TABLE 5. — *Analyses of samples from veins in the Lemhi Pass quadrangle, Idaho and Montana*

[Mineral data are in percent, except as indicated. Symbols: C, chip sample; CH, channel sample; G, grab sample; <, less than value indicated. Dash leaders (....) indicate not determined]

Locality No.	Name of claim where known	Vein, if more than one	No. (MHS–)	Vein thickness and type	Description of sample locality	ThO_2[a]	La_2O_3[b]	Ce_2O_3[b]	Pr_2O_3[b]	Nd_2O_3[b]	Sm_2O_3[b]	Eu_2O_3	Gd_2O_3	Tb_2O_3	Dy_2O_3	Ho_2O_3	Er_2O_3	Tm_2O_3	Yb_2O_3	Lu_2O_3	Y_2O_3	ΣRE_2O_3[c]	ΣRE_2O_3[c]/ThO_2	Au (oz. per ton)	Ag[d] (ozz. per ton)	Cu[d]	Pb[d]	Zn[e]	Mo[f]	U[a]
1	Lucky Horseshoe		144–68	0.8-ft C	295 ft northwest of adit mouth	0.89	0.035	0.077	0.0165	0.132	0.018	0.0044	0.013	0.0010	0.0077	<0.0011	0.0022	<0.0011	<0.0011	<0.0011	0.040	0.347	0.38	[g] 0.0006	[g] <0.0058					
			71–69	1.5-ft C	132 ft S. 84° E. of sample MHS–144–68.	.80																		[g] .0006	<.0058	<0.001	0.0130	0.0030		
			72–69	2.8-ft CH	130 ft S. 62° E. of sample MHS–144–68.	.047																								
4			163–68	1.3-ft CH	Center of west pit	.42	.101	.356	.149	1.37	.157	.018	.039	.0012	.0060	<.0030	<.0024	<.0030	<.0030	<.0030	.039	2.20	5.24								
5			157–68	1.3-ft C	Northeast wall of 12-ft-deep pit	.19	.037	.128	.046	.563	.104	.020	.032	.0013	.0051	<.0013	<.0010	<.0013	<.0013	<.0013	.023	.959	5.05	[g] .0006	<.0058	.0017	.0068	.050		
18	Buffalo	Vein in west trench	74–69	2-ft C	Center of trench	.37																								
		Vein in easternmost trench	141–68	11-ft C	Above adit mouth	.098	.012	.026	.0048	.036	.017	.0044	.010	.0004	.0020	<.00020	.00020	<.00020	<.00020	<.00020	.0046	.117	1.20								
		do	142–68	1.5-ft C	Most radioactive part of vein above adit mouth.	.48	.0032	.011	.0022	.027	.014	.0027	.0081	<.00016	.0016	<.00054	.00038	<.00054	<.00054	<.00054	.0032	.073	.15	[g] .0017	.38						
19	Black Bull Fraction No. 4.		125–68	4-ft C	Most radioactive part of vein in back of cut.	.13	.058	.096	.012	.082	.038	.0048	.022	.0019	.0043	<.00048	.00096	<.00048	.00096	<.00048	.023	.344	2.64								
20	Black Bull No. 3	Northeast-trending vein	122–68	0.7-ft CH	Back of cut	.80																								
21	Deer Fraction 1A	West vein	54–69	3-ft C	Northwest trench	.19																								
		East vein	55–69	0.4-ft C	Southeast trench	.59																								
31		Veinlets in conglomerate	59–68	G	Pile of radioactive conglomerate between trenches.	.0012																								0.012
32	Blue Boar		57–69	1-ft C	East side of pit																			[g] .0017						
34			70–69	25-ft C	Back of trench																			[g] <.0015						
35			66–68	0.7-ft C	In small pit	.073	.012	.035	.016	.173	.032	.0058	.0083	.00032	.00096	<.00032	.00032	<.00032	<.00032	<.00032	.0070	.291	3.98								
37	Black Bear		133–68	19-ft C	Back of large trench	.082																		[e] <.0006	.090	.0053	.050	.080	0.024	
40	Thorite No. 3		119–68	0.5-ft C	East side of east trench	.38	.057	.095	.010	.068	.037	.010	.028	.0014	.010	<.00068	.0028	<.00068	.0020	<.00068	.046	.367	.97								
45	Wonder		19–69	2-ft CH	Pit 100 ft west of creek	.066																		[e] .0058	.99	.42	.012	3.70		
			59–69	0.7-ft C	Vein on road at 7,180-ft elevation	.34																								
			60–69	9.8-ft C	Vein on road at 6,860-ft elevation	.34																		[e] .020	.52	.44	.013	.40		
46	Wonder No. 3		58–69	1.4-ft C	East side of pit																			[g] .0017						
47	Badger No. 10		61–68	5-ft C	Center of trench	.089																								
49	Cago No. 12		28–69	13-ft C	On vein 270 ft N. 55° W. of where road crosses valley.	.085																		[e] <.0006	<.0058					
			29–69	12-ft C	On vein 240 ft N. 55° W. of where road crosses valley.	.29																								
			30–69	1-ft C	East end of long trench that exposes west end of vein.	.12																		[e] <.0006	<.0058					
52	Contact		16–69	2.5-ft C	Just east of the westernmost of three trenches at east end of vein.	.86																								
			17–69	10-ft C	East end of long trench near center of vein.	.17																								
			20–69	1.3-ft C	Vein just east of where it crosses the road.	.12																								
54			23–69	G	From west end of east trench	.046																								
55		West vein	50–69	4.5-ft C	Center of west trench	.0061																								
56			21–69	G	Rubble in center of westernmost trench.	.029																								
57			22–69	5-ft C	Center trench	.043																								
59			15–69	4-ft C	East vein exposure on lower road	.56																								
61			13–69	G	Loose pieces	.77																								
			14–69	C, over irregular mass.	Center of exposure to east of main trench.	.23																								
63			12–69	0.9-ft CH	East side of east trench	.28																								
64	Beaverhead		46–69	6.0-ft C	Above road 120 ft from east end of vein.	.48																		[e] <.0006	.020					
66			49–69	7.0-ft C	East end of vein	.030																		[e] <.0006	.0058					
67	Trapper No. 1		47–69	G	Northeast vein exposure	.28																		[e] <.0006	.047					
			48–69	2.6-ft C	Trench 140 ft south-southwest of locality of sample MHS–47–69.	.97																		[e] <.0006	.085					
70	Wonder No. 18	West vein	10–69	1.0-ft C	Near center of west trench	.22																								
		East vein	9–69	G	Near center of trench	.33																								
72	Little Dandy No. 1		8–69	2.5-ft C	East side of trench adjacent to road	.047																								
73	Shear Zone		7–69	1.0-ft C	Center of trench 800 ft north-northeast of point 7,685.	.56																								
			163–67	0.8-ft CH	20 ft from end of adit near southeast end of Shear Zone.	2.49	.0049	.013	.0012	.011	.0073	.0098	.134	.0098	.16	.022	.027	.012	.017	.0024	.55	.981	.39	[e] <.0006	.047	.053	.14	.035		
			164–67	0.3-ft CH	End of adit near southeast end of Shear Zone.	.0081																								
75	Black Rock	Northwest-trending vein	63–68	1.3-ft C	Next west end of long trench	2.19	.0044	.0088	.0011	.011	.013	.0088	.024	.0011	.0088	<.0022	.0022	<.0022	.0022	<.0022	.020	.105	.049	[g] .0012	.23	.15	.023	1.10		
		Northeast-trending vein	62–68	0.7-ft CH	Center of trench	1.70																								
82	Last Chance		149–68	12.5-ft C	West side of crosscut, west adit, footwall side of vein.	.36	.0096	.031	.0051	.054	.043	.015	.026	.0013	.0045	<.00064	.0013	<.00064	<.00064	<.00064	.0077	.199	.55								
			150–68	10.0-ft C	West side of crosscut, west adit, hanging-wall side of vein.	.26	.0082	.028	.0048	.053	.038	.012	.024	.0014	.0029	<.00048	.00048	<.00048	<.00048	<.00048	.0053	.178	.69								
			148–68	6.9-ft C	Cross roof in drift, west adit, 225 ft east-southeast of crosscut.	1.45	.114	.271	.054	.434	.230	.065	.13	.0054	.016	<.0027	.0024	<.0027	<.0027	<.0027	.019	1.34	.93								
			147–68	5.9-ft C	End of drift, west adit, 120 ft east-southeast of crosscut.	.35																		[e] <.0006	.20					
			63–69	6.8-ft C	20 ft west of where vein crosses ridge.	.54																		[e] <.0006	.017					
			155–67	2.2-ft CH	140 ft northwest of shaft in footwall of vein.	.30	.011	.030	.0086	.068	.063	.022	.048	.0023	.0091	<.00057	.0010	<.00057	<.00057	<.00057	.019	.282	.94								
			156–67	3.2-ft CH	Adjacent to sample MHS–155–67, central part of vein.	.43	.052	.150	.017	.22	.15	.058	.104	.0058	.017	<.0012	.0023	<.0012	<.0012	<.0012	.032	.808	2.04								
			157–67	5.7-ft CH	Adjacent to sample MHS–156–67, central part of vein.	.61	.037	.086	.018	.14	.14	.027	.097	.0065	.017	<.0011	.0054	<.0011	<.0011	<.0011	.032	.606	1.00								
			158–67	5.2-ft CH	Adjacent to sample MHS–157–67, central part of vein.	.15	.0069	.020	.0036	.053	.046	.020	.040	.0013	.0063	<.00033	.00099	<.00033	<.00033	<.00033	.0089	.207	1.38								
			159–67	2.0-ft CH	Adjacent to sample MHS–158–67, hanging wall of vein.	.017																								
			151–68	10.0-ft C	South side of drift, east adit, 58–68 ft west-northwest of portal.	.16	.026	.050	.0067	.050	.026	.0068	.013	.00072	.0014	<.00036	.00048	<.00036	<.00036	<.00036	.0043	.185	1.16								
			152–68	14.0-ft C	South side of drift, east adit, 256–270 ft west-northwest of portal.	.20	.033	.068	.010	.075	.044	.014	.026	.00068	.0027	<.00068	.00029	<.00068	<.00068	<.00068	.0075	.281	1.40	[g] .012	<.0058					
			153–68	14.8-ft C	South side of drift, east adit, 270–284.8 ft west-northwest of portal.	.074																								
85	Frying Pan	Central vein	171–68	0.5-ft CH	West side of east trench	1.35	.0066	.020	.0033	.023	.028	.012	.030	.0033	.0099	<.0017	<.0013	<.0017	<.0017	<.0017	.026	.162	.12								
		Southeast vein	172–68	0.5-ft CH	Northwest end of vein	.69	.037	.110	.033	.311	.110	.025	.049	.0030	.0089	<.0015	<.0012	<.0015	<.0015	<.0015	.027	.714	1.03								
86	M.S.D. No. 7		166–68	G	Center of vein exposure in woods	.22	.020	.038	.0075	.095	.048	.013	.023	.00075	.0025	<.0025	<.0020	<.0025	<.0025	<.0025	.015	.263	1.20	[e] <.0006	.017						
89	G&G Nos. 6 and 8		34–68	G	Southeast trench at northwest end of vein.	.65	.043	.054	.012	.067	.021	.0080	.046	.0027	.020	.0053	.0062	<.00089	.0027	<.00089	.080	.368	.56	[e] <.0006	.0058	.0023	.0064	.0025		
			35–68	G	Northwest trench at northwest end of vein.	1.72	.0036	.011	.0016	.0072	.011	.0072	.021	.0016	.014	<.0018	.0054	<.0018	.0036	<.0018	.042	.129	.075	[g] .0006	<.0058	.0024	.015	.10		
90	G&G Nos. 1, 2, and 5	North vein	29–68	0.8-ft C	Trench on ridge at northeast end of vein.	.33																								
			33–68	2.0-ft C	South side of east trench near northwest end of vein.	.20	.0052	.017	.0033	.026	.026	.0085	.015	.00074	<.0030	<.00037	.00037	<.00037	<.00037	<.00037	.0081	.110	.55								
93	Thorite No. 1		132–68	0.9-ft C	Vein between two trenches	.14	.012	.032	.0044	.030	.016	.0046	.0087	.00046	.0012	<.00023	<.00014	<.00023	<.00023	<.00023	.0016	.111	.79								
94	Saddlehorn No. 3		131–68	G	Trench at northwest end of vein	.16	.047	.149	.015	.094	.053	.017	.035	.0022	.0055	<.00055	<.00033	<.00055	<.00055	<.00055	.0099	.428	2.67								
95	H.R.S. No. 1		129–68	0.9-ft C	Center of upper trench	.26	.032	.080	.011	.107	.062	.015	.028	.0020	.0054	<.00067	.00040	<.00067	<.00067	<.00067	.010	.353	1.36								
98	Dan Patch Nos. 1 and 2	North vein	126–68	G	Third trench from east end of vein.	.41	.0078	.021	.0029	.018	.0064	.0034	.011	.00098	.0044	<.00049	.00049	<.00049	<.00049	<.00049	.0069	.0833	.92	[g] .0012	<.0058					
		South vein	127–68	1.0-ft C	Trench in center of vein	.47	.034	.068	.0084	.042	.0099	.0061	.018	.0015	.0084	<.00076	.00053	<.00076	<.00076	<.00076	.023	.220	.47								
100			45–69	5.7-ft C	Easternmost of three trenches	.0020																								
102	Big Thor Nos. 1 and 2		43–69	0.3-ft C	Center of east trench	3.03																								
104	Silvertip Nos. 1, 2, and 3.	North vein	130–68	G	Center of trench	.071																		[e] <.0006	.020	.0020	.23	.026		
105	Atomic Blast	North vein	140–68	1.3-ft C	East side of second trench from west.	.092	.0029	.012	.0022	.018	.0043	.0014	.039	.014	.042	.0079	.023	.0058	.0194	.0022	.288	.482	5.24							
107	Reactor Nos. 1, 3, and 5.	Northeast vein	25–69	1.0-ft C	Third trench from southeast end of vein.	.15																		[e] <.0006	.0087					
			26–69	1.3-ft C	Fourth trench from southeast end of vein.	1.32																								

[a]Analyzed by gamma-ray spectrometer by C. M. Bunker and C. A. Bush.
[b]Rare earths were analyzed by two-step method in which (1) a chemical separate containing all the rare earths, thorium, and minor amounts of several other elements was made from the bulk sample by V. E. Shaw, and (2) the various amounts of each element in this separate were then determined by X-ray fluorescence by J. S. Wahlberg.
[c]Total rare-earth oxides.
[d]Analyzed by atomic absorption by R. M. O'Leary and C. A. Curtis.
[e]Analyzed by atomic absorption by R. N. Babcock.
[f]Analyzed colorimetrically by H. D. King.
[g]Analyzed by first making button by fire assay and then analyzing the button by atomic absorption. Analysts are W. D. Goss, L. B. Breeden, and J. A. Thomas.

473-715 O - 73 (In pocket)