

Public-data File 88-41

PRELIMINARY LITHOGEOCHEMISTRY OF GOLD HILL AND LUCKY HILL,
VALDEZ CREEK MINING DISTRICT, HEALY A-1 QUADRANGLE,
SOUTHCENTRAL ALASKA

By

M.A. Wiltse

Alaska Division of
Geological and Geophysical Surveys

November 1988

THIS REPORT HAS NOT BEEN REVIEWED FOR
TECHNICAL CONTENT (EXCEPT AS NOTED IN
TEXT) OR FOR CONFORMITY TO THE
EDITORIAL STANDARDS OF DGGS.

794 University Avenue, Suite 200
Fairbanks, Alaska 99709-3645

CONTENTS

	Page
INTRODUCTION.....	1
ANALYSES.....	2

ILLUSTRATIONS

Sheet 1. Sample location map.....attached

INTRODUCTION

The geochemical data compiled in this Public-Data File were derived from samples collected on Gold Hill and Lucky Hill during the summer of 1988. The samples consist of 18 rock samples, 20 vein samples, 3 samples of sheared rock, 1 sample of fault gouge, 1 sample of gossan, and 1 sample of fracture breccia. These data will be incorporated in a more detailed geologic report during the winter of 1988-89. This study was conducted as part of a cooperative agreement with the U.S. Bureau of Mines and the Alaska Division of Geological and Geophysical Surveys to investigate the geology and mineralization of the Valdez Creek mining District.

Location, description, and analyses of rock samples from Lucky Hill and Gold Hill, Valdez Creek Mining District, Healy A-1 Quadrangle, Southcentral Alaska. V=Vein, R=Rock, F=Fault Gouge, B= Breccia, G=Gossan, S=Shear.
ppm = parts per million, ppb = parts per billion.

Sample	Type	T.	R.	Sec.	Elevation	Description
30165	R	20S	2E	12	3980	phyllite, brown-orange, quartz, muscovite, tr. tourmaline
30168	V	20S	3E	18	3880	vein, float-boulders quartz-carbonate-chlorite 2 ft. thick.
30169	V	20S	3E	18	4880	vein, Qtz-carb, ge phyllite selvage
30172	R	20S	3E	18	5010	argillite, ol-ge and bl, silicified, limonite stained
30173	V	20S	3E	18	5010	vein, Qtz-carb, in silic, limonite stained, ol-ge and bl arg.
30174	R	20S	3E	18	3890	lamprophyre, float, predominantly biot and plag, weathered
30177	V	20S	3E	18	4100	vein, Qtz-carb, satellite in mafic hb-bi-diorite dike
30179	V	20S	3E	18	4100	vein, Qtz-carb, porcellaneous, primary vein assoc with 30177
30181	V	20S	3E	7	4750	vein, Qtz-carb, sheared, in sheared argillite
30182	V	20S	3E	18	5200	vein, Qtz-carb-musc-k-spar, in FeOx stnd, or-brn argillite
30183	V	20S	3E	18	5200	vein, msv sulf, assoc with Qtz-carb-chl vein and mafic ign dike
30185	V	20S	3E	7	4460	vein, compound Qtz, reaction selvage with host phyl-argillite
30188	V	20S	3E	7	4980	vein, Qtz-carb, fract'd parallel to contact with mafic dike
30190	V	20S	3E	7	5000	vein, Qtz-carb, in contact with mafic dike
30193	F	20S	2E	12	3600	fault gouge, or-red, FeOx matrix, low-angle, N-dipping shear
31204	V	20S	2E	12	4280	vein, Qtz-carb-sulfide pod in mafic dike
31205	R	20S	2E	12	4280	felsite and silicified mafic ign host rock
31208	V	20S	2E	12	4620	vein, Qtz-carb, in bi-plag mafic ign rock (bi-gabbro?)
31209	V	20S	2E	12	4680	vein, Qtz-tourm (schorlite), talus cobble
31213	V	20S	2E	12	4780	vein, msv Qtz boulder, 1.5 m dia.
31214	R	20S	2E	12	4790	phyllite, ge-brn, similar to that seen at Yellow Horn prospect
31216	V	20S	2E	12	4840	vein, Qtz-chl, in meta ss-turbidite, limonite stained, clear ss
31219	V	20S	2E	11	4700	vein, Qtz-carb-chl, in turbidite pebble cong.
31223	R	20S	2E	12	3890	argillite, phyl-, pale ge, with intrafolial Qtz layers
31224	R	20S	2E	11	4680	conglomerate, interbedded with phyl-argillite of 31223
31225	R	20S	2E	12	3890	felsite, salmon weath, bleached white, py-bearing, sill?
31227	R	20S	2E	12	3950	argillite, phyl-, pale ge, limonite stained, py, cov
31228	S	20S	2E	12	3680	shear zone in black bi-phyllite, east bank of Lucky Gulch
31229	S	20S	2E	12	3700	shear zone in black bi-phyllite, east bank of Lucky Gulch
31230	R	20S	2E	12	3800	phyllite, bi-spotted-, bl and gy, east bank Lucky Gulch
31232	V	20S	3E	7	4600	vein, porcellaneous, clear term xls in vugs, prospect dump
31233	R	20S	2E	13	4850	phyllite, gy and ol ge argillite units mixed chip sample
31234	R	20S	2E	13	4880	argillite, ol ge unit only from mixed sample of 31233
31235	R	20S	2E	13	4800	phyllite, bl, bi-spotted
31236	R	20S	2E	13	4735	phyllite, bl, bi-spotted, thinly foliated, above ge meta-tuff
31237	R	20S	2E	13	4450	phyllite, ge, thinly lam, buff., yw-or lim stned, Qtz-carb units
31238	R	20S	2E	13	4425	phyllite, gy and bl, fissile, minor ge-phyl, ge shear gouge
31240	V	20S	3E	18	4900	vein, Qtz, composite grab sample
31241	G	20S	3E	18	5100	gossan, ferricrete bx, phyl-arg-Qtz frags in FeOx matrix
31244	V	20S	3E	18	5100	vein, Qtz-carb, chip sample from float adj to mafic dike

SAMPLE	AL ppb	AL %	AG ppm	AS ppm	BA ppm	BE ppm	BI ppm	CA %	CD ppm	CO ppm	CR ppm	CU ppm	FE %	GA ppm	HG ppb	K %	LA ppm
30165	30	0.57	0.2	15	120	10.5	12	1.78	0.5	10	121	160	4.43	110	11	0.25	20
30168	15	0.02	10.2	15	110	10.5	12	6.95	10.5	3	188	4	0.43	110	11	10.01	110
30169	15	0.06	10.2	15	110	10.5	12	2.52	10.5	4	188	24	1.61	110	11	0.01	110
30172	5	0.78	10.2	55	30	10.5	12	1.21	10.5	3	44	9	1.07	110	11	0.11	110
30173	15	0.03	10.2	10	110	10.5	12	0.94	10.5	2	125	2	0.41	110	11	10.01	110
30174	15	2.99	10.2	15	520	10.5	12	1.83	10.5	40	273	88	4.50	110	11	0.68	110
30177	15	1.41	10.2	95	20	1.0	12	3.31	10.5	5	41	16	0.80	110	1	0.15	110
30179	45	0.22	1.0	325	110	10.5	12	0.12	10.5	12	222	507	1.54	110	11	0.02	110
30181	120	0.57	10.2	5	60	10.5	12	6.66	10.5	3	155	11	1.24	110	11	0.25	110
30182	10	0.17	10.2	15	110	10.5	12	4.95	10.5	3	213	18	0.63	110	11	0.02	110
30183	125	0.30	2.0	45	110	10.5	12	0.18	10.5	529	44	806	15.00	110	11	0.01	20
30185	480	0.23	10.2	25	10	10.5	4	7.02	10.5	5	188	7	0.86	110	11	0.05	110
30188	15	0.10	10.2	60	10	10.5	2	0.08	10.5	7	252	126	1.16	110	2	0.03	110
30190	15	0.01	0.2	25	110	10.5	4	0.03	10.5	11	230	13	0.44	110	11	10.01	110
30193	>10000	0.41	5.2	>10000	40	10.5	12	1.28	10.5	1430	33	59	15.00	110	11	0.21	10
31204	190	0.33	10.2	1405	50	10.5	10	12.50	10.5	12	122	99	1.37	110	11	0.15	110
31205	45	0.32	10.2	540	60	10.5	10	11.50	10.5	5	33	3	3.55	110	11	0.17	110
31208	3300	0.10	10.2	130	20	10.5	6	3.71	0.5	4	203	31	2.63	110	11	0.03	110
31209	35	0.26	10.2	220	20	10.5	12	0.27	10.5	6	130	20	0.73	110	11	0.06	110
31213	10	0.01	10.2	105	110	10.5	12	0.02	10.5	2	200	19	0.42	110	11	0.01	110
31214	1250	1.90	10.2	25	30	10.5	4	2.25	10.5	23	100	74	5.99	110	11	0.06	110
31216	5	0.53	10.2	20	40	10.5	12	1.45	10.5	4	301	22	1.37	110	11	0.17	110
31219	15	0.14	10.2	25	20	10.5	2	0.08	10.5	2	362	7	0.64	110	11	0.01	110
31223	15	2.24	10.2	90	210	10.5	4	0.74	10.5	16	123	59	3.90	110	4	0.73	110
31224	15	2.27	10.2	15	250	10.5	4	2.27	10.5	13	119	32	3.74	110	1	0.46	110
31225	15	0.81	10.2	150	30	10.5	12	2.67	10.5	24	77	69	5.99	110	11	0.28	110
31227	85	1.59	2.0	15	20	10.5	12	0.96	10.5	46	122	1555	10.35	110	11	0.06	110
31228	5	3.80	10.2	20	130	10.5	12	1.12	10.5	26	63	173	7.09	110	11	0.41	30
31229	15	2.36	10.2	45	80	10.5	12	2.64	10.5	15	119	178	4.62	110	11	0.35	110
31230	15	3.22	10.2	5	50	10.5	12	2.54	10.5	20	108	75	5.47	110	11	0.23	110
31232	1350	0.04	10.2	510	110	10.5	12	0.35	10.5	1	241	7	0.62	110	11	0.01	110
31233	15	2.86	10.2	45	50	10.5	12	4.37	10.5	18	125	69	5.05	110	11	0.16	110
31234	10	2.75	10.2	15	60	10.5	10	4.00	10.5	18	137	55	5.35	110	11	0.20	110
31235	15	3.01	10.2	40	40	10.5	12	3.93	10.5	17	89	65	4.99	110	11	0.10	110
31236	5	2.74	10.2	15	30	10.5	4	4.72	10.5	18	80	72	5.03	110	11	0.10	110
31237	85	2.32	10.2	85	40	10.5	12	2.86	10.5	19	75	110	5.39	110	11	0.17	110
31238	115	2.81	10.2	15	20	10.5	4	2.98	10.5	17	88	90	5.41	110	11	0.07	110
31240	15	0.04	10.2	15	110	10.5	12	0.02	10.5	11	200	11	0.35	110	11	10.01	110
31241	15	3.02	10.2	510	30	10.5	2	0.22	10.5	19	248	711	8.16	110	1	0.37	10
31244	15	0.03	10.2	30	110	10.5	12	0.01	10.5	11	262	36	0.41	110	11	10.01	110

SAMPLE	MS ppm	MN ppm	MO ppm	NA %	NI ppm	P ppm	PB ppm	SB ppm	SC ppm	SR ppm	TI %	TL ppm	U ppm	V ppm	W ppm	ZN ppm	TE ppm
30165	0.18	1100	8	0.04	11	2150	10	5	2	85	0.01	110	110	24	15	47	0.05
30168	0.11	696	11	0.01	2	80	12	15	2	522	0.01	110	110	11	15	8	0.05
30169	0.41	697	11	0.01	10	210	16	5	11	84	0.01	110	110	1	15	14	0.05
30172	0.52	202	11	0.08	2	870	14	15	11	27	0.06	110	110	9	15	15	0.05
30173	0.02	125	11	0.01	7	40	20	15	11	23	0.01	110	110	11	15	5	0.05
30174	4.01	656	11	0.31	235	1420	4	15	3	186	0.18	110	110	27	20	76	0.05
30177	0.21	201	3	0.11	7	1110	14	15	3	63	0.08	110	110	25	15	8	0.05
30179	0.04	45	11	0.01	48	70	4	15	11	13	0.01	110	110	4	15	16	0.05
30181	0.38	746	11	0.04	8	760	12	15	2	65	0.05	110	110	19	15	10	0.05
30182	0.13	489	11	0.01	8	400	14	5	1	129	0.01	110	110	5	15	5	0.05
30183	0.11	73	8	0.01	2040	350	12	15	2	8	0.01	110	110	6	15	76	3.50
30185	0.19	921	3	0.03	6	620	4	15	2	176	0.01	110	110	3	15	8	0.05
30188	0.01	134	11	0.01	22	250	18	15	11	4	0.01	110	110	1	50	8	0.05
30190	0.01	32	11	0.01	7	10	2	15	11	1	0.01	110	110	1	15	2	0.05
30193	0.20	214	11	0.01	55	320	12	165	1	302	0.01	110	110	12	20	48	17.50
31204	0.23	2440	11	0.02	5	480	12	15	2	504	0.03	110	110	15	15	17	0.25
31205	2.48	1470	11	0.03	11	280	8	15	2	732	0.01	110	110	16	15	27	0.05
31208	0.62	1555	11	0.01	11	150	26	15	1	150	0.01	110	110	2	10	48	2.75
31209	0.08	149	11	0.04	6	480	2	15	11	24	0.04	110	110	7	15	8	0.05
31213	0.01	35	11	0.01	3	20	4	15	11	1	0.01	110	110	11	15	2	0.05
31214	1.40	663	1	0.02	22	790	12	15	14	24	0.01	110	110	88	25	94	0.05
31216	0.35	366	11	0.02	11	180	12	15	11	43	0.03	110	110	16	15	16	0.05
31219	0.08	44	1	0.01	2	40	12	15	11	4	0.01	110	110	5	15	8	0.05
31223	1.67	435	4	0.05	28	1100	12	15	4	28	0.19	110	110	83	15	53	0.05
31224	1.63	477	1	0.02	25	760	12	5	3	48	0.22	110	110	67	10	75	0.05
31225	0.84	785	2	0.02	35	2650	12	15	7	88	0.01	110	110	39	15	86	0.05
31227	1.01	435	9	0.06	29	890	12	15	5	39	0.32	110	110	65	20	49	0.50
31228	2.36	1065	11	0.04	10	3700	12	15	7	54	0.14	110	110	159	20	132	0.05
31229	1.52	633	11	0.06	10	1640	12	15	4	50	0.14	110	110	88	5	75	0.05
31230	2.27	552	11	0.02	42	880	12	15	9	28	0.10	110	110	111	25	110	0.05
31232	0.01	121	1	0.01	1	30	20	15	1	2	0.01	110	110	2	15	14	0.05
31233	2.14	773	11	0.02	33	870	12	15	9	193	0.08	110	110	113	30	101	0.05
31234	1.65	553	11	0.02	39	700	12	15	10	37	0.10	110	110	168	25	97	0.05
31235	2.37	893	11	0.02	47	850	12	15	8	116	0.10	110	110	82	30	105	0.05
31236	2.00	909	11	0.02	49	370	12	15	6	109	0.02	110	110	56	30	114	0.05
31237	1.76	671	11	0.02	46	840	12	15	4	62	0.15	110	110	50	35	99	0.10
31238	2.13	660	11	0.01	45	940	12	15	5	102	0.13	110	110	56	25	94	0.20
31240	0.01	26	11	0.01	11	10	12	15	1	1	0.01	110	110	11	5	5	0.05
31241	1.81	375	11	0.03	52	770	12	15	8	33	0.24	110	110	89	25	66	0.05
31244	0.01	26	11	0.01	11	30	12	15	11	1	0.01	110	110	1	15	5	0.05

Location, description, and analyses of rock samples from Lucky Hill and Gold Hill, Valdez Creek Mining District, Healy A-1 Quadrangle, Southcentral Alaska. V=Vein, R=Rock, F=Fault Gouge, B= Breccia, G=Gossan, S=Shear.
 ppm = parts per million, ppb = parts per billion.

Sample	Type	T.	R.	Sec.	Elevation	Description
31245	B	20S	3E	18	4900	breccia, tourmaline replacement of fractured ge-arg
31264	R	20S	2E	11	4300	phyllite, tan to pale ge-white, fissile, deeply weath or alt'd
31265	R	20S	2E	11	4250	phyllite, bl, bi-spotted, fissile

SAMPLE	AU	AL	AG	AS	BA	BE	BI	CA	CD	CO	CR	CU	FE	GA	HG	K	LA
	ppb	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm
31245	35	0.44	(0.2	240	20	(0.5	(2	0.93	(0.5	24	225	348	1.85	(10	1	0.40	20
31264	45	1.02	(0.2	5	50	(0.5	(2	0.21	(0.5	5	101	32	2.99	(10	(1	0.15	10
31265	10	3.05	(0.2	10	50	(0.5	(2	0.48	(0.5	18	112	56	5.40	(10	(1	0.13	10

SAMPLE	MG	MN	MO	MA	NI	P	PB	SB	SC	SR	TI	TL	U	V	W	ZN	TE
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
31245	0.23	286	2	0.02	13	800	12	15	2	13	0.02	110	110	9	15	22	0.05
31264	0.59	189	1	0.02	8	850	12	15	1	17	0.01	110	110	12	15	66	0.05
31265	2.25	638	11	0.02	41	990	12	15	5	15	0.07	110	110	72	5	123	0.05