

Division of Geological & Geophysical Surveys

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**MAJOR OXIDE, MINOR OXIDE, TRACE ELEMENT, AND GEOCHEMICAL DATA
FROM ROCKS COLLECTED IN THE SALCHA RIVER – POGO AREA IN 2000,
BIG DELTA AND NORTHWESTERN EAGLE QUADRANGLES, ALASKA**

by

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Note: This report (including all analytical data, tables, and map sheets) is available in digital format from the DGGs web site (<http://www.dggs.dnr.state.ak.us>) at no charge. The digital data are available as PDF files and Excel spreadsheets.

MAJOR OXIDE, MINOR OXIDE, TRACE ELEMENT, AND GEOCHEMICAL DATA FROM ROCKS COLLECTED IN THE SALCHA RIVER – POGO AREA IN 2000, BIG DELTA AND NORTHWESTERN EAGLE QUADRANGLES, ALASKA

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INTRODUCTION

Mineral resource personnel from the Alaska Division of Geological & Geophysical Surveys carried out a reconnaissance geological field survey, including mapping and sampling of Big Delta and northwestern Eagle Quadrangles, Alaska from August 7-21, 2000. The fieldwork provides basic information critical to building an understanding of Alaska's geology and is part of an integrated program of airborne geophysical surveys followed by geological mapping programs. During 2000, 40 rock samples were collected for geochemical trace-element analysis, and 131 samples were collected for whole rock (major and minor oxides, and petrogenetically important trace element data) analysis. The locations of these samples are shown on Sheet 1. Location data (in UTM coordinates with a Clark 1866, NAD27, UTM zone 6 projection), descriptions, and analytical results for each sample are tabulated in Tables 1, 2, 3, and 4. Two samples, 00MBW690 and 00MBW691, are located in the Eagle Quadrangle; however, their locations on the map are projected in UTM zone 6. In Table 3, these locations are given in both UTM zone 6 and 7.

ANALYTICAL METHODS

All 2000 trace-element geochemical analyses were performed by Chemex Labs, Inc. Rock samples were crushed so that at least 70 percent of the material passed through a -10 (2 mm) mesh screen. A 200-gram, representative split of the sample was then taken using a riffle splitter. The 200-gram sample was then pulverized in a chrome steel ring mill so that 95 percent of the sample passed through a -150 (106 micron) mesh screen.

For the samples collected in 2000, gold was analyzed on a 30 gram representative sample split using Fire Assay (FA) and Atomic Absorption Spectroscopy (AAS) methods. Most of the trace elements were analyzed by Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES) methods after nitric aqua regia digestion. One sample containing greater than 100 ppm Ag (00MBW663) was further analyzed using FA-Gravimetric (Fire Assay - Gravimetric Analysis). Analytical detection limits are tabulated in Table 5.

All whole rock analyses were performed by Chemex Labs, Inc. Major and minor element oxides were determined by XRF methods following a metaborate fusion. Trace elements (Ba, Nb, Rb, Sr, Y, and Zr) were also analyzed using XRF methods on a pressed pellet. Ferrous iron was determined by wet chemistry. Analytical detection limits are tabulated in Table 6.

Table 1. Location and description of rock samples collected in the Big Delta Quadrangle for trace element geochemical analyses.

Sample	UTM E	UTM N	Description
00DS254	605188	7146685	Orthogneiss with quartz veining and quartz-feldspar pegmatite dike. Minor quartz-biotite schist/gneiss with very fine-grained pyrite in clots.
00DS263B	592864	7150466	Skarn along dike margin; no obvious carbonates in gneiss wall rock.
00DS266	593366	7150550	Highly iron-stained (oxidized/weathered) gneiss?/plutonic? rock and light gray cobbles of unoxidized biotite-bearing granodiorite; altered pluton (granodiorite?) with hairlike black (tourmaline? or Mn/Fe oxide?) and quartz (sometimes as euhedral crystals) parallel fractures, 1- to 2-cm apart in many cases. Trace amount of pyrite on fracture selvage.
00DS272B	565698	7179356	Amphibolite cut by quartz-chlorite-chalcopyrite veinlets.
00DS304B	568115	7174194	Foliation-parallel, 3-inch-thick, white quartz vein with black irregular masses (former pyrite?).
00DS318	567769	7182341	Clear and white quartz (with +/- clear crystals) in vugs containing iron oxide; some wall rock inclusions (breccia).
00DS319	567825	7182296	Very limonite-stained area with abundant quartz, sulfides, and fault slickensides; dark brown-gray granular quartz with clots of well-formed pyrite (oxidizing to limonite) with yellow-green coatings (scorodite?); host rock is sericite-quartz-iron oxide-altered augen? gneiss with silica flooding.
00DS338	567092	7180095	Clear to white quartz veins up to 6 inches wide with white to buff selvage (0.5-1 inch wide) of pegmatite (feldspar-quartz intergrowth). Veins cross-cut foliation and include some wallrock clasts. Occasional partially limonite-filled vugs in quartz. One quartz vein with chlorite rosettes and limonite clots.
00DS341	566732	7179568	Biotite-feldspar-quartz schist +/- chlorite-feldspar-quartz-biotite gneiss cross-cut by iron oxide and euhedral quartz fracture fillings.
00DS342	566418	7179682	Biotite-quartz-feldspar-garnet (rare) schist with vuggy quartz and limonite fracture fills and 2-inch-wide milky white, foliation-parallel quartz veins.
00DS375B	577320	7163664	Rusty-red weathering cobbles of dark green pyroxene with vugs of pale green amphibole. Skarn or contact metamorphism.
00DS377B	586547	7161233	Dense black porphyritic gabbro cut by white quartz stockwork veins. Black glassy phenocrysts of unknown mineral in aphanitic to very fine-grained matrix.
00DS380	586405	7161617	Meta-quartz latite cross-cut by quartz veins (up to 2 cm wide) with Mn-oxide-filled fractures cutting en echelon across vein. Sample collected over 30' diameter area.
00JG529A	560591	7167727	Calc-schist hornfels.
00JG531A	560303	7168103	Quartz-rich +/- chlorite-bearing calc-schist hornfels.
00MBW585A	570180	7185521	Phyllite cut by vein of quartz + pyrite (partially altered to limonite).
00MBW608	603437	7148126	Fractured, limonite-stained, quartz-veined granodiorite.
00MBW639C	603438	7158792	Quartz vein with tiny molybdenite/hematite? grain +/- trace igneous wall rock inclusions.
00MBW640B	605215	7152843	Iron sulfide (altered to limonite) + quartz + sericite? vein ~2 inches wide cutting granodiorite.
00MBW649A	593205	7149525	Fault zone with iron carbonate, quartz, pyrite, and a bright green mineral (mariposite? or scorodite?).
00MBW663	566175	7175713	Schist with clay alteration, limonite staining, and quartz veining.
00MBW673	565315	7174501	Iron-stained quartz vein with stibnite and arsenopyrite? +/- sericite +/- carbonate mineral.

Table 1. Location and description of rock samples collected in the Big Delta Quadrangle for trace element geochemical analyses.

Sample	UTM E	UTM N	Description
00MBW683	631470	7199499	Tan, very fine-grained, felsic porphyritic igneous rock with quartz stockwork veins.
00MBW730	567722	7180303	Large, slightly iron-stained bull quartz vein with internal lamellae.
00MBW731	567980	7180161	Fault breccia; clasts of leached schist in granular silica matrix; slightly iron-stained and green scorodite?-stained, carbonate-bearing.
00MBW732	568071	7180085	Altered schist? with quartz-sericite-pyrite alteration; cut by microcrystalline quartz veinlets.
00MBW733	568085	7180070	White mica-quartz-feldspar schist 50-60 feet uphill (SE) from 00MBW732.
00MBW751	567355	7176597	Quartz breccia cemented by tourmaline, arsenopyrite, +/- pyrite, and possibly trace white mica(?).
00MBW773	589897	7148802	Small iron-stained patch of rocks in tundra-covered saddle. Sampled quartz vein with irregularly-shaped vuggy areas partially filled with limonite. Possible fault zone.
00MBW774	589860	7148812	Fractured, iron-stained, quartz-veined area in augen gneiss averaging 3 feet wide (10 feet wide maximum).
00MBW775	589840	7148792	Vuggy, crystalline quartz vein.
00MBW776	589799	7148718	Augen gneiss; very clay altered with relict augen texture +/- quartz-veined. Likely fault zone.
00MBW786	588916	7147893	Altered, iron-stained, augen gneiss? with disseminated pyrite (altering to limonite); gossanous vugs +/- lined with acicular quartz.
00RN544A	592151	7149274	Fine-grained hornblende-biotite tonalite? (marginal phase?) with occasional cross-cutting, sharp-walled, quartz veins 0.5 cm wide; very occasional sulfides and chlorite? veinlets.
00RN556A	591958	7147174	Fractured, iron-stained, foliation-parallel? quartz vein that is 1 meter thick and can be traced along strike about 20 meters.
00RN638A	566937	7167241	Foliation-parallel quartz + feldspar vein with a hint of sulfide + sillimanite(?).
00RN643A	562616	7168746	Biotite hornfels + fine-grained clinopyroxene? skarn?/skarnoid? with trace sulfide?
00RN651B	565701	7169000	Quartz-sillimanite-K-feldspar(?)-manganese vein with tourmaline envelope. Vein is 10 cm thick and foliation-parallel.
00RN692B	593751	7148011	One-meter-thick quartz vein with secondary As-Sb coatings.
00RN696C	581598	7164661	Occasional high-angle tourmaline veinlets.

Table 2. Concentration of trace elements in rock samples collected in the Big Delta Quadrangle. Detection limits given in Table 5.

Note: --- = not analyzed.

SAMPLE	Au ppb	Ag ppm	Ag opt	Al %	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %
00DS254	5	<0.2	---	2.70	6	<10	160	<0.5	<2	0.03	<0.5	21	133	45	3.85	<10	<1	1.42
00DS263B	<5	<0.2	---	3.63	<2	<10	40	1.5	8	3.24	<0.5	3	59	6	1.13	<10	<1	0.07
00DS266	<5	0.4	---	0.30	<2	<10	40	<0.5	<2	0.01	3.5	3	91	1	4.91	<10	<1	0.16
00DS272B	<5	<0.2	---	2.34	<2	<10	110	<0.5	2	1.05	<0.5	27	93	80	3.43	<10	<1	0.07
00DS304B	<5	<0.2	---	0.06	2	<10	<10	<0.5	<2	<0.01	<0.5	1	203	10	0.61	<10	<1	0.02
00DS318	<5	<0.2	---	0.23	14	<10	90	<0.5	2	0.04	<0.5	2	134	8	0.67	<10	<1	0.15
00DS319	<5	0.2	---	0.64	128	<10	420	0.5	<2	0.47	<0.5	4	25	6	3.26	<10	<1	0.29
00DS338	<5	<0.2	---	0.54	<2	<10	110	<0.5	<2	0.21	<0.5	7	124	27	0.94	<10	<1	0.07
00DS341	<5	<0.2	---	0.52	40	<10	90	<0.5	<2	0.03	<0.5	7	119	16	1.84	<10	<1	0.24
00DS342	<5	<0.2	---	1.09	<2	<10	120	<0.5	<2	0.19	<0.5	9	110	11	1.95	<10	<1	0.42
00DS375B	<5	<0.2	---	0.33	<2	<10	40	<0.5	<2	0.08	<0.5	100	272	95	6.13	<10	<1	<0.01
00DS377B	<5	<0.2	---	0.52	<2	<10	20	<0.5	2	0.05	<0.5	3	107	6	1.11	<10	<1	0.06
00DS380	<5	<0.2	---	0.62	4	<10	30	<0.5	<2	0.08	<0.5	3	106	6	1.17	<10	<1	0.10
00JG529A	65	<0.2	---	8.64	<2	<10	40	2	<2	6.03	<0.5	9	58	33	1.61	20	<1	0.13
00JG531A	25	<0.2	---	5.37	<2	<10	40	1.5	10	3.68	<0.5	3	28	1	0.36	10	<1	0.09
00MBW585A	<5	2.8	---	1.79	28	<10	60	<0.5	<2	0.02	28	20	88	118	4.92	<10	<1	0.11
00MBW608	595	0.6	---	2.08	1435	<10	630	1	<2	0.18	1.5	24	125	63	4.43	<10	<1	0.72
00MBW639C	<5	0.4	---	0.37	10	<10	10	<0.5	<2	0.26	<0.5	1	150	2	0.40	<10	<1	0.03
00MBW640B	<5	<0.2	---	2.00	<2	<10	280	<0.5	<2	0.55	<0.5	4	66	3	2.18	<10	<1	0.91
00MBW649A	<5	0.6	---	0.14	104	<10	50	0.5	8	4.96	28	51	249	115	3.34	<10	<1	0.08
00MBW663	260	>100.0	3.2	0.20	1940	<10	60	<0.5	2	0.05	2	1	95	15	1.43	<10	<1	0.16
00MBW673	405	1	---	0.13	272	<10	40	<0.5	<2	0.03	<0.5	1	112	58	0.94	<10	<1	0.06
00MBW683	<5	<0.2	---	0.33	4	<10	180	<0.5	<2	0.07	<0.5	1	38	7	0.45	<10	<1	0.24
00MBW730	<5	<0.2	---	0.14	8	<10	30	<0.5	<2	0.04	<0.5	2	147	8	0.81	<10	<1	0.07
00MBW731	<5	<0.2	---	0.31	134	<10	70	<0.5	<2	2.12	<0.5	3	91	3	1.11	<10	<1	0.13
00MBW732	<5	<0.2	---	0.27	2	<10	70	<0.5	<2	0.02	<0.5	1	98	4	0.85	<10	<1	0.21
00MBW733	<5	<0.2	---	0.22	12	70	30	<0.5	<2	<0.01	<0.5	<1	81	1	0.37	<10	<1	0.12
00MBW751	<5	0.2	---	0.08	>10000	<10	10	<0.5	2	0.05	<0.5	24	150	6	1.59	<10	<1	0.02
00MBW773	15	0.6	---	0.26	42	<10	10	<0.5	<2	0.01	<0.5	<1	116	1	0.90	<10	<1	0.14
00MBW774	<5	<0.2	---	0.42	38	<10	20	<0.5	<2	<0.01	<0.5	<1	71	<1	0.91	<10	<1	0.31
00MBW775	15	0.4	---	0.23	86	<10	10	0.5	<2	<0.01	<0.5	<1	128	1	1.27	<10	<1	0.13
00MBW776	<5	<0.2	---	0.45	2	<10	20	<0.5	<2	<0.01	<0.5	<1	92	<1	0.27	<10	<1	0.18
00MBW786	260	0.6	---	0.40	206	<10	60	<0.5	<2	<0.01	<0.5	7	82	15	2.57	<10	<1	0.26
00RN638A	<5	<0.2	---	0.08	24	<10	<10	<0.5	<2	0.02	<0.5	<1	152	3	0.28	<10	<1	0.04

Table 2. Concentration of trace elements in rock samples collected in the Big Delta Quadrangle. Detection limits given in Table 5.
 Note: --- = not analyzed.

SAMPLE	Au	Ag	Ag	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K
	ppb	ppm	opt	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%
00RN643A	<5	<0.2	---	<2	<10	50	1	10	5.92	<0.5	5	55	17	1.38	20	<1	0.25
00RN651B	<5	<0.2	---	<2	<10	110	18.5	4	0.16	<0.5	3	87	46	1.04	<10	<1	0.15
00RN692B	845	0.2	---	2	<10	<10	<0.5	1170	0.03	<0.5	<1	135	5	0.25	<10	<1	0.04
00RN696C	<5	<0.2	---	40	<10	40	<0.5	4	0.3	<0.5	17	149	17	3.93	10	<1	0.15
00RN844A	<5	0.2	---	<2	<10	190	<0.5	<2	2.13	<0.5	13	27	103	3.99	10	<1	0.58
00RN856A	<5	<0.2	---	2	<10	<10	<0.5	<2	<0.01	<0.5	1	197	10	0.73	<10	<1	0.01

Table 2. Concentration of trace elements in rock samples collected in the Big Delta Quadrangle. Detection limits given in Table 5.

Note: --- = not analyzed.

SAMPLE	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
00DS254	10	0.9	235	1	0.04	47	130	<2	0.39	50	9	10	0.27	<10	<10	65	<10	64
00DS263B	10	0.25	210	1	0.12	6	350	<2	0.05	<2	1	112	0.05	<10	<10	11	40	52
00DS266	<10	0.03	2630	<1	0.01	7	120	68	0.04	<2	1	7	<0.01	<10	<10	5	<10	680
00DS272B	<10	1.82	490	1	0.14	47	910	<2	0.01	4	10	12	0.14	<10	<10	108	<10	54
00DS304B	<10	<0.01	35	<1	0.01	6	10	<2	<0.01	<2	<1	1	<0.01	<10	<10	<1	<10	2
00DS318	10	0.03	215	1	0.02	9	240	4	<0.01	<2	<1	5	<0.01	<10	<10	3	<10	8
00DS319	10	0.06	1360	2	0.05	13	490	66	0.64	46	2	30	<0.01	<10	<10	1	<10	100
00DS338	<10	0.32	110	<1	0.05	17	110	2	<0.01	2	1	6	0.05	<10	<10	22	<10	12
00DS341	10	0.08	80	<1	0.02	18	270	12	0.01	<2	1	5	<0.01	<10	<10	10	<10	56
00DS342	10	0.44	180	<1	0.04	21	370	6	0.01	2	3	6	0.05	<10	<10	29	<10	44
00DS375B	<10	14.4	935	<1	0.01	1160	30	<2	0.04	<2	8	1	<0.01	<10	<10	14	<10	46
00DS377B	<10	0.22	110	<1	0.04	12	210	16	<0.01	<2	<1	6	<0.01	<10	<10	5	<10	30
00DS380	<10	0.23	170	<1	0.04	10	200	10	<0.01	4	<1	8	0.02	<10	<10	5	<10	24
00JG529A	20	0.38	190	6	0.41	33	460	<2	0.06	<2	1	531	0.07	<10	<10	36	30	22
00JG531A	10	0.3	80	3	0.25	12	1200	<2	<0.01	<2	<1	436	0.07	<10	<10	14	<10	14
00MBW585A	<10	0.49	2270	1	0.01	28	290	234	0.06	<2	2	5	<0.01	<10	<10	12	<10	2450
00MBW608	10	0.85	1060	1	0.03	28	310	298	<0.01	20	10	15	0.07	<10	<10	69	<10	492
00MBW639C	10	0.06	60	<1	0.05	5	40	22	<0.01	44	<1	7	0.01	<10	<10	7	<10	6
00MBW640B	10	0.69	455	<1	0.23	1	460	2	<0.01	10	8	31	0.21	<10	<10	43	<10	52
00MBW649A	<10	7.67	645	<1	0.01	493	30	38	0.13	10	19	175	<0.01	<10	<10	22	<10	1215
00MBW663	<10	<0.01	20	1	0.01	<1	160	5440	0.22	8390	1	16	<0.01	<10	<10	3	<10	10
00MBW673	<10	0.03	25	<1	0.01	<1	40	16	0.87	>10000	<1	6	<0.01	<10	<10	2	<10	18
00MBW683	40	0.05	140	<1	0.01	9	480	4	<0.01	<2	<1	4	<0.01	10	<10	<1	<10	40
00MBW730	<10	0.01	70	<1	0.03	7	110	8	<0.01	<2	1	3	<0.01	<10	<10	3	<10	46
00MBW731	<10	0.06	805	<1	0.01	14	1620	<2	0.01	2	4	17	<0.01	<10	<10	9	<10	34
00MBW732	<10	<0.01	60	<1	0.06	2	330	10	0.12	6	<1	7	<0.01	<10	<10	1	<10	20
00MBW733	<10	<0.01	25	<1	0.01	1	90	8	0.06	2	<1	24	<0.01	<10	<10	<1	<10	14
00MBW751	<10	0.03	110	<1	0.01	22	160	12	0.46	14	<1	4	<0.01	<10	<10	1	<10	30
00MBW773	10	0.01	45	6	0.01	3	120	36	0.04	8	<1	7	<0.01	<10	<10	1	<10	16
00MBW774	40	0.01	30	1	0.01	1	180	36	0.02	6	<1	7	<0.01	10	<10	1	<10	24
00MBW775	20	<0.01	55	2	0.01	3	150	160	0.04	6	<1	6	<0.01	<10	<10	1	<10	50
00MBW776	40	<0.01	5	5	0.01	2	80	20	0.02	6	<1	4	<0.01	10	<10	<1	<10	2
00MBW786	10	0.03	50	3	0.01	6	100	28	0.03	24	<1	7	<0.01	<10	<10	3	<10	38
00RN638A	<10	<0.01	15	<1	0.02	3	110	<2	<0.01	2	<1	<1	<0.01	<10	<10	<1	<10	<2

Table 2. Concentration of trace elements in rock samples collected in the Big Delta Quadrangle. Detection limits given in Table 5.

Note: --- = not analyzed.

SAMPLE	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
00RN643A	10	0.47	145	4	0.34	30	290	<2	0.08	<2	1	537	0.1	<10	<10	28	<10	30
00RN651B	<10	0.14	165	<1	0.03	8	770	<2	<0.01	<2	1	13	0.01	<10	<10	4	<10	16
00RN692B	<10	<0.01	15	2	0.01	3	10	6	0.01	98	<1	2	<0.01	<10	<10	1	110	<2
00RN696C	10	1.96	355	<1	0.04	69	610	18	<0.01	<2	8	20	0.18	<10	<10	79	<10	68
00RN844A	<10	1.71	590	1	0.25	4	790	<2	0.03	<2	6	96	0.28	<10	<10	118	<10	74
00RN856A	<10	<0.01	35	8	0.01	6	10	<2	<0.01	92	<1	<1	<0.01	<10	<10	1	<10	6

Table 3. Location and description of rock samples collected in the Big Delta and northwestern Eagle Quadrangles for major oxide, minor oxide, and trace element analyses.

Sample #	UTM E	UTM N	Sample description
00DS287	566400	7176090	Biotite-feldspar-quartz schist and feldspar-biotite-andalusite gneiss.
00DS258	604620	7146947	Biotite-bearing orthogneiss of granodiorite? composition.
00DS260	604887	7147250	Diorite; unfoliated.
00DS263A	592864	7150466	Pegmatite dike.
00DS267	593477	7150467	Fine-grained, equigranular monzodiorite dike with abundant biotite.
00DS275	565441	7179209	Chloritized amphibolite with distinct banding.
00DS281	564848	7178550	Amphibolite.
00DS292	567339	7177016	Quartz-andalusite-biotite gneiss with white and black bands.
00DS297	566543	7177551	Feldspar-biotite-quartz gneiss.
00DS301	568238	7174933	Medium-grained, porphyritic biotite-hornblende-garnet granite.
00DS304	568115	7174194	Quartz-feldspar-white mica-biotite (chlorite) schist.
00DS306	568116	7173751	Biotite-quartz-feldspar schist +/- andalusite, +/- tourmaline.
00DS309A	568086	7173282	Schist with garnet.
00DS309B	568086	7173282	Feldspar-quartz-biotite gneiss.
00DS313	567688	7172561	Medium-grained tourmaline granite.
00DS314	567716	7172388	Tourmaline-muscovite granite.
00DS317	567767	7182451	Quartz-feldspar-white mica-biotite augen gneiss.
00DS320	567817	7182232	Biotite-hornblende amphibolite.
00DS330	567756	7180861	Feldspar-quartz-biotite-garnet schist.
00DS345	568722	7179980	Feldspar-quartz-white mica-biotite augen gneiss.
00DS352B	569435	7179828	Augen gneiss.
00DS364	564803	7172348	Quartz-feldspar-biotite-white mica gneiss (orthogneiss?).
00DS366A	576625	7167187	Biotite granodiorite: medium-grained, equigranular, ~15% quartz.
00DS366B	576625	7167187	Tourmaline-garnet-muscovite-biotite pegmatite.
00DS368	578344	7161971	Moderately foliated, biotite (~20-25%) -white mica granodiorite with 12-15% grayish smoky quartz phenocrysts.
00DS371	577882	7162617	Foliated, biotite-rich (+/- white mica) granite.
00DS377	586547	7161233	Porphyritic microgabbro.
00DS378	586532	7161315	Greenstone: light to medium olive-green, discontinuously color-banded, aphanitic, intermediate volcanic tuff? with fine-grained quartz eyes.
00JG502	595666	7150572	Biotite quartz diorite sill?
00JG509	597464	7150886	Biotite amphibolite with minor plagioclase layers.
00JG511	598012	7151050	Biotite-quartz-feldspar gneiss.
00JG516A	599675	7151563	Quartz diorite.
00MBW604	604235	7161271	Granular, coarse-grained gneiss composed of quartz, feldspar, white mica, biotite, cordierite?, and kyanite.
00MBW605	603503	7147731	Fine-grained, equigranular, biotite (~5%) granodiorite.

Table 3. Location and description of rock samples collected in the Big Delta and northwestern Eagle Quadrangles for major oxide, minor oxide, and trace element analyses.

Sample #	UTM E	UTM N	Sample description
00MBW618	603610	7147575	Equigranular, medium-grained biotite diorite.
00MBW639A	603438	7158792	Medium-grained, slightly K-feldspar porphyritic granite with ~3% biotite.
00MBW640A	605215	7152843	Goodpaster batholith: medium- to coarse-grained, biotite > hornblende (~60:40?) granodiorite.
00MBW641	606459	7152207	Goodpaster batholith: hornblende-biotite granodiorite.
00MBW642	608372	7152528	Goodpaster batholith: hornblende-biotite granodiorite.
00MBW652	593168	7149463	Medium to fine-grained, biotite (~3%) granodiorite.
00MBW655	593155	7149323	Amphibolite.
00MBW659	593287	7149031	Fine-grained, equigranular biotite diorite.
00MBW661	593440	7148672	Biotite-K-feldspar (up to 15 cm, average ~05 cm) augen gneiss.
00MBW662	593525	7148619	Slightly foliated, medium-grained, equigranular biotite granodiorite/quartz diorite?
00MBW670	565062	7174962	White mica-quartz-feldspar-tourmaline? augen gneiss with K-feldspar augens.
00MBW671A	565078	7174912	Amphibolite; contains sparse 1- to 2-mm-diameter garnets, and plagioclase bands.
00MBW676	566304	7175841	Banded biotite (~3-5%) - quartz-feldspar gneiss.
00MBW677	565604	7175418	Coarse-grained andalusite-garnet-biotite-white mica schist.
00MBW678	564973	7175735	Gneiss/schist.
00MBW680	564601	7176196	Biotite-white mica schist.
00MBW681	568360	7175372	Quartz monzonite/monzonite.
00MBW682	631251	7198794	Gabbro?
00MBW684	631308	7200613	Porphyritic rhyolite or dacite.
00MBW685	631128	7201224	Feldspar-porphyritic rhyolite or dacite.
00MBW686	635960	7200766	Granite.
00MBW687	637530	7202541	Porphyritic biotite granodiorite?
00MBW688x	639221	7204176	Coarse-grained porphyritic granite?
00MBW688y	639221	7204176	Duplicate of 00MBW688x.
00MBW689	641492	7205037	Coarse-grained porphyritic granite with rare mafic xenoliths.
00MBW690	641840	7208539	UTM zone 6 projected location. Coarse-grained porphyritic granite with rare mafic xenoliths.
00MBW691	641840	7208539	UTM zone 6 projected location. Coarse-grained porphyritic granite with rare mafic xenoliths.
00MBW690	358572	7206903	UTM zone 7 projected location. Coarse-grained porphyritic granite with rare mafic xenoliths.
00MBW691	358678	7208514	UTM zone 7 projected location. Coarse-grained porphyritic granite with rare mafic xenoliths.
00MBW692A	591091	7175602	Fine-grained gabbro.
00MBW692B	591091	7175602	Coarse-grained gabbro.
00MBW693	601340	7167851	Medium-grained equigranular granite/granodiorite.
00MBW694	602286	7169475	Slightly foliated granodiorite?
00MBW695	601660	7170800	Tan pluton, locally cut by apfite dikes; fractured and slightly chlorite-altered.
00MBW696	602739	7172479	Foliated pluton.

Table 3. Location and description of rock samples collected in the Big Delta and northwestern Eagle Quadrangles for major oxide, minor oxide, and trace element analyses.

Sample #	UTM E	UTM N	Sample description
00MBW697	606852	7170812	White, biotite granodiorite?
00MBW698	605103	7167930	Granite with rare xenoliths.
00MBW699A	608530	7165728	Biotite diorite? with slight foliation?
00MBW700	603162	7165412	Medium-grained pluton? with biotite clots.
00MBW701	594242	7169838	Granodiorite? with local mafic/biotite inclusions.
00MBW702	595494	7170400	Granodiorite? with local mafic/biotite inclusions.
00MBW703	591291	7168819	Granodiorite.
00MBW704	594305	7159052	Goodpaster Batholith: biotite-hornblende granodiorite.
00MBW705	592244	7156527	Biotite granodiorite or granite.
00MBW707	608563	7159030	Biotite granodiorite.
00MBW708	609628	7158210	Biotite granodiorite with local inclusions of gneiss.
00MBW710	613272	7158552	Fine-grained, equigranular, biotite granodiorite.
00MBW711	612684	7159910	Granodiorite with gneiss/biotite inclusions (~2%).
00MBW712	602034	7156763	Goodpaster batholith: biotite-hornblende granodiorite.
00MBW713	597375	7158865	Goodpaster batholith: biotite-hornblende granodiorite.
00MBW714	589440	7154504	Orthogneiss.
00MBW715	591184	7174962	Gabbro.
00MBW715A	591184	7174962	Dike of fine-grained pyroxene?-plagioclase gabbro or diorite.
00MBW716	591091	7175260	Fine-grained, faintly porphyritic clinopyroxene-plagioclase gabbro.
00MBW717A	591000	7175253	White granitic? dike.
00MBW720	577102	7166258	Black, hornblende-biotite-plagioclase gneiss.
00MBW722	577122	7166250	Tourmaline-garnet granite sill?
00MBW725	576672	7166830	Amphibole-feldspar gneiss, almost an amphibolite.
00MBW726	577677	7163561	Biotite-white mica granite/granodiorite?
00MBW727A	552128	7143330	Slightly foliated gneiss? or pluton.
00MBW764	591422	7149200	Augen gneiss: pink and black, coarse-grained, 2- to 3-cm diameter K-feldspar augens in biotite + quartz matrix.
00MBW766	591191	7149233	Biotite granodiorite with a hint of foliation.
00MBW772	590251	7148930	Slightly foliated biotite (8-10%) quartz diorite?
00MBW780	589552	7148434	Augen gneiss with huge K-feldspar augens up to 4 cm long.
00MBW791	589317	7148593	Biotite quartz diorite? with slight foliation.
00MBW806	600000	7148250	Garnet-bearing altered granite - Pogo underground (estimated location).
00RN604	568760	7166334	Muscovite-biotite-sillimanite?-feldspar-quartz gneiss.
00RN607	568304	7166568	Granite.
00RN608	568207	7167038	Gneiss.
00RN611B	568051	7167444	Garnet-biotite-quartz-feldspar gneiss.

Table 3. Location and description of rock samples collected in the Big Delta and northwestern Eagle Quadrangles for major oxide, minor oxide, and trace element analyses.

Sample #	UTM E	UTM N	Sample description
00RN623	566989	7165616	Sillimanite?-biotite-quartz-feldspar gneiss.
00RN673	600000	7148250	Feldspar?-quartz-biotite gneiss - Pogo underground (estimated location).
00RN674	592236	7143554	Quartz-eye augen gneiss.
00RN699A	581851	7164599	Amphibolite.
00RN820A	605394	7146464	Medium-grained biotite-quartz-feldspar gneiss.
00RN821	605798	7146249	Orthogneiss with biotite up to 2 cm in diameter + occasional K-feldspar? augen.
00RN830	606556	7146309	Tertiary? felsic porphyry dike with quartz eyes.
00RN831B	606693	7146306	Basaltic dike.
00RN835	607498	7147092	Hornblende-biotite granodiorite.
00RN844B	592151	7149274	Hornblende-biotite tonalite.
00RN849	592206	7148633	Granodiorite.
00RN850B	592160	7148477	Garnet-bearing fine-grained granite.
00RN851B	592115	7148314	Basalt dike.
00RN855B	591953	7147252	Amphibolite.
00RN857	592041	7147015	Fine-grained orthogneiss.
00RN862A1	564114	7166103	Garnet- and tourmaline-bearing aplite dike.
00RN862B	564114	7166103	Schist/gneiss.
00RN862C	564114	7166103	Gneiss.
00RN863A	564198	7166472	Gneiss/orthogneiss?
00RN867A	564460	7167420	Garnet-bearing gneiss.
00RN872	564314	7168031	Garnet-muscovite granite.
00RN874	601550	7149600	Gneiss.
00RN886	562946	7168048	Granitic rock.
00RN887	569706	7168217	Mica-rich schist/gneiss.
00RN888	569755	7167950	Micaceous quartz schist to quartzite with occasional staurolite?/very deformed garnet?
00RN890	569824	7167578	Garnet (tiny, pink) -feldspar-biotite-quartz schist.
00RN892A	569986	7166799	Garnet-muscovite-quartz schist.
00RN892B	569986	7166799	Garnet?-biotite-quartz schist (biotite-rich).
96RN/CDB-GR2	567291	7189955	Tertiary? hypabyssal porphyritic rhyolite/dacite?

Table 4. Concentration of major oxides, minor oxides, and trace elements in rock samples from the Big Delta and northwestern Eagle Quadrangles. Detection limits are given in Table 6. Note: --- = not analyzed.

SAMPLE	Al ₂ O ₃	CaO	Cr ₂ O ₃	FeO	Fe ₂ O ₃	Fe ₂ O ₃ *	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	SiO ₂	TiO ₂	LOI	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
00DS287	16.06	1.30	<0.01	---	---	6.39	2.69	1.74	0.15	2.10	0.09	67.04	0.76	1.11	99.43	---	---	---	---	---	---
00DS258	13.61	1.53	<0.01	---	---	1.45	4.61	0.12	0.05	2.88	0.05	73.97	0.09	0.33	98.69	540	142	146	18	111	32
00DS260	14.79	6.86	0.05	5.76	7.12	---	2.42	4.91	0.13	2.04	0.11	59.39	0.69	0.83	99.34	1160	80	228	10	126	24
00DS263A	17.05	2.42	<0.01	---	---	0.78	7.68	0.48	0.03	2.95	0.54	63.94	0.16	2.43	98.46	2150	224	330	2	18	38
00DS267	15.99	5.15	<0.01	4.64	5.41	---	2.08	2.34	0.08	2.30	0.15	62.96	0.90	1.05	98.41	865	90	316	22	219	30
00DS275	15.86	10.12	0.02	---	---	10.14	0.84	6.52	0.17	3.36	0.32	48.33	1.80	1.45	98.93	520	22	308	18	135	26
00DS281	15.08	8.30	<0.01	---	---	11.10	0.56	6.85	0.16	2.72	0.13	46.99	1.50	5.15	98.54	150	26	148	8	96	30
00DS292	22.04	1.35	<0.01	---	---	3.74	3.77	2.20	0.01	4.15	0.13	58.41	1.04	1.73	98.57	---	---	---	---	---	---
00DS297	14.03	1.12	<0.01	---	---	5.07	2.49	1.44	0.10	1.70	0.09	70.81	0.65	0.96	98.46	---	---	---	---	---	---
00DS301	15.04	3.10	<0.01	3.23	3.99	---	4.04	1.36	0.08	2.65	0.14	67.53	0.46	0.96	99.35	1205	150	320	14	129	22
00DS304	23.28	0.32	<0.01	---	---	6.94	5.80	2.28	0.07	0.73	0.22	54.16	0.82	3.89	98.51	---	---	---	---	---	---
00DS306	7.54	0.99	0.01	---	---	2.84	0.84	0.75	0.08	1.74	0.20	82.94	0.37	0.70	99.00	195	40	108	14	225	20
00DS309A	16.37	0.87	<0.01	---	---	5.80	3.77	2.02	0.11	1.51	0.12	65.12	0.76	2.14	98.59	---	---	---	---	---	---
00DS309B	8.89	0.99	<0.01	---	---	2.37	1.15	0.74	0.06	1.89	0.05	82.04	0.38	0.52	99.08	---	---	---	---	---	---
00DS313	14.92	0.35	<0.01	---	---	0.52	4.46	<0.01	0.06	4.86	0.18	72.78	0.01	0.27	98.41	---	---	---	---	---	---
00DS314	14.88	0.34	<0.01	0.18	0.81	---	4.25	0.03	0.10	4.09	0.18	72.64	0.03	0.67	98.02	155	444	10	42	33	14
00DS317	13.18	0.26	<0.01	---	---	2.08	6.02	0.65	0.03	0.74	0.19	73.90	0.22	1.19	98.46	---	---	---	---	---	---
00DS320	11.14	9.01	0.02	---	---	14.31	1.41	10.80	0.21	1.88	0.44	44.86	2.67	1.87	98.62	555	52	304	58	219	26
00DS330	12.42	0.67	<0.01	---	---	4.07	2.71	2.07	0.06	1.41	0.08	72.87	0.54	1.27	98.17	---	---	---	---	---	---
00DS345	14.17	1.16	<0.01	---	---	2.44	4.39	0.81	0.04	2.62	0.20	71.44	0.39	1.08	98.74	920	148	66	20	201	32
00DS352B	8.06	0.67	0.01	---	---	1.87	1.26	0.54	0.03	1.76	0.07	83.41	0.22	0.94	98.84	335	50	80	8	159	20
00DS364	12.18	1.74	<0.01	---	---	3.53	3.32	1.22	0.06	2.72	0.07	72.67	0.48	0.70	98.69	935	104	204	16	228	24
00DS366A	14.69	1.29	<0.01	1.19	1.32	---	4.62	0.32	0.03	3.25	0.11	72.52	0.22	0.68	99.05	475	218	156	12	111	20
00DS366B	14.82	0.85	<0.01	0.31	0.47	---	3.61	0.06	0.06	4.19	0.07	75.22	0.03	0.54	99.92	65	188	30	14	39	26
00DS368	15.44	1.77	<0.01	1.59	1.77	---	4.62	0.48	0.03	3.59	0.14	69.52	0.33	0.48	98.17	630	250	230	14	156	16
00DS371	15.79	1.83	<0.01	1.98	2.33	---	4.56	0.70	0.03	3.44	0.14	68.11	0.44	0.77	98.14	880	220	324	18	207	16
00DS377	5.46	0.36	<0.01	---	---	1.71	0.52	0.46	0.03	1.61	0.06	87.87	0.20	0.79	99.07	130	28	58	10	204	16
00DS378	10.33	0.35	<0.01	---	---	4.41	1.47	1.46	0.04	1.93	0.03	76.23	0.40	1.98	98.63	305	62	56	16	237	18
00JG502	14.12	2.37	<0.01	2.92	3.41	---	3.42	1.71	0.04	2.23	0.07	69.79	0.40	0.92	98.48	510	130	210	14	114	16
00JG509	14.78	10.44	<0.01	---	---	10.12	0.51	10.43	0.17	2.60	0.12	47.25	1.31	1.14	98.87	150	18	106	8	72	28
00JG511	17.68	4.83	0.02	---	---	5.25	1.82	1.83	0.08	2.94	0.18	61.49	0.72	1.40	98.24	690	70	332	16	156	16
00JG516A	14.07	0.59	<0.01	---	---	1.03	4.37	0.12	0.04	3.46	0.21	74.12	0.08	0.71	98.80	140	274	30	16	45	18
00MBW604	13.40	0.31	<0.01	---	---	4.30	3.02	1.15	0.05	1.01	0.11	72.48	0.56	2.47	98.86	---	---	---	---	---	---
00MBW605	15.29	3.07	<0.01	2.03	2.26	---	3.14	0.68	0.03	3.05	0.09	70.06	0.34	0.73	98.74	2200	98	306	12	129	14
00MBW618	16.68	7.41	<0.01	7.20	8.80	---	1.93	5.25	0.16	2.13	0.14	54.24	0.79	1.58	99.11	2130	64	390	10	75	22

Table 4. Concentration of major oxides, minor oxides, and trace elements in rock samples from the Big Delta and northwestern Eagle Quadrangles. Detection limits are given in Table 6. Note: --- = not analyzed.

SAMPLE	Al ₂ O ₃	CaO	Cr ₂ O ₃	FeO	Fe ₂ O ₃	Fe ₂ O ₃ *	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	SiO ₂	TiO ₂	LOI	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
00MBW639A	11.28	1.11	<0.01	1.37	1.54	---	3.60	0.48	0.03	1.51	0.07	77.99	0.20	1.05	98.86	450	106	132	6	93	34
00MBW640A	16.32	4.39	<0.01	3.64	4.23	---	3.06	1.67	0.08	2.78	0.14	65.13	0.60	0.52	98.92	755	110	252	18	165	30
00MBW641	15.67	4.16	<0.01	3.56	3.91	---	3.20	1.67	0.08	2.75	0.11	65.32	0.59	0.66	98.12	640	114	228	16	129	34
00MBW642	15.90	3.96	<0.01	3.66	4.35	---	3.23	1.66	0.08	2.82	0.13	64.04	0.59	1.26	98.02	760	114	252	16	156	30
00MBW652	13.83	1.56	0.01	1.40	1.88	---	4.65	0.29	0.04	3.11	0.08	71.54	0.23	0.88	98.10	700	164	170	16	90	26
00MBW655	15.47	11.45	<0.01	---	---	11.22	1.13	8.42	0.21	1.61	0.07	47.23	0.82	1.67	99.30	100	54	272	8	30	14
00MBW659	17.21	4.94	<0.01	4.27	5.41	---	2.55	2.29	0.09	2.92	0.21	60.88	0.81	1.08	98.39	715	116	380	14	198	30
00MBW661	13.27	0.89	<0.01	---	---	1.72	5.27	0.23	0.02	2.51	0.10	74.67	0.23	0.73	99.64	---	---	---	---	---	---
00MBW662	15.74	2.89	<0.01	2.41	2.99	---	4.04	1.08	0.07	3.06	0.12	67.67	0.61	0.46	98.73	650	166	238	18	132	28
00MBW670	12.70	0.37	<0.01	---	---	1.52	5.21	0.09	0.03	2.56	0.08	75.02	0.06	0.71	98.35	---	---	---	---	---	---
00MBW671A	18.73	16.70	<0.01	---	---	8.89	0.38	6.02	0.04	0.64	0.19	45.53	0.55	1.37	99.04	50	12	744	16	84	20
00MBW676	5.88	0.75	<0.01	---	---	2.37	0.37	0.47	0.08	1.62	0.08	86.68	0.23	0.32	98.85	---	---	---	---	---	---
00MBW677	24.47	0.79	<0.01	---	---	8.77	3.66	2.35	0.14	2.00	0.12	52.81	1.23	2.64	98.98	---	---	---	---	---	---
00MBW678	11.15	1.00	<0.01	---	---	3.11	2.40	1.09	0.05	2.43	0.09	76.06	0.43	1.11	98.92	---	---	---	---	---	---
00MBW680	11.34	1.12	<0.01	---	---	3.55	2.62	1.05	0.06	1.60	0.08	75.73	0.51	0.97	98.63	---	---	---	---	---	---
00MBW681	16.19	6.42	0.01	6.08	7.78	---	3.23	3.83	0.14	2.38	0.31	55.29	0.91	1.53	98.02	1180	102	528	12	120	26
00MBW682	15.27	3.84	<0.01	3.47	4.52	---	3.78	1.82	0.09	2.65	0.12	66.14	0.54	0.70	99.47	1330	136	304	14	126	24
00MBW684	14.85	0.14	<0.01	0.29	0.65	---	8.11	0.03	0.01	0.38	0.12	74.24	0.42	1.01	99.96	2470	160	26	42	402	54
00MBW685	15.01	0.18	<0.01	0.43	0.84	---	8.87	0.02	0.03	1.39	0.14	70.67	0.45	0.79	98.39	2730	154	62	44	423	54
00MBW686	15.12	4.02	<0.01	3.86	4.72	---	3.69	1.78	0.10	2.48	0.13	65.17	0.55	1.11	98.87	1160	134	332	14	123	24
00MBW687	15.20	2.51	<0.01	2.71	3.15	---	4.76	0.73	0.06	2.71	0.16	68.38	0.48	0.53	98.67	1400	170	402	22	231	22
00MBW688x	14.44	2.22	<0.01	2.23	2.62	---	3.90	0.78	0.07	2.68	0.08	71.42	0.29	1.13	99.63	880	184	232	14	102	26
00MBW688y	14.39	2.09	<0.01	2.19	2.65	---	4.51	0.78	0.07	2.85	0.07	70.54	0.29	1.04	99.28	905	182	260	14	105	28
00MBW689	15.12	3.09	<0.01	2.83	3.48	---	4.14	1.12	0.07	2.66	0.13	67.43	0.41	0.70	98.35	1155	148	320	14	120	24
00MBW690	14.74	3.40	<0.01	3.63	4.28	---	4.10	1.59	0.08	2.54	0.13	66.11	0.51	0.76	98.24	1170	140	304	14	123	26
00MBW691	14.66	3.17	<0.01	3.26	3.87	---	4.21	1.49	0.08	2.43	0.10	67.47	0.47	0.66	98.61	935	164	280	12	111	24
00MBW692A	15.95	10.31	<0.01	6.99	9.76	---	0.27	5.61	0.13	2.01	0.16	52.43	0.60	1.85	99.08	85	8	278	2	51	16
00MBW692B	16.21	8.74	<0.01	10.10	15.31	---	0.49	4.59	0.20	2.83	0.10	44.62	3.31	1.74	98.14	145	16	260	6	36	14
00MBW693	14.62	2.34	<0.01	2.81	3.32	---	3.51	0.94	0.07	2.62	0.15	70.08	0.41	0.88	98.94	790	146	202	18	144	28
00MBW694	15.78	3.07	<0.01	2.83	3.53	---	3.24	1.10	0.08	2.80	0.14	67.18	0.43	1.32	98.67	1075	120	308	18	156	30
00MBW695	15.94	3.49	<0.01	2.80	3.86	---	3.52	1.51	0.09	2.96	0.15	65.49	0.49	1.24	98.74	960	130	344	18	138	30
00MBW696	16.60	3.52	<0.01	3.04	3.92	---	3.51	1.57	0.08	2.85	0.14	65.96	0.50	0.81	99.46	985	150	346	18	135	26
00MBW697	14.15	1.64	<0.01	2.11	2.31	---	4.30	0.57	0.05	2.72	0.12	71.58	0.27	0.57	98.28	760	166	180	16	129	28
00MBW698	14.85	2.15	<0.01	2.27	2.63	---	3.69	0.62	0.07	2.91	0.14	71.33	0.28	0.80	99.47	855	138	232	14	147	28
00MBW699A	14.43	2.61	<0.01	3.00	3.54	---	3.33	1.03	0.07	2.58	0.13	68.92	0.44	0.97	98.05	665	124	200	18	156	28

Table 4. Concentration of major oxides, minor oxides, and trace elements in rock samples from the Big Delta and northwestern Eagle Quadrangles. Detection limits are given in Table 6. Note: --- = not analyzed.

SAMPLE	Al ₂ O ₃	CaO	Cr ₂ O ₃	FeO	Fe ₂ O ₃	Fe ₂ O ₃ *	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	SiO ₂	TiO ₂	LOI	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
00MBW700	14.58	2.07	<0.01	3.28	3.82	---	3.57	1.22	0.07	2.15	0.11	69.84	0.53	1.15	99.11	935	126	178	16	168	30
00MBW701	15.71	3.08	<0.01	2.38	3.63	---	4.06	1.36	0.08	3.01	0.12	65.20	0.46	2.25	98.96	1270	146	376	18	141	26
00MBW702	16.20	3.58	<0.01	3.13	3.95	---	3.92	1.54	0.08	3.21	0.16	65.51	0.48	0.53	99.16	965	160	324	20	153	24
00MBW703	15.88	3.34	<0.01	2.86	3.87	---	4.05	1.49	0.09	2.95	0.15	64.99	0.49	0.83	98.13	1005	158	344	18	153	26
00MBW704	16.34	4.62	<0.01	3.93	4.91	---	2.95	2.01	0.09	2.70	0.10	63.17	0.69	1.44	99.02	720	104	280	14	135	30
00MBW705	16.38	4.26	<0.01	3.20	4.87	---	2.88	1.84	0.09	2.79	0.24	64.42	0.63	1.29	99.69	695	114	250	16	141	30
00MBW707	14.54	1.78	<0.01	2.34	2.78	---	4.11	0.77	0.05	2.38	0.12	70.55	0.39	0.84	98.31	730	170	164	20	156	32
00MBW708	14.28	1.22	<0.01	1.72	1.99	---	5.08	0.44	0.05	2.63	0.14	72.49	0.27	0.66	99.25	795	216	144	20	144	30
00MBW710	14.25	1.47	<0.01	1.89	2.21	---	4.56	0.57	0.05	2.71	0.13	72.06	0.30	0.78	99.09	945	182	154	20	174	30
00MBW711	14.88	2.25	<0.01	2.64	3.06	---	3.77	0.91	0.07	2.68	0.12	70.04	0.41	0.81	99.00	745	154	196	18	153	32
00MBW712	16.24	3.71	<0.01	3.49	4.30	---	3.07	1.69	0.08	2.76	0.13	64.02	0.61	1.89	98.50	880	110	348	18	162	28
00MBW713	15.98	4.54	<0.01	3.30	4.38	---	2.99	1.77	0.08	2.65	0.12	64.69	0.62	0.87	98.69	680	112	228	16	141	28
00MBW714	14.26	1.49	<0.01	---	---	2.81	5.58	0.69	0.04	2.40	0.16	70.68	0.44	0.50	99.05	1200	164	188	10	189	44
00MBW715	16.49	12.65	<0.01	12.85	16.07	---	0.24	6.15	0.13	1.17	0.01	39.63	1.39	4.36	98.29	145	12	204	2	18	6
00MBW715A	16.06	7.23	<0.01	5.59	7.42	---	0.26	4.80	0.15	5.86	0.06	55.60	0.49	1.64	99.57	95	8	120	8	54	18
00MBW716	16.05	7.69	<0.01	6.25	8.22	---	0.81	6.89	0.16	4.06	0.07	52.33	0.54	2.19	99.01	440	16	268	6	39	14
00MBW717A	13.13	0.61	<0.01	0.85	1.00	---	0.22	0.25	0.03	6.74	0.02	75.96	0.13	0.48	98.57	170	4	44	6	90	28
00MBW720	15.56	8.31	<0.01	---	---	10.21	0.51	6.85	0.17	4.10	0.11	50.80	1.07	0.84	98.53	110	14	196	6	69	24
00MBW722	14.89	0.80	<0.01	0.24	0.58	---	2.03	0.07	0.07	5.32	0.06	74.79	0.02	0.57	99.20	35	166	20	24	36	18
00MBW725	17.98	15.09	<0.01	---	---	7.61	0.10	9.55	0.13	1.00	0.18	45.59	0.58	1.09	98.90	30	8	132	6	27	14
00MBW726	14.27	1.07	<0.01	1.64	1.81	---	5.44	0.59	0.02	2.36	0.11	71.62	0.25	1.20	98.74	790	170	192	14	105	14
00MBW727A	14.94	1.10	<0.01	0.67	0.89	---	5.76	0.29	0.04	3.38	0.10	72.17	0.11	0.41	99.19	355	204	86	18	36	40
00MBW764	12.34	0.81	<0.01	---	---	1.87	5.88	0.21	0.04	2.30	0.03	74.60	0.22	0.45	98.75	395	244	58	28	171	68
00MBW766	14.43	1.33	<0.01	1.25	1.43	---	4.48	0.48	0.05	3.00	0.12	72.59	0.15	0.61	98.67	470	208	120	14	72	26
00MBW772	16.06	3.79	<0.01	3.13	3.87	---	3.13	1.49	0.08	2.94	0.17	65.64	0.58	0.65	98.40	770	142	278	22	171	30
00MBW780	13.86	1.25	<0.01	---	---	2.99	5.02	0.81	0.05	2.64	0.15	70.01	0.46	1.11	98.35	775	204	86	20	186	48
00MBW791	15.39	2.60	<0.01	2.42	2.81	---	3.87	1.20	0.06	3.01	0.11	68.59	0.40	0.95	98.99	800	164	288	16	135	30
00MBW806	14.64	0.56	<0.01	---	---	1.03	4.46	0.06	0.21	3.61	0.23	73.66	0.04	0.61	99.11	65	318	14	12	45	22
00RN604	4.36	0.20	0.01	---	---	1.56	1.10	0.50	0.02	0.10	0.11	89.95	0.19	0.83	98.93	---	---	---	---	---	---
00RN607	14.81	0.67	<0.01	0.40	0.71	---	4.62	0.05	0.05	3.44	0.13	73.85	0.03	0.70	99.06	50	236	30	12	39	20
00RN608	11.42	1.52	<0.01	---	---	2.31	1.80	0.94	0.03	2.19	0.09	76.93	0.52	0.79	98.54	---	---	---	---	---	---
00RN611B	8.18	0.87	<0.01	---	---	2.67	1.03	0.71	0.07	2.00	0.04	82.73	0.38	0.37	99.05	285	56	204	14	273	20
00RN623	14.43	2.60	<0.01	---	---	3.03	3.94	1.04	0.05	2.60	0.10	70.19	0.32	0.49	98.79	725	156	160	18	120	26
00RN673	13.51	7.07	0.02	---	---	10.46	1.64	4.73	0.17	2.27	0.31	53.56	1.89	3.17	98.80	---	---	---	---	---	---
00RN674	13.49	2.27	<0.01	---	---	3.45	3.50	1.16	0.06	2.44	0.09	70.28	0.37	1.35	98.46	720	134	188	20	162	32

Table 4. Concentration of major oxides, minor oxides, and trace elements in rock samples from the Big Delta and northwestern Eagle Quadrangles. Detection limits are given in Table 6. Note: --- = not analyzed.

SAMPLE	Al ₂ O ₃	CaO	Cr ₂ O ₃	FeO	Fe ₂ O ₃	Fe ₂ O ₃ *	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	SiO ₂	TiO ₂	LOI	TOTAL	Ba	Rb	Sr	Nb	Zr	Y
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
00RN699A	12.90	12.31	0.02	---	---	12.26	1.12	8.74	0.21	2.53	0.60	44.35	2.71	1.28	99.03	405	36	788	106	252	26
00RN820A	12.97	1.15	<0.01	---	---	1.59	4.44	0.34	0.04	3.34	0.09	74.39	0.21	0.27	98.83	1445	130	234	126	123	14
00RN821	13.91	1.50	<0.01	---	---	1.97	4.25	0.40	0.05	3.63	0.07	72.06	0.23	0.60	98.67	1995	122	346	162	132	22
00RN830	13.11	0.10	<0.01	0.24	2.12	---	5.32	0.16	0.03	2.47	0.07	74.12	0.32	1.35	99.17	410	352	16	24	210	46
00RN831B	14.15	7.87	<0.01	8.05	10.09	---	2.12	6.33	0.16	2.74	0.49	52.14	2.11	0.78	98.98	585	74	344	24	228	34
00RN835	15.36	7.48	<0.01	6.34	7.95	---	1.76	5.61	0.14	2.15	0.12	56.61	0.74	0.92	98.84	1065	60	264	12	96	24
00RN844B	18.64	6.88	<0.01	6.49	7.82	---	2.45	3.75	0.13	2.08	0.22	53.16	1.00	2.51	98.64	530	116	340	16	129	34
00RN849	16.63	3.52	<0.01	3.74	4.34	---	3.09	1.65	0.09	3.43	0.18	64.08	0.62	0.73	98.36	720	166	292	22	168	30
00RN850B	14.21	0.99	<0.01	0.87	0.93	---	5.73	0.24	0.06	3.31	0.08	72.60	0.10	0.45	98.70	250	212	72	20	57	30
00RN851B	11.86	7.83	0.01	8.02	9.73	---	2.51	7.85	0.15	0.75	0.13	51.25	0.70	6.24	99.01	410	142	228	8	93	22
00RN855B	12.54	7.12	<0.01	---	---	16.85	1.13	3.00	0.27	1.48	1.34	50.73	2.88	1.40	98.74	230	40	198	50	363	46
00RN857	11.80	0.25	0.01	---	---	4.46	1.96	2.71	0.06	1.47	0.05	73.86	0.59	2.13	99.35	---	---	---	---	---	---
00RN862A1	14.63	1.02	<0.01	0.59	0.83	---	4.87	0.25	0.07	2.66	0.12	73.81	0.07	0.61	98.94	120	198	58	12	48	26
00RN862B	14.05	1.91	<0.01	---	---	5.56	2.63	2.36	0.07	1.14	0.08	70.26	0.66	1.20	99.92	---	---	---	---	---	---
00RN862C	18.18	0.12	<0.01	---	---	7.11	5.52	2.89	0.06	0.48	0.07	62.07	1.08	1.21	98.79	---	---	---	---	---	---
00RN863A	14.68	2.82	<0.01	---	---	3.26	3.18	1.18	0.05	2.79	0.07	69.45	0.36	0.45	98.29	---	---	---	---	---	---
00RN867A	13.28	0.82	0.01	---	---	5.05	2.57	1.11	0.08	1.31	0.06	73.06	0.60	1.15	99.10	---	---	---	---	---	---
00RN872	15.16	0.91	<0.01	0.20	0.47	---	4.64	0.14	0.02	3.22	0.11	73.40	0.07	0.94	99.08	165	202	88	14	45	34
00RN874	14.58	0.74	<0.01	---	---	6.12	3.34	2.33	0.06	0.99	0.06	67.25	0.68	2.55	98.70	---	---	---	---	---	---
00RN886	14.82	1.03	<0.01	0.46	0.56	---	6.26	0.18	0.02	2.72	0.04	73.03	0.05	0.42	99.13	375	244	108	8	45	34
00RN887	12.23	1.12	<0.01	---	---	6.25	2.34	1.47	0.06	1.97	0.10	70.37	0.54	1.61	98.06	---	---	---	---	---	---
00RN888	5.51	0.42	<0.01	1.64	1.94	---	1.29	0.75	0.03	0.59	0.09	87.56	0.21	0.60	98.99	660	70	56	8	156	18
00RN890	12.07	0.80	<0.01	---	---	5.40	2.68	1.07	0.06	1.54	0.09	73.24	0.61	1.16	98.72	---	---	---	---	---	---
00RN892A	12.75	0.44	<0.01	---	---	4.37	3.37	0.53	0.07	0.39	0.09	74.83	0.24	1.48	98.56	---	---	---	---	---	---
00RN892B	21.38	1.27	<0.01	---	---	8.00	5.30	2.49	0.06	1.93	0.17	54.13	1.32	2.34	98.39	---	---	---	---	---	---
96RN/CDB-GR2	15.73	0.03	<0.01	---	---	0.98	9.07	0.15	<0.01	<0.01	0.11	70.99	0.53	1.60	99.19	2400	168	18	52	534	52

Table 5. Detection limits for trace element geochemical analyses. Analytical methods include: FA-AAS = Fire Assay-Atomic Absorption Spectroscopy, FA-Gravimetric = Fire Assay-Gravimetric Analysis, and ICP-AES = Inductively Coupled Plasma-Atomic Emission Spectroscopy. Unit opt = ounce(s) per ton.

Element	Units	Lower Detection Limit	Upper Detection Limit	Analytical Method
Au	ppb	5	10,000	FA-AAS
Ag	ppm	0.2	100	ICP-AES
Ag	opt	0.1	100	FA-Gravimetric
Al	percent	0.01	15	ICP-AES
As	ppm	2	10,000	ICP-AES
B	ppm	10	10,000	ICP-AES
Ba	ppm	10	10,000	ICP-AES
Be	ppm	0.5	100	ICP-AES
Bi	ppm	2	10,000	ICP-AES
Ca	percent	0.01	15	ICP-AES
Cd	ppm	0.5	500	ICP-AES
Co	ppm	1	10,000	ICP-AES
Cr	ppm	1	10,000	ICP-AES
Cu	ppm	1	10,000	ICP-AES
Fe	percent	0.01	15	ICP-AES
Ga	ppm	10	10,000	ICP-AES
Hg	ppm	1	10,000	ICP-AES
K	percent	0.1	10	ICP-AES
La	ppm	10	10,000	ICP-AES
Mg	percent	0.01	15	ICP-AES
Mn	ppm	5	10,000	ICP-AES
Mo	ppm	1	10,000	ICP-AES
Na	percent	0.01	10	ICP-AES
Ni	ppm	1	10,000	ICP-AES
P	ppm	10	10,000	ICP-AES
Pb	ppm	2	10,000	ICP-AES
S	percent	0.01	5	ICP-AES
Sb	ppm	2	10,000	ICP-AES
Sc	ppm	1	10,000	ICP-AES
Sr	ppm	1	10,000	ICP-AES
Ti	percent	0.01	10	ICP-AES
Tl	ppm	10	10,000	ICP-AES
U	ppm	10	10,000	ICP-AES
V	ppm	1	10,000	ICP-AES
W	ppm	10	10,000	ICP-AES
Zn	ppm	2	10,000	ICP-AES

Table 6. Detection limits for major oxide, minor oxide, and trace element analyses. Analytical methods include: Wet Chemistry and XRF = X-Ray Fluorescence Spectroscopy. Note: LOI* = Loss On Ignition; Fe₂O₃* = total iron oxide.

Element	Units	Lower Detection Limit	Upper Detection Limit	Analytical Method
Al ₂ O ₃	percent	0.01	100	XRF
CaO	percent	0.01	100	XRF
Cr ₂ O ₃	percent	0.01	100	XRF
FeO	percent	0.01	100	Wet Chemistry
Fe ₂ O ₃	percent	0.01	100	Calculation
Fe ₂ O ₃ *	percent	0.01	100	XRF
K ₂ O	percent	0.01	100	XRF
MgO	percent	0.01	100	XRF
MnO	percent	0.01	100	XRF
Na ₂ O	percent	0.01	100	XRF
P ₂ O ₅	percent	0.01	100	XRF
SiO ₂	percent	0.01	100	XRF
TiO ₂	percent	0.01	100	XRF
LOI*	percent	0.01	100	XRF
Total	percent	0.01	105	Calculation
Ba	ppm	5	50,000	XRF
Rb	ppm	2	50,000	XRF
Sr	ppm	2	50,000	XRF
Nb	ppm	2	50,000	XRF
Zr	ppm	3	50,000	XRF
Y	ppm	2	50,000	XRF