UNITED STATES
DEPARTMENT OF THE INTERIOR
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WATER RESOURCES OF THE CORDOVA AREA, ALASKA

by

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INTRODUCTION

This report is a compilation of ground-water, surface-water, and water-quality data collected by the U.S. Geological Survey, Water Resources Division on Eyak Lake and Power Creek, near Cordova, and wells in and near Cordova, Alaska. Many of these data were collected as part of a cooperative program with the city of Cordova. The purpose of this report is to present the data in a concise format for interested parties.

Cordova is on the southeast shore of Orca Inlet in Prince William Sound (lat 60°33' N.; long 145°45' W.) at an altitude of approximately 90 feet (fig. 1). The limited development has occurred along the north shore of the west arm of Eyak Lake. The current population of Cordova is about 1,800. Commercial fishing and fish processing form the economic base for the community.

WELL-NUMBERING SYSTEM

The well-numbering system used in this report is that of the Alaska District, Water Resources Division, and is based on the official rectangular subdivision of public lands. The first two letters in the well number indicate the coordinates referred to the Copper River baseline and meridian and the quadrant formed by the intersection of the baseline and the principal meridian. The first three digits indicate the township, the next three digits the range, and the last two digits the section in which the well is located. Letters following the section number indicate the $\frac{1}{4}$ section; each succeeding subdivision is lettered counter-clockwise from the northeast corner. Each well, or group of wells, within the smallest quarter-section subdivision is assigned a sequential number which follows the lettered quarter sections. The last three digits represent a field map number unique to a given section. Thus, the Geological Survey's well number CC015003278DBC1 001, illustrated in figure 2, is in the Copper River base and meridian (C), the southwest quadrant (C), Township 15 South, Range 3 West, section 27, and is in the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the section (BDBC). It is the first well located in that $\frac{1}{4}$ section (BDBC1). The last three digits, 001, indicate this was the first well plotted on the field maps for section 27.

Although the primary reference for ground-water data is the Alaska local well number described above, data-collection sites in this report are located on the map (fig. 1) by the Alaska Register number.

Figure 1.--Locations of water-quality sampling sites, water wells, and discharge measuring station near Cordova, Alaska.

Base from U.S. Geological Survey Cordova (C-3) Alaska, 1:38 1:63,350, 1951

Base from U.S. Geological Survey Cordova (B-4, C-4) Alaska, 1:63,380, 1951, 1950

Figure 1.--Continued.

Based from U.S. Geological Survey Cordova, Alaska (1:250,000) 1959

Figure 2.--System of numbering wells in Alaska.

Well ownership is included as a cross reference in table 5. Ownership was recorded at the time of data collection; it may not be the same as the present ownership.

METHODS OF INVESTIGATION

All chemical samples were collected and analyzed in accordance with standard methods of the U.S. Geological Survey (Brown and others, 1970). Dissolved oxygen content was determined in the field with a model 54 YSI dissolved oxygen meter.* Conductivity was measured with a Beckman RB-3 Solubridge conductivity meter and alkalinity was determined by the electrometric titration method (Brown and others, 1970). Field pH was determined with a Leeds and Northrup model 7417 pH meter. Samples for bacteriological analysis were collected by the Geological Survey and analyzed by the State of Alaska, Department of Health and Social Services, Division of Public Health.

Data on wells were obtained from driller's logs and from information supplied by owners. Water-level data were collected by the U.S. Geological Survey.

DATA COLLECTED

This report includes discharge and water-quality data on Power Creek near Cordova (station number 15216000) from 1948 to 1976 (tables 1 and 2). Water-quality data for Eyak Lake from 1962, 1974, and 1975 is presented in tables 3 and 4. Bathymetric data were collected from the west arm of Eyak Lake near Cordova in 1975. This arm is 7-8 feet deep in most places, with a few narrow channels as deep as 10 feet.

The water-quality data are from samples collected on Eyak Lake in 1974 and 1975. The data-collection program was designed and accomplished by D.E. Donaldson. The authors compiled the data for this report. The ground-water data include data on 11 wells in Cordova, 5 wells at the Cordova Airport southeast of town, and one well approximately 1½ miles south of town (table 5). Water-level data on 7 of these wells (table 6), drillers' descriptions of subsurface materials in 10 wells (table 7), and water-quality data on ground water in 11 wells (table 8) are also presented.

REFERENCES

Brown, Eugene, Skougstad, M.W., and Fishman, M.J., 1970, Methods for collection and analysis of water sampled for dissolved minerals and gases: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. A1, 160 p.

*The use of brand and model names in this report is for the purpose of identification only and does not imply an endorsement by the U.S. Geological Survey.

Table 1.--Discharge in cubic feet per second, of Power Creek near Cordova, Alaska
(15216000), 1948-1976.

YEAR	MONTHLY MEANS												ANNUAL MEANS
	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	
1948	282	327	103	86.6	53.5	28.4	23.9	218	566	667	453	478	274
1949	385	199	59.5	48.5	30.4	42.9	34.6	142	376	454	435	749	247
1950	487	318	73.0	36.1	22.3	25.4	25.2	141	571	400	424	632	263
1951	123	53.0	37.4	25.0	29.0	33.0	34.0	120	355	539	397	1024	231
1952	250	232	50.0	35.0	25.0	20.0	20.0	94.0	427	897	485	388	245
1953	594	267	85.0	50.3	32.6	31.9	50.0	259	595	542	620	451	300
1954	343	103	58.5	49.6	46.7	27.5	29.5	189	412	451	612	461	233
1955	387	290	52.5	60.1	42.6	29.0	24.4	102	372	671	603	294	246
1956	151	60.3	38.0	35.0	23.0	16.0	21.5	177	356	612	716	425	220
1957	134	246	100	48.8	23.2	22.6	24.0	180	422	457	484	973	260
1958	400	334	69.2	113	45.7	44.6	65.1	297	598	925	673	256	321
1959	388	112	82.6	42.6	34.1	23.6	37.4	236	464	592	331	265	219
1960	328	165	77.6	84.3	58.7	33.5	35.0	271	465	628	536	471	264
1961	219	101	164	129	66.4	41.9	59.0	308	420	506	587	486	259
1962	291	116	61.4	86.5	45.0	41.8	43.2	173	399	472	355	363	205
1963	248	189	128	91.5	156	98.2	104	240	382	593	432	326	250
1964	255	65.3	140	62.8	69.1	46.7	43.7	99.7	496	610	490	291	223
1965	258	196	111	43.0	39.0	47.0	95.7	187	428	433	436	556	236
1966	326	79.7	53.9	32.6	22.5	22.0	39.0	146	382	431	566	713	235
1967	360	178	48.1	35.7	49.1	59.0	88.7	181	455	487	494	736	265
1968	174	260	102	58.3	175	134	52.9	274	401	452	337	311	228
1969	184	109	59.1	26.8	35.7	93.5	93.9	228	458	399	252	218	181
1970	448	204	190	101	143	114	104	173	428	527	640	367	288
1971	259	162	73.6	56.3	45.0	26.9	47.2	116	466	681	559	318	236
1972	287	81.2	38.9	25.1	19.0	15.5	15.7	101	328	565	505	542	211
1973	340	90.0	60.7	38.9	29.6	20.6	37.4	189	351	449	478	234	195
1974	155	56.1	47.5	35.9	27.7	19.2	48.0	186	354	352	340	531	180
1975	460	254	84.1	56.0	42.7	26.0	39.7	179	382	632	388	604	263
1976	267	49.0	40.7	30.3	35.8	20.8	90.0	468	803	546	469	686	292
MEAN	303	169	79.0	56.0	50.6	41.6	49.2	196	445	551	486	488	244
PERCENTAGE ANNUAL FLOW	10	6	3	2	2	1	2	7	15	19	17	17	
RANGE MIN MAX	123 594	49.0 334	37.4 190	25.0 129	19.0 175	15.5 134	15.7 104	94.0 468	328 803	352 925	252 716	218 1024	180 321

Table 2.--Water-quality data for Power Creek near Cordova, Alaska (15216000).--Continued

Date	Time	Specific conductance (micro-mhos)	pH (units)	Temperature (deg C)	Color (platinum-cobalt units)	Hardness (Ca, Mg) (mg/L)	Non-carbonate hardness (mg/L)	Dissolved calcium (Ca) (mg/L)	Dissolved magnesium (Mg) (mg/L)	Dissolved sodium (Na) (mg/L)	Dissolved potassium (K) (mg/L)
July, 1949	1615	36	7.1	4.5	--	14	0	--	--	--	--
July, 1950	19...	37	7.3	6.0	5	15	2	--	--	--	--
Jun, 1951	10...	48	7.5	4.0	5	15	0	--	--	--	--
Apr, 1955	14...	64	7.3	--	--	24	3	8.7	.5	1.6	.3
July, 1958	12...	34	6.2	--	0	14	3	4.0	.9	.8	.4
Sep, 1967	1136	34	--	7.0	--	--	--	--	--	--	--
	1200	34	6.6	7.0	10	13	2	3.6	1.2	1.0	.0
Oct	12...	47	6.9	4.5	5	22	6	7.9	.5	.9	.3
Nov	29...	52	6.9	2.0	0	22	3	7.5	.7	1.0	.3
Feb, 1968	14...	51	7.1	2.0	5	18	0	6.7	.3	.9	.2
Apr	19...	59	6.8	--	0	28	5	10	.9	1.4	.3
	1248	59	--	3.0	--	--	--	--	--	--	--
May	09...	40	6.6	3.0	0	19	3	6.5	.7	.9	.0
Jun	15...	40	6.3	5.0	5	14	0	5.3	.4	1.3	.3
Jul	24...	36	--	6.0	--	--	--	--	--	--	--
Aug	27...	36	--	5.0	--	--	--	--	--	--	--
Nov	03...	48	--	2.0	--	--	--	--	--	--	--
Feb, 1969	12...	66	--	1.0	--	--	--	--	--	--	--
Jul	22...	37	7.3	8.0	10	16	5	5.8	.4	1.0	.0
Feb, 1970	18...	50	7.1	2.0	0	21	5	7.0	.8	1.4	.2

Table 2.--Water quality data for Power Creek near Cordova, Alaska (15216000).--Continued

Date	Bicar- bonate (HCO ₃) (mg/L)	Car- bonate (CO ₃) (mg/L)	Dis- solved sulfate (SO ₄) (mg/L)	Dis- solved chlor- ide (Cl) (mg/L)	Dis- solved fluor- ide (F) (mg/L)	Dis- solved silica (SiO ₂) (mg/L)	Dis- solved solids (sum of consti- tuents) (mg/L)	Dis- solved nitrite plus nitrate (N) (mg/L)	Dis- solved ortho- phos- phate (PO ₄) (mg/L)	Dis- solved iron (Fe) (µg/L)
July, 1949 27...	18	0	3.6	1.5	--	2.8	--	--	--	--
July, 1950 19..	16	0	4.1	1.0	--	3.2	--	--	--	--
Jun., 1951 10..	18	0	3.8	1.7	.0	3.9	28	--	--	--
Apr., 1955 18..	26	0	4.0	1.8	.0	4.4	34	--	--	--
July, 1958 12..	13	0	2.0	2.0	.0	3.6	20	--	--	--
Sept., 1967 07..	--	--	--	--	--	--	--	--	--	--
Oct. 12...	20	0	2.0	1.8	.3	3.8	28	--	--	--
Nov. 20..	23	0	1.0	.7	.3	4.4	28	--	--	--
Feb., 1968 14..	22	0	4	1.1	.0	4.3	25	--	--	--
Apr. 19...	29	0	4.2	.8	.3	4.8	37	--	--	--
May 07..	19	0	4.2	.4	.0	3.4	25	--	--	--
Jun. 15...	19	0	3.6	.5	.2	3.2	24	--	--	--
July 24..	--	--	--	--	--	--	--	--	--	--
Aug. 27...	--	--	--	--	--	--	--	--	--	--
Nov. 01...	--	--	--	--	--	--	--	--	--	--
Feb., 1969 12..	--	--	--	--	--	--	--	--	--	--
Jul. 22..	14	--	3.0	.4	.2	2.6	19	--	--	--
Feb., 1970 18..	20	0	3.9	2.1	.0	4.3	30	--	--	--

Table 2.--Water-quality data for Power Creek near Cordova, Alaska [15216000].¹

Date	Time	Specific conductance (micro- mhos)	pH (units)	Temperature (deg C)	Color (plat- inum- cobalt units)	Hard- ness (Ca,Mg) (mg/L)	Non- car- bonate hard- ness (mg/L)	Dissolved calcium (Ca) (mg/L)	Dissolved magnesium (Mg) (mg/L)	Dissolved sodium (Na) (mg/L)	Dissolved potassium (K) (mg/L)
May, 1970											
04...	1700	54	7.0	3.0	0	21	3	7.6	.5	1.5	.1
04...	1915	54	--	3.0	--	--	--	--	--	--	--
Jun 14...	1100	40	7.5	5.0	5	18	6	6.6	.5	.8	.2
Aug 24...	1800	37	6.5	6.5	0	15	4	5.2	.5	1.1	.1
Sep 10...	1100	48	--	3.5	--	--	--	--	--	--	--
July, 1971											
21...	1100	33	--	5.0	--	--	--	--	--	--	--
Sep 11...	0925	45	--	4.5	--	--	--	--	--	--	--
Nov 22...	1300	--	--	2.0	--	--	--	--	--	--	--
Mar, 1972											
26...	1300	74	--	.0	--	--	--	--	--	--	--
May 18...	1200	52	--	1.0	--	--	--	--	--	--	--
Jun 13...	1200	50	--	--	--	--	--	--	--	--	--
Aug 10...	1100	37	--	7.0	--	--	--	--	--	--	--
Sep 11...	1700	30	--	5.5	--	--	--	--	--	--	--
Dec 05...	0945	58	--	1.0	--	--	--	--	--	--	--
Feb, 1973											
09...	1330	69	--	.5	--	--	--	--	--	--	--
Mar, 1974											
11...	1100	70	7.2	.0	--	28	2	10	.7	2.1	.2
July 23...	1940	<50	7.1	6.0	2	13	0	4.7	.4	1.0	.2
Jun, 1975											
06...	1030	46	--	4.5	0	17	1	6.1	.4	1.6	.1

Table 2.--Water-quality data for Power Creek near Cordova, Alaska (15216000).--Continued:

Date	Bicar- bonate (HCO ₃) (mg/L)	Car- bonate (CO ₃) (mg/L)	Dis- solved sulfate (SO ₄) (mg/L)	Dis- solved chlor- ide (Cl) (mg/L)	Dis- solved fluor- ide (F) (mg/L)	Dis- solved silica (SiO ₂) (mg/L)	Dis- solved solids (sum of consti- tuents (mg/L)	Dis- solved nitrite plus nitrate (N) (mg/L)	Dis- solved ortho- phos- phate (PO ₄) (mg/L)	Dis- solved iron (Fe) (µg/L)
May, 1970										
04...	22	0	4.3	2.5	.0	3.0	31	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
Jun 14...	15	0	4.9	2.1	.0	3.0	23	--	--	--
Aug 24...	14	0	3.5	1.0	.0	2.4	21	--	--	--
Sep 10...	--	--	--	--	--	--	--	--	--	--
Jul, 1971										
21...	--	--	--	--	--	--	--	--	--	--
Sep 11...	--	--	--	--	--	--	--	--	--	--
Nov 22...	--	--	--	--	--	--	--	--	--	--
Mar, 1972										
26...	--	--	--	--	--	--	--	--	--	--
May 18...	--	--	--	--	--	--	--	--	--	--
Jun 13...	--	--	--	--	--	--	--	--	--	--
Aug 10...	--	--	--	--	--	--	--	--	--	--
Sep 11...	--	--	--	--	--	--	--	--	--	--
Dec 05...	--	--	--	--	--	--	--	--	--	--
Feb, 1973										
09...	--	--	--	--	--	--	--	--	--	--
Mar, 1974										
11...	31	0	4.6	1.1	.6	5.7	41	.13	.00	20
July 23...	17	--	4.6	1.1	.0	2.9	23	.02	.00	30
Jun, 1975										
06	19	--	3.5	1.5	.0	2.8	26	.05	.00	10

Table 3.--Water-quality data for Eyak Lake near Cordova, Alaska.

Date	Time	Spe- cific con- duct- ance (micro- mhos)	ph (units)	Temper- ature (deg C)	Color (plat- inum- cobalt units)	Diss- olved oxygen (mg/L)	Hard- ness (Ca, Mg) (mg/L)	Non- car- bonate hard- ness (mg/L)	Diss- olved cal- cium (Ca) (mg/L)	Diss- olved mag- ne- sium (Mg) (mg/L)	Diss- olved sodium (Na) (mg/L)	Diss- olved po- tas- sium (K) (mg/L)
EYAK LK NR CORDOVA AK, SITE 1												
Jan, 1962	1100	56	7.3	--	0	--	20	0	6.4	.9	4.6	.1
Feb 19...	--	48	--	--	--	--	--	--	--	--	--	--
Jul, 1974	1000	<50	7.4	13.5	1	10.7	17	1	5.2	.9	3.0	.2
EYAK R AT BRIDGE NR CORDOVA AK, SITE 2												
Mar, 1974	1430	75	6.7	1.0	--	9.7	26	5	9.0	.9	4.5	.4
Jul 24...	1000	<50	6.9	12.5	1	--	17	1	6.0	.5	2.0	.2
Jun, 1975	1145	42	--	4.0	2	--	--	--	--	--	--	--
EYAK LK NR CORDOVA AK, SITE 3												
Mar, 1974	1100	43	6.3	.0	--	1.8	11	0	3.8	.4	3.8	.3
Jul 23...	0930	<50	7.9	14.5	2	10.6	15	0	5.2	.6	2.8	.3
Jun, 1975	1045	38	7.3	11.0	7	11.0	17	6	3.9	1.8	2.9	.1
EYAK LK NR CORDOVA AK, SITE 4												
Mar, 1974	1330	53	6.5	1.0	--	3.0	15	1	5.0	.6	3.7	.4
Jun, 1975	1115	39	7.5	11.8	2	11.6	17	0	4.0	.3	3.1	.1

Table 3.--Water-quality data for Eyak Lake near Cordova, Alaska.--Continued

Date	Time	Specific conductance (micro- mhos)	ph (units)	Temper- ature (deg C)	Color (plat- inum- cobalt units)	Dissolved oxygen (mg/L)	Hard- ness (Ca, Mg) (mg/L)	Non- car- bonate hard- ness (mg/L)	Dissolved calcium (Ca) (mg/L)	Dissolved magnesium (Mg) (mg/L)	Dissolved sodium (Na) (mg/L)	Dissolved potassium (K) (mg/L)
EYAK LK NR CORDOVA AK, SITE 5												
Mar, 1974	1430	61	6.3	2.0	--	1.4	17	2	5.8	.7	4.2	.4
Jun, 1975	1145	38	7.5	11.0	4	11.7	11	0	3.9	.3	2.9	.1
EYAK LK NR CORDOVA AK, SITE 6												
Jul, 1974	1030	<50	7.6	13.0	1	10.6	15	0	5.2	.4	2.6	.2
Jun, 1975	1215	40	7.7	11.0	3	11.8	13	0	4.3	.6	3.0	.2
EYAK LK NR MAVIS ISLAND NR CORDOVA AK, SITE 7												
Mar, 1974	1530	58	6.5	1.0	--	2.8	--	--	--	--	--	--
EYAK LK NR CORDOVA AK, SITE 8												
Jul, 1974	1100	<50	7.6	13.5	1	10.3	17	2	5.6	.7	2.6	.2

Table 3.--Water-quality data for Eyak Lake near Cordova, Alaska.--Continued

Date	Bicar- bonate (HCO ₃) (mg/L)	Car- bonate (CO ₃) (mg/L)	Dis- solved sulfate (SO ₄) (mg/L)	Dis- solved chloride (Cl) (mg/L)	Dis- solved fluoride (F) (mg/L)	Dis- solved silica (SiO ₂) (mg/L)	Dis- solved solids (sum of consti- tuents) (mg/L)	Dis- solved nitrite plus nitrate (N) (mg/L)	Dis- solved ortho- phos- phate (PO ₄) (mg/L)	Dis- solved iron (Fe) (μg/L)	Dis- solved man- ganese (Mn) (μg/L)	Dis- solved zinc (Zn) (μg/L)
EYAK LK NR CORDOVA AK, SITE 1												
Jan, 1962 23...	25	0	3.0	4.5	.1	--	--	--	--	--	--	--
Feb 19...	--	--	--	6.5	--	--	--	--	--	--	--	--
Jul, 1974 23...	19	0	4.4	3.4	.0	.6	27	.02	.00	20	0	0
EYAK LK NR CORDOVA AK, SITE 2												
Mar, 1974 11...	20	0	4.1	4.5	.1	4.2	41	.08	.00	50	80	--
Jul 24...	20	0	5.1	2.3	.0	2.2	28	.02	.00	20	0	0
Jun, 1975 06...	17	0	1.8	3.2	.0	1.0	--	.00	.00	--	--	--
EYAK LK NR CORDOVA AK, SITE 3												
Mar, 1974 12...	17	0	4.0	5.5	.2	1.6	27	.08	.00	70	150	--
Jul 23...	20	0	4.4	3.5	.0	.5	27	.02	.00	20	0	0
Jun, 1975 06...	14	0	1.5	3.6	.0	.9	22	.01	.00	40	0	0
EYAK LK NR CORDOVA AK, SITE 4												
Mar, 1974 12...	20	0	3.0	4.7	.0	2.3	29	.08	.00	80	150	--
Jun, 1975 06...	20	--	1.7	3.1	.0	.9	23	.02	.00	30	0	0

Table 3.--Water-quality data for Eyak Lake near Cordova, Alaska.--Continued

Date	Bicar- bonate (HCO ₃) (mg/L)	Car- bonate (CO ₃) (mg/L)	Dis- solved sulfate (SO ₄) (mg/L)	Dis- solved chlor- ide (Cl) (mg/L)	Dis- solved fluor- ide (F) (mg/L)	Dis- solved silica (SiO ₂) (mg/L)	Dis- solved solids (sum of consti- tuents (mg/L)	Dis- solved nitrite plus nitrate (N) (mg/L)	Dis- solved ortho- phos- phate (PO ₄) (mg/L)	Dis- solved iron (Fe) (ug/L)	Dis- solved man- ganese (Mn) (ug/L)	Dis- solved zinc (Zn) (ug/L)
<u>EYAK LK NR CORDOVA AK, SITE 5</u>												
Mar, 1974 12...	24	0	2.4	6.0	.0	2.2	32	.04	.00	100	150	--
Jun, 1975 06...	16	--	1.5	3.3	.0	.7	21	.01	.00	30	0	0
<u>EYAK LK NR CORDOVA AK, SITE 6</u>												
Jul, 1974 23...	18	0	4.5	3.0	.0	.8	26	.03	.00	30	0	0
Jun, 1975 06...	17	0	1.9	3.1	.0	.9	22	.01	.00	30	0	0
<u>EYAK LK NR MAVIS ISLAND NR CORDOVA AK, SITE 7</u>												
Mar, 1974 12...	--	--	--	--	--	--	--	--	--	--	--	--
<u>EYAK LK NR CORDOVA AK, SITE 8</u>												
Jul, 1974 23...	18	0	4.1	2.6	.0	1.2	27	.32	.03	30	0	20

Table 4.--Bacteriological data from Eyak Lake, July 23, 1974 (most probable number per 100 milliliters).

[Analyses performed by the Alaska Department of Health and Social Services, Division of Public Health.]

Site Number	Total Coliform	Fecal Coliform	Fecal Streptococcus
1	170	79	0
2	21	2	0
3	94	8	0
4	49	13	0
6	0	0	0
8	110	8	3.3
9	140	14	0
10	33	8	0
11	4	<2	0

Table 5.--Description of wells.

Local well number: Numbering system described in text

Alaska Register Number: Unique identifier used as reference number on location map (figure 3).

Owner or user: Person or agency responsible for the well.

Hole depth: Maximum depth penetrated during construction of the well.

Well depth: Depth of the finished well (usually the depth to which the well can be probed).

Diameter: Diameter of the well casing.

Openings interval(s): Depth to the top and bottom of any openings to the surrounding material (perforations, screened intervals, depth of open ended casing).

Type of opening: R-wire wound screen; S-screen of unknown construction; P-perforations in the casing; Ø-open ended casing; X-open hole.

Driller: Name of contractor who drilled the well.

Method drilled: C-cable tool or churn drill; B-bored or augered; D-dug by hand.

Year completed: Year construction of the well was finished.

Depth to water: Depth to water below land surface.

Method of measurement: Method used to determine depth to water. S-steel tape; G-pressure gage; R-reported by another source.

Measurement date: Month and year the water level was measured or reported.

Yield: Reported yield of the well.

Drawdown: Reported drawdown from static water level at the reported yield.

Well log: D, driller's log available.

QW: Type of water-quality data available: B-common chemicals; C-trace metals; E-nutrients; F-biological.

Remarks: OWP-past observation well; OWC-current observation well; OWT-temporary observation well (usually only during an aquifer test); F-flowing; D-seasonally dry; GP-gravel pack inside casing.

LOCAL WELL NUMBER	AK REG NO	OWNER OR USER	HOLE DEPTH (FT)	WELL DEPTH (FT)	WELL DIAM (IN)	OPENINGS INTERVAL	TYP OF OPN	DRILLER	MTHD DRLD	YEAR CPL	DEPTH TO WATER (FT)	MTHD OF MEAS	MEAS DATE	YLD GAL/M	DD FT	WELL LOGS	QW
CC015003278ACC1 002	30019	USGS-CPU	124	124	6	85.5-95.5	R	CHANNEL DRL	C	1961	4.60	S	09/61	27	73	D	B
CC015003278ADB1 007	30026	BORER, RICH	126	126	8	126	Ø	JAY BIRD		1965							
CC015003278CDB1 005	30024	CORDOVA P.U.	72	72	10	55 - 72	S	CLEMENSON	C	1972	12.92	S	10/72	420		D	BCE
CC015003278CDB2 005	30028	USGS	63	63	4	57 - 61	P	A.R.C. INDUS		1973	5.0	R	05/73			D	
CC015003278DAB1 006	30027	CORDOVA P.U.	153	153	8	140 - 153	X	CLEMENSON		1973	4.39	S	05/73			D	
CC015003278DBC1 001	30017	USGS-CPU	142	139.5	6	134.5-139.5	R	CHANNEL DRL	C	1961	4.0	R	10/61	130	34	D	B
CC015003278DBC2 001	30021	CORDOVA P.U.	160	153.5	8	138.5-153.5	S	CHANNEL DRL	C	1962	8.96	S	05/73	200	6		BCE
CC015003278DCB1 004	30023	CORDOVA P.U.	82	71	10	48.5-71.0	S	CLEMENSON	C	1972	33.65	S	02/73	250	18	D	
CC015003278DDB1 003	30020	CORDOVA P.U.	188	60	8	51 - 60	S	CHANNEL DRL	C	1962	9.08	S	07/62	190	28	D	B
CC015003278DDB2 003	30022	CORDOVA P.U.	76.7	67.5	10	45.2-67.6	S	CLEMENSON	C	1972	12.3	R	11/72	260	118	D	BCF
CC01500328ABAA1 001	30040	COLLINS			4			UNKNOWN		1920	-3.00	G	10/59	4			B
CC01500332DA0B1 001	30025	O'BRIAN, BILL	37	37	6			UNKNOWN		----							
CC016001078ABC1 002	30030	ADH	223	206.5	4	212	Ø	ADH	B	1972							
CC016001078BCC1 001	30029	FAA		173	160	136.6-160	X	DOTTEN DRL	C	1967				20		D	BE
CC016001078BCC2 001	30041	FAA	19	19	120		Ø	UNKNOWN	D	1940							B
CC016001078BCC3 001	30039	FAA	12	12	36		X	UNKNOWN	D	1956							B
CC016001078BCC4 001	30042	PACIFIC N AIR	16	16	60		X	UNKNOWN	C	<1959	6.0	R	00/59			D	BE

Table 6.--Records of water levels in wells.

CC01500327BACC1 002. Alaska Register No. 30019. Cordova Public Utilities Test Well No. 1. Altitude of land surface at the well is approximately 31 feet above mean sea level.

<u>Water levels in feet below land surface</u>					
<u>Date</u>	<u>Water level</u>	<u>Date</u>	<u>Water level</u>	<u>Date</u>	<u>Water level</u>
Sept. 29, 1961	4.60	July 30, 1962	5.34	July 27, 1964	4.79
Oct. 30, 1961	3.57	July 31, 1962	5.88	July 28, 1964	4.84
		Aug. 1, 1962	6.13		

CC01500327B0AB1 006. Alaska Register No. 30027. Cordova Public Utilities Water Well No. 4. Altitude of land surface at the well is approximately 23 feet above mean sea level.

<u>Water levels in feet below land surface</u>			
<u>Date</u>	<u>Water level</u>	<u>Date</u>	<u>Water level</u>
May 3, 1973	4.39	Sept. 12, 1973	2.82
May 29, 1973	2.95	Jan. 14, 1974	5.86

CC01500327B0BC1 001. Alaska Register No. 30017. Cordova Public Utilities Test Well No. 2. Altitude of land surface at the well is approximately 33 feet above mean sea level.

<u>Water levels in feet below land surface</u>					
<u>Date</u>	<u>Water level</u>	<u>Date</u>	<u>Water level</u>	<u>Date</u>	<u>Water level</u>
Oct. 26, 1961	3.94	July 30, 1962	4.38	July 27, 1964	6.67
Oct. 30, 1961	4.05			July 28, 1964	6.73

CC01500327B0BC2 001. Alaska Register No. 30021. Cordova Public Utilities Prod. Well No. 2. Altitude of land surface at the well is approximately 33 feet above mean sea level.

<u>Water levels in feet below land surface</u>			
<u>Date</u>	<u>Water level</u>	<u>Date</u>	<u>Water level</u>
May 29, 1973	8.96	Jan. 14, 1974	22.22
Sept. 12, 1973	8.83		

CC01500327B0CB1 004. Alaska Register No. 30023. Cordova Public Utilities Water Well No. 2. Altitude of land surface at the well is approximately 32 feet above mean sea level. Highest water level recorded, 8.40 feet below land surface on Nov. 3 and 4, 1974; lowest recorded, 41.22 feet below land surface on Mar. 25, 1975.

<u>Water levels in feet below land surface</u>	
<u>Date</u>	<u>Water level</u>
Nov. 7, 1972	21.87
Nov. 8, 1972	17.94

Water levels for the period 1973 to current year were taken from recorder charts. Only 5-day highs shown below.

1973												
DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
5	--	--	30.90	12.03	22.94	11.03	11.49	10.83	10.51	10.91	11.41	17.63
10	--	33.65	27.72	18.15	26.88	11.02	11.77	10.60	10.29	10.17	11.78	17.60
15	--	28.68	31.13	17.94	25.75	11.25	10.17	10.55	11.11	10.66	12.06	17.88
20	--	20.95	34.34	18.36	10.98	11.39	10.35	11.23	11.44	10.77	12.23	16.59
25	--	26.04	29.45	23.62	10.64	10.75	11.63	9.49	11.51	11.32	12.37	16.12
EQM	--	22.26	21.50	22.70	11.67	11.09	10.21	10.66	10.83	11.10	12.27	12.70
1974												
5	15.12	22.40	24.87	31.76	28.24	11.19	26.77	19.35	11.99	18.36	8.54	10.01
10	20.03	35.44	28.84	29.63	28.30	11.10	23.42	12.73	12.47	9.94	10.20	9.67
15	27.92	28.30	26.76	23.63	12.42	11.31	23.00	12.76	10.61	9.42	9.12	10.05
20	31.68	20.02	28.52	29.55	11.30	10.15	--	12.47	11.26	9.11	10.30	10.53
25	21.52	19.88	26.54	32.04	11.74	10.80	20.12	12.46	24.71	8.75	10.63	10.05
EQM	17.30	26.97	24.11	32.95	11.12	--	24.19	10.95	29.11	9.29	9.52	--

Table 6.--Records of water levels in wells.--Continued

CC015003278D081 004. 5-day highs for water levels.--Continued

1975												
DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
5	--	--	e 34.0	35.05	33.72	--	9.61	--	--	9.63	11.27	25.40
10	--	--	34.00	34.86	34.18	9.52	10.44	--	--	10.53	11.41	27.10
15	--	--	30.12	34.79	34.00	9.74	10.16	--	--	8.50	11.73	26.44
20	--	--	33.63	33.88	--	13.11	14.03	--	8.66	9.97	15.04	30.83
25	--	--	36.40	37.73	--	10.95	14.76	--	9.33	9.42	11.96	34.92
EQM	--	--	34.90	33.70	--	10.70	--	--	9.38	10.53	12.63	--

e estimated

1976												
5	--	--	29.41	29.84	22.36	10.95	12.62	--	10.95	9.58	9.58	8.88
10	--	--	28.69	--	10.02	13.62	23.54	14.09	9.58	9.73	8.27	9.91
15	--	--	36.56	--	9.43	12.44	30.50	12.26	8.67	8.91	8.41	9.40
20	--	27.32	30.52	--	9.77	11.27	22.80	11.21	7.73	9.31	9.50	9.81
25	--	23.36	37.21	39.28	12.62	15.51	39.08	11.37	9.16	9.92	9.66	9.67
EQM	--	25.80	30.75	25.77	28.60	12.98	--	11.20	8.86	10.03	6.82	9.72

1977												
5	9.08	--	10.59	9.52	9.99	10.82	18.76					
10	9.82	--	10.95	10.30	10.13	10.86	9.92					
15	10.52	--	11.41	10.45	10.79	11.09	11.84					
20	10.28	--	11.62	10.45	10.60	10.52						
25	--	10.00	11.83	--	10.46	12.16						
EQM	--	10.64	12.01	10.24	10.60	14.60						

CC015003278D081 003. Alaska Register No. 30020. Cordova Public Utilities Prod. Well No. 4. Altitude of land surface at the well is approximately 34 feet above mean sea level.

Water levels in feet below land surface

Date	Water level	Date	Water level
July 17, 1962	9.08	Aug. 1, 1962	9.52
July 30, 1962	8.65	July 27, 1964	8.14
July 31, 1962	9.08	July 28, 1964	8.14

CC015003278D082 003. Alaska Register No. 30022. Cordova Public Utilities Water Well No. 1. Altitude of land surface at the well is approximately 34 feet above mean sea level.

Water levels in feet below land surface

Date	Water level	Date	Water level
Nov. 8, 1972	17.40	Mar. 22, 1973	24.27
Feb. 16, 1973	22.23	May 3, 1973	16.83
		Sept. 12, 1973	14.57

Table 7.--Cordova well logs.

Material	Thickness (feet)	Depth (feet)	Material	Thickness (feet)	Depth (feet)
Local No: CC01500327 BACC1 002 A.K. Reg. No. 30019 Owner: Cordova Public Utilities Driller: Channel Drilling Co.			Local No: CC01500327 BDBC1 001 A.K. Reg. No. 30017 --Continued		
Soil, boulders, rubble.....	2	2	Sand, fine to medium, some gravel.....	2.5	77
Gravel, coarse, some boulders and clay.....	6	8	Sand, fine to medium, medium gravel and clay.....	2	79
Gravel, fine to coarse, some sand and cobbles.....	6	14	Sand, fine to medium, and clay.....	5.5	84
Gravel, fine to medium and medium to coarse sand.....	2	16	Sand, fine to coarse, medium gravel, some clay.....	1	85.5
Sand, medium, with clay in layers.....	10	26	Sand, fine to coarse, some gravel and clay.....	15	100.5
Sand, fine to medium, clayey (glacial till).....	5	32	Gravel, fine to medium, and coarse sand.....	2.5	103
Gravel, medium, and clay (glacial till).....	5	37	Gravel, medium, and fine to medium sand.....	10.5	113.5
Sand, medium to coarse; and fine gravel.....	0.5	32.5	Gravel, medium, and coarse sand.....	0.5	114
Gravel, medium to coarse, much clay and fine sand (glacial till).....	5	37.5	Sand, fine to coarse, some gravel.....	7	121
Sand, fine to coarse, and fine to coarse gravel.....	4.5	42	Gravel, fine to medium, and coarse sand.....	1	122
Gravel, sand, cobbles, clay (glacial till).....	6	48	Sand, fine to coarse, some gravel.....	6	128
Sand, medium, some water.....	2	50	Sand, gravel, clay, hardpacked.....	4.5	132.5
Gravel, medium, and sand, some clay.....	5	55	Sand, fine to coarse, and gravel.....	2.5	135
Gravel and sand, water bearing.....	3	58	Sand, fine, some gravel and clay bails.....	3	138
Gravel, sand, clay.....	3	61	Sand, fine to coarse; and gravel.....	4	142
Gravel and sand, water bearing.....	2	63			
Sand, medium to fine, silt, some gravel.....	11	74	Local No: CC01500327 BDBH1 004 A.K. Reg. No. 30023 Owner: Cordova Public Utilities Driller: Clemenson		
Sand, medium to coarse, and fine gravel, some clay (glacial till).....	7.5	81.5	Gravel, sand, and rock.....	10	10
Gravel, fine to coarse, and sand, water bearing.....	1.5	83	Sand, gravel, and gray clay.....	7	17
Gravel, fine to coarse, sand, some clay.....	5	88	Gravel and sand, water bearing.....	10	27
Gravel, fine to coarse, some sand, water bearing.....	7	89	Sand, gravelly, and brown clay, water bearing.....	6	33
Sand, medium to coarse, and gravel.....	0.5	89.5	Gravel, sand and brown clay, water bearing.....	1	34
Sand, medium, some gravel.....	1.5	94	Clay, brown and gray, gravelly.....	13.5	47.5
Sand, fine to medium, some medium to coarse gravel and trace of clay.....	16	110	Gravel and sand, water bearing.....	34.5	82
Sand, fine to coarse, gravel and clay (glacial till).....	2	112	Gravel, cemented, and blue clay.....		>82
Sand, fine to medium, some gravel, trace of clay (glacial till).....	4	116			
Clay, gravel, sand (glacial till).....	4.5	120.5	Local No: CC01500327 BDBB1 003 A.K. Reg. No. 30020 Owner: Cordova Public Utilities Driller: Channel Drilling Co.		
Rock, black, hard.....	3.5	124	Boulders, gravel, and gray clay.....	18	18
			Clay, brown.....	24	42
Local No: CC01500327 BCD1 005 A.K. Reg. No. 30024 Owner: Cordova Public Utilities Driller: Clemenson			Clay, blue.....	3	45
Overburden.....	3	3	Gravel, clay, and water.....	6	51
Gravel.....	4	7	Gravel, sand and clay.....	8	59
Sand and gravel, brown, water bearing.....	18	25	Gravel, large to fine, and sand.....	10	69
Sand, water bearing.....	11	36	Gravel, sand and clay.....	1	70
Clay, gray, gravelly.....	12.5	48.5	Gravel, sand and clay.....	56	126
Sand and gravel, water bearing.....	23.5	72	Sand, some gravel, hardpack.....	5	131
			Gravel, sand, and clay.....	41	182
Local No: CC01500327 BCD2 005 A.K. Reg. No. 30026 Owner: USGS Driller: A.R.C. Industries			Bedrock, black.....	6	188
Sand and gravel.....	30	10			
Clay.....	24	54	Local No: CC01500327 BDBB2 003 A.K. Reg. No. 30022 Owner: Cordova Public Utilities Driller: Clemenson		
Gravel, dry.....	2	56	Sand and gravel.....	16	16
Gravel, water bearing.....	8	64	Clay, gray, gravelly.....	3	19
			Clay, gray, gravelly, water bearing.....	13	32
Local No: CC01500327 BDB1 006 A.K. Reg. No. 30027 Owner: Cordova Public Utilities Driller: Clemenson			Clay, brownish-gray, gravelly.....	12	44
Gravel, fill and rock.....	3	3	Sand and gravel, water bearing.....	7.5	51.5
Clay, brown, gravelly.....	5	8	Gravel, cemented, clayey.....	5	56.5
Clay, gray, gravelly.....	6	14	Sand and gravel, water bearing.....	1.5	58
Sand and gravel, water bearing.....	6	20	Gravel, cemented, clayey.....	3	61
Sand and gravel, gray, silty.....	12	32	Sand and gravel, water bearing.....	6.5	67.5
Sand and gravel, coarse, brownish, water bearing.....	5	37	Sand and gravel, cemented.....	9	76.5
Silt, black, water bearing, with layers of silty gravel.....	13	50			
Gravel, silty, cemented, water bearing.....	17	62	Local No: CC01600107 BABC1 002 A.K. Reg. No. 30030 Owner: Alaska Dept. of Highways Driller: Alaska Dept. of Highways		
Silt and gravel, gray.....	5	67	Fill, sandy gravel.....	10	10
Fill, gravelly, water bearing.....	3	70	Sand and silt, some gravel.....	40	50
Fill, gravelly, blue-gray, water bearing.....	8	78	Silt with fine sand, trace organic material.....	32	82
Fill, gravelly, blue-gray.....	5	83	Sand, silty.....	28	100
Gravel and sand (fill), gray, water bearing.....	37	120	Sand, silty, dark gray, some shell and wood fragments in layers.....	27	197
Gravel and sand, cemented.....	1	121	Gravel, sandy, with silt, some shell fragments.....	24	221
Boulder, solid, black.....	9	130			
Gravel, some gray clay.....	6	136	Local No: CC01600107 BDBC1 001 A.K. Reg. No. 30029 Owner: FAA Driller: Dutton Drilling Co.		
Bedrock, gray-black.....	17	153	No log.....	18	14
			Silt, sandy.....	1	25
Local No: CC01500327 BDB1 001 A.K. Reg. No. 30017 Owner: USGS - Cordova Public Utilities Driller: Channel Drilling Co.			Sand and silt, with organic material.....	2	33
Clay, silty, tan-brown.....	13	13	Gravel and sand, with organic material.....	16	49
Sand, fine, and coarse gravel.....	11	24	Sand, silty, with organic material.....	3	52
Gravel and fine sand.....	2	33	Sand, coarse.....	5	57
Clay, very gravelly, hardpacked.....	2.5	35.5	Silt, olive drab, with organic materials, stratified sand and gravel; water bearing.....	25	82
Clay and gravel, hardpacked.....	1.5	37	Silt, dark gray.....	2	84
Hardpacked.....	3	39	Sand, very fine.....	34	118
Clay, blue, sand and gravel, hardpacked.....	7	68	Sand, very fine, silty, sea shells.....	12	130
Sand, fine to medium, some gravel and clay.....	3.5	69.5	Sand, very fine, silty, sea shells, organic material.....	1	131
			Sand, fine, and sea shells.....	1	132
			Boulder, graywacke.....	7	139
			Graywacke (open hole).....	12	151
			Sand and silty sand, heaving.....	22	173

(Continued in next column)

Table 8.--Ground-water quality data from wells in and near Cordova, Alaska.

Alaska Reg. No.	Date of sample	Time	Depth to bot- tom of water- bearing zone (ft)	Depth to top of water- bearing zone (ft)	Total depth of well (ft)	Depth to bot- tom of sample inter- val (ft)	Depth to top of sample inter- val (ft)	Pump or flow prior to sam- pling (min)	Total depth of hole (ft. below LSD)	Instan- taneous flow rate (gal/m)	Spe- cific con- duct- ance (micro- mhos)
30019	61-09-22	--	89	88	88	89	88	180	89	60	191
	61-10-09	--	--	--	124	124	123	--	124	--	200
30024	73-10-04	0830	--	48	64	72	55	--	72	--	133
30017	61-10-27	--	--	103	140	140	134	300	142	75	263
	61-10-31	0920	--	103	--	140	134	1440	--	130	311
	62-02-19	--	--	103	--	140	134	--	--	75	263
	62-02-21	--	--	103	--	140	134	2880	--	125	312
	62-02-22	--	--	103	--	140	134	7200	--	125	308
	62-02-23	--	--	10	--	140	134	2304	--	125	308
	62-02-24	--	--	103	--	140	134	7200	--	120	314
30021	62-10-02	0800	--	--	154	154	138	60	160	186	245
	62-10-02	0900	--	--	154	154	138	330	160	196	222
	64-07-27	--	--	--	154	154	138	3	160	200	345
	65-01-12	--	--	--	154	154	138	--	160	--	335
	66-07-22	--	--	--	154	154	138	--	160	--	232
	66-08-03	--	--	--	154	154	138	--	160	--	236
	73-10-04	0900	--	--	154	154	138	--	--	--	208
30020	62-07-31	0800	60	51	188	60	51	80	188	198	192
	62-07-31	0900	60	51	188	60	51	420	--	190	195
30022	72-11-08	--	--	--	76	68	45	1440	77	260	129
30040	59-10-07	--	--	--	--	--	--	--	--	--	130
30030	73-09-13	--	--	197	223	--	--	--	223	--	1020
30029	73-09-13	--	--	132	173	160	137	--	173	--	324
30041	55-09-29	--	--	--	19	--	--	--	19	--	99
	66-07-22	1830	--	--	--	--	--	--	--	--	87
30039	56-01-19	--	--	--	12	--	--	--	12	--	80

Table 8.--Ground-water quality data from wells in and near Cordova, Alaska.--Continued

Alaska Reg. No.	Date of Sample	pH {units}	Temper- ature (deg C)	Color (plat- inum- cobalt units)	Hard- ness (Ca, Mg) (mg/L)	Non- car- bonate hard- ness (mg/L)	Dissolved calcium (Ca) (mg/L)	Dissolved magnesium (Mg) (mg/L)	Dissolved sodium (Na) (mg/L)	Dissolved potassium (K) (mg/L)	Bicarbonate {HCO ₃ } (mg/L)
30019	61-09-22	7.8	5.5	0	89	0	25	6.4	5.6	1.1	112
	61-10-09	7.2	--	0	76	0	24	3.9	8.8	7.9	111
30024	73-10-04	7.2	--	1	50	0	15	3.1	5.0	2.5	72
30017	61-10-27	7.9	5.0	0	36	0	12	1.5	41	2.2	109
	61-10-31	7.9	--	0	41	0	--	--	--	--	110
	62-02-19	--	--	--	--	--	--	--	--	--	--
	62-02-21	--	--	--	--	--	--	--	--	--	--
	62-02-22	--	--	--	--	--	--	--	--	--	--
	62-02-23	--	--	--	--	--	--	--	--	--	--
	62-02-24	--	--	--	--	--	--	--	--	--	--
30021	62-10-02	--	5.5	--	--	--	--	--	--	--	--
	62-10-02	--	5.5	--	--	--	--	--	--	--	--
	64-07-27	--	5.0	--	84	--	26	4.6	--	--	--
	65-01-12	7.2	--	5	69	20	22	3.4	46	2.3	60
	66-07-22	7.9	5.5	--	52	--	--	--	--	--	--
	66-08-03	7.9	10.0	10	54	0	16	3.4	28	1.8	106
	73-10-04	8.3	--	1	69	0	21	4.0	17	1.4	114
30020	62-07-31	--	5.5	--	--	--	--	--	--	--	--
	62-07-31	--	5.5	--	--	--	--	--	--	--	--
30022	72-11-08	7.9	5.0	0	47	0	15	2.6	5.0	.7	64
30040	59-10-07	6.9	4.5	0	55	4	13	5.5	5.0	.1	62
30030	73-09-13	8.2	5.0	20	73	0	11	11	210	7.9	205
30029	73-09-13	9.1	5.0	5	34	0	10	2.2	61	2.2	119
30041	55-09-29	6.8	--	--	34	3	12	1.1	4.1	.8	38
	66-07-22	6.6	14.5	--	--	--	--	--	--	--	--
30039	56-01-19	7.2	--	5	32	4	12	.4	1.6	.6	34

Table 8.--Ground-water quality data from wells in and near Cordova, Alaska.--Continued

Alaska Reg. No.	Date of sample	Car- bonate {CO ₃ } (mg/L)	Dis- solved sulfate (SO ₄) (mg/L)	Dis- solved chlo- ride (Cl) (mg/L)	Dis- solved fluo- ride (F) (mg/L)	Dis- solved silica {SiO ₂ } (mg/L)	Dis- solved solids (sum of consti- tuents) (mg/L)	Dis- solved nitrate (N) (mg/L)	Dis- solved nitrite plus nitrate (N) (mg/L)	Dis- solved ortho- phos- phate {PO ₄ } (mg/L)	Iron {Fe} (µg/L)
30019	61-09-22	0	6.0	3.0	.1	9.0	113	.00	--	--	0
	61-10-09	0	10	4.0	.2	4.8	119	.02	--	--	20
30024	73-10-04	0	3.7	2.7	.0	9.4	77	--	.03	.06	--
30017	61-10-27	0	1.0	29	.5	10	152	.07	--	--	20
	61-10-31	0	--	42	--	--	--	--	--	--	20
	62-02-19	--	--	29	--	--	--	--	--	--	--
	62-02-21	--	--	41	--	--	--	--	--	--	--
	62-02-22	--	--	42	--	--	--	--	--	--	--
	62-02-23	--	--	40	--	--	--	--	--	--	--
	62-02-24	--	--	42	--	--	--	--	--	--	--
30021	62-10-02	--	--	24	--	--	--	--	--	--	--
	62-10-02	--	--	22	--	--	--	--	--	--	--
	64-07-27	--	--	50	--	--	--	--	--	--	--
	65-01-12	0	58	40	.2	11	202	.18	--	--	--
	66-07-22	--	--	--	.3	9.5	134	.00	--	--	0
	66-08-03	0	--	23	.2	11	120	--	.01	.09	--
	73-10-04	0	1.8	7.1	--	--	--	--	--	--	--
30020	62-07-31	--	--	13	--	--	--	--	--	--	--
	62-07-31	--	--	13	--	--	--	--	--	--	--
30022	72-11-08	0	2.3	2.0	.0	9.8	69	.07	--	--	--
30040	59-10-07	0.1	3.0	5.0	.0	13	75	.07	--	--	380
30030	73-09-13	10	3.0	260	.4	14	621	--	.06	1.9	--
30029	73-09-13	20	2.8	25	.2	16	199	--	.02	.74	--
30041	55-09-29	0	11	1.0	.0	13	62	.00	--	--	1300
	66-07-22	--	--	--	--	--	--	--	--	--	--
30039	56-01-19	0	7.6	1.5	.0	11	52	.00	--	--	0

Table 8.--Ground-water quality data from wells in and near
Cordova, Alaska.--Continued

Alaska Reg. No.	Date of sample	Dis- solved lead (Pb) ($\mu\text{g/L}$)	Dis- solved man- ganese (Mn) ($\mu\text{g/L}$)	Man- ganese (Mn) ($\mu\text{g/L}$)	Dis- solved zinc (Zn) ($\mu\text{g/L}$)
30019	61-09-22	--	--	40	--
	61-10-09	--	--	40	--
30024	73-10-04	3	90	--	10
30017	61-10-27	--	--	0	--
	61-10-31	--	--	--	--
	62-02-19	--	--	--	--
	62-02-21	--	--	--	--
	62-02-22	--	--	--	--
	62-02-23	--	--	--	--
	62-02-24	--	--	--	--
30021	62-10-02	--	--	--	--
	62-10-02	--	--	--	--
	64-07-27	--	--	--	--
	65-01-12	--	--	--	--
	66-07-22	--	--	--	--
	66-08-03	--	--	--	--
	73-10-04	4	40	--	10
30020	62-07-31	--	--	--	--
	62-07-31	--	--	--	--
30022	72-11-08	80	140	--	20
30040	59-10-07	--	--	0	--
30030	73-09-13	--	10	--	--
30029	73-09-13	--	20	--	--
30041	55-09-29	--	--	40	--
	66-07-22	--	--	--	--
30039	56-01-19	--	--	--	--