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Chemical Analyses of Native Soil and Vegetation Samples, Capps Coal Field, Alaska

By

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CHEMICAL ANALYSES OF NATIVE SOIL AND VEGETATION SAMPLES, CAPPS COAL FIELD, ALASKA

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INTRODUCTION

The purpose of this report is to present data for 55 soil and 43 plant material parameters (mostly element concentrations) that were determined on samples collected in the Capps Coal Field, Alaska. The study site is a 10-km^2 area located within all or parts of sections 13-15 and 22-27 (T. 14 N., R. 14 W.) of the Tyonek B-5 quadrangle. The area is about 100 km west of Anchorage within the Beluga coal area (fig. 1). Figure 2 shows the position of the 10-km^2 study area within the Capps Coal Field and figure 3 gives the sample site locations and their identifying numbers within each square kilometer (for an additional discussion of the sample identifications, see the explanation for tables 1-3).

The area is rolling hill country with low relief that has an elevational gradient (about 460 to 620 m) increasing from northeast to southwest. At the lower elevation, a vegetation community of grasses and forbs with scattered thickets of willow and alder predominates. These shrub and tree stands can be either low and open or tall and so dense as to essentially prohibit their penetration. At higher elevations, the composition and density of the grasses and forbs remains essentially unchanged; however, the alders disappear and the willow clumps become smaller and more scattered. About 10 percent of the area (all across the elevational gradient) is occupied by numerous sedge bogs that

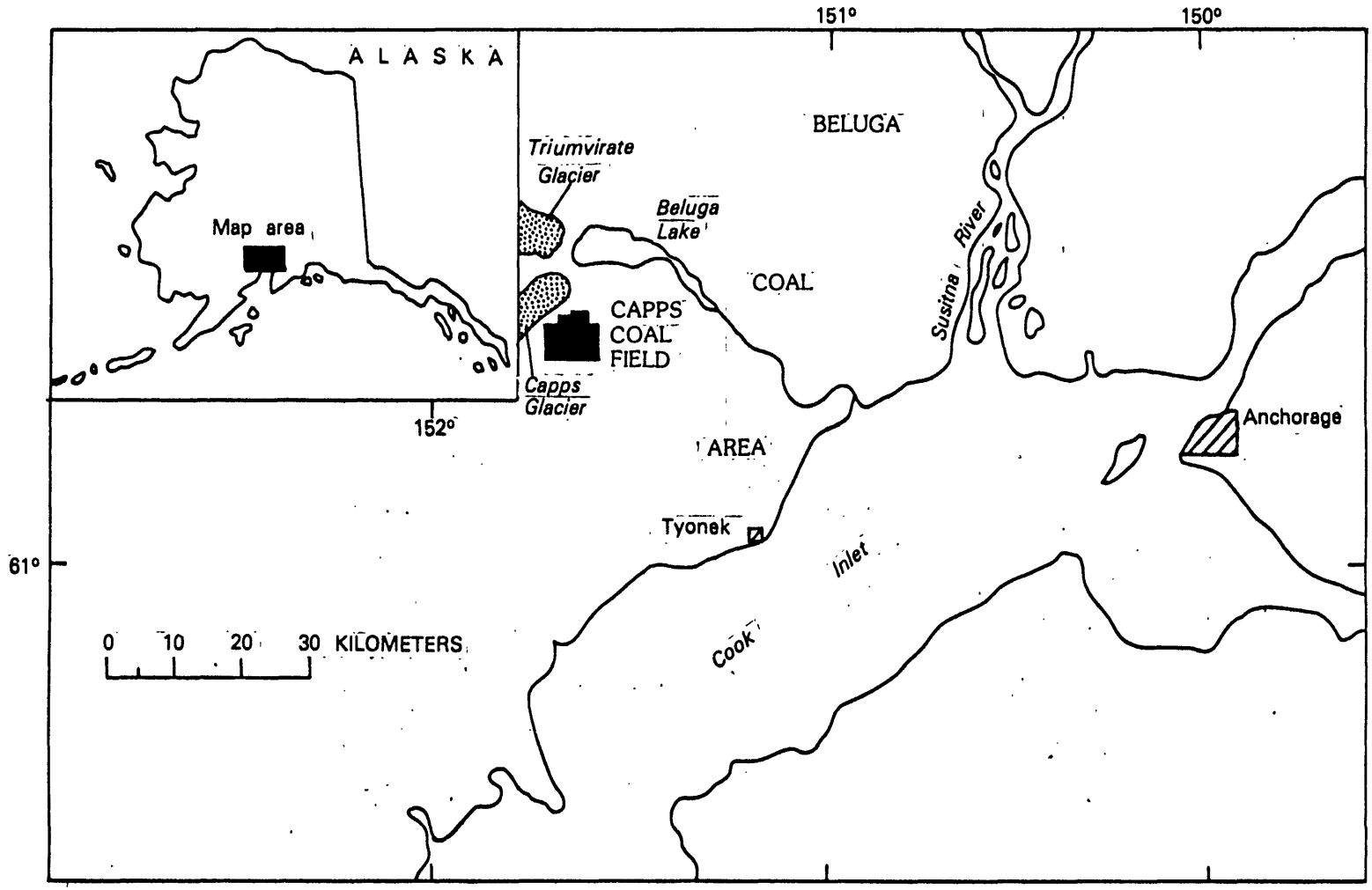

Figure 1.--Location of the Capps Coal Field, Alaska.

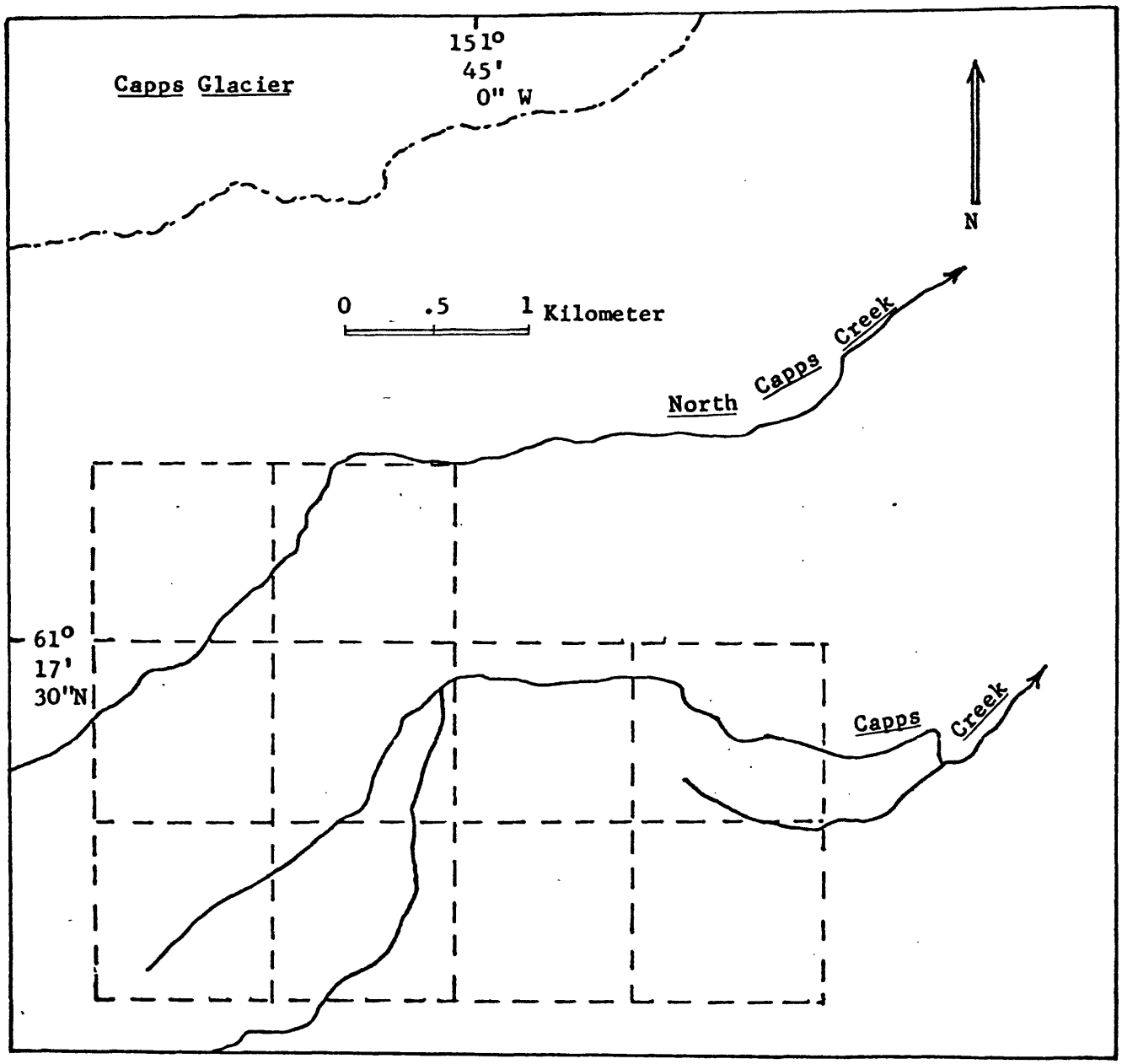

Figure 2.--Position of the 10-km^2 study area, Capps Coal Field, Alaska. Cells are 1 km^2 sampling localities.

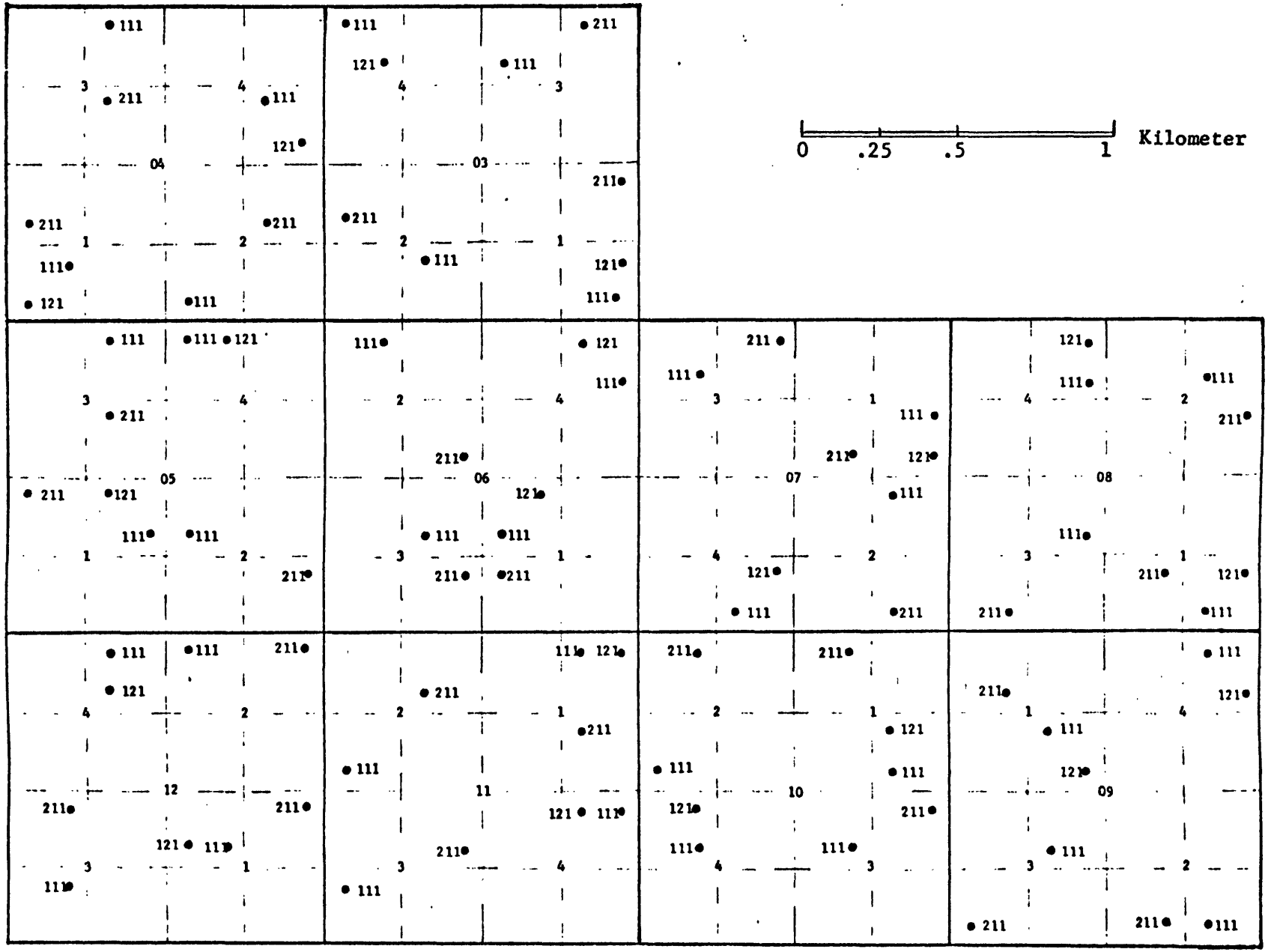

Figure 3.--Sample site locations and their identifying numbers within the 10-km^2 study area, Capps Coal Field, Alaska.

range in size from only a few hectares to some that blend together and cover several hundred hectares.

ACKNOWLEDGMENTS

We thank the Cook Inlet Region, Inc. for granting us permission to work on their land and in particular we appreciate the assistance of Perry R. Ahsogeak and Margie Sagerser, members of the Land Department. Betty J. McIntire, Patricia A. Carroll, Harvey Haynes, and Kitty Reed, of the Alaska Field Office of the U. S. Geological Survey, provided valuable assistance in the acquisition of field supplies and transportation, and in the monitoring of radio communications. Lynn A. Yehle and Hank R. Schmoll (U.S.G.S.) and Jay D. McKendrick (Univ. of Alaska) helped orient us to the physiography of the Beluga coal area. Finally, the work of Paul H. Briggs (U.S.G.S.), during the second field season, is appreciated.

USE OF THE DATA

These data are presented at this time in tabular form because of both written and verbal requests for the information by individuals of the U.S. Fish and Wildlife Service, the State of Alaska Department of Environmental Conservation, the U.S. Soil Conservation Service, and the Cook Inlet Region, Inc. (owners of the land). The data are important because of the general lack of geochemical information on native soils and vegetation in the Cook Inlet region and because of the high probability that surface mining of coal will commence within the decade. The data should be used for gross comparisons with other published data of element levels either in similar Alaskan materials or materials in other areas. The statistical treatment and detailed interpretation of the data are ongoing projects.

SAMPLE DESCRIPTIONS AND COLLECTION METHODS

Based on a statistical sampling design described in Severson and Gough (1983), 90 study sites were randomly located throughout the 10-km^2 area (fig. 3). At each sample location, a soil pit was dug and examined and soil and plant samples were collected.

Soils.--Two soil samples were collected within each pit. The first sample consisted of a gray, medium-sand-size volcanic ash layer at the surface (2 to 8 cm in thickness) and the second consisted of a composite of material from below the first sample to a depth of 40 cm. At nearly all sampling locations, this composite consisted of three or four layers of volcanic ash. These soils would probably be classified as Cryandepts. Each sample consisted of about 1 kg of material.

Vegetation.--The vegetation over most of the Capps Coal Field can be described as "herbaceous tundra," of the low elevation type, when using the taxonomic system for Alaska vegetation that is proposed by Viereck and Dyrness (1980). A willow and a grass sample were collected near the soil pit at every site. The willow sample consisted of the stem material (terminal 10 cm of young branches) of several Salix pulchra Cham. individuals. The taxonomy of this species is unsettled (Viereck and Little, 1972; Argus, 1973), and morphologically it can vary considerably among sites. We feel confident that the material we collected is S. pulchra even though some of the diagnostic features used in the field varied considerably among locations. Festuca altaica Trin. was the grass most frequently collected. It is a common inhabitant of the crest and sides of frost-heave hummocks. Where Festuca was not found, a substitution was made with Calamagrostis canadensis (Michx.)

Beauv. (bluejoint) which inhabits areas that are protected by snow cover in the winter (but is not a characteristic member of communities associated with deep late-lying snow fields). Samples of both grasses were composites of the above-ground parts (clipped at a height of 10 cm) of numerous scattered individual culms (C. canadensis) or clumps (F. altaica).

The stage of maturity of the plants varied among sites and ranged from individual willows that possessed pre-flowering capsules to those that were releasing seeds. The grasses were mostly in the flowering stage, although some samples at lower elevations were composed of individuals with ripening seeds.

ANALYTICAL METHODOLOGY

Table 4 lists the parameters measured (in both the soils and plant materials), the method used in their measurement, and a reference that discusses the method in detail. The measurement of all parameters incorporated standard methods for the assessment of both laboratory precision and accuracy.

TABLE EXPLANATIONS

Explanations for the column symbols used in Tables 1 and 2 (soil samples) follow.

XD: Element determined in an AB-DTPA (ammonium bicarbonate-diethylenetriaminepentaacetic acid) extract of soil.
ppm: Parts per million.
XW: pH determined from a 1:1 soil:water slurry.
me: Milliequivalents per liter.
XS: Element or compound determined in a water-saturation extract of soil.
Sp Con: Specific conductance of the water from the saturation extract expressed in millimhos per centimeter.
Sat Ind: Saturation index percentage determined as the grams of water per 100 grams of soil necessary to bring the soil to saturation.

-S: Elements with this suffix represent total concentrations in samples as determined by inductively coupled argon plasma-optical emission spectroscopy in an acid digestion.
%: Percent.
<: Less than the indicated value.
--: Not determined.

Explanations for the row symbols used in tables 1 and 2 are as follows. Each sample number is coded to represent a location in figure 3. The first two digits (03 to 12) represent a 1-km-square area. These numbers are located in the center of the cells shown in figure 3. The next single digit (1 to 4) represents a 0.5-km-square area within each 1-km cell. The next three digits (111, 121, or 211) are displayed next to each sampling location in figure 3 and represent levels 3, 4, and 5 of the analysis-of-variance design. The last digit (1 or 2) is used to represent samples split in the laboratory for the estimation of laboratory error. The suffix letters "A" and "C" represent the upper soil zone and the lower soil zone, respectively.

Explanations for the column symbols used in table 3 (plant samples) are as follows.

%: Percent.
ppm: Parts per million.
Tot S: Total sulfur.
-S: Elements with this suffix have concentration values determined by inductively coupled argon plasma-optical emission spectroscopy; elements not ending in this suffix were determined using the following analytical methods: Cd, K, and Na (atomic absorption spectrophotometry; S (turbidimetric); Se and U (fluorometric), and P (colorametric).
<: Less than the indicated value.

The numeric portion of the row symbols (first six digits in the sample identification code) follows the explanation given for the soil samples (tables 1 and 2). The suffix letter stands for Calamagrostis canadensis (C), Festuca altaica (F), or Salix pulchra (W).

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Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.

Sample	XD-Al ppm	XD-Cd ppm	XD-Co ppm	XD-Cu ppm	XD-Fe ppm	XD-Mn ppm	XD-Ni ppm	XD-P ppm	XD-Pb ppm	XD-Zn ppm	XW-pH	XS-Ca me
031111A	84	<.2	<.2	6.0	343	21.4	.6	15	<1	3.1	4.8	1.15
031112A	85	<.2	<.2	5.1	347	23.3	.5	16	<1	2.7	4.8	--
031121A	96	<.2	<.2	2.8	225	4.1	<.5	6	<1	<.5	5.2	.32
031211A	140	<.2	<.2	6.9	418	9.5	<.5	16	<1	1.1	4.6	1.08
032111A	150	<.2	.3	4.8	429	8.5	.7	14	<1	.6	4.8	--
032211A	110	<.2	<.2	4.0	412	7.0	<.5	16	<1	<.5	4.8	--
033111A	39	<.2	<.2	3.9	228	9.8	<.5	16	<1	2.0	5.3	1.67
033211A	120	<.2	.4	5.8	422	36.4	.6	25	<1	1.6	4.6	--
034111A	93	<.2	.2	4.5	375	27.7	.7	19	<1	1.5	5.1	--
034121A	86	<.2	<.2	3.1	295	14.3	<.5	12	<1	1.6	5.0	--
041111A	100	<.2	<.2	4.1	431	8.7	<.5	12	<1	.7	4.5	--
041112A	110	<.2	.2	4.6	475	9.3	<.5	13	<1	.9	4.7	--
041121A	110	<.2	<.2	2.3	346	13.5	<.5	12	<1	1.5	4.9	--
041211A	97	<.2	.3	4.1	337	10.5	<.5	18	<1	2.6	5.0	--
042111A	110	<.2	.2	4.9	256	12.5	.5	11	<1	1.5	4.9	--
042211A	110	<.2	.2	6.2	495	17.2	<.5	24	<1	1.6	4.8	--
043111A	100	<.2	<.2	4.9	368	10.0	<.5	12	<1	1.0	4.6	.76
043211A	91	<.2	.2	6.4	396	34.9	.6	24	<1	3.0	4.8	--
044111A	120	<.2	<.2	3.7	383	14.2	<.5	16	<1	1.6	4.6	.57
044121A	120	<.2	<.2	3.6	332	15.5	<.5	14	<1	1.2	4.7	.54
051111A	86	<.2	<.2	3.5	309	15.9	.5	14	<1	1.4	4.9	--
051112A	82	<.2	<.2	3.1	281	13.4	<.5	13	<1	1.2	4.7	--
051121A	110	<.2	<.2	3.1	273	6.2	.5	9	<1	<.5	5.2	--
051211A	84	<.2	<.2	4.3	387	10.5	<.5	11	<1	2.3	4.8	--
052111A	82	<.2	<.2	4.8	389	16.5	<.5	13	<1	1.9	4.8	--
052211A	94	<.2	<.2	3.8	402	5.5	<.5	12	<1	.8	5.0	--
053111A	73	<.2	<.2	3.6	234	13.9	<.5	12	<1	1.7	5.0	--
053211A	98	<.2	<.2	3.8	241	9.6	<.5	13	<1	2.0	5.1	--
054111A	75	<.2	.2	3.9	397	11.9	<.5	18	<1	.5	4.5	--
054121A	110	<.2	.2	4.0	396	9.4	<.5	15	<1	<.5	4.9	--
061111A	110	<.2	.2	3.9	338	15.3	<.5	15	<1	.6	4.8	--
061112A	120	<.2	.2	3.5	357	15.3	<.5	15	<1	<.5	4.8	--
061121A	110	<.2	<.2	2.6	307	6.2	<.5	22	<1	<.5	4.8	--
061211A	82	<.2	<.2	2.9	251	5.4	<.5	12	<1	<.5	5.2	--
062111A	110	<.2	.2	2.9	422	11.8	<.5	28	<1	.8	4.6	--
062211A	110	<.2	.2	3.7	456	9.1	<.5	21	<1	.5	4.6	--
063111A	96	<.2	.3	3.7	309	21.0	<.5	15	<1	1.8	4.7	--
063211A	76	<.2	<.2	6.2	400	11.2	<.5	17	<1	.8	4.4	--
064111A	130	<.2	<.2	3.9	267	8.9	<.5	22	<1	.7	4.8	--
064121A	100	<.2	<.2	3.6	248	11.0	<.5	13	<1	2.2	4.8	.65
071111A	150	<.2	<.2	7.2	435	11.4	<.5	17	<1	1.1	4.5	1.01
071112A	91	<.2	.2	5.5	357	21.9	<.5	19	<1	2.0	4.6	--
071121A	84	<.2	<.2	3.7	361	19.8	<.5	16	<1	2.1	4.8	--
071211A	130	<.2	<.2	3.7	326	19.4	<.5	18	<1	1.2	4.4	.71
072111A	130	<.2	.2	4.3	382	6.7	<.5	16	<1	.7	4.6	--

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.

Sample	XS-Cl me	XS-K me	XS-Mg me	XS-Na me	XSSO4 me	X-Sp Con	Sat Ind%	Al%-S	As ppm-S	Ba ppm-S	Ca%-S
031111A	.4	.7	.91	.63	.7	<.2	55.3	9.1	<20	360	4.6
031112A	--	--	--	--	--	--	--	8.5	<20	320	4.3
031121A	.4	.3	.17	.89	.5	.3	40.2	9.5	<20	340	4.7
031211A	.3	.4	.89	.76	.8	.3	49.0	8.5	<20	320	4.2
032111A	--	--	--	--	--	--	--	8.8	20	2,300	4.7
032211A	--	--	--	--	--	--	--	9.7	<20	390	5.0
033111A	.4	1.5	.97	.48	1.0	.4	63.4	9.2	<20	360	4.7
033211A	--	--	--	--	--	--	--	8.3	80	310	4.9
034111A	--	--	--	--	--	--	--	9.7	<20	970	5.3
034121A	--	--	--	--	--	--	--	9.0	80	350	4.8
041111A	--	--	--	--	--	--	--	8.7	<20	340	4.6
041112A	--	--	--	--	--	--	--	8.3	<20	330	4.3
041121A	--	--	--	--	--	--	--	8.9	<20	330	4.4
041211A	--	--	--	--	--	--	--	9.9	<20	380	5.1
042111A	--	--	--	--	--	--	--	8.7	<20	340	4.5
042211A	--	--	--	--	--	--	--	9.8	20	370	5.4
043111A	.3	.6	.32	.45	.8	.2	49.6	9.6	<20	380	4.8
043211A	--	--	--	--	--	--	--	8.6	<20	350	4.5
044111A	.3	.6	.32	.68	.8	.3	55.6	9.2	<20	370	4.7
044121A	.3	.5	.28	.49	.7	<.2	48.8	9.4	<20	360	4.7
051111A	--	--	--	--	--	--	--	8.4	<20	310	4.2
051112A	--	--	--	--	--	--	--	8.8	70	350	4.8
051121A	--	--	--	--	--	--	--	10.0	60	390	5.7
051211A	--	--	--	--	--	--	--	8.7	70	360	4.8
052111A	--	--	--	--	--	--	--	8.5	<20	320	4.2
052211A	--	--	--	--	--	--	--	8.8	<20	320	4.3
053111A	--	--	--	--	--	--	--	8.6	<20	310	4.4
053211A	--	--	--	--	--	--	--	8.7	<20	330	4.4
054111A	--	--	--	--	--	--	--	8.9	<20	330	4.4
054121A	--	--	--	--	--	--	--	9.6	40	380	5.3
061111A	--	--	--	--	--	--	--	8.6	<20	320	4.2
061112A	--	--	--	--	--	--	--	9.7	<20	370	5.1
061121A	--	--	--	--	--	--	--	9.9	<20	390	5.8
061211A	--	--	--	--	--	--	--	9.8	<20	390	5.1
062111A	--	--	--	--	--	--	--	8.6	<20	330	4.7
062211A	--	--	--	--	--	--	--	8.4	40	340	4.7
063111A	--	--	--	--	--	--	--	8.7	<20	1,500	4.5
063211A	--	--	--	--	--	--	--	8.8	70	370	5.2
064111A	--	--	--	--	--	--	--	9.0	<20	330	4.4
064121A	.5	.7	.36	.69	.6	.3	49.4	9.6	<20	370	4.6
071111A	.5	.6	.57	.94	1.0	.3	53.8	9.2	<20	340	4.7
071112A	--	--	--	--	--	--	--	8.7	<20	320	4.3
071121A	--	--	--	--	--	--	--	8.6	<20	330	5.0
071211A	.6	.7	.45	.83	.9	.3	51.2	9.2	<20	350	4.6
072111A	--	--	--	--	--	--	--	8.2	<20	310	4.3

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.

Sample	Cd ppm-S	Ce ppm-S	Co ppm-S	Cr ppm-S	Cu ppm-S	Dy ppm-S	Fe%-S	Ga ppm-S	Gd ppm-S	K%-S	La ppm-S
031111A	<4	20	20	25	31	<10	4.8	<20	<20	.30	<8
031112A	7	10	19	28	41	<10	4.6	<20	<20	.64	9
031121A	<4	20	20	30	31	<10	5.2	<20	<20	.40	8
031211A	<4	20	18	24	30	<10	4.5	<20	<20	<.10	<8
032111A	7	14	19	30	41	<10	4.6	<20	<20	.76	11
032211A	<4	30	22	29	40	<10	5.3	<20	<20	.70	8
033111A	<4	10	21	33	31	<10	5.0	<20	<20	2.00	<8
033211A	5	12	16	30	23	<10	5.1	<20	<20	.62	9
034111A	<4	10	26	35	33	<10	5.9	<20	<20	.70	<8
034121A	6	7	19	43	42	<10	4.8	<20	<20	.73	9
041111A	5	11	18	28	47	<10	5.0	<20	<20	.67	10
041112A	4	16	15	25	24	<10	4.6	<20	<20	.62	10
041121A	6	13	18	30	42	<10	4.8	<20	<20	.69	10
041211A	<4	20	23	30	35	<10	5.5	<20	<20	.70	<8
042111A	6	13	19	28	47	<10	4.9	<20	<20	.69	9
042211A	<4	20	24	34	38	<10	5.6	<20	<20	.70	9
043111A	<4	20	21	30	33	<10	5.1	<20	<20	.70	<8
043211A	6	9	19	30	45	<10	4.9	<20	<20	.67	10
044111A	<4	20	22	26	37	<10	5.1	<20	<20	.60	<8
044121A	<4	20	21	33	33	<10	5.2	<20	<20	.50	<8
051111A	4	8	16	25	34	<10	4.6	<20	<20	.59	<8
051112A	6	12	17	25	43	<10	4.7	<20	<20	.74	11
051121A	<4	10	25	30	37	<10	5.7	<20	<20	.60	8
051211A	7	10	17	27	45	<10	4.6	<20	<20	.75	11
052111A	6	6	18	28	42	<10	4.6	<20	<20	.67	11
052211A	5	10	16	27	35	<10	4.7	20	<20	.59	9
053111A	5	9	19	27	34	<10	4.8	20	<20	.59	8
053211A	6	15	18	26	37	<10	4.7	20	<20	.61	8
054111A	4	16	16	29	36	<10	4.7	<20	<20	.61	9
054121A	<4	20	22	30	34	<10	5.3	<20	<20	.70	9
061111A	5	15	16	27	35	<10	4.5	<20	<20	.59	9
061112A	<4	20	25	35	34	<10	5.8	<20	20	.70	9
061121A	<4	20	25	36	32	<10	5.8	<20	<20	.70	<8
061211A	<4	20	23	36	35	<10	5.4	<20	<20	.70	9
062111A	6	16	17	29	22	<10	4.9	20	<20	.66	8
062211A	5	14	16	28	24	<10	4.6	<20	<20	.67	11
063111A	5	11	18	28	33	<10	4.6	20	<20	.63	8
063211A	6	10	19	35	47	<10	5.0	<20	<20	.73	9
064111A	6	16	19	29	45	<10	4.7	<20	<20	.71	11
064121A	<4	10	19	27	32	<10	4.8	<20	<20	1.10	<8
071111A	<4	20	21	32	33	<10	5.2	<20	<20	.70	<8
071112A	6	7	18	30	44	<10	4.8	<20	<20	.66	11
071121A	6	10	19	34	42	<10	5.0	<20	<20	.65	10
071211A	<4	20	20	28	31	<10	4.9	<20	<20	.90	<8
072111A	4	19	16	28	23	<10	4.8	20	<20	.64	9

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.

Sample	Li ppm-S	Mg%-S	Mn ppm-S	Mo ppm-S	Na%-S	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Sc ppm-S
031111A	17	2.6	1,100	<8	2.3	<10	<10	14	.10	<20	19
031112A	15	2.3	1,100	<8	2.5	<10	<10	14	.08	<20	17
031121A	17	2.6	1,000	<8	2.5	<10	10	14	.10	<20	20
031211A	15	2.4	930	<6	2.2	<10	10	12	.09	<20	18
032111A	17	2.6	1,100	<8	3.6	<10	11	12	.08	<20	18
032211A	17	2.5	1,100	<8	2.6	<10	20	14	.11	<20	19
033111A	16	2.6	1,100	<6	2.4	<10	20	16	.10	<20	20
033211A	14	2.7	970	<8	2.9	<10	14	12	.08	20	18
034111A	15	3.1	1,300	<8	2.9	<10	20	16	.09	<20	22
034121A	17	2.5	1,100	<8	3.2	<10	12	13	.09	<20	18
041111A	16	2.3	1,100	<6	2.6	<10	<10	15	.09	<20	17
041112A	15	2.2	880	<8	2.4	<10	16	11	.08	20	18
041121A	17	2.4	1,100	<8	2.6	<10	<10	14	.10	<20	18
041211A	18	2.8	1,100	<8	2.6	<10	20	14	.11	<20	20
042111A	15	2.3	1,100	<8	2.6	<10	<10	12	.10	<20	17
042211A	17	2.9	1,200	<8	2.9	<10	20	15	.10	<20	21
043111A	17	2.7	1,100	<8	2.5	<10	<10	14	.10	<20	20
043211A	16	2.4	1,200	<8	2.7	<10	<10	15	.10	<20	17
044111A	16	2.7	1,100	<8	2.4	<10	10	15	.10	<20	20
044121A	15	2.7	1,100	<8	2.4	<10	10	15	.10	<20	20
051111A	13	2.4	1,100	<8	2.1	<10	10	14	.08	<20	16
051112A	16	2.5	1,100	<8	3.3	<10	<10	13	.08	<20	17
051121A	16	3.0	1,200	<8	3.3	<10	20	16	.10	<20	21
051211A	16	2.4	1,100	<8	3.5	<10	<10	12	.08	<20	17
052111A	15	2.3	1,000	<8	2.4	<10	<10	10	.07	<20	16
052211A	15	2.5	1,100	<8	2.3	<10	<10	12	.08	<20	18
053111A	14	2.5	1,100	<8	2.2	<10	14	11	.08	<20	18
053211A	14	2.4	1,100	<8	2.2	<10	19	16	.09	<20	17
054111A	16	2.4	1,100	<8	2.3	<10	10	11	.08	20	18
054121A	17	2.8	1,100	<8	3.1	<10	10	18	.10	<20	21
061111A	14	2.3	1,000	<8	2.3	<10	11	13	.08	<20	17
061112A	16	3.0	1,200	<8	2.5	<10	20	16	.10	<20	23
061121A	19	3.1	1,200	<8	3.3	<10	10	16	.11	<20	23
061211A	19	2.6	1,100	<8	2.5	<10	30	16	.10	<20	21
062111A	14	2.6	930	<8	2.6	<10	20	15	.09	20	17
062211A	15	2.4	900	<8	2.8	<10	<10	10	.09	<20	17
063111A	16	2.5	1,100	<8	2.9	<10	10	13	.08	20	18
063211A	17	2.5	1,000	<8	3.6	<10	<10	16	.10	<20	17
064111A	17	2.3	1,100	<8	2.6	<10	12	13	.09	<20	16
064121A	18	2.5	1,000	<8	2.5	<10	20	12	.10	<20	20
071111A	16	2.8	1,100	<8	2.4	<10	<10	15	.10	<20	21
071112A	17	2.4	1,100	<8	2.5	<10	13	9	.09	<20	18
071121A	15	2.6	1,100	<8	3.1	<10	11	17	.09	<20	18
071211A	17	2.6	1,100	<8	2.4	<10	10	12	.10	<20	20
072111A	15	2.3	880	<8	2.3	<10	<10	14	.08	20	18

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.

Sample	Sm ppm-S	Sn ppm-S	Sr ppm-S	Ta ppm-S	Ti%-S	Th ppm-S	U ppm-S	V ppm-S	Y ppm-S	Zn ppm-S
031111A	<10	<10	570	<20	.38	<8	<80	150	12	83
031112A	<10	<10	530	<20	.37	<8	<80	140	10	79
031121A	<10	<10	590	<20	.43	<8	<80	170	12	85
031211A	<10	<10	530	<20	.36	<8	<80	140	11	75
032111A	<10	<10	570	<20	.38	<8	<80	150	11	78
032211A	<10	<10	610	<20	.43	9	<80	160	13	92
033111A	<10	<10	580	<20	.41	<8	<80	160	11	88
033211A	<10	<10	530	20	.39	<8	<80	160	8	73
034111A	<10	<10	610	<20	.45	<8	<80	190	12	94
034121A	<10	<10	580	<20	.39	<8	<80	150	10	88
041111A	<10	<10	560	<20	.41	<8	<80	160	10	84
041112A	<10	<10	530	20	.37	<8	<80	140	9	66
041121A	<10	<10	580	20	.39	<8	<80	150	11	82
041211A	<10	<10	610	<20	.44	<8	<80	170	13	94
042111A	<10	<10	570	20	.40	<8	<80	150	10	83
042211A	<10	<10	610	<20	.44	<8	100	180	13	97
043111A	<10	<10	600	<20	.42	<8	<80	160	12	85
043211A	<10	<10	550	<20	.40	<8	<80	160	10	84
044111A	<10	<10	590	<20	.41	<8	<80	160	12	93
044121A	<10	<10	590	<20	.41	<8	<80	160	12	86
051111A	<10	<10	510	<20	.36	<8	<80	140	9	68
051112A	<10	<10	590	<20	.38	<8	<80	150	11	81
051121A	<10	<10	630	<20	.44	<8	80	170	13	94
051211A	<10	10	590	<20	.39	<8	<80	150	11	81
052111A	<10	<10	540	<20	.36	<8	<80	140	10	79
052211A	<10	<10	530	20	.37	<8	<80	150	10	70
053111A	<10	<10	520	<20	.37	9	<80	150	10	72
053211A	<10	<10	530	20	.38	<8	<80	150	11	73
054111A	<10	<10	530	<20	.38	<8	<80	150	10	70
054121A	<10	<10	610	<20	.42	<8	80	170	13	88
061111A	<10	<10	520	<20	.37	<8	<80	140	10	68
061112A	<10	<10	610	<20	.45	<8	<80	190	13	91
061121A	<10	<10	630	30	.46	<8	90	180	12	98
061211A	<10	<10	610	<20	.44	<8	<80	170	13	89
062111A	<10	<10	550	20	.39	<8	<80	150	8	74
062211A	<10	<10	540	<20	.38	<8	<80	150	9	70
063111A	<10	<10	530	<20	.37	<8	<80	150	10	70
063211A	<10	<10	600	<20	.42	<8	<80	160	9	84
064111A	<10	11	570	<20	.38	<8	<80	150	12	79
064121A	<10	<10	580	<20	.40	<8	<80	150	12	91
071111A	<10	<10	580	<20	.41	<8	<80	170	12	87
071112A	<10	<10	550	<20	.38	<8	<80	150	11	80
071121A	<10	<10	570	<20	.42	<8	<80	160	9	84
071211A	<10	<10	580	<20	.41	<8	<80	160	11	83
072111A	<10	<10	520	20	.37	<8	<80	150	9	69

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.--continued

Sample	XD-Al ppm	XD-Cd ppm	XD-Co ppm	XD-Cu ppm	XD-Fe ppm	XD-Mn ppm	XD-Ni ppm	XD-P ppm	XD-Pb ppm	XD-Zn ppm	XW-pH	XS-Ca me
072211A	110	<.2	<.2	4.2	449	13.3	<.5	17	<1	.8	4.7	--
073111A	47	<.2	.2	3.9	310	21.3	<.5	22	<1	3.5	5.3	--
073211A	120	<.2	.2	4.4	495	12.3	.5	19	<1	.9	4.5	--
074111A	82	<.2	<.2	3.7	292	6.9	<.5	16	<1	<.5	4.4	--
074121A	110	<.2	.2	5.1	466	9.5	<.5	20	<1	1.4	4.5	--
081111A	120	<.2	.4	7.6	564	63.5	.7	34	<1	4.0	4.8	--
081112A	70	<.2	.2	4.3	331	39.0	<.5	23	<1	1.9	4.7	--
081121A	93	<.2	.5	3.8	367	39.6	<.5	25	<1	2.9	4.6	--
081211A	55	<.2	.3	4.6	405	7.5	.6	25	<1	3.0	4.9	--
082111A	47	<.2	.3	3.7	296	27.7	<.5	17	<1	1.7	5.3	--
082211A	70	<.2	.4	4.5	343	51.2	.5	19	<1	2.9	4.7	--
083111A	80	<.2	<.2	4.6	358	23.0	<.5	19	<1	2.5	4.6	.93
083211A	73	<.2	<.2	5.3	327	29.3	<.5	20	<1	2.6	4.8	1.16
084111A	83	<.2	<.2	3.8	357	19.1	<.5	21	<1	1.9	4.7	1.81
084121A	130	<.2	.3	4.5	475	18.8	<.5	19	<1	<.5	4.7	--
091111A	200	<.2	.4	6.6	472	40.1	.9	42	<1	3.9	4.4	.85
091112A	210	.2	.6	7.0	518	49.7	1.2	50	<1	4.0	4.5	--
091121A	200	<.2	<.2	4.8	311	11.3	<.5	20	<1	2.4	4.8	.47
091211A	65	<.2	.2	3.6	334	35.9	.5	25	<1	4.4	5.3	--
092111A	88	.2	.5	8.5	464	64.3	.8	38	<1	2.7	4.6	--
092211A	240	.2	.2	4.2	491	46.3	.9	60	<1	8.2	4.6	--
093111A	120	<.2	.3	6.7	425	55.6	.7	42	<1	4.3	4.6	--
093211A	140	.3	.3	9.3	537	22.1	.5	24	<1	2.9	4.8	.79
094111A	94	<.2	.2	4.9	407	25.4	<.5	19	<1	2.1	4.4	--
094121A	60	<.2	<.2	4.0	318	38.6	.5	25	<1	3.9	4.6	--
101111A	120	<.2	<.2	4.7	404	17.4	<.5	25	<1	2.1	4.6	.77
101112A	100	<.2	.2	3.7	387	17.5	<.5	24	<1	1.6	4.6	--
101121A	100	<.2	.3	5.0	442	24.8	<.5	19	<1	2.0	4.6	--
101211A	74	<.2	.2	4.4	378	11.2	<.5	15	<1	<.5	4.9	--
102111A	82	<.2	<.2	4.3	426	7.1	<.5	17	<1	1.1	4.6	--
102211A	120	<.2	.3	4.8	478	43.6	.6	26	<1	1.9	5.0	--
103111A	130	<.2	.2	3.8	467	14.8	<.5	23	<1	.8	4.6	--
103211A	120	<.2	.2	4.9	455	18.1	.6	30	<1	1.1	4.6	--
104111A	110	<.2	.3	3.3	294	9.3	<.5	17	<1	.8	4.7	--
104121A	100	<.2	<.2	3.0	294	9.7	<.5	20	<1	.6	4.8	--
111111A	130	<.2	<.2	3.4	326	9.1	<.5	21	<1	.8	4.6	.27
111112A	130	<.2	<.2	2.7	313	6.3	<.5	20	<1	.5	5.1	--
111121A	150	<.2	.2	7.9	476	16.1	<.5	21	<1	<.5	4.8	--
111211A	81	<.2	.4	3.3	235	16.1	.5	15	<1	1.1	5.3	--
112111A	100	<.2	<.2	3.6	440	9.4	<.5	13	<1	.5	5.0	--
112211A	98	<.2	.3	5.6	463	10.8	<.5	21	<1	1.7	4.7	--
113111A	96	<.2	<.2	4.7	374	11.3	<.5	16	<1	1.5	4.9	.65
113211A	110	<.2	<.2	3.0	341	4.4	<.5	14	<1	.5	4.9	--
114111A	81	<.2	.2	5.0	277	15.2	<.5	15	<1	1.8	5.0	--
114121A	85	<.2	.2	4.1	351	7.4	<.5	16	<1	1.5	5.1	--

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.--continued

Sample	XS-Cl me	XS-K me	XS-Mg me	XS-Na me	XSSO4 me	X-Sp Con	Sat Ind%	Al%-S	As ppm-S	Ba ppm-S	Ca%-S
072211A	--	--	--	--	--	--	--	7.6	<20	290	4.1
073111A	--	--	--	--	--	--	--	8.2	30	330	4.5
073211A	--	--	--	--	--	--	--	8.0	40	310	4.4
074111A	--	--	--	--	--	--	--	8.5	<20	340	4.9
074121A	--	--	--	--	--	--	--	8.0	20	320	4.2
081111A	--	--	--	--	--	--	--	9.1	30	380	5.0
081112A	--	--	--	--	--	--	--	9.5	<20	380	4.9
081121A	--	--	--	--	--	--	--	8.5	<20	330	4.4
081211A	--	--	--	--	--	--	--	8.1	80	370	4.2
082111A	--	--	--	--	--	--	--	8.8	<20	330	4.4
082211A	--	--	--	--	--	--	--	7.8	<20	310	4.2
083111A	.5	.7	.47	.71	.8	<.2	48.1	9.1	<20	380	4.5
083211A	.5	.8	.49	.72	.9	.4	50.2	9.5	<20	370	4.8
084111A	.5	1.0	1.39	.74	.8	.3	51.0	9.3	<20	360	4.7
084121A	--	--	--	--	--	--	--	9.8	<20	370	5.2
091111A	.6	1.1	.52	.49	.8	.3	72.5	8.3	<20	390	3.7
091112A	--	--	--	--	--	--	--	7.4	<20	350	3.4
091121A	.3	.4	.27	.43	.4	<.2	46.6	9.1	<20	380	4.1
091211A	--	--	--	--	--	--	--	9.4	40	390	5.2
092111A	--	--	--	--	--	--	--	7.6	30	320	4.3
092211A	--	--	--	--	--	--	--	7.2	<20	330	3.2
093111A	--	--	--	--	--	--	--	8.1	<20	340	3.7
093211A	.3	.7	.59	.71	1.1	.4	60.4	8.7	<20	320	4.4
094111A	--	--	--	--	--	--	--	8.7	<20	2,200	4.8
094121A	--	--	--	--	--	--	--	8.4	<20	370	3.9
101111A	.5	.9	.54	.69	.7	<.2	54.7	9.1	<20	340	4.7
101112A	--	--	--	--	--	--	--	8.6	<20	310	4.2
101121A	--	--	--	--	--	--	--	8.0	70	320	4.5
101211A	--	--	--	--	--	--	--	9.5	<20	360	5.2
102111A	--	--	--	--	--	--	--	8.6	40	330	4.8
102211A	--	--	--	--	--	--	--	9.7	<20	370	5.1
103111A	--	--	--	--	--	--	--	8.8	<20	320	4.4
103211A	--	--	--	--	--	--	--	9.3	<20	370	5.2
104111A	--	--	--	--	--	--	--	9.0	<20	350	4.5
104121A	--	--	--	--	--	--	--	8.6	<20	310	4.4
111111A	.4	.5	.21	.64	.5	.2	44.9	9.4	<20	340	4.8
111112A	--	--	--	--	--	--	--	9.0	<20	340	4.5
111121A	--	--	--	--	--	--	--	9.7	<20	400	5.3
111211A	--	--	--	--	--	--	--	8.9	<20	340	4.4
112111A	--	--	--	--	--	--	--	9.0	<20	1,100	4.9
112211A	--	--	--	--	--	--	--	8.5	<20	320	4.3
113111A	.3	.7	.36	.63	.8	<.2	51.7	9.2	<20	380	4.5
113211A	--	--	--	--	--	--	--	8.6	60	340	4.8
114111A	--	--	--	--	--	--	--	9.3	<20	2,300	5.0
114121A	--	--	--	--	--	--	--	8.3	50	340	5.1

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.--continued

Sample	Cd ppm-S	Ce ppm-S	Co ppm-S	Cr ppm-S	Cu ppm-S	Dy ppm-S	Fe%-S	Ga ppm-S	Gd ppm-S	K%-S	La ppm-S
072211A	6	11	16	23	36	<10	4.1	<20	<20	.63	10
073111A	5	13	16	29	22	<10	4.7	20	<20	.64	10
073211A	5	18	15	29	23	<10	4.6	20	<20	.61	11
074111A	5	14	17	26	25	<10	4.8	20	<20	.67	10
074121A	5	19	14	23	26	<10	4.4	20	<20	.61	11
081111A	<4	10	26	150	36	<10	5.4	<20	<20	.70	<8
081112A	<4	20	21	35	34	<10	5.4	<20	<20	.73	<8
081121A	5	13	15	30	22	<10	4.8	<20	<20	.65	9
081211A	6	8	16	36	40	<10	4.2	<20	<20	.74	11
082111A	4	16	19	29	34	<10	4.8	20	<20	.61	9
082211A	4	11	17	30	22	<10	4.7	<20	<20	.59	10
083111A	<4	20	19	27	36	<10	4.9	<20	<20	.50	<8
083211A	<4	20	20	28	33	<10	5.0	<20	<20	1.10	<8
084111A	<4	20	23	29	30	<10	5.2	<20	<20	.60	<8
084121A	<4	20	24	32	34	<10	5.8	<20	<20	.70	<8
091111A	<4	20	18	30	30	<10	4.3	<20	<20	1.60	8
091112A	5	<5	12	25	24	<10	3.8	<20	<20	.70	9
091121A	<4	20	18	28	29	<10	4.5	<20	<20	1.10	9
091211A	<4	30	19	27	35	<10	4.8	<20	<20	.80	<8
092111A	5	11	17	28	27	<10	4.3	<20	<20	.63	11
092211A	5	10	16	25	36	<10	3.8	<20	<20	.64	11
093111A	5	8	18	27	36	<10	4.3	<20	<20	.60	9
093211A	<4	20	19	29	31	<10	4.8	<20	<20	.40	<8
094111A	6	10	20	26	45	<10	4.7	<20	<20	.82	11
094121A	6	14	17	31	40	<10	4.4	<20	<20	.73	12
101111A	<4	10	22	31	27	<10	5.2	<20	<20	.40	<8
101112A	5	9	17	28	32	<10	4.7	<20	20	.60	<8
101121A	5	11	15	26	23	<10	4.4	<20	<20	.64	10
101211A	<4	20	20	29	38	<10	5.2	<20	<20	.70	9
102111A	6	8	17	31	42	<10	4.6	<20	<20	.70	11
102211A	<4	20	22	33	32	<10	5.8	<20	<20	.70	<8
103111A	4	15	16	29	40	<10	4.8	20	<20	.60	9
103211A	<4	30	22	32	36	<10	5.3	<20	<20	.70	<8
104111A	6	15	18	30	36	<10	4.9	20	<20	.63	9
104121A	5	14	18	32	32	<10	4.9	<20	<20	.61	9
111111A	<4	10	22	31	29	<10	5.4	<20	<20	1.00	<8
111112A	6	16	17	33	43	<10	4.9	20	<20	.73	11
111121A	<4	30	23	28	42	<10	5.4	<20	<20	.80	10
111211A	6	12	19	36	42	<10	4.7	<20	<20	.71	11
112111A	<4	20	20	31	36	<10	5.1	<20	<20	.70	8
112211A	5	17	19	28	37	<10	4.7	20	<20	.60	11
113111A	<4	20	19	25	35	<10	4.8	<20	<20	.40	<8
113211A	6	9	16	28	23	<10	4.9	20	<20	.69	9
114111A	6	12	21	34	46	<10	4.8	<20	<20	.83	11
114121A	5	8	16	36	23	<10	4.8	20	<20	.68	9

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.--Continued

Sample	Li ppm-S	Mg%-S	Mn ppm-S	Mo ppm-S	Na%-S	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Sc ppm-S
072211A	13	2.2	890	<6	2.7	<10	10	13	.07	<20	14
073111A	15	2.4	980	<8	2.4	<10	16	13	.09	20	18
073211A	14	2.4	910	<8	2.3	<10	12	10	.08	20	19
074111A	15	2.6	930	<8	3.0	<10	15	11	.09	20	17
074121A	15	2.1	860	<8	2.3	<10	11	16	.09	20	16
081111A	17	2.7	1,200	14	2.5	<10	20	140	.10	<20	20
081112A	18	2.6	1,100	<8	2.5	<10	30	17	.11	<20	20
081121A	19	2.4	980	<8	2.4	<10	<10	13	.09	20	19
081211A	15	2.3	910	<8	3.0	<10	<10	13	.08	<20	16
082111A	15	2.4	1,200	<6	2.3	<10	11	11	.09	20	17
082211A	14	2.4	930	<8	2.1	<10	14	12	.08	<20	17
083111A	16	2.4	1,100	<8	2.4	<10	<10	14	.11	<20	19
083211A	16	2.6	1,100	<8	2.5	<10	<10	14	.11	<20	20
084111A	16	2.8	1,100	<8	2.4	<10	10	14	.10	<20	21
084121A	16	2.9	1,200	<8	2.5	<10	<10	18	.11	<20	21
091111A	16	2.2	1,000	<8	2.1	<10	10	13	.11	<20	19
091112A	13	1.7	890	<8	2.0	<10	17	11	.11	20	15
091121A	17	2.2	930	<8	2.2	<10	10	13	.10	<20	19
091211A	17	2.4	1,100	<8	3.1	<10	20	15	.11	<20	18
092111A	13	2.2	1,100	<8	2.5	<10	11	11	.10	20	18
092211A	15	1.7	1,000	<8	2.1	<10	<10	13	.11	<20	14
093111A	15	2.0	1,300	<8	2.2	<10	11	14	.09	20	16
093211A	15	2.6	1,000	<8	2.2	<10	10	13	.09	<20	20
094111A	19	2.5	1,100	<8	3.5	<10	11	14	.09	<20	16
094121A	17	2.1	1,200	<8	2.4	<10	<10	12	.09	<20	17
101111A	18	2.9	1,100	<8	2.3	<10	<10	16	.09	<20	21
101112A	14	2.4	1,000	<8	2.1	<10	<10	15	.08	<20	17
101121A	14	2.4	910	<8	3.1	<10	<10	9	.08	20	17
101211A	16	2.6	1,100	<8	2.8	<10	20	17	.10	<20	21
102111A	16	2.4	990	<8	3.2	<10	<10	10	.09	<20	16
102211A	17	3.0	1,200	<8	2.5	<10	10	16	.10	<20	22
103111A	16	2.5	1,000	<8	2.3	<10	12	15	.08	<20	19
103211A	17	2.7	1,100	<8	2.9	<10	<10	13	.11	<20	21
104111A	16	2.5	1,100	<8	2.3	<10	15	18	.08	20	19
104121A	15	2.6	1,100	<8	2.3	<10	11	14	.08	20	18
111111A	17	2.9	1,100	<8	2.4	<10	<10	15	.10	<20	21
111112A	18	2.4	1,100	<8	2.6	<10	12	18	.09	<20	17
111121A	16	2.7	1,200	<8	3.0	<10	10	14	.11	<20	20
111211A	17	2.3	1,100	<8	2.6	<10	10	12	.09	<20	17
112111A	17	2.6	1,100	<6	2.8	<10	20	13	.10	<20	19
112211A	16	2.4	1,100	<8	2.2	<10	11	15	.09	20	18
113111A	20	2.4	1,000	<8	2.5	<10	<10	13	.11	<20	19
113211A	15	2.6	940	<8	3.0	<10	<10	13	.09	20	19
114111A	19	2.6	1,100	<8	3.8	<10	11	15	.09	<20	18
114121A	13	2.7	910	<8	3.4	<10	12	15	.09	20	17

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.--continued

Sample	Sm ppm-S	Sn ppm-S	Sr ppm-S	Ta ppm-S	Ti%-S	Th ppm-S	U ppm-S	V ppm-S	Y ppm-S	Zn ppm-S
072211A	<10	<10	490	<20	.33	<8	<80	130	9	70
073111A	<10	<10	530	20	.38	<8	<80	150	9	73
073211A	<10	<10	520	20	.37	<8	<80	150	9	65
074111A	<10	<10	550	<20	.38	<8	<80	150	9	73
074121A	<10	<10	520	20	.36	<8	<80	130	9	66
081111A	10	<10	570	<20	.42	<8	<80	170	12	91
081112A	<10	<10	590	<20	.43	<8	80	170	12	90
081121A	<10	<10	540	<20	.39	<8	<80	150	8	73
081211A	<10	<10	510	<20	.35	<8	<80	130	10	77
082111A	<10	<10	550	<20	.38	<8	<80	150	11	72
082211A	<10	<10	500	<20	.37	<8	<80	150	8	69
083111A	<10	<10	560	<20	.41	<8	<80	160	12	87
083211A	<10	<10	600	<20	.40	<8	<80	160	12	86
084111A	<10	<10	570	<20	.42	<8	<80	170	11	89
084121A	<10	<10	610	<20	.44	<8	<80	180	12	91
091111A	<10	<10	480	<20	.40	<8	<80	140	11	81
091112A	<10	<10	440	20	.34	<8	<80	120	9	61
091121A	<10	<10	530	<20	.39	<8	<80	140	12	78
091211A	<10	<10	600	<20	.40	8	<80	150	12	87
092111A	<10	<10	480	20	.36	<8	<80	140	8	67
092211A	<10	<10	440	<20	.33	<8	<80	120	10	73
093111A	<10	<10	480	20	.37	<8	<80	140	10	70
093211A	<10	<10	530	<20	.39	<8	<80	150	11	79
094111A	<10	<10	580	<20	.39	<8	<80	150	11	87
094121A	<10	<10	500	<20	.37	<8	<80	140	11	81
101111A	<10	<10	560	<20	.40	<8	<80	160	11	89
101112A	<10	<10	520	<20	.37	<8	<80	150	9	69
101121A	<10	<10	510	20	.36	<8	<80	140	8	68
101211A	<10	<10	600	<20	.42	<8	<80	160	13	87
102111A	<10	<10	550	<20	.38	<8	<80	150	10	80
102211A	10	<10	610	<20	.45	<8	<80	180	11	92
103111A	<10	<10	530	<20	.38	<8	<80	150	11	78
103211A	<10	<10	590	<20	.42	<8	<80	170	13	89
104111A	<10	<10	540	40	.39	<8	<80	160	11	73
104121A	<10	<10	520	20	.38	<8	<80	160	10	71
111111A	<10	<10	590	<20	.42	<8	<80	170	11	88
111112A	<10	<10	570	<20	.40	<8	<80	160	11	83
111121A	<10	<10	610	<20	.42	<8	90	160	13	92
111211A	<10	<10	560	<20	.38	<8	<80	140	11	82
112111A	10	<10	570	20	.41	13	<80	160	12	86
112211A	<10	<10	510	20	.37	<8	<80	150	11	73
113111A	<10	10	570	<20	.40	<8	<80	150	13	83
113211A	<10	<10	560	20	.39	<8	<80	150	9	71
114111A	<10	<10	610	<20	.39	<8	<80	150	11	85
114121A	<10	<10	540	20	.39	<8	<80	150	9	71

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.--continued

Sample	XD-Al ppm	XD-Cd ppm	XD-Co ppm	XD-Cu ppm	XD-Fe ppm	XD-Mn ppm	XD-Ni ppm	XD-P ppm	XD-Pb ppm	XD-Zn ppm	XW-pH	XS-Ca me
121111A	74	<.2	<.2	4.3	343	13.8	<.5	19	<1	.9	4.8	.64
121112A	80	<.2	.3	4.9	367	15.5	<.5	22	<1	1.0	4.9	--
121121A	110	<.2	.2	3.2	420	7.9	.5	20	<1	1.1	4.8	--
121211A	19	<.2	.2	2.9	155	20.1	.6	8	<1	1.9	5.3	--
122111A	92	<.2	<.2	3.6	287	11.4	<.5	12	<1	1.0	4.9	.69
122211A	95	<.2	<.2	4.5	382	9.7	<.5	13	<1	1.3	5.8	--
123111A	110	<.2	<.2	2.6	296	5.1	<.5	13	<1	<.5	4.7	.56
123211A	96	<.2	<.2	3.1	257	3.8	<.5	10	<1	<.5	4.7	--
124111A	83	<.2	<.2	1.9	252	6.4	<.5	11	<1	1.3	5.1	--
124121A	100	<.2	<.2	4.1	434	8.8	<.5	13	<1	.7	4.7	--

Sample	XS-Cl me	XS-K me	XS-Mg me	XS-Na me	XSSO4 me	X-Sp Con	Sat Ind%	Al%-S	As ppm-S	Ba ppm-S	Ca%-S
121111A	.4	.4	.36	.69	.7	.2	64.7	9.3	<20	340	4.8
121112A	--	--	--	--	--	--	--	9.0	<20	330	4.4
121121A	--	--	--	--	--	--	--	8.5	<20	320	4.5
121211A	--	--	--	--	--	--	--	8.6	<20	2,400	4.8
122111A	.4	.6	.44	.62	1.2	.3	60.0	9.5	<20	370	4.8
122211A	--	--	--	--	--	--	--	8.1	<20	310	4.2
123111A	.3	.3	.62	.74	.5	.2	45.6	9.8	<20	390	4.9
123211A	--	--	--	--	--	--	--	8.9	<20	340	4.9
124111A	--	--	--	--	--	--	--	8.8	40	330	4.8
124121A	--	--	--	--	--	--	--	8.9	20	340	4.6

Sample	Cd ppm-S	Ce ppm-S	Co ppm-S	Cr ppm-S	Cu ppm-S	Dy ppm-S	Fe%-S	Ga ppm-S	Gd ppm-S	K%-S	La ppm-S
121111A	<4	10	24	43	30	<10	5.5	<20	<20	1.30	<8
121112A	4	17	18	29	37	<10	4.8	20	<20	.63	10
121121A	5	16	17	31	22	<10	4.9	20	<20	.64	10
121211A	7	20	21	31	41	<10	4.6	21	<20	.81	12
122111A	<4	20	22	26	33	<10	5.3	<20	<20	1.00	<8
122211A	5	12	15	26	25	10	4.7	20	<20	.62	10
123111A	<4	20	21	41	33	<10	5.3	<20	<20	.60	<8
123211A	7	17	20	31	44	<10	4.8	<20	<20	.74	12
124111A	6	17	18	28	41	<10	4.7	<20	<20	.71	12
124121A	6	12	19	32	43	<10	4.9	<20	<20	.68	11

Table 1.--Chemical data for the upper soil zone, Capps Coal Field, Alaska.--continued

Sample	Li ppm-S	Mg%-S	Mn ppm-S	Mo ppm-S	Na%-S	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Sc ppm-S
121111A	18	3.1	1,100	<8	2.4	<10	<10	19	.10	<20	22
121112A	14	2.5	1,100	<8	2.3	<10	<10	11	.09	<20	18
121121A	15	2.5	940	<8	2.3	<10	12	15	.09	20	19
121211A	17	2.6	1,200	<8	3.7	<10	16	15	.09	21	17
122111A	15	2.8	1,100	<8	2.5	<10	<10	15	.10	<20	20
122211A	17	2.4	930	<8	2.3	<10	<10	16	.08	20	18
123111A	20	2.8	1,100	<8	2.5	<10	10	15	.11	<20	21
123211A	16	2.5	1,100	<8	3.2	<10	14	15	.09	<20	18
124111A	16	2.5	1,100	<8	3.1	<10	<10	16	.09	<20	18
124121A	18	2.4	1,100	<8	2.7	<10	<10	14	.09	<20	19

Sample	Sm ppm-S	Sn ppm-S	Sr ppm-S	Ta ppm-S	Ti%-S	Th ppm-S	U ppm-S	V ppm-S	Y ppm-S	Zn ppm-S
121111A	<10	<10	580	<20	.43	<8	<80	180	12	90
121112A	<10	<10	540	20	.38	<8	<80	150	11	72
121121A	<10	<10	540	20	.39	<8	<80	160	9	70
121211A	<10	<10	570	20	.38	<8	<80	150	11	84
122111A	<10	<10	600	<20	.42	<8	<80	170	12	87
122211A	<10	<10	510	20	.36	<8	<80	140	9	70
123111A	<10	<10	610	<20	.43	<8	<80	170	12	90
123211A	<10	<10	570	<20	.39	<8	<80	150	11	84
124111A	<10	<10	570	<20	.38	<8	<80	150	11	81
124121A	<10	<10	560	<20	.41	<8	<80	160	11	81

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.

Sample	XD-Al ppm	XD-Cd ppm	XD-Co ppm	XD-Cu ppm	XD-Fe ppm	XD-Mn ppm	XD-Ni ppm	XD-P ppm	XD-Pb ppm	XD-Zn ppm	XW-pH	XS-Ca me
031111C	220	<.2	<.2	5.2	299	15.2	<.5	16	<1.0	1.6	5.0	.12
031112C	320	<.2	<.2	7.0	459	21.1	.6	27	<1.0	1.7	4.9	--
031121C	240	<.2	<.2	5.8	144	1.2	<.5	12	<1.0	<.5	5.3	--
031211C	440	<.2	.2	4.0	425	3.7	<.5	39	1.3	2.3	4.7	--
032111C	240	<.2	<.2	8.4	216	2.3	<.5	18	<1.0	<.5	5.2	--
032211C	210	<.2	.2	11.5	216	5.5	.5	15	<1.0	.9	5.3	--
033111C	470	.2	<.2	4.5	408	4.9	<.5	25	<1.0	1.7	4.9	--
033211C	370	.2	.4	5.8	653	5.2	.6	25	1.2	1.0	4.9	--
034111C	310	<.2	<.2	9.0	190	6.6	.6	21	<1.0	.5	5.1	--
034121C	250	<.2	<.2	6.9	363	12.7	.7	18	<1.0	.7	5.1	--
041111C	230	<.2	<.2	4.8	429	7.0	.6	21	<1.0	1.2	5.0	.13
041112C	250	<.2	.2	4.6	459	5.1	.5	23	<1.0	1.2	5.1	--
041121C	290	<.2	.3	9.6	197	11.6	<.5	25	<1.0	2.1	5.1	--
041211C	290	<.2	.2	7.4	268	5.7	<.5	21	<1.0	.9	5.1	--
042111C	240	<.2	<.2	8.3	219	6.5	<.5	14	<1.0	<.5	5.2	--
042211C	280	<.2	.4	4.6	420	4.2	.6	22	1.0	2.9	5.1	--
043111C	290	<.2	<.2	4.2	335	9.8	.7	19	<1.0	4.3	4.9	.28
043211C	310	<.2	.2	6.7	398	6.2	<.5	32	<1.0	1.7	5.0	--
044111C	560	<.2	.2	7.3	398	12.2	1.2	34	1.3	4.2	5.0	--
044121C	240	<.2	<.2	6.7	318	7.6	.6	15	<1.0	1.9	5.1	--
051111C	100	<.2	<.2	5.7	367	21.2	<.5	20	<1.0	2.0	5.1	.07
051112C	250	<.2	.2	10.8	167	9.0	<.5	18	<1.0	1.2	5.2	--
051121C	240	<.2	<.2	9.4	224	7.6	.6	16	<1.0	1.5	5.2	--
051211C	210	<.2	<.2	7.6	220	10.8	.8	13	<1.0	5.6	4.8	.20
052111C	240	<.2	.2	11.0	310	7.3	<.5	22	<1.0	.9	5.2	--
052211C	310	<.2	<.2	6.3	216	9.8	.7	18	<1.0	2.2	4.9	.17
053111C	240	<.2	<.2	6.6	171	4.6	<.5	11	<1.0	<.5	5.3	--
053211C	240	<.2	<.2	10.9	183	7.3	.7	17	<1.0	3.0	5.3	--
054111C	290	<.2	.2	8.4	443	2.9	.6	18	<1.0	1.1	5.0	--
054121C	200	<.2	<.2	9.1	279	5.6	<.5	16	<1.0	.9	5.2	--
061111C	230	<.2	<.2	9.6	243	5.4	<.5	17	<1.0	<.5	5.1	--
061112C	220	<.2	.2	8.5	203	5.0	<.5	15	<1.0	.6	5.2	--
061121C	54	<.2	<.2	14.9	513	15.4	<.5	22	<1.0	.9	4.7	.18
061211C	180	<.2	.2	7.2	159	3.3	.9	20	<1.0	<.5	5.2	--
062111C	32	<.2	<.2	5.0	398	14.8	1.1	33	<1.0	6.9	4.7	.61
062211C	380	<.2	.2	6.3	221	11.0	.8	31	<1.0	1.7	4.9	--
063111C	400	<.2	<.2	8.5	264	7.9	.9	24	<1.0	<.5	4.9	--
063211C	340	<.2	<.2	5.2	421	4.1	<.5	24	1.0	1.6	4.9	--
064111C	240	<.2	.3	11.3	193	9.9	<.5	23	<1.0	.7	5.0	--
064121C	220	<.2	<.2	8.2	203	8.8	<.5	13	<1.0	.9	5.0	.15
071111C	260	.2	.2	7.3	245	7.9	.7	18	<1.0	2.8	5.0	--
071112C	260	<.2	<.2	7.1	222	8.4	<.5	16	<1.0	2.6	5.1	--
071121C	240	.2	.2	5.8	294	4.6	.6	16	<1.0	1.5	5.1	--
071211C	330	<.2	<.2	7.5	184	10.0	.6	26	1.1	<.5	5.0	--
072111C	450	<.2	.4	5.9	454	5.5	.7	23	1.6	<.5	4.9	--

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.

Sample	XS-Cl me	XS-K me	XS-Mg me	XS-Na me	XSSO4 me	X-Sp Con	Sat IndX	AlX-S	As ppm-S	Ba ppm-S	CaX-S
031111C	.4	<.3	.06	.81	.1	<.2	55.5	8.3	<20	500	2.80
031112C	--	--	--	--	--	--	--	8.8	<20	540	3.20
031121C	--	--	--	--	--	--	--	8.0	70	480	3.00
031211C	--	--	--	--	--	--	--	6.8	<20	400	1.90
032111C	--	--	--	--	--	--	--	8.3	<20	400	3.00
032211C	--	--	--	--	--	--	--	9.2	<20	380	4.00
033111C	--	--	--	--	--	--	--	6.9	70	550	2.10
033211C	--	--	--	--	--	--	--	6.9	20	390	2.30
034111C	--	--	--	--	--	--	--	8.7	<20	470	3.10
034121C	--	--	--	--	--	--	--	9.1	<20	480	3.30
041111C	.4	<.3	.06	.37	<.1	<.2	76.3	8.3	<20	450	2.70
041112C	--	--	--	--	--	--	--	7.8	40	420	3.10
041121C	--	--	--	--	--	--	--	7.6	<20	360	2.70
041211C	--	--	--	--	--	--	--	7.6	<20	410	2.70
042111C	--	--	--	--	--	--	--	9.2	<20	500	3.40
042211C	--	--	--	--	--	--	--	7.5	<20	390	2.50
043111C	.6	.3	.12	.36	.2	<.2	84.6	7.8	<20	440	2.70
043211C	--	--	--	--	--	--	--	7.8	<20	420	2.70
044111C	--	--	--	--	--	--	--	8.5	30	470	3.10
044121C	--	--	--	--	--	--	--	7.8	<20	390	2.90
051111C	.5	.3	<.05	.44	<.1	<.2	63.1	8.7	<20	440	3.00
051112C	--	--	--	--	--	--	--	8.0	<20	1,400	3.00
051121C	--	--	--	--	--	--	--	8.1	20	390	2.90
051211C	.4	.3	.08	.31	.2	<.2	52.2	8.5	<20	420	3.20
052111C	--	--	--	--	--	--	--	8.0	20	360	2.90
052211C	.5	.3	.10	.46	.3	.2	71.5	8.3	<20	450	2.90
053111C	--	--	--	--	--	--	--	9.3	30	520	3.80
053211C	--	--	--	--	--	--	--	6.9	<20	330	2.40
054111C	--	--	--	--	--	--	--	8.8	<20	420	3.70
054121C	--	--	--	--	--	--	--	7.7	<20	340	2.80
061111C	--	--	--	--	--	--	--	8.1	<20	390	3.20
061112C	--	--	--	--	--	--	--	8.1	<20	400	2.90
061121C	.9	<.3	.08	.43	<.1	.3	84.4	5.5	<20	410	1.70
061211C	--	--	--	--	--	--	--	8.6	30	500	3.40
062111C	.6	.3	.27	.47	.3	.2	91.2	7.2	<20	470	2.10
062211C	--	--	--	--	--	--	--	7.4	70	410	2.90
063111C	--	--	--	--	--	--	--	8.8	30	450	3.50
063211C	--	--	--	--	--	--	--	7.4	30	400	2.90
064111C	--	--	--	--	--	--	--	7.4	20	480	2.50
064121C	.5	<.3	.07	.56	<.1	<.2	59.1	8.6	<20	480	2.70
071111C	--	--	--	--	--	--	--	7.6	<20	410	2.80
071112C	--	--	--	--	--	--	--	8.1	<20	420	2.90
071121C	--	--	--	--	--	--	--	7.9	40	400	3.20
071211C	--	--	--	--	--	--	--	9.0	<20	510	3.10
072111C	--	--	--	--	--	--	--	7.9	<20	520	2.50

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.

Sample	Cd ppm-S	Ce ppm-S	Co ppm-S	Cr ppm-S	Cu ppm-S	Dy ppm-S	Fe%-S	Ga ppm-S	Gd ppm-S	K%-S	La ppm-S
031111C	<4	30	13	14	23	<10	3.7	<20	<20	.60	12
031112C	<4	30	15	17	26	<10	4.1	<20	<20	1.00	11
031121C	4	20	11	44	26	<10	3.9	<20	<20	.95	16
031211C	<4	18	10	22	29	<10	3.2	<20	<20	.78	11
032111C	6	30	13	25	38	<10	4.0	20	<20	.75	15
032211C	<4	20	20	39	50	<10	5.3	20	<20	.80	11
033111C	5	21	17	44	39	<10	3.4	<20	<20	1.00	11
033211C	4	16	8	18	20	<10	3.4	<20	<20	.72	11
034111C	<4	30	14	20	35	<10	4.1	<20	<20	.90	12
034121C	<4	30	16	24	34	<10	4.4	<20	<20	.90	13
041111C	<4	30	13	17	24	<10	3.7	<20	<20	.90	12
041112C	5	16	11	17	33	<10	3.6	<20	<20	.81	13
041121C	4	15	13	27	33	<10	3.8	<20	<20	.68	11
041211C	5	22	11	28	21	<10	3.7	<20	<20	.80	11
042111C	<4	30	16	21	120	<10	4.2	<20	<20	1.00	14
042211C	5	22	12	26	27	<10	3.5	<20	<20	.73	12
043111C	<4	20	14	24	27	<10	3.8	<20	<20	.80	11
043211C	5	23	10	26	20	<10	3.9	<20	<20	.85	13
044111C	<4	20	16	29	29	<10	4.2	20	<20	.90	13
044121C	4	21	15	23	33	<10	3.9	20	<20	.73	10
051111C	<4	30	15	21	39	<10	4.0	<20	<20	.60	12
051112C	<4	15	14	22	37	<10	3.7	20	<20	.75	13
051121C	4	17	13	30	33	<10	3.7	20	<20	.74	12
051211C	<4	30	17	33	29	<10	4.2	<20	<20	1.00	11
052111C	6	23	12	26	39	<10	4.1	20	<20	.69	14
052211C	<4	20	15	23	24	<10	3.9	<20	<20	.60	12
053111C	<4	30	14	19	30	<10	4.2	<20	<20	1.00	13
053211C	5	19	11	25	33	<10	3.3	<20	<20	.65	12
054111C	<4	10	17	25	35	<10	4.4	<20	<20	.80	10
054121C	5	20	13	25	37	<10	4.2	20	20	.63	11
061111C	<4	21	14	22	31	<10	4.1	<20	<20	.73	8
061112C	4	24	11	20	34	<10	3.7	20	<20	.73	11
061121C	<4	30	14	22	11	<10	15.0	<20	<20	.60	12
061211C	<4	30	15	30	35	<10	4.3	<20	<20	.90	15
062111C	<4	20	14	28	26	<10	3.5	<20	<20	.80	10
062211C	4	21	10	26	18	<10	3.5	<20	<20	.80	13
063111C	<4	30	15	24	35	<10	4.0	<20	<20	.80	11
063211C	5	17	11	28	35	<10	3.4	<20	<20	.83	11
064111C	5	23	13	33	32	<10	3.7	<20	<20	1.00	14
064121C	<4	20	16	34	33	<10	4.0	<20	<20	.80	14
071111C	4	19	12	20	19	<10	3.6	20	<20	.78	13
071112C	4	27	13	22	32	<10	3.7	20	<20	.77	15
071121C	6	11	14	20	38	<10	3.8	<20	<20	.78	12
071211C	<4	40	13	21	31	<10	3.9	<20	<20	1.00	16
072111C	<4	20	13	25	30	<10	3.8	<20	<20	1.00	13

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.

Sample	Li ppm-S	Mg%-S	Mn ppm-S	Mo ppm-S	Na%-S	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Sc ppm-S
031111C	17	1.40	1,000	<8	2.20	<10	<10	<8	.11	<20	13
031112C	16	1.50	1,200	<8	2.50	<10	30	<8	.11	<20	14
031121C	21	1.80	640	<8	2.90	<10	10	17	.09	20	17
031211C	15	1.10	630	<8	1.60	<10	<10	<8	.12	20	11
032111C	16	1.70	890	<8	2.00	10	15	12	.10	20	17
032211C	14	2.40	1,000	<8	2.40	<10	20	17	.12	<20	24
033111C	16	1.50	660	<8	2.20	<10	18	19	.06	<20	14
033211C	12	1.20	590	<8	1.80	<10	<10	11	.09	<20	11
034111C	17	1.60	920	<8	2.40	<10	40	13	.11	<20	15
034121C	18	1.70	1,000	<8	2.30	<10	30	12	.11	<20	18
041111C	14	1.40	790	<8	2.00	<10	<10	<8	.12	<20	14
041112C	15	1.50	840	<8	2.80	<10	10	8	.10	<20	12
041121C	13	1.60	980	<8	1.80	<10	10	13	.10	20	13
041211C	16	1.50	770	<8	2.10	<10	<10	8	.10	20	14
042111C	18	1.70	900	<8	2.50	<10	20	12	.11	<20	16
042211C	14	1.30	770	<8	1.80	<10	<10	10	.12	20	14
043111C	15	1.50	820	<8	2.00	<10	10	10	.12	<20	15
043211C	15	1.50	770	<8	2.00	<10	11	8	.11	20	16
044111C	17	1.80	950	<8	2.50	<10	30	13	.11	<20	17
044121C	16	1.60	980	<8	2.20	<10	<10	9	.09	<20	15
051111C	15	1.60	950	<8	2.10	<10	10	10	.12	<20	16
051112C	16	1.70	980	<8	2.60	<10	10	8	.09	<20	15
051121C	14	1.50	830	<8	2.10	<10	15	10	.08	20	14
051211C	16	1.80	1,000	<8	2.20	<10	<10	11	.10	<20	16
052111C	14	1.60	910	<8	2.00	<10	10	10	.11	20	17
052211C	17	1.70	1,100	<8	2.10	<10	20	11	.11	<20	16
053111C	17	1.80	920	<8	3.20	<10	10	<8	.10	<20	15
053211C	13	1.30	780	<8	1.70	<10	15	13	.09	20	13
054111C	15	1.90	930	<8	2.60	<10	20	11	.11	<20	17
054121C	13	1.60	900	<8	1.90	<10	16	10	.11	20	17
061111C	13	1.70	770	<8	2.10	<10	11	12	.10	<20	15
061112C	16	1.50	830	<8	2.10	<10	15	10	.09	20	15
061121C	15	1.10	2,800	<8	1.30	<10	20	10	1.20	<20	14
061211C	19	1.70	850	<8	2.60	<10	20	14	.15	<20	17
062111C	17	1.30	870	<8	1.70	<10	10	13	.14	<20	13
062211C	15	1.60	780	<8	2.80	<10	14	10	.11	20	14
063111C	16	1.70	910	<8	2.70	<10	30	9	.11	<20	16
063211C	16	1.40	700	<8	2.80	<10	12	9	.11	<20	11
064111C	18	1.40	810	<8	2.10	<10	18	12	.12	20	15
064121C	21	1.70	870	<8	2.00	<10	20	15	.12	<20	18
071111C	15	1.40	850	<8	2.10	<10	14	8	.11	30	13
071112C	16	1.50	960	<8	2.10	<10	<10	11	.11	20	15
071121C	16	1.70	850	<8	2.70	<10	14	9	.11	<20	15
071211C	19	1.50	1,000	<8	2.50	<10	10	11	.11	<20	14
072111C	18	1.40	700	<8	2.00	<10	10	10	.10	<20	15

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.

Sample	Sm ppm-S	Sn ppm-S	Sr ppm-S	Ta ppm-S	Ti%-S	Th ppm-S	U ppm-S	V ppm-S	Y ppm-S	Zn ppm-S
031111C	<10	<10	460	<20	.34	<8	<80	100	11	66
031112C	<10	<10	490	<20	.37	8	<80	110	12	71
031121C	<10	<10	350	<20	.38	<8	<80	130	12	75
031211C	<10	<10	310	<20	.31	<8	<80	96	9	49
032111C	<10	<10	420	20	.39	<8	<80	130	13	79
032211C	<10	<10	450	<20	.48	<8	<80	190	16	77
033111C	<10	<10	270	<20	.34	<8	<80	110	10	69
033211C	<10	<10	350	20	.31	<8	<80	97	8	45
034111C	<10	<10	470	<20	.38	<8	<80	120	13	72
034121C	<10	<10	480	<20	.40	<8	110	140	14	74
041111C	<10	30	410	<20	.34	<8	<80	110	12	62
041112C	<10	<10	400	<20	.33	<8	<80	100	11	63
041121C	<10	<10	380	20	.35	<8	<80	120	10	58
041211C	<10	<10	400	<20	.34	<8	<80	110	10	58
042111C	<10	<10	550	<20	.39	<8	<80	130	13	72
042211C	<10	<10	380	<20	.33	<8	<80	110	10	60
043111C	<10	<10	410	<20	.37	<8	<80	120	12	65
043211C	<10	<10	420	20	.36	<8	<80	120	9	58
044111C	<10	<10	460	<20	.39	8	<80	130	12	74
044121C	<10	<10	400	20	.35	<8	<80	120	11	61
051111C	<10	20	450	<20	.38	<8	<80	120	14	66
051112C	<10	<10	420	<20	.35	<8	<80	120	12	60
051121C	<10	<10	440	<20	.34	<8	<80	110	11	59
051211C	<10	<10	460	<20	.39	<8	<80	130	12	77
052111C	<10	<10	370	30	.37	<8	<80	130	13	56
052211C	<10	<10	450	<20	.36	<8	<80	120	12	71
053111C	<10	<10	560	<20	.39	<8	<80	120	13	110
053211C	<10	<10	330	<20	.30	<8	<80	100	11	55
054111C	<10	<10	470	<20	.40	<8	<80	140	12	75
054121C	<10	<10	350	20	.36	9	<80	130	12	54
061111C	<10	<10	460	<20	.36	<8	<80	120	12	63
061112C	<10	<10	440	<20	.34	<8	<80	110	12	56
061121C	<10	<10	230	<20	.26	<8	<80	95	16	46
061211C	<10	<10	430	<20	.40	<8	<80	130	16	70
062111C	<10	<10	330	<20	.34	<8	<80	110	11	76
062211C	<10	<10	390	<20	.33	<8	<80	110	9	57
063111C	<10	<10	480	<20	.39	9	<80	120	12	71
063211C	<10	<10	370	<20	.33	<8	<80	100	10	62
064111C	<10	<10	320	20	.35	<8	<80	120	11	67
064121C	<10	<10	420	<20	.40	<8	<80	130	15	74
071111C	<10	<10	430	20	.35	<8	<80	110	10	57
071112C	<10	<10	440	<20	.34	<8	<80	110	12	63
071121C	<10	<10	420	<20	.36	<8	<80	120	11	66
071211C	<10	<10	530	<20	.36	<8	<80	110	12	77
072111C	<10	<10	380	<20	.36	12	<80	110	12	67

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.--continued

Sample	XD-Al ppm	XD-Cd ppm	XD-Co ppm	XD-Cu ppm	XD-Fe ppm	XD-Mn ppm	XD-Ni ppm	XD-P ppm	XD-Pb ppm	XD-Zn ppm	XW-pH	XS-Ca me
072211C	760	.2	.5	5.0	745	5.3	1.1	50	1.2	.5	4.6	--
073111C	380	<.2	.2	7.4	227	8.5	.5	21	<1.0	1.1	5.1	--
073211C	570	.2	<.2	4.5	700	3.7	<.5	29	<1.0	.9	4.8	--
074111C	290	<.2	.7	3.7	579	3.1	.7	20	1.3	2.1	4.9	--
074121C	700	.2	.4	2.0	654	5.6	<.5	45	1.3	.9	4.6	--
081111C	270	<.2	<.2	5.0	162	7.1	<.5	15	<1.0	2.1	4.9	--
081112C	310	<.2	<.2	6.2	181	8.3	.5	16	<1.0	2.7	4.8	.16
081121C	350	<.2	<.2	8.5	229	11.5	.6	21	<1.0	1.9	4.8	.15
081211C	260	<.2	<.2	1.1	160	.7	<.5	21	<1.0	.6	4.7	--
082111C	440	<.2	.2	4.7	361	5.2	.6	30	1.2	.8	4.8	--
082211C	410	<.2	<.2	7.3	271	8.3	1.0	26	<1.0	1.4	4.8	.19
083111C	350	<.2	<.2	3.2	231	8.4	.7	28	<1.0	2.5	4.6	.44
083211C	370	.2	.2	3.9	391	6.3	.6	25	1.1	2.3	4.9	--
084111C	260	<.2	<.2	7.8	193	9.3	.6	20	<1.0	.5	5.1	--
084121C	370	.2	.4	5.0	619	9.6	.8	29	<1.0	1.5	4.9	--
091111C	470	.2	.2	5.9	360	7.4	.8	32	1.1	3.2	4.8	--
091112C	330	<.2	.2	5.5	307	6.5	.6	24	<1.0	2.7	5.0	--
091121C	300	<.2	<.2	5.6	498	5.3	<.5	29	<1.0	3.1	4.7	.34
091211C	260	<.2	.2	10.3	164	20.0	.5	24	<1.0	2.8	5.1	--
092111C	270	<.2	<.2	10.9	264	7.0	1.0	19	<1.0	2.3	4.9	.31
092211C	310	<.2	.2	4.6	471	3.6	.6	23	1.3	2.7	5.0	--
093111C	380	<.2	.3	7.6	300	6.7	.6	21	<1.0	3.0	5.0	--
093211C	350	<.2	.5	2.3	532	4.5	.6	28	1.2	2.3	4.7	--
094111C	340	.2	.2	4.3	460	5.3	.8	25	<1.0	3.4	5.0	--
094121C	270	<.2	<.2	8.1	183	8.1	<.5	17	<1.0	2.5	5.1	--
101111C	270	<.2	.2	9.9	330	6.2	<.5	29	<1.0	.9	5.0	--
101112C	250	<.2	<.2	9.8	307	7.1	<.5	23	<1.0	.9	4.9	.11
101121C	200	<.2	<.2	6.1	246	9.7	.6	16	<1.0	1.6	5.4	.35
101211C	260	.2	.2	6.7	433	5.1	.8	20	<1.0	1.5	5.1	--
102111C	250	<.2	.3	3.4	485	2.8	<.5	14	<1.0	1.6	4.9	--
102211C	310	<.2	.2	8.7	186	8.7	.5	23	<1.0	1.1	5.1	--
103111C	360	<.2	.2	7.7	370	9.1	.6	26	<1.0	.6	5.0	--
103211C	320	<.2	.2	11.3	335	9.7	.7	24	<1.0	1.1	4.7	.15
104111C	230	<.2	<.2	4.6	244	6.0	<.5	18	<1.0	.9	5.0	--
104121C	230	<.2	.2	5.8	332	5.0	.5	20	<1.0	<.5	5.1	--
111111C	150	<.2	.2	8.4	222	6.8	<.5	14	2.0	1.6	4.6	--
111112C	140	.2	<.2	8.6	298	7.4	.7	18	2.3	1.0	4.6	--
111121C	520	.2	.3	3.0	709	5.4	.9	46	<1.0	1.5	4.6	--
111211C	150	<.2	.2	6.4	146	4.7	.8	13	<1.0	<.5	5.4	--
112111C	340	.2	.3	5.8	456	9.2	.7	25	<1.0	4.5	5.0	--
112211C	380	<.2	.3	4.9	542	3.9	.7	27	1.4	2.6	5.0	--
113111C	230	<.2	<.2	9.3	425	9.9	.8	20	<1.0	1.8	5.1	--
113211C	180	<.2	.3	7.0	186	1.9	<.5	12	<1.0	.6	5.4	--
114111C	270	<.2	<.2	9.2	202	5.5	<.5	15	<1.0	1.2	5.1	--
114121C	270	<.2	.2	8.7	232	5.7	.5	18	<1.0	1.2	5.0	--

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.--continued

Sample	XS-Cl me	XS-K me	XS-Mg me	XS-Na me	XSSO4 me	X-Sp Con	Sat Ind%	Al%-S	As ppm-S	Ba ppm-S	Ca%-S
072211C	--	--	--	--	--	--	--	8.2	<20	440	2.70
073111C	--	--	--	--	--	--	--	8.5	20	490	3.00
073211C	--	--	--	--	--	--	--	7.6	<20	410	2.50
074111C	--	--	--	--	--	--	--	7.3	<20	430	2.20
074121C	--	--	--	--	--	--	--	6.6	<20	410	1.90
081111C	--	--	--	--	--	--	--	8.1	<20	400	2.90
081112C	.7	<.3	.11	.54	<.1	<.2	65.3	8.6	<20	440	3.10
081121C	.7	.4	.12	.85	.1	.4	50.6	8.3	<20	500	2.90
081211C	--	--	--	--	--	--	--	4.0	<20	640	.74
082111C	--	--	--	--	--	--	--	7.1	<20	440	2.40
082211C	.7	.5	.16	.57	.2	.2	71.2	7.7	<20	420	2.60
083111C	1.4	.4	.26	.77	.2	.4	43.4	4.9	<20	670	1.00
083211C	--	--	--	--	--	--	--	7.5	70	500	2.90
084111C	--	--	--	--	--	--	--	9.2	30	500	3.20
084121C	--	--	--	--	--	--	--	7.1	70	410	2.50
091111C	--	--	--	--	--	--	--	7.5	50	400	2.90
091112C	--	--	--	--	--	--	--	7.7	20	400	2.50
091121C	.5	<.3	.15	.42	<.1	<.2	45.8	8.2	<20	410	2.80
091211C	--	--	--	--	--	--	--	7.5	50	410	2.80
092111C	.6	<.3	.13	.48	<.1	<.2	53.2	8.6	<20	450	2.80
092211C	--	--	--	--	--	--	--	7.3	<20	1,300	2.70
093111C	--	--	--	--	--	--	--	7.6	<20	410	2.90
093211C	--	--	--	--	--	--	--	6.7	<20	350	2.40
094111C	--	--	--	--	--	--	--	8.4	40	510	3.00
094121C	--	--	--	--	--	--	--	7.9	<20	370	2.90
101111C	--	--	--	--	--	--	--	8.0	<20	370	2.90
101112C	.6	.3	.09	.55	.1	.2	55.4	8.3	<20	410	2.90
101121C	.6	<.3	.16	.51	<.1	<.2	70.8	8.3	<20	460	2.70
101211C	--	--	--	--	--	--	--	7.6	<20	370	2.70
102111C	--	--	--	--	--	--	--	7.9	<20	410	2.80
102211C	--	--	--	--	--	--	--	7.8	<20	400	2.90
103111C	--	--	--	--	--	--	--	8.4	<20	430	3.20
103211C	.7	.5	.17	.58	.1	.2	63.3	7.7	<20	1,300	3.10
104111C	--	--	--	--	--	--	--	8.0	<20	420	3.00
104121C	--	--	--	--	--	--	--	8.9	<20	470	3.40
111111C	--	--	--	--	--	--	--	8.3	<20	660	.68
111112C	--	--	--	--	--	--	--	8.4	<20	720	.91
111121C	--	--	--	--	--	--	--	6.6	20	380	2.30
111211C	--	--	--	--	--	--	--	8.2	<20	420	3.20
112111C	--	--	--	--	--	--	--	7.6	20	1,400	3.20
112211C	--	--	--	--	--	--	--	7.2	40	410	2.50
113111C	--	--	--	--	--	--	--	8.9	<20	430	3.70
113211C	--	--	--	--	--	--	--	7.8	40	470	3.10
114111C	--	--	--	--	--	--	--	8.0	<20	390	2.90
114121C	--	--	--	--	--	--	--	7.2	<20	360	2.80

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.--continued

Sample	Cd ppm-S	Ce ppm-S	Co ppm-S	Cr ppm-S	Cu ppm-S	Dy ppm-S	Fe%-S	Ga ppm-S	Gd ppm-S	K%-S	La ppm-S
072211C	<4	20	14	24	30	<10	3.9	<20	<20	.90	11
073111C	<4	30	15	26	35	<10	4.2	<20	<20	.90	13
073211C	5	13	12	22	38	<10	3.6	<20	<20	.82	11
074111C	5	25	9	22	32	<10	3.0	<20	<20	.82	13
074121C	4	16	9	23	24	<10	2.8	<20	<20	.74	12
081111C	5	21	13	32	33	<10	3.7	<20	<20	.80	13
081112C	<4	30	15	30	24	<10	4.0	<20	<20	.70	11
081121C	<4	20	13	19	27	<10	3.8	<20	<20	.70	12
081211C	<4	19	5	25	12	<10	1.3	<20	<20	1.00	8
082111C	5	15	10	23	18	<10	3.3	<20	<20	.89	13
082211C	<4	20	15	28	33	<10	3.9	<20	<20	.60	11
083111C	<4	20	9	26	18	<10	1.9	<20	<20	1.10	10
083211C	5	20	8	18	15	<10	3.4	20	<20	.90	13
084111C	<4	20	16	29	35	<10	4.4	<20	<20	1.00	13
084121C	4	15	7	18	20	<10	3.4	<20	<20	.77	11
091111C	4	20	12	29	18	<10	3.6	20	<20	.80	12
091112C	5	21	10	28	30	<10	3.4	20	<20	.76	14
091121C	<4	30	15	33	31	<10	4.0	<20	<20	1.20	10
091211C	4	21	11	31	24	12	3.7	<20	<20	.78	12
092111C	<4	20	14	31	36	<10	3.7	<20	<20	.80	12
092211C	4	21	13	27	33	<10	3.7	20	<20	.75	12
093111C	4	16	11	20	18	<10	3.5	<20	<20	.79	13
093211C	<4	18	12	22	29	<10	3.6	<20	<20	.69	11
094111C	<4	40	14	27	27	<10	3.9	<20	<20	.90	12
094121C	4	13	13	27	37	<10	3.9	<20	<20	.74	11
101111C	5	21	13	24	40	<10	4.3	20	<20	.72	11
101112C	<4	30	15	22	40	<10	4.4	<20	<20	.70	11
101121C	<4	30	15	33	30	<10	3.9	<20	<20	1.20	13
101211C	4	15	12	23	36	<10	3.9	<20	<20	.68	11
102111C	5	20	14	55	35	<10	3.9	<20	<20	.77	13
102211C	4	14	12	18	24	<10	3.7	<20	<20	.78	11
103111C	<4	20	16	23	30	<10	4.0	<20	<20	.80	12
103211C	<4	20	14	22	28	<10	3.7	<20	<20	.30	9
104111C	6	13	12	26	34	<10	3.6	<20	<20	.87	11
104121C	<4	20	17	24	32	<10	4.5	<20	<20	.90	11
111111C	4	40	10	54	44	<10	2.9	20	<20	1.40	20
111112C	<4	40	12	56	43	<10	3.2	<20	<20	1.60	19
111121C	5	18	12	27	38	<10	3.7	<20	<20	.82	12
111211C	5	26	15	24	32	<10	4.0	20	<20	.76	15
112111C	5	18	16	27	32	<10	4.0	<20	<20	.74	10
112211C	5	20	10	22	19	<10	3.4	20	<20	.80	12
113111C	<4	20	18	34	36	<10	4.6	20	<20	.80	9
113211C	5	21	11	30	26	<10	3.7	<20	<20	1.00	15
114111C	4	24	12	21	38	<10	4.0	<20	<20	.74	12
114121C	4	13	12	23	26	<10	4.0	<20	<20	.71	11

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.--continued

Sample	Li ppm-S	Mg%-S	Mn ppm-S	Mo ppm-S	Na%-S	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Sc ppm-S
072211C	15	1.60	720	<8	2.10	<10	30	12	.12	<20	14
073111C	16	1.60	980	<8	2.50	<10	10	10	.12	<20	17
073211C	17	1.40	740	<8	2.30	<10	15	<8	.09	<20	13
074111C	17	1.10	600	<8	2.00	<10	14	<8	.09	<20	12
074121C	15	1.00	590	<8	1.70	<10	<10	9	.11	20	10
081111C	18	1.60	930	<8	2.40	<10	12	14	.09	<20	13
081112C	16	1.80	940	<8	2.20	<10	20	13	.10	<20	17
081121C	17	1.50	850	<8	2.20	<10	<10	8	.10	<20	14
081211C	14	.51	220	<8	.85	<10	12	<8	.03	<20	6
082111C	15	1.30	640	<8	2.10	<10	13	10	.10	20	12
082211C	17	1.60	730	<8	1.80	<10	<10	13	.10	<20	17
083111C	16	.67	370	<8	1.10	<10	10	10	.06	<20	8
083211C	15	1.50	660	<8	2.90	<10	14	<8	.09	20	13
084111C	15	1.70	1,000	<8	2.50	<10	20	10	.13	<20	16
084121C	13	1.40	690	<8	2.40	<10	<10	<8	.09	20	15
091111C	16	1.70	710	<8	2.40	<10	12	12	.11	20	14
091112C	17	1.40	780	<8	2.00	<10	13	10	.11	20	14
091121C	19	1.70	730	<8	1.90	<10	<10	17	.12	<20	17
091211C	14	1.60	850	<8	2.30	<10	11	8	.10	20	15
092111C	18	1.50	800	<8	2.10	<10	<10	13	.13	<20	15
092211C	15	1.60	770	<8	2.30	<10	12	13	.11	20	15
093111C	16	1.40	750	<8	2.20	<10	<10	8	.10	20	13
093211C	13	1.40	730	<8	1.70	<10	15	<8	.09	<20	14
094111C	17	1.50	790	<8	2.50	<10	20	10	.11	20	15
094121C	15	1.60	960	<8	2.20	<10	<10	<8	.08	<20	14
101111C	16	1.60	1,000	<8	2.10	<10	19	9	.11	<20	14
101112C	17	1.60	970	<8	2.10	<10	10	8	.13	<20	15
101121C	20	1.60	870	<8	2.00	<10	10	12	.11	<20	16
101211C	13	1.50	870	<8	1.90	<10	14	9	.11	<20	14
102111C	20	1.80	730	<8	2.10	<10	<10	16	.07	<20	16
102211C	15	1.40	820	<8	2.20	<10	15	13	.11	20	13
103111C	18	1.60	930	<8	2.20	<10	<10	10	.11	<20	14
103211C	15	1.70	780	<8	2.50	<10	<10	<8	.11	<20	15
104111C	18	1.50	810	<8	2.50	<10	11	11	.10	<20	13
104121C	19	1.70	960	<8	2.40	<10	20	11	.12	<20	16
111111C	39	.78	540	<8	1.20	10	25	20	.06	30	17
111112C	40	.88	500	<8	1.40	<10	20	24	.07	<20	15
111121C	15	1.40	770	<8	2.00	<10	<10	<8	.12	<20	15
111211C	16	1.40	850	<8	2.20	<10	15	12	.10	20	15
112111C	13	1.80	1,000	<8	2.60	<10	10	11	.10	20	15
112211C	16	1.50	640	<8	2.40	<10	18	8	.10	20	13
113111C	14	2.00	1,100	<8	2.40	<10	20	14	.13	<20	18
113211C	18	1.70	660	<8	2.90	<10	15	15	.08	20	15
114111C	14	1.60	1,000	<8	2.10	<10	<10	10	.11	<20	14
114121C	16	1.50	770	<8	2.00	<10	15	15	.08	20	15

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.--continued

Sample	Sm ppm-S	Sn ppm-S	Sr ppm-S	Ta ppm-S	Ti%-S	Th ppm-S	U ppm-S	V ppm-S	Y ppm-S	Zn ppm-S
072211C	<10	<10	430	<20	.36	9	80	120	10	65
073111C	<10	<10	390	<20	.39	<8	<80	130	13	77
073211C	<10	<10	370	<20	.34	<8	<80	110	10	62
074111C	<10	<10	400	<20	.30	<8	<80	91	10	54
074121C	<10	<10	350	20	.28	<8	<80	85	8	50
081111C	<10	<10	450	<20	.35	<8	<80	110	11	71
081112C	<10	<10	490	<20	.38	<8	<80	130	11	73
081121C	<10	<10	460	<20	.36	<8	<80	120	12	72
081211C	<10	<10	150	<20	.16	<8	<80	59	6	30
082111C	<10	<10	360	<20	.32	<8	<80	100	9	50
082211C	<10	<10	350	<20	.37	<8	<80	130	12	59
083111C	<10	<10	190	<20	.23	<8	<80	79	8	52
083211C	<10	<10	420	<20	.31	<8	<80	94	8	53
084111C	<10	<10	460	30	.41	<8	<80	130	14	75
084121C	<10	<10	340	<20	.31	<8	<80	100	9	49
091111C	<10	<10	410	<20	.34	<8	<80	110	9	60
091112C	<10	<10	380	20	.34	<8	<80	110	11	57
091121C	<10	<10	410	<20	.39	<8	<80	130	11	71
091211C	<10	<10	380	<20	.34	<8	<80	110	10	59
092111C	<10	<10	460	<20	.37	<8	<80	110	11	69
092211C	<10	<10	380	<20	.35	<8	<80	120	10	56
093111C	<10	<10	460	20	.33	<8	<80	100	9	60
093211C	<10	<10	340	<20	.33	<8	<80	110	10	53
094111C	<10	<10	460	<20	.37	13	<80	120	13	74
094121C	<10	<10	420	<20	.35	<8	<80	120	11	69
101111C	<10	<10	380	<20	.36	<8	<80	130	12	67
101112C	<10	<10	390	<20	.39	<8	<80	130	13	74
101121C	<10	<10	410	<20	.38	<8	<80	120	12	74
101211C	<10	<10	360	<20	.35	<8	<80	120	11	58
102111C	<10	<10	390	<20	.35	<8	<80	120	11	67
102211C	<10	<10	420	<20	.34	<8	<80	110	9	59
103111C	<10	<10	490	<20	.37	9	<80	120	12	71
103211C	<10	<10	470	<20	.35	<8	<80	120	11	62
104111C	<10	<10	440	<20	.35	<8	<80	110	10	74
104121C	<10	<10	500	<20	.40	<8	<80	130	13	100
111111C	<10	<10	150	<20	.37	<8	<80	110	17	83
111112C	<10	<10	160	<20	.40	<8	<80	110	17	100
111121C	<10	<10	360	20	.36	<8	<80	120	11	62
111211C	<10	<10	470	20	.38	8	<80	120	13	61
112111C	<10	<10	400	20	.36	<8	<80	120	10	65
112211C	<10	<10	380	20	.32	<8	<80	100	9	53
113111C	<10	<10	470	20	.43	<8	<80	150	13	79
113211C	<10	<10	350	<20	.36	<8	<80	120	12	68
114111C	<10	<10	390	20	.35	<8	<80	120	12	62
114121C	<10	<10	370	<20	.35	<8	<80	120	10	63

Table 2.--Chemical data for the lower soil zone, Capps Coal Field, Alaska.--continued

Sample	XD-Al ppm	XD-Cd ppm	XD-Co ppm	XD-Cu ppm	XD-Fe ppm	XD-Mn ppm	XD-Ni ppm	XD-P ppm	XD-Pb ppm	XD-Zn ppm	XW-pH	XS-Ca me
121111C	190	<.2	<.2	12.4	158	14.4	.6	14	<1.0	1.4	5.1	--
121112C	170	<.2	<.2	12.1	148	13.7	.6	14	<1.0	1.3	5.3	--
121121C	350	<.2	.2	7.5	303	10.7	.8	27	<1.0	4.4	4.9	--
121211C	180	<.2	<.2	7.6	141	3.1	<.5	15	<1.0	.7	5.3	--
122111C	220	<.2	<.2	8.0	255	4.3	<.5	16	<1.0	1.2	5.2	--
122211C	270	.2	.2	6.0	292	5.8	.6	19	<1.0	1.5	5.0	--
123111C	210	<.2	<.2	3.6	142	4.4	<.5	7	<1.0	.9	5.2	--
123211C	180	<.2	.2	8.4	181	2.5	.5	13	<1.0	.8	5.3	--
124111C	320	<.2	<.2	8.4	189	6.6	.5	24	<1.0	1.3	5.1	--
124121C	230	.2	.4	6.1	455	6.1	.8	21	<1.0	2.8	5.0	--

Sample	XS-Cl me	XS-K me	XS-Mg me	XS-Na me	XSSO4 me	X-Sp Con	Sat Ind%	Al%-S	As ppm-S	Ba ppm-S	Ca%-S
121111C	--	--	--	--	--	--	--	8.1	<20	450	2.20
121112C	--	--	--	--	--	--	--	8.6	20	1,500	2.50
121121C	--	--	--	--	--	--	--	7.4	<20	360	2.70
121211C	--	--	--	--	--	--	--	8.8	80	450	4.40
122111C	--	--	--	--	--	--	--	8.3	<20	360	3.10
122211C	--	--	--	--	--	--	--	7.6	<20	410	3.00
123111C	--	--	--	--	--	--	--	9.1	<20	370	4.70
123211C	--	--	--	--	--	--	--	9.5	<20	440	3.80
124111C	--	--	--	--	--	--	--	7.6	30	390	3.20
124121C	--	--	--	--	--	--	--	7.4	<20	380	2.80

Sample	Cd ppm-S	Ce ppm-S	Co ppm-S	Cr ppm-S	Cu ppm-S	Dy ppm-S	Fe%-S	Ga ppm-S	Gd ppm-S	K%-S	La ppm-S
121111C	5	23	16	54	36	10	3.8	20	<20	.95	13
121112C	4	29	17	56	47	<10	3.7	20	<20	.98	14
121121C	5	14	13	34	23	<10	3.9	<20	<20	.47	10
121211C	6	16	17	36	47	<10	4.7	<20	<20	.90	15
122111C	5	15	14	28	38	<10	4.2	20	<20	.68	13
122211C	4	22	10	18	19	<10	3.6	<20	<20	.77	14
123111C	6	14	23	35	71	<10	5.3	<20	<20	.75	11
123211C	<4	20	19	27	49	<10	4.7	<20	<20	.80	11
124111C	5	23	13	30	22	<10	3.7	20	<20	.75	13
124121C	4	12	13	31	22	<10	3.8	<20	<20	.71	11

Table 2.--Chemical data for the lower soil zone, Capps Coal field, Alaska.--continued

Sample	Li ppm-S	Mg%-S	Mn ppm-S	Mo ppm-S	Na%-S	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Sc ppm-S
121111C	24	1.50	980	<8	1.60	<10	17	23	.10	20	17
121112C	25	1.70	1,100	<8	2.40	<10	11	20	.10	20	18
121121C	13	1.70	860	<8	1.90	<10	<10	13	.10	20	16
121211C	17	2.10	1,000	<8	3.80	<10	14	16	.12	<20	17
122111C	15	1.80	990	<8	2.10	<10	13	13	.09	20	18
122211C	16	1.50	820	<8	2.50	<10	<10	10	.10	30	15
123111C	13	2.20	1,000	<8	2.70	<10	<10	22	.08	<20	23
123211C	16	1.80	900	<8	2.30	<10	10	17	.12	<20	19
124111C	13	1.80	800	<8	2.60	<10	17	13	.11	20	15
124121C	14	1.60	730	<8	1.90	<10	18	10	.09	20	15

Sample	Sm ppm-S	Sn ppm-S	Sr ppm-S	Ta ppm-S	Ti%-S	Th ppm-S	U ppm-S	V ppm-S	Y ppm-S	Zn ppm-S
121111C	<10	<10	290	<20	.38	<8	<80	130	13	74
121112C	<10	<10	300	<20	.39	<8	<80	130	14	77
121121C	<10	<10	340	20	.36	<8	<80	120	10	66
121211C	<10	<10	550	<20	.46	<8	<80	150	13	78
122111C	<10	<10	420	20	.39	<8	<80	140	12	58
122211C	<10	<10	420	<20	.33	<8	<80	100	10	59
123111C	<10	<10	500	<20	.55	<8	<80	200	14	80
123211C	<10	<10	470	<20	.45	<8	<80	170	16	82
124111C	<10	<10	400	20	.34	<8	<80	120	10	58
124121C	<10	<10	390	<20	.35	<8	<80	120	9	62

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.

Sample	Ash%[1]	Al%-S	As-ppm[2]	Au ppm-S	B ppm-S	Ba ppm-S	Bi ppm-S	Ca%-S	Cd-ppm	Ce ppm-S	Co ppm-S	Cr ppm-S
						Calamagrostis canadensis (grass) stems and leaves						
031211C	7.1	<.03	<.05	<20	100	210	<50	2.5	.4	<20	<5	6
032111C	8.8	<.03	<.05	<20	50	240	<50	2.5	<.4	<20	<5	<5
032211C	9.0	<.03	.15	<20	210	310	<50	2.7	<.4	<20	22	<5
033111C	7.2	<.03	<.05	<20	50	170	<50	2.4	<.4	<20	<5	9
033211C	8.8	<.03	.11	<20	100	190	<50	2.7	<.4	<20	11	<5
034111C	7.9	<.03	<.05	<20	70	260	<50	2.2	<.4	<20	<5	<5
034121C	8.4	<.03	.09	<20	80	320	<50	2.8	<.4	20	<5	<5
041121C	9.5	<.03	.24	<20	100	250	<50	2.7	<.4	<20	<5	<5
043111C	8.3	<.03	.32	<20	100	280	<50	2.6	<.4	<20	<5	<5
051211C	9.8	<.03	<.05	<20	50	210	<50	2.1	<.4	20	<5	<5
052111C	9.3	<.03	.14	<20	90	320	<50	2.5	<.4	<20	<5	6
052211C	11.0	<.03	1.84	<20	80	370	<50	3.0	<.4	<20	<5	<5
061121C	7.2	<.03	.32	<20	350	450	<50	3.4	<.4	<20	11	<5
071111C	7.4	<.03	.11	<20	270	200	<50	2.5	.8	40	<5	<5
071121C	7.5	<.03	.51	<20	330	250	<50	2.4	<.4	<20	<5	<5
072111C	5.5	<.03	.07	<20	420	430	<50	3.7	<.4	20	16	8
073111C	6.3	<.03	.31	<20	240	280	<50	3.4	<.4	40	<5	<5
073211C	6.6	<.03	<.05	<20	190	210	<50	2.9	<.4	<20	11	<5
074121C	6.6	<.03	.13	<20	170	240	<50	2.8	<.4	<20	<5	<5
082111C	7.3	<.03	.20	<20	320	410	<50	3.4	<.4	<20	6	8
082211C	8.2	<.03	.12	<20	170	310	<50	3.2	<.4	<20	5	<5
083111C	8.2	<.03	1.32	<20	460	250	<50	2.2	<.4	<20	<5	7
084111C	7.1	<.03	.20	<20	240	230	50	2.4	<.4	<20	<5	<5
084121C	7.4	<.03	.07	<20	210	230	<50	2.2	<.4	<20	10	<5
121211C	12.0	.03	.67	20	80	220	<50	2.9	1.4	<20	<5	<5
122111C	11.0	<.03	1.50	<20	130	200	<50	2.1	<.4	<20	7	<5
						Festuca altaica (grass) stems and leaves						
031111F	9.9	.09	<.05	<20	80	190	<50	3.0	<.4	<20	<5	8
031121F	10.0	.04	<.05	<20	90	140	<50	3.3	.6	<20	<5	<5
041111F	10.0	.06	.12	<20	60	140	<50	2.6	<.4	20	<5	<5
041211F	9.9	.09	.08	<20	60	180	<50	2.6	.8	<20	<5	<5
042111F	10.0	.23	.20	<20	80	210	<50	3.1	<.4	<20	<5	<5
042211F	11.0	.06	<.05	<20	80	150	<50	2.5	<.4	<20	7	6
043211F	9.3	.13	.05	<20	70	130	<50	2.8	<.4	<20	<5	<5
044111F	10.0	.05	.15	<20	40	140	<50	2.9	<.4	<20	<5	<5
044121F	11.0	.07	.21	<20	60	200	<50	3.1	<.4	<20	<5	<5
051111F	10.0	.06	<.05	<20	100	140	50	2.7	<.4	<20	<5	6

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.

Sample	Cu ppm-S	Dy ppm-S	Er ppm-S	Fe%-S	Ga ppm-S	Ge ppm-S	K%	La ppm-S	Li ppm-S	Mg%-S	Mn ppm-S
				Calamagrostis canadensis (grass) stems and leaves							
031211C	170	<20	<20	.04	<20	--	22	<10	<10	1.3	3,600
032111C	85	<20	<20	<.03	<20	--	20	<10	300	.9	7,300
032211C	140	<20	<20	.06	<20	--	23	<10	10	1.1	4,400
033111C	89	<20	<20	<.03	<20	--	16	<10	20	.9	2,800
033211C	130	<20	<20	<.03	<20	<50	15	<10	90	1.0	3,000
034111C	140	<20	<20	.05	<20	--	25	<10	<10	1.0	3,000
034121C	110	<20	<20	.04	<20	--	20	<10	20	1.0	5,100
041121C	120	<20	<20	.04	<20	--	25	<10	<10	1.2	3,600
043111C	100	<20	<20	<.03	<20	--	24	<10	<10	1.0	2,700
051211C	140	<20	<20	<.03	<20	--	22	20	<10	.8	4,600
052111C	120	<20	<20	.05	<20	--	22	<10	<10	.9	5,900
052211C	130	<20	<20	.04	<20	--	20	<10	<10	1.1	6,500
061121C	120	<20	<20	.07	<20	--	22	<10	<10	1.3	4,300
071111C	81	30	<20	<.03	20	--	23	<10	<10	.9	4,100
071121C	93	<20	<20	.04	<20	--	24	<10	30	.9	4,300
072111C	240	<20	<20	<.03	20	<50	22	<10	<10	3.0	3,900
073111C	80	<20	<20	<.03	<20	<50	21	<10	100	1.0	6,000
073211C	90	<20	<20	<.03	20	<50	18	<10	20	1.0	4,700
074121C	110	<20	<20	<.03	30	<50	16	10	90	1.3	4,200
082111C	200	<20	<20	.07	20	--	23	<10	30	1.8	5,500
082211C	130	<20	<20	<.03	<20	<50	25	<10	<10	1.3	2,400
083111C	120	<20	<20	<.03	<20	--	24	<10	<10	.8	3,700
084111C	100	<20	<20	<.03	<20	--	23	<10	<10	.9	3,300
084121C	83	<20	<20	.04	<20	--	21	<10	<10	.8	5,500
121211C	120	<20	<20	.07	<20	--	27	<10	<10	1.4	3,400
122111C	140	<20	<20	.03	<20	--	22	<10	<10	1.0	6,000
				Festuca altaica (grass) stems and leaves--continued							
031111F	40	<20	<20	.06	30	--	15	<10	<10	.8	4,100
031121F	44	<20	<20	.04	<20	--	16	<10	<10	.8	4,600
041111F	50	<20	<20	.06	<20	--	16	<10	30	.9	4,000
041211F	51	<20	<20	.08	<20	--	19	<10	20	.9	4,200
042111F	43	<20	<20	.13	<20	--	17	<10	<10	.9	3,800
042211F	44	<20	<20	.07	<20	--	15	<10	10	.9	4,700
043211F	40	<20	<20	.09	<20	--	19	<10	<10	.9	3,400
044111F	51	20	<20	.07	<20	--	19	<10	10	.8	3,200
044121F	44	20	<20	.06	<20	--	15	<10	10	.8	4,000
051111F	59	<20	<20	.07	20	--	21	<10	10	1.0	4,100

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.

Sample	Mo ppm-S	Na%	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Pr ppm-S	Se-ppm	Sn ppm-S	Sr ppm-S
					Calamagrostis canadensis (grass) stems and leaves						
031211C	<10	.035	<20	<20	20	3.1	<20	<50	.20	--	170
032111C	<10	.020	<20	<20	50	3.2	<20	<50	.05	--	150
032211C	<10	.020	<20	30	80	3.4	<20	<50	.10	--	230
033111C	<10	.040	<20	<20	10	3.2	<20	<50	.05	--	160
033211C	20	.030	<20	<20	10	2.5	<20	<50	.05	<20	200
034111C	20	.050	30	<20	50	2.5	<20	<50	.10	--	210
034121C	10	.030	<20	<20	50	3.0	<20	<50	.05	--	210
041121C	<10	.030	<20	<20	60	3.4	<20	<50	.05	--	180
043111C	<10	.015	<20	<20	40	2.9	<20	50	.05	--	220
051211C	<10	.020	<20	<20	30	3.4	<20	<50	.05	--	150
052111C	<10	.060	<20	<20	60	3.3	<20	<50	.10	--	130
052211C	<10	.040	<20	<20	50	2.8	<20	<50	.10	--	250
061121C	<10	.045	<20	<20	60	3.3	<20	100	<.05	--	320
071111C	<10	.050	<20	30	30	3.3	<20	<50	.05	--	180
071121C	10	.050	<20	<20	70	3.4	<20	<50	<.05	--	170
072111C	<10	.075	<20	<20	20	4.3	<20	<50	.05	<20	330
073111C	10	.040	<20	<20	40	2.7	<20	<50	.05	<20	260
073211C	<10	.040	<20	<20	20	3.1	<20	<50	.05	<20	220
074121C	10	.130	<20	20	20	2.5	<20	<50	.15	30	170
082111C	<10	.030	<20	30	10	3.9	<20	<50	.10	--	220
082211C	<10	.065	<20	<20	50	2.1	<20	<50	.10	<20	260
083111C	<10	.060	<20	<20	70	3.4	<20	<50	.10	--	140
084111C	<10	.050	<20	60	30	3.2	<20	<50	.05	--	160
084121C	<10	.060	<20	<20	40	2.8	<20	<50	.10	--	200
121211C	<10	.090	<20	<20	70	4.3	<20	<50	.20	--	190
122111C	<10	.035	<20	<20	50	3.1	<20	<50	.15	--	140
					Festuca altaica (grass) stems and leaves--continued						
031111F	10	.085	<20	<20	60	2.3	<20	<50	.10	--	190
031121F	<10	.040	<20	<20	80	2.8	<20	<50	.20	--	190
041111F	<10	.040	<20	<20	90	2.9	<20	<50	.10	--	160
041211F	<10	.040	<20	<20	90	2.9	<20	<50	.10	--	210
042111F	<10	.055	<20	<20	130	2.7	<20	<50	.15	--	190
042211F	10	.055	<20	<20	80	2.6	<20	<50	.20	--	170
043211F	<10	.080	<20	<20	70	3.3	<20	<50	.10	--	150
044111F	10	.035	<20	30	60	2.9	<20	<50	.20	--	180
044121F	<10	.025	<20	20	80	2.6	<20	<50	.20	--	200
051111F	<10	.050	<20	<20	100	3.3	<20	<50	.15	--	180

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.

Sample	Tot S%	Th ppm-S	Ti%-S	U-ppm	V ppm-S	W ppm-S	Y ppm-S	Yb ppm-S	Zn ppm-S	Zr ppm-S
				Calamagrostis canadensis (grass) stems and leaves						
031211C	.120	<20	<.03	<.05	<5	<20	<10	<5	930	<10
032111C	.210	<20	<.03	<.05	<5	<20	<10	<5	450	<10
032211C	.110	30	<.03	<.05	<5	<20	<10	<5	590	10
033111C	.110	<20	<.03	<.05	<5	<20	<10	<5	420	<10
033211C	.140	<20	<.03	<.05	<5	<20	<10	<5	500	<10
034111C	.160	<20	<.03	<.05	<5	<20	<10	<5	450	<10
034121C	.140	<20	<.03	<.05	<5	<20	<10	<5	500	<10
041121C	.220	<20	<.03	<.05	<5	<20	<10	<5	760	<10
043111C	.150	<20	<.03	<.05	<5	<20	<10	<5	570	<10
051211C	.230	<20	<.03	<.05	<5	<20	<10	<5	530	<10
052111C	.220	<20	<.03	<.05	<5	<20	<10	<5	490	<10
052211C	.240	<20	<.03	<.05	<5	30	<10	<5	610	<10
061121C	.110	30	<.03	<.05	<5	<20	<10	<5	570	<10
071111C	.120	<20	<.03	<.05	<5	<20	<10	<5	420	<10
071121C	.170	<20	<.03	<.05	<5	<20	<10	<5	540	<10
072111C	.200	<20	<.03	<.05	5	<20	<10	<5	1,100	<10
073111C	.150	<20	<.03	<.05	6	<20	<10	<5	560	<10
073211C	.120	<20	<.03	<.05	<5	<20	<10	<5	440	<10
074121C	.110	50	<.03	<.05	<5	<20	<10	<5	490	<10
082111C	.130	30	<.03	<.05	9	<20	<10	<5	670	<10
082211C	.190	<20	<.03	<.05	<5	<20	<10	<5	530	<10
083111C	.170	30	<.03	<.05	<5	<20	<10	5	550	<10
084111C	.120	<20	<.03	<.05	<5	<20	<10	<5	630	<10
084121C	.200	<20	<.03	<.05	<5	<20	<10	<5	510	<10
121211C	.340	<20	<.03	<.05	<5	<20	<10	<5	480	<10
122111C	.250	<20	<.03	<.05	<5	<20	<10	<5	600	<10
				Festuca altaica (grass) stems and leaves--continued						
031111F	.130	<20	<.03	<.05	<5	<20	<10	<5	540	<10
031121F	.120	<20	<.03	<.05	<5	<20	<10	<5	460	<10
041111F	.150	<20	<.03	<.05	<5	<20	<10	<5	470	<10
041211F	.170	20	<.03	<.05	<5	<20	<10	<5	500	<10
042111F	.150	<20	<.03	<.05	<5	<20	<10	<5	490	<10
042211F	.140	30	<.03	<.05	<5	<20	<10	<5	500	<10
043211F	.120	<20	<.03	<.05	<5	<20	<10	<5	510	<10
044111F	.110	<20	<.03	<.05	<5	<20	<10	<5	480	<10
044121F	.170	<20	<.03	<.05	<5	20	<10	<5	540	<10
051111F	.170	30	<.03	<.05	<5	<20	<10	<5	520	<10

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Ash%[1]	Al%-S	As-ppm[2]	Au ppm-S	B ppm-S	Ba ppm-S	Bi ppm-S	Ca%-S	Cd-ppm	Ce ppm-S	Co ppm-S	Cr ppm-S
051121F	12.0	.14	.61	<20	100	160	90	2.8	<.4	<20	10	<5
053111F	12.0	.08	.52	<20	100	140	<50	3.1	<.4	<20	<5	<5
053211F	11.0	.08	.13	<20	120	140	<50	3.2	<.4	<20	<5	<5
054111F	11.0	.22	.24	<20	130	250	<50	3.8	.6	<20	8	<5
054121F	13.0	.12	.54	<20	90	180	<50	3.0	<.4	<20	6	<5
061111F	11.0	.09	.13	<20	220	180	70	3.0	<.4	<20	<5	<5
061211F	11.0	.21	.05	<20	190	280	<50	3.1	<.4	30	8	10
062111F	9.9	<.03	.26	<20	190	190	<50	3.4	<.4	30	17	<5
062211F	11.0	<.03	<.05	<20	130	170	<50	3.1	<.4	<20	9	<5
063111F	10.0	.07	.18	<20	120	160	<50	3.0	.6	<20	<5	<5
063211F	9.8	.41	.05	<20	190	180	<50	3.0	<.4	<20	<5	<5
064111F	9.6	.11	.12	<20	200	200	<50	2.5	.6	<20	<5	<5
064121F	10.0	.05	.26	<20	120	130	<50	2.4	<.4	<20	<5	<5
071211F	11.0	.03	.82	<20	470	140	<50	2.6	<.4	<20	<5	<5
072211F	9.7	.03	.05	<20	210	130	<50	2.4	<.4	<20	7	<5
074111F	10.0	<.03	.43	<20	230	170	80	3.1	.6	<20	6	<5
081111F	14.0	.13	.74	<20	270	190	<50	3.2	<.4	<20	5	<5
081121F	12.0	<.03	4.22	<20	390	190	<50	3.0	<.4	20	7	<5
081211F	9.8	.06	1.20	<20	370	350	<50	4.2	1.6	<20	11	<5
083211F	11.0	.11	3.20	<20	420	320	<50	3.3	<.4	<20	<5	<5
091111F	9.2	.11	<.05	<20	100	130	<50	2.8	<.4	<20	<5	5
091121F	8.8	.08	<.05	<20	70	150	140	2.9	<.4	<20	5	<5
091211F	15.0	.18	6.00	<20	480	160	<50	2.4	2.5	<20	<5	<5
092111F	10.0	<.03	<.05	<20	120	190	<50	2.9	<.4	<20	9	7
092211F	10.0	.07	<.05	<20	130	170	<50	3.0	<.4	<20	10	<5
093111F	9.1	.10	<.05	<20	120	180	<50	2.9	1.4	<20	<5	<5
093211F	13.0	.06	1.60	<20	340	110	<50	3.4	<.4	20	<5	7
094111F	12.0	.13	2.55	<20	450	170	<50	3.0	<.4	<20	<5	<5
094121F	12.0	.18	4.30	<20	400	220	<50	3.2	.6	<20	<5	<5
101111F	12.0	.05	.17	<20	130	160	<50	2.9	<.4	<20	<5	9
101121F	9.8	<.03	.38	<20	220	180	<50	3.1	<.4	30	12	<5
101211F	9.0	.14	.09	<20	250	250	70	3.0	<.4	<20	<5	<5
102111F	8.5	.14	.09	<20	170	140	<50	2.6	<.4	<20	6	<5
102211F	8.5	.06	<.05	<20	180	220	50	2.5	<.4	<20	<5	<5
103111F	11.0	.07	.06	<20	180	180	<50	3.4	.4	<20	<5	<5
103211F	8.9	.05	<.05	<20	200	130	<50	2.3	<.4	<20	<5	7
104111F	11.0	.20	<.05	<20	150	130	70	2.4	<.4	<20	14	<5
104121F	9.3	.06	.13	<20	200	230	<50	3.5	.6	<20	14	<5
111111F	12.0	.09	1.40	<20	70	250	<50	2.9	<.4	<20	7	<5
111121F	10.0	.22	.90	<20	270	360	<50	4.6	<.4	<20	11	8
111211F	11.0	.19	.66	<20	70	170	<50	4.0	<.4	<20	<5	12
112111F	11.0	.26	1.10	<20	60	150	<50	2.9	<.4	<20	<5	<5
112211F	9.5	.08	.62	<20	110	170	<50	3.0	<.4	<20	<5	<5
113111F	9.9	<.03	.84	30	120	170	<50	3.1	<.4	<20	<5	6
113211F	12.0	.30	.29	<20	110	230	<50	4.0	.6	<20	13	<5

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Cu ppm-S	Dy ppm-S	Er ppm-S	Fe%-S	Ga ppm-S	Ge ppm-S	K%	La ppm-S	Li ppm-S	Mg%-S	Mn ppm-S
051121F	47	<20	<20	.10	<20	--	16	<10	<10	.8	3,800
053111F	58	<20	<20	.08	<20	--	15	<10	60	.9	4,400
053211F	52	<20	<20	.07	30	--	17	<10	<10	1.1	4,700
054111F	61	<20	<20	.17	<20	--	19	<10	<10	1.1	3,100
054121F	46	<20	<20	.11	<20	--	15	<10	10	.9	4,700
061111F	48	<20	<20	.09	<20	--	18	<10	20	.9	4,000
061211F	48	20	<20	.18	<20	--	19	<10	10	.9	3,100
062111F	50	<20	<20	<.03	<20	<50	16	10	30	1.0	3,400
062211F	40	<20	<20	<.03	30	<50	17	10	20	.7	4,500
063111F	52	<20	<20	.07	<20	--	19	<10	10	.8	5,100
063211F	39	<20	<20	.20	<20	--	15	<10	40	.8	4,400
064111F	53	<20	<20	.08	<20	--	20	<10	30	.8	3,600
064121F	31	30	<20	.04	<20	--	15	<10	<10	.6	3,300
071211F	42	30	<20	.04	40	--	16	<10	<10	.7	4,800
072211F	41	<20	<20	.04	<20	--	20	<10	20	.8	4,200
074111F	40	<20	<20	<.03	<20	<50	15	<10	<10	.6	4,100
081111F	42	<20	<20	.08	<20	--	13	<10	<10	.8	4,600
081121F	50	<20	<20	<.03	<20	<50	18	<10	20	1.0	4,400
081211F	130	<20	<20	.08	<20	--	31	<10	<10	1.5	2,300
083211F	54	<20	<20	.08	<20	--	19	<10	<10	.9	3,900
091111F	55	<20	<20	.08	<20	--	21	<10	<10	1.0	4,700
091121F	45	<20	<20	.06	<20	--	17	<10	<10	.8	5,000
091211F	31	<20	<20	.11	<20	--	11	<10	<10	.7	3,800
092111F	60	<20	<20	<.03	<20	<50	20	<10	<10	1.0	3,400
092211F	48	<20	<20	.07	<20	--	20	<10	<10	.9	4,100
093111F	61	<20	<20	.09	30	--	19	<10	<10	1.0	5,400
093211F	47	<20	<20	.07	<20	--	15	<10	10	.8	3,100
094111F	48	<20	<20	.10	<20	--	18	<10	20	1.1	4,400
094121F	60	<20	<20	.12	<20	--	18	<10	<10	1.1	4,200
101111F	48	20	<20	.05	<20	--	16	<10	<10	.8	4,700
101121F	60	<20	<20	<.03	40	<50	21	10	<10	1.0	4,300
101211F	49	<20	<20	.11	<20	--	18	<10	<10	1.0	4,100
102111F	54	<20	<20	.11	<20	--	19	<10	<10	.9	2,000
102211F	61	<20	<20	.08	<20	--	22	<10	10	1.0	3,700
103111F	51	<20	<20	.08	20	--	15	<10	10	.9	4,400
103211F	43	<20	<20	.06	<20	--	22	<10	<10	.9	3,900
104111F	54	<20	<20	.13	<20	--	21	<10	<10	1.0	3,500
104121F	61	<20	<20	.10	<20	--	20	<10	20	1.0	4,100
111111F	79	<20	<20	.07	<20	--	21	<10	<10	1.0	3,400
111121F	89	<20	30	.18	<20	--	19	<10	<10	1.8	4,800
111211F	35	<20	<20	.11	<20	--	10	<10	<10	.7	5,900
112111F	37	<20	<20	.16	<20	--	13	<10	<10	.7	3,700
112211F	59	<20	<20	.06	<20	--	19	<10	<10	1.1	3,600
113111F	62	20	<20	.05	20	--	21	<10	<10	1.2	4,200
113211F	60	<20	<20	.20	20	<50	16	10	10	1.0	3,600

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal field, Alaska.--continued

Sample	Mo ppm-S	Na%	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Pr ppm-S	Se-ppm[a]	Sn ppm-S	Sr ppm-S
051121F	<10	.050	20	<20	70	2.2	<20	<50	.20	--	210
053111F	<10	.030	<20	<20	80	3.0	<20	<50	.05	--	180
053211F	<10	.035	<20	20	100	3.0	<20	<50	.10	--	180
054111F	<10	.050	<20	<20	100	3.0	<20	<50	.25	--	230
054121F	<10	.050	<20	<20	90	2.6	<20	<50	.10	--	220
061111F	<10	.035	<20	<20	100	2.9	<20	<50	.15	--	170
061211F	<10	.035	<20	60	120	2.8	<20	<50	.20	--	280
062111F	<10	.050	<20	<20	30	2.5	<20	80	.10	<20	200
062211F	20	.040	<20	<20	80	2.2	<20	50	.10	<20	170
063111F	<10	.030	<20	<20	100	2.6	<20	<50	.15	--	190
063211F	10	.055	<20	<20	60	2.5	<20	<50	.10	--	200
064111F	<10	.050	<20	<20	120	3.1	<20	<50	.15	--	160
064121F	<10	.030	<20	<20	60	1.9	<20	<50	.15	--	150
071211F	10	.055	<20	30	110	2.4	<20	50	.10	--	140
072211F	<10	.050	<20	<20	90	3.1	<20	<50	.10	--	100
074111F	<10	.050	<20	<20	90	2.1	30	<50	.10	<20	190
081111F	<10	.060	<20	20	80	2.3	<20	<50	.20	--	190
081121F	20	.055	<20	<20	120	3.1	<20	<50	.20	20	180
081211F	10	.065	<20	<20	120	3.7	<20	<50	.20	--	300
083211F	<10	.060	<20	<20	60	2.0	<20	<50	.15	--	210
091111F	<10	.035	<20	<20	90	3.5	<20	<50	.05	--	170
091121F	<10	.040	<20	<20	80	2.7	<20	<50	.10	--	150
091211F	<10	.070	20	30	60	1.5	<20	<50	.40	--	190
092111F	10	.070	<20	<20	90	3.5	<20	<50	.15	<20	190
092211F	<10	.020	<20	<20	70	2.8	<20	<50	.10	--	160
093111F	10	.045	<20	<20	60	2.7	<20	<50	.10	--	200
093211F	<10	.065	<20	<20	40	2.0	<20	<50	.20	--	160
094111F	<10	.070	<20	<20	70	2.9	<20	<50	.15	--	140
094121F	<10	.060	<20	<20	90	2.5	<20	<50	.15	--	180
101111F	10	.065	<20	<20	100	2.5	<20	<50	.20	--	180
101121F	10	.060	<20	30	70	3.0	<20	50	.15	<20	180
101211F	<10	.050	<20	<20	110	3.0	<20	<50	.20	--	190
102111F	<10	.060	<20	<20	70	2.8	<20	<50	.10	--	160
102211F	<10	.055	<20	<20	110	2.8	<20	<50	.10	--	220
103111F	20	.040	<20	<20	60	2.4	<20	<50	<.05	--	200
103211F	20	.065	<20	<20	60	2.6	<20	<50	.20	--	190
104111F	<10	.050	<20	30	120	3.1	<20	<50	.15	--	150
104121F	10	.050	<20	<20	80	2.9	<20	<50	.15	--	210
111111F	<10	.060	<20	<20	110	3.4	<20	<50	.15	--	190
111121F	10	.075	<20	<20	110	4.5	30	<50	.15	--	300
111211F	<10	.050	<20	<20	60	1.9	20	<50	.15	--	200
112111F	<10	.060	<20	30	60	1.8	<20	<50	.20	--	150
112211F	<10	.060	<20	<20	90	2.9	<20	<50	.10	--	190
113111F	10	.085	<20	50	90	3.3	<20	<50	.15	--	190
113211F	10	.060	<20	<20	130	2.7	<20	<50	.30	<20	230

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Tot SX	Th ppm-S	Ti%-S	U-ppm	V ppm-S	W ppm-S	Y ppm-S	Yb ppm-S	Zn ppm-S	Zr ppm-S
051121F	.150	20	<.03	<.05	<5	30	<10	<5	470	<10
053111F	.190	<20	<.03	<.05	<5	<20	<10	<5	500	<10
053211F	.180	<20	<.03	<.05	<5	<20	<10	<5	730	<10
054111F	.190	<20	<.03	<.05	5	<20	<10	<5	630	<10
054121F	.160	<20	<.03	<.05	<5	30	<10	<5	470	<10
061111F	.130	20	<.03	<.05	<5	<20	<10	<5	560	<10
061211F	.100	30	<.03	<.05	6	30	<10	<5	410	<10
062111F	.100	<20	<.03	<.05	<5	<20	<10	<5	340	<10
062211F	.130	<20	<.03	<.05	<5	<20	<10	<5	440	<10
063111F	.140	<20	<.03	<.05	<5	<20	<10	<5	490	<10
063211F	.130	<20	<.03	<.05	7	<20	<10	<5	340	10
064111F	.150	<20	<.03	<.05	<5	<20	<10	<5	470	<10
064121F	.130	<20	<.03	<.05	<5	<20	<10	<5	320	<10
071211F	.110	<20	<.03	<.05	<5	<20	<10	<5	440	<10
072211F	.130	<20	<.03	<.05	<5	<20	<10	<5	380	<10
074111F	.090	<20	<.03	<.05	<5	<20	<10	<5	340	<10
081111F	.120	30	<.03	<.05	<5	<20	<10	<5	500	<10
081121F	.170	<20	<.03	<.05	<5	<20	<10	<5	50	<10
081211F	.230	<20	<.03	<.05	<5	<20	<10	<5	530	<10
083211F	.130	<20	<.03	<.05	<5	<20	<10	<5	430	<10
091111F	.130	<20	<.03	<.05	<5	<20	<10	<5	490	<10
091121F	.120	<20	<.03	<.05	<5	<20	<10	<5	470	<10
091211F	.160	<20	<.03	<.05	6	<20	<10	<5	400	20
092111F	.140	<20	<.03	<.05	<5	<20	<10	<5	470	<10
092211F	.150	<20	<.03	<.05	<5	<20	<10	<5	440	<10
093111F	.150	40	<.03	<.05	<5	20	<10	<5	520	<10
093211F	.130	<20	<.03	<.05	<5	<20	<10	<5	420	<10
094111F	.180	<20	<.03	<.05	<5	<20	<10	<5	410	<10
094121F	.150	<20	<.03	<.05	<5	<20	<10	<5	460	<10
101111F	.170	30	<.03	<.05	<5	<20	<10	<5	470	<10
101121F	.150	<20	<.03	<.05	6	<20	<10	<5	48	<10
101211F	.190	<20	<.03	<.05	<5	<20	<10	<5	500	<10
102111F	.120	<20	<.03	<.05	<5	<20	<10	<5	420	<10
102211F	.160	<20	<.03	<.05	<5	<20	<10	<5	510	<10
103111F	.140	30	<.03	<.05	<5	<20	<10	<5	470	<10
103211F	.130	<20	<.03	<.05	<5	30	<10	<5	450	<10
104111F	.160	<20	<.03	<.05	<5	20	<10	<5	480	<10
104121F	.140	40	<.03	<.05	<5	20	<10	<5	510	<10
111111F	.110	<20	<.03	<.05	<5	<20	<10	<5	530	<10
111121F	.140	<20	.03	<.05	<5	<20	<10	<5	760	10
111211F	.100	<20	<.03	<.05	<5	<20	<10	<5	610	<10
112111F	.130	<20	<.03	<.05	<5	<20	<10	<5	370	<10
112211F	.140	<20	<.03	<.05	<5	<20	<10	<5	550	<10
113111F	.180	<20	<.03	<.05	<5	<20	<10	<5	660	<10
113211F	.130	<20	<.03	<.05	9	<20	<10	<5	640	<10

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Ash%[1]	Al%-S	As-ppm[a]	Au ppm-S	B ppm-S	Ba ppm-S	Bi ppm-S	Ca%-S	Cd-ppm	Ce ppm-S	Co ppm-S	Cr ppm-S
114111F	12.0	.26	.92	<20	90	310	<50	3.7	.6	<20	<5	<5
114121F	13.0	.20	3.05	<20	110	240	<50	3.3	.6	60	9	<5
121111F	11.0	.18	.08	<20	30	150	<50	3.5	<.4	<20	5	<5
121121F	9.5	<.03	.16	<20	65	190	<50	2.9	<.4	<20	21	<5
122211F	11.0	<.03	.28	<20	90	210	<50	3.0	<.4	20	13	<5
123111F	12.0	.11	.10	<20	100	99	<50	3.3	1.6	<20	9	<5
123211F	10.0	.12	.07	<20	50	240	<50	3.4	.6	<20	7	<5
124111F	13.0	.14	.50	<20	100	180	<50	3.3	<.4	<20	<5	<5
124121F	10.0	.12	.30	50	90	190	<50	3.7	<.4	<20	<5	<5
					Salix pulchra (willow) stems							
031111W	2.0	.50	<.05	<20	560	4,400	<50	27.0	35.0	<20	18	<5
031121W	2.5	.20	<.05	<20	500	3,700	<50	28.0	27.0	<20	48	9
031211W	1.6	.17	<.05	<20	430	3,300	<50	23.0	12.0	<20	28	6
032111W	1.8	.19	<.05	<20	600	3,900	<50	28.0	11.0	<20	57	<5
032211W	2.0	.19	.05	<20	450	3,500	<50	20.0	19.0	<20	21	8
033111W	1.5	.24	<.05	<20	560	1,000	<50	23.0	27.0	<20	13	6
033211W	1.9	.20	<.05	20	550	3,900	<50	25.0	8.0	40	50	5
034111W	1.5	.34	<.05	<20	760	3,900	<50	23.0	20.0	<20	35	<5
034121W	2.4	.21	<.05	<20	430	4,500	<50	26.0	25.0	<20	27	<5
041111W	1.9	.23	.07	<20	580	3,700	<50	23.0	25.0	<20	32	<5
041121W	2.0	.23	<.05	<20	620	4,700	80	29.0	22.0	50	21	<5
041211W	1.7	.20	<.05	<20	720	4,600	<50	25.0	34.0	<20	18	<5
042111W	2.3	.31	<.05	<20	510	3,600	<50	31.0	50.0	<20	29	<5
042211W	1.8	.26	<.05	<20	550	4,400	<50	31.0	42.0	<20	30	<5
043111W	2.3	.10	<.05	<20	530	3,700	<50	29.0	10.0	<20	13	10
043211W	2.4	.30	<.05	30	600	4,300	<50	25.0	17.0	<20	31	<5
044111W	1.7	.42	<.05	<20	750	2,500	120	23.0	11.0	<20	34	7
044121W	2.0	.23	<.05	<20	630	5,400	<50	31.0	20.0	<20	11	<5
051111W	1.4	.25	<.05	<20	740	3,800	<50	25.0	30.0	<20	31	12
051121W	2.1	.26	<.05	<20	590	3,900	80	28.0	37.0	<20	32	5
051211W	2.0	.15	<.05	<20	540	4,400	<50	26.0	18.0	<20	10	<5
052111W	1.9	.20	<.05	<20	560	4,200	<50	25.0	12.0	<20	30	<5
052211W	2.7	.22	.11	<20	710	3,400	<50	28.0	30.0	<20	15	<5
053111W	2.1	.33	.06	<20	620	4,900	<50	28.0	16.0	<20	32	<5
053211W	2.3	.26	.17	<20	560	3,600	<50	26.0	12.0	<20	9	5
054111W	2.2	.22	<.05	<20	630	4,200	60	28.0	30.0	<20	23	<5
054121W	2.5	.30	<.05	<20	540	3,300	<50	24.0	16.0	30	21	<5
061111W	2.4	.16	.08	<20	600	3,800	<50	30.0	25.0	<20	22	<5
061121W	2.0	.23	<.05	<20	760	5,100	<50	30.0	70.0	<20	50	6
061211W	1.4	.28	<.05	<20	800	4,500	70	24.0	40.0	<20	19	10

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Cu ppm-S	Dy ppm-S	Er ppm-S	Fe%-S	Ga ppm-S	Ge ppm-S	K%	La ppm-S	Li ppm-S	Mg%-S	Mn ppm-S
114111F	45	<20	<20	.16	<20	--	14	<10	<10	.9	2,400
114121F	60	30	20	.20	20	<50	16	20	<10	1.0	2,700
121111F	37	<20	<20	.12	40	--	13	<10	<10	.7	4,200
121121F	70	<20	<20	<.03	<20	<50	22	10	10	1.2	3,300
122211F	50	<20	<20	<.03	<20	<50	18	10	20	1.0	4,600
123111F	47	<20	<20	.09	<20	--	12	<10	<10	.8	3,800
123211F	41	<20	<20	.09	<20	--	15	<10	10	1.0	4,500
124111F	48	<20	<20	.10	<20	--	15	<10	20	.8	5,300
124121F	36	<20	<20	.10	<20	--	15	<10	30	1.0	4,300
					Salix pulchra (willow) stems--continued						
031111W	340	<20	<20	.23	20	--	14	10	<10	3.8	5,300
031121W	150	<20	<20	.20	<20	<50	15	50	<10	4.0	4,500
031211W	390	<20	<20	.13	<20	--	20	20	<10	4.2	4,200
032111W	240	<20	<20	.22	<20	--	15	50	<10	3.6	7,500
032211W	180	<20	<20	.15	<20	--	20	<10	<10	4.1	5,300
033111W	280	<20	<20	.19	<20	--	19	10	<10	4.8	4,900
033211W	250	<20	<20	<.03	<20	<50	18	20	<10	4.5	5,800
034111W	370	<20	<20	.21	<20	--	20	<10	<10	4.0	8,400
034121W	260	<20	<20	.14	<20	--	15	<10	<10	4.5	4,600
041111W	310	<20	<20	.17	<20	--	18	20	<10	4.3	3,800
041121W	280	<20	20	.17	<20	--	14	20	<10	3.4	3,500
041211W	340	<20	<20	.20	20	<50	19	30	<10	3.6	6,500
042111W	290	<20	<20	.17	<20	--	11	<10	<10	3.1	7,000
042211W	180	<20	<20	.19	20	--	13	20	<10	4.1	6,600
043111W	200	<20	<20	.09	<20	--	14	<10	<10	3.4	3,400
043211W	320	<20	<20	.20	20	<50	17	20	<10	3.5	5,200
044111W	430	<20	<20	.22	<20	--	18	<10	<10	4.5	7,100
044121W	230	<20	<20	.15	30	--	13	20	<10	3.8	8,400
051111W	370	30	<20	.17	<20	--	16	20	<10	4.4	8,300
051121W	320	<20	<20	.19	20	--	15	30	<10	3.2	4,300
051211W	170	<20	<20	.09	<20	--	17	10	<10	3.8	3,000
052111W	270	<20	<20	.13	<20	--	16	30	<10	4.0	4,600
052211W	180	30	<20	.12	30	--	14	20	<10	3.4	4,600
053111W	340	<20	<20	.21	<20	--	17	<10	<10	3.8	4,500
053211W	310	<20	<20	.16	<20	--	17	20	<10	3.8	4,000
054111W	190	<20	<20	.14	<20	--	13	<10	<10	3.9	4,500
054121W	220	<20	<20	.18	<20	--	17	10	<10	3.8	6,400
061111W	180	20	<20	.12	<20	--	12	<10	<10	3.1	3,800
061121W	230	<20	<20	.22	<20	--	12	20	<10	3.6	6,600
061211W	190	<20	<20	.15	<20	--	19	<10	<10	3.9	3,700

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Mo ppm-S	Na%	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Pr ppm-S	Se-ppm[a]	Sn ppm-S	Sr ppm-S
114111F	<10	.080	<20	<20	90	2.6	<20	<50	.25	--	180
114121F	<10	.110	<20	20	110	2.8	<20	60	.25	20	200
121111F	<10	.045	<20	<20	80	1.9	<20	<50	.20	--	180
121121F	<10	.060	<20	<20	100	3.5	<20	<50	.15	<20	180
122211F	20	.045	<20	<20	100	2.8	<20	<50	.10	<20	20
123111F	10	.025	<20	40	100	2.2	20	<50	.20	--	180
123211F	<10	.060	<20	<20	110	2.6	<20	<50	.20	--	200
124111F	<10	.030	<20	<20	140	2.6	<20	<50	.20	--	190
124121F	<10	.060	<20	40	50	2.5	<20	<50	.10	--	210
					Salix pulchra (willow) stems--continued						
031111W	<10	.160	<20	40	80	4.7	<20	90	.10	--	3,100
031121W	<10	.110	<20	<20	40	5.1	<20	60	.15	30	3,400
031211W	<10	.080	<20	<20	30	7.2	<20	<50	.15	--	2,800
032111W	<10	.090	<20	<20	50	5.7	<20	<50	.10	--	3,100
032211W	<10	.110	<20	<20	40	5.4	<20	60	.25	--	2,600
033111W	<10	.130	<20	<20	40	7.3	<20	<50	<.05	--	2,100
033211W	<10	.170	<20	<20	50	5.6	<20	<50	.20	<20	2,900
034111W	<10	.190	<20	<20	90	7.0	30	<50	.05	--	2,900
034121W	<10	.100	<20	<20	50	4.9	<20	60	.10	--	3,100
041111W	<10	.140	<20	30	60	5.9	<20	<50	.10	--	2,700
041121W	<10	.090	<20	<20	90	4.9	20	<50	.30	--	3,300
041211W	<10	.100	<20	<20	20	5.4	40	80	.05	40	3,200
042111W	<10	.140	<20	<20	80	4.9	<20	<50	.15	--	3,100
042211W	<10	.110	<20	<20	40	4.8	<20	<50	.15	--	3,700
043111W	<10	.110	<20	20	50	5.0	<20	<50	.05	--	3,200
043211W	<10	.095	<20	30	110	6.1	<20	70	.05	30	2,900
044111W	<10	.180	<20	<20	60	6.5	20	70	.20	--	2,900
044121W	<10	.080	<20	<20	60	4.6	30	<50	.10	--	3,400
051111W	<10	.160	<20	50	100	6.5	30	<50	.05	--	2,700
051121W	<10	.110	<20	<20	120	6.0	<20	<50	.10	--	3,300
051211W	<10	.110	<20	50	60	4.2	<20	<50	.05	--	3,100
052111W	<10	.100	<20	<20	80	4.5	<20	<50	.15	--	3,000
052211W	<10	.170	<20	<20	90	4.2	<20	<50	.10	--	3,100
053111W	<10	.150	<20	<20	130	5.5	<20	60	.30	--	3,400
053211W	<10	.150	<20	<20	120	5.5	<20	<50	.05	--	3,000
054111W	<10	.100	20	30	60	4.8	<20	<50	.10	--	3,400
054121W	<10	.140	<20	<20	80	5.4	<20	60	.10	--	2,800
061111W	<10	.085	<20	20	70	4.2	<20	60	.10	--	3,200
061121W	<10	.080	<20	<20	130	5.4	20	50	.10	--	3,700
061211W	<10	.140	<20	<20	70	6.1	30	70	.10	--	3,200

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Tot S%[a]	Th ppm-S	Ti%-S	U-ppm	V ppm-S	W ppm-S	Y ppm-S	Yb ppm-S	Zn ppm-S	Zr ppm-S
114111F	.150	<20	<.03	<.05	<5	<20	<10	<5	640	<10
114121F	.095	<20	<.03	<.05	8	<20	<10	<5	510	<10
121111F	.170	<20	<.03	<.05	<5	<20	<10	<5	420	<10
121121F	.180	<20	<.03	<.05	7	<20	<10	<5	640	<10
122211F	.160	<20	<.03	<.05	5	<20	<10	<5	660	<10
123111F	.140	<20	<.03	<.05	<5	<20	<10	<5	400	<10
123211F	.130	<20	<.03	<.05	<5	<20	<10	<5	620	<10
124111F	.130	<20	<.03	<.05	<5	<20	<10	<5	600	<10
124121F	.120	<20	<.03	<.05	<5	<20	<10	<5	520	<10
				Salix pulchra (willow) stems--continued						
031111W	.040	<20	<.03	<.05	<5	<20	<10	<5	6,700	<10
031121W	.055	<20	<.03	<.05	<5	<20	<10	<5	2,400	10
031211W	.050	<20	<.03	<.05	6	<20	<10	<5	3,000	<10
032111W	.045	20	<.03	<.05	8	<20	<10	<5	3,200	<10
032211W	.045	<20	<.03	<.05	<5	<20	<10	<5	3,100	<10
033111W	.035	<20	<.03	<.05	<5	<20	<10	<5	8,400	<10
033211W	.050	<20	<.03	<.05	<5	<20	<10	<5	4,900	<10
034111W	.040	<20	<.03	<.05	<5	<20	<10	<5	9,900	<10
034121W	.040	50	<.03	<.05	<5	<20	<10	<5	4,400	<10
041111W	.030	<20	<.03	<.05	5	<20	<10	<5	5,200	<10
041121W	.045	30	<.03	<.05	9	30	<10	<5	4,800	10
041211W	.035	<20	<.03	<.05	<5	<20	<10	<5	4,400	20
042111W	.050	<20	<.03	<.05	<5	<20	<10	<5	9,200	<10
042211W	.035	<20	<.03	<.05	<5	<20	<10	<5	4,700	<10
043111W	.045	<20	<.03	<.05	<5	<20	<10	<5	4,900	<10
043211W	.050	30	<.03	<.05	<5	<20	<10	<5	6,800	<10
044111W	.045	<20	.03	<.05	7	<20	<10	<5	7,800	20
044121W	.035	20	<.03	<.05	<5	<20	<10	<5	6,100	<10
051111W	.035	<20	<.03	<.05	<5	<20	<10	<5	9,900	<10
051121W	.050	20	<.03	<.05	9	<20	<10	<5	4,000	<10
051211W	.050	<20	<.03	<.05	<5	<20	<10	<5	4,900	<10
052111W	.045	<20	<.03	<.05	<5	<20	<10	<5	4,800	<10
052211W	.040	<20	<.03	<.05	<5	30	<10	<5	5,100	<10
053111W	.045	<20	<.03	<.05	<5	<20	<10	<5	4,600	<10
053211W	.055	<20	<.03	<.05	<5	<20	<10	<5	4,400	<10
054111W	.035	30	<.03	<.05	<5	<20	<10	<5	5,900	<10
054121W	.050	<20	<.03	<.05	<5	<20	<10	<5	3,800	10
061111W	.030	20	<.03	<.05	6	<20	50	<5	3,800	<10
061121W	.035	<20	<.03	<.05	<5	<20	<10	<5	3,900	<10
061211W	.030	<20	<.03	<.05	5	<20	<10	<5	3,400	<10

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal field, Alaska.--continued

Sample	Ash%[1]	Al%-S	As-ppm[2]	Au ppm-S	B ppm-S	Ba ppm-S	Bi ppm-S	Ca%-S	Cd-ppm	Ce ppm-S	Co ppm-S	Cr ppm-S
062111W	1.9	.16	.10	<20	710	4,600	<50	29.0	5.0	<20	19	<5
062211W	2.3	.20	.09	<20	700	4,300	<50	30.0	8.0	<20	23	<5
063111W	2.1	.18	.05	<20	720	5,700	<50	27.0	32.0	<20	37	<5
063211W	2.0	.18	.08	<20	690	5,000	<50	28.0	18.0	<20	34	<5
064111W	2.2	.20	.09	<20	840	4,300	<50	28.0	30.0	<20	54	9
064121W	1.9	.21	.18	<20	840	4,000	<50	33.0	32.0	<20	26	7
071111W	1.9	.20	.24	<20	990	3,700	<50	23.0	13.0	40	45	<5
071121W	1.8	.17	.12	<20	750	3,800	<50	23.0	33.0	<20	28	10
071211W	1.7	.18	.12	<20	1,000	4,100	<50	21.0	70.0	<20	37	5
072111W	1.4	.17	.08	<20	820	1,300	<50	14.0	20.0	<20	46	<5
072211W	1.6	.16	.05	<20	930	3,300	<50	23.0	23.0	<20	56	<5
073111W	2.3	.17	.05	<20	900	3,700	<50	30.0	19.0	<20	20	<5
073211W	1.9	.25	.08	<20	890	4,500	<50	28.0	12.0	<20	44	<5
074111W	1.5	.32	<.05	<20	890	3,900	<50	26.0	27.0	<20	42	9
074121W	1.4	.30	<.05	<20	730	2,500	<50	23.0	27.0	<20	52	<5
081111W	1.9	.19	.13	<20	950	4,300	<50	28.0	23.0	30	28	14
081121W	1.8	.28	.80	<20	1,400	3,600	<50	23.0	16.0	<20	57	<5
081211W	2.6	.20	.33	<20	1,000	3,300	<50	25.0	22.0	<20	34	<5
082111W	1.8	.20	<.05	<20	840	3,200	<50	29.0	11.0	<20	20	<5
082211W	1.6	.10	<.05	<20	700	2,300	<50	21.0	20.0	<20	40	8
083111W	2.2	.17	.35	<20	980	4,300	<50	30.0	70.0	<20	31	<5
083211W	1.8	.30	.09	20	960	3,200	<50	25.0	30.0	<20	29	<5
084111W	1.6	.27	<.05	<20	930	4,600	<50	28.0	22.0	<20	28	10
084121W	1.7	.30	.07	<20	880	4,000	<50	28.0	26.0	<20	32	<5
091111W	2.8	.20	<.05	<20	380	3,900	<50	20.0	25.0	<20	48	8
091121W	2.0	.14	<.05	<20	670	2,100	<50	18.0	30.0	<20	22	<5
091211W	2.1	.20	.33	<20	810	2,200	<50	18.0	23.0	20	27	16
092111W	1.9	.22	<.05	<20	680	3,000	<50	24.0	35.0	<20	26	8
092211W	2.1	.44	<.05	<20	780	3,500	<50	29.0	36.0	<20	32	<5
093111W	3.3	.20	<.05	30	400	3,500	<50	22.0	38.0	<20	30	<5
093211W	2.1	.22	.72	<20	870	2,800	<50	21.0	10.0	<20	31	6
094111W	2.0	.20	.15	<20	650	3,000	<50	19.0	21.0	<20	29	7
094121W	2.3	.22	.43	<20	750	5,100	<50	28.0	28.0	<20	24	6
101111W	1.6	.32	<.05	<20	710	5,200	<50	25.0	6.0	<20	32	<5
101121W	1.7	.25	<.05	<20	730	5,400	<50	27.0	75.0	<20	36	<5
101211W	2.2	.31	<.05	<20	660	4,200	<50	28.0	8.0	<20	20	12
102111W	1.6	.30	<.05	<20	1,100	3,200	<50	26.0	75.0	<20	55	<5
102211W	1.6	.20	<.05	<20	700	4,400	<50	23.0	13.0	<20	37	7
103111W	1.9	.26	<.05	<20	520	4,100	<50	24.0	95.0	<20	57	9
103211W	1.8	.12	<.05	<20	790	4,200	<50	28.0	55.0	<20	41	<5
104111W	2.0	.17	<.05	<20	720	3,100	<50	25.0	16.0	<20	32	<5
104121W	1.8	.35	<.05	<20	750	3,500	<50	24.0	40.0	<20	42	17
111111W	2.4	.64	.12	<20	440	4,300	<50	25.0	110.0	<20	36	<5
111121W	2.0	.35	<.05	<20	520	3,200	<50	23.0	9.0	<20	38	12
111211W	1.9	.27	.23	<20	750	3,700	<50	30.0	82.0	<20	45	8

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Cu ppm-S	Dy ppm-S	Er ppm-S	Fe%-S	Ga ppm-S	Ge ppm-S	K%	La ppm-S	Li ppm-S	Mg%-S	Mn ppm-S
062111W	200	30	<20	.13	20	--	13	10	<10	3.8	4,100
062211W	150	<20	<20	<.03	<20	<50	14	30	<10	2.8	4,700
063111W	260	<20	20	.13	30	--	17	<10	<10	3.9	4,600
063211W	220	<20	<20	.10	<20	--	15	20	<10	3.3	5,700
064111W	150	<20	<20	<.03	<20	<50	15	50	<10	3.0	5,600
064121W	220	30	<20	.12	<20	--	10	20	<10	3.0	7,400
071111W	220	<20	<20	.20	<20	<50	19	50	<10	4.0	3,400
071121W	220	<20	<20	.10	<20	--	18	10	<10	3.9	4,700
071211W	320	<20	<20	.12	<20	--	20	<10	<10	3.9	16,000
072111W	330	<20	<20	.13	<20	--	20	<10	<10	4.2	8,500
072211W	390	<20	<20	.12	<20	--	17	<10	<10	4.6	7,900
073111W	260	<20	<20	.16	<20	--	18	<10	<10	4.4	4,400
073211W	180	<20	<20	.11	<20	--	18	20	<10	3.9	5,500
074111W	380	<20	<20	.16	20	--	15	<10	<10	4.0	11,000
074121W	300	<20	<20	.19	<20	--	15	10	<10	4.5	8,800
081111W	160	<20	<20	.11	<20	--	15	30	<10	3.6	4,900
081121W	210	20	<20	.15	20	--	19	<10	<10	3.4	7,800
081211W	230	<20	<20	.18	<20	--	18	20	<10	4.1	3,700
082111W	200	<20	20	<.03	<20	<50	14	40	<10	3.7	4,600
082211W	240	<20	<20	.10	<20	--	20	10	<10	3.8	9,300
083111W	280	<20	<20	.11	<20	--	14	20	<10	2.9	5,700
083211W	320	<20	<20	.20	20	<50	16	30	<10	5.0	7,700
084111W	390	<20	<20	.15	<20	--	14	<10	<10	4.8	7,900
084121W	290	<20	<20	.20	30	<50	13	40	10	4.4	15,000
091111W	260	<20	<20	.20	<20	<50	24	20	<10	4.0	6,800
091121W	310	<20	<20	.11	<20	--	22	<10	<10	4.5	17,000
091211W	290	<20	<20	<.03	30	<50	23	<10	<10	4.2	5,800
092111W	370	<20	<20	.13	<20	--	16	20	<10	4.0	9,400
092211W	430	<20	<20	.25	<20	--	13	<10	<10	4.6	9,900
093111W	250	<20	<20	<.03	<20	<50	20	30	<10	3.8	3,900
093211W	270	<20	<20	.15	<20	--	23	20	<10	4.7	4,800
094111W	200	<20	<20	.11	<20	--	19	<10	<10	3.6	4,300
094121W	230	<20	<20	.13	<20	--	13	20	<10	4.5	5,900
101111W	330	<20	<20	.17	<20	--	18	20	<10	4.3	4,300
101121W	340	30	<20	.15	<20	--	14	10	<10	4.1	6,100
101211W	280	<20	<20	.20	<20	--	15	20	<10	3.8	3,100
102111W	310	<20	<20	.18	<20	--	15	<10	<10	4.9	8,600
102211W	250	<20	<20	<.03	<20	<50	22	30	<10	4.3	5,700
103111W	110	<20	<20	.16	<20	--	15	<10	<10	2.9	4,900
103211W	300	<20	<20	.09	<20	--	14	<10	<10	3.4	12,000
104111W	240	<20	<20	.09	<20	--	18	<10	<10	3.5	4,100
104121W	210	<20	<20	.18	<20	--	16	<10	<10	3.3	9,400
111111W	340	<20	<20	.36	<20	--	16	30	<10	3.8	6,700
111121W	240	<20	<20	.21	<20	--	20	<10	<10	3.7	6,800
111211W	330	<20	<20	.20	<20	--	18	20	<10	5.8	14,000

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Mo ppm-S	Na%	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Pr ppm-S	Se-ppm[a]	Sn ppm-S	Sr ppm-S
062111W	<10	.140	<20	30	40	5.7	<20	<50	.05	--	3,400
062211W	<10	.070	<20	20	50	4.9	<20	<50	.10	<20	3,100
063111W	<10	.110	<20	30	110	5.6	<20	90	.10	--	3,400
063211W	<10	.100	<20	<20	100	5.2	<20	<50	.05	--	3,200
064111W	10	.070	<20	<20	70	5.4	40	60	.20	<20	3,800
064121W	<10	.065	<20	40	60	4.2	20	80	.05	--	3,600
071111W	<10	.130	<20	<20	60	7.0	<20	100	.05	<20	3,000
071121W	<10	.100	<20	<20	90	6.5	<20	<50	.05	--	2,800
071211W	<10	.190	<20	30	100	5.4	<20	90	.10	--	2,700
072111W	<10	.100	<20	<20	10	5.5	40	<50	.20	--	1,800
072211W	<10	.150	<20	<20	80	6.3	<20	<50	<.05	--	2,900
073111W	<10	.170	<20	<20	80	7.0	20	<50	.10	--	3,300
073211W	<10	.095	<20	<20	40	5.6	<20	<50	.05	--	3,300
074111W	<10	.160	<20	<20	70	5.4	<20	<50	.05	--	3,200
074121W	<10	.170	<20	<20	40	5.5	<20	<50	.05	--	2,600
081111W	<10	.110	<20	<20	40	5.8	30	<50	.05	--	3,300
081121W	<10	.150	<20	40	80	6.1	30	60	<.05	--	2,700
081211W	<10	.100	<20	<20	70	6.9	<20	90	.20	--	3,000
082111W	<10	.110	<20	<20	50	4.6	<20	<50	.10	60	3,100
082211W	<10	.140	<20	20	40	7.4	30	<50	.05	--	2,400
083111W	<10	.160	<20	<20	60	5.3	30	<50	.10	--	3,400
083211W	<10	.160	<20	<20	90	7.1	30	<50	.05	<20	2,900
084111W	<10	.160	20	<20	60	6.2	30	70	.05	--	3,400
084121W	<10	.150	<20	60	40	5.3	30	80	.05	<20	3,000
091111W	<10	.140	<20	40	170	7.6	<20	60	.20	<20	2,600
091121W	<10	.150	<20	<20	80	8.3	20	<50	.05	--	1,900
091211W	<10	.160	<20	<20	120	7.7	<20	100	.10	20	2,300
092111W	<10	.025	<20	<20	120	6.3	20	<50	.05	--	3,000
092211W	<10	.150	<20	<20	60	5.9	<20	<50	.05	--	3,500
093111W	<10	.140	<20	<20	90	6.1	<20	<50	.10	50	2,600
093211W	<10	.160	<20	<20	20	6.1	<20	<50	.10	--	2,400
094111W	<10	.160	<20	<20	60	5.1	<20	70	.15	--	2,500
094121W	<10	.150	<20	<20	120	4.6	<20	<50	.05	--	3,200
101111W	<10	.150	<20	<20	80	7.4	<20	<50	.10	--	3,100
101121W	<10	.140	<20	50	110	5.2	<20	60	.05	--	3,200
101211W	<10	.130	<20	<20	90	5.9	<20	<50	.20	--	3,000
102111W	<10	.130	<20	<20	80	6.1	<20	<50	.05	--	2,800
102211W	<10	.085	<20	<20	140	6.5	<20	70	.05	20	2,900
103111W	<10	.170	<20	<20	90	3.8	<20	70	.10	--	3,000
103211W	<10	.130	<20	30	60	5.1	40	<50	.20	--	3,500
104111W	<10	.110	<20	<20	120	6.5	<20	<50	.05	--	3,000
104121W	<10	.150	<20	<20	100	5.1	30	80	.10	--	2,700
111111W	<10	.140	<20	<20	260	6.2	<20	<50	.10	--	3,200
111121W	<10	.220	<20	<20	60	5.8	<20	<50	.10	--	2,900
111211W	<10	.140	<20	<20	350	7.9	<20	<50	.10	--	4,400

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Tot S%*	Th ppm-S	Ti%-S	U-ppm	V ppm-S	W ppm-S	Y ppm-S	Yb ppm-S	Zn ppm-S	Zr ppm-S
062111W	.030	<20	<.03	<.05	<5	<20	<10	<5	5,900	<10
062211W	.035	<20	<.03	<.05	8	<20	<10	<5	3,200	<10
063111W	.050	60	<.03	<.05	<5	<20	<10	<5	5,700	<10
063211W	.030	<20	<.03	<.05	<5	<20	<10	<5	3,900	<10
064111W	.035	30	<.03	<.05	<5	<20	<10	<5	2,800	<10
064121W	.035	<20	<.03	<.05	<5	<20	<10	<5	5,500	<10
071111W	.040	40	<.03	<.05	5	<20	<10	<5	3,600	<10
071121W	.045	<20	<.03	<.05	<5	<20	<10	<5	4,000	<10
071211W	.045	30	<.03	<.05	<5	<20	<10	<5	7,600	<10
072111W	.040	<20	<.03	<.05	<5	<20	<10	<5	7,300	10
072211W	.035	<20	<.03	<.05	<5	<20	<10	<5	9,000	<10
073111W	.040	<20	<.03	<.05	8	<20	20	<5	5,000	20
073211W	.035	<20	<.03	<.05	<5	<20	<10	<5	3,800	<10
074111W	.040	<20	<.03	<.05	<5	<20	<10	<5	11,000	<10
074121W	.035	<20	<.03	<.05	<5	<20	<10	<5	9,500	<10
081111W	.030	<20	<.03	<.05	7	<20	<10	<5	4,900	10
081121W	.045	<20	<.03	<.05	<5	<20	<10	<5	3,700	<10
081211W	.065	<20	<.03	<.05	<5	<20	<10	<5	3,500	10
082111W	.030	<20	<.03	<.05	<5	<20	<10	<5	3,600	10
082211W	.035	<20	<.03	<.05	<5	<20	<10	<5	6,200	<10
083111W	.050	<20	<.03	.05	<5	<20	<10	<5	6,100	<10
083211W	.060	30	<.03	<.05	7	<20	<10	<5	7,800	<10
084111W	.030	<20	<.03	<.05	<5	<20	<10	<5	17,000	<10
084121W	.035	40	<.03	<.05	<5	<20	<10	<5	11,000	<10
091111W	.085	30	<.03	<.05	6	<20	<10	<5	6,100	<10
091121W	.070	<20	<.03	<.05	<5	<20	<10	<5	7,800	<10
091211W	.035	20	<.03	<.05	<5	<20	<10	<5	11,000	<10
092111W	.040	<20	<.03	<.05	<5	<20	<10	<5	8,000	<10
092211W	.050	<20	<.03	<.05	<5	<20	<10	<5	13,000	<10
093111W	.075	<20	<.03	<.05	8	<20	<10	<5	5,600	<10
093211W	.060	<20	<.03	<.05	<5	<20	<10	<5	4,000	<10
094111W	.055	<20	<.03	<.05	<5	<20	<10	<5	3,300	<10
094121W	.040	<20	<.03	<.05	<5	<20	<10	<5	4,400	<10
101111W	.050	20	<.03	<.05	<5	<20	<10	<5	4,200	10
101121W	.040	<20	<.03	<.05	<5	<20	<10	<5	4,500	<10
101211W	.045	30	<.03	<.05	7	<20	<10	<5	5,400	<10
102111W	.035	<20	<.03	<.05	<5	<20	<10	<5	8,800	<10
102211W	.045	30	<.03	<.05	6	<20	<10	<5	5,300	<10
103111W	.035	40	<.03	<.05	<5	<20	<10	<5	4,300	<10
103211W	.035	<20	<.03	.08	<5	<20	<10	<5	10,000	<10
104111W	.045	<20	<.03	<.05	<5	<20	<10	<5	4,200	<10
104121W	.030	30	<.03	<.05	6	<20	<10	<5	6,400	<10
111111W	.060	<20	.03	<.05	8	<20	<10	<5	4,600	10
111121W	.050	<20	<.03	<.05	<5	<20	<10	<5	3,500	<10
111211W	.050	<20	<.03	<.05	<5	<20	<10	<5	8,500	<10

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska.--continued

Sample	Ash%[1]	Al%-S	As-ppm[2]	Au ppm-S	B ppm-S	Ba ppm-S	Bi ppm-S	Ca%-S	Cd-ppm	Ce ppm-S	Co ppm-S	Cr ppm-S
112111W	1.9	.28	.06	<20	570	3,400	<50	29.0	24.0	<20	36	6
112211W	1.6	.30	.20	<20	830	2,800	<50	23.0	25.0	<20	48	7
113111W	1.6	.65	.11	<20	650	3,000	<50	24.0	65.0	<20	34	<5
113211W	2.6	.30	.06	<20	510	4,200	60	32.0	73.0	<20	33	<5
114111W	3.2	.36	.10	<20	640	3,400	100	26.0	20.0	<20	21	<5
114121W	1.9	.40	.24	<20	640	5,700	<50	27.0	28.0	20	32	8
121111W	2.5	.20	<.05	<20	480	4,800	<50	29.0	20.0	<20	28	<5
121121W	2.5	.30	.07	<20	480	3,800	<50	24.0	24.0	30	31	8
121211W	2.7	.26	.08	<20	520	3,300	<50	26.0	11.0	<20	31	<5
122111W	2.5	.22	.12	<20	500	4,200	110	28.0	15.0	<20	50	<5
122211W	2.3	.20	.08	<20	620	3,800	50	23.0	16.0	20	28	6
123111W	4.4	.49	.10	<20	640	810	<50	27.0	19.0	<20	16	6
123211W	2.4	.35	<.05	<20	470	4,000	<50	32.0	38.0	<20	12	11
124111W	2.3	.30	.09	<20	540	3,600	<50	25.0	10.0	<20	31	<5
124121W	2.1	.40	.06	<20	530	2,800	<50	26.0	47.0	<20	29	<5

Sample	Cu ppm-S	Dy ppm-S	Er ppm-S	Fe%-S	Ga ppm-S	Ge ppm-S	K%	La ppm-S	Li ppm-S	Mg%-S	Mn ppm-S
112111W	330	<20	<20	.20	<20	--	15	10	<10	3.4	4,000
112211W	380	<20	<20	.20	<20	<50	20	30	<10	3.9	10,000
113111W	220	<20	<20	.33	<20	--	16	<10	<10	4.0	8,700
113211W	180	<20	<20	.20	40	<50	12	30	<10	2.9	5,500
114111W	240	30	<20	.24	<20	--	20	30	<10	4.6	3,400
114121W	260	<20	<20	.20	<20	<50	15	20	<10	3.7	4,700
121111W	230	<20	<20	.20	20	<50	14	30	<10	3.3	3,400
121121W	260	<20	<20	.20	<20	<50	17	40	<10	3.4	3,000
121211W	180	<20	<20	.21	<20	--	15	20	<10	5.3	7,600
122111W	270	<20	<20	.14	<20	--	16	20	<10	3.3	6,100
122211W	300	<20	<20	.20	<20	<50	19	30	10	5.2	4,600
123111W	280	<20	<20	.30	<20	--	15	<10	<10	3.7	2,700
123211W	280	<20	<20	.21	<20	--	12	<10	<10	2.9	3,500
124111W	260	<20	<20	.20	30	<50	18	30	<10	4.0	5,100
124121W	230	<20	<20	.20	<20	<50	15	20	<10	3.8	6,600

Table 3.--Concentrations of elements (ash weight basis, except as noted) reported in plant samples, Capps Coal Field, Alaska,--continued

Sample	Mo ppm-S	Na%	Nb ppm-S	Nd ppm-S	Ni ppm-S	P%-S	Pb ppm-S	Pr ppm-S	Se-ppm[2]	Sn ppm-S	Sr ppm-S
112111W	<10	.120	<20	<20	190	5.1	<20	<50	.10	--	3,400
112211W	10	.150	<20	<20	120	6.4	30	80	.05	50	2,800
113111W	<10	.170	<20	<20	130	6.3	<20	60	.10	--	2,800
113211W	<10	.095	<20	50	80	4.2	40	70	.15	30	3,200
114111W	<10	.190	<20	<20	110	7.8	<20	<50	.25	--	3,300
114121W	<10	.210	<20	<20	80	5.5	20	<50	.10	20	3,300
121111W	<10	.160	<20	<20	190	5.4	20	90	.20	<20	3,600
121121W	<10	.040	<20	<20	200	5.7	<20	<50	.15	<20	2,800
121211W	<10	.130	<20	<20	120	5.8	<20	<50	.10	--	2,800
122111W	<10	.110	<20	<20	50	5.6	<20	<50	.10	--	3,200
122211W	<10	.140	<20	30	60	7.0	<20	50	.05	<20	2,700
123111W	<10	.190	<20	20	30	7.5	<20	<50	.25	--	2,100
123211W	<10	.150	<20	<20	60	5.1	<20	80	.10	--	3,500
124111W	<10	.160	<20	<20	100	6.5	<20	50	.10	<20	3,100
124121W	<10	.085	<20	30	60	5.0	<20	50	.05	30	3,100

Sample	Tot S%[2]	Th ppm-S	Ti%-S	U-ppm	V ppm-S	W ppm-S	Y ppm-S	Yb ppm-S	Zn ppm-S	Zr ppm-S
112111W	.050	<20	<.03	<.05	8	<20	<10	<5	6,900	<10
112211W	.035	30	<.03	<.05	6	<20	<10	<5	10,000	10
113111W	.045	<20	.03	<.05	6	<20	<10	<5	12,000	<10
113211W	.040	60	<.03	<.05	7	<20	<10	<5	4,000	<10
114111W	.075	<20	<.03	<.05	6	30	<10	<5	4,100	20
114121W	.050	50	<.03	<.05	6	<20	<10	<5	5,900	<10
121111W	.050	30	<.03	<.05	<5	<20	<10	<5	4,000	<10
121121W	.060	30	<.03	<.05	10	<20	<10	<5	4,600	10
121211W	.120	<20	<.03	<.05	<5	<20	<10	<5	3,000	<10
122111W	.055	<20	<.03	<.05	<5	<20	<10	<5	3,700	<10
122211W	.050	20	<.03	<.05	5	<20	<10	<5	4,500	20
123111W	.120	20	<.03	<.05	9	<20	<10	<5	3,300	<10
123211W	.050	<20	<.03	<.05	5	<20	<10	<5	6,200	<10
124111W	.060	<20	<.03	<.05	<5	<20	<10	<5	4,300	10
124121W	.040	<20	<.03	<.05	5	<20	<10	<5	5,300	<10

[1] Ash yield is calculated as a percent of the homogenized ground dry material following combustion at 500°C for about 14 hours.

[2] Concentrations are expressed on a dry weight basis.

Table 4.--Analytical methodology for soil and plant materials.

Parameter	Method	Reference
	Soil Materials	
Concentrations of Al, Cd, Co, Cu, Fe, Mn, Ni, P, Pb, and Zn	ICP[1] analysis of AB-DTPA[2] extract of <2 mm material	Soltanpour and Schwab (1977)
pH	Selective electrode	Crock and Severson (1980)
Concentration of B	DC[3] plasma analysis of hot-water extract of <2 mm soil material	Crock and Severson (1980)
Concentrations of Ca, Cl, K, Mg, Na, SO_4, and the properties EC[4] and SI[5]	Various analytical methods including ICP, selective electrodes, and conductivity bridge for <2 mm material	Crock and Severson (1980)
Concentrations of Al, As, Ca, Cd, Ce, Co, Cr, Cu, Dy, Fe, Ga, Gd, K, La, Li, Mg, Mn, Mo, Na, Nb, Nd, Ni, P, Pb, Sc, Sm, Sn, Sr, Ta, Ti, Th, U, V, Y, and Zn	ICP analysis of an acid digestion for total analysis of <100 mesh material	Taggert and others (1981)
	Plant Materials	
Concentrations of Cd, K, and Na	AAS[6] on digested plant ash	Harms (1976)
Concentrations of Al, Au, B, Ba, Bi, Ca, Ce, Co, Cr, Cu, Dy, Er, Fe, Ga, Ge, La, Li, Mg, Mn, Mo, Nb, Nd, Ni, P, Pb, Pr, Sn, Sr, Th, Ti, V, W, Y, Yb, Zn, and Zr	ICP[1] analysis on digested plant ash	Taggert and others (1981)
Concentrations of As	AAS[6] on plant dry material	Harms (1976)
Concentrations of Se	FLUR[7] on plant dry material	Harms and Ward (1975)
Concentrations of U	FLUR[7] on digested plant ash	Huffman and Riley (1970)

Table 4. (Continued).

Parameter	Method	Reference
	Plant Materials	
Concentrations of S	TURB[8] on plant dry material	Tabatabia and Bremner (1970)

[1] Induction coupled argon plasma-emission spectroscopy.

[2] Ammonium bicarbonate-diethylenetriaminepentaacetic acid.

[3] Direct current.

[4] Electrical conductance.

[5] Saturation index.

[6] Atomic absorption spectrophotometry.

[7] Flurometric.

[8] Turbidimetric.