, no quartz.
660- 680 201.2-207.3	Siltstone - As above with trace of chalcedony.
680- 740 207.3-225.6	Siltstone - Dark gray, slightly soft and plattie.
740- 780 225.6-237.8	Siltstone - Dark green gray clay silt and dark gray silt, trace pyrite.
780- 860 237.8-262.2	Siltstone - As above with minor quartz grains, minor small volcanic gravels.
860- 880 262.2-268.3	Siltstone - As above with small quartz vein.

LITHOLOGIC LOG

Project: Alum

Hole: 51-29

Elevation: _____ Date Drilled: _____

Location: _____ Method: _____

Geologist: _____ Gamma: _____

Depth (m)	Description
880-1000 268.3-304.8	Clay - Medium gray, very soft and sticky, minor silts from above, also minor quartz and limonite.
1000-1020 304.8-311	Clay - As above with some siliceous siltstones, trace pyrite, trace very small quartz gravels.
1020-1100 311-335.4	Siltstone - Medium gray, very soft, mostly altered to a very soft sticky clay, minor siliceous zones.
1100-1200 335.4-366	Siltstone - Medium green gray siliceous, slightly hard, minor clays, trace limonite, minor quartz.
1200-1280 366-390.2	Clay and siltstone - Medium gray, soft, sticky, minor quartz fragments.
1280-1380 390.2-420.7	Clay and siltstone - As above with some very hard dark gray silts, possibly entering breccia unit.
1380-1530 420.7-466.5	Breccia - Black siliceous shale fragments or argilite, minor pyrite.
1530-1570 466.5-478.6	Breccia - As above with dark siliceous siltstone, very slow drilling, lots of clays in sample from ground mass.
1570-1640 478.6-500	Breccia - As above with small pieces of talc, minor argillic altevation, lots of clay from drilling, still hard formation with slow drilling rate.
1640-1850 500-557.9	Breccia - Black siliceous shales and argilite, very hard very slow drilling, minor quartz.
1850-1906 557.9-581	Breccia - As above, gray and black, very siliceous shales and argilite, very hard, fractures filled with chalcedony, minor to moderate pyrite, minor kaolinite, moderate to abundant calcite, 3' core pulled at 1850'.

AMAX EXPLORATION, INC.

TEMPERATURE/DEPTH LOG

11186-47 CPG

ΔT Well No. 51-29

Property-Project ALUM Depth Logged 580m

Map Silver peak Scale 15m Date: Drilled 3-21-83 Logged 6-3-83

State Nev County Esm , of of of of Sec T R

Instrument # 29 Operator DEYMONAZ Elevation 5044 (ft / m)

Comments No fluids above 180 meters

Card A

JUSTIFY	Proj No	Well No	DA	MO	YR	*
	1186	47	3	6	83	CM

*19-Write F if Fahrenheit, 20-Write F if Feet

Site Description	Operator	Editor	Drilled DA	Drilled MO	Drilled YR
1 KM NORTH OF ALUM MINE	DEYMON	JED	21	3	83

(Approx. location, water well?, oil test?, etc.)

Card B

Scale Unit IN CM	Map Size (7.5, 15., 60.)	N Lat Degree	N Lat Min	W Long Degree	W Long Min **
cm	15.	37.	45.	117.	45.

Use decimals

Measure from SW corner of map; except AMS sheets measure from bottom center degree mark (W,-)(E,+)

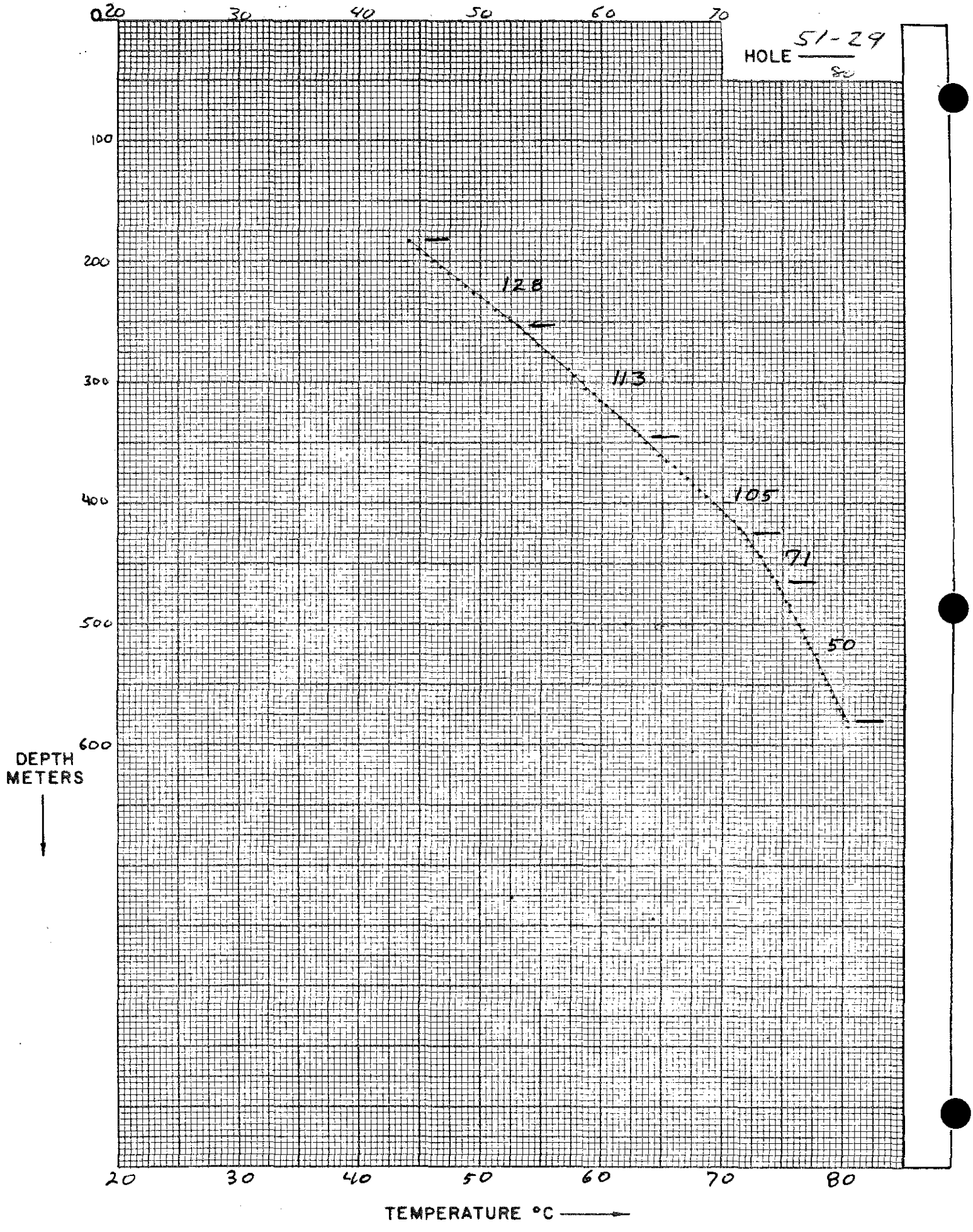
Northing	Easting	Elev	
30.1	12.3	5044.	F

Use decimals

← Write M if if meters

Segment	Start	End	Conductivity K	ΔK	Best cond. (-K) Downward extrapolations (-ΔK)
1	185.0	255.0	-3.5	-0.5	
2	255.0	345.0			
3	345.0	425.0			
4	425.0	465.0			
5	465.0	580.0			
6	1.999				
7					
8					
9					
10					

After final segment Start = 999


HOLE 51-29
80
20
30
40
50
60
70
100
200
300
400
500
600
128
113
105
71
50
DEPTH METERS
20
30
40
50
60
70
80
TEMPERATURE °C

Date Logged: 6-3-83 ΔT Well No. 57-29

PROBE-29

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H_2O Air	Lithology, etc.
SURFACE						AIR	C. .0920 L. ———
25			———	———			
40			———	———			
55			———	———			
70			———	———			
85			———	———			
100			———	———			
115			———	———			
130			———	———			
145			———	———			
160			———	———			
175			———	———			
185	42.80	44.15				H_2O	C .0934 L. ———
190	41.62	44.91	.76	152			
195	40.54	45.61	.70	140			
200	39.57	46.26	.65	130			
205	38.64	46.91	.65	130			
210	37.70	47.57	.66	132			
215	36.85	48.18	.61	122			
220	35.98	48.83	.65	130			
225	35.20	49.42	.59	118			
230	34.41	50.03	.61	122			
235	33.63	50.66	.63	126			
240	32.91	51.24	.42	84			
245	32.12	51.90	.66	132			
250	31.41	52.51	.61	122			
255	30.75	53.09	.58	116			

K=Conductivity

Date Logged: 6-3-83

ΔT Well No. 51-29

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H_2O Air	Lithology, etc.
260	30.06	53.71					
			.52	104			
265	29.48	54.23					
			.60	120			
270	28.85	54.83					
			.58	116			
275	28.24	55.41					
			.58	116			
280	27.65	55.99					
			61	122			
285	27.04	56.60					
			60	120			
290	26.46	57.20					
			54	108			
295	25.95	57.74					
			58	116			
300	25.41	58.32					C .0955 L
			54	108			
305	24.91	58.86					
			63	126			
310	24.41	59.49					
			49	98			
315	23.93	59.98					
			53	106			
320	23.47	60.51					
			56	112			
325	23.00	61.07					
			60	120			
330	22.52	61.67					
			50	100			
335	22.11	62.17					
			53	106			
340	21.70	62.70					
			53	106			
345	21.29	63.23					
			54	108			
350	20.89	63.77					
			53	106			
355	20.49	64.30					
			50	100			
360	20.13	64.80					
			61	122			
365	19.706	65.41					
			56	112			
370	19.316	65.97					
			53	106			
375	18.959	66.50					
			52	104			
380	18.614	67.02					
			52	104			
385	18.274	67.54					
			53	106			
390	17.937	68.07					

K=Conductivity

Date Logged: 6-3-83

ΔT Well No. 51-29

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H_2O Air	Lithology, etc.
395	17.599	68.62					
			53	106			
400	17.271	69.15					C_L .0980
			53	106			
405	16.955	69.68					
			57	114			
410	16.645	70.21					
			50	100			
415	16.353	70.71					
			54	108			
420	16.051	71.25					
			37	74			
425	15.840	71.62					
			37	74			
430	15.640	71.99					
			36	72			
435	15.449	72.35					
			42	84			
440	15.229	72.77					
			39	78			
445	15.022	73.16					
			32	64			
450	14.856	73.48					
			34	68			
455	14.689	73.82					
			32	64			
460	14.524	74.14					
			30	60			
465	14.374	74.44					
			29	58			
470	14.233	74.73					
			29	58			
475	14.092	75.02					
			28	56			
480	13.957	75.30					
			29	58			
485	13.820	75.59					
			25	50			
490	13.699	75.84					
			27	54			
495	13.578	76.11					
			26	52			
500	13.457	76.37					C_L .1009
			25	50			
505	13.340	76.62					
			25	50			
510	13.229	76.87					
			26	52			
515	13.113	77.13					
			25	50			
520	13.000	77.38					
			24	45			
525	12.894	77.62					

K=Conductivity

Date Logged: 6-3-83

ΔT Well No. 51-29

Depth (meters)	Instr. Reading	Temp. °C	ΔT	Grad. °C/km	K (Est.)	H_2O Air	Lithology, etc.
530	12.798	77.84					
			.26	52			
535	12.685	78.10					
			.22	44			
540	12.592	78.32					
			24	48			
545	12.492	78.56					
			.23	46			
550	12.395	78.79					
			.25	50			
555	12.290	79.04					
			.23	46			
560	12.195	79.27					
			.26	52			
565	12.089	79.53					
			.25	50			
570	11.989	79.78					
			.23	46			
575	11.893	80.01					
			.21	42			
<580	11.812	80.22					
			.02	4			
TD 581	11,804	80.24					C .1034
							L

K=Conductivity