UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PRELIMINARY GEOLOGIC INVESTIGATIONS OF EASTERN ST. LAWRENCE ISLAND, ALASKA

By

William W. Patton, Jr., and Béla Csejtey, Jr.

Open-file report

1971

71-224

Preliminary geologic investigations of eastern St. Lawrence Island, Alaska

By William W. Patton, Jr., and Béla Csejtey, Jr.

INTRODUCTION

St. Lawrence Island, about 2,000 square miles in area, is located in the northern Bering Sea 130 miles west of mainland Alaska and 40 miles southeast of the Chukotsk Peninsula, U.S.S.R. This report covers about 500 square miles of the eastern part of the island (fig. 1).

Figure 1 near here

Reconnaissance geologic mapping of this area is part of a long-range program to investigate the mineral resources of the Bering Sea shelf. The purpose of these investigations is not only to assess the mineral potential of the island itself but also to provide basic geologic information needed in the interpretation of offshore geophysical data.

The eastern part of St. Lawrence Island is a broad, flat, wave-cut, bedrock platform standing less than 100 feet above sea level. The surface of the platform is dotted with numerous small lakes and blanketed by a thin veneer of water-soaked mossy turf and peat. Several isolated groups of talus-covered hills, which are bounded by ancient sea cliffs and probably represent former islands, rise 1,000 to 2,000 feet above the surface of the platform.

The reconnaissance geologic mapping and geochemical sampling of eastern St. Lawrence Island were carried out during the summers of 1968 and 1970. Transportation on the island was provided by small tracked vehicles

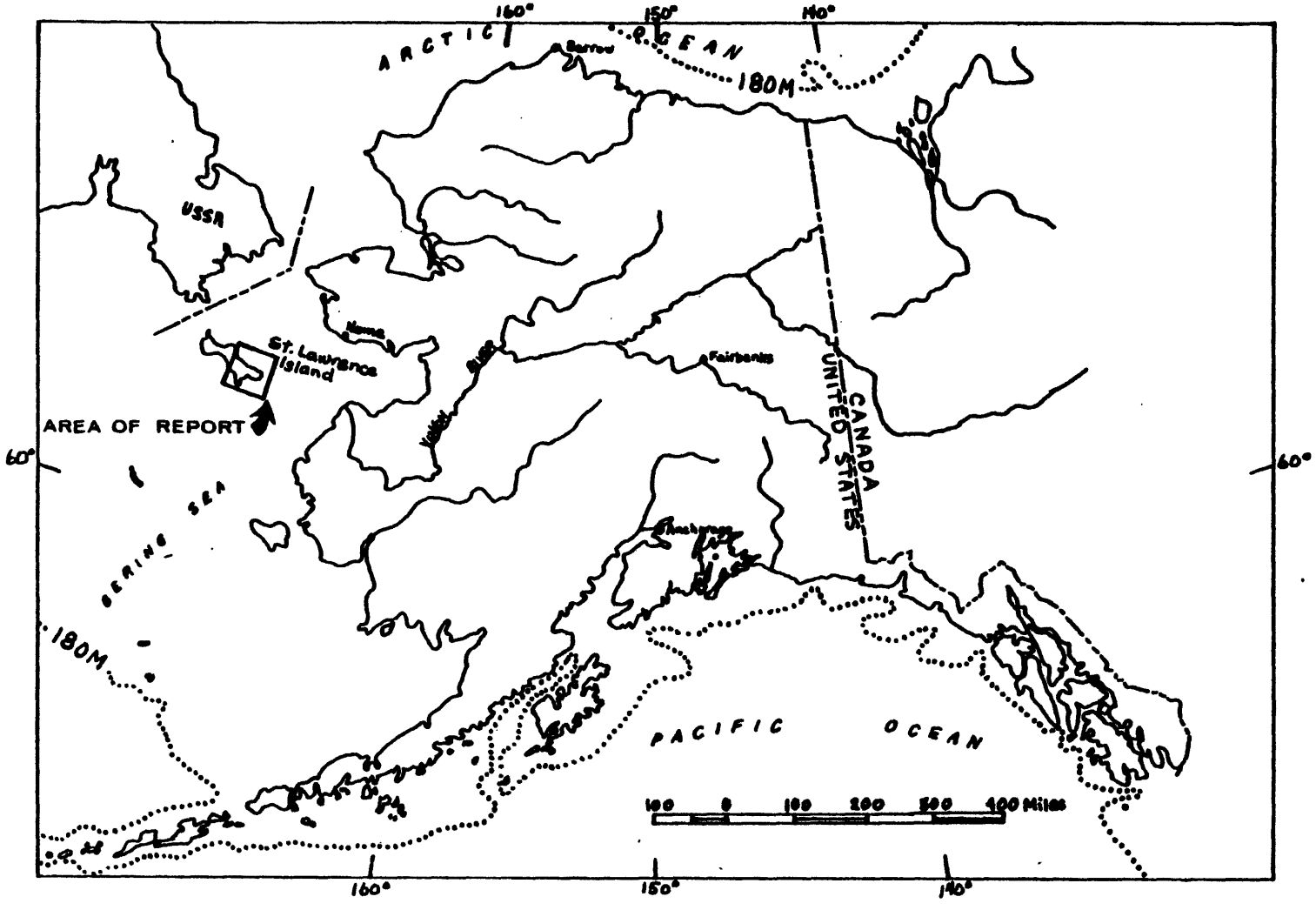


FIGURE 1. INDEX MAP SHOWING LOCATION OF ST. LAWRENCE ISLAND AND AREA OF THIS REPORT.

and float plane. The authors were assisted in the field by D. L. Wagner, A. F. White, and M. B. Eatlund.

GEOLOGIC SETTING

The bedrock of eastern St. Lawrence Island is composed chiefly of carbonate rocks of Paleozoic age and granitic bodies of Cretaceous age (fig. 2). The granitic rocks underlie virtually all of the hilly areas

Figure 2 near here

where they crop out in sparse erosional knobs and pinnacles and in broad expanses of frost-riven rubble. The carbonate rocks, some of which are altered to contact marbles, are confined to the wave-cut platform and are exposed in only a few widely scattered localities along incised drainages.

The oldest carbonate rocks comprise a thick sequence of gray dolomite and dolomitic limestone of Devonian age. Possibly as much as 4,000 to 6,000 feet of these rocks are exposed along the lower course of the Seknak River (Patton and Dutro, 1969). Other exposures occur on the upper Maknek River and along streams that drain into Tommame Lagoon.

Overlying the dolomite is a 1,000- to 2,000-foot sequence of gray crinoidal limestone and black nodular chert of Mississippian age. This sequence is exposed chiefly in the Tommame Lagoon drainage basin but small rubble patches of these rocks are also found on the Seknak River and along the shores of Niykhapakhit Lake.

The carbonate rocks are succeeded in the Tommame Lagoon drainage basin by a poorly exposed assemblage of dark mudstone, graywacke, shale,

chert, and thin-bedded limestone. Fossiliferous beds of Triassic age were found at two localities, but most of the rocks included in this unit are unfossiliferous and cannot be dated more closely than Mississippian to Cretaceous.

Granitic rocks of Cretaceous age underlie at least 150 square miles of the map area in four major plutonic bodies (fig. 2). The rocks are dominantly quartz monzonite but include granodiorite, monzonite, and syenite. All the plutons appear to be discordant epizonal bodies with narrow low-grade contact aureoles.

Patches of volcanic rocks of probable Cretaceous and early Tertiary age occur in three widely separated areas (fig. 2). These include flows, tuffs, and hypabyssal intrusives that range in composition from andesite to quartz latite. All of the volcanic rocks are devitrified and more or less altered to chlorite, sericite, clay minerals, calcite, and pyrite.

MINERAL OCCURRENCES

Anomalous amounts of gold, silver, arsenic, bismuth, molybdenum, lead, antimony, tin, and zinc were discovered in rock and soil samples from a heavily oxidized and hydrothermally altered body of latite and quartz latite on Myghapowit Mountain (fig. 3). Analyses of representative grab samples collected on a foot traverse across the latite body are given in table 1. Moderately high amounts of lead, zinc, and molybdenum also

---

Figure 3 and TABLE 1 NEAR HERE

---

were found in a few sediment samples collected from streams draining these volcanic rocks (table 2).

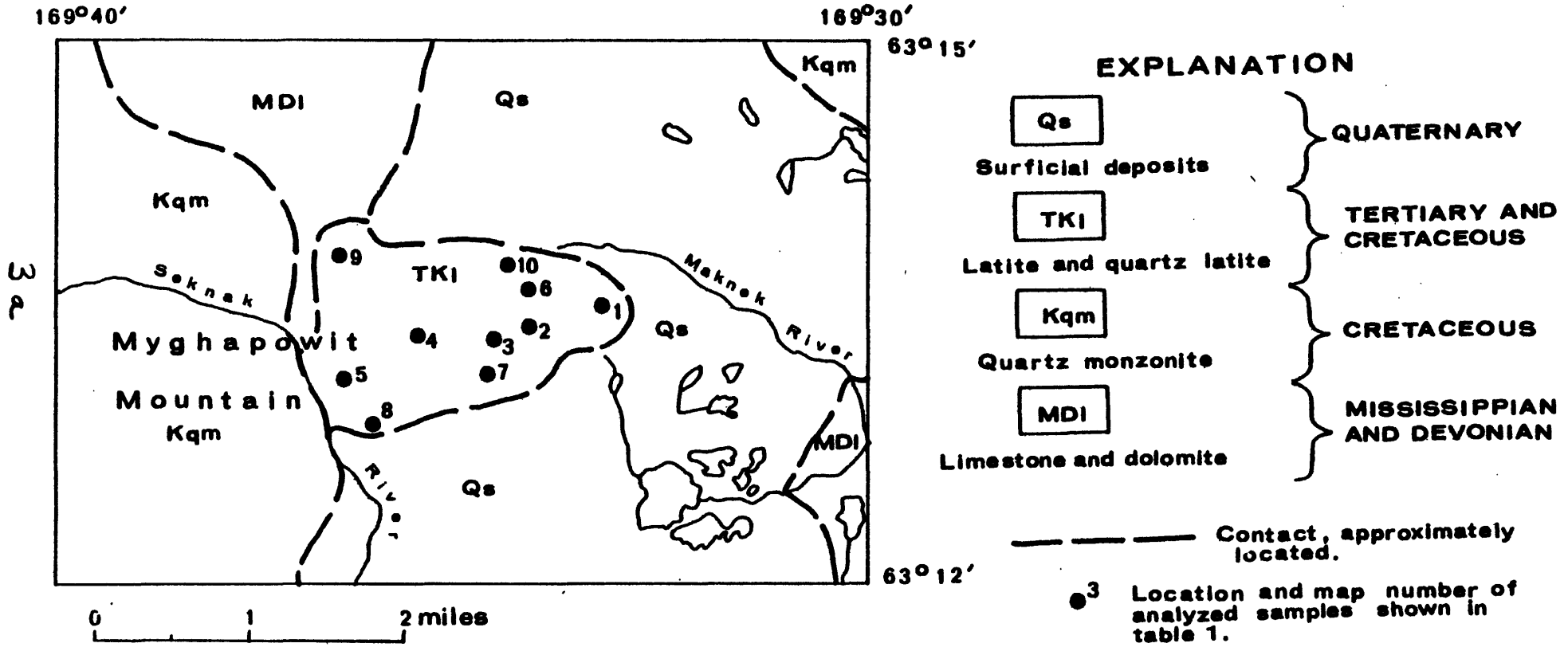


Figure 3. Generalized geologic map of Myghapowit Mountain latite body and surrounding areas.

Table 1.--Analyses of representative grab samples of rock and soil from Myghapowit Mountain latite body, eastern St. Lawrence Island

[Au contents determined by atomic absorption analyses, shown in ppm. All other elements determined by semiquantitative spectrographic analyses; the results are reported in ppm and in the series 1, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, etc. The precision of a reported value is approximately plus 100 percent or minus 50 percent. Analyses for gold by the atomic absorption method are accurate to ±100 percent. Lower limits of determination are in parentheses. N, not detected; L, detected but below limits of determination. Sample localities shown in fig. 3. Analysts: K. J. Curry, R. L. Miller, D. G. Murrey.]

Map No.	Field No.	(0.02) Au	(0.5) Ag	(200) As	(10) Bi	(5) Cu	(5) Mo	(10) Pb	(100) Sb	(10) Sn	(50) W	(200) Zn	Remarks
1	70ACy-135	L	N	N	N	15	L	70	N	N	N	N	Moderately altered latite porphyry.
2	-136a	L	N	N	N	70	N	30	N	150	N	300	Strongly altered aphanitic latite.
	-136b	L	N	L	50	70	150	30	N	30	N	N	Brecciated and limonite-stained altered quartz latite.
3	-137	L	L	L	L	5	150	20	N	15	N	N	Altered latite breccia.
4	-139a	0.2	N	N	15	150	300	700	N	50	L	N	Altered quartz latite breccia with limonite veinlets.
	-139b	L	L	N	L	5	L	3000	N	70	N	N	Limonite-stained altered quartz latite.
5	-140	L	N	N	N	15	L	30	N	N	N	N	Pyritiferous altered latite.
6	-145a	0.6	1	3000	150	100	30	50	300	150	N	N	Altered quartz latite with limonite veinlet.
	-145b	0.3	0.5	L	300	70	700	700	N	N	N	N	Altered latite.
	-145c	L	N	N	15	5	10	200	N	N	N	N	Sample of red soil.
7	70APa-559	L	N	N	15	50	150	700	N	30	N	N	Limonite-stained altered latite.
8	-562	L	N	N	N	10	L	30	N	N	N	N	Limonite-stained altered latite.
9	-566	L	1	N	N	70	L	700	N	N	N	N	Sample of red soil.
10	-568	L	L	N	10	30	50	150	N	N	N	N	Sample of red soil.

The latite body forms a plug-like mass underlying approximately 2 square miles in the hilly easternmost portion of Myghapowit Mountain. Bedrock exposures are confined to talus, rubble patches, and a few erosional knobs. Intense oxidation has produced a brilliant red and orange gossan that serves to distinguish the latite body even at a distance from the quartz monzonite which underlies the main mass of Myghapowit Mountain.

All of the volcanic rock is more or less altered to an aggregate of sericite, chlorite, clay minerals, and secondary silica and only traces of the original textures can be seen. Much of the rock has been brecciated and heavily infiltrated with limonite. No sulphides other than pyrite were recognized in hand specimens.

ANALYSES OF STREAM-SEDIMENT SAMPLES

Analytical data for 184 stream-sediment samples from eastern St. Lawrence Island are presented in table 2 at the end of the report. These samples were collected from streams draining areas of bedrock exposure and are designed to supplement geologic mapping by providing a broad background of reconnaissance geochemical data. Location of the samples are shown in figure 4. All samples were analyzed for 30 elements by the

---

Figure 4 near here

---

six-step semiquantitative spectrographic method and for gold by the atomic absorption method. Results of the spectrographic analyses for antimony, cadmium, gold, and tungsten have been omitted in table 2 because no values above the limits of detection were reported.

The semiquantitative spectrographic analyses were done by K. J. Curry, Liz Martinez, and R. L. Miller and atomic absorption analyses by R. L. Miller, D. G. Murrey, and R. Vaughn.

The results of the stream-sediment analyses have been processed by means of a computer program known as GEOSUM and are presented in table 2. The GEOSUM program is designed primarily for summarizing and tabulating geochemical data--especially data from semiquantitative spectrographic analyses by the laboratories of the U.S. Geological Survey.

The program output consists of: a) a tabulation of the data, b) histograms and cumulative frequency distributions, and c) a statistical summary which includes geometric means and geometric deviations.

SUMMARY OF RESULTS OF STREAM SEDIMENT SAMPLING

The reconnaissance stream-sediment sampling on eastern St. Lawrence Island failed to reveal any anomalously high base metal concentrations comparable to those reported on the western part of the island (Patton and Csejtey, 1970a, b). A few samples from streams draining a small plug of altered latite at the eastern end of Myghapowit Mountain contain moderately high amounts of lead (150 ppm), zinc (200 ppm), and molybdenum (7 to 20 ppm). However, elsewhere no values exceed 100 ppm lead, 200 ppm zinc, or 50 ppm copper; and only four samples yielded more than 5 ppm molybdenum.

Tin is generally widespread on the eastern part of the island, but values are low (30 ppm or less). Detectable amounts of tin were found in 48 out of 184 stream-sediment samples from the eastern part of the island compared with only 4 out of 207 samples from the western part (Patton and Csejtey, 1970). Most of the tin-bearing samples on the eastern part of

the island come from streams draining the Soomaghat pluton and the north-central part of the Kinipaghulghat pluton. No tin mineralization was found in place and only two out of 15 representative grab samples of the quartz monzonite from the two plutons contain detectable amounts of tin. Some high tin values were detected, however, in tourmaline-rich samples of granite found as float in the stream beds.

Beryllium content is also higher in samples from the eastern part of the island. The geometric mean for 184 samples from the eastern part of the island is 2.1 ppm compared with 1.5 ppm for 207 samples from the western part. The highest values (5-7 ppm) were found in streams draining the western and north-central part of the Kinipaghulghat pluton.

EXPLANATION OF TABLE 2

Analytical results from stream-sediment samples are given in table 2 as analytical values such as 7.0000 ppm, 10.0000 percent, etc., or as qualified values expressed as a letter. These letter codes are N = not detected, L = less than specified limit of detection, G = greater than value shown, B = no data, H = interference, and T = trace. Note that the right-most zero digits for each analytical value may or may not be significant. The precision of semiquantitative spectrographic values is approximately plus 100 percent or minus 50 percent. Analyses for gold by atomic absorption method are accurate to $\pm$100 percent. The specified limits of detection are as follows:

Specified limits of detection[1/]

FE PCT	MG PCT	CA PCT	TI PCT	MN PPM	AG PPM
0.05000	0.02000	0.05000	0.00200	10.00000	0.50000
AS PPM	AU PPM	B PPM	BA PPM	BE PPM	BI PPM
200.00000	0.02000	10.00000	20.00000	1.00000	10.00000
CO PPM	CR PPM	CU PPM	LA PPM	MO PPM	NB PPM
5.00000	5.00000	5.00000	20.00000	5.00000	10.00000
NI PPM	PB PPM	SC PPM	SN PPM	SR PPM	V PPM
5.00000	10.00000	5.00000	10.00000	100.00000	10.00000
Y PPM	ZN PPM	ZR PPM			
10.00000	200.00000	10.00000			

Semiquantitative spectrographic analyses by the U.S. Geological Survey are reported as geometric midpoints (1.0, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, etc.) of geometric brackets having the boundaries 1.2, 0.83, 0.56, 0.38, 0.26, 0.18, 0.12, 0.083, etc. The frequency distributions and histograms are on logarithmic scales and are computed using these brackets as class intervals, for example:

Reported value (ppm)	Limits	
1.0	.83	1.2
1.5	1.2	1.8
2.0	1.8	2.6
3.0	2.6	3.8
5.0	3.8	5.6
7.0	5.6	8.3
10.0	8.3	12.0

[1/] Four elements were analyzed for by semiquantitative spectrographic methods but were not detected in any of the samples. The specified limits of detection for these four elements are Sb---100, Cd---20, W---50, Au---10.

On the histograms decimal numbers are shown as powers of 10, for example:

7.0E-01 means 7.0×10^{-1} or 0.7

7.0E 00 means 7.0×10^{0} or 7.0

7.0E 01 means 7.0×10^{1} or 70.0

7.0E 02 means 7.0×10^{2} or 700.0

7.0E 03 means 7.0×10^{3} or 7,000.0

The histograms are constructed of X's, each of which represents 1 percent of the total number (184) of samples.

The histograms and the statistics given below them are derived only from data values within the ranges of analytical determination ("analytical values") and the statistics are biased if data values qualified with N, L, B, T, or H codes are present. Statistical estimates that are unbiased in this regard are given at the end of table 2. The geometric mean is the antilogarithm of the arithmetic mean of the logs of the analyses and an estimate of "central tendency", or of a characteristic value, of a frequency distribution that is approximately symmetrical on a log scale, and is therefore useful for characterizing many geochemical distributions. The geometric mean is not an estimate of geochemical abundance. The geometric deviation is the antilogarithm of the standard deviation of the logs of the analyses. See USGS Professional Paper 574-B for further discussion and USGS Bulletin 1147E, p. 20-23, for further discussion and explanation of geometric deviation.

In the computations performed to produce the statistical summary at the end of table 2 all elements are ignored where one or more of the

unqualified data values is less than the analytical limit of detection specified on input or where any data values are qualified with the G (greater than) code. Data values qualified with B or H are not used in the computations. Where none of the data values for an element are qualified the mean and deviation should be the same as those given in the preceding section. Where data are qualified with the codes N, L, or T, the estimates of geometric mean and deviation are based on a method by A. J. Cohen for treating censored distributions. The application of this method of geochemical problems is described in USGS Professional Paper 574-B. The estimates are unbiased in a strict sense only where the data are derived from a lognormal parent population, but experiments have shown that large departures from this requirement may not greatly invalidate the results. Acceptance and use of the estimates, however, is the responsibility of the individual.

REFERENCES CITED

Miesch, A. T., 1963, Distribution of elements in Colorado Plateau uranium deposits--A preliminary report: U.S. Geol. Survey Bull. 1147-E, 57 p.

_____1967, Methods of computation for estimating geochemical abundance: U.S. Geol. Survey Prof. Paper 574-B, 15 p.

Patton, William W., Jr., and Dutro, J. Thomas, Jr., 1969, Preliminary report on the Paleozoic and Mesozoic sedimentary sequence on St. Lawrence Island, Alaska: U.S. Geol. Survey Prof. Paper 650-D, p. D138-D143.

Patton, William W., Jr., and Csejtey, Béla, Jr., 1970, Preliminary geologic investigations of western St. Lawrence Island, Alaska: U.S. Geol. Survey Open File Report.

_____1970, Analyses of stream-sediment samples from western St. Lawrence Island, Alaska: U.S. Geol. Survey Open File Report.

TABLE 2 NEAR HERE

TABLE 2.

STREAM SEDS--E. ST LAWRENCE IS

No (see fig. 4)

	SAMPLE	FE PCT	MG PCT	CA PCT	TI PCT	MN PPM	AG PPM	AS PPM	B PPM	BA PPM	BE PPM
1	BAW014	7.0000	2.0000	3.0000	0.7000	700.0000	0.5000N	200.0000N	50.0000	300.0000	2.0000
2	BAW030	7.0000	5.0000	7.0000	0.5000	1000.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
3	BAW107	2.0000	0.5000	0.7000	0.2000	300.0000	0.5000L	200.0000N	10.0000L	300.0000	1.0000L
4	BAW029	7.0000	3.0000	7.0000	1.0000	1000.0000	0.5000N	200.0000N	30.0000	200.0000	1.5000
5	BAW028	7.0000	3.0000	5.0000	1.0000G	1500.0000	0.5000N	200.0000N	70.0000	200.0000	1.5000
6	BAW027	7.0000	3.0000	5.0000	0.7000	1000.0000	0.5000N	200.0000N	30.0000	200.0000	2.0000
7	BAW026	7.0000	3.0000	5.0000	1.0000	1000.0000	0.5000N	200.0000N	20.0000	200.0000	2.0000
8	BAW025	7.0000	1.5000	2.0000	0.5000	700.0000	0.5000N	200.0000N	30.0000	200.0000	2.0000
9	BAW108	3.0000	0.7000	0.7000	0.3000	700.0000	0.5000L	200.0000N	10.0000N	200.0000	1.0000
10	BAW031	15.0000	3.0000	5.0000	1.0000G	2000.0000	0.5000N	200.0000N	20.0000	150.0000	1.0000
11	BAW032	3.0000	0.7000	1.0000	0.3000	500.0000	0.5000N	200.0000N	15.0000	150.0000	2.0000
12	BAW033	7.0000	0.7000	1.5000	0.7000	700.0000	0.5000N	200.0000N	10.0000	150.0000	1.5000
13	BAW085	10.0000	1.5000	1.5000	1.0000	1500.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
14	BAW086	10.0000	1.5000	1.5000	1.0000	1500.0000	0.5000N	200.0000N	50.0000	300.0000	2.0000
15	BAW088	10.0000	3.0000	3.0000	1.0000	700.0000	0.5000N	200.0000N	70.0000	300.0000	1.5000
16	BAW087	10.0000	1.5000	1.5000	1.0000	1000.0000	0.5000N	200.0000N	30.0000	300.0000	3.0000
17	BAW015	5.0000	1.5000	1.5000	0.7000	700.0000	0.5000N	200.0000N	50.0000	300.0000	1.5000
18	BAW083	7.0000	1.5000	1.5000	1.0000	1000.0000	0.5000N	200.0000N	70.0000	700.0000	2.0000
19	BAW082	10.0000	3.0000	1.5000	1.0000	1500.0000	0.5000N	200.0000N	100.0000	700.0000	1.5000
20	BAW013	7.0000	1.5000	1.5000	1.0000	700.0000	0.5000N	200.0000N	50.0000	300.0000	1.5000
21	BAW012	7.0000	2.0000	3.0000	1.0000	700.0000	0.5000N	200.0000N	70.0000	300.0000	1.5000
22	BAW011	5.0000	1.5000	1.5000	0.7000	700.0000	0.5000N	200.0000N	50.0000	300.0000	1.5000
23	BAW084	7.0000	1.5000	1.0000	1.0000	700.0000	0.5000N	200.0000N	50.0000	500.0000	1.5000
24	BAW079	7.0000	1.5000	0.7000	0.7000	700.0000	0.5000N	200.0000N	50.0000	300.0000	1.0000L
25	BAW080	7.0000	1.5000	1.0000	1.0000	1000.0000	0.5000N	200.0000N	70.0000	700.0000	1.5000
26	BAW081	7.0000	1.5000	0.7000	0.7000	1500.0000	0.5000N	200.0000N	50.0000	700.0000	2.0000
27	BAW039	3.0000	0.5000	0.3000	0.3000	150.0000	0.5000L	200.0000N	30.0000	150.0000	1.0000
28	BAW024	3.0000	1.0000	2.0000	0.3000	700.0000	0.5000N	200.0000N	30.0000	500.0000	2.0000
29	BAW023	7.0000	1.5000	2.0000	0.7000	1000.0000	0.5000N	200.0000N	30.0000	500.0000	1.5000
30	BAW022	1.5000	0.7000	1.5000	0.3000	300.0000	0.5000N	200.0000N	20.0000	300.0000	2.0000
31	BAW021	3.0000	1.5000	3.0000	0.7000	700.0000	0.5000N	200.0000N	30.0000	300.0000	2.0000
32	AGO177	5.0000	1.5000	2.0000	0.7000	700.0000	0.5000N	200.0000N	30.0000	500.0000	1.5000
33	AGO176	5.0000	1.5000	2.0000	0.7000	300.0000	0.5000N	200.0000N	30.0000	500.0000	1.5000
34	AGO175	7.0000	1.5000	3.0000	1.0000G	700.0000	0.5000L	200.0000N	30.0000	500.0000	1.5000
35	AGO174	7.0000	1.5000	3.0000	1.0000	500.0000	0.5000L	200.0000N	30.0000	700.0000	1.5000
36	AGO173	3.0000	2.0000	3.0000	0.3000	300.0000	0.5000N	200.0000N	10.0000	500.0000	1.5000
37	AGO172	3.0000	3.0000	5.0000	0.5000	300.0000	0.5000N	200.0000N	30.0000	700.0000	1.5000
38	AGO171	3.0000	2.0000	3.0000	0.5000	200.0000	0.5000N	200.0000N	10.0000	500.0000	1.0000
39	AGO184	3.0000	5.0000	3.0000	0.5000	300.0000	0.5000N	200.0000N	15.0000	300.0000	1.0000L
40	AGO183	3.0000	5.0000	7.0000	0.3000	200.0000	0.5000N	200.0000N	30.0000	300.0000	1.0000L
41	AGO178	3.0000	3.0000	5.0000	0.3000	300.0000	0.5000N	200.0000N	10.0000N	300.0000	1.5000
42	AGO179	3.0000	2.0000	2.0000	0.2000	200.0000	0.5000N	200.0000N	10.0000	300.0000	1.0000L
43	AGO180	3.0000	0.7000	1.5000	0.5000	300.0000	0.5000L	200.0000N	10.0000	300.0000	2.0000
44	AGO181	10.0000	1.0000	1.5000	1.0000	700.0000	0.5000L	200.0000N	30.0000	700.0000	1.5000
45	BAW008	7.0000	1.5000	1.5000	1.0000G	700.0000	0.5000N	200.0000N	50.0000	300.0000	3.0000
46	AGO182	5.0000	0.7000	1.5000	0.7000	700.0000	0.5000L	200.0000N	20.0000	300.0000	2.0000
47	BAW009	7.0000	1.0000	1.5000	1.0000	700.0000	0.5000N	200.0000N	15.0000	150.0000	3.0000
48	BAW010	15.0000	1.5000	3.0000	1.0000G	1500.0000	0.5000N	200.0000N	15.0000	150.0000	3.0000
49	BAW078	7.0000	3.0000	5.0000	1.0000G	2000.0000	0.5000N	200.0000N	10.0000	200.0000	2.0000
50	BAW004	7.0000	1.5000	1.5000	0.7000	1500.0000	0.5000N	200.0000N	50.0000	300.0000	1.5000

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	BI PPM	CO PPM	CR PPM	CU PPM	LA PPM	MO PPM	NB PPM	NI PPM	PB PPM	SC PPM
1	BAW014	10.0000N	15.0000	70.0000	7.0000	20.0000L	5.0000L	10.0000	30.0000	50.0000	15.0000
2	BAW030	10.0000N	10.0000	50.0000	7.0000	20.0000L	5.0000	10.0000	20.0000	70.0000	15.0000
3	BAW107	10.0000N	5.0000L	20.0000	5.0000	20.0000N	5.0000N	10.0000L	5.0000	30.0000	5.0000N
4	BAW029	10.0000N	10.0000	70.0000	7.0000	30.0000	5.0000L	10.0000	20.0000	50.0000	15.0000
5	BAW028	10.0000N	10.0000	70.0000	10.0000	30.0000	5.0000	10.0000	30.0000	70.0000	15.0000
6	BAW027	10.0000N	10.0000	50.0000	7.0000	30.0000	5.0000	10.0000	30.0000	70.0000	15.0000
7	BAW026	10.0000N	10.0000	30.0000	7.0000	30.0000	5.0000	15.0000	20.0000	70.0000	15.0000
8	BAW025	10.0000N	10.0000	70.0000	7.0000	20.0000	5.0000	10.0000L	15.0000	50.0000	15.0000
9	BAW108	10.0000N	5.0000L	20.0000	7.0000	20.0000L	5.0000N	10.0000L	7.0000	30.0000	5.0000N
10	BAW031	10.0000N	10.0000	70.0000	15.0000	200.0000	7.0000	15.0000	15.0000	50.0000	15.0000
11	BAW032	10.0000N	5.0000L	20.0000	5.0000	20.0000L	5.0000L	10.0000	15.0000	50.0000	7.0000
12	BAW033	10.0000N	5.0000L	30.0000	10.0000	70.0000	5.0000	10.0000	5.0000	30.0000	10.0000
13	BAW085	10.0000N	15.0000	70.0000	15.0000	100.0000	10.0000	15.0000	15.0000	50.0000	15.0000
14	BAW086	10.0000N	20.0000	150.0000	50.0000	30.0000	15.0000	15.0000	20.0000	70.0000	15.0000
15	BAW088	10.0000N	7.0000	150.0000	10.0000	100.0000	5.0000	15.0000	30.0000	50.0000	15.0000
16	BAW087	10.0000N	10.0000	70.0000	15.0000	100.0000	7.0000	15.0000	15.0000	50.0000	15.0000
17	BAW015	10.0000N	15.0000	70.0000	7.0000	20.0000L	5.0000L	10.0000	15.0000	30.0000	15.0000
18	BAW083	10.0000N	15.0000	70.0000	15.0000	20.0000	5.0000L	10.0000	30.0000	30.0000	15.0000
19	BAW082	10.0000N	20.0000	150.0000	15.0000	30.0000	5.0000L	10.0000	50.0000	50.0000	20.0000
20	BAW013	10.0000N	15.0000	70.0000	7.0000	70.0000	30.0000	15.0000	50.0000	30.0000	15.0000
21	BAW012	10.0000N	20.0000	100.0000	7.0000	30.0000	5.0000L	10.0000	50.0000	30.0000	15.0000
22	BAW011	10.0000N	15.0000	100.0000	7.0000	20.0000L	5.0000	10.0000	50.0000	30.0000	15.0000
23	BAW084	10.0000N	10.0000	70.0000	10.0000	20.0000L	5.0000L	10.0000L	50.0000	30.0000	15.0000
24	BAW079	10.0000N	15.0000	100.0000	10.0000	20.0000L	5.0000	10.0000L	50.0000	20.0000	15.0000
25	BAW080	10.0000N	20.0000	150.0000	20.0000	20.0000	5.0000L	10.0000	70.0000	30.0000	20.0000
26	BAW081	10.0000N	30.0000	70.0000	50.0000	20.0000	5.0000L	10.0000L	70.0000	50.0000	15.0000
27	BAW039	10.0000N	5.0000N	30.0000	7.0000	20.0000L	5.0000N	10.0000L	5.0000L	70.0000	15.0000
28	BAW024	10.0000N	10.0000	30.0000	5.0000	20.0000L	5.0000L	10.0000	20.0000	30.0000	10.0000
29	BAW023	10.0000N	15.0000	70.0000	5.0000	30.0000	5.0000L	15.0000	15.0000	20.0000	15.0000
30	BAW022	10.0000N	5.0000L	15.0000	5.0000L	20.0000L	5.0000N	10.0000L	30.0000	15.0000	7.0000
31	BAW021	10.0000N	7.0000	50.0000	5.0000L	20.0000	5.0000L	10.0000L	10.0000	15.0000	15.0000
32	AGO177	10.0000N	10.0000	50.0000	7.0000	50.0000	5.0000L	10.0000	50.0000	30.0000	15.0000
33	AGO176	10.0000N	10.0000	70.0000	15.0000	30.0000	5.0000L	10.0000	50.0000	30.0000	10.0000
34	AGO175	10.0000N	15.0000	50.0000	30.0000	150.0000	5.0000	15.0000	30.0000	30.0000	15.0000
35	AGO174	10.0000N	10.0000	70.0000	20.0000	70.0000	5.0000L	10.0000L	70.0000	70.0000	15.0000
36	AGO173	10.0000N	10.0000	30.0000	7.0000	30.0000	5.0000N	10.0000	30.0000	30.0000	7.0000
37	AGO172	10.0000N	10.0000	70.0000	10.0000	30.0000	5.0000L	10.0000	50.0000	30.0000	10.0000
38	AGO171	10.0000N	10.0000	150.0000	5.0000	30.0000	5.0000N	10.0000	30.0000	30.0000	10.0000
39	AGO184	10.0000N	7.0000	50.0000	7.0000	20.0000L	5.0000N	10.0000L	50.0000	20.0000	7.0000
40	AGO183	10.0000N	7.0000	50.0000	7.0000	20.0000	5.0000N	10.0000L	30.0000	30.0000	7.0000
41	AGO178	10.0000N	10.0000	30.0000	10.0000	50.0000	5.0000L	10.0000	30.0000	30.0000	7.0000
42	AGO179	10.0000N	10.0000	70.0000	7.0000	20.0000	5.0000L	10.0000	30.0000	30.0000	7.0000
43	AGO180	10.0000N	10.0000	30.0000	10.0000	100.0000	10.0000	15.0000	50.0000	30.0000	10.0000
44	AGO181	10.0000N	15.0000	50.0000	10.0000	100.0000	5.0000L	15.0000	30.0000	30.0000	15.0000
45	BAW008	10.0000N	20.0000	70.0000	5.0000	150.0000	5.0000L	15.0000	15.0000	30.0000	15.0000
46	AGO182	10.0000N	10.0000	50.0000	7.0000	70.0000	5.0000L	15.0000	30.0000	50.0000	15.0000
47	BAW009	10.0000N	15.0000	30.0000	5.0000L	70.0000	5.0000L	15.0000	15.0000	20.0000	15.0000
48	BAW010	10.0000N	20.0000	70.0000	5.0000L	150.0000	5.0000	15.0000	15.0000	20.0000	20.0000
49	BAW078	10.0000N	20.0000	50.0000	5.0000L	150.0000	5.0000L	15.0000	20.0000	30.0000	20.0000
50	BAW004	10.0000N	15.0000	70.0000	7.0000	50.0000	5.0000L	15.0000	30.0000	20.0000	15.0000

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	SN PPM	SR PPM	V PPM	Y PPM	ZN PPM	ZR PPM	AU PPM
1	BAW014	10.0000N	300.0000	150.0000	20.0000	200.0000N	300.0000	0.0200L
2	BAW030	10.0000N	700.0000	200.0000	30.0000	200.0000N	200.0000	0.0200L
3	BAW107	10.0000N	300.0000	70.0000	10.0000L	200.0000N	70.0000	0.0200L
4	BAW029	10.0000N	500.0000	200.0000	50.0000	200.0000N	500.0000	0.0200L
5	BAW028	10.0000N	500.0000	200.0000	30.0000	200.0000N	300.0000	0.0200L
6	BAW027	10.0000N	500.0000	200.0000	30.0000	200.0000N	100.0000	0.0200L
7	BAW026	10.0000N	500.0000	200.0000	30.0000	200.0000N	700.0000	0.0200L
8	BAW025	10.0000N	500.0000	200.0000	30.0000	200.0000N	500.0000	0.0200L
9	BAW108	10.0000N	300.0000	70.0000	10.0000	200.0000N	100.0000	0.0200L
10	BAW031	10.0000N	500.0000	500.0000	150.0000	200.0000N	1000.0000G	0.0200L
11	BAW032	10.0000N	300.0000	150.0000	15.0000	200.0000N	70.0000	0.0200L
12	BAW033	10.0000N	500.0000	200.0000	30.0000	200.0000N	300.0000	0.0200L
13	BAW085	10.0000	500.0000	300.0000	70.0000	200.0000N	300.0000	0.0200L
14	BAW086	10.0000N	500.0000	300.0000	30.0000	200.0000N	700.0000	0.0200L
15	BAW088	10.0000N	500.0000	300.0000	70.0000	200.0000N	300.0000	0.0200L
16	BAW087	10.0000L	700.0000	200.0000	70.0000	200.0000N	500.0000	0.0200L
17	BAW015	10.0000N	300.0000	150.0000	20.0000	200.0000N	300.0000	0.0200L
18	BAW083	10.0000N	300.0000	200.0000	30.0000	200.0000N	700.0000	0.0200L
19	BAW082	10.0000N	300.0000	200.0000	30.0000	200.0000N	300.0000	0.0200L
20	BAW013	10.0000N	300.0000	150.0000	30.0000	200.0000N	300.0000	0.0200L
21	BAW012	10.0000N	300.0000	200.0000	30.0000	200.0000N	300.0000	0.0200L
22	BAW011	10.0000N	300.0000	150.0000	30.0000	200.0000N	300.0000	0.0200L
23	BAW084	10.0000N	300.0000	200.0000	15.0000	200.0000N	200.0000	0.0200L
24	BAW079	10.0000N	200.0000	200.0000	10.0000	200.0000N	300.0000	0.0200L
25	BAW080	10.0000N	300.0000	300.0000	20.0000	200.0000N	300.0000	0.0200L
26	BAW081	10.0000N	300.0000	300.0000	20.0000	200.0000N	300.0000	0.0200L
27	BAW039	10.0000N	150.0000	200.0000	20.0000	200.0000N	150.0000	0.0200L
28	BAW024	10.0000N	700.0000	150.0000	30.0000	200.0000N	70.0000	0.0200L
29	BAW023	10.0000N	500.0000	200.0000	30.0000	200.0000N	150.0000	0.0200L
30	BAW022	10.0000N	700.0000	70.0000	15.0000	200.0000N	70.0000	0.0200L
31	BAW021	10.0000N	500.0000	150.0000	20.0000	200.0000N	300.0000	0.0200L
32	AGO177	10.0000N	300.0000	100.0000	30.0000	200.0000L	150.0000	0.0200L
33	AGO176	10.0000N	300.0000	150.0000	30.0000	200.0000L	300.0000	0.0200L
34	AGO175	10.0000	700.0000	150.0000	70.0000	200.0000L	70.0000	0.0200L
35	AGO174	10.0000N	700.0000	150.0000	30.0000	200.0000L	300.0000	0.0200L
36	AGO173	10.0000N	300.0000	100.0000	10.0000	200.0000L	70.0000	0.0200L
37	AGO172	10.0000N	500.0000	150.0000	15.0000	200.0000L	300.0000	0.0200L
38	AGO171	10.0000N	300.0000	150.0000	15.0000	200.0000L	70.0000	0.0200L
39	AGO184	10.0000N	200.0000	100.0000	10.0000	200.0000N	150.0000	0.0200L
40	AGO183	10.0000N	200.0000	100.0000	15.0000	200.0000N	300.0000	0.0200L
41	AGO178	10.0000N	700.0000	70.0000	20.0000	200.0000L	70.0000	0.0200L
42	AGO179	10.0000N	300.0000	100.0000	20.0000	200.0000N	70.0000	0.0200L
43	AGO180	10.0000L	300.0000	150.0000	50.0000	200.0000L	100.0000	0.0200L
44	AGO181	10.0000L	500.0000	150.0000	50.0000	200.0000L	200.0000	0.0200L
45	BAW008	10.0000N	500.0000	150.0000	70.0000	200.0000N	700.0000	0.0200L
46	AGO182	10.0000N	300.0000	100.0000	30.0000	200.0000N	200.0000	0.0200L
47	BAW009	10.0000N	700.0000	150.0000	30.0000	200.0000N	200.0000	0.0200L
48	BAW010	10.0000N	500.0000	200.0000	70.0000	200.0000N	700.0000	0.0200L
49	BAW078	15.0000	700.0000	200.0000	70.0000	200.0000N	300.0000	0.0200L
50	BAW004	10.0000N	300.0000	150.0000	50.0000	200.0000N	500.0000	0.0200L

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	FE PCT	MG PCT	CA PCT	TI PCT	MN PPM	AG PPM	AS PPM	B PPM	BA PPM	BE PPM
51	BAW005	7.0000	1.0000	0.7000	0.7000	1000.0000	0.5000N	200.0000N	70.0000	300.0000	1.5000
52	BAW006	7.0000	1.5000	3.0000	1.0000G	1500.0000	0.5000N	200.0000N	20.0000	150.0000	2.0000
53	BAW007	10.0000	1.5000	1.5000	0.5000	1500.0000	0.5000N	200.0000N	20.0000	150.0000	2.0000
54	BAW003	7.0000	1.5000	3.0000	1.0000G	1000.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
55	BAW002	5.0000	1.5000	2.0000	1.0000	1500.0000	0.5000N	200.0000N	20.0000	150.0000	2.0000
56	BAW001	7.0000	1.5000	2.0000	1.0000G	1500.0000	0.5000N	200.0000N	20.0000	150.0000	2.0000
57	BAW073	10.0000	2.0000	3.0000	1.0000G	2000.0000	0.5000N	200.0000N	20.0000	200.0000	3.0000
58	BAW017	3.0000	1.5000	2.0000	0.7000	700.0000	0.5000N	200.0000N	20.0000	200.0000	2.0000
59	BAW018	3.0000	1.5000	3.0000	0.7000	1000.0000	0.5000N	200.0000N	30.0000	200.0000	1.5000
60	BAW106	7.0000	1.5000	3.0000	1.0000G	1000.0000	0.5000N	200.0000N	50.0000	200.0000	1.0000L
61	BAW019	7.0000	1.5000	3.0000	1.0000	1500.0000	0.5000N	200.0000N	30.0000	200.0000	2.0000
62	BAW020	7.0000	1.5000	3.0000	1.0000G	1500.0000	0.5000N	200.0000N	30.0000	200.0000	2.0000
63	BAW070	10.0000	1.5000	1.5000	0.7000	700.0000	0.5000N	200.0000N	70.0000	300.0000	2.0000
64	BAW075	10.0000	2.0000	2.0000	1.0000	1500.0000	0.5000N	200.0000N	15.0000	150.0000	1.5000
65	BAW103	3.0000	0.7000	1.0000	0.5000	500.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
66	BAW102	5.0000	0.7000	1.5000	0.7000	500.0000	0.5000N	200.0000N	15.0000	300.0000	1.5000
67	BAW104	3.0000	0.7000	1.0000	1.0000	700.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
68	BAW101	7.0000	0.7000	1.5000	1.0000	500.0000	0.5000N	200.0000N	15.0000	300.0000	2.0000
69	BAW100	7.0000	1.5000	1.0000	0.7000	700.0000	0.5000N	200.0000N	30.0000	300.0000	2.0000
70	BAW105	5.0000	1.0000	1.5000	0.7000	700.0000	0.5000N	200.0000N	15.0000	200.0000	1.5000
71	BAW069	7.0000	1.5000	1.5000	0.7000	700.0000	0.5000N	200.0000N	50.0000	300.0000	2.0000
72	BAW068	7.0000	1.5000	1.5000	0.7000	1000.0000	0.5000N	200.0000N	70.0000	300.0000	3.0000
73	BAW067	7.0000	1.5000	1.5000	0.7000	700.0000	0.5000N	200.0000N	30.0000	300.0000	3.0000
74	BAW063	7.0000	1.5000	1.0000	0.5000	1000.0000	0.5000N	200.0000N	50.0000	300.0000	3.0000
75	BAW066	15.0000	1.5000	2.0000	1.0000G	1500.0000	10.0000	200.0000N	20.0000	150.0000	3.0000
76	BAW065	7.0000	1.5000	0.7000	0.7000	1000.0000	0.5000N	200.0000N	70.0000	300.0000	2.0000
77	BAW064	5.0000	1.0000	1.0000	0.5000	700.0000	0.5000N	200.0000N	70.0000	300.0000	2.0000
78	BAW072	5.0000	1.0000	1.5000	0.5000	1000.0000	0.5000N	200.0000N	20.0000	300.0000	3.0000
79	BAW071	1.5000	0.3000	1.0000	0.3000	200.0000	0.5000N	200.0000N	15.0000	200.0000	2.0000
80	BAW016	5.0000	0.7000	0.5000	0.5000	300.0000	0.5000N	200.0000N	50.0000	200.0000	2.0000
81	BAW089	10.0000	5.0000	5.0000	0.7000	700.0000	0.5000N	200.0000N	15.0000	150.0000	1.0000
82	BAW090	7.0000	7.0000	15.0000	0.7000	1000.0000	0.5000N	200.0000N	50.0000	200.0000	3.0000
83	AGO275	2.0000	7.0000	7.0000	0.1500	200.0000	0.5000N	200.0000N	30.0000	300.0000	1.0000
84	AGO276	3.0000	5.0000	7.0000	0.3000	200.0000	0.5000N	200.0000N	10.0000	300.0000	1.5000
85	AGO277	3.0000	3.0000	5.0000	0.3000	300.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
86	AGO278	3.0000	7.0000	7.0000	0.3000	500.0000	0.5000N	200.0000N	10.0000L	300.0000	1.5000
87	AGO279	3.0000	5.0000	7.0000	0.2000	500.0000	0.5000N	200.0000N	30.0000	300.0000	2.0000
88	AGO281	3.0000	0.7000	1.5000	0.3000	300.0000	0.5000N	200.0000N	30.0000	500.0000	3.0000
89	AGO280	3.0000	7.0000	10.0000	0.3000	700.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
90	BAW049	5.0000	7.0000	15.0000	0.3000	1000.0000	0.5000N	200.0000N	30.0000	150.0000	1.5000
91	BAW048	5.0000	7.0000	10.0000	0.3000	700.0000	0.5000N	200.0000N	30.0000	150.0000	2.0000
92	BAW047	2.0000	0.7000	1.5000	0.3000	700.0000	0.5000N	200.0000N	15.0000	150.0000	3.0000
93	BAW041	5.0000	7.0000	10.0000	0.5000	1000.0000	0.5000N	200.0000N	10.0000L	100.0000	1.5000
94	BAW042	10.0000	5.0000	7.0000	0.7000	1500.0000	0.5000N	200.0000N	10.0000	150.0000	1.5000
95	BAW043	7.0000	3.0000	5.0000	0.7000	1500.0000	0.5000N	200.0000N	15.0000	150.0000	2.0000
96	BAW109	7.0000	0.7000	1.5000	0.3000	700.0000	0.5000N	200.0000N	10.0000	150.0000	1.5000
97	BAW044	15.0000	2.0000	1.5000	0.5000	1500.0000	0.5000N	200.0000N	15.0000	150.0000	3.0000
98	BAW045	7.0000	1.5000	3.0000	1.0000	1500.0000	0.5000N	200.0000N	10.0000	150.0000	2.0000
99	BAW046	15.0000	1.5000	7.0000	1.0000G	2000.0000	0.5000N	200.0000N	10.0000	100.0000	1.5000
100	BAW077	10.0000	3.0000	2.0000	1.0000G	1500.0000	0.5000N	200.0000N	20.0000	200.0000	2.0000

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	BI PPM	CD PPM	CR PPM	CU PPM	LA PPM	MO PPM	NB PPM	NI PPM	PB PPM	SC PPM
51	BAW005	10.0000N	20.0000	70.0000	10.0000	20.0000	5.0000L	15.0000	30.0000	15.0000	15.0000
52	BAW006	10.0000N	20.0000	30.0000	5.0000L	150.0000	5.0000L	15.0000	15.0000	20.0000	20.0000
53	BAW007	10.0000N	15.0000	50.0000	5.0000	70.0000	5.0000L	15.0000	15.0000	15.0000	15.0000
54	BAW003	10.0000N	15.0000	150.0000	5.0000	150.0000	5.0000L	15.0000	30.0000	15.0000	20.0000
55	BAW002	10.0000N	7.0000	70.0000	5.0000	70.0000	5.0000L	15.0000	15.0000	15.0000	15.0000
56	BAW001	10.0000N	15.0000	70.0000	5.0000	100.0000	5.0000L	15.0000	15.0000	15.0000	15.0000
57	BAW073	10.0000N	20.0000	70.0000	7.0000	150.0000	5.0000	15.0000	20.0000	30.0000	15.0000
58	BAW017	10.0000N	5.0000L	30.0000	5.0000L	30.0000	5.0000L	10.0000	7.0000	20.0000	15.0000
59	BAW018	10.0000N	5.0000	30.0000	5.0000L	50.0000	5.0000L	10.0000	10.0000	15.0000	15.0000
60	BAW106	10.0000N	5.0000	30.0000	5.0000L	150.0000	5.0000L	15.0000	10.0000	15.0000	15.0000
61	BAW019	10.0000N	15.0000	20.0000	5.0000L	70.0000	5.0000L	10.0000	10.0000	15.0000	20.0000
62	BAW020	10.0000N	15.0000	70.0000	5.0000L	150.0000	5.0000L	15.0000	20.0000	15.0000	15.0000
63	BAW070	10.0000N	10.0000	70.0000	7.0000	30.0000	5.0000L	10.0000	20.0000	30.0000	15.0000
64	BAW075	10.0000N	15.0000	50.0000	5.0000L	70.0000	5.0000L	10.0000	10.0000	30.0000	15.0000
65	BAW103	10.0000N	5.0000L	30.0000	5.0000L	20.0000L	5.0000N	10.0000L	5.0000	30.0000	10.0000
66	BAW102	10.0000N	5.0000L	50.0000	5.0000L	20.0000	5.0000L	10.0000	7.0000	30.0000	10.0000
67	BAW104	10.0000N	5.0000L	70.0000	5.0000L	50.0000	5.0000L	15.0000	7.0000	30.0000	15.0000
68	BAW101	10.0000N	5.0000L	15.0000	5.0000L	100.0000	5.0000L	15.0000	5.0000	30.0000	10.0000
69	BAW100	10.0000N	10.0000	70.0000	5.0000	50.0000	5.0000L	15.0000	15.0000	50.0000	15.0000
70	BAW105	10.0000N	5.0000L	30.0000	5.0000	20.0000	5.0000L	10.0000L	5.0000	30.0000	7.0000
71	BAW069	10.0000N	10.0000	70.0000	7.0000	50.0000	5.0000L	10.0000	15.0000	50.0000	15.0000
72	BAW068	10.0000N	7.0000	70.0000	7.0000	70.0000	5.0000L	10.0000	10.0000	100.0000	15.0000
73	BAW067	10.0000N	7.0000	70.0000	5.0000	70.0000	5.0000L	10.0000	7.0000	50.0000	10.0000
74	BAW063	10.0000N	10.0000	70.0000	7.0000	30.0000	5.0000L	10.0000	15.0000	50.0000	15.0000
75	BAW066	10.0000N	7.0000	70.0000	5.0000L	70.0000	5.0000	10.0000	5.0000	30.0000	15.0000
76	BAW065	10.0000N	7.0000	70.0000	10.0000	20.0000	5.0000L	10.0000	15.0000	30.0000	15.0000
77	BAW064	10.0000N	7.0000	70.0000	7.0000	20.0000	5.0000L	10.0000	15.0000	30.0000	15.0000
78	BAW072	10.0000N	15.0000	50.0000	5.0000L	30.0000	5.0000L	15.0000	7.0000	50.0000	10.0000
79	BAW071	10.0000N	5.0000L	15.0000	5.0000L	20.0000L	5.0000N	10.0000L	5.0000L	30.0000	5.0000L
80	BAW016	10.0000N	7.0000	70.0000	7.0000	20.0000	5.0000L	10.0000	15.0000	50.0000	15.0000
81	BAW089	10.0000N	7.0000	30.0000	5.0000L	50.0000	5.0000L	10.0000L	15.0000	30.0000	10.0000
82	BAW090	10.0000N	15.0000	70.0000	5.0000L	30.0000	5.0000L	10.0000	20.0000	50.0000	15.0000
83	AGO275	10.0000N	15.0000	50.0000	10.0000	30.0000	5.0000L	10.0000	30.0000	30.0000	7.0000
84	AGO276	10.0000N	7.0000	15.0000	7.0000	70.0000	5.0000N	10.0000	7.0000	30.0000	7.0000
85	AGO277	10.0000N	7.0000	10.0000	10.0000	70.0000	5.0000N	10.0000L	5.0000	30.0000	7.0000
86	AGO278	10.0000N	10.0000	15.0000	7.0000	50.0000	5.0000N	10.0000	15.0000	30.0000	7.0000
87	AGO279	10.0000N	15.0000	30.0000	7.0000	30.0000	5.0000N	10.0000	15.0000	30.0000	7.0000
88	AGO281	10.0000N	10.0000	30.0000	15.0000	20.0000	5.0000N	15.0000	20.0000	30.0000	7.0000
89	AGO280	10.0000N	10.0000	30.0000	7.0000	50.0000	5.0000N	10.0000	15.0000	20.0000	7.0000
90	BAW049	10.0000N	10.0000	70.0000	5.0000	20.0000	5.0000L	10.0000	15.0000	30.0000	10.0000
91	BAW048	10.0000N	10.0000	70.0000	5.0000L	70.0000	5.0000L	10.0000	15.0000	20.0000	15.0000
92	BAW047	10.0000N	5.0000L	30.0000	5.0000	20.0000L	5.0000N	15.0000	7.0000	30.0000	7.0000
93	BAW041	10.0000N	5.0000L	20.0000	5.0000L	70.0000	5.0000L	10.0000	5.0000	20.0000	15.0000
94	BAW042	10.0000N	15.0000	30.0000	5.0000L	70.0000	5.0000L	10.0000	7.0000	20.0000	10.0000
95	BAW043	10.0000N	15.0000	30.0000	5.0000L	70.0000	5.0000L	10.0000	10.0000	30.0000	15.0000
96	BAW109	10.0000N	5.0000L	20.0000	5.0000L	50.0000	5.0000N	10.0000	5.0000L	15.0000	5.0000L
97	BAW044	10.0000N	20.0000	50.0000	5.0000L	30.0000	5.0000L	10.0000	10.0000	30.0000	15.0000
98	BAW045	10.0000N	15.0000	20.0000	5.0000L	150.0000	5.0000L	10.0000	7.0000	20.0000	15.0000
99	BAW046	10.0000N	20.0000	70.0000	5.0000L	300.0000	5.0000	10.0000	15.0000	15.0000	20.0000
100	BAW077	10.0000N	20.0000	70.0000	5.0000	150.0000	5.0000L	10.0000	15.0000	30.0000	20.0000

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	SN PPM	SR PPM	V PPM	Y PPM	ZN PPM	ZR PPM	AU PPM
61	BAW005	10.0000N	300.0000	150.0000	50.0000	200.0000N	300.0000	0.0200L
62	BAW006	10.0000N	500.0000	150.0000	70.0000	200.0000N	700.0000	0.0200L
63	BAW007	10.0000N	500.0000	150.0000	20.0000	200.0000N	300.0000	0.0200L
64	BAW003	10.0000L	500.0000	150.0000	70.0000	200.0000N	300.0000	0.0200L
65	BAW002	10.0000N	500.0000	150.0000	50.0000	200.0000N	700.0000	0.0200L
66	BAW001	10.0000N	500.0000	150.0000	70.0000	200.0000N	700.0000	0.0200L
67	BAW073	10.0000L	500.0000	200.0000	70.0000	200.0000N	700.0000	0.0200L
68	BAW017	10.0000L	700.0000	150.0000	30.0000	200.0000N	300.0000	0.0200L
69	BAW018	10.0000L	700.0000	150.0000	50.0000	200.0000N	150.0000	0.0200L
60	BAW106	15.0000	300.0000	200.0000	70.0000	200.0000N	150.0000	0.0200L
61	BAW019	10.0000N	700.0000	150.0000	70.0000	200.0000N	300.0000	0.0200L
62	BAW020	10.0000L	500.0000	150.0000	70.0000	200.0000N	500.0000	0.0200L
63	BAW070	10.0000N	300.0000	300.0000	30.0000	200.0000N	300.0000	0.0200L
64	BAW075	10.0000L	300.0000	300.0000	70.0000	200.0000N	300.0000	0.0200L
65	BAW103	10.0000N	500.0000	70.0000	20.0000	200.0000N	300.0000	0.0200L
66	BAW102	10.0000N	500.0000	70.0000	20.0000	200.0000N	300.0000	0.0200L
67	BAW104	10.0000	500.0000	100.0000	30.0000	200.0000N	1000.0000	0.0200L
68	BAW101	10.0000	500.0000	100.0000	70.0000	200.0000N	200.0000	0.0200L
69	BAW100	10.0000N	500.0000	150.0000	30.0000	200.0000N	200.0000	0.0200L
70	BAW105	10.0000	300.0000	70.0000	30.0000	200.0000N	200.0000	0.0200L
71	BAW069	10.0000N	300.0000	150.0000	30.0000	200.0000N	500.0000	0.0200L
72	BAW068	10.0000N	300.0000	150.0000	30.0000	200.0000N	700.0000	0.0200L
73	BAW067	10.0000L	500.0000	150.0000	30.0000	200.0000N	500.0000	0.0200L
74	BAW063	10.0000N	300.0000	150.0000	30.0000	200.0000N	500.0000	0.0200L
75	BAW066	15.0000	500.0000	300.0000	70.0000	200.0000L	700.0000	0.0200L
76	BAW065	10.0000N	300.0000	150.0000	30.0000	200.0000N	500.0000	0.0200L
77	BAW064	10.0000N	300.0000	150.0000	20.0000	200.0000N	500.0000	0.0200L
78	BAW072	10.0000L	500.0000	70.0000	50.0000	200.0000N	200.0000	0.0200L
79	BAW071	10.0000N	500.0000	50.0000	15.0000	200.0000N	200.0000	0.0200L
80	BAW016	10.0000N	200.0000	150.0000	30.0000	200.0000N	200.0000	0.0200L
81	BAW089	10.0000N	300.0000	200.0000	20.0000	200.0000N	300.0000	0.0200L
82	BAW090	10.0000N	500.0000	200.0000	20.0000	200.0000N	300.0000	0.0200L
83	AGQ275	10.0000N	300.0000	100.0000	30.0000	200.0000N	70.0000	0.0200L
84	AGQ276	10.0000N	500.0000	30.0000	30.0000	200.0000N	70.0000	0.0200L
85	AGQ277	10.0000L	500.0000	50.0000	20.0000	200.0000N	70.0000	0.0400L
86	AGQ278	10.0000N	300.0000	70.0000	30.0000	200.0000N	100.0000	0.0200L
87	AGQ279	10.0000N	300.0000	70.0000	30.0000	200.0000N	200.0000	0.0200L
88	AGQ281	10.0000N	300.0000	70.0000	15.0000	200.0000N	200.0000	0.0200L
89	AGQ280	10.0000N	300.0000	100.0000	30.0000	200.0000N	150.0000	0.0200L
90	BAW049	10.0000N	300.0000	100.0000	20.0000	200.0000N	300.0000	0.0200L
91	BAW048	10.0000N	300.0000	100.0000	30.0000	200.0000N	300.0000	0.0200L
92	BAW047	10.0000	300.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
93	BAW041	10.0000L	300.0000	100.0000	50.0000	200.0000N	150.0000	0.0200L
94	BAW042	10.0000N	700.0000	200.0000	50.0000	200.0000N	300.0000	0.0200L
95	BAW043	10.0000N	700.0000	150.0000	50.0000	200.0000N	500.0000	0.0200L
96	BAW109	10.0000N	700.0000	200.0000	20.0000	200.0000N	200.0000	0.0200L
97	BAW044	10.0000N	700.0000	300.0000	20.0000	200.0000N	500.0000	0.0200L
98	BAW045	10.0000L	700.0000	200.0000	150.0000	200.0000N	300.0000	0.0200L
99	BAW046	30.0000	500.0000	500.0000	300.0000	200.0000N	200.0000	0.0200L
100	BAW077	10.0000N	700.0000	300.0000	50.0000	200.0000N	700.0000	0.0200L

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	FE PCT	MG PCT	CA PCT	TI PCT	MN PPM	AG PPM	AS PPM	B PPM	BA PPM	BE PPM
101	BAW076	10.0000	2.0000	2.0000	1.0000	1500.0000	0.5000N	200.0000N	10.0000	200.0000	2.0000
102	BAW074	10.0000	1.5000	2.0000	1.0000G	1500.0000	0.5000N	200.0000N	15.0000	150.0000	1.5000
103	AGO193	5.0000	5.0000	5.0000	0.1500	500.0000	0.5000L	200.0000N	30.0000	500.0000	2.0000
104	AGO194	3.0000	1.0000	2.0000	0.3000	200.0000	0.5000N	200.0000N	30.0000	500.0000	1.5000
105	AGO195	3.0000	1.0000	1.0000	0.3000	300.0000	0.5000N	200.0000L	50.0000	700.0000	1.5000
106	AGO192	5.0000	1.0000	0.5000	0.2000	300.0000	0.5000N	200.0000L	50.0000	700.0000	3.0000
107	AGO196	3.0000	0.7000	0.3000	0.2000	150.0000	0.5000N	200.0000L	30.0000	500.0000	1.5000
108	AGO197	3.0000	0.7000	0.2000	0.2000	200.0000	0.5000N	200.0000L	20.0000	500.0000	2.0000
109	AGO198	3.0000	0.7000	0.2000	0.5000	150.0000	0.5000N	200.0000L	20.0000	500.0000	1.0000
110	BAW040	7.0000	1.0000	0.1500	0.7000	150.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
111	BAW034	7.0000	0.7000	0.3000	0.7000	150.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
112	BAW055	3.0000	7.0000	15.0000	0.2000	700.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
113	BAW056	3.0000	7.0000	15.0000	0.5000	700.0000	0.5000N	200.0000N	30.0000	300.0000	2.0000
114	BAW057	3.0000	7.0000	15.0000	0.2000	700.0000	0.5000N	200.0000N	30.0000	700.0000	1.5000
115	BAW058	3.0000	7.0000	15.0000	0.3000	700.0000	0.5000N	200.0000N	20.0000	150.0000	2.0000
116	BAW059	3.0000	3.0000	7.0000	0.3000	700.0000	0.5000N	200.0000N	15.0000	300.0000	2.0000
117	BAW035	7.0000	5.0000	2.0000	1.0000	1000.0000	0.5000N	200.0000N	30.0000	300.0000	3.0000
118	BAW036	7.0000	2.0000	1.5000	1.0000	700.0000	0.5000N	200.0000N	20.0000	150.0000	3.0000
119	BAW037	2.0000	0.7000	1.5000	0.3000	300.0000	0.5000N	200.0000N	10.0000N	150.0000	2.0000
120	BAW038	7.0000	0.7000	0.3000	0.5000	150.0000	0.5000L	200.0000N	30.0000	300.0000	1.5000
121	BAW060	5.0000	0.7000	1.0000	0.5000	300.0000	0.5000N	200.0000N	15.0000	300.0000	2.0000
122	BAW061	3.0000	0.7000	1.0000	0.5000	300.0000	0.5000N	200.0000N	15.0000	300.0000	2.0000
123	BAW099	3.0000	0.7000	0.7000	0.5000	300.0000	0.5000N	200.0000N	15.0000	300.0000	1.5000
124	BAW062	3.0000	0.3000	0.7000	0.3000	300.0000	0.5000N	200.0000N	15.0000	300.0000	2.0000
125	BAW092	5.0000	1.5000	1.5000	0.7000	700.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
126	BAW094	3.0000	0.7000	1.0000	0.3000	500.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
127	BAW091	15.0000	2.0000	3.0000	1.0000G	3000.0000	0.5000N	200.0000N	30.0000	300.0000	3.0000
128	BAW093	2.0000	0.3000	1.5000	0.3000	300.0000	0.5000N	200.0000N	10.0000N	300.0000	1.5000
129	BAW054	5.0000	1.0000	1.5000	1.0000	700.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
130	BAW053	7.0000	1.0000	1.0000	1.0000	1000.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
131	BAW052	7.0000	1.5000	1.5000	1.0000G	1000.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
132	BAW051	7.0000	1.5000	2.0000	1.0000G	1000.0000	0.5000N	200.0000N	15.0000	300.0000	1.5000
133	BAW050	7.0000	1.0000	1.5000	0.5000	1500.0000	0.5000N	200.0000N	30.0000	300.0000	1.5000
134	BAW098	3.0000	1.0000	1.5000	0.7000	700.0000	0.5000N	200.0000N	20.0000	300.0000	1.0000
135	BAW097	3.0000	1.0000	0.7000	0.3000	300.0000	0.5000N	200.0000N	30.0000	300.0000	1.0000L
136	BAW096	7.0000	1.5000	1.5000	0.7000	700.0000	0.5000N	200.0000N	20.0000	300.0000	1.5000
137	BAW095	5.0000	1.5000	2.0000	1.0000	1000.0000	0.5000N	200.0000N	20.0000	300.0000	2.0000
138	BAW117	5.0000	1.5000	1.0000	0.3000	1000.0000	0.5000N	200.0000N	30.0000	300.0000	7.0000
139	BAW116	7.0000	1.0000	0.7000	0.5000	700.0000	0.5000L	200.0000N	30.0000	300.0000	5.0000
140	BAW115	7.0000	1.5000	1.5000	0.5000	1500.0000	0.5000L	200.0000N	15.0000	300.0000	5.0000
141	BAW138	7.0000	2.0000	3.0000	0.5000	700.0000	0.5000L	200.0000N	20.0000	300.0000	3.0000
142	BAW137	10.0000	3.0000	5.0000	1.0000	1000.0000	0.5000N	200.0000N	50.0000	500.0000	3.0000
143	BAW114	7.0000	3.0000	7.0000	0.7000	1500.0000	0.5000L	200.0000N	20.0000	300.0000	3.0000
144	BAW113	3.0000	1.5000	1.5000	0.7000	700.0000	0.5000L	200.0000N	30.0000	300.0000	3.0000
145	BAW136	3.0000	1.0000	1.5000	0.3000	700.0000	0.5000N	200.0000N	15.0000	300.0000	5.0000
146	BAW135	3.0000	1.0000	1.0000	0.3000	500.0000	0.5000N	200.0000N	15.0000	200.0000	5.0000
147	BAW122	3.0000	0.7000	0.7000	0.5000	700.0000	0.5000N	200.0000N	20.0000	150.0000	5.0000
148	BAW123	7.0000	1.5000	1.5000	0.7000	1000.0000	0.5000N	200.0000N	30.0000	300.0000	5.0000
149	BAW130	2.0000	0.1500	1.5000	0.1500	200.0000	0.5000N	200.0000N	10.0000L	150.0000	7.0000
150	BAW128	3.0000	0.5000	1.0000	0.3000	500.0000	0.5000N	200.0000N	10.0000	150.0000	5.0000

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	BI PPM	CO PPM	CR PPM	CU PPM	LA PPM	MO PPM	NB PPM	NI PPM	PB PPM	SC PPM
101	BAW076	10.0000N	15.0000	30.0000	5.0000L	150.0000	5.0000L	10.0000	10.0000	30.0000	15.0000
102	BAW074	10.0000N	20.0000	70.0000	5.0000L	150.0000	5.0000L	10.0000	15.0000	30.0000	15.0000
103	AGO193	10.0000N	15.0000	70.0000	20.0000	50.0000	5.0000L	10.0000	50.0000	50.0000	10.0000
104	AGO194	10.0000N	15.0000	50.0000	7.0000	30.0000	5.0000N	15.0000	50.0000	30.0000	10.0000
105	AGO195	10.0000N	10.0000	70.0000	5.0000	50.0000	5.0000N	10.0000	30.0000	30.0000	15.0000
106	AGO192	10.0000N	15.0000	100.0000	15.0000	50.0000	5.0000N	10.0000	50.0000	20.0000	15.0000
107	AGO196	10.0000N	10.0000	70.0000	5.0000	50.0000	5.0000L	10.0000	20.0000	30.0000	15.0000
108	AGO197	10.0000N	10.0000	50.0000	5.0000	70.0000	5.0000L	10.0000	15.0000	50.0000	15.0000
109	AGO198	10.0000N	7.0000	50.0000	5.0000	50.0000	5.0000	15.0000	5.0000	30.0000	10.0000
110	BAW040	10.0000N	5.0000N	70.0000	5.0000	30.0000	10.0000	10.0000	7.0000	150.0000	15.0000
111	BAW034	10.0000N	5.0000L	70.0000	7.0000	30.0000	20.0000	10.0000	15.0000	150.0000	15.0000
112	BAW055	10.0000N	5.0000L	50.0000	5.0000	20.0000L	5.0000L	10.0000L	10.0000	30.0000	7.0000
113	BAW056	10.0000N	10.0000	70.0000	7.0000	20.0000	5.0000L	10.0000	20.0000	50.0000	7.0000
114	BAW057	10.0000N	5.0000	70.0000	7.0000	20.0000L	5.0000L	10.0000L	30.0000	30.0000	7.0000
115	BAW058	10.0000N	5.0000	70.0000	5.0000L	20.0000L	5.0000L	10.0000	15.0000	30.0000	5.0000
116	BAW059	10.0000N	5.0000L	100.0000	5.0000L	20.0000L	5.0000N	10.0000L	10.0000	30.0000	5.0000
117	BAW035	10.0000N	15.0000	50.0000	5.0000	70.0000	7.0000	15.0000	15.0000	70.0000	15.0000
118	BAW036	10.0000N	15.0000	50.0000	5.0000	300.0000	7.0000	15.0000	15.0000	30.0000	15.0000
119	BAW037	10.0000N	5.0000L	15.0000	5.0000L	100.0000	5.0000N	10.0000L	7.0000	20.0000	5.0000
120	BAW038	10.0000N	5.0000L	50.0000	10.0000	50.0000	15.0000	10.0000	15.0000	150.0000	15.0000
121	BAW060	10.0000N	5.0000L	20.0000	5.0000L	20.0000L	5.0000N	10.0000	5.0000	50.0000	7.0000
122	BAW061	10.0000N	5.0000L	20.0000	5.0000L	20.0000L	5.0000N	10.0000	5.0000	30.0000	7.0000
123	BAW099	10.0000N	5.0000L	20.0000	5.0000L	20.0000L	5.0000N	10.0000L	7.0000	50.0000	7.0000
124	BAW062	10.0000N	5.0000N	15.0000	5.0000L	20.0000	5.0000N	10.0000L	5.0000L	30.0000	5.0000L
125	BAW092	10.0000N	5.0000	70.0000	5.0000L	20.0000	5.0000L	15.0000	10.0000	30.0000	10.0000
126	BAW094	10.0000N	5.0000L	70.0000	5.0000L	20.0000L	5.0000N	10.0000L	10.0000	20.0000	7.0000
127	BAW091	10.0000N	20.0000	70.0000	5.0000	30.0000	5.0000L	15.0000	20.0000	30.0000	20.0000
128	BAW093	10.0000N	5.0000L	15.0000	5.0000L	20.0000L	5.0000L	10.0000L	5.0000	20.0000	5.0000
129	BAW054	10.0000N	5.0000L	100.0000	5.0000L	20.0000	5.0000N	10.0000	10.0000	15.0000	15.0000
130	BAW053	10.0000N	10.0000	50.0000	5.0000	30.0000	5.0000L	10.0000	15.0000	15.0000	15.0000
131	BAW052	10.0000N	10.0000	50.0000	5.0000	30.0000	5.0000L	20.0000	15.0000	20.0000	15.0000
132	BAW051	10.0000N	5.0000	100.0000	5.0000L	30.0000	5.0000L	15.0000	10.0000	20.0000	15.0000
133	BAW050	10.0000N	7.0000	30.0000	5.0000L	20.0000	5.0000L	10.0000	15.0000	30.0000	10.0000
134	BAW098	10.0000N	5.0000L	30.0000	5.0000L	20.0000L	5.0000N	10.0000	7.0000	15.0000	15.0000
135	BAW097	10.0000N	5.0000	70.0000	5.0000	20.0000L	5.0000N	10.0000L	15.0000	20.0000	15.0000
136	BAW096	10.0000N	10.0000	50.0000	5.0000	30.0000	5.0000L	15.0000	10.0000	30.0000	15.0000
137	BAW095	10.0000N	7.0000	150.0000	5.0000	50.0000	5.0000L	15.0000	5.0000	30.0000	15.0000
138	BAW117	10.0000L	10.0000	70.0000	10.0000	50.0000	5.0000L	10.0000	15.0000	70.0000	10.0000
139	BAW116	10.0000N	10.0000	50.0000	15.0000	70.0000	5.0000L	15.0000	15.0000	100.0000	10.0000
140	BAW115	10.0000N	15.0000	70.0000	15.0000	50.0000	5.0000N	15.0000	15.0000	150.0000	15.0000
141	BAW138	10.0000N	15.0000	100.0000	50.0000	30.0000	5.0000L	15.0000	30.0000	70.0000	15.0000
142	BAW137	10.0000N	30.0000	150.0000	15.0000	30.0000	5.0000L	10.0000	50.0000	50.0000	20.0000
143	BAW114	10.0000N	30.0000	150.0000	20.0000	50.0000	5.0000N	15.0000	70.0000	70.0000	30.0000
144	BAW113	10.0000N	5.0000	70.0000	15.0000	30.0000	5.0000N	15.0000	15.0000	70.0000	15.0000
145	BAW136	10.0000N	5.0000	50.0000	10.0000	20.0000L	5.0000N	10.0000	15.0000	50.0000	7.0000
146	BAW135	10.0000N	5.0000	70.0000	7.0000	20.0000L	5.0000L	10.0000	15.0000	50.0000	7.0000
147	BAW122	10.0000N	5.0000	30.0000	7.0000	30.0000	5.0000L	15.0000	15.0000	70.0000	7.0000
148	BAW123	10.0000N	15.0000	70.0000	15.0000	30.0000	5.0000L	15.0000	30.0000	50.0000	15.0000
149	BAW130	10.0000N	5.0000N	10.0000	5.0000L	20.0000L	5.0000N	10.0000L	5.0000	30.0000	5.0000L
150	BAW128	10.0000N	5.0000L	10.0000	5.0000L	20.0000L	5.0000N	10.0000L	5.0000	50.0000	5.0000

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	SN PPM	SR PPM	V PPM	Y PPM	ZN PPM	ZR PPM	AU PPM
101	BAW076	10.0000N	500.0000	200.0000	70.0000	200.0000N	200.0000	0.0200L
102	BAW074	10.0000L	700.0000	200.0000	100.0000	200.0000N	300.0000	0.0200L
103	AGO193	10.0000N	300.0000	100.0000	15.0000	200.0000N	70.0000	0.0200L
104	AGO194	10.0000N	200.0000	100.0000	15.0000	200.0000N	150.0000	0.0200L
105	AGO195	10.0000N	300.0000	150.0000	30.0000	200.0000N	300.0000	0.0200L
106	AGO192	10.0000N	200.0000	150.0000	30.0000	200.0000L	300.0000	0.0200L
107	AGO196	10.0000N	300.0000	150.0000	30.0000	200.0000N	100.0000	0.0200L
108	AGO197	10.0000N	500.0000	150.0000	30.0000	200.0000N	150.0000	0.0200L
109	AGO198	10.0000N	500.0000	150.0000	20.0000	200.0000N	200.0000	0.0200L
110	BAW040	10.0000N	700.0000	200.0000	20.0000	200.0000N	500.0000	0.0200L
111	BAW034	10.0000N	500.0000	200.0000	20.0000	200.0000N	300.0000	0.0200L
112	BAW055	10.0000N	300.0000	70.0000	10.0000	200.0000N	70.0000	0.0200L
113	BAW056	10.0000N	300.0000	100.0000	30.0000	200.0000N	200.0000	0.0200L
114	BAW057	10.0000N	300.0000	100.0000	15.0000	200.0000N	70.0000	0.0200L
115	BAW058	10.0000N	300.0000	70.0000	20.0000	200.0000N	150.0000	0.0200L
116	BAW059	10.0000N	300.0000	70.0000	10.0000	200.0000N	150.0000	0.0200L
117	BAW035	10.0000L	700.0000	150.0000	70.0000	200.0000N	300.0000	0.0200L
118	BAW036	10.0000N	500.0000	150.0000	50.0000	200.0000	200.0000	0.0200L
119	BAW037	10.0000N	300.0000	70.0000	30.0000	200.0000N	70.0000	0.0200L
120	BAW038	10.0000N	500.0000	150.0000	15.0000	200.0000N	300.0000	0.0200L
121	BAW060	10.0000N	300.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
122	BAW061	10.0000N	300.0000	70.0000	15.0000	200.0000N	200.0000	0.0200L
123	BAW099	10.0000L	300.0000	70.0000	20.0000	200.0000N	300.0000	0.0200L
124	BAW062	10.0000L	300.0000	70.0000	15.0000	200.0000N	200.0000	0.0200L
125	BAW092	10.0000L	500.0000	100.0000	30.0000	200.0000N	300.0000	0.0200L
126	BAW094	10.0000N	300.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
127	BAW091	10.0000N	700.0000	300.0000	70.0000	200.0000N	500.0000	0.0200L
128	BAW093	10.0000N	500.0000	30.0000	15.0000	200.0000N	100.0000	0.0200L
129	BAW054	10.0000N	500.0000	150.0000	30.0000	200.0000N	500.0000	0.0200L
130	BAW053	10.0000N	300.0000	150.0000	30.0000	200.0000N	700.0000	0.0200L
131	BAW052	10.0000N	500.0000	150.0000	50.0000	200.0000N	700.0000	0.0200L
132	BAW051	10.0000N	700.0000	100.0000	30.0000	200.0000N	500.0000	0.0200L
133	BAW050	10.0000N	500.0000	100.0000	20.0000	200.0000N	500.0000	0.0200L
134	BAW098	10.0000L	300.0000	100.0000	30.0000	200.0000N	300.0000	0.0200L
135	BAW097	10.0000N	200.0000	100.0000	15.0000	200.0000N	200.0000	0.0200L
136	BAW096	10.0000N	500.0000	150.0000	30.0000	200.0000N	300.0000	0.0200L
137	BAW095	10.0000N	500.0000	150.0000	50.0000	200.0000N	1000.0000G	0.0200L
138	BAW117	10.0000	300.0000	70.0000	20.0000	200.0000N	300.0000	0.0200L
139	BAW116	10.0000	300.0000	70.0000	20.0000	200.0000N	300.0000	0.0200L
140	BAW115	10.0000N	300.0000	100.0000	20.0000	200.0000L	300.0000	0.0200L
141	BAW138	10.0000N	500.0000	150.0000	20.0000	200.0000N	500.0000	0.0200L
142	BAW137	10.0000N	500.0000	200.0000	30.0000	200.0000N	300.0000	0.0200L
143	BAW114	10.0000N	500.0000	150.0000	30.0000	200.0000N	300.0000	0.0200L
144	BAW113	10.0000L	300.0000	70.0000	20.0000	200.0000N	500.0000	0.0200L
145	BAW136	10.0000N	500.0000	70.0000	20.0000	200.0000N	150.0000	0.0200L
146	BAW135	10.0000N	300.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
147	BAW122	10.0000N	300.0000	70.0000	20.0000	200.0000N	150.0000	0.0200L
148	BAW123	10.0000N	300.0000	150.0000	30.0000	200.0000N	300.0000	0.0200L
149	BAW130	10.0000N	300.0000	30.0000	15.0000	200.0000N	70.0000	0.0200L
150	BAW128	10.0000L	300.0000	30.0000	15.0000	200.0000N	200.0000	0.0200L

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	FE PCT	MG PCT	CA PCT	TI PCT	MN PPM	AG PPM	AS PPM	B PPM	BA PPM	BE PPM
151	BAW129	3.0000	0.7000	1.0000	0.3000	700.0000	0.5000L	200.0000N	10.0000	150.0000	5.0000
152	BAW134	3.0000	0.7000	1.0000	0.3000	700.0000	0.5000L	200.0000N	30.0000	150.0000	5.0000
153	BAW133	5.0000	0.7000	1.0000	0.5000	700.0000	0.5000L	200.0000N	30.0000	150.0000	5.0000
154	BAW132	5.0000	0.5000	1.0000	0.3000	700.0000	0.5000L	200.0000N	20.0000	150.0000	5.0000
155	BAW121	7.0000	1.0000	0.7000	0.5000	1000.0000	0.5000L	200.0000N	15.0000	150.0000	5.0000
156	BAW131	2.0000	0.5000	1.5000	0.1500	300.0000	0.5000N	200.0000N	10.0000	200.0000	5.0000
157	BAW120	3.0000	0.7000	1.0000	0.5000	700.0000	0.5000N	200.0000N	30.0000	150.0000	3.0000
158	BAW127	3.0000	0.7000	1.0000	0.3000	700.0000	0.5000L	200.0000N	20.0000	150.0000	3.0000
159	BAW119	3.0000	0.7000	1.0000	0.3000	700.0000	0.5000L	200.0000N	15.0000	150.0000	3.0000
160	BAW118	3.0000	0.7000	1.5000	0.7000	700.0000	0.5000N	200.0000N	10.0000	150.0000	3.0000
161	BAW126	5.0000	0.7000	1.0000	0.5000	700.0000	0.5000N	200.0000N	30.0000	300.0000	2.0000
162	BAW125	1.5000	0.7000	1.0000	0.3000	300.0000	0.5000N	200.0000N	20.0000	200.0000	3.0000
163	BAW124	5.0000	0.7000	0.7000	0.3000	700.0000	0.5000N	200.0000N	20.0000	150.0000	2.0000
164	BAW179	3.0000	0.7000	0.7000	0.5000	300.0000	0.5000N	200.0000N	70.0000	300.0000	1.5000
165	BAW208	3.0000	0.5000	1.0000	0.3000	500.0000	0.5000N	200.0000N	10.0000	150.0000	3.0000
166	BAW207	5.0000	0.7000	0.7000	0.3000	700.0000	0.5000L	200.0000N	30.0000	300.0000	5.0000
167	BAW180	2.0000	0.3000	1.0000	0.3000	200.0000	0.5000N	200.0000N	10.0000L	150.0000	3.0000
168	BAW189	3.0000	0.5000	1.0000	0.3000	500.0000	0.5000L	200.0000N	15.0000	150.0000	5.0000
169	BAW190	5.0000	1.0000	1.0000	0.5000	700.0000	0.5000N	200.0000N	30.0000	200.0000	3.0000
170	BAW191	7.0000	1.0000	0.7000	0.7000	700.0000	0.5000N	200.0000N	200.0000	300.0000	5.0000
171	BAW192	5.0000	0.7000	1.5000	0.7000	500.0000	0.5000N	200.0000N	20.0000	150.0000	3.0000
172	BAW193	7.0000	2.0000	2.0000	0.7000	1000.0000	0.5000L	200.0000N	20.0000	200.0000	5.0000
173	BAW203	3.0000	0.5000	1.0000	0.3000	500.0000	0.5000N	200.0000N	15.0000	150.0000	3.0000
174	BAW204	3.0000	0.5000	1.0000	0.3000	700.0000	0.5000N	200.0000N	10.0000	150.0000	3.0000
175	BAW206	3.0000	0.7000	1.0000	0.3000	500.0000	0.5000N	200.0000N	10.0000	150.0000	2.0000
176	BAW205	5.0000	0.7000	1.5000	0.5000	700.0000	0.5000L	200.0000N	10.0000	150.0000	3.0000
177	BAW181	3.0000	0.7000	1.0000	0.3000	500.0000	0.5000L	200.0000N	15.0000	150.0000	5.0000
178	BAW183	2.0000	0.3000	1.0000	0.2000	300.0000	0.5000L	200.0000N	10.0000L	150.0000	3.0000
179	BAW184	3.0000	0.5000	1.0000	0.3000	700.0000	0.5000N	200.0000N	10.0000L	150.0000	5.0000
180	BAW186	3.0000	0.7000	1.0000	0.3000	500.0000	0.5000N	200.0000N	10.0000L	150.0000	3.0000
181	BAW187	3.0000	0.7000	1.5000	0.3000	500.0000	0.5000L	200.0000N	15.0000	150.0000	3.0000
182	BAW188	5.0000	0.7000	1.5000	0.5000	500.0000	0.5000L	200.0000N	15.0000	150.0000	3.0000
183	BAW185	3.0000	0.7000	0.7000	0.3000	700.0000	0.5000N	200.0000N	20.0000	200.0000	2.0000
184	BAW182	3.0000	0.7000	0.3000	0.3000	700.0000	0.5000L	200.0000N	50.0000	300.0000	3.0000

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	BI PPM	CD PPM	CR PPM	CU PPM	LA PPM	MO PPM	NB PPM	NI PPM	PB PPM	SC PPM
151	BAW129	10.0000N	5.0000L	10.0000	5.0000	20.0000	5.0000L	15.0000	7.0000	50.0000	5.0000
152	BAW134	10.0000N	5.0000L	30.0000	15.0000	150.0000	5.0000L	10.0000	10.0000	70.0000	7.0000
153	BAW133	10.0000N	5.0000L	30.0000	15.0000	20.0000	5.0000L	15.0000	10.0000	50.0000	7.0000
154	BAW132	10.0000N	5.0000L	20.0000	7.0000	30.0000	5.0000L	15.0000	7.0000	50.0000	5.0000
155	BAW121	10.0000N	10.0000	30.0000	10.0000	30.0000	5.0000N	15.0000	10.0000	70.0000	10.0000
156	BAW131	10.0000N	5.0000L	15.0000	15.0000	20.0000L	5.0000N	10.0000L	7.0000	50.0000	5.0000
157	BAW120	10.0000N	7.0000	30.0000	7.0000	30.0000	5.0000N	10.0000	10.0000	30.0000	7.0000
158	BAW127	10.0000N	7.0000	30.0000	5.0000	30.0000	5.0000N	15.0000	15.0000	30.0000	7.0000
159	BAW119	10.0000N	7.0000	20.0000	5.0000	20.0000	5.0000N	10.0000	10.0000	30.0000	7.0000
160	BAW118	10.0000N	5.0000L	15.0000	5.0000	50.0000	5.0000L	10.0000	7.0000	30.0000	7.0000
161	BAW126	10.0000N	10.0000	70.0000	7.0000	30.0000	15.0000	15.0000	30.0000	30.0000	15.0000
162	BAW125	10.0000N	5.0000L	30.0000	5.0000L	20.0000L	5.0000L	10.0000	7.0000	20.0000	5.0000
163	BAW124	10.0000N	7.0000	30.0000	7.0000	20.0000	7.0000	10.0000	15.0000	15.0000	7.0000
164	BAW179	10.0000N	5.0000L	100.0000	5.0000	20.0000	5.0000L	10.0000	15.0000	15.0000	10.0000
165	BAW208	10.0000N	5.0000L	20.0000	5.0000L	20.0000	5.0000L	10.0000	5.0000	50.0000	5.0000L
166	BAW207	10.0000N	5.0000L	30.0000	15.0000	20.0000	5.0000L	10.0000	5.0000	70.0000	5.0000
167	BAW180	10.0000N	5.0000L	10.0000	5.0000L	20.0000	5.0000N	10.0000L	5.0000L	50.0000	5.0000L
168	BAW189	10.0000N	5.0000N	20.0000	5.0000L	20.0000L	7.0000	10.0000L	5.0000L	50.0000	5.0000L
169	BAW190	10.0000N	5.0000	30.0000	5.0000	50.0000	5.0000	15.0000	10.0000	70.0000	10.0000
170	BAW191	10.0000N	5.0000	50.0000	7.0000	50.0000	5.0000L	15.0000	10.0000	70.0000	10.0000
171	BAW192	10.0000N	5.0000L	30.0000	5.0000L	70.0000	5.0000L	15.0000	5.0000	70.0000	7.0000
172	BAW193	10.0000N	15.0000	70.0000	7.0000	30.0000	5.0000L	15.0000	30.0000	70.0000	15.0000
173	BAW203	10.0000N	5.0000L	10.0000	10.0000	20.0000	5.0000N	10.0000	7.0000	50.0000	5.0000L
174	BAW204	10.0000N	5.0000L	10.0000	7.0000	20.0000L	5.0000L	10.0000	7.0000	30.0000	5.0000L
175	BAW206	10.0000N	5.0000L	15.0000	5.0000L	20.0000L	5.0000L	10.0000L	7.0000	30.0000	5.0000L
176	BAW205	10.0000N	5.0000L	10.0000	15.0000	30.0000	5.0000L	10.0000	7.0000	30.0000	7.0000
177	BAW181	10.0000N	5.0000N	70.0000	5.0000	50.0000	5.0000L	10.0000	5.0000	30.0000	7.0000
178	BAW183	10.0000N	5.0000N	10.0000	5.0000L	20.0000	5.0000L	10.0000L	5.0000	50.0000	5.0000L
179	BAW184	10.0000N	5.0000N	15.0000	5.0000	30.0000	5.0000L	10.0000	5.0000L	30.0000	5.0000L
180	BAW186	10.0000N	5.0000L	15.0000	5.0000	20.0000	5.0000	10.0000	15.0000	30.0000	5.0000
181	BAW187	10.0000N	5.0000L	20.0000	5.0000L	30.0000	5.0000L	15.0000	5.0000	30.0000	5.0000
182	BAW188	10.0000N	5.0000L	20.0000	5.0000	50.0000	5.0000L	15.0000	5.0000	30.0000	7.0000
183	BAW185	10.0000N	5.0000	30.0000	7.0000	20.0000L	5.0000L	10.0000	20.0000	30.0000	7.0000
184	BAW182	10.0000N	5.0000L	100.0000	5.0000	30.0000	5.0000L	10.0000	15.0000	30.0000	10.0000

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

	SAMPLE	SN PPM	SR PPM	V PPM	Y PPM	ZN PPM	ZR PPM	AU PPM
151	BAW129	10.0000L	300.0000	50.0000	20.0000	200.0000N	300.0000	0.0200L
152	BAW134	10.0000L	300.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
153	BAW133	10.0000N	300.0000	100.0000	20.0000	200.0000N	200.0000	0.0200L
154	BAW132	10.0000N	300.0000	70.0000	20.0000	200.0000N	300.0000	0.0200L
155	BAW121	10.0000	300.0000	100.0000	20.0000	200.0000N	700.0000	0.0200L
156	BAW131	10.0000N	500.0000	30.0000	15.0000	200.0000N	70.0000	0.0200L
157	BAW120	10.0000N	300.0000	70.0000	20.0000	200.0000N	200.0000	0.0200L
158	BAW127	10.0000N	300.0000	70.0000	20.0000	200.0000N	150.0000	0.0200L
159	BAW119	10.0000N	500.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
160	BAW118	10.0000L	500.0000	70.0000	50.0000	200.0000N	300.0000	0.0200L
161	BAW126	10.0000N	300.0000	150.0000	30.0000	200.0000N	150.0000	0.0200L
162	BAW125	10.0000N	500.0000	150.0000	15.0000	200.0000N	70.0000	0.0200L
163	BAW124	10.0000N	300.0000	70.0000	15.0000	200.0000N	200.0000	0.0200L
164	BAW179	10.0000N	200.0000	100.0000	15.0000	200.0000N	300.0000	0.0200L
165	BAW208	10.0000N	500.0000	70.0000	15.0000	200.0000N	300.0000	0.0200L
166	BAW207	10.0000L	300.0000	70.0000	15.0000	200.0000N	300.0000	0.0200L
167	BAW180	10.0000L	500.0000	20.0000	15.0000	200.0000N	70.0000	0.0200L
168	BAW189	10.0000N	500.0000	50.0000	10.0000	200.0000N	100.0000	0.0200L
169	BAW190	15.0000	500.0000	100.0000	20.0000	200.0000N	300.0000	0.0200L
170	BAW191	15.0000	300.0000	70.0000	30.0000	200.0000N	700.0000	0.0200L
171	BAW192	10.0000	500.0000	100.0000	30.0000	200.0000N	150.0000	0.0200L
172	BAW193	10.0000N	500.0000	150.0000	20.0000	200.0000L	150.0000	0.0200L
173	BAW203	10.0000L	500.0000	70.0000	15.0000	200.0000N	200.0000	0.0200L
174	BAW204	10.0000N	500.0000	70.0000	15.0000	200.0000N	100.0000	0.0200L
175	BAW206	10.0000L	300.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
176	BAW205	10.0000	500.0000	70.0000	30.0000	200.0000N	150.0000	0.0200L
177	BAW181	10.0000N	500.0000	70.0000	30.0000	200.0000N	300.0000	0.0200L
178	BAW183	10.0000N	500.0000	50.0000	10.0000	200.0000N	150.0000	0.0200L
179	BAW184	10.0000L	500.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
180	BAW186	10.0000N	500.0000	50.0000	10.0000	200.0000N	100.0000	0.0200L
181	BAW187	10.0000N	500.0000	70.0000	15.0000	200.0000N	150.0000	0.0200L
182	BAW188	15.0000	500.0000	100.0000	30.0000	200.0000N	200.0000	0.0200L
183	BAW185	10.0000N	200.0000	70.0000	15.0000	200.0000N	200.0000	0.0200L
184	BAW182	10.0000N	200.0000	100.0000	20.0000	200.0000N	300.0000	0.0200L

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 1 (FE PCT)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.0	0.0
5.6E-02 -	8.3E-02	0	0	0.0	0.0
8.3E-02 -	1.2E-01	0	0	0.0	0.0
1.2E-01 -	1.8E-01	0	0	0.0	0.0
1.8E-01 -	2.6E-01	0	0	0.0	0.0
2.6E-01 -	3.8E-01	0	0	0.0	0.0
3.8E-01 -	5.6E-01	0	0	0.0	0.0
5.6E-01 -	8.3E-01	0	0	0.0	0.0
8.3E-01 -	1.2E 00	0	0	0.0	0.0
1.2E 00 -	1.8E 00	3	3	1.63	1.63
1.8E 00 -	2.6E 00	9	12	4.89	6.52
2.6E 00 -	3.8E 00	62	74	33.70	40.22
3.8E 00 -	5.6E 00	30	104	16.30	56.52
5.6E 00 -	8.3E 00	58	162	31.52	88.04
8.3E 00 -	1.2E 01	16	178	8.70	96.74
1.2E 01 -	1.8E 01	6	184	3.26	100.00

HISTOGRAM FOR COLUMN 1 (FE PCT)

24

```
1.5E 00 XX
2.0E 00 XXXXX
3.0E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 00 XXXXXXXXXXXXXXXX
7.0E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 01 XXXXXXXXX
1.5E 01 XXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 1.50000E 01
MINIMUM = 1.50000E 00
GEOMETRIC MEAN = 4.83077E 00
GEOMETRIC DEVIATION = 1.68097E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 2 (MG PCT)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-02 -	2.6E-02	0	0	0.0	0.0
2.6E-02 -	3.8E-02	0	0	0.0	0.0
3.8E-02 -	5.6E-02	0	0	0.0	0.0
5.6E-02 -	8.3E-02	0	0	0.0	0.0
8.3E-02 -	1.2E-01	0	0	0.0	0.0
1.2E-01 -	1.8E-01	1	1	0.54	0.54
1.8E-01 -	2.6E-01	0	1	0.0	0.54
2.6E-01 -	3.8E-01	5	6	2.72	3.26
3.8E-01 -	5.6E-01	10	16	5.43	8.70
5.6E-01 -	8.3E-01	46	62	25.00	33.70
8.3E-01 -	1.2E 00	22	84	11.96	45.65
1.2E 00 -	1.8E 00	51	135	27.72	73.37
1.8E 00 -	2.6E 00	13	148	7.07	80.43
2.6E 00 -	3.8E 00	16	164	8.70	89.13
3.8E 00 -	5.6E 00	9	173	4.89	94.02
5.6E 00 -	8.3E 00	11	184	5.98	100.00

HISTOGRAM FOR COLUMN 2 (MG PCT)

```
1.5E-01 X
2.0E-01
3.0E-01 XXX
5.0E-01 XXXXX
7.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 00 XXXXXXXXXXXX
1.5E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 00 XXXXXXX
3.0E 00 XXXXXXXXX
5.0E 00 XXXXX
7.0E 00 XXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 7.00000E 00
MINIMUM = 1.50000E-01
GEOMETRIC MEAN = 1.32587E 00
GEOMETRIC DEVIATION = 2.13879E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 3 (CA PCT)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.0	0.0
5.6E-02 -	8.3E-02	0	0	0.0	0.0
8.3E-02 -	1.2E-01	0	0	0.0	0.0
1.2E-01 -	1.8E-01	1	1	0.54	0.54
1.8E-01 -	2.6E-01	2	3	1.09	1.63
2.6E-01 -	3.8E-01	5	8	2.72	4.35
3.8E-01 -	5.6E-01	2	10	1.09	5.43
5.6E-01 -	8.3E-01	17	27	9.24	14.67
8.3E-01 -	1.2E 00	37	64	20.11	34.78
1.2E 00 -	1.8E 00	49	113	26.63	61.41
1.8E 00 -	2.6E 00	19	132	10.33	71.74
2.6E 00 -	3.8E 00	20	152	10.87	82.61
3.8E 00 -	5.6E 00	12	164	6.52	89.13
5.6E 00 -	8.3E 00	11	175	5.98	95.11
8.3E 00 -	1.2E 01	3	178	1.63	96.74
1.2E 01 -	1.8E 01	6	184	3.26	100.00

HISTOGRAM FOR COLUMN 3 (CA PCT)

```
1.5E-01 X
2.0E-01 X
3.0E-01 XXX
5.0E-01 X
7.0E-01 XXXXXXXXX
1.0E 00 XXXXXXXXXXXXXXXXXXXX
1.5E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 00 XXXXXXXXXX
3.0E 00 XXXXXXXXXXX
5.0E 00 XXXXXXX
7.0E 00 XXXXXX
1.0E 01 XX
1.5E 01 XXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 1.50000E 01
MINIMUM = 1.50000E-01
GEOMETRIC MEAN = 1.72477E 00
GEOMETRIC DEVIATION = 2.38639E 00

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 4 (TI PCT)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-03 -	2.6E-03	0	0	0.0	0.0
2.6E-03 -	3.8E-03	0	0	0.0	0.0
3.8E-03 -	5.6E-03	0	0	0.0	0.0
5.6E-03 -	8.3E-03	0	0	0.0	0.0
8.3E-03 -	1.2E-02	0	0	0.0	0.0
1.2E-02 -	1.8E-02	0	0	0.0	0.0
1.8E-02 -	2.6E-02	0	0	0.0	0.0
2.6E-02 -	3.8E-02	0	0	0.0	0.0
3.8E-02 -	5.6E-02	0	0	0.0	0.0
5.6E-02 -	8.3E-02	0	0	0.0	0.0
8.3E-02 -	1.2E-01	0	0	0.0	0.0
1.2E-01 -	1.8E-01	4	4	2.17	2.17
1.8E-01 -	2.6E-01	9	13	4.89	7.07
2.6E-01 -	3.8E-01	51	64	27.72	34.78
3.8E-01 -	5.6E-01	33	97	17.93	52.72
5.6E-01 -	8.3E-01	40	137	21.74	74.46
8.3E-01 -	1.2E 00	28	165	15.22	89.67

HISTOGRAM FOR COLUMN 4 (TI PCT)

```
1.5E-01 XX
2.0E-01 XXXXX
3.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E-01 XXXXXXXXXXXXXXXXX
7.0E-01 XXXXXXXXXXXXXXXXXXXXX
1.0E 00 XXXXXXXXXXXXXXX
```

27

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	19	165
0.0	0.0			0.0	10.33	

MAXIMUM = 1.00000E 00
MINIMUM = 1.50000E-01
GEOMETRIC MEAN = 4.81426E-01
GEOMETRIC DEVIATION = 1.68263E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 5 (MN PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	0	0	0.0	0.0
1.8E 01 -	2.6E 01	0	0	0.0	0.0
2.6E 01 -	3.8E 01	0	0	0.0	0.0
3.8E 01 -	5.6E 01	0	0	0.0	0.0
5.6E 01 -	8.3E 01	0	0	0.0	0.0
8.3E 01 -	1.2E 02	0	0	0.0	0.0
1.2E 02 -	1.8E 02	6	6	3.26	3.26
1.8E 02 -	2.6E 02	10	16	5.43	8.70
2.6E 02 -	3.8E 02	24	40	13.04	21.74
3.8E 02 -	5.6E 02	20	60	10.87	32.61
5.6E 02 -	8.3E 02	65	125	35.33	67.93
8.3E 02 -	1.2E 03	29	154	15.76	83.70
1.2E 03 -	1.8E 03	25	179	13.59	97.28
1.8E 03 -	2.6E 03	4	183	2.17	99.46
2.6E 03 -	3.8E 03	1	184	0.54	100.00

HISTOGRAM FOR COLUMN 5 (MN PPM)

```
1.5E 02 XXX
2.0E 02 XXXXX
3.0E 02 XXXXXXXXXXXXX
5.0E 02 XXXXXXXXXXX
7.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 03 XXXXXXXXXXXXXXXX
1.5E 03 XXXXXXXXXXXXXX
2.0E 03 XX
3.0E 03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 3.00000E 03
MINIMUM = 1.50000E 02
GEOMETRIC MEAN = 6.49394E 02
GEOMETRIC DEVIATION = 1.88360E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 6 (AG PPM)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-01 -	5.6E-01	0	0	0.0	0.0
5.6E-01 -	8.3E-01	0	0	0.0	0.0
8.3E-01 -	1.2E 00	0	0	0.0	0.0
1.2E 00 -	1.8E 00	0	0	0.0	0.0
1.8E 00 -	2.6E 00	0	0	0.0	0.0
2.6E 00 -	3.8E 00	0	0	0.0	0.0
3.8E 00 -	5.6E 00	0	0	0.0	0.0
5.6E 00 -	8.3E 00	0	0	0.0	0.0
8.3E 00 -	1.2E 01	1	1	0.54	0.54

HISTOGRAM FOR COLUMN 6 (AG PPM)

1.0E 01 X

N	L	H	B	T	G	ANALYTICAL VALUES
182	31	0	0	0	0	1
82.61	16.85			0.0	0.0	

MAXIMUM = 1.00000E 01
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 9.99999E 00
GEOMETRIC DEVIATION = 9.99900E 48

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 7 (AS PPM)

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM	
N	L	H	B	T	G	ANALYTICAL VALUES
179	5	0	0	0	0	0
97.28	2.72			0.0	0.0	

MAXIMUM = -9.99900E 48
MINIMUM = 9.99900E 48
GEOMETRIC MEAN = 9.99900E 48
GEOMETRIC DEVIATION = 9.99900E 48

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--F. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 8 (B PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	20	20	10.87	10.87
1.2E 01 -	1.8E 01	30	50	16.30	27.17
1.8E 01 -	2.6E 01	37	87	20.11	47.28
2.6E 01 -	3.8E 01	53	140	28.80	76.09
3.8E 01 -	5.6E 01	19	159	10.33	86.41
5.6E 01 -	8.3E 01	11	170	5.98	92.39
8.3E 01 -	1.2E 02	1	171	0.54	92.93
1.2E 02 -	1.8E 02	0	171	0.0	92.93
1.8E 02 -	2.6E 02	1	172	0.54	93.48

HISTOGRAM FOR COLUMN 8 (B PPM)

```
1.0E 01 XXXXXXXXXXX
1.5E 01 XXXXXXXXXXXXXXXX
2.0E 01 XXXXXXXXXXXXXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 01 XXXXXXXXXX
7.0E 01 XXXXXX
1.0E 02 X
1.5E 02
2.0E 02 X
```

31

N	L	H	B	T	G	ANALYTICAL VALUES
4	8	0	0	0	0	172
2.17	4.35			0.0	0.0	

MAXIMUM = 2.00000E 02
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 2.43846E 01
GEOMETRIC DEVIATION = 1.76452E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 9 (BA PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E 01 -	2.6E 01	0	0	0.0	0.0
2.6E 01 -	3.8E 01	0	0	0.0	0.0
3.8E 01 -	5.6E 01	0	0	0.0	0.0
5.6E 01 -	8.3E 01	0	0	0.0	0.0
8.3E 01 -	1.2E 02	2	2	1.09	1.09
1.2E 02 -	1.8E 02	52	54	28.26	29.35
1.8E 02 -	2.6E 02	25	79	13.59	42.93
2.6E 02 -	3.8E 02	80	159	43.48	86.41
3.8E 02 -	5.6E 02	15	174	8.15	94.57
5.6E 02 -	8.3E 02	10	184	5.43	100.00

HISTOGRAM FOR COLUMN 9 (BA PPM)

```
1.0E 02 X
1.5E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 02 XXXXXXXXXXXXXX
3.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 02 XXXXXXXX
7.0E 02 XXXXX
```

N	L	H	R	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 7.00000E 02
MINIMUM = 1.00000E 02
GEOMETRIC MEAN = 2.51758E 02
GEOMETRIC DEVIATION = 1.56826E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 10 (BE PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E-01 -	1.2E 00	8	8	4.35	4.35
1.2E 00 -	1.8E 00	60	68	32.61	36.96
1.8E 00 -	2.6E 00	49	117	26.63	63.59
2.6E 00 -	3.8E 00	39	156	21.20	84.78
3.8E 00 -	5.6E 00	19	175	10.33	95.11
5.6E 00 -	8.3E 00	2	177	1.09	96.20

HISTOGRAM FOR COLUMN 10 (BE PPM)

```
1.0E 00 XXXX
1.5E 00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 00 XXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E 00 XXXXXXXXXXXXXXXXXXXX
5.0E 00 XXXXXXXXXX
7.0E 00 X
```

33

N	L	H	B	T	G	ANALYTICAL VALUES
0	7	0	0	0	0	177
0.0	3.80			0.0	0.0	

MAXIMUM = 7.00000E 00
MINIMUM = 1.00000E 00
GEOMETRIC MEAN = 2.15145E 00
GEOMETRIC DEVIATION = 1.54562E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 11 (BI PPM)

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM	
					ANALYTICAL VALUES
N	L	H	R	T	G	0
183	1	0	0	0	0	
99.46	0.54			0.0	0.0	

MAXIMUM = -9.99900E 48
MINIMUM = 9.99900E 48
GEOMETRIC MEAN = 9.99900E 48
GEOMETRIC DEVIATION = 9.99900E 48

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 12 (CO PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	14	14	7.61	7.61
5.6E 00 -	8.3E 00	21	35	11.41	19.02
8.3E 00 -	1.2E 01	40	75	21.74	40.76
1.2E 01 -	1.8E 01	35	110	19.02	59.78
1.8E 01 -	2.6E 01	15	125	8.15	67.93
2.6E 01 -	3.8E 01	3	128	1.63	69.57

HISTOGRAM FOR COLUMN 12 (CO PPM)

```
5.0E 00 XXXXXXXX
7.0E 00 XXXXXXXXXX
1.0E 01 XXXXXXXXXXXXXXXXXXXXX
1.5E 01 XXXXXXXXXXXXXXXXXX
2.0E 01 XXXXXXXX
3.0E 01 XX
```

N	L	H	B	T	G	ANALYTICAL VALUES
8	48	0	0	0	0	128
4.35	26.09			0.0	0.0	

MAXIMUM = 3.00000E 01
MINIMUM = 5.00000E 00
GEOMETRIC MEAN = 1.08708E 01
GEOMETRIC DEVIATION = 1.55970E 00

A470 GFOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--F. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 13 (CR PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	9	9	4.89	4.89
1.2E 01 -	1.8E 01	13	22	7.07	11.96
1.8E 01 -	2.6E 01	16	38	8.70	20.65
2.6E 01 -	3.8E 01	36	74	19.57	40.22
3.8E 01 -	5.6E 01	29	103	15.76	55.98
5.6E 01 -	8.3E 01	62	165	33.70	89.67
8.3E 01 -	1.2E 02	10	175	5.43	95.11
1.2E 02 -	1.8E 02	9	184	4.89	100.00

HISTOGRAM FOR COLUMN 13 (CR PPM)

```
1.0E 01 XXXXX
1.5E 01 XXXXXXX
2.0E 01 XXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXXX
5.0E 01 XXXXXXXXXXXXXXX
7.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E 02 XXXXX
1.5E 02 XXXXX
```


N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 1.50000E 02
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 4.35255E 01
GEOMETRIC DEVIATION = 1.97028E 00

A470 GFDSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 14 (CU PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	41	41	22.28	22.28
5.6E 00 -	8.3E 00	44	85	23.91	46.20
8.3E 00 -	1.2E 01	18	103	9.78	55.98
1.2E 01 -	1.8E 01	18	121	9.78	65.76
1.8E 01 -	2.6E 01	4	125	2.17	67.93
2.6E 01 -	3.8E 01	1	126	0.54	68.48
3.8E 01 -	5.6E 01	3	129	1.63	70.11

HISTOGRAM FOR COLUMN 14 (CU PPM)

```
5.0E 00 XXXXXXXXXXXXXXXXXXXX
7.0E 00 XXXXXXXXXXXXXXXXXXXXXX
1.0E 01 XXXXXXXXXX
1.5E 01 XXXXXXXXXX
2.0E 01 XX
3.0E 01 X
5.0E 01 XX
```

37

N	L	H	B	T	G	ANALYTICAL VALUES
0	55	0	0	0	0	129
0.0	29.89			0.0	0.0	

MAXIMUM = 5.00000E 01
MINIMUM = 5.00000E 00
GEOMETRIC MEAN = 8.04155E 00
GEOMETRIC DEVIATION = 1.66197E 00

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 15 (LA PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E 01 -	2.6E 01	31	31	16.85	16.85
2.6E 01 -	3.8E 01	43	74	23.37	40.22
3.8E 01 -	5.6E 01	26	100	14.13	54.35
5.6E 01 -	8.3E 01	22	122	11.96	66.30
8.3E 01 -	1.2E 02	8	130	4.35	70.65
1.2E 02 -	1.8E 02	14	144	7.61	78.26
1.8E 02 -	2.6E 02	1	145	0.54	78.80
2.6E 02 -	3.8E 02	2	147	1.09	79.89

HISTOGRAM FOR COLUMN 15 (LA PPM)

```
2.0E 01 XXXXXXXXXXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXXXXXXX
5.0E 01 XXXXXXXXXXXXXX
7.0E 01 XXXXXXXXXXXX
1.0E 02 XXXX
1.5E 02 XXXXXXXX
2.0E 02 X
3.0E 02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
1	36	0	0	0	0	147
0.54	19.57			0.0	0.0	

MAXIMUM = 3.00000E 02
MINIMUM = 2.00000E 01
GEOMETRIC MEAN = 4.45168E 01
GEOMETRIC DEVIATION = 1.96724E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 16 (MO PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	17	17	9.24	9.24
5.6E 00 -	8.3E 00	6	23	3.26	12.50
8.3E 00 -	1.2E 01	3	26	1.63	14.13
1.2E 01 -	1.8E 01	3	29	1.63	15.76
1.8E 01 -	2.6E 01	1	30	0.54	16.30
2.6E 01 -	3.8E 01	1	31	0.54	16.85

HISTOGRAM FOR COLUMN 16 (MO PPM)

```
5.0E 00 XXXXXXXXX
7.0E 00 XXX
1.0E 01 XX
1.5E 01 XX
2.0E 01 X
3.0E 01 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
44	109	0	0	0	0	31
23.91	59.24			0.0	0.0	

MAXIMUM = 3.00000E 01
MINIMUM = 5.00000E 00
GEOMETRIC MEAN = 7.03198E 00
GEOMETRIC DEVIATION = 1.63596E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 17 (NB PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	90	90	48.91	48.91
1.2E 01 -	1.8E 01	60	150	32.61	81.52
1.8E 01 -	2.6E 01	1	151	0.54	82.07

HISTOGRAM FOR COLUMN 17 (NB PPM)

```
1.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 01 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	33	0	0	0	0	151
0.0	17.93			0.0	0.0	

MAXIMUM = 2.00000E 01
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 1.18019E 01
GEOMETRIC DEVIATION = 1.22556E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 18 (NI PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	22	22	11.96	11.96
5.6E 00 -	8.3E 00	23	45	12.50	24.46
8.3E 00 -	1.2E 01	23	68	12.50	36.96
1.2E 01 -	1.8E 01	51	119	27.72	64.67
1.8E 01 -	2.6E 01	15	134	8.15	72.83
2.6E 01 -	3.8E 01	24	158	13.04	85.87
3.8E 01 -	5.6E 01	15	173	8.15	94.02
5.6E 01 -	8.3E 01	4	177	2.17	96.20

HISTOGRAM FOR COLUMN 18 (NI PPM)

```
       5.0E 00 XXXXXXXXXXX
       7.0E 00 XXXXXXXXXXXX
       1.0E 01 XXXXXXXXXXXX
       1.5E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
       2.0E 01 XXXXXXXX
       3.0E 01 XXXXXXXXXXXX
       5.0E 01 XXXXXXXX
       7.0E 01 XX
```

41

N	L	H	B	T	G	ANALYTICAL VALUES
0	7	0	0	0	0	177
0.0	3.80			0.0	0.0	

MAXIMUM = 7.00000E 01
MINIMUM = 5.00000E 00
GEOMETRIC MEAN = 1.45119E 01
GEOMETRIC DEVIATION = 2.02418E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 19 (PB PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	18	18	9.78	9.78
1.8E 01 -	2.6E 01	21	39	11.41	21.20
2.6E 01 -	3.8E 01	82	121	44.57	65.76
3.8E 01 -	5.6E 01	37	158	20.11	85.87
5.6E 01 -	8.3E 01	20	178	10.87	96.74
8.3E 01 -	1.2E 02	2	180	1.09	97.83
1.2E 02 -	1.8E 02	4	184	2.17	100.00

HISTOGRAM FOR COLUMN 19 (PB PPM)

```
1.5E 01 XXXXXXXXXX
2.0E 01 XXXXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 01 XXXXXXXXXXXXXXXXXXXX
7.0E 01 XXXXXXXXXXX
1.0E 02 X
1.5E 02 XX
```

43

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 1.50000E 02
MINIMUM = 1.50000E 01
GEOMETRIC MEAN = 3.41228E 01
GEOMETRIC DEVIATION = 1.65415E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 20 (SC PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E 00 -	5.6E 00	12	12	6.52	6.52
5.6E 00 -	8.3E 00	38	50	20.65	27.17
8.3E 00 -	1.2E 01	26	76	14.13	41.30
1.2E 01 -	1.8E 01	82	158	44.57	85.87
1.8E 01 -	2.6E 01	11	169	5.98	91.85
2.6E 01 -	3.8E 01	1	170	0.54	92.39

HISTOGRAM FOR COLUMN 20 (SC PPM)

```
 5.0E 00 XXXXXXX
 7.0E 00 XXXXXXXXXXXXXXXXXXXX
 1.0E 01 XXXXXXXXXXXXX
 1.5E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 2.0E 01 XXXXXX
 3.0E 01 X
```

43

N	L	H	B	T	G	ANALYTICAL VALUES
2	12	0	0	0	0	170
1.09	6.52			0.0	0.0	

MAXIMUM = 3.00000E 01
MINIMUM = 5.00000E 00
GEOMETRIC MEAN = 1.12549E 01
GEOMETRIC DEVIATION = 1.50455E 00

A470 GEUSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 21 (SN PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	11	11	5.98	5.98
1.2E 01 -	1.8E 01	6	17	3.26	9.24
1.8E 01 -	2.6E 01	0	17	0.0	9.24
2.6E 01 -	3.8E 01	1	18	0.54	9.78

HISTOGRAM FOR COLUMN 21 (SN PPM)

```
      1.0E 01 XXXXXX
      1.5E 01 XXX
      2.0E 01
      3.0E 01 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
136	30	0	0	0	0	18
73.91	16.30			0.0	0.0	

MAXIMUM = 3.00000E 01
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 1.21675E 01
GEOMETRIC DEVIATION = 1.34598E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 22 (SR PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 01 -	1.2E 02	0	0	0.0	0.0
1.2E 02 -	1.8E 02	1	1	0.54	0.54
1.8E 02 -	2.6E 02	10	11	5.43	5.98
2.6E 02 -	3.8E 02	78	89	42.39	48.37
3.8E 02 -	5.6E 02	72	161	39.13	87.50
5.6E 02 -	8.3E 02	23	184	12.50	100.00

HISTOGRAM FOR COLUMN 22 (SR PPM)

```
1.5E 02 X
2.0E 02 XXXXX
3.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E 02 XXXXXXXXXXXXX
```

45

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 7.00000E 02
MINIMUM = 1.50000E 02
GEOMETRIC MEAN = 3.96873E 02
GEOMETRIC DEVIATION = 1.42845E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 23 (V PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	0	0	0.0	0.0
1.8E 01 -	2.6E 01	1	1	0.54	0.54
2.6E 01 -	3.8E 01	5	6	2.72	3.26
3.8E 01 -	5.6E 01	6	12	3.26	6.52
5.6E 01 -	8.3E 01	45	57	24.46	30.98
8.3E 01 -	1.2E 02	30	87	16.30	47.28
1.2E 02 -	1.8E 02	55	142	29.89	77.17
1.8E 02 -	2.6E 02	29	171	15.76	92.93
2.6E 02 -	3.8E 02	11	182	5.98	98.91
3.8E 02 -	5.6E 02	2	184	1.09	100.00

HISTOGRAM FOR COLUMN 23 (V PPM)

```
2.0E 01 X
3.0E 01 XXX
5.0E 01 XXX
7.0E 01 XXXXXXXXXXXXXXXXXXXXXXX
1.0E 02 XXXXXXXXXXXXXXXX
1.5E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E 02 XXXXXXXXXXXXXXXX
3.0E 02 XXXXXX
5.0E 02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	184
0.0	0.0			0.0	0.0	

MAXIMUM = 5.00000E 02
MINIMUM = 2.00000E 01
GEOMETRIC MEAN = 1.17614E 02
GEOMETRIC DEVIATION = 1.73134E 00

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 24 (Y PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	9	9	4.89	4.89
1.2E 01 -	1.8E 01	37	46	20.11	25.00
1.8E 01 -	2.6E 01	40	86	21.74	46.74
2.6E 01 -	3.8E 01	57	143	30.98	77.72
3.8E 01 -	5.6E 01	16	159	8.70	86.41
5.6E 01 -	8.3E 01	20	179	10.87	97.28
8.3E 01 -	1.2E 02	1	180	0.54	97.83
1.2E 02 -	1.8E 02	2	182	1.09	98.91
1.8E 02 -	2.6E 02	0	182	0.0	98.91
2.6E 02 -	3.8E 02	1	183	0.54	99.46

HISTOGRAM FOR COLUMN 24 (Y PPM)

```
1.0E 01 XXXXX
1.5E 01 XXXXXXXXXXXXXXXXXXX
2.0E 01 XXXXXXXXXXXXXXXXXXXXX
3.0E 01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 01 XXXXXXXXX
7.0E 01 XXXXXXXXXX
1.0E 02 X
1.5E 02 X
2.0E 02
3.0E 02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	1	0	0	0	0	183
0.0	0.54			0.0	0.0	

MAXIMUM = 3.00000E 02
MINIMUM = 1.00000E 01
GEOMETRIC MEAN = 2.69071E 01
GEOMETRIC DEVIATION = 1.80522E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 25 (ZN PPM)

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E 02 - 2.6E 02	1	1	0.54	0.54

HISTOGRAM FOR COLUMN 25 (ZN PPM)

2.0E 02 X

N	L	H	B	T	G	ANALYTICAL VALUES
169	14	8	0	0	0	1
91.85	7.61			0.0	0.0	

MAXIMUM = 2.00000E 02
MINIMUM = 2.00000E 02
GEOMETRIC MEAN = 1.99999E 02
GEOMETRIC DEVIATION = 9.99900E 48

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE IS

FREQUENCY TABLE FOR COLUMN 26 (ZR PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E 00 -	1.2E 01	0	0	0.0	0.0
1.2E 01 -	1.8E 01	0	0	0.0	0.0
1.8E 01 -	2.6E 01	0	0	0.0	0.0
2.6E 01 -	3.8E 01	0	0	0.0	0.0
3.8E 01 -	5.6E 01	0	0	0.0	0.0
5.6E 01 -	8.3E 01	20	20	10.87	10.87
8.3E 01 -	1.2E 02	9	29	4.89	15.76
1.2E 02 -	1.8E 02	29	58	15.76	31.52
1.8E 02 -	2.6E 02	29	87	15.76	47.28
2.6E 02 -	3.8E 02	59	146	32.07	79.35
3.8E 02 -	5.6E 02	19	165	10.33	89.67
5.6E 02 -	8.3E 02	16	181	8.70	98.37
8.3E 02 -	1.2E 03	1	182	0.54	98.91

HISTOGRAM FOR COLUMN 26 (ZR PPM)

```
7.0E 01 XXXXXXXXXXX
1.0E 02 XXXXX
1.5E 02 XXXXXXXXXXXXXXXXX
2.0E 02 XXXXXXXXXXXXXXXXX
3.0E 02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E 02 XXXXXXXXXX
7.0E 02 XXXXXXXXX
1.0E 03 X
```

49

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	2	182
0.0	0.0			0.0	1.09	

MAXIMUM = 1.00000E 03
MINIMUM = 7.00000E 01
GEOMETRIC MEAN = 2.32484E 02
GEOMETRIC DEVIATION = 1.92880E 00

A470 GEOSUM - U S G S STATPAC (09/21/70) DATE 3/ 2/71

TITLE
STREAM SEDS--E. ST LAWRENCE 1S

FREQUENCY TABLE FOR COLUMN 27 (AU PPM)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM	
N	L	H	B	T	G	ANALYTICAL VALUES
0	184	0	0	0	0	0
0.0	*****			0.0	0.0	

MAXIMUM = -9.99900E 48
MINIMUM = 9.99900E 48
GEOMETRIC MEAN = 9.99900E 48
GEOMETRIC DEVIATION = 9.99900E 48

SO

TITLE
STREAM SEDS--E. ST LAWRENCE IS

IN THE COMPUTATIONS PERFORMED TO PRODUCE THE FOLLOWING TABLE OF GEOMETRIC MEANS AND DEVIATIONS, ALL ELEMENTS ARE IGNORED WHERE ONE OR MORE OF THE UNQUALIFIED DATA VALUES IS LESS THAN THE ANALYTICAL LIMIT OF DETECTION SPECIFIED ON INPUT OR WHERE ANY DATA VALUES ARE QUALIFIED WITH THE G (GREATER THAN) CODE. DATA VALUES QUALIFIED WITH B OR H ARE NOT USED IN THE COMPUTATIONS. WHERE NONE OF THE DATA VALUES FOR AN ELEMENT ARE QUALIFIED THE MEAN AND DEVIATION SHOULD BE THE SAME AS THOSE GIVEN IN THE PRECEDING SECTION. WHERE DATA ARE QUALIFIED WITH THE CODES N, L, OR T, THE ESTIMATES OF GEOMETRIC MEAN AND DEVIATION ARE BASED ON A METHOD BY A. J. COHEN FOR TREATING CENSORED DISTRIBUTIONS. THE APPLICATION OF THIS METHOD TO GEOCHEMICAL PROBLEMS IS DESCRIBED IN USGS PROFESSIONAL PAPER 574-B. THE ESTIMATES ARE UNBIASED IN A STRICT SENSE ONLY WHERE THE DATA ARE DERIVED FROM A LOGNORMAL PARENT POPULATION, BUT EXPERIMENTS HAVE SHOWN THAT LARGE DEPARTURES FROM THIS REQUIREMENT MAY NOT GREATLY INVALIDATE THE RESULTS ACCEPTANCE AND USE OF THE ESTIMATES, HOWEVER, IS THE RESPONSIBILITY OF THE INDIVIDUAL.

ELEMENT	N	L	H	B	T	G	ANALYTICAL VALUES
FE PCT	0	0	0	0	0	0	184
MG PCT	0	0	0	0	0	0	184
CA PCT	0	0	0	0	0	0	184
TI PCT	0	0	0	0	0	19	165
MN PPM	0	0	0	0	0	0	184
AG PPM	152	31	0	0	0	0	1
AS PPM	179	5	0	0	0	0	0
B PPM	4	8	0	0	0	0	172
BA PPM	0	0	0	0	0	0	184
BE PPM	0	7	0	0	0	0	177
BI PPM	183	1	0	0	0	0	0
CO PPM	8	48	0	0	0	0	128
CR PPM	0	0	0	0	0	0	184
CU PPM	0	55	0	0	0	0	129
LA PPM	1	36	0	0	0	0	147
MO PPM	44	109	0	0	0	0	31
NB PPM	0	33	0	0	0	0	151
NI PPM	0	7	0	0	0	0	177
PB PPM	0	0	0	0	0	0	184
SC PPM	2	12	0	0	0	0	170
SN PPM	136	30	0	0	0	0	18
SR PPM	0	0	0	0	0	0	184
V PPM	0	0	0	0	0	0	184
Y PPM	0	1	0	0	0	0	183
ZN PPM	169	14	0	0	0	0	1
ZR PPM	0	0	0	0	0	2	182
AU PPM	0	184	0	0	0	0	0

ELEMENT	GEOMETRIC MEAN	GEOMETRIC DEVIATION	REMARKS
FE PCT	4.830764	1.68	184 SAMPLES AND 184 ANALYTICAL VALUES.
MG PCT	1.325869	2.14	184 SAMPLES AND 184 ANALYTICAL VALUES.
CA PCT	1.724768	2.39	184 SAMPLES AND 184 ANALYTICAL VALUES.
TI PCT	********	******	19 GREATER THAN VALUES. NO COMPUTATIONS.
MN PPM	649.391602	1.88	184 SAMPLES AND 184 ANALYTICAL VALUES.
AG PPM	********	******	183 NOT DETECTED, LESS THAN, OR TRACE VALUES. 1 REPORTED VALUES. NO COMPUTATIONS.
AS PPM	********	******	184 NOT DETECTED, LESS THAN, OR TRACE VALUES. 0 REPORTED VALUES. NO COMPUTATIONS.
B PPM	22.309419	1.91	12 NOT DETECTED, LESS THAN, OR TRACE VALUES. 172 REPORTED VALUES.

BA PPM	251.757950	1.57	184 SAMPLES AND	184 ANALYTICAL VALUES.	
BE PPM	2.059879	1.62	7 NOT DETECTED, LESS THAN, OR TRACE VALUES.	177 REPORTED VALUES.	
BI PPM	********	******	184 NOT DETECTED, LESS THAN, OR TRACE VALUES.	0 REPORTED VALUES.	NO COMPUTATIONS.
CO PPM	6.818097	2.29	56 NOT DETECTED, LESS THAN, OR TRACE VALUES.	128 REPORTED VALUES.	
CR PPM	43.525421	1.97	184 SAMPLES AND	184 ANALYTICAL VALUES.	
CU PPM	5.617497	2.06	55 NOT DETECTED, LESS THAN, OR TRACE VALUES.	129 REPORTED VALUES.	
LA PPM	33.536819	2.33	37 NOT DETECTED, LESS THAN, OR TRACE VALUES.	147 REPORTED VALUES.	
MO PPM	1.275011	3.10	153 NOT DETECTED, LESS THAN, OR TRACE VALUES.	31 REPORTED VALUES.	
NB PPM	10.785786	1.31	33 NOT DETECTED, LESS THAN, OR TRACE VALUES.	151 REPORTED VALUES.	
NI PPM	13.629779	2.14	7 NOT DETECTED, LESS THAN, OR TRACE VALUES.	177 REPORTED VALUES.	
PB PPM	34.122696	1.65	184 SAMPLES AND	184 ANALYTICAL VALUES.	
SC PPM	10.210637	1.68	14 NOT DETECTED, LESS THAN, OR TRACE VALUES.	170 REPORTED VALUES.	
SN PPM	********	******	166 NOT DETECTED, LESS THAN, OR TRACE VALUES.	18 REPORTED VALUES.	NO COMPUTATIONS.
SR PPM	396.871582	1.43	184 SAMPLES AND	184 ANALYTICAL VALUES.	
V PPM	117.613693	1.73	184 SAMPLES AND	184 ANALYTICAL VALUES.	
Y PPM	26.701233	1.82	1 NOT DETECTED, LESS THAN, OR TRACE VALUES.	183 REPORTED VALUES.	
ZN PPM	********	******	183 NOT DETECTED, LESS THAN, OR TRACE VALUES.	1 REPORTED VALUES.	NO COMPUTATIONS.
ZR PPM	********	******	2 GREATER THAN VALUES. NO COMPUTATIONS.		
AU PPM	********	******	184 NOT DETECTED, LESS THAN, OR TRACE VALUES.	0 REPORTED VALUES.	NO COMPUTATIONS.

71-224

Figure 2. Reconnaissance Geologic map of eastern St. Lawrence Island.

EXPLANATION

LAYERED ROCKS

Qs	Surficial deposits	QUATERNARY
TKv	Volcanic rocks	TERTIARY AND CRETACEOUS
KMm	Mudstone, graywacke, shale and chert	MISSISSIPPIAN TO CRETACEOUS
MDl	Limestone and dolomite	MISSISSIPPIAN AND DEVONIAN

INTRUSIVE ROCKS

Kqm	Quartz monzonite	CRETACEOUS

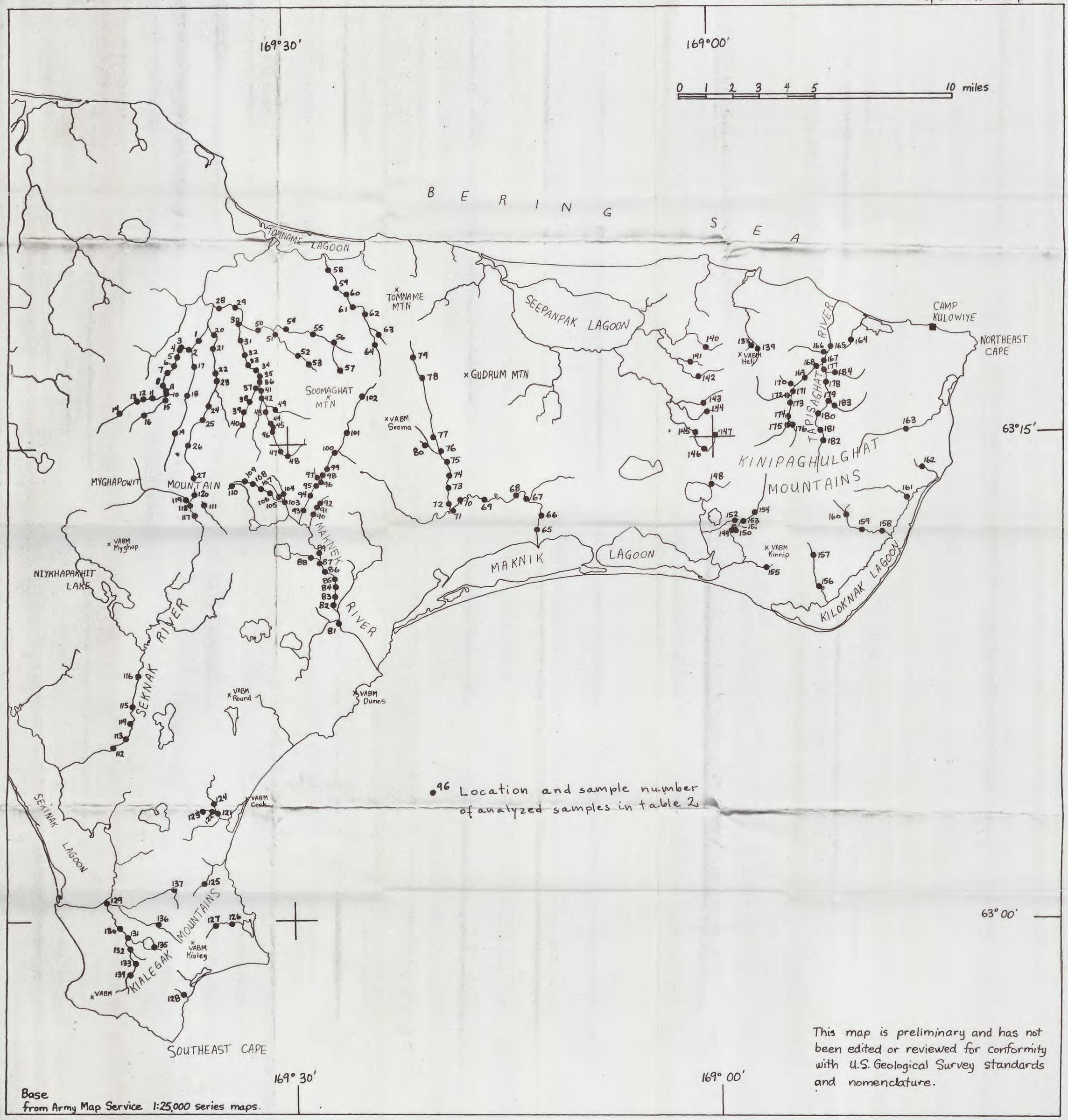
25 Strike and dip of beds

Contact, approximately located

Fault, dashed where inferred

This map is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey standards and nomenclature.

71-224
Open-file map



•96 Location and sample number of analyzed samples in table 2.

This map is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey standards and nomenclature.

Base
from Army Map Service 1:25,000 series maps.

Figure 4. Location of stream sediment samples from eastern St. Lawrence Island, Alaska.