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Regional Geochemical Results from Analyses of Stream-Water, Stream-Sediment, Soil, Soil-Water, Bedrock, and Vegetation Samples, Tangle Lakes District, Alaska

Open-File Report 2008–1260

U.S. Department of the Interior
U.S. Geological Survey

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By Bronwen Wang, U.S. Geological Survey; L.P. Gough, U.S. Geological Survey; R.B. Wanty, U.S. Geological Survey; G.K. Lee, U.S. Geological Survey; James Vohden, U.S. Geological Survey, J.M. O'Neill, U.S. Geological Survey; and L.J. Kerin, Alaska Department of Natural Resources

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Conversion Factors

Multiply	By	To obtain
meter (m)	3.281	foot (ft)
kilometer (km)	0.6214	mile (mi)
kilometer (km)	0.5400	mile, nautical (nmi)
square kilometer (km^2)	0.3861	square mile (mi^2)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F=(1.8×°C)+32.$$

Datums

Horizontal coordinate information is referenced to the bedrock samples, Tangle Lakes District, Alaska. “North American Datum of 1927, Alaska (NAD 27 Alaska)”

Altitude, as used in this report, refers to distance above the vertical datum.

Abbreviations

Abbreviation	Meaning
L	liter
mg/L	milligram per liter
µg/L	microgram per liter
ng/L	nanogram per liter
µm	micrometer
µg/g	microgram per gram
ng/g	nanogram per gram
mg/kg	milligram per kilogram
µS	microSiemens
ppb	part per billion
ppm	part per million

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Regional Geochemical Results from Analyses of Stream-Water, Stream-Sediment, Soil, Soil-Water, Bedrock, and Vegetation Samples, Tangle Lakes District, Alaska

By Bronwen Wang[1], L.P. Gough[2], R.B. Wanty[3], G.K. Lee[3], James Vohden[4], J.M. O'Neill[3], and L.J. Kerin[4]

Introduction and Landscape Setting

We report chemical analyses of stream-water, stream-sediment, soil, soil-water, bedrock, and vegetation samples collected from the headwaters of the Delta River (Tangle Lakes District, Mount Hayes 1:250,000-scale quadrangle) in east-central Alaska for the period June 20–25, 2006. Additionally, we present mineralogic analyses of stream sediment, concentrated by panning. The study area includes the southwestward extent of the Bureau of Land Management (BLM) Delta River Mining District (Bittenbender and others, 2007), including parts of the Delta River Archeological District, and encompasses an area of about 500 km^2 (approximately bordered by the Denali Highway to the south, near Round Tangle Lake, northward to the foothills of the Alaska Range (fig. 1). The primary focus of this study was the chemical characterization of native materials, especially surface-water and sediment samples, of first-order streams from the headwaters of the Delta River.

The impetus for this work was the need, expressed by the Alaska Department of Natural Resources (ADNR), for an inventory of geochemical and hydrogeochemical baseline information about the Delta River Mining District. This information is needed because of a major upturn in exploration, drilling, and general mineral-resources assessments in the region since the late 1990s. Currently, the study area, called the "MAN Project" area is being explored by Pure Nickel, Inc. (http://www.purenickel.com/s/MAN_Alaska.asp), and includes both Cu-Au-Ag and Ni-Cu-PGE (Pt-Pd-Au-Ag) mining claims.

Geochemical data on surface-water, stream-sediment, soil, soil-water, grayleaf willow (*Salix glauca* L.), and limited bedrock samples are provided along with the analytical methodologies used and panned-concentrate mineralogy. We are releasing the data at this time with only minimal interpretation.

Objectives

The objectives of U.S. Geological Survey (USGS) and ADNR studies in the Delta River Mining District include (1) description of chemical signatures imparted to water, sediment, soil, and vegetation from the geologic (mineralized and nonmineralized) substrate, and (2) estimation of geochemical baselines for surface water, sediment, soils, and vegetation in selected watersheds before development, if it is to occur.

Terrain, Vegetation, and Hydrology

The Tangle Lakes area of the Delta River Mining District is south of the Alaska Range in east-central Alaska about 30 km west-northwest of the small community of Paxson (figs. 1, 2). Pure Nickel Inc. (http://www.purenickel.com/s/Home.asp), the exploration company that owns most of the claims in this area, is in an exploration phase and has not announced when it might move beyond this present phase. The activities of Pure Nickel, as well as of previous property owners in the area (Nevada Star Resources Corp., Anglo American Exploration USA, Inc.), have created a renewed interest in understanding the tectonic setting and metallogeny of the Cu-Ni-PGE deposits present in mafic and ultramafic country rocks of the area.

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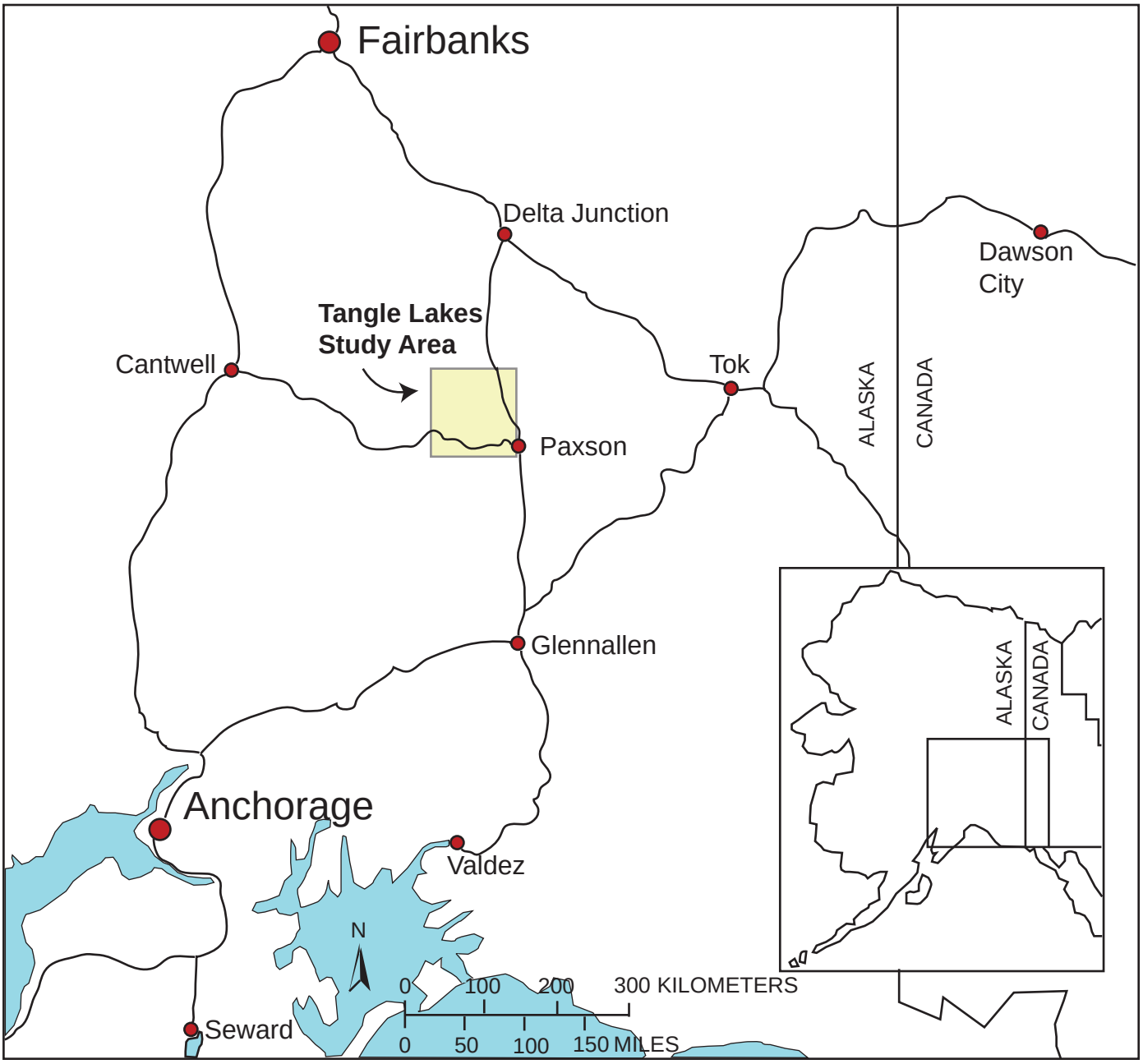

Figure 1. Mount Hayes quadrangle, east-central Alaska, with the location of the Tangle Lakes study area.

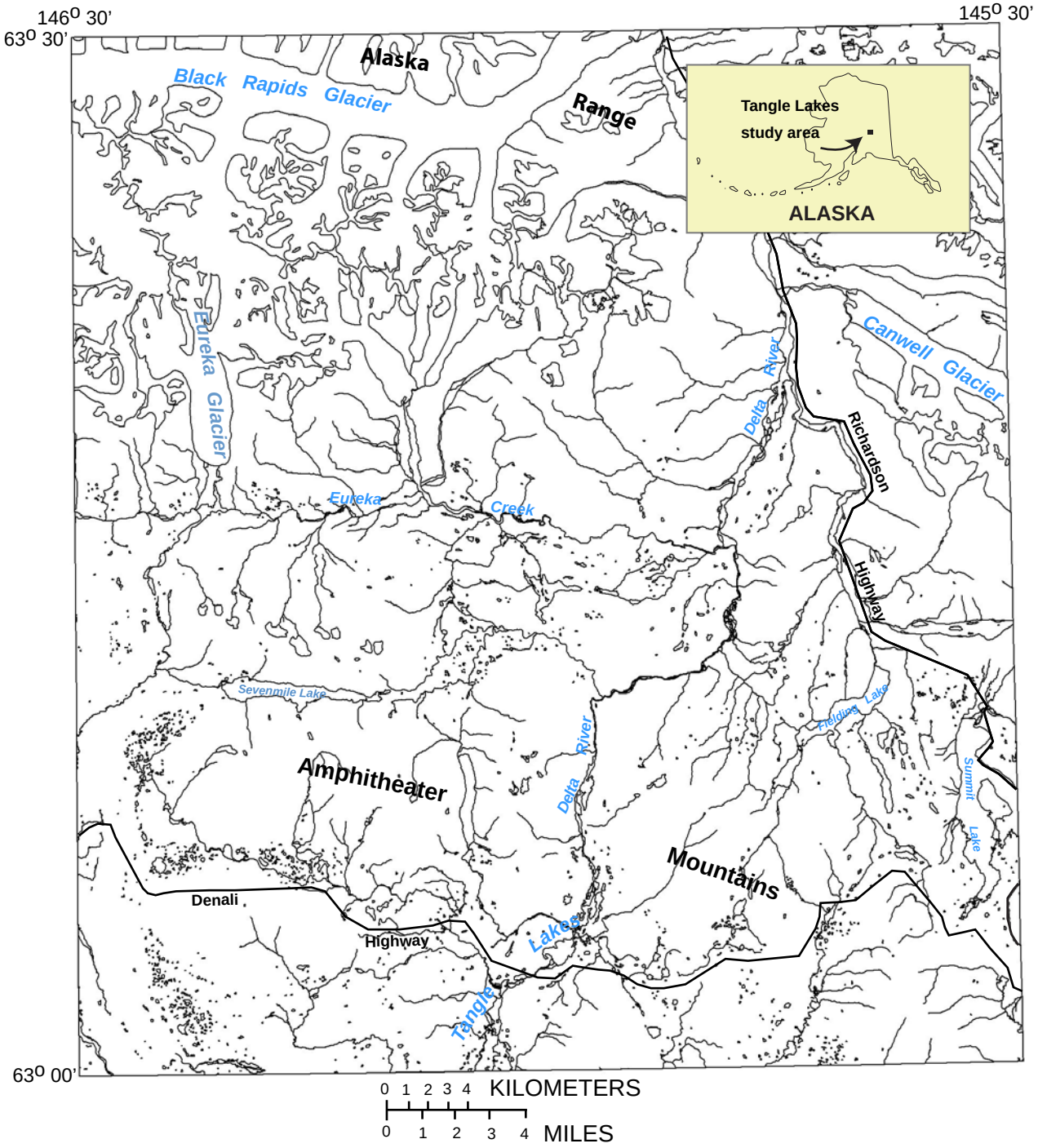

Figure 2. Study area with generalized hydrologic features in the Mount Hayes quadrangle, east-central Alaska, Tangle Lakes study area.

The Mount Hayes A-4, A-5, B-4, and B-5 quadrangles, where we focused our 2006 field studies, are characterized by vegetated, high rugged mountains with scattered, sparsely vegetated to barren higher peaks (highest elevations, >1,700 m in the Alaska Range foothills). The Delta River, the area's largest stream, drains northward through the Alaska Range from Round Tangle Lake. The drainage is narrow and swift moving in the south but becomes broad and meandering as it leaves the Alaska Range. Eureka Creek, the main tributary to the Delta River in the study area (fig. 1), runs west to east, and its drainage is narrower and steeper than the Delta River. The alpine tundra vegetation of the region (tree line at about 900 m, well below the elevation of most of the study area) is composed of forbs, herbs, and low shrubs (*Salix*, *Betula*, and *Spirea*); ground cover is composed of forbs, mosses, and lichens. Fires are infrequent, and most of our sampling sites did not show evidence of past fire disturbance. The study area has an interior Alaska continental climate characterized by cool, wet summers, very cold, dry winters, a day length that ranges from about 5 hours in December to about 19 hours in June, and broad fluctuations in ambient temperature.

Geologic Framework

The Tangle Lakes District, the area drained by Eureka Creek and its tributaries between the Denali Highway and the foothills of the Alaska Range (figs. 1, 2), is underlain mainly by Late Triassic rocks of the Nikolai Greenstone. The area is part of the massive Wrangellia superterrane that was accreted to this part of Alaska in the Late Cretaceous (Nokleberg and others, 1994). Nokleberg and others (1994) included the Eureka Creek study area in a larger, fault-bounded Tangle Lakes subterrane within the much larger Wrangellia superterrane of south-central and southeastern Alaska. Early geologic investigations were by Rose (1965, 1966) in the Rainy Creek area and Amphitheater Mountains in the northeastern and southern parts of the study area, respectively, and by Stout (1976), who summarized the geology of the intervening Eureka Creek area and integrated that geology with the work by Rose in the north and south.

The Nikolai Greenstone, more than 4,000 m thick in the Amphitheater Mountains, consists mainly of basalt flows, some of which are spectacular pillow basalts, interbedded with minor argillite, chert, and mafic volcaniclastic rocks. What distinguishes the Nikolai in the Tangle Lakes area from equivalent rocks elsewhere in south-central Alaska is the presence of large cumulate mafic and ultramafic sills that were emplaced mainly into or beneath the overlying volcanic sequence. Unconformably underlying the Nikolai volcanic rocks (and intruded by the mafic sills and dikes) are Pennsylvanian(?) through Triassic limestone, shale, and chert, exposed between Eureka and Rainy Creeks in the northeastern part of the study area (fig. 1).

The Nikolai Greenstone and underlying sedimentary rocks are folded into the broad, west trending Amphitheater syncline, whose axis is in the low-lying area occupied by Sevenmile Lake (fig. 2) within the Amphitheater Mountains. The syncline plunges gently west and traces eastward to Summit Lake. The study area (fig. 1) is bounded on the south by the north-dipping limb of this syncline.

On the northeast, weakly folded Nikolai mafic rocks are bounded by the northwest-trending Eureka Fault of Nokleberg and others (1992), northeast of which are strongly deformed metasedimentary, metavolcanic, and intrusive rocks that range in age from Pennsylvanian to Cretaceous. This and other faults in the region are mapped as thrust faults (Stout, 1976; Nokleberg and others, 1992), some of which place younger on older sequences. Reconnaissance during this study revealed that the faults exposed in Broxson Gulch juxtapose the Cretaceous Kahiltna flysch of Stout (1976) against Triassic mafic rocks along a wide, nearly vertical shear zone marked by abundant subhorizontal slickenlines. The area east and west of Broxson Gulch appears to represent a series of tectonic slices ranging from Permian pyroclastic flows and tuffs, through mafic and ultramafic igneous rocks of uncertain age, and possible Cretaceous flysch deposits, to quartz monzonite to diorite igneous bodies variously mapped as intrusive rocks by Stout (1976) and as fault-bounded tectonic slices by Nokleberg and others (1992). Our reconnaissance suggests that strike-slip faulting may be a major component of tectonic displacements in the Broxson Gulch area.

The Late Triassic Nikolai Greenstone is the main igneous rock type exposed in the study area (fig. 1). On the southern limb of the Amphitheater syncline, Stout (1976) reported approximately 3,500 m of andesitic to mafic mixed volcanic rocks and intrusive sills of diabase and diorite; the intrusive sills account for about one-third of the thickness of the section. The base of this section consists of water-laid tuffs and local limestone overlain mainly by volcanic tuffs and agglomerate. The upper part of the section consists of pillowed andesite flows and minor pillowed basalt flows. The andesitic volcanic section is overlain by gray to green basalts that commonly are amygdaloidal.

Intruding the Nikolai andesites, basalts, and related tuffs is the Fish Lake intrusive complex of Stout, 1976, who described this complex as (1) intrusive into the overlying volcanic rocks, (2) mafic to ultramafic in composition, and (3) probably a layered differentiated ultramafic sill. The peridotites examined by Stout are associated with secondary serpentinite, chrome spinel, and clinopyroxene layers.

Exploration geologists from the Nevada Star Resource Group (Larry Hulbert, oral commun., 2006) have mapped ultramafic-layered zones within the complex, including peridotites that consist of dunite, wehrlite, and feldspathic wehrlite and pyroxenites that consist of olivine clinopyroxenite and clinopyroxenite, all of which show cumulate textures. The ultramafic rocks are associated with gabbro, olivine gabbro, and troctolite that are locally transitional into feldspathic peridotite and that locally display cumulate textures. The Fish Lake complex intrudes the Late Triassic Nikolai Greenstone; these rocks are now considered to represent a comagmatic phase of Late Triassic mafic volcanism that intruded the overlying volcanic carapace (Nokleberg and others, 1994).

Younger, quartz monzonite to diorite intrusive bodies are present in the Tangle Lakes district only in the area northeast of the Eureka Fault and specifically adjacent to the Broxson Gulch area. The age of these rocks is uncertain, and they have been mapped as both Cretaceous and Tertiary intrusions and as fault-bounded tectonic slices (Stout, 1976; Nokleberg and others, 1992). Southwest of the Eureka Fault, a north- to northeast-trending fracture system that cuts across the Amphitheater Mountains includes fractures locally filled with quartz veins as much as 30 cm thick (Stout, 1976).

Base metal, disseminated Cu, and associated Fe sulfides, such as those that occur west of the study area (fig. 1) and west of the Maclaren River (Kathleen-Margaret Cu deposit) are absent in the Eureka Creek area. Sulfide-bearing veins do occur in the study area but have attracted little attention. Most of these veins occur along or near the axis of the Amphitheater syncline, south of the Eureka Fault, in association with quartz-filled fractures. Stout (1976) reported that some veins contain chalcopyrite, bornite, malachite, and azurite, some of which occur as pods as much as 2.5 cm across. Stout noted that several Cu-Ni occurrences were known at that time and that these occurrences were closely associated with the Fish Lake ultramafic intrusive complex.

Since 1991, several exploration companies have undertaken mapping, sampling, and core drilling in the Tangle Lakes district, all focused on the Fish Lake intrusive complex. Currently, Pure Nickel, Inc., which owns mineral rights within the area, reports showings as much as 15.4 weight percent Ni, 7.19 weight percent Cu, and 170 g of platinum-group elements (PGE) + Au + Ag per tonne. Pure Nickel has subdivided the Tangle Lakes district into three metallogenic areas: (1) the broadly folded Nikolai Greenstone area (Ni-Cu-PGE) southwest of the Eureka Fault that includes all of the Amphitheater Mountains, (2) the complexly faulted and strongly folded multilithologic area (Ni-Cu-PGE) northeast of the Eureka Fault, and (3) a small area (Cu-Au) directly east of Broxson Gulch where tectonic slices of both sedimentary rocks and mafic and felsic igneous rocks of all ages and compositions are exposed.

Mineral resource investigations of the study area (fig. 1) are being carried out by exploration companies and BLM (Bean and others, 2004; Bittenbender and others, 2007).

Soils

Soils at our sampling sites are classified as Orthels (Gelisols) and only occasionally as Cryepts (Inceptisols). More than 50 percent of our sampling sites were very moist at the time of collection, and permafrost, when present, was commonly observed at 15- to 50-cm depth. Most sites had silty to fine-sandy-loam A soil horizons with abundant root penetration. The A horizon was commonly less than 10 cm thick and dark brown (organic rich); the B horizon was generally about as thick as the A horizon, lighter and redder, and contained moderate root volume; the C soil horizons, which commonly extended below 20- to 40-cm deep, consisted of fine to coarse sand with small blocks of angular bedrock and few roots. The universal presence of silt (eolian loess) in the soil horizons plays an important role in the definition of soil-geochemical signatures. We tried to collect mature, residual soils wherever possible. Although some of the soils collected had developed from alluvium, most sampling sites were intentionally located well above contemporary flood levels on slopes no steeper than 15 percent. Geomorphic signs of downslope soil movement (solifluction lobes and outwash fans), however, indicate that the upper horizons of many of these soils were mostly colluvial in origin. Cryoturbation, most commonly signaled by the presence of hummocks, was universally observed.

Methods

Samples of stream water, stream sediment, soil, soil-water, bedrock, and vegetation were collected for chemical analysis at various sites in the study area (fig. 3; table 1). Surface-water samples were collected at 30 sites. Near 22 of the surface–water-sampling sites, stream sediment was collected for chemical analysis (fig. 4); and at 17 sites both stream-sediment and pan concentrates were collected for chemical and mineralogical analyses, respectively. Soil and soil-water samples were collected for chemical analysis near five stream–water-sampling sites, and grayleaf willow (*Salix glauca* L.) was sampled at six sites. The stream-sediment and stream-water samples were specifically targeted to elucidate the geochemical signature of the ultramafic rocks of the study area (fig. 1).

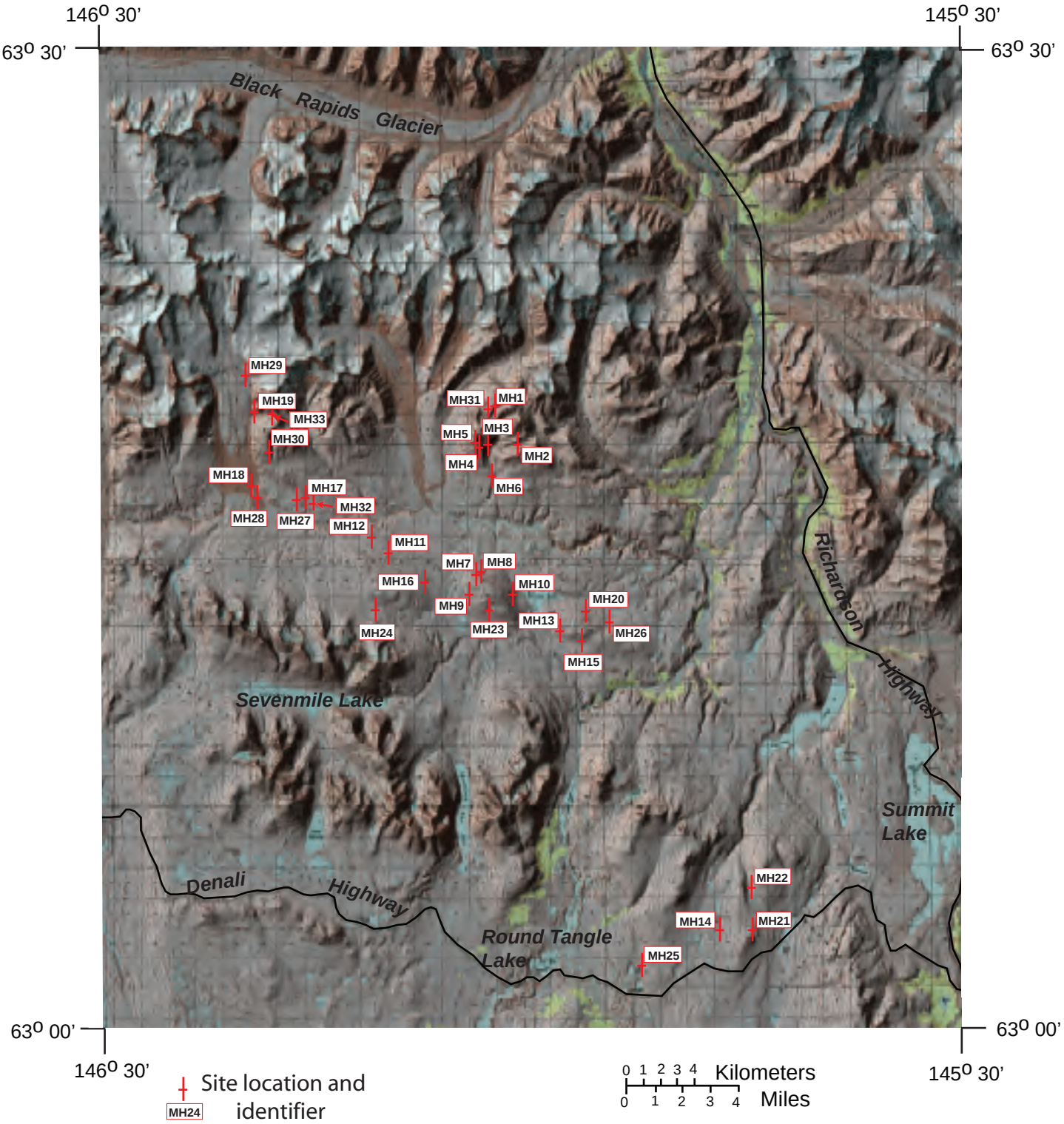

Figure 3. Study area in the Mount Hayes quadrangle, east-central Alaska, showing locations of sampling sites. See tables 4 through 15 for precise coordinates and types of material sampled at each site.

Table 1. Map numbers of sampling sites and corresponding field identifiers (field No.) for samples taken at the site, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. For exact sampling location see tables 4–14. **Field No: Water:** in tables 4, 5, and 6, the prefix is followed by the field treatment designator indicating that sample was: (1) 0.1FA if passed through 0.1-µm filter and acidified; 0.45FA if passed through 0.45-µm filter and acidified, and RA if unfiltered and acidified; (2) 0.45FU if passed through 0.45-µm filter but not acidified; (3) RU if unfiltered and not acidified. **Sediment and mineralogy**: in tables 7 and 8, prefix is followed by SS for stream sediment, SD for stream-sediment duplicate, SC for stream-sediment panned concentrate. **Soil:** in table 9, prefix is followed by A, B, or C designating horizon sampled. **Soil water:** in tables 10, 11, and 12, prefix is followed by C or A indicating samples for cation and anion analysis, respectively. All samples were filtered through 0.45 µm filter. Cation samples were acidified; anion samples were not acidified. **Vegetation:** in table 13, prefix is followed by W indicating willow samples. **Abbreviation:** µm, micrometer]

Map No.	Field No.					
	Water	Sediment and mineralogy	Soil	Soil water	Vegetation	Bedrock
MH1	06AK01	06GL078	–	–	–	–
MH2	06AK02	06GL079	–	–	–	–
MH3	06AK03	06GL080	–	–	–	–
MH4	06AK04	06GL081	–	–	–	–
MH5	06AK05	–	–	–	–	–
MH6	06AK06	06GL082	–	–	–	–
MH7	06AK07	06GL083	–	–	–	–
MH8	06AK08	–	–	–	–	–
MH9	06AK09	06GL084	–	–	–	–
MH10	06AK10	06GL085	–	–	–	–
MH11	06AK11	06GL086	–	–	–	–
MH12	06AK12	06GL087	–	–	–	–
MH13	06AK13	06GL088	–	–	–	–
MH14	06AK14	06GL089	–	–	–	–
MH15	06AK15	06GL090	–	–	–	–
MH16	06AK16	06GL091	–	–	–	–
MH17	06AK17	06GL092	–	–	–	–
MH18	06AK18	06GL093	–	–	–	–
MH19	06AK19	06GL094	–	–	–	–
MH20	06AK20	06GL095	–	–	–	–
MH21	06AK06LG	–	06AK06	06AK06L1	06AK06	–
MH22	06AK07LG	–	06AK07	06AK07L1	06AK07	–
MH23	06AK08LG	–	06AK08	06AK08L1	06AK08	–
MH24	06AK09LG	–	06AK09	06AK09L1	06AK09	–
MH25	06AK10LG	–	06AK10	06AK10L1	06AK10	–
MH26	06AK11LG	–	–	–	06AK11	–
MH27	06AK12LG	–	–	–	–	–
MH28	06AK13LG	06AK13LG		–	–	–
MH29	06AK14LG	06AK14LG		–	–	–
MH30	06AK15LG	–		–	–	–
MH31	–	–	–	–	–	06GL077R
MH32	–	–	–	–	–	06GL092R
MH33	–	–	–	–	–	06GL094R

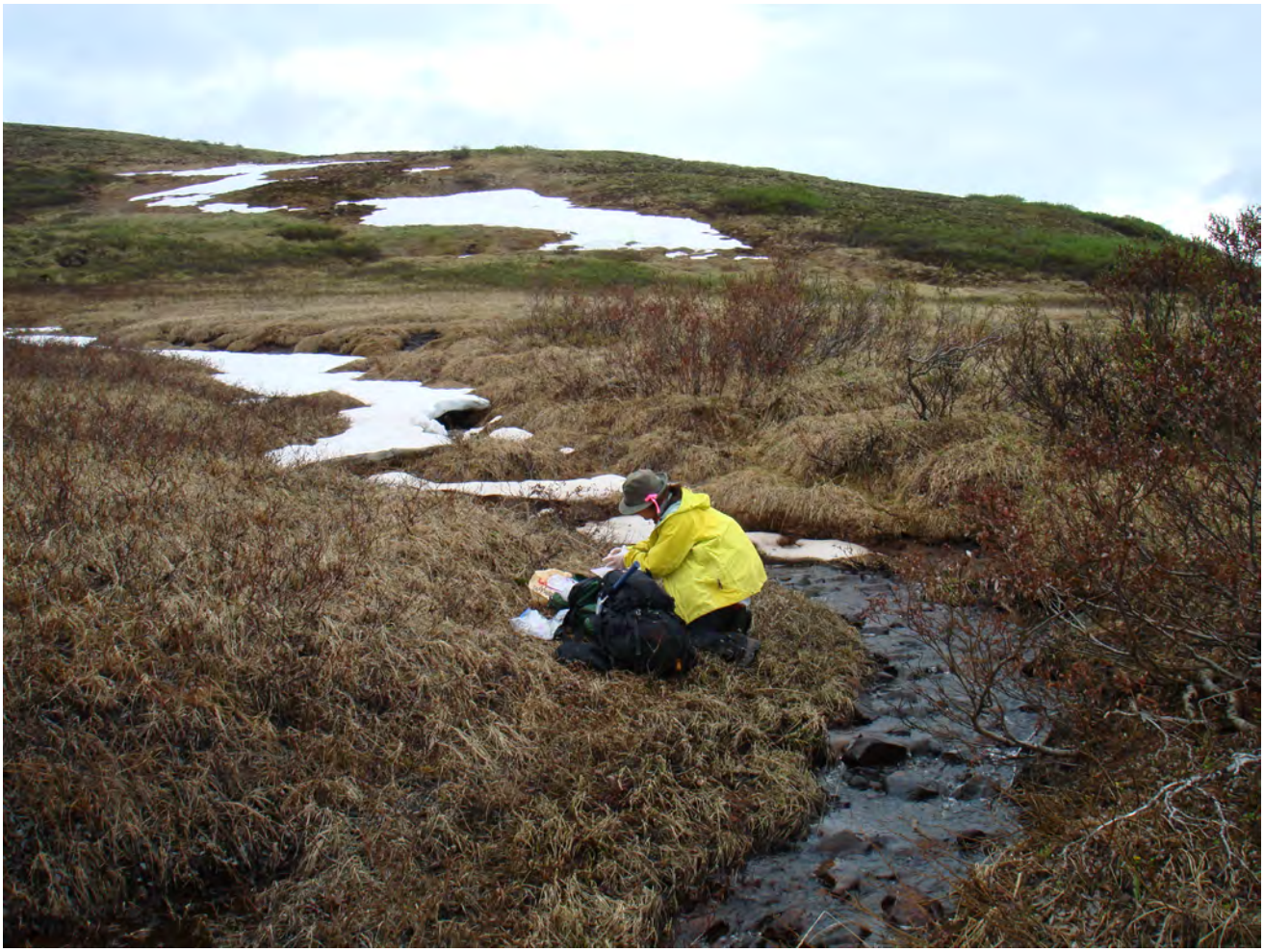

Figure 4. Photograph of a U.S. Geological Survey scientist sampling surface water at a site south of Eureka Creek (fig. 2), at approximately 3,700-ft elevation, showing general lack of new-growth vegetation (June 20–24, 2006), and presence of snow fields.

Stream-Water Samples

Water samples were collected as depth- and width-integrated composite samples. Waters were filtered through a 0.45-µm syringe-end filter fitted to a 60 mL syringe. Samples for major-cation (Ca, Mg, K, Na) and trace-element analyses were preserved with ultra-high-purity HNO_3; samples for major-anion (SO_4^{2-}, Cl^-, F^-, NO_3^-) analyses were filtered but not acidified. Alkalinity (as $CaCO_3$) samples were either filtered and not acidified or unfiltered and not acidified. Water conductivity, pH, and temperature were measured in the field by using standard pH and conductivity meters and submersible thermometers. Stream discharge was measured in cross section by using the cross-sectional area, and velocity was determined by using a pygmy meter.

For water samples, major-cations and trace-element contents were determined by inductively coupled plasma mass spectrometry (ICP-MS), and major–anion contents by ion chromatography (IC) (Lamothe and others, 2002; Theodorakos and others, 2002). Alkalinity was determined by using a preset–end-point (pH 4.5) autotritration system (Theodorakos and others, 2002). Laboratory procedures require instrument calibration with appropriate standards for the elements to be reported. In general, the instrumentation calibration and quality-control procedures for the laboratory are (1) daily hardware and software checks to ensure that the instrument and its components are working properly; (2) calibration of the instrument to appropriate standards; (3) analysis of standard reference materials (aqueous standard reference materials

are from the USGS Water Resource Division; see http://bqs.usgs.gov/SRS/); (4) analysis of samples, with every tenth sample designated a calibration-check solution (that is, a calibration standard run as a sample); and (5) recalibration of the instrument and running of standard reference materials. Each run concludes with the analysis of a standard reference material (Paul Lamothe, U.S. Geological Survey, oral commun., 2008).

Sediment Chemistry and Mineralogy, and Bedrock Samples

All stream-sediment samples consisted of fine alluvium from the active stream channel, primarily from first-order streams as shown on USGS 1:63,360-scale topographic maps. Each sample was a composite of material collected from several places along a 10-m reach of the channel at the sampling site. Approximately 0.9 kg of material was collected in a cloth bag, and the samples were air-dried. The samples were shipped to the USGS Mineral Resources Program's Laboratory in Denver, Colo., for analysis. Before analysis, dried sediment samples were sieved to minus-80-mesh (0.177 mm); the coarse fraction was discarded, and the fine fraction was ground with ceramic plates to minus-100 mesh (0.149 mm). Clean quartz sand was pulverized between the sediment samples to reduce risk of cross-contamination (Peacock and others, 2002). For each sample, approximately 185 g was saved for chemical analysis; any remaining material was archived.

The ground-sediment samples were digested by using a four-acid digestion; digests were analyzed by ICP-MS using the methods of Crock and others (1983), Briggs and Meier (2002), and Lamothe and others (2002). Hg-Au, and Pd-Pt were analyzed in separate splits of the sediment samples. Sediment samples for Hg analysis were digested with HNO_3-$Na_2Cr_2O_7$ and Hg contents were determined by cold-vapor atomic-absorption spectrometry (CV-AAS) (Brown and others, 2002). Au, Pd, and Pt were quantitated by ICP-MS analysis after collection by fire assay. A 30-g aliquot was weighed into a crucible with 150 g of flux and mixed; 1 mg of $AgNO_3$ was added and covered with borax, and then the sample was placed in the furnace for 45 minutes at 1,080°C. The melt was poured into a cast-iron mold, cooled, and hammered to free the lead button from the slag. The lead button was heated at 950°C until all the lead was removed. The resulting bead was dissolved in a HNO_3-HCl and heated in a waterbath. The final solution was adjusted to 10 mL and introduced into the ICP-MS.

Heavy-mineral panned-concentrate samples were collected from active alluvium at most stream-sediment-sampling sites; however, a higher-energy depositional environment, such as coarser gravel, was sought to provide a more favorable environment for collecting heavy (high specific gravity) minerals. A 36-cm-diameter plastic gold pan was filled with approximately 7 kg of alluvium and panned on site until many of the lighter minerals (those with a lower specific gravity, such as quartz and feldspar, along with organic material and clays) were removed. The resulting concentrate was examined with 10x and 14x hand lenses in the field and collected in a plastic bag that was covered by a protective paper envelope.

The concentrate samples were analyzed in the USGS Mineral Resources Program's laboratory in Denver, Colo., where they were air dried and sieved to minus-30 mesh (0.6 mm) and then gravity separated by using bromoform (specific gravity, about 2.85) to remove any remaining light minerals, primarily quartz and feldspar. The resulting heavy-mineral-concentrate sample was separated into magnetic, weakly magnetic, and nonmagnetic fractions, using a modified Frantz Isodynamic Separator (Taylor and Theodorakos, 1996). The magnetic fraction, which was extracted at a setting of 0.25 A contains primarily magnetite and ilmenite; the weakly magnetic fraction, which was extracted at a setting of 1.75 A consists largely of ferromagnesian silicates and Fe oxides; and the remaining nonmagnetic fraction may contain many ore-related minerals, including sulfide minerals, gold and other native metals, and some accessory oxides and silicates. The mineral content of nonmagnetic heavy-mineral-concentrate samples was determined by visual identification through a binocular microscope.

Bedrock samples were collected from outcrop localities near stream-sediment-sampling sites where alteration or mineralization was observed. The samples were analyzed in the USGS Mineral Resources Program's laboratory in Denver, Colo. Samples were reduced to 1/2-cm fragments in a jaw crusher, and the crushed samples were ground to minus-100 mesh and subsequently chemically analyzed for major and trace elements using the techniques of Taylor and Theodorakos, 2002.

Soil, Soil-Water, and Vegetation Samples

Soil- and vegetation-sampling sites were selected on the basis of the following landscape and soil criteria: (1) sites possessed soils developed over a known lithologic unit; (2) sites were low in peat; (3) if permafrost was present, depth to frost layer was more than 30 cm; (4) if over Quaternary deposits, sites were composed of colluvium and not alluvium (above and out of the flood plain); and (5) soils were mature to the point of having recognizable horizontal development. Sites were also selected based on the following ecosystem and vegetation criteria: (1) sites were from open alpine tundra, and (2) sites were as well drained as possible for the area (generally with a southerly or ridge-crest exposure). Commonly, the sites were well drained if they lacked permafrost. At least one soil-collection pit was dug at each sampling site. Where available, samples of A1, B, and C soil

horizon material (about 1 kg) were collected by using a spade, mixed separately with a plastic spatula and bucket, and placed in paper USGS soil-sample bags. In the laboratory, the soils were mechanically disaggregated, sieved to 10 mesh (2 mm), and the minus-10 mesh material was further ground to pass a 100 mesh (150 µm) sieve. The ground material was then used for all total chemical analyses.

Ceramic-cup lysimeters were used in the collection of all soil pore water (figs. 5, 6). Before leaving for the field, the lysimeter tubes, cups, and O-rings were mounted and flushed (allowed to "drip") as follows: five volumes (about 60 mL) with 1 volume percent reagent-grade HCl, two volumes with 1 volume percent ultrapure HCl, and four volumes with nanopure water. The apparatus was then disassembled, soaked in 1 volume percent ultrapure HCl, and rinsed with three flushes of laboratory nanopure water. In the field, before use, the assembled apparatus was again flushed 10 times with laboratory distilled-deionized (DI) water. Teflon tape was used to ensure a proper seal for the ceramic cup and vacuum hose. The complete apparatus was packed in plastic for transport to the field.

In the field, areas of small wet-weather drainages were probed to locate soils with a depth of at least 35–40 cm. (The depth was commonly dictated by the presence of permafrost or bedrock.) Once a sampling site was located, a steel soil corer was used to make a hole in the soil with the proper diameter for insertion of the apparatus (ceramic cup and tube extension). The apparatus was always inserted into the C soilhorizon.

At sites with what appeared to be minimal soil water, the ceramic cups were coated with silica flour. (Cups were moistened with DI-distilled water so that the flour would stick to the cup.) At sites with adequate soil water, the cups were not coated. The silica flour was supposed to ensure a tighter union of the cup with the soil.[1] Once inserted, a vacuum of 700–900 mbars was applied to the apparatus, and the cups and tubes were allowed to fill for about 20 minutes, extracted and emptied, and then reinserted into the soil to obtain the final sample. The tubes normally took from 2–4 hours to fill completely (50-60 mL).

Once filled, the apparatus was removed from the soil, and the soil water was filtered through a 0.45-µm filter and then transferred to three bottles: 30 mL (cation determination; several drops of ultrapure HCl were added to ensure that no elements were adsorbed onto the bottle wall), 15 mL (anion determination), and 15 mL with no headspace (pH and conductivity determinations measured the same day back at camp). The bottles for cation and anion determinations were analyzed in the USGS Mineral Resources Program's laboratory in Denver, Colo.

Figure 5. Photograph of the apparatus used for collecting soil water. After the application of a vacuum, soil water moves from soil through a ceramic cup into plexiglass tubing. Note level of water column in clear plexiglass tube.

Figure 6. Photograph of a U.S. Geological Survey scientist at sampling site 06AK06LG. Elevation is approximately 4,000 ft. (21,219 m).

[1] By ICP-MS analysis, the flour was found to be essentially devoid of trace elements.

Soil-water major ions and trace elements were analyzed by using the same techniques as for stream water. In addition, major-cation and trace-element contents in the soil water were also determined by ICP-AES (Briggs and Meier, 2002).

Samples of the terminal 10–15 cm of the stems with leaves of grayleaf willow (*Salix glauca* L.) were clipped with stainless-steel shears and placed in Hubco polypropylene/cotton sample bags. These samples usually were collected in close proximity to the soil-collection pit. The willow leaf was separated from the stem, and the leaf material was retained for analysis. One to four individual plants were collected at each site and composited. In the laboratory, the leaf material was dried at ambient temperature, ground in a Wiley mill to pass a 2-mm screen, and an aliquot ashed at 500°C. The ash was digested and analyzed by the methods of Crock and others (1999) and Taggart (2002).

The analytical methodologies used for stream-water, stream-sediment, soil, soil-water, bedrock, and vegetation samples are listed in table 2, and current detection limits are listed in table 3. All analyses were performed in the USGS Mineral Resources Program's laboratory in Denver, Colo. Details of the protocols used were described by Crock and others (1999) and Taggart (2002).

Table 2. Analytical methodology for stream-sediment, stream-water, soil, soil-water, vegetation and bedrock samples.

[Methods follow those detailed in Crock and others (1999) and Taggart (2002)]

Parameter	Method
Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Fe, Ga, Gd, Ge, Ho, K, La, Li, Lu, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pr, Rb, Sb, Sc, Se, SiO^2, Sm, SO_4^{2-}, Sr, Ta, Tb, Th, Ti, Tl, Tm, U, V, Y, and Zn content	ICP-MS[1]
Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Sb, Sc, Sr, Th, Ti, Tl, U, V, Y, and Zn content	ICP-MS[2]
Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, SO_4^{2-}, Sr, Ti, V, and Zn content	ICP-AES[3]
Au, Pd, and Pt content	FA-ICPMS[4]
Hg content	CV-AAS[5]
Ash yield	GRAV[6]

[1] Inductively coupled plasma mass spectrometry on aqueous samples.
[2] Inductively coupled plasma mass spectrometry on solid samples with acid digestion.
[3] Inductively coupled plasma atomic-emission spectrometry on aqueous samples.
[4] Flame-assay inductively coupled plasma mass spectrometry.
[5] Cold-vapor atomic-absorption spectroscopy.
[6] Gravimetric analysis.

Table 3. Detection limits of analytical methods used in chemical analyses for stream-sediments, stream-waters, soil, soil-water, vegetation, and bedrock samples, Tangle Lakes District, Alaska.

[**Abbreviations:** ICP-MS, inductively coupled plasma-mass spectrometry; ICP-AES, inductively coupled plasma-atomic emission spectrometry; µg/L, microgram per liter; ppm, part per million; ppb, part per billion; –, not analyzed by method]

Parameter	ICP-MS detection limits		ICP-AES	Cold-vapor-atomic-absorption spectroscopy	Flame-assay-inductively coupled plasma-mass spectrometry
	Aqueous phase samples (µg/L)	Solid phase sediment, soil, vegetation and bedrock samples (ppm)	Aqueous phase samples (µg/L)	Solid phase sediment, soil, vegetation and bedrock samples (ppm)	Solid phase sediment, soil, vegetation and bedrock samples (ppb)
Au	–	–	–	–	1
Pd	–	–	–	–	1
Pt	–	–	–	–	.5
Hg	–	–	–	0.02	–
Ag	0.3	< 0.01	–	–	–
Al	2	50	10	–	–
As	1	1	50	–	–
B	–	–	5	–	–
Ba	.2	.2	1	–	–
Be	.05	.03	10	–	–
Bi	.2	.06	–	–	–

Table 3. Detection limits of analytical methods used in chemical analyses for stream-sediments, stream-waters, soil, soil-water, vegetation, and bedrock samples, Tangle Lakes District, Alaska.—Continued

[**Abbreviations:** ICP-MS, inductively coupled plasma-mass spectrometry; ICP-AES, inductively coupled plasma-atomic emission spectrometry; µg/L, microgram per liter; ppm, part per million; ppb, part per billion; –, not analyzed by method]

Parameter	ICP-MS detection limits		ICP-AES	Cold-vapor-atomic-absorption spectroscopy	Flame-assay-inductively coupled plasma-mass spectrometry
	Aqueous phase samples (µg/L)	Solid phase sediment, soil, vegetation and bedrock samples (ppm)	Aqueous phase samples (µg/L)	Solid phase sediment, soil, vegetation and bedrock samples (ppm)	Solid phase sediment, soil, vegetation and bedrock samples (ppb)
Ca	.2	100	100	–	–
Cd	.02	.007	5	–	–
Ce	.01	.1	–	–	–
Co	.02	.03	10	–	–
Cr	1	.5	10	–	–
Cs	.02	.003	–	–	–
Cu	.5	2	10	–	–
Dy	.005	–	–	–	–
Er	.005	–	–	–	–
Eu	.005	–	–	–	–
Fe	50	50	20	–	–
Ga	.05	.02	–	–	–
Gd	.005	–	–	–	–
Ge	.05	–	–	–	–
Ho	.005	–	–	–	–
K	.03	20	100	–	–
La	.01	.05	–	–	–
Li	.9	.3	1	–	–
Lu	.1	–	–	–	–
Mg	.01	6	100	–	–
Mn	.2	.7	10	–	–
Mo	2	.05	20	–	–
Na	< .5	20	100	–	–
Nb	.2	.1	–	–	–
Nd	.01	–	–	–	–
Ni	.4	.3	10	–	–
P	.01	5	100	–	–
Pb	.05	.4	50	–	–
Pr	.01	–	–	–	–
Rb	.01	.01	–	–	–
Sb	.3	.04	50	–	–
Sc	.6	.04	–	–	–
Se	1	–	–	–	–
SiO_2	[1].2	–	100	–	–
Sm	.01	–	–	–	–
SO_4^{2-}	[1]2	–	–	–	–
Sr	.5	.8	1	–	–
Ta	.02	–	–	–	–
Tb	.005	–	–	–	–
Th	.2	.1	–	–	–
Ti	.5	40	50	–	–
Tl	.1	.08	–	–	–
Tm	.005	–	–	–	–
U	.1	.02	–	–	–
V	.5	.2	10	–	–
W	.5	–	–	–	–
Y	.01	.05	–	–	–
Yb	.005	–	–	–	–
Zn	.5	3	10	–	–
Zr	.2	–	–	–	–

Data

The analytic major-, minor-, and trace-element data for surface waters, stream sediments, soils, soil waters, and grayleaf willow (*Salix glauca* L.) presented in the tables is intended as a data release with minimal interpretation. The following describes the contents of these tables.

General Analytical and Site Information

Analytical methodologies, current detection limits, and map numbers (fig. 3) that correspond to the field number for the type of samples collected at each site are listed in tables 1, 2, and 3, respectively, and major-, minor, and trace-element data for the various sample types are listed in tables 4 through 15. All site descriptions, elevation, and location information in these tables are from the field notes and presented without alteration or unit conversion.

Table 4. Map, laboratory, and field numbers, site latitude and longitude, field parameters and discharge for surface-water sampling sites, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. **Abbreviations:** µS/cm, microsiemens per centimeter; ºN, degrees North; ºC, degrees Celsius; ft³.s, cubic foot per second; –, no data]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Date collected	Field parameter			Discharge (ft³/s)
						Conductivity (µS/cm)	pH	Temperature (°C)	
MH1	C-285462	06AK01	63.32227	-146.04453	06-21-06	224	7.81	9.0	1.0
MH2	C-285463	06AK02	63.30497	-146.01581	06-21-06	38	7.10	3.0	3.9
MH3	C-285464	06AK03	63.30404	-146.04607	06-21-06	63	7.56	3.0	7.6
MH4	C-285465	06AK04	63.30370	-146.04990	06-21-06	125	7.56	4.0	20
MH5	C-285466	06AK05	63.30473	-146.05590	06-21-06	258	7.13	4.5	19
MH6	C-285467	06AK06	63.29038	-146.04857	06-21-06	129	7.45	4.5	15
MH7	C-285468	06AK07	63.24325	-146.06044	06-22-06	151	8.09	3.0	.31
MH7	C-285469	06AK07B	63.24325	-146.06044	06-22-06	151	8.09	3.0	.31
MH8	C-285470	06AK08	63.24343	-146.06023	06-22-06	159	7.91	2.5	.02
MH9	C-285471	06AK09	63.23375	-146.07518	06-22-06	26	7.44	4.5	.30
MH10	C-285472	06AK10	63.23109	-146.02482	06-22-06	45	7.72	6.0	.76
MH11	C-285473	06AK11	63.25372	-146.17209	06-22-06	33	7.61	5.0	1.8
MH12	C-285474	06AK12	63.26160	-146.19040	06-22-06	47	7.46	6.0	2.5
MH13	C-285475	06AK13	63.21561	-145.96478	06-23-06	69	7.91	5.5	.40
MH14	C-285476	06AK14	63.06788	-145.77942	06-23-06	25	6.77	3.0	.001
MH15	C-285479	06AK15	63.20863	-145.94130	06-24-06	70	7.74	4.0	.68
MH16	C-285480	06AK16	63.23763	-146.12909	06-24-06	18	7.16	2.0	.29
MH17	C-285481	06AK17	63.27634	-146.27193	06-25-06	37	7.43	4.5	.37
MH18	C-285482	06AK18	63.28515	-146.32445	06-25-06	20	7.43	5.5	.81
MH19	C-285483	06AK19	63.31868	-146.32762	06-25-06	54	7.85	1.0	1.2
MH20	C-285484	06AK20	63.22520	-145.93295	06-25-06	91	8.04	5.0	.44
MH20	C-285485	06AK20B	63.22520	-145.93295	06-25-06	91	8.04	5.0	.44
MH21	C-285559	06AK06LG	63.07365	-145.74760	06-20-06	–	–	–	[1].04
MH22	C-285560	06AK07LG	63.09626	-145.75070	06-20-06	77	7.10	9.7	.28
MH23	C-285561	06AK08LG	63.22570	-146.05507	06-22-06	67	7.60	6.9	[1]0.01–0.02
MH24	C-285562	06AK09LG	63.22648	-146.18576	06-22-06	8	7.15	4.7	10.20
MH25	C-285563	06AK10LG	63.05607	-145.87636	06-23-06	92	7.90	2.6	.28
MH26	C-285564	06AK11LG	63.22106	-145.91483	06-24-06	102	8.04	3.1	.30
MH27	C-285565	06AK12LG	63.27527	-146.27946	06-25-06	44	7.59	6.9	4.70
MH28	C-285566	06AK13LG	63.27890	-146.31895	06-25-06	36	7.38	9.1	2.01
MH29	C-285567	06AK14LG	63.33512	-146.33614	06-25-06	106	8.14	3.5	[1]10
MH30	C-285568	06AK15LG	63.29633	-146.30942	06-25-06	43	7.53	4.5	.96

[1] Discharge estimated.

Stream Water Chemistry

Map numbers, field numbers, site latitude and longitude, field parameters (conductivity, pH, temperature), and discharge for surface-water-sampling sites are listed in table 4. ICP-MS analyses of filtered and unfiltered, acidified surface-water samples are listed in table 5 (at back of report). One 0.1 µm filtered blank showed elevated levels of Al, Ba, Ca, Ce, Co, Cu, Dy, Gd, K, La, Li, Na, Nd, Ni, Sc, SO_4, Sr, Ta, Y, and Zn over raw water samples indicating that contamination was introduced during processing or analysis. Consequently, the 0.1 µm data must be viewed with caution. Contents of major anions (F^-, Cl^-, NO_3^-, SO_4^{2-}) in filtered, unacidified samples are listed in table 6 (at back of report); alkalinity, expressed as $CaCl_2$, is listed separately in table 7 (at back of report), whether the alkalinity was measured on a filtered or unfiltered sample.

Sediment Chemistry and Mineralogy

Map numbers, field numbers, site latitude and longitude, location descriptions, sample-collection methods, analytical methods, and chemical analyses of stream sediment are listed in table 8 (at back of report). Mineralogy of panned concentrates is described in table 9 (at back of report).

Soils and Soil Water

Analytical data for soil samples reported on a dry-weight basis are listed in table 10 (at back of report). ICP-MS, ICP-AES, and IC analyses of soil water are listed in tables 11, 12, and 13 (at back of report), respectively. ICP-MS is the preferred method for trace-element analysis because of the lower detection limits for most of these elements, whereas ICP-AES has been the preferred analytical method for major cations. Recently, the detection limits of ICP-MS for major cations have decreased, and so ICP-AES has now largely been supplanted by ICP-MS for the determination of major cations. Here, we have included the data for major- and trace-element contents in soil water by both ICP-MS and ICP-AES.

Vegetation

Analytical data for vegetation samples on a dry-weight basis are listed in table 14 (at back of report). Dry-weight determinations are considered more biologically relevant and are the most common method of measuring elemental contents in plants. Conversion to an ash-weight basis can be made using the formula: $C_a = (C_d/A) \times 100$, where C_a is the ash-weight element concentration, C_d is the dry-weight element concentration, and A is the percent ash in the sample.

Bedrock

Analytical data for bedrock samples are listed in table 15 (at back of report).

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Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Ag (µg/L)	Al (µg/L)	As (µg/L)	Ba (µg/L)	Be (µg/L)	Bi (µg/L)	Ca (mg/L)	Cd (µg/L)
0.1 µm filter, acidifed														
MH1	C-285462	06AK01-.1FA	0.1FA	63.32227	-146.04453	06-21-06	<3	<2	1	35.3	<0.05	< 0.2	30.6	<0.02
MH2	C-285463	06AK02-.1FA	0.1FA	63.30497	-146.01581	06-21-06	<3	<2	<1	.23	<.05	< .2	5.92	<.02
MH3	C-285464	06AK03-.1FA	0.1FA	63.30404	-146.04607	06-21-06	<3	27.9	<1	.37	<.05	< .2	11.1	<.02
MH4	C-285465	06AK04-.1FA	0.1FA	63.30370	-146.04990	06-21-06	<3	33.3	2	5.97	<.05	< .2	20.2	.06
MH5	C-285466	06AK05-.1FA	0.1FA	63.30473	-146.05590	06-21-06	<3	52.2	3	9.29	<.05	< .2	24.2	.1
MH6	C-285467	06AK06-.1FA	0.1FA	63.29038	-146.04857	06-21-06	<3	29.6	2	8.18	<.05	< .2	20.9	.06
MH7	C-285468	06AK07-.1FA	0.1FA	63.24325	-146.06044	06-22-06	<3	<2	91.5	1.04	<.05	< .2	9.06	<.02
	C-285469	06AK07-.1FA repl.	0.1FA	63.24325	-146.06044	06-22-06	<3	<2	94.7	1.02	<.05	< .2	9.43	<.02
MH8	C-285470	06AK08-.1FA	0.1FA	63.24343	-146.06023	06-22-06	<3	<2	86.9	1.34	<.05	.38	8.9	<.02
MH9	C-285471	06AK09-.1FA	0.1FA	63.23375	-146.07518	06-22-06	<3	20.1	<1	1.9	<.05	< .2	1.5	<.02
MH10	C-285472	06AK10-.1FA	0.1FA	63.23109	-146.02482	06-22-06	<3	10	1	2.1	<.05	< .2	1.92	<.02
MH11	C-285473	06AK11-.1FA	0.1FA	63.25372	-146.17209	06-22-06	<3	19.8	<1	1.62	<.05	< .2	1.56	<.02
MH12	C-285474	06AK12-.1FA	0.1FA	63.26160	-146.19040	06-22-06	<3	11.6	<1	2.42	<.05	< .2	1.89	<.02
MH13	C-285475	06AK13-.1FA	0.1FA	63.21561	-145.96478	06-23-06	<3	3.2	<1	1.41	<.05	< .2	.96	<.02
MH14	C-285476	06AK14-.1FA	0.1FA	63.06788	-145.77942	06-23-06	<3	170	<1	4.53	<.05	< .2	2.31	<.02
MH15	C-285479	06AK15-.1FA	0.1FA	63.20863	-145.94130	06-24-06	<3	<2	<1	<.2	<.05	< .2	<.2	<.02
MH16	C-285480	06AK16-.1FA	0.1FA	63.23763	-146.12909	06-24-06	<3	25	<1	1.78	<.05	< .2	1.31	<.02
MH17	C-285481	06AK17-.1FA	0.1FA	63.27634	-146.27193	06-25-06	<3	6.8	<1	4.1	<.05	< .2	3.17	<.02
MH18	C-285482	06AK18-.1FA	0.1FA	63.28515	-146.32445	06-25-06	<3	29.8	1	8.73	<.05	< .2	2.47	<.02
MH19	C-285483	06AK19-.1FA	0.1FA	63.31868	-146.32762	06-25-06	<3	4.8	28.9	10.3	<.05	< .2	8.98	<.02
MH20	C-285484	06AK20-.1FA	0.1FA	63.22520	-145.93295	06-25-06	<3	3.2	2	4.61	<.05	< .2	3.36	<.02
	C-285485	06AK20-.1FA repl.	0.1FA	63.22520	-145.93295	06-25-06	<3	3.2	2	4.66	<.05	< .2	3.32	<.02
	C-285477	Blank-ocala-.1FA	0.1FA	–	–	06-24-10	<3	13.6	<1	2.04	<.05	< .2	1.89	<.02
	C-285478	Blank-rich-.1FA	0.1FA	–	–	06-24-10	<3	<2	<1	<0.2	<.05	.4	<.2	<.02

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
						0.1 µm filter, acidifed								
MH1	C-285462	06AK01-.1FA	0.1FA	63.32227	-146.04453	06-21-06	< 0.01	<0.02	<1	< 0.02	< 0.5	< 0.005	< 0.005	0.006
MH2	C-285463	06AK02-.1FA	0.1FA	63.30497	-146.01581	06-21-06	< .01	<.02	<1	< .02	< .5	< .005	< .005	< .005
MH3	C-285464	06AK03-.1FA	0.1FA	63.30404	-146.04607	06-21-06	< .01	<.02	<1	< .02	< .5	< .005	< .005	< .005
MH4	C-285465	06AK04-.1FA	0.1FA	63.30370	-146.04990	06-21-06	.18	1.85	<1	< .02	17.3	.095	.074	.02
MH5	C-285466	06AK05-.1FA	0.1FA	63.30473	-146.05590	06-21-06	.25	2.32	<1	< .02	24.4	.15	.1	.03
MH6	C-285467	06AK06-.1FA	0.1FA	63.29038	-146.04857	06-21-06	.09	1.3	<1	< .02	9.5	.058	.04	.01
MH7	C-285468	06AK07-.1FA	0.1FA	63.24325	-146.06044	06-22-06	< .01	<.02	3.1	1.28	.55	< .005	< .005	< .005
	C-285469	06AK07-.1FA repl.	0.1FA	63.24325	-146.06044	06-22-06	< .01	<.02	3.1	1.27	.63	< .005	< .005	< .005
MH8	C-285470	06AK08-.1FA	0.1FA	63.24343	-146.06023	06-22-06	< .01	<.02	2.4	1.33	.55	< .005	< .005	< .005
MH9	C-285471	06AK09-.1FA	0.1FA	63.23375	-146.07518	06-22-06	.03	.07	<1	.07	1.8	.008	.005	< .005
MH10	C-285472	06AK10-.1FA	0.1FA	63.23109	-146.02482	06-22-06	.01	.03	<1	.38	2.2	.005	< .005	< .005
MH11	C-285473	06AK11-.1FA	0.1FA	63.25372	-146.17209	06-22-06	.03	.02	<1	< .02	1.4	.006	.007	< .005
MH12	C-285474	06AK12-.1FA	0.1FA	63.26160	-146.19040	06-22-06	.02	.02	<1	.02	1.2	< .005	< .005	< .005
MH13	C-285475	06AK13-.1FA	0.1FA	63.21561	-145.96478	06-23-06	< .01	<.02	<1	< .02	1	< .005	< .005	< .005
MH14	C-285476	06AK14-.1FA	0.1FA	63.06788	-145.77942	06-23-06	.15	.07	<1	< .02	4.6	.02	.01	.007
MH15	C-285479	06AK15-.1FA	0.1FA	63.20863	-145.94130	06-24-06	< .01	<.02	<1	< .02	< .5	< .005	< .005	< .005
MH16	C-285480	06AK16-.1FA	0.1FA	63.23763	-146.12909	06-24-06	.03	.02	<1	< .02	.95	.009	.006	< .005
MH17	C-285481	06AK17-.1FA	0.1FA	63.27634	-146.27193	06-25-06	.01	.07	<1	< .02	1.4	< .005	< .005	< .005
MH18	C-285482	06AK18-.1FA	0.1FA	63.28515	-146.32445	06-25-06	.05	.02	<1	.09	1	.01	.01	.005
MH19	C-285483	06AK19-.1FA	0.1FA	63.31868	-146.32762	06-25-06	< .01	.09	1.3	.08	.59	< .005	< .005	< .005
MH20	C-285484	06AK20-.1FA	0.1FA	63.22520	-145.93295	06-25-06	< .01	.05	<1	< .02	2.3	< .005	< .005	< .005
	C-285485	06AK20-.1FA repl.	0.1FA	63.22520	-145.93295	06-25-06	< .01	.04	<1	< .02	2.4	< .005	< .005	< .005
	C-285477	Blank-ocala-.1FA	0.1FA	–	–	06-24-10	.02	.04	<1	< .02	2	.005	< .005	< .005
	C-285478	Blank-rich-.1FA	0.1FA	–	–	06-24-10	< .01	<.02	<1	< .02	< .5	< .005	< .005	< .005

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Fe	Ga	Gd	Ge	Ho	K (mg/L)	La	Li
0.1 µm filter, acidifed														
MH1	C-285462	06AK01-.1FA	0.1FA	63.32227	-146.04453	06-21-06	<50	< 0.05	< 0.005	< 0.05	< 0.005	0.61	0.01	2.5
MH2	C-285463	06AK02-.1FA	0.1FA	63.30497	-146.01581	06-21-06	<50	< .05	< .005	< .05	< .005	.06	< .01	< .1
MH3	C-285464	06AK03-.1FA	0.1FA	63.30404	-146.04607	06-21-06	<50	< .05	< .005	< .05	< .005	.3	< .01	.1
MH4	C-285465	06AK04-.1FA	0.1FA	63.30370	-146.04990	06-21-06	<50	< .05	.093	< .05	.02	.2	.2	< .1
MH5	C-285466	06AK05-.1FA	0.1FA	63.30473	-146.05590	06-21-06	<50	< .05	.15	< .05	.03	.2	.29	.3
MH6	C-285467	06AK06-.1FA	0.1FA	63.29038	-146.04857	06-21-06	<50	< .05	.052	< .05	.01	.2	.09	< .1
MH7	C-285468	06AK07-.1FA	0.1FA	63.24325	-146.06044	06-22-06	<50	< .05	< .005	< .05	< .005	.85	< .01	13.2
	C-285469	06AK07-.1FA repl.	0.1FA	63.24325	-146.06044	06-22-06	<50	< .05	< .005	.05	< .005	.89	< .01	13.9
MH8	C-285470	06AK08-.1FA	0.1FA	63.24343	-146.06023	06-22-06	<50	< .05	< .005	< .05	< .005	.82	< .01	12.6
MH9	C-285471	06AK09-.1FA	0.1FA	63.23375	-146.07518	06-22-06	<50	< .05	.008	< .05	< .005	.1	.02	2
MH10	C-285472	06AK10-.1FA	0.1FA	63.23109	-146.02482	06-22-06	<50	< .05	.009	< .05	< .005	.2	.01	2.3
MH11	C-285473	06AK11-.1FA	0.1FA	63.25372	-146.17209	06-22-06	<50	< .05	.009	< .05	< .005	.07	.02	.2
MH12	C-285474	06AK12-.1FA	0.1FA	63.26160	-146.19040	06-22-06	<50	< .05	.006	< .05	< .005	.1	.01	< .1
MH13	C-285475	06AK13-.1FA	0.1FA	63.21561	-145.96478	06-23-06	<50	< .05	< .005	< .05	< .005	.1	< .01	.6
MH14	C-285476	06AK14-.1FA	0.1FA	63.06788	-145.77942	06-23-06	72	< .05	.02	< .05	.005	.47	.08	< .1
MH15	C-285479	06AK15-.1FA	0.1FA	63.20863	-145.94130	06-24-06	<50	< .05	< .005	< .05	< .005	<.03	< .01	< .1
MH16	C-285480	06AK16-.1FA	0.1FA	63.23763	-146.12909	06-24-06	<50	< .05	.009	< .05	< .005	.06	.03	< .1
MH17	C-285481	06AK17-.1FA	0.1FA	63.27634	-146.27193	06-25-06	105	< .05	.005	< .05	< .005	.04	< .01	< .1
MH18	C-285482	06AK18-.1FA	0.1FA	63.28515	-146.32445	06-25-06	<50	< .05	.01	< .05	< .005	.2	.06	.4
MH19	C-285483	06AK19-.1FA	0.1FA	63.31868	-146.32762	06-25-06	<50	< .05	< .005	.05	< .005	.5	< .01	1.8
MH20	C-285484	06AK20-.1FA	0.1FA	63.22520	-145.93295	06-25-06	<50	< .05	.005	< .05	< .005	.32	< .01	1.8
	C-285485	06AK20-.1FA repl.	0.1FA	63.22520	-145.93295	06-25-06	<50	< .05	< .005	< .05	< .005	.32	.01	2.4
	C-285477	Blank-ocala-.1FA	0.1FA	–	–	06-24-10	<50	< .05	.006	< .05	< .005	.1	.02	1.2
	C-285478	Blank-rich-.1FA	0.1FA	–	–	06-24-10	<50	< .05	< .005	< .05	< .005	<.03	< .01	< .1

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Lu	Mg (mg/L)	Mn	Mo	Na	Nb	Nd	Ni
0.1 µm filter, acidifed														
MH1	C-285462	06AK01-.1FA	0.1FA	63.32227	-146.04453	06-21-06	< 0.1	11.2	< 0.2	< 2	11	< 0.2	< 0.01	< 0.4
MH2	C-285463	06AK02-.1FA	0.1FA	63.30497	-146.01581	06-21-06	< .1	.91	< .2	< 2	1.05	< .2	< .01	< .4
MH3	C-285464	06AK03-.1FA	0.1FA	63.30404	-146.04607	06-21-06	< .1	2.47	1.7	< 2	2.03	< .2	< .01	2.6
MH4	C-285465	06AK04-.1FA	0.1FA	63.30370	-146.04990	06-21-06	< .1	6.47	29.5	< 2	2.43	< .2	.24	8.7
MH5	C-285466	06AK05-.1FA	0.1FA	63.30473	-146.05590	06-21-06	< .1	8.14	39.6	< 2	2.72	< .2	.35	10.6
MH6	C-285467	06AK06-.1FA	0.1FA	63.29038	-146.04857	06-21-06	< .1	6.4	22.5	< 2	2.54	< .2	.12	7.8
MH7	C-285468	06AK07-.1FA	0.1FA	63.24325	-146.06044	06-22-06	< .1	26.1	< .2	< 2	.91	< .2	< .01	1.7
	C-285469	06AK07-.1FA repl.	0.1FA	63.24325	-146.06044	06-22-06	< .1	27.4	< .2	< 2	.95	< .2	< .01	1.7
MH8	C-285470	06AK08-.1FA	0.1FA	63.24343	-146.06023	06-22-06	< .1	26.4	< .2	< 2	1.05	.93	< .01	1.9
MH9	C-285471	06AK09-.1FA	0.1FA	63.23375	-146.07518	06-22-06	< .1	3.67	3.1	< 2	.47	.49	.03	5.3
MH10	C-285472	06AK10-.1FA	0.1FA	63.23109	-146.02482	06-22-06	< .1	6.69	< .2	< 2	.57	.27	.02	8.8
MH11	C-285473	06AK11-.1FA	0.1FA	63.25372	-146.17209	06-22-06	< .1	4.86	.3	< 2	.33	< .2	.04	4.6
MH12	C-285474	06AK12-.1FA	0.1FA	63.26160	-146.19040	06-22-06	< .1	7.54	< .2	< 2	.34	< .2	.02	5.1
MH13	C-285475	06AK13-.1FA	0.1FA	63.21561	-145.96478	06-23-06	< .1	12.6	< .2	< 2	.25	< .2	< .01	4.3
MH14	C-285476	06AK14-.1FA	0.1FA	63.06788	-145.77942	06-23-06	< .1	3.85	1	< 2	.33	< .2	.1	9.5
MH15	C-285479	06AK15-.1FA	0.1FA	63.20863	-145.94130	06-24-06	< .1	< .01	< .2	< 2	<.01	.35	< .01	< .4
MH16	C-285480	06AK16-.1FA	0.1FA	63.23763	-146.12909	06-24-06	< .1	1.93	.3	< 2	.34	.26	.04	1.4
MH17	C-285481	06AK17-.1FA	0.1FA	63.27634	-146.27193	06-25-06	< .1	4.43	3.5	< 2	.5	< .2	.01	9.5
MH18	C-285482	06AK18-.1FA	0.1FA	63.28515	-146.32445	06-25-06	< .1	1.36	< .2	< 2	.66	< .2	.06	2.9
MH19	C-285483	06AK19-.1FA	0.1FA	63.31868	-146.32762	06-25-06	< .1	3.6	1.6	< 2	1.49	< .2	< .01	.6
MH20	C-285484	06AK20-.1FA	0.1FA	63.22520	-145.93295	06-25-06	< .1	14.4	< .2	< 2	.35	< .2	.02	9.2
	C-285485	06AK20-.1FA repl.	0.1FA	63.22520	-145.93295	06-25-06	< .1	14.5	< .2	< 2	.36	< .2	.01	9
	C-285477	Blank-ocala-.1FA	0.1FA	–	–	06-24-10	< .1	12.8	.2	< 2	.45	< .2	.02	8
	C-285478	Blank-rich-.1FA	0.1FA	–	–	06-24-10	< .1	< .01	< .2	< 2	<.01	.79	< .01	< .4

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	P	Pb	Pr	Rb	Sb	Sc	Se	SiO_2
						0.1 µm filter, acidifed								
MH1	C-285462	06AK01-.1FA	0.1FA	63.32227	-146.04453	06-21-06	< 0.01	<0.05	< 0.01	0.28	0.39	< 0.6	1.2	3.6
MH2	C-285463	06AK02-.1FA	0.1FA	63.30497	-146.01581	06-21-06	< .01	<.05	< .01	.06	<.3	< .6	< 1	5.9
MH3	C-285464	06AK03-.1FA	0.1FA	63.30404	-146.04607	06-21-06	.03	<.05	< .01	.14	<.3	< .6	< 1	6.2
MH4	C-285465	06AK04-.1FA	0.1FA	63.30370	-146.04990	06-21-06	< .01	<.05	.05	.24	<.3	.6	< 1	6.8
MH5	C-285466	06AK05-.1FA	0.1FA	63.30473	-146.05590	06-21-06	< .01	<.05	.07	.32	<.3	.7	< 1	7
MH6	C-285467	06AK06-.1FA	0.1FA	63.29038	-146.04857	06-21-06	< .01	<.05	.02	.26	<.3	.6	< 1	7
MH7	C-285468	06AK07-.1FA	0.1FA	63.24325	-146.06044	06-22-06	.02	<.05	< .01	3.43	3.14	2.9	< 1	29.1
	C-285469	06AK07-.1FA repl.	0.1FA	63.24325	-146.06044	06-22-06	< .01	<.05	< .01	3.52	2.94	2.8	< 1	30.4
MH8	C-285470	06AK08-.1FA	0.1FA	63.24343	-146.06023	06-22-06	< .01	<.05	< .01	3.36	3.56	2.7	< 1	27.3
MH9	C-285471	06AK09-.1FA	0.1FA	63.23375	-146.07518	06-22-06	< .01	<.05	< .01	.3	.49	.7	< 1	7.7
MH10	C-285472	06AK10-.1FA	0.1FA	63.23109	-146.02482	06-22-06	< .01	<.05	< .01	.59	.31	1.1	< 1	11.6
MH11	C-285473	06AK11-.1FA	0.1FA	63.25372	-146.17209	06-22-06	< .01	<.05	< .01	.11	<.3	.8	< 1	8.4
MH12	C-285474	06AK12-.1FA	0.1FA	63.26160	-146.19040	06-22-06	< .01	<.05	< .01	.18	<.3	1	< 1	10.7
MH13	C-285475	06AK13-.1FA	0.1FA	63.21561	-145.96478	06-23-06	< .01	<.05	< .01	.24	<.3	.6	< 1	6.8
MH14	C-285476	06AK14-.1FA	0.1FA	63.06788	-145.77942	06-23-06	< .01	<.05	.02	.66	<.3	1	< 1	10.7
MH15	C-285479	06AK15-.1FA	0.1FA	63.20863	-145.94130	06-24-06	< .01	<.05	< .01	< .01	.38	< .6	< 1	< .2
MH16	C-285480	06AK16-.1FA	0.1FA	63.23763	-146.12909	06-24-06	< .01	<.05	.01	.13	<.3	.7	< 1	6.9
MH17	C-285481	06AK17-.1FA	0.1FA	63.27634	-146.27193	06-25-06	< .01	<.05	< .01	.1	<.3	1.1	< 1	11.1
MH18	C-285482	06AK18-.1FA	0.1FA	63.28515	-146.32445	06-25-06	< .01	<.05	.02	.26	<.3	.7	< 1	7.5
MH19	C-285483	06AK19-.1FA	0.1FA	63.31868	-146.32762	06-25-06	.01	<.05	< .01	1.86	<.3	.8	< 1	7.8
MH20	C-285484	06AK20-.1FA	0.1FA	63.22520	-145.93295	06-25-06	< .01	<.05	< .01	.7	<.3	1	< 1	10.2
	C-285485	06AK20-.1FA repl.	0.1FA	63.22520	-145.93295	06-25-06	< .01	<.05	< .01	.71	<.3	.9	< 1	10.3
	C-285477	Blank-ocala-.1FA	0.1FA	–	–	06-24-10	< .01	<.05	< .01	.16	<.3	1.1	< 1	11.9
	C-285478	Blank-rich-.1FA	0.1FA	–	–	06-24-10	< .01	<.05	< .01	.01	1.16	< .6	< 1	< .2

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Sm	SO_4	Sr	Ta	Tb	Th	Ti	Tl
0.1 µm filter, acidifed														
MH1	C-285462	06AK01-.1FA	0.1FA	63.32227	-146.04453	06-21-06	< 0.01	43	161	< 0.02	< 0.005	< 0.2	0.6	< 0.1
MH2	C-285463	06AK02-.1FA	0.1FA	63.30497	-146.01581	06-21-06	< .01	7	2.66	< .02	< .005	< .2	< .5	<.1
MH3	C-285464	06AK03-.1FA	0.1FA	63.30404	-146.04607	06-21-06	< .01	22	5.9	< .02	< .005	< .2	.6	<.1
MH4	C-285465	06AK04-.1FA	0.1FA	63.30370	-146.04990	06-21-06	.04	41	55	< .02	.01	< .2	.6	<.1
MH5	C-285466	06AK05-.1FA	0.1FA	63.30473	-146.05590	06-21-06	.07	47	80.1	< .02	.02	< .2	.6	<.1
MH6	C-285467	06AK06-.1FA	0.1FA	63.29038	-146.04857	06-21-06	.02	42	58.3	< .02	.008	< .2	.6	<.1
MH7	C-285468	06AK07-.1FA	0.1FA	63.24325	-146.06044	06-22-06	< .01	8	38.5	.07	< .005	< .2	< .5	<.1
	C-285469	06AK07-.1FA repl.	0.1FA	63.24325	-146.06044	06-22-06	< .01	9	39.4	.04	< .005	< .2	< .5	<.1
MH8	C-285470	06AK08-.1FA	0.1FA	63.24343	-146.06023	06-22-06	< .01	8	38.7	.2	< .005	< .2	< .5	<.1
MH9	C-285471	06AK09-.1FA	0.1FA	63.23375	-146.07518	06-22-06	< .01	< 2	5.6	.07	< .005	< .2	.6	<.1
MH10	C-285472	06AK10-.1FA	0.1FA	63.23109	-146.02482	06-22-06	< .01	< 2	7.09	.04	< .005	< .2	< .5	<.1
MH11	C-285473	06AK11-.1FA	0.1FA	63.25372	-146.17209	06-22-06	< .01	< 2	5.54	.03	< .005	< .2	< .5	<.1
MH12	C-285474	06AK12-.1FA	0.1FA	63.26160	-146.19040	06-22-06	< .01	< 2	6.29	.02	< .005	< .2	< .5	<.1
MH13	C-285475	06AK13-.1FA	0.1FA	63.21561	-145.96478	06-23-06	< .01	< 2	4.65	< .02	< .005	< .2	< .5	<.1
MH14	C-285476	06AK14-.1FA	0.1FA	63.06788	-145.77942	06-23-06	.02	< 2	9.03	.02	< .005	< .2	1.3	<.1
MH15	C-285479	06AK15-.1FA	0.1FA	63.20863	-145.94130	06-24-06	< .01	< 2	< .5	.04	< .005	< .2	< .5	<.1
MH16	C-285480	06AK16-.1FA	0.1FA	63.23763	-146.12909	06-24-06	< .01	< 2	6.28	.03	< .005	< .2	< .5	<.1
MH17	C-285481	06AK17-.1FA	0.1FA	63.27634	-146.27193	06-25-06	< .01	< 2	9.56	.02	< .005	< .2	< .5	<.1
MH18	C-285482	06AK18-.1FA	0.1FA	63.28515	-146.32445	06-25-06	.02	< 2	12.6	< .02	< .005	< .2	< .5	<.1
MH19	C-285483	06AK19-.1FA	0.1FA	63.31868	-146.32762	06-25-06	< .01	7	48.4	< .02	< .005	< .2	< .5	<.1
MH20	C-285484	06AK20-.1FA	0.1FA	63.22520	-145.93295	06-25-06	< .01	6	11.6	< .02	< .005	< .2	< .5	<.1
	C-285485	06AK20-.1FA repl.	0.1FA	63.22520	-145.93295	06-25-06	< .01	6	11.4	< .02	< .005	< .2	< .5	<.1
	C-285477	Blank-ocala-.1FA	0.1FA	–	–	06-24-10	< .01	3	7.61	.03	< .005	< .2	< .5	<.1
	C-285478	Blank-rich-.1FA	0.1FA	–	–	06-24-10	< .01	< 2	< .5	.1	< .005	< .2	< .5	<.1

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Tm	U	V	W	Y	Yb	Zn	Zr
0.1 µm filter, acidifed														
MH1	C-285462	06AK01-.1FA	0.1FA	63.32227	-146.04453	06-21-06	< 0.005	0.35	0.7	< 0.5	0.04	< 0.005	1.2	< 0.2
MH2	C-285463	06AK02-.1FA	0.1FA	63.30497	-146.01581	06-21-06	< .005	< .1	<.5	< .5	< .01	< .005	1	< .2
MH3	C-285464	06AK03-.1FA	0.1FA	63.30404	-146.04607	06-21-06	< .005	< .1	.5	< .5	< .01	< .005	125	.3
MH4	C-285465	06AK04-.1FA	0.1FA	63.30370	-146.04990	06-21-06	.008	< .1	.6	< .5	.84	.04	6.7	< .2
MH5	C-285466	06AK05-.1FA	0.1FA	63.30473	-146.05590	06-21-06	.01	< .1	.6	< .5	1.24	.07	8.3	< .2
MH6	C-285467	06AK06-.1FA	0.1FA	63.29038	-146.04857	06-21-06	< .005	< .1	.6	< .5	.43	.02	4.9	< .2
MH7	C-285468	06AK07-.1FA	0.1FA	63.24325	-146.06044	06-22-06	< .005	< .1	.5	< .5	< .01	< .005	.7	< .2
	C-285469	06AK07-.1FA repl.	0.1FA	63.24325	-146.06044	06-22-06	< .005	< .1	.5	< .5	< .01	< .005	.5	< .2
MH8	C-285470	06AK08-.1FA	0.1FA	63.24343	-146.06023	06-22-06	< .005	< .1	<.5	1.07	< .01	< .005	.7	< .2
MH9	C-285471	06AK09-.1FA	0.1FA	63.23375	-146.07518	06-22-06	< .005	< .1	<.5	< .5	.04	.005	.6	< .2
MH10	C-285472	06AK10-.1FA	0.1FA	63.23109	-146.02482	06-22-06	< .005	< .1	<.5	< .5	.03	< .005	<.5	< .2
MH11	C-285473	06AK11-.1FA	0.1FA	63.25372	-146.17209	06-22-06	< .005	< .1	<.5	< .5	.05	< .005	.6	< .2
MH12	C-285474	06AK12-.1FA	0.1FA	63.26160	-146.19040	06-22-06	< .005	< .1	<.5	< .5	.02	< .005	.7	< .2
MH13	C-285475	06AK13-.1FA	0.1FA	63.21561	-145.96478	06-23-06	< .005	< .1	<.5	< .5	< .01	< .005	1	< .2
MH14	C-285476	06AK14-.1FA	0.1FA	63.06788	-145.77942	06-23-06	< .005	< .1	<.5	< .5	.12	.01	3.4	.2
MH15	C-285479	06AK15-.1FA	0.1FA	63.20863	-145.94130	06-24-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH16	C-285480	06AK16-.1FA	0.1FA	63.23763	-146.12909	06-24-06	< .005	< .1	<.5	< .5	.06	.005	.8	< .2
MH17	C-285481	06AK17-.1FA	0.1FA	63.27634	-146.27193	06-25-06	< .005	< .1	<.5	< .5	.03	.005	.7	< .2
MH18	C-285482	06AK18-.1FA	0.1FA	63.28515	-146.32445	06-25-06	< .005	< .1	<.5	< .5	.09	.009	.6	< .2
MH19	C-285483	06AK19-.1FA	0.1FA	63.31868	-146.32762	06-25-06	< .005	.56	<.5	< .5	.01	< .005	.8	< .2
MH20	C-285484	06AK20-.1FA	0.1FA	63.22520	-145.93295	06-25-06	< .005	< .1	<.5	< .5	.03	< .005	<.5	< .2
	C-285485	06AK20-.1FA repl.	0.1FA	63.22520	-145.93295	06-25-06	< .005	< .1	<.5	< .5	.02	< .005	.7	< .2
	C-285477	Blank-ocala-.1FA	0.1FA	–	–	06-24-10	< .005	< .1	<.5	< .5	.03	< .005	.8	< .2
	C-285478	Blank-rich-.1FA	0.1FA	–	–	06-24-10	< .005	< .1	<.5	.88	< .01	< .005	.5	< .2

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Ag	Al	As	Ba	Be	Bi	Ca	Cd
0.45 µm filter, acidifed														
MH1	C-285486	06AK01-.45FA	0.45FA	63.32227	-146.04453	06-21-06	< 3	13	1	36.2	< 0.05	0.3	30.4	< 0.02
MH2	C-285487	06AK02-.45FA	0.45FA	63.30497	-146.01581	06-21-06	< 3	< 2	< 1	< .2	< .05	< .2	5.73	< .02
MH3	C-285488	06AK03-.45FA	0.45FA	63.30404	-146.04607	06-21-06	< 3	< 2	< 1	.28	< .05	< .2	10.5	< .02
MH4	C-285489	06AK04-.45FA	0.45FA	63.30370	-146.04990	06-21-06	< 3	28.2	1	5.81	< .05	< .2	17.9	.08
MH5	C-285490	06AK05-.45FA	0.45FA	63.30473	-146.05590	06-21-06	< 3	58.9	3	9.13	< .05	< .2	21.6	.1
MH6	C-285491	06AK06-.45FA	0.45FA	63.29038	-146.04857	06-21-06	< 3	30.2	1	7.7	< .05	< .2	18.2	.06
MH7	C-285492	06AK07-.45FA	0.45FA	63.24325	-146.06044	06-22-06	< 3	< 2	78.1	.96	< .05	< .2	7.22	< .02
	C-285493	06AK07-.45FA repl.	0.45FA	63.24325	-146.06044	06-22-06	< 3	< 2	79.4	.9	< .05	< .2	7.23	< .02
MH8	C-285494	06AK08-.45FA	0.45FA	63.24343	-146.06023	06-22-06	< 3	< 2	76.8	1.33	< .05	.29	7.58	< .02
MH9	C-285495	06AK09-.45FA	0.45FA	63.23375	-146.07518	06-22-06	< 3	22.1	< 1	1.74	< .05	< .2	1.31	< .02
MH10	C-285496	06AK10-.45FA	0.45FA	63.23109	-146.02482	06-22-06	< 3	10.7	< 1	1.92	< .05	< .2	1.66	< .02
MH11	C-285497	06AK11-.45FA	0.45FA	63.25372	-146.17209	06-22-06	< 3	20.3	< 1	1.52	< .05	< .2	1.37	< .02
MH12	C-285498	06AK12-.45FA	0.45FA	63.26160	-146.19040	06-22-06	< 3	11.6	< 1	2.23	< .05	< .2	1.58	< .02
MH13	C-285499	06AK13-.45FA	0.45FA	63.21561	-145.96478	06-23-06	< 3	3.8	< 1	1.36	< .05	< .2	.88	< .02
MH14	C-285500	06AK14-.45FA	0.45FA	63.06788	-145.77942	06-23-06	< 3	161	< 1	4.74	< .05	< .2	2.08	< .02
MH15	C-285503	06AK15-.45FA	0.45FA	63.20863	-145.94130	06-24-06	< 3	12.4	< 1	1.88	< .05	< .2	1.57	< .02
MH16	C-285504	06AK16-.45FA	0.45FA	63.23763	-146.12909	06-24-06	< 3	25.7	< 1	1.68	< .05	< .2	1.27	< .02
MH17	C-285505	06AK17-.45FA	0.45FA	63.27634	-146.27193	06-25-06	< 3	6.6	< 1	3.89	< .05	< .2	2.91	< .02
MH18	C-285506	06AK18-.45FA	0.45FA	63.28515	-146.32445	06-25-06	< 3	26.9	< 1	8.11	< .05	< .2	2.23	< .02
MH19	C-285507	06AK19-.45FA	0.45FA	63.31868	-146.32762	06-25-06	< 3	5	26.1	9.69	< .05	< .2	8.04	< .02
MH20	C-285508	06AK20-.45FA	0.45FA	63.22520	-145.93295	06-25-06	< 3	3.3	2	4.39	< .05	< .2	2.9	< .02
	C-285509	06AK20-.45FA repl.	0.45FA	63.22520	-145.93295	06-25-06	< 3	3.5	2	4.5	< .05	< .2	2.92	< .02
MH21	C-285510	06AK06LG-.45FA	0.45FA	63.07365	-145.74760	06-20-06	< 3	10.3	< 1	2.41	< .05	< .2	1.21	< .02
MH22	C-285511	06AK07LG-.45FA	0.45FA	63.09626	-145.75070	06-20-06	< 3	4.3	< 1	5.3	< .05	< .2	4.51	< .02
MH23	C-285512	06AK08LG-.45FA	0.45FA	63.22570	-146.05507	06-22-06	< 3	3.5	< 1	2.34	< .05	< .2	1.49	< .02
MH24	C-285513	06AK09LG-.45FA	0.45FA	63.22648	-146.18576	06-22-06	< 3	4.7	< 1	2.24	< .05	< .2	1.26	< .02
MH25	C-285514	06AK10LG-.45FA	0.45FA	63.05607	-145.87636	06-23-06	< 3	24.6	< 1	11	< .05	< .2	13.4	< .02
MH26	C-285515	06AK11LG-.45FA	0.45FA	63.22106	-145.91483	06-24-06	< 3	14	2	2.88	< .05	< .2	1.8	< .02
MH27	C-285516	06AK12LG-.45FA	0.45FA	63.27527	-146.27946	06-25-06	< 3	7.5	< 1	4.83	< .05	< .2	2.24	< .02
MH28	C-285517	06AK13LG-.45FA	0.45FA	63.27890	-146.31895	06-25-06	< 3	9.7	1	6.04	< .05	< .2	3.37	< .02
MH29	C-285518	06AK14LG-.45FA	0.45FA	63.33512	-146.33614	06-25-06	< 3	2	< 1	32.2	< .05	< .2	19	< .02
MH30	C-285519	06AK15LG-.45FA	0.45FA	63.29633	-146.30942	06-25-06	< 3	2.1	< 1	10.8	< .05	< .2	6.67	< .02
	C-285501	Blank-ocala.45FA	0.45FA	–	–	06-24-10	< 3	< 2	< 1	< .2	< .05	< .2	< .2	< .02
	C-285502	Blank-rich-.45FA	0.45FA	–	–	06-24-10	< 3	< 2	< 1	< .2	< .05	.32	< .2	< .02

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
0.45 µm filter, acidifed														
MH1	C-285486	06AK01-.45FA	0.45FA	63.32227	-146.04453	06-21-06	< 0.01	<0.02	<1	< 0.02	0.54	< 0.005	< 0.005	0.005
MH2	C-285487	06AK02-.45FA	0.45FA	63.30497	-146.01581	06-21-06	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005
MH3	C-285488	06AK03-.45FA	0.45FA	63.30404	-146.04607	06-21-06	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005
MH4	C-285489	06AK04-.45FA	0.45FA	63.30370	-146.04990	06-21-06	.16	1.74	<1	< .02	16.6	.091	.056	.01
MH5	C-285490	06AK05-.45FA	0.45FA	63.30473	-146.05590	06-21-06	.34	2.24	<1	< .02	26.9	.23	.15	.04
MH6	C-285491	06AK06-.45FA	0.45FA	63.29038	-146.04857	06-21-06	.11	1.22	<1	< .02	10	.076	.05	.01
MH7	C-285492	06AK07-.45FA	0.45FA	63.24325	-146.06044	06-22-06	< .01	<.02	2.4	1.19	.5	< .005	< .005	< .005
	C-285493	06AK07-.45FA repl.	0.45FA	63.24325	-146.06044	06-22-06	< .01	<.02	2.4	1.18	.51	< .005	< .005	< .005
MH8	C-285494	06AK08-.45FA	0.45FA	63.24343	-146.06023	06-22-06	< .01	<.02	2	1.29	.6	< .005	< .005	< .005
MH9	C-285495	06AK09-.45FA	0.45FA	63.23375	-146.07518	06-22-06	.03	.06	<1	.07	1.6	.009	< .005	< .005
MH10	C-285496	06AK10-.45FA	0.45FA	63.23109	-146.02482	06-22-06	.01	.03	<1	.36	2	.006	< .005	< .005
MH11	C-285497	06AK11-.45FA	0.45FA	63.25372	-146.17209	06-22-06	.03	.02	<1	< .02	1.3	.008	< .005	< .005
MH12	C-285498	06AK12-.45FA	0.45FA	63.26160	-146.19040	06-22-06	.02	.02	<1	< .02	1.2	< .005	< .005	< .005
MH13	C-285499	06AK13-.45FA	0.45FA	63.21561	-145.96478	06-23-06	< .01	<.02	<1	< .02	.98	< .005	< .005	< .005
MH14	C-285500	06AK14-.45FA	0.45FA	63.06788	-145.77942	06-23-06	.15	.07	<1	< .02	4.5	.02	.01	.005
MH15	C-285503	06AK15-.45FA	0.45FA	63.20863	-145.94130	06-24-06	.02	.04	<1	< .02	1.7	< .005	< .005	< .005
MH16	C-285504	06AK16-.45FA	0.45FA	63.23763	-146.12909	06-24-06	.04	.02	<1	< .02	.99	.01	.005	< .005
MH17	C-285505	06AK17-.45FA	0.45FA	63.27634	-146.27193	06-25-06	< .01	.07	<1	< .02	1.5	< .005	< .005	< .005
MH18	C-285506	06AK18-.45FA	0.45FA	63.28515	-146.32445	06-25-06	.05	.02	<1	.08	1.1	.01	.008	< .005
MH19	C-285507	06AK19-.45FA	0.45FA	63.31868	-146.32762	06-25-06	< .01	.08	1.1	.08	.54	< .005	< .005	< .005
MH20	C-285508	06AK20-.45FA	0.45FA	63.22520	-145.93295	06-25-06	< .01	.04	<1	< .02	2.1	< .005	< .005	< .005
	C-285509	06AK20-.45FA repl.	0.45FA	63.22520	-145.93295	06-25-06	< .01	.04	<1	< .02	2.1	< .005	< .005	< .005
MH21	C-285510	06AK06LG-.45FA	0.45FA	63.07365	-145.74760	06-20-06	.01	.04	<1	< .02	.76	< .005	< .005	< .005
MH22	C-285511	06AK07LG-.45FA	0.45FA	63.09626	-145.75070	06-20-06	< .01	.04	<1	< .02	.73	< .005	< .005	< .005
MH23	C-285512	06AK08LG-.45FA	0.45FA	63.22570	-146.05507	06-22-06	< .01	.04	<1	< .02	1.4	< .005	< .005	< .005
MH24	C-285513	06AK09LG-.45FA	0.45FA	63.22648	-146.18576	06-22-06	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005
MH25	C-285514	06AK10LG-.45FA	0.45FA	63.05607	-145.87636	06-23-06	.04	.02	<1	< .02	1.7	.009	.006	.005
MH26	C-285515	06AK11LG-.45FA	0.45FA	63.22106	-145.91483	06-24-06	.02	.04	<1	< .02	1.8	.005	< .005	< .005
MH27	C-285516	06AK12LG-.45FA	0.45FA	63.27527	-146.27946	06-25-06	.01	.05	<1	< .02	1.3	< .005	< .005	< .005
MH28	C-285517	06AK13LG-.45FA	0.45FA	63.27890	-146.31895	06-25-06	.02	.2	<1	.02	1.1	< .005	< .005	< .005
MH29	C-285518	06AK14LG-.45FA	0.45FA	63.33512	-146.33614	06-25-06	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005
MH30	C-285519	06AK15LG-.45FA	0.45FA	63.29633	-146.30942	06-25-06	< .01	<.02	<1	< .02	.6	< .005	< .005	< .005
	C-285501	Blank-ocala.45FA	0.45FA	–	–	06-24-10	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005
	C-285502	Blank-rich-.45FA	0.45FA	–	–	06-24-10	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Fe	Ga	Gd	Ge	Ho	K	La	Li
0.45 µm filter, acidifed														
MH1	C-285486	06AK01-.45FA	0.45FA	63.32227	-146.04453	06-21-06	<50	< 0.05	< 0.005	< 0.05	< 0.005	0.63	0.01	2.2
MH2	C-285487	06AK02-.45FA	0.45FA	63.30497	-146.01581	06-21-06	<50	< .05	< .005	< .05	< .005	.07	< .01	< .1
MH3	C-285488	06AK03-.45FA	0.45FA	63.30404	-146.04607	06-21-06	<50	< .05	< .005	< .05	< .005	.1	< .01	< .1
MH4	C-285489	06AK04-.45FA	0.45FA	63.30370	-146.04990	06-21-06	<50	< .05	.084	< .05	.02	.2	.19	< .1
MH5	C-285490	06AK05-.45FA	0.45FA	63.30473	-146.05590	06-21-06	<50	< .05	.21	< .05	.05	.2	.36	< .1
MH6	C-285491	06AK06-.45FA	0.45FA	63.29038	-146.04857	06-21-06	<50	< .05	.065	< .05	.02	.2	.11	< .1
MH7	C-285492	06AK07-.45FA	0.45FA	63.24325	-146.06044	06-22-06	<50	< .05	< .005	< .05	< .005	.69	< .01	10.4
	C-285493	06AK07-.45FA repl.	0.45FA	63.24325	-146.06044	06-22-06	<50	< .05	< .005	< .05	< .005	.69	< .01	10.5
MH8	C-285494	06AK08-.45FA	0.45FA	63.24343	-146.06023	06-22-06	<50	< .05	< .005	< .05	< .005	.71	< .01	9.8
MH9	C-285495	06AK09-.45FA	0.45FA	63.23375	-146.07518	06-22-06	<50	< .05	.008	< .05	< .005	.1	.02	.4
MH10	C-285496	06AK10-.45FA	0.45FA	63.23109	-146.02482	06-22-06	<50	< .05	< .005	< .05	< .005	.1	.01	.8
MH11	C-285497	06AK11-.45FA	0.45FA	63.25372	-146.17209	06-22-06	<50	< .05	.01	< .05	< .005	.06	.02	< .1
MH12	C-285498	06AK12-.45FA	0.45FA	63.26160	-146.19040	06-22-06	<50	< .05	.005	< .05	< .005	.1	.01	< .1
MH13	C-285499	06AK13-.45FA	0.45FA	63.21561	-145.96478	06-23-06	<50	< .05	< .005	< .05	< .005	.1	< .01	< .1
MH14	C-285500	06AK14-.45FA	0.45FA	63.06788	-145.77942	06-23-06	58	< .05	.03	< .05	.005	.41	.08	< .1
MH15	C-285503	06AK15-.45FA	0.45FA	63.20863	-145.94130	06-24-06	<50	< .05	.006	< .05	< .005	.08	.01	< .1
MH16	C-285504	06AK16-.45FA	0.45FA	63.23763	-146.12909	06-24-06	<50	< .05	.008	< .05	< .005	.07	.03	< .1
MH17	C-285505	06AK17-.45FA	0.45FA	63.27634	-146.27193	06-25-06	94	< .05	.005	< .05	< .005	.04	< .01	< .1
MH18	C-285506	06AK18-.45FA	0.45FA	63.28515	-146.32445	06-25-06	<50	< .05	.01	< .05	< .005	.2	.05	< .1
MH19	C-285507	06AK19-.45FA	0.45FA	63.31868	-146.32762	06-25-06	<50	< .05	< .005	.05	< .005	.46	< .01	.5
MH20	C-285508	06AK20-.45FA	0.45FA	63.22520	-145.93295	06-25-06	<50	< .05	< .005	< .05	< .005	.3	< .01	.4
	C-285509	06AK20-.45FA repl.	0.45FA	63.22520	-145.93295	06-25-06	<50	< .05	.007	< .05	< .005	.3	< .01	< .1
MH21	C-285510	06AK06LG-.45FA	0.45FA	63.07365	-145.74760	06-20-06	91	< .05	< .005	< .05	< .005	.06	< .01	< .1
MH22	C-285511	06AK07LG-.45FA	0.45FA	63.09626	-145.75070	06-20-06	89	< .05	< .005	< .05	< .005	.1	< .01	< .1
MH23	C-285512	06AK08LG-.45FA	0.45FA	63.22570	-146.05507	06-22-06	<50	< .05	< .005	< .05	< .005	.1	< .01	.6
MH24	C-285513	06AK09LG-.45FA	0.45FA	63.22648	-146.18576	06-22-06	<50	< .05	< .005	< .05	< .005	.07	< .01	.4
MH25	C-285514	06AK10LG-.45FA	0.45FA	63.05607	-145.87636	06-23-06	<50	< .05	.01	< .05	< .005	.52	.03	.4
MH26	C-285515	06AK11LG-.45FA	0.45FA	63.22106	-145.91483	06-24-06	<50	< .05	.005	< .05	< .005	.2	.02	3.5
MH27	C-285516	06AK12LG-.45FA	0.45FA	63.27527	-146.27946	06-25-06	80	< .05	< .005	< .05	< .005	.09	.01	.9
MH28	C-285517	06AK13LG-.45FA	0.45FA	63.27890	-146.31895	06-25-06	138	< .05	< .005	< .05	< .005	.2	.01	1.3
MH29	C-285518	06AK14LG-.45FA	0.45FA	63.33512	-146.33614	06-25-06	<50	< .05	< .005	< .05	< .005	.3	< .01	.4
MH30	C-285519	06AK15LG-.45FA	0.45FA	63.29633	-146.30942	06-25-06	<50	< .05	< .005	< .05	< .005	.56	.02	.7
	C-285501	Blank-ocala.45FA	0.45FA	–	–	06-24-10	<50	< .05	< .005	< .05	< .005	<.03	< .01	< .1
	C-285502	Blank-rich-.45FA	0.45FA	–	–	06-24-10	<50	< .05	< .005	< .05	< .005	<.03	< .01	< .1

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni
0.45 µm filter, acidifed														
MH1	C-285486	06AK01-.45FA	0.45FA	63.32227	-146.04453	06-21-06	< 0.1	10.7	<0.2	< 2	10.4	0.87	< 0.01	<0.4
MH2	C-285487	06AK02-.45FA	0.45FA	63.30497	-146.01581	06-21-06	< .1	.86	<.2	< 2	.98	.28	< .01	<.4
MH3	C-285488	06AK03-.45FA	0.45FA	63.30404	-146.04607	06-21-06	< .1	2.24	1.6	< 2	1.63	< .2	< .01	2.4
MH4	C-285489	06AK04-.45FA	0.45FA	63.30370	-146.04990	06-21-06	< .1	5.42	27.9	< 2	2.06	< .2	.21	8.1
MH5	C-285490	06AK05-.45FA	0.45FA	63.30473	-146.05590	06-21-06	< .1	7.03	36.7	< 2	2.35	< .2	.45	10.1
MH6	C-285491	06AK06-.45FA	0.45FA	63.29038	-146.04857	06-21-06	< .1	5.38	20.4	< 2	2.14	< .2	.15	7.2
MH7	C-285492	06AK07-.45FA	0.45FA	63.24325	-146.06044	06-22-06	< .1	20.9	<.2	< 2	.73	< .2	< .01	1.3
	C-285493	06AK07-.45FA repl.	0.45FA	63.24325	-146.06044	06-22-06	< .1	21.2	<.2	< 2	.73	< .2	< .01	1.3
MH8	C-285494	06AK08-.45FA	0.45FA	63.24343	-146.06023	06-22-06	< .1	22.2	<.2	< 2	.89	.74	< .01	1.6
MH9	C-285495	06AK09-.45FA	0.45FA	63.23375	-146.07518	06-22-06	< .1	3.25	2.9	< 2	.41	.3	.03	4.8
MH10	C-285496	06AK10-.45FA	0.45FA	63.23109	-146.02482	06-22-06	< .1	5.66	<.2	< 2	.48	< .2	.02	7.7
MH11	C-285497	06AK11-.45FA	0.45FA	63.25372	-146.17209	06-22-06	< .1	4.32	.2	< 2	.3	< .2	.03	4.2
MH12	C-285498	06AK12-.45FA	0.45FA	63.26160	-146.19040	06-22-06	< .1	6.34	<.2	< 2	.3	< .2	.02	4.4
MH13	C-285499	06AK13-.45FA	0.45FA	63.21561	-145.96478	06-23-06	< .1	11.8	<.2	< 2	.24	< .2	< .01	4
MH14	C-285500	06AK14-.45FA	0.45FA	63.06788	-145.77942	06-23-06	< .1	3.51	.9	< 2	.3	< .2	.11	8.6
MH15	C-285503	06AK15-.45FA	0.45FA	63.20863	-145.94130	06-24-06	< .1	10.8	<.2	< 2	.39	.36	.02	6.7
MH16	C-285504	06AK16-.45FA	0.45FA	63.23763	-146.12909	06-24-06	< .1	1.92	.3	< 2	.34	< .2	.04	1.3
MH17	C-285505	06AK17-.45FA	0.45FA	63.27634	-146.27193	06-25-06	< .1	4.19	3.2	< 2	.47	< .2	.02	8.8
MH18	C-285506	06AK18-.45FA	0.45FA	63.28515	-146.32445	06-25-06	< .1	1.25	<.2	< 2	.6	< .2	.07	2.7
MH19	C-285507	06AK19-.45FA	0.45FA	63.31868	-146.32762	06-25-06	< .1	3.23	1.5	< 2	1.34	< .2	< .01	.5
MH20	C-285508	06AK20-.45FA	0.45FA	63.22520	-145.93295	06-25-06	< .1	12.6	<.2	< 2	.32	< .2	.01	8
	C-285509	06AK20-.45FA repl.	0.45FA	63.22520	-145.93295	06-25-06	< .1	12.7	<.2	< 2	.32	< .2	.01	8.2
MH21	C-285510	06AK06LG-.45FA	0.45FA	63.07365	-145.74760	06-20-06	< .1	5.38	.6	< 2	.38	< .2	.01	4.5
MH22	C-285511	06AK07LG-.45FA	0.45FA	63.09626	-145.75070	06-20-06	< .1	10.2	2.9	< 2	1.14	< .2	< .01	4.1
MH23	C-285512	06AK08LG-.45FA	0.45FA	63.22570	-146.05507	06-22-06	< .1	10.7	1.6	< 2	.27	< .2	< .01	7.4
MH24	C-285513	06AK09LG-.45FA	0.45FA	63.22648	-146.18576	06-22-06	< .1	.23	.2	< 2	.35	< .2	.01	<.4
MH25	C-285514	06AK10LG-.45FA	0.45FA	63.05607	-145.87636	06-23-06	< .1	7.25	.7	< 2	1.19	< .2	.04	1.5
MH26	C-285515	06AK11LG-.45FA	0.45FA	63.22106	-145.91483	06-24-06	< .1	16.2	<.2	< 2	.91	< .2	.02	2.8
MH27	C-285516	06AK12LG-.45FA	0.45FA	63.27527	-146.27946	06-25-06	< .1	5.73	1.9	< 2	.76	< .2	.02	8.1
MH28	C-285517	06AK13LG-.45FA	0.45FA	63.27890	-146.31895	06-25-06	< .1	3.52	13.4	< 2	1.06	< .2	.01	5.6
MH29	C-285518	06AK14LG-.45FA	0.45FA	63.33512	-146.33614	06-25-06	< .1	4.5	.4	< 2	.99	< .2	< .01	<.4
MH30	C-285519	06AK15LG-.45FA	0.45FA	63.29633	-146.30942	06-25-06	< .1	1.21	<.2	< 2	1.09	< .2	.01	<.4
	C-285501	Blank-ocala.45FA	0.45FA	–	–	06-24-10	< .1	<.01	<.2	< 2	<.01	< .2	< .01	<.4
	C-285502	Blank-rich-.45FA	0.45FA	–	–	06-24-10	< .1	<.01	<.2	< 2	<.01	.67	< .01	<.4

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	P	Pb	Pr	Rb	Sb	Sc	Se	SiO_2
0.45 µm filter, acidifed														
MH1	C-285486	06AK01-.45FA	0.45FA	63.32227	-146.04453	06-21-06	< 0.01	<0.05	< 0.01	0.31	1.75	< 0.6	1.4	3.5
MH2	C-285487	06AK02-.45FA	0.45FA	63.30497	-146.01581	06-21-06	< .01	<.05	< .01	.07	.55	< .6	< 1	5.5
MH3	C-285488	06AK03-.45FA	0.45FA	63.30404	-146.04607	06-21-06	< .01	<.05	< .01	.13	.33	< .6	< 1	5.6
MH4	C-285489	06AK04-.45FA	0.45FA	63.30370	-146.04990	06-21-06	< .01	<.05	.04	.26	.42	.6	< 1	5.8
MH5	C-285490	06AK05-.45FA	0.45FA	63.30473	-146.05590	06-21-06	< .01	<.05	.09	.33	.54	.6	1	6.1
MH6	C-285491	06AK06-.45FA	0.45FA	63.29038	-146.04857	06-21-06	< .01	<.05	.03	.26	.39	< .6	< 1	6
MH7	C-285492	06AK07-.45FA	0.45FA	63.24325	-146.06044	06-22-06	< .01	<.05	< .01	3.05	2.56	2.1	< 1	23
	C-285493	06AK07-.45FA repl.	0.45FA	63.24325	-146.06044	06-22-06	< .01	<.05	< .01	3.03	2.56	2	< 1	23.3
MH8	C-285494	06AK08-.45FA	0.45FA	63.24343	-146.06023	06-22-06	< .01	<.05	< .01	3.11	3.34	2.1	< 1	22.9
MH9	C-285495	06AK09-.45FA	0.45FA	63.23375	-146.07518	06-22-06	< .01	<.05	< .01	.27	.48	.6	< 1	6.6
MH10	C-285496	06AK10-.45FA	0.45FA	63.23109	-146.02482	06-22-06	< .01	<.05	< .01	.53	.32	.8	< 1	9.9
MH11	C-285497	06AK11-.45FA	0.45FA	63.25372	-146.17209	06-22-06	< .01	<.05	< .01	.1	<.3	.6	< 1	7.2
MH12	C-285498	06AK12-.45FA	0.45FA	63.26160	-146.19040	06-22-06	< .01	<.05	< .01	.16	<.3	.8	< 1	8.9
MH13	C-285499	06AK13-.45FA	0.45FA	63.21561	-145.96478	06-23-06	< .01	<.05	< .01	.22	<.3	< .6	< 1	6.1
MH14	C-285500	06AK14-.45FA	0.45FA	63.06788	-145.77942	06-23-06	< .01	<.05	.03	.64	<.3	.8	< 1	9.6
MH15	C-285503	06AK15-.45FA	0.45FA	63.20863	-145.94130	06-24-06	< .01	<.05	< .01	.15	.5	.9	< 1	9.8
MH16	C-285504	06AK16-.45FA	0.45FA	63.23763	-146.12909	06-24-06	< .01	<.05	< .01	.12	<.3	< .6	< 1	6.5
MH17	C-285505	06AK17-.45FA	0.45FA	63.27634	-146.27193	06-25-06	< .01	<.05	< .01	.1	<.3	.8	< 1	10
MH18	C-285506	06AK18-.45FA	0.45FA	63.28515	-146.32445	06-25-06	< .01	<.05	.02	.25	<.3	< .6	< 1	6.5
MH19	C-285507	06AK19-.45FA	0.45FA	63.31868	-146.32762	06-25-06	.01	<.05	< .01	1.75	.3	< .6	< 1	6.7
MH20	C-285508	06AK20-.45FA	0.45FA	63.22520	-145.93295	06-25-06	< .01	<.05	< .01	.65	<.3	.7	< 1	8.9
	C-285509	06AK20-.45FA repl.	0.45FA	63.22520	-145.93295	06-25-06	< .01	11.4	< .01	.65	<.3	.7	< 1	8.8
MH21	C-285510	06AK06LG-.45FA	0.45FA	63.07365	-145.74760	06-20-06	< .01	<.05	< .01	.12	<.3	< .6	< 1	1.1
MH22	C-285511	06AK07LG-.45FA	0.45FA	63.09626	-145.75070	06-20-06	< .01	<.05	< .01	.13	<.3	.6	< 1	6.8
MH23	C-285512	06AK08LG-.45FA	0.45FA	63.22570	-146.05507	06-22-06	< .01	<.05	< .01	.27	.57	1.2	< 1	13.2
MH24	C-285513	06AK09LG-.45FA	0.45FA	63.22648	-146.18576	06-22-06	< .01	<.05	< .01	.09	<.3	< .6	< 1	3.1
MH25	C-285514	06AK10LG-.45FA	0.45FA	63.05607	-145.87636	06-23-06	< .01	<.05	< .01	.36	<.3	1	< 1	10.6
MH26	C-285515	06AK11LG-.45FA	0.45FA	63.22106	-145.91483	06-24-06	< .01	<.05	< .01	.29	<.3	< .6	< 1	5.6
MH27	C-285516	06AK12LG-.45FA	0.45FA	63.27527	-146.27946	06-25-06	< .01	<.05	< .01	.14	<.3	.9	< 1	9.1
MH28	C-285517	06AK13LG-.45FA	0.45FA	63.27890	-146.31895	06-25-06	< .01	<.05	< .01	.24	<.3	.6	< 1	7.1
MH29	C-285518	06AK14LG-.45FA	0.45FA	63.33512	-146.33614	06-25-06	< .01	<.05	< .01	.25	<.3	< .6	< 1	2.4
MH30	C-285519	06AK15LG-.45FA	0.45FA	63.29633	-146.30942	06-25-06	< .01	<.05	< .01	1.02	<.3	.6	< 1	6.5
	C-285501	Blank-ocala.45FA	0.45FA	–	–	06-24-10	< .01	<.05	< .01	< .01	<.3	< .6	< 1	< .2
	C-285502	Blank-rich-.45FA	0.45FA	–	–	06-24-10	< .01	<.05	< .01	< .01	1.12	< .6	< 1	< .2

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Sm	SO_4	Sr	Ta	Tb	Th	Ti	Tl
0.45 µm filter, acidifed														
MH1	C-285486	06AK01-.45FA	0.45FA	63.32227	-146.04453	06-21-06	< 0.01	46	166	0.08	< 0.005	< 0.2	0.7	<0.1
MH2	C-285487	06AK02-.45FA	0.45FA	63.30497	-146.01581	06-21-06	< .01	8	2.77	.03	< .005	< .2	< .5	<.1
MH3	C-285488	06AK03-.45FA	0.45FA	63.30404	-146.04607	06-21-06	< .01	23	5.89	.02	< .005	< .2	< .5	<.1
MH4	C-285489	06AK04-.45FA	0.45FA	63.30370	-146.04990	06-21-06	.05	40	55.3	< .02	.01	< .2	.5	<.1
MH5	C-285490	06AK05-.45FA	0.45FA	63.30473	-146.05590	06-21-06	.12	46	81	< .02	.03	< .2	.6	<.1
MH6	C-285491	06AK06-.45FA	0.45FA	63.29038	-146.04857	06-21-06	.04	40	60.2	< .02	.01	< .2	< .5	<.1
MH7	C-285492	06AK07-.45FA	0.45FA	63.24325	-146.06044	06-22-06	< .01	7	36.3	< .02	< .005	< .2	< .5	<.1
	C-285493	06AK07-.45FA repl.	0.45FA	63.24325	-146.06044	06-22-06	< .01	7	36.6	< .02	< .005	< .2	< .5	<.1
MH8	C-285494	06AK08-.45FA	0.45FA	63.24343	-146.06023	06-22-06	< .01	8	37.3	.06	< .005	< .2	< .5	<.1
MH9	C-285495	06AK09-.45FA	0.45FA	63.23375	-146.07518	06-22-06	< .01	< 2	5.52	.03	< .005	< .2	.5	<.1
MH10	C-285496	06AK10-.45FA	0.45FA	63.23109	-146.02482	06-22-06	< .01	< 2	6.64	< .02	< .005	< .2	< .5	<.1
MH11	C-285497	06AK11-.45FA	0.45FA	63.25372	-146.17209	06-22-06	< .01	< 2	5.38	< .02	< .005	< .2	< .5	<.1
MH12	C-285498	06AK12-.45FA	0.45FA	63.26160	-146.19040	06-22-06	< .01	< 2	5.96	< .02	< .005	< .2	< .5	<.1
MH13	C-285499	06AK13-.45FA	0.45FA	63.21561	-145.96478	06-23-06	< .01	3	4.7	< .02	< .005	< .2	< .5	<.1
MH14	C-285500	06AK14-.45FA	0.45FA	63.06788	-145.77942	06-23-06	.02	< 2	9.04	< .02	< .005	< .2	1.4	<.1
MH15	C-285503	06AK15-.45FA	0.45FA	63.20863	-145.94130	06-24-06	< .01	4	7.13	.03	< .005	< .2	< .5	<.1
MH16	C-285504	06AK16-.45FA	0.45FA	63.23763	-146.12909	06-24-06	.01	< 2	6.35	< .02	< .005	< .2	< .5	<.1
MH17	C-285505	06AK17-.45FA	0.45FA	63.27634	-146.27193	06-25-06	< .01	< 2	9.54	< .02	< .005	< .2	< .5	<.1
MH18	C-285506	06AK18-.45FA	0.45FA	63.28515	-146.32445	06-25-06	.01	< 2	12.1	< .02	< .005	< .2	< .5	<.1
MH19	C-285507	06AK19-.45FA	0.45FA	63.31868	-146.32762	06-25-06	< .01	7	47.8	< .02	< .005	< .2	< .5	<.1
MH20	C-285508	06AK20-.45FA	0.45FA	63.22520	-145.93295	06-25-06	< .01	6	11.3	< .02	< .005	< .2	< .5	<.1
	C-285509	06AK20-.45FA repl.	0.45FA	63.22520	-145.93295	06-25-06	< .01	6	11.3	< .02	< .005	< .2	< .5	<.1
MH21	C-285510	06AK06LG-.45FA	0.45FA	63.07365	-145.74760	06-20-06	< .01	< 2	6.9	< .02	< .005	< .2	< .5	<.1
MH22	C-285511	06AK07LG-.45FA	0.45FA	63.09626	-145.75070	06-20-06	< .01	2	17	< .02	< .005	< .2	< .5	<.1
MH23	C-285512	06AK08LG-.45FA	0.45FA	63.22570	-146.05507	06-22-06	< .01	2	7.09	.03	< .005	< .2	< .5	<.1
MH24	C-285513	06AK09LG-.45FA	0.45FA	63.22648	-146.18576	06-22-06	< .01	< 2	4.47	.02	< .005	< .2	< .5	<.1
MH25	C-285514	06AK10LG-.45FA	0.45FA	63.05607	-145.87636	06-23-06	.01	< 2	38.7	.02	< .005	< .2	.7	<.1
MH26	C-285515	06AK11LG-.45FA	0.45FA	63.22106	-145.91483	06-24-06	< .01	11	8	< .02	< .005	< .2	< .5	<.1
MH27	C-285516	06AK12LG-.45FA	0.45FA	63.27527	-146.27946	06-25-06	< .01	< 2	13.7	< .02	< .005	< .2	< .5	<.1
MH28	C-285517	06AK13LG-.45FA	0.45FA	63.27890	-146.31895	06-25-06	< .01	< 2	14.7	< .02	< .005	< .2	< .5	<.1
MH29	C-285518	06AK14LG-.45FA	0.45FA	63.33512	-146.33614	06-25-06	< .01	22	108	< .02	< .005	< .2	< .5	<.1
MH30	C-285519	06AK15LG-.45FA	0.45FA	63.29633	-146.30942	06-25-06	< .01	10	28.4	< .02	< .005	< .2	< .5	<.1
	C-285501	Blank-ocala.45FA	0.45FA	–	–	06-24-10	< .01	< 2	< .5	< .02	< .005	< .2	< .5	<.1
	C-285502	Blank-rich-.45FA	0.45FA	–	–	06-24-10	< .01	< 2	< .5	.05	< .005	< .2	< .5	<.1

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Tm	U	V	W	Y	Yb	Zn	Zr
0.45 µm filter, acidifed														
MH1	C-285486	06AK01-.45FA	0.45FA	63.32227	-146.04453	06-21-06	< 0.005	0.42	0.6	1.08	0.02	< 0.005	1.6	< 0.2
MH2	C-285487	06AK02-.45FA	0.45FA	63.30497	-146.01581	06-21-06	< .005	< .1	<.5	< .5	< .01	< .005	1.4	< .2
MH3	C-285488	06AK03-.45FA	0.45FA	63.30404	-146.04607	06-21-06	< .005	< .1	<.5	< .5	< .01	< .005	1.5	< .2
MH4	C-285489	06AK04-.45FA	0.45FA	63.30370	-146.04990	06-21-06	.008	< .1	.5	< .5	.77	.04	5.8	< .2
MH5	C-285490	06AK05-.45FA	0.45FA	63.30473	-146.05590	06-21-06	.02	.12	.5	< .5	1.6	.1	7.9	< .2
MH6	C-285491	06AK06-.45FA	0.45FA	63.29038	-146.04857	06-21-06	.006	< .1	<.5	< .5	.53	.04	4.8	< .2
MH7	C-285492	06AK07-.45FA	0.45FA	63.24325	-146.06044	06-22-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
	C-285493	06AK07-.45FA repl.	0.45FA	63.24325	-146.06044	06-22-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH8	C-285494	06AK08-.45FA	0.45FA	63.24343	-146.06023	06-22-06	< .005	.1	<.5	1.04	< .01	< .005	<.5	< .2
MH9	C-285495	06AK09-.45FA	0.45FA	63.23375	-146.07518	06-22-06	< .005	< .1	<.5	< .5	.03	.007	.6	< .2
MH10	C-285496	06AK10-.45FA	0.45FA	63.23109	-146.02482	06-22-06	< .005	< .1	<.5	< .5	.02	< .005	<.5	< .2
MH11	C-285497	06AK11-.45FA	0.45FA	63.25372	-146.17209	06-22-06	< .005	< .1	<.5	< .5	.03	.006	<.5	< .2
MH12	C-285498	06AK12-.45FA	0.45FA	63.26160	-146.19040	06-22-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH13	C-285499	06AK13-.45FA	0.45FA	63.21561	-145.96478	06-23-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH14	C-285500	06AK14-.45FA	0.45FA	63.06788	-145.77942	06-23-06	< .005	< .1	<.5	< .5	.11	.02	2	.2
MH15	C-285503	06AK15-.45FA	0.45FA	63.20863	-145.94130	06-24-06	< .005	< .1	<.5	< .5	.01	< .005	.5	< .2
MH16	C-285504	06AK16-.45FA	0.45FA	63.23763	-146.12909	06-24-06	< .005	< .1	<.5	< .5	.04	.006	.5	< .2
MH17	C-285505	06AK17-.45FA	0.45FA	63.27634	-146.27193	06-25-06	< .005	< .1	<.5	< .5	.01	< .005	<.5	< .2
MH18	C-285506	06AK18-.45FA	0.45FA	63.28515	-146.32445	06-25-06	< .005	< .1	<.5	< .5	.07	.009	.6	< .2
MH19	C-285507	06AK19-.45FA	0.45FA	63.31868	-146.32762	06-25-06	< .005	.6	<.5	< .5	< .01	< .005	.8	< .2
MH20	C-285508	06AK20-.45FA	0.45FA	63.22520	-145.93295	06-25-06	< .005	< .1	<.5	< .5	.01	< .005	<.5	< .2
	C-285509	06AK20-.45FA repl.	0.45FA	63.22520	-145.93295	06-25-06	< .005	< 0.1	<.5	< .5	.01	< .005	<.5	< .2
MH21	C-285510	06AK06LG-.45FA	0.45FA	63.07365	-145.74760	06-20-06	< .005	< .1	<.5	< .5	< .01	< .005	.8	< .2
MH22	C-285511	06AK07LG-.45FA	0.45FA	63.09626	-145.75070	06-20-06	< .005	< .1	<.5	< .5	< .01	< .005	.7	< .2
MH23	C-285512	06AK08LG-.45FA	0.45FA	63.22570	-146.05507	06-22-06	< .005	< .1	<.5	< .5	< .01	< .005	.7	< .2
MH24	C-285513	06AK09LG-.45FA	0.45FA	63.22648	-146.18576	06-22-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH25	C-285514	06AK10LG-.45FA	0.45FA	63.05607	-145.87636	06-23-06	< .005	< .1	.7	< .5	.05	.005	.5	< .2
MH26	C-285515	06AK11LG-.45FA	0.45FA	63.22106	-145.91483	06-24-06	< .005	< .1	<.5	< .5	.02	< .005	.5	< .2
MH27	C-285516	06AK12LG-.45FA	0.45FA	63.27527	-146.27946	06-25-06	< .005	< .1	<.5	< .5	.01	< .005	.7	< .2
MH28	C-285517	06AK13LG-.45FA	0.45FA	63.27890	-146.31895	06-25-06	< .005	< .1	<.5	< .5	.01	< .005	<.5	< .2
MH29	C-285518	06AK14LG-.45FA	0.45FA	63.33512	-146.33614	06-25-06	< .005	< .1	<.5	< .5	< .01	< .005	.5	< .2
MH30	C-285519	06AK15LG-.45FA	0.45FA	63.29633	-146.30942	06-25-06	< .005	< .1	<.5	< .5	.02	< .005	.6	< .2
	C-285501	Blank-ocala.45FA	0.45FA	–	–	06-24-10	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
	C-285502	Blank-rich-.45FA	0.45FA	–	–	06-24-10	< .005	< .1	<.5	.92	< .01	< .005	<.5	< .2

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Ag	Al	As	Ba	Be	Bi	Ca	Cd
						Unfiltered, acidifed								
MH1	C-285535	06AK01-RA	RA	63.32227	-146.04453	06-21-06	<3	23.3	1	35	<0.05	< 0.2	28.7	<0.02
MH2	C-285536	06AK02-RA	RA	63.30497	-146.01581	06-21-06	<3	17.3	<1	<.2	<.05	< .2	5.59	<.02
MH3	C-285537	06AK03-RA	RA	63.30404	-146.04607	06-21-06	<3	24.1	<1	.36	<.05	.32	10.3	<.02
MH4	C-285538	06AK04-RA	RA	63.30370	-146.04990	06-21-06	<3	127	2	5.99	<.05	< .2	17.9	.07
MH5	C-285539	06AK05-RA	RA	63.30473	-146.05590	06-21-06	<3	154	3.6	9.25	<.05	< .2	21.2	.1
MH6	C-285540	06AK06-RA	RA	63.29038	-146.04857	06-21-06	<3	105	2	7.91	<.05	< .2	18.4	.06
MH7	C-285541	06AK07-RA	RA	63.24325	-146.06044	06-22-06	<3	<2	81	.95	<.05	< .2	7.49	<.02
	C-285542	06AK07-RA repl.	RA	63.24325	-146.06044	06-22-06	<3	<2	82.4	.96	<.05	< .2	7.52	<.02
MH8	C-285543	06AK08-RA	RA	63.24343	-146.06023	06-22-06	<3	5.5	82.2	1.34	<.05	< .2	8.04	<.02
MH9	C-285544	06AK09-RA	RA	63.23375	-146.07518	06-22-06	<3	46.6	<1	2.11	<.05	< .2	1.4	<.02
MH10	C-285545	06AK10-RA	RA	63.23109	-146.02482	06-22-06	<3	15.9	1	2.03	<.05	.38	1.72	<.02
MH11	C-285546	06AK11-RA	RA	63.25372	-146.17209	06-22-06	<3	25.5	<1	1.6	<.05	< .2	1.41	<.02
MH12	C-285547	06AK12-RA	RA	63.26160	-146.19040	06-22-06	<3	15.2	<1	2.29	<.05	< .2	1.63	<.02
MH13	C-285548	06AK13-RA	RA	63.21561	-145.96478	06-23-06	<3	4.6	<1	1.46	<.05	< .2	.9	<.02
MH14	C-285549	06AK14-RA	RA	63.06788	-145.77942	06-23-06	<3	175	<1	4.83	<.05	< .2	2.13	<.02
MH15	C-285552	06AK15-RA	RA	63.20863	-145.94130	06-24-06	<3	14.3	<1	1.87	<.05	< .2	1.65	<.02
MH16	C-285553	06AK16-RA	RA	63.23763	-146.12909	06-24-06	<3	28.2	<1	1.86	<.05	< .2	1.31	<.02
MH17	C-285554	06AK17-RA	RA	63.27634	-146.27193	06-25-06	<3	11.4	<1	4.17	<.05	< .2	3.01	<.02
MH18	C-285555	06AK18-RA	RA	63.28515	-146.32445	06-25-06	<3	33.9	1	8.4	<.05	< .2	2.28	<.02
MH19	C-285556	06AK19-RA	RA	63.31868	-146.32762	06-25-06	<3	222	29.4	11.8	<.05	< .2	8.29	<.02
MH20	C-285557	06AK20-RA	RA	63.22520	-145.93295	06-25-06	<3	10.9	2	4.54	<.05	< .2	3.04	<.02
	C-285558	06AK20-RA repl.	RA	63.22520	-145.93295	06-25-06	<3	7.8	2	4.53	<.05	< .2	3.13	<.02
MH21	C-285559	06AK06LG-RA	RA	63.07365	-145.74760	06-20-06	<3	18.6	<1	2.55	<.05	< .2	1.3	<.02
MH22	C-285560	06AK07LG-RA	RA	63.09626	-145.75070	06-20-06	<3	5	<1	5.28	<.05	< .2	4.62	<.02
MH23	C-285561	06AK08LG-RA	RA	63.22570	-146.05507	06-22-06	<3	8	<1	2.34	<.05	< .2	1.52	<.02
MH24	C-285562	06AK09LG-RA	RA	63.22648	-146.18576	06-22-06	<3	55.1	<1	2.78	<.05	< .2	1.28	<.02
MH25	C-285563	06AK10LG-RA	RA	63.05607	-145.87636	06-23-06	<3	94.7	<1	11.2	<.05	< .2	13.1	<.02
MH26	C-285564	06AK11LG-RA	RA	63.22106	-145.91483	06-24-06	<3	28.8	2	3.01	<.05	< .2	1.81	<.02
MH27	C-285565	06AK12LG-RA	RA	63.27527	-146.27946	06-25-06	<3	15.9	<1	5.12	<.05	< .2	2.38	.07
MH28	C-285566	06AK13LG-RA	RA	63.27890	-146.31895	06-25-06	<3	23.9	2	6.45	<.05	.37	3.41	<.02
MH29	C-285567	06AK14LG-RA	RA	63.33512	-146.33614	06-25-06	<3	325	1	34.6	<.05	< .2	18.9	<.02
MH30	C-285568	06AK15LG-RA	RA	63.29633	-146.30942	06-25-06	<3	12.9	<1	11.4	<.05	< .2	6.54	<.02
	C-285550	Blank-ocala-RA	RA	–	–	06-24-10	<3	<2	<1	<.2	<.05	< .2	<.2	<.02
	C-285551	Blank-rich-RA	RA	–	–	06-24-10	<3	<2	<1	<.2	<.05	< .2	<.2	<.02

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu
						Unfiltered, acidifed								
MH1	C-285535	06AK01-RA	RA	63.32227	-146.04453	06-21-06	0.02	<0.02	<1	< 0.02	0.52	< 0.005	< 0.005	< 0.005
MH2	C-285536	06AK02-RA	RA	63.30497	-146.01581	06-21-06	< .01	.02	<1	< .02	<.5	< .005	< .005	< .005
MH3	C-285537	06AK03-RA	RA	63.30404	-146.04607	06-21-06	< .01	.04	<1	< .02	<.5	< .005	< .005	< .005
MH4	C-285538	06AK04-RA	RA	63.30370	-146.04990	06-21-06	.42	1.92	1	< .02	25	.26	.16	.05
MH5	C-285539	06AK05-RA	RA	63.30473	-146.05590	06-21-06	.61	2.38	1.2	.02	34.2	.36	.23	.072
MH6	C-285540	06AK06-RA	RA	63.29038	-146.04857	06-21-06	.25	1.37	1	< .02	14.7	.16	.097	.03
MH7	C-285541	06AK07-RA	RA	63.24325	-146.06044	06-22-06	< .01	<.02	2.6	1.18	.51	< .005	< .005	< .005
	C-285542	06AK07-RA repl.	RA	63.24325	-146.06044	06-22-06	< .01	<.02	2.7	1.2	.52	< .005	< .005	< .005
MH8	C-285543	06AK08-RA	RA	63.24343	-146.06023	06-22-06	< .01	<.02	2.3	1.32	.71	< .005	< .005	< .005
MH9	C-285544	06AK09-RA	RA	63.23375	-146.07518	06-22-06	.04	.1	<1	.07	1.8	.009	.005	< .005
MH10	C-285545	06AK10-RA	RA	63.23109	-146.02482	06-22-06	.02	.03	<1	.37	2.1	.006	< .005	< .005
MH11	C-285546	06AK11-RA	RA	63.25372	-146.17209	06-22-06	.03	.03	<1	.02	1.3	.008	.005	< .005
MH12	C-285547	06AK12-RA	RA	63.26160	-146.19040	06-22-06	.02	<.02	<1	.02	1.2	.005	< .005	< .005
MH13	C-285548	06AK13-RA	RA	63.21561	-145.96478	06-23-06	< .01	.02	<1	< .02	.98	< .005	< .005	< .005
MH14	C-285549	06AK14-RA	RA	63.06788	-145.77942	06-23-06	.15	.09	<1	< .02	4.6	.02	.01	.007
MH15	C-285552	06AK15-RA	RA	63.20863	-145.94130	06-24-06	.02	.04	<1	< .02	1.9	< .005	< .005	< .005
MH16	C-285553	06AK16-RA	RA	63.23763	-146.12909	06-24-06	.04	.03	<1	< .02	1.1	.009	.005	< .005
MH17	C-285554	06AK17-RA	RA	63.27634	-146.27193	06-25-06	.01	.13	<1	< .02	1.4	< .005	< .005	< .005
MH18	C-285555	06AK18-RA	RA	63.28515	-146.32445	06-25-06	.05	.03	<1	.09	1.3	.01	.009	< .005
MH19	C-285556	06AK19-RA	RA	63.31868	-146.32762	06-25-06	.29	.3	2	.18	2.9	.03	.02	.007
MH20	C-285557	06AK20-RA	RA	63.22520	-145.93295	06-25-06	< .01	.06	<1	< .02	2.3	.006	< .005	< .005
	C-285558	06AK20-RA repl.	RA	63.22520	-145.93295	06-25-06	< .01	.06	<1	< .02	2.3	< .005	< .005	< .005
MH21	C-285559	06AK06LG-RA	RA	63.07365	-145.74760	06-20-06	.02	.1	<1	< .02	.88	.005	< .005	< .005
MH22	C-285560	06AK07LG-RA	RA	63.09626	-145.75070	06-20-06	< .01	.04	<1	< .02	.7	< .005	< .005	< .005
MH23	C-285561	06AK08LG-RA	RA	63.22570	-146.05507	06-22-06	< .01	.06	<1	< .02	1.4	.005	< .005	< .005
MH24	C-285562	06AK09LG-RA	RA	63.22648	-146.18576	06-22-06	.02	.04	<1	< .02	.69	< .005	< .005	< .005
MH25	C-285563	06AK10LG-RA	RA	63.05607	-145.87636	06-23-06	.06	.06	<1	< .02	2	.01	.008	< .005
MH26	C-285564	06AK11LG-RA	RA	63.22106	-145.91483	06-24-06	.03	.07	<1	< .02	1.6	.005	< .005	< .005
MH27	C-285565	06AK12LG-RA	RA	63.27527	-146.27946	06-25-06	.02	.09	<1	< .02	3.2	.006	< .005	< .005
MH28	C-285566	06AK13LG-RA	RA	63.27890	-146.31895	06-25-06	.02	.27	<1	.03	1.4	< .005	< .005	< .005
MH29	C-285567	06AK14LG-RA	RA	63.33512	-146.33614	06-25-06	.11	.65	5.2	< .02	2.2	.02	.01	.008
MH30	C-285568	06AK15LG-RA	RA	63.29633	-146.30942	06-25-06	.01	.04	<1	< .02	.73	.005	< .005	< .005
	C-285550	Blank-ocala-RA	RA	–	–	06-24-10	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005
	C-285551	Blank-rich-RA	RA	–	–	06-24-10	< .01	<.02	<1	< .02	<.5	< .005	< .005	< .005

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Fe	Ga	Gd	Ge	Ho	K	La	Li
						Unfiltered, acidifed								
MH1	C-285535	06AK01-RA	RA	63.32227	-146.04453	06-21-06	<50	< 0.05	0.008	< 0.05	< 0.005	0.58	0.02	3.1
MH2	C-285536	06AK02-RA	RA	63.30497	-146.01581	06-21-06	<50	< .05	< .005	< .05	< .005	.06	< .01	< .1
MH3	C-285537	06AK03-RA	RA	63.30404	-146.04607	06-21-06	<50	< .05	< .005	< .05	< .005	.1	< .01	< .1
MH4	C-285538	06AK04-RA	RA	63.30370	-146.04990	06-21-06	93	< .05	.26	< .05	.054	.2	.38	.6
MH5	C-285539	06AK05-RA	RA	63.30473	-146.05590	06-21-06	117	< .05	.37	< .05	.077	.2	.57	1.1
MH6	C-285540	06AK06-RA	RA	63.29038	-146.04857	06-21-06	84	< .05	.15	< .05	.04	.2	.22	.5
MH7	C-285541	06AK07-RA	RA	63.24325	-146.06044	06-22-06	<50	< .05	< .005	< .05	< .005	.68	< .01	11.9
	C-285542	06AK07-RA repl.	RA	63.24325	-146.06044	06-22-06	<50	< .05	< .005	< .05	< .005	.7	< .01	12.8
MH8	C-285543	06AK08-RA	RA	63.24343	-146.06023	06-22-06	<50	< .05	< .005	< .05	< .005	.73	< .01	12.9
MH9	C-285544	06AK09-RA	RA	63.23375	-146.07518	06-22-06	121	< .05	.01	< .05	< .005	.1	.03	2.9
MH10	C-285545	06AK10-RA	RA	63.23109	-146.02482	06-22-06	<50	< .05	.006	< .05	< .005	.2	.01	2.9
MH11	C-285546	06AK11-RA	RA	63.25372	-146.17209	06-22-06	<50	< .05	.01	< .05	< .005	.05	.02	.9
MH12	C-285547	06AK12-RA	RA	63.26160	-146.19040	06-22-06	<50	< .05	< .005	< .05	< .005	.1	.01	.2
MH13	C-285548	06AK13-RA	RA	63.21561	-145.96478	06-23-06	<50	< .05	< .005	< .05	< .005	.1	< .01	1.9
MH14	C-285549	06AK14-RA	RA	63.06788	-145.77942	06-23-06	90	< .05	.03	< .05	.005	.41	.08	.2
MH15	C-285552	06AK15-RA	RA	63.20863	-145.94130	06-24-06	<50	< .05	.005	< .05	< .005	.09	.01	2
MH16	C-285553	06AK16-RA	RA	63.23763	-146.12909	06-24-06	<50	< .05	.01	< .05	< .005	.08	.03	< .1
MH17	C-285554	06AK17-RA	RA	63.27634	-146.27193	06-25-06	223	< .05	< .005	< .05	< .005	.06	.01	.5
MH18	C-285555	06AK18-RA	RA	63.28515	-146.32445	06-25-06	<50	< .05	.01	< .05	< .005	.2	.06	.8
MH19	C-285556	06AK19-RA	RA	63.31868	-146.32762	06-25-06	354	.06	.04	.1	.007	.41	.17	2.7
MH20	C-285557	06AK20-RA	RA	63.22520	-145.93295	06-25-06	<50	< .05	< .005	< .05	< .005	.3	.01	2.4
	C-285558	06AK20-RA repl.	RA	63.22520	-145.93295	06-25-06	<50	< .05	.006	< .05	< .005	.31	.01	2.5
MH21	C-285559	06AK06LG-RA	RA	63.07365	-145.74760	06-20-06	184	< .05	< .005	< .05	< .005	.08	.01	.1
MH22	C-285560	06AK07LG-RA	RA	63.09626	-145.75070	06-20-06	182	< .05	< .005	< .05	< .005	.1	< .01	< .1
MH23	C-285561	06AK08LG-RA	RA	63.22570	-146.05507	06-22-06	<50	< .05	< .005	< .05	< .005	.1	< .01	.2
MH24	C-285562	06AK09LG-RA	RA	63.22648	-146.18576	06-22-06	<50	< .05	.005	< .05	< .005	.08	.02	.1
MH25	C-285563	06AK10LG-RA	RA	63.05607	-145.87636	06-23-06	85	< .05	.01	< .05	< .005	.51	.03	.7
MH26	C-285564	06AK11LG-RA	RA	63.22106	-145.91483	06-24-06	<50	< .05	< .005	< .05	< .005	.2	.02	3.3
MH27	C-285565	06AK12LG-RA	RA	63.27527	-146.27946	06-25-06	118	< .05	< .005	< .05	< .005	.2	.02	1.4
MH28	C-285566	06AK13LG-RA	RA	63.27890	-146.31895	06-25-06	239	< .05	.006	< .05	< .005	.2	.02	1.5
MH29	C-285567	06AK14LG-RA	RA	63.33512	-146.33614	06-25-06	528	.08	.02	< .05	< .005	.3	.05	.4
MH30	C-285568	06AK15LG-RA	RA	63.29633	-146.30942	06-25-06	<50	< .05	< .005	< .05	< .005	.55	.02	.5
	C-285550	Blank-ocala-RA	RA	–	–	06-24-10	<50	< .05	< .005	< .05	< .005	<.03	< .01	.4
	C-285551	Blank-rich-RA	RA	–	–	06-24-10	<50	< .05	< .005	< .05	< .005	<.03	< .01	.3

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Lu	Mg	Mn	Mo	Na	Nb	Nd	Ni
						Unfiltered, acidifed								
MH1	C-285535	06AK01-RA	RA	63.32227	-146.04453	06-21-06	< 0.1	9.91	1.1	< 2	9.56	< 0.2	0.02	<0.4
MH2	C-285536	06AK02-RA	RA	63.30497	-146.01581	06-21-06	< .1	.84	.3	< 2	.96	< .2	< .01	<.4
MH3	C-285537	06AK03-RA	RA	63.30404	-146.04607	06-21-06	< .1	2.25	1.9	< 2	1.63	.89	< .01	2.7
MH4	C-285538	06AK04-RA	RA	63.30370	-146.04990	06-21-06	< .1	5.36	30.2	< 2	2.04	.46	.56	8.9
MH5	C-285539	06AK05-RA	RA	63.30473	-146.05590	06-21-06	< .1	6.8	39.8	< 2	2.28	.27	.85	10.8
MH6	C-285540	06AK06-RA	RA	63.29038	-146.04857	06-21-06	< .1	5.29	23.3	< 2	2.14	< .2	.33	7.9
MH7	C-285541	06AK07-RA	RA	63.24325	-146.06044	06-22-06	< .1	20.8	<.2	< 2	.73	< .2	< .01	1.4
	C-285542	06AK07-RA repl.	RA	63.24325	-146.06044	06-22-06	< .1	21.1	<.2	< 2	.72	< .2	< .01	1.5
MH8	C-285543	06AK08-RA	RA	63.24343	-146.06023	06-22-06	< .1	22.4	.2	< 2	.9	< .2	< .01	1.8
MH9	C-285544	06AK09-RA	RA	63.23375	-146.07518	06-22-06	< .1	3.38	5.3	< 2	.43	< .2	.04	5.4
MH10	C-285545	06AK10-RA	RA	63.23109	-146.02482	06-22-06	< .1	5.77	<.2	< 2	.49	1.02	.02	8.4
MH11	C-285546	06AK11-RA	RA	63.25372	-146.17209	06-22-06	< .1	4.37	.4	< 2	.3	.49	.03	4.3
MH12	C-285547	06AK12-RA	RA	63.26160	-146.19040	06-22-06	< .1	6.42	.2	< 2	.3	.2	.02	4.6
MH13	C-285548	06AK13-RA	RA	63.21561	-145.96478	06-23-06	< .1	11.8	<.2	< 2	.23	< .2	< .01	4.3
MH14	C-285549	06AK14-RA	RA	63.06788	-145.77942	06-23-06	< .1	3.48	1.4	< 2	.29	< .2	.11	9.1
MH15	C-285552	06AK15-RA	RA	63.20863	-145.94130	06-24-06	< .1	11	.3	< 2	.4	< .2	.02	7.1
MH16	C-285553	06AK16-RA	RA	63.23763	-146.12909	06-24-06	< .1	1.95	.4	< 2	.35	< .2	.05	1.4
MH17	C-285554	06AK17-RA	RA	63.27634	-146.27193	06-25-06	< .1	4.27	7.2	< 2	.47	< .2	.02	9.9
MH18	C-285555	06AK18-RA	RA	63.28515	-146.32445	06-25-06	< .1	1.25	.9	< 2	.6	< .2	.06	2.8
MH19	C-285556	06AK19-RA	RA	63.31868	-146.32762	06-25-06	< .1	3.44	7.7	< 2	1.4	< .2	.17	2.4
MH20	C-285557	06AK20-RA	RA	63.22520	-145.93295	06-25-06	< .1	13.1	.3	< 2	.33	< .2	.01	8.7
	C-285558	06AK20-RA repl.	RA	63.22520	-145.93295	06-25-06	< .1	13.1	.2	< 2	.33	< .2	.01	8.8
MH21	C-285559	06AK06LG-RA	RA	63.07365	-145.74760	06-20-06	< .1	5.71	6.9	< 2	.4	< .2	.02	5.1
MH22	C-285560	06AK07LG-RA	RA	63.09626	-145.75070	06-20-06	< .1	10.5	7.6	< 2	1.14	< .2	< .01	4.3
MH23	C-285561	06AK08LG-RA	RA	63.22570	-146.05507	06-22-06	< .1	10.9	3	< 2	.27	< .2	< .01	7.7
MH24	C-285562	06AK09LG-RA	RA	63.22648	-146.18576	06-22-06	< .1	0.25	1.2	< 2	.35	< .2	.02	<.4
MH25	C-285563	06AK10LG-RA	RA	63.05607	-145.87636	06-23-06	< .1	7.14	1.7	< 2	1.17	< .2	.05	1.8
MH26	C-285564	06AK11LG-RA	RA	63.22106	-145.91483	06-24-06	< .1	16.2	.5	< 2	.93	< .2	.03	3.1
MH27	C-285565	06AK12LG-RA	RA	63.27527	-146.27946	06-25-06	< .1	6.01	4.4	< 2	.9	< .2	.02	8.9
MH28	C-285566	06AK13LG-RA	RA	63.27890	-146.31895	06-25-06	< .1	3.79	16.8	< 2	1.1	1	.02	6.2
MH29	C-285567	06AK14LG-RA	RA	63.33512	-146.33614	06-25-06	< .1	5.48	12.2	< 2	1.02	.47	.06	8.6
MH30	C-285568	06AK15LG-RA	RA	63.29633	-146.30942	06-25-06	< .1	1.26	1.2	< 2	1.13	.28	.02	<.4
	C-285550	Blank-ocala-RA	RA	–	–	06-24-10	< .1	<.01	<.2	< 2	<.01	< .2	< .01	<.4
	C-285551	Blank-rich-RA	RA	–	–	06-24-10	< .1	<.01	<.2	< 2	<.01	< .2	< .01	<.4

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	P	Pb	Pr	Rb	Sb	Sc	Se	SiO_2
						Unfiltered, acidifed								
MH1	C-285535	06AK01-RA	RA	63.32227	-146.04453	06-21-06	< 0.01	<0.05	< 0.01	0.31	0.46	< 0.6	1.2	3.5
MH2	C-285536	06AK02-RA	RA	63.30497	-146.01581	06-21-06	< .01	<.05	< .01	.08	<.3	< .6	< 1	5.6
MH3	C-285537	06AK03-RA	RA	63.30404	-146.04607	06-21-06	< .01	<.05	< .01	.15	1.12	< .6	< 1	5.8
MH4	C-285538	06AK04-RA	RA	63.30370	-146.04990	06-21-06	< .01	<.05	.11	.28	.69	.6	< 1	6.2
MH5	C-285539	06AK05-RA	RA	63.30473	-146.05590	06-21-06	< .01	<.05	.16	.36	.62	.6	1	6.4
MH6	C-285540	06AK06-RA	RA	63.29038	-146.04857	06-21-06	< .01	<.05	.06	.28	.43	.6	< 1	6.3
MH7	C-285541	06AK07-RA	RA	63.24325	-146.06044	06-22-06	< .01	<.05	< .01	3.18	2.44	2.2	< 1	23.3
	C-285542	06AK07-RA repl.	RA	63.24325	-146.06044	06-22-06	< .01	<.05	< .01	3.13	2.46	2.1	< 1	24
MH8	C-285543	06AK08-RA	RA	63.24343	-146.06023	06-22-06	< .01	<.05	< .01	3.31	2.23	2.1	< 1	24.2
MH9	C-285544	06AK09-RA	RA	63.23375	-146.07518	06-22-06	< .01	<.05	< .01	.3	<.3	.6	< 1	7
MH10	C-285545	06AK10-RA	RA	63.23109	-146.02482	06-22-06	< .01	<.05	< .01	.57	1.2	.9	< 1	10.3
MH11	C-285546	06AK11-RA	RA	63.25372	-146.17209	06-22-06	< .01	<.05	< .01	.11	.4	.7	< 1	7.5
MH12	C-285547	06AK12-RA	RA	63.26160	-146.19040	06-22-06	< .01	<.05	< .01	.17	<.3	.8	< 1	9.3
MH13	C-285548	06AK13-RA	RA	63.21561	-145.96478	06-23-06	< .01	<.05	< .01	.24	<.3	< .6	< 1	6.4
MH14	C-285549	06AK14-RA	RA	63.06788	-145.77942	06-23-06	.01	<.05	.02	.67	<.3	.8	< 1	9.8
MH15	C-285552	06AK15-RA	RA	63.20863	-145.94130	06-24-06	< .01	<.05	< .01	.16	<.3	.8	< 1	10.2
MH16	C-285553	06AK16-RA	RA	63.23763	-146.12909	06-24-06	< .01	<.05	< .01	.13	<.3	< .6	< 1	6.9
MH17	C-285554	06AK17-RA	RA	63.27634	-146.27193	06-25-06	< .01	<.05	< .01	.1	<.3	.8	< 1	10.6
MH18	C-285555	06AK18-RA	RA	63.28515	-146.32445	06-25-06	< .01	<.05	.02	.25	<.3	< .6	< 1	6.9
MH19	C-285556	06AK19-RA	RA	63.31868	-146.32762	06-25-06	.02	.09	.04	2.06	.71	.8	< 1	7.9
MH20	C-285557	06AK20-RA	RA	63.22520	-145.93295	06-25-06	< .01	<.05	< .01	.67	.45	.8	< 1	9.2
	C-285558	06AK20-RA repl.	RA	63.22520	-145.93295	06-25-06	< .01	<.05	< .01	.69	.36	.8	< 1	9.1
MH21	C-285559	06AK06LG-RA	RA	63.07365	-145.74760	06-20-06	.01	<.05	< .01	.14	<.3	< .6	< 1	1.3
MH22	C-285560	06AK07LG-RA	RA	63.09626	-145.75070	06-20-06	< .01	<.05	< .01	.13	<.3	.6	< 1	7.1
MH23	C-285561	06AK08LG-RA	RA	63.22570	-146.05507	06-22-06	< .01	<.05	< .01	.27	<.3	1.1	< 1	12.9
MH24	C-285562	06AK09LG-RA	RA	63.22648	-146.18576	06-22-06	< .01	<.05	< .01	.11	<.3	< .6	< 1	3.3
MH25	C-285563	06AK10LG-RA	RA	63.05607	-145.87636	06-23-06	< .01	<.05	.01	.39	<.3	.9	< 1	10.3
MH26	C-285564	06AK11LG-RA	RA	63.22106	-145.91483	06-24-06	< .01	.2	< .01	.28	<.3	< .6	< 1	5.6
MH27	C-285565	06AK12LG-RA	RA	63.27527	-146.27946	06-25-06	< .01	.3	< .01	.21	<.3	.7	< 1	9.1
MH28	C-285566	06AK13LG-RA	RA	63.27890	-146.31895	06-25-06	< .01	<.05	< .01	.27	1.2	.6	< 1	7.2
MH29	C-285567	06AK14LG-RA	RA	63.33512	-146.33614	06-25-06	< .01	<.05	.01	.32	.58	< .6	< 1	4.3
MH30	C-285568	06AK15LG-RA	RA	63.29633	-146.30942	06-25-06	< .01	<.05	< .01	1.03	.4	< .6	< 1	6.4
	C-285550	Blank-ocala-RA	RA	–	–	06-24-10	< .01	<.05	< .01	< .01	<.3	< .6	< 1	< .2
	C-285551	Blank-rich-RA	RA	–	–	06-24-10	< .01	<.05	< .01	< .01	<.3	< .6	< 1	< .2

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Sm	SO_4	Sr	Ta	Tb	Th	Ti	Tl
						Unfiltered, acidifed								
MH1	C-285535	06AK01-RA	RA	63.32227	-146.04453	06-21-06	< 0.01	48	161	< 0.02	< 0.005	< 0.2	1.3	<0.1
MH2	C-285536	06AK02-RA	RA	63.30497	-146.01581	06-21-06	< .01	7	2.83	< .02	< .005	<.2	.6	<.1
MH3	C-285537	06AK03-RA	RA	63.30404	-146.04607	06-21-06	< .01	24	6.17	.05	< .005	< .2	1.1	<.1
MH4	C-285538	06AK04-RA	RA	63.30370	-146.04990	06-21-06	.14	42	56.3	.03	.04	< .2	2.6	<.1
MH5	C-285539	06AK05-RA	RA	63.30473	-146.05590	06-21-06	.21	48	81.4	< .02	.057	< .2	2.7	<.1
MH6	C-285540	06AK06-RA	RA	63.29038	-146.04857	06-21-06	.08	43	61.8	< .02	.02	< .2	2.7	<.1
MH7	C-285541	06AK07-RA	RA	63.24325	-146.06044	06-22-06	< .01	7	36.8	< .02	< .005	< .2	< .5	<.1
	C-285542	06AK07-RA repl.	RA	63.24325	-146.06044	06-22-06	< .01	7	36.8	< .02	< .005	< .2	.5	<.1
MH8	C-285543	06AK08-RA	RA	63.24343	-146.06023	06-22-06	< .01	8	39	< .02	< .005	< .2	< .5	<.1
MH9	C-285544	06AK09-RA	RA	63.23375	-146.07518	06-22-06	.01	< 2	5.82	< .02	< .005	< .2	1.4	<.1
MH10	C-285545	06AK10-RA	RA	63.23109	-146.02482	06-22-06	< .01	< 2	6.8	.06	< .005	< .2	.5	<.1
MH11	C-285546	06AK11-RA	RA	63.25372	-146.17209	06-22-06	< .01	< 2	5.5	.03	< .005	< .2	.6	<.1
MH12	C-285547	06AK12-RA	RA	63.26160	-146.19040	06-22-06	< .01	< 2	6.03	< .02	< .005	< .2	< .5	<.1
MH13	C-285548	06AK13-RA	RA	63.21561	-145.96478	06-23-06	< .01	2	4.81	< .02	< .005	< .2	< .5	<.1
MH14	C-285549	06AK14-RA	RA	63.06788	-145.77942	06-23-06	.03	< 2	9.05	< .02	< .005	< .2	1.9	<.1
MH15	C-285552	06AK15-RA	RA	63.20863	-145.94130	06-24-06	< .01	3	7.42	< .02	< .005	< .2	< .5	<.1
MH16	C-285553	06AK16-RA	RA	63.23763	-146.12909	06-24-06	.01	< 2	6.68	< .02	< .005	< .2	< .5	<.1
MH17	C-285554	06AK17-RA	RA	63.27634	-146.27193	06-25-06	< .01	< 2	9.73	< .02	< .005	< .2	< .5	<.1
MH18	C-285555	06AK18-RA	RA	63.28515	-146.32445	06-25-06	.02	< 2	12.5	< .02	< .005	< .2	< .5	<.1
MH19	C-285556	06AK19-RA	RA	63.31868	-146.32762	06-25-06	.03	8	49.2	.03	.006	< .2	6	<.1
MH20	C-285557	06AK20-RA	RA	63.22520	-145.93295	06-25-06	< .01	7	11.6	.03	< .005	< .2	< .5	<.1
	C-285558	06AK20-RA repl.	RA	63.22520	-145.93295	06-25-06	< .01	7	11.8	.02	< .005	< .2	< .5	<.1
MH21	C-285559	06AK06LG-RA	RA	63.07365	-145.74760	06-20-06	< .01	< 2	7.22	.02	< .005	< .2	.6	<.1
MH22	C-285560	06AK07LG-RA	RA	63.09626	-145.75070	06-20-06	< .01	3	17.3	< .02	< .005	< .2	< .5	<.1
MH23	C-285561	06AK08LG-RA	RA	63.22570	-146.05507	06-22-06	< .01	3	7.18	< .02	< .005	< .2	< .5	<.1
MH24	C-285562	06AK09LG-RA	RA	63.22648	-146.18576	06-22-06	< .01	< 2	4.62	< .02	< .005	< .2	2	<.1
MH25	C-285563	06AK10LG-RA	RA	63.05607	-145.87636	06-23-06	.01	2	37.7	< .02	< .005	< .2	2.4	<.1
MH26	C-285564	06AK11LG-RA	RA	63.22106	-145.91483	06-24-06	< .01	11	8.04	< .02	< .005	< .2	.9	<.1
MH27	C-285565	06AK12LG-RA	RA	63.27527	-146.27946	06-25-06	< .01	< 2	14.2	< .02	< .005	< .2	.5	<.1
MH28	C-285566	06AK13LG-RA	RA	63.27890	-146.31895	06-25-06	< .01	< 2	15.2	.06	< .005	< .2	.7	<.1
MH29	C-285567	06AK14LG-RA	RA	63.33512	-146.33614	06-25-06	< .01	20	109	.03	< .005	< .2	12.4	<.1
MH30	C-285568	06AK15LG-RA	RA	63.29633	-146.30942	06-25-06	< .01	11	28.8	< .02	< .005	< .2	.7	<.1
	C-285550	Blank-ocala-RA	RA	–	–	06-24-10	< .01	< 2	< .5	< .02	< .005	< .2	< .5	<.1
	C-285551	Blank-rich-RA	RA	–	–	06-24-10	< .01	< 2	< .5	< .02	< .005	< .2	< .5	<.1

Table 5. Map, laboratory, and field numbers, sample treatment, site latitude and longitude, and cation and trace-element chemistry of filtered (FA) and unfiltered (RA) acidified surface-water samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Surface-water cation and trace-element chemistry determined using inductively coupled plasma-mass spectrometry (ICP-MS). **Filter and treatment:** 0.1FA, passed through 0.1-µm filter, acidified; 0.45FA, passed through 0.45-µm filter, acidified. **Field No.:** repl., field replicate. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µm, micrometer; mg/L, milligram per liter; <, less than; –, not applicable]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	Tm	U	V	W	Y	Yb	Zn	Zr
						Unfiltered, acidifed								
MH1	C-285535	06AK01-RA	RA	63.32227	-146.04453	06-21-06	< 0.005	0.36	0.8	< 0.5	0.04	0.005	0.8	< 0.2
MH2	C-285536	06AK02-RA	RA	63.30497	-146.01581	06-21-06	< .005	< .1	.5	< .5	< .01	< .005	1.6	< .2
MH3	C-285537	06AK03-RA	RA	63.30404	-146.04607	06-21-06	< .005	< .1	.6	.95	< .01	< .005	2	< .2
MH4	C-285538	06AK04-RA	RA	63.30370	-146.04990	06-21-06	.02	< .1	.8	< .5	1.69	.13	7.1	< .2
MH5	C-285539	06AK05-RA	RA	63.30473	-146.05590	06-21-06	.03	.13	.8	< .5	2.54	.17	9.6	< .2
MH6	C-285540	06AK06-RA	RA	63.29038	-146.04857	06-21-06	.01	< .1	.7	< .5	1.04	.08	5.6	< .2
MH7	C-285541	06AK07-RA	RA	63.24325	-146.06044	06-22-06	< .005	< .1	.5	< .5	< .01	< .005	<.5	< .2
	C-285542	06AK07-RA repl.	RA	63.24325	-146.06044	06-22-06	< .005	< .1	.5	< .5	< .01	< .005	.7	< .2
MH8	C-285543	06AK08-RA	RA	63.24343	-146.06023	06-22-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH9	C-285544	06AK09-RA	RA	63.23375	-146.07518	06-22-06	< .005	< .1	<.5	< .5	.04	.005	.5	< .2
MH10	C-285545	06AK10-RA	RA	63.23109	-146.02482	06-22-06	< .005	< .1	<.5	.95	.02	< .005	<.5	< .2
MH11	C-285546	06AK11-RA	RA	63.25372	-146.17209	06-22-06	< .005	< .1	<.5	< .5	.04	.007	.6	< .2
MH12	C-285547	06AK12-RA	RA	63.26160	-146.19040	06-22-06	< .005	< .1	<.5	< .5	.02	< .005	<.5	< .2
MH13	C-285548	06AK13-RA	RA	63.21561	-145.96478	06-23-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH14	C-285549	06AK14-RA	RA	63.06788	-145.77942	06-23-06	< .005	< .1	<.5	< .5	.11	.01	1.9	.2
MH15	C-285552	06AK15-RA	RA	63.20863	-145.94130	06-24-06	< .005	< .1	<.5	< .5	.02	< .005	.7	< .2
MH16	C-285553	06AK16-RA	RA	63.23763	-146.12909	06-24-06	< .005	< .1	<.5	< .5	.05	< .005	.6	< .2
MH17	C-285554	06AK17-RA	RA	63.27634	-146.27193	06-25-06	< .005	< .1	<.5	< .5	.02	< .005	<.5	< .2
MH18	C-285555	06AK18-RA	RA	63.28515	-146.32445	06-25-06	< .005	< .1	<.5	< .5	.08	.009	.6	< .2
MH19	C-285556	06AK19-RA	RA	63.31868	-146.32762	06-25-06	< .005	.6	1.1	< .5	.15	.01	1.7	< .2
MH20	C-285557	06AK20-RA	RA	63.22520	-145.93295	06-25-06	< .005	< .1	<.5	< .5	.02	< .005	<.5	< .2
	C-285558	06AK20-RA repl.	RA	63.22520	-145.93295	06-25-06	< .005	< .1	<.5	< .5	.02	.005	.7	< .2
MH21	C-285559	06AK06LG-RA	RA	63.07365	-145.74760	06-20-06	< .005	< .1	<.5	< .5	< .01	< .005	.9	< .2
MH22	C-285560	06AK07LG-RA	RA	63.09626	-145.75070	06-20-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH23	C-285561	06AK08LG-RA	RA	63.22570	-146.05507	06-22-06	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
MH24	C-285562	06AK09LG-RA	RA	63.22648	-146.18576	06-22-06	< .005	< .1	<.5	< .5	.02	< .005	<.5	< .2
MH25	C-285563	06AK10LG-RA	RA	63.05607	-145.87636	06-23-06	< .005	< .1	.8	< .5	.06	.009	1	< .2
MH26	C-285564	06AK11LG-RA	RA	63.22106	-145.91483	06-24-06	< .005	< .1	<.5	< .5	.02	< .005	2.6	< .2
MH27	C-285565	06AK12LG-RA	RA	63.27527	-146.27946	06-25-06	< .005	< .1	<.5	< .5	.02	< .005	3.8	< .2
MH28	C-285566	06AK13LG-RA	RA	63.27890	-146.31895	06-25-06	< .005	< .1	<.5	.99	.02	< .005	.5	< .2
MH29	C-285567	06AK14LG-RA	RA	63.33512	-146.33614	06-25-06	< .005	.13	.7	< .5	.07	.006	1.2	< .2
MH30	C-285568	06AK15LG-RA	RA	63.29633	-146.30942	06-25-06	< .005	< .1	<.5	< .5	.02	< .005	<.5	< .2
	C-285550	Blank-ocala-RA	RA	–	–	06-24-10	< .005	< .1	<.5	< .5	< .01	< .005	<.5	< .2
	C-285551	Blank-rich-RA	RA	–	–	06-24-10	< .005	< .1	<.5	< .5	< .01	< .005	1.1	< .2

Table 6. Map and field numbers, major anion chemistry of filtered unacidified (FU) surface water samples, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. All values are in milligrams per liter. Surface-water major anion chemistry determined by ion chormatography (IC). **Filter and treatment:** 0.45FU, passed through 0.45 µm-filter, unacidified. **Abbreviations**: º, degrees; N, North; W, West; repl., field replicate; dup, laboratory duplicate; NQ, not quantified; ND, not detected; –, not applicable; <, less than]

Map No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	F^-	Cl^-	NO_3^-	SO_4^{2-}
MH1	06AK01-.45FU	0.45FU	63.32227	-146.04453	06-21-06	0.15	0.07	NQ	61.5
MH2	06AK02-.45FU	0.45FU	63.30497	-146.01581	06-21-06	<.01	.01	0.05	9.5
MH3	06AK03-.45FU	0.45FU	63.30404	-146.04607	06-21-06	<.01	.24	.26	32.2
MH3	06AK03-.45FU dup.	0.45FU	63.30404	-146.04607	06-21-06	<.01	.21	.25	30.4
MH4	06AK04-.45FU	0.45FU	63.30370	-146.04990	06-21-06	.05	.21	.26	58.4
MH5	06AK05-.45FU	0.45FU	63.30473	-146.05590	06-21-06	.05	.16	.04	66.9
MH6	06AK06-.45FU	0.45FU	63.29038	-146.04857	06-21-06	.02	.38	NQ	50.9
MH7	06AK07-.45FU	0.45FU	63.24325	-146.06044	06-22-06	.01	.11	ND	9.2
MH7	06AK07-.45FU repl.	0.45FU	63.24325	-146.06044	06-22-06	.05	.1	ND	9.2
MH8	06AK08-.45FU	0.45FU	63.24343	-146.06023	06-22-06	.06	.16	ND	10
MH9	06AK09-.45FU	0.45FU	63.23375	-146.07518	06-22-06	.01	.05	.73	.8
MH10	06AK10-.45FU	0.45FU	63.23109	-146.02482	06-22-06	<.01	.07	ND	1.25
MH11	06AK11-.45FU	0.45FU	63.25372	-146.17209	06-22-06	<.01	.04	ND	.59
MH12	06AK12-.45FU	0.45FU	63.26160	-146.19040	06-22-06	<.01	.09	ND	1.48
MH13	06AK13-.45FU	0.45FU	63.21561	-145.96478	06-22-06	<.01	.22	ND	3.8
MH13	06AK13-.45FU dup.	0.45FU	63.21561	-145.96478	06-22-06	<.01	.2	ND	3.81
MH14	06AK14-.45FU	0.45FU	63.06788	-145.77942	06-22-06	<.01	.13	ND	1.59
MH15	06AK15-.45FU	0.45FU	63.20863	-145.94130	06-23-06	<.01	.29	ND	4.89
MH16	06AK16-.45FU	0.45FU	63.23763	-146.12909	06-23-06	<.01	<.01	ND	.41
MH17	06AK17-.45FU	0.45FU	63.27634	-146.27193	06-24-06	<.01	.02	ND	.3
MH18	06AK18-.45FU	0.45FU	63.28515	-146.32445	06-24-06	<.01	.07	ND	.73
MH19	06AK19-.45FU	0.45FU	63.31868	-146.32762	06-25-06	.01	.07	.14	9.03
MH2	06AK20-.45FU	0.45FU	63.31868	-146.32762	06-25-06	<.01	.23	ND	7.86
	06AK20-.45FU repl.	0.45FU	63.22520	-145.93295	06-25-06	<.01	.1	ND	7.38
	06AK20-.45FU repl., dup.	0.45FU	63.22520	-145.93295	06-25-06	<.01	.08	ND	7.74
MH21	06AK06LG-.45FU-str	0.45FU	63.07365	-145.74760	06-20-06	<.01	.05	ND	.4
MH22	06AK07LG-.45FU-str	0.45FU	63.09626	-145.75070	06-20-06	.01	.05	ND	2.18
MH23	06AK08LG-.45FU-str	0.45FU	63.22570	-146.05507	06-21-06	<.01	.08	ND	3.05
MH24	06AK09LG-.45FU-str	0.45FU	63.22648	-146.18576	06-21-06	<.01	.07	ND	.6
MH25	06AK10LG-.45FU-str	0.45FU	63.05607	-145.87636	06-22-06	<.01	.16	ND	2.11
MH26	06AK11LG-.45FU-str	0.45FU	63.05607	-145.87636	06-22-06	<.01	.51	ND	12.14
MH27	06AK12LG-.45FU-str	0.45FU	63.22106	-145.91483	06-23-06	<.01	.13	<.01	.81
MH27	06AK12LG-.45FU-str, dup.	0.45FU	63.27527	-146.27946	06-23-06	<.01	.11	ND	.78
MH28	06AK13LG-.45FU-str	0.45FU	63.27890	-146.31895	06-24-06	<.01	.22	ND	1.2
MH29	06AK14LG-.45FU-str	0.45FU	63.33512	-146.33614	06-25-06	<.01	.16	.14	26.2
MH30	06AK15LG-.45FU-str	0.45FU	63.29633	-146.30942	06-25-06	<.01	.05	<.01	14
	BLANK-OCALA-.45FU	0.45FU	–	–	06-23-06	<.01	.11	ND	ND
	BLANK-RICH-.45FU	0.45FU	–	–	06-23-06	<.01	.36	ND	.1

Table 7. Map, laboratory, and field numbers, site latitude and longitude, and alkalinity reported as calcium carbonate of unfiltered and filtered unacidified surface water samples, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. Surface water carbonate concentration determined by fixed-endpoint-titration. RU, unfiltered, unacidified; 0.45FU, passed through 0.45-µm filter, unacidified. **Abbreviations:** °N, degrees North, °W, degrees West; repl., field replicated; $CaCO_3$, calcium carbonate; mg/L, milligram per liter]

Map No.	Laboratory No.	Field No.	Filter and treatment	Latitude (°N)	Longitude (°W)	Date collected	$CaCO_3$ (mg/L)
			Unfiltered, unacidified				
MH17	C-285520	06AK17-RU	RU	63.27634	-146.27193	06-25-06	24.7
MH18	C-285521	06AK18-RU	RU	63.28515	-146.32445	06-25-06	12.1
MH19	C-285522	06AK19-RU	RU	63.31868	-146.32762	06-25-06	35.7
MH20	C-285523	06AK20-RU	RU	63.22520	-145.93295	06-25-06	56.4
	C-285524	06AK20-RU repl.	RU	63.22520	-145.93295	06-25-06	55.3
MH21	C-285525	06AK06LG-RU	RU	63.07365	-145.74760	06-21-06	25.3
MH22	C-285526	06AK07LG-RU	RU	63.09626	-145.75070	06-21-06	53.8
MH23	C-285527	06AK08LG-RU	RU	63.22570	-146.05507	06-22-06	72.3
MH24	C-285528	06AK09LG-RU	RU	63.22648	-146.18576	06-22-06	5.40
MH25	C-285529	06AK10LG-RU	RU	63.05607	-145.87636	06-23-06	60.0
MH26	C-285530	06AK11LG-RU	RU	63.22106	-145.91483	06-24-06	58.7
MH27	C-285531	06AK12LG-RU	RU	63.27527	-146.27946	06-25-06	30.6
MH28	C-285532	06AK13LG-RU	RU	63.27890	-146.31895	06-25-06	23.4
MH29	C-285533	06AK14LG-RU	RU	63.33512	-146.33614	06-25-06	46.2
MH30	C-285534	06AK15LG-RU	RU	63.29633	-146.30942	06-25-06	14.7
			Filtered (0.45 µm), unacidified				
MH1	C-285569	06AK01-.45FU	0.45FU	63.32227	-146.04453	06-21-06	89.0
MH2	C-285570	06AK02-.45FU	0.45FU	63.30497	-146.01581	06-21-06	13.7
MH3	C-285571	06AK03-.45FU	0.45FU	63.30404	-146.04607	06-21-06	13.9
MH4	C-285572	06AK04-.45FU	0.45FU	63.30370	-146.04990	06-21-06	30.1
MH5	C-285573	06AK05-.45FU	0.45FU	63.30473	-146.05590	06-21-06	38.2
MH6	C-285574	06AK006-.45FU	0.45FU	63.29038	-146.04857	06-21-06	30.7
MH7	C-285575	06AK07-.45FU	0.45FU	63.24325	-146.06044	06-22-06	112
	C-285576	06AK07-.45FU repl.	0.45FU	63.24325	-146.06044	06-22-06	105
MH8	C-285577	06AK08-.45FU	0.45FU	63.24343	-146.06023	06-22-06	109.1
MH9	C-285578	06AK09-.45FU	0.45FU	63.23375	-146.07518	06-22-06	18.2
MH10	C-285579	06AK10-.45FU	0.45FU	63.23109	-146.02482	06-22-06	30.6
MH11	C-285580	06AK11-.45FU	0.45FU	63.25372	-146.17209	06-22-06	21.5
MH12	C-285581	06AK12-.45FU	0.45FU	63.26160	-146.19040	06-22-06	30.0
MH13	C-285582	06AK13-.45FU	0.45FU	63.21561	-145.96478	06-23-06	77.6
MH14	C-285583	06AK14-.45FU	0.45FU	63.06788	-145.77942	06-23-06	15.5
MH15	C-285586	06AK15-.45FU	0.45FU	63.20863	-145.94130	06-24-06	44.3
MH16	C-285587	06AK106-.45FU	0.45FU	63.23763	-146.12909	06-24-06	12.1
MH17	C-285588	06AK17-.45FU	0.45FU	63.27634	-146.27193	06-25-06	25.0
MH18	C-285589	06AK18-.45FU	0.45FU	63.28515	-146.32445	06-25-06	12.2
MH19	C-285590	06AK19-.45FU	0.45FU	63.31868	-146.32762	06-25-06	29.8
MH20	C-285591	06AK20-.45FU	0.45FU	63.22520	-145.93295	06-25-06	54.8
	C-285592	06AK20-.45FU repl.	0.45FU	63.22520	-145.93295	06-25-06	56.5

Table 8. Map and field numbers, site latitude and longitude, location descriptions, and chemistry of composited stream-sediment samples, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP) and Hg determined by old-vapor atomic-absorption spectroscopy (CV-AAS). All other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ppb, part per billion; ppm, part per million; ft, foot; mi, mile; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Date collected	Location description	FA-ICPMS			CV-AA	ICP-MS		
						Au (ppb)	Pd (ppb)	Pt (ppb)	Hg (ppm)	Ag (ppm)	Al (ppm)	As (ppm)
MH1	06GL078SS	63.32312	-146.04228	06-21-06	Upper W Specimen Cr. at 4,738 ft elevation.	7	5	6.9	0.08	0.34	81,400	33.1
MH2	06GL079SS	63.30545	-146.01343	06-21-06	Upper E Specimen Cr. at 4,217 ft elevation.	2	6	8.6	.03	.064	60,300	4.3
MH3	06GL080SS	63.30453	-146.04385	06-21-06	Upper E Specimen Cr. at 3,868 ft elevation.	2	6	9.8	.07	.051	62,500	3.1
MH4	06GL081SS	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	290	8	10.9	2.2	1.46	60,300	33
	06GL081SD	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	10	7	10	5.3	.105	51,900	31.9
MH6	06GL082SS	63.29040	-146.04565	06-21-06	Specimen Cr. at 3,586 ft elevation.	37	8	10	.39	.475	50,500	23.1
MH7	06GL083SS	63.24371	-146.05809	06-22-06	Stream N side Wild VABM at 3,602 ft elevation.	12	8	20	18	.162	27,000	1,160
	06GL084SS	63.23421	-146.07301	06-22-06	Stream W side Wild VABM at 3,983 ft elevation.	6	11	7.8	.24	.076	48,800	55.8
MH9	06GL085SS	63.23159	-146.02222	06-22-06	Stream E side Wild VABM at 3,442 ft elevation.	5	21	15.1	.34	.085	36,400	22.6
MH10	06GL086SS	63.25433	-146.16962	06-22-06	Stream NE side knob 3 mi W of Wild VABM at 3,845 ft elevation.	2	11	9.7	.12	.061	50,000	25.7
MH11	06GL087SS	63.26217	-146.18781	06-22-06	S tributary Eureka Cr. enters at 3250 ft; taken at 3,668 ft elevation.	4	7	6.4	.03	.07	57,100	29.3
MH12	06GL088SS	63.21600	-145.96277	06-23-06	Stream SW side knob E of Fish L at 3,455 ft elevation.	7	18	25.2	.06	.07	20,700	7.3
MH13	06GL089SS	63.06786	-145.77934	06-23-06	Stream E of 14-mile L at 3,622 ft elevation.	8	4	5.1	<.02	.049	67,900	10.2
MH14	06GL090SS	63.20904	-145.93913	06-24-06	Stream S side knob E of Fish L at 3,428 ft elevation.	3	16	33.7	.02	.035	11,500	4
MH15	06GL091SS	63.23813	-146.12677	06-24-06	Stream E side knob w/4440 ft. pond at 3,743 ft elevation.	6	42	32.7	.13	.094	65,400	17.8
MH16	06GL092SS	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation.	6	49	35.5	.21	.17	49,800	46
MH17	06GL093SS	63.28561	-146.32222	06-25-06	E tributary upper Eureka Cr. at 3,570 ft elevation.	5	7	6.5	.17	.225	71,900	91.7
MH18	06GL094SS	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation.	13	5	6	.2	.111	74,600	134
MH19	06GL095SS	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	430	16	23.2	.74	.109	29,800	24.6
MH20	06GL095SD	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	7	15	17.9	.03	.084	23,400	21.2
MH28	06AK-13LG	63.27890	-146.31895	06-25-06	E tributary upper Eureka Cr. at 3,490 ft elevation.	5	11	6.9	.18	.146	57,300	173
MH29	06AK-14LG	63.33512	-146.33612	06-25-06	E tributary upper Eureka Cr. at 4,550 ft elevation.	8	8	9.8	.27	.069	57,200	17.9

Table 8. Map and field numbers, site latitude and longitude, location descriptions, and chemistry of composited stream-sediment samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP) and Hg determined by old-vapor atomic-absorption spectroscopy (CV-AAS). All other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ppb, part per billion; ppm, part per million; ft, foot; mi, mile; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Date collected	Location description	ICP-MS						
						Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Ce (ppm)	Co (ppm)
MH1	06GL078SS	63.32312	-146.04228	06-21-06	Upper W Specimen Cr. at 4,738 ft elevation.	890	0.86	< 0.06	20,600	0.19	31.4	35.2
MH2	06GL079SS	63.30545	-146.01343	06-21-06	Upper E Specimen Cr. at 4,217 ft elevation.	191	.56	< .06	67,500	.12	21.7	56
MH3	06GL080SS	63.30453	-146.04385	06-21-06	Upper E Specimen Cr. at 3,868 ft elevation.	185	.59	< .06	62,400	.08	22.1	56.8
MH4	06GL081SS	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	313	.97	< .06	52,200	.59	48.5	118
	06GL081SD	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	254	.88	< .06	51,400	.57	46.8	127
MH6	06GL082SS	63.29040	-146.04565	06-21-06	Specimen Cr. at 3,586 ft elevation.	274	.66	< .06	44,700	.65	33	63.2
MH7	06GL083SS	63.24371	-146.05809	06-22-06	Stream N side Wild VABM at 3,602 ft elevation.	352	1	.08	10,200	.17	27.4	188
	06GL084SS	63.23421	-146.07301	06-22-06	Stream W side Wild VABM at 3,983 ft elevation.	309	.61	< .06	46,300	.37	22.9	75.8
MH9	06GL085SS	63.23159	-146.02222	06-22-06	Stream E side Wild VABM at 3,442 ft elevation.	155	.37	< .06	40,100	.28	12.2	89.6
MH10	06GL086SS	63.25433	-146.16962	06-22-06	Stream NE side knob 3 mi W of Wild VABM at 3,845 ft elevation.	244	.59	< .06	40,500	.2	22.1	56.1
MH11	06GL087SS	63.26217	-146.18781	06-22-06	S tributary Eureka Cr. enters at 3250 ft.; taken at 3,668 ft elevation.	306	.9	.06	39,900	.22	32.3	39.1
MH12	06GL088SS	63.21600	-145.96277	06-23-06	Stream SW side knob E of Fish L at 3,455 ft elevation.	134	.32	< .06	14,500	.17	10.5	123
MH13	06GL089SS	63.06786	-145.77934	06-23-06	Stream E of 14-mile L at 3,622 ft elevation.	441	.9	.09	28,900	.15	32.9	33.8
MH14	06GL090SS	63.20904	-145.93913	06-24-06	Stream S side knob E of Fish L at 3,428 ft elevation.	61.2	.14	< .06	11,400	.12	5	163
MH15	06GL091SS	63.23813	-146.12677	06-24-06	Stream E side knob w/4440 ft. pond at 3,743 ft elevation.	391	.82	.07	40,800	.26	30.6	48.4
MH16	06GL092SS	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation.	452	.64	.08	16,900	.39	18.7	114
MH17	06GL093SS	63.28561	-146.32222	06-25-06	E tributary upper Eureka Cr. at 3,570 ft elevation.	562	1	.16	25,800	.27	33.1	45.6
MH18	06GL094SS	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation.	680	.98	.15	31,900	.23	27.5	34.6
MH19	06GL095SS	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	158	.38	< .06	24,100	.13	12.2	113
MH20	06GL095SD	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	123	.28	< .06	18,900	.1	11.3	84.7
MH28	06AK-13LG	63.27890	-146.31895	06-25-06	E tributary upper Eureka Cr. at 3,490 ft elevation.	529	.84	.12	26,000	.29	27.6	86.5
MH29	06AK-14LG	63.33512	-146.33612	06-25-06	E tributary upper Eureka Cr. at 4,550 ft elevation.	404	.6	< .06	44,600	.21	20.6	51.9

Table 8. Map and field numbers, site latitude and longitude, location descriptions, and chemistry of composited stream-sediment samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP) and Hg determined by old-vapor atomic-absorption spectroscopy (CV-AAS). All other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ppb, part per billion; ppm, part per million; ft, foot; mi, mile; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Date collected	Location description	ICP-MS						
						Cr (ppm)	Cs (ppm)	Cu (ppm)	Fe (ppm)	Ga (ppm)	K (ppm)	La (ppm)
MH1	06GL078SS	63.32312	-146.04228	06-21-06	Upper W Specimen Cr. at 4,738 ft elevation.	346	2.1	113	66,000	15.7	17,600	15.7
MH2	06GL079SS	63.30545	-146.01343	06-21-06	Upper E Specimen Cr. at 4,217 ft elevation.	1,000	.35	108	78,600	14.2	2,430	10.8
MH3	06GL080SS	63.30453	-146.04385	06-21-06	Upper E Specimen Cr. at 3,868 ft elevation.	966	.26	105	79,700	14.8	2,560	10.6
MH4	06GL081SS	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	1,640	.95	1,260	89,400	14.3	3,030	27.1
	06GL081SD	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	1,680	.84	1,320	89,100	15.4	2,840	25.2
MH6	06GL082SS	63.29040	-146.04565	06-21-06	Specimen Cr. at 3,586 ft elevation.	1,650	.9	214	77,100	14	3,410	17.4
MH7	06GL083SS	63.24371	-146.05809	06-22-06	Stream N side Wild VABM at 3,602 ft elevation.	7,660	22.9	368	198,000	9.2	7,440	14.2
	06GL084SS	63.23421	-146.07301	06-22-06	Stream W side Wild VABM at 3,983 ft elevation.	954	2.5	80.7	106,000	13	3,210	10.8
MH9	06GL085SS	63.23159	-146.02222	06-22-06	Stream E side Wild VABM at 3,442 ft elevation.	2,140	5.2	147	95,500	10.3	2,000	5.6
MH10	06GL086SS	63.25433	-146.16962	06-22-06	Stream NE side knob 3 mi W of Wild VABM at 3,845 ft elevation.	1,280	2.2	90.4	82,000	14.2	3,230	10.4
MH11	06GL087SS	63.26217	-146.18781	06-22-06	S tributary Eureka Cr. enters at 3250 ft.; taken at 3,668 ft elevation.	472	2.2	72.9	65,700	14.9	4,460	15.6
MH12	06GL088SS	63.21600	-145.96277	06-23-06	Stream SW side knob E of Fish L at 3,455 ft elevation.	4,220	.82	128	114,000	6.2	1,930	5
MH13	06GL089SS	63.06786	-145.77934	06-23-06	Stream E of 14-mile L at 3,622 ft elevation.	378	1.2	63.6	53,600	15.4	6,760	16.1
MH14	06GL090SS	63.20904	-145.93913	06-24-06	Stream S side knob E of Fish L at 3,428 ft elevation.	1,460	.2	120	131,000	2.9	770	2.3
MH15	06GL091SS	63.23813	-146.12677	06-24-06	Stream E side knob w/4440 ft. pond at 3,743 ft elevation.	1,100	3.3	81	78,200	16.6	5,020	14.9
MH16	06GL092SS	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation.	684	5.1	137	160,000	11.5	5,160	9.2
MH17	06GL093SS	63.28561	-146.32222	06-25-06	E tributary upper Eureka Cr. at 3,570 ft elevation.	654	6.7	154	57,400	15	9,360	17.3
MH18	06GL094SS	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation.	2,260	3.1	85.6	59,000	15	11,700	14.7
MH19	06GL095SS	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	2,990	.88	200	107,000	7.4	2,580	5.7
MH20	06GL095SD	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	2,220	.7	153	81,100	5.9	2,010	5.6
MH28	06AK-13LG	63.27890	-146.31895	06-25-06	E tributary upper Eureka Cr. at 3,490 ft elevation.	966	3.4	89.2	73,200	12.3	7,890	14.3
MH29	06AK-14LG	63.33512	-146.33612	06-25-06	E tributary upper Eureka Cr. at 4,550 ft elevation.	1,840	.45	69.4	68,200	12	5,080	10.8

Table 8. Map and field numbers, site latitude and longitude, location descriptions, and chemistry of composited stream-sediment samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP) and Hg determined by old-vapor atomic-absorption spectroscopy (CV-AAS). All other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ppb, part per billion; ppm, part per million; ft, foot; mi, mile; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Date collected	Location description	ICP-MS						
						Li (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)	Nb (ppm)	Ni (ppm)
MH1	06GL078SS	63.32312	-146.04228	06-21-06	Upper W Specimen Cr. at 4,738 ft elevation.	17.8	32,300	1,140	0.26	19,000	7.9	141
MH2	06GL079SS	63.30545	-146.01343	06-21-06	Upper E Specimen Cr. at 4,217 ft elevation.	7.9	66,600	1,230	.25	10,200	7.5	390
MH3	06GL080SS	63.30453	-146.04385	06-21-06	Upper E Specimen Cr. at 3,868 ft elevation.	7.9	65,600	1,250	.2	12,000	8.8	352
MH4	06GL081SS	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	11.2	59,700	2,350	1	10,700	7.9	620
	06GL081SD	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	9.4	49,500	2,340	.73	8,210	12	616
MH6	06GL082SS	63.29040	-146.04565	06-21-06	Specimen Cr. at 3,586 ft elevation.	10.6	45,000	1,240	.46	8,860	10	391
MH7	06GL083SS	63.24371	-146.05809	06-22-06	Stream N side Wild VABM at 3,602 ft elevation.	20.1	40,900	2,340	.38	8,210	4.4	1,120
	06GL084SS	63.23421	-146.07301	06-22-06	Stream W side Wild VABM at 3,983 ft elevation.	15.6	33,800	2,860	.21	8,910	5.4	357
MH9	06GL085SS	63.23159	-146.02222	06-22-06	Stream E side Wild VABM at 3,442 ft elevation.	15	80,000	1,540	.26	5,880	4.1	715
MH10	06GL086SS	63.25433	-146.16962	06-22-06	Stream NE side knob 3 mi W of Wild VABM at 3,845 ft elevation.	13.6	39,700	1,200	.2	9,260	10	316
MH11	06GL087SS	63.26217	-146.18781	06-22-06	S tributary Eureka Cr. enters at 3250 ft.; taken at 3,668 ft elevation.	15.8	28,700	1,370	.41	11,300	9.7	213
MH12	06GL088SS	63.21600	-145.96277	06-23-06	Stream SW side knob E of Fish L at 3,455 ft elevation.	13.4	116,000	1,680	.27	3,320	1.7	1,150
MH13	06GL089SS	63.06786	-145.77934	06-23-06	Stream E of 14-mile L at 3,622 ft elevation.	19	23,000	912	.41	13,400	10	191
MH14	06GL090SS	63.20904	-145.93913	06-24-06	Stream S side knob E of Fish L at 3,428 ft elevation.	8.3	178,000	2,020	.1	2,020	.42	972
MH15	06GL091SS	63.23813	-146.12677	06-24-06	Stream E side knob w/4440 ft. pond at 3,743 ft elevation.	19.2	34,900	1,620	.57	10,600	13	253
MH16	06GL092SS	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation.	17.1	18,200	3,650	1	9,060	6	765
MH17	06GL093SS	63.28561	-146.32222	06-25-06	E tributary upper Eureka Cr. at 3,570 ft elevation.	28.9	28,700	1,260	1.6	14,300	10	372
MH18	06GL094SS	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation.	15.6	25,100	1,160	.54	20,300	5.7	231
MH19	06GL095SS	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	12.3	123,000	1,510	.23	5,330	2.3	1,020
MH20	06GL095SD	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	9.3	92,500	1,140	.2	4,080	2.5	761
MH28	06AK-13LG	63.27890	-146.31895	06-25-06	E tributary upper Eureka Cr. at 3,490 ft elevation.	21.2	21,800	3,890	1.7	14,000	6.6	514
MH29	06AK-14LG	63.33512	-146.33612	06-25-06	E tributary upper Eureka Cr. at 4,550 ft elevation.	13.1	56,800	1,130	.4	12,500	4	533

Table 8. Map and field numbers, site latitude and longitude, location descriptions, and chemistry of composited stream-sediment samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP) and Hg determined by old-vapor atomic-absorption spectroscopy (CV-AAS). All other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ppb, part per billion; ppm, part per million; ft, foot; mi, mile; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Date collected	Location description	ICP-MS						
						P (ppm)	Pb (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Th (ppm)
MH1	06GL078SS	63.32312	-146.04228	06-21-06	Upper W Specimen Cr. at 4,738 ft elevation.	749	9.67	59.7	6.3	24.8	197	3.01
MH2	06GL079SS	63.30545	-146.01343	06-21-06	Upper E Specimen Cr. at 4,217 ft elevation.	498	2.54	6.8	.41	29.4	217	1.43
MH3	06GL080SS	63.30453	-146.04385	06-21-06	Upper E Specimen Cr. at 3,868 ft elevation.	541	1.5	6.7	.34	31.9	181	1.31
MH4	06GL081SS	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	496	3.44	8.8	1.9	27.3	237	2.71
	06GL081SD	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	436	3.2	9.2	1.8	26.5	257	1.62
MH6	06GL082SS	63.29040	-146.04565	06-21-06	Specimen Cr. at 3,586 ft elevation.	439	4.29	11.6	1.8	24	241	2.52
MH7	06GL083SS	63.24371	-146.05809	06-22-06	Stream N side Wild VABM at 3,602 ft elevation.	242	3.56	31.9	13.2	13.8	85.9	4.34
	06GL084SS	63.23421	-146.07301	06-22-06	Stream W side Wild VABM at 3,983 ft elevation.	429	4.74	11.8	.88	24.8	219	1.9
MH9	06GL085SS	63.23159	-146.02222	06-22-06	Stream E side Wild VABM at 3,442 ft elevation.	241	3.2	8.2	.59	24.5	162	.89
MH10	06GL086SS	63.25433	-146.16962	06-22-06	Stream NE side knob 3 mi W of Wild VABM at 3,845 ft elevation.	462	4.44	11.7	.6	24.2	221	1.52
MH11	06GL087SS	63.26217	-146.18781	06-22-06	S tributary Eureka Cr. enters at 3250 ft.; taken at 3,668 ft elevation.	586	6.35	16.4	.61	23.3	244	2.89
MH12	06GL088SS	63.21600	-145.96277	06-23-06	Stream SW side knob E of Fish L at 3,455 ft elevation.	377	3.41	9.3	.2	12.4	103	1.07
MH13	06GL089SS	63.06786	-145.77934	06-23-06	Stream E of 14-mile L at 3,622 ft elevation.	667	6.98	25.1	.82	22.2	253	3.54
MH14	06GL090SS	63.20904	-145.93913	06-24-06	Stream S side knob E of Fish L at 3,428 ft elevation.	155	1.85	3	.2	11.4	43.5	.39
MH15	06GL091SS	63.23813	-146.12677	06-24-06	Stream E side knob w/4440 ft. pond at 3,743 ft elevation.	850	7.04	17.7	.73	27	253	2.82
MH16	06GL092SS	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation.	1,200	5.56	15.7	1.6	19.6	183	1.91
MH17	06GL093SS	63.28561	-146.32222	06-25-06	E tributary upper Eureka Cr. at 3,570 ft elevation.	1,080	9.08	27.5	2.2	20	308	3.71
MH18	06GL094SS	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation.	464	7.8	35.9	3.6	19.7	277	3.38
MH19	06GL095SS	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	297	2.82	8.9	.98	17.6	112	1.09
MH20	06GL095SD	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	233	2.22	7.1	.82	13.5	88.8	.99
MH28	06AK-13LG	63.27890	-146.31895	06-25-06	E tributary upper Eureka Cr. at 3,490 ft elevation.	1,140	8.87	26.4	1.8	17.7	259	3.83
MH29	06AK-14LG	63.33512	-146.33612	06-25-06	E tributary upper Eureka Cr. at 4,550 ft elevation.	328	3.92	14.4	3.3	24.4	249	1.96

Table 8. Map and field numbers, site latitude and longitude, location descriptions, and chemistry of composited stream-sediment samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP) and Hg determined by old-vapor atomic-absorption spectroscopy (CV-AAS). All other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ppb, part per billion; ppm, part per million; ft, foot; mi, mile; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Date collected	Location description	ICP-MS					
						Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	Y (ppm)	Zn (ppm)
MH1	06GL078SS	63.32312	-146.04228	06-21-06	Upper W Specimen Cr. at 4,738 ft elevation.	5,230	0.66	1.52	191	24.6	95.1
MH2	06GL079SS	63.30545	-146.01343	06-21-06	Upper E Specimen Cr. at 4,217 ft elevation.	6,290	.08	.6	228	20.5	83
MH3	06GL080SS	63.30453	-146.04385	06-21-06	Upper E Specimen Cr. at 3,868 ft elevation.	6,950	<.08	.54	252	21.9	79.8
MH4	06GL081SS	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	6,510	.12	.79	218	95.5	158
	06GL081SD	63.30515	-146.04347	06-21-06	Upper W Specimen Cr. at 3,871 ft elevation.	6,820	.12	.76	214	101	169
MH6	06GL082SS	63.29040	-146.04565	06-21-06	Specimen Cr. at 3,586 ft elevation.	6,510	.13	.96	192	30.1	145
MH7	06GL083SS	63.24371	-146.05809	06-22-06	Stream N side Wild VABM at 3,602 ft elevation.	3,430	.16	1.22	17.3	13.4	188
	06GL084SS	63.23421	-146.07301	06-22-06	Stream W side Wild VABM at 3,983 ft elevation.	6,400	.11	.61	196	20.7	101
MH9	06GL085SS	63.23159	-146.02222	06-22-06	Stream E side Wild VABM at 3,442 ft elevation.	5,010	<.08	.39	138	15.4	112
MH10	06GL086SS	63.25433	-146.16962	06-22-06	Stream NE side knob 3 mi W of Wild VABM at 3,845 ft elevation.	7,300	.1	.56	223	20.4	115
MH11	06GL087SS	63.26217	-146.18781	06-22-06	S tributary Eureka Cr. enters at 3,250 ft; taken at 3,668 ft elevation.	7,820	.12	.88	221	21.7	98
MH12	06GL088SS	63.21600	-145.96277	06-23-06	Stream SW side knob E of Fish L at 3,455 ft elevation.	2,300	<.08	.4	62.2	8	124
MH13	06GL089SS	63.06786	-145.77934	06-23-06	Stream E of 14-mile L at 3,622 ft elevation.	5,810	.2	1.17	182	18.2	76.7
MH14	06GL090SS	63.20904	-145.93913	06-24-06	Stream S side knob E of Fish L at 3,428 ft elevation.	1,390	<.08	.13	60.8	4	111
MH15	06GL091SS	63.23813	-146.12677	06-24-06	Stream E side knob w/4440 ft. pond at 3,743 ft elevation.	9,640	.15	.94	252	23.3	124
MH16	06GL092SS	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation.	4,360	.2	1.12	151	16	134
MH17	06GL093SS	63.28561	-146.32222	06-25-06	E tributary upper Eureka Cr. at 3,570 ft elevation.	6,030	.23	6.48	153	22.9	109
MH18	06GL094SS	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation.	4,480	.23	1.9	134	21.2	94.4
MH19	06GL095SS	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	3,600	.08	.44	94.6	10.6	100
MH20	06GL095SD	63.22569	-145.93065	06-25-06	Stream N side knob E of Fish L at 3,301 ft elevation.	3,040	<.08	.34	69.5	8.1	75.3
MH28	06AK-13LG	63.27890	-146.31895	06-25-06	E tributary upper Eureka Cr. at 3,490 ft elevation.	4,230	.28	6.54	152	18.4	90.8
MH29	06AK-14LG	63.33512	-146.33612	06-25-06	E tributary upper Eureka Cr. at 4,550 ft elevation.	3,810	.13	1.13	122	16.2	78.4

Table 9. Map and field numbers, site latitude and longitude, location descriptions, and mineralogy of panned-concentrate samples of stream-sediments, Tangle Lakes District, Alaska.

[Map Nos. are shown on figure 3. Mineralogy determined by visual identification in the field. Confirmed using microscopic examination of concentrates. **Abbreviations:** °N, degrees North; °W, degrees west; ft, foot; mi, mile; %, percent]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Local description	Mineralogy
MH1	06GL078SC	63.32312	-146.04228	Upper W Specimen Cr. at 4,738 ft elevation	1 tiny well-crystalized gold grain; sparse oxidized pyrite (0.1%); trace barite; yellow monazite; trace cinnabar.
MH2	06GL079SC	63.30545	-146.01343	Upper E Specimen Cr. at 4,217 ft elevation	Trace oxidized pyrite; trace brilliant red cinnabar.
MH3	06GL080SC	63.30453	-146.04385	Upper E Specimen Cr. at 3,868 ft elevation	1 possible tiny gold grain (?) seen in field; sparse oxidized pyrite (0.1%).
MH4	06GL081SC	63.30515	-146.04347	Upper W Specimen Cr. at 3,871 ft elevation	Gold grain (?) seen in field; sparse scheelite; 1% oxidized pyrite; barite; 22 grains bright red cinnabar; manganese oxide in orbicular form.
MH6	06GL082SC	63.29040	-146.04565	Specimen Cr. at 3,586 ft elevation	Copper silicates; barite; bright red cinnabar.
MH7	06GL083SC	63.24371	-146.05809	Stream N side Wild VABM at 3,602 ft elevation	Oxidized pyrite; notable amounts of red to purplish cinnabar and metacinnabar.
MH9	06GL084SC	63.23421	-146.07301	Stream W side Wild VABM at 3,983 ft elevation	Schorl; trace cinnabar.
MH10	06GL085SC	63.23159	-146.02222	Stream E side Wild VABM at 3,442 ft elevation	Gold - 1 relatively large, thick, heavy, subangular, elongate flake with rough, semihackly surface; trace cinnabar.
MH11	06GL086SC	63.25433	-146.16962	Stream NE side knob 3 mi W of Wild VABM at 3,845 ft elevation	Schorl.
MH12	06GL087SC	63.26217	-146.18781	S tributary Eureka Cr. enters at 3,250 ft; taken at 3,668 ft elevation	Schorl.
MH13	06GL088SC	63.21600	-145.96277	Stream SW side knob E of Fish Lake at 3,455 ft elevation	Cinnabar grain; 1 pyrite grain.
MH14	06GL089SC	63.06786	-145.77934	Stream E of Fourteenmile Lake at 3,622 ft elevation	No ore-related minerals seen.
MH15	06GL090SC	63.20904	-145.93913	Stream S side knob E of Fish Lake at 3,428 ft elevation	Gold grain seen in field; 1 grain cinnabar; 1 pyrite grain.
MH16	06GL091SC	63.23813	-146.12677	Stream E side knob w/4,440 ft pond at 3,743 ft elevation	1 tiny, jagged gold grain seen in field; sparse scheelite.
MH18	06GL093SC	63.28561	-146.32222	E tributary upper Eureka Cr. at 3,570 ft elevation	Schorl.
MH19	06GL094SC	63.31912	-146.32547	E tributary upper Eureka Cr. at 4,350 ft elevation	Scheelite; 20% oxidized pyrite; barite; cinnabar.
MH20	06GL095SC	63.22569	-145.93065	Stream N side knob E of Fish Lake at 3,301 ft elevation	1 flattened, rounded, medium-size gold flake seen in field; sparse oxidized pyrite.

Table 10. Map, laboratory, and field numbers, site latitude and longitude, sample descriptions, and chemistry of soils, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. All values are in parts per million. Concentration of Hg determined using cold-vapor atomic-absorption spectroscopy (CV-AAS) on a ground sample aliquot. All other elements determined using inductively coupled plasma-mass spectrometry (ICP-MS) on the ground sample. **Abbreviations:** °N., degrees North; °W., degrees West; <, less than]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Hg	Al	As	Ba	Be	Bi	Ca
MH21	C-283228	06AK06A	63.07368	-145.74762	Organic-rich A horizon; dark brown; silty	0.04	59,600	10	360	0.63	0.07	28,800
MH21	C-283229	06AK06B	63.07368	-145.74762	Reddish-brown B horizon; silty	.03	66,000	9.5	400	.66	< .06	29,400
MH21	C-283230	06AK06C	63.07368	-145.74762	Grey C horizon; coarse-sandy	.06	68,500	8.3	410	.74	< .06	30,500
MH22	C-283231	06AK07A	63.09644	-145.75018	Dark-brown A horizon; silty; organic; some fine sand	.04	70,200	8.0	420	.69	< .06	34,600
MH22	C-283232	06AK07C	63.09644	-145.75018	Coarse gray C horizon sandy-gravely; flood plain	.02	73,300	7.5	420	.81	< .06	39,000
MH23	C-283233	06AK08A	63.22575	-146.05510	Dark-brown A horizon; silty; organic-rich	.21	66,200	20	410	.86	.11	24,100
MH23	C-283234	06AK08B	63.22575	-146.05510	Red-brown B horizon; silty	.29	67,300	23	350	.84	.11	25,300
MH23	C-283235	06AK08C	63.22575	-146.05510	Grayish-brown C horizon; fine sandy	.33	63,800	27	300	.61	.12	30,400
MH24	C-283236	06AK09A	63.22578	-146.18777	Dark-brown A horizon; silty	.07	66,700	17	600	.9	.17	16,700
MH24	C-283237	06AK09C	63.22578	-146.18777	Gray silty C horizon with few large coarse fragments	.07	90,300	20	810	1.0	.14	27,700
MH25	C-283238	06AK10A	63.05629	-145.87428	Silty to fine sandy A horizon; organic-rich	.04	74400	7.3	440	.83	< .06	33,500
MH25	C-283239	06AK10B	63.05629	-145.87428	Silty B horizon; gray-brown	.04	80,600	8.3	500	.96	< .06	36,100
MH25	C-283240	06AK10C	63.05629	-145.87428	Silty C horizon; gray; very wet; no permafrost	.07	83,100	8.9	520	.96	< .06	37,200

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Cd	Ce	Co	Cr	Cs	Cu	Fe
MH21	C-283228	06AK06A	63.07368	-145.74762	Organic-rich A horizon; dark brown; silty	0.19	18	65	982	1.1	100	67,200
MH21	C-283229	06AK06B	63.07368	-145.74762	Reddish-brown B horizon; silty	.14	20	61	1,010	1.2	120	68,200
MH21	C-283230	06AK06C	63.07368	-145.74762	Grey C horizon; coarse-sandy	.14	23	62	1,020	1.2	120	70,800
MH22	C-283231	06AK07A	63.09644	-145.75018	Dark-brown A horizon; silty; organic; some fine sand	.16	23	38	644	.88	68	56,400
MH22	C-283232	06AK07C	63.09644	-145.75018	Coarse gray C horizon sandy-gravely; flood plain	.15	28	38	716	.79	68	57,400
MH23	C-283233	06AK08A	63.22575	-146.05510	Dark-brown A horizon; silty; organic-rich	.19	23	43	679	2.8	99	65,000
MH23	C-283234	06AK08B	63.22575	-146.05510	Red-brown B horizon; silty	.23	24	45	825	3.2	96	80,000
MH23	C-283235	06AK08C	63.22575	-146.05510	Grayish-brown C horizon; fine sandy	.24	17	94	1,420	3.0	280	82,500
MH24	C-283236	06AK09A	63.22578	-146.18777	Dark-brown A horizon; silty	.30	28	61	135	2.2	61	44,900
MH24	C-283237	06AK09C	63.22578	-146.18777	Gray silty C horizon with few large coarse fragments	.23	31	41	274	2.4	110	79,100
MH25	C-283238	06AK10A	63.05629	-145.87428	Silty to fine sandy A horizon; organic-rich	.15	22	26	319	1.0	49	51,500
MH25	C-283239	06AK10B	63.05629	-145.87428	Silty B horizon; gray-brown	.12	25	30	411	1.1	58	55,000
MH25	C-283240	06AK10C	63.05629	-145.87428	Silty C horizon; gray; very wet; no permafrost	.13	29	32	450	1.2	72	58,000

Table 10. Map, laboratory, and field numbers, site latitude and longitude, sample descriptions, and chemistry of soils, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. All values are in parts per million. Concentration of Hg determined using cold-vapor atomic-absorption spectroscopy (CV-AAS) on a ground sample aliquot. All other elements determined using inductively coupled plasma-mass spectrometry (ICP-MS) on the ground sample. **Abbreviations:** °N., degrees North; °W., degrees West; <, less than]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Ga	K	La	Li	Mg	Mn	Mo
MH21	C-283228	06AK06A	63.07368	-145.74762	Organic-rich A horizon; dark brown; silty	12	5,240	9.0	15	61,500	1,350	0.27
MH21	C-283229	06AK06B	63.07368	-145.74762	Reddish-brown B horizon; silty	13	5,480	10	17	63,600	1,180	.20
MH21	C-283230	06AK06C	63.07368	-145.74762	Grey C horizon; coarse-sandy	14	5,740	12	17	59,500	1,150	.07
MH22	C-283231	06AK07A	63.09644	-145.75018	Dark-brown A horizon; silty; organic; some fine sand	13	6,540	12	16	46,200	1,110	.24
MH22	C-283232	06AK07C	63.09644	-145.75018	Coarse gray C horizon sandy-gravely; flood plain	14	6,620	15	15	48,100	1,100	.10
MH23	C-283233	06AK08A	63.22575	-146.05510	Dark-brown A horizon; silty; organic-rich	15	7,270	12	25	42,200	1,010	.81
MH23	C-283234	06AK08B	63.22575	-146.05510	Red-brown B horizon; silty	16	5,980	12	26	44,700	1,040	.76
MH23	C-283235	06AK08C	63.22575	-146.05510	Grayish-brown C horizon; fine sandy	12	4,820	8.3	23	78,400	1,440	.20
MH24	C-283236	06AK09A	63.22578	-146.18777	Dark-brown A horizon; silty	15	7,970	13	19	15,100	4,860	8.9
MH24	C-283237	06AK09C	63.22578	-146.18777	Gray silty C horizon with few large coarse fragments	22	7,480	15	22	23,800	2,300	3.0
MH25	C-283238	06AK10A	63.05629	-145.87428	Silty to fine sandy A horizon; organic-rich	14	7,840	12	16	28,100	895	.31
MH25	C-283239	06AK10B	63.05629	-145.87428	Silty B horizon; gray-brown	15	8,520	12	18	30,200	1,050	.27
MH25	C-283240	06AK10C	63.05629	-145.87428	Silty C horizon; gray; very wet; no permafrost	15	9,180	16	20	32,100	1,140	.24

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Na	Nb	Ni	P	Pb	Rb	Sb
MH21	C-283228	06AK06A	63.07368	-145.74762	Organic-rich A horizon; dark brown; silty	13,900	6.1	390	560	4.3	20	0.67
MH21	C-283229	06AK06B	63.07368	-145.74762	Reddish-brown B horizon; silty	16,600	7.3	400	500	4.3	19	.68
MH21	C-283230	06AK06C	63.07368	-145.74762	Grey C horizon; coarse-sandy	17,400	7.1	410	560	4.4	20	.65
MH22	C-283231	06AK07A	63.09644	-145.75018	Dark-brown A horizon; silty; organic; some fine sand	16,800	7.0	240	650	5.2	21	.74
MH22	C-283232	06AK07C	63.09644	-145.75018	Coarse gray C horizon sandy-gravely; flood plain	18,300	7.1	230	650	5.0	20	.71
MH23	C-283233	06AK08A	63.22575	-146.05510	Dark-brown A horizon; silty; organic-rich	13,100	6.9	280	970	12	28	1.6
MH23	C-283234	06AK08B	63.22575	-146.05510	Red-brown B horizon; silty	11,300	8.3	280	590	11	23	1.8
MH23	C-283235	06AK08C	63.22575	-146.05510	Grayish-brown C horizon; fine sandy	11,500	6.0	760	460	9.3	15	2.2
MH24	C-283236	06AK09A	63.22578	-146.18777	Dark-brown A horizon; silty	12,000	7.4	57	2,540	10	27	.72
MH24	C-283237	06AK09C	63.22578	-146.18777	Gray silty C horizon with few large coarse fragments	11,000	13	84	1,790	9.9	28	1.1
MH25	C-283238	06AK10A	63.05629	-145.87428	Silty to fine sandy A horizon; organic-rich	19,000	7.9	120	610	6.1	26	.78
MH25	C-283239	06AK10B	63.05629	-145.87428	Silty B horizon; gray-brown	20,600	7.3	130	540	6.0	26	.84
MH25	C-283240	06AK10C	63.05629	-145.87428	Silty C horizon; gray; very wet; no permafrost	20,600	8.5	150	640	7.2	28	.91

Table 10. Map, laboratory, and field numbers, site latitude and longitude, sample descriptions, and chemistry of soils, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. All values are in parts per million. Concentration of Hg determined using cold-vapor atomic-absorption spectroscopy (CV-AAS) on a ground sample aliquot. All other elements determined using inductively coupled plasma-mass spectrometry (ICP-MS) on the ground sample. **Abbreviations:** °N., degrees North; °W., degrees West; <, less than]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Sc	Sr	Th	Ti	Tl
MH21	C-283228	06AK06A	63.07368	-145.74762	Organic-rich A horizon; dark brown; silty	23	180	1.9	4,720	0.18
MH21	C-283229	06AK06B	63.07368	-145.74762	Reddish-brown B horizon; silty	25	200	1.9	5,630	.15
MH21	C-283230	06AK06C	63.07368	-145.74762	Grey C horizon; coarse-sandy	27	210	2.2	6,130	.14
MH22	C-283231	06AK07A	63.09644	-145.75018	Dark-brown A horizon; silty; organic; some fine sand	23	240	2.5	4,870	.16
MH22	C-283232	06AK07C	63.09644	-145.75018	Coarse gray C horizon sandy-gravely; flood plain	25	260	2.9	5,210	.16
MH23	C-283233	06AK08A	63.22575	-146.05510	Dark-brown A horizon; silty; organic-rich	19	210	2.9	4,880	.24
MH23	C-283234	06AK08B	63.22575	-146.05510	Red-brown B horizon; silty	22	150	2.8	5,920	.22
MH23	C-283235	06AK08C	63.22575	-146.05510	Grayish-brown C horizon; fine sandy	24	150	1.6	4,870	.17
MH24	C-283236	06AK09A	63.22578	-146.18777	Dark-brown A horizon; silty	15	200	3.0	4,230	.58
MH24	C-283237	06AK09C	63.22578	-146.18777	Gray silty C horizon with few large coarse fragments	30	180	3.5	8,590	.34
MH25	C-283238	06AK10A	63.05629	-145.87428	Silty to fine sandy A horizon; organic-rich	22	250	2.5	5,650	.19
MH25	C-283239	06AK10B	63.05629	-145.87428	Silty B horizon; gray-brown	26	260	2.7	6,140	.19
MH25	C-283240	06AK10C	63.05629	-145.87428	Silty C horizon; gray; very wet; no permafrost	27	270	3.3	6,220	.23

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	U	V	Y	Zn
MH21	C-283228	06AK06A	63.07368	-145.74762	Organic-rich A horizon; dark brown; silty	0.64	190	14	93
MH21	C-283229	06AK06B	63.07368	-145.74762	Reddish-brown B horizon; silty	.66	210	16	81
MH21	C-283230	06AK06C	63.07368	-145.74762	Grey C horizon; coarse-sandy	.70	220	18	84
MH22	C-283231	06AK07A	63.09644	-145.75018	Dark-brown A horizon; silty; organic; some fine sand	.79	190	16	81
MH22	C-283232	06AK07C	63.09644	-145.75018	Coarse gray C horizon sandy-gravely; flood plain	.87	200	18	78
MH23	C-283233	06AK08A	63.22575	-146.05510	Dark-brown A horizon; silty; organic-rich	.96	180	11	110
MH23	C-283234	06AK08B	63.22575	-146.05510	Red-brown B horizon; silty	.88	220	12	120
MH23	C-283235	06AK08C	63.22575	-146.05510	Grayish-brown C horizon; fine sandy	.53	190	11	100
MH24	C-283236	06AK09A	63.22578	-146.18777	Dark-brown A horizon; silty	1.4	150	13	85
MH24	C-283237	06AK09C	63.22578	-146.18777	Gray silty C horizon with few large coarse fragments	1.5	330	19	170
MH25	C-283238	06AK10A	63.05629	-145.87428	Silty to fine sandy A horizon; organic-rich	.77	210	16	74
MH25	C-283239	06AK10B	63.05629	-145.87428	Silty B horizon; gray-brown	.80	230	17	78
MH25	C-283240	06AK10C	63.05629	-145.87428	Silty C horizon; gray; very wet; no permafrost	.89	240	19	86

Table 11. Map, laboratory, and field numbers, site latitude and longitude, site descriptions, and chemistry of soil water, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. Samples collected with a ceramic lysimeter (collected with a vacuum of 70–90 centibars). Soil-water chemistry determined by inductively coupled plasma-mass spectrometry. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µS/cm, microsiemens per centimeter; mg/L, milligram per liter; ft, foot]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Be (µg/L)	Bi (µg/L)	Ca (mg/L)	Cd (µg/L)	Ce (µg/L)	Co (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	<0.05	< 0.2	1.9	0.03	0.97	0.22
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	<.05	< .2	5.5	.04	.44	.18
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	<.05	< .2	2.0	.07	6.1	.86
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	<.05	< .2	0.2	.12	1.4	.08
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	<.05	< .2	1.6	.12	6.8	.56

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Cr (µg/L)	Cs (µg/L)	Cu (mg/L)	Dy (µg/L)	Er (µg/L)	Eu (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	<1	< 0.02	8.2	0.10	0.062	0.02
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	1.3	< .02	2.6	.084	.073	.01
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	1	< .02	5.5	.73	.63	.12
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	<1	< .02	1.1	.12	.088	.03
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	1.9	< .02	6.0	.70	.41	.15

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Fe (µg/L)	Ga (µg/L)	Gd (mg/L)	Ge (µg/L)	Ho (µg/L)	K (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	120	< 0.05	0.13	< 0.05	0.02	0.07
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	<50	< .05	.074	.08	.02	.20
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	1,150	< .05	.79	.10	.19	.10
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	<50	< .05	.15	.07	.03	.08
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	260	.05	.80	.05	.14	.20

Table 11. Map, laboratory, and field numbers, site latitude and longitude, site descriptions, and chemistry of soil water, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Samples collected with a ceramic lysimeter (collected with a vacuum of 70–90 centibars). Soil-water chemistry determined by inductively coupled plasma-mass spectrometry. **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; µS/cm, microsiemens per centimeter; mg/L, milligram per liter; ft, foot]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		La (µg/L)	Li (µg/L)	Lu (mg/L)	Mg (mg/L)	Mn (µg/L)	Mo (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	0.36	1.4	< 0.1	2.0	4.1	< 2
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	.20	5.4	< .1	15.8	11	< 2
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	2.4	24	< .1	10.6	48	< 2
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	.56	2.4	< .1	.05	3.3	< 2
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	3.0	1.4	< .1	.71	6.3	< 2

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Na (mg/L)	Nb (µg/L)	Nd (µg/L)	Ni (µg/L)	P (mg/L)	Pb (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	0.35	< 0.2	0.48	17	0.06	0.10
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	2.1	< .2	.36	6.5	.10	.20
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	.50	< .2	2.4	9.3	.06	.09
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	.46	< .2	.59	1.1	.10	.08
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	.50	< .2	3.2	5.6	.20	.06

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Pr (µg/L)	Rb (µg/L)	Sb (µg/L)	Sc (µg/L)	Se (µg/L)	SiO_2 (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	0.10	0.10	<0.3	0.60	< 1	6.4
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	.07	.10	<.3	2.0	< 1	19
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	.50	.20	<.3	2.0	< 1	18
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	.13	.19	<.3	< .6	< 1	3.7
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	.77	.27	<.3	1.5	< 1	8.1

Table 11. Map, laboratory, and field numbers, site latitude and longitude, site descriptions, and chemistry of soil water, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. Samples collected with a ceramic lysimeter (collected with a vacuum of 70–90 centibars). Soil-water chemistry determined by inductively coupled plasma-mass spectrometry.
Abbreviations: °N, degrees north; °W, degrees west; µg/L, microgram per liter; µS/cm, microsiemens per centimeter; mg/L, milligram per liter; ft, foot]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Sm (µg/L)	SO_4 (mg/L)	Sr (µg/L)	Ta (µg/L)	Tb (µg/L)	Th (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	0.10	< 2	3.4	< 0.02	0.02	< 0.2
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	.08	3.0	8.2	< .02	.01	< .2
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	.48	< 2	14	< .02	.12	< .2
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	.10	< 2	2.9	< .02	.02	< .2
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	.69	< 2	4.2	< .02	.12	.2

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Ti (µg/L)	Tl (µg/L)	Tm (µg/L)	U (µg/L)	V (µg/L)	W (µg/L)
							pH	Conductivity (µS/cm)						
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	2.1	<0.1	0.008	< 0.1	0.80	< 0.5
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	< .5	<.1	.01	< .1	.80	< .5
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	1.5	<.1	.081	< .1	1.8	< .5
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	1.3	<.1	.01	< .1	.70	< .5
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	6.0	<.1	.057	< .1	1.3	< .5

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Site elevation (ft)	Underlying lithology	Soil water		Y (µg/L)	Yb (µg/L)	Zn (µg/L)	Zr (µg/L)
							pH	Conductivity (µS/cm)				
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	4,007	Cumulate (ultramafic)	6.74	51	0.62	0.06	27	< 0.2
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	3,909	Cumulate (ultramafic)	6.42	180	.60	.09	29	.58
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	3,950	Cumulate (ultramafic)	6.24	160	7.6	.54	68	< .2
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	4,460	Cumulate (ultramafic)	4.87	37	.92	.08	63	< .2
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	3,258	Nikolai greenstone (?)	4.81	29	3.5	.36	41	1.7

Table 12. Map, laboratory, and field numbers, site latitude and longitude, and chemistry of soil water, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. Samples were collected with a ceramic lysimeter (collected with a vacuum of 70–90 centibars). Soil-water chemistry determined by inductively coupled plasma atomic-emission spectrometry (ICP-AES). **Abbreviations:** °N, degrees north; °W, degrees west; µg/L, microgram per liter; mg/L, milligram per liter]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Ag (µg/L)	Al (µg/L)	As (µg/L)	B (µg/L)	Ba (µg/L)	Be (µg/L)	Ca (µg/L)	Cd (µg/L)	Co (µg/L)	Cr (µg/L)	Cu (µg/L)	Fe (µg/L)
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	<5	130	<200	<5	<1	<10	2.1	<5	<10	<10	<10	140
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	<5	36	<200	<5	1.2	<10	5.7	<5	<10	<10	<10	<20
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	<5	110	<200	<5	3.0	<10	2.2	<5	<10	<10	<10	1,290
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	<5	120	<200	<5	22	<10	.20	<5	<10	<10	<10	29
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	<5	570	<200	<5	7.1	<10	1.7	<5	<10	<10	<10	290

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	K (mg/L)	Li (µg/L)	Mg (mg/L)	Mn (µg/L)	Mo (µg/L)	Na (mg/L)	Ni (µg/L)	P (µg/L)	Pb (µg/L)	Sb (µg/L)	SiO_2 (mg/L)	SO_4 (µg/L)
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	<0.1	<5	2.4	<10	<20	0.38	17	<0.5	<50	<50	6.7	1.2
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	.20	5.0	17.8	12	<20	2.3	<10	<.5	<50	<50	22	4.0
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	<.1	23	12.4	53	<20	.55	<10	<.5	<50	<50	20	2.5
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	<.1	<5	<.1	<10	<20	.52	<10	<.5	<50	<50	4.5	<1
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	.23	<5	.85	<10	<20	.54	<10	<.5	<50	<50	9.7	1.2

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sr (µg/L)	Ti (µg/L)	V (µg/L)	Zn (mg/L)
MH21	C-292604	06AK06L1-C	63.07368	-145.74762	3.5	<50	<10	<20
MH22	C-292605	06AK07L1-C	63.09644	-145.75018	8.1	<50	<10	28
MH23	C-292606	06AK08L1-C	63.22575	-146.05510	15	<50	<10	57
MH24	C-292607	06AK09L1-C	63.22578	-146.18777	3.0	<50	<10	69
MH25	C-292608	06AK10L1-C	63.05629	-145.87428	4.3	<50	<10	45

Table 13. Map, laboratory, and field numbers, site latitude and longitude, and major-anion chemistry of soil-water samples, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. All values are in milligrams per liter. Samples were collected with a ceramic lysimeter (drawn through at 70–90 centibars). Soil-water chemistry determined by ion chromatography. **Abbreviations:** °N, degrees North; °W, degrees west]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	F^-	Cl^-	NO_3^-	SO_4^{2-}
MH21	C-292604	06AK06L1-A	63.07368	-145.74762	0.01	0.22	1.2	0.57
MH22	C-292605	06AK07L1-A	63.09644	-145.75018	.05	2.21	4.3	3.16
MH23	C-292606	06AK08L1-A	63.22575	-146.05510	.15	.59	4.6	1.53
MH24	C-292607	06AK09L1-A	63.22578	-146.18777	.50	.73	.18	.80
MH25	C-292608	06AK10L1-A	63.05629	-145.87428	.55	.65	.50	.53

Table 14. Map, laboratory, and field numbers, site latitude and longitude, sample description, and chemistry of willow leaf material (dry-weight basis), Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. All element values are in parts per million (ppm). Samples were collected from the terminal 10–20 centimeters of stems. Plant chemistry determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; <, less than]

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Ash yield (percent)	Al	Al	As	Ba	Be	Bi	Ca	Cd	Ce
MH21	C-283246	06AK06W	63.07368	-145.74762	Composite of 3 shrubs	4.25	<0.1	<50	<1	1.2	<0.03	<0.06	1,840	0.4	<0.1
MH22	C-283247	06AK07W	63.09644	-145.75018	Composite of 1 shrub	5.00	<.1	<50	<1	2.0	<.03	<.06	3,100	1.4	<.1
MH23	C-283248	06AK08W	63.22575	-146.05510	Composite of 3 shrubs	4.00	<.1	69	<1	40	<.03	<.06	5,030	1.1	<.1
MH24	C-283249	06AK09W	63.22578	-146.18777	Composite of 5 shrubs	5.25	<.1	87	<1	60	<.03	<.06	5,750	2.3	<.1
MH25	C-283250	06AK10W	63.05629	-145.87428	Composite of 3 shrubs	4.50	<.1	<50	<1	3.8	<.03	<.06	4,800	1.4	<.1
MH26	C-283251	06AK11W	63.22145	-145.91254	Composite of 4 shrubs	5.25	<.1	<50	<1	2.4	<.03	<.06	2,940	.54	<.1

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Ash yield (percent)	Co	Cr	Cs	Cu	Fe	Ga	K	La	Li
MH21	C-283246	06AK06W	63.07368	-145.74762	Composite of 3 shrubs	4.25	0.64	<0.5	0.04	9.4	64	0.02	<20	<0.05	1.2
MH22	C-283247	06AK07W	63.09644	-145.75018	Composite of 1 shrub	5.00	2.5	<.5	.05	8.2	81	.04	<20	<.05	2.2
MH23	C-283248	06AK08W	63.22575	-146.05510	Composite of 3 shrubs	4.00	5.9	<.5	.05	4.8	60	.03	9,720	.08	.30
MH24	C-283249	06AK09W	63.22578	-146.18777	Composite of 5 shrubs	5.25	1.9	<.5	.04	9.1	120	.05	13,500	<.05	2.0
MH25	C-283250	06AK10W	63.05629	-145.87428	Composite of 3 shrubs	4.50	2.0	<.5	.05	7.0	72	.03	10,300	<.05	1.6
MH26	C-283251	06AK11W	63.22145	-145.91254	Composite of 4 shrubs	5.25	3.8	<.5	.10	7.4	68	.04	14,900	<.05	.80

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Ash yield (percent)	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb
MH21	C-283246	06AK06W	63.07368	-145.74762	Composite of 3 shrubs	4.25	5,740	130	0.10	48	< 0.1	12	4,570	<0.4	18
MH22	C-283247	06AK07W	63.09644	-145.75018	Composite of 1 shrub	5.00	5,150	390	.10	45	< .1	15	6,430	<.4	23
MH23	C-283248	06AK08W	63.22575	-146.05510	Composite of 3 shrubs	4.00	2,860	550	<.05	40	< .1	19	3,680	<.4	13
MH24	C-283249	06AK09W	63.22578	-146.18777	Composite of 5 shrubs	5.25	2,610	580	.22	66	< .1	9.6	6,080	<.4	15
MH25	C-283250	06AK10W	63.05629	-145.87428	Composite of 3 shrubs	4.50	4,850	260	.20	56	< .1	6.3	4,840	<.4	9.3
MH26	C-283251	06AK11W	63.22145	-145.91254	Composite of 4 shrubs	5.25	6,050	480	.10	53	< .1	10	7,190	<.4	25

Map No.	Laboratory No.	Field No.	Latitude (°N)	Longitude (°W)	Sample description	Ash yield (percent)	Sb	Sc	Sr	Th	Ti	Tl	U	V	Y	Zn
MH21	C-283246	06AK06W	63.07368	-145.74762	Composite of 3 shrubs	4.25	<0.04	<0.04	4.7	<0.1	<40	<0.08	< 0.02	<0.2	<0.05	130
MH22	C-283247	06AK07W	63.09644	-145.75018	Composite of 1 shrub	5.00	<.04	<.04	8.7	<.1	<40	<.08	< .02	<.2	<.05	68
MH23	C-283248	06AK08W	63.22575	-146.05510	Composite of 3 shrubs	4.00	<.04	<.04	63	<.1	<40	<.08	< .02	<.2	<.05	81
MH24	C-283249	06AK09W	63.22578	-146.18777	Composite of 5 shrubs	5.25	<.04	<.04	50	< .1	<40	<.08	< .02	.2	<.05	200
MH25	C-283250	06AK10W	63.05629	-145.87428	Composite of 3 shrubs	4.50	<.04	<.04	13	< .1	<40	<.08	< .02	<.2	<.05	91
MH26	C-283251	06AK11W	63.22145	-145.91254	Composite of 4 shrubs	5.25	<.04	< .04	9.4	< .1	<40	<.08	< .02	<.2	<.05	85

Table 15. Map and field numbers, site latitude and longitude, sample sources and descriptions, collection method, and chemistry of bedrock samples, Tangle Lakes District, Alaska.

[Map Nos. are shown in figure 3. All values in parts per billion (ppb). Samples were collected from outcrops. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP), and Hg determined by cold vapor-atomic absorption spectroscopy (CV-AAS); all other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ft, foot; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Collection date	Location description	Sample description	Collection method	Au	Pd	Pt	Hg	Ag	Al
MH31	06GL077R	63.32220	-146.05052	06-21-06	Ridge W of upper W Specimen Cr.	Fe-stained basalt, ls w/qz-calcite stockwork	Composite	1	5	13.4	0.03	<2	12,500
MH32	06GL092R	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation	Ultramafic cumulate	Composite	1	62	40.8	<.02	<2	2,150
MH33	06GL094R	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation	Rusty ultramafic cumulate with sulfides	Composite	78	<1	1.8	.03	<2	82,500

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Collection date	Location description	Sample description	Collection method	As	Ba	Be	Bi	Ca	Cd
MH31	06GL077R	63.32220	-146.05052	06-21-06	Ridge W of upper W Specimen Cr.	Fe-stained basalt, ls w/qz-calcite stockwork	Composite	<1	16.8	0.08	< 0.06	27,800	0.06
MH32	06GL092R	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation	Ultramafic cumulate	Composite	<1	5.8	<.03	< .06	3,580	.03
MH33	06GL094R	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation	Rusty ultramafic cumulate with sulfides	Composite	104	1,530	.72	3.15	4,580	.03

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Collection date	Location description	Sample description	Collection method	Ce	Co	Cr	Cs	Cu	Fe
MH31	06GL077R	63.32220	-146.05052	06-21-06	Ridge W of upper W Specimen Cr.	Fe-stained basalt, ls w/qz-calcite stockwork	Composite	3.2	91.1	1,360	0.06	39.9	61,800
MH32	06GL092R	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation	Ultramafic cumulate	Composite	.51	174	1,350	.02	190	112,000
MH33	06GL094R	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation	Rusty ultramafic cumulate with sulfides	Composite	12.6	10.3	19.4	.97	14.8	54,400

Table 15. Map and field numbers, site latitude and longitude, sample sources and descriptions, collection method, and chemistry of bedrock samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. All values in parts per billion (ppb). Samples were collected from outcrops. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP), and Hg determined by cold vapor-atomic absorption spectroscopy (CV-AAS); all other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ft, foot; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Collection date	Location description	Sample description	Collection method	Ga	K	La	Li	Mg	Mn
MH31	06GL077R	63.32220	-146.05052	06-21-06	Ridge W of upper W Specimen Cr.	Fe-stained basalt, ls w/qz-calcite stockwork	Composite	3	271	1.4	1.9	170,000	1,020
MH32	06GL092R	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation	Ultramafic cumulate	Composite	.7	64.4	.25	3.2	247,000	1,660
MH33	06GL094R	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation	Rusty ultramafic cumulate with sulfides	Composite	17.2	35,100	6.7	4.2	19,200	580

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Collection date	Location description	Sample description	Collection method	Mo	Na	Nb	Ni	P	Pb
MH31	06GL077R	63.32220	-146.05052	06-21-06	Ridge W of upper W Specimen Cr.	Fe-stained basalt, ls w/qz-calcite stockwork	Composite	0.36	441	2.6	1,590	133	0.78
MH32	06GL092R	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation	Ultramafic cumulate	Composite	< .05	305	< .1	1,500	25	<.4
MH33	06GL094R	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation	Rusty ultramafic cumulate with sulfides	Composite	8	1,300	1.1	5.7	369	13.1

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Collection date	Location description	Sample description	Collection method	Rb	Sb	Sc	Sr	Th	Ti
MH31	06GL077R	63.32220	-146.05052	06-21-06	Ridge W of upper W Specimen Cr.	Fe-stained basalt, ls w/qz-calcite stockwork	Composite	0.93	<0.04	8.5	41.4	0.34	1,490
MH32	06GL092R	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation	Ultramafic cumulate	Composite	.14	<.04	7	8	< .1	328
MH33	06GL094R	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation	Rusty ultramafic cumulate with sulfides	Composite	106	4	20.4	20.2	2.18	2,270

Table 15. Map and field numbers, site latitude and longitude, sample sources and descriptions, collection method, and chemistry of bedrock samples, Tangle Lakes District, Alaska.—Continued

[Map Nos. are shown in figure 3. All values in parts per billion (ppb). Samples were collected from outcrops. Au, Pd, and Pt determined by flame-assay direct-current plasma (FA-DCP), and Hg determined by cold vapor-atomic absorption spectroscopy (CV-AAS); all other elements were determined by inductively coupled plasma-mass spectrometry (ICP-MS). **Abbreviations:** °N, degrees North; °W, degrees West; ft, foot; <, less than]

Map No.	Field No.	Latitude (°N)	Longitude (°W)	Collection date	Location description	Sample description	Collection method	Tl	U	V	Y	Zn
MH31	06GL077R	63.32220	-146.05052	06-21-06	Ridge W of upper W Specimen Cr.	Fe-stained basalt, ls w/qz-calcite stockwork	Composite	<0.08	0.13	50.5	4.5	55.4
MH32	06GL092R	63.27601	-146.27095	06-25-06	N tributary of N tributary of Eureka Cr. at 3,510 ft elevation	Ultramafic cumulate	Composite	<.08	< .02	15.6	.86	69.2
MH33	06GL094R	63.31912	-146.32547	06-25-06	E tributary upper Eureka Cr. at 4,350 ft elevation	Rusty ultramafic cumulate with sulfides	Composite	1.23	1.42	134	19.8	75.3

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