

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SPECTROGRAPHIC DATA FOR THE ASH OF GROUND BIRCH
(BETULA ROTUNDIFOLIA SARG.) LEAVES AND BLACK SPRUCE
(PICEA MARIANA B.S.P.) NEEDLES COLLECTED FROM THE
TANACROSS 1:250,000-SCALE QUADRANGLE, ALASKA

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INTRODUCTION

The data presented in this report are semiquantitative spectrographic results for the ash of 478 samples of ground birch (Betula Rotundifolia Sarg.) leaves and 645 samples of black spruce (Picea Mariana B.S.P.) needles collected from the Tanacross 1:250,000-scale quadrangle, east-central Alaska. The samples were collected during reconnaissance geochemical studies which were being made to assess the mineral-resource potential of the quadrangle. The samples of black spruce were collected throughout most of the quadrangle (fig. 1) in two different terrains: (1) the maturely dissected topography of the Yukon-Tanana Upland (area north of the Tanana River); and (2) the rugged, mountainous terrain of the Alaska Range (southwest part of the quadrangle). Ground birch samples were collected mainly from the maturely dissected terrain.

COLLECTION, PREPARATION, AND ANALYSIS OF SAMPLES

The samples of vegetation were collected at sites where lake sediment, bog sediment, or stream sediment and other sample media were collected (O'Leary and others, 1976). The samples were collected adjacent to, or within a few yards of lakes or streams draining areas ranging from 10 to 25 km².

A composite sample was collected at each site by sampling several branches of each of two or three trees growing within a few feet to a few yards of each other. The present year's growth of ground birch and 3 to 5 years growth of spruce needles taken approximately at chest height were placed in cloth bags and allowed to dry.

The leaves and needles were separated from twigs and were finely chopped in a blender. They were ashed in a muffle furnace at a peak temperature of 500°C for 24 hours.

The ashed material was then analyzed by optical emission spectrography (Mosier, 1972) for 29 elements. The results were reported as the approximate midpoints of geometric brackets whose boundaries are 1.2, 0.83, 0.56, 0.38, 0.26, 0.18, 0.12, and so on. These midpoints are 1, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, and so on.

The lower limits of determination used for vegetation are, for those given in percentage: iron, 0.05; magnesium, 0.02; and titanium, 0.002. For those reported in ppm: manganese, 10; silver, 0.1; arsenic, 200; gold, 2; boron, 5; barium, 20; beryllium, 1; bismuth, 1; cadmium, 2; cobalt, 10; chromium, 5; copper, 1; lanthanum, 20; molybdenum, 2; niobium, 50; nickel, 5; lead, 1; antimony, 50; scandium, 5; tin, 5; strontium, 100; vanadium, 10; tungsten, 50; yttrium, 10; zinc, 100; and zirconium, 10.

EXPLANATION OF DATA

The analytical results were entered into the computerized Rock Analysis Storage System (RASS) of the U.S. Geological Survey (VanTrump and Miesch, 1977). A computer print-out program was used in compiling the tables.

The columns have heading titles of sample, latitude, longitude, the elements, and percent ash.

The results for all elements are reported in parts per million (ppm) except for iron, magnesium, and titanium, which are reported in percent.

Definitions of the qualifier codes used in Tables 1 and 2 are as follows: --, no data available, or sample not analyzed for this element; N, not detected at the level of detection; <, detected, but below the lowest limit of detection, which is value shown; and >, greater than value shown.

The sample numbers appearing in figures 1 and 2 have been simplified from sample numbers in Tables 1 and 2. The prefix TX and suffixes VB and VD were eliminated. Therefore, TX112VB and TX98VD become 112 and 98 on the respective figures. A DTX prefix indicates that a replicate sample was collected at a particular site.

REFERENCES CITED

- Mosier, E. L., 1972, A method for semiquantitative spectrographic analysis of plant ash for use in biogeochemical and environmental studies: *Applied Spectroscopy*, v. 26, no. 6, p. 636-640.
- O'Leary, R. M., McDaniel, S. K., McDougal, C. M., Day, G. W., Curtin, G. C., and Foster, H. L., 1976, Spectrographic and chemical analyses of geochemical samples and related data from the Tanacross quadrangle, Alaska: U.S. Geological Survey Open-File Report 76-422, 94 p.
- VanTrump, George, Jr., and Miesch, A. T., 1977, The U.S. Geological Survey RASS-STAT^{AC} system for management and statistical reduction of geochemical data: *Computers and Geosciences*, v. 3, p. 475-488.

Table 1.--Spectrographic analyses for the ash of samples of ground birch leaves collected in the Tanacross quadrangle, Alaska

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX52VDA	63 37 0	142 31 40	.07	3.0	--	.005	>10,000	.1	N	N	200	500
TX52VDB	63 37 0	142 31 40	.07	5.0	--	.005	5,000	N	N	N	200	150
TX56VD	63 33 35	142 40 20	.07	3.0	--	.005	>10,000	N	N	N	150	700
TX57VD	63 34 10	142 34 20	.10	10.0	--	.010	>10,000	.7	N	N	200	500
TX58VD	63 30 55	142 35 20	.10	5.0	--	.005	>10,000	N	N	N	150	700
TX59VD	63 32 10	142 33 30	.10	10.0	--	.010	>10,000	1.0	N	<2	150	70
TX60VD	63 30 10	142 42 10	.10	5.0	--	.010	>10,000	N	N	N	200	700
TX61VD	63 32 10	142 33 5	.10	5.0	--	.010	>10,000	N	N	N	150	700
TX62VD	63 31 0	142 48 20	.10	5.0	--	.010	>10,000	N	N	N	200	200
TX63VD	63 32 15	142 37 35	.10	10.0	--	.010	7,000	N	N	N	200	700
DTX63VD	63 32 15	142 37 35	.15	10.0	--	.020	10,000	N	N	N	200	700
TX65VD	63 32 10	142 54 20	.10	10.0	--	.010	7,000	N	N	N	150	700
TX71VD	63 33 10	143 25 60	.10	10.0	--	.010	7,000	1.0	N	2	200	200
TX73VD	63 35 10	143 23 5	.20	10.0	--	.010	>10,000	N	N	N	300	700
TX76VD	63 43 10	143 21 10	.10	10.0	--	.005	10,000	N	N	N	200	300
TX78VD	63 37 30	142 48 50	.10	10.0	--	.005	>10,000	N	N	N	150	700
DTX78VD	63 37 30	142 48 50	.10	10.0	--	.010	>10,000	<.1	N	N	200	700
TX79VD	63 40 40	142 25 25	.10	10.0	--	.002	>10,000	.5	N	N	300	200
TX80VD	63 38 55	142 53 25	.10	10.0	--	.002	>10,000	N	N	N	150	300
TX81VD	63 37 30	142 44 25	.10	5.0	--	.002	>10,000	N	N	N	150	700
TX83VD	63 44 25	142 56 55	.10	5.0	--	.010	10,000	N	N	N	200	500
TX84VD	63 48 5	142 43 55	.15	10.0	--	.010	>10,000	N	N	N	200	700
TX85VD	63 45 50	142 52 15	.10	5.0	--	.005	>10,000	N	N	N	150	300
TX86VD	63 49 30	142 39 40	.30	10.0	--	.005	>10,000	<.1	N	N	150	700
TX87VD	63 46 50	142 47 20	.10	5.0	--	.002	>10,000	<.1	N	N	150	700
TX88VD	63 51 50	142 38 35	.30	10.0	--	.005	>10,000	<.1	N	N	150	700
TX89VD	63 48 25	142 32 30	.15	10.0	--	.010	>10,000	N	N	N	150	500
TX90VD	63 54 10	142 35 40	.20	10.0	--	.002	>10,000	N	N	N	200	700
TX91VD	63 50 40	142 31 40	.50	10.0	--	.005	>10,000	N	N	N	200	700
TX92VD	63 45 40	142 40 40	.20	10.0	--	.005	>10,000	N	N	N	200	700
DTX92VD	63 45 40	142 40 40	.20	10.0	--	.010	>10,000	N	N	N	150	700
TX93VD	63 46 20	142 37 25	.20	10.0	--	.005	>10,000	N	N	N	200	700
TX94VD	63 42 45	142 28 55	.15	10.0	--	.005	>10,000	N	N	N	200	300
TX95VD	63 47 5	142 30 35	.15	10.0	--	.005	>10,000	N	N	N	150	700
TX96VD	63 41 50	142 26 45	.15	7.0	--	.010	>10,000	N	N	N	200	700
TX97VD	63 45 25	142 33 55	.10	5.0	--	.005	>10,000	N	N	N	200	700
TX98VD	63 46 0	143 10 10	.10	7.0	--	.005	>10,000	N	N	N	150	700
TX99VD	63 42 30	142 31 40	.70	10.0	--	.030	>10,000	.1	N	N	200	1,000
TX100VD	63 47 55	143 7 60	.15	10.0	--	.005	>10,000	N	N	N	150	700
TX101VD	63 44 20	143 17 20	.20	>10.0	--	.020	10,000	N	N	N	200	200
TX102VD	63 46 40	143 20 10	.20	10.0	--	.005	>10,000	N	N	N	150	700
TX103VD	63 46 60	143 11 20	.10	10.0	--	.010	>10,000	N	N	N	150	700
TX104VD	63 48 0	143 22 40	.10	10.0	--	.002	>10,000	N	N	N	150	300
TX105VD	63 48 10	143 4 20	.15	10.0	--	.002	>10,000	N	N	N	150	700
TX106VD	63 48 0	143 21 0	.20	>10.0	--	.002	>10,000	N	N	N	150	700

ground birch

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-VB	S-NI	S-PB
TX52VDA	N	N	5	5	N	50	N	2	N	100	15.0
TX52VDB	N	N	N	N	N	100	N	2	N	30	5.0
TX56VD	N	N	5	10	N	100	N	2	N	150	2.0
TX57VD	N	N	5	5	N	150	N	2	N	50	7.0
TX58VD	N	N	5	20	N	150	N	2	N	100	3.0
TX59VD	N	N	5	5	N	150	N	2	N	100	5.0
TX60VD	N	N	15	5	N	70	N	2	N	30	7.0
TX61VD	N	N	5	20	N	70	N	<2	N	70	5.0
TX62VD	N	N	2	N	N	150	N	2	N	30	7.0
TX63VD	N	N	5	N	N	150	N	2	N	50	30.0
DTX63VD	N	N	5	N	N	150	N	2	N	70	10.0
TX65VD	N	N	5	N	N	100	N	2	N	20	7.0
TX71VD	N	N	2	10	N	150	N	10	N	50	10.0
TX73VD	N	N	10	N	N	150	N	15	N	100	15.0
TX76VD	N	N	5	N	N	150	N	2	N	30	7.0
TX78VD	N	N	10	30	N	150	N	2	N	70	7.0
DTX78VD	N	N	20	15	N	150	N	5	N	100	10.0
TX79VD	N	N	5	N	N	150	N	2	N	30	15.0
TX80VD	N	N	5	N	N	100	N	2	N	30	5.0
TX81VD	N	N	20	N	N	100	N	7	N	30	5.0
TX83VD	N	N	5	N	N	100	N	2	N	30	10.0
TX84VD	N	N	10	N	N	150	N	2	N	20	10.0
TX85VD	N	N	7	5	N	70	N	2	N	20	2.0
TX86VD	N	N	5	30	N	150	N	3	N	150	7.0
TX87VD	N	N	10	10	N	70	N	3	N	30	5.0
TX88VD	N	N	5	30	N	100	N	3	N	150	5.0
TX89VD	N	N	3	N	N	100	N	3	N	50	10.0
TX90VD	N	N	5	30	N	150	N	5	N	100	15.0
TX91VD	N	N	7	15	N	150	N	5	N	150	2.0
TX92VD	N	N	7	30	N	150	N	5	N	150	5.0
DTX92VD	N	N	3	20	N	150	N	2	N	150	3.0
TX93VD	N	N	5	10	N	100	N	2	N	50	1.0
TX94VD	N	N	5	N	N	150	N	5	N	50	2.0
TX95VD	N	N	5	N	N	70	N	5	N	30	2.0
TX96VD	N	N	10	N	N	70	N	5	N	30	2.0
TX97VD	N	N	5	N	N	70	N	2	N	30	2.0
TX98VD	N	N	5	15	N	50	N	2	N	50	5.0
TX99VD	N	N	7	30	N	100	N	2	N	150	5.0
TX100VD	N	N	5	30	N	100	N	2	N	150	2.0
TX101VD	N	N	2	N	N	150	N	2	N	150	5.0
TX102VD	N	N	5	20	N	150	N	3	N	150	2.0
TX103VD	N	N	10	15	N	30	N	5	N	50	2.0
TX104VD	N	N	N	5	N	150	N	2	N	100	1.0
TX105VD	N	N	5	10	N	70	N	2	N	50	2.0
TX106VD	N	N	2	30	N	100	N	2	N	50	5.0

ground birch

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-ZR	S-Y	S-ZN	S-ZR	ASHZ
TX52VDA	N	N	N	200	20	N		N	3,000	N	4.03
TX52VDB	N	N	N	500	10	N		N	5,000	N	4.41
TX56VD	N	N	N	200	20	N		N	3,000	N	3.75
TX57VD	N	N	N	500	30	N		N	5,000	N	3.90
TX58VD	N	N	N	300	30	N		N	3,000	N	4.45
TX59VD	N	N	N	300	30	N		N	3,000	N	4.15
TX60VD	N	N	N	300	50	N		N	3,000	N	4.00
TX61VD	N	N	N	200	10	N		N	3,000	N	3.90
TX62VD	N	N	N	150	20	N		N	3,000	N	4.16
TX63VD	N	N	N	500	20	N		N	7,000	N	3.73
DTX63VD	N	N	N	500	20	N		N	7,000	N	3.78
TX65VD	N	N	N	500	10	N		N	7,000	N	3.75
TX71VD	N	N	N	200	20	N		N	3,000	N	3.80
TX73VD	N	N	N	500	20	N		N	7,000	N	3.56
TX76VD	N	N	N	500	20	N		N	5,000	N	4.08
TX78VD	N	N	N	300	20	N		N	3,000	N	4.26
DTX78VD	N	N	N	500	50	N		N	7,000	N	3.85
TX79VD	N	N	N	300	20	N		N	7,000	N	5.58
TX80VD	N	N	N	200	20	N		N	3,000	N	3.56
TX81VD	N	N	N	200	20	N		N	5,000	N	3.73
TX83VD	N	N	<5	200	10	N		N	5,000	N	5.75
TX84VD	N	N	N	500	30	N		N	3,000	N	3.41
TX85VD	N	N	N	100	20	N		N	3,000	N	3.75
TX86VD	N	N	N	500	30	N		N	2,000	N	4.11
TX87VD	N	N	N	300	50	N		N	3,000	N	4.21
TX88VD	N	N	N	500	50	N		N	3,000	N	4.48
TX89VD	N	N	N	700	20	N		N	3,000	N	4.03
TX90VD	N	N	N	300	70	N		N	2,000	N	3.15
TX91VD	N	N	N	500	70	N		N	3,000	N	4.75
TX92VD	N	N	N	300	50	N		N	3,000	N	4.01
DTX92VD	N	N	N	700	20	N		N	3,000	N	3.85
TX93VD	N	N	N	300	30	N		N	3,000	N	4.61
TX94VD	N	N	N	100	50	N		N	2,000	N	3.58
TX95VD	N	N	N	300	50	N		N	2,000	N	4.13
TX96VD	N	N	N	300	50	N		N	3,000	N	3.25
TX97VD	N	N	N	200	50	N		N	3,000	N	4.70
TX98VD	N	N	N	300	30	N		N	3,000	N	3.92
TX99VD	N	N	N	500	50	N		N	3,000	15	3.98
TX100VD	N	N	N	300	20	N		N	3,000	N	3.98
TX101VD	N	N	N	300	10	N		N	5,000	N	3.23
TX102VD	N	N	N	300	20	N		N	2,000	N	4.15
TX103VD	N	N	N	200	30	N		N	3,000	N	5.15
TX104VD	N	N	N	200	10	N		N	2,000	N	4.05
TX105VD	N	N	N	300	20	N		N	2,000	N	3.11
TX106VD	N	N	N	300	30	N		N	2,000	N	3.88

ground birch--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CA%	S-TIX	S-WN	S-AG	S-AS	S-AU	S-B	S-BA
TX108V0	63 45 10	143 29 50	.20	10.0	--	.005	5,000	<.1	N	N	200	500
TX109V0	63 45 20	143 22 0	.20	10.0	--	.020	>10,000	<.1	N	N	150	700
TX110V0	63 52 10	143 25 30	.20	10.0	--	.002	>10,000	<.1	N	N	200	700
TX111V0	63 49 35	143 25 10	.20	10.0	--	.005	>10,000	<.1	N	N	200	300
TX112V0	63 51 45	143 26 10	.10	10.0	--	.002	>10,000	<.1	N	N	200	700
TX113V0	63 43 50	143 28 10	.10	5.0	--	.002	>10,000	<.1	N	N	150	300
TX114V0	63 55 40	143 16 60	.10	10.0	--	.002	10,000	<.1	N	N	200	500
TX115V0	63 51 20	143 22 0	.10	10.0	--	.002	>10,000	<.1	N	N	150	700
TX116V0	63 58 5	143 23 40	.30	10.0	--	.003	>10,000	<.1	N	N	300	700
TX117V0	63 54 0	143 22 0	.20	10.0	--	.005	>10,000	.7	N	2	300	500
DTX117V0	63 54 0	143 22 0	.20	10.0	--	.005	>10,000	<.1	N	N	300	700
TX118V0	63 58 60	143 15 30	.20	10.0	--	.002	>10,000	<.1	N	N	150	700
TX119V0	63 53 20	143 16 15	.20	10.0	--	.005	10,000	<.1	N	N	150	700
TX120V0	63 56 40	143 6 50	.20	10.0	--	.002	>10,000	<.1	N	N	150	500
TX121V0	63 58 50	143 20 30	.20	>10.0	--	.002	>10,000	<.1	N	N	200	700
TX122V0	63 57 50	142 59 15	.10	10.0	--	<.002	>10,000	<.1	N	N	300	300
TX123V0	63 59 45	142 23 20	.30	>10.0	--	.020	>10,000	<.1	N	N	200	700
TX124V0	63 57 10	143 30 20	.10	10.0	--	.002	>10,000	<.1	N	N	300	700
TX125V0	63 57 5	143 10 20	.20	10.0	--	.002	>10,000	<.1	N	N	100	700
TX127V0	63 56 30	143 2 40	.20	10.0	--	.002	>10,000	<.1	N	N	200	700
TX131V0	63 57 10	143 24 20	.20	>10.0	--	.005	>10,000	<.1	N	N	200	700
TX133V0	63 53 55	143 35 40	.10	10.0	--	<.002	7,000	<.1	N	N	150	700
TX135V0	63 58 60	143 35 40	.20	10.0	--	.002	10,000	<.1	N	N	150	500
TX136V0	63 13 55	143 5 0	.10	10.0	--	<.002	>10,000	<.1	N	N	150	150
TX137V0	63 53 10	143 37 50	.10	5.0	--	<.002	10,000	N	N	N	100	700
TX139V0	63 50 15	143 51 50	.30	5.0	--	.002	1,000	N	N	N	150	200
DTX139V0	63 50 15	143 51 50	.15	5.0	--	<.002	1,000	N	N	N	150	150
TX141V01	63 49 20	143 54 20	.50	10.0	--	.020	10,000	N	N	N	150	700
TX141V02	63 49 20	143 54 20	.15	10.0	--	.002	10,000	N	N	N	150	200
TX143V0	63 47 30	143 54 40	.10	5.0	--	.002	3,000	N	N	N	100	300
TX147V0	63 8 5	143 56 10	.20	10.0	--	.003	2,000	N	N	N	200	200
TX155V0	63 14 50	143 54 35	.10	3.0	--	.002	>10,000	N	N	N	150	150
TX157V0	63 14 50	143 54 35	.20	3.0	--	.002	2,000	N	N	N	200	150
TX163V0	63 20 10	143 56 45	.15	3.0	--	.010	2,000	N	N	N	50	300
TX166V0	63 56 60	143 1 30	.15	10.0	--	.002	>10,000	N	N	N	200	700
TX167V0	63 57 40	143 35 20	.10	5.0	--	.002	10,000	N	N	N	150	700
TX168V0	63 59 50	143 39 15	.10	5.0	--	.002	10,000	N	N	N	200	700
TX169V0	63 57 40	143 40 30	.20	10.0	--	.002	5,000	N	N	N	150	700
TX170V0	63 58 55	143 52 0	.15	10.0	--	.002	>10,000	N	N	N	150	700
TX171V0	63 55 20	143 46 25	.10	5.0	--	.002	7,000	N	N	N	150	700
TX173V0	63 56 5	143 45 60	.20	10.0	--	.002	10,000	N	N	N	150	500
TX175V0	63 54 45	143 53 55	.20	5.0	--	.002	10,000	N	N	N	500	700
DTX175V0	63 54 45	143 53 55	.30	10.0	--	.020	10,000	N	N	N	1,000	1,000
TX176V0	63 52 20	143 58 30	.10	10.0	--	.002	7,000	N	N	N	150	300
TX177V0	63 56 5	143 56 50	.20	10.0	--	.005	2,000	.1	N	N	50	500

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX108VD	N	N	2	N	N	100	N	15	N	50	2.0
TX109VD	N	N	5	30	N	150	N	2	N	150	20.0
TX110VD	N	N	5	10	N	150	N	3	N	150	5.0
TX111VD	N	N	2	N	N	150	N	2	N	50	5.0
TX112VD	N	N	7	N	N	150	N	3	N	100	5.0
TX113VD	N	N	20	30	N	70	N	2	N	100	15.0
TX114VD	N	N	2	5	N	150	N	N	N	100	7.0
TX115VD	N	N	15	30	N	100	N	2	N	100	5.0
TX116VD	N	N	7	30	5	100	N	20	N	100	20.0
TX117VD	N	N	5	N	N	150	N	7	N	30	10.0
DTX117VD	N	N	2	N	N	150	N	10	N	20	5.0
TX118VD	N	30	7	20	N	150	N	15	N	100	2.0
TX119VD	N	N	2	5	N	100	N	3	N	50	5.0
TX120VD	N	N	5	5	N	150	N	2	N	30	7.0
TX121VD	N	N	7	N	N	150	N	3	N	70	2.0
TX122VD	N	N	5	N	N	150	N	3	N	30	2.0
TX123VD	N	N	7	30	N	150	N	2	N	150	20.0
TX124VD	N	N	7	5	N	150	N	3	N	100	7.0
TX125VD	N	N	7	5	N	100	N	2	N	100	2.0
TX127VD	N	N	10	N	N	100	N	3	N	30	2.0
TX131VD	N	N	15	10	N	150	N	15	N	150	5.0
TX133VD	N	N	2	N	N	150	N	15	N	30	7.0
TX135VD	N	N	N	N	N	150	N	10	N	50	2.0
TX136VD	N	N	N	10	N	70	N	2	N	20	2.0
TX137VD	N	N	7	10	N	50	N	<2	N	30	2.0
TX139VD	N	N	N	N	N	150	N	<2	N	30	5.0
DTX139VD	N	N	N	N	N	150	N	N	N	15	5.0
TX141VD1	N	N	7	10	N	50	N	2	N	15	5.0
TX141VD2	N	N	N	N	N	100	N	2	N	20	2.0
TX143VD	N	N	N	N	N	100	N	3	N	30	2.0
TX147VD	N	N	N	N	N	150	N	3	N	100	20.0
TX155VD	N	N	2	N	N	70	N	N	N	30	10.0
TX157VD	N	N	2	5	N	150	N	2	N	150	7.0
TX163VD	N	N	N	N	N	150	N	N	N	30	5.0
TX166VD	N	N	7	30	5	150	N	5	N	70	20.0
TX167VD	N	N	7	10	N	100	N	2	N	150	7.0
TX168VD	N	N	5	N	N	150	N	5	N	50	2.0
TX169VD	N	N	2	N	N	100	N	10	N	30	10.0
TX170VD	N	N	15	15	N	100	N	20	N	30	10.0
TX171VD	N	N	2	N	N	100	N	2	N	50	5.0
TX173VD	N	N	5	30	N	150	N	5	N	70	10.0
TX175VD	N	N	10	15	5	50	N	5	N	50	5.0
DTX175VD	N	N	10	30	7	100	N	10	N	70	30.0
TX176VD	N	N	2	N	N	50	N	2	N	15	5.0
TX177VD	N	N	5	N	N	150	N	15	N	30	5.0

ground birch--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHZ
TX108VD	N	N	N	700	10	N	N	3,000	N	5.91
TX109VD	N	N	N	700	50	N	N	7,000	N	3.41
TX110VD	N	N	N	1,000	30	N	N	7,000	N	4.33
TX111VD	N	N	N	500	30	N	N	7,000	N	4.85
TX112VD	N	N	N	500	70	N	N	5,000	N	4.01
TX113VD	N	N	N	300	30	N	N	5,000	N	6.08
TX114VD	N	N	N	300	20	N	N	5,000	N	4.63
TX115VD	N	N	N	500	50	N	N	3,000	N	3.93
TX116VD	N	N	N	300	100	N	N	3,000	N	3.21
TX117VD	N	N	N	500	30	N	N	7,000	N	4.98
DTX117VD	N	N	N	700	30	N	N	7,000	N	5.03
TX118VD	N	N	N	700	30	N	N	5,000	N	4.03
TX119VD	N	N	N	700	10	N	N	7,000	N	3.70
TX120VD	N	N	N	700	20	N	N	7,000	N	4.23
TX121VD	N	N	N	500	50	N	N	5,000	N	4.58
TX122VD	N	N	N	300	20	N	N	5,000	N	5.31
TX123VD	N	N	N	300	50	N	N	3,000	N	3.77
TX124VD	N	N	N	300	30	N	N	5,000	N	4.33
TX125VD	N	N	N	700	20	N	N	5,000	N	4.90
TX127VD	N	N	N	700	50	N	N	7,000	N	3.86
TX131VD	N	N	N	500	70	50	N	5,000	N	3.21
TX133VD	N	N	N	500	10	N	N	5,000	N	5.10
TX135VD	N	N	N	500	10	N	N	1,500	N	6.83
TX136VD	N	N	N	100	30	N	N	3,000	N	4.50
TX137VD	N	N	N	500	10	N	N	2,000	N	8.00
TX139VD	N	N	N	1,000	5	N	N	1,500	N	7.28
DTX139VD	N	N	N	700	5	N	N	1,500	N	8.36
TX141VD1	N	N	N	1,000	30	N	N	2,000	N	5.05
TX141VD2	N	N	N	500	30	N	N	7,000	N	4.75
TX143VD	N	N	N	500	5	N	N	5,000	N	4.28
TX147VD	N	N	N	150	5	N	N	3,000	N	5.20
TX155VD	N	N	N	N	20	N	N	1,500	N	4.33
TX157VD	N	N	N	N	5	N	N	3,000	N	6.03
TX163VD	N	N	N	100	5	N	N	3,000	N	4.88
TX166VD	N	N	N	300	70	N	N	3,000	N	3.73
TX167VD	N	N	N	300	20	N	N	3,000	N	4.28
TX168VD	N	N	N	700	30	N	N	5,000	N	4.50
TX169VD	N	N	N	700	5	N	N	5,000	N	4.60
TX170VD	N	N	N	300	30	N	N	3,000	N	4.38
TX171VD	N	N	N	200	10	N	N	1,500	N	5.13
TX173VD	N	N	N	200	30	N	N	2,000	N	4.46
TX175VD	N	N	N	200	70	N	N	2,000	N	4.15
DTX175VD	N	N	N	700	150	N	N	3,000	N	3.83
TX176VD	N	N	N	700	10	N	N	5,000	N	4.66
TX177VD	N	N	N	500	10	N	N	3,000	N	3.66

ground birch--continued

sample	LATITUDE	LONGTUD	S-FEX	S-MGZ	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX179VD	63 45 55	143 57 10	.10	3.0	---	<.002	>10,000	N	N	N	300	700
TX181VD	63 47 5	143 39 10	.20	10.0	---	.005	>10,000	N	N	N	300	700
TX187VD	63 43 40	143 51 45	.20	>10.0	---	.010	>10,000	.1	N	N	700	300
TX191VD	63 38 50	143 43 0	.15	3.0	---	.005	10,000	.1	N	N	300	150
TX193VD	63 42 45	143 32 55	.30	10.0	---	.020	>10,000	.1	N	N	200	700
TX196VD	63 54 0	143 2 35	.20	10.0	---	.005	>10,000	.1	N	N	700	700
TX197VD	63 36 15	143 33 35	.10	5.0	---	<.002	7,000	N	N	N	150	500
TX198VD	63 52 55	143 4 45	.10	7.0	---	.002	>10,000	N	N	N	150	700
TX199VD	63 53 7	143 1 39	.30	>10.0	---	.010	>10,000	N	N	N	200	200
TX200VD	63 52 14	143 0 25	.20	>10.0	---	.002	>10,000	N	N	N	150	700
TX201VD	63 51 15	143 0 60	.10	3.0	---	.005	>10,000	N	N	N	200	300
TX202VD	63 51 40	142 57 22	.20	10.0	---	.005	>10,000	N	N	N	300	500
TX203VD	63 52 35	142 59 20	.20	>10.0	---	.002	>10,000	N	N	N	300	700
TX205VD	63 52 25	142 54 45	.10	5.0	---	.002	10,000	N	N	N	300	500
TX206VD	63 54 2	143 9 43	.20	10.0	---	.001	>10,000	N	N	N	300	500
TX208VD	63 51 25	143 10 30	.10	10.0	---	.002	>10,000	N	N	N	150	500
TX209VD	63 51 20	143 7 0	.10	10.0	---	.005	>10,000	N	N	N	200	500
TX210VD	63 49 40	143 14 30	.10	>10.0	---	<.002	>10,000	N	N	N	200	700
TX211VD	63 50 25	143 7 45	.10	7.0	---	<.002	>10,000	N	N	N	150	300
TX212VD	63 38 40	141 14 10	.20	10.0	---	.005	>10,000	.1	N	N	500	700
TX213VD	63 50 5	143 10 15	.10	10.0	---	.005	>10,000	N	N	N	300	500
TX215VD	63 50 55	142 58 30	.10	10.0	---	.005	>10,000	N	N	N	100	700
TX216VD	63 49 19	142 54 17	.10	10.0	---	<.002	>10,000	N	N	N	200	300
TX217VD	63 50 60	142 51 15	.10	10.0	---	<.002	>10,000	N	N	N	200	500
TX219VD	63 53 15	142 45 30	.07	10.0	---	<.002	>10,000	N	N	N	300	700
TX220VD	63 58 40	142 54 5	.05	3.0	---	<.002	>10,000	N	N	N	200	500
TX221VD	63 56 60	142 45 50	.10	5.0	---	.002	>10,000	N	N	N	200	700
TX222VD	63 58 15	142 46 40	.20	>10.0	---	.005	>10,000	.1	N	N	300	1,000
TX223VD	63 57 25	142 44 0	.10	10.0	---	.002	>10,000	.1	N	N	150	700
TX224VD	63 59 25	142 43 5	.05	5.0	---	<.002	>10,000	N	N	N	200	500
TX225VD	63 56 0	142 40 60	.10	>10.0	---	.002	>10,000	N	N	N	150	700
TX226VD	63 58 25	142 17 45	.05	10.0	---	<.002	>10,000	.1	N	N	150	500
TX227VD	63 55 55	142 34 30	.10	10.0	---	<.002	>10,000	N	N	N	150	500
TX228VD	63 57 40	142 18 10	.20	10.0	---	.002	>10,000	N	N	N	150	700
TX229VD	63 58 0	142 31 40	.10	10.0	---	.002	>10,000	N	N	N	150	700
TX230VD	63 57 40	142 11 30	.10	5.0	---	<.002	>10,000	N	N	N	150	700
TX231VD	63 56 5	142 21 45	.20	5.0	---	.030	>10,000	N	N	N	150	1,000
TX232VD	63 59 30	142 4 0	.10	10.0	---	.002	>10,000	N	N	N	200	1,000
TX233VD	63 54 55	142 20 50	.20	10.0	---	.002	10,000	N	N	N	100	700
TX235VD	63 55 10	142 9 15	.10	10.0	---	.003	>10,000	N	N	N	200	500
TX236VD	63 53 20	142 10 60	.10	5.0	---	<.002	>10,000	N	N	N	150	700
TX237VD	63 50 35	142 4 10	.20	10.0	---	.002	>10,000	N	N	N	150	700
TX238VD	63 53 5	142 18 50	.10	10.0	---	<.002	10,000	N	N	N	150	700
TX239VD	63 52 35	142 2 15	.10	10.0	---	.002	>10,000	N	N	N	300	1,000
TX240VD	63 49 40	142 18 35	.05	7.0	---	<.002	>10,000	N	N	N	150	500

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX179VD	N	N	2	N	N	100	N	7	N	15	5.0
TX181VD	N	N	10	5	5	100	N	5	N	30	5.0
TX187VD	N	N	2	5	N	150	N	2	N	30	5.0
TX191VD	N	N	N	N	N	100	N	2	N	50	5.0
TX193VD	N	N	2	N	N	100	N	3	N	30	7.0
TX196VD	N	N	2	5	N	150	N	3	N	50	2.0
TX197VD	N	N	2	5	N	100	N	10	N	20	1.5
TX198VD	N	N	5	10	N	150	N	5	N	30	1.0
TX199VD	N	N	2	N	N	100	N	2	N	30	7.0
TX200VD	N	N	N	7	N	150	N	5	N	30	10.0
TX201VD	N	N	10	N	N	70	N	2	N	15	5.0
TX202VD	N	N	5	10	N	100	N	20	N	15	20.0
TX203VD	N	N	5	20	N	150	N	3	N	30	7.0
TX205VD	N	N	3	5	N	100	N	5	N	30	7.0
TX206VD	N	N	10	5	N	70	N	7	N	30	7.0
TX208VD	N	N	7	N	N	100	N	2	N	50	7.0
TX209VD	N	N	2	N	N	70	N	2	N	30	30.0
TX210VD	N	N	10	30	N	100	N	5	N	50	7.0
TX211VD	N	N	7	20	N	100	N	2	N	100	10.0
TX212VD	N	N	7	30	N	100	N	3	N	30	10.0
TX213VD	N	N	10	10	N	100	N	15	N	50	10.0
TX215VD	N	N	2	5	N	100	N	2	N	30	10.0
TX216VD	N	N	15	N	N	100	N	5	N	20	2.0
TX217VD	N	N	5	5	N	100	N	2	N	20	7.0
TX219VD	N	N	2	5	N	150	N	2	N	150	3.0
TX220VD	N	N	7	N	N	50	N	2	N	20	1.0
TX221VD	N	N	7	20	N	100	N	15	N	150	5.0
TX222VD	N	N	5	30	5	150	N	7	N	150	5.0
TX223VD	N	N	20	30	N	100	N	3	N	150	7.0
TX224VD	N	N	10	10	N	70	N	3	N	30	2.0
TX225VD	N	N	10	N	N	70	N	10	N	100	5.0
TX226VD	N	N	2	N	N	70	N	5	N	50	5.0
TX227VD	N	N	3	5	N	100	N	30	N	150	5.0
TX228VD	N	N	5	N	N	150	N	N	N	150	10.0
TX229VD	N	N	7	10	N	150	N	N	N	150	5.0
TX230VD	N	N	7	5	N	150	N	N	N	150	5.0
TX231VD	N	N	5	20	N	150	N	2	N	150	20.0
TX232VD	N	N	5	N	N	100	N	5	N	100	5.0
TX233VD	N	N	3	10	N	100	N	5	N	50	10.0
TX235VD	N	N	N	N	N	150	N	2	N	20	7.0
TX236VD	N	N	5	20	N	150	N	<2	N	150	30.0
TX237VD	N	N	3	15	N	150	N	<2	N	100	10.0
TX238VD	N	N	5	N	N	100	N	2	N	100	3.0
TX239VD	N	N	15	10	N	150	N	2	N	70	7.0
TX240VD	N	N	5	5	N	70	N	<2	N	50	2.0

ground birch--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHZ
TX179VD	N	N	N	300	20	N	N	2,000	N	5.98
TX181VD	N	N	N	200	70	N	N	3,000	N	4.26
TX187VD	N	N	N	700	20	N	N	5,000	N	6.30
TX191VD	N	N	N	200	10	N	N	3,000	N	5.68
TX193VD	N	N	N	1,000	50	N	N	5,000	N	5.00
TX196VD	N	N	N	500	70	N	N	3,000	N	3.91
TX197VD	N	N	N	300	10	N	N	3,000	N	5.88
TX198VD	N	N	N	300	70	N	N	3,000	N	4.51
TX199VD	N	N	N	200	50	N	N	3,000	N	2.85
TX200VD	N	N	N	300	30	N	N	3,000	N	3.58
TX201VD	N	N	N	300	50	N	N	7,000	N	4.35
TX202VD	N	N	N	300	30	N	N	5,000	N	3.45
TX203VD	N	N	N	500	50	N	N	3,000	N	4.78
TX205VD	N	N	N	500	20	N	N	1,500	N	4.78
TX206VD	N	N	N	300	30	N	N	5,000	N	3.58
TX208VD	N	N	N	500	30	N	N	5,000	N	3.50
TX209VD	N	N	N	500	30	N	N	5,000	N	3.23
TX210VD	N	N	N	300	50	N	N	3,000	N	4.65
TX211VD	N	N	N	150	50	N	N	1,500	N	3.61
TX212VD	N	N	N	500	30	N	N	3,000	N	4.05
TX213VD	N	N	N	150	50	N	N	3,000	N	3.45
TX215VD	N	N	N	700	30	N	N	5,000	N	3.83
TX216VD	N	N	N	150	70	N	N	5,000	N	5.25
TX217VD	N	N	N	200	50	N	N	2,000	N	4.05
TX219VD	N	N	N	700	20	N	N	7,000	N	4.71
TX220VD	N	N	N	150	30	N	N	5,000	N	5.75
TX221VD	N	N	N	200	20	N	N	3,000	N	4.21
TX222VD	N	N	N	300	70	N	N	2,000	N	3.93
TX223VD	N	N	N	300	50	N	N	5,000	N	3.43
TX224VD	N	N	N	200	30	N	N	5,000	N	4.55
TX225VD	N	N	N	500	20	N	N	5,000	N	3.81
TX226VD	N	N	N	300	10	N	N	3,000	N	4.21
TX227VD	N	N	N	150	20	N	N	3,000	N	3.66
TX228VD	N	N	N	500	20	N	N	5,000	N	3.57
TX229VD	N	N	N	500	30	N	N	5,000	N	3.96
TX230VD	N	N	N	300	30	N	N	3,000	N	4.46
TX231VD	N	N	N	700	30	N	N	7,000	N	6.21
TX232VD	N	N	N	1,000	30	N	N	7,000	N	4.50
TX233VD	N	N	N	700	20	N	N	5,000	N	5.05
TX235VD	N	N	N	700	30	N	N	7,000	N	4.31
TX236VD	N	N	N	500	30	N	N	3,000	N	4.98
TX237VD	N	N	N	500	30	N	N	3,000	N	4.40
TX238VD	N	N	N	700	10	N	N	7,000	N	5.23
TX239VD	N	N	N	500	30	N	N	5,000	N	4.10
TX240VD	N	N	N	200	20	N	N	5,000	N	3.83

ground birch--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MCX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX241VD	63 51 35	142 7 30	.05	5.0	--	<.002	>10,000	N	N	N	300	700
TX242VD	63 50 60	142 23 50	.10	10.0	--	.005	>10,000	N	N	N	300	700
TX243VD	63 50 50	142 16 50	.07	3.0	--	.002	>10,000	N	N	N	500	700
TX244VD	63 47 15	142 26 10	.10	5.0	--	.002	>10,000	N	N	N	200	700
TX245VD	63 52 50	142 29 20	.10	5.0	--	<.002	>10,000	N	N	N	300	700
TX246VD	63 47 25	142 18 40	.05	3.0	--	<.002	>10,000	N	N	N	100	300
TX247VD	63 49 55	142 28 10	.05	2.0	--	<.002	>10,000	N	N	N	30	500
TX248VD	63 47 25	142 10 20	.10	5.0	--	.002	>10,000	.1	N	N	150	700
TX249VD	63 48 45	142 24 10	.15	3.0	--	<.002	>10,000	N	N	N	150	700
TX250VD	63 48 15	142 0 40	.05	10.0	--	.002	>10,000	N	N	N	500	500
TX251VD	63 46 20	142 19 15	.07	5.0	--	<.002	>10,000	N	N	N	150	1,000
TX252VD	63 43 40	142 0 40	.10	5.0	--	.005	>10,000	N	N	N	300	700
TX253VD	63 45 15	142 6 45	.10	5.0	--	.002	>10,000	N	N	N	150	700
TX254VD	63 42 45	142 5 50	.10	5.0	--	.005	>10,000	N	N	N	150	700
TX255VD	63 45 40	142 2 60	.10	5.0	--	.005	>10,000	N	N	N	200	700
TX256VD	63 59 45	141 55 20	.07	5.0	--	.005	>10,000	N	N	N	300	500
DTX256VD	63 59 45	141 55 20	.50	5.0	--	<.002	5,000	N	N	N	150	700
TX257VD	63 43 35	142 16 10	.10	3.0	--	<.002	>10,000	N	N	N	150	300
DTX257VD	63 43 35	142 16 10	.10	5.0	--	.002	>10,000	N	N	N	150	700
TX258VD	63 58 35	141 56 30	.05	3.0	--	.002	7,000	N	N	N	150	700
TX259VD	64 0 0	141 46 60	.10	5.0	--	<.002	>10,000	N	N	N	200	700
TX260VD	63 54 40	141 50 10	.05	5.0	--	.002	>10,000	N	N	N	300	700
TX261VD	63 56 45	141 54 20	.05	5.0	--	<.002	10,000	N	N	N	200	700
TX262VD	63 54 25	141 58 30	<.05	2.0	--	<.002	3,000	N	N	N	200	300
TX263VD	63 56 0	141 54 18	.10	10.0	--	<.002	>10,000	N	N	N	300	1,000
TX264VD	63 49 10	141 46 60	.05	2.0	--	.002	7,000	N	N	N	50	700
TX265VD	63 52 15	141 52 0	.05	3.0	--	<.002	>10,000	N	N	N	300	300
TX266VD	63 49 50	141 46 60	.05	5.0	--	<.002	>10,000	N	N	N	300	700
TX267VD	63 51 45	141 53 25	.05	5.0	--	<.002	>10,000	N	N	N	300	300
TX268VD	63 49 10	141 51 0	.05	5.0	--	.002	>10,000	N	N	N	300	700
TX269VD	63 52 36	141 55 50	.05	7.0	--	.002	7,000	N	N	N	200	500
TX270VD	63 46 5	141 58 0	.05	3.0	--	<.002	>10,000	N	N	N	300	500
TX271VD	63 49 20	141 58 40	.05	3.0	--	<.002	10,000	N	N	N	200	150
TX272VD	63 36 17	143 46 55	.10	10.0	--	.003	>10,000	<.1	N	N	300	300
TX273VD	63 47 50	141 58 10	.05	3.0	--	.002	7,000	N	N	N	200	700
TX274VD	63 33 35	143 45 32	.07	2.0	--	.005	3,000	N	N	N	200	150
TX275VD	63 46 12	141 39 10	.05	3.0	--	.002	5,000	N	N	N	70	700
TX276VD	63 33 24	143 36 5	.10	5.0	--	.003	10,000	N	N	N	200	500
TX277VD	63 46 45	141 39 60	.07	5.0	--	.002	>10,000	N	N	N	150	300
TX278VD	63 32 5	143 41 10	.10	3.0	--	.010	5,000	N	N	N	150	300
TX279VD	63 35 60	143 41 50	.05	1.0	--	<.002	10,000	N	N	N	500	700
TX280VD	63 33 0	143 39 10	.10	3.0	--	.010	5,000	N	N	N	200	700
TX283VD	63 27 45	143 32 20	.10	5.0	--	.010	>10,000	N	N	N	300	700
TX285VD	63 27 6	143 36 49	.07	3.0	--	.005	10,000	N	N	N	300	150
TX286VD	63 28 15	143 36 10	.05	3.0	--	.002	3,000	N	N	N	100	700

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX241VD	N	N	7	10	N	100	N	<2	N	20	7.0
TX242VD	N	N	10	5	N	100	N	2	N	150	7.0
TX243VD	N	N	7	N	N	100	N	<2	N	30	7.0
TX244VD	N	N	2	N	N	100	N	2	N	30	10.0
TX245VD	N	N	30	N	N	100	N	3	N	30	10.0
TX246VD	N	N	7	N	N	50	N	7	N	15	10.0
TX247VD	N	N	N	10	N	30	N	N	N	30	1.0
TX248VD	N	N	7	5	N	150	N	2	N	50	10.0
TX249VD	N	N	7	5	N	100	N	3	N	50	7.0
TX250VD	N	N	10	10	N	150	N	2	N	30	7.0
TX251VD	N	N	20	10	N	100	N	2	N	30	7.0
TX252VD	N	N	15	N	5	100	N	10	N	30	10.0
TX253VD	N	N	10	N	N	100	N	3	N	15	7.0
TX254VD	N	N	5	N	N	100	N	15	N	30	10.0
TX255VD	N	N	100	30	N	100	N	3	N	150	30.0
TX256VD	N	N	5	N	<5	70	N	2	N	15	20.0
DTX256VD	N	N	N	N	N	100	N	<2	N	30	5.0
TX257VD	N	N	15	N	N	70	N	5	N	30	7.0
DTX257VD	N	N	15	N	N	50	N	5	N	30	7.0
TX258VD	N	N	N	N	N	50	N	N	N	30	1.0
TX259VD	N	N	10	N	N	50	N	2	N	20	7.0
TX260VD	N	N	30	N	N	50	N	3	N	20	2.0
TX261VD	N	N	5	N	N	70	N	N	N	50	2.0
TX262VD	N	N	N	N	N	70	N	N	N	20	7.0
TX263VD	N	N	15	30	N	100	N	2	N	50	5.0
TX264VD	N	N	5	N	N	100	N	N	N	50	7.0
TX265VD	N	N	10	N	N	100	N	2	N	20	2.0
TX266VD	N	N	5	N	N	100	N	5	N	20	5.0
TX267VD	N	N	15	30	N	70	N	3	N	30	5.0
TX268VD	N	N	5	10	N	70	N	N	N	30	5.0
TX269VD	N	N	N	N	N	100	N	N	N	30	3.0
TX270VD	N	N	10	15	N	100	N	N	N	30	5.0
TX271VD	N	N	2	N	N	100	N	2	N	5	5.0
TX272VD	N	N	3	N	N	100	N	5	N	5	15.0
TX273VD	N	N	3	N	N	50	N	2	N	30	2.0
TX274VD	N	N	5	N	N	70	N	20	N	20	10.0
TX275VD	N	N	3	N	N	70	N	N	N	30	2.0
TX276VD	N	N	3	N	N	100	N	3	N	10	7.0
TX277VD	N	N	5	10	N	100	N	3	N	15	3.0
TX278VD	N	N	7	N	N	100	N	7	N	15	10.0
TX279VD	N	N	15	10	N	100	N	2	N	50	2.0
TX280VD	N	N	5	N	N	100	N	5	N	20	7.0
TX283VD	N	N	5	N	N	70	N	2	N	30	5.0
TX285VD	N	N	2	N	N	100	N	5	N	50	5.0
TX286VD	N	N	5	N	N	50	N	2	N	15	1.0

ground birch--continued

sample	S-SB	S-S-C	S-S-N	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX241VD	N	N	N	300	30	N	N	7,000	N	4.85
TX242VD	N	N	N	1,000	20	N	N	5,000	N	5.80
TX243VD	N	N	N	300	20	N	N	5,000	N	4.81
TX244VD	N	N	N	500	20	N	N	7,000	N	4.45
TX245VD	N	N	N	200	70	N	N	5,000	N	4.05
TX246VD	N	N	N	100	30	N	N	500	N	4.85
TX247VD	N	N	N	200	10	N	N	1,000	N	4.15
TX248VD	N	N	N	300	30	N	N	5,000	N	5.33
TX249VD	N	N	N	300	30	N	N	5,000	N	5.13
TX250VD	N	N	N	200	30	N	N	3,000	N	4.30
TX251VD	N	N	N	500	30	N	N	5,000	N	4.33
TX252VD	N	N	N	200	100	N	N	5,000	N	4.33
TX253VD	N	N	N	700	50	N	N	7,000	N	4.10
TX254VD	N	N	N	1,500	30	N	N	7,000	N	3.60
TX255VD	N	N	N	500	70	N	N	5,000	N	4.08
TX256VD	N	N	N	300	20	N	N	5,000	N	5.30
DTX256VD	N	N	N	700	10	N	N	5,000	N	4.55
TX257VD	N	N	N	200	70	N	N	5,000	N	3.96
DTX257VD	N	N	N	500	70	N	N	5,000	N	4.31
TX258VD	N	N	N	500	10	N	N	5,000	N	6.68
TX259VD	N	N	N	500	30	N	N	7,000	N	4.30
TX260VD	N	N	N	200	70	N	N	5,000	N	4.51
TX261VD	N	N	N	300	20	N	N	5,000	N	3.83
TX262VD	N	N	N	200	10	N	N	5,000	N	5.25
TX263VD	N	N	N	700	50	N	N	7,000	N	5.38
TX264VD	N	N	N	200	10	N	N	3,000	N	5.83
TX265VD	N	N	N	150	30	N	N	5,000	N	3.56
TX266VD	N	N	N	200	70	N	N	5,000	N	5.21
TX267VD	N	N	N	150	30	N	N	5,000	N	5.03
TX268VD	N	N	N	200	20	N	N	5,000	N	4.35
TX269VD	N	N	N	500	10	N	N	5,000	N	3.65
TX270VD	N	N	N	150	30	N	N	5,000	N	5.06
TX271VD	N	N	N	150	10	N	N	7,000	N	4.58
TX272VD	N	N	N	500	20	N	N	7,000	N	6.80
TX273VD	N	N	N	500	15	N	N	3,000	N	3.18
TX274VD	N	N	N	500	10	N	N	5,000	N	7.88
TX275VD	N	N	N	500	10	N	N	3,000	N	3.81
TX276VD	N	N	N	1,000	20	N	N	3,000	N	5.00
TX277VD	N	N	N	300	30	N	N	3,000	N	3.62
TX278VD	N	N	N	500	20	N	N	7,000	N	5.72
TX279VD	N	N	N	200	20	N	N	2,000	N	7.41
TX280VD	N	N	N	500	20	N	N	2,000	N	6.33
TX283VD	N	N	N	700	30	N	N	2,000	N	6.10
TX285VD	N	N	N	500	20	N	N	3,000	N	5.70
TX286VD	N	N	N	700	10	N	N	3,000	N	4.76

ground birch--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MGZ	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX288VD	63 27 50	143 38 45	.10	3.0	--	.010	>10,000	N	N	N	150	500
TX289VD	63 58 30	141 39 50	.05	3.0	--	.002	>10,000	N	N	N	300	700
TX290VD	63 27 45	143 49 0	.10	10.0	--	.010	10,000	N	N	N	150	700
TX291VD	63 56 45	141 42 40	.05	2.0	--	<.002	7,000	N	N	N	150	700
TX292VD	63 58 15	141 33 40	.05	3.0	--	<.002	>10,000	N	N	N	300	1,000
TX293VD	63 51 45	141 39 10	.05	3.0	--	<.002	>10,000	N	N	N	200	300
TX293VD	63 51 45	141 39 10	.03	3.0	--	<.002	>10,000	N	N	N	500	700
TX294VD	63 56 5	141 39 10	.05	3.0	--	<.002	>10,000	N	N	N	150	700
TX295VD	63 50 60	141 39 10	.05	3.0	--	.002	7,000	N	N	N	150	700
TX296VD	63 55 20	141 42 30	.10	3.0	--	.002	>10,000	N	N	N	100	1,000
TX297VD	63 52 55	141 42 10	.05	3.0	--	.003	10,000	N	N	N	500	1,000
TX298VD	63 54 35	141 33 40	.05	3.0	--	.005	>10,000	N	N	N	200	700
TX299VD	63 52 50	141 36 50	.03	2.0	--	.005	10,000	N	N	N	200	200
TX300VD	63 53 30	141 31 15	.03	2.0	--	.002	10,000	N	N	N	30	200
TX301VD	63 45 30	141 49 5	.05	3.0	--	<.002	>10,000	N	N	N	150	700
TX302VD	63 46 10	141 43 5	.07	3.0	--	.002	10,000	N	N	N	150	700
TX303VD	63 46 10	141 51 20	.05	3.0	--	.002	10,000	.1	N	N	100	700
TX304VD	63 44 35	141 51 15	.05	3.0	--	<.002	10,000	N	N	N	100	700
TX305VD	63 43 32	141 23 5	.03	2.0	--	<.002	7,000	N	N	N	50	500
TX306VD	63 45 0	141 20 30	.02	2.0	--	<.002	3,000	N	N	N	150	200
TX306VD	63 45 0	141 20 30	.05	3.0	--	.002	7,000	N	N	N	150	300
TX307VD	63 47 52	141 2 32	.07	3.0	--	.002	10,000	N	N	N	200	700
TX308VD	63 45 50	141 21 20	.07	3.0	--	<.002	10,000	N	N	N	150	300
TX309VD	63 47 10	141 3 15	.05	2.0	--	.002	5,000	.2	N	N	150	300
TX310VD	63 44 35	141 21 52	.05	2.0	--	<.002	7,000	N	N	N	50	300
TX311VD	63 46 45	141 11 50	.05	2.0	--	<.002	>10,000	N	N	N	70	500
TX312VD	63 43 5	141 13 45	.05	3.0	--	<.002	5,000	N	N	N	50	700
TX313VD	63 43 10	141 9 45	.05	3.0	--	<.002	>10,000	.2	N	N	100	500
TX314VD	63 43 2	141 5 45	.07	3.0	--	<.002	>10,000	N	N	N	100	200
TX315VD	63 42 20	141 10 15	.07	3.0	--	.002	>10,000	N	N	N	150	700
TX316VD	63 42 10	141 5 40	.05	3.0	--	<.002	10,000	N	N	N	100	1,000
TX317VD	63 41 30	141 6 25	.10	3.0	--	.002	10,000	.3	N	N	150	700
TX318VD	63 39 0	141 3 20	.03	2.0	--	<.002	7,000	N	N	N	200	500
TX319VD	63 39 30	141 0 40	.07	3.0	--	<.002	10,000	N	N	N	150	500
TX320VD	63 59 10	141 0 20	.07	3.0	--	<.002	3,000	N	N	N	200	700
TX321VD	63 59 10	141 8 60	.07	3.0	--	<.002	3,000	N	N	N	100	700
TX322VD	63 55 7	141 10 51	.05	3.0	--	.002	10,000	N	N	N	150	300
TX323VD	63 59 58	141 8 51	.05	3.0	--	<.002	1,500	N	N	N	100	300
TX324VD	63 54 33	141 12 30	.05	3.0	--	<.002	5,000	N	N	N	150	700
TX325VD	63 57 15	141 0 0	.07	3.0	--	.002	7,000	N	N	N	200	500
TX326VD	63 54 22	141 6 56	.05	3.0	--	<.002	5,000	N	N	N	100	300
TX327VD	63 56 20	141 7 60	.03	2.0	--	<.002	3,000	1.0	N	N	150	500
TX328VD	63 53 58	141 3 2	.07	3.0	--	<.002	>10,000	N	N	N	50	1,000
TX329VD	63 54 35	141 10 50	.07	2.0	--	<.002	>10,000	N	N	N	50	700
TX330VD	63 52 0	141 8 22	.02	2.0	--	<.002	5,000	N	N	N	150	500

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX288VD	N	N	10	N	N	50	N	50	N	50	10.0
TX289VD	N	N	10	5	N	70	N	2	N	50	2.0
TX290VD	N	N	5	N	N	50	N	5	N	30	7.0
TX291VD	N	N	5	30	N	100	N	N	N	50	10.0
TX292VD	N	N	15	N	N	50	N	3	N	30	2.0
TX293VD	N	N	15	30	N	70	N	2	N	30	2.0
DTX293VD	N	N	15	30	N	70	N	7	N	30	2.0
TX294VD	N	N	7	N	N	100	N	5	N	30	2.0
TX295VD	N	N	3	N	N	100	N	N	N	50	2.0
TX296VD	N	N	5	N	N	100	N	5	N	50	2.0
TX297VD	N	N	3	N	N	100	N	20	N	100	2.0
TX298VD	N	N	7	N	N	70	N	2	N	30	7.0
TX299VD	N	N	2	N	N	50	N	10	N	30	1.0
TX300VD	N	N	5	5	N	30	N	2	N	20	1.0
TX301VD	N	N	7	N	N	30	N	2	N	30	1.0
TX302VD	N	N	7	10	N	50	N	N	N	50	1.0
TX303VD	N	N	2	5	N	50	N	10	N	20	1.0
TX304VD	N	N	5	5	N	50	N	2	N	30	2.0
TX305VD	N	N	2	7	N	30	N	N	N	20	1.0
TX306VD	N	N	2	N	N	30	N	2	N	20	1.0
DTX306VD	N	N	10	N	N	50	N	<2	N	20	1.0
TX307VD	N	N	3	N	N	50	N	5	N	15	1.0
TX308VD	N	N	10	N	N	30	N	2	N	15	1.0
TX309VD	N	N	7	N	N	30	N	<2	N	15	2.0
TX310VD	N	N	5	30	N	30	N	N	N	50	2.0
TX311VD	N	N	7	N	N	30	N	2	N	30	1.0
TX312VD	N	N	5	N	N	50	N	N	N	50	2.0
TX313VD	N	N	7	30	N	30	N	2	N	30	2.0
TX314VD	N	N	10	N	N	50	N	2	N	15	1.0
TX315VD	N	N	15	5	N	30	N	2	N	30	2.0
TX316VD	N	N	10	5	N	30	N	2	N	70	1.0
TX317VD	N	N	15	10	N	30	N	2	N	30	2.0
TX318VD	N	N	5	20	N	30	N	2	N	30	1.0
TX319VD	N	N	7	10	N	50	N	3	N	20	1.0
TX320VD	N	N	7	N	N	50	N	2	N	20	1.0
TX321VD	N	N	5	N	N	50	N	<2	N	70	2.0
TX322VD	N	N	5	N	N	30	N	30	N	15	1.0
TX323VD	N	N	2	N	N	50	N	N	N	30	1.0
TX324VD	N	N	5	N	N	30	N	2	N	50	1.0
TX325VD	N	N	7	N	N	30	N	2	N	20	7.0
TX326VD	N	N	2	N	N	30	N	N	N	30	1.0
TX327VD	N	N	2	N	N	30	N	<2	N	10	1.0
TX328VD	N	N	5	N	N	50	N	<2	N	30	1.0
TX329VD	N	N	5	10	N	50	N	20	N	30	5.0
TX330VD	N	N	2	N	N	30	N	<2	N	7	1.0

ground birch--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX288VD	N	N	N	500	30	N	N	5,000	N	3.68
TX289VD	N	N	N	300	20	N	N	5,000	N	4.11
TX290VD	N	N	N	2,000	20	N	N	5,000	N	4.46
TX291VD	N	N	N	200	10	N	N	3,000	N	4.28
TX292VD	N	N	N	200	30	N	N	5,000	N	3.75
TX293VD	N	N	N	150	20	N	N	3,000	N	4.95
DTX293VD	N	N	N	150	30	N	N	5,000	N	5.18
TX294VD	N	N	N	200	30	N	N	5,000	N	4.15
TX295VD	N	N	N	700	10	N	N	2,000	N	4.96
TX296VD	N	N	N	200	20	N	N	3,000	N	5.06
TX297VD	N	N	N	500	10	N	N	5,000	N	5.07
TX298VD	N	N	N	200	30	N	N	5,000	N	3.89
TX299VD	N	N	N	150	20	N	N	2,000	N	3.85
TX300VD	N	N	N	100	20	N	N	2,000	N	3.32
TX301VD	N	N	N	200	30	N	N	3,000	N	3.50
TX302VD	N	N	N	500	10	N	N	3,000	N	3.56
TX303VD	N	N	N	500	20	N	N	2,000	N	3.58
TX304VD	N	N	N	300	20	N	N	2,000	N	4.11
TX305VD	N	N	N	150	10	N	N	1,500	N	3.51
TX306VD	N	N	N	200	5	N	N	3,000	N	3.88
DTX306VD	N	N	N	300	20	N	N	2,000	N	4.08
TX307VD	N	N	N	300	30	N	N	1,500	N	3.86
TX308VD	N	N	N	300	30	N	N	1,500	N	4.23
TX309VD	N	N	N	300	20	N	N	2,000	N	3.50
TX310VD	N	N	N	150	20	N	N	1,500	N	3.36
TX311VD	N	N	N	200	30	N	N	1,500	N	3.56
TX312VD	N	N	N	500	10	N	N	1,500	N	4.35
TX313VD	N	N	N	200	30	N	N	1,500	N	4.33
TX314VD	N	N	N	200	30	N	N	2,000	N	3.79
TX315VD	N	N	N	200	30	N	N	2,000	N	3.50
TX316VD	N	N	N	300	20	N	N	2,000	N	5.03
TX317VD	N	N	N	200	20	N	N	1,500	N	3.78
TX318VD	N	N	N	150	10	N	N	1,500	N	4.81
TX319VD	N	N	N	200	20	N	N	2,000	N	4.25
TX320VD	N	N	N	150	10	N	N	3,000	N	3.48
TX321VD	N	N	N	200	10	N	N	2,000	N	3.58
TX322VD	N	N	N	150	20	N	N	3,000	N	4.25
TX323VD	N	N	N	300	10	N	N	2,000	N	3.90
TX324VD	N	N	N	300	10	N	N	2,000	N	4.03
TX325VD	N	N	N	200	10	N	N	2,000	N	4.13
TX326VD	N	N	N	150	10	N	N	1,500	N	3.31
TX327VD	N	N	N	150	10	N	N	3,000	N	4.68
TX328VD	N	N	N	300	20	N	N	2,000	N	4.02
TX329VD	N	N	N	200	20	N	N	1,500	N	4.30
TX330VD	N	N	N	300	10	N	N	2,000	N	4.46

sample	LATITUDE	LONGITUDE	S-FEZ	S-MGZ	S-CAZ	S-TIZ	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX331VD	63 52 45	141 6 0	.05	2.0	--	<.002	>10,000	.5	N	N	150	700
DTX331VD	63 52 45	141 6 0	.05	3.0	--	<.002	>10,000	.7	N	N	150	200
TX332VD	63 51 14	141 10 29	.05	2.0	--	<.002	5,000	N	N	N	100	500
TX333VD	63 51 15	141 13 10	.03	2.0	--	<.002	3,000	N	N	N	200	150
TX334VD	63 50 37	141 13 12	.03	3.0	--	<.002	10,000	N	N	N	100	700
TX335VD	63 49 20	141 15 0	.03	2.0	--	<.002	3,000	2.0	N	2	100	300
TX336VD	63 51 40	141 12 18	.03	1.0	--	<.002	10,000	N	N	N	150	500
TX337VD	63 49 20	141 28 50	.05	2.0	--	<.002	>10,000	N	N	N	100	150
TX338VD	63 52 32	141 21 0	.02	2.0	--	<.002	10,000	N	N	N	150	500
TX339VD	63 48 45	141 28 20	.05	1.0	--	<.002	10,000	.5	N	N	70	700
TX340VD	63 53 18	141 24 7	.02	1.0	--	<.002	3,000	N	N	N	100	200
TX341VD	63 57 55	141 21 5	.03	1.0	--	<.002	10,000	N	N	N	150	200
TX342VD	63 57 16	141 32 16	.03	1.0	--	<.002	>10,000	N	N	N	50	700
TX343VD	63 57 12	141 21 47	.03	1.0	--	<.002	7,000	1.0	N	N	30	500
TX344VD	63 50 55	141 25 30	.03	1.0	--	<.002	10,000	N	N	N	150	150
TX345VD	63 58 55	141 29 35	.03	1.0	--	<.002	10,000	N	N	N	150	500
TX346VD	63 51 21	141 27 42	.03	1.0	--	<.002	10,000	N	N	N	200	150
TX347VD	63 54 10	141 30 0	.03	1.0	--	<.002	>10,000	.2	N	N	50	700
TX348VD	63 42 35	141 30 30	.03	1.0	--	<.002	3,000	N	N	N	70	300
TX349VD	63 44 10	141 30 60	.05	3.0	--	<.002	10,000	N	N	N	200	300
TX350VD	63 43 50	141 21 50	.05	3.0	--	<.002	10,000	N	N	N	100	500
TX351VD	63 45 40	141 30 10	.05	2.0	--	<.002	5,000	.7	N	N	50	700
TX352VD	63 41 30	141 23 15	.05	2.0	--	<.002	10,000	N	N	N	100	200
TX353VD	63 42 55	141 26 50	.07	5.0	--	.005	>10,000	N	N	N	200	700
TX354VD	63 40 30	141 33 10	.03	2.0	--	<.002	5,000	N	N	N	150	700
TX355VD	63 40 25	141 28 5	.07	3.0	--	.002	>10,000	.7	N	N	300	500
TX356VD	63 39 30	141 38 30	.05	2.0	--	<.002	>10,000	N	N	N	200	300
DTX356VD	63 39 30	141 38 30	.03	2.0	--	<.002	>10,000	N	N	N	300	150
TX357VD	63 38 40	141 29 0	.05	3.0	--	.002	>10,000	N	N	N	500	1,000
TX358VD	63 33 45	141 19 10	.05	3.0	--	.003	>10,000	N	N	N	500	700
TX359VD	63 36 25	141 39 20	.03	3.0	--	<.002	10,000	.7	N	N	150	500
TX360VD	63 32 54	141 19 18	.07	2.0	--	.002	>10,000	N	N	N	500	700
TX361VD	63 30 50	141 15 55	.07	2.0	--	.005	7,000	N	N	N	150	700
TX362VD	63 35 50	141 0 10	.07	3.0	--	.002	>10,000	N	N	N	200	1,000
TX363VD	63 31 25	141 14 20	.05	3.0	--	.002	10,000	N	N	N	150	700
TX364VD	63 37 35	141 5 10	.05	2.0	--	<.002	10,000	N	N	N	100	700
TX365VD	63 32 20	141 0 20	.05	2.0	--	<.002	10,000	N	N	N	500	700
TX366VD	63 39 30	141 12 57	.07	3.0	--	<.002	>10,000	N	N	N	200	700
TX367VD	63 30 20	141 0 40	.07	2.0	--	.002	10,000	N	N	N	700	700
TX368VD	63 36 5	141 13 50	.05	3.0	--	<.002	>10,000	N	N	N	200	1,000
DTX369VD	63 31 40	141 8 60	.05	2.0	--	.002	>10,000	N	N	N	500	700
TX370VD	63 36 25	141 17 20	.05	3.0	--	<.002	10,000	N	N	N	300	700
TX371VD	63 32 25	141 7 30	.07	2.0	--	.002	10,000	N	N	N	150	700
TX372VDA	63 36 40	141 19 40	.03	2.0	--	.002	7,000	N	N	N	300	300
TX372VDB	63 36 40	141 19 40	.05	3.0	--	.002	10,000	N	N	N	1,000	700

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX331VD	N	N	7	15	N	30	N	2	N	30	2.0
DTX331VD	N	N	5	15	N	30	N	3	N	20	2.0
TX332VD	N	N	N	N	N	30	N	N	N	20	1.0
TX333VD	N	N	N	N	N	30	N	N	N	5	1.5
TX334VD	N	N	5	N	N	30	N	<2	N	30	1.0
TX335VD	N	N	3	N	N	30	N	5	N	20	2.0
TX336VD	N	N	5	20	N	30	N	5	N	20	1.0
TX337VD	N	N	5	N	N	30	N	2	N	20	5.0
TX338VD	N	N	7	N	N	30	N	2	N	15	1.5
TX339VD	N	N	15	N	N	50	N	N	N	30	1.5
TX340VD	N	N	5	N	N	30	N	3	N	30	1.5
TX341VD	N	N	7	N	N	30	N	2	N	10	2.0
TX342VD	N	N	15	N	N	30	N	2	N	10	2.0
TX343VD	N	N	5	N	N	30	N	15	N	15	1.5
TX344VD	N	N	5	N	N	30	N	3	N	20	2.0
TX345VD	N	N	10	N	N	30	N	<2	N	20	2.0
TX346VD	N	N	3	N	N	30	N	<2	N	20	2.0
TX347VD	N	N	10	N	N	30	N	2	N	20	1.5
TX348VD	N	N	N	N	N	30	N	N	N	15	1.5
TX349VD	N	N	2	N	N	30	N	<2	N	30	1.0
TX350VD	N	N	3	7	N	50	N	<2	N	30	1.0
TX351VD	N	N	5	20	N	50	N	N	N	30	2.0
TX352VD	N	N	5	N	N	50	N	N	N	30	30.0
TX353VD	N	N	5	N	N	50	N	3	N	30	2.0
TX354VD	N	N	2	N	N	30	N	5	N	30	5.0
TX355VD	N	N	7	30	N	50	N	2	N	30	2.0
TX356VD	N	N	7	N	N	50	N	2	N	20	2.0
DTX356VD	N	N	7	N	N	50	N	2	N	15	1.0
TX357VD	N	N	20	10	N	50	N	2	N	30	2.0
TX358VD	N	N	7	20	N	50	N	2	N	30	5.0
TX359VD	N	N	5	N	N	50	N	<2	N	30	2.0
TX360VD	N	N	7	20	N	50	N	10	N	30	5.0
TX361VD	N	N	10	N	N	50	N	N	N	30	2.0
TX362VD	N	N	10	20	N	50	N	3	N	50	2.0
TX363VD	N	N	2	N	N	100	N	2	N	50	2.0
TX364VD	N	N	5	10	N	50	N	2	N	100	2.0
TX365VD	N	N	7	20	N	50	N	2	N	30	2.0
TX366VD	N	N	10	N	N	50	N	2	N	30	2.0
TX367VD	N	N	10	N	N	70	N	N	N	30	2.0
TX368VD	N	N	5	5	N	50	N	2	N	30	1.0
DTX369VD	N	N	7	5	N	30	N	2	N	30	7.0
TX370VD	N	N	7	10	N	50	N	2	N	50	2.0
TX371VD	N	N	7	20	N	70	N	N	N	30	5.0
TX372VDA	N	N	2	N	N	70	N	N	N	30	2.0
TX372VDB	N	N	5	20	N	100	N	10	N	50	2.0

Ground Birch--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX331VD	N	N	N	200	20	N	N	1,500	N	4.06
DTX331VD	N	N	N	150	30	N	N	1,500	N	3.38
TX332VD	N	N	N	200	10	N	N	2,000	N	4.58
TX333VD	N	N	N	100	10	N	N	3,000	N	4.50
TX334VD	N	N	N	200	20	N	N	2,000	N	4.35
TX335VD	N	N	N	500	10	N	N	2,000	N	4.40
TX336VD	N	N	N	150	20	N	N	2,000	N	4.16
TX337VD	N	N	N	100	30	N	N	1,500	N	3.66
TX338VD	N	N	N	150	20	N	N	2,000	N	3.48
TX339VD	N	N	N	200	20	N	N	3,000	N	4.46
TX340VD	N	N	N	150	10	N	N	2,000	N	3.89
TX341VD	N	N	N	100	20	N	N	2,000	N	3.46
TX342VD	N	N	N	100	30	N	N	2,000	N	4.71
TX343VD	N	N	N	150	10	N	N	3,000	N	4.26
TX344VD	N	N	N	100	20	N	N	3,000	N	3.58
TX345VD	N	N	N	150	20	N	N	3,000	N	3.31
TX346VD	N	N	N	100	20	N	N	2,000	N	3.71
TX347VD	N	N	N	150	20	N	N	2,000	N	4.06
TX348VD	N	N	N	200	10	N	N	1,500	N	4.07
TX349VD	N	N	N	200	20	N	N	2,000	N	3.76
TX350VD	N	N	N	150	20	N	N	2,000	N	3.37
TX351VD	N	N	N	300	20	N	N	2,000	N	4.43
TX352VD	N	N	N	150	30	N	N	2,000	N	3.88
TX353VD	N	N	N	300	70	N	N	3,000	N	3.00
TX354VD	N	N	N	500	20	N	N	2,000	N	4.19
TX355VD	N	N	N	300	50	N	N	1,500	N	4.56
TX356VD	N	N	N	200	50	N	N	2,000	N	4.40
DTX356VD	N	N	N	150	30	N	N	2,000	N	4.30
TX357VD	N	N	N	500	30	N	N	3,000	N	4.38
TX358VD	N	N	N	500	50	N	N	2,000	N	4.30
TX359VD	N	N	N	500	20	N	N	3,000	N	4.25
TX360VD	N	N	N	300	30	N	N	1,500	N	5.06
TX361VD	N	N	N	300	20	N	N	3,000	N	4.85
TX362VD	N	N	N	500	30	N	N	2,000	N	4.95
TX363VD	N	N	N	300	20	N	N	3,000	N	4.50
TX364VD	N	N	N	200	20	N	N	1,500	N	4.39
TX365VD	N	N	N	300	20	N	N	2,000	N	6.64
TX366VD	N	N	N	500	50	N	N	3,000	N	4.83
TX367VD	N	N	N	300	30	N	N	1,500	70	4.48
TX368VD	N	N	N	700	30	N	N	2,000	N	4.65
DTX369VD	N	N	N	200	30	N	N	2,000	N	4.33
TX370VD	N	N	N	500	20	N	N	2,000	N	4.50
TX371VD	N	N	N	150	20	N	N	2,000	N	4.08
TX372VDA	N	N	N	300	10	N	N	3,000	N	4.19
TX372VDB	N	N	N	500	30	N	N	2,000	N	5.24

ground birch--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-SA
TX373VD	63 34 30	141 3 20	.10	2.0	---	.003	>10,000	N	N	N	1,000	700
TX375VD	63 33 60	141 13 25	.05	2.0	---	<.002	>10,000	N	N	N	500	700
TX376VD	63 36 25	141 32 60	.03	1.5	---	<.002	10,000	N	N	N	1,000	700
TX377VD	63 33 30	141 15 60	.05	3.0	---	<.002	>10,000	N	N	N	500	1,000
TX378VD	63 32 18	141 35 55	.05	3.0	---	.002	10,000	N	N	N	300	700
TX379VD	63 32 45	141 37 20	.05	3.0	---	.005	10,000	N	N	N	150	700
TX380VD	63 35 15	141 47 60	.20	5.0	---	.005	>10,000	N	N	N	150	700
TX381VD	63 41 55	141 57 20	.03	2.0	---	.005	>10,000	N	N	N	150	700
TX382VD	63 44 55	141 56 20	.07	2.0	---	.005	>10,000	N	N	N	200	700
TX383VD	63 39 30	142 8 52	.05	1.5	---	<.002	2,000	N	N	N	50	700
TX384VD	63 36 30	142 4 50	.05	2.0	---	.002	>10,000	N	N	N	50	700
TX387VD	63 34 40	141 34 30	.10	3.0	---	.003	>10,000	N	N	N	150	1,000
TX388VD	63 33 45	141 38 40	.07	3.0	---	<.002	>10,000	N	N	N	300	1,000
TX389VD	63 37 5	141 43 50	.20	3.0	---	.007	10,000	N	N	N	200	500
TX390VD	63 39 14	143 51 20	.05	2.0	---	<.002	10,000	N	N	N	200	500
TX391VD	63 38 45	141 51 15	.07	3.0	---	.003	5,000	N	N	N	300	500
TX392VD	63 41 55	142 8 40	.07	3.0	---	.002	>10,000	N	N	N	200	700
TX393VD	63 37 30	142 3 20	.05	3.0	---	.002	>10,000	N	N	N	150	700
TX394VD	63 40 30	142 21 10	.10	3.0	---	<.002	>10,000	N	N	N	200	700
TX395VD	63 41 0	142 22 50	.05	3.0	---	<.002	>10,000	N	N	N	150	700
TX396VD	63 1 35	143 20 30	.05	2.0	---	<.002	>10,000	N	N	N	300	150
TX398VD	63 36 5	141 22 50	.05	3.0	---	<.002	>10,000	N	N	N	50	700
TX399VD	63 29 35	141 29 15	.10	3.0	---	.005	10,000	N	N	N	200	1,000
TX400VD	63 34 40	141 41 50	.03	1.0	---	<.002	>10,000	N	N	N	50	150
TX401VD	63 35 50	141 44 30	.05	2.0	---	.002	>10,000	N	N	N	150	700
TX402VD	63 41 40	141 49 5	.03	1.0	---	<.002	3,000	N	N	N	70	700
TX403VD	63 42 20	141 50 0	.10	3.0	---	.002	>10,000	N	N	N	200	500
TX404VD	63 41 45	142 1 25	.07	3.0	---	.002	>10,000	N	N	N	200	700
TX405VD	63 37 30	142 10 55	.03	1.0	---	<.002	5,000	N	N	N	100	500
TX406VD	63 18 5	143 34 20	.07	1.0	---	<.002	1,000	N	N	N	50	150
TX407VD	63 17 35	143 35 15	.03	1.0	---	<.002	3,000	N	N	N	50	70
TX408VD	63 21 10	143 45 55	.03	1.0	---	.002	5,000	N	N	N	70	300
TX409VD	63 20 45	143 28 55	.05	2.0	---	<.002	10,000	N	N	N	50	300
TX410VD	63 25 35	143 30 25	.03	3.0	---	<.002	3,000	N	N	N	300	150
TX414VD	63 19 5	143 26 10	.10	3.0	---	.002	>10,000	N	N	N	70	700
TX415VD	63 16 45	143 23 30	.03	2.0	---	<.002	10,000	N	N	N	50	200
TX421VD	63 18 60	143 24 60	.05	3.0	---	.002	>10,000	N	N	N	200	300
TX422VD	63 16 45	143 20 5	.03	2.0	---	<.002	>10,000	N	N	N	100	200
TX427VD	63 30 47	143 22 4	.03	3.0	---	.002	10,000	N	N	N	300	500
TX434VD	63 26 40	143 20 0	.05	7.0	---	<.002	>10,000	N	N	N	150	700
TX442VD	63 39 35	142 25 35	.07	3.0	---	.010	>10,000	N	N	N	200	500
TX443VD	63 41 30	142 27 35	.02	1.0	---	<.002	>10,000	N	N	N	150	150
TX4443VD	63 41 30	142 27 35	.05	3.0	---	.005	>10,000	N	N	N	150	500
TX444VD	63 38 10	142 24 30	.05	5.0	---	.002	10,000	N	N	N	150	700
TX445VD	63 38 55	142 22 25	.03	3.0	---	<.002	10,000	.3	N	N	200	700

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX373VD	N	N	10	10	N	100	N	5	N	30	2.0
TX375VD	N	N	10	30	N	100	N	2	N	50	1.0
TX376VD	N	N	2	10	N	100	N	2	N	30	1.0
TX377VD	N	N	20	50	N	100	N	5	N	50	1.0
TX378VD	N	N	7	N	N	100	N	2	N	50	1.0
TX379VD	N	N	3	N	N	100	N	5	N	50	5.0
TX380VD	N	N	15	30	N	100	N	15	N	100	2.0
TX381VD	N	N	10	N	N	70	N	10	N	20	2.0
TX382VD	N	N	10	20	N	70	N	5	N	70	2.0
TX383VD	N	N	N	10	N	70	N	N	N	20	2.0
TX384VD	N	N	10	30	N	50	N	N	N	100	1.0
TX387VD	N	N	7	10	N	70	N	5	N	100	3.0
TX388VD	N	N	10	10	N	50	N	5	N	100	2.0
TX389VD	N	N	5	30	N	50	N	2	N	100	2.0
TX390VD	N	N	7	N	N	50	N	N	N	50	5.0
TX391VD	N	N	2	N	N	50	N	2	N	30	7.0
TX392VD	N	N	7	20	N	30	N	3	N	10	2.0
TX393VD	N	N	5	10	N	30	N	3	N	30	2.0
TX394VD	N	N	7	N	N	100	N	7	N	50	2.0
TX395VD	N	N	10	N	N	50	N	5	N	30	1.0
TX396VD	N	N	5	N	N	50	N	3	N	10	5.0
TX398VD	N	N	2	30	N	70	N	5	N	100	1.0
TX399VD	N	N	5	5	N	30	N	2	N	30	1.0
TX400VD	N	N	7	N	N	30	N	5	N	15	1.0
TX401VD	N	N	5	N	5	30	N	5	N	15	2.0
TX402VD	N	N	2	N	N	30	N	5	N	30	1.0
TX403VD	N	N	20	N	5	50	N	5	N	50	2.0
TX404VD	N	N	7	10	N	30	N	3	N	30	2.0
TX405VD	N	N	2	N	N	30	N	5	N	30	1.0
TX406VD	N	N	N	5	N	50	N	10	N	50	2.0
TX407VD	N	N	N	N	N	30	N	N	N	10	1.0
TX408VD	N	N	N	N	N	50	N	N	N	50	30.0
TX409VD	N	N	N	5	N	30	N	N	N	15	1.0
TX410VD	N	N	N	N	N	50	N	5	N	10	1.0
TX414VD	N	N	N	N	N	30	N	2	N	20	2.0
TX415VD	N	N	N	5	N	50	N	N	N	30	1.0
TX421VD	N	N	10	N	N	50	N	2	N	10	2.0
TX422VD	N	N	2	N	N	30	N	N	N	5	2.0
TX427VD	N	N	N	N	N	30	N	7	N	5	1.0
TX434VD	N	N	2	N	N	30	N	2	N	10	2.0
TX442VD	N	N	5	N	N	50	N	N	N	50	1.0
TX443VD	N	N	5	N	N	30	N	N	N	5	2.0
DTX443VD	N	N	10	N	N	30	N	2	N	15	7.0
TX444VD	N	N	10	10	N	50	N	2	N	100	2.0
TX445VD	N	N	2	10	N	50	N	N	N	100	1.0

ground birch--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX373VD	N	N	N	300	30	N	N	2,000	N	4.06
TX375VD	N	N	N	300	30	N	N	2,000	N	3.70
TX376VD	N	N	N	500	20	N	N	1,500	N	4.68
TX377VD	N	N	N	500	50	N	N	3,000	N	4.60
TX378VD	N	N	N	500	30	N	N	3,000	N	4.42
TX379VD	N	N	N	500	30	N	N	2,000	N	4.00
TX380VD	N	N	N	1,000	30	N	N	3,000	N	3.91
TX381VD	N	N	N	300	30	N	N	2,000	N	3.81
TX382VD	N	N	N	300	30	N	N	2,000	N	5.56
TX383VD	N	N	N	300	10	N	N	2,000	N	4.66
TX384VD	N	N	N	500	30	N	N	1,500	N	3.65
TX387VD	N	N	N	1,000	30	N	N	2,000	N	4.86
TX388VD	N	N	N	500	30	N	N	2,000	N	5.09
TX389VD	N	N	N	500	30	N	N	1,500	N	5.80
TX390VD	N	N	N	300	20	N	N	2,000	N	5.01
TX391VD	N	N	5	500	20	N	N	2,000	N	3.63
TX392VD	N	N	N	500	50	N	N	1,500	N	6.40
TX393VD	N	N	N	500	30	N	N	3,000	N	5.11
TX394VD	N	N	N	500	30	<50	N	3,000	N	3.87
TX395VD	N	N	N	200	50	N	N	1,500	N	4.43
TX396VD	N	N	N	200	30	N	N	3,000	N	3.83
TX398VD	N	N	N	500	20	N	N	1,000	N	4.20
TX399VD	N	N	N	700	20	N	N	2,000	N	4.92
TX400VD	N	N	N	100	50	N	N	1,500	N	4.26
TX401VD	N	N	N	500	50	N	N	1,500	N	3.66
TX402VD	N	N	N	300	10	N	N	1,500	N	3.65
TX403VD	N	N	N	300	50	N	N	2,000	N	3.65
TX404VD	N	N	N	300	30	N	N	1,000	N	3.78
TX405VD	N	N	N	300	20	N	N	1,500	N	3.70
TX406VD	N	N	N	300	10	50	N	300	N	5.60
TX407VD	N	N	N	100	5	N	N	300	N	5.40
TX408VD	N	N	N	100	5	N	N	1,500	N	5.65
TX409VD	N	N	N	200	10	N	N	1,000	N	5.91
TX410VD	N	N	N	500	5	N	N	3,000	N	5.40
TX414VD	N	N	N	500	50	N	N	1,500	N	3.56
TX415VD	N	N	N	<100	10	N	N	1,500	N	5.16
TX421VD	N	N	N	200	50	N	N	2,000	N	3.57
TX422VD	N	N	N	100	10	N	N	1,500	N	4.67
TX427VD	N	N	N	700	5	N	N	2,000	N	5.45
TX434VD	N	N	N	500	50	N	N	1,500	N	5.05
TX442VD	N	N	N	500	20	N	N	3,000	N	3.72
TX443VD	N	N	N	N	20	N	N	2,000	N	5.20
DTX443VD	N	N	N	100	50	N	N	3,000	N	5.29
TX444VD	N	N	N	300	50	N	N	3,000	N	4.30
TX445VD	N	N	N	300	10	N	N	1,500	N	5.13

sample	LATITUDE	LONGITUDE	S-FEX%	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX446VD	63 34 50	142 17 20	.03	2.0	--	<.002	10,000	N	N	N	150	500
TX448VD	63 35 40	142 16 30	.07	3.0	--	.005	>10,000	N	N	N	500	300
TX449VD	63 34 50	142 26 5	.05	3.0	--	.002	>10,000	.7	N	N	200	700
TX450VD	63 34 10	142 16 20	.05	3.0	--	.002	>10,000	N	N	N	100	700
TX451VD	63 33 55	142 26 20	.03	3.0	--	<.002	>10,000	N	N	N	200	300
TX452VD	63 31 55	142 16 15	.20	5.0	--	.020	>10,000	N	N	N	150	1,000
TX453VD	63 32 20	142 28 15	.07	5.0	--	<.002	>10,000	N	N	N	200	700
TX454VD	63 31 40	142 10 50	.03	3.0	--	<.002	7,000	N	N	N	150	150
TX455VD	63 30 10	142 20 15	.05	3.0	--	<.002	7,000	N	N	N	100	500
TX456VD	63 35 40	142 0 60	.07	3.0	--	.002	10,000	N	N	N	100	700
TX457VDA	63 32 10	142 7 30	.05	3.0	--	.002	>10,000	N	N	N	150	200
TX457VDB	63 32 10	142 7 30	.07	3.0	--	<.002	10,000	N	N	N	150	700
TX458VDA	63 33 30	142 0 15	.05	3.0	--	.002	10,000	N	N	N	150	1,000
TX458VDB	63 33 30	142 0 15	.03	3.0	--	.002	10,000	N	N	N	150	500
TX459VD	63 32 35	141 56 40	.07	5.0	--	<.002	>10,000	N	N	N	150	700
TX460VD	63 33 10	141 51 20	.05	3.0	--	.002	7,000	N	N	N	100	700
TX461VD	63 29 30	142 33 10	.05	5.0	--	.002	10,000	N	N	N	150	500
TX462VD	63 34 35	141 34 0	.05	3.0	--	<.002	>10,000	N	N	N	150	700
TX463VD	63 30 45	142 33 50	.05	3.0	--	<.002	7,000	.2	N	N	150	300
TX464VD	63 28 2	143 42 40	.05	5.0	--	<.002	5,000	N	N	N	150	700
TX465VD	63 31 45	142 28 45	.07	3.0	--	.002	10,000	N	N	N	100	700
TX467VD	63 28 20	142 30 60	.07	3.0	--	<.002	10,000	.2	N	N	150	500
TX468VD	63 25 35	142 45 60	.05	3.0	--	<.002	3,000	N	N	N	150	200
TX476VD	63 25 5	142 25 35	.07	3.0	--	<.002	7,000	N	N	N	50	700
TX478VD	63 26 45	142 24 15	.07	3.0	--	.002	10,000	N	N	N	150	700
TX480VD	63 14 10	143 24 10	.03	3.0	--	<.002	10,000	N	N	N	150	300
TX482VD	63 14 40	143 22 40	.03	3.0	--	<.002	5,000	N	N	N	50	700
TX488VD	63 2 15	143 9 60	.05	3.0	--	<.002	2,000	N	N	N	200	1,000
TX491VD	63 27 5	142 22 0	.05	3.0	--	.002	7,000	N	N	N	150	700
TX493VD	63 27 40	142 19 40	.07	3.0	--	<.002	>10,000	1.0	N	N	200	700
TX494VD	63 28 30	142 21 40	.07	3.0	--	<.002	10,000	N	N	N	150	700
TX495VD	63 30 13	143 52 20	.05	3.0	--	.002	7,000	N	N	N	150	700
TX496VD	63 29 5	142 14 0	1.00	3.0	--	.050	>10,000	N	N	N	150	700
TX497VD	63 30 45	141 52 37	.05	3.0	--	.002	10,000	.5	N	N	100	700
TX498VD	63 31 16	141 56 17	.10	5.0	--	.002	10,000	N	N	N	300	700
TX499VD	63 25 55	142 6 25	.20	5.0	--	.010	>10,000	N	N	N	200	700
TX500VD	63 30 2	141 58 5	.07	3.0	--	<.002	10,000	N	N	N	150	700
TX501VD	63 26 30	142 5 30	.10	3.0	--	.002	10,000	.7	N	N	150	700
TX502VD	63 27 32	142 6 30	.10	5.0	--	<.002	10,000	N	N	N	150	500
TX503VD	63 28 50	142 6 0	.05	3.0	--	<.002	>10,000	N	N	N	150	200
TX504VD	63 29 30	142 7 50	.10	5.0	--	<.002	>10,000	N	N	N	150	700
TX505VD	63 20 50	142 27 20	.10	3.0	--	.005	>10,000	1.0	N	N	200	700
TX506VD	63 21 5	142 23 60	.15	5.0	--	.002	>10,000	N	N	N	300	700
TX507VD	63 18 8	142 19 39	.15	10.0	--	.010	10,000	N	N	N	300	700
TX508VD	63 20 40	142 19 25	.10	2.0	--	<.002	>10,000	N	N	N	150	500

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX446VD	N	N	7	N	N	30	N	N	N	30	1.0
TX448VD	N	N	N	N	N	100	N	N	N	20	1.0
TX449VD	N	N	5	5	N	30	N	2	N	100	5.0
TX450VD	N	N	5	5	N	50	N	2	N	50	1.0
TX451VD	N	N	7	N	N	30	N	2	N	50	1.0
TX452VD	N	N	3	5	N	50	N	N	N	50	2.0
TX453VD	N	N	5	20	<5	50	N	2	N	20	2.0
TX454VD	N	N	2	5	N	70	N	N	N	30	1.0
TX455VD	N	N	5	10	N	50	N	N	N	50	1.0
TX456VD	N	N	2	N	N	50	N	N	N	30	1.0
TX457VDA	N	N	5	N	N	30	N	<2	N	10	1.0
TX457VDB	N	N	5	N	N	50	N	N	N	50	1.0
TX458VDA	N	N	3	N	N	50	N	<2	N	100	1.0
TX458VDB	N	N	2	N	N	50	N	<2	N	20	1.0
TX459VD	N	N	2	N	N	50	N	2	N	30	2.0
TX460VD	N	N	5	N	N	30	N	N	N	50	1.0
TX461VD	N	N	N	N	N	50	N	N	N	100	10.0
TX462VD	N	N	5	N	N	30	N	2	N	30	1.0
TX463VD	N	N	2	N	N	70	N	N	N	100	5.0
TX464VD	N	N	2	N	N	50	N	N	N	20	5.0
TX465VD	N	N	2	20	N	50	N	N	N	100	10.0
TX467VD	N	N	5	N	N	30	N	N	N	30	7.0
TX468VD	N	N	3	N	N	30	N	<2	N	10	5.0
TX476VD	N	N	5	5	N	50	N	N	N	50	10.0
TX478VD	N	N	3	N	N	50	N	<2	N	50	5.0
TX480VD	N	N	5	N	N	30	N	N	N	15	1.0
TX482VD	N	N	N	30	N	50	N	N	N	30	1.0
TX488VD	N	N	N	N	N	50	N	N	N	30	2.0
TX491VD	N	N	2	5	N	30	N	N	N	50	2.0
TX493VD	N	N	7	5	N	30	N	<2	N	50	2.0
TX494VD	N	N	N	5	N	50	N	N	N	100	2.0
TX495VD	N	N	N	N	N	50	N	N	N	50	5.0
TX496VD	N	N	10	10	5	70	N	2	N	150	10.0
TX497VD	N	N	N	N	N	30	N	2	N	20	2.0
TX498VD	N	N	N	N	N	70	N	N	N	50	2.0
TX499VD	N	N	5	N	N	70	N	3	N	100	7.0
TX500VD	N	N	2	N	N	70	N	N	N	50	2.0
TX501VD	N	N	5	N	N	70	N	N	N	50	2.0
TX502VD	N	N	5	N	N	50	N	N	N	50	2.0
TX503VD	N	N	5	N	N	50	N	2	N	20	2.0
TX504VD	N	N	5	10	N	50	N	N	N	100	2.0
TX505VD	N	N	7	20	N	70	N	N	N	100	5.0
TX506VD	N	N	7	7	N	50	N	2	N	50	3.0
TX507VD	N	N	N	N	N	70	N	N	N	30	3.0
TX508VD	N	N	10	N	N	50	N	2	N	20	5.0

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX446VD	N	N	N	200	10	N	N	3,000	N	6.27
TX448VD	N	N	N	300	10	N	N	3,000	N	4.40
TX449VD	N	N	N	300	20	N	N	1,500	N	5.36
TX450VD	N	N	N	500	20	N	N	2,000	N	4.35
TX451VD	N	N	N	150	50	N	N	2,000	N	3.65
TX452VD	N	N	N	500	20	N	N	3,000	N	5.58
TX453VD	N	N	N	200	30	N	N	2,000	N	3.71
TX454VD	N	N	N	150	10	N	N	2,000	N	3.86
TX455VD	N	N	N	200	20	N	N	2,000	N	3.71
TX456VD	N	N	N	500	20	N	N	1,500	N	4.48
TX457VDA	N	N	N	150	30	N	N	3,000	N	3.86
TX457VDB	N	N	N	150	20	N	N	1,500	N	4.21
TX458VDA	N	N	N	300	20	N	N	1,500	N	3.48
TX458VDB	N	N	N	300	20	N	N	1,500	N	3.61
TX459VD	N	N	N	300	30	N	N	1,500	N	3.08
TX460VD	N	N	N	300	10	N	N	2,000	N	4.98
TX461VD	N	N	N	300	10	N	N	2,000	N	4.78
TX462VD	N	N	N	150	30	N	N	1,500	N	4.11
TX463VD	N	N	N	150	10	N	N	1,500	N	4.30
TX464VD	N	N	N	500	10	N	N	2,000	N	5.10
TX465VD	N	N	N	200	10	N	N	1,500	N	4.11
TX467VD	N	N	N	200	20	N	N	2,000	N	4.10
TX468VD	N	N	N	150	10	N	N	2,000	N	5.25
TX476VD	N	N	N	200	10	N	N	1,500	N	4.03
TX478VD	N	N	N	200	10	N	N	1,500	N	2.86
TX480VD	N	N	N	150	10	N	N	1,500	N	5.45
TX482VD	N	N	N	150	10	N	N	1,500	N	4.77
TX488VD	N	N	N	200	10	N	N	2,000	N	4.27
TX491VD	N	N	N	300	10	N	N	1,500	N	4.70
TX493VD	N	N	N	200	30	N	N	2,000	N	4.28
TX494VD	N	N	N	200	20	N	N	1,000	N	4.03
TX495VD	N	N	N	500	10	N	N	3,000	N	3.70
TX496VD	N	N	N	500	70	N	N	3,000	N	6.06
TX497VD	N	N	N	1,000	20	N	N	3,000	N	4.25
TX498VD	N	N	N	700	20	N	N	5,000	N	3.58
TX499VD	N	N	N	500	70	N	N	3,000	N	4.30
TX500VD	N	N	N	700	20	N	N	5,000	N	5.96
TX501VD	N	N	N	700	20	N	N	3,000	N	5.31
TX502VD	N	N	N	200	20	N	N	1,500	N	4.36
TX503VD	N	N	N	100	50	N	N	2,000	N	4.64
TX504VD	N	N	N	700	20	N	N	3,000	N	4.21
TX505VD	N	N	N	300	30	N	N	1,500	N	4.95
TX506VD	N	N	N	700	50	N	N	2,000	N	4.39
TX507VD	N	N	N	700	30	N	N	5,000	N	3.93
TX508VD	N	N	N	200	50	N	N	5,000	N	5.49

ground birch--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX509VD	63 15 16	142 17 40	.10	5.0	--	.002	>10,000	N	N	N	150	300
TX510VD	63 18 58	142 17 35	.10	5.0	--	<.002	10,000	N	N	N	200	300
TX511VD	63 16 51	142 15 28	.10	5.0	--	.002	>10,000	N	N	N	200	500
TX512VD	63 15 38	142 14 43	.10	5.0	--	.003	>10,000	N	N	N	500	700
TX513VD	63 22 50	142 12 50	.10	5.0	--	.002	10,000	N	N	N	100	700
TX514VD	63 16 23	142 13 5	.20	5.0	--	.003	>10,000	N	N	N	200	700
TX515VD	63 21 50	142 11 25	.10	2.0	--	.002	>10,000	N	N	N	150	700
TX516VD	63 15 15	142 2 35	.10	3.0	--	<.002	>10,000	N	N	N	150	700
TX517VD	63 21 30	142 12 15	.05	2.0	--	.002	>10,000	N	N	N	500	500
TX518VD	63 15 50	142 3 55	.05	3.0	--	<.002	7,000	N	N	N	150	500
TX519VD	63 18 0	142 3 40	.01	5.0	--	.005	7,000	N	N	N	200	700
TX520VD	63 21 35	142 1 60	.05	5.0	--	.002	7,000	N	N	N	300	500
TX521VD	63 18 55	142 2 50	.10	7.0	--	.003	10,000	N	N	N	300	500
DTX521VD	63 18 55	142 2 50	.07	5.0	--	.002	10,000	N	N	N	200	500
TX522VD	63 23 15	142 0 45	.02	3.0	--	<.002	>10,000	N	N	N	200	200
TX523VD	63 14 12	142 0 50	.10	3.0	--	.005	10,000	N	N	N	150	700
TX524VD	63 21 5	141 58 45	.07	5.0	--	<.002	>10,000	N	N	N	150	700
TX525VD	63 14 30	142 0 20	.10	5.0	--	.005	>10,000	3.0	N	N	150	700
TX526VD	63 15 25	141 59 0	.05	3.0	--	.002	>10,000	N	N	N	150	500
TX527VD	63 23 10	141 54 60	.03	3.0	--	.020	>10,000	N	N	N	200	150
TX529VD	63 24 10	141 52 45	.20	5.0	--	.020	10,000	3.0	N	3	200	700
TX530VD	63 24 60	141 56 5	.10	5.0	--	.005	>10,000	N	N	N	200	300
TX531VD	63 29 4	141 43 51	.10	7.0	--	.010	>10,000	N	N	N	300	700
TX532VD	63 26 0	141 50 15	.10	7.0	--	.005	>10,000	N	N	N	200	700
TX533VD	63 28 43	141 43 30	.10	7.0	--	.005	>10,000	.5	N	N	300	700
TX534VD	63 27 20	141 45 40	.07	5.0	--	.002	7,000	N	N	N	100	700
DTX534VD	63 27 20	141 45 40	.10	10.0	--	.005	>10,000	N	N	N	150	1,000
TX536VD	63 9 45	142 0 50	.10	10.0	--	.010	>10,000	N	N	N	300	700
TX539VD	63 26 25	141 10 25	.07	10.0	--	.010	10,000	N	N	N	100	1,000
TX540VD	63 25 55	141 3 38	.05	7.0	--	.005	>10,000	N	N	N	150	700
TX541VD	63 26 38	141 11 8	.07	10.0	--	.005	>10,000	.3	N	N	100	1,000
TX542VD	63 25 15	141 2 60	.07	7.0	--	<.002	>10,000	N	N	N	200	500
TX543VD	63 25 35	141 10 30	.10	10.0	--	.005	>10,000	N	N	N	100	1,000
TX544VD	63 24 5	141 0 10	.10	10.0	--	.002	>10,000	N	N	N	200	700
TX545VD	63 23 45	141 10 45	.05	7.0	--	.002	>10,000	2.0	N	N	300	500
TX546VD	63 24 30	141 9 50	.03	3.0	--	<.002	>10,000	N	N	N	150	150
TX547VD	63 19 55	141 1 10	.10	3.0	--	.005	>10,000	N	N	N	200	700
TX549VD	63 20 45	141 0 40	.20	5.0	--	.010	>10,000	.5	N	N	200	1,000
TX552VD	63 15 20	141 9 10	<.05	2.0	--	<.002	>10,000	N	N	N	150	200
TX553VD	63 18 55	141 21 45	.15	5.0	--	<.002	>10,000	1.5	N	N	50	1,000
TX554VD	63 16 0	141 21 45	.10	5.0	--	.001	>10,000	N	N	N	200	700
TX556VD	63 20 10	141 14 40	.02	3.0	--	.001	>10,000	N	N	N	150	70
TX557VD	63 25 45	141 19 50	.02	2.0	--	.001	10,000	.5	N	N	100	700
TX561VD	63 26 30	141 27 15	.05	3.0	--	.001	>10,000	.7	N	N	150	300
TX562VD	63 29 5	141 27 20	.03	3.0	--	.001	>10,000	N	N	N	150	700

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX509VD	N	N	N	N	N	70	N	N	N	50	5.0
TX510VD	N	N	5	N	N	50	N	N	N	50	7.0
TX511VD	N	N	2	N	N	100	N	N	N	50	2.0
TX512VD	N	N	3	N	N	70	N	2	N	20	2.0
TX513VD	N	N	5	N	N	70	N	N	N	50	2.0
TX514VD	N	N	5	10	N	50	N	5	N	50	7.0
TX515VD	N	N	5	20	N	50	N	N	N	50	2.0
TX516VD	N	N	5	10	N	70	N	2	N	100	1.0
TX517VD	N	N	7	15	N	70	N	2	N	30	1.0
TX518VD	N	N	2	N	N	50	N	N	N	50	1.0
TX519VD	N	N	5	5	N	70	N	5	N	70	1.0
TX520VD	N	N	2	N	N	70	N	10	N	50	1.0
TX521VD	N	N	2	N	N	70	N	N	N	50	1.0
DTX521VD	N	N	5	N	N	50	N	N	N	30	1.0
TX522VD	N	N	7	10	N	50	N	2	N	20	2.0
TX523VD	N	N	2	N	N	70	N	N	N	100	1.0
TX524VD	N	N	2	N	N	50	N	N	N	30	1.0
TX525VD	N	N	7	N	N	50	N	2	N	30	5.0
TX526VD	N	N	10	10	N	30	N	2	N	20	5.0
TX527VD	N	N	5	N	5	30	N	2	N	10	50.0
TX529VD	N	N	5	N	N	50	N	5	N	70	7.0
TX530VD	N	N	5	N	N	50	N	3	N	10	2.0
TX531VD	N	N	10	N	N	70	N	3	N	30	10.0
TX532VD	N	N	5	N	N	50	N	2	N	30	2.0
TX533VD	N	N	7	N	N	70	N	2	N	30	2.0
TX534VD	N	N	2	N	N	70	N	N	N	20	2.0
DTX534VD	N	N	2	N	N	70	N	2	N	30	1.0
TX536VD	N	N	2	N	N	70	N	2	N	20	20.0
TX539VD	N	N	5	N	N	70	N	N	N	50	7.0
TX540VD	N	N	7	N	N	50	N	2	N	10	1.0
TX541VD	N	N	3	15	N	70	N	2	N	30	1.0
TX542VD	N	N	7	N	N	50	N	3	N	15	1.0
TX543VD	N	N	5	7	N	70	N	2	N	50	7.0
TX544VD	N	N	20	N	N	70	N	3	N	10	1.0
TX545VD	N	N	3	N	N	70	N	2	N	30	1.0
TX546VD	N	N	3	N	N	50	N	2	N	15	1.0
TX547VD	N	N	3	N	N	50	N	2	N	50	5.0
TX549VD	N	N	3	N	N	70	N	2	N	150	5.0
TX552VD	N	N	3	N	N	30	N	N	N	5	1.0
TX553VD	N	N	5	10	N	50	N	2	N	20	5.0
TX554VD	N	N	5	5	N	70	N	2	N	20	2.0
TX556VD	N	N	7	N	N	30	N	2	N	10	5.0
TX557VD	N	N	5	N	N	50	N	N	N	50	2.0
TX561VD	N	N	5	10	N	70	N	2	N	50	1.0
TX562VD	N	N	7	N	N	70	N	<2	N	20	2.0

ground birch--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX509VD	N	N	N	500	20	N	N	5,000	N	4.26
TX510VD	N	N	N	500	20	N	N	5,000	N	4.88
TX511VD	N	N	N	700	20	N	N	5,000	N	3.50
TX512VD	N	N	N	700	50	N	N	7,000	N	3.52
TX513VD	N	N	N	500	20	N	N	3,000	N	5.63
TX514VD	N	N	N	700	70	N	N	2,000	N	4.78
TX515VD	N	N	N	500	30	N	N	1,500	N	3.63
TX516VD	N	N	N	500	30	N	N	2,000	N	4.13
TX517VD	N	N	N	200	30	N	N	2,000	N	3.98
TX518VD	N	N	N	500	10	N	N	3,000	N	4.55
TX519VD	N	N	N	700	10	N	N	3,000	N	5.29
TX520VD	N	N	N	500	10	N	N	3,000	N	4.71
TX521VD	N	N	N	700	30	N	N	3,000	N	4.06
DX521VD	N	N	N	500	20	N	N	3,000	N	4.08
TX522VD	N	N	N	100	30	N	N	3,000	N	4.46
TX523VD	N	N	N	300	20	N	N	3,000	N	3.23
TX524VD	N	N	N	300	20	N	N	1,500	N	4.64
TX525VD	N	N	N	300	30	N	N	3,000	N	5.53
TX526VD	N	N	N	150	30	N	N	3,000	N	5.38
TX527VD	N	N	N	100	50	N	N	2,000	N	5.09
TX529VD	N	N	N	1,000	20	N	N	3,000	N	6.93
TX530VD	N	N	N	150	50	N	N	3,000	N	3.56
TX531VD	N	N	N	1,000	50	N	N	3,000	N	3.61
TX532VD	N	N	N	500	50	N	N	3,000	N	5.12
TX533VD	N	N	N	300	50	N	N	2,000	N	4.10
TX534VD	N	N	N	700	10	N	N	3,000	N	3.68
DX534VD	N	N	N	1,000	30	N	N	3,000	N	3.66
TX536VD	N	N	N	700	30	N	N	3,000	N	3.78
TX539VD	N	N	N	300	20	N	N	2,000	N	5.45
TX540VD	N	N	N	300	30	N	N	3,000	N	5.89
TX541VD	N	N	N	500	30	N	N	1,500	N	3.62
TX542VD	N	N	N	150	30	N	N	2,000	N	3.56
TX543VD	N	N	N	700	30	N	N	2,000	N	3.81
TX544VD	N	N	N	300	50	N	N	3,000	N	3.27
TX545VD	N	N	N	300	50	N	N	3,000	N	3.80
TX546VD	N	N	N	N	50	N	N	2,000	N	3.63
TX547VD	N	N	N	200	30	N	N	2,000	N	4.01
TX549VD	N	N	N	700	30	N	N	2,000	N	5.23
TX552VD	N	N	N	100	30	N	N	2,000	N	3.77
TX553VD	N	N	N	700	50	N	N	2,000	N	3.59
TX554VD	N	N	N	500	50	N	N	3,000	N	4.15
TX556VD	N	N	N	N	50	N	N	2,000	N	4.77
TX557VD	N	N	N	200	10	N	N	2,000	N	6.13
TX561VD	N	N	N	200	20	N	N	3,000	N	4.30
TX562VD	N	N	N	300	20	N	N	3,000	N	7.02

sample	LATITUDE	LONGITUDE	S-FEZ	S-MGZ	S-CAZ	S-T1Z	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX563VD	63 25 42	141 33 10	.05	5.0	--	.001	>10,000	N	N	N	200	300
TX564VD	63 24 20	141 27 30	.03	3.0	--	.001	>10,000	N	N	N	200	300
TX565VD	63 30 11	141 39 18	.07	5.0	--	.001	>10,000	.5	N	N	100	700
TX566VD	63 25 10	141 34 40	.03	3.0	--	.001	10,000	N	N	N	150	700
TX568VD	63 24 0	141 33 40	.05	3.0	--	.001	>10,000	N	N	N	150	200
TX569VD	63 25 45	141 43 50	.07	5.0	--	.002	>10,000	1.0	N	N	150	700
DTX569VD	63 25 45	141 43 50	.10	3.0	--	.001	>10,000	1.0	N	N	200	700
TX571VD	63 25 22	141 48 55	.05	3.0	--	.001	>10,000	N	N	N	150	150
TX573VD	63 21 11	141 38 25	.05	5.0	--	.001	>10,000	1.5	N	N	150	700
TX574VD	63 22 5	141 35 56	.07	5.0	--	.001	>10,000	N	N	N	200	700
DTX574VD	63 22 5	141 35 56	.10	7.0	--	.002	>10,000	N	N	N	300	700
TX575VD	63 18 35	141 36 25	.10	5.0	--	.001	>10,000	N	N	N	150	700
TX577VD	63 16 21	141 29 31	.10	10.0	--	.010	2,000	.5	N	N	300	2,000
TX578VD	63 19 53	141 40 60	.20	10.0	--	.001	7,000	N	N	N	300	500
TX579VD	63 16 0	141 29 41	.10	5.0	--	.001	>10,000	N	N	N	150	700
TX580VD	63 18 3	141 39 35	.07	10.0	--	.001	10,000	N	N	N	300	500
TX581VD	63 15 11	141 38 10	.05	5.0	--	.001	>10,000	.7	N	N	300	700
TX582VD	63 16 21	141 32 40	.05	5.0	--	.001	>10,000	N	N	N	70	700
TX583VD	63 16 55	141 48 15	.10	5.0	--	.002	>10,000	N	N	N	200	700
TX585VD	63 13 57	141 43 28.	.10	5.0	--	.002	>10,000	.7	N	N	200	700
TX586VD	63 15 52	141 43 42	.07	5.0	--	.001	>10,000	N	N	N	200	700
TX587VD	63 14 8	141 47 15	.05	5.0	--	.001	>10,000	N	N	N	150	700
TX588VD	63 16 60	141 50 20	.05	10.0	--	.001	>10,000	N	N	N	200	500
TX589VD	63 12 55	141 50 57	.05	5.0	--	.001	>10,000	.5	N	N	300	700
TX590VD	63 16 28	141 49 41	.07	5.0	--	.003	>10,000	N	N	N	300	200
TX591VD	63 9 47	141 47 50	.05	5.0	--	.002	>10,000	N	N	N	150	500
TX592VD	63 11 23	141 46 35	.10	7.0	--	.010	7,000	N	N	N	70	700
TX593VD	63 10 12	141 48 27	.10	7.0	--	.001	>10,000	N	N	N	300	700
TX594VD	63 17 57	141 14 15	.03	5.0	--	.001	10,000	N	N	N	300	1,000
TX597VD	63 15 35	141 15 0	.07	5.0	--	.001	>10,000	N	N	N	100	700
TX598VD	63 11 47	141 7 25	.03	3.0	--	.001	7,000	N	N	N	200	200
TX600VD	63 10 31	141 6 39	.10	5.0	--	.001	>10,000	N	N	N	200	1,000
TX601VD	63 12 38	141 9 24	.07	5.0	--	.001	>10,000	N	N	N	150	500
TX602VD	63 9 0	141 6 21	.10	5.0	--	.001	>10,000	N	N	N	200	700
TX603VD	63 11 8	141 11 10	.05	5.0	--	.001	7,000	N	N	N	200	700
TX604VD	63 8 11	141 6 49	.05	5.0	--	.001	>10,000	N	N	N	200	700
TX605VD	63 9 47	141 8 2	.07	7.0	--	.001	>10,000	N	N	N	500	700
DTX605VD	63 9 47	141 8 2	.10	5.0	--	.005	>10,000	N	N	N	500	700
TX606VD	63 6 59	141 7 38	.05	5.0	--	.001	>10,000	N	N	N	300	1,000
TX607VD	63 7 45	141 9 18	.05	10.0	--	.001	>10,000	N	N	N	300	1,000
TX608VD	63 4 5	141 8 35	.05	5.0	--	.001	>10,000	N	N	N	200	500
TX609VD	63 5 32	141 10 49	.10	5.0	--	.002	>10,000	N	N	N	200	700
TX610VD	63 1 47	141 4 50	.05	5.0	--	.001	>10,000	N	N	N	300	700
TX611VD	63 4 41	141 6 30	.07	5.0	--	.001	>10,000	N	N	N	70	700
TX612VD	63 1 28	141 6 1	.07	5.0	--	.002	>10,000	N	N	N	300	700

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX563VD	N	N	5	N	N	70	N	15	N	10	5.0
TX564VD	N	N	7	N	N	70	N	2	N	10	5.0
TX565VD	N	N	2	5	N	70	N	2	N	100	2.0
TX566VD	N	N	2	N	N	50	N	N	N	10	2.0
TX568VD	N	N	5	30	N	50	N	2	N	20	2.0
TX569VD	N	N	5	20	N	70	N	2	N	50	2.0
DTX569VD	N	N	5	20	N	100	N	2	N	100	1.0
TX571VD	N	N	7	5	N	50	N	2	N	5	3.0
TX573VD	N	N	5	N	N	50	N	2	N	20	2.0
TX574VD	N	N	7	5	N	50	N	2	N	20	5.0
DTX574VD	N	N	10	10	N	70	N	2	N	50	20.0
TX575VD	N	N	5	5	N	100	N	2	N	100	2.0
TX577VD	N	N	2	5	15	100	N	5	N	30	2.0
TX578VD	N	N	2	5	N	150	N	2	N	150	2.0
TX579VD	N	N	20	N	5	100	N	3	N	30	2.0
TX580VD	N	N	N	N	N	70	N	N	N	50	5.0
TX581VD	N	N	5	7	N	100	N	N	N	50	2.0
TX582VD	N	N	5	5	N	70	N	2	N	50	2.0
TX583VD	N	N	5	N	N	70	N	5	N	30	3.0
TX585VD	N	N	2	30	N	100	N	2	N	150	5.0
TX586VD	N	N	5	10	N	50	N	2	N	30	2.0
TX587VD	N	N	3	15	N	100	N	2	N	100	2.0
TX588VD	N	N	5	5	N	100	N	2	N	20	1.5
TX589VD	N	N	7	10	N	50	N	2	N	50	2.0
TX590VD	N	N	5	N	5	50	N	5	N	30	7.0
TX591VD	N	N	10	N	N	50	N	2	N	30	7.0
TX592VD	N	N	5	5	N	100	N	2	N	50	5.0
TX593VD	N	N	5	5	N	100	N	2	N	100	10.0
TX594VD	N	N	3	5	N	50	N	5	N	50	2.0
TX597VD	N	N	10	5	N	70	N	2	N	30	5.0
TX598VD	N	N	3	N	N	300	N	2	N	5	10.0
TX600VD	N	N	5	N	N	100	N	3	N	100	2.0
TX601VD	N	N	5	N	N	100	N	5	N	20	5.0
TX602VD	N	N	7	N	N	70	N	2	N	15	5.0
TX603VD	N	N	N	N	N	70	N	2	N	20	5.0
TX604VD	N	N	2	N	N	50	N	2	N	20	2.0
TX605VD	N	N	N	N	N	100	N	3	N	30	2.0
DTX605VD	N	N	5	N	<5	100	N	3	N	30	7.0
TX606VD	N	N	3	N	N	100	N	3	N	20	2.0
TX607VD	N	N	N	N	N	100	N	N	N	70	2.0
TX608VD	N	N	2	N	N	100	N	2	N	30	2.0
TX609VD	N	N	N	N	N	100	N	2	N	100	7.0
TX610VD	N	N	7	10	N	100	N	N	N	100	2.0
TX611VD	N	N	5	N	N	50	N	2	N	30	2.0
TX612VD	N	N	3	5	N	70	N	N	N	70	2.0

ground birch--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX563VD	N	N	N	300	50	N	N	3,000	N	5.21
TX564VD	N	N	N	100	50	N	N	3,000	N	5.21
TX565VD	N	N	N	300	20	N	N	2,000	N	5.13
TX566VD	N	N	N	500	10	N	N	3,000	N	5.08
TX568VD	N	N	N	100	50	N	N	2,000	N	4.77
TX569VD	N	N	N	700	20	N	N	3,000	N	6.48
DTX569VD	N	N	N	500	20	N	N	2,000	N	4.37
TX571VD	N	N	N	100	30	N	N	2,000	N	4.48
TX573VD	N	N	N	500	30	N	N	3,000	N	4.73
TX574VD	N	N	N	200	30	N	N	5,000	N	4.45
DTX574VD	N	N	N	500	30	N	N	3,000	N	4.25
TX575VD	N	N	N	500	20	N	N	3,000	N	3.68
TX577VD	N	N	N	1,500	10	N	N	1,000	N	3.95
TX578VD	N	N	N	200	10	N	N	2,000	N	2.59
TX579VD	N	N	N	200	50	N	N	3,000	N	3.43
TX580VD	N	N	N	500	20	N	N	5,000	N	4.16
TX581VD	N	N	N	300	30	N	N	5,000	N	4.76
TX582VD	N	N	N	300	30	N	N	3,000	N	4.85
TX583VD	N	N	N	500	70	100	N	3,000	N	3.90
TX585VD	N	N	N	500	30	N	N	1,000	N	4.89
TX586VD	N	N	N	500	30	N	N	3,000	N	4.56
TX587VD	N	N	N	300	20	N	N	3,000	N	4.81
TX588VD	N	N	N	500	20	N	N	5,000	N	5.00
TX589VD	N	N	N	300	30	N	N	3,000	N	4.73
TX590VD	N	N	N	200	70	N	N	3,000	N	3.86
TX591VD	N	N	N	500	20	N	N	5,000	N	4.63
TX592VD	N	N	N	700	10	50	N	3,000	N	5.00
TX593VD	N	N	N	500	20	N	N	3,000	N	4.02
TX594VD	N	N	N	700	10	N	N	3,000	N	5.00
TX597VD	N	N	N	500	20	N	N	3,000	N	6.92
TX598VD	N	N	30	100	10	N	N	5,000	N	4.48
TX600VD	N	N	N	300	50	N	N	3,000	N	4.72
TX601VD	N	N	N	150	70	N	N	3,000	N	3.48
TX602VD	N	N	N	200	30	N	N	3,000	N	4.95
TX603VD	N	N	N	1,500	10	N	N	3,000	N	4.86
TX604VD	N	N	N	200	30	N	N	3,000	N	4.36
TX605VD	N	N	N	300	30	N	N	3,000	N	3.51
DTX605VD	N	N	N	300	50	N	N	7,000	N	3.56
TX606VD	N	N	N	200	20	N	N	2,000	N	4.31
TX607VD	N	N	N	500	20	N	N	3,000	N	4.34
TX608VD	N	N	N	150	10	N	N	2,000	N	4.50
TX609VD	N	N	N	500	10	N	N	7,000	N	3.71
TX610VD	N	N	N	200	10	N	N	3,000	N	4.16
TX611VD	N	N	N	200	30	N	N	1,000	N	3.88
TX612VD	N	N	N	500	10	N	N	3,000	N	3.45

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CA%	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX613VD	63 2 11	141 7 50	.10	5.0	--	.002	>10,000	N	N	N	200	1,000
TX614VD	63 11 53	141 57 28	.01	.2	--	N	1,000	N	N	N	50	100
TX615VD	63 0 45	141 14 55	.10	5.0	--	.001	>10,000	N	N	N	200	700
TX616VD	63 11 47	141 34 59	.10	5.0	--	.001	>10,000	N	N	N	200	700
TX617VD	63 12 22	141 37 6	.10	5.0	--	.001	>10,000	N	N	N	150	700
TX618VD	63 11 38	141 29 58	.10	5.0	--	.001	>10,000	N	N	N	150	700
TX619VD	63 11 10	141 30 0	.10	5.0	--	.001	>10,000	N	N	N	200	1,000
TX620VD	63 8 28	141 40 16	.10	10.0	--	.002	>10,000	.3	N	2	200	700
TX621VD	63 10 51	141 28 45	.10	10.0	--	.002	>10,000	N	N	N	100	700
TX622VD	63 8 40	141 33 30	.10	5.0	--	.002	>10,000	N	N	N	200	700
TX623VD	63 8 32	141 36 46	.10	10.0	--	.002	>10,000	N	N	N	300	700
TX624VD	63 7 45	141 21 31	.10	3.0	--	.001	>10,000	N	N	N	150	700
TX625VD	63 6 37	141 33 20	.05	10.0	--	.001	>10,000	N	N	N	300	300
TX626VD	63 7 23	141 25 15	.10	5.0	--	.001	>10,000	N	N	N	100	700
TX627VD	63 4 15	141 32 50	1.00	5.0	--	.030	>10,000	N	N	N	200	1,000
TX628VD	63 4 45	141 25 3	.05	5.0	--	.001	10,000	N	N	N	200	700
DTX628VD	63 4 45	141 25 3	.05	5.0	--	.001	>10,000	N	N	N	200	700
TX629VD	63 4 56	141 33 10	.05	5.0	--	.001	>10,000	N	N	N	150	500
TX630VD	63 1 20	141 28 30	.05	5.0	--	.001	10,000	N	N	N	300	700
TX631VD	63 3 28	141 22 11	.05	3.0	--	.001	10,000	N	N	N	150	300
TX632VD	63 1 30	141 34 10	.10	5.0	--	.002	>10,000	.1	N	N	300	700
TX633VD	63 2 9	141 20 46	.07	3.0	--	.001	>10,000	N	N	N	150	150
TX634VD	63 0 9	141 39 25	.10	5.0	--	.010	10,000	.1	N	N	300	1,000
TX635VD	63 2 10	141 30 38	.10	5.0	--	.002	5,000	N	N	N	150	500
TX636VD	63 0 50	141 41 50	.20	5.0	--	.002	>10,000	N	N	N	200	700
TX637VD	63 3 25	141 39 15	.07	5.0	--	.001	>10,000	N	N	N	200	700
TX638VD	63 2 27	141 48 22	.07	5.0	--	.001	>10,000	N	N	N	300	500
TX641VD	63 4 50	141 49 45	.05	5.0	--	.001	10,000	.1	N	N	50	500

ground birch--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX613VD	N	N	10	10	N	50	N	2	N	30	7.0
TX614VD	N	N	N	N	N	20	N	N	N	5	1.0
TX615VD	N	N	5	30	N	50	N	2	N	50	2.0
TX616VD	N	N	5	10	N	70	N	2	N	20	3.0
TX617VD	N	N	7	5	N	50	N	N	N	70	2.0
TX618VD	N	N	5	10	N	50	N	2	N	50	1.0
TX619VD	N	N	5	5	N	70	N	N	N	100	1.0
TX620VD	N	N	7	10	N	100	N	2	N	50	3.0
TX621VD	N	N	3	20	N	100	N	3	N	100	5.0
TX622VD	N	N	5	10	N	100	N	2	N	100	5.0
TX623VD	N	N	20	20	N	100	N	3	N	100	3.0
TX624VD	N	N	3	10	N	100	N	2	N	100	2.0
TX625VD	N	N	10	N	N	100	N	5	N	20	5.0
TX626VD	N	N	2	5	N	100	N	3	N	100	2.0
TX627VD	N	N	10	5	N	100	N	2	N	50	10.0
TX628VD	N	N	2	N	<5	100	N	<2	N	10	2.0
DTX628VD	N	N	3	5	N	100	N	2	N	30	2.0
TX629VD	N	N	3	5	N	100	N	N	N	30	2.0
TX630VD	N	N	2	5	N	100	N	N	N	20	2.0
TX631VD	N	N	N	5	N	100	N	N	N	100	1.0
TX632VD	N	N	10	N	N	50	N	5	N	20	3.0
TX633VD	N	N	5	N	N	70	N	2	N	30	3.0
TX634VD	N	N	2	N	N	100	N	2	N	30	7.0
TX635VD	N	N	2	N	N	100	N	N	N	100	5.0
TX636VD	N	N	7	N	N	50	N	5	N	50	5.0
TX637VD	N	N	10	N	N	50	N	5	N	50	7.0
TX638VD	N	N	7	N	N	50	N	5	N	15	7.0
TX641VD	N	N	2	5	N	50	N	N	N	10	5.0

ground birch--continued

sample	S-SB	S-S-C	S-S-N	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX613VD	N	N	N	500	50	N	N	5,000	N	5.37
TX614VD	N	N	N	N	20	N	N	1,000	N	3.61
TX615VD	N	N	N	300	30	N	N	3,000	N	3.44
TX616VD	N	N	N	500	30	N	N	3,000	N	4.03
TX617VD	N	N	N	700	15	N	N	3,000	N	4.16
TX618VD	N	N	N	700	15	N	N	3,000	N	4.16
TX619VD	N	N	N	700	20	N	N	3,000	N	4.23
TX620VD	N	N	N	700	30	N	N	3,000	N	3.67
TX621VD	N	N	N	700	20	N	N	3,000	N	4.16
TX622VD	N	N	N	700	20	N	N	5,000	N	3.88
TX623VD	N	N	N	700	30	N	N	7,000	N	3.63
TX624VD	N	N	N	300	20	N	N	3,000	N	3.63
TX625VD	N	N	N	700	10	N	N	20,000	N	4.03
TX626VD	N	N	N	300	20	N	N	3,000	N	3.65
TX627VD	N	N	N	500	50	50	N	3,000	N	4.55
TX628VD	N	N	N	300	20	N	N	3,000	N	4.13
DTX628VD	N	N	N	300	20	N	N	3,000	N	4.06
TX629VD	N	N	N	200	20	N	N	5,000	N	4.00
TX630VD	N	N	N	200	10	N	N	5,000	N	5.46
TX631VD	N	N	N	150	10	N	N	2,000	N	4.20
TX632VD	N	N	N	300	50	N	N	5,000	N	4.59
TX633VD	N	N	N	100	30	N	N	2,000	N	3.51
TX634VD	N	N	N	700	20	N	N	7,000	N	4.01
TX635VD	N	N	N	700	20	N	N	7,000	N	3.56
TX636VD	N	N	N	300	50	N	N	3,000	N	4.59
TX637VD	N	N	N	300	70	N	N	5,000	N	3.87
TX638VD	N	N	N	150	70	N	N	3,000	N	3.76
TX641VD	N	N	N	500	10	N	N	1,000	N	6.41

Table 2.--Spectrographic analyses for the ash of samples of black spruce needles collected in the Tanacross quadrangle, Alaska

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX1VB	63 10 30	143 37 55	.100	1.00	--	.020	7,000	.1	N	N	150	2,000
TX2VB	63 10 35	143 37 40	.200	2.00	--	.020	7,000	.1	N	N	150	2,000
TX3VB	63 11 20	143 30 40	.100	1.50	--	.010	1,000	N	N	N	200	700
TX4VB	63 13 40	143 35 40	.070	2.00	--	.020	10,000	N	N	N	70	1,000
TX5VB	63 13 25	143 40 30	.070	1.50	--	.010	3,000	N	N	N	100	5,000
TX6VB	63 6 25	143 32 60	.200	2.00	--	.030	3,000	N	N	N	100	5,000
TX8VB	63 8 10	143 40 10	.200	3.00	--	.030	5,000	N	N	N	150	1,000
TX9VB	63 11 40	143 47 35	.050	1.00	--	.010	2,000	N	N	N	70	700
TX11VB	63 34 2	142 58 42	.070	2.00	--	.020	>10,000	<.1	N	N	100	1,000
TX13VB	63 33 30	143 54 20	.200	10.00	--	.020	>10,000	<.1	N	N	100	3,000
TX14VB	63 35 55	143 6 15	.100	3.00	--	.010	>10,000	.3	N	N	100	2,000
TX15VB	63 34 35	142 47 60	.100	3.00	--	.020	>10,000	1.0	N	N	100	700
TX16VB	63 37 30	143 3 20	.100	2.00	--	.020	3,000	.5	N	N	150	7,000
TX17VB	63 35 5	143 1 18	.300	3.00	--	.020	3,000	.3	N	N	70	7,000
TX18VB	63 41 0	143 5 30	.200	2.00	--	.020	3,000	1.5	N	N	150	7,000
TX19VB	63 37 51	143 6 42	.100	1.50	--	.030	>10,000	1.5	N	N	150	7,000
TX20VB	63 41 50	143 3 10	.070	2.00	--	.010	>10,000	.1	N	N	150	1,000
TX21VB	63 39 12	143 6 25	.200	5.00	--	.030	>10,000	.1	N	N	200	1,000
TX22VB	63 41 30	143 14 0	.070	2.00	--	.002	3,000	30.0	N	N	150	700
TX23VB	63 40 40	143 1 30	.200	2.00	--	.020	5,000	.3	N	N	150	2,000
TX24VB	63 43 0	142 45 30	.100	2.00	--	.020	>10,000	.5	N	N	150	2,000
TX25VB	63 42 20	142 57 10	.070	1.00	--	.010	10,000	1.0	N	N	100	1,500
TX26VB	63 41 50	142 47 30	.100	3.00	--	.020	10,000	.2	N	N	200	1,000
TX27VB	63 43 30	143 4 50	.100	2.00	--	.020	>10,000	.3	N	N	150	5,000
TX28VB	63 43 60	142 44 0	.070	3.00	--	.020	>10,000	N	N	N	70	1,000
TX29VB	63 44 30	143 8 60	.100	5.00	--	.030	7,000	.1	N	N	150	5,000
TX30VB	63 42 40	142 38 30	.100	2.00	--	.020	7,000	N	N	N	200	7,000
TX31VB	63 41 0	143 11 10	.100	3.00	--	.020	>10,000	N	N	N	150	5,000
TX32VB	63 39 56	142 55 15	.100	3.00	--	.020	>10,000	N	N	N	150	2,000
TX33VB	63 37 32	142 56 45	.020	.20	--	.003	10,000	N	N	N	200	700
TX34VB	63 35 40	142 58 10	.070	2.00	--	.010	>10,000	N	N	N	150	500
TX35VB	63 37 13	142 51 54	.070	5.00	--	.010	10,000	N	N	N	150	1,000
TX36VB	63 42 55	142 38 60	.070	2.00	--	.020	10,000	N	N	N	150	5,000
TX37VB	63 38 50	142 49 50	.300	7.00	--	.030	>10,000	.5	N	N	100	2,000
TX38VB	63 39 30	142 38 40	.300	5.00	--	.030	7,000	N	N	N	200	3,000
TX39VB	63 35 60	142 46 10	.100	3.00	--	.020	7,000	N	N	N	200	7,000
TX39VB	63 35 60	142 46 10	.100	3.00	--	.020	10,000	N	N	N	200	5,000
TX40VB	63 4 35	143 43 10	.050	1.00	--	.003	2,000	N	N	N	150	1,000
TX41VB	63 40 10	142 44 20	.100	2.00	--	.020	10,000	N	N	N	200	1,000
TX42VB	63 3 30	143 45 5	.100	2.00	--	.030	7,000	N	N	N	50	2,000
TX43VB	63 1 23	143 52 25	.500	2.00	--	.030	500	N	N	N	300	5,000
TX45VB	63 2 2	143 52 7	.100	1.50	--	.020	1,000	N	N	N	200	700
TX46VB	63 4 35	143 42 25	.100	2.00	--	.020	3,000	N	N	N	100	500
TX48VB	63 3 5	143 34 55	.070	2.00	--	.010	3,000	N	N	N	200	1,500

black spruce

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX1VB	N	N	N	N	10	50	N	7	N	15	1.0
TX2VB	N	N	N	N	20	70	N	5	N	100	2.0
TX3VB	N	N	N	N	N	70	N	5	N	50	2.0
TX4VB	N	N	N	N	N	70	N	5	N	30	3.0
TX5VB	N	N	N	N	10	50	N	7	N	15	3.0
TX6VB	N	N	N	N	N	70	N	5	N	20	5.0
TX8VB	N	N	N	N	N	70	N	N	N	15	5.0
TX9VB	N	N	N	N	N	70	N	N	N	20	1.0
TX11VB	N	N	N	N	10	70	N	N	N	15	10.0
TX13VB	N	N	N	N	10	70	N	5	N	15	1.0
TX14VB	N	N	N	N	N	70	N	<2	N	10	3.0
TX15VB	N	N	N	N	N	70	N	<2	N	15	3.0
TX16VB	N	N	N	N	N	50	N	5	N	15	2.0
TX17VB	N	N	N	N	N	70	N	<2	N	70	2.0
TX18VB	N	N	N	N	10	70	N	N	N	15	2.0
TX19VB	N	N	N	N	10	50	N	N	N	50	2.0
TX20VB	N	N	N	N	15	50	N	<2	N	15	3.0
TX21VB	N	N	N	N	10	70	N	N	N	15	2.0
TX22VB	N	N	N	N	N	70	N	7	N	15	3.0
TX23VB	N	N	N	N	N	70	N	5	N	70	3.0
TX24VB	N	N	N	N	N	50	N	N	N	50	1.0
DTX24VB	N	N	N	N	N	70	N	N	N	15	2.0
TX25VB	N	N	N	N	N	50	N	N	N	10	1.0
TX26VB	N	N	N	N	N	50	N	5	N	70	1.0
TX27VB	N	N	N	N	N	50	N	<2	N	20	3.0
TX28VB	N	N	N	N	N	50	N	7	N	50	3.0
TX29VB	N	N	N	N	N	50	N	N	N	100	1.0
TX30VB	N	N	N	N	N	50	N	<2	N	30	3.0
TX31VB	N	N	N	N	N	50	N	5	N	50	1.0
TX32VB	N	N	N	N	N	70	N	5	N	20	3.0
TX33VB	N	N	N	N	N	15	N	N	N	5	<1.0
TX34VB	N	N	N	N	N	50	N	<2	N	10	2.0
TX35VB	N	N	N	N	N	50	N	7	N	15	2.0
TX36VB	N	N	N	N	N	70	N	7	N	70	3.0
TX37VB	N	N	N	N	10	70	N	5	N	50	1.0
TX38VB	N	N	N	N	10	70	N	<2	N	100	3.0
TX39VB	N	N	N	N	7	50	N	N	N	70	1.0
DTX39VB	N	N	N	N	N	50	N	N	N	70	2.0
TX40VB	N	N	N	N	N	50	N	N	N	70	1.0
TX41VB	N	N	N	N	N	70	N	7	N	70	3.0
TX42VB	N	N	N	N	A	50	N	7	N	15	1.0
TX43VB	N	N	N	N	10	70	N	5	N	50	<1.0
TX45VB	N	N	N	N	N	50	N	N	N	10	2.0
TX46VB	N	N	N	N	N	50	N	N	N	50	1.0
TX48VB	N	N	N	N	N	70	N	N	N	20	1.0

black spruce

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHX
TX1VB	N	N	N	1,500	30	<50	N	1,000	N	5.82
TX2VB	N	N	N	1,500	30	N	N	700	N	5.25
TX3VB	N	N	N	1,500	10	N	N	2,000	N	3.33
TX4VB	N	N	N	700	20	N	N	2,000	N	3.59
TX5VB	N	N	N	1,500	20	N	N	700	N	6.30
TX6VB	N	N	N	1,500	10	N	N	2,000	N	4.74
TX8VB	N	N	N	1,500	20	70	N	2,000	N	3.83
TX9VB	N	N	N	1,000	20	N	N	700	N	3.39
TX11VB	N	N	5	1,000	30	N	N	3,000	N	3.79
TX13VB	N	N	N	2,000	30	N	N	2,000	N	3.26
TX14VB	N	N	N	1,000	30	N	N	2,000	N	3.08
TX15VB	N	N	N	700	30	N	N	1,000	N	2.95
TX16VB	N	N	N	2,000	10	N	N	2,000	N	4.13
TX17VB	N	N	N	2,000	10	N	N	3,000	N	4.33
TX18VB	N	N	N	3,000	10	N	N	2,000	N	5.27
TX19VB	N	N	N	1,500	20	N	N	2,000	N	6.70
TX20VB	N	N	N	700	20	N	N	3,000	N	2.86
TX21VB	N	N	N	1,500	30	N	N	2,000	N	3.75
TX22VB	N	N	N	1,500	20	N	N	1,500	N	3.53
TX23VB	N	N	N	1,000	20	N	N	1,000	N	3.52
TX24VB	N	N	N	1,500	30	N	N	1,000	N	4.37
DTX24VB	N	N	N	1,500	50	N	N	2,000	N	4.16
TX25VB	N	N	N	1,000	30	N	N	2,000	N	3.14
TX26VB	N	N	N	1,500	20	N	N	2,000	N	4.42
TX27VB	N	N	N	1,500	20	N	N	1,500	N	4.91
TX28VB	N	N	N	1,500	30	N	N	3,000	N	3.78
TX29VB	N	N	N	2,000	30	N	N	3,000	N	4.94
TX30VB	N	N	N	1,500	10	N	N	3,000	N	4.17
TX31VB	N	N	N	3,000	30	N	N	1,000	N	5.38
TX32VB	N	N	N	1,000	30	N	N	3,000	N	5.11
TX33VB	N	N	N	500	50	N	N	1,000	N	4.42
TX34VB	N	N	N	300	30	N	N	2,000	N	3.00
TX35VB	N	N	N	1,000	20	N	N	2,000	50	4.11
TX36VB	N	N	N	1,500	20	N	N	3,000	N	4.04
TX37VB	N	N	N	1,500	70	N	N	1,000	N	3.85
TX38VB	N	N	N	1,500	30	N	N	2,000	N	4.34
TX39VB	N	N	N	2,000	20	N	N	3,000	N	6.27
DTX39VB	N	N	N	1,500	30	N	N	3,000	N	4.75
TX40VB	N	N	N	700	10	N	N	2,000	N	3.74
TX41VB	N	N	N	700	20	N	N	1,500	N	3.21
TX42VB	N	N	N	2,000	20	N	N	3,000	N	7.05
TX43VB	N	N	N	5,000	10	N	N	1,000	N	4.40
TX45VB	N	N	N	1,500	10	N	N	2,000	N	3.78
TX46VB	N	N	N	1,000	30	50	N	2,000	N	4.27
TX48VB	N	N	N	700	<10	N	N	2,000	N	3.20

black spruce--continued

sample	LATITUDE	LONGITUDE	S-FEZ	S-MGZ	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX49VB	63 2 50	143 48 5	.070	5.00	--	.020	>10,000	N	N	N	100	1,500
TX51VB	63 5 30	143 39 50	.050	2.00	--	.010	7,000	N	N	N	70	1,000
TX52VB	63 37 0	142 31 40	.070	2.00	--	.005	10,000	N	N	N	150	1,500
TX53VB	63 38 20	142 32 60	.070	2.00	--	.010	>10,000	<.1	N	N	150	2,000
TX54VB	63 34 40	142 36 5	.050	2.00	--	.010	7,000	N	N	N	100	2,000
TX55VB	63 36 30	142 37 35	.070	3.00	--	.005	5,000	<.1	N	N	200	1,500
TX56VB	63 33 35	142 40 20	.070	3.00	--	.010	>10,000	<.1	N	N	150	3,000
TX57VB	63 34 7	142 34 20	.070	3.00	--	.010	3,000	1.5	N	N	100	1,500
TX58VB	63 30 55	142 35 20	.070	3.00	--	.010	>10,000	N	N	N	200	700
TX59VB	63 32 10	142 33 30	.100	2.00	--	.010	>10,000	.2	N	N	150	2,000
TX60VB	63 30 10	142 42 10	.100	3.00	--	.020	>10,000	N	N	N	70	1,000
TX61VB	63 32 5	142 43 5	.050	2.00	--	.010	>10,000	.2	N	N	100	1,000
TX62VB	63 31 0	142 48 20	.070	2.00	--	.020	10,000	N	N	N	200	1,500
TX63VB	63 32 10	142 47 38	.070	2.00	--	.010	7,000	N	N	N	200	2,000
TX63VB	63 32 10	142 47 38	.070	2.00	--	.020	7,000	2.0	N	7	200	1,500
TX64VB	63 31 10	143 0 40	<.050	.70	--	.002	5,000	.1	N	N	70	700
TX65VB	63 32 10	142 54 20	<.050	1.50	--	.005	10,000	<.1	N	N	100	1,000
TX66VB	63 19 45	142 50 15	.070	1.00	--	.005	3,000	.1	N	N	200	700
TX67VB	63 23 20	142 32 15	.070	.70	--	.005	7,000	N	N	N	200	700
TX68VB	63 22 30	142 31 35	<.050	.15	--	N	1,000	.5	N	N	70	100
TX69VB	63 23 15	142 30 20	.070	2.00	--	.010	5,000	.2	N	N	150	1,000
TX70VB	63 33 30	143 20 20	.050	3.00	--	.005	>10,000	.1	N	N	150	1,000
TX71VB	63 33 10	143 25 60	.070	2.00	--	.010	3,000	.5	N	N	300	700
TX72VB	63 35 10	143 19 40	<.050	1.00	--	.002	1,000	.5	N	N	200	700
TX73VB	63 35 10	143 23 5	.100	2.00	--	.010	>10,000	.2	N	N	500	700
TX74VB	63 39 50	143 22 60	.050	2.00	--	.010	10,000	.1	N	N	200	1,000
TX75VB	63 37 60	143 16 35	.100	3.00	--	.020	10,000	N	N	N	200	2,000
TX76VB	63 43 10	143 21 10	.200	5.00	--	.030	5,000	N	N	N	150	3,000
TX77VB	63 40 25	143 17 20	.100	5.00	--	.020	3,000	N	N	N	300	700
TX78VB	63 37 30	142 48 50	.070	3.00	--	.010	>10,000	.2	N	N	100	1,000
TX78VB	63 37 30	142 48 50	.070	5.00	--	.010	>10,000	.3	N	N	100	2,000
TX79VB	63 40 40	143 25 25	.100	3.00	--	.030	7,000	N	N	N	500	2,000
TX80VB	63 38 55	142 53 25	.070	5.00	--	.010	10,000	N	N	N	200	2,000
TX81VB	63 37 30	142 44 25	.070	2.00	--	.005	>10,000	.5	N	N	150	1,000
TX82VB	63 45 45	142 56 25	.070	2.00	--	.005	2,000	N	N	N	200	1,500
TX83VB	63 44 25	142 56 55	.100	5.00	--	.010	2,000	N	N	N	100	3,000
TX84VB	63 48 5	142 43 55	.070	2.00	--	.010	7,000	N	N	N	200	2,000
TX85VB	63 45 50	142 52 15	.100	3.00	--	.020	>10,000	.2	N	N	150	5,000
TX86VB	63 49 30	142 39 40	.100	3.00	--	.005	>10,000	.1	N	N	150	700
TX87VB	63 46 50	142 47 20	.050	3.00	--	.005	>10,000	.2	N	N	100	2,000
TX88VB	63 51 50	142 38 35	.070	5.00	--	.010	>10,000	.2	N	N	150	1,000
TX89VB	63 46 25	142 32 30	N	.20	--	.002	1,500	N	N	N	70	300
TX90VB	63 54 10	142 35 40	.100	7.00	--	.010	>10,000	.1	N	N	100	2,000
TX91VB	63 50 40	142 31 40	.100	2.00	--	.010	>10,000	N	N	N	200	5,000
TX92VB	63 45 40	142 40 40	.070	5.00	--	.010	>10,000	N	N	N	100	2,000

black spruce--continued

sample	S-DE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX49VB	N	N	N	N	N	70	N	<2	N	100	1.0
TX51VB	N	N	N	N	N	50	N	N	N	10	1.0
TX52VB	N	N	N	N	N	30	N	N	N	20	<1.0
TX53VB	N	N	N	N	N	30	N	N	N	15	2.0
TX54VB	N	N	N	N	N	50	N	<2	N	70	1.0
TX55VB	N	N	N	N	N	50	N	N	N	15	1.0
TX56VB	N	N	N	N	10	30	N	<2	N	50	<1.0
TX57VB	N	N	N	N	N	30	N	N	N	15	2.0
TX58VB	N	N	N	N	N	50	N	<2	N	15	3.0
TX59VB	N	N	N	N	N	50	N	<2	N	70	1.0
TX60VB	N	N	N	N	20	70	N	5	N	20	<1.0
TX61VB	N	N	N	N	N	50	N	<2	N	70	3.0
TX62VB	N	N	N	N	N	50	N	5	N	10	3.0
TX63VB	N	N	N	N	N	50	N	<2	N	50	3.0
DTX63VB	N	N	N	N	N	50	N	5	N	50	3.0
TX64VB	N	N	N	N	N	15	N	<2	N	5	<1.0
TX65VB	N	N	N	N	N	50	N	N	N	7	1.0
TX66VB	N	N	N	N	N	50	N	<2	N	15	10.0
TX67VB	N	N	N	N	N	15	N	<2	100	5	1.0
TX68VB	N	N	N	N	N	7	N	N	100	N	<1.0
TX69VB	N	N	N	N	N	50	N	N	N	5	3.0
TX70VB	N	N	N	N	N	20	N	<2	N	15	1.0
TX71VB	N	N	N	N	N	50	N	10	N	7	2.0
TX72VB	N	N	N	N	N	10	N	N	100	N	<1.0
TX73VB	N	N	N	N	N	50	N	N	N	10	3.0
TX74VB	N	N	N	N	N	50	N	N	N	15	1.0
TX75VB	N	N	N	N	N	70	N	5	N	15	1.0
TX76VB	N	N	N	N	N	50	N	10	N	15	1.0
TX77VB	N	N	N	N	N	50	N	7	N	5	2.0
TX78VB	N	N	N	N	N	50	N	<2	N	15	1.0
DTX78VB	N	N	N	N	N	50	N	<2	N	50	2.0
TX79VB	N	N	N	N	N	50	N	7	N	20	2.0
TX80VB	N	N	N	N	N	70	N	N	N	15	2.0
TX81VB	N	N	N	N	N	50	N	5	N	15	3.0
TX82VB	N	N	N	N	N	70	N	7	N	15	2.0
TX83VB	N	N	N	N	N	50	N	N	N	15	2.0
TX84VB	N	N	N	N	N	70	N	N	N	20	2.0
TX85VB	N	N	N	N	N	70	N	N	N	20	1.0
TX86VB	N	N	N	N	N	50	N	<2	N	15	1.0
TX87VB	N	N	N	N	N	70	N	5	N	20	1.0
TX88VB	N	N	N	N	N	70	N	5	N	15	<1.0
TX89VB	N	N	N	N	N	10	N	N	150	5	<1.0
TX90VB	N	N	N	N	7	70	N	7	N	15	1.0
TX91VB	N	N	N	N	N	50	N	N	N	70	1.0
TX92VB	N	N	N	N	N	50	N	N	N	15	<1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX49VB	N	N	N	1,000	20	N	N	3,000	N	2.85
TX51VB	N	N	N	1,500	<10	N	N	1,000	N	4.55
TX52VB	N	N	N	1,000	20	N	N	1,000	N	4.50
TX53VB	N	N	N	1,500	20	N	N	1,500	N	4.80
TX54VB	N	N	N	1,500	10	N	N	2,000	N	4.60
TX55VB	N	N	N	4,500	10	N	N	2,000	N	3.82
TX56VB	N	N	N	1,500	30	N	N	1,000	N	3.72
TX57VB	N	N	N	1,500	20	70	N	2,000	N	3.84
TX58VB	N	N	N	500	20	N	N	2,000	N	3.14
TX59VB	N	N	N	1,500	20	N	N	2,000	N	3.40
TX60VB	N	N	N	700	70	N	N	700	N	3.38
TX61VB	N	N	N	700	20	N	N	1,500	N	2.74
TX62VB	N	N	N	1,500	20	N	N	2,000	N	4.04
TX63VB	N	N	N	1,000	10	N	N	2,000	N	3.22
DTX63VB	N	N	N	1,000	10	N	N	2,000	N	3.01
TX64VB	N	N	N	700	<10	N	N	1,000	N	3.45
TX65VB	N	N	N	700	10	N	N	1,500	N	2.75
TX66VB	N	N	N	1,000	<10	N	N	1,500	N	3.38
TX67VB	N	N	N	1,000	20	N	N	1,000	N	3.91
TX68VB	N	N	N	N	20	N	N	300	N	3.68
TX69VB	N	N	N	1,000	10	N	N	2,000	N	3.81
TX70VB	N	N	N	1,000	20	N	N	2,000	N	3.48
TX71VB	N	N	N	1,500	<10	N	N	3,000	N	3.14
TX72VB	N	N	N	1,500	50	N	N	1,500	N	3.98
TX73VB	N	N	N	500	20	N	N	3,000	N	3.07
TX74VB	N	N	N	1,000	10	N	N	2,000	N	3.12
TX75VB	N	N	N	1,000	20	N	N	3,000	N	5.87
TX76VB	N	N	N	3,000	20	N	N	3,000	N	5.77
TX77VB	N	N	N	3,000	10	N	N	3,000	N	5.21
TX78VB	N	N	N	700	30	N	N	2,000	N	3.30
DTX78VB	N	N	N	1,000	30	N	N	3,000	N	3.81
TX79VB	N	N	N	2,000	10	N	N	3,000	N	6.70
TX80VB	N	N	N	1,500	10	N	N	3,000	N	4.01
TX81VB	N	N	N	500	70	N	N	2,000	N	3.40
TX82VB	N	N	N	1,500	10	N	N	3,000	N	3.88
TX83VB	N	N	N	1,500	10	N	N	2,000	N	3.87
TX84VB	N	N	N	1,000	20	N	N	2,000	N	3.27
TX85VB	N	N	N	1,500	20	N	N	3,000	N	4.48
TX86VB	N	N	N	500	50	N	N	1,000	N	3.65
TX87VB	N	N	N	1,000	20	N	N	2,000	N	2.40
TX88VB	N	N	N	1,000	50	N	N	2,000	N	2.97
TX89VB	N	N	N	200	20	N	N	700	N	3.57
TX90VB	N	N	N	1,000	100	N	N	2,000	N	3.82
TX91VB	N	N	N	1,500	20	N	N	2,000	N	4.68
TX92VB	N	N	N	1,500	20	N	N	2,000	N	4.24

black spruce--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CAZ	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX93VB	63 46 20	142 37 25	.070	2.00	--	.010	>10,000	N	N	N	200	1,000
TX94VB	63 42 45	142 28 55	<.050	2.00	--	.002	>10,000	N	N	N	70	2,000
TX95VB	63 47 5	142 30 35	.070	1.00	--	.010	>10,000	N	N	N	70	1,000
TX96VB	63 41 50	142 26 45	.050	1.00	--	.002	5,000	N	N	N	70	2,000
TX97VB	63 45 25	142 33 55	<.050	1.00	--	.002	7,000	N	N	N	50	5,000
TX98VB	63 46 20	143 14 50	.050	1.00	--	.002	3,000	N	N	N	70	1,500
TX99VB	63 42 30	142 31 40	.070	.70	--	.005	2,000	<.1	N	N	100	2,000
TX100VB	63 47 55	143 7 60	.030	1.00	--	.002	>10,000	N	N	N	100	500
TX101VB	63 44 20	143 17 20	.050	1.50	--	.002	3,000	N	N	N	70	1,500
TX102VB	63 46 40	143 20 10	.070	3.00	--	.010	>10,000	.5	N	N	70	2,000
TX103VB	63 46 60	143 11 20	.070	2.00	--	.010	10,000	N	N	N	100	1,500
TX104VB	63 48 0	143 22 40	.070	2.00	--	.020	>10,000	N	N	N	70	1,500
TX105VB	63 48 10	143 4 20	.100	3.00	--	.010	>10,000	N	N	N	200	2,000
TX106VB	63 48 0	143 21 0	.100	2.00	--	.020	>10,000	N	N	N	100	2,000
TX107VB	63 50 20	143 4 15	.070	3.00	--	.010	10,000	N	N	N	70	3,000
TX108VB	63 45 10	143 29 50	.070	2.00	--	.020	3,000	N	N	N	200	3,000
TX109VB	63 45 20	143 22 0	.070	2.00	--	.010	5,000	N	N	N	70	2,000
TX110VB	63 52 10	143 25 30	.070	2.00	--	.002	>10,000	N	N	N	70	2,000
TX111VB	63 49 35	143 25 10	.070	2.00	--	.020	>10,000	N	N	N	150	2,000
TX112VB	63 51 45	143 26 10	.050	2.00	--	.002	>10,000	N	N	N	100	2,000
TX113VB	63 43 50	143 28 10	.070	2.00	--	.010	>10,000	.1	N	N	300	1,500
TX114VB	63 55 40	143 16 60	.050	2.00	--	.002	10,000	N	N	N	100	3,000
TX115VB	63 51 20	143 22 0	.070	3.00	--	.010	>10,000	.1	N	N	70	700
TX116VB	63 58 5	143 23 40	.050	2.00	--	.002	>10,000	.2	N	N	150	500
TX117VB	63 54 0	143 22 0	.070	2.00	--	.010	3,000	N	N	N	70	2,000
DTX117VB	63 54 0	143 22 0	.070	2.00	--	.020	3,000	N	N	N	100	3,000
TX118VB	63 58 60	143 15 30	.070	2.00	--	.010	3,000	N	N	N	100	3,000
TX119VB	63 53 20	143 16 15	.050	1.00	--	.002	10,000	.1	N	N	70	1,500
TX120VB	63 56 40	143 6 50	.100	1.00	--	.020	>10,000	N	N	N	100	2,000
TX121VB	63 58 50	143 20 30	.070	3.00	--	.010	>10,000	N	N	N	100	3,000
TX122VB	63 57 50	142 59 15	.070	2.00	--	.010	10,000	.1	N	N	100	5,000
TX123VB	63 59 45	142 23 20	.100	3.00	--	.020	7,000	N	N	N	100	1,500
TX124VB	63 57 10	143 30 20	.050	2.00	--	.010	5,000	.1	N	N	100	3,000
TX125VB	63 57 5	143 10 20	.100	3.00	--	.020	>10,000	.2	N	N	200	5,000
TX126VB	63 51 15	143 41 20	.100	5.00	--	.020	>10,000	N	N	N	500	1,500
TX127VB	63 56 30	143 2 40	.100	3.00	--	.010	>10,000	.3	N	N	70	1,500
TX128VB	63 51 20	143 42 10	.100	5.00	--	.010	5,000	N	N	N	300	5,000
TX130VB	63 50 40	143 42 40	.100	1.00	--	.020	>10,000	<.1	N	N	200	1,500
TX131VB	63 57 10	143 24 20	.070	2.00	--	.002	>10,000	.3	N	N	70	1,500
TX132VB	63 50 12	143 45 10	.070	5.00	--	.010	5,000	N	N	N	200	5,000
TX133VB	63 53 55	143 35 40	.070	5.00	--	.010	10,000	<.1	N	N	70	1,000
TX134VB	63 46 15	143 43 40	.050	2.00	--	.002	7,000	<.1	N	N	300	1,000
TX135VB	63 58 60	143 35 40	.050	1.00	--	.010	3,000	N	N	N	70	2,000
TX136VB	63 13 55	143 5 0	.070	2.00	--	.010	>10,000	N	N	N	300	700
TX137VB	63 53 10	143 37 50	.200	3.00	--	.010	7,000	N	N	N	200	5,000

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX93VB	N	N	N	N	N	50	N	N	N	15	1.0
TX94VB	N	N	N	N	N	70	N	N	N	10	<1.0
TX95VB	N	N	N	N	N	20	N	N	N	5	<1.0
TX96VB	N	N	N	N	N	20	N	N	N	15	<1.0
TX97VB	N	N	N	N	N	50	N	N	N	7	1.0
TX98VB	N	N	N	N	N	20	N	N	N	15	<1.0
TX99VB	N	N	N	N	N	15	N	N	N	70	<1.0
TX100VB	N	N	N	N	N	15	N	N	N	5	<1.0
TX101VB	N	N	N	N	N	15	N	5	N	10	<1.0
TX102VB	N	N	N	N	N	70	N	N	N	70	1.0
TX103VB	N	N	N	N	N	50	N	N	N	50	2.0
TX104VB	N	N	N	N	N	50	N	N	N	15	1.0
TX105VB	N	N	N	N	20	70	N	N	N	70	<1.0
TX106VB	N	N	N	N	N	50	N	7	N	15	2.0
TX107VB	N	N	N	N	N	70	N	7	N	150	1.0
TX108VB	N	N	N	N	N	70	N	7	N	10	1.0
TX109VB	N	N	N	N	N	50	N	N	N	15	1.0
TX110VB	N	N	N	N	N	70	N	N	N	20	1.0
TX111VB	N	N	N	N	N	70	N	N	N	15	2.0
TX112VB	N	N	N	N	N	70	N	5	N	50	<1.0
TX113VB	N	N	N	N	N	50	N	7	N	15	1.0
TX114VB	N	N	N	N	N	70	N	5	N	15	1.0
TX115VB	N	N	N	N	N	50	N	2	N	15	1.0
TX116VB	N	N	N	N	N	20	N	7	N	15	1.0
TX117VB	N	N	N	N	N	20	N	N	N	7	1.0
DTX117VB	N	N	N	N	N	20	N	N	N	10	1.0
TX118VB	N	N	N	N	N	30	N	10	N	15	<1.0
TX119VB	N	N	N	N	N	20	N	7	N	5	1.0
TX120VB	N	N	N	N	N	30	N	N	N	50	1.0
TX121VB	N	N	N	N	N	50	N	2	N	15	2.0
TX122VB	N	N	N	N	N	20	N	7	N	15	1.0
TX123VB	N	N	N	N	10	50	N	N	N	70	<1.0
TX124VB	N	N	N	N	N	70	N	15	N	70	1.0
TX125VB	N	N	N	N	N	70	N	N	N	20	1.0
TX126VB	N	N	N	N	N	50	N	N	N	10	3.0
TX127VB	N	N	N	N	N	70	N	N	N	15	3.0
TX128VB	N	N	N	N	N	70	N	N	N	15	1.0
TX130VB	N	N	N	N	N	70	N	5	N	5	3.0
TX131VB	N	N	N	N	N	70	N	5	N	15	3.0
TX132VB	N	N	N	N	N	70	N	5	N	15	2.0
TX133VB	N	N	N	N	N	50	N	10	N	10	3.0
TX134VB	N	N	N	N	N	70	N	N	N	10	3.0
TX135VB	N	N	N	N	N	70	N	5	N	10	1.0
TX136VB	N	N	N	N	N	70	N	<2	N	10	3.0
TX137VB	N	N	N	N	20	70	N	7	N	30	1.0

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX93VB	N	N	N	1,000	20	N	N	3,000	N	3.94
TX94VB	N	N	N	700	10	N	N	1,000	N	2.95
TX95VB	N	N	N	700	30	N	N	700	N	3.60
TX96VB	N	N	N	1,500	10	N	N	1,000	N	3.98
TX97VB	N	N	N	1,500	10	N	N	1,500	N	4.51
TX98VB	N	N	N	1,000	10	N	N	700	N	4.54
TX99VB	N	N	N	1,000	10	N	N	500	N	4.70
TX100VB	N	N	N	300	20	N	N	1,000	N	3.57
TX101VB	N	N	N	1,000	10	N	N	1,000	N	4.91
TX102VB	N	N	N	1,000	30	N	N	700	N	2.82
TX103VB	N	N	N	1,000	20	N	N	2,000	N	4.41
TX104VB	N	N	N	1,500	30	N	N	1,500	N	4.57
TX105VB	N	N	N	1,500	30	N	N	200	N	4.42
TX106VB	N	N	N	1,500	30	N	N	1,500	N	4.98
TX107VB	N	N	N	1,500	10	N	N	1,500	N	3.58
TX108VB	N	N	N	2,000	20	N	N	1,500	N	3.85
TX109VB	N	N	N	1,500	20	N	N	1,500	N	4.11
TX110VB	N	N	N	1,500	20	N	N	1,500	N	2.97
TX111VB	N	N	N	1,500	20	N	N	2,000	N	3.58
TX112VB	N	N	N	1,000	10	N	N	1,500	N	3.57
TX113VB	N	N	N	1,000	30	N	N	2,000	N	3.35
TX114VB	N	N	N	1,500	10	N	N	1,500	N	3.94
TX115VB	N	N	N	500	30	N	N	1,500	N	3.62
TX116VB	N	N	N	300	30	N	N	1,000	N	2.55
TX117VB	N	N	N	3,000	10	N	N	3,000	N	4.78
DTX117VB	N	N	N	3,000	30	N	N	2,000	N	5.21
TX118VB	N	N	N	3,000	10	N	N	3,000	N	3.41
TX119VB	N	N	N	1,500	10	N	N	3,000	N	3.15
TX120VB	N	N	N	1,500	20	N	N	2,000	N	4.48
TX121VB	N	N	N	1,500	30	N	N	3,000	N	2.85
TX122VB	N	N	N	1,500	10	N	N	3,000	N	5.04
TX123VB	N	N	N	1,000	20	N	N	1,000	N	3.90
TX124VB	N	N	N	1,500	15	N	N	3,000	N	3.94
TX125VB	N	N	N	2,000	20	N	N	3,000	N	3.31
TX126VB	N	N	N	3,000	50	N	N	3,000	N	4.97
TX127VB	N	N	N	1,500	30	N	N	3,000	N	3.10
TX128VB	N	N	N	3,000	20	N	N	1,000	N	3.91
TX130VB	N	N	N	1,500	50	N	N	3,000	N	3.88
TX131VB	N	N	N	700	70	N	N	3,000	N	3.22
TX132VB	N	N	N	2,000	20	N	N	3,000	N	3.82
TX133VB	N	N	N	1,500	10	N	N	2,000	N	3.21
TX134VB	N	N	N	1,000	10	N	N	3,000	N	3.78
TX135VB	N	N	N	1,500	10	N	N	2,000	N	3.78
TX136VB	N	N	N	500	30	N	N	2,000	N	3.34
TX137VB	N	N	N	1,500	30	N	N	1,000	N	5.17

black spruce--continued

sample	LATITUDE	LONGITUDE	S-FEZ	S-MGZ	S-CAZ	S-TIZ	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX138VB	63 12 45	143 5 0	.070	1.00	--	.010	3,000	N	N	N	500	5,000
TX139VB	63 50 15	143 51 50	.100	5.00	--	.020	3,000	N	N	N	300	1,500
DTX139VB	63 50 15	143 51 50	.100	5.00	--	.010	3,000	N	N	N	300	1,000
TX140VB	63 12 5	143 9 10	.100	2.00	--	.030	>10,000	<.1	N	N	300	5,000
TX141VB	63 49 20	143 54 20	.070	2.00	--	.020	>10,000	<.1	N	N	200	1,000
TX142VB	63 8 30	143 15 60	.070	1.00	--	.010	3,000	N	N	N	100	700
TX143VB	63 47 30	143 54 40	.070	2.00	--	.010	2,000	N	N	N	70	2,000
TX144VB	63 5 60	143 54 50	.050	1.00	--	.002	5,000	N	N	N	50	700
TX146VB	63 6 40	143 50 20	.100	2.00	--	.020	3,000	N	N	N	300	1,000
TX147VB	63 8 5	143 56 10	.070	1.00	--	.002	1,000	N	N	N	150	1,000
TX148VB	63 10 50	143 46 20	.200	2.00	--	.010	7,000	N	N	N	70	5,000
TX149VB	63 7 60	143 50 15	.500	5.00	--	.020	2,000	N	N	N	300	2,000
TX150VB	63 14 45	143 47 40	.100	3.00	--	.010	7,000	N	N	N	100	1,500
TX151VB	63 13 40	143 45 60	.200	2.00	--	.020	>10,000	N	N	N	150	5,000
TX152VB	63 15 40	143 47 60	.070	.50	--	.010	10,000	N	N	N	150	1,500
TX154VB	63 14 10	143 58 40	.100	2.00	--	.010	>10,000	.2	N	N	100	500
TX157VB	63 14 50	143 54 35	.100	2.00	--	.020	3,000	N	N	N	100	3,000
TX158VB	63 13 40	143 58 35	.050	.50	--	.005	3,000	N	N	N	70	2,000
TX161VB	63 18 30	143 54 15	.070	.70	--	.005	5,000	N	N	N	50	1,500
TX162VB	63 18 45	143 59 20	.200	2.00	--	.020	5,000	N	N	N	150	1,000
TX163VB	63 20 10	143 56 45	.200	2.00	--	.030	2,000	N	N	N	150	3,000
TX164VB	63 21 20	144 0 0	.200	2.00	--	.030	7,000	N	N	N	70	1,000
TX165VB	63 23 30	143 52 35	.100	2.00	--	.010	2,000	N	N	N	100	2,000
TX166VB	63 56 60	143 1 30	.100	3.00	--	.010	7,000	N	N	N	100	5,000
TX167VB	63 57 40	143 35 20	.200	2.00	--	.020	>10,000	1.0	N	N	300	2,000
TX168VB	63 59 50	143 39 15	.200	2.00	--	.020	10,000	.3	N	N	300	3,000
TX169VB	63 57 40	143 40 30	.100	1.00	--	.020	>10,000	.1	N	N	300	1,000
TX170VB	63 58 55	143 52 0	.100	2.00	--	.020	5,000	.1	N	N	200	5,000
TX171VB	63 55 20	143 46 25	.100	3.00	--	.010	>10,000	N	N	N	100	1,000
TX172VB	63 58 20	143 52 40	.070	2.00	--	.010	3,000	N	N	N	100	2,000
TX173VB	63 56 5	143 45 60	.100	5.00	--	.030	>10,000	.5	N	N	100	1,000
TX174VB	63 57 50	143 53 60	.100	5.00	--	.010	>10,000	N	N	N	70	1,500
TX175VB	63 54 45	143 53 55	.100	2.00	--	.020	3,000	.2	N	N	200	5,000
DTX175VB	63 54 45	143 53 55	.300	3.00	--	.010	3,000	N	N	N	200	1,500
TX176VB	63 52 20	143 58 30	.100	5.00	--	.020	5,000	N	N	N	200	2,000
TX177VB	63 56 5	143 56 50	.070	2.00	--	.010	3,000	.5	N	N	70	2,000
TX178VB	63 48 40	143 37 60	.100	5.00	--	.020	5,000	N	N	N	200	3,000
TX179VB	63 45 55	143 57 10	.070	2.00	--	.010	>10,000	.1	N	N	300	3,000
TX180VB	63 49 38	143 37 40	.070	2.00	--	.010	>10,000	.1	N	N	100	1,500
TX181VB	63 47 5	143 39 10	.100	3.00	--	.030	>10,000	N	N	N	150	5,000
TX182VB	63 48 25	143 50 0	.070	2.00	--	.010	7,000	.1	N	N	100	7,000
TX183VB	63 41 2	143 44 50	.100	2.00	--	.010	5,000	<.1	N	N	150	3,000
TX184VB	63 43 50	143 47 60	.070	3.00	--	.010	10,000	.1	N	N	500	2,000
TX185VB	63 42 40	143 46 20	.100	3.00	--	.010	5,000	.3	N	N	150	2,000
TX186VB	63 43 30	143 54 40	.300	3.00	--	.030	7,000	N	N	N	300	3,000

black spruce---continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX138VB	N	N	N	N	15	70	N	N	N	20	2.0
TX139VB	N	N	N	N	N	70	N	5	N	10	1.0
DTX139VB	N	N	N	N	N	70	N	5	N	10	1.0
TX140VB	N	N	N	N	N	70	N	N	N	15	3.0
TX141VB	N	N	N	N	N	70	N	7	N	15	5.0
TX142VB	N	N	N	N	N	70	N	7	N	15	2.0
TX143VB	N	N	N	N	N	70	N	7	N	10	1.0
TX144VB	N	N	N	N	N	70	N	5	N	50	<1.0
TX146VB	N	N	N	N	N	70	N	7	N	10	1.0
TX147VB	N	N	N	N	N	70	N	N	N	15	1.0
TX148VB	N	N	N	N	10	70	N	N	N	70	1.0
TX149VB	N	N	N	N	10	70	N	10	N	30	3.0
TX150VB	N	N	N	N	N	70	N	N	N	15	2.0
TX151VB	N	N	N	N	N	70	N	N	N	15	3.0
TX152VB	N	N	N	N	N	20	N	5	N	5	1.0
TX154VB	N	N	N	N	N	70	N	7	N	15	2.0
TX157VB	N	N	N	N	N	70	N	N	N	50	2.0
TX158VB	N	N	N	N	N	20	N	N	N	10	1.0
TX161VB	N	N	N	N	N	20	N	N	N	10	1.0
TX162VB	N	N	N	N	7	70	N	N	N	15	3.0
TX163VB	N	N	N	N	10	50	N	N	N	10	2.0
TX164VB	N	N	N	N	5	70	N	7	N	20	3.0
TX165VB	N	N	N	N	N	70	N	5	N	70	3.0
TX166VB	N	N	N	N	5	70	N	N	N	100	1.0
TX167VB	N	N	N	N	N	70	N	N	N	50	3.0
TX168VB	N	N	N	N	5	70	N	N	N	30	1.0
TX169VB	N	N	N	N	5	70	N	5	N	15	1.0
TX170VB	N	N	N	N	5	70	N	10	N	10	1.0
TX171VB	N	N	N	N	N	100	N	N	N	70	1.0
TX172VB	N	N	N	N	N	70	N	N	N	20	1.0
TX173VB	N	N	N	N	N	70	N	30	N	30	3.0
TX174VB	N	N	N	N	N	70	N	N	N	15	2.0
TX175VB	N	N	N	N	N	70	N	N	N	10	3.0
DTX175VB	N	N	N	N	15	100	N	N	N	50	1.0
TX176VB	N	N	N	N	N	70	N	7	N	50	1.0
TX177VB	N	N	N	N	N	70	N	30	N	30	3.0
TX178VB	N	N	N	N	N	70	N	N	N	15	2.0
TX179VB	N	N	N	N	N	70	N	N	N	10	3.0
TX180VB	N	N	N	N	N	100	N	N	N	50	1.0
TX181VB	N	N	N	N	15	50	N	N	N	70	<1.0
TX182VB	N	N	N	N	N	70	N	<2	N	10	1.0
TX183VB	N	N	N	N	N	70	N	20	N	15	3.0
TX184VB	N	N	N	N	N	70	N	5	N	10	2.0
TX185VB	N	N	N	N	N	70	N	5	N	15	1.0
TX186VB	N	N	N	N	15	70	N	N	N	70	<1.0
TX187VB	N	N	N	N	N	70	N	7	N	30	1.0
TX188VB	N	N	N	N	N	70	N	7	N	5	3.0
TX189VB	N	N	N	N	N	70	N	5	N	10	3.0
TX190VB	N	N	N	N	N	70	N	7	N	10	3.0
TX191VB	N	N	N	N	15	70	N	7	N	15	1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHZ
TX138VB	N	N	N	1,000	10	N	N	1,500	N	5.28
TX139VB	N	N	N	2,000	10	N	N	3,000	N	3.92
DTX139VB	N	N	N	2,000	10	N	N	3,000	N	3.70
TX140VB	N	N	N	1,500	30	N	N	3,000	N	4.74
TX141VB	N	N	N	700	20	N	N	2,000	N	2.75
TX142VB	N	N	N	1,500	10	N	N	1,000	N	4.18
TX143VB	N	N	N	2,000	10	N	N	3,000	N	3.38
TX144VB	N	N	N	1,000	10	N	N	2,000	N	3.75
TX146VB	N	N	N	1,500	10	N	N	3,000	N	3.92
TX147VB	N	N	N	1,000	10	N	N	2,000	N	3.50
TX148VB	N	N	N	1,500	30	N	N	300	N	5.17
TX149VB	N	N	N	3,000	20	N	N	1,000	N	4.31
TX150VB	N	N	N	1,500	20	N	N	1,000	N	4.38
TX151VB	N	N	N	3,000	50	N	N	2,000	N	5.52
TX152VB	N	N	N	300	50	N	N	1,000	N	6.42
TX154VB	N	N	N	300	70	N	N	3,000	N	3.24
TX157VB	N	N	N	1,500	10	N	N	3,000	N	4.92
TX158VB	N	N	N	700	30	N	N	700	N	4.80
TX161VB	N	N	N	700	30	N	N	200	N	7.65
TX162VB	N	N	N	1,500	20	N	N	1,000	N	3.78
TX163VB	N	N	N	1,500	20	N	N	500	N	5.22
TX164VB	N	N	N	700	20	N	N	1,500	N	3.48
TX165VB	N	N	N	1,500	10	N	N	1,000	N	3.14
TX166VB	N	N	N	1,500	30	N	N	700	N	4.28
TX167VB	N	N	N	1,500	30	N	N	3,000	N	4.41
TX168VB	N	N	N	1,500	30	N	N	700	N	3.94
TX169VB	N	N	N	700	70	N	N	2,000	N	3.41
TX170VB	N	N	N	2,000	20	N	N	3,000	N	4.11
TX171VB	N	N	N	1,000	30	N	N	2,000	N	3.32
TX172VB	N	N	N	1,500	10	N	N	700	N	3.75
TX173VB	N	N	N	1,000	50	N	N	2,000	N	3.25
TX174VB	N	N	N	1,000	50	N	N	1,500	N	3.72
TX175VB	N	N	N	3,000	20	N	N	3,000	N	4.07
DTX175VB	N	N	N	3,000	20	N	N	2,000	N	4.11
TX176VB	N	N	N	3,000	20	50	N	3,000	N	3.71
TX177VB	N	N	N	2,000	20	N	N	2,000	N	3.18
TX178VB	N	N	N	5,000	20	N	N	3,000	N	4.70
TX179VB	N	N	N	1,500	30	N	N	2,000	N	3.47
TX180VB	N	N	N	1,000	30	50	N	3,000	N	4.10
TX181VB	N	N	N	2,000	50	N	N	2,000	N	5.97
TX182VB	N	N	N	2,000	20	N	N	700	N	3.70
TX183VB	N	N	N	2,000	10	N	N	3,000	N	3.11
TX184VB	N	N	N	1,500	20	N	N	2,000	N	3.35
TX185VB	N	N	N	1,500	10	N	N	3,000	N	3.07
TX186VB	N	N	N	3,000	10	50	N	1,000	N	5.17

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX187VB	63 43 40	143 51 45	.100	3.00	--	.005	7,000	N	N	N	300	1,500
TX188VB	63 41 50	143 52 30	.100	2.00	--	.010	10,000	.3	N	N	300	1,500
TX188VB	63 41 50	143 52 30	.100	3.00	--	.020	>10,000	.1	N	N	200	2,000
TX189VB	63 39 40	143 46 50	.500	3.00	--	.010	5,000	N	N	N	200	5,000
TX190VB	63 44 55	143 39 10	.100	2.00	--	.020	5,000	N	N	N	150	7,000
TX191VB	63 38 50	143 43 0	.300	3.00	--	.020	7,000	N	N	N	300	5,000
TX192VB	63 44 7	143 38 60	.100	2.00	--	.020	5,000	.3	N	N	150	2,000
TX193VB	63 42 45	143 32 55	.100	3.00	--	.020	3,000	N	N	N	500	5,000
TX194VB	63 38 15	143 33 30	.100	5.00	--	.020	7,000	.1	N	N	100	1,000
TX195VB	63 43 30	143 33 35	.200	5.00	--	.030	>10,000	.1	N	N	70	2,000
TX196VB	63 54 0	143 2 35	.100	5.00	--	.005	>10,000	.1	N	N	1,000	500
TX197VB	63 36 15	143 33 35	.200	2.00	--	.030	5,000	N	N	N	200	5,000
TX198VB	63 52 55	143 4 45	.100	7.00	--	.020	>10,000	N	N	N	200	2,000
TX199VB	63 53 7	143 1 39	.200	5.00	--	.020	>10,000	.2	N	N	300	500
TX200VB	63 52 14	143 0 25	.070	2.00	--	.002	>10,000	.2	N	N	200	700
TX201VB	63 51 15	143 0 60	.200	2.00	--	.002	3,000	.3	N	N	100	2,000
TX202VB	63 51 40	142 57 22	.150	2.00	--	.003	>10,000	.2	N	N	300	300
TX203VB	63 52 35	142 59 20	.070	5.00	--	.002	10,000	.1	N	N	300	1,000
TX204VB	63 52 45	142 52 10	.070	3.00	--	.002	7,000	<.1	N	N	200	1,000
TX205VB	63 52 25	142 54 45	.100	1.50	--	.010	2,000	N	N	N	700	3,000
TX206VB	63 54 2	143 9 43	.070	1.50	--	.010	>10,000	.3	N	N	500	3,000
TX207VB	63 53 40	142 51 10	.070	2.00	--	.010	>10,000	.2	N	N	100	5,000
TX208VB	63 51 25	143 10 30	.050	2.00	--	.020	>10,000	N	N	N	300	2,000
TX209VB	63 51 20	143 7 0	.100	3.00	--	.010	>10,000	.1	N	N	300	1,000
TX210VB	63 49 40	143 14 30	.070	2.00	--	.010	10,000	<.1	N	N	300	1,000
TX211VB	63 50 25	143 7 45	.070	2.00	--	.010	>10,000	.2	N	N	300	700
TX212VB	63 38 40	141 14 10	.070	2.00	--	.010	>10,000	.3	N	N	500	1,000
TX213VB	63 50 5	143 10 15	.070	5.00	--	.010	>10,000	.2	N	N	300	2,000
TX214VB	63 48 20	142 53 35	.300	3.00	--	.020	5,000	N	N	N	150	5,000
TX215VB	63 50 55	142 58 30	.050	2.00	--	<.002	7,000	.3	N	N	70	5,000
TX216VB	63 49 19	142 54 17	.050	2.00	--	.010	>10,000	.1	N	N	200	2,000
TX217VB	63 50 60	142 51 15	.070	2.00	--	.010	10,000	.1	N	N	200	700
TX218VB	63 49 30	142 50 0	.100	3.00	--	.002	10,000	.5	N	N	200	2,000
TX219VB	63 53 15	142 45 30	.200	3.00	--	.020	>10,000	N	N	N	100	3,000
TX220VB	63 58 40	142 54 5	.050	1.50	--	.002	7,000	.1	N	N	150	2,000
TX221VB	63 56 60	142 45 50	.050	1.50	--	.002	7,000	.3	N	N	150	1,500
TX222VB	63 58 15	142 46 40	.070	1.00	--	.010	7,000	.1	N	N	150	1,000
TX223VB	63 57 25	142 44 0	.070	2.00	--	.020	>10,000	N	N	N	200	2,000
TX224VB	63 59 25	142 43 5	.070	2.00	--	.010	>10,000	.1	N	N	150	1,500
TX225VB	63 56 0	142 40 60	.050	2.00	--	.010	7,000	<.1	N	N	70	1,000
TX226VB	63 58 25	142 17 45	.050	2.00	--	.002	7,000	.1	N	N	200	1,500
TX227VB	63 55 55	142 34 30	.070	3.00	--	.005	10,000	.3	N	N	150	3,000
TX228VB	63 57 40	142 18 10	.100	3.00	--	.010	3,000	N	N	N	300	7,000
TX229VB	63 58 0	142 31 40	.070	2.00	--	.010	10,000	N	N	N	150	5,000
TX230VB	63 57 40	142 11 30	.070	2.00	--	.002	5,000	.5	N	N	300	700

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX187VB	N	N	N	N	N	100	N	10	N	5	2.0
TX188VB	N	N	N	N	N	70	N	N	N	5	2.0
OTX188VB	N	N	N	N	N	70	N	7	N	15	3.0
TX189VB	N	N	N	N	N	50	N	7	N	15	3.0
TX190VB	N	N	N	N	N	50	N	N	N	15	2.0
TX191VB	N	N	N	N	N	70	N	7	N	10	3.0
TX192VB	N	N	N	N	N	70	N	7	N	50	3.0
TX193VB	N	N	N	N	N	70	N	N	N	20	1.0
TX194VB	N	N	N	N	N	50	N	15	N	15	3.0
TX195VB	N	N	N	N	N	70	N	5	N	70	3.0
TX196VB	N	N	N	N	N	70	N	7	N	10	1.0
TX197VB	N	N	N	N	300	70	N	10	N	20	1.0
TX198VB	N	N	N	N	N	100	N	N	N	30	1.0
TX199VB	N	N	N	N	N	70	N	<2	N	10	3.0
TX200VB	N	N	N	N	N	100	N	N	N	15	2.0
TX201VB	N	N	N	N	N	150	N	N	N	100	1.0
TX202VB	N	N	N	N	N	100	N	7	N	200	2.0
TX203VB	N	N	N	N	N	150	N	7	N	10	3.0
TX204VB	N	N	N	N	N	100	N	7	N	20	1.0
TX205VB	N	N	N	N	N	70	N	20	N	15	1.0
TX206VB	N	N	N	N	N	70	N	5	N	15	1.0
TX207VB	N	N	N	N	N	70	N	N	N	15	2.0
TX208VB	N	N	N	N	N	70	N	N	N	70	2.0
TX209VB	N	N	N	N	10	70	N	7	N	15	3.0
TX210VB	N	N	N	N	N	70	N	N	N	15	3.0
TX211VB	N	N	N	N	N	70	N	N	N	30	3.0
TX212VB	N	N	N	N	N	70	N	N	N	15	1.0
TX213VB	N	N	N	N	N	100	N	N	N	15	2.0
TX214VB	N	N	N	N	10	70	N	5	N	20.0	3.0
TX215VB	N	N	N	N	N	150	N	5	N	70	1.0
TX216VB	N	N	N	N	N	50	N	2	N	15	2.0
TX217VB	N	N	N	N	N	50	N	2	N	15	3.0
TX218VB	N	N	N	N	N	70	N	N	N	70	1.0
TX219VB	N	N	N	N	N	50	N	5	N	15	7.0
TX220VB	N	N	N	N	N	70	N	N	N	15	1.0
TX221VB	N	N	N	N	N	70	N	N	N	50	2.0
TX222VB	N	N	N	N	N	50	N	N	N	15	1.0
TX223VB	N	N	N	N	N	50	N	2	N	70	1.0
TX224VB	N	N	N	N	N	50	N	5	N	15	1.0
TX225VB	N	N	N	N	N	70	N	5	N	20	<1.0
TX226VB	N	N	N	N	N	70	N	N	N	15	7.0
TX227VB	N	N	N	N	N	70	N	N	N	70	3.0
TX228VB	N	N	N	N	10	70	N	7	N	50	2.0
TX229VB	N	N	N	N	N	50	N	N	N	70	2.0
TX230VB	N	N	N	N	N	70	N	N	N	70	3.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX187VB	N	N	N	2,000	10	N	N	2,000	N	3.60
TX188VB	N	N	N	1,000	10	N	N	3,000	N	4.61
TX188VB	N	N	N	1,500	20	N	N	3,000	N	4.10
TX189VB	N	N	N	3,000	10	N	N	3,000	N	5.27
TX190VB	N	N	N	5,000	10	N	N	2,000	N	6.27
TX191VB	N	N	N	2,000	20	N	N	2,000	N	4.60
TX192VB	N	N	N	2,000	20	N	N	3,000	N	4.17
TX193VB	N	N	N	3,000	20	N	N	2,000	N	4.98
TX194VB	N	N	N	1,500	10	50	N	3,000	N	2.91
TX195VB	N	N	N	1,000	70	50	N	1,500	N	3.42
TX196VB	N	N	N	700	50	N	N	1,500	N	2.85
TX197VB	N	N	N	>5,000	30	N	N	3,000	N	4.41
TX198VB	N	N	N	3,000	50	N	N	3,000	N	3.77
TX199VB	N	N	N	700	70	N	N	3,000	N	2.62
TX200VB	N	N	N	300	10	N	N	3,000	N	2.88
TX201VB	N	N	N	1,500	10	N	N	3,000	N	2.87
TX202VB	N	N	N	100	10	N	N	2,000	N	2.45
TX203VB	N	N	N	1,000	10	N	N	2,000	N	2.05
TX204VB	N	N	N	1,500	10	N	N	2,000	N	3.28
TX205VB	N	N	N	2,000	10	N	N	500	N	3.77
TX206VB	N	N	N	1,500	30	N	N	2,000	N	4.10
TX207VB	N	N	N	1,500	20	N	N	3,000	N	3.80
TX208VB	N	N	N	1,500	10	N	N	3,000	N	2.80
TX209VB	N	N	N	1,000	30	N	N	3,000	N	3.10
TX210VB	N	N	N	1,000	20	N	N	2,000	N	2.98
TX211VB	N	N	N	700	20	N	N	2,000	N	3.64
TX212VB	N	N	N	700	30	N	N	1,000	N	3.31
TX213VB	N	N	N	1,500	30	N	N	2,000	N	3.65
TX214VB	N	N	N	2,000	10	N	N	2,000	N	4.72
TX215VB	N	N	N	1,000	10	N	N	3,000	N	3.01
TX216VB	N	N	N	1,500	30	N	N	3,000	N	3.50
TX217VB	N	N	N	700	20	N	N	1,000	N	3.42
TX218VB	N	N	N	1,500	30	N	N	1,500	N	3.08
TX219VB	N	N	N	1,500	30	N	N	500	N	4.35
TX220VB	N	N	N	1,000	30	N	N	2,000	N	3.64
TX221VB	N	N	N	1,000	10	N	N	2,000	N	3.12
TX222VB	N	N	N	1,000	20	N	N	1,500	N	4.32
TX223VB	N	N	N	1,500	50	N	N	2,000	N	5.42
TX224VB	N	N	N	1,000	50	N	N	3,000	N	3.91
TX225VB	N	N	N	1,000	10	N	N	1,000	N	3.14
TX226VB	N	N	N	1,500	10	N	N	3,000	N	2.92
TX227VB	N	N	N	1,500	10	N	N	1,500	N	3.00
TX228VB	N	N	N	3,000	N	N	N	1,000	N	2.90
TX229VB	N	N	N	1,500	10	N	N	3,000	N	3.58
TX230VB	N	N	N	300	10	N	N	3,000	N	2.38

black spruce--continued

sample	LATITUDE	LONGITUDE	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX231VB	63 56 5	142 21 45	.070	3.00	--	.010	10,000	N	N	N	100	5,000
TX232VB	63 59 30	142 4 0	<.050	1.50	--	.002	7,000	.2	N	N	300	500
TX233VB	63 54 55	142 20 50	.100	2.00	--	.002	7,000	.3	N	N	70	2,000
TX234VB	63 51 35	142 1 15	.100	3.00	--	.010	>10,000	N	N	N	300	5,000
TX235VB	63 55 10	142 9 15	N	.20	--	<.002	500	N	N	N	150	500
TX236VB	63 53 20	142 10 60	<.050	1.50	--	.002	5,000	.3	N	N	200	1,000
TX238VB	63 53 5	142 18 50	.070	1.50	--	.010	5,000	N	N	N	300	5,000
TX239VB	63 52 35	142 2 15	.100	2.00	--	.010	2,000	N	N	N	150	2,000
TX240VB	63 49 40	142 18 35	.070	2.00	--	.005	7,000	N	N	N	150	5,000
TX241VB	63 51 35	142 7 30	N	.20	--	<.002	200	N	N	N	70	700
TX242VB	63 50 60	142 23 50	.050	3.00	--	.002	5,000	N	N	N	200	3,000
TX244VB	63 47 15	142 26 10	.100	3.00	--	.020	10,000	N	N	N	150	3,000
TX245VB	63 52 50	142 29 20	.100	2.00	--	.020	10,000	N	N	N	150	7,000
TX246VB	63 47 25	142 18 40	.100	1.00	--	.010	10,000	N	N	N	70	5,000
TX247VB	63 49 55	142 28 10	.100	5.00	--	.010	10,000	N	N	N	100	7,000
TX248VB	63 47 25	142 10 20	.200	2.00	--	.020	5,000	N	N	N	200	7,000
TX249VB	63 48 45	142 24 10	.050	1.00	--	.002	>10,000	.5	N	N	100	2,000
TX250VB	63 48 15	142 0 40	.070	2.00	--	.010	>10,000	1.0	N	N	300	3,000
TX251VB	63 46 20	142 19 15	.100	2.00	--	.010	7,000	N	N	N	100	7,000
TX252VB	63 43 40	142 0 40	.070	3.00	--	.010	>10,000	.5	N	N	150	2,000
TX253VB	63 45 15	142 6 45	.100	1.00	--	.010	10,000	N	N	N	150	5,000
TX254VB	63 42 45	142 5 50	.100	5.00	--	.010	>10,000	.5	N	N	70	2,000
TX255VB	63 45 40	142 2 60	.070	3.00	--	.010	>10,000	N	N	N	200	3,000
TX256VB	63 59 45	141 55 20	.070	2.00	--	.010	>10,000	.2	N	N	200	3,000
DTX256VB	63 59 45	141 55 20	.070	5.00	--	.010	>10,000	.3	N	N	200	5,000
TX257VB	63 43 35	142 16 10	.100	2.00	--	.020	5,000	.3	N	N	100	10,000
DTX257VB	63 43 35	142 16 10	.070	2.00	--	.020	7,000	.7	N	N	100	10,000
TX258VB	63 58 35	141 56 30	.070	2.00	--	.010	7,000	N	N	N	100	7,000
TX259VB	64 0 0	141 46 60	.070	1.50	--	.010	5,000	N	N	N	100	5,000
TX260VB	63 54 40	141 51 10	.070	2.00	--	.010	7,000	N	N	N	100	2,000
TX261VB	63 56 45	141 54 20	.050	2.00	--	.010	>10,000	N	N	N	200	7,000
TX262VB	63 54 25	141 58 30	.100	3.00	--	.020	>10,000	N	N	N	200	10,000
TX263VB	63 56 0	141 54 18	.100	3.00	--	.020	>10,000	N	N	N	200	7,000
TX264VB	63 49 10	141 46 60	.070	2.00	--	.010	>10,000	.5	N	N	150	2,000
TX266VB	63 49 50	141 46 60	.050	2.00	--	.010	>10,000	.2	N	N	70	5,000
TX269VB	63 52 36	141 55 50	.070	2.00	--	.010	>10,000	N	N	N	300	2,000
TX270VB	63 46 5	141 58 0	.070	5.00	--	.020	10,000	N	N	N	300	7,000
TX271VB	63 49 20	141 58 40	.070	2.00	--	.010	7,000	N	N	N	100	5,000
TX272VB	63 36 17	143 46 55	.070	2.00	--	.010	7,000	N	N	N	500	1,000
TX273VB	63 47 50	141 58 10	.100	3.00	--	.010	>10,000	N	N	N	300	2,000
TX274VB	63 33 35	143 45 32	.100	3.00	--	.020	3,000	N	N	N	300	700
TX275VB	63 46 12	141 39 10	.070	2.00	--	.010	5,000	N	N	N	100	7,000
DTX275VB	63 46 12	141 39 10	.100	5.00	--	.020	10,000	N	N	N	300	700
TX277VB	63 46 45	141 39 60	.100	5.00	--	.010	10,000	N	N	N	100	1,500
TX278VB	63 32 5	143 41 10	<.050	.20	--	.002	500	N	N	N	70	700

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX231VB	N	N	N	N	N	70	N	N	N	15	3.0
TX232VB	N	N	N	N	N	70	N	30	N	5	1.0
TX233VB	N	N	N	N	N	70	N	5	N	15	3.0
TX234VB	N	N	N	N	N	50	N	N	N	20	3.0
TX235VB	N	N	N	N	N	15	N	N	N	5	1.0
TX236VB	N	N	N	N	N	70	N	N	N	100	2.0
TX238VB	N	N	N	N	N	50	N	N	N	50	3.0
TX239VB	N	N	N	N	N	70	N	5	N	5	3.0
TX240VB	N	N	N	N	N	70	N	N	N	50	3.0
TX241VB	N	N	N	N	N	10	N	N	N	5	<1.0
TX242VB	N	N	N	N	N	70	N	5	N	70	2.0
TX244VB	N	N	N	N	N	70	N	N	N	20	3.0
TX245VB	N	N	N	N	10	70	N	7	N	50	3.0
TX246VB	N	N	N	N	10	50	N	N	N	20	<1.0
TX247VB	N	N	N	N	N	70	N	N	N	70	1.0
TX248VB	N	N	N	N	15	70	N	N	N	70	3.0
TX249VB	N	N	N	N	N	50	N	5	N	15	2.0
TX250VB	N	N	N	N	N	70	N	2	N	30	3.0
TX251VB	N	N	N	N	N	50	N	N	N	15	1.0
TX252VB	N	N	N	N	N	50	N	5	N	15	1.0
TX253VB	N	N	N	N	N	70	N	N	N	15	1.0
TX254VB	N	N	N	N	15	70	N	N	N	15	3.0
TX255VB	N	N	N	N	N	50	N	N	N	70	1.0
TX256VB	N	N	N	N	N	70	N	N	N	70	1.0
DTX256VB	N	N	N	N	N	70	N	5	N	70	1.0
TX257VB	N	N	N	N	15	50	N	N	N	15	1.0
DTX257VB	N	N	N	N	N	50	N	N	N	15	1.0
TX258VB	N	N	N	N	N	70	N	N	N	20	1.0
TX259VB	N	N	N	N	N	50	N	N	N	10	1.0
TX260VB	N	N	N	N	N	70	N	N	N	70	<1.0
TX261VB	N	N	N	N	N	70	N	N	N	15	<1.0
TX262VB	N	N	N	N	5	70	N	2	N	70	<1.0
TX263VB	N	N	N	N	N	70	N	2	N	70	1.0
TX264VB	N	N	N	N	N	50	N	N	N	10	2.0
TX266VB	N	N	N	N	N	70	N	5	N	50	1.0
TX269VB	N	N	N	N	N	70	N	5	N	10	1.0
TX270VB	N	N	N	N	N	50	N	N	N	70	1.0
TX271VB	N	N	N	N	N	70	N	7	N	50	1.0
TX272VB	N	N	N	N	30	50	N	7	N	15	3.0
TX273VB	N	N	N	N	N	70	N	7	N	10	1.0
TX274VB	N	N	N	N	5	50	N	2	N	10	2.0
TX275VB	N	N	N	N	N	50	N	N	N	15	<1.0
DTX275VB	N	N	N	N	5	70	N	10	N	10	2.0
TX277VB	N	N	N	N	N	70	N	N	N	50	3.0
TX278VB	N	N	N	N	N	10	N	N	N	N	<1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX231VB	N	N	N	2,000	30	N	N	3,000	N	3.40
TX232VB	N	N	N	300	10	N	N	1,500	N	2.44
TX233VB	N	N	N	1,000	20	N	N	2,000	N	2.72
TX234VB	N	N	N	1,500	30	N	N	1,500	N	3.91
TX235VB	N	N	N	300	30	N	N	700	N	3.92
TX236VB	N	N	N	300	10	N	N	1,500	N	2.64
TX238VB	N	N	N	1,500	20	N	N	3,000	N	4.82
TX239VB	N	N	N	1,500	20	N	N	1,000	N	3.82
TX240VB	N	N	N	1,500	20	N	N	3,000	N	3.18
TX241VB	N	N	N	300	30	N	N	100	N	5.00
TX242VB	N	N	N	1,500	10	N	N	3,000	N	4.00
TX244VB	N	N	N	1,500	20	N	N	3,000	N	4.34
TX245VB	N	N	N	1,500	30	N	N	2,000	N	5.71
TX246VB	N	N	N	1,500	30	N	N	700	N	6.00
TX247VB	N	N	N	2,000	30	N	N	3,000	N	4.20
TX248VB	N	N	N	1,500	20	N	N	1,000	N	3.40
TX249VB	N	N	N	700	30	N	N	2,000	N	3.14
TX250VB	N	N	N	1,000	20	N	N	3,000	N	3.42
TX251VB	N	N	N	2,000	20	N	N	3,000	N	3.28
TX252VB	N	N	N	1,000	50	N	N	2,000	N	4.04
TX253VB	N	N	N	1,500	30	N	N	3,000	N	5.12
TX254VB	N	N	N	2,000	20	N	N	3,000	N	3.21
TX255VB	N	N	N	1,500	20	N	N	3,000	N	3.78
TX256VB	N	N	N	1,500	20	N	N	1,500	N	3.87
TX256VB	N	N	N	2,000	20	N	N	1,500	N	3.35
TX257VB	N	N	N	5,000	20	N	N	2,000	N	5.48
TX257VB	N	N	N	>5,000	15	N	N	3,000	N	5.88
TX258VB	N	N	N	2,000	20	N	N	3,000	N	3.95
TX259VB	N	N	N	1,500	15	N	N	3,000	N	4.48
TX260VB	N	N	N	1,500	20	N	N	300	N	4.40
TX261VB	N	N	N	1,500	30	N	N	3,000	N	4.10
TX262VB	N	N	N	2,000	30	N	N	2,000	N	4.94
TX263VB	N	N	N	1,500	50	N	N	3,000	N	2.47
TX264VB	N	N	N	1,000	20	N	N	3,000	N	4.27
TX266VB	N	N	N	2,000	20	N	N	3,000	N	3.45
TX269VB	N	N	N	1,000	50	N	N	3,000	N	2.61
TX270VB	N	N	N	3,000	20	N	N	3,000	N	4.87
TX271VB	N	N	N	1,500	10	N	N	2,000	N	3.94
TX272VB	N	N	N	1,500	10	N	N	2,000	N	3.52
TX273VB	N	N	N	1,500	30	N	N	3,000	N	3.81
TX274VB	N	N	N	3,000	10	N	N	3,000	N	4.27
TX275VB	N	N	N	2,000	20	N	N	2,000	N	5.32
TX275VB	N	N	N	>5,000	20	N	N	3,000	N	3.30
TX277VB	N	N	N	1,500	20	N	N	2,000	N	3.64
TX278VB	N	N	N	700	10	N	N	N	N	3.70

sample	LATITUDE	LONGITUD	S-FEZ	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX279VB	63 35 60	143 41 50	.070	2.00	--	.010	7,000	N	N	N	200	1,000
TX280VB	63 33 0	143 39 10	.200	5.00	--	.030	3,000	N	N	N	500	700
TX281VB	63 34 47	143 43 0	.100	2.00	--	.010	3,000	N	N	N	300	500
TX282VB	63 30 45	143 33 25	<.050	.20	--	.002	1,500	N	N	N	70	700
TX283VB	63 27 45	143 32 20	.100	3.00	--	.010	>10,000	.3	N	N	200	700
TX284VB	63 29 40	143 32 10	.100	3.00	--	.020	3,000	N	N	N	150	3,000
DTX284VB	63 29 40	143 32 10	.300	5.00	--	.030	2,000	N	N	N	500	5,000
TX285VB	63 27 6	143 36 49	.070	3.00	--	.010	5,000	N	N	N	500	1,000
TX286VB	63 28 15	143 36 10	.070	2.00	--	.010	5,000	N	N	N	100	7,000
TX287VB	63 25 55	143 44 5	.100	2.00	--	.020	5,000	N	N	N	300	1,000
TX288VB	63 27 50	143 38 45	.100	3.00	--	.020	5,000	.1	N	N	200	5,000
TX289VB	63 58 30	141 39 50	.050	1.00	--	.002	>10,000	.3	N	N	100	1,000
TX290VB	63 27 45	143 46 60	<.050	.20	--	N	2,000	N	N	N	70	200
TX291VB	63 56 45	141 42 40	.070	2.00	--	.003	5,000	.3	N	N	150	5,000
TX292VB	63 58 15	141 33 40	.070	2.00	--	.002	>10,000	.3	N	N	70	5,000
TX293VB	63 51 45	141 39 10	.070	2.00	--	.010	10,000	.7	N	N	150	7,000
DTX293VB	63 51 45	141 39 10	.070	2.00	--	.003	10,000	.1	N	N	150	5,000
TX294VB	63 56 5	141 39 10	.070	2.00	--	.002	>10,000	.1	N	N	200	2,000
TX295VB	63 50 60	141 38 60	.070	2.00	--	.005	10,000	.1	N	N	150	7,000
TX296VB	63 55 20	141 42 30	.100	2.00	--	.010	>10,000	N	N	N	150	7,000
TX297VB	63 52 55	141 42 10	.050	3.00	--	.002	>10,000	.2	N	N	200	2,000
TX298VB	63 54 35	141 33 40	<.050	2.00	--	.002	>10,000	.1	N	N	200	700
TX299VB	63 52 50	141 36 50	.050	2.00	--	.002	10,000	.5	N	N	100	2,000
TX300VB	63 53 30	141 31 15	.100	2.00	--	.010	10,000	N	N	N	70	7,000
TX301VB	63 45 30	141 49 5	.070	2.00	--	.010	>10,000	.3	N	N	70	1,500
TX302VB	63 46 10	141 43 5	<.050	2.00	--	<.002	>10,000	<.1	N	N	100	1,000
TX303VB	63 46 10	141 51 20	<.050	2.00	--	<.002	>10,000	.3	N	N	200	700
TX304VB	63 44 35	141 51 15	<.050	2.00	--	<.002	>10,000	.3	N	N	100	700
TX305VB	63 43 32	141 23 5	<.050	2.00	--	.002	>10,000	.3	N	N	200	1,000
TX306VB	63 45 0	141 20 30	.050	5.00	--	.010	7,000	.1	N	N	200	5,000
DTX306VB	63 45 0	141 20 30	.020	5.00	--	.002	10,000	.5	N	N	100	2,000
TX307VB	63 47 52	141 2 32	.070	3.00	--	.010	>10,000	.1	N	N	150	1,000
TX308VB	63 45 50	141 21 20	.050	1.00	--	.005	3,000	.2	N	N	200	3,000
TX309VB	63 47 10	141 3 15	.100	2.00	--	.020	10,000	.3	N	N	100	3,000
TX310VB	63 44 35	141 21 52	.070	3.00	--	.010	>10,000	.3	N	N	100	1,000
TX311VB	63 46 45	141 11 50	.100	5.00	--	.020	>10,000	.3	N	N	100	1,000
TX312VB	63 43 5	141 13 45	.050	3.00	--	.005	>10,000	.5	N	N	100	2,000
TX313VB	63 43 10	141 9 45	.100	5.00	--	.010	>10,000	.3	N	N	150	1,000
TX314VB	63 43 2	141 5 45	.070	5.00	--	.010	10,000	.1	N	N	50	3,000
TX315VB	63 42 20	141 10 15	.050	3.00	--	.010	>10,000	.2	N	N	150	5,000
TX316VB	63 42 10	141 5 40	.050	3.00	--	<.002	5,000	N	N	N	200	150
TX317VB	63 41 30	141 6 25	.100	2.00	--	.010	>10,000	.7	N	N	300	5,000
TX320VB	63 59 10	141 0 20	.100	5.00	--	.005	>10,000	.1	N	N	150	2,000
TX321VB	63 59 10	141 8 60	.200	2.00	--	.020	3,000	.1	N	N	70	5,000
TX322VB	63 55 7	141 10 51	.050	5.00	--	.002	>10,000	.1	N	N	100	500

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX279VB	N	N	N	N	N	70	N	N	N	15	3.0
TX280VB	N	N	N	N	N	50	N	10	N	5	2.0
TX281VB	N	N	N	N	N	100	N	N	N	5	3.0
TX282VB	N	N	N	N	N	7	N	N	N	5	<1.0
TX283VB	N	N	N	N	10	70	N	N	N	15	3.0
TX284VB	N	N	N	N	N	70	N	N	N	15	2.0
DTX284VB	N	N	N	N	20	100	N	N	N	70	1.0
TX285VB	N	N	N	N	N	20	N	10	N	15	1.0
TX286VB	N	N	N	N	10	100	N	N	N	10	1.0
TX287VB	N	N	N	N	10	70	N	7	N	10	3.0
TX288VB	N	N	N	N	N	50	N	30	N	70	1.0
TX289VB	N	N	N	N	N	50	N	N	N	15	1.0
TX290VB	N	N	N	N	N	15	N	N	N	5	1.0
TX291VB	N	N	N	N	N	70	N	N	N	70	1.0
TX292VB	N	N	N	N	N	70	N	2	N	30	1.0
TX293VB	N	N	N	N	N	70	N	5	N	50	1.0
DTX293VB	N	N	N	N	N	50	N	N	N	50	1.0
TX294VB	N	N	N	N	N	100	N	5	N	70	1.0
TX295VB	N	N	N	N	N	50	N	N	N	15	1.0
TX296VB	N	N	N	N	N	70	N	N	N	70	1.0
TX297VB	N	N	N	N	N	100	N	N	N	70	1.0
TX298VB	N	N	N	N	N	70	N	2	N	10	<1.0
TX299VB	N	N	N	N	N	50	N	N	N	50	<1.0
TX300VB	N	N	N	N	N	70	N	N	N	50	1.0
TX301VB	N	N	N	N	N	50	N	7	N	15	N
TX302VB	N	N	N	N	N	70	N	5	N	5	N
TX303VB	N	N	N	N	N	70	N	N	N	100	<1.0
TX304VB	N	N	N	N	N	70	N	N	N	70	<1.0
TX305VB	N	N	N	N	N	20	N	2	N	10	N
TX306VB	N	N	N	N	N	50	N	N	N	70	1.0
DTX306VB	N	N	N	N	N	30	N	N	N	50	<1.0
TX307VB	N	N	N	N	N	50	N	2	N	20	1.0
TX308VB	N	N	N	N	10	50	N	N	N	50	<1.0
TX309VB	N	N	N	N	N	20	N	N	N	30	1.0
TX310VB	N	N	N	N	N	50	N	<2	N	30	<1.0
TX311VB	N	N	N	N	N	70	N	<2	N	30	<1.0
TX312VB	N	N	N	N	N	30	N	3	N	20	<1.0
TX313VB	N	N	N	N	N	50	N	5	N	30	1.0
TX314VB	N	N	N	N	N	50	N	N	N	30	<1.0
TX315VB	N	N	N	N	N	20	N	N	N	30	<1.0
TX316VB	N	N	N	N	N	70	N	N	N	200	<1.0
TX317VB	N	N	N	N	N	50	N	2	N	70	<1.0
TX320VB	N	N	N	N	N	30	N	<2	N	30	<1.0
TX321VB	N	N	N	N	N	30	N	<2	N	10	1.0
TX322VB	N	N	N	N	N	30	N	<2	N	10	<1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX279VB	N	N	N	1,000	10	N	N	2,000	N	3.80
TX280VB	N	N	N	5,000	20	N	N	1,000	N	3.95
TX281VB	N	N	N	1,000	N	N	N	2,000	N	2.68
TX282VB	N	N	N	1,500	20	N	N	500	N	3.64
TX283VB	N	N	N	1,500	30	N	N	3,000	N	3.24
TX284VB	N	N	N	3,000	20	100	N	2,000	N	4.02
DTX284VB	N	N	N	>5,000	30	N	N	700	N	3.84
TX285VB	N	N	N	>5,000	50	N	N	3,000	N	3.42
TX286VB	N	N	N	>5,000	10	N	N	3,000	N	3.60
TX287VB	N	N	N	>5,000	20	100	N	2,000	N	5.31
TX288VB	N	N	N	3,000	20	N	N	3,000	N	4.37
TX289VB	N	N	N	500	20	N	N	1,500	N	3.44
TX290VB	N	N	N	500	20	N	N	700	N	4.17
TX291VB	N	N	N	1,500	20	N	N	1,500	N	3.57
TX292VB	N	N	N	1,000	30	N	N	1,500	N	3.40
TX293VB	N	N	N	2,000	20	N	N	3,000	N	4.82
DTX293VB	N	N	N	1,500	20	N	N	2,000	N	4.32
TX294VB	N	N	N	1,000	20	N	N	2,000	N	2.90
TX295VB	N	N	N	2,000	20	N	N	3,000	N	4.40
TX296VB	N	N	N	1,500	20	100	N	2,000	N	4.41
TX297VB	N	N	N	1,500	20	N	N	2,000	N	3.52
TX298VB	N	N	N	300	50	N	N	3,000	N	2.92
TX299VB	N	N	N	200	15	N	N	3,000	N	3.54
TX300VB	N	N	N	200	15	N	N	2,000	N	3.50
TX301VB	N	N	N	200	70	N	N	3,000	N	4.20
TX302VB	N	N	N	70	50	N	N	2,000	N	3.04
TX303VB	N	N	N	100	20	N	N	2,000	N	3.25
TX304VB	N	N	N	70	20	N	N	1,500	N	2.25
TX305VB	N	N	N	200	50	N	N	2,000	N	3.22
TX306VB	N	N	N	2,000	20	N	N	1,500	N	3.08
DTX306VB	N	N	N	1,000	20	N	N	1,000	N	2.95
TX307VB	N	N	N	700	70	N	N	1,500	N	3.14
TX308VB	N	N	N	5,000	20	N	N	200	N	2.97
TX309VB	N	N	N	3,000	20	N	N	1,000	N	5.64
TX310VB	N	N	N	700	50	N	N	1,000	N	3.44
TX311VB	N	N	N	700	30	N	N	1,000	N	2.84
TX312VB	N	N	N	700	70	N	N	1,000	N	3.00
TX313VB	N	N	N	1,000	100	N	N	1,500	N	3.48
TX314VB	N	N	N	1,000	10	N	N	1,000	N	2.54
TX315VB	N	N	N	1,000	30	N	N	1,500	N	4.17
TX316VB	N	N	N	100	10	N	N	1,000	N	2.77
TX317VB	N	N	N	1,000	50	N	N	700	N	3.78
TX320VB	N	N	N	500	50	N	N	1,500	N	2.97
TX321VB	N	N	N	2,000	10	N	N	1,500	N	4.70
TX322VB	N	N	N	200	30	N	N	1,000	N	3.02

sample	LATITUDE	LONGITUDE	S-FEZ	S-MGZ	S-CAZ	S-TIZ	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX323VB	63 59 58	141 8 51	.100	2.00	--	.020	2,000	.2	N	N	100	5,000
TX324VB	63 54 33	141 12 30	.050	5.00	--	.005	>10,000	.1	N	N	300	1,500
TX325VB	63 57 15	141 0 0	.150	3.00	--	.020	5,000	.1	N	N	300	3,000
TX326VB	63 54 22	141 6 56	.050	3.00	--	.010	5,000	.1	N	N	50	3,000
TX328VB	63 53 58	141 3 2	.100	5.00	--	.005	>10,000	.1	N	N	300	700
TX329VB	63 54 35	141 1 56	.100	3.00	--	.010	10,000	.5	N	N	300	2,000
TX330VB	63 52 0	141 8 22	.100	5.00	--	.030	7,000	.1	N	N	70	5,000
TX331VB	63 52 45	141 6 0	.050	3.00	--	.005	>10,000	.5	N	N	200	300
TX331VB	63 52 45	141 6 0	.050	3.00	--	.010	>10,000	.5	N	N	200	500
TX332VB	63 51 14	141 10 29	.100	3.00	--	.010	2,000	.3	N	N	150	5,000
TX333VB	63 51 15	141 13 10	.050	2.00	--	.010	5,000	N	N	N	70	2,000
TX334VB	63 50 37	141 13 12	.100	2.00	--	.010	2,000	.2	N	N	150	7,000
TX335VB	63 49 20	141 15 0	.070	3.00	--	.010	5,000	.2	N	N	50	3,000
TX336VB	63 51 40	141 12 18	.070	3.00	--	.010	3,000	.5	N	N	100	3,000
TX337VB	63 49 20	141 28 50	.100	3.00	--	.010	>10,000	N	N	N	150	200
TX338VB	63 52 32	141 21 0	.070	3.00	--	.020	5,000	.2	N	N	200	5,000
TX339VB	63 48 45	141 28 20	.100	3.00	--	.020	10,000	.5	N	N	200	1,500
TX340VB	63 53 18	141 24 7	.050	3.00	--	.010	3,000	.1	N	N	300	2,000
TX341VB	63 57 55	141 21 5	.100	3.00	--	.010	10,000	.1	N	N	100	3,000
TX342VB	63 57 16	141 32 16	.070	2.00	--	.010	5,000	.1	N	N	100	7,000
TX343VB	63 57 12	141 21 47	.100	3.00	--	.020	7,000	1.0	N	N	70	2,000
TX344VB	63 50 55	141 25 30	.150	3.00	--	.020	10,000	.1	N	N	200	1,500
TX345VB	63 58 55	141 29 35	.070	3.00	--	.020	10,000	.2	N	N	200	10,000
TX346VB	63 51 21	141 27 45	.160	5.00	--	.010	>10,000	.1	N	N	300	1,000
TX347VB	63 54 10	141 30 0	.100	3.00	--	.010	>10,000	.7	N	N	100	2,000
TX348VB	63 42 35	141 30 30	.100	5.00	--	.020	5,000	.1	N	N	100	5,000
TX349VB	63 44 10	141 21 0	.100	5.00	--	.020	>10,000	.1	N	N	300	2,000
TX350VB	63 43 50	141 21 50	.050	3.00	--	.010	>10,000	.2	N	N	100	5,000
TX351VB	63 45 40	141 30 10	.050	2.00	--	.020	5,000	.5	N	N	100	7,000
TX352VB	63 41 30	141 23 15	.070	5.00	--	.010	>10,000	.1	N	N	70	3,000
TX353VB	63 42 55	141 26 50	.200	5.00	--	.020	>10,000	.2	N	N	300	700
TX354VB	63 40 30	141 33 10	.100	5.00	--	.020	10,000	.1	N	N	70	5,000
TX355VB	63 40 25	141 28 5	.070	5.00	--	.005	>10,000	1.0	N	N	500	1,500
TX356VB	63 39 30	141 38 30	.100	3.00	--	.010	10,000	.2	N	N	300	2,000
TX356VB	63 39 30	141 38 30	.070	5.00	--	.010	10,000	.1	N	N	300	1,500
TX357VB	63 38 40	141 29 0	.100	7.00	--	.020	>10,000	1.0	N	N	500	1,500
TX358VB	63 33 45	141 19 10	.100	5.00	--	.010	>10,000	.5	N	N	1,000	2,000
TX359VB	63 36 25	141 39 20	.100	3.00	--	.020	500	1.0	N	N	200	5,000
TX360VB	63 32 54	141 19 18	.100	5.00	--	.010	>10,000	.5	N	N	300	1,500
TX361VB	63 30 50	141 15 55	1.000	5.00	--	.050	>10,000	.5	N	N	150	>5,000
TX362VB	63 35 50	141 0 10	.100	5.00	--	.010	>10,000	.2	N	N	300	2,000
TX363VB	63 31 25	141 14 20	.500	5.00	--	.020	10,000	.1	N	N	200	5,000
TX364VB	63 37 35	141 5 10	.100	5.00	--	.020	>10,000	.2	N	N	300	5,000
TX365VB	63 32 20	141 0 20	.100	5.00	--	.010	>10,000	1.0	N	N	300	5,000
TX366VB	63 39 30	141 12 57	.100	5.00	--	.010	>10,000	.7	N	N	300	3,000

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX323VB	N	N	N	N	100	30	N	2	N	20	<1.0
TX324VB	N	N	N	N	N	50	N	2	N	50	<1.0
TX325VB	N	N	N	N	N	50	N	N	N	15	1.0
TX326VB	N	N	N	N	N	70	N	N	N	50	<1.0
TX328VB	N	N	N	N	N	70	N	2	N	20	<1.0
TX329VB	N	N	N	N	N	50	N	N	N	30	<1.0
TX330VB	N	N	N	N	N	50	N	N	N	10	<1.0
TX331VB	N	N	N	N	N	50	N	2	N	10	<1.0
DTX331VB	N	N	N	N	N	50	N	5	N	10	<1.0
TX332VB	N	N	N	N	10	70	N	N	N	50	<1.0
TX333VB	N	N	N	N	N	50	N	N	N	5	1.0
TX334VB	N	N	N	N	10	70	N	N	N	50	<1.0
TX335VB	N	N	N	N	N	70	N	N	N	30	1.0
TX336VB	N	N	N	N	N	50	N	N	N	30	1.0
TX337VB	N	N	N	N	5	50	N	5	N	20	1.0
TX338VB	N	N	N	N	N	50	N	N	N	20	1.0
TX339VB	N	N	N	N	N	50	N	N	N	50	1.0
TX340VB	N	N	N	N	N	50	N	N	N	50	<1.0
TX341VB	N	N	N	N	N	50	N	N	N	20	<1.0
TX342VB	N	N	N	N	N	50	N	N	N	70	1.0
TX343VB	N	N	N	N	N	50	N	N	N	30	1.0
TX344VB	N	N	N	N	N	70	N	N	N	70	1.0
TX345VB	N	N	N	N	N	30	N	N	N	70	1.0
TX346VB	N	N	N	N	N	50	N	N	N	20	1.0
TX347VB	N	N	N	N	N	70	N	2	N	70	1.0
TX348VB	N	N	N	N	N	30	N	2	N	70	1.0
TX349VB	N	N	N	N	N	50	N	N	N	20	1.0
TX350VB	N	N	N	N	N	50	N	5	N	70	1.0
TX351VB	N	N	N	N	5	30	N	N	N	70	1.0
TX352VB	N	N	N	10	N	70	N	N	N	70	<1.0
TX353VB	N	N	N	N	N	30	N	20	N	30	2.0
TX354VB	N	N	N	N	N	50	N	N	N	100	<1.0
TX355VB	N	N	N	N	N	30	N	2	N	70	<1.0
TX356VB	N	N	N	N	N	50	N	N	N	70	<1.0
DTX356VB	N	N	N	N	N	50	N	N	N	50	<1.0
TX357VB	N	N	N	N	N	50	N	10	N	20	<1.0
TX358VB	N	N	N	N	N	50	N	5	N	100	<1.0
TX359VB	N	N	N	N	N	50	N	N	N	20	1.0
TX360VB	N	N	N	N	N	50	N	10	N	30	3.0
TX361VB	N	N	N	N	N	50	N	5	N	100	1.0
TX362VB	N	N	N	N	N	50	N	2	N	100	1.0
TX363VB	N	N	N	N	N	100	N	N	N	200	1.0
TX364VB	N	N	N	N	N	50	N	N	N	100	1.0
TX365VB	N	N	N	N	N	50	N	N	N	20	1.0
TX366VB	N	N	N	N	N	50	N	5	N	20	<1.0

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX323VB	N	N	N	2,000	10	N	N	300	N	4.54
TX324VB	N	N	N	700	70	N	N	1,500	N	2.74
TX325VB	N	N	N	1,500	10	N	N	1,000	N	4.28
TX326VB	N	N	N	2,000	10	N	N	1,000	N	3.98
TX328VB	N	N	N	300	70	N	N	1,000	N	2.50
TX329VB	N	N	N	700	20	N	N	1,000	N	3.25
TX330VB	N	N	N	3,000	10	N	N	1,500	N	4.32
TX331VB	N	N	N	300	70	N	N	1,000	N	2.35
DTX331VB	N	N	N	300	100	N	N	1,500	N	2.91
TX332VB	N	N	N	5,000	10	N	N	300	N	3.04
TX333VB	N	N	N	1,000	10	N	N	1,000	N	3.65
TX334VB	N	N	N	2,000	10	N	N	200	N	3.85
TX335VB	N	N	N	2,000	10	N	N	1,500	N	3.24
TX336VB	N	N	N	1,500	10	N	N	1,500	N	3.70
TX337VB	N	N	N	300	100	N	N	1,000	N	2.87
TX338VB	N	N	N	1,500	10	N	N	1,500	N	4.38
TX339VB	N	N	N	1,500	20	N	N	1,000	N	2.97
TX340VB	N	N	N	1,000	10	N	N	1,500	N	3.87
TX341VB	N	N	N	1,500	20	N	N	1,500	N	4.85
TX342VB	N	N	N	1,500	10	N	N	2,000	N	4.21
TX343VB	N	N	N	1,500	20	N	N	1,500	N	4.17
TX344VB	N	N	N	700	30	N	N	1,000	N	3.12
TX345VB	N	N	N	1,500	20	N	N	1,500	N	4.82
TX346VB	N	N	N	1,500	50	N	N	1,500	N	3.21
TX347VB	N	N	N	1,000	20	N	N	1,000	N	3.50
TX348VB	N	N	N	2,000	10	N	N	2,000	N	4.91
TX349VB	N	N	N	1,500	30	N	N	1,000	N	3.57
TX350VB	N	N	N	1,000	70	N	N	1,000	N	4.31
TX351VB	N	N	N	2,000	20	N	N	500	N	4.58
TX352VB	N	N	N	1,500	20	N	N	1,000	N	4.48
TX353VB	N	N	N	1,000	100	N	N	1,500	N	3.65
TX354VB	N	N	N	2,000	20	N	N	1,500	N	3.97
TX355VB	N	N	N	1,000	50	N	N	1,000	N	2.92
TX356VB	N	N	N	1,500	10	N	N	1,500	N	3.57
DTX356VB	N	N	N	1,500	20	N	N	1,500	N	3.48
TX357VB	N	N	N	700	70	N	N	1,500	N	3.15
TX358VB	N	N	N	1,000	70	N	N	1,500	N	4.12
TX359VB	N	N	N	5,000	100	N	N	1,000	N	5.32
TX360VB	N	N	N	1,000	1,000	N	N	1,000	N	3.85
TX361VB	N	N	N	2,000	500	N	N	1,500	N	5.57
TX362VB	N	N	N	1,000	20	N	N	1,000	N	3.34
TX363VB	N	N	N	2,000	20	N	N	1,500	N	3.05
TX364VB	N	N	N	2,000	20	N	N	1,000	N	5.32
TX365VB	N	N	N	1,000	50	N	N	1,500	N	2.75
TX366VB	N	N	N	1,000	70	N	N	1,500	N	3.92

sample	LATITUDE		LONGITUD	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX367VB	63 30 20	141 0 40	.100	5.00	--	.010	10,000	.2	N	N	N	100	>5,000
TX368VB	63 36 5	141 13 50	.100	5.00	--	.010	10,000	.2	N	N	N	150	5,000
TX369VB	63 31 40	141 8 60	.100	5.00	--	.020	>10,000	.2	N	N	N	100	>5,000
DTX369VB	63 31 40	141 8 60	.100	5.00	--	.010	>10,000	.1	N	N	N	100	5,000
TX370VB	63 36 25	141 17 20	.300	7.00	--	.010	>10,000	.7	N	N	N	200	2,000
TX371VB	63 32 25	141 7 30	.100	5.00	--	.050	10,000	.1	N	N	N	150	>5,000
TX372VBA	63 36 40	141 19 40	.100	5.00	--	.010	>10,000	.7	N	N	N	500	2,000
TX372VBB	63 36 40	141 19 40	.100	3.00	--	.030	7,000	.1	N	N	N	300	>5,000
TX373VB	63 34 30	141 3 20	.100	3.00	--	.020	5,000	.7	N	N	N	300	7,000
TX375VB	63 33 60	141 13 25	.100	3.00	--	.200	5,000	.1	N	N	N	100	5,000
TX376VB	63 36 25	141 32 60	.070	5.00	--	.005	>10,000	.5	N	N	N	700	1,500
TX377VB	63 33 30	141 15 60	.100	7.00	--	.100	>10,000	.1	N	N	N	150	2,000
TX378VB	63 32 18	141 35 55	.100	5.00	--	.010	10,000	.2	N	N	N	100	5,000
TX379VB	63 32 45	141 37 20	.200	5.00	--	.010	10,000	.5	N	N	N	200	7,000
TX380VB	63 35 15	141 47 60	.200	5.00	--	.010	>10,000	.5	N	N	N	100	2,000
TX381VB	63 41 55	141 57 20	.070	5.00	--	.010	>10,000	.3	N	N	N	300	1,500
TX382VB	63 44 55	141 56 20	.100	5.00	--	.010	>10,000	.1	N	N	N	200	1,500
TX383VB	63 39 30	142 8 52	.100	5.00	--	.010	>10,000	1.0	N	N	N	200	1,500
TX384VB	63 36 30	142 4 50	.100	3.00	--	.020	>10,000	.3	N	N	N	150	5,000
TX385VB	63 6 20	143 15 20	.500	5.00	--	.050	>10,000	.7	N	N	N	150	2,000
TX386VB	63 2 25	141 21 5	.200	5.00	--	.020	>10,000	.2	N	N	N	200	5,000
TX387VB	63 34 40	141 34 30	.100	5.00	--	.020	10,000	.2	N	N	N	200	7,000
TX388VB	63 33 45	141 38 40	.100	5.00	--	.010	5,000	.3	N	N	N	300	5,000
TX389VB	63 37 5	141 43 50	.050	3.00	--	.010	10,000	.5	N	N	N	200	2,000
TX390VB	63 39 14	143 51 20	.100	5.00	--	.020	>10,000	.3	N	N	N	150	3,000
TX391VB	63 38 45	141 51 15	.100	5.00	--	.020	>10,000	.3	N	N	N	200	7,000
TX392VB	63 41 55	142 8 40	.100	7.00	--	.010	>10,000	1.0	N	N	N	70	2,000
TX393VB	63 37 30	142 3 20	.070	3.00	--	.010	10,000	.2	N	N	N	500	5,000
TX394VB	63 40 30	142 21 10	.200	3.00	--	.020	>10,000	.3	N	N	N	200	10,000
TX395VB	63 41 0	142 22 50	.100	3.00	--	.020	5,000	.5	N	N	N	200	7,000
TX396VB	63 1 35	143 20 30	.100	3.00	--	.020	3,000	.2	N	N	N	200	5,000
TX397VB	63 0 25	143 19 40	.100	2.00	--	.020	3,000	.3	N	N	N	200	1,000
TX398VB	63 36 5	141 22 50	.100	2.00	--	.020	>10,000	.5	N	N	N	300	2,000
TX399VB	63 29 35	141 29 15	.200	3.00	--	.020	>10,000	2.0	N	N	N	100	3,000
TX400VB	63 34 40	141 41 50	.200	3.00	--	.020	>10,000	.1	N	N	N	100	500
TX401VB	63 35 50	141 44 30	.050	1.00	--	.020	>10,000	.1	N	N	N	300	300
TX402VB	63 41 40	141 49 5	.100	3.00	--	.050	10,000	.2	N	N	N	100	3,000
TX403VB	63 42 20	141 50 0	.100	3.00	--	.020	>10,000	.3	N	N	N	100	1,500
TX404VB	63 41 45	142 1 25	.100	3.00	--	.020	>10,000	.3	N	N	N	150	3,000
TX405VB	63 37 30	142 10 55	.200	3.00	--	.010	5,000	.2	N	N	N	70	1,000
TX409VB	63 20 45	143 28 55	.100	2.00	--	.010	3,000	.2	N	N	N	50	500
TX410VB	63 25 35	143 30 25	.200	5.00	--	.020	>10,000	.2	N	N	N	500	200
TX411VB	63 27 20	143 56 40	.200	5.00	--	.020	5,000	.2	N	N	N	30	1,500
TX412VB	63 26 15	143 52 55	.200	2.00	--	.020	10,000	.2	N	N	N	50	1,500
TX413VB	63 21 55	143 42 35	.100	2.00	--	.010	10,000	.1	N	N	N	70	500

black spruce--continued

sample	S-BE	S-B1	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX367VB	N	N	N	N	N	50	N	N	N	70	1.0
TX368VB	N	N	N	N	N	50	N	N	N	50	1.0
TX369VB	N	N	N	N	N	50	N	2	N	50	<1.0
DTX369VB	N	N	N	N	N	50	N	N	N	50	<1.0
TX370VB	N	N	N	N	N	50	N	2	N	50	1.0
TX371VB	N	N	N	N	N	100	N	N	N	150	<1.0
TX372VBA	N	N	N	N	N	50	N	2	N	50	2.0
TX372VB8	N	N	N	N	N	30	N	N	N	20	1.0
TX373VB	N	N	N	N	N	30	N	N	N	30	1.0
TX375VB	N	N	N	N	N	30	N	N	N	30	1.0
TX376VB	N	N	N	N	N	30	N	2	N	20	1.0
TX377VB	N	N	N	N	N	30	N	N	N	50	1.0
TX378VB	N	N	N	N	N	50	N	N	N	50	1.0
TX379VB	N	N	N	N	N	30	N	N	N	50	1.0
TX380VB	N	N	N	N	N	30	N	2	N	30	2.0
TX381VB	N	N	N	N	N	30	N	2	N	30	1.0
TX382VB	N	N	N	N	N	30	N	5	N	30	1.0
TX383VB	N	N	N	N	N	30	N	N	N	10	1.0
TX384VB	N	N	N	S	N	50	N	N	N	100	<1.0
TX385VB	N	N	N	S	N	50	N	2	N	100	2.0
TX386VB	N	N	N	N	N	50	N	N	N	50	2.0
TX387VB	N	N	N	N	N	30	N	N	N	50	1.0
TX388VB	N	N	N	N	10	50	N	N	N	50	<1.0
TX389VB	N	N	N	N	N	70	N	N	N	100	1.0
TX390VB	N	N	N	N	10	30	N	5	N	50	1.0
TX391VB	N	N	N	N	N	30	N	N	N	100	1.0
TX392VB	N	N	N	N	N	50	N	5	N	50	1.0
TX393VB	N	N	N	N	N	30	N	N	N	10	1.0
TX394VB	N	N	N	N	N	30	N	N	N	70	1.0
TX395VB	N	N	N	N	10	30	N	N	N	70	1.0
TX396VB	N	N	N	N	N	50	N	N	N	70	1.0
TX397VB	N	N	N	N	N	70	N	N	N	50	2.0
TX398VB	N	N	N	N	N	70	N	5	N	70	1.0
TX399VB	N	N	N	N	N	50	N	2	N	70	1.0
TX400VB	N	N	N	N	10	70	N	5	N	20	1.0
TX401VB	N	N	N	N	15	30	N	10	N	10	1.0
TX402VB	N	N	N	N	N	30	N	2	N	70	1.0
TX403VB	N	N	N	N	5	50	N	N	N	30	1.0
TX404VB	N	N	N	N	10	50	N	5	N	30	1.0
TX405VB	N	N	N	N	5	100	N	N	N	150	1.0
TX409VB	N	N	N	N	5	70	N	10	N	100	<1.0
TX410VB	N	N	N	10	5	70	N	2	N	5	<1.0
TX411VB	N	N	N	N	5	100	N	10	N	100	1.0
TX412VB	N	N	N	N	5	30	N	N	N	15	1.0
TX413VB	N	N	N	N	N	100	N	N	N	50	1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHX
TX367VB	N	N	N	2,000	20	N	N	1,500	N	3.81
TX368VB	N	N	N	2,000	20	N	N	1,000	N	3.02
TX369VB	N	N	N	2,000	20	N	N	1,000	N	4.45
DTX369VB	N	N	N	1,500	20	N	N	1,000	N	4.54
TX370VB	N	N	N	1,500	50	N	N	1,000	N	2.67
TX371VB	N	N	N	1,500	20	N	N	700	N	5.60
TX372VBA	N	N	N	1,500	20	N	N	1,500	N	3.25
TX372VBB	N	N	N	5,000	10	N	N	2,000	N	6.07
TX373VB	N	N	N	2,000	20	N	N	1,000	N	6.34
TX375VB	N	N	N	2,000	20	N	N	1,000	N	4.95
TX376VB	N	N	N	1,000	50	N	N	1,000	N	3.68
TX377VB	N	N	N	1,500	30	N	N	1,000	N	4.00
TX378VB	N	N	N	1,500	20	N	N	1,000	N	3.68
TX379VB	N	N	N	2,000	20	N	N	2,000	N	3.91
TX380VB	N	N	N	1,000	50	N	N	1,000	N	3.12
TX381VB	N	N	N	700	50	N	N	1,000	N	3.08
TX382VB	N	N	N	1,000	70	N	N	1,000	N	4.02
TX383VB	N	N	N	1,000	20	N	N	2,000	N	3.08
TX384VB	N	N	N	2,000	20	N	N	700	N	5.30
TX385VB	N	N	N	1,000	50	N	N	1,500	N	5.98
TX386VB	N	N	N	2,000	20	N	N	1,000	N	5.71
TX387VB	N	N	N	3,000	20	N	N	1,500	N	4.17
TX388VB	N	N	N	2,000	20	N	N	200	N	3.02
TX389VB	N	N	N	1,500	10	N	N	1,000	N	3.05
TX390VB	N	N	N	2,000	70	N	N	1,000	N	4.54
TX391VB	N	N	N	2,000	20	N	N	1,500	N	4.28
TX392VB	N	N	N	1,500	70	N	N	1,000	N	3.20
TX393VB	N	N	N	2,000	20	N	N	1,500	N	4.35
TX394VB	N	N	N	3,000	20	N	N	1,500	N	5.31
TX395VB	N	N	N	5,000	20	N	N	300	N	4.65
TX396VB	N	N	N	2,000	10	N	N	1,000	N	6.70
TX397VB	N	N	N	1,000	10	N	N	1,000	N	3.41
TX398VB	N	N	N	1,000	70	N	N	700	N	3.85
TX399VB	N	N	N	1,500	70	N	N	700	N	3.78
TX400VB	N	N	N	300	100	N	N	700	N	2.12
TX401VB	N	N	N	500	150	N	N	700	N	2.72
TX402VB	N	N	N	2,000	50	N	N	1,000	N	4.54
TX403VB	N	N	N	1,000	70	N	N	1,500	N	2.70
TX404VB	N	N	N	1,500	100	N	N	1,500	N	4.38
TX405VB	N	N	N	5,000	30	N	N	1,000	N	3.11
TX409VB	N	N	N	2,000	30	N	N	200	N	3.21
TX410VB	N	N	N	5,000	50	N	N	1,000	N	2.94
TX411VB	N	N	N	2,000	30	50	N	200	N	2.94
TX412VB	N	N	N	2,000	30	N	N	200	N	9.00
TX413VB	N	N	N	1,500	20	N	N	1,000	N	4.15

sample	LATITUDE	LONGITUDE	S-FEX	S-MGZ	S-CAZ	S-TIZ	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX414VB	63 19 5	143 26 10	.070	2.00	--	.005	5,000	.2	N	N	150	500
TX416VB	63 20 5	143 38 55	.100	3.00	--	.020	7,000	.1	N	N	150	700
TX417VB	63 19 55	143 37 5	.100	3.00	--	.010	7,000	.2	N	N	30	1,000
TX418VB	63 20 35	143 37 25	.100	3.00	--	.010	>10,000	.2	N	N	150	300
TX419VB	63 22 15	143 46 50	.100	1.00	--	.020	10,000	.2	N	N	30	700
TX420VB	63 22 0	143 32 40	.100	2.00	--	.020	>10,000	.5	N	N	150	700
TX421VB	63 18 60	143 24 60	.050	2.00	--	.010	5,000	<.1	N	N	30	200
TX422VB	63 16 45	143 20 5	.070	3.00	--	.005	>10,000	1.0	N	N	150	200
TX423VB	63 26 55	143 30 60	.100	2.00	--	.020	3,000	.5	N	N	1,000	700
TX424VB	63 28 40	143 30 0	.050	1.00	--	.020	1,000	.5	N	N	500	1,000
TX425VB	63 29 40	143 27 5	.100	2.00	--	.020	1,000	.5	N	N	200	500
TX426VB	63 30 35	143 24 50	.150	3.00	--	.020	>10,000	.2	N	N	500	150
TX428VB	63 30 25	143 14 5	.030	.50	--	.002	5,000	.2	N	N	50	150
TX429VB	63 30 10	143 21 35	.200	5.00	--	.030	10,000	.2	N	N	200	500
TX430VB	63 30 10	143 13 50	.070	3.00	--	.020	7,000	.2	N	N	200	1,000
TX431VB	63 29 15	143 21 40	.070	3.00	--	.010	5,000	.2	N	N	300	700
TX432VB	63 28 30	143 17 10	.200	2.00	--	.030	7,000	.2	N	N	1,000	700
TX433VB	63 26 40	143 26 20	.200	2.00	--	.030	>10,000	.2	N	N	200	500
TX434VB	63 26 40	143 20 0	.200	3.00	--	.020	>10,000	.2	N	N	200	500
TX435VB	63 24 15	143 25 40	.070	2.00	--	.010	2,000	.2	N	N	500	150
TX436VB	63 26 60	143 12 15	.070	2.00	--	.010	5,000	.2	N	N	300	500
TX437VB	63 28 15	143 8 40	.200	2.00	--	.020	2,000	.2	N	N	500	200
TX438VB	63 28 18	143 0 50	.100	3.00	--	.020	10,000	.2	N	N	300	300
DTX438VB	63 28 18	143 0 50	.100	3.00	--	.010	10,000	.2	N	N	200	500
TX439VB	63 30 35	143 2 50	.100	3.00	--	.010	2,000	.2	N	N	200	700
TX440VB	63 28 55	143 0 20	.100	3.00	--	.010	3,000	.2	N	N	150	200
TX441VB	63 29 30	143 3 2	.050	3.00	--	.010	2,000	.1	N	N	300	1,000
TX442VB	63 39 35	142 25 35	.020	1.00	--	.005	10,000	.7	N	N	70	500
TX443VB	63 41 30	142 27 35	.100	2.00	--	.010	10,000	.5	N	N	300	700
DTX443VB	63 41 30	142 27 35	.100	3.00	--	.020	>10,000	.2	N	N	300	300
TX444VB	63 38 10	142 24 30	.070	3.00	--	.020	10,000	.2	N	N	200	700
TX445VB	63 38 55	142 22 25	N	.10	--	N	3,000	.5	N	N	20	100
TX446VB	63 34 50	142 17 20	.050	3.00	--	.020	10,000	.7	N	N	200	700
TX447VB	63 37 0	142 21 25	.070	3.00	--	.010	>10,000	.5	N	N	500	700
TX448VB	63 35 40	142 16 30	.100	3.00	--	.020	>10,000	.2	N	N	200	700
TX449VB	63 34 50	142 26 5	.100	3.00	--	.010	2,000	.5	N	N	300	700
TX450VB	63 34 10	142 16 20	.100	3.00	--	.010	>10,000	.2	N	N	150	500
TX451VB	63 33 55	142 26 20	.050	3.00	--	.020	10,000	.2	N	N	150	1,000
TX452VB	63 31 55	142 16 15	.100	3.00	--	.010	10,000	.2	N	N	150	1,000
TX453VB	63 32 20	142 28 15	.010	1.00	--	.002	>10,000	.5	N	N	150	150
TX454VB	63 31 40	142 10 50	.100	3.00	--	.020	>10,000	.2	N	N	150	500
TX455VB	63 30 10	142 20 15	.070	3.00	--	.010	>10,000	.7	N	N	200	700
TX456VB	63 35 40	142 0 60	.100	3.00	--	.010	>10,000	.2	N	N	150	1,000
TX457VB	63 32 10	142 7 30	.010	.50	--	.002	>10,000	.2	N	N	100	150
TX458VB	63 33 30	142 0 15	.050	2.00	--	.020	7,000	.2	N	N	300	1,500

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX414VB	N	N	N	N	N	50	N	N	N	15	1.0
TX416VB	N	N	N	5	N	50	N	N	N	100	<1.0
TX417VB	N	N	N	20	N	100	N	5	N	150	<1.0
TX418VB	N	N	N	20	N	50	N	5	N	70	1.0
TX419VB	N	N	N	N	N	30	N	10	N	20	1.0
TX420VB	N	N	N	20	5	70	N	5	N	50	<1.0
TX421VB	N	N	N	N	N	50	N	N	N	30	<1.0
TX422VB	N	N	N	N	N	50	N	2	N	15	1.0
TX423VB	N	N	N	N	7	50	N	N	N	20	<1.0
TX424VB	N	N	N	N	5	30	N	N	N	10	<1.0
TX425VB	N	N	N	N	5	50	N	N	N	20	<1.0
TX426VB	N	N	N	N	7	50	N	10	N	10	20.0
TX428VB	N	N	N	N	5	20	N	5	N	10	<1.0
TX429VB	N	N	N	N	10	50	N	5	N	30	<1.0
TX430VB	N	N	N	N	N	50	N	N	N	15	<1.0
TX431VB	N	N	N	N	5	30	N	10	N	10	<1.0
TX432VB	N	N	N	10	7	50	N	N	N	30	1.0
TX433VB	N	N	N	N	5	30	N	5	N	50	1.0
TX434VB	N	N	N	N	5	30	N	N	N	10	<1.0
TX435VB	N	N	N	N	N	30	N	5	N	10	1.0
TX436VB	N	N	N	N	5	50	N	N	N	5	<1.0
TX437VB	N	N	N	N	15	50	N	N	N	5	<1.0
TX438VB	N	N	N	N	N	50	N	N	N	20	<1.0
DTX438VB	N	N	N	N	N	30	N	N	N	20	<1.0
TX439VB	N	N	N	N	7	70	N	N	N	30	<1.0
TX440VB	N	N	N	N	7	30	N	N	N	5	1.0
TX441VB	N	N	N	N	5	50	N	N	N	15	1.0
TX442VB	N	N	N	N	N	30	N	N	N	10	<1.0
TX443VB	N	N	N	N	N	50	N	N	N	100	<1.0
DTX443VB	N	N	N	N	5	30	N	2	N	30	<1.0
TX444VB	N	N	N	N	N	30	N	N	N	100	<1.0
TX445VB	N	N	N	N	N	15	N	N	N	10	N
TX446VB	N	N	N	N	5	30	N	3	N	50	1.0
TX447VB	N	N	N	N	2	50	N	2	N	50	<1.0
TX448VB	N	N	N	20	2	50	N	2	N	50	<1.0
TX449VB	N	N	N	N	2	50	N	10	N	200	<1.0
TX450VB	N	N	N	20	5	30	N	2	N	20	<1.0
TX451VB	N	N	N	N	N	30	N	N	N	50	<1.0
TX452VB	N	N	N	N	5	30	N	N	N	70	<1.0
TX453VB	N	N	N	N	N	30	N	N	N	10	<1.0
TX454VB	N	N	N	N	N	30	N	5	N	15	1.0
TX455VB	N	N	N	N	N	50	N	2	N	50	1.0
TX456VB	N	N	N	N	N	50	N	N	N	20	<1.0
TX457VB	N	N	N	N	N	30	N	N	N	N	<1.0
TX458VB	N	N	N	N	N	30	N	5	N	15	1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHZ
TX414VB	N	N	N	700	10	N	N	1,500	N	2.91
TX416VB	N	N	N	1,500	20	N	N	1,500	N	4.28
TX417VB	N	N	N	2,000	30	N	N	200	N	3.60
TX418VB	N	N	N	2,000	50	N	N	500	N	3.88
TX419VB	N	N	N	3,000	30	50	N	500	N	7.22
TX420VB	N	N	N	2,000	70	N	N	500	N	3.32
TX421VB	N	N	N	700	10	N	N	1,500	N	3.62
TX422VB	N	N	N	500	50	N	N	2,000	N	2.81
TX423VB	N	N	N	>5,000	20	N	N	500	N	5.70
TX424VB	N	N	N	>5,000	10	N	N	500	N	4.25
TX425VB	N	N	N	>5,000	10	N	N	200	N	3.44
TX426VB	N	N	N	200	70	N	N	500	N	2.84
TX428VB	N	N	N	5,000	70	50	N	200	N	4.87
TX429VB	N	N	N	2,000	30	N	N	200	N	3.10
TX430VB	N	N	N	5,000	20	N	N	1,000	N	4.47
TX431VB	N	N	N	5,000	20	N	N	500	N	4.57
TX432VB	N	N	N	2,000	70	N	N	200	N	3.90
TX433VB	N	N	N	2,000	50	N	N	2,000	N	4.55
TX434VB	N	N	N	2,000	50	N	N	2,000	N	4.62
TX435VB	N	N	N	1,500	20	N	N	1,500	N	4.12
TX436VB	N	N	N	2,000	20	N	N	300	N	2.84
TX437VB	N	N	N	5,000	30	N	N	700	N	4.10
TX438VB	N	N	N	3,000	20	N	N	1,500	N	3.71
DTX438VB	N	N	N	5,000	20	N	N	1,000	N	4.58
TX439VB	N	N	N	5,000	10	N	N	1,000	N	2.62
TX440VB	N	N	N	3,000	20	N	N	1,500	N	3.20
TX441VB	N	N	N	5,000	10	N	N	1,000	N	2.60
TX442VB	N	N	N	5,000	20	N	N	3,000	N	3.10
TX443VB	N	N	N	3,000	30	N	N	500	N	4.72
DTX443VB	N	N	N	2,000	50	N	N	500	N	4.28
TX444VB	N	N	N	5,000	50	N	N	1,500	N	4.60
TX445VB	N	N	N	N	50	N	N	N	N	3.77
TX446VB	N	N	7	3,000	20	N	N	1,500	N	4.18
TX447VB	N	N	N	1,000	70	N	N	500	N	2.72
TX448VB	N	N	N	3,000	30	N	N	1,500	N	3.72
TX449VB	N	N	N	5,000	10	N	N	1,500	N	2.82
TX450VB	N	N	N	1,000	70	N	N	200	N	3.47
TX451VB	N	N	N	5,000	20	N	N	1,000	N	5.55
TX452VB	N	N	N	5,000	20	N	N	300	N	5.17
TX453VB	N	N	N	700	50	N	N	1,500	N	2.65
TX454VB	N	N	N	2,000	50	N	N	1,000	N	3.75
TX455VB	N	N	N	1,500	30	N	N	1,500	N	2.78
TX456VB	N	N	N	3,000	50	N	N	1,500	N	3.95
TX457VB	N	N	N	1,000	30	N	N	2,000	N	3.02
TX458VB	N	N	N	5,000	10	N	N	2,000	N	3.65

black spruce--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX459VB	63 32 35	142 56 40	.100	3.00	--	.020	5,000	.2	N	N	150	1,000
TX460VB	63 33 10	142 51 20	.200	3.00	--	.010	>10,000	.2	N	N	200	500
TX461VB	63 29 30	142 33 10	.070	2.00	--	.020	10,000	.1	N	N	300	500
TX462VB	63 34 35	142 34 0	.070	2.00	--	.010	10,000	.2	N	N	200	700
TX463VB	63 30 45	142 33 50	.200	3.00	--	.010	>10,000	.2	N	N	150	700
TX464VB	63 28 2	143 42 40	.200	3.00	--	.030	10,000	.2	N	N	500	1,000
TX465VB	63 31 45	143 28 45	.070	3.00	--	.020	>10,000	.1	N	N	150	1,000
TX466VB	63 27 38	143 44 25	.100	3.00	--	.020	7,000	.2	N	N	150	1,000
TX467VB	63 28 20	142 30 60	.100	2.00	--	.020	5,000	.2	N	N	150	1,000
TX468VB	63 25 35	142 45 60	.100	3.00	--	.020	>10,000	.2	N	N	500	700
TX469VB	63 22 60	142 35 40	.070	2.00	--	.010	10,000	.2	N	N	500	200
TX470VB	63 24 25	142 50 30	.070	3.00	--	.010	7,000	.2	N	N	300	700
TX471VB	63 23 35	142 36 55	.050	3.00	--	.010	5,000	.2	N	N	300	700
TX472VB	63 23 35	142 50 40	.100	3.00	--	.010	5,000	.2	N	N	300	500
TX473VB	63 23 20	142 39 40	.200	2.00	--	.030	2,000	.2	N	N	500	200
TX474VB	63 26 10	142 54 5	.100	3.00	--	.020	>10,000	.2	N	N	500	500
TX475VB	63 22 50	142 43 0	.100	2.00	--	.010	3,000	.1	N	N	100	150
TX476VB	63 25 5	142 25 35	.010	.50	--	.002	7,000	.2	N	N	30	200
TX477VB	63 12 25	143 20 5	.100	2.00	--	.020	2,000	.2	N	N	300	500
TX478VB	63 26 45	142 24 15	.100	2.00	--	.010	10,000	.2	N	N	300	1,000
TX479VB	63 12 5	143 17 55	N	.10	--	N	1,000	.5	N	N	30	50
TX480VB	63 14 10	143 24 10	.010	.20	--	.003	2,000	.2	N	N	100	700
TX481VB	63 2 5	143 26 25	.100	2.00	--	.020	2,000	.2	N	N	150	1,000
TX482VB	63 14 40	143 22 40	.100	2.00	--	.020	2,000	.2	N	N	150	500
TX483VB	63 6 29	143 22 23	.100	2.00	--	.030	7,000	.2	N	N	150	700
TX484VB	63 10 40	143 13 50	.030	.50	--	.010	10,000	.2	N	N	150	200
TX485VB	63 5 0	143 8 40	.100	2.00	--	.020	1,000	.2	N	N	150	1,000
TX486VB	63 4 30	143 28 50	.200	2.00	--	.030	2,000	.3	N	N	500	500
TX487VB	63 4 40	143 9 15	.010	.20	--	.002	700	.5	N	N	30	150
TX488VB	63 2 15	143 9 60	.010	.20	--	<.002	500	.2	N	N	30	150
TX489VB	63 9 10	143 5 40	.050	.50	--	.020	10,000	.2	N	N	50	200
TX490VB	63 6 5	143 11 35	.100	2.00	--	.010	2,000	.5	N	N	200	700
TX490VB	63 6 5	143 11 35	.050	2.00	--	.005	2,000	.2	N	N	100	700
TX491VB	63 27 5	142 22 0	.050	2.00	--	.010	>10,000	.7	N	N	150	500
TX492VB	63 10 50	143 0 25	.050	2.00	--	.020	>10,000	.2	N	N	200	1,000
TX493VB	63 27 40	142 19 40	.050	3.00	--	.010	>10,000	.7	N	N	70	150
TX494VB	63 28 30	142 21 40	.050	3.00	--	.020	>10,000	.5	N	N	150	500
TX495VB	63 30 13	143 52 20	.030	2.00	--	.010	10,000	.1	N	N	100	500
TX496VB	63 29 5	142 14 0	.100	3.00	--	.030	>10,000	.2	N	N	200	1,000
TX497VB	63 30 45	141 52 37	.050	2.00	--	.015	>10,000	.2	N	N	150	1,000
TX498VB	63 31 16	141 56 17	.020	2.00	--	.002	>10,000	.1	N	N	50	300
TX499VB	63 25 55	142 6 25	.100	1.00	--	.020	>10,000	.2	N	N	150	5,000
TX500VB	63 30 2	141 58 5	.100	2.00	--	.010	>10,000	<.1	N	N	150	500
TX501VB	63 26 30	142 5 30	.050	3.00	--	.005	>10,000	.2	N	N	50	700
TX502VB	63 27 32	142 6 30	.030	2.00	--	.005	>10,000	.2	N	N	70	500

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX459VB	N	N	N	N	N	30	N	2	N	20	1.0
TX460VB	N	N	N	N	10	50	N	5	N	15	1.0
TX461VB	N	N	N	N	N	30	N	2	N	5	<1.0
TX462VB	N	N	N	N	<5	50	N	15	N	50	<1.0
TX463VB	N	N	N	20	7	100	N	10	N	100	1.0
TX464VB	N	N	N	N	5	50	N	5	N	50	1.0
TX465VB	N	N	N	N	N	30	N	5	N	20	<1.0
TX466VB	N	N	N	N	N	30	N	N	N	10	<1.0
TX467VB	N	N	N	N	10	30	N	N	N	150	<1.0
TX468VB	N	N	N	N	7	50	N	N	N	50	1.0
TX469VB	N	N	N	N	N	50	N	N	N	N	1.0
TX470VB	N	N	N	N	N	50	N	N	N	50	7.0
TX471VB	N	N	N	N	10	30	N	N	N	20	<1.0
TX472VB	N	N	N	N	N	70	N	2	N	30	<1.0
TX473VB	N	N	N	N	7	30	N	5	N	10	<1.0
TX474VB	N	N	N	N	N	30	N	3	N	20	2.0
TX475VB	N	N	N	N	N	50	N	N	N	30	<1.0
TX476VB	N	N	N	N	N	15	N	N	N	20	<1.0
TX477VB	N	N	N	N	5	50	N	N	N	50	<1.0
TX478VB	N	N	N	N	10	50	N	N	N	100	<1.0
TX479VB	N	N	N	N	N	20	N	N	N	N	N
TX480VB	N	N	N	N	N	30	N	N	N	10	<1.0
TX481VB	N	N	N	N	5	70	N	2	N	150	<1.0
TX482VB	N	N	N	N	5	70	N	2	N	150	<1.0
TX483VB	N	N	N	N	5	50	N	2	N	50	<1.0
TX484VB	N	N	N	N	<5	30	N	N	N	10	<1.0
TX485VB	N	N	N	N	<5	70	N	N	N	20	<1.0
TX486VB	N	N	N	N	10	50	N	N	N	10	1.0
TX487VB	N	N	N	N	N	20	N	N	N	N	<1.0
TX488VB	N	N	N	N	N	20	N	N	N	N	<1.0
TX489VB	N	N	N	N	5	30	N	N	N	20	<1.0
TX490VB	N	N	N	N	N	100	N	N	N	50	<1.0
DTX490VB	N	N	N	N	N	100	N	N	N	30	<1.0
TX491VB	N	N	N	N	N	30	N	5	N	10	<1.0
TX492VB	N	N	N	N	N	30	N	2	N	10	10.0
TX493VB	N	N	N	N	5	30	N	5	N	15	<1.0
TX494VB	N	N	N	N	N	30	N	2	N	50	<1.0
TX495VB	N	N	N	N	N	100	N	N	N	15	<1.0
TX496VB	N	N	N	N	5	30	N	5	N	50	<1.0
TX497VB	N	N	N	N	N	30	N	5	N	5	<1.0
TX498VB	N	N	N	N	N	50	N	2	N	<5	<1.0
TX499VB	N	N	N	N	N	30	N	N	N	20	<1.0
TX500VB	N	N	N	N	N	30	N	5	N	5	1.0
TX501VB	N	N	N	N	N	30	N	2	N	15	<1.0
TX502VB	N	N	N	N	N	20	N	2	N	15	<1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHZ
TX459VB	N	N	N	5,000	20	N	N	2,000	N	3.67
TX460VB	N	N	N	1,500	70	N	N	500	N	2.77
TX461VB	N	N	N	2,000	10	N	N	3,000	N	3.67
TX462VB	N	N	N	3,000	10	50	N	1,000	N	3.80
TX463VB	N	N	N	1,500	70	N	N	300	N	2.52
TX464VB	N	N	N	3,000	20	N	N	1,500	N	3.30
TX465VB	N	N	N	2,000	50	N	N	1,500	N	4.24
TX466VB	N	N	N	5,000	10	N	N	2,000	N	6.52
TX467VB	N	N	N	5,000	10	N	N	1,000	N	4.24
TX468VB	N	N	N	2,000	70	200	N	1,500	N	3.20
TX469VB	N	N	N	1,500	10	N	N	2,000	N	2.85
TX470VB	N	N	N	2,000	10	N	N	2,000	N	3.50
TX471VB	N	N	N	2,000	20	50	N	1,500	N	4.64
TX472VB	N	N	N	2,000	10	N	N	1,500	N	3.55
TX473VB	N	N	N	2,000	20	N	N	1,000	N	7.52
TX474VB	N	N	N	1,500	50	N	N	2,000	N	3.04
TX475VB	N	N	N	500	10	N	N	1,500	N	3.91
TX476VB	N	N	N	1,000	30	50	N	500	N	4.45
TX477VB	N	N	N	5,000	20	N	N	500	N	4.11
TX478VB	N	N	N	5,000	50	N	N	500	N	3.71
TX479VB	N	N	N	200	30	N	N	300	20	4.61
TX480VB	N	N	N	2,000	10	N	N	1,500	N	4.92
TX481VB	N	N	N	2,000	10	N	N	1,500	N	4.42
TX482VB	N	N	N	1,000	20	N	N	200	N	3.05
TX483VB	N	N	N	2,000	20	N	N	500	N	4.31
TX484VB	N	N	N	>5,000	30	50	N	500	N	6.40
TX485VB	N	N	N	3,000	20	N	N	1,000	N	3.97
TX486VB	N	N	N	5,000	70	N	N	1,000	N	3.91
TX487VB	N	N	N	1,000	20	50	N	500	20	3.71
TX488VB	N	N	N	2,000	20	50	N	500	20	4.68
TX489VB	N	N	N	5,000	30	N	N	1,500	20	5.11
TX490VB	N	N	N	1,000	10	N	N	1,500	N	3.37
DTX490VB	N	N	N	1,500	10	N	N	1,500	N	3.78
TX491VB	N	N	N	1,500	30	N	N	1,500	N	3.78
TX492VB	N	N	N	2,000	50	<50	N	2,000	N	5.32
TX493VB	N	N	N	700	50	N	N	2,000	N	3.58
TX494VB	N	N	N	1,500	30	N	N	1,500	N	3.75
TX495VB	N	N	N	1,500	10	N	N	3,000	N	3.05
TX496VB	N	N	N	2,000	50	N	N	1,500	N	5.25
TX497VB	N	N	N	2,000	20	N	N	2,000	N	4.12
TX498VB	N	N	N	1,000	20	N	N	2,000	N	3.12
TX499VB	N	N	N	5,000	30	N	N	1,000	N	8.27
TX500VB	N	N	N	500	50	N	N	1,500	N	2.51
TX501VB	N	N	N	1,000	30	N	N	2,000	N	3.18
TX502VB	N	N	N	1,000	10	N	N	2,000	N	3.70

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX503VB	63 28 50	142 6 0	.100	3.00	--	.010	>10,000	.2	N	N	100	150
TX504VB	63 29 30	142 7 50	.050	2.00	--	.010	>10,000	.1	N	N	50	700
TX505VB	63 20 50	142 27 20	.100	2.00	--	.020	>10,000	.7	N	N	150	2,000
TX506VB	63 21 5	142 23 60	.050	3.00	--	.005	>10,000	.2	N	N	150	700
TX507VB	63 18 8	142 19 39	.050	3.00	--	.020	>10,000	.1	N	N	100	3,000
TX508VB	63 20 40	142 19 25	.100	3.00	--	.020	>10,000	.1	N	N	150	3,000
TX509VB	63 16 15	142 17 40	.100	2.00	--	.020	10,000	.1	N	N	200	1,000
TX510VB	63 18 58	142 17 35	.050	3.00	--	.010	>10,000	.3	N	N	150	1,000
TX511VB	63 16 51	142 15 28	.070	3.00	--	.010	>10,000	.1	N	N	150	1,000
TX512VB	63 15 38	142 14 43	.050	3.00	--	.002	>10,000	.1	N	N	200	500
TX513VB	63 22 50	142 12 50	.050	2.00	--	.010	>10,000	.2	N	N	70	2,000
TX515VB	63 21 50	142 11 25	.070	5.00	--	.010	>10,000	.2	N	N	150	2,000
TX516VB	63 15 15	142 3 35	.050	3.00	--	.002	>10,000	.2	N	N	200	700
TX517VB	63 21 30	142 12 15	.020	2.00	--	.001	>10,000	1.0	N	N	150	1,000
TX518VB	63 15 50	142 3 55	.020	2.00	--	.001	>10,000	.2	N	N	50	1,000
TX520VB	63 21 35	142 1 60	.050	3.00	--	.010	10,000	.1	N	N	150	2,000
TX521VB	63 18 55	142 2 50	.070	2.00	--	.010	10,000	.5	N	N	150	2,000
TX521VB	63 18 55	142 2 50	.070	2.00	--	.010	>10,000	.2	N	N	70	1,000
TX522VB	63 23 15	142 0 45	.030	3.00	--	.002	>10,000	1.0	N	N	150	500
TX523VB	63 14 12	142 0 50	.050	2.00	--	.010	>10,000	.2	N	N	100	3,000
TX524VB	63 21 5	141 58 45	.070	3.00	--	.020	>10,000	.2	N	N	150	7,000
TX525VB	63 14 30	142 0 20	.050	3.00	--	.010	>10,000	.5	N	N	150	2,000
TX526VB	63 15 25	141 59 0	.070	3.00	--	.020	>10,000	.2	N	N	100	3,000
TX527VB	63 23 10	141 54 60	.030	3.00	--	.020	>10,000	.5	N	N	100	2,000
TX528VB	63 24 15	141 58 0	.050	3.00	--	.005	>10,000	.1	N	N	150	700
TX529VB	63 24 10	141 52 45	.005	.10	--	<.002	5,000	.2	N	N	50	700
TX530VB	63 24 60	141 56 5	.020	1.00	--	.002	>10,000	.2	N	N	150	700
TX531VB	63 29 4	141 43 51	.100	3.00	--	.020	>10,000	.2	N	N	150	700
TX532VB	63 26 0	141 50 15	.050	5.00	--	.010	>10,000	.1	N	N	150	700
TX533VB	63 28 43	141 43 30	.050	5.00	--	.020	>10,000	.2	N	N	150	2,000
TX534VB	63 27 20	141 45 40	.005	.20	--	N	2,000	N	N	N	50	300
TX534VB	63 27 20	141 45 40	.070	3.00	--	.020	>10,000	.1	N	N	150	2,000
TX535VB	63 10 45	142 0 25	.100	3.00	--	.030	10,000	.2	N	N	200	5,000
TX536VB	63 9 45	142 0 50	.030	2.00	--	.020	10,000	.1	N	N	300	1,500
TX537VB	63 11 18	142 1 58	.200	5.00	--	.030	>10,000	1.0	N	N	300	3,000
TX538VB	63 8 11	142 3 34	.500	2.00	--	.050	10,000	.1	N	N	150	1,000
TX539VB	63 26 25	141 10 25	.050	3.00	--	.010	>10,000	.7	N	N	150	1,000
TX540VB	63 25 55	141 3 38	.030	3.00	--	.010	>10,000	.3	N	N	150	2,000
TX541VB	63 26 38	141 11 8	.030	3.00	--	.002	>10,000	1.0	N	N	50	1,000
TX542VB	63 25 15	141 2 60	.050	2.00	--	.020	>10,000	.2	N	N	200	2,000
TX543VB	63 25 35	141 10 30	.070	5.00	--	.010	>10,000	1.0	N	N	30	2,000
TX544VB	63 24 5	141 0 10	.050	3.00	--	.010	>10,000	.1	N	N	100	700
TX545VB	63 23 45	141 10 45	.050	5.00	--	.010	>10,000	1.0	N	N	70	700
TX546VB	63 24 30	141 9 50	.050	5.00	--	.020	>10,000	.2	N	N	70	2,000
TX547VB	63 19 55	141 1 10	.100	5.00	--	.020	10,000	.7	N	N	300	3,000

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX503VB	N	N	N	N	N	30	N	N	N	5	<1.0
TX504VB	N	N	N	N	N	30	N	7	N	10	<1.0
TX505VB	N	N	N	N	N	30	N	N	N	30	<1.0
TX506VB	N	N	N	N	N	30	N	2	N	10	<1.0
TX507VB	N	N	N	N	N	30	N	N	N	30	1.0
TX508VB	N	N	N	N	N	30	N	2	N	20	30.0
TX509VB	N	N	N	N	N	70	N	3	N	10	2.0
TX510VB	N	N	N	N	N	30	N	3	N	7	1.0
TX511VB	N	N	N	N	N	50	N	5	N	15	2.0
TX512VB	N	N	N	N	N	30	N	10	N	5	1.0
TX513VB	N	N	N	N	N	30	N	2	N	20	1.0
TX515VB	N	N	N	N	N	30	N	5	N	10	1.0
TX516VB	N	N	N	N	N	50	N	3	N	10	1.0
TX517VB	N	N	N	N	N	30	N	2	N	7	1.0
TX518VB	N	N	N	N	N	30	N	2	N	10	1.0
TX520VB	N	N	N	N	N	30	N	2	N	7	1.0
TX521VB	N	N	N	N	N	30	N	3	N	7	1.0
DTX521VB	N	N	N	N	N	30	N	3	N	7	1.0
TX522VB	N	N	N	N	N	30	N	3	N	5	1.0
TX523VB	N	N	N	N	N	50	N	N	N	100	1.0
TX524VB	N	N	N	N	N	30	N	10	N	30	1.0
TX525VB	N	N	N	N	N	30	N	10	N	30	2.0
TX526VB	N	N	N	N	N	30	N	10	N	30	1.0
TX527VB	N	N	N	N	10	30	N	2	N	30	20.0
TX528VB	N	N	N	N	N	30	N	3	N	5	2.0
TX529VB	N	N	N	N	N	10	N	N	N	N	1.0
TX530VB	N	N	N	N	N	30	N	2	N	N	1.0
TX531VB	N	N	N	N	N	30	N	2	N	20	1.0
TX532VB	N	N	N	N	N	30	N	5	N	5	<1.0
TX533VB	N	N	N	N	N	30	N	N	N	30	<1.0
TX534VB	N	N	N	N	N	20	N	N	N	N	<1.0
DTX534VB	N	N	N	N	N	30	N	5	N	10	1.0
TX535VB	N	N	N	N	N	30	N	N	N	30	2.0
TX536VB	N	N	N	N	N	30	N	N	N	7	1.0
TX537VB	N	N	N	N	5	50	N	5	N	30	2.0
TX538VB	N	N	N	N	10	50	N	2	N	20	10.0
TX539VB	N	N	N	N	N	30	N	5	N	7	1.0
TX540VB	N	N	N	N	N	30	N	N	N	20	<1.0
TX541VB	N	N	N	N	N	30	N	N	N	15	<1.0
TX542VB	N	N	N	N	N	30	N	N	N	10	1.0
TX543VB	N	N	N	N	N	30	N	5	N	20	1.0
TX544VB	N	N	N	N	N	30	N	3	N	10	1.0
TX545VB	N	N	N	N	5	30	N	5	N	5	1.0
TX546VB	N	N	N	N	N	30	N	2	N	30	2.0
TX547VB	N	N	N	N	N	50	N	N	N	30	2.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHX
TX503VB	N	N	N	1,500	50	N	N	700	N	4.51
TX504VB	N	N	N	1,000	70	N	N	2,000	N	3.72
TX505VB	N	N	N	1,500	10	N	N	2,000	N	5.15
TX506VB	N	N	N	700	30	N	N	1,500	N	2.98
TX507VB	N	N	N	5,000	30	N	N	1,500	N	4.28
TX508VB	N	N	N	2,000	30	N	N	1,500	N	3.60
TX509VB	N	N	N	2,000	20	N	N	1,000	N	3.77
TX510VB	N	N	N	1,500	30	N	N	1,500	N	2.97
TX511VB	N	N	N	2,000	10	N	N	1,500	N	3.02
TX512VB	N	N	N	500	70	N	N	1,000	N	2.51
TX513VB	N	N	N	2,000	20	N	N	1,000	N	5.08
TX515VB	N	N	N	2,000	50	N	N	1,000	N	4.27
TX516VB	N	N	N	1,000	50	N	N	1,500	N	3.00
TX517VB	N	N	N	700	20	N	N	700	N	3.01
TX518VB	N	N	N	1,500	10	N	N	1,000	N	2.40
TX520VB	N	N	N	1,500	10	N	N	1,500	N	3.95
TX521VB	N	N	N	1,500	20	N	N	1,500	N	3.81
DTX521VB	N	N	N	1,500	20	N	N	2,000	N	3.87
TX522VB	N	N	N	500	50	N	N	1,500	N	2.61
TX523VB	N	N	N	2,000	10	N	N	1,500	N	3.77
TX524VB	N	N	N	3,000	20	N	N	1,500	N	5.40
TX525VB	N	N	N	1,500	20	N	N	1,000	N	4.61
TX526VB	N	N	N	3,000	30	N	N	700	N	5.90
TX527VB	N	N	N	1,500	20	N	N	2,000	N	4.11
TX528VB	N	N	N	1,500	30	N	N	5,000	N	3.70
TX529VB	N	N	N	3,000	20	N	N	700	N	3.92
TX530VB	N	N	N	1,000	20	50	N	1,000	N	4.11
TX531VB	N	N	N	5,000	50	N	N	2,000	N	5.92
TX532VB	N	N	N	700	50	N	N	3,000	N	2.95
TX533VB	N	N	N	2,000	70	50	N	3,000	N	4.47
TX534VB	N	N	N	N	30	N	N	1,000	N	3.54
DTX534VB	N	N	N	2,000	50	N	N	3,000	N	3.98
TX535VB	N	N	N	3,000	20	N	N	2,000	N	4.81
TX536VB	N	N	N	2,000	10	N	N	3,000	N	4.20
TX537VB	N	N	N	1,500	20	N	N	1,500	N	4.31
TX538VB	N	N	N	1,500	70	50	N	2,000	N	5.01
TX539VB	N	N	N	1,000	20	N	N	3,000	N	3.38
TX540VB	N	N	N	2,000	10	N	N	3,000	N	4.95
TX541VB	N	N	N	1,000	20	N	N	2,000	N	2.92
TX542VB	N	N	N	1,500	20	N	N	2,000	N	5.05
TX543VB	N	N	N	1,500	50	N	N	2,000	N	4.25
TX544VB	N	N	N	700	30	N	N	3,000	N	4.10
TX545VB	N	N	N	500	70	N	N	3,000	N	3.35
TX546VB	N	N	N	1,500	30	N	N	2,000	N	5.27
TX547VB	N	N	N	2,000	10	N	N	3,000	N	4.08

sample	LATITUDE		LONGITUDE		S-FEX	S-MG%	S-CA%	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX548VB	63 21 30	141 12 5			.100	5.00	--	.005	>10,000	.7	N	N	300	1,000
TX549VB	63 20 45	141 0 40			.050	3.00	--	.010	10,000	.7	N	N	100	3,000
TX550VB	63 19 35	141 10 10			.100	3.00	--	.020	>10,000	.2	N	N	300	3,000
TX551VB	63 16 50	141 3 55			.100	3.00	--	.010	>10,000	.2	N	N	300	3,000
TX552VB	63 15 20	141 9 10			.050	5.00	--	.002	>10,000	<.1	N	N	30	1,000
TX553VB	63 18 55	141 21 45			.020	3.00	--	.002	>10,000	.2	N	N	30	3,000
TX554VB	63 16 0	141 10 10			.020	3.00	--	.001	>10,000	.2	N	N	100	700
TX555VB	63 23 20	141 18 50			.100	3.00	--	.030	>10,000	.2	N	N	150	3,000
TX556VB	63 20 10	141 14 40			.100	5.00	--	.010	>10,000	.5	N	N	150	2,000
TX557VB	63 25 45	141 19 50			.030	3.00	--	.001	>10,000	1.0	N	N	70	700
TX558VB	63 22 40	141 16 50			.050	5.00	--	.010	>10,000	.1	N	N	30	2,000
TX559VB	63 28 5	141 26 25			.030	3.00	--	.001	10,000	1.0	N	N	200	1,000
TX560VB	63 23 55	141 18 50			.070	5.00	--	.010	>10,000	.1	N	N	200	3,000
TX561VB	63 26 30	141 27 15			.030	3.00	--	.005	>10,000	2.0	N	N	150	2,000
TX562VB	63 29 5	141 27 20			.100	3.00	--	.020	10,000	.1	N	N	70	5,000
TX563VB	63 25 42	141 33 10			.050	3.00	--	.020	>10,000	.5	N	N	150	7,000
TX564VB	63 24 20	141 27 30			.070	3.00	--	.010	>10,000	.1	N	N	150	5,000
TX565VB	63 30 11	141 39 18			.070	3.00	--	.020	>10,000	.5	N	N	100	7,000
TX566VB	63 25 10	141 34 40			.050	3.00	--	.002	>10,000	2.0	N	N	100	1,500
TX568VB	63 24 0	141 33 40			.100	3.00	--	.020	>10,000	.2	N	N	150	2,000
TX569VB	63 25 45	141 43 50			.050	3.00	--	.005	>10,000	.7	N	N	200	1,000
DTX569VB	63 25 45	141 43 50			.050	3.00	--	.010	>10,000	.7	N	N	200	3,000
TX571VB	63 25 22	141 48 55			.100	5.00	--	.010	>10,000	.2	N	N	100	700
TX572VB	63 25 5	141 44 20			.050	3.00	--	.005	>10,000	.2	N	N	150	1,000
TX573VB	63 21 11	141 38 25			.050	3.00	--	.002	>10,000	.5	N	N	150	1,000
TX574VB	63 22 5	141 35 56			.070	3.00	--	.005	>10,000	.2	N	N	50	2,000
DTX574VB	63 22 5	141 35 56			.100	5.00	--	.010	>10,000	.5	N	N	30	3,000
TX575VB	63 18 35	141 36 25			.030	3.00	--	.005	>10,000	.1	N	N	100	2,000
TX576VB	63 20 15	141 36 23			.070	3.00	--	.005	>10,000	.1	N	N	70	1,000
TX577VB	63 16 21	141 29 31			.050	5.00	--	.002	>10,000	.1	N	N	200	1,000
TX578VB	63 19 53	141 40 60			.070	3.00	--	.010	>10,000	.3	N	N	200	7,000
TX579VB	63 16 0	141 29 41			.100	5.00	--	.002	>10,000	.2	N	N	150	1,000
TX580VB	63 18 3	141 39 35			.070	3.00	--	.002	>10,000	.5	N	N	150	1,500
TX581VB	63 15 11	141 38 10			.100	5.00	--	.010	>10,000	1.0	N	N	50	700
TX582VB	63 16 21	141 32 40			.020	2.00	--	.005	>10,000	.5	N	N	70	5,000
TX583VB	63 16 55	141 48 15			.070	5.00	--	.010	10,000	.1	N	N	70	3,000
TX584VB	63 15 28	141 32 5			.500	3.00	--	.001	>10,000	.1	N	N	100	1,000
TX585VB	63 13 57	141 43 28			.070	3.00	--	.005	>10,000	.1	N	N	50	2,000
TX586VB	63 15 52	141 43 42			.005	.20	--	.001	3,000	.5	N	N	20	700
TX587VB	63 14 8	141 47 15			.050	3.00	--	.020	>10,000	.1	N	N	100	1,000
TX588VB	63 16 60	141 50 20			.050	3.00	--	.002	7,000	<.1	N	N	100	1,500
TX589VB	63 12 55	141 50 57			.100	3.00	--	.020	>10,000	.2	N	N	200	3,000
TX590VB	63 16 28	141 49 41			.050	3.00	--	.020	>10,000	.2	N	N	100	3,000
TX591VB	63 9 47	141 47 50			.100	3.00	--	.030	>10,000	1.0	N	N	200	5,000
TX592VB	63 11 23	141 46 35			.070	3.00	--	.005	10,000	<.1	N	N	50	2,000

black spruce---continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX548VB	N	N	N	N	N	30	N	3	N	5	1.0
TX549VB	N	N	N	N	N	30	N	N	N	30	<1.0
TX550VB	N	N	N	N	N	50	N	2	N	5	<1.0
TX551VB	N	N	N	N	N	50	N	2	N	10	1.0
TX552VB	N	N	N	N	N	30	N	3	N	10	<1.0
TX553VB	N	N	N	N	N	50	N	2	N	20	1.0
TX554VB	N	N	N	N	N	30	N	N	N	20	1.0
TX555VB	N	N	N	N	N	30	N	N	N	30	1.0
TX556VB	N	N	N	N	N	50	N	15	N	30	1.0
TX557VB	N	N	3	N	5	100	N	5	N	10	10.0
TX558VB	N	N	N	N	N	70	N	2	N	100	<1.0
TX559VB	N	N	N	N	N	100	N	3	N	30	2.0
TX560VB	N	N	N	N	N	50	N	N	N	15	1.0
TX561VB	N	N	3	N	N	30	N	3	N	15	<1.0
TX562VB	N	N	N	N	N	30	N	N	N	15	1.0
TX563VB	N	N	N	N	N	30	N	N	N	15	1.0
TX564VB	N	N	N	N	N	30	N	3	N	20	1.0
TX565VB	N	N	N	N	N	30	N	2	N	30	1.0
TX566VB	N	N	N	N	N	30	N	2	N	5	1.0
TX568VB	N	N	N	N	N	50	N	N	N	50	2.0
TX569VB	N	N	N	N	N	50	N	3	N	10	2.0
DTX569VB	N	N	N	N	N	50	N	2	N	15	1.0
TX571VB	N	N	N	N	5	50	N	7	N	10	2.0
TX572VB	N	N	N	N	N	30	N	2	N	10	<1.0
TX573VB	N	N	N	N	5	30	N	5	N	10	1.0
TX574VB	N	N	N	30	N	30	N	3	N	50	1.0
DTX574VB	N	N	N	30	5	30	N	5	N	100	1.0
TX575VB	N	N	N	N	N	70	N	N	N	20	1.0
TX576VB	N	N	N	N	N	30	N	N	N	5	1.0
TX577VB	N	N	N	N	N	30	N	2	N	5	1.0
TX578VB	N	N	N	N	N	30	N	N	N	30	<1.0
TX579VB	N	N	N	N	5	30	N	10	N	10	5.0
TX580VB	N	N	N	N	N	30	N	N	N	20	1.0
TX581VB	N	N	N	N	N	30	N	30	N	10	1.0
TX582VB	N	N	N	N	N	30	N	2	N	20	<1.0
TX583VB	N	N	N	N	N	30	N	5	N	10	1.0
TX584VB	N	N	N	N	N	30	N	5	N	10	1.0
TX585VB	N	N	N	N	N	30	N	2	N	30	1.0
TX586VB	N	N	N	N	<5	15	N	N	N	5	<1.0
TX587VB	N	N	N	N	N	30	N	10	N	10	1.0
TX588VB	N	N	N	N	N	30	N	5	N	10	1.0
TX589VB	N	N	N	N	N	30	N	2	N	20	1.0
TX590VB	N	N	N	N	N	30	N	2	N	20	1.0
TX591VB	N	N	N	N	<5	30	N	N	N	20	1.0
TX592VB	N	N	N	N	N	30	N	5	N	20	1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX548VB	N	N	N	700	50	N	N	3,000	N	3.68
TX549VB	N	N	N	1,500	10	N	N	3,000	N	4.27
TX550VB	N	N	N	1,000	30	N	N	2,000	N	5.91
TX551VB	N	N	N	1,500	20	N	N	3,000	N	4.02
TX552VB	N	N	N	700	50	N	N	2,000	N	4.17
TX553VB	N	N	N	1,500	50	N	N	3,000	N	3.68
TX554VB	N	N	N	500	30	N	N	3,000	N	3.02
TX555VB	N	N	N	2,000	30	N	N	3,000	N	5.04
TX556VB	N	N	N	1,500	70	N	N	3,000	N	3.72
TX557VB	N	N	N	700	100	N	N	3,000	N	3.40
TX558VB	N	N	N	1,500	50	N	N	3,000	N	4.64
TX559VB	N	N	N	700	10	N	N	5,000	N	2.55
TX560VB	N	N	N	2,000	30	N	N	3,000	N	3.50
TX561VB	N	N	N	1,000	50	N	N	3,000	N	4.00
TX562VB	N	N	N	3,000	20	N	N	3,000	N	4.78
TX563VB	N	N	N	3,000	20	N	N	3,000	N	4.75
TX564VB	N	N	N	2,000	50	N	N	3,000	N	4.75
TX565VB	N	N	N	3,000	20	N	N	3,000	N	4.60
TX566VB	N	N	N	1,000	20	N	N	3,000	N	2.72
TX568VB	N	N	N	2,000	30	N	N	1,500	N	3.62
TX569VB	N	N	N	1,000	50	N	N	3,000	N	2.88
DTX569VB	N	N	N	2,000	30	N	N	3,000	N	3.38
TX571VB	N	N	N	500	70	N	N	3,000	N	3.28
TX572VB	N	N	N	500	50	N	N	1,500	N	3.31
TX573VB	N	N	N	700	70	N	N	3,000	N	2.91
TX574VB	N	N	N	1,500	50	N	N	2,000	N	4.57
DTX574VB	N	N	N	2,000	70	N	N	3,000	N	5.47
TX575VB	N	N	N	1,500	20	N	N	3,000	N	3.85
TX576VB	N	N	N	2,000	20	N	N	2,000	N	4.08
TX577VB	N	N	N	1,500	10	N	N	3,000	N	3.74
TX578VB	N	N	N	5,000	30	N	N	1,000	N	6.24
TX579VB	N	N	N	1,000	150	N	N	3,000	N	4.20
TX580VB	N	N	N	1,000	10	N	N	3,000	N	3.05
TX581VB	N	N	N	700	30	N	N	2,000	N	3.11
TX582VB	N	N	N	5,000	30	N	N	1,000	N	5.14
TX583VB	N	N	N	5,000	10	N	N	3,000	N	4.50
TX584VB	N	N	N	700	50	N	N	3,000	N	3.27
TX585VB	N	N	N	1,500	20	N	N	2,000	N	5.31
TX586VB	N	N	N	200	30	N	N	1,000	N	3.75
TX587VB	N	N	N	1,000	30	N	N	2,000	N	3.08
TX588VB	N	N	N	1,000	10	N	N	3,000	N	3.71
TX589VB	N	N	N	2,000	30	N	N	3,000	N	5.32
TX590VB	N	N	N	2,000	20	N	N	3,000	N	4.75
TX591VB	N	N	N	2,000	20	N	N	3,000	N	5.74
TX592VB	N	N	N	1,500	10	N	N	2,000	N	3.48

black spruce--continued

sample	LATITUDE	LONGITUDE	S-FEZ	S-MGZ	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX593VB	63 10 12	141 48 27	.100	5.00	--	.020	10,000	.1	N	N	150	7,000
TX594VB	63 17 57	141 14 15	.050	3.00	--	.010	>10,000	.1	N	N	150	5,000
TX595VB	63 17 13	141 16 58	.070	5.00	--	.010	>10,000	.1	N	N	100	2,000
TX596VB	63 14 38	141 12 35	.100	3.00	--	.010	>10,000	.2	N	N	300	3,000
TX597VB	63 15 35	141 15 0	.200	5.00	--	.020	>10,000	.1	N	N	50	7,000
TX598VB	63 11 47	141 7 25	.100	2.00	--	.020	>10,000	.1	N	N	150	7,000
TX599VB	63 14 28	141 4 5	.050	3.00	--	.002	>10,000	.1	N	N	200	1,000
TX600VB	63 10 31	141 6 39	.150	3.00	--	.030	>10,000	.2	N	N	150	7,000
TX601VB	63 12 38	141 9 24	.050	3.00	--	.020	>10,000	.2	N	N	300	7,000
TX602VB	63 9 0	141 6 21	.050	3.00	--	.002	>10,000	.1	N	N	150	1,000
TX603VB	63 11 8	141 11 10	.100	3.00	--	.020	5,000	.1	N	N	150	3,000
TX604VB	63 8 11	141 6 49	.050	3.00	--	.010	>10,000	.1	N	N	70	3,000
TX605VB	63 9 47	141 8 2	.030	3.00	--	.002	>10,000	.2	N	N	200	300
TX514VB	63 16 23	142 13 5	.050	3.00	--	.010	>10,000	.1	N	N	200	2,000
DTX605VB	63 9 47	141 8 2	.070	3.00	--	.010	>10,000	.2	N	N	300	300
TX606VB	63 6 59	141 7 38	.030	1.00	--	.010	5,000	.1	N	N	300	3,000
TX607VB	63 7 45	141 9 18	.050	2.00	--	.002	10,000	.2	N	N	150	1,500
TX608VB	63 4 5	141 8 35	.030	2.00	--	.010	>10,000	.2	N	N	200	3,000
TX609VB	63 5 32	141 10 49	.050	2.00	--	.002	3,000	.1	N	N	100	1,500
TX610VB	63 1 47	141 4 50	.050	2.00	--	.005	>10,000	.2	N	N	150	1,000
TX611VB	63 4 41	141 6 30	.030	2.00	--	.010	10,000	.1	N	N	150	2,000
TX612VB	63 1 28	141 6 1	.050	1.00	--	.010	7,000	.2	N	N	100	3,000
TX613VB	63 2 11	141 7 50	.030	3.00	--	.001	>10,000	N	N	N	100	1,000
TX614VB	63 11 53	141 57 28	.070	3.00	--	.020	7,000	.7	N	N	100	3,000
TX615VB	63 0 45	141 14 55	.050	2.00	--	.010	>10,000	.1	N	N	150	1,000
TX616VB	63 11 47	141 34 59	.050	2.00	--	.020	7,000	.1	N	N	150	3,000
TX617VB	63 12 22	141 37 6	.030	2.00	--	.010	10,000	.1	N	N	100	3,000
TX618VB	63 11 38	141 29 58	.050	3.00	--	.010	10,000	.2	N	N	50	3,000
TX619VB	63 11 10	141 30 0	.050	2.00	--	.005	>10,000	.2	N	N	200	700
TX620VB	63 8 28	141 40 16	.100	2.00	--	.010	>10,000	.2	N	N	50	2,000
TX621VB	63 10 51	141.28 45	.050	2.00	--	.010	10,000	.2	N	N	50	2,000
TX622VB	63 8 40	141 33 30	.100	3.00	--	.010	>10,000	<.1	N	N	70	1,000
TX623VB	63 8 32	141 36 46	.030	3.00	--	.002	>10,000	1.0	N	N	150	1,500
TX624VB	63 7 45	141 21 31	.100	2.00	--	.010	7,000	.1	N	N	100	5,000
TX625VB	63 6 37	141 33 20	.020	1.00	--	.005	1,000	.1	N	N	200	1,000
TX626VB	63 7 23	141 25 15	.100	2.00	--	.010	10,000	.1	N	N	70	3,000
TX627VB	63 4 15	141 32 50	.030	2.00	--	.002	>10,000	.7	N	N	300	700
TX628VB	63 4 45	141 25 3	.050	1.00	--	.010	2,000	.1	N	N	70	2,000
DTX628VB	63 4 45	141 25 3	.030	1.00	--	.005	10,000	<.1	N	N	150	2,000
TX629VB	63 4 56	141 33 10	.030	2.00	--	.005	7,000	.1	N	N	150	5,000
TX630VB	63 1 20	141 28 30	.050	2.00	--	.002	10,000	.1	N	N	150	3,000
TX631VB	63 3 28	141 22 11	.050	2.00	--	.002	>10,000	.2	N	N	150	2,000
TX632VB	63 1 30	141 34 10	.050	2.00	--	.005	>10,000	.1	N	N	100	3,000
TX633VB	63 2 9	141 20 46	.100	3.00	--	.005	>10,000	<.1	N	N	150	1,000
TX634VB	63 0 9	141 39 25	.100	2.00	--	.005	10,000	.1	N	N	150	2,000

black spruce--continued

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB
TX593VB	N	N	N	N	N	30	N	N	N	20	1.0
TX594VB	N	N	N	N	N	30	N	2	N	20	1.0
TX595VB	N	N	N	N	N	50	N	2	N	20	1.0
TX596VB	N	N	N	N	N	30	N	5	N	10	1.0
TX597VB	N	N	N	N	<5	30	N	2	N	20	<1.0
TX598VB	N	N	N	N	N	30	N	30	N	30	1.0
TX599VB	N	N	N	N	N	30	N	2	N	10	1.0
TX600VB	N	N	N	N	N	30	N	70	N	20	1.0
TX601VB	N	N	N	N	N	30	N	N	N	15	1.0
TX602VB	N	N	N	N	N	30	N	<2	N	5	1.0
TX603VB	N	N	N	N	5	30	N	<2	N	10	1.0
TX604VB	N	N	N	N	N	30	N	5	N	20	1.0
TX605VB	N	N	N	N	N	30	N	3	N	5	1.0
TX514VB	N	N	N	N	N	30	N	2	N	20	1.0
DTX605VB	N	N	2	N	<5	30	N	15	N	5	1.0
TX606VB	N	N	2	N	N	30	N	2	N	15	<10.0
TX607VB	N	N	N	N	N	30	N	<2	N	5	<10.0
TX608VB	N	N	N	N	N	30	N	2	N	7	1.0
TX609VB	N	N	N	N	N	30	N	<2	N	5	1.0
TX610VB	N	N	N	N	N	30	N	5	N	10	1.0
TX611VB	N	N	2	N	N	30	N	N	N	15	<10.0
TX612VB	N	N	N	N	N	30	N	5	N	15	<10.0
TX613VB	N	N	N	N	N	30	N	2	N	10	<10.0
TX614VB	N	N	N	N	N	30	N	<2	N	10	1.0
TX615VB	N	N	N	N	N	30	N	2	N	5	<10.0
TX616VB	N	N	N	N	N	30	N	N	N	15	1.0
TX617VB	N	N	N	N	N	20	N	2	N	10	<10.0
TX618VB	N	N	N	N	N	30	N	N	N	30	1.0
TX619VB	N	N	N	N	<5	30	N	5	N	10	20.0
TX620VB	N	N	N	N	N	30	N	2	N	30	<10.0
TX621VB	N	N	N	N	N	30	N	<2	N	10	<10.0
TX622VB	N	N	N	N	<5	30	N	7	N	30	2.0
TX623VB	N	N	N	N	<5	30	N	5	N	15	1.0
TX624VB	N	N	N	N	N	30	N	3	N	30	1.0
TX625VB	N	N	N	N	<5	30	N	N	N	10	<10.0
TX626VB	N	N	N	N	7	50	N	2	N	100	N
TX627VB	N	N	N	N	N	30	N	3	N	5	1.0
TX628VB	N	N	N	N	N	30	N	N	N	10	1.0
DTX628VB	N	N	N	N	N	30	N	N	N	10	<10.0
TX629VB	N	N	N	N	N	30	N	N	N	30	<10.0
TX630VB	N	N	N	N	N	30	N	N	N	10	<10.0
TX631VB	N	N	N	N	N	50	N	3	N	100	<10.0
TX632VB	N	N	N	N	N	20	N	2	N	15	<10.0
TX633VB	N	N	N	N	5	30	N	7	N	5	1.0
TX634VB	N	N	N	N	N	20	N	N	N	5	1.0

black spruce--continued

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASHX
TX593VB	N	N	N	5,000	20	N	N	3,000	N	4.51
TX594VB	N	N	N	2,000	30	N	N	3,000	N	4.74
TX595VB	N	N	N	1,500	20	N	N	2,000	N	3.32
TX596VB	N	N	N	1,500	50	N	N	3,000	N	4.74
TX597VB	N	N	N	3,000	30	N	N	2,000	N	6.84
TX598VB	N	N	N	2,000	20	N	N	2,000	N	5.55
TX599VB	N	N	N	1,000	30	N	N	2,000	N	3.20
TX600VB	N	N	N	5,000	20	N	N	2,000	N	5.38
TX601VB	N	N	N	5,000	20	N	N	2,000	N	5.20
TX602VB	N	N	N	1,000	20	N	N	3,000	N	3.87
TX603VB	N	N	N	5,000	5	N	N	2,000	N	4.85
TX604VB	N	N	N	1,500	20	N	N	2,000	N	3.82
TX605VB	N	N	N	200	30	N	N	2,000	N	2.67
TX514VB	N	N	N	1,500	10	N	N	3,000	N	4.14
DTX605VB	N	N	N	200	50	N	N	1,500	N	2.28
TX606VB	N	N	N	1,000	10	N	N	2,000	N	3.74
TX607VB	N	N	N	1,000	10	N	N	2,000	N	2.68
TX608VB	N	N	N	1,500	30	N	N	2,000	N	3.98
TX609VB	N	N	N	700	<10	N	N	2,000	N	2.41
TX610VB	N	N	N	1,000	20	N	N	1,500	N	2.95
TX611VB	N	N	N	1,500	50	N	N	1,500	N	4.71
TX612VB	N	N	N	2,000	10	N	N	2,000	N	4.82
TX613VB	N	N	N	500	20	N	N	2,000	N	3.45
TX614VB	N	N	N	2,000	10	N	N	2,000	N	4.27
TX615VB	N	N	N	1,000	20	N	N	2,000	N	3.20
TX616VB	N	N	N	2,000	10	N	N	1,500	N	5.24
TX617VB	N	N	N	2,000	10	N	N	2,000	N	5.28
TX618VB	N	N	N	2,000	10	N	N	2,000	N	3.37
TX619VB	N	N	20	1,000	50	N	N	2,000	N	3.10
TX620VB	N	N	N	1,500	50	50	N	2,000	N	3.61
TX621VB	N	N	N	1,500	20	N	N	2,000	N	3.20
TX622VB	N	N	N	700	50	N	N	1,500	N	2.55
TX623VB	N	N	N	700	50	N	N	2,000	N	4.02
TX624VB	N	N	N	2,000	10	N	N	2,000	N	4.48
TX625VB	N	N	N	1,500	10	N	N	1,000	N	3.72
TX626VB	N	N	N	1,500	20	50	N	1,000	N	4.27
TX627VB	N	N	N	500	30	N	N	1,500	N	3.18
TX628VB	N	N	N	1,000	10	N	N	2,000	N	5.21
DTX628VB	N	N	N	1,000	10	N	N	1,500	N	4.61
TX629VB	N	N	N	1,500	20	N	N	1,500	N	4.90
TX630VB	N	N	N	700	20	N	N	1,500	N	3.01
TX631VB	N	N	N	1,000	20	N	N	1,500	N	3.27
TX632VB	N	N	N	1,000	50	N	N	1,500	N	4.82
TX633VB	N	N	N	700	70	N	N	1,500	N	3.45
TX634VB	N	N	N	1,000	20	N	N	2,000	N	3.74

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black spruce--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA
TX635VB	63 2 10	141 30 38	.030	2.00	--	.010	3,000	.1	N	N	200	5,000
TX636VB	63 0 50	141 41 50	.100	2.00	--	.010	>10,000	.1	N	N	200	2,000
TX637VB	63 3 25	141 39 15	.070	2.00	--	.002	>10,000	<.1	N	N	70	200
TX638VB	63 2 27	141 48 22	.070	2.00	--	.010	10,000	<.1	N	N	200	2,000
TX639VB	63 4 47	141 49 15	.100	2.00	--	.010	10,000	.1	N	N	70	2,000
TX640VB	63 5 25	141 58 0	.100	2.00	--	.005	10,000	<.1	N	N	200	2,000
TX641VB	63 4 50	141 49 45	.100	2.00	--	.005	5,000	.1	N	N	100	1,000
DTX641VB	63 5 20	141 50 10	.050	1.00	--	.005	5,000	<.1	N	N	150	1,500
TX642VB	63 16 18	143 15 2	.070	2.00	--	.005	10,000	<.1	N	N	150	1,500
TX44VB	63 3 30	143 45 0	.050	1.00	--	.010	5,000	<.1	N	N	150	1,500
DTX92VB	63 45 40	142 40 40	.050	2.00	--	.010	>10,000	.1	N	N	150	2,000
TX7VB	63 7 20	143 36 30	.100	1.00	--	.030	10,000	.1	N	N	200	3,000
TX10VB	63 33 37	143 11 5	.200	2.00	--	.010	10,000	<.1	N	N	50	5,000
TX12VB	63 34 36	143 9 5	.050	2.00	--	.007	>10,000	<.1	N	N	30	3,000

sample	S-BE	S-BI	S-CD	S-CO	S-CR	S-CU	S-LA	S-MO	S-N3	S-NI	S-PB
TX635VB	N	N	N	N	N	15	N	5	N	5	<10.0
TX636VB	N	N	N	N	N	30	N	3	N	5	1.0
TX637VB	N	N	N	N	N	30	N	5	N	7	1.0
TX638VB	N	N	N	N	<5	30	N	3	N	7	2.0
TX639VB	N	N	N	N	5	30	N	5	N	30	<10.0
TX640VB	N	N	N	N	<5	30	N	N	N	5	2.0
TX641VB	N	N	N	N	5	30	N	N	N	20	<10.0
DTX641VB	N	N	N	N	N	30	N	N	N	5	1.0
TX642VB	N	N	N	N	N	30	N	N	N	10	<10.0
TX44VB	N	N	N	N	N	30	N	N	N	5	<10.0
DTX92VB	N	N	N	N	N	30	N	3	N	20	<10.0
TX7VB	N	N	N	N	N	30	N	N	N	10	1.0
TX10VB	N	N	N	N	N	30	N	2	N	20	<10.0
TX12VB	N	N	N	N	N	30	N	3	N	10	<10.0

sample	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	ASH%
TX635VB	N	N	N	2,000	10	N	N	2,000	N	4.71
TX636VB	N	N	N	1,500	50	N	N	2,000	N	4.55
TX637VB	N	N	N	150	50	N	N	2,000	N	2.12
TX638VB	N	N	N	1,000	20	N	N	1,500	N	3.81
TX639VB	N	N	N	1,500	20	N	N	1,500	N	6.15
TX640VB	N	N	N	1,000	20	N	N	1,500	N	3.07
TX641VB	N	N	N	1,500	20	N	N	1,000	N	3.00
DTX641VB	N	N	N	1,500	10	N	N	1,500	N	4.65
TX642VB	N	N	N	1,500	20	N	N	1,500	N	4.91
TX44VB	N	N	N	2,000	10	N	N	500	N	6.17
DTX92VB	N	N	N	700	30	N	N	1,500	N	3.62
TX7VB	N	N	N	1,000	20	N	N	1,500	N	5.00
TX10VB	N	N	N	2,000	10	N	N	1,500	N	3.95
TX12VB	N	N	N	1,500	20	N	N	1,500	N	4.20