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**PRELIMINARY ROCK AND STREAM-SEDIMENT GEOCHEMISTRY FROM PARTS
OF THE TALKEETNA MOUNTAINS A-2 AND B-2 QUADRANGLES,
SOUTHCENTRAL ALASKA**

by

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In cooperation with U.S. Bureau of Mines

Alaska Division of
Geological and Geophysical Surveys

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THIS REPORT HAS NOT BEEN REVIEWED FOR
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Sheet 1. Sample location map Talkeetna Mountains B-2 and northern portion of Talkeetna Mountains A-2 quadrangles (attached)

Introduction

The geochemical data presented in this report are the results from analyses of rocks collected during the 1989 field season as part of the initial stages of a geologic mapping project in the Talkeetna Mountains B-2 quadrangle. Listed herein are the analyses for 28 elements of 46 rock samples and 27 stream sediment samples.

Analytical methods and minimum detection limits varied for each element and are listed with the results. Analytical methods are indicated using the following abbreviations:

AFS - Atomic fluorescence spectrometry

AAS - Atomic absorption spectrometry

ICP - Inductively coupled plasma spectrometry

Results are listed in parts per million (ppm) unless otherwise indicated. Results listed as '0' analyzed at less than the detection limit.

This study was conducted as part of a cooperative agreement between 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.

Rock Analyses
(Results listed in ppm unless otherwise noted.)

Sample #	Au(ppb)	Pd(ppb)	Pt(ppb)	Ag	Sn	Mo	W	Zn	P	Cu	Pb	Bi	Cd	Co	Ni	Ba
Analyt. meth.	AFS	AFS	AFS	AAS	AAS	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
Detec. limit	2	2	5	0.2	2	1	10	2	10	1	2	2	0.5	1	1	10
32851	48	0	0	0.8	0	0	10	66	350	340	18	0	1.5	46	107	10
32852	0	0	0	0.8	0	0	0	58	550	38	4	0	0.5	21	15	190
32853	4	0	5	1.2	0	6	0	8	730	1	8	0	0.5	4	2	1310
32854	0	0	5	0.4	0	0	0	22	470	2	4	0	0	4	3	370
32855	4	0	20	0	0	0	0	40	1440	37	6	0	0	11	7	230
32856	76	0	15	8.4	0	7	10	436	990	6640	14	0	3.5	14	4	340
32857	0	0	10	0	0	0	0	70	970	79	4	0	0	6	2	570
32858	0	0	15	0	0	2	0	70	120	42	4	4	0	3	3	430
33255	0	0	0	0	2	0	10	70	570	55	0	0	0	31	28	90
33256	0	0	0	0	0	0	20	98	720	24	0	0	0	30	17	130
33257	0	0	0	0	0	0	20	90	780	78	0	4	0	28	12	100
33258	0	0	5	0	2	0	10	74	600	104	10	2	0	27	32	150
33259	4	0	5	0	2	0	10	64	480	39	0	2	0	39	59	320
33260	0	0	10	0	0	0	0	100	710	68	0	0	0	24	6	160
33261	0	0	0	0	0	0	10	54	680	22	0	12	0	12	5	1230
33262	2	0	0	0	0	0	10	78	1280	13	2	4	0	14	2	350
33263	4	0	0	0	0	2	10	60	1080	0	2	4	0	4	0	530
33264	0	0	5	0	0	0	10	68	450	69	0	0	0.5	43	65	60
33265	0	0	0	0	0	0	0	72	630	111	0	32	2.5	33	15	110
33266	0	0	0	0	0	5	30	102	1300	53	2	0	0	17	5	210
33669	0	0	0	0	0	3	10	50	1320	0	0	8	0	5	0	630
33670	0	0	0	0	0	0	20	62	750	114	0	0	0	19	6	450
33671	0	0	0	0	0	0	10	60	430	55	4	2	0	27	29	330
33672	0	0	0	0	0	0	0	110	990	17	4	0	0	8	2	450
33676	0	0	0	0	3	0	20	80	880	91	0	2	0	28	8	340

Rock Analyses (cont.)

Sample #	Fe%	Mn	Cr	Hg%	V	Al%	Be	Ca%	Ti%	Sr	Na%	K%
Analyt. meth.	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
Detec. limit	0.01	.5	1	0.01	1	0.01	0.5	0.01	0.01	1	0.01	0.01
32851	5.98	2445	414	2.46	132	7.02	0	15.87	0.37	93	0.21	0.07
32852	4.95	1125	52	1.95	189	11.01	0	6.81	0.53	336	2.43	0.05
32853	2.03	230	89	0.11	16	7.37	0	1.04	0.49	217	2.46	4.26
32854	2.81	260	46	0.74	47	7.14	0	0.75	0.38	130	3.72	1.34
32855	4.82	545	59	1.56	101	7.97	0	1.69	0.76	231	3.79	0.82
32856	5.53	660	16	1.76	139	10.46	0	3.53	0.45	305	1.46	2.41
32857	3.46	1045	30	0.71	24	7.24	0	1.12	0.57	122	3.98	2.02
32858	1.31	735	52	1.17	1	6.14	0	0.22	0.11	46	1.71	2.23
33255	6.38	1125	48	2.46	209	8.71	0	4.92	0.51	540	2.13	0.53
33256	7.39	1700	60	2.72	274	8.83	0	5.49	0.68	261	2.21	0.32
33257	6.45	1350	27	2.21	262	9.15	0	4.81	0.61	350	1.58	0.37
33258	5.89	1020	121	2.38	242	8.52	0	2.73	0.54	269	1.34	0.59
33259	5.84	1090	141	3.39	165	7.95	0	4.89	0.47	311	1.87	0.29
33260	7.29	1410	30	1.91	277	7.86	0	5.01	1.18	198	2.97	0.35
33261	3.43	600	23	0.76	83	8.37	0	4.05	0.46	1130	2.64	0.52
33262	4.86	1240	12	1.38	100	8.44	0	3.62	0.61	314	2.98	1.08
33263	2.95	405	12	0.71	25	8.31	0	1.59	0.43	233	3.05	1.12
33264	5.94	1080	159	4.01	191	8.02	0	5.93	0.46	183	1.51	0.19
33265	5.76	1090	47	2.53	214	9.46	0	6.21	0.51	258	2.13	0.37
33266	5.85	1365	6	1.51	134	7.11	0	2.91	0.79	149	3.87	0.72
33669	3.41	520	18	0.81	28	8.62	0	1.75	0.41	280	3.55	1.22
33670	5.77	750	11	1.44	226	6.36	0	3.43	0.71	1390	1.86	0.82
33671	5.89	965	150	2.01	161	7.66	0	5.93	0.49	1025	1.76	0.26
33672	4.79	1275	24	0.82	12	7.18	0	1.74	0.54	362	3.41	1.15
33676	6.13	1140	42	2.77	242	8.37	0	3.91	0.68	2720	2.22	1.11

Rock Analyses (cont.)

Sample #	Au(ppb)	Pd(ppb)	Pt(ppb)	Ag	Sn	Mo	W	Zn	P	Cu	Pb	Bi	Cd	Co	Ni	Ba
Analyt. meth.	AFS	AFS	AFS	AAS	AAS	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
Detec. limit	2	2	5	0.2	2	1	10	2	10	1	2	2	0.5	1	1	10
33677	0	0	0	0	0	0	20	72	800	41	0	0	0	24	8	260
33678	0	0	0	0	0	0	20	94	690	57	0	0	1	34	27	210
33679	0	0	0	0	0	0	10	90	1270	6	2	0	0	12	3	330
33680	0	0	0	0	0	0	10	72	610	70	0	0	0	31	19	190
33682	0	0	0	0	0	0	20	92	1810	113	0	0	0	23	12	330
33683	0	0	0	0	0	0	0	78	1010	175	2	0	0	34	16	210
33684	0	0	0	0	0	0	0	66	1220	2	0	0	0	7	1	370
33688	0	0	0	0	0	1	0	50	570	11	0	0	0	4	1	600
33701	0	0	0	0	0	0	20	100	900	100	0	0	0	40	36	110
33702	0	0	0	0	0	1	10	82	740	69	0	0	0	39	36	140
33704	6	0	5	0	0	1	0	74	520	16	0	0	0	26	38	100
33706	10	0	0	0	0	0	10	64	1120	20	0	0	0	7	7	320
33707	0	0	0	0	0	0	0	76	1190	4	0	0	0	6	0	360
33708	2	0	0	0	2	0	0	50	1060	2	4	0	0	0	1	480
33709	0	0	0	0	0	0	0	60	1100	0	0	0	0	0	1	340
33711	4	0	5	0	0	6	10	66	1270	0	0	0	0	1	0	530
33716	8	0	5	0	0	0	10	62	300	32	0	0	0	35	39	100
33717	0	0	0	0	0	1	10	94	1340	4	0	2	0	14	1	120
33718	0	0	0	0	0	1	20	84	660	87	0	6	0	30	12	100
33719	0	0	0	0	2	1	10	88	1040	0	0	0	0	12	1	270
33721	0	0	0	0	2	0	10	60	1100	37	0	0	0	4	1	180

Rock Analyses (cont.)

Sample #	Fe%	Mn	Cr	Mg%	V	Al%	Be	Ca%	Ti%	Sr	Na%	K%
Analyt. meth.	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
Detec. limit	0.01	5	1	0.01	1	0.01	0.5	0.01	0.01	1	0.01	0.01
33677	5.62	1050	37	2.61	225	7.68	0	3.71	0.62	955	1.86	1.01
33678	6.26	1230	101	3.43	239	7.98	0	5.65	0.61	296	1.92	0.55
33679	4.71	1225	13	1.41	105	7.73	0	2.37	0.62	150	3.03	0.99
33680	5.86	1095	57	3.09	190	7.99	0	4.91	0.56	718	1.65	0.43
33682	6.27	1145	28	1.92	218	8.29	0	5.17	0.91	417	2.23	1.06
33683	7.06	925	21	1.75	240	6.26	0	4.25	0.78	399	2.11	0.61
33684	3.87	800	9	1.07	65	8.31	0	2.21	0.56	353	3.18	0.67
33688	2.82	855	14	0.43	29	7.55	0	1.62	0.38	195	2.75	1.86
33701	7.93	1405	74	3.22	321	7.86	0	5.61	0.87	229	1.69	0.53
33702	6.56	1170	94	3.61	237	8.36	0	5.89	0.61	236	1.84	0.25
33704	5.61	1410	183	2.09	248	8.12	0	3.49	0.55	252	0.68	0.28
33706	4.87	365	23	0.68	167	7.44	0	1.71	0.66	134	2.59	1.49
33707	4.07	885	13	1.31	86	8.01	0	1.92	0.59	222	3.51	1.43
33708	3.27	465	18	0.47	40	7.11	0	1.41	0.51	154	2.76	3.16
33709	3.69	280	12	0.41	35	7.37	0	1.85	0.52	113	3.23	1.31
33711	3.88	490	17	1.04	40	7.18	0	1.35	0.56	203	3.24	1.51
33716	6.75	640	114	1.48	223	7.74	0	3.21	0.55	267	1.04	0.31
33717	4.82	1375	7	1.61	93	8.44	0	4.12	0.61	279	3.08	0.21
33718	6.31	1500	32	2.05	279	9.72	0	7.13	0.67	275	2.21	0.21
33719	4.63	1190	1	1.66	47	8.27	0.5	2.59	0.59	172	3.25	1.41
33721	6.32	480	17	1.06	167	7.46	0.5	1.62	0.81	82	2.95	0.76

Stream Sediment Analyses
(Results listed in ppm unless otherwise noted.)

Sample #	Au(ppb)	Pd(ppb)	Pt(ppb)	Ag	Sn	Mo	W	Zn	P	Cu	Pb	Bi	Cd	Co	Ni	Ba
Analyt. meth.	AFS	AFS	AFS	AAS	AAS	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
Detec. limit	2	2	5	0.2	2	1	10	2	10	1	2	2	0.5	1	1	10
33267	8	0	0	0	0	0	0	72	1370	47	8	0	0	15	16	250
33268	6	0	0	0	0	1	0	104	1280	24	8	0	0	13	12	360
33269	4	0	0	0	0	0	10	108	1020	45	6	0	0	19	14	340
33270	0	0	0	0	0	0	0	94	1310	19	6	0	0	12	14	410
33271	0	0	0	0	0	0	10	98	910	40	4	0	0	18	9	290
33272	16	0	0	0	0	0	10	84	940	70	2	0	0	26	24	210
33673	0	0	0	0	0	1	10	112	970	34	2	0	0	16	7	330
33674	0	0	0	0	0	0	20	102	1090	62	0	0	0	21	8	230
33675	0	0	0	0	0	0	10	98	990	7	4	0	0.5	11	4	370
33681	2	0	0	0	0	0	20	96	900	72	0	0	0	25	18	230
33685	2	0	0	0	0	0	10	86	660	82	0	0	0	32	30	210
33686	0	0	0	0	0	0	10	78	670	91	0	0	0	29	30	160
33687	0	0	5	0	0	0	10	92	680	23	0	0	0	14	12	290
33689	0	0	0	0	0	0	10	94	890	17	2	0	0.5	14	7	290
33690	6	0	0	0	0	0	10	104	890	33	0	0	0	20	16	280
33700	0	0	0	0	0	0	10	104	400	12	0	4	0	10	4	220
33703	4	0	10	0	0	0	10	378	470	75	6	0	1.5	49	50	140
33705	0	0	0	0	0	0	10	86	630	60	0	0	0	32	30	190
33710	4	0	0	0	0	0	10	92	960	30	2	0	0	17	13	360
33712	6	0	0	0	0	0	10	112	1130	54	6	0	0	23	17	270
33713	0	0	0	0	0	0	0	72	1260	36	4	6	0	16	11	350
33714	2	0	0	0	0	0	10	88	980	33	6	2	0	14	6	250
33715	0	0	0	0	0	0	0	90	640	61	0	0	0	33	32	180
33720	6100	0	0	0	0	0	0	82	720	45	4	8	0	19	23	470
33733	na*	na	na	0	0	0	0	94	1620	28	6	2	0	11	14	220
33734	56	0	0	na	0	na	na	na	na	na	na	na	na	na	na	na
33735	6	0	0	0	0	0	0	92	650	28	2	0	0	23	18	300

* na = not analyzed

Stream Sediment Analyses (cont.)

Sample #	Fe%	Mn	Cr	Mg%	V	Al%	Be	Ca%	Ti%	Sr	Na%	K%
Analyt. meth.	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP
Detec. limit	0.01	.5	1	0.01	1	0.01	0.5	0.01	0.01	1	0.01	0.01
33267	4.14	615	42	1.15	122	6.41	0	2.02	0.45	259	1.06	0.84
33268	4.05	965	31	1.08	97	6.86	0	2.18	0.51	239	1.56	0.82
33269	6.08	1180	36	1.41	179	7.67	0	2.57	0.82	336	1.87	1.04
33270	3.68	770	43	1.13	96	7.08	0	2.02	0.47	240	1.58	0.78
33271	5.87	1205	33	1.29	154	7.38	0	2.36	0.71	257	2.06	1.01
33272	5.54	995	66	2.07	194	7.56	0	3.31	0.58	332	1.45	0.61
33673	6.03	1245	23	1.19	149	7.53	0	1.89	0.78	199	2.17	1.19
33674	6.51	1355	26	1.61	232	7.58	0	3.51	0.84	234	2.39	0.69
33675	4.61	1215	11	0.95	81	7.43	0	1.93	0.61	193	2.59	1.25
33681	6.57	1200	53	1.66	205	7.85	0	3.71	0.85	322	1.71	0.59
33685	6.38	1215	121	2.61	223	7.75	0	3.54	0.66	256	1.43	0.61
33686	6.13	980	100	2.16	206	7.89	0	4.45	0.63	283	1.41	0.54
33687	4.74	1295	49	1.22	101	7.86	0	3.32	0.5	190	2.34	1.01
33689	5.26	1395	32	1.31	109	8.25	0	3.15	0.62	202	2.25	1.01
33690	6.28	1310	75	1.46	187	7.28	0	2.53	0.88	236	1.89	0.81
33700	4.68	330	21	0.52	38	11.24	0	1.35	0.45	182	1.01	0.23
33703	6.33	1535	148	3.11	220	8.04	0	3.41	0.54	263	1.11	0.45
33705	6.19	1255	89	2.62	201	7.98	0	4.23	0.69	282	1.51	0.48
33710	4.98	1110	44	1.22	125	7.53	0	2.43	0.68	208	2.13	0.97
33712	5.02	1010	49	1.53	159	7.39	0	2.46	0.53	313	1.37	0.65
33713	3.91	900	35	1.33	106	7.45	0.5	2.71	0.46	276	1.65	0.84
33714	4.99	970	34	1.14	119	7.41	0	3.13	0.67	133	2.32	0.91
33715	6.42	1300	98	2.68	217	7.82	0	4.22	0.75	260	1.51	0.44
33720	4.58	850	81	1.18	141	6.81	0	2.06	0.57	215	1.32	0.84
33733	2.15	1340	34	0.79	58	4.61	0	2.16	0.19	146	0.73	0.46
33734	na	na	na	na	na	na	na	na	na	na	na	na
33735	5.36	1390	82	1.38	148	6.79	0	2.24	0.62	236	1.28	0.73

Rock Sample Locations and Descriptions

Sample	Latitude(N)	Longitude(W)	Twp(N)	Rge(E)	Sec	Brief description
32851	62 18 18	147 56 47	26	8	34	FeO-stained zone (3 ft wide) with trace dissem. pyrrhotite and chalcopyrite(?) in welded tuff
32852	62 19 23	147 52 40	26	8	24	Dark gray, fine-grained tonalite finely dissem. pyrite
32853	62 18 16	147 54 51	26	8	35	Pyritic pod (2 ft wide) in 70 x 200 ft long rusty zone in flows and tuff
32854	62 22 45	147 38 13	26	10	5	Layer (70-100 ft wide) of FeO-stained light gray-green pyritic tuff in mafic flows
32855	62 22 45	147 38 13	26	10	5	Pyritic version of sample 32854
32856	62 18 16	147 54 51	26	8	35	High-grade grab of sample 32853
32857	62 16 6	147 41 11	25	10	7	Dark tan feldspar porphyry dike intruding basalt
32858	62 18 11	147 57 1	26	8	34	FeO-stained, light gray, siliceous, aphanitic, pyritic tuff
33255	62 13 12	147 40 58	25	10	31	Brick red volcanic breccia
33256	62 13 34	147 42 9	25	9	25	Dark gray, magnetic, fine-grained mafic volcanic
33257	62 13 31	147 42 16	25	9	25	Light tan weathered, dark green aphanitic volcanic with finely dissem pyrite
33258	62 13 33	147 42 27	25	9	25	Dark gray basalt/andesite, trace pyrite
33259	62 14 11	147 42 45	25	9	24	Maroon-colored volcanic breccia
33260	62 14 22	147 43 6	25	9	24	Columnar-jointed basalt/andesite
33261	62 14 25	147 43 16	25	9	23	Tan weathered aphanitic mafic volcanic
33262	62 14 45	147 43 17	25	9	23	Orange-tan weathered, gray-green andesite porphyry with calcite-, epidote-altered feldspars
33263	62 14 48	147 43 23	25	9	23	FeO-stained horizon (100 ft thick), arsenopyrite stain on siliceous, gray-green dacite(?)
33264	62 15 9	147 38 34	25	10	17	Brick-red oxidized zone, 3 ft thick, between flows 20-70 ft thick
33265	62 15 13	147 38 40	25	10	17	Dark olive-green basalt/andesite
33266	62 15 57	147 39 52	25	10	7	Dark red-brown, magnetic, aphanitic basalt/andesite
33669	62 14 46	147 43 21	25	9	23	Red-orange gossan, yellow-green alteration, flecks of 2 metallic minerals in qtz
33670	62 15 30	147 40 32	25	10	18	Maroon-colored top of flow, some malachite
33671	62 14 51	147 41 56	25	9	24	Vesicular, maroon-colored top of flow, vesicles filled with qtz(?)
33672	62 15 30	147 42 10	25	9	13	Porphyritic black volcanic, malachite(?)
33676	62 17 14	147 41 37	25	9	1	Pink-colored, altered tuff with pyrite

Rock Sample Locations and Descriptions (cont.)

Sample	Latitude(N)	Longitude(N)	Twp(N)	Rge(E)	Sec	Brief description
33677	62 17 13	147 41 37	25	9	1	Green-colored, altered tuff, pyrite
33678	62 17 6	147 42 4	25	9	1	Salmon-colored volcanic, olive-green weathered rind, finely dissem. pyrite and aspy(?)
33679	62 17 25	147 42 52	25	9	1	Chlorite-altered crystal-lithic tuff, feldspars to 1 cm
33680	62 14 19	147 44 31	25	9	23	Bright red weathered vesicular lahar, gypsum(?) filling vesicules
33682	62 14 40	147 44 25	25	9	23	Mafic, fine-grained dike rock
33683	62 14 36	147 44 32	25	9	23	Basalt/andesite float in creek with Cu stain
33684	62 15 2	147 42 40	25	9	13	Limonite-stained mafic volcanic with 2 metallic minerals
33688	62 16 33	147 43 39	25	9	11	Limonite stained volcanic, 2 metallic minerals
33701	62 14 14	147 43 49	25	9	23	Black, magnetic, aphanitic dike
33702	62 14 14	147 43 49	25	9	23	Vesicular basalt; silica, gypsum(?), trace magnetite in vesicles
33704	62 14 12	147 44 25	25	9	23	Blue-green, pyritic, aphanitic volcanic float in tundra
33706	62 17 47	147 40 24	26	10	31	FeO-stained tuffaceous breccia
33707	62 17 53	147 40 42	26	10	31	FeO-stained lt. green crystal-lithic tuff; hornblende, plag. phenocrysts, trace pyrite
33708	62 17 52	147 40 60	26	10	31	FeO-stained tuffaceous breccia
33709	62 18 26	147 40 39	26	10	31	Blue-green, pyritic tuff
33711	62 18 53	147 41 39	26	9	25	Limonite stained zone, 20 ft wide, between agglomerate and overlying lt green tuff
33716	62 14 12	147 44 25	25	9	23	Blue-green, pyritic, aphanitic volcanic float in tundra
33717	62 14 17	147 44 21	25	9	23	Fine-grained, magnetic, mafic dike (15 ft wide) cutting lahar
33718	62 14 35	147 44 23	25	9	23	Mafic, aphanitic dike (3 ft wide)
33719	62 14 55	147 44 12	25	9	23	Brick red, siliceous, vein material up to several feet wide intruding basalt
33721	62 15 4	147 42 36	25	9	13	Rock chip sample across 10 ft thick pyritic zone in layered mafic volcanics

Stream Sediment Sample Locations

Sample	Latitude(N)			Longitude(W)			Twp(N)	Rge(E)	Sec
33268	62	16	35	147	40	29	25	10	7
33269	62	16	35	147	40	9	25	10	7
33270	62	16	30	147	40	34	25	10	7
33271	62	16	10	147	41	10	25	10	7
33272	62	16	5	147	41	16	25	9	12
33673	62	16	51	147	39	42	25	10	6
33674	62	16	49	147	39	40	25	10	6
33675	62	16	48	147	40	12	25	10	6
33681	62	14	38	147	44	24	25	9	23
33685	62	15	15	147	42	33	25	9	13
33686	62	15	16	147	42	37	25	9	13
33687	62	16	36	147	43	27	25	9	11
33689	62	16	30	147	44	3	25	9	11
33690	62	16	31	147	44	11	25	9	11
33700	62	14	26	147	43	22	25	9	23
33703	62	14	12	147	44	16	25	9	23
33705	62	14	7	147	44	39	25	9	26
33710	62	18	23	147	40	58	26	10	31
33712	62	18	14	147	37	38	26	10	32
33713	62	18	43	147	36	20	26	10	28
33714	62	18	57	147	38	31	26	10	29
33715	62	14	13	147	44	35	25	9	23
33720	62	14	59	147	43	43	25	9	23
33733	62	15	9	147	44	42	25	9	14
33734	62	15	18	147	45	41	25	9	15
33735	62	15	27	147	46	1	25	9	15