UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

REPORT OF THE U.S. GEOLOGICAL SURVEY'S ANALYTICAL EVALUATION PROGRAM --
STANDARD REFERENCE WATER SAMPLES   T-107   (TRACE CONSTITUENTS),   M-110
(MAJOR CONSTITUENTS),   N-22   (NUTRIENTS),   N-23   (NUTRIENTS),   P-13
(PRECIPITATION-SNOWMELT), AND   Hg-5   (MERCURY).

Denver, Colorado

August 1989

Comments, suggestions, or questions regarding these samples or this program may be made by writing or calling:

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ABSTRACT

The U.S. Geological Survey (USGS) Water Resources Division (WRD) Branch of Quality Assurance (BQA) Standard Reference Sample (SRS) Project conducts a semi-annual interlaboratory testing program. A series of natural matrix water and sediment samples are prepared and distributed to all laboratories that provide water quality analyses and data for WRD use. Since 1962, when the program began, the objectives have been primarily twofold:

(1) to provide a library of carefully prepared, homogeneous, stable reference materials, and

(2) to evaluate the performance of U.S. Geological Survey and other participating laboratories.

This report includes tables giving overall laboratory performance summaries and presents analytical data for each standard reference sample. Presented data were submitted by the participating laboratories that analyzed parts or all of the constituent suites for 5 reference sample types which were mailed the week of May 29, 1989. Water samples available for the evaluation program included one each for major, trace, precipitate and mercury constituents. Two nutrient samples were also distributed. Relative performance rating achieved by the laboratories for each constituent, statistical evaluations, graphical presentations, and data summaries are presented for each of the samples. The most probable value (MPV) is established for each sample constituent by the use of non-parametric statistics.

INTRODUCTION

The USGS WRD BQA conducts the interlaboratory testing program semi-annually. Within BQA we strive to have this testing program provide a variety of reference materials to accomplish meaningful quality assurance testing of laboratories and to provide an adequate supply of samples to contribute to each participating laboratory's quality control program. Only natural matrix reference materials are utilized in this interlaboratory evaluation program. A series of water samples are prepared and distributed each spring and fall. Occasionally sediment reference samples are provided.

The program began in 1962 with a single major-constituent sample prepared from distilled water and reagent grade chemicals. Twenty-three USGS laboratories participated in the 1962 effort to determine 6 constituents in the major-constituent SRS. Since that time, objectives of the program have been to provide a means for:

(1) evaluating and improving the performance of Survey and other participating laboratories;

(2) identifying analytical problem areas;

(3) identifying water analyses QA needs and developing new reference materials to meet those needs;

(4) ascertaining the accuracy and precision of analytical methods; and

(5) providing adequate supplies of a variety of reference samples to enable continuing quality assurance testing laboratories.

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Today more than 150 Survey and non-Survey Laboratories participate in the program, which currently furnishes eight SRS types:

(1) Major constituents,
(2) Trace constituents,
(3) Nutrients,
(4) Water and Suspended-sediment mixtures for trace metals,
(5) Precipitation snowmelt,
(6) Acid mine drainage,
(7) Sediment (bed material) for "total recoverable" major, minor, and trace elements, and
(8) Mercury.

When sufficient data are available, most probable values are statistically determined for each constituent in each reference sample.

Limited quantities of most of these defined reference samples are available upon request. Participating laboratories may request samples for further testing and continuing quality assurance, quality control efforts, by contacting:

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PURPOSE AND PLAN

Participation in this continuing QA program is mandatory for all laboratories providing water-analyses data for USGS use. Other Federal, state, municipal, and university laboratories may also participate. The SRWS are prepared and distributed to participating laboratories semi-annually; other SRS may be included. Periodic analyses of these reference materials provides the means to alert participating laboratories to possible deficiencies in their analytical operations, and also provides reference materials for continuing quality control testing. These analyses provide independent and objective evaluations of water quality data provided for Survey and publications. With the exception of Survey laboratories, participating laboratories are identified only by a confidential code number.

This report summarizes the analytical results submitted by 114 of the 138 laboratories that requested and were shipped samples for this round-robin testing. Not all samples are requested nor necessarily analyzed by all laboratories; nor do all laboratories enrolled in the program participate in each round of analyses. Samples which are included in this report were mailed the week of May 29, 1989:

T-107   (Trace constituents)
M-110   (Major constituents)
N-22   (Nutrients)
N-23   (Nutrients)
P-13   (Precipitation-snowmelt)
Hg-5   (Mercury)

It was requested that analytical data be submitted by July 3 for evaluation and preparation of the administrative report. Prompt return of the data greatly facilitates timely preparation and distribution of the information provided in the report. Each participating laboratory was asked to perform at least those determinations routinely made on the respective sample type and to indicate the analytical method used for each constituent. When analytical method information was provided, it has been included in the respective data table. Within BQA we attempt to present the analytical data with emphasizing features which allows participating laboratories to evaluate data distribution, scatter, outliers, central tendency, bias, skewness, and method relationships. (Suggestions and criticism to improve this report are welcome.)

PREPARATION OF SAMPLES

SRS T-107, N-22, Hg-5, and P-13 were prepared in Denver, Colorado. Samples M-110 and N-23 were prepared in Ocala, Florida.

T-107 was prepared from the Denver Federal Center tap water in a 1250-liter polyethylene drum. The water was acidified to pH 1.5-2 with nitric acid and then "spiked" with constituents needed to attain desirable concentration levels. The solution was mixed for several hours and sodium hypochlorite was added to achieve a free chlorine concentration of several milligrams per liter. The solution was stirred overnight and tested to have 5 milligrams per liter of free chlorine. Each sample was then bottled after being pumped through a UV sterilizer and a filter train of 5-um, 0.45-um, and 0.2-um filters. Bottles used were acid washed, deionized water rinsed, autoclave-sterilized 1-liter TFE fluorocarbon and 1-liter polypropylene bottles. Samples are warehouse stored until used.

Nutrient sample N-22 was prepared from the Denver Federal Center tap-water also. A 200-liter polyethylene drum was used to prepare the solution. Hydrochloric acid was added to attain pH 6 and 50-milligrams $HgCl_2$ per liter + 450-milligrams NaCl per liter were added to preserve the samples. Nutrient constituent levels were supplemented with reagent grade chemicals to achieve desirable levels. The solution was stirred for 36-hours, each sample was then bottled, pumping the solution through a UV sterilizer and a filter train (5-um, 0.45-um, 0.2 um). Bottles used were new, deionized water rinsed, unsterilized 500-mL polyethylene and 250-mL TFE fluorocarbon bottles. Samples are refrigerated at 4 °C until used. Nutrient sample N-23 was prepared in Ocala, FL using similar procedures.

Sample Hg-5 was prepared in a 50-liter polyethylene carboy using Golden, Colorado, tap water. A solution containing mercuric ion was added to obtain a mercury concentration approximating 0.2-ug/liter. Nitric acid (5% v/v) and dichromate ion (0.05% w/v) were added to preserve the sample. The solution was stirred for 36-hours prior to bottling the samples. Bottles used were new, acid leached 250-mL glass bottles with TFE fluorocarbon lined caps. Samples are warehouse stored until used.

Sample P-13 was prepared in a 1250-liter polyethylene drum using snowmelt collected near Echo Lake in Colorado. The snowmelt was pumped through 5-um and 0.45-um filters during transfer into the polyethylene drum. The snowmelt was stirred for 40-hours, each sample was then bottled, pumping the water through a UV sterilizer and a filter train of 5-um, 0.45-um, and 0.2-um filters. Bottles used were acid washed, deionized water rinsed, autoclave-sterilized 1-liter TFE fluorocarbon and 1-liter polypropylene bottles. Samples are warehouse stored until used.

Major constituent sample M-110 was prepared from water collected from tap water in Ocala, FL. The sample water was filtered through a filter train (10-um, 5-um, 0.45-um) into a 500 gallon polyethylene drum and then "spiked" with constituents needed to attain desirable levels of concentration. Due to persistent problems of bacterial and fungal growths in some previous samples, free chlorine, added to 6 milligrams per liter, was used in this sample. The sample was stirred over a week-end, each sample was then bottled, pumping through a UV sterilizer and a train of 5-um, 0.45-um, and 0.2-um filters. Bottles used were new deionized water rinsed, autoclave-sterilized 500-mL polypropylene bottles. Samples are warehouse stored until used.

The mercury and nutrient samples were shipped in iced coolers to minimize the potential breakage of the glass bottled mercury SRS and to help maintain the integrity of the nutrient sample. Major, trace, and precipitate samples were shipped in cardboard cartons at ambient temperature.

DETERMINATIONS

Samples in this listing include: T107 (trace constituents), M110 (major constituents), N22 (nutrients), N23 (nutrients), P13 (precipitation snowmelt, and Hg5 (mercury).

Constituent:			T107	M110	N22	N23	P13	Hg5
Alk (CaCO$_3$)	mg/L	Alkalinity as CaCO$_3$		x			x	
Ag	ug/L	Silver	x					
Al	ug/L	Aluminum	x					
As	ug/L	Arsenic	x					
B	ug/L	Boron	x	x				
Ba	ug/L	Barium	x					
Be	ug/L	Beryllium	x					
Ca	mg/L	Calcium	x	x			x	
Cd	ug/L	Cadmium	x					
Cl	mg/L	Chloride		x			x	
Co	ug/L	Cobalt	x					
Cr, total	ug/L	total Chromium	x					
Cu	ug/L	Copper	x					
DSRD 180	mg/L	Dissolved solids @ 180°C		x				
F	mg/L	Fluoride		x			x	
Fe	ug/L	Iron	x					
Hg	ug/L	Mercury						x
K	mg/L	Potassium	x	x			x	
Li	ug/L	Lithium	x					
Mg	mg/L	Magnesium	x	x			x	
Mn	ug/L	Manganese	x					
Mo	ug/L	Molybdenum	x					
Na	mg/L	Sodium	x	x			x	
NH$_3$-N	mg/L	Ammonia as Nitrogen			x	x		
NH$_3$+Org N	mg/L	Ammonia + Organic Nitrogen			x	x		
Ni	ug/L	Nickel	x					
NO$_2$-N	mg/L	Nitrite as Nitrogen			x	x		
NO$_3$-N	mg/L	Nitrate as Nitrogen			x	x		
Pb	ug/L	Lead	x					
pH	units			x			x	
PO$_4$-P	mg/L	orthophosphate as Phosphate			x	x	x	
P, total	mg/L	total Phosphorus		x	x	x		
Sb	ug/L	Antimony	x					
Se	ug/L	Selenium	x					
SiO$_2$	mg/L	Silica	x	x				
SO$_4$	mg/L	Sulfate		x			x	
Sp Cond	uS/cm	Specific Conductance		x			x	
Sr	ug/L	Strontium	x	x				
V	ug/L	Vanadium	x	x				
Zn	ug/L	Zinc	x					

STATISTICAL EVALUATION

Data in this report have been evaluated using non-parametric statistics as described by Hoaglin, and others (1983). This approach is believed to present a better treatment of analytical data which commonly includes non-normal distributions, considerable numbers of less-than values, and outliers at the upper, lower or both ends of the data set.

Analytical data for each analyte are presented in both tabular and graphical forms; grouped for each SRS type. Tabulated data for each constituent include the MPV, F-pseudosigma, laboratory code number, analytical method, reported value, number of reported values, data range, and the Z value (number of sigma deviations the reported value is from the MPV.) Reported values are rounded, if necessary to conform to U.S. Geological Survey policy on reporting analytical data, as given by Bishop, et al. [1987]).

The median value is normally considered the MPV. Reported values of "less than" are used to establish the median but are not considered range limits. The range of the data between the upper hinge (Hu) and lower hinge (Hl), the hinge spread (H-spr), is used to calculate the F-pseudosigma, the 95% confidence level MPV, the laboratory performance rating, and the upper and lower warning and control levels. The median (midpoint) divides the ordered data into halves. The hinges are the mid values of each half of these data. F-pseudosigma is calculated by dividing the H-spread value of the data by the normal distribution spread value, i.e., [H-spr/1.349 = F-pseudosigma]. Laboratories reporting less than values are not performance rated, unless their reported value is less-than the confidence limit of the MPV.

It is attempted to maintain the value boundaries of the graphical plots at upper and lower control limits of +/- 3 sigma deviations. The frequency distribution plots show the reported values grouped by analytical method with an overlay modified "ghost box plot" specifying MPV, Hu, Hl, and upper and lower warning levels at +/- 2 sigma deviations. Less than detection limit values are plotted at 1/2 their reported less-than value.

LABORATORY PERFORMANCE AND REPORTED VALUES

To facilitate interlaboratory performance comparisons, laboratory ratings based on the analyses reported for each SRS are included in Performance Tables 2 through 6 in this report. Averages of the constituent ratings and the number of constituent values reported for each SRS are also given for each laboratory. Laboratory performance for each analyte and the overall averages are rated on an arbitrary scale of 0 - 4, based on the number of F-pseudosigma values from the MPV as indicated below:

                4 (Excellent)----------0.00 to 0.50 F-pseudosigma values
                3 (Good)---------------0.51 to 1.00 F-pseudosigma values
                2 (Satisfactory)-------1.01 to 1.50 F-pseudosigma values
                1 (Questionable)-------1.51 to 2.00 F-pseudosigma values
                0 (Poor)--------------   > 2.00 F-pseudosigma values

Laboratories were requested to identify the method used for each determination. The references for these methods are included with the analytical data and are identified in the following publications:

1. American Public Health Association and others, Standard methods for the examination of water and wastewater, Washington, D.C., American Public Health Association.

2. American Society for Testing and Materials, Annual book of ASTM standards, Volume 11.01 and 11.02: Philadelphia, PA.

3. Kopp, J. F., and McKee, G. F., 1979, Methods for chemical analysis of water and wastes: Cincinnati, Ohio, U.S. Environmental Protection Agency, EPA 600/4-79-020, rev. 1983, 460 p.

4. Fishman, M. J., and Friedman, L. C., eds., 1985, Methods for determination of inorganic substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A1, Open-File Report 85-495, 709 p.

5. Miscellaneous manufacturer's instrument manuals or other references.

DISCUSSION

It is suggested that users review the tabulated data and graphical plots for each constituent. These tables and plots give indications of the method and instrumentation precision and help provide additional evidence as to the desirability of upgrading methods and/or equipment. The graphs for some of the constituents indicate the MPV is bias toward a given method(s). In most cases, the bias is not statistically significant. It is not the intention of this evaluation program to recommend a specific method or unfairly "rate" a laboratory because of the method used.

REFERENCES

Bishop, E.E., Eckel, E.B., and others, 1978, Suggestions to Authors of the reports of the U.S. Geological Survey: Washington, D.C., U.S. Government Printing Office, 6th edition, p.198.

Hoaglin, D.C., Mosteller, F. and Tukey, J.W., eds., 1983, Understanding Robust and Exploratory Data Analysis: John Wiley & Sons, Inc. New York, NY, 447 p.

Region	State	City	PARTICIPATING LABORATORY	Lab #
SE	AL	Tuscaloosa	Geological Survey of Alabama	
SE	AR	Arkdelphia	Ouachita Baptist University	
SE	AR	Fayetteville	University of Arkansas. Dep't of Civil Engineering	
SE	AR	Little Rock	Arkansas Dep't of Pollution Control & Ecology	
W	AZ	Yuma	Burns & Roe Services Corporation	
W	CA	Castaic	Dep't of Water Resources Chemical Laboratory	
W	CA	Davis	University of California – Davis	
W	CA	Lakeside	Helix Water District	
W	CA	LaVerne	The Metropolitan Water District of Southern California	
W	CA	Los Gatos	Santa Clara Valley Water District	
W	CA	Martinez	Central Contra Costa Sanitary District	
W	CA	Oakland	East Bay Muncipal Utility District	
W	CA	Riverside	University of California – Riverside	
W	CA	Sacramento	USGS (Makita)	15
W	CA	Sacramento	BOR/USGS (Loya)	91
W	CA	Sacramento	ANLAB	
W	CA	Santa Barbara	University of California, Dep't of Biology	
W	CA	Santa Fe Springs	West Coast Analytical Service, Inc.	
W	CA	West Sacramento	California Dep't of Water Resources	
C	CO	Arvada	USGS NWQL (Watterson)	1
C	CO	Aurora	Core Laboratories Inc	
C	CO	Denver	USGS (Kimball)	2
C	CO	Denver	Denver Water Dep't, Quality Control Laboratory	
C	CO	Denver	Bureau of Reclamation	
C	CO	Fort Collins	Environmental Services/Water Utilities	
C	CO	Golden	Rockwell International, Rocky Flats Plant	
C	CO	Parachute	Upgrade Lab, UNOCAL	
SE	FL	Albany	Albany Water, Gas & Light Commission	
SE	FL	Clearwater	WPC Division/City of Clearwater	
SE	FL	Ocala	USGS (Kirkland)	58
SE	FL	Tallahassee	City of Tallahassee, Water Quality Laboratory	
SE	FL	Tampa	Hillsborough County Environmental Protection Commission	
SE	FL	W Palm Beach	South Florida Water Management District	
SE	GA	Athens	University of Georgia, Dep't of Horticulture	
SE	GA	Atlanta	Georgia Dep't of Natural Resources	
SE	GA	Doraville	USGS (Drake)	40
SE	GA	Tifton	US Dep't of Agriculture, SE Watershed Laboratory	
C	IA	Des Moines	University Hygienic Laboratory, Des Moines Branch	
W	ID	Boise	US Bureau of Reclamation	
W	ID	Boise	Idaho Bureau of Laboratories	
W	ID	Cour d'Alene	Cour d'Alene Branch Laboratory	
NE	IL	Champaign	Illinois Environmental Protection Agency, Laboratory Services	
NE	IL	Chicago	Illinois Environmental Protection Agency	
NE	IN	Indianapolis	Indianpolis Department of Public Works	
C	KS	Lawrence	Kansas Geological Survey	
C	KS	Topeka	KS Dep't of Health & Environment, Div of Laboratories & Research	
SE	KY	Berea	US Forest Service	
SE	KY	Frankfort	Kentucky Natural Resources & Environmental Protection	

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Region	State	City	PARTICIPATING LABORATORY	Lab #
SE	LA	Baton Rouge	USGS (Garrison)	52
NE	MA	Wellesley Hills	Massachusetts Department of Public Works	
NE	MD	Baltimore	Martel Laboratory Services, Inc.	
NE	ME	Augusta	Maine Department of Environmental Protection	
NE	ME	Orono	Department of Plant & Soil Science, University of Maine	
NE	MI	Houghton	Michigan Technical University, School of Forestry & Wood Products	
NE	MN	Minneapolis	Braun Engineering & Testing Inc.	
NE	MN	St. Paul	Metropolitan Waste Control Commission	
NE	MN	Vadnais Heights	St Paul Water Utility	
C	MO	Jefferson City	Missouri Department of Health	
C	MT	Butte	Montana Bureau of Mines and Geology	
C	MT	Helena	Montana. Dep't of Health and Environmental Sciences, Chemistry Lab	
SE	NC	Browns Summit	Lake Townsend Water Filtration Plant	
SE	NC	Charlotte	Mecklenburg County Environmental Health Dep't	
SE	NC	Durham	City of Durham	
SE	NC	Greensboro	City of Greensboro, Osborne Plant	
C	ND	Bismarck	North Dakota State Water Commission	
NE	NJ	Trenton	New Jersey Department of Health	
C	NM	Albuquerque	City of Albuquerque Water Resources Laboratory	
C	NM	Gallup	Bureau of Indian Affairs–Natural Resources & Engr Laboratory	
W	NV	Boulder City	BOR, Lower Colorado Regional Laboratory	
W	NV	Las Vegas	Clark County Sanitation District	
W	NV	Reno	Nevada State Health Laboratory	
W	NV	Reno	Water Analysis Laboratory, Desert Research Institute	
W	NV	Reno	Reno–Sparks Wastewater Treatment Facility	
W	NV	Sutcliffe	Pyramid Lake Fisheries	
NE	NY	Alfred	Alfred Analytical Laboratory, Suny College	
NE	NY	Brockport	State University of New York, Brockport; Biology Department	
NE	NY	Buffalo	Erie County Public Health Laboratory	
NE	NY	Hempstead	Nassau County Department of Health	
NE	NY	Milbrook	Institute of Ecosystem Studies	
NE	NY	New York City	New York City Health Department	
NE	NY	North Babylon	EcoTest Laboratories, Inc	
NE	NY	Port Washington	Nytest Environmental, Inc	
NE	NY	Rochester	Monroe County Environmental Health Laboratory	
NE	NY	Syracuse	Onondaga County Department of Drainage & Sanitation	
NE	NY	Syracuse	Syracuse University, Dep't of Geology, Heroy Lab	
NE	OH	Columbus	Columbus Surveillance Laboratory	
NE	OH	Medina	Medina County Sanitary Engineering Dep't	
NE	OH	Tiffin	Heidelberg College, Water Quality Laboratroy	
NE	OH	Xenia	Green County Sanitation Engineering Dep't	
C	OK	Norman	Oklahoma Geological Survey	
C	OK	Oklahoma City	Oklahoma State Department of Health	
W	OR	Corvallis	US Dep't of Agriculture, Forestry Sciences Laboratory	
W	OR	Sandy	Bureau of Water Works, Water Quality Laboratory	
NE	PA	Harrisburg	Pennsylvania DER, Bureau of Laboratories	
SE	PR	San Juan	Dep't of Natural Resources, Laboratory Division	
SE	SC	Columbia	USGS	117

Region	State	City	PARTICIPATING LABORATORY	Lab #
C	SD	Brookings	SDSU, Water Quality Laboratory	
C	SD	Pierre	South Dakota Department of Health	
C	SD	Rapid City	Travis Laboratories	
C	SD	Vermillion	South Dakota Geological Survey	
SE	TN	Chattanooga	TVA, Laboratory Branch	
C	TX	Corpus Christi	Core Laboratories Inc	
NE	VA	Manassas	Occoquan Watershed Monitoring Laboratory	
NE	VA	Reston	USGS (Kennedy)	
NE	VA	Richmond	Commonwealth of VA DGS, Division of Consolidated Laboratories	
NE	WI	Madison	State Laboratory of Hygiene, University of Wisconsin	
NE	WI	Milwaukee	Milwaukee Metropolitan Sewerage District, Central Laboratory	
NE	WV	Morgantown	West Virginia Geologic & Economic Survey	
C	WY	Casper	Core Laboratories	
C	WY	Laramie	Wyoming Department of Agriculture, Division of Laboratories	

Table 2: Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:				F-pseudosigma				F-pseudosigma
	4	(Excellent)	0.00 to 0.50		1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00		0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50		NR	(Not Rated)	

			Ag (Silver)		Al (Aluminum)		As (Arsenic)		B (Boron)		Ba (Barium)		Be (Beryllium)	
		MPV =	12.3 +/- 0.6		220 +/- 13		10.8 +/- 0.5		130 +/- 7		192 +/- 3		11.0 +/- 0.4	
	F-pseudosigma =		2.2		45		1.9		21		12		1.1	
T-107														
	Avg.	Values/	Reported		Reported		Reported		Reported		Reported		Reported	
Lab #	Rating	26	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
1	3.65	26	12.7	4	221	4	12.1	3	136	4	200	3	11.4	4
2	3.21	19							130	4	190	4	10.0	3
4	2.80	5												
5	2.82	17	11.0	3	230	4			97	1	210	1	11.0	4
6	2.71	14			240	4			120	4				
10	3.46	13	11.3	4	188	3	10.8	4			195	4	10.0	3
11	2.75	20	13.0	4	22	0	11.0	4	350	0	200	3	12.0	3
15	4.00	1												
16	2.30	20	12.0	4	298	1	10.0	4			167	0	9.0	1
17	2.08	24	13.1	4	190	3	11.0	4	146	3	192	4	12.4	2
18	2.48	25	11.1	3	202	4	10.0	4	109	2	198	3	8.0	0
19	2.42	19	10.0	2	212	4	14.0	1	100	2	190	4		
20	1.89	18	15.3	2	250	3	10.8	4	100	2	270	0		
21	2.87	23	11.0	3	220	4	13.0	2	186	0	190	4	10.0	3
24	2.33	24	12.0	4	210	4	8.2	2	135	4	195	4		
25	2.63	16			203	4	12.5	3	120	4			22.0	0
29	2.81	16	13.0	4	199	4	8.3	2	370	0	162	0		
30	1.32	25	13.2	4	200	4	3.4	0	200	0	176	2	10.0	3
31	3.60	20	12.1	4	227	4	10.5	4	120	4	184	3	10.5	4
32	2.45	20	11.0	3	172	2	9.0	3			82	0	10.0	3
33	3.61	23	10.7	3	196	3	11.3	4	122	4	192	4	11.5	4
34	3.50	18	12.0	4	246	3	12.0	3	< 300	NR	200	3	10.0	3
35	3.47	15	12.0	4	220	4	10.3	4			197	4		
38	3.00	21	27.0	0	160	2	9.8	4	123	4	195	4	12.0	3
39	2.68	19	10.0	2	210	4	9.0	3			200	3	10.4	3
43	2.91	23	7.1	0	250	3	< 11	NR	150	3	190	4	11.0	4
44	0.00	7					154.0	0						
45	2.20	20	14.0	3	270	2	5.0	0	120	4	210	1	11.0	4
50	1.92	24	190.0	0	232	4	56.0	0	136	4	210	1		
51	3.54	13												
52.1		0												
52.2	0.50	2												
55	1.58	19			690	0	21.0	0	< 10	0	190	4	11.0	4
56	2.47	15	11.6	4	318	0					242	0		
57	2.59	17	15.1	2			10.0	4			190	4		
58	2.96	26	4.7	0	190	3	9.5	3	135	4	200	3	13.0	1
60	2.84	19	13.0	4	230	4	9.0	3			190	4		
61	2.67	6												
62	2.20	15	10.9	3			9.8	3			96	0		
63	4.00	1												

Table 2: (cont.) Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:	4	(Excellent)	F-pseudosigma 0.00 to 0.50	1	(Questionable)	F-pseudosigma 1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	

			Ag (Silver) MPV = 12.3 +/- 0.6 F-pseudosigma = 2.2		Al (Aluminum) 220 +/- 13 45		As (Arsenic) 10.8 +/- 0.5 1.9		B (Boron) 130 +/- 7 21		Ba (Barium) 192 +/- 3 12		Be (Beryllium) 11.0 +/- 0.4 1.1	
	T-107 Avg.	Values/	Reported		Reported		Reported		Reported		Reported		Reported	
Lab #	Rating	26	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
64	2.32	19	11.6	4	296	1	8.3	2			350	0		
65	2.40	10												
66	2.68	22	11.0	3	16	0	10.4	4	150	3	21	0	12.0	3
67	3.13	23	12.0	4	189	3	9.6	3	85	0	204	2	11.5	3
68	3.57	7												
69	2.20	10			140	1					190	4		
70	1.08	12	18.5	0	305	1			150	3	10	0		
72	2.33	18	14.0	3			12.0	3			170	1		
73	2.47	17	13.0	4	495	0	11.1	4						
74	2.78	9					8.0	2					11.0	4
78	3.00	2												
79	2.46	24	3.8	0	240	4	12.6	3	128	4	228	0	11.2	4
80	2.19	16	15.8	1	19	0	10.3	4			105	0		
81	2.18	17	< 10	NR	200	4	8.0	2	90	1	220	0	< 20	NR
83	2.53	17			478	0	14.0	1			190	4		
84	3.50	14			170	2	11.0	4	126	4	190	4		
85	1.33	6							187	0				
90	3.16	25	11.4	4	355	0	11.0	4			190	4	11.0	4
91	3.00	10									220	0		
93	2.28	25	10.0	2	30	0	10.7	4	260	0	157	0	10.5	4
94	3.46	13	12.0	4			13.0	2						
96	3.18	11	12.7	4			12.1	3			195	4		
98	3.54	26	12.5	4	235	4	13.2	2	137	4	194	4	11.4	4
100	2.29	14					109.0	0						
101	2.43	21	< 30	NR	224	4	14.0	1	148	3	208	2	12.0	3
102	2.79	14	18.0	0	94	0	10.0	4						
103	1.20	15	14.0	3			97.0	0						
104	0.00	2												
107	2.53	19	23.8	0	262	3	8.6	2						
108	3.60	10			261	3					200	3		
109	1.73	15	17.0	0	540	0	42.0	0						
111	1.00	13	17.5	0	219	4	254.0	0			111	0		
113	0.71	7	295.0	0										
118	2.00	18	13.8	3			10.0	4			147	0	19.0	0
119	2.33	15			150	1			115	3	205	2		
120	3.35	26	12.8	4	186	3	9.6	3	130	4	187	4	11.2	4
121	1.67	9	5.7	0										
122	3.41	22	12.8	4	183	3	10.7	4			185	3	10.0	3
124	3.13	8							140	4				
125	2.50	12												
127	1.88	26	5.0	0	270	2	9.6	3	115	3	206	2	11.5	4
130	2.63	8												
134	3.00	4												
135	3.00	1					11.9	3						

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Table 2: (cont.) Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	Ca (Calcium)		Cd (Cadmium)		Co (Cobalt)		Cr (total Chromium)		Cu (Copper)		Fe (Iron)	
MPV =	11.7 +/- 0.2		14.3 +/- 0.5		11.0 +/- 0.5		13.0 +/- 0.5		30.0 +/- 0.6		52 +/- 2	
F-pseudosigma =	0.7		2.1		1.4		2.1		2.3		7	
	Reported		Reported		Reported		Reported		Reported		Reported	
Lab #	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
1	11.7	4	14.0	4	11.7	4	12.4	4	31.2	3	51	4
2	12.0	4	20.0	0	10.0	3	10.0	2	30.0	4	50	4
4			15.0	4			11.0	3	27.0	2		
5	12.0	4	15.0	4			13.0	4	26.0	1	50	4
6	12.1	3			10.0	3			30.0	4	70	0
10			13.5	4	< 30	NR	11.0	3	30.0	4	49	4
11	12.0	4	16.0	3	12.0	3	13.0	4	28.0	3	50	4
15												
16	13.0	1	11.0	1	10.0	3	14.0	4	27.0	2	322	0
17	11.4	4	15.5	3	8.2	1	5.6	0	37.3	0	69	0
18	12.1	3	14.3	4	11.0	4	19.0	0	27.5	2	58	3
19	11.0	3	13.6	4			12.0	4	40.0	0	46	3
20			7.8	0			18.1	0	24.0	0	50	4
21	11.0	3	14.0	4	9.0	2	10.0	2	28.0	3	61	2
24	11.0	3	13.0	3	15.0	0	68.0	0	30.0	4	48	3
25	12.1	3	22.5	0			9.5	1			55	4
29	12.0	4	11.3	2			13.0	4	30.0	4	55	4
30	10.0	0	10.8	1	9.2	2	9.2	1	26.0	1	30	0
31			12.9	3	12.2	3	13.0	4	29.5	4	< 110	NR
32	9.8	0	12.0	2	11.0	4	13.0	4	27.0	2	80	0
33	11.3	3	13.0	3	11.8	3	13.5	4	29.1	4	55	4
34	10.8	2	13.4	4	< 100	NR	14.2	3	31.0	4	56	3
35	11.6	4	10.8	1			11.9	3	29.0	4	62	2
38	11.8	4	9.4	0	< 50	NR	< 20	NR	26.0	1	48	3
39	9.9	0	15.0	4			12.9	4	25.0	0	30	0
43	11.0	3	15.0	4	9.3	2	13.0	4	32.0	3	53	4
44			141.0	0			1260.0	0	333.0	0		
45	12.0	4	19.0	0	< 50	NR	6.0	0	30.0	4	60	2
50	14.0	0	15.0	4	10.0	3	13.0	4	10.0	0	42	2
51	11.7	4	14.2	4			13.1	4	30.2	4	59	3
52.1												
52.2											40	1
55	10.9	2	20.0	0	< 10	NR	< 10	NR	30.0	4	50	4
56	9.2	0	13.7	4			14.1	3	31.4	3	52	4
57	12.3	3	12.1	3			15.2	2	23.0	0	49	4
58	11.0	3	7.7	0	10.0	3	13.0	4	29.3	4	60	2
60	11.5	4	< 2	0			20.0	0	30.0	4	80	0
61			15.0	4			20.0	0	30.0	4		
62	13.7	0	8.7	0			12.5	4	29.0	4	83	0
63												

Table 2: (cont.) Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma				F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	Ca (Calcium) MPV = 11.7 +/- 0.2 F-pseudosigma = 0.7		Cd (Cadmium) 14.3 +/- 0.5 2.1		Co (Cobalt) 11.0 +/- 0.5 1.4		Cr (total Chromium) 13.0 +/- 0.5 2.1		Cu (Copper) 30.0 +/- 0.6 2.3		Fe (Iron) 52 +/- 2 7	
Lab #	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
64	11.2	3	14.9	4			18.3	0	25.6	1	57	3
65	10.7	2	14.0	4			7.0	0	27.0	2	62	2
66	11.9	4	13.0	3			19.0	0	30.0	4	49	4
67	11.4	4	15.0	4			14.0	4	27.0	2	54	4
68			16.0	3					30.0	4	48	3
69	11.6	4							27.0	2	70	0
70							9.8	1	26.0	1	76	0
72	10.0	0	16.0	3			13.0	4	31.0	4	67	0
73	12.0	4	11.8	2			11.5	3	18.1	0	42	2
74			16.1	3			11.8	3	28.0	3		
78												
79	12.9	1	15.1	4	14.2	0	14.7	3	28.9	4	54	4
80	8.9	0	15.0	4			17.6	0	< 50	NR	60	2
81	11.7	4	20.0	0	< 20	NR	< 20	NR	30.0	4	50	4
83	9.0	0	15.0	4	10.0	3	10.0	2	21.0	0	50	4
84	12.0	4	18.0	1					29.0	4	51	4
85	13.0	1										
90	11.7	4	7.3	0	9.8	3	12.0	4	30.0	4	45	3
91			15.0	4			13.0	4	34.0	1		
93	12.0	4	15.0	4	21.0	0	16.0	2	28.0	3	58	3
94			14.0	4	11.0	4	11.0	3	30.0	4	50	4
96			12.8	3			12.5	4	32.0	3	52	4
98	11.9	4	14.2	4	11.7	4	12.7	4	31.3	3	52	4
100	11.7	4	16.2	3			20.7	0	30.0	4	55	4
101	13.0	1	15.0	4	12.0	3	14.0	4	31.0	4	59	3
102			12.0	2	11.0	4	12.0	4	27.0	2	40	1
103	17.1	0	16.0	3			22.0	0	34.0	1	80	0
104							0.0	0	0.0	0		
107	11.2	3	14.6	4	12.4	3	12.1	4	28.8	3	55	4
108	11.5	4	14.0	4			11.0	3				
109	11.6	4	15.6	3			100.0	0	30.0	4	50	4
111			2.0	0			69.0	0	60.0	0		
113			< 10	0			< 30	NR	< 20	0	< 10	0
118	10.8	2	11.3	2			11.6	3	34.9	0	48	3
119	12.1	3							30.0	4	40	1
120	11.7	4	14.6	4	12.6	2	11.4	3	30.2	4	54	4
121			13.0	3			7.5	0	20.0	0		
122	11.3	3	14.8	4	< 25	NR	13.7	4	26.0	1	50	4
124	12.0	4									45	3
125	11.0	3	12.0	2			19.0	0	35.0	0	50	4
127	9.3	0	11.0	1	11.0	4	12.0	4	35.0	0	40	1
130			20.0	0					30.0	4	50	4
134	12.4	3										
135												

Table 2: (cont.) Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	K (Potassium)		Li (Lithium)		Mg (Magnesium)		Mn (Manganese)		Mo (Molybdenum)		Na (Sodium)	
MPV =	0.84 +/- 0.04		193 +/- 7		2.10 +/- 0.03		45 +/- 2		15 +/- 0.7		20.8 +/- 0.3	
F-pseudosigma =	0.15		14		0.13		6		1.9			
	Reported		Reported		Reported		Reported		Reported		Reported	
Lab #	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
1	0.84	4	193	4	2.10	4	47	4	12.5	2	21.6	3
2			200	4	2.10	4	50	3			21.0	4
4												
5	0.89	4			2.00	3	50	3			24.0	0
6	1.10	1			2.20	3	50	3			19.7	3
10							49	3				
11	1.00	2			2.20	3	46	4	13.0	2	22.0	2
15												
16	0.80	4			2.10	4	40	3			22.3	2
17	0.12	0			2.07	4	48	4	18.1	1	21.0	4
18	0.77	4			1.50	0	49	3	9.7	0	21.6	3
19	1.10	1			1.70	0	40	3			20.0	3
20			18	0			40	3	30.6	0		
21	1.08	2			2.00	3	43	4	13.0	2	20.0	3
24	0.55	1	215	1	2.00	3	47	4	18.0	1	22.0	2
25	0.89	4			1.65	0	45	4	< 50	NR	21.0	4
29	0.79	4			2.10	4	51	2			20.4	4
30	1.00	2	119	0	1.00	0	70	0	16.0	3	19.0	1
31			200	4			45	4	14.6	4		
32	0.76	3			2.50	0	40	3			20.3	4
33	0.64	2			2.10	4	47	4			20.3	4
34	0.84	4			2.10	4	41	3	< 500	NR	20.7	4
35	0.79	4			2.20	3					21.3	4
38	0.81	4	210	2	2.16	4	43	4	< 50	NR	20.7	4
39	0.85	4			1.97	2	40	3			20.4	4
43	670.00	0	190	4	2.00	3	45	4	15.0	4	20.0	3
44												
45	1.00	2			2.10	4	50	3			21.0	4
50	1.00	2	212	2	2.40	0	53	2	15.0	4	22.0	2
51	0.81	4			2.19	3	44	4			22.1	2
52.1												
52.2							77	0				
55	0.53	0			1.92	2	20	0	< 10	0	19.8	3
56	0.83	4	190	4	1.45	0	41	3			20.8	4
57	0.94	3			2.20	3	45	4			20.5	4
58	0.87	4	200	4	2.10	4	50	3	14.0	3	21.0	4
60	0.80	4			2.10	4	50	3			20.5	4
61												
62	0.90	4			2.60	0	45	4			20.3	4
63												

Table 2: (cont.) Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	K (Potassium)		Li (Lithium)		Mg (Magnesium)		Mn (Manganese)		Mo (Molybdenum)		Na (Sodium)	
MPV =	0.84 +/- 0.04		193 +/- 7		2.10 +/- 0.03		45 +/- 2		15 +/- 0.7		20.8 +/- 0.3	
F-pseudosigma =	0.15		14		0.13		6		1.9			
Lab #	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
64	0.84	4			2.03	3	41	3			16.7	0
65	0.80	4			2.00	3					19.9	3
66	0.80	4	21	0	2.06	4	51	2	< 50	NR	20.4	4
67	0.71	3	186	4	2.15	4	44	4			20.6	4
68							46	4				
69					1.50	0	40	3			20.4	4
70	0.71	3					3	0			22.0	2
72	0.76	3			2.02	3	42	4			21.2	4
73	0.84	4			1.95	2	50	3			21.0	4
74												
78											20.0	3
79	1.44	0	205	3	2.73	0	48	4			23.4	0
80	0.90	4			2.10	4	< 50	NR			22.0	2
81	1.00	2			3.58	0	40	3	< 20	NR	19.8	3
83	1.01	2			2.10	4	48	4			18.6	1
84	0.80	4			2.10	4	46	4			20.0	3
85	1.00	2			2.00	3	30	0			22.0	2
90	0.85	4	200	4	2.18	3	43	4	16.0	3	21.0	4
91									14.0	3	21.0	4
93	3.90	0	20	0	2.10	4	50	3	150.0	0	20.0	3
94							42	4	16.0	3		
96							50	3				
98	0.70	3	190	4	2.16	4	46	4	14.0	3	22.3	2
100	0.80	4			2.00	3	47	4			19.6	2
101	< 2	NR			2.30	1	49	3	16.0	3	23.0	1
102							44	4	15.0	4		
103	0.90	4			1.30	0	41	3			18.4	0
104												
107	0.55	1			2.62	0	46	4			20.0	3
108	0.77	4			2.10	4					21.0	4
109	1.00	2			2.50	0	50	3			21.0	4
111	0.77	4									16.5	0
113							50	3				
118	0.76	3			2.29	2	40	3			19.4	2
119	0.90	4	122	0	2.10	4	48	4			21.5	3
120	0.85	4	214	2	2.17	3	45	4	14.5	4	21.2	4
121	0.97	3					49	3				
122	0.88	4	191	4	2.01	3	45	4	19.0	0	20.5	4
124	0.90	4			2.00	3	40	3			21.0	4
125	0.90	4			2.10	4	39	2			19.0	1
127	0.25	0	370	0	2.04	4	37	2	15.0	4	50.0	0
130	0.65	2			2.00	3	40	3			22.0	2
134	0.99	2			2.09	4					20.1	3
135												

Table 2: (cont.) Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma				F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)		1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)		> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)		1.01 to 1.50

	Ni (Nickel)		Pb (Lead)		Sb (Antimony)		Se (Selenium)		SiO2 (Silica)		Sr (Strontium)	
MPV =	28.1 +/- 1.1		26 +/- 1		10.1 +/- 1.0		11.0 +/- 0.5		7.7 +/- 0.2		61 +/- 1	
F-pseudosigma =	3.9		4		2.5		1.9		0.5		4	
	Reported		Reported		Reported		Reported		Reported		Reported	
Lab #	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
1	25.7	3	30	3	10.1	4	11.6	4	7.9	4	64	3
2	30.0	4	40	0					7.8	4	60	4
4			25	4								
5	22.0	1	23	3	< 100	NR						
6	30.0	4	20	2					9.3	0		
10	< 30	NR	28	4			10.8	4				
11	34.0	1									63	3
15							11.0	4				
16	41.0	0	25	4	10.0	4	11.0	4				
17	7.8	0	26	4	< 0.05	0	19.5	0	7.0	2		
18	24.0	2	27	4	26.3	0	9.4	3	7.3	3	62	4
19	22.0	1	25	4			10.0	3	7.7	4		
20	30.2	3	7	0			9.5	3	7.5	4	65	2
21	27.0	4	26	4	9.0	4	12.0	3			57	2
24	40.0	0	30	3			4.1	0	8.6	1	67	1
25	< 30	NR	42	0	< 100	NR	11.0	4	7.4	3		
29			29	3			6.0	0				
30	16.0	0	22	3	18.9	0	12.7	3	6.6	0		
31	29.6	4	26	4			19.0	0	8.0	3	60	4
32	27.0	4	24	4			17.0	0			60	4
33	25.4	3	30	3	9.1	4	11.9	4			60	4
34	< 30	NR	26	4	< 1000	NR	10.9	4	7.6	4		
35			27	4			11.8	4	7.3	3		
38	< 50	NR	21	2	12.0	3	11.0	4	7.7	4	59	3
39	28.2	4	26	4	7.2	2	13.8	1				
43	25.0	3	< 20	NR	25.0	0	< 25	NR	7.7	4	61	4
44	326.0	0	93	0								
45	< 100	NR	32	2	5.0	0	13.0	2	6.8	1		
50	29.0	4	17	0			9.0	2	7.6	4	70	0
51	28.8	4	26	4					8.1	3		
52.1												
52.2												
55	20.0	0	< 50	NR	< 10	NR	< 6	0	7.5	4	40	0
56			24	4								
57			20	2			9.0	2	5.8	0	73	0
58	25.7	3	24	4	10.2	4	10.5	4	7.9	4	80	0
60	30.0	4	20	2	< 5	0	9.0	2			60	4
61	30.0	4	31	2								
62			26	4			15.4	0				
63									7.9	4		

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RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	Ni (Nickel)		Pb (Lead)		Sb (Antimony)		Se (Selenium)		SiO2 (Silica)		Sr (Strontium)	
MPV =	28.1 +/- 1.1		26 +/- 1		10.1 +/- 1.0		11.0 +/- 0.5		7.7 +/- 0.2		61 +/- 1	
F-pseudosigma =	3.9		4		2.5		1.9		0.5		4	
Lab #	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
64	29.2	4	28	4	9.3	4	< 0.25	0	9.2	0		
65									9.0	0		
66	34.0	1	27	4	< 50	NR	11.0	4	3.6	0	62	4
67	26.0	3	45	0			11.1	4	7.5	3	58	3
68	28.0	4	30	3								
69	50.0	0										
70			63	0								
72	35.0	1	33	1	12.8	2	2.1	0	7.0	2		
73	10.0	0	24	4			< 2	0	7.6	4		
74	24.8	3			10.8	4	4.5	0				
78			29	3								
79	27.1	4	33	1	8.8	3	11.0	4			66	2
80	60.0	0	24	4			11.0	4	7.9	4		
81	20.0	0	28	4	< 20	NR	9.0	2	10.8	0		
83	27.0	4	29	3					7.7	4		
84			< 100	NR			12.0	3	7.5	4		
85												
90	25.8	3	25	4	10.4	4	11.2	4	7.8	4	50	0
91	26.0	3	30	3			11.0	4				
93	34.0	1	25	4			13.5	2	8.1	3	60	4
94	27.0	4	28	4			11.0	4				
96			23	3			11.5	4				
98	28.0	4	28	4	11.8	3	13.5	2	7.5	4	60	4
100	32.4	2	51	0								
101	< 40	NR	28	4	< 40	NR	13.0	2	8.8	0	69	0
102	30.0	4	24	4			10.0	3				
103	42.0	0	46	0			19.0	0				
104												
107	28.1	4	30	3			5.8	0	6.8	1	56	2
108			23	3					7.5	4		
109			21	2			47.0	0				
111	22.0	1	45	0			14.0	1				
113	100.0	0										
118	30.9	3	25	4	23.0	0	3.9	0				
119	40.0	0							8.2	2	61	4
120	33.4	2	25	4	7.6	3	10.0	3	7.8	4	339	0
121	17.0	0	24	4								
122	< 25	NR	25	4	10.0	4	11.3	4	8.1	3	61	4
124									9.9	0		
125	25.0	3	29	3								
127	24.0	2	20	2	1.1	0	9.7	3	8.6	1	55	1
130												
134												
135												

Table 2: (cont.) Standard Reference Water Sample T-107 (Trace Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	V (Vanadium)	Zn (Zinc)
MPV =	14.0 +/- 1.1	75.8 +/- 2.5
F-pseudosigma =	2.8	9.9

Lab #	Reported Value (V)	Rating (V)	Reported Value (Zn)	Rating (Zn)
1	14.4	4	75.6	4
2	10.0	2	80.0	4
4			58.0	1
5			73.0	4
6			80.0	4
10			58.0	1
11	16.0	3		
15				
16			168.0	0
17	8.3	0	81.1	3
18	13.0	4	27.0	0
19			39.0	0
20			77.0	4
21	12.0	3		
24	14.0	4	73.0	4
25			72.5	4
29				
30	7.8	0	70.0	3
31	14.0	4	74.0	4
32			74.0	4
33	13.3	4	79.2	4
34	< 1000	NR	80.0	4
35				
38	< 50	NR	74.0	4
39			80.0	4
43	13.0	4	170.0	0
44			1316.0	0
45	< 50	NR	90.0	2
50	18.0	2	54.0	0
51			85.0	3
52.1				
52.2				
55	< 10	NR	70.0	3
56			52.0	0
57			71.0	4
58	10.4	2	75.0	4
60			80.0	4
61			90.0	2
62			70.0	3
63				

RATING:	4	(Excellent)	F-pseudosigma 0.00 to 0.50	1	(Questionable)	F-pseudosigma 1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	V (Vanadium)	Zn (Zinc)
MPV =	14.0 +/- 1.1	75.8 +/- 2.5
F-pseudosigma =	2.8	9.9

Lab #	Reported Value	Rating	Reported Value	Rating
64			75.4	4
65			76.0	4
66	< 50	NR	80.0	4
67	14.0	4	70.0	3
68			74.0	4
69			80.0	4
70			90.0	2
72			79.0	4
73			62.5	2
74			68.0	3
78				
79	16.7	3	73.6	4
80			62.0	2
81	< 50	NR	80.0	4
83			70.0	3
84				
85				
90	20.0	0	78.0	4
91			76.0	4
93	14.0	4	84.0	3
94			95.0	1
96			104.0	0
98	16.0	3	81.8	3
100	20.1	0	90.5	2
101	15.0	4	93.0	1
102			68.0	3
103			73.0	4
104				
107			72.1	4
108				
109			160.0	0
111			70.0	3
113			90.0	2
118			89.1	2
119			100.0	0
120	15.0	4	82.6	3
121			88.0	2
122	< 20	NR	72.0	4
124				
125			73.0	4
127	15.0	4	65.0	2
130			70.0	3
134				
135				

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RATING:	4 (Excellent)	F-pseudosigma 0.00 to 0.50	1 (Questionable)	F-pseudosigma 1.51 to 2.00
	3 (Good)	0.51 to 1.00	0 (Poor)	> 2.00
	2 (Satisfactory)	1.01 to 1.50	NR (Not Rated)	

			Alkalinity 92 +/- 0.9 3.6		B (Boron) 43 +/- 8 23		Ca (Calcium) 45.0 +/- 0.3 1.3		Cl (Chloride) 266 +/- 3 11		DRSD 180 639 +/- 6 24	
Lab #	Avg. Rating	Values/ 15	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
1	3.80	15	94	3	49	4	43.4	2	269	4	634	4
2	3.14	7					45.0	4	270	4		
4	1.40	5							253	2	63	0
5	3.46	13	95	3	< 4	0	45.0	4	270	4	648	4
6	2.00	9	89	3	30	3	48.6	0				
10	2.00	13	258	0	192	0	45.2	4	233	0		
11	2.93	15	93	4	32	4	46.0	3	270	4	624	3
14	3.00	2										
15	2.50	4					49.0	0	272	3		
16	3.00	6	91	4					145	0		
17	2.57	14	100	0	55	3	44.0	3	261	4	683	1
18	2.38	13	98	1	21	3	46.2	3	267	4	608	2
19	3.71	14	90	3	50	4	45.0	4	265	4	627	4
20	2.25	12	90	3	70	2	44.1	3	263	4	629	4
21	1.86	14	95	3	140	0	43.0	2	268	4	647	4
22	3.71	7	93	4					266	4	638	4
23	1.86	7					45.1	4	330	0		
24	2.92	13	94	3	87	1	45.0	4	261	4		
25	3.77	13	91	4	37	4	45.0	4	266	4	630	4
27	2.40	5							192	0		
29	2.33	12	87	2	250	0	44.8	4	263	4		
30	2.08	13	96	2			45.0	4	275	3	628	4
31	2.90	10	96	2	45	4			244	1	648	4
33	3.13	15	80	0	36	4	44.2	3	256	3	680	1
34	3.23	13	92	4	< 300	NR	44.0	3	268	4	580	0
35	3.15	13	93	4			44.8	4	266	4	668	2
36	3.14	7	92	4					249	2	610	2
37	2.90	10	91	4			34.2	0			693	0
38	2.85	13	88	2	< 50		44.2	3	258	3	644	4
39	1.64	11	97	2			39.0	0	248	1	674	2
42	3.67	12	94	3			45.2	4	267	4	648	4
43	2.56	9	368	0			44.0	3	257	3		
45	2.33	12	90	3	< 100	NR	47.0	2	260	3	630	4
48	2.50	14	97	2	93	0	45.5	4			647	4
49	2.75	8					43.0	2				
50	2.07	14	215	0	41	4	50.0	0	239	0		
51	2.75	12	202	0			45.1	4	280	2	628	4
52.1	2.60	10	94	3			46.0	3	258	3	654	3
52.2	2.64	11	92	4			45.0	4	242	0	652	3
53	3.57	14	93	4	60	3	44.9	4	258	3	635	4
55	1.85	13	93	4	< 10	0	39.9	0	288	1	650	4
56	3.00	12	90	3			46.0	3	260	3	610	2
57	3.07	14	94	3			45.6	4	270	4	603	2
58	3.53	15	93	4	41	4	42.0	0	268	4	644	4
59	2.71	14	90	3	38	4	50.2	0	272	3	658	3

Table 3: Standard Reference Water Sample M-110 (Major Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma				F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	

	MPV = F-pseudosigma = M-110		Alkalinity 92 +/- 0.9 3.6		B (Boron) 43 +/- 8 23		Ca (Calcium) 45.0 +/- 0.3 1.3		Cl (Chloride) 266 +/- 3 11		DRSD 180 639 +/- 6 24	
Lab #	Avg. Rating	Values/ 15	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
60	3.09	11	90	3			45.7	3			623	3
61	1.00	3	97	2								
62	0.50	2										
63	3.00	4										
64	1.83	6	95	3							592	1
65	2.50	12	93	4			41.0	0	272	3	656	3
66	3.60	15	93	4	63	3	45.9	3	264	4	610	2
67	3.33	12	94	4	34	4	44.9	4			661	3
68	1.43	7	85	1					250	2		
70	1.91	11	92	4	230	0	53.0	0	242	0		
71	2.50	8	118	0			44.2	3				
72	2.58	12	91	4			43.8	3	275	3	636	4
73	3.46	13	95	3			45.7	3	272	3	635	4
74	3.00	3	89	3								
75	1.88	8					44.2	3	153	0		
78	3.00	4							270	4		
79	2.07	15	325	0	45	4	44.0	3	283	1	716	0
80	2.75	12	86	1			44.5	4	274	3	638	4
81	1.83	12	110	0	50	4	43.5	2	280	2		
83	2.08	12	91	4			39.0	0	281	2	844	0
84	2.80	10	92	4	33	4	45.0	4	250	2	664	2
85	2.08	13	80	0	77	2	39.2	0	270	4	651	3
90	2.69	13	91	4			45.7	3	275	3	670	2
91	1.86	7	100	0					270	4	623	3
93	1.86	14	88	2	80	1	45.3	4	252	2	590	0
95	2.50	4										
96	3.00	4	92	4					274	3		
98	2.79	14	92	4	50	4	47.8	0	273	3	608	2
100	2.88	8					47.6	1	264	4	650	4
101	2.27	15	90	3	55	3	47.0	2	263	4	604	2
102	3.25	12	93	4	< 100		44.0	3	261	4	630	4
103	1.55	11	88	2			44.9	4	319	0	639	4
104	2.22	9	88	2	0.2	1					620	3
107	2.58	12	93	4			42.5	1	270	4	635	4
108	3.82	11	92	4			44.0	3	258	3		
109	2.38	8	85	1			50.0	0	281	2	654	3
111	1.50	2										
113	3.10	10	96	3			46.0	3	257	3	643	4
118	3.20	10	92	4			42.4	1	260	3	659	3
119	2.25	12	92	4	18	2	46.0	3	249	1		
120	3.00	15	88	2	40	4	44.5	4	243	0	620	3
121	1.75	4	90	3					295	0		
122	3.14	14	92	4			45.4	4	260	3	657	3
124	3.00	11	126	0			45.0	4	255	3	590	0
125	3.36	11					45.0	4	273	3	615	3
127	1.13	8			39	4	34.0	0				
128	2.43	14	91	4	50	4	43.0	2	261	4	620	3
130	1.29	7	90	3			53.0	0	305	0		
131	3.17	6	88	2					267	4	672	2

Table 3: (cont.) Standard Reference Water Sample M-110 (Major Constituents) Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	F (Fluoride)		K (Potassium)		Mg (Magnesium)		Na (Sodium)		total Phosphorus		pH	
MPV =	0.13 +/- 0.01		4.00 +/- 0.08		20.2 +/- 0.2		151 +/- 2		0.051 +/- 0.004		8.20 +/- 0.03	
F-pseudosigma =	0.03		0.33		0.9		6		0.015		0.14	
Lab #	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
1	0.14	4	4.14	4	20.4	4	152	4	0.050	4	8.25	4
2					21.0	3	150	4				
4											7.85	0
5			4.10	4	21.0	3	150	4	0.044	4	8.20	4
6			6.00	0	20.3	4	140	1			8.22	4
10	0.14	4	3.75	3	19.3	3	164	0	0.017	0	8.29	3
11	0.14	4	3.90	4	21.0	3	160	1	0.040	3	8.40	2
14	0.15	3									8.08	3
15					21.0	3						
16	0.11	3							0.050	4	8.12	3
17	0.01	4	4.40	2	20.0	4	156	3	0.050	4	7.73	0
18			3.62	2	20.7	3	158	2			8.28	3
19	0.15	3	3.80	3	20.1	4	149	4	0.050	4	8.25	4
20	0.04	0	4.43	2	21.9	1	170	0			8.20	4
21	0.18	1	4.40	2	19.0	2	139	0	0.039	3	7.85	0
22	0.11	3									8.21	4
23			4.12	4	19.6	3					6.09	0
24	0.10	2	3.70	3	20.0	4	160	1			8.20	4
25	0.12	4	3.96	4	20.9	3	152	4			8.28	3
27									0.050	4		
29	0.10	2	4.17	4	20.8	3	159	2	0.050	4	8.09	3
30	0.13	4	5.00	0	19.0	2	122	0	0.051	4	8.11	3
31	0.09	2							0.058	4	7.96	1
33	0.11	3	3.80	3	20.0	4	153	4	0.050	4	8.32	3
34	0.10	3	3.71	3	21.1	3	148	4	0.056	4	8.25	4
35	0.16	2	3.82	3	18.6	1	150	4	0.032	2	8.28	4
36									0.060	3	8.14	4
37			4.04	4	20.7	3	145	2	0.053	4	8.20	4
38	0.12	4	4.60	1	20.8	3	153	4	< 0.1	NR	8.00	2
39			4.79	0	19.1	2	156	3	0.600	3	7.87	0
42	0.13	4	4.10	4	20.8	3	155	3	0.043	3	8.25	4
43			3.40	1	20.0	4	150	4	0.113	0		
45	< 0.2	NR	6.60	0	20.0	4	156	3	0.070	2	8.20	4
48	0.30	0	3.60	2	18.7	1	148	4	0.130	0	8.10	3
49			3.99	4	20.1	4	150	4	0.140	0	8.21	4
50	0.14	4	4.30	3	21.7	1	148	4	0.040	3	8.23	4
51			4.04	4	20.5	4	151	4	0.042	3	7.72	0
52.1			4.40	2	21.0	3	150	4			8.06	3
52.2	1.30	0	4.50	2	21.0	3	147	3			8.08	3
53	0.11	3	4.20	3	20.4	4	150	4	0.050	4	8.28	3
55	< 0.1	NR	4.95	0	19.3	3	143	2			8.19	4
56	0.12	4	4.00	4	21.0	3	145	2			8.20	4
57	0.15	3	3.87	4	20.0	4	151	4	0.040	3	8.25	4
58	0.15	3	4.00	4	20.0	4	152	4	0.050	4	8.00	2
59	0.10	2	3.90	4	20.3	4	151	4			8.28	3

Table 3: (cont.)   Standard Reference Water Sample M-110 (Major Constituents)
Rated Overall Laboratory Performance

RATING:	4 (Excellent)	F-pseudosigma 0.00 to 0.50	1 (Questionable)	F-pseudosigma 1.51 to 2.00
	3 (Good)	0.51 to 1.00	0 (Poor)	> 2.00
	2 (Satisfactory)	1.01 to 1.50	NR (Not Rated)	1.01 to 1.50

	F (Fluoride) MPV = 0.13 +/- 0.01 F-pseudosigma = 0.03		K (Potassium) 4.00 +/- 0.08 0.33		Mg (Magnesium) 20.2 +/- 0.2 0.9		Na (Sodium) 151 +/- 2 6		total Phosphorus 0.051 +/- 0.004 0.015		pH 8.20 +/- 0.03 0.14	
Lab #	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
60	0.15	3	3.70	3	20.4	4	148	4	0.100	0	8.22	4
61									0.090	0	7.97	1
62											7.80	0
63									0.076	1	8.25	4
64	0.10	2									8.28	3
65			4.04	4	20.0	4	140	1	0.085	0	8.04	2
66	0.12	4	3.77	3	19.8	4	148	4	0.057	4	8.26	4
67			3.20	0	20.2	4	157	3	0.051	4	8.20	4
68	0.15	3							0.600	0	8.27	4
70	0.11	3	2.68	0			153	4	0.040	3	8.12	3
71			6.16	0	20.6	4	151	4			8.18	4
72			3.55	2	19.3	3	155	3	< 0.01	0	8.00	2
73	0.13	4	3.78	3	20.7	3	152	4	0.050	4	8.25	4
74											8.28	3
75			3.77	3	18.7	1	151	4				
78							150	4			8.20	4
79	0.13	4	3.59	2	24.3	0	147	3	0.280	0	8.32	3
80	< 0.2	NR	4.10	4	20.3	4	155	3	0.472	0	8.28	3
81	< 0.2	NR	4.20	3	18.8	2	140	1	0.060	3	8.28	3
83			5.00	0	20.9	3	136	0	0.076	1	8.28	3
84			4.00	4	20.0	4	151	0				
85	0.18	1	4.30	3	21.0	3	157	2			8.00	2
90			3.90	4	21.3	2	140	1	0.050	4	7.69	0
91							160	1			8.10	3
93	0.18	1	6.80	0	19.5	3	145	2	0.070	2	8.00	2
95											8.08	3
96											8.20	4
98	0.10	2	3.46	1	20.9	3	163	0	< 0.2	NR	8.24	4
100			4.10	4	20.0	4	160	1			7.93	1
101	0.13	4	3.80	3	21.0	3	160	1	0.200	0	8.15	4
102	0.10	2	3.80	3	22.0	1	153	4			8.00	2
103	0.27	0	3.60	2	18.7	1	142	1	< 0.1	NR	8.10	3
104	0.11	3							0.050	4	8.10	3
107	0.11	3	3.52	2	17.9	0			0.040	3	8.21	4
108	0.12	4	4.00	4	20.0	4	149	4			8.23	4
109	0.13	4									8.10	3
111			3.70	3			107	0				
113			3.70	3	20.0	4	161	1			8.06	3
118			3.88	4	19.3	3	144	2	0.051	4	8.16	4
119			4.00	4	21.6	2	169	0			8.05	2
120	0.14	4	4.22	3	19.8	4	150	4	0.050	4	8.30	3
121											8.20	4
122	0.12	4	3.99	4	20.0	4	166	0	0.070	2	8.20	4
124	0.13	4	4.20	3	21.0	3	150	4			8.19	4
125	0.16	2	4.00	4	19.5	3	154	4	0.050	4	8.25	4
127			2.73	0	16.5	0	265	0	0.070	2		
128	0.00	0	4.80	0	22.0	1	149	4	0.050	4	8.10	3
130					18.8	2					7.85	0
131									0.057	4	8.24	4

Table 3: (cont.)   Standard Reference Water Sample M-110 (Major Constituents)
Rated Overall Laboratory Performance

RATING:	4 (Excellent)	F-pseudosigma 0.00 to 0.50	1 (Questionable)	F-pseudosigma 1.51 to 2.00
	3 (Good)	0.51 to 1.00	0 (Poor)	> 2.00
	2 (Satisfactory)	1.01 to 1.50	NR (Not Rated)	1.01 to 1.50

	SiO2 (Silica)		SO4 (Sulfate)		Sp Cond		Sr (Strontium)		V (Vanadium)	
MPV =	8.5 +/- 0.2		64 +/- 1		1145 +/- 7		750 +/- 16		Insufficient data	
F-pseudosigma =	0.7		3.4		32		39			
Lab #	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
1	8.8	4	63	4	1150	4	750	4	< 6	
2	9.0	3	160	0			730	4		
4			64	4	1202	1				
5	8.3	4	63	4	1170	3				
6			54	0	1170	3				
10	8.9	3	63	4	1180	2				
11	7.2	1	65	4	1160	4	78	0	3.0	
14										
15			66	4						
16					1152	4				
17	7.9	3	68	2	1115	3			8.5	
18	7.2	1	61	3	1272	0	731	4		
19	9.0	3	66	4	1161	4				
20			64	4	1260	0				
21			30	0	1142	4	675	1	< 10	
22			64	4	1167	3				
23			59	1	1092	1				
24	9.7	1	65	4	1160	4	770	3		
25	7.9	3	64	4	1148	4				
27	9.8	1	65	4	1124	3				
29			55	0	1081	0				
30	6.6	0	61	3	1025	0				
31	8.9	3	63	4	1180	2	735	4	< 3	
33	8.2	4	64	4	1164	3	736	4	< 1	
34	8.3	4	63	4	1100	2			< 1000	
35	8.2	4	65	4	1170	3				
36			64	4	1120	3				
37	8.7	4			1156	4				
38	8.8	4	60	2	1100	2	705	3	< 50	
39			60	2	1114	3				
42			65	4	1155	4				
43	8.7	4					750	4	< 3	
45	8.1	3	56	0	950	0			< 50	
48	9.2	3	66	4	1140	4	748	4	< 34	
49	8.0	3			1093	1				
50	8.4	4	145	0	109	0	784	2	6.0	
51	10.4	0	64	4	1152	4				
52.1			57	0	1190	2				
52.2			61	3	1160	4				
53	8.6	4	65	4	1167	3				
55	8.2	4	69	2	1000	0	650	0	< 10	
56	10.0	0	65	4	1130	4				
57	6.3	0	65	4	1020	0	753	4		
58	8.8	4	64	4	1152	4	730	4	2.0	
59	9.3	2	67	3	1170	3	646	0		

RATING:	4	(Excellent)	F-pseudosigma 0.00 to 0.50	1	(Questionable)	F-pseudosigma 1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	SiO2 (Silica)		SO4 (Sulfate)		Sp Cond		Sr (Strontium)		V (Vanadium)	
MPV =	8.5 +/- 0.2		64 +/- 1		1145 +/- 7					
F-pseudosigma =	0.7		3.4		32		750 +/- 16		Insufficient data	
							39			
Lab #	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
60	8.5	4			1128	3				
61										
62					1200	1				
63	8.4	4			1177	3				
64	9.6	1			1095	1				
65	9.0	3	66	4	1106	2				
66	8.5	4	64	4	1170	3	745	4	< 50	
67	8.5	4			1146	4	692	2		
68			45	0	125	0				
70			70	1	1116	3				
71			71	1	1139	4				
72	8.0	3	65	4	978	0				
73	9.1	3	66	4	1123	3				
74					1162	3				
75	3.8	0	65	4			632	0		
78					112	0				
79	6.8	0	66	3	1152	4	738	4		
80	7.9	3	61	2	1180	2				
81	10.0	0	110	0	1110	2			< 50	
83	8.5	4	65	4	1148	4				
84	8.5	4	47	0						
85	9.8	1	67	3	1124	3				
90	9.5	2	66	4	1140	4	790	2		
91	10.5	0			1180	2				
93			69	2	1100	2	710	3	1.0	
95	4.0	0	67	3	1131	4				
96					1088	1				
98	8.6	4	66	4	1150	4	730	4	< 10	
100					1145	4				
101	9.9	1	58	1	1169	3	821	0	< 10	
102	8.8	4	64	4	1140	4				
103			56	0	1068	0				
104	8.4	4	< 0.2	0	1026	0				
107	7.5	2	70	1	1166	3				
108	8.3	4	64	4	1147	4				
109			65	4	1184	2				
111										
113			61	3	1140	4				
118			64	4						
119	8.9	3	65	4	1310	0	780	2		
120	8.0	3	61	3	1152	4	1810	0	2.0	
121					1061	0				
122	8.7	4	66	4	923	0	740	4	< 20	
124			66	4	1130	4				
125			68	2	1150	4				
127	9.2	3					640	0	< 10	
128	6.0	0	64	4	1090	1				
130			60	2	1180	2				
131					1116	3				

Table 4: Standard Reference Water Sample N-22 (Nutrient Constituents)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	

	N-22 Avg.	Values/	NH3 as N $0.704 +/- 0.021$ 0.072		NH3+Org-N as N $1.260 +/- 0.096$ 0.297		NO2 as N $.125 +/- 0.008$ 0.030		NO3 as N $1.420 +/- 0.032$ 0.117		total Phosphorus $1.000 +/- 0.015$ 0.052		PO4 as P $0.470 +/- 0.007$ 0.024	
Lab #	Rating	6	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
1	3.33	6	0.620	2	1.390	4	0.110	4	1.350	3	1.020	4	0.489	3
11	2.40	5	0.550	0			0.080	1	1.520	3	0.980	4	0.470	4
14	3.33	3			1.600	2	0.140	4	1.370	4				
16	3.00	6	0.740	4	1.090	3	0.110	4	1.480	3	0.790	0	0.460	4
17	2.83	6	0.740	4	1.970	0	0.110	4	1.350	3	0.930	2	0.480	4
18	2.80	5	0.706	4	1.240	4			1.500	3	0.895	0	0.454	3
19	3.17	6	0.670	4	1.080	3	0.150	3	1.650	1	1.000	4	0.460	4
20	1.33	3					0.180	1	1.510	3			0.390	0
25	3.67	3	0.740	4			0.141	3	1.402	4				
26	0.25	4	0.440	0			0.240	0	1.020	0			0.510	1
27	3.00	6	0.680	4	1.150	4	0.090	2	1.370	4	0.980	4	0.400	0
28	3.33	6	0.784	2	1.230	4	0.150	3	1.440	4	1.020	4	0.457	3
29	2.80	5			1.350	4	0.107	3	1.342	3	1.020	4	0.541	0
30	2.00	6	0.940	0	1.600	2	0.133	4	1.730	0	1.020	4	0.444	2
32	1.83	6	0.826	1	1.050	3	0.075	1	1.570	2	0.980	4	0.526	0
34	4.00	6	0.735	4	1.200	4	0.117	4	1.390	4	1.000	4	0.468	4
35	2.67	6	0.870	0	0.770	1	0.120	4	1.340	3	0.980	4	0.460	4
36	3.80	5	0.640	3	< 2.5	NR	0.130	4	1.440	4	1.010	4	0.470	4
39	2.17	6	0.600	2	1.360	4	0.080	1	2.020	0	1.060	2	0.462	4
43	3.00	3	0.640	3	0.970	3					1.050	3		
45	2.00	6	0.710	4	1.600	2	0.150	3	1.000	0	0.950	3	0.570	0
48	3.20	5	0.630	2			0.090	2	1.440	4	1.000	4	0.470	4
51	2.50	6	0.570	1	0.935	2	0.118	4	0.391	0	0.979	4	0.461	4
53	4.00	6	0.700	4	1.260	4	0.120	4	1.420	4	1.010	4	0.460	4
55	0.00	3	0.920	0			0.500	0	0.400	0				
57	3.20	5	0.664	3			0.126	4	1.300	2	0.975	4	0.485	3
58	4.00	6	0.720	4	1.200	4	0.120	4	1.390	4	1.010	4	0.480	4
61	2.33	6	0.850	0	1.630	2	0.140	4	0.880	0	1.010	4	0.480	4
63	2.00	6	0.561	1	1.350	4	0.150	3	1.386	4	1.214	0	0.403	0
65	1.75	4					0.121	4	1.740	0	0.833	0	0.450	3
66	4.00	5	0.710	4			0.140	4	1.370	4	1.000	4	0.460	4
67	2.00	2									1.490	0	0.466	4
69	2.00	1							1.290	2				
70	1.60	5	0.270	0			0.150	3	1.180	0	0.950	3	0.500	2
72	3.33	6	0.735	4	1.030	3	0.120	4	1.500	3	0.940	2	0.480	4
73	3.50	6	0.701	4	1.350	4	0.073	1	1.430	4	1.020	4	0.472	4
74	2.00	6	0.720	4	1.070	3	0.026	0	1.500	3	0.920	1	0.430	1
78	2.33	3	0.750	3			< 0.01	0	1.400	4				
79	3.40	5	0.790	2			0.140	4	1.380	4	1.050	3	0.460	4
80	2.67	6	0.713	4	1.160	4	0.123	4	0.680	0	1.100	1	0.486	3
81	1.83	6	0.600	2	3.000	0	1.000	0	1.500	3	0.960	3	0.490	3
82	3.67	6	0.645	3	1.260	4	0.107	3	1.470	4	1.010	4	0.478	4
83	2.50	6	0.720	4	1.200	4	0.150	3	1.710	0	0.948	3	0.433	1
84	4.00	1							1.430	4				
85	3.00	1							1.530	3				
87	2.33	6	0.600	2	1.580	2	0.150	3	1.510	3	1.110	0	0.470	4
90	4.00	4	0.680	4	1.360	4					1.000	4	0.460	4
91	3.00	1	0.760	3										
93	2.00	5	1.000	0			0.290	0	1.470	4	1.020	4	0.500	2
97	1.50	4	0.519	0	1.585	2					0.714	0	0.469	4

Table 4: Standard Reference Water Sample N-22 (Nutrient Constituents)
Rated Overall Laboratory Performance

RATING:	4 (Excellent)	F-pseudosigma 0.00 to 0.50	1 (Questionable)	F-pseudosigma 1.51 to 2.00
	3 (Good)	0.51 to 1.00	0 (Poor)	> 2.00
	2 (Satisfactory)	1.01 to 1.50	NR (Not Rated)	

			NH3 as N 0.704 +/- 0.021 0.072		NH3+Org-N as N 1.260 +/- 0.096 0.297		NO2 as N .125 +/- 0.008 0.030		NO3 as N 1.420 +/- 0.032 0.117		total Phosphorus 1.000 +/- 0.015 0.052		PO4 as P 0.470 +/- 0.007 0.024	
Lab #	Avg. Rating	Values/ 6	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
98	1.83	6	0.670	4	1.600	2	0.090	2	1.300	2	1.420	0	0.430	1
103	0.00	5	< 0.09	0			290.000	0	6.860	0	0.250	0	0.066	0
107	2.50	6	0.650	3	1.320	4	0.110	4	1.490	3	0.920	1	0.520	0
108	3.00	4	0.720	4			0.140	4	1.390	4			0.422	0
109	0.00	3					0.300	0	0.700	0			0.560	0
110	3.00	5	0.674	4	1.348	4			1.307	3	1.011	4	0.518	0
111	0.75	4	0.600	2	1.610	1	0.259	0	3.361	0				
113	3.00	6	0.784	2	1.020	3	0.136	4	1.340	3	0.950	3	0.447	3
115	3.00	2									0.986	4	0.443	2
117	1.00	2					< 0.5	NR	1.580	2			0.360	0
118	4.00	5	0.712	4			0.120	4	1.420	4	1.013	4	0.478	4
120	1.50	6	0.711	4	1.420	3	< 0.02	0	1.960	0	0.944	2	0.559	0
121	4.00	5	0.700	4	1.250	4	0.110	4	1.380	4	1.000	4		
122	3.00	6	0.710	4	1.680	2	0.124	4	1.420	4	1.200	0	0.480	4
125	3.83	6	0.700	4	1.230	4	0.130	4	1.500	3	1.020	4	0.480	4
131	2.17	6	0.544	0	1.100	3	0.016	0	1.450	4	1.001	4	0.503	2
134	1.20	5			0.780	1	< 0.02	0	0.840	0	0.965	3	0.502	2
135	4.00	1							1.400	4				

Table 5: Standard Reference Water Sample N-23 (Nutrient Constituents)
         Rated Overall Laboratory Performance

RATING:	4	(Excellent)	F-pseudosigma 0.00 to 0.50	1	(Questionable)	F-pseudosigma 1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	

	N-23		NH3 as N		NH3+Org-N as N		NO2 as N		NO3 as N		total Phosphorus		PO4 as P	
	MPV =		.500 +/- 0.015		0.816 +/- 0.075		0.201 +/- 0.002		0.77 +/- 0.032		0.600 +/- 0.009		0.481 +/- 0.006	
F-pseudosigma =			0.053		0.237		0.007		0.119		0.032		0.022	
	Avg.	Values/	Reported		Reported		Reported		Reported		Reported		Reported	
Lab #	Rating	6	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
1	3.33	6	0.483	4	0.880	4	0.210	2	0.755	4	0.600	4	0.508	2
11	1.80	5	0.390	0			0.220	0	0.790	4	0.540	1	0.470	4
14	2.67	3			1.310	0	0.200	4	0.710	4				
16	3.17	6	0.460	3	0.730	4	0.206	3	0.900	2	0.580	3	0.480	4
17	2.00	6	0.520	4	1.170	2	0.210	2	0.610	2	0.550	1	0.520	1
18	3.20	5	0.480	4	0.800	4			0.850	3	0.592	4	0.446	1
19	2.83	6	0.550	3	0.680	3	0.220	0	0.850	3	0.610	4	0.480	4
20	1.33	3					0.240	0	0.750	4			0.410	0
21	0.60	5	0.896	0	1.500	0	< 0.5	NR	0.900	2	0.460	0	0.440	1
25	3.67	3	0.510	4			0.194	3	0.730	4				
26	1.50	4	0.640	0			0.190	2	1.440	0			0.490	4
27	3.00	6	0.500	4	0.720	4	0.210	2	0.750	4	0.590	4	0.430	0
28	3.17	6	0.507	4	1.070	2	0.193	2	0.776	4	0.575	3	0.485	4
29	3.60	5			0.860	4	0.195	3	0.779	4	0.595	4	0.503	3
30	2.50	6	0.600	1	1.060	2	0.195	3	0.980	1	0.603	4	0.480	4
32	3.40	5	0.566	2	0.599	3	0.199	4	0.800	4	0.605	4		
34	3.33	6	0.514	4	0.812	4	0.201	4	0.702	3	0.626	3	0.514	2
35	2.80	5	0.670		0.290	0	0.200	4	0.670	3	0.580	3	0.470	4
36	3.00	5	0.410	1	< 2.5	NR	0.190	2	0.790	4	0.610	4	0.490	4
39	2.83	6	0.400	1	0.900	4	0.200	4	1.000	1	0.570	3	0.480	4
43	2.33	3	0.440	2	0.590	3					0.637	2		
45	2.33	6	0.530	3	0.800	4	0.200		0.550	1	0.520	0	0.510	2
48	2.40	5	0.410	1			0.190	2	1.000	1	0.600	4	0.490	4
51	3.00	6	0.410	1	0.718	4	0.201	4	0.645	2	0.580	3	0.478	4
53	4.00	6	0.510	4	0.780	4	0.200	4	0.740	4	0.600	4	0.490	4
55	0.00	3	0.700	0			0.650	0	0.300	0				
57	3.40	5	0.496	4			0.201	4	0.862	3	0.560	2	0.482	4
58	4.00	6	0.500	4	0.700	4	0.200	4	0.730	4	0.600	4	0.490	4
61	2.33	6	0.620	0	0.860	4	0.200	4	0.620	2	0.620	3	0.520	1
63	2.67	6	0.430	2	0.850	4	0.200	4	0.742	4	0.781	0	0.456	2
65	2.25	4					0.201	4	0.893	2	0.497	0	0.469	3
66	3.60	5	0.520	4			0.200	4	0.720	4	0.620	3	0.500	3
67	4.00	2									0.605	4	0.480	4
69	3.00	1							0.860	3				
70	1.40	5	0.160	0			0.200	4	0.580	1	0.880	0	0.450	2
72	2.67	6	0.618	0	0.709	4	0.200	4	0.770	4	0.540	1	0.501	3
73	3.83	6	0.501	4	0.783	4	0.203	4	0.731	4	0.617	3	0.491	4
74	2.67	6	0.420	1	0.730	4	0.207	3	1.050	0	0.610	4	0.470	4
78	3.00	3	0.550	3			0.200	4	0.920	2				
79	2.40	5	0.590	1			0.200	4	0.760	4	0.670	0	0.500	3
80	2.33	6	0.531	3	0.960	3	0.199	4	0.500	0	0.658	1	0.500	3
81	1.83	6	2.400	0	4.800	0	0.250	0	0.700	3	0.600	4	0.480	4
82	3.67	6	0.460	3	0.820	4	0.206	3	0.739	4	0.600	4	0.490	4
83	2.00	3							0.860	3	0.552	2	0.443	1
84	4.00	1							0.820	4				
85	3.00	4	0.490	4	0.760	4	0.230	0	0.790	4				
87	3.00	6	0.430	2	1.050	3	0.210	2	0.790	4	0.630	3	0.480	4
90	3.75	4	0.480	4	0.760	4					0.600	4	0.460	3
91	4.00	1	0.520	4										
93	1.20	5	1.100	0			0.520	0	0.460	0	0.630	3	0.500	3

Table 5: Standard Reference Water Sample N–23 (Nutrient Constituents)
Rated Overall Laboratory Performance

RATING:	4	(Excellent)	F-pseudosigma 0.00 to 0.50	1	(Questionable)	F-pseudosigma 1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	

			NH3 as N .500 +/- 0.015		NH3+Org-N as N 0.816 +/- 0.075		NO2 as N 0.201 +/- 0.002		NO3 as N 0.77 +/- 0.032		total Phosphorus 0.600 +/- 0.007		PO4 as P 0.481 +/- 0.006	
MPV =														
F-pseudosigma =			0.053		0.237		0.007		0.119		0.026			
N-23														
Lab #	Avg. Rating	Values/ 6	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating	Reported Value	Rating
97	1.00	4	0.330	0	1.362	0					0.502	0	0.481	4
98	1.83	6	0.460	3	1.100	2	0.210	2	0.600	2	0.920	0	0.450	2
103	0.00	5	0.190	0			186.100	0	3.530	0	0.433	0	0.063	0
107	2.67	6	0.460	3	0.800	4	0.180	0	0.790	4	0.570	3	0.510	2
108	2.20	5	0.510	4			0.210	2	0.770	4	0.440	0	0.440	1
109	0.00	3					1.950	0	1.280	0			0.560	0
110	2.40	5	0.466	3	0.915	4			1.031	0	0.612	4	0.521	1
111	0.75	4	0.452	3	3.695	0	0.404	0	0.009	0				
113	3.50	6	0.463	3	0.700	4	0.199	4	0.653	3	0.578	3	0.473	4
115	4.00	2									0.603	4	0.472	4
117	2.00	2					< 0.2	NR	1.090	0			0.480	4
118	3.60	5	0.515	4			0.200	4	0.730	4	0.571	3	0.495	3
120	2.67	6	0.514	4	1.110	2	0.235	0	0.645	2	0.606	4	0.486	4
121	3.40	5	0.500	4	0.750	4	0.210	2	0.700	3	0.600	4		
122	3.50	6	0.500	4	0.980	3	0.200	4	0.770	4	0.580	3	0.460	3
125	2.50	6	0.530	3	0.860	4	0.270	0	0.960	1	0.620	3	0.490	4
131	3.00	6	0.386	0	0.800	4	0.206	3	0.720	4	0.615	3	0.487	4
133	1.50	6	0.570	2	2.800	0	0.170	0	0.780	4	0.560	2	0.440	1
134	3.20	5			0.700	4	0.200	4	0.930	2	0.577	3	0.500	3
135	3.00	1							0.700	3				

Table 6: Standard Reference Water Sample P-13 (Precipitate-snowmelt)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	

			Acidity (as CaCO3)		Ca (Calcium)		Cl (Chloride)		F (Fluoride)		K (Potassium)		Mg (Magnesium)	
MPV =			2.0 +/- 0.4		0.26 +/- 0.03		0.12 +/- 0.08		Insufficient data		0.028 +/- 0.003		.020 +/- 0.001	
F-pseudosigma =			0.7		0.06		0.19				0.008		0.001	
P-13														
	Avg.	Values/	Reported		Reported		Reported		Reported		Reported		Reported	
Lab #	Rating	9	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
1	3.00	9	< 0.005	0	0.23	4	0.08	4	< 0.01		0.025	4	0.044	0
5	2.43	7			0.17	1	0.09	4	< 0.1		< 0.05	NR	< 0.01	0
6	3.14	7	2.0	4	0.31	3					0.060	0	0.020	4
19	0.00	4			0.40	0	0.00	NR	0.06		0.000	NR	0.000	0
23	1.29	7			0.34	2	0.01	3			0.168	0	0.010	0
25	1.67	3	< 5	NR	< 1	NR	< 5	NR	< 0.01		0.010	0	< 1	NR
27	0.00	1					< 1	NR						
34	2.50	2	< 1	NR	< 0.2	NR	< 1	NR	< 0.02		< 0.10	NR	< 0.05	NR
37	2.71	7	1.8	4	0.22	3					0.030	4	0.024	0
39	2.17	6			0.30	3	< 1	NR			0.010	0	0.021	3
40	3.75	8			0.23	4	0.08	4	< 0.01		0.020	3	0.020	4
48	3.00	2					< 2	NR	< 0.02		< 0.10	NR		
49	3.75	8			0.20	2	0.10	4			0.030	4	0.020	4
53	2.13	8			0.24	4	0.07	4	< 0.01		0.040	1	0.040	0
58	2.63	8			0.29	4	0.18	4	0.04		0.020	3	0.060	0
60	1.43	7	2.6	3	0.30	3			< 0.1		0.100	0	< 0.1	NR
64	2.00	8	1.7	4	0.31	3	0.45	1	0.06		0.020	3	< 0.5	NR
67	2.20	5			0.19	2							0.020	4
70	1.80	5							0.04		0.250	0		
73	2.29	7	1.1	2	0.20	2	0.51	0	< 0.1		0.020	3	0.018	2
78	4.00	2					< 1	NR						
85	0.00	6			2.00	0	1.00	0	0.06					
90	2.89	9	4.0	0	0.22	3	0.12	4			0.031	4	0.020	4
95	3.67	3					0.20	4						
98	3.00	7	< 10	NR	0.22	3	0.60	0	< 0.1		0.020	3	0.020	4
100	2.57	7			0.26	4	0.69	0			0.022	3	0.019	3
101	1.50	4			< 1	NR	2.40	0	0.05		< 2	NR	< 1	NR
110	2.67	6			0.27	4					0.160	0	0.022	2
112	4.00	4					0.07	4						
116	3.67	3					0.09	4						
120	3.67	6	< 2	NR	0.27	4	< 1	NR	< 0.1		0.030	4	0.020	4
122	2.80	5	2.0	4	0.24	4	< 0.1	NR	< 0.1		< 0.135	NR	0.023	0
134	2.67	6			0.32	2	0.52	0			< 0.10	NR	0.020	4

Table 6: (cont.) Standard Reference Water Sample P-13 (Precipitate-snowmelt)
Rated Overall Laboratory Performance

RATING:			F-pseudosigma			F-pseudosigma
	4	(Excellent)	0.00 to 0.50	1	(Questionable)	1.51 to 2.00
	3	(Good)	0.51 to 1.00	0	(Poor)	> 2.00
	2	(Satisfactory)	1.01 to 1.50	NR	(Not Rated)	1.01 to 1.50

	Na (Sodium)		pH		PO4 as P		SO4 (Sulfate)		Sp. Cond.	
MPV =	.040 +/- 0.007		5.94 +/- 0.09		Insufficient data		0.17 +/- 0.04		2.77 +/- 0.29	
F-pseudosigma =	0.018		0.24				0.11		0.76	

	Reported		Reported		Reported		Reported		Reported	
Lab #	Value	Rating	Value	Rating	Value	Rating	Value	Rating	Value	Rating
1	0.040	4	6.08	3	0.063		0.15	4	2.50	4
5	0.040	4	6.04	4	< 0.002		0.80	0	3.00	4
6	0.040	4	5.92	4					2.30	3
19	0.000	0	7.48	0	0.000		0.00	NR		
23			7.69	0	< 0.02		0.15	4	4.52	0
25	< 1	NR	6.35	1			< 1	NR	2.68	4
27					0.005		< 1	NR	0.00	0
34	< 0.2	NR	5.94	4	< 0.005		< 1	NR	4.10	1
37	0.070	1	6.10	3	0.001				2.59	4
39	< 0.002	0	5.70	3	< 0.005		< 1	NR	2.73	4
40	0.030	3	5.92	4	< 0.01		0.15	4	2.58	4
48	< 0.1	NR	5.60	2	< 0.10		< 0.15	NR	2.39	4
49	0.040	4	5.85	4	< 0.001		0.20	4	2.51	4
53	0.050	3	6.35	1	< 0.002		0.13	4	9.00	0
58	0.090	0	5.58	2	< 0.01		0.19	4	2.48	4
60	0.100	0	4.36	0	0.010		0.01	2	3.60	2
64	0.010	1	6.04	4	< 0.01		0.77	0	27.10	0
67	0.030	3	5.48	1					3.91	1
70	0.010	1	5.84	4	0.010		0.20	4	6.00	0
73	< 0.05	NR	6.16	3	< 0.002		< 1	NR	2.68	4
78			5.85	4					3.00	4
85	0.100	0	6.45	0			3.50	0	4.80	0
90	0.030	3	5.55	1			0.25	3	3.15	4
95			5.78	3			0.00	NR	2.60	4
98	0.040	4	6.12	3	< 0.01		< 10	NR	3.00	4
100	0.143	0	5.92	4					2.80	4
101	< 1	NR	5.65	2			1.85	0	2.90	4
110	0.037	4	5.95	4			0.03	2		
112			5.94	4			0.15	4	2.52	4
116			6.11	3			0.17	4		
120	0.048	4	6.20	2	< 0.02		< 1	NR	2.71	4
122	< 0.2	NR	5.80	3	< 0.002		< 1	NR	3.50	3
134	0.020	2	5.95	4	0.002		< 1	NR	2.65	4

T107 Ag (Silver) ug/liter

MPV =	12.3 +/- 0.6				
F-pseudosigma =	2.2				
N =	54		Hu = 14.0		
Range =	3.8 295		HI = 11.0		

1. AA: direct, air		4. ICP	
3. AA: flameless		6. MS/ICP	
N =	9	32	12	1
Max =	14.0	295.0	190.0	12.1
Median =	10.0	12.9	12.0	
Min =	3.8	10.0	5.0	12.1

Lab #	Rating	Z-value	1	3	4	6
1	4	0.18		12.7		
5	3	-0.58		11.0		
10	4	-0.47		11.3		
11	4	0.31			13.0	
16	4	-0.13			12.0	
17	4	0.36			13.1	
18	3	-0.54		11.1		
19	2	-1.03		10.0		
20	2	1.35		15.3		
21	3	-0.58			11.0	
24	4	-0.13	12.0			
29	4	0.31		13.0		
30	4	0.40		13.2		
31	4	-0.09				12.1
32	3	-0.58		11.0		
33	3	-0.72			10.7	
34	4	-0.13		12.0		
35	4	-0.13		12.0		
38	0	6.61		27.0		
39	2	-1.03	10.0			
43	0	-2.34			7.1	
45	3	0.76		14.0		
50	0	79.91			190.0	
56	4	-0.31		11.6		
57	2	1.26		15.1		
58	0	-3.42	4.7			
60	4	0.31		13.0		
62	3	-0.65		10.9		
64	4	-0.31		11.6		
66	3	-0.58	11.0			
67	4	-0.13			12.0	
70	0	2.79		18.5		
72	3	0.76	14.0			
73	4	0.31		13.0		
79	0	-3.82	3.8			
80	1	1.57		15.8		
81	NR	NR	< 10			
90	4	-0.40		11.4		
93	2	-1.03	10.0			
94	4	-0.13		12.0		
96	4	0.18		12.7		
98	4	0.09			12.5	
101	NR	NR			< 30	
102	0	2.56		18.0		
103	3	0.76	14.0			
107	0	5.17		23.8		
109	0	2.11		17.0		
111	0	2.34		17.5		
113	0	127.12		295.0		
118	3	0.67		13.8		
120	4	0.22		12.8		
121	0	-2.97			5.7	
122	4	0.22		12.8		
127	0	-3.28			5.0	

Legend: ■ AA: AIR   □ AA: FLAMELESS   ◆ ICP   ◇ MS/ICP   ✕ LESS THAN

33
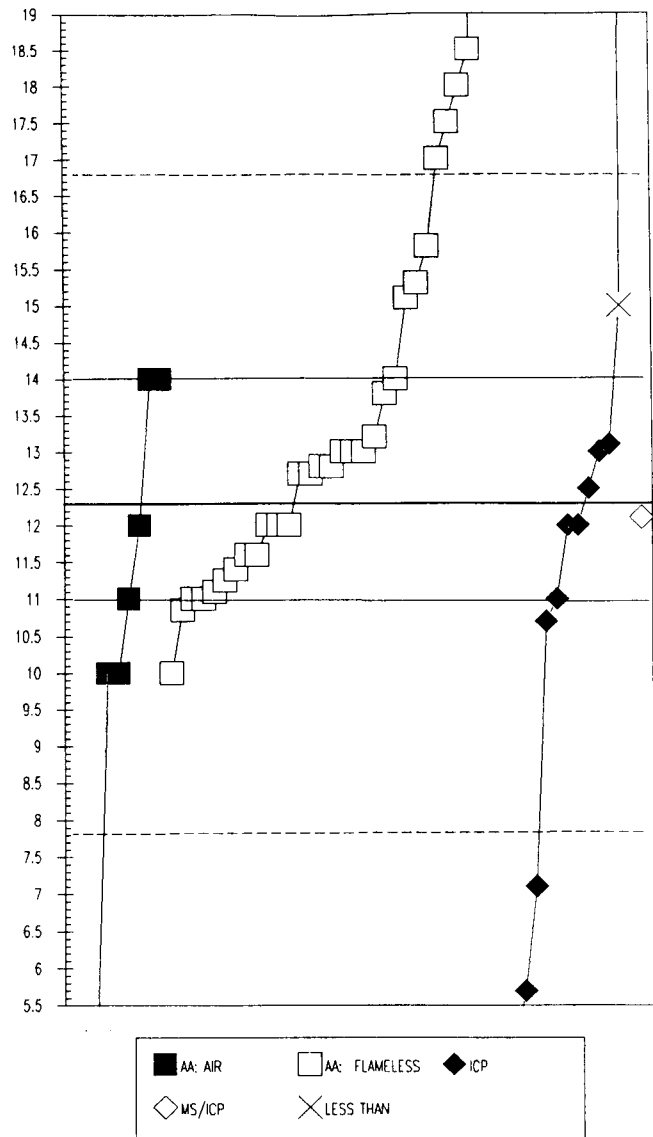
1107   Al (Aluminum)   ug/liter

MPV = 220 +/- 13
F-pseudosigma = 45
N = 53   Hu = 250
Range = 16 690   HI = 189

0. Other		3. AA: flameless	
2. AA: direct,N20		4. ICP	
N =	4	9	12	28
Max =	240	540	495	690
Median =		200	262	215
Min =	190	16	94	19

Lab #	Rating	Z-value	0	2	3	4
1	4	0.02	221			
5	4	0.22				230
6	4	0.44	240			
10	3	-0.71		188		
11	0	-4.38				22
16	1	1.72				298
17	3	-0.66				190
18	4	-0.40				202
19	4	-0.18			212	
20	3	0.66		250		
21	4	0.00				220
24	4	-0.22				210
25	4	-0.38				203
29	4	-0.46	199			
30	4	-0.44		200		
31	4	0.15				227
32	2	-1.06			172	
33	3	-0.53				196
34	3	0.57		246		
35	4	0.00			220	
38	2	-1.33				160
39	4	-0.22		210		
43	3	0.66				250
45	2	1.11				270
50	4	0.27				232
55	0	10.39				690
56	0	2.17			318	
58	3	-0.66	190			
60	4	0.22				230
64	1	1.68			296	
66	0	-4.51		16		
67	3	-0.69				189
69	1	-1.77		140		
70	1	1.88			305	
73	0	6.08			495	
79	4	0.44				240
80	0	-4.45				19
81	4	-0.44				200
83	0	5.71			478	
84	2	-1.11				170
90	0	2.99				355
93	0	-4.20		30		
98	4	0.33				235
101	4	0.09				224
102	0	-2.79			94	
107	3	0.93			262	
108	3	0.91			261	
109	0	7.08		540		
111	4	-0.02			219	
119	1	-1.55				150
120	3	-0.75				186
122	3	-0.82				183
127	2	1.11				270

OTHER   AA: DIRECT N20   AA: FLAMELESS   ICP
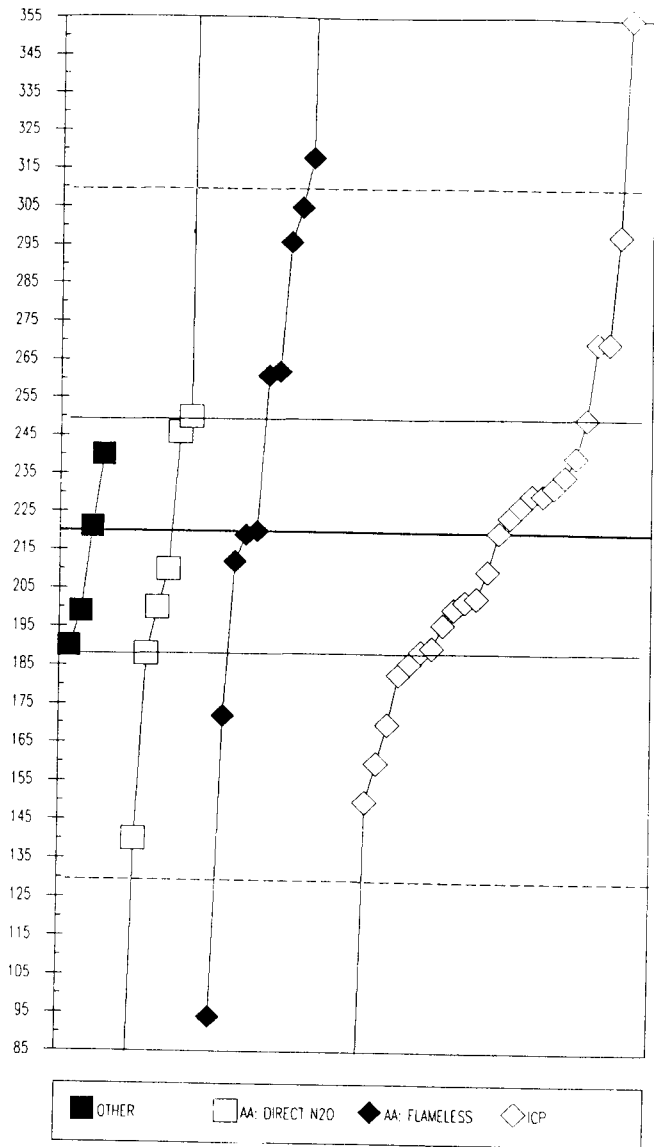
T107   As (Arsenic)   ug/liter

MPV =   10.8 +/- 0.6
F-pseudosigma =   2.1
N =   57   Hu = 12.5
Range =   3 254   HI = 9.6

	0. Other		4. ICP	
	3. AA: flameless		11. AA: hydride,NaBH4	
N =	1	32	6	18
Max =	10.3	254	154	21
Median =		10.8		10.5
Min =	10.3	3.4	9.6	5

Lab #	Rating	Z-value	0	3	4	11
1	3	0.63				12.1
10	4	0.02		10.8		
11	4	0.12				11.0
16	4	-0.35		10.0		
17	4	0.12		11.0		
18	4	-0.35		10.0		
19	1	1.51				14.0
20	4	0.02		10.8		
21	2	1.05		13.0		
24	2	-1.19		8.2		
25	3	0.81				12.5
29	2	-1.14		8.3		
30	0	-3.42		3.4		
31	4	-0.12			10.5	
32	3	-0.81		9.0		
33	4	0.26				11.3
34	3	0.58		12.0		
35	4	-0.21		10.3		
38	4	-0.44		9.8		
39	3	-0.81		9.0		
43	NR	NR			< 11	
44	0	66.64			154.0	
45	0	-2.67				5.0
50	0	21.05			56.0	
55	0	4.77				21.0
57	4	-0.35		10.0		
58	3	-0.58				9.5
60	3	-0.81		9.0		
62	4	-0.47		9.8		
64	2	-1.16				8.3
66	4	-0.16				10.4
67	3	-0.53				9.6
72	3	0.58				12.0
73	4	0.16				11.1
74	2	-1.28				8.0
79	3	0.86		12.6		
80	4	-0.21	10.3			
81	2	-1.28		8.0		
83	1	1.51		14.0		
84	4	0.12		11.0		
90	4	0.12		11.0		
93	4	-0.04				10.7
94	2	1.05		13.0		
96	3	0.63		12.1		
98	2	1.14		13.2		
100	0	45.70			109.0	
101	1	1.51		14.0		
102	4	-0.35				10.0
103	0	40.12		97.0		
107	3	-0.99				8.6
109	0	14.54		42.0		
111	0	113.15		254.0		
118	4	-0.35				10.0
120	3	-0.53		9.6		
122	4	-0.02		10.7		
127	3	-0.53			9.6	
135	3	0.53		11.9		

■ OTHER	□ AA: FLAMELESS	◆ ICP
◇ AA:HYDRIDE	✕ LESS THAN	
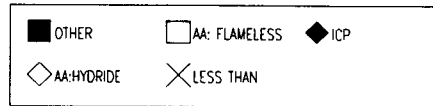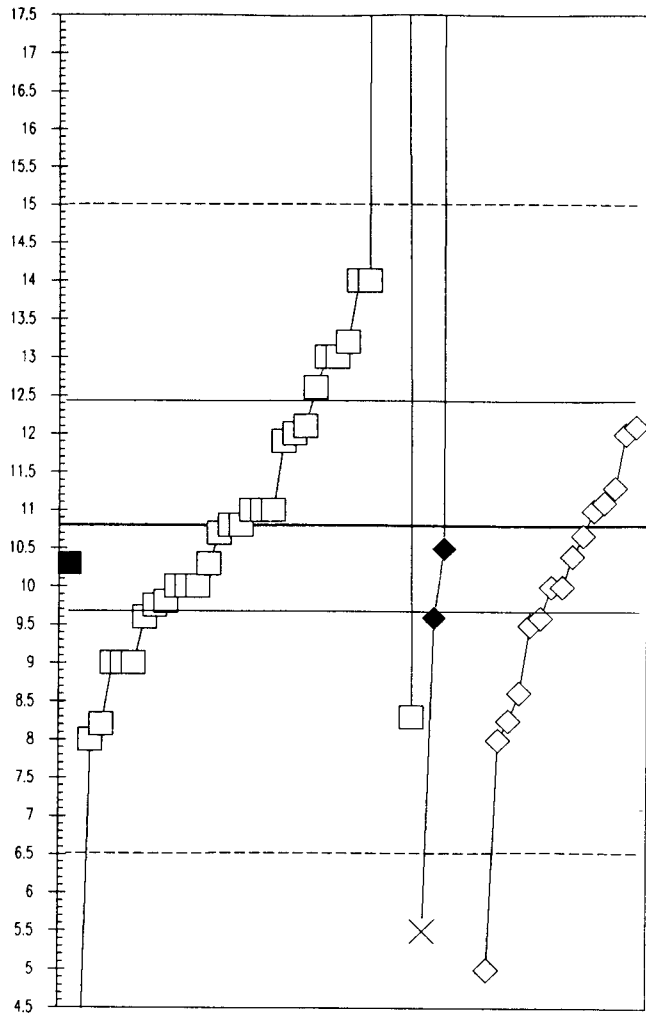
T107   B (Boron)   ug/liter

```
        MPV =       130  +/-  7
F-pseudosigma =      21
          N =        37          Hu = 148
      Range =        85   370    HI = 120
```

	0. Other		22a. Color: curcurmin
4. ICP			
5. DCP			
N =	1	26	2	8
Max =	100	186	136	370
Median =		125		194
Min =	100	85	120	135

Lab #	Rating	Z-value	0	4	5	22c
1	4	0.29			136	
2	4	0.00		130		
5	1	-1.59		97		
6	4	-0.48			120	
11	0	10.60				350
17	3	0.77		146		
18	2	-1.01		109		
19	2	-1.45		100		
20	2	-1.45	100			
21	0	2.70		186		
24	4	0.24		135		
25	4	-0.48		120		
29	0	11.56				370
30	0	3.37				200
31	4	-0.48		120		
33	4	-0.39		122		
34	NR	NR				< 300
38	4	-0.34		123		
43	3	0.96		150		
45	4	-0.48		120		
50	4	0.29		136		
55	0	<		< 10		
58	4	0.24				135
66	3	0.96		150		
67	0	-2.17		85		
70	3	0.96				150
79	4	-0.10		128		
81	1	-1.93		90		
84	4	-0.19		126		
85	0	2.75				187
93	0	6.26				260
98	4	0.34		137		
101	3	0.87		148		
119	3	-0.72		115		
120	4	0.00		130		
124	4	0.48		140		
127	3	-0.72		115		

OTHER   ICP   DCP   COLOR: CURCURMIN   LESS THAN
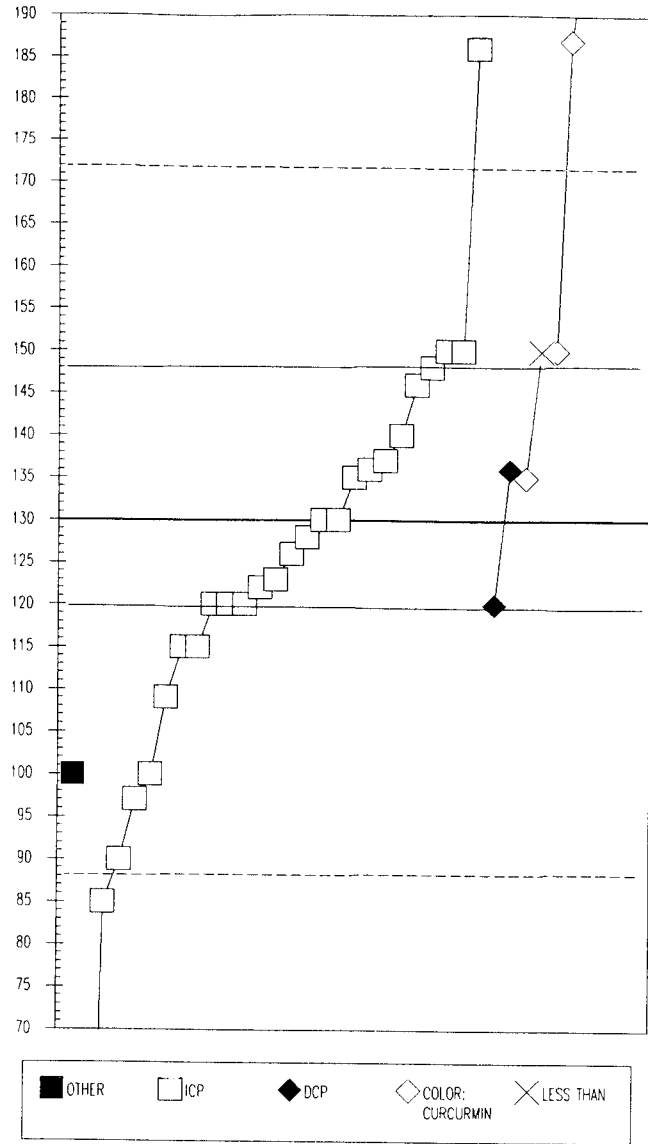
T107   Ba (Barium)   ug/liter

MPV = 192 +/- 3
F-pseudosigma = 11
N = 53   Hu = 200
Range = 10 350   HI = 185

	0. Other			4. ICP
2. AA: direct, N2O				
3. AA: flameless				
N =	1	8	13	31
Max =	200	270	350	228
Median =		195	170	194
Min =	200	105	10	21

Lab #	Rating	Z-value	0	2	3	4
1	3	0.72				200
2	4	-0.18				190
5	1	1.62				210
10	4	0.27		195		
11	3	0.72				200
16	0	-2.25				167
17	4	0.00				192
18	3	0.54				198
19	4	-0.18				190
20	0	7.01		270		
21	4	-0.18				190
24	4	0.27				195
29	0	-2.70			162	
30	2	-1.44			176	
31	3	-0.72				184
32	0	-9.89			82	
33	4	0.00				192
34	3	0.72		200		
35	4	0.45				197
38	4	0.27				195
39	3	0.72		200		
43	4	-0.18				190
45	1	1.62				210
50	1	1.62				210
55	4	-0.18				190
56	0	4.50			242	
57	4	-0.18			190	
58	3	0.72	200			
60	4	-0.18				190
62	0	-8.65			96	
64	0	14.21			350	
66	0	-15.38				21
67	2	1.08				204
69	4	-0.18		190		
70	0	-16.33			10	
73	1	-1.98			170	
79	0	3.24				228
80	0	-7.82		105		
81	0	2.52				220
84	4	-0.18				190
90	4	-0.18				190
91	0	2.52			220	
93	0	-3.17		157		
96	4	0.27		195		
98	4	0.18				194
101	2	1.44				208
108	3	0.72			200	
111	0	-7.28			111	
118	0	-4.05			147	
119	2	1.17				205
120	4	-0.45				187
122	3	-0.63				185
127	2	1.26				206

OTHER   AA: N2O   AA: FLAMELESS   ICP
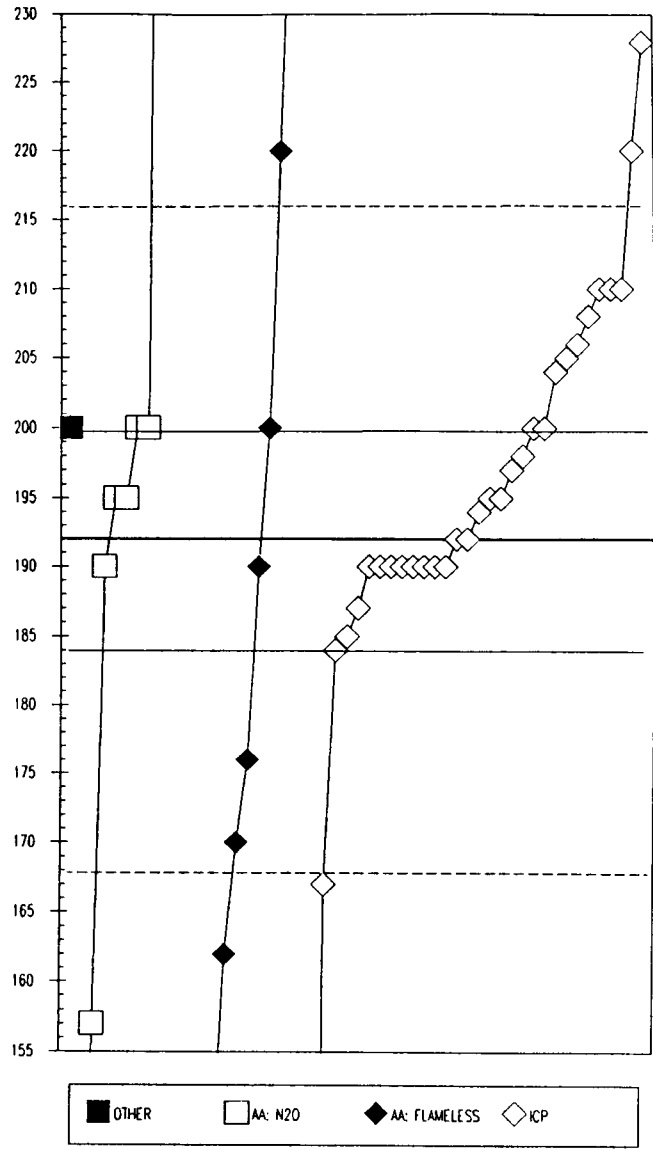
T107   Be (Beryllium)   ug/liter

MPV =   11.0 +/- 0.4
F-pseudosigma =   1.1
N = 34   Hu = 11.5
Range =   8.0 22.0   HI = 10.0

		3. AA: flameless
2. AA: direct, N2O		4. ICP

	N =	5	6	23
	Max =	13.0	19.0	22.0
	Median =			11.0
	Min =	10.0	10.0	8.0

Lot #	Rating	Z-value	2	3	4
1	4	0.36			11.4
2	3	-0.90			10.0
5	4	0.00			11.0
10	3	-0.90	10.0		
11	3	0.90			12.0
16	1	-1.80			9.0
17	2	1.26			12.4
18	0	-2.70			8.0
21	3	-0.90			10.0
25	0	9.89			22.0
30	3	-0.90		10.0	
31	4	-0.45			10.5
32	3	-0.90		10.0	
33	4	0.45			11.5
34	3	-0.90		10.0	
38	3	0.90			12.0
39	3	-0.54		10.4	
43	4	0.00			11.0
45	4	0.00			11.0
55	4	0.00			11.0
58	1	1.80	13.0		
66	3	0.90	12.0		
67	4	0.45			11.5
74	4	0.00		11.0	
79	4	0.18	11.2		
81	NR	NR			< 20
90	4	0.00			11.0
93	4	-0.45	10.5		
98	4	0.36			11.4
101	3	0.90			12.0
118	0	7.19		19.0	
120	4	0.18			11.2
122	3	-0.90			10.0
127	4	0.45			11.5

AA: N2O   AA: FLAMELESS   ICP   LESS THAN

38
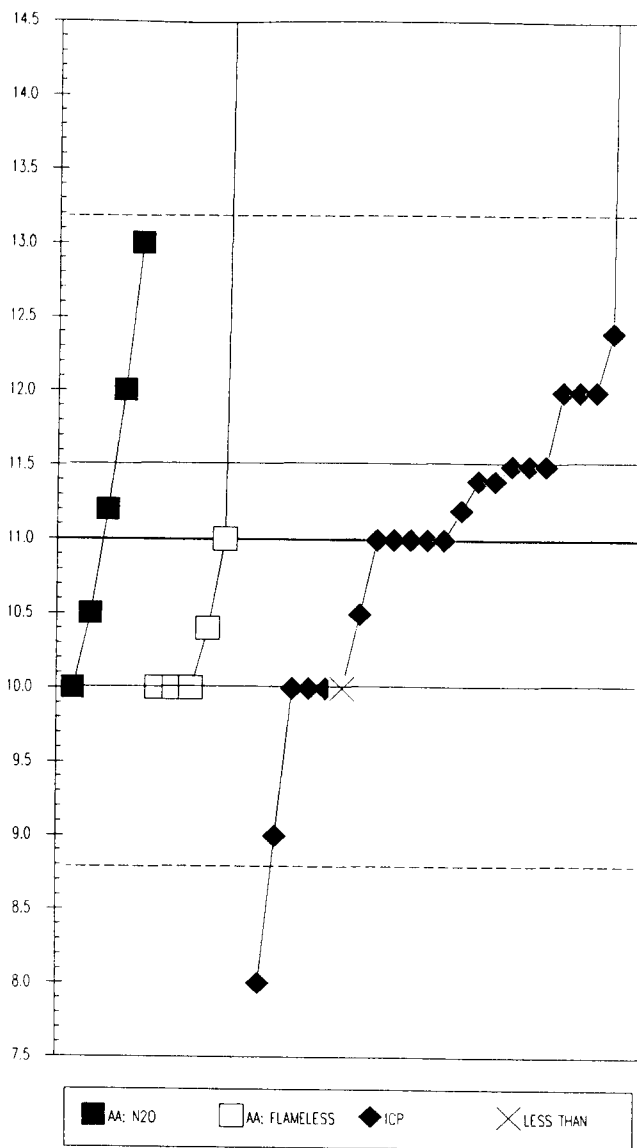
T107   Ca (Calcium)   mg/liter

MPV =	11.7 +/- 0.2	
F-pseudosigma =	0.7	
N =	60	Hu = 12.0
Range =	8.9 17.1	Hl = 11.0

		0. Other		4. ICP	
		1. AA: direct, air		5. DCP	
		2. AA: direct, N2O			
	N =	2	26	5	26	1
	Max =	11.2	17.1	11.7	14	12.1
	Median =		11.7		11.8	
	Min =	9.2	8.9	9.8	9.3	12.1

Lab #	Rating	Z-value	0	1	2	4	5
1	4	0.00		11.7			
2	4	0.40				12.0	
5	4	0.40				12.0	
6	3	0.54					12.1
11	4	0.40				12.0	
16	1	1.75		13.0			
17	4	-0.40				11.4	
18	3	0.54				12.1	
19	3	-0.94				11.0	
21	3	-0.94				11.0	
24	3	-0.94				11.0	
25	3	0.54				12.1	
29	4	0.40		12.0			
30	0	-2.29		10.0			
32	0	-2.56			9.8		
33	3	-0.54				11.3	
34	2	-1.21			10.8		
35	4	-0.11		11.6			
38	4	0.13				11.8	
39	0	-2.46		9.9			
43	3	-0.94				11.0	
45	4	0.40				12.0	
50	0	3.10				14.0	
51	4	0.00		11.7			
55	2	-1.08				10.9	
56	0	-3.37	9.2				
57	3	0.81		12.3			
58	3	-0.94		11.0			
60	4	-0.27				11.5	
62	0	2.70		13.7			
64	3	-0.67	11.2				
65	2	-1.35		10.7			
66	4	0.27		11.9			
67	4	-0.40				11.4	
69	4	-0.13		11.6			
72	0	-2.29			10.0		
73	4	0.40		12.0			
79	1	1.62				12.9	
80	0	-3.78		8.9			
81	4	0.00			11.7		
83	0	-3.64		9.0			
84	4	0.40				12.0	
85	1	1.75		13.0			
90	4	0.00				11.7	
93	4	0.40		12.0			
98	4	0.27				11.9	
100	4	0.00		11.7			
101	1	1.75				13.0	
103	0	7.28		17.1			
107	3	-0.67		11.2			
108	4	-0.27		11.5			
109	4	-0.13			11.6		
118	2	-1.20		10.8			
119	3	0.54				12.1	
120	4	0.00				11.7	
122	3	-0.54				11.3	
124	4	0.40		12.0			
125	3	-0.94		11.0			
127	0	-3.24				9.3	
134	3	0.92		12.4			

OTHER   AA: AIR   AA: N2O   ICP   DCP

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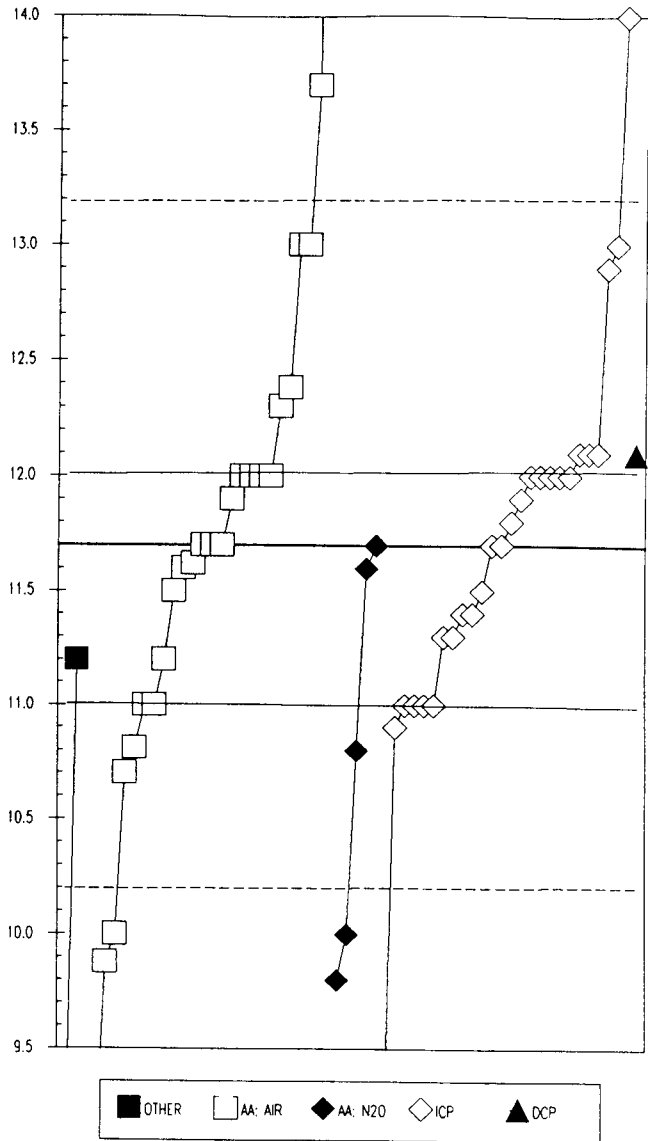
Cd (Cadmium)   ug/liter

MPV = 14.3 +/- 0.5
F-pseudosigma = 2.1
N = 70
Range = 2.0   141
Hu = 15.0
HI = 12.1

0. Other		4. ICP
1. AA: direct, air		10. AA: APDC/MIBK
3. AA: flameless		

	0	1	3	4	10
N =	1	16	33	19	1
Max =	15.0	20.0	19.0	141.0	7.7
Median =		15.0	13.5	15.0	
Min =	15.0	8.7	2.0	11.0	7.7

Lab #	Rating	Z-value	0	1	3	4	10
1	4	-0.12				14.0	
2	0	2.67				20.0	
4	4	0.35			15.0		
5	4	0.35			15.0		
10	4	-0.35			13.5		
11	3	0.81				16.0	
16	1	-1.51				11.0	
17	3	0.58			15.5		
18	4	0.02				14.3	
19	4	-0.30			13.6		
20	0	-2.99			7.8		
21	4	-0.12				14.0	
24	3	-0.58		13.0			
25	0	3.84				22.5	
29	2	-1.37			11.3		
30	1	-1.60			10.8		
31	3	-0.63				12.9	
32	2	-1.05			12.0		
33	3	-0.58				13.0	
34	4	-0.40			13.4		
35	1	-1.60			10.8		
38	0	-2.26			9.4		
39	4	0.35		15.0			
43	4	0.35				15.0	
44	0	58.96				141.0	
45	0	2.21			19.0		
50	4	0.35				15.0	
51	4	-0.02			14.2		
55	0	2.67				20.0	
56	4	-0.26			13.7		
57	3	-1.00			12.1		
58	0	-3.05					7.7
60	0	<			< 2		
61	4	0.35		15.0			
62	0	-2.60		8.7			
64	4	0.30			14.9		
65	4	-0.12		14.0			
66	3	-0.58		13.0			
67	4	0.35				15.0	
68	3	0.81		16.0			
72	3	0.81		16.0			
73	2	-1.14			11.8		
74	3	0.86			16.1		
79	4	0.40		15.1			
80	4	0.35	15.0				
81	0	2.67		20.0			
83	4	0.35			15.0		
84	1	1.74			18.0		
90	0	-3.24			7.3		
91	4	0.35			15.0		
93	4	0.35		15.0			
94	4	-0.12		14.0			
96	3	-0.67			12.8		
98	4	-0.02				14.2	
100	3	0.91				16.2	
101	4	0.35				15.0	
102	2	-1.05			12.0		
103	3	0.81		16.0			
107	4	0.16			14.6		
108	4	-0.12			14.0		
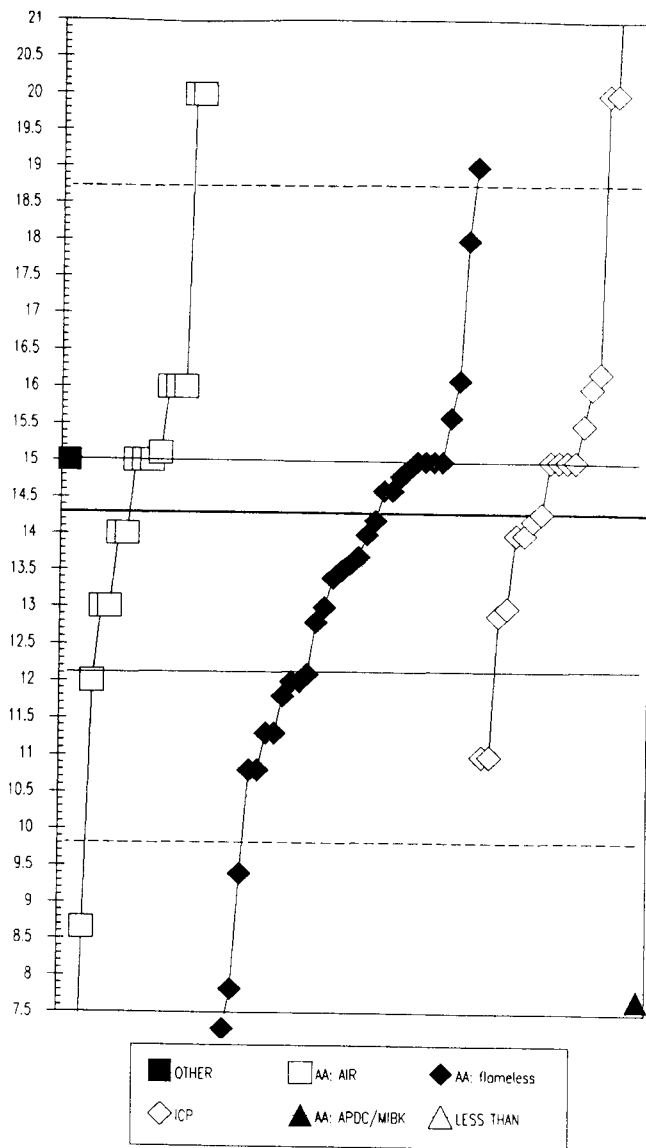
Lab #	Rating	Z-value	0	1	3	4	10
109	3	0.63			15.6		
111	0	-5.70			2.0		
113	0	<		< 10			
118	2	-1.37			11.3		
120	4	0.16			14.6		
121	3	-0.58			13.0		
122	4	0.26			14.8		
125	2	-1.05		12.0			
127	1	-1.51				11.0	
130	0	2.67		20.0			

Legend: OTHER · AA: AIR · AA: flameless · ICP · AA: APDC/MIBK · LESS THAN

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T107   Co (Cobalt)   ug/liter

MPV = 11.0 +/- 0.5
F-pseudosigma = 1.4
N = 34   Hu = 11.8
Range = 8.2 21.0   HI = 9.9

	0. Other		4. ICP		
	1. AA: direct, air		5. DCP		
	3. AA: flameless		10. AA: APDC/MIBK		
N =	0	5	9	18	1	1
Max =	0	21.0	12.6	12.2	10.0	10.0
Median =			11.0	11.0		
Min =	0	14.2	9.2	8.2	10.0	10.0

Lab #	Rating	Z-value	0	1	3	4	5	10
1	4	0.50				11.7		
2	3	-0.71				10.0		
6	3	-0.71					10.0	
10	NR	NR		< 30				
11	3	0.71				12.0		
16	3	-0.71				10.0		
17	1	-1.99				8.2		
18	4	0.00				11.0		
21	2	-1.42				9.0		
24	0	2.84		15.0				
30	2	-1.28			9.2			
31	3	0.85				12.2		
32	4	0.00			11.0			
33	3	0.57				11.8		
34	NR	NR		< 100				
38	NR	NR				< 50		
43	2	-1.21				9.3		
45	NR	NR			< 50			
50	3	-0.71				10.0		
55	NR	NR				< 10		
58	3	-0.71						10.0
79	0	2.27		14.2				
81	NR	NR				< 20		
83	3	-0.71			10.0			
90	3	-0.85			9.8			
93	0	7.10		21.0				
94	4	0.00			11.0			
98	4	0.50				11.7		
101	3	0.71				12.0		
102	4	0.00			11.0			
107	3	0.99			12.4			
120	2	1.14			12.6			
122	NR	NR				< 25		
127	4	0.00				11.0		

OTHER   AA: AIR   AA: FLAMELESS   ICP
DCP   AA: APDC/MIBK   LESS THAN
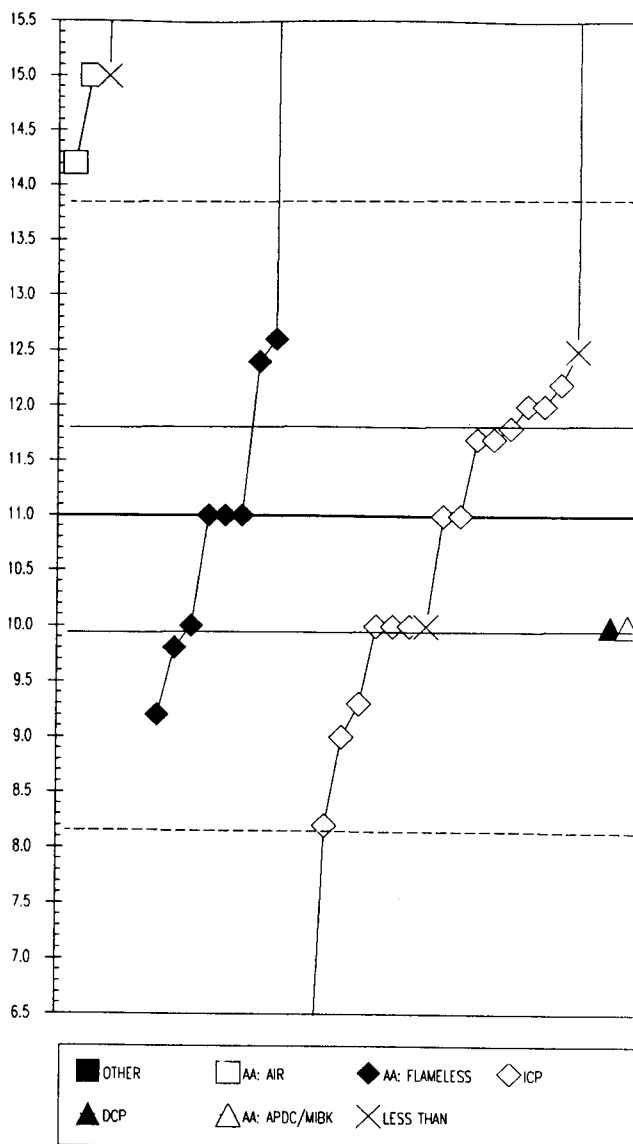
MPV =   13.0 +/- 0.5
F-pseudosigma =   2.1
N =   69   Hu = 14.2
Range =   0.0 1260   HI = 11.4

			0	1	3	4	10a
0. Other					4. ICP		
1. AA: direct, air					10a. AA: APDC/MIBK		
3. AA: flameless							
N =			2	10	27	19	1
Max =			19.0	22.0	68.0	1260.0	13.0
Median =				13.9	12.5	13.0	
Min =			12.4	7.0	0.0	5.6	13.0

Lab #	Rating	Z-value	0	1	3	4	10a
1	4	-0.29	12.4				
2	2	-1.45				10.0	
4	3	-0.96			11.0		
5	4	0.00			13.0		
10	3	-0.96		11.0			
11	4	0.00				13.0	
16	4	0.48				14.0	
17	0	-3.57				5.6	
18	0	2.89				19.0	
19	4	-0.48			12.0		
20	0	2.46			18.1		
21	2	-1.45				10.0	
24	0	26.50			68.0		
25	1	-1.69				9.5	
29	4	0.00			13.0		
30	1	-1.83			9.2		
31	4	0.00				13.0	
32	4	0.00			13.0		
33	4	0.24			13.5		
34	3	0.58			14.2		
35	3	-0.53			11.9		
38	NR	NR			< 20		
39	4	-0.05			12.9		
43	4	0.00				13.0	
44	0	600.79				1260	
45	0	-3.37			6.0		
50	4	0.00			13.0		
51	4	0.04			13.1		
55	NR	NR			< 10		
56	3	0.53			14.1		
57	2	1.06			15.2		
58	4	0.00					13.0
60	0	3.37				20	
61	0	3.37		20			
62	4	-0.24		12.5			
64	0	2.55			18.3		
65	0	-2.89		7.0			
66	0	2.89	19.0				
67	4	0.48				14.0	
70	1	-1.54			9.8		
72	4	0.00		13.0			
73	3	-0.72			11.5		
74	3	-0.58			11.8		
79	3	0.82		14.7			
80	0	2.22			17.6		
81	NR	NR		< 20			
83	2	-1.45			10.0		
90	4	-0.48			12.0		
91	4	0.00			13.0		
93	2	1.45		16.0			
94	3	-0.96			11.0		
96	4	-0.24			12.5		
98	4	-0.14				12.7	
100	0	3.71				20.7	
101	4	0.48				14.0	
102	4	-0.48			12.0		
103	0	4.34		22.0			
104	0	-6.26			0.0		

■ OTHER	□ AA: AIR	◆ AA: FLAMELESS
◇ ICP	▲ AA: APDC/MIBK	✕ LESS THAN
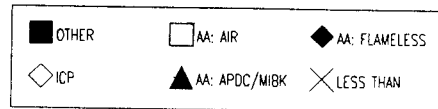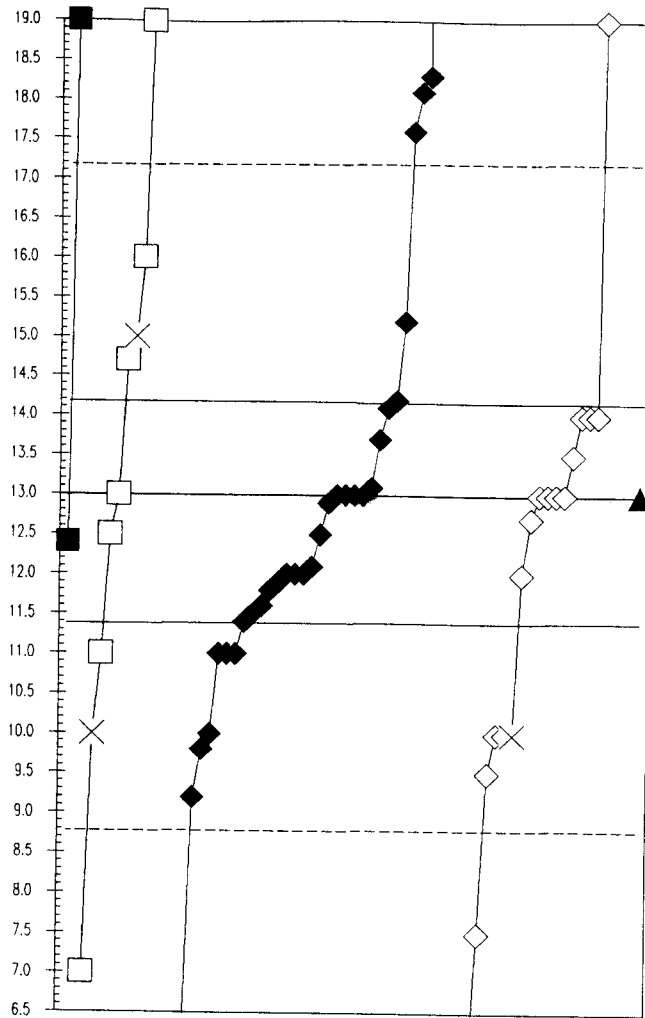
Lab #	Rating	Z-value	0	1	3	4
107	4	-0.43			12.1	
108	3	-0.96			11.0	
109	0	41.92			100.0	
111	0	26.98			69.0	
113	NR	NR		< 30		
118	3	-0.67			11.6	
120	3	-0.77			11.4	
121	0	-2.65				7.5
122	4	0.34			13.7	
125	0	2.89		19.0		
127	4	-0.48				12.0

T107   Cu (Copper) ug/liter

MPV =   30.0 +/- 0.6
F-pseudosigma =   2.3
N = 73   Hu = 30.2
Range =   0.02   333   HI = 27.0

| | 0. Other | 3. AA: flameless |
| | 1. AA: direct, air | 4. ICP |

	0	1	3	4
N =	1	27	21	24
Max =	30.0	60.0	34.9	333.0
Median =		30.0	27.5	30.0
Min =	30.0	0.0	18.1	10.0

Lab #	Rating	Z-value	0	1	3	4
1	3	0.51				31.2
2	4	0.00				30.0
4	2	-1.28		27.0		
5	1	-1.71			26.0	
6	4	0.00	30.0			
10	4	0.00		30.0		
11	3	-0.86				28.0
16	2	-1.28		27.0		
17	0	3.13				37.3
18	2	-1.07			27.5	
19	0	4.28		40.0		
20	0	-2.57		24.0		
21	3	-0.86				28.0
24	4	0.00				30.0
29	4	0.00		30.0		
30	1	-1.71			26.0	
31	4	-0.21				29.5
32	2	-1.28		27.0		
33	4	-0.39				29.1
34	4	0.43		31.0		
35	4	-0.43		29.0		
38	1	-1.71			26.0	
39	0	-2.14		25.0		
43	3	0.86				32.0
44	0	129.76				333.0
45	4	0.00		30.0		
50	0	-8.57				10.0
51	4	0.06			30.2	
55	4	0.00				30.0
56	3	0.60			31.4	
57	0	-3.00			23.0	
58	4	-0.30		29.3		
60	4	0.00				30.0
61	4	0.00		30.0		
62	4	-0.43		29.0		
64	1	-1.88			25.6	
65	2	-1.28		27.0		
66	4	0.00		30.0		
67	2	-1.28				27.0
68	4	0.00		30.0		
69	2	-1.28		27.0		
70	1	-1.71			26.0	
72	4	0.43		31.0		
73	0	-5.10			18.1	
74	3	-0.86			28.0	
79	4	-0.47		28.9		
80	NR	NR				< 50
81	4	0.00		30.0		
83	0	-3.85			21.0	
84	4	-0.43				29.0
90	4	0.00				30.0
91	1	1.71		34.0		
93	3	-0.86		28.0		
94	4	0.00		30.0		
96	3	0.86		32.0		
98	3	0.56				31.3
100	4	0.00				30.0
101	4	0.43				31.0
102	2	-1.28			27.0	
103	1	1.71		34.0		
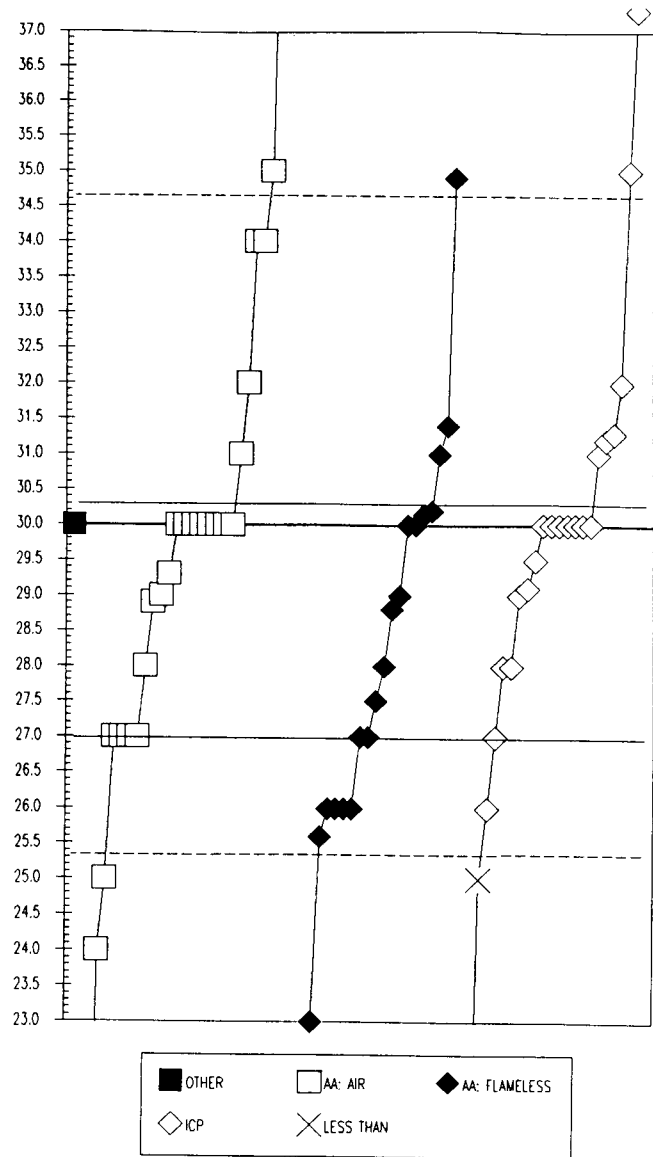
Lab #	Rating	Z-value	0	1	3	4
104	0	-12.84		0.0		
107	3	-0.51			28.8	
109	4	0.00			30.0	
111	0	12.85		60.0		
113	0	<		< 20		
118	0	2.10			34.9	
119	4	0.00				30.0
120	4	0.09			30.2	
121	0	-4.28				20.0
122	1	-1.71				26.0
125	0	2.14		35.0		
127	0	2.14				35.0
130	4	0.00		30.0		

■ OTHER   □ AA: AIR   ◆ AA: FLAMELESS
◇ ICP   ✕ LESS THAN

T107   Fe (Iron) µg /liter

MPV = 52 +/- 2
F-pseudosigma = 7
N = 68   Hu = 59
Range = 30 322   HI = 49

	0. Other		4. ICP
	1. AA: direct, air		
	3. AA: flameless		
N =	5	29	6	28
Max =	70	322	76	80
Median =		50		52
Min =	40	30	40	40

Lab #	Rating	Z-value	0	1	3	4
1	4	-0.20				51
2	4	-0.27				50
5	4	-0.27				50
6	0	2.43	70			
10	4	-0.40		49		
11	4	-0.27				50
16	0	36.42		322		
17	0	2.29				69
18	3	0.81				58
19	3	-0.81				46
20	4	-0.27		50		
21	2	1.21				61
24	3	-0.54				48
25	4	0.40				55
29	4	0.40		55		
30	0	-2.97		30		
31	NR	NR				< 110
32	0	3.78		80		
33	4	0.40				55
34	3	0.54			56	
35	2	1.35		62		
38	3	-0.54				48
39	0	-2.97		30		
43	4	0.13				53
45	2	1.08		60		
50	2	-1.35				42
51	3	0.94	59			
52.2	1	-1.62	40			
55	4	-0.27				50
56	4	0.00			52	
57	4	-0.40		49		
58	2	1.08		60		
60	0	3.78				80
62	0	4.18		83		
64	3	0.73			57	
65	2	1.35		62		
66	4	-0.40		49		
67	4	0.20				54
68	3	-0.54		48		
69	0	2.43		70		
70	0	3.24			76	
72	0	2.02	67			
73	2	-1.36		42		
79	4	0.22		54		
80	2	1.08				60
81	4	-0.27		50		
83	4	-0.27		50		
84	4	-0.13				51
90	3	-0.94				45
93	3	0.81		58		
94	4	-0.27		50		
96	4	0.00		52		
98	4	0.04				52
100	4	0.35				55
101	3	0.94				59
102	1	-1.62			40	
103	0	3.78		80		
107	4	0.34			55	
109	4	-0.27	50			
113	0	<		< 10		
118	3	-0.54		48		
119	1	-1.62				40
120	4	0.22				54
122	4	-0.27				50
124	3	-0.94		45		
125	4	-0.27		50		
127	1	-1.62				40
130	4	-0.27		50		

■ OTHER   □ AA: AIR   ◆ AA: FLAMELESS
◇ ICP   ✕ LESS THAN

44
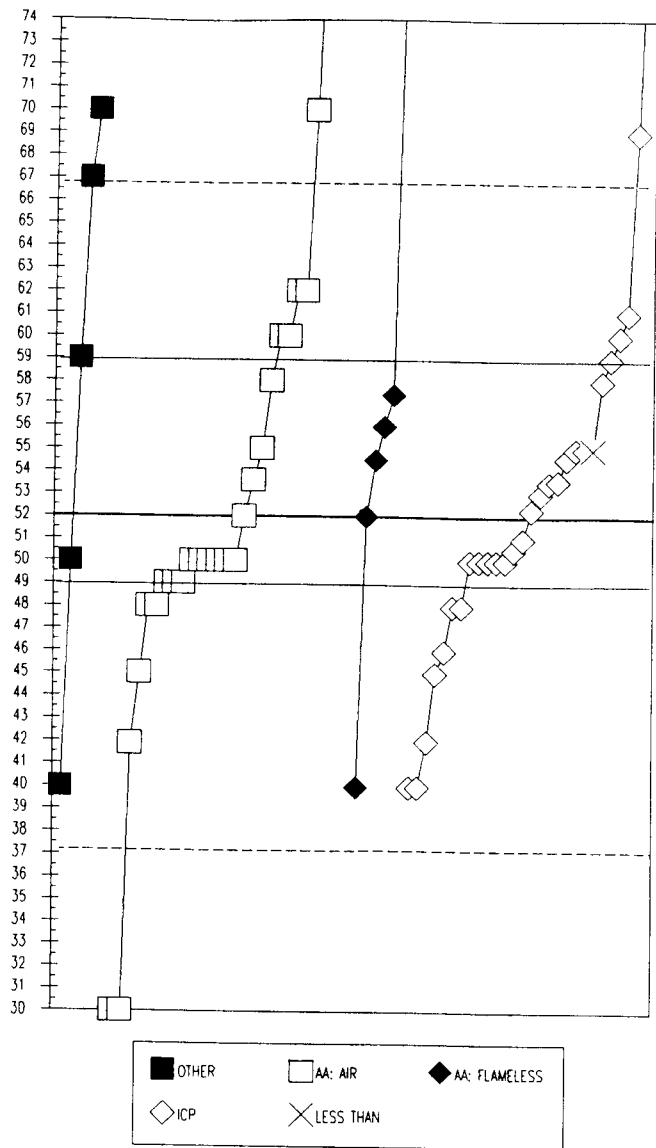
T107   K (Potassium)   mg/liter

MPV =   0.84   +/-   0.04
F-pseudosigma =   0.15
N =   62   Hu = 0.97
Range =   0.12   670   HI = 0.77

	0. Other		4. ICP	
	1. AA: direct, air		12. Flame photometric	
N =	3	42	16	1
Max =	1.10	3.90	670	0.81
Median =		0.85	0.80	
Min =	0.83	0.55	0.12	0.81

Lab #	Rating	Z-value	0	1	4	12
1	4	-0.01		0.84		
5	4	0.34			0.89	
6	1	1.75	1.10			
11	2	1.08	1.00			
16	4	-0.27		0.80		
17	0	-4.86			0.12	
18	4	-0.47			0.77	
19	1	1.75		1.10		
21	2	1.08		1.00		
24	1	-1.96			0.55	
25	4	0.33		0.89		
29	4	-0.34		0.79		
30	2	1.08		1.00		
32	3	-0.54		0.76		
33	2	-1.35			0.64	
34	4	-0.03		0.84		
35	4	-0.34		0.79		
38	4	-0.20				0.81
39	4	0.07		0.85		
43	0	4513			670	
45	2	1.08		1.00		
50	2	1.08			1.00	
51	4	-0.20		0.81		
55	0	-2.09			0.53	
56	4	-0.07	0.83			
57	3	0.64		0.94		
58	4	0.20		0.87		
60	4	-0.27			0.80	
62	4	0.40		0.90		
64	4	0.00		0.84		
65	4	-0.27		0.80		
66	4	-0.27		0.80		
67	3	-0.88			0.71	
70	3	-0.88		0.71		
72	3	-0.54		0.76		
73	4	0.00		0.84		
79	0	4.05			1.44	
80	4	0.40		0.90		
81	2	1.08		1.00		
83	2	1.15		1.01		
84	4	-0.27			0.80	
85	2	1.08		1.00		
90	4	0.07		0.85		
93	0	20.64		3.90		
98	3	-0.94		0.70		
100	4	-0.27		0.80		
101	NR	NR			< 2	
103	4	0.40		0.90		
107	1	-1.96		0.55		
108	4	-0.47		0.77		
109	2	1.08		1.00		
111	4	-0.47		0.77		
118	3	-0.54		0.76		
119	4	0.40			0.90	
120	4	0.07		0.85		
121	3	0.88			0.97	
122	4	0.27		0.88		
124	4	0.40		0.90		
125	4	0.40		0.90		
127	0	-3.98			0.25	
130	2	-1.28		0.65		
134	2	1.01		0.99		

OTHER   AA: AIR   ICP   FLAME   LESS THAN
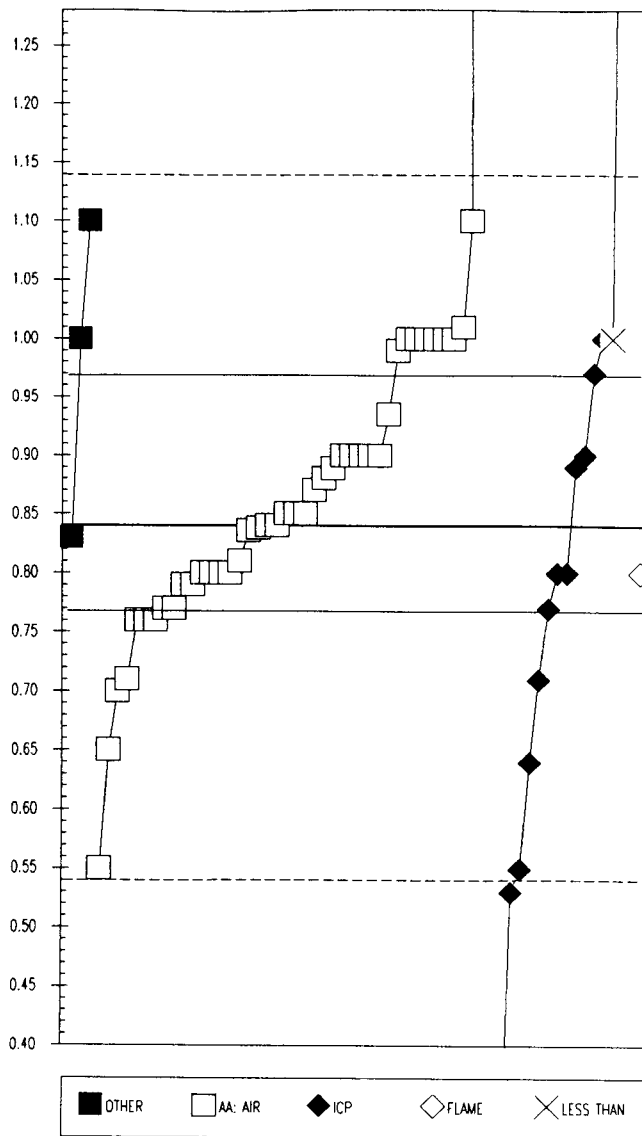
T107   Li (Lithium)   ug/liter

MPV =   193 +/- 7
F-pseudosigma =   14
N =   21   Hu = 205
Range =   18 370   HI = 186

	0. Other		3. AA: flameless	
	1. AA: direct, air		4. ICP	
N =	1	6	1	13
Max =	190	200	119	370
Median =				200
Min =	190	18	119	122

Lab #	Rcting	Z-value	0	1	3	4
1	4	0.00				193
2	4	0.50				200
20	0	-12.43		18		
24	1	1.56				215
30	0	-5.25			119	
31	4	0.50				200
38	2	1.21				210
43	4	-0.21				190
50	2	1.35				212
56	4	-0.21	190			
58	4	0.50		200		
66	0	-12.21		21		
67	4	-0.50				186
79	3	0.85				205
90	4	0.50		200		
93	0	-12.28		20		
98	4	-0.21				190
119	0	-5.04				122
120	2	1.49				214
122	4	-0.14				191
127	0	12.57				370

OTHER   AA: AIR   AA: FLAMELESS   ICP

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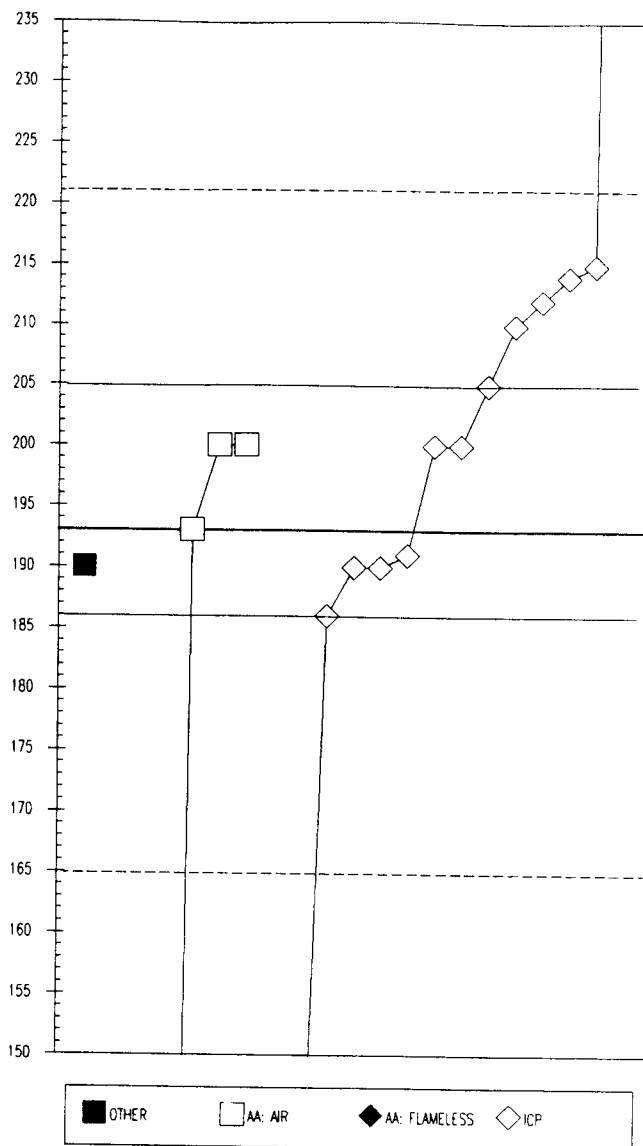
T107   Mg (Magnesium)   mg/liter

MPV = 2.10 +/- 0.03
F-pseudosigma = 0.13
N = 61   Hu = 2.17
Range = 1.00 3.58   Hl = 2.00

0. Other			4. ICP	
1. AA: direct, air			5. DCP	
N =	1	54	25	1
Max =	1.45	3.58	2.73	2.20
Median =		2.10	2.10	
Min =	1.45	1.00	1.50	2.20

Lab #	Rating	Z-value	0	1	4	5
1	4	0.00		2.10		
2	4	0.00			2.10	
5	3	-0.79			2.00	
6	3	0.79				2.20
11	3	0.79			2.20	
16	4	0.00		2.10		
17	4	-0.24			2.07	
18	0	-4.76			1.50	
19	0	-3.17			1.70	
21	3	-0.79			2.00	
24	3	-0.79			2.00	
25	0	-3.57			1.65	
29	4	0.00		2.10		
30	0	-8.73		1.00		
32	0	3.17		2.50		
33	4	0.00			2.10	
34	4	0.00		2.10		
35	3	0.79		2.20		
38	4	0.48			2.16	
39	2	-1.03		1.97		
43	3	-0.79			2.00	
45	4	0.00		2.10		
50	0	2.38			2.40	
51	3	0.71		2.19		
55	2	-1.43			1.92	
56	0	-5.16	1.45			
57	3	0.79		2.20		
58	4	0.00		2.10		
60	4	0.00			2.10	
62	0	3.97		2.60		
64	3	-0.56		2.03		
65	3	-0.79		2.00		
66	4	-0.32		2.06		
67	4	0.40			2.15	
69	0	-4.76		1.50		
72	3	-0.63		2.02		
73	2	-1.19		1.95		
79	0	5.00			2.73	
80	4	0.00		2.10		
81	0	11.74		3.58		
83	4	0.00		2.10		
84	4	0.00			2.10	
85	3	-0.79		2.00		
90	3	0.63			2.18	
93	4	0.00		2.10		
98	4	0.48			2.16	
100	3	-0.79		2.00		
101	1	1.59			2.30	
103	0	-6.35		1.30		
107	0	4.13		2.62		
108	4	0.00		2.10		
109	0	3.17		2.50		
118	2	1.51		2.29		
119	4	0.00			2.10	
120	3	0.56		2.17		
122	3	-0.71			2.01	
124	3	-0.79		2.00		
125	4	0.00		2.10		
127	4	-0.48			2.04	
130	3	-0.79		2.00		
134	4	-0.08		2.09		

OTHER   AA: AIR   ICP   DCP

47
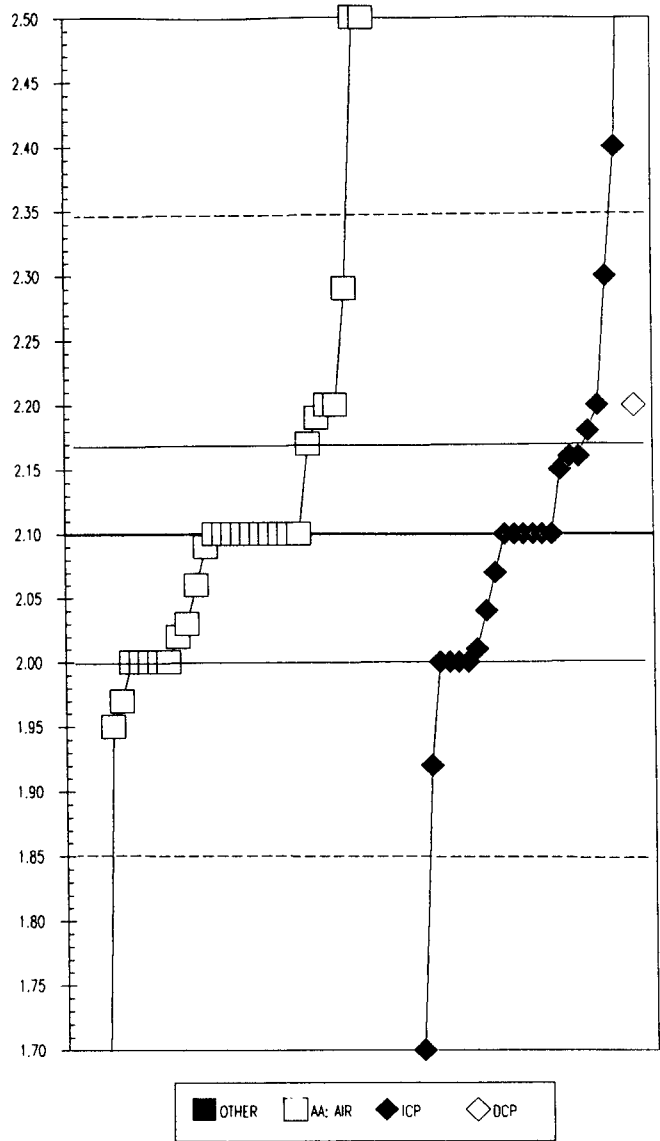
T107   Mn (Manganese)   ug/liter

MPV = 45 +/- 2
F-pseudosigma = 6
N = 68   Hu = 49
Range = 3 77   Hl = 41

0. Other			3. AA: flameless	
1. AA: direct, air			4. ICP	
	0	1	3	4
N =	1	29	8	29
Max =	50	77	46	53
Median =		45		46
Min =	50	30	3	20

Lab #	Rating	Z-value	0	1	3	4
1	4	0.34				47
2	3	0.84				50
5	3	0.84				50
6	3	0.84		50		
10	3	0.67		49		
11	4	0.17				46
16	3	-0.84				40
17	4	0.51				48
18	3	0.67				49
19	3	-0.84				40
20	3	-0.84		40		
21	4	-0.34				43
24	4	0.34				47
25	4	0.00				45
29	2	1.01		51		
30	0	4.22		70		
31	4	0.00				45
32	3	-0.84		40		
33	4	0.34				47
34	3	-0.67			41	
38	4	-0.34				43
39	3	-0.84		40		
43	4	0.00				45
45	3	0.84		50		
50	2	1.35				53
51	4	-0.17			44	
52.2	0	5.40		77		
55	0	-4.22				20
56	3	-0.67			41	
57	4	0.00		45		
58	3	0.84		50		
60	3	0.84				50
62	4	0.00		45		
64	3	-0.67			41	
66	2	1.01		51		
67	4	-0.17				44
68	4	0.17		46		
69	3	-0.84		40		
70	0	-7.08			3	
72	4	-0.51		42		
73	3	0.84		50		
79	4	0.51		48		
80	NR	NR				< 50
81	3	-0.84		40		
83	4	0.51		48		
84	4	0.17				46
85	0	-2.53		30		
90	4	-0.34				43
93	3	0.84		50		
94	4	-0.51			42	
96	3	0.84		50		
98	4	0.17				46
100	4	0.34				47
101	3	0.67				49
102	4	-0.17			44	
103	3	-0.67		41		
107	4	0.17			46	
109	3	0.84		50		
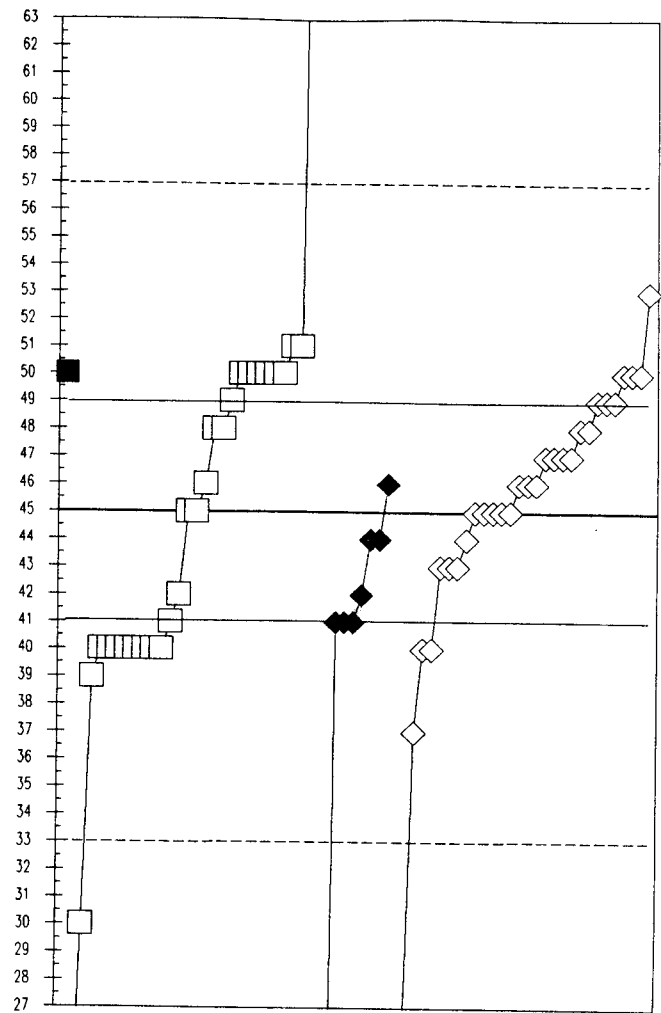
Lab #	Rating	Z-value	0	1	3	4
113	3	0.84		50		
118	3	-0.84		40		
119	4	0.51				48
120	4	0.00				45
121	3	0.67				49
122	4	0.00				45
124	3	-0.84		40		
125	2	-1.01		39		
127	2	-1.35				37
130	3	-0.84		40		

OTHER   AA: AIR   AA: FLAMELESS
ICP   LESS THAN

T107　　　Mo (Molybdenum)　　　ug/liter

MPV = 15.0 +/- 0.7
F-pseudosigma = 1.9
N = 28　　　　　Hu = 16.0
Range = 9.7　150　　Hl = 13.5

				4. ICP		
2. AA: direct, N2O				6. MS/ICP		
3. AA: flameless				10. 8-hydroxylquinoline/MIBK		
N =	5	5	15	1	2
Max =	150	16	19	14.6	14
Median =			15		
Min =	18	14	9.7	14.6	12.5

Lab #	Rating	Z-value	2	3	4	6	10
1	2	-1.35					12.5
11	2	-1.08			13.0		
17	1	1.67			18.1		
18	0	-2.86			9.7		
20	0	8.41	30.6				
21	2	-1.08			13.0		
24	1	1.62	18.0				
25	NR	NR			< 50		
30	3	0.54		16.0			
31	4	-0.22				14.6	
34	NR	NR	< 500				
38	NR	NR			< 50		
43	4	0.00			15.0		
50	4	0.00			15.0		
55	0	<			< 10		
58	3	-0.54					14.0
66	NR	NR	< 50				
81	NR	NR			< 20		
90	3	0.54			16.0		
91	3	-0.54		14.0			
93	0	72.79	150.0				
94	3	0.54		16.0			
98	3	-0.54			14.0		
101	3	0.54		16.0			
102	4	0.00		15.0			
120	4	-0.27		14.5			
122	0	2.16			19.0		
127	4	0.00			15.0		

Legend:
AA: N2O　　AA: FLAMELESS　　ICP
MS/ICP　　8-HYDROXYL/MIBK　　LESS THAN
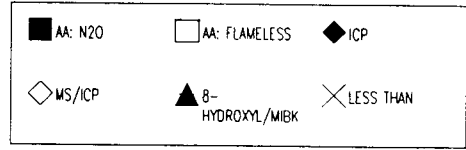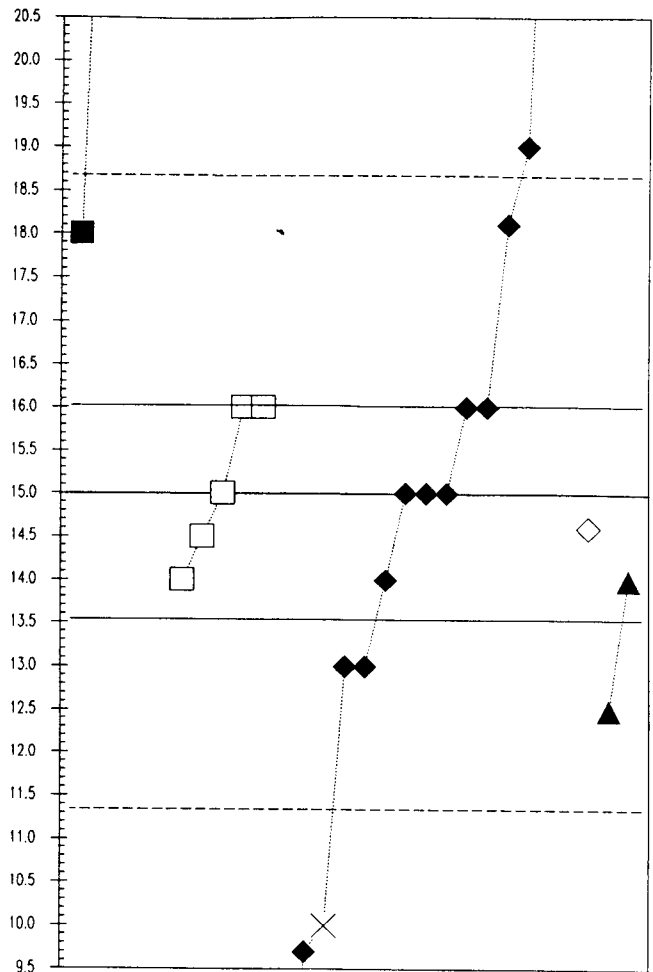
T107   Na (Sodium)   mg/liter

MPV = 20.7 +/- 0.3
F-pseudosigma = 1.1
N = 65   Hu = 21.5
Range = 16.5 50 Hl = 20.0

	0. Other		4. ICP	
	1. AA: direct, air		5. DCP	
N =	3	34	26	2
Max =	22.0	22.3	50.0	21.0
Median =		20.4	21.0	
Min =	20.7	16.5	19.8	19.7

Lab #	Rating	Z-value	0	1	4	5
1	3	0.81			21.6	
2	4	0.27			21.0	
5	0	2.97			24.0	
6	3	-0.90				19.7
11	2	1.17	22.0			
16	2	1.44		22.3		
17	4	0.27			21.0	
18	3	0.81			21.6	
19	3	-0.63			20.0	
21	3	-0.63			20.0	
24	2	1.17			22.0	
25	4	0.27			21.0	
29	4	-0.27		20.4		
30	1	-1.53		19.0		
32	4	-0.36		20.3		
33	4	-0.36			20.3	
34	4	0.00	20.7			
35	3	0.54		21.3		
38	4	0.00			20.7	
39	4	-0.27		20.4		
43	3	-0.63			20.0	
45	4	0.27			21.0	
50	2	1.17			22.0	
51	2	1.26		22.1		
55	3	-0.81			19.8	
56	4	0.09	20.8			
57	4	-0.18		20.5		
58	4	0.27		21.0		
60	4	-0.18			20.5	
62	4	-0.36		20.3		
64	0	-3.59		16.7		
65	3	-0.72		19.9		
66	4	0.27			21.0	
67	4	-0.09			20.6	
69	4	-0.27		20.4		
70	2	1.17		22.0		
72	4	0.45		21.2		
73	4	0.27		21.0		
78	3	-0.63		20.0		
79	0	2.43			23.4	
80	2	1.17		22.0		
81	3	-0.81		19.8		
83	1	-1.89		18.6		
84	3	-0.63			20.0	
85	2	1.17		22.0		
90	4	0.27		21.0		
91	4	0.27		21.0		
93	3	-0.63		20.0		
98	2	1.44			22.3	
100	3	-0.99		19.6		
101	0	2.07			23.0	
103	0	-2.07		18.4		
107	3	-0.63		20.0		
109	4	0.27				21.0
111	0	-3.77		16.5		
118	2	-1.17		19.4		
119	3	0.72			21.5	
120	4	0.45			21.2	
122	4	-0.18			20.5	
124	4	0.27		21.0		
125	1	-1.53		19.0		
127	0	26.33			50.0	
130	2	1.17		22.0		
134	3	-0.54		20.1		
108	4	0.27		21.0		

OTHER   AA: AIR   ICP   DCP
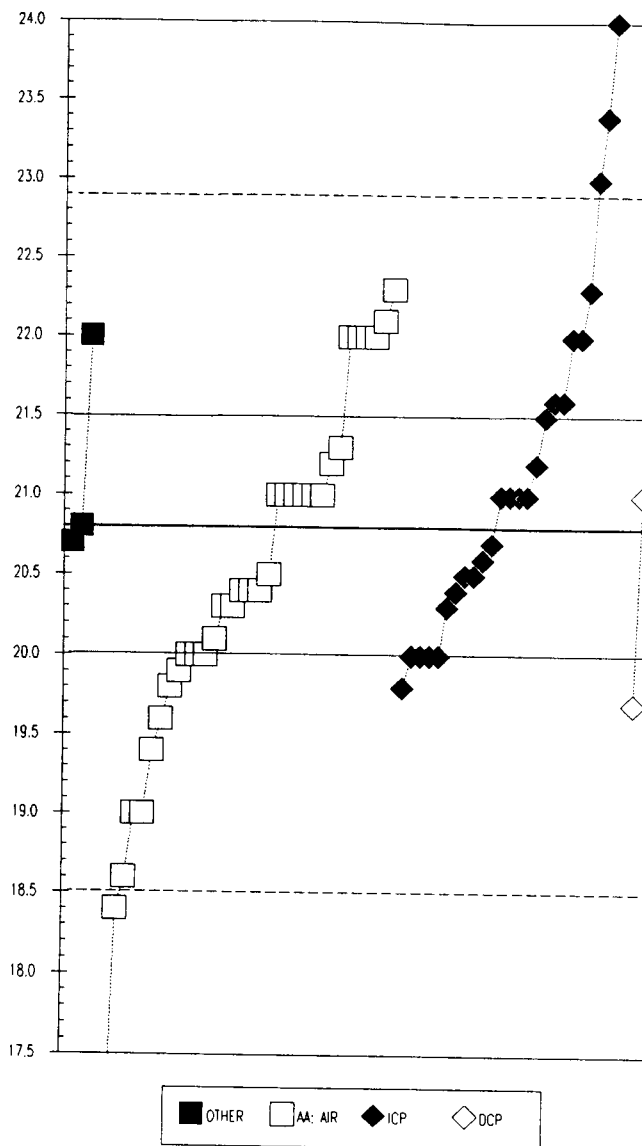
T107   Ni (Nickel)   ug/liter

MPV = 28.1 +/- 1.1
F-pseudosigma = 3.9
N = 61   Hu = 30.2
Range = 7.8   326   Hl = 24.9

	0. Other			4. ICP	
	1. AA: direct. air			5. DCP	
	3. AA: flameless				
N =	1	15	19	25	1
Max =	25.7	100	33.4	326	30
Median =		34	27	26	
Min =	25.7	20	10	7.8	30

Lab #	Rating	Z-value	0	1	3	4	5
1	3	-0.60			25.7		
2	4	0.50				30.0	
5	1	-1.54				22.0	
6	4	0.50					30.0
10	NR	NR		< 30			
11	1	1.51				34.0	
16	0	3.29				41.0	
17	0	-5.15				7.8	
18	2	-1.03				24.0	
19	1	-1.54			22.0		
20	3	0.55			30.2		
21	4	-0.27				27.0	
24	0	3.04		40.0			
25	NR	NR				< 30	
30	0	-3.06			16.0		
31	4	0.39				29.6	
32	4	-0.27			27.0		
33	3	-0.67				25.4	
34	NR	NR		< 30			
38	NR	NR				< 50	
39	4	0.04			28.2		
43	3	-0.78				25.0	
44	0	75.78				326.0	
45	NR	NR		< 100			
50	4	0.24				29.0	
51	4	0.19			28.8		
55	0	-2.05				20.0	
58	3	-0.60	25.7				
60	4	0.50				30.0	
61	4	0.50		30.0			
64	4	0.29			29.2		
66	1	1.51		34.0			
67	3	-0.52				26.0	
68	4	-0.01		28.0			
69	0	5.58		50.0			
72	1	1.77		35.0			
73	0	-4.59			10.0		
74	3	-0.83			24.8		
79	4	-0.24		27.1			
80	0	8.13				60.0	
81	0	-2.05		20.0			
83	4	-0.27			27.0		
90	3	-0.57			25.8		
91	3	-0.52			26.0		
93	1	1.51		34.0			
94	4	-0.27			27.0		
98	4	-0.01				28.0	
100	2	1.11				32.4	
101	NR	NR				< 40	
102	4	0.50				30.0	
103	0	3.55		42.0			
107	4	0.01			28.1		
111	1	-1.54			22.0		
113	0	18.30		100.0			
118	3	0.72			30.9		
119	0	3.04				40.0	
120	2	1.36			33.4		
121	0	-2.81				17.0	
122	NR	NR				< 25	
125	3	-0.78		25.0			
127	2	-1.03				24.0	

OTHER   AA: AIR   AA: FLAMELESS
ICP   DCP   LESS THAN
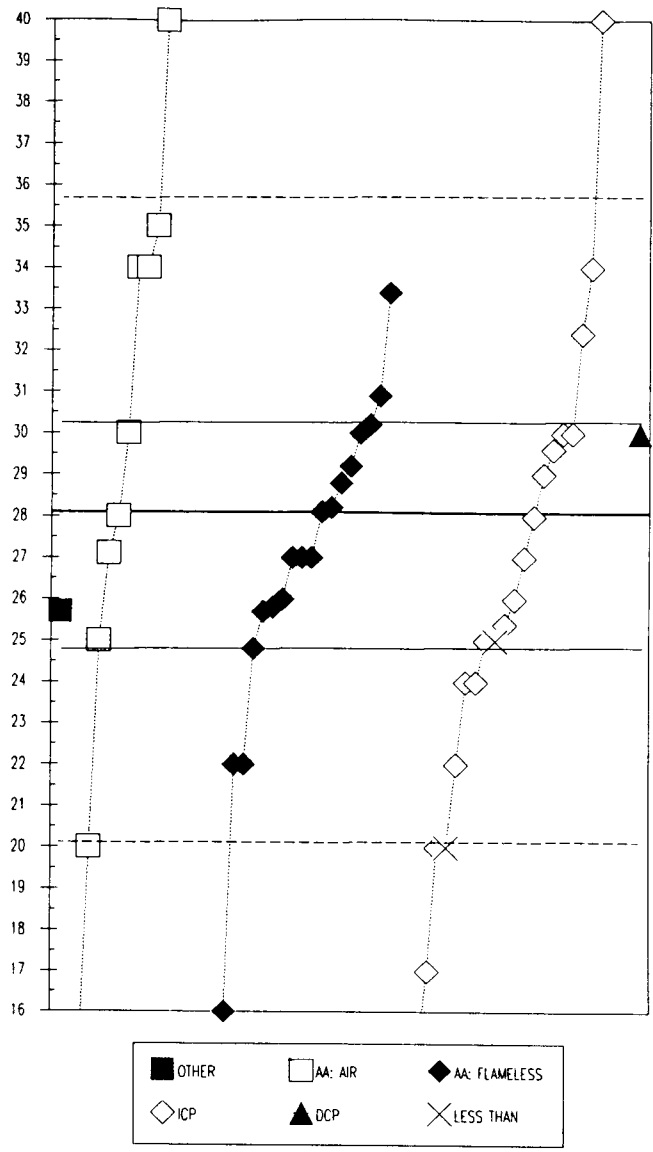
T107   Pb (Lead) ug/liter

MPV =   26 +/- 1
F-pseudosigma =   4
N = 67   Hu = 30
Range =   7   93   Hl = 24

	0. Other		4. ICP		
	1. AA: direct, air		5. DCP		
	3. AA: flameless		10. AA: APDC/MIBK		
N =	1	8	42	13	2	2
Max =	21	46	63	93	24	26
Median =			26	26		
Min =	21	25	7	17	20	24

Lab #	Rating	Z-value	0	1	3	4	5	10
1	3	0.90			30			
2	0	3.15				40		
4	4	-0.22			25			
5	3	-0.67			23			
6	2	-1.35				20		
10	4	0.45			28			
16	4	-0.22				25		
17	4	0.00				26		
18	4	0.22			27			
19	4	-0.22			25			
20	0	-4.27			7			
21	4	0.00			26			
24	3	0.90		30				
25	0	3.59				42		
29	3	0.67			29			
30	3	-0.90			22			
31	4	0.00				26		
32	4	-0.45			24			
33	3	0.90			30			
34	4	0.00			26			
35	4	0.22			27			
38	2	-1.12			21			
39	4	0.00			26			
43	NR	NR				< 20		
44	0	15.05				93		
45	2	1.35			32			
50	0	-2.02				17		
51	4	0.00			26			
55	NR	NR			< 50			
56	4	-0.45			24			
57	2	-1.35			20			
58	4	-0.45						24
60	2	-1.35			20			
61	2	1.12		31				
62	4	0.00						26
64	4	0.45			28			
66	4	0.22		27				
67	0	4.27				45		
68	3	0.90		30				
70	0	8.31			63			
72	1	1.57		33				
73	4	-0.45			24			
78	3	0.67			29			
79	1	1.57			33			
80	4	-0.45				24		
81	4	0.45			28			
83	3	0.67			29			
84	NR	NR				< 100		
90	4	-0.22			25			
91	3	0.90			30			
93	4	-0.22		25				
94	4	0.45			28			
96	3	-0.67			23			
98	4	0.45				28		
100	0	5.62			51			
101	4	0.45			28			
102	4	-0.45			24			

	OTHER		AA: AIR		AA: FLAMELESS		ICP
	DCP		AA: APDC/MIBK		LESS THAN		
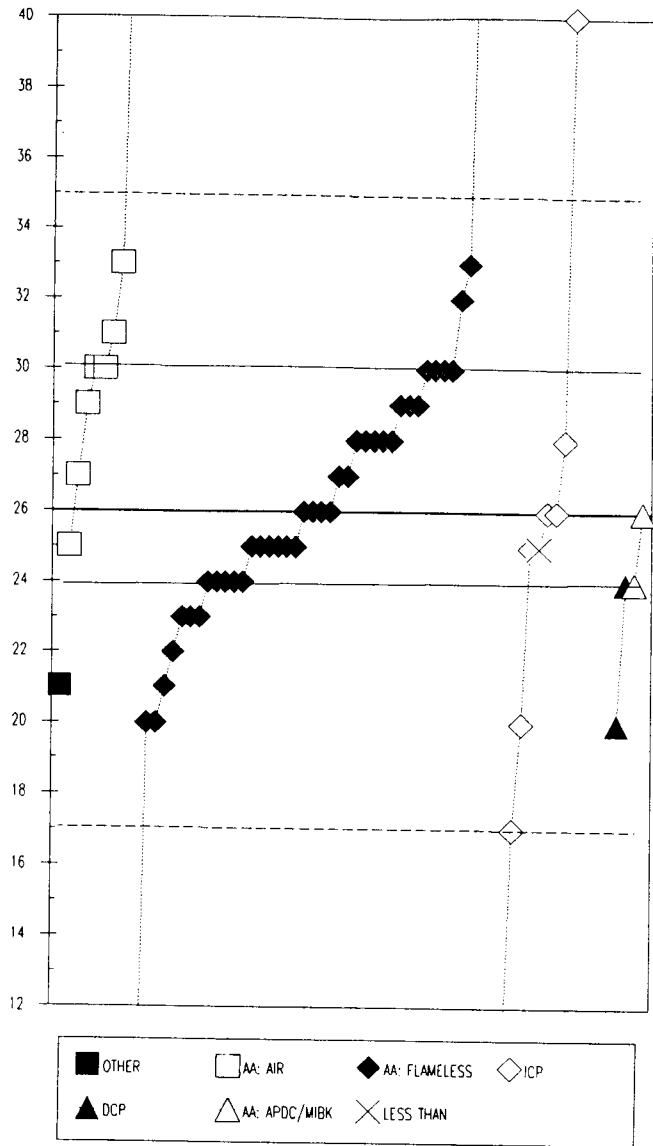
Lab #	Rating	Z-value	0	1	3	4
103	0	4.49		46		
107	3	0.90			30	
108	3	-0.67			23	
109	2	-1.12	21			
111	0	4.27			45	
118	4	-0.22			25	
120	4	-0.22			25	
121	4	-0.45			24	
122	4	-0.22			25	
125	3	0.67		29		
127	2	-1.35				20

T107 Sb (Antimony) ug/liter

MPV = 10.1 +/- 1.0
F-pseudosigma = 2.5
N = 30   Hu = 10.8
Range = 1.1 26.3   Hl = 7.4

	0. Other			4. ICP	
	1. AA: direct, air			11. AA: hydride	
	3. AA: flameless				
N =	0	3	16	9	2
Max =	0	23.0	18.9	26.3	10.2
Median =			9.7		
Min =	0	23.0	5.0	1.1	10.1

Lab #	Rating	Z-value	0	1	3	4	11
1	4	0.00					10.1
5	NR	NR				< 100	
16	4	-0.04			10.0		
17	0	<				< 0.05	
18	0	6.43				26.3	
21	4	-0.44			9.0		
25	NR	NR				< 100	
30	0	3.49			18.9		
33	4	-0.40			9.1		
34	NR	NR		< 1000			
38	3	0.75			12.0		
39	2	-1.15			7.2		
43	0	5.91				25.0	
45	0	-2.02			5.0		
55	NR	NR				< 10	
58	4	0.04					10.2
60	0	<			< 5		
64	4	-0.31			9.3		
66	NR	NR		< 50			
72	2	1.07			12.8		
74	4	0.28			10.8		
79	3	-0.52			8.8		
81	NR	NR				< 20	
90	4	0.12			10.4		
98	3	0.67			11.8		
101	NR	NR				< 40	
118	0	5.12		23.0			
120	3	-0.99			7.6		
122	4	-0.04			10.0		
127	0	-3.57				1.1	

Legend: ■ AA: AIR   □ AA: FLAMELESS   ◆ ICP   ◇ AA: HYDRIDE   ✕ LESS THAN
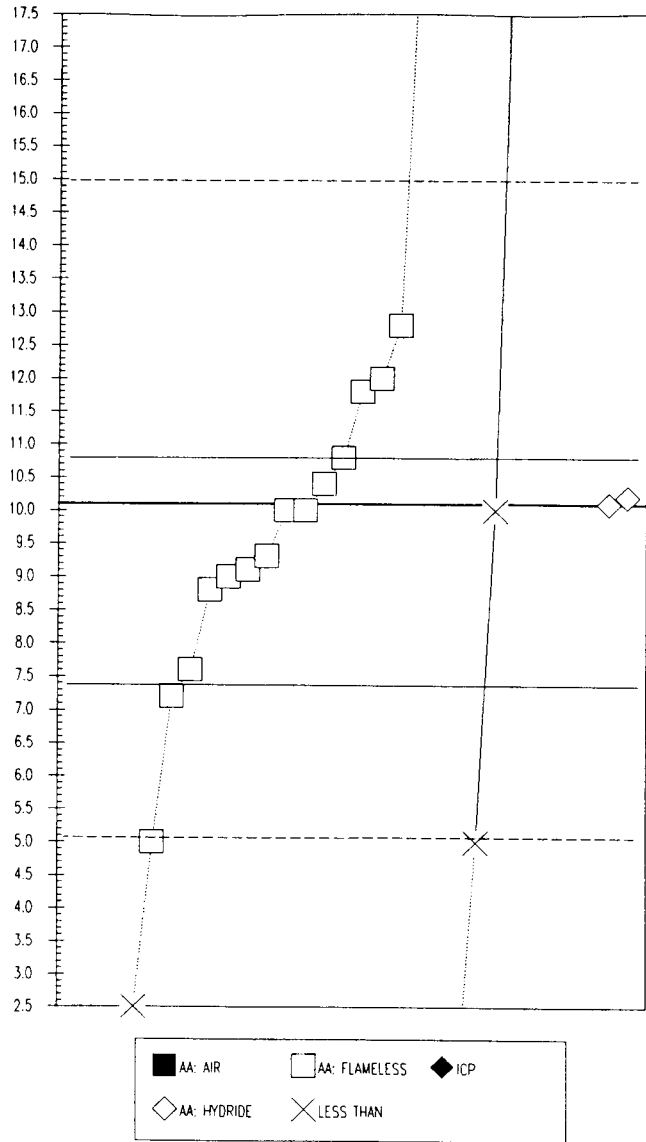
T107   Se (Selenium)   ug/liter

MPV = 11.0 +/- 0.5
F-pseudosigma = 1.9
N = 54   Hu = 12.0
Range = 2.1 47.0   Hl = 9.5

|			0. Other		6. MS/ICP		
			3. AA: flameless		11. AA: hydride		
			4. ICP				
		N =	3	25	3	1	22
		Max =	47.0	19.5	9.7	19.0	13.5
		Median =		11.3			10.7
		Min =	11.0	4.1	9.0	19.0	2.1

Lab #	Rating	Z-value	0	3	4	6	11
1	4	0.32					11.6
10	4	-0.11		10.8			
15	4	0.00					11.0
16	4	0.00		11.0			
17	0	4.59		19.5			
18	3	-0.86		9.4			
19	3	-0.54					10.0
20	3	-0.81		9.5			
21	3	0.54		12.0			
24	0	-3.72		4.1			
25	4	0.00					11.0
29	0	-2.70		6.0			
30	3	0.92					12.7
31	0	4.32				19.0	
32	0	3.24		17.0			
33	4	0.49					11.9
34	4	-0.05					10.9
35	4	0.43		11.8			
38	4	0.00		11.0			
39	1	1.51		13.8			
43	NR	NR		< 25			
45	2	1.08					13.0
50	2	-1.08		9.0			
55	0	<					< 6
57	2	-1.08		9.0			
58	4	-0.27					10.5
60	2	-1.08		9.0			
62	0	2.37		15.4			
64	0	<					< 0.25
66	4	0.00					11.0
67	4	0.05					11.1
72	0	-4.80					2.1
73	0	<					< 2
74	0	-3.51					4.5
79	4	0.00		11.0			
80	4	0.00	11.0				
81	2	-1.08		9.0			
84	3	0.54		12.0			
90	4	0.11		11.2			
91	4	0.00					11.0
93	2	1.32					13.5
94	4	0.00		11.0			
96	4	0.27		11.5			
98	2	1.35		13.5			
101	2	1.08		13.0			
102	3	-0.54					10.0
103	0	4.32		19.0			
107	0	-2.82					5.8
109	0	19.43	47.0				
111	1	1.62		14.0			
118	0	-3.83					3.9
120	3	-0.54					10.0
122	4	0.18		11.3			
127	3	-0.70			9.7		

OTHER   AA: FLAMELESS   ICP
MS/ICP   AA: HYDRIDE   LESS THAN

54
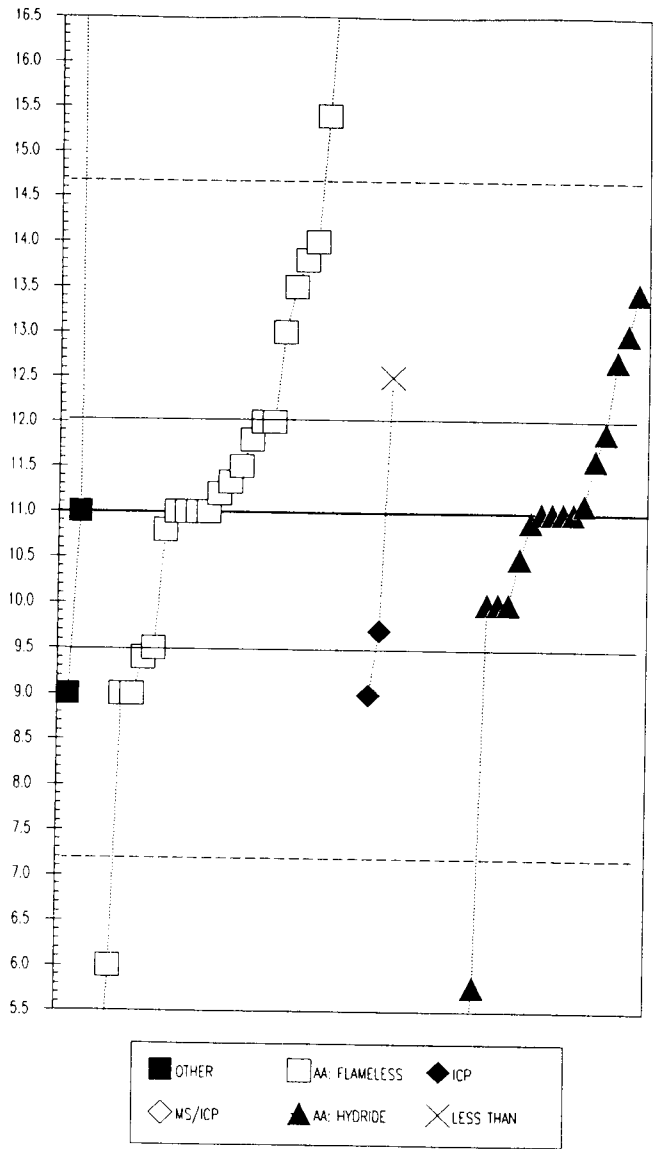
SiO2 (Silica)   mg/liter

MPV = 7.7 +/- 0.2
F-pseudosigma = 0.5
N = 43   Hu = 8.1
Range = 3.6 10.8   Hl = 7.5

0. Other			22a. Color: ascorbic acid				
2. AA: direct, N2O			22h. Color: heteropoly blue				
4. ICP			22m. Color: molybdosilicic acid				
N =	7	4	21	3	4	4
Max =	9.3	8.11	10.8	7.7	9.24	7.88
Median =			7.7			
Min =	7.5	6.6	6.8	3.6	7.62	5.75

Lab #	Rating	Z-value	0	2	4	22a	22h	22m
1	4	0.42			7.9			
2	4	0.21			7.8			
6	0	3.35	9.3					
17	2	-1.46			7.0			
18	3	-0.82			7.3			
19	4	0.00			7.7			
20	4	-0.44		7.5				
24	1	1.88			8.6			
25	3	-0.73			7.4			
30	0	-2.30		6.6				
31	3	0.63			8.0			
34	4	-0.21						7.6
35	3	-0.88			7.3			
38	4	0.00				7.7		
43	4	-0.02	7.7					
45	1	-1.88			6.8			
50	4	-0.21			7.6			
51	3	0.84					8.1	
55	4	-0.50			7.5			
57	0	-4.08						5.8
58	4	0.46					7.9	
63	4	0.38						7.9
64	0	3.22					9.2	
65	0	2.72	9.0					
66	0	-8.58				3.6		
67	3	-0.52			7.5			
72	2	-1.42				7.0		
73	4	-0.17					7.6	
80	4	0.42		7.9				
81	0	6.48			10.8			
83	4	0.00	7.7					
84	4	-0.42			7.5			
90	4	0.25			7.8			
93	3	0.84	8.1					
98	4	-0.42			7.5			
101	0	2.38			8.8			
107	1	-1.86						6.8
108	4	-0.42	7.5					
119	2	1.05			8.2			
120	4	0.21	7.8					
122	3	0.86		8.1				
124	0	4.60			9.9			
127	1	1.88			8.6			

■ OTHER	□ AA: N2O	◆ ICP	◇ AA: ASCORBIC
▲ AA: HETERO	△ AA: MOLYBDO		
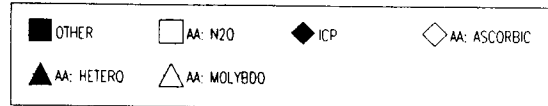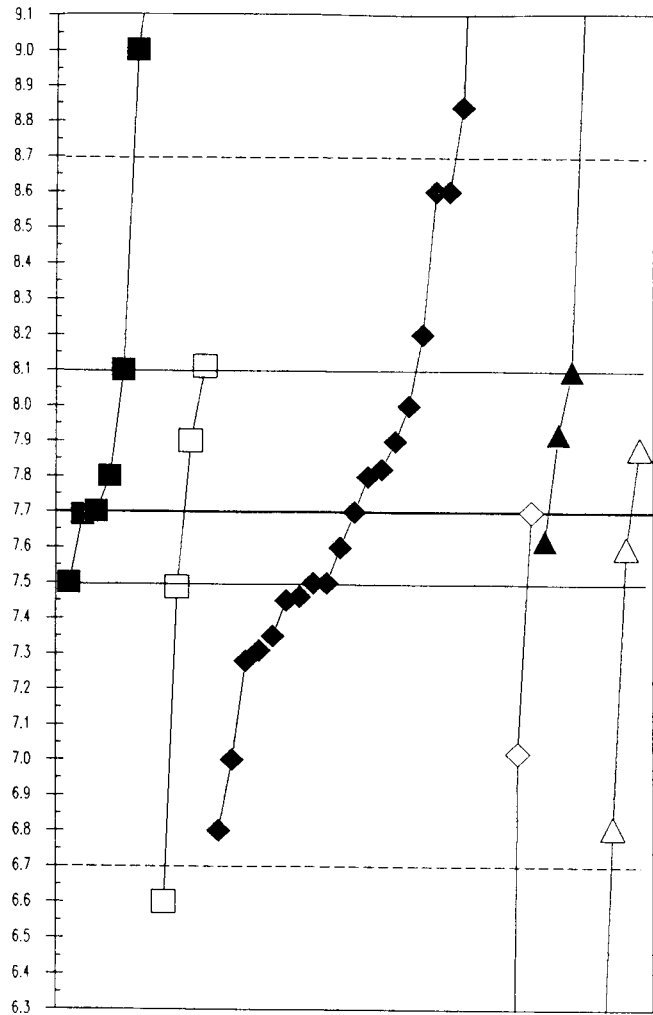
T107   Sr (Strontium)   ug/liter

MPV = 61 +/- 1
F-pseudosigma = 4
N = 29   Hu = 65
Range = 40 339   HI = 60

	0. Other	1. AA: direct, air	4. ICP
N =	4	4	21
Max =	62	80	339
Median =			61
Min =	56	50	40

Lab #	Rating	Z-value	0	1	4
1	3	0.73			64
2	4	-0.27			60
11	3	0.54			63
18	4	0.27			62
20	2	1.08		65	
21	2	-1.08			57
24	1	1.62			67
31	4	-0.27			60
32	4	-0.27	60		
33	4	-0.27			60
38	3	-0.54			59
43	4	0.00			61
50	0	2.43			70
55	0	-5.67			40
57	0	3.24		73	
58	0	5.13		80	
60	4	-0.27			60
66	4	0.27	62		
67	3	-0.81			58
79	2	1.43			66
90	0	-2.97		50	
93	4	-0.27	60		
98	4	-0.19			60
101	0	2.16			69
107	2	-1.38	56		
119	4	0.00			61
120	0	75.00			339
122	4	0.00			61
127	1	-1.62			55

OTHER   AA: N2O   ICP
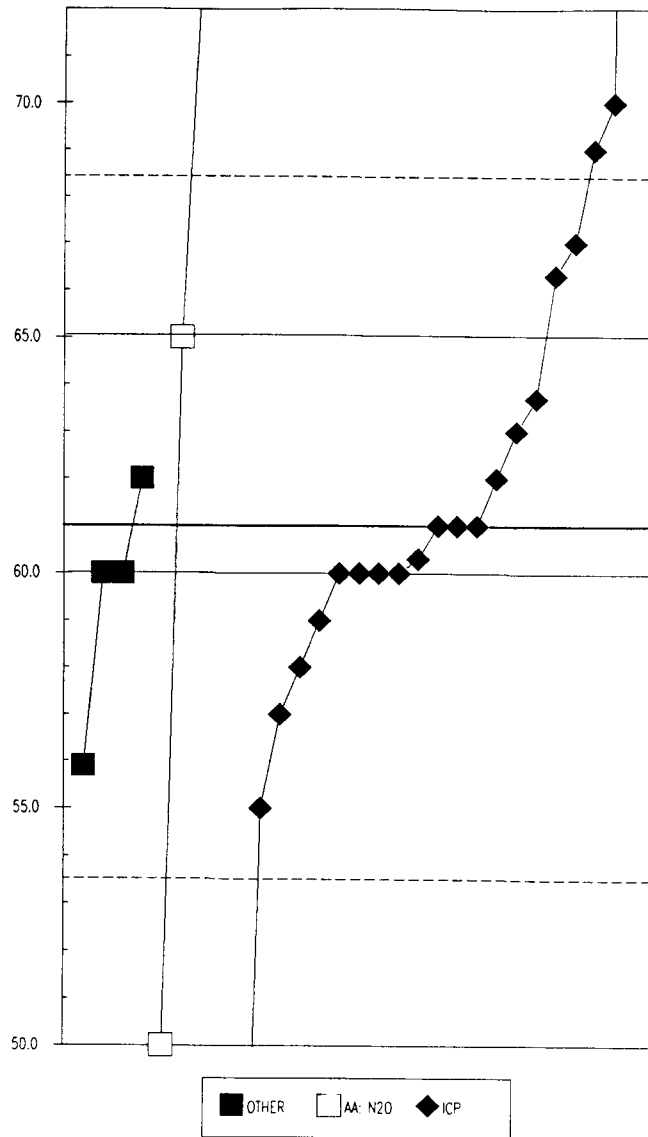
MPV =   14.0 +/− 1.1
F−pseudosigma =   2.8
N = 29   Hu = 15.0
Range =   7.8   20.1   HI = 11.2

	2. AA: direct, N2O		4. ICP	
	3. AA: flameless		22. Color: cayalytic oxication	
N =	2	3	23	1
Max =	20.1	20.1	20.1	500
Median =			14.4	
Min =	7.8	7.8	7.8	7.8

Lab #	Rating	Z-value	2	3	4	22
1	4	0.14			14.4	
2	2	−1.42			10.0	
11	3	0.71			16.0	
17	0	−2.02			8.3	
18	4	−0.36			13.0	
21	3	−0.71			12.0	
24	4	0.00			14.0	
30	0	−2.20		7.8		
31	4	0.00			14.0	
33	4	−0.25			13.3	
34	NR	NR	< 1000			
38	NR	NR			< 50	
43	4	−0.36			13.0	
45	NR	NR		< 50		
50	2	1.42			18.0	
55	NR	NR			< 10	
58	2	−1.28				10.4
66	NR	NR			< 50	
67	4	0.00			14.0	
79	3	0.96			16.7	
81	NR	NR			< 50	
90	0	2.13			20.0	
93	4	0.00	14.0			
98	3	0.71			16.0	
100	0	2.17			20.1	
101	4	0.36			15.0	
120	4	0.36		15.0		
122	NR	NR			< 20	
127	4	0.36			15.0	

AA: N2O   AA: FLAMELESS   ICP
COLOR   LESS THAN

Zn (Zinc) ug/liter
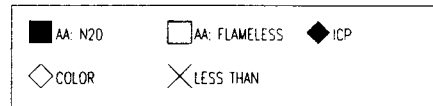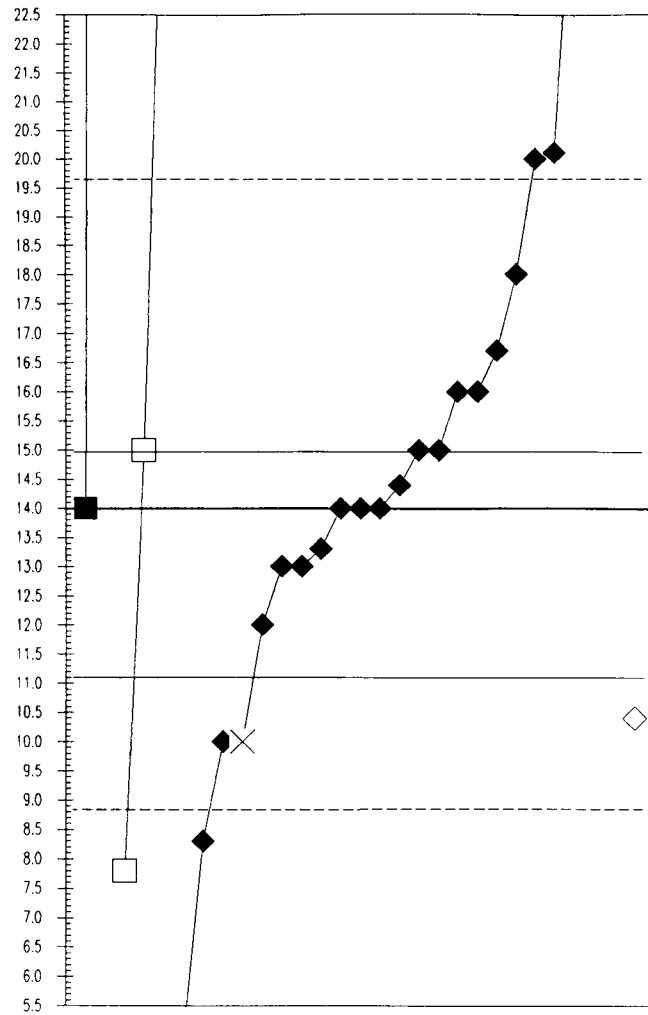
MPV =   75.8 +/- 2.5
F-pseudosigma =   9.9
N =   68   Hu = 83.3
Range =   27.0 1316   HI = 70.0

0. Other			3. AA: flameless	
1. AA: direct, air			4. ICP	
N =	3	33	5	27
Max =	80.0	160.0	89.1	1316.0
Median =		76.0		78.0
Min =	62.0	58.0	52.0	27.0

Lab #	Rating	Z-value	0	1	3	4
1	4	-0.02				75.6
2	4	0.43				80.0
4	1	-1.81		58.0		
5	4	-0.28				73.0
6	4	0.43	80.0			
10	1	-1.81		58.0		
16	0	9.35				168.0
17	3	0.54				81.1
18	0	-4.95				27.0
19	0	-3.73				39.0
20	4	0.12		77.0		
24	4	-0.28				73.0
25	4	-0.33				72.5
30	3	-0.59		70.0		
31	4	-0.18				74.0
32	4	-0.18		74.0		
33	4	0.34				79.2
34	4	0.43		80.0		
38	4	-0.18				74.0
39	4	0.43		80.0		
43	0	9.55				170.0
44	0	125.79				1316
45	2	1.44		90.0		
50	0	-2.21				54.0
51	3	0.93		85.0		
55	3	-0.59				70.0
56	0	-2.41			52.0	
57	4	-0.49		71.0		
58	4	-0.08		75.0		
60	4	0.43				80.0
61	2	1.44		90.0		
62	3	-0.59		70.0		
64	4	-0.04			75.4	
65	4	0.02		76.0		
66	4	0.43		80.0		
67	3	-0.59				70.0
68	4	-0.18		74.0		
69	4	0.43		80.0		
70	2	1.44		90.0		
72	4	0.32		79.0		
73	2	-1.35		62.5		
74	3	-0.79		68.0		
79	4	-0.22		73.6		
80	2	-1.40	62.0			
81	4	0.43		80.0		
83	3	-0.59			70.0	
90	4	0.22				78.0
91	4	0.02		76.0		
93	3	0.83		84.0		
94	1	1.95		95.0		
96	0	2.86		104.0		
98	3	0.61				81.8
100	2	1.49				90.5
101	1	1.74				93.0
102	3	-0.79			68.0	
103	4	-0.28		73.0		
107	4	-0.38		72.1		
109	0	8.54		160.0		
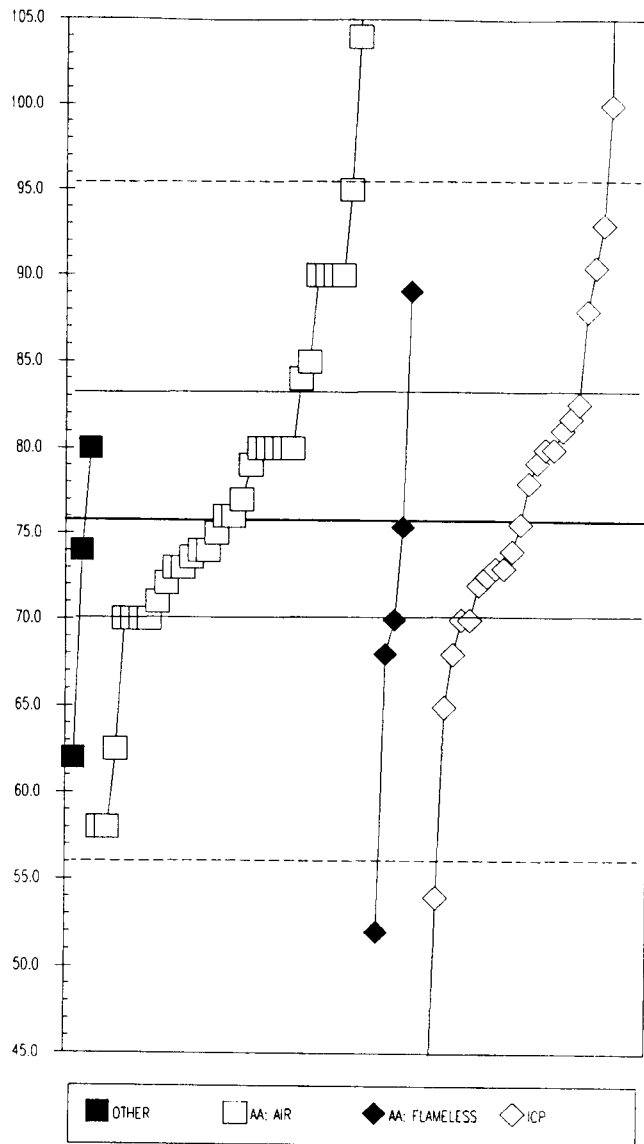
Lab #	Rating	Z-value	0	1	3	4
111	3	-0.59		70.0		
113	2	1.44		90.0		
118	2	1.35			89.1	
119	0	2.45				100.0
120	3	0.69				82.6
121	2	1.24				88.0
122	4	-0.39				72.0
125	4	-0.28		73.0		
127	2	-1.10				65.0
130	3	-0.59		70.0		

OTHER   AA: AIR   AA: FLAMELESS   ICP

M110 Alkalinity (as CaCO3)   mg/liter

MPV =   92 +/-   0.9
F-pseudosigma =   3.6
N =   78   Hu = 95
Range =   1   368   Hl = 90

	0. Other	20. Titrate: colorimetric	21. Titrate: electrometric
N =	8	15	55
Max =	368	215	325
Median =		90	92
Min =	1	80	85

Lab #	Rating	Z-value	0	20	21
1	3	0.59	94		
5	3	0.84			95
6	3	-0.79			89
10	0	47	258		
11	4	0.28			93
16	4	-0.28			91
17	0	2.25			100
18	1	1.69	98		
19	3	-0.56		90	
20	3	-0.56		90	
21	3	0.73	95		
22	4	0.28			93
24	3	0.56			94
25	4	-0.20			91
29	2	-1.40			87
30	2	1.12		96	
31	2	1.15			96
33	0	-3.37	80		
34	4	0.00			92
35	4	0.22			93
36	4	0.11			92
37	4	-0.21			91
38	2	-1.26	88		
39	2	1.40			97
42	3	0.56		94	
43	0	78	368		
45	3	-0.56		90	
48	2	1.43			97
50	0	35		215	
51	0	31		202	
52.1	3	0.56			94
52.2	4	0.00			92
53	4	0.17			93
55	4	0.28			93
56	3	-0.70			90
57	3	0.56			94
58	4	0.37			93
59	3	-0.65			90
60	3	-0.56			90
61	2	1.46			97
64	3	0.79			95
65	4	0.14			93
66	4	0.34			93
67	4	0.49			94
68	1	-1.97		85	
70	4	0.00	92		
71	0	7.33			118
72	4	-0.28			91
73	3	0.84			95
74	3	-0.73			89
79	0	65			325
80	1	-1.60	86		
81	0	5.06		110	
83	4	-0.28			91
84	4	0.00	92		
85	0	-3.37		80	
90	4	-0.28			91
91	0	2.25			100
93	2	-1.26		88	
96	4	0.00			92

Legend: ■ OTHER   □ TITRATE: COLOR   ◆ TITRATE, ELECTRO
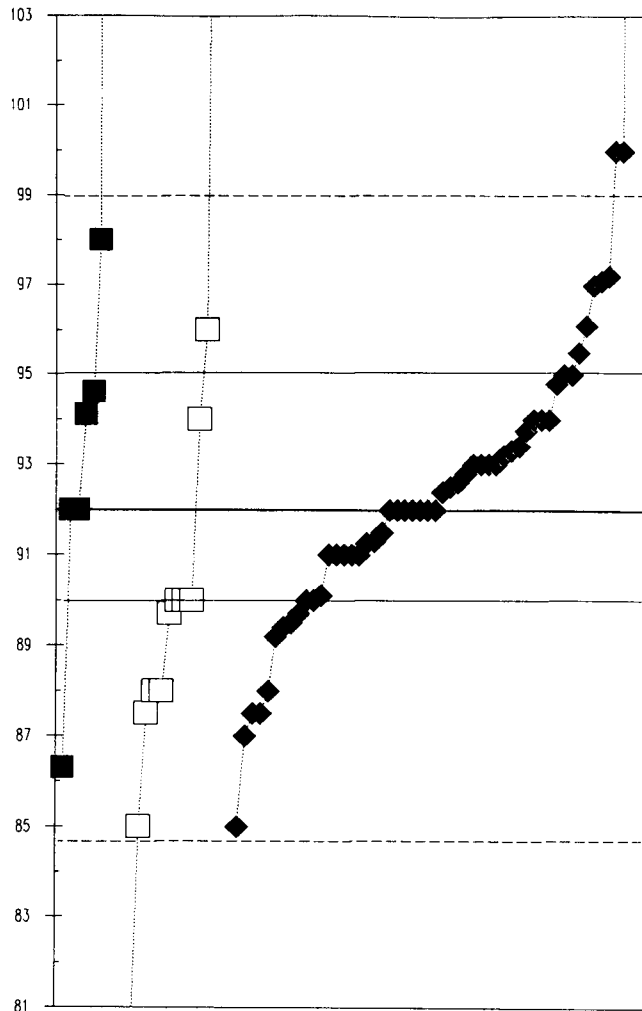
Lab #	Rating	Z-value	0	20	21
98	4	0.00			92
101	3	-0.56			90
102	4	0.28			93
103	2	-1.26			88
104	2	-1.12		88	
107	4	0.39			93
108	4	0.00			92
109	1	-1.97			85
113	3	0.98			96
118	4	0.00			92
119	4	-0.14			92
120	2	-1.12		88	
121	3	-0.53			90
122	4	0.00			92
124	0	9.55			126
128	4	-0.28			91
130	3	-0.65		90	
131	2	-1.12			88

M110   B (Boron)   ug/liter

MPV =   43 +/- 8
F-pseudosigma =   23
N =   40   Hu = 62
Range =   0.2   250   HI = 31

			0. Other	22a. Color: azomethine
			4. ICP	22ca. Color: carmine
			5. DCP	22cu. Color: curcumin

	0	4	5	2	4	3	5
N =	1	25			4	3	5
Max =	45	140	49	250	70	192
Median =		40				
Min =	45	18	30	41	0.2	60

Lab #	Rating	Z-value	0	4	5	22a	22ca	22cu
1	4	0.28			49			
5	0	<		< 4				
6	3	-0.57			30			
10	0	6.59						192
11	4	-0.49		32				
17	3	0.53		55				
18	3	-0.97		21				
19	4	0.31		50				
20	2	1.19					70	
21	0	4.29		140				
24	1	1.94		87				
25	4	-0.27		37				
29	0	9.15				250		
31	4	0.09	45					
33	4	-0.31		36				
34	NR	NR						< 300
38	NR	NR		< 50				
45	NR	NR		< 100				
48	0	2.21		93				
50	4	-0.09		41				
53	3	0.75						60
55	0	<		< 10				
58	4	-0.09				41		
59	4	-0.22		38				
66	3	0.88		63				
67	4	-0.40		34				
70	0	8.26				230		
79	4	0.09		45				
81	4	0.31		50				
84	4	-0.44		33				
85	2	1.50					77	
93	1	1.64						80
98	4	0.31		50				
101	3	0.53		55				
102	NR	NR						< 100
104	1	-1.89				0		
119	2	-1.10		18				
120	4	-0.13		40				
127	4	-0.18		39				
128	4	0.31						50

■ OTHER   □ ICP   ◆ DCP   ◇ AZOMETHINE
▲ CARMINE   △ CURCUMIN   ✕ LESS THAN

60
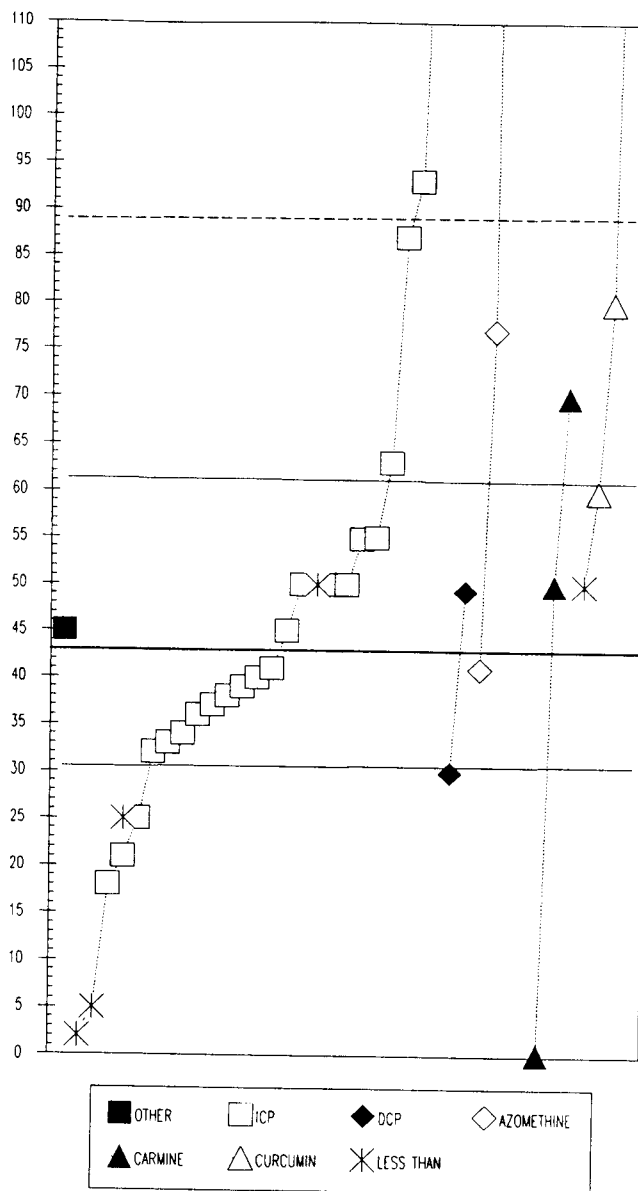
M110 Ca (Calcium) mg/liter

MPV = 45.0 +/- 0.3
F-pseudosigma = 1.3
N = 73   Hu = 45.8
Range = 0.3 53.0   HI = 44.0

0. Other		4. ICP			
1. AA: direct, air		5. DCP			
2. AA: direct, N2O		20. Titrate: EDTA			
N =	4	28	6	30	2	3
Max =	53.0	47.6	45.2	50.2	48.6	53.0
Median =		45.0		45.0		
Min =	1.3	39.0	0.3	34.0	44.2	44.1

Lab #	Rating	Z-value	0	1	2	4	5	20
1	2	-1.20				43.4		
2	4	0.00				45.0		
5	4	0.00				45.0		
6	0	2.70					48.6	
10	4	0.15		45.2				
11	3	0.75				46.0		
15	0	3.00	49.0					
17	3	-0.75				44.0		
18	3	0.90				46.2		
19	4	0.00				45.0		
20	3	-0.67						44.1
21	2	-1.50				43.0		
23	4	0.04		45.1				
24	4	0.00				45.0		
25	4	0.00				45.0		
29	4	-0.15		44.8				
30	4	0.00		45.0				
33	3	-0.60				44.2		
34	3	-0.75			44.0			
35	4	-0.12		44.8				
37	0	-8.09			34.2			
38	3	-0.60				44.2		
39	0	-4.49		39.0				
42	4	0.15			45.2			
43	3	-0.75				44.0		
45	2	1.50				47.0		
48	4	0.37				45.5		
49	2	-1.50				43.0		
50	0	3.74				50.0		
51	4	0.07		45.1				
52.1	3	0.75		46.0				
52.2	4	0.00		45.0				
53	4	-0.07		44.9				
55	0	-3.82				39.9		
56	3	0.75	46.0					
57	4	0.45		45.6				
58	0	-2.25		42.0				
59	0	3.89				50.2		
60	3	0.52				45.7		
65	0	-3.00		41.0				
66	3	0.67		45.9				
67	4	-0.07				44.9		
70	0	5.99	53.0					
71	3	-0.60			44.2			
72	3	-0.90			43.8			
73	3	0.52		45.7				
75	3	-0.60						44.2
79	3	-0.75				44.0		
80	4	-0.37		44.5				
81	2	-1.12			43.5			
83	0	-4.49		39.0				
84	4	0.00				45.0		
85	0	-4.34		39.2				
90	3	0.52				45.7		
93	4	0.22		45.3				
98	0	2.10				47.8		
100	1	1.95		47.6				
101	2	1.50				47.0		
102	3	-0.75		44.0				
103	4	-0.07		44.9				
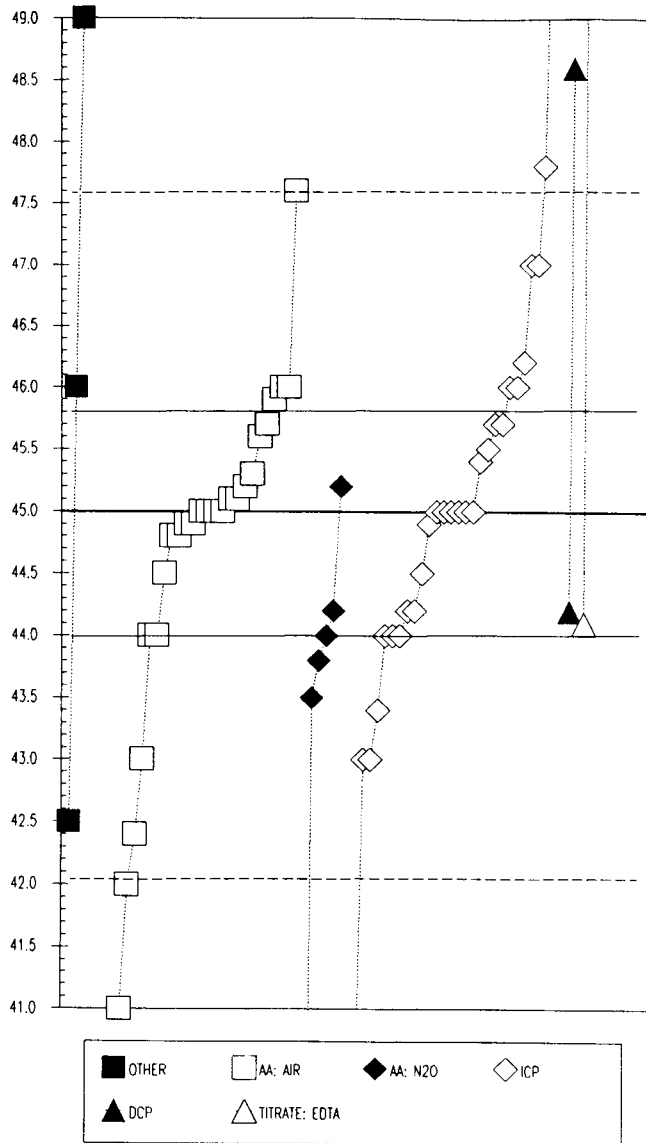
Lab #	Rating	Z-value	0	1	2	4	5	20
107	1	-1.87	42.5					
108	3	-0.75		44.0				
109	0	3.74						50.0
113	3	0.75		46.0				
118	1	-1.92		42.4				
119	3	0.75				46.0		
120	4	-0.37				44.5		
122	4	0.30				45.4		
124	4	0.00		45.0				
125	4	0.00		45.0				
127	0	-8.24				34.0		
128	2	-1.50		43.0				
130	0	5.95						53.0

Legend:
■ OTHER   □ AA: AIR   ◆ AA: N2O   ◇ ICP
▲ DCP   △ TITRATE: EDTA

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M110   Cl (Chloride) mg/liter

MPV =   266 +/- 3
F-pseudosigma =   11
N =   77   Hu = 272
Range =   145 330   HI = 257

0. Other			20h. Titrate: Hg		
7. IC			22. Color: Fe thio		
20a. Titrate: Ag			40. Ion Electrode		
N =	16	17	14	3	24	3
Max =	274	330	305	280	280	261
Median =	262	268	266		267	
Min =	145	153	242	270	192	239

Lab #	Rating	Z-value	0	7	20a	20h	22	40
1	4	0.27			269			
2	4	0.36		270				
4	2	-1.17					253	
5	4	0.36					270	
10	0	-2.97					233	
11	4	0.36				270		
15	3	0.54		272				
16	0	-10.88	145					
17	4	-0.45						261
18	4	0.09				267		
19	4	-0.09	265					
20	4	-0.27	263					
21	4	0.15					268	
22	4	0.00					266	
23	0	5.76		330				
24	4	-0.45	261					
25	4	0.00	266					
27	0	-6.62					192	
29	4	-0.27	263					
30	3	0.81				275		
31	1	-1.98		244				
33	3	-0.90					256	
34	4	0.18					268	
35	4	0.00					266	
36	2	-1.49					249	
38	3	-0.72					258	
39	1	-1.62		248				
42	4	0.09					267	
43	3	-0.81	257					
45	3	-0.54		260				
50	0	-2.43						239
51	2	1.30					280	
52.1	3	-0.72		258				
52.2	0	-2.16		242				
53	3	-0.72	258					
55	1	1.98		288				
56	4	-0.54		260				
57	4	0.36					270	
58	4	0.18		268				
59	3	0.54					272	
65	3	0.54			272			
66	4	-0.18					264	
68	2	-1.44		250				
70	0	-2.16	242					
72	3	0.81					275	
73	3	0.54		272				
75	0	-10.20		153				
78	4	0.36					270	
79	1	1.53		283				
80	3	0.72	274					
81	2	1.26					280	
83	2	1.35		281				
84	2	-1.44						250
85	4	0.36			270			
90	3	0.81		275				
91	4	0.36					270	
93	2	-1.26	252					
96	3	0.72	274					
98	3	0.63					273	
100	4	-0.18	264					

Legend: OTHER · IC · TITRATE: Ag · TITRATE: Hg · COLOR: Fe THIO · ION ELECTRODE
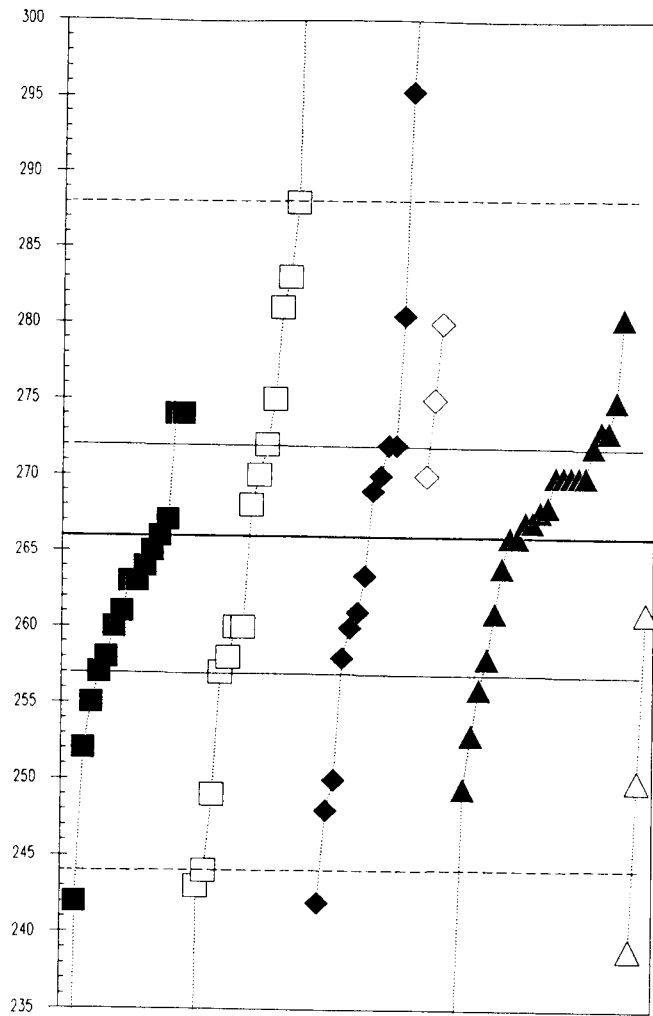
Lab #	Rating	Z-value	0	7	20a	20h	22
101	4	-0.23			263		
102	4	-0.45					261
103	0	4.75		319			
107	4	0.36					270
108	3	-0.72		258			
109	2	1.30			281		
113	3	-0.81		257			
118	3	-0.54	260				
119	1	-1.53		249			
120	0	-2.07		243			
121	0	2.64			295		
122	3	-0.54		260			
124	3	-0.99	255				
125	3	0.63					273
128	4	-0.45			261		
130	0	3.51			305		
131	4	0.10	267				

M-110   DRSD 180   mg/liter

MPV = 639 +/- 6
F-pseudosigma = 24
N = 63   Hu = 654
Range = 63 844   Hl = 622

			0. Other		
			50e. Residue: evaporation		
			50f. Residue: filtrable		
		N =	2	54	7
		Max =	638	844	659
		Median =		637	
		Min =	603	63	580

Lab #	Rating	Z-value	0	50e	50f
1	4	-0.19		634	
4	0	-23.89		63	
5	4	0.39		648	
11	3	-0.60			624
17	1	1.85		683	
18	2	-1.27		608	
19	4	-0.48		627	
20	4	-0.39		629	
21	4	0.35		647	
22	4	-0.02		638	
25	4	-0.37		630	
30	4	-0.44			628
31	4	0.39		648	
33	1	1.72		680	
34	0	-2.43			580
35	2	1.22		668	
36	2	-1.18		610	
37	0	2.26		693	
38	4	0.23		644	
39	2	1.47		674	
42	4	0.39		648	
45	4	-0.35		630	
48	4	0.35		647	
51	4	-0.44		628	
52.1	3	0.64		654	
52.2	3	0.56		652	
53	4	-0.15		635	
55	4	0.48			650
56	2	-1.18		610	
57	2	-1.47	603		
58	4	0.23		644	
59	3	0.81		658	
60	3	-0.64		623	
64	1	-1.93		592	
65	3	0.73		656	
66	2	-1.18		610	
67	3	0.93		661	
72	4	-0.10		636	
73	4	-0.15		635	
79	0	3.22		716	
80	4	-0.02	638		
83	0	8.53		844	
84	2	1.06		664	
85	3	0.52		651	
90	2	1.31		670	
91	3	-0.64		623	
93	0	-2.01		590	
98	2	-1.27		608	
100	4	0.48		650	
101	2	-1.43		604	
102	4	-0.35		630	
103	4	0.02			639
104	3	-0.77		620	
107	4	-0.15		635	
109	3	0.64		654	
113	4	0.19		643	
118	3	0.85			659
120	3	-0.77		620	
122	3	0.77			657
124	0	-2.01		590	
125	3	-0.98		615	
128	3	-0.77		620	
131	2	1.39		672	

■ OTHER   □ EVAPORATE   ◆ FILTRABLE
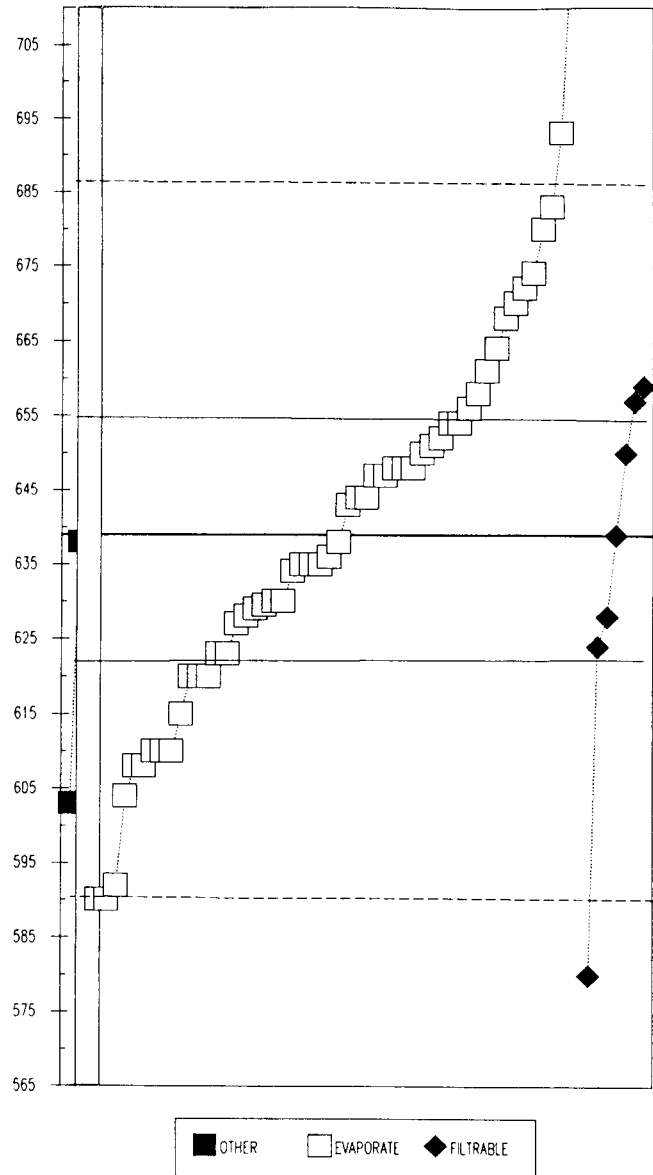
# M110   F (Fluoride)   mg/liter

MPV = 0.13 +/- 0.01
F-pseudosigma = 0.03
N = 54
Range = 0.00 1.30
Hu = 0.15
HI = 0.11

0. Other			22s. Color: SPADNS	
7. IC			40. Ion electrode	
22e. Color: eriochrome				
N =	2	7	1	4	40
Max =	0.13	0.30	1.30	0.18	0.18
Median =					0.12
Min =	0.10	0.11	1.30	0.00	0.04

Lab #	Rating	Z-value	0	7	22e	22s	40
1	4	0.24					0.14
10	4	0.34					0.14
11	4	0.34					0.14
14	3	0.67					0.15
16	3	-0.67					0.11
17	4	0.34					0.14
19	3	0.67					0.15
20	0	-3.04					0.04
21	1	1.59					0.18
22	3	-0.67					0.11
24	2	-1.01					0.10
25	4	-0.34					0.12
29	2	-1.01					0.10
30	4	0.00					0.13
31	2	-1.21					0.09
33	3	-0.67					0.11
34	3	-0.88					0.10
35	2	1.01					0.16
38	4	-0.34					0.12
42	4	-0.10					0.13
45	NR	NR					< 0.2
48	0	5.73		0.30			
50	4	0.34					0.14
52.2	0	39.46			1.30		
53	3	-0.67					0.11
55	NR	NR		< 0.1			
56	4	-0.34					0.12
57	3	0.67					0.15
58	3	0.67				0.15	
59	2	-1.01					0.10
60	3	0.67		0.15			
64	2	-1.01					0.10
66	4	-0.34					0.12
68	3	0.67					0.15
70	3	-0.67					0.11
73	4	0.00					0.13
79	4	0.00					0.13
80	NR	NR		< 0.2			
81	NR	NR					< 0.2
85	1	1.52					0.18
93	1	1.69				0.18	
98	2	-1.01	0.10				
101	4	0.00	0.13				
102	2	-1.01					0.10
103	0	4.72		0.27			
104	3	-0.67		0.11			
107	3	-0.84					0.11
108	4	-0.34					0.12
109	4	0.07					0.13
120	4	0.44					0.14
122	4	-0.34		0.12			
124	4	0.00					0.13
125	2	1.01					0.16
128	0	-4.35				0.00	

Legend: OTHER, IC, COLOR: ERIO, COLOR: SPADNS, ION ELECTRODE, LESS THAN
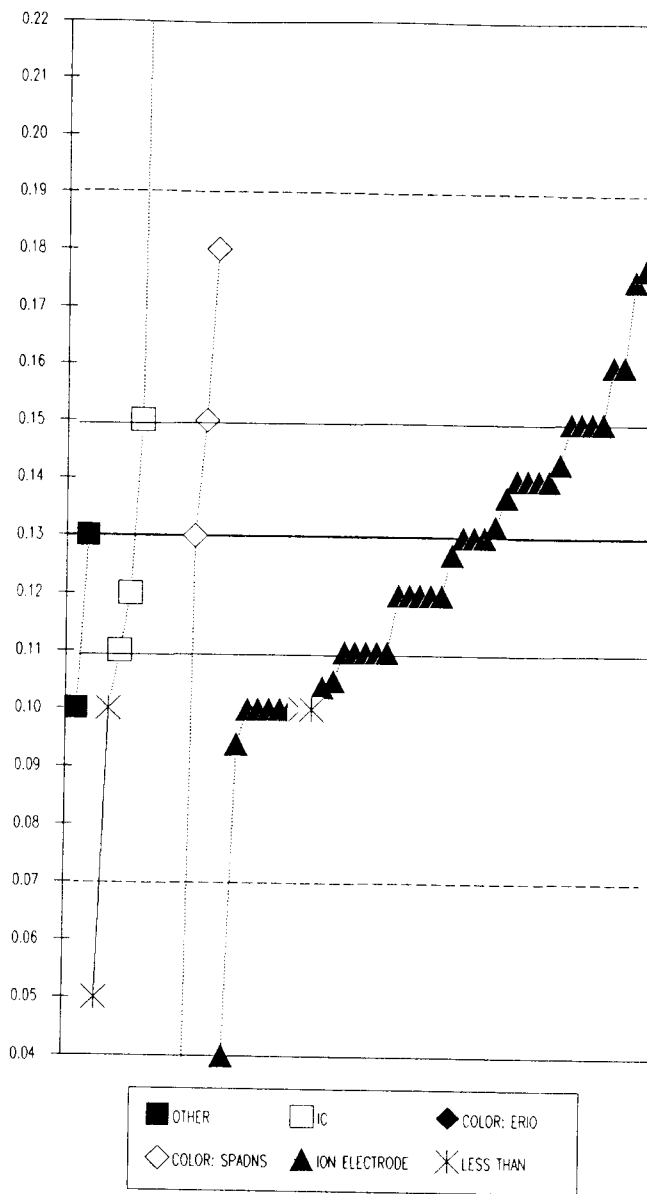
M110   K (Potassium) mg/liter

MPV =   4.00   +/-   0.08
F-pseudosigma =   0.33
N = 70   Hu = 4.22
Range =   2.68   6.80   HI = 3.77

			0. Other		4. ICP	
			1. AA: direct, air		12. Flame photometric	
		N =	4	48	16	2
		Max =	6.00	6.80	4.95	4.60
		Median =		4.02	3.80	
		Min =	3.77	2.68	2.73	4.43
Lab #	Rating	Z-value	0	1	4	12
1	4	0.42		4.14		
5	4	0.30		4.10		
6	0	6.00	6.00			
10	3	-0.75		3.75		
11	4	-0.30	3.90			
17	2	1.20			4.40	
18	2	-1.14			3.62	
19	3	-0.60			3.80	
20	2	1.29				4.43
21	2	1.20		4.40		
23	4	0.36		4.12		
24	3	-0.90			3.70	
25	4	-0.12		3.96		
29	4	0.51		4.17		
30	0	3.00		5.00		
33	3	-0.60			3.80	
34	3	-0.87		3.71		
35	3	-0.54		3.82		
37	4	0.12		4.04		
38	1	1.80				4.60
39	0	2.37		4.79		
42	4	0.30		4.10		
43	1	-1.80			3.40	
45	0	7.79		6.60		
48	2	-1.20		3.60		
49	4	-0.03		3.99		
50	3	0.90			4.30	
51	4	0.12		4.04		
52.1	2	1.20		4.40		
52.2	2	1.50		4.50		
53	3	0.60		4.20		
55	0	2.85			4.95	
56	4	0.00	4.00			
57	4	-0.39		3.87		
58	4	0.00		4.00		
59	4	-0.30			3.90	
60	3	-0.90			3.70	
65	4	0.12		4.04		
66	3	-0.69		3.77		
67	0	-2.40			3.20	
70	0	-3.96		2.68		
71	0	6.48		6.16		
72	2	-1.35		3.55		
73	3	-0.66		3.78		
75	3	-0.69	3.77			
79	2	-1.23			3.59	
80	4	0.30		4.10		
81	3	0.60		4.20		
83	0	3.00		5.00		
84	4	0.00			4.00	
85	3	0.90		4.30		
90	4	-0.30		3.90		
93	0	8.39		6.80		
98	1	-1.62		3.46		
100	4	0.30		4.10		
101	3	-0.60			3.80	
102	3	-0.60		3.80		
103	2	-1.20		3.60		
107	2	-1.44		3.52		
108	4	0.00		4.00		
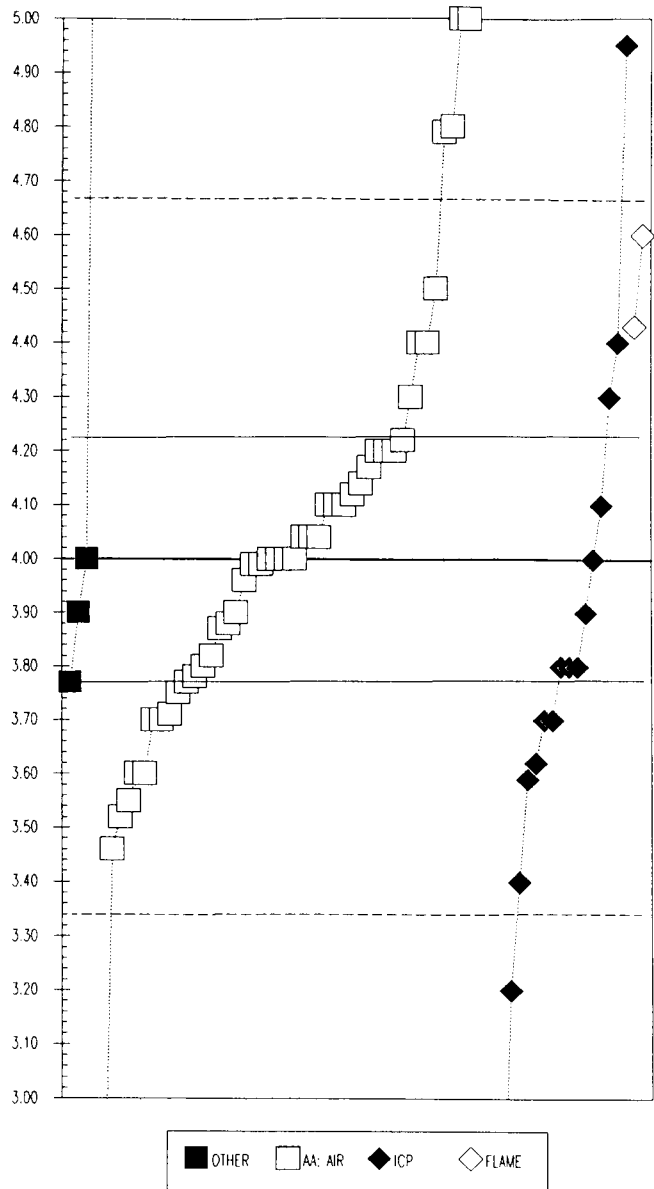
Lab #	Rating	Z-value	0	1	4
111	3	-0.90		3.70	
113	3	-0.90		3.70	
118	4	-0.36		3.88	
119	4	0.00		4.00	
120	3	0.66		4.22	
122	4	-0.03		3.99	
124	3	0.60		4.20	
125	4	0.00		4.00	
127	0	-3.81			2.73
128	0	2.40		4.80	

OTHER   AA: AIR   ICP   FLAME

M110   Mg (Magnesium)   mg/liter

MPV =   20.2 +/- 0.2
F-pseudosigma =   0.9
       N = 71   Hu = 21.0
     Range = 16.5 24.3   HI = 19.7

0. Other			4. ICP		
1. AA: direct, air			5. DCP		
2. AA: direct, N2O			20. Titrate: EDTA		
N =	3	32	3	30	2	1
Max =	21.9	22.0	21.1	24.3	20.3	18.8
Median =		20.0		20.3		
Min =	21.0	17.9	20.6	16.5	18.7	18.8

Lab #	Rating	Z-value	0	1	2	4	5	20
1	4	0.21				20.4		
2	3	0.86				21.0		
5	3	0.86				21.0		
6	4	0.11					20.3	
10	3	-0.97		19.3				
11	3	0.86				21.0		
15	3	0.86	21.0					
17	4	-0.21				20.0		
18	3	0.54				20.7		
19	4	-0.11				20.1		
20	1	1.83	21.9					
21	2	-1.29				19.0		
23	3	-0.66		19.6				
24	4	-0.21				20.0		
25	3	0.75				20.9		
29	3	0.64		20.8				
30	2	-1.29		19.0				
33	4	-0.21				20.0		
34	3	0.97			21.1			
35	1	-1.68		18.6				
37	3	0.52		20.7				
38	3	0.64				20.8		
39	2	-1.18		19.1				
42	3	0.64			20.8			
43	4	-0.21				20.0		
45	4	-0.21				20.0		
48	1	-1.61				18.7		
49	4	-0.11				20.1		
50	1	1.61				21.7		
51	4	0.31		20.5				
52.1	3	0.86		21.0				
52.2	3	0.86		21.0				
53	4	0.21		20.4				
55	3	-0.97				19.3		
56	3	0.86	21.0					
57	4	-0.21		20.0				
58	4	-0.21		20.0				
59	4	0.11				20.3		
60	4	0.21				20.4		
65	4	-0.21		20.0				
66	4	-0.43		19.8				
67	4	0.00				20.2		
71	4	0.43			20.6			
72	3	-0.97		19.3				
73	3	0.54		20.7				
75	1	-1.61					18.7	
79	0	4.41				24.3		
80	4	0.11		20.3				
81	2	-1.50		18.8				
83	3	0.75		20.9				
84	4	-0.21				20.0		
85	3	0.86		21.0				
90	2	1.18				21.3		
93	3	-0.75		19.5				
98	3	0.75				20.9		
100	4	-0.21		20.0				
101	3	0.86				21.0		
102	1	1.93		22.0				
103	1	-1.61		18.7				
107	0	-2.47		17.9				

OTHER	AA: AIR	AA: N2O
ICP	DCP	TITRATE
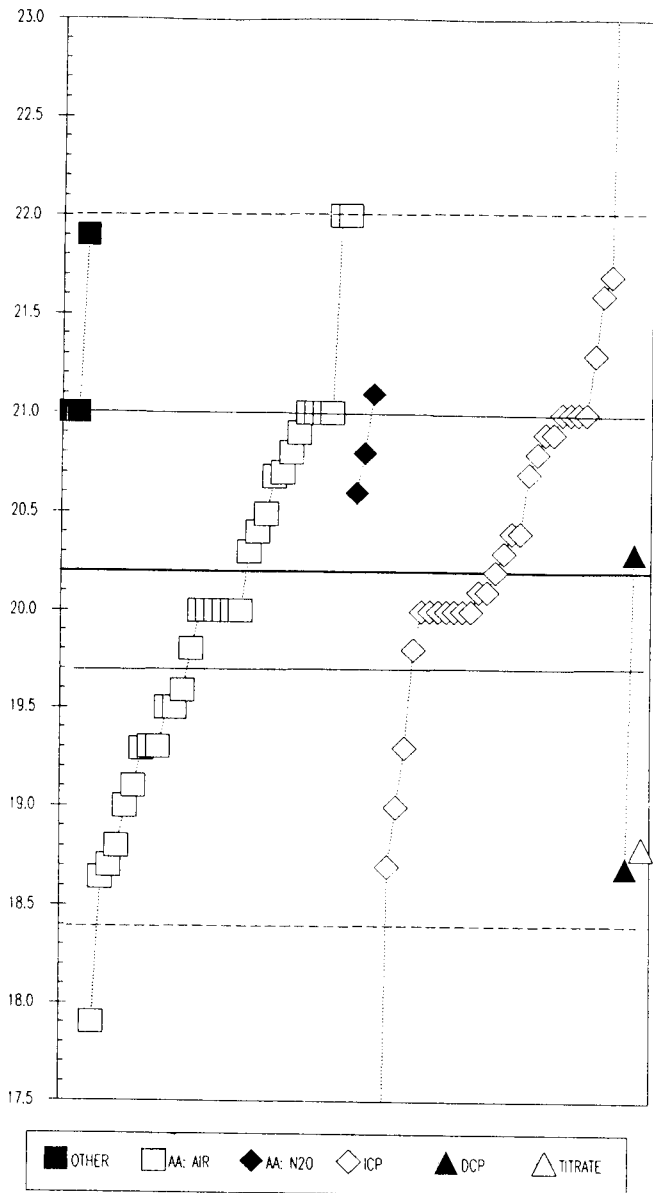
Lab #	Rating	Z-value	0	1	2	4	20
108	4	-0.21		20.0			
113	4	-0.21		20.0			
118	3	-0.98		19.3			
119	2	1.50				21.6	
120	4	-0.43				19.8	
122	4	-0.21				20.0	
124	3	0.86		21.0			
125	3	-0.75		19.5			
127	0	-3.98				16.5	
128	1	1.93		22.0			
130	2	-1.50					18.8

M110   Na (Sodium) mg/liter

MPV = 151 +/- 2
F-pseudosigma = 6
N = 71
Range = 107 265
Hu = 156
Hl = 148

	0. Other		5. DCP		
	1. AA: direct, air		12. Flame photometric		
	4. ICP				
N =	2	40	26	2	1
Max =	160	164	265	151	170
Median =		150	152		
Min =	145	107	139	140	170

Lab #	Rating	Z-value	0	1	4	5	12
1	4	0.17		152			
2	4	-0.17			150		
5	4	-0.17			150		
6	1	-1.85				140	
10	0	2.19		164			
11	1	1.52	160				
17	3	0.84			156		
18	2	1.18			158		
19	4	-0.34			149		
20	0	3.20					170
21	0	-2.02			139		
24	1	1.52			160		
25	4	0.17			152		
29	2	1.35		159			
30	0	-4.89		122			
33	4	0.34			153		
34	4	-0.51		148			
35	4	-0.12		150			
37	2	-1.10		145			
38	4	0.34			153		
39	3	0.84		156			
42	3	0.67		155			
43	4	-0.17			150		
45	3	0.84			156		
48	4	-0.51			148		
49	4	-0.17		150			
50	4	-0.51			148		
51	4	0.04		151			
52.1	4	-0.17		150			
52.2	3	-0.67		147			
53	4	-0.17		150			
55	2	-1.35			143		
56	2	-1.01	145				
57	4	0.00		151			
58	4	0.17		152			
59	4	0.00			151		
60	4	-0.51			148		
65	1	-1.85		140			
66	4	-0.51		148			
67	3	0.94			157		
70	4	0.34		153			
71	4	-0.04		151			
72	3	0.67		155			
73	4	0.17		152			
75	4	0.00			151		
78	4	-0.17		150			
79	3	-0.67			147		
80	3	0.67		155			
81	1	-1.85		140			
83	0	-2.53		136			
84	4	0.00			151		
85	2	1.01		157			
90	1	-1.85		140			
91	1	1.52		160			
93	2	-1.01		145			
98	0	2.02			163		
100	1	1.52		160			
101	1	1.52			160		
102	4	0.34		153			
103	1	-1.60		142			

| | OTHER | | AA: AIR | | ICP | | DCP | | FLAME |
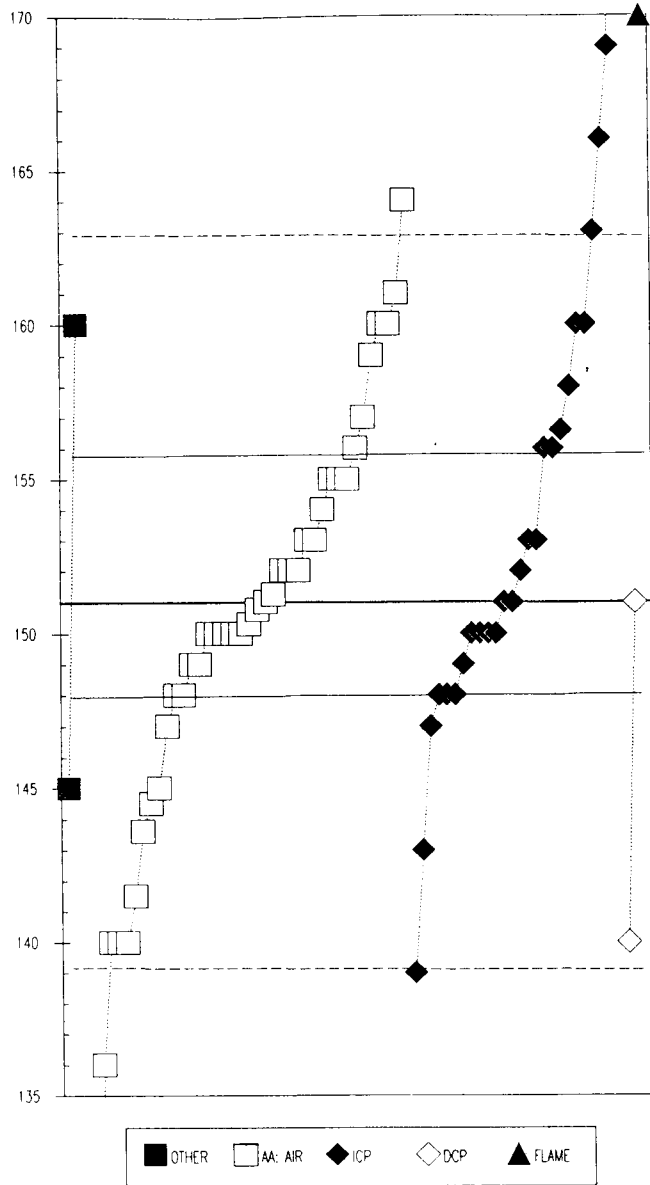
Lab #	Rating	Z-value	0	1	4
108	4	-0.34		149	
111	0	-7.42		107	
113	1	1.69		161	
118	2	-1.25		144	
119	0	3.04			169
120	4	-0.17			150
122	0	2.53			166
124	4	-0.17		150	
125	4	0.51		154	
127	0	19.22			265
128	4	-0.34		149	

M110 pH

MPV = 8.20 +/- 0.03
F-pseudosigma = 0.14

N = 86   Hu = 8.25
Range = 6.09 8.40   HI = 8.06

| | 0. Other | |
	1. Electrometric	
N =	3	83
Max =	8.18	8.40
Median =		8.20
Min =	8.00	6.09

Lab #	Rating	Z-value	0	1
1	4	0.36		8.25
4	0	-2.49		7.85
5	4	0.00		8.20
6	4	0.14		8.22
10	3	0.64		8.29
11	2	1.42		8.40
14	3	-0.85		8.08
16	3	-0.57		8.12
17	0	-3.34		7.73
18	3	0.57		8.28
19	4	0.36		8.25
20	4	0.00		8.20
21	0	-2.49		7.85
22	4	0.07		8.21
23	0	-14.98		6.09
24	4	0.00		8.20
25	3	0.57		8.28
29	3	-0.64	8.11	
30	1	-1.70		7.96
31	3	-0.78		8.09
33	3	0.85		8.32
34	4	0.36		8.25
35	4	0.50		8.27
36	4	-0.43		8.14
37	4	0.00		8.20
38	2	-1.42		8.00
39	0	-2.34		7.87
42	4	0.36		8.25
45	4	0.00		8.20
48	3	-0.71		8.10
49	4	0.07		8.21
50	4	0.21		8.23
51	0	-3.41		7.72
52.1	3	-0.99		8.06
52.2	3	-0.85		8.08
53	3	0.57		8.28
55	4	-0.07		8.19
56	4	0.00		8.20
57	4	0.36		8.25
58	2	-1.42	8.00	
59	3	0.57		8.28
60	4	0.14		8.22
61	1	-1.63		7.97
62	0	-2.84		7.80
63	4	0.36		8.25
64	3	0.57		8.28
65	2	-1.14		8.04
66	4	0.43		8.26
67	4	0.00		8.20
68	4	0.50		8.27
70	3	-0.57		8.12
71	4	-0.14	8.18	
72	2	-1.42		8.00
73	4	0.36		8.25
74	3	0.57		8.28
78	4	0.00		8.20
79	3	0.85		8.32
80	3	0.57		8.28
81	3	0.57		8.28
83	3	0.57		8.28

OTHER   ELECTROMETRIC
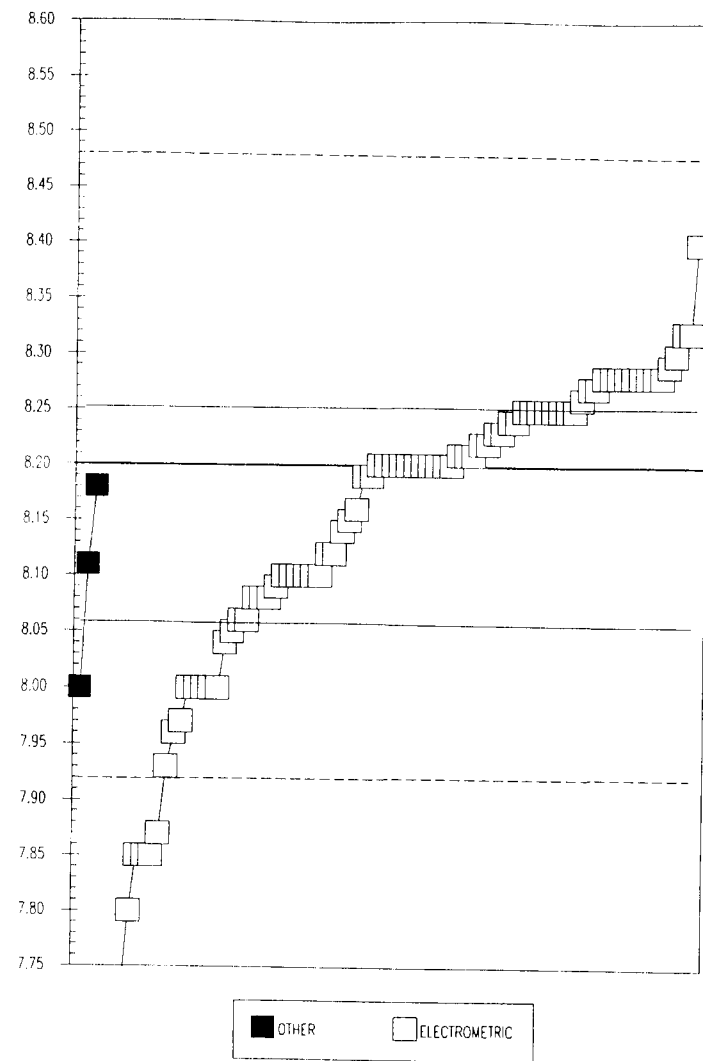
Lab #	Rating	Z-value	0	1
85	2	-1.42		8.00
90	0	-3.62		7.69
91	3	-0.71		8.10
93	2	-1.42		8.00
95	3	-0.85		8.08
96	4	0.00		8.20
98	4	0.28		8.24
100	1	-1.92		7.93
101	4	-0.35		8.15
102	2	-1.42		8.00
103	3	-0.71		8.10
104	3	-0.71		8.10
107	4	0.07		8.21
108	4	0.21		8.23
109	3	-0.71		8.10
113	3	-0.99		8.06
118	4	-0.28		8.16
119	2	-1.06		8.05
120	3	0.71		8.30
121	4	0.00		8.20
122	4	0.00		8.20
124	4	-0.07		8.19
125	4	0.36		8.25
128	3	-0.71		8.10
130	0	-2.49		7.85
131	4	0.28		8.24

M110   total P (Phosphorus)   mg/liter

MPV = 0.051 +/-   0.004
F-pseudosigma = 0.015
N = 56   Hu = 0.070
Range = 0.017 0.600   Hl = 0.050

0. Other	22a. Colorimetric: ascorbic acid		
4. ICP			
N =	10	2	44
Max =	0.600	0.040	0.280
Median =	0.050		0.051
Min =	0.040	0.040	0.017

Lab #	Rating	Z-value	0	4	22a
1	4	-0.07			0.050
5	4	-0.47			0.044
10	0	-2.29			0.017
11	3	-0.74	0.040		
16	4	-0.07			0.050
17	4	-0.07			0.050
19	4	-0.07			0.050
21	3	-0.81			0.039
27	4	-0.07			0.050
29	4	0.00			0.051
30	4	0.47			0.058
33	4	-0.07			0.050
34	4	0.34			0.056
35	2	-1.28			0.032
36	3	0.61			0.060
37	4	0.13			0.053
38	NR	NR			< 0.1
39	3	0.61			0.060
42	3	-0.54			0.043
43	0	4.18	0.113		
45	2	1.28			0.070
48	0	5.33			0.130
49	0	6.00			0.140
50	3	-0.74		0.040	
51	3	-0.61			0.042
53	4	-0.07	0.050		
57	3	-0.74	0.040		
58	4	-0.07			0.050
60	0	3.31			0.100
61	0	2.63			0.090
63	1	1.69			0.076
65	0	2.29			0.085
66	4	0.40			0.057
67	4	0.00			0.051
68	0	37.03	0.600		
70	3	-0.74			0.040
72	0	<			< 0.01
73	4	-0.07	0.050		
79	0	15.45			0.280
80	0	28.40	0.472		
81	3	0.61			0.060
83	1	1.69	0.076		
90	4	-0.07			0.050
93	2	1.28			0.070
98	NR	NR		< 0.2	
101	0	10.05			0.200
103	NR	NR			< 0.1
104	4	-0.07			0.050
107	3	-0.74			0.040
118	4	0.00			0.051
120	4	-0.07	0.050		
122	2	1.28			0.070
125	4	-0.07			0.050
127	2	1.28			0.070
128	4	-0.07	0.050		
131	4	0.40			0.057

OTHER   ICP   AA: FLAMELESS   LESS THAN
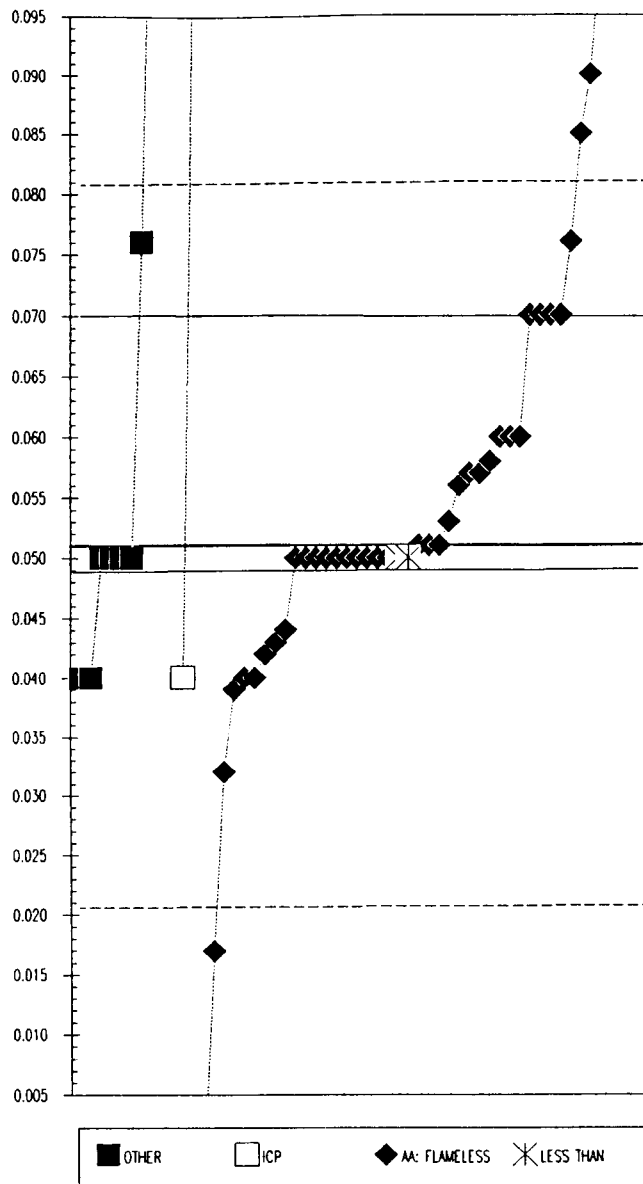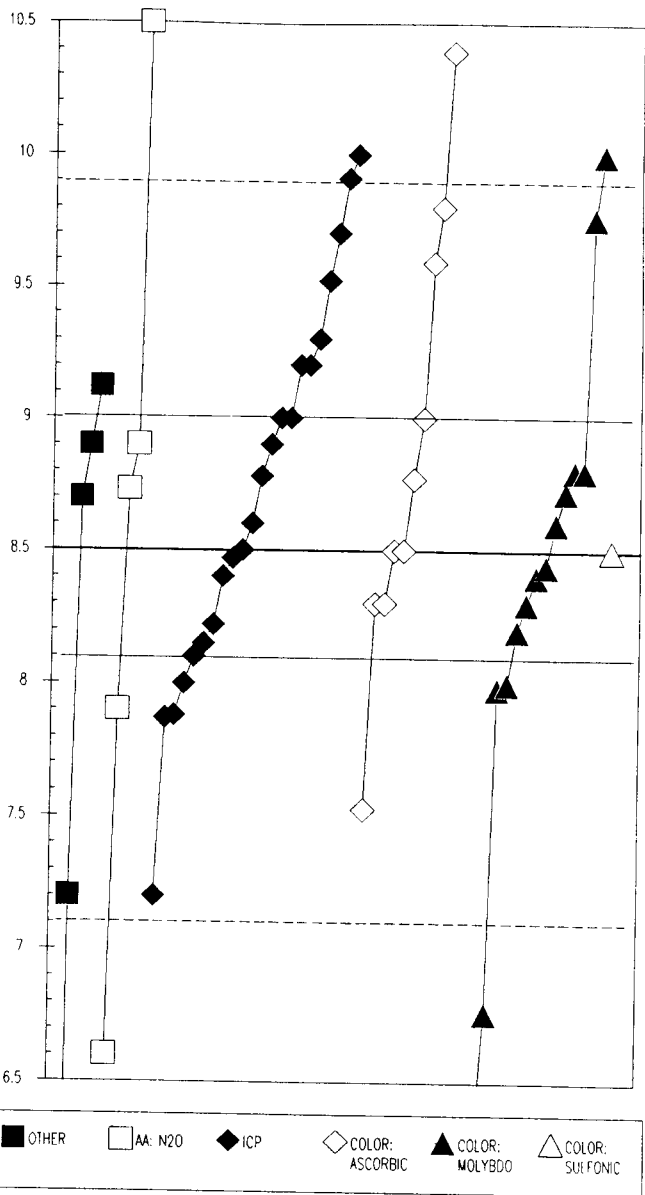
M110   SiO2 (Silica)   mg/liter

MPV = 8.5 +/- 0.2
F-pseudosigma = 0.7
N = 59   Hu = 9.0
Range = 3.8 10.5   HI = 8.1

	0. Other	22a. Color: ascorbic acid				
	2. AA: direct, N2O	22m. Color: molybdo				
	4. ICP	22s. Color: sulfonic acid)				
N =	5	5	22	10	16	1
Max =	9.1	10.5	10.0	10.4	10.0	8.5
Median =			8.7	8.6	8.4	
Min =	3.8	6.6	7.2	7.5	4.0	8.5

Lab #	Rating	Z-value	0	2	4	22o	22m	22s
1	4	0.40			8.8			
2	3	0.71			9.0			
5	4	-0.28			8.3			
16	3	0.57		8.9				
11	1	-1.85	7.2					
17	3	-0.88			7.9			
18	1	-1.85			7.2			
19	3	0.71			9.0			
24	1	1.70			9.7			
25	3	-0.89			7.9			
27	1	1.79					9.8	
30	0	-2.70		6.6				
31	3	0.57	8.9					
33	4	-0.43					8.2	
34	4	-0.28					8.3	
35	4	-0.50			8.2			
37	4	0.31					8.7	
38	4	0.43					8.8	
43	4	0.28	8.7					
45	3	-0.57			8.1			
48	3	0.99			9.2			
49	3	-0.71			8.0			
50	4	-0.14			8.4			
51	0	2.68				10.4		
53	4	0.14					8.6	
55	4	-0.40			8.2			
56	0	2.13					10.0	
57	0	-3.15					6.3	
58	4	0.38					8.8	
59	2	1.14			9.3			
60	4	0.00					8.5	
63	4	-0.08					8.4	
64	1	1.55					9.6	
65	3	0.71					9.0	
66	4	0.00					8.5	
67	4	-0.04			8.5			
72	3	-0.74					8.0	
73	3	0.88	9.1					
75	0	-6.75	3.8					
79	0	-2.47					6.8	
80	3	-0.85		7.9				
81	0	2.13			10.0			
83	4	0.00						8.5
84	4	0.00			8.5			
85	1	1.85				9.8		
90	2	1.45			9.5			
93	0	2.84		10.5				
95	0	-6.38					4.0	
98	4	0.14			8.6			
101	1	2.00			9.9			
102	4	0.43					8.8	
104	4	-0.14					8.4	
107	2	-1.38			7.5			
108	4	-0.28			8.3			
119	3	0.57			8.9			
120	3	-0.71					8.0	
122	4	0.33	8.7					
127	3	0.99			9.2			
128	0	-3.55					6.0	

Legend: OTHER   AA: N2O   ICP   COLOR: ASCORBIC   COLOR: MOLYBDO   COLOR: SULFONIC

70

M110   SO4 (Sulfate)   mg/liter

MPV = 64 +/- 1
F-pseudosigma = 3.4
N = 74   Hu = 66
Range = 30 160   HI = 61

0. Other			50. Gravimetric: Ba	
7. Ion Chromatography			51. Turbidimetric: Ba	
22. Color: thymol blue				
N =	6	25	24	7	12
Max =	66	160	145	110	71
Median =		65	64		64
Min =	57	56	30	47	60

Lab #	Rating	Z-value	0	7	22	50	51
1	4	-0.38					63
2	0	27.76		160			
4	4	-0.09			64		
5	4	-0.38			63		
6	0	-3.10			54		
10	4	-0.46					63
11	4	0.20		65			
15	4	0.49		66			
17	2	1.07				68	
18	3	-0.87			61		
19	4	0.49					66
20	4	-0.09				64	
21	0	-9.89			30		
22	4	-0.09					64
23	1	-1.54		59			
24	4	0.20			65		
25	4	-0.15					64
27	4	0.17					65
29	0	-2.73			55		
30	3	-0.96					61
31	4	-0.41		63			
33	4	-0.09			64		
34	4	-0.41					63
35	4	0.06			65		
36	4	-0.15			64		
38	2	-1.25	60				
39	2	-1.25					60
42	4	0.20			65		
45	0	-2.41			56		
48	4	0.38		66			
50	0	23.41			145		
51	4	0.00		64			
52.1	0	-2.12	57				
52.2	3	-0.96	61				
53	4	0.06					65
55	2	1.36		69			
56	4	0.20		65			
57	4	0.20		65			
58	4	-0.09		64			
59	3	0.78		67			
65	4	0.35	66				
66	4	-0.15			64		
68	0	-5.60			45		
70	1	1.65		70			
71	1	1.80					71
72	4	0.09			65		
73	4	0.49					66
75	4	0.20		65			
79	3	0.52		66			
80	2	-1.10	61				
81	0	13.26				110	
83	4	0.26		65			
84	0	-5.02				47	
85	3	0.64			67		
90	4	0.49		66			
93	2	1.42			69		
95	3	0.84		67			
98	4	0.49			66		
101	1	-1.80			58		
102	4	-0.09			64		

| | OTHER | | IC | | COLOR: THYMOL |
| GRAVIMETRIC | | TURBIDIMETRIC | | LESS THAN | |
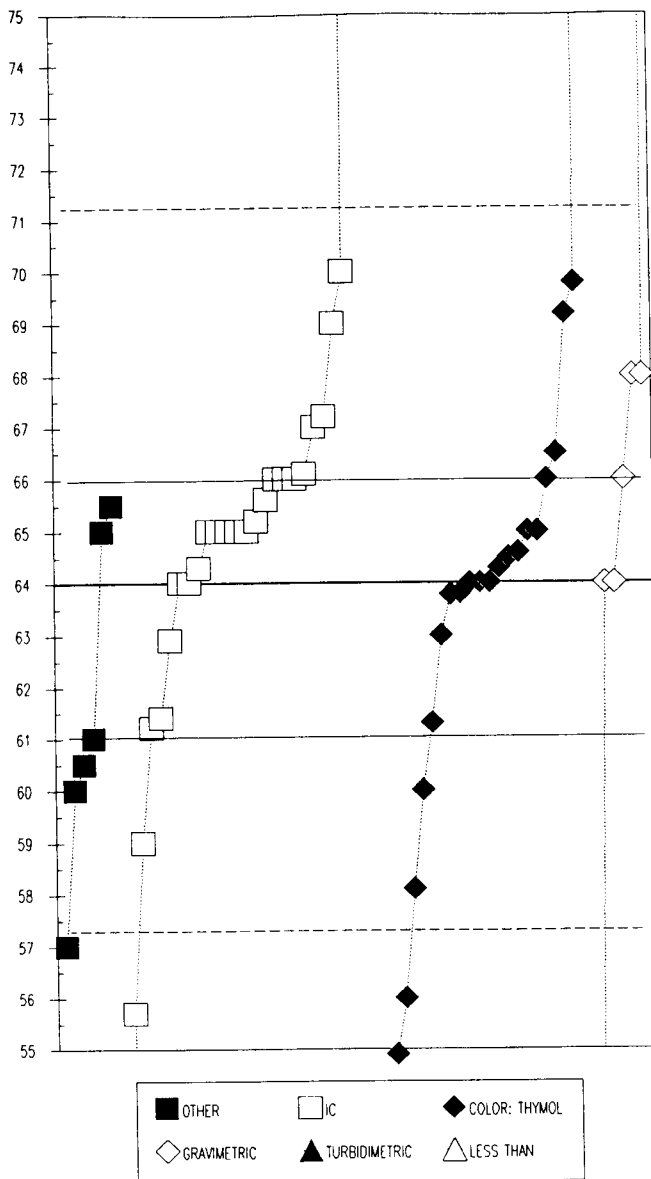
Lab #	Rating	Z-value	0	7	22	50
103	0	-2.49		56		
104	0	<		< 0.2		
107	1	1.60			70	
108	4	-0.09		64		
109	4	0.20	65			
113	3	-0.84		61		
118	4	0.00			64	
119	4	0.20		65		
120	3	-0.90		61		
122	4	0.49		66		
124	4	0.49				66
125	2	1.07				68
128	4	-0.09				64
130	2	-1.25		60		

MPV = 1145 +/- 7

F-pseudosigma = 32

N = 84   Hu = 1146

Range = 109 1310   HI = 1103

0. Other			41w. Electrometric: wheatstone	
41d. Electrometric: direct read				
41i. Electrometric: inductive cell				
N =	1	63	1	19
Max =	1116	1310	1150	1272
Median =		1142.0		1152.0
Min =	1116	109	1150	923

Lab #	Rating	Z-value	0	41d	41i	41w
1	4	0.14		1150		
4	1	1.78				1202
5	3	0.77		1170		
6	3	0.77		1170		
10	2	1.09		1180		
11	4	0.46		1160		
16	4	0.21				1152
17	3	-0.96		1115		
18	0	3.98				1272
19	4	0.49		1161		
20	0	3.60				1260
21	4	-0.11		1142		
22	3	0.68				1167
23	1	-1.69		1092		
24	4	0.46		1160		
25	4	0.08		1148		
27	3	-0.67		1124		
29	0	-2.03		1081		
30	0	-3.79		1025		
31	2	1.09		1180		
33	3	0.58		1164		
34	2	-1.43				1100
35	3	0.77		1170		
36	3	-0.80		1120		
37	4	0.34				1156
38	2	-1.43		1100		
39	3	-0.99		1114		
42	4	0.30		1155		
45	0	-6.15				950
48	4	-0.17		1140		
49	1	-1.65		1093		
50	0	-32.59		109		
51	4	0.21		1152		
52.1	2	1.40				1190
52.2	4	0.46				1160
53	3	0.68		1167		
55	0	-4.57		1000		
56	4	-0.49		1130		
57	0	-3.94				1020
58	4	0.21		1152		
59	3	0.77		1170		
60	3	-0.55		1128		
62	1	1.72		1200		
63	3	0.99		1177		
64	1	-1.59		1095		
65	2	-1.24		1106		
66	3	0.77		1170		
67	4	0.01				1146
68	0	-32.09		125		
70	3	-0.93	1116			
71	4	-0.20				1139
72	0	-5.27		978		
73	3	-0.71				1123
74	3	0.52		1162		
78	0	-32.50		112		
79	4	0.21		1152		
80	2	1.09				1180
81	2	-1.11		1110		
83	4	0.08		1148		
85	3	-0.67		1124		
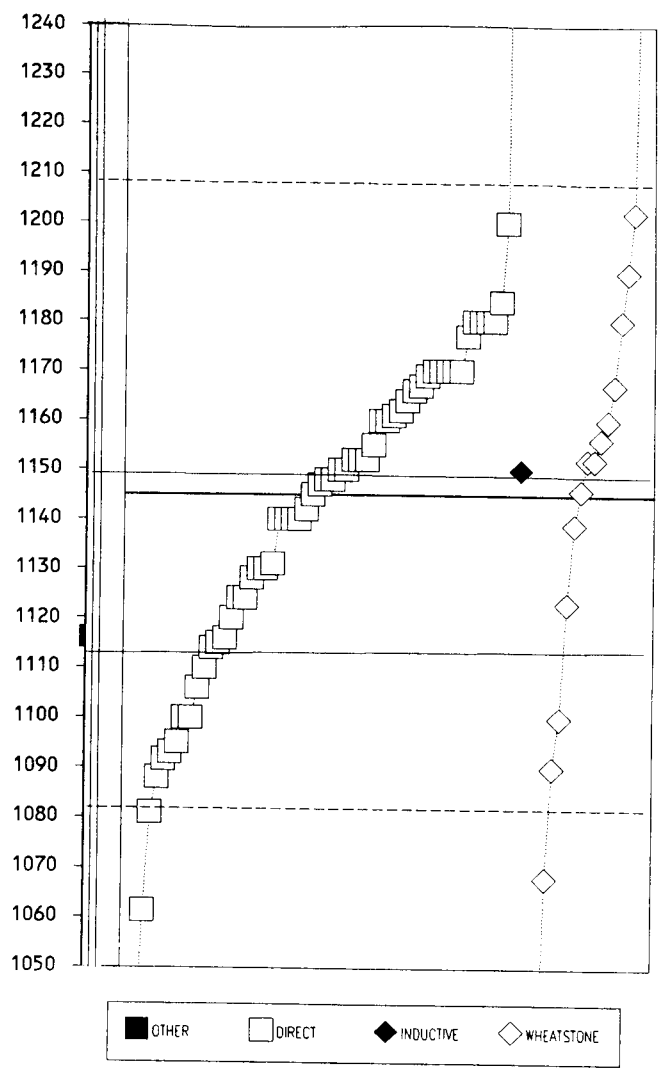
Lab #	Rating	Z-value	0	41d	41i	41w
90	4	-0.17		1140		
91	2	1.09		1180		
93	2	-1.43		1100		
95	4	-0.45		1131		
96	1	-1.81		1088		
98	4	0.14			1150	
100	4	-0.01		1145		
101	3	0.74		1169		
102	4	-0.17		1140		
103	0	-2.44				1068
104	0	-3.76		1026		
107	3	0.65		1166		
108	4	0.05		1147		
109	2	1.21		1184		
113	4	-0.17		1140		
119	0	5.17		1310		
120	4	0.21				1152
121	0	-2.64		1061		
122	0	-6.99				923
124	4	-0.49		1130		
125	4	0.14		1150		
128	1	-1.74				1090
130	2	1.09		1180		
131	3	-0.93		1116		

OTHER   DIRECT   INDUCTIVE   WHEATSTONE

M110   Sr (Strontium)ug/liter

MPV = 736 +/- 16
F-pseudosigma = 39
N = 28   Hu = 752
Range = 78 1810   HI = 699

| 0. Other | | 3. AA: flameless | | 6. MS/ICP |
| 1. AA: direct, air | | 4. iCP | | |

	0	1	3	4	6
N =	2	3		22	1
Max =	745	753		1810	735
Median =				737	
Min =	632	710		78	735

Lab #	Rating	Z-value	0	1	3	4	6
1	4	0.37				750	
2	4	-0.14				730	
11	0	-16.74				78	
18	4	-0.11				731	
21	1	-1.54				675	
24	3	0.88				770	
31	4	-0.01					735
33	4	0.01				736	
38	3	-0.78				705	
43	4	0.37				750	
48	4	0.32				748	
50	2	1.23				784	
55	0	-2.18				650	
57	4	0.45		753			
58	4	-0.14		730			
59	0	-2.28				646	
66	4	0.24	745				
67	2	-1.11				692	
75	0	-2.63	632				
79	4	0.06				738	
90	2	1.39				790	
93	3	-0.65		710			
98	4	-0.14				730	
101	0	2.18				821	
119	2	1.13				780	
120	0	27.35				1810	
122	4	0.11				740	
127	0	-2.43				640	

■ OTHER   □ AA: AIR   ◆ iCP   ◇ MS/ICP

73
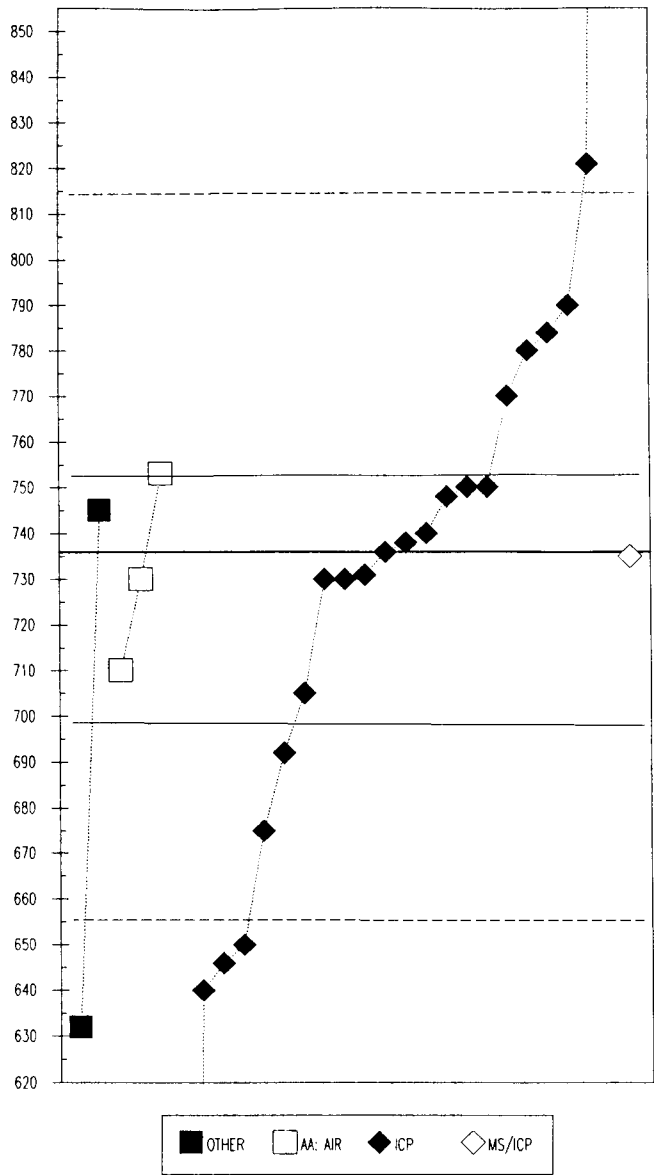
M110   V (Vanadium) ug/liter

MPV = insufficient data

F-pseudosigma =

N =   22

Range =   1.0   8.5

0. Other				4. ICP		
2. AA: direct, N2O				22. Color: catalytic oxication		
3. AA: flameless						
N =	1	2	2	16		1
Max =						
Median =						
Min =						

Lab #	Rating	Z-value	0	2	3	4	22
1						< 6	
11						3.0	
17						8.5	
21						< 10	
31			< 3				
33						< 1	
34			< 1000				
38						< 50	
43						< 3	
45					< 50		
48						< 34	
50						6.0	
55						< 10	
58							2.0
66						< 50	
81						< 50	
93				1.0			
98						< 10	
101						< 10	
120					2.0		
122						< 20	
127						< 10	

Legend: ■ OTHER □ AA: N2O ◆ AA: FLAMELESS ◇ ICP ▲ COLOR ✳ LESS THAN
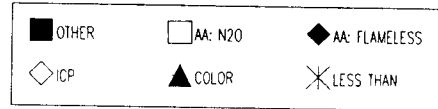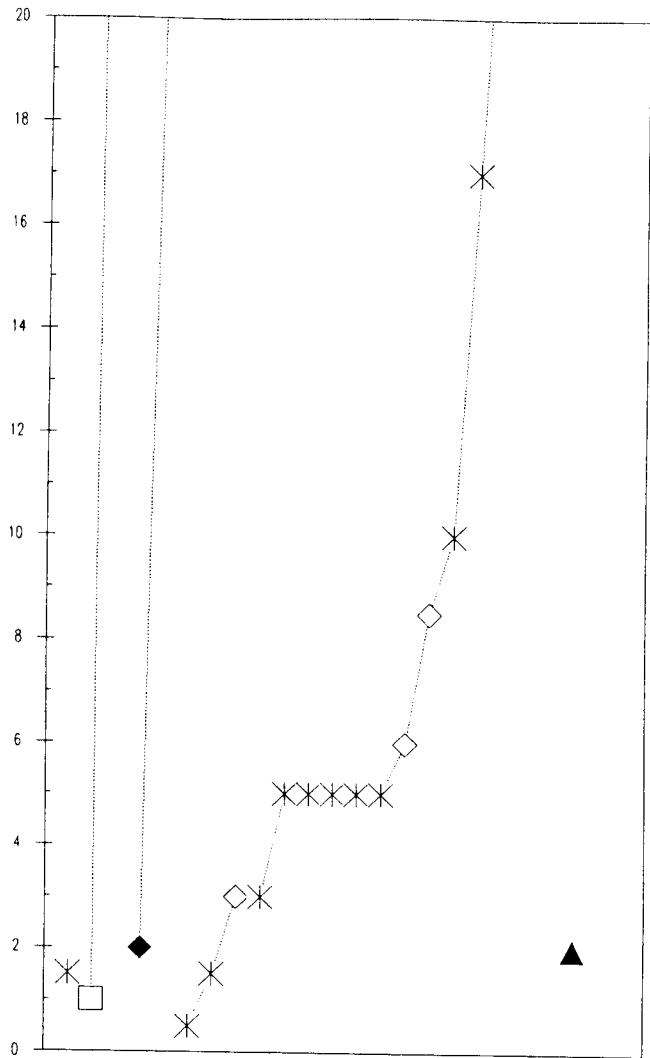
N-22 NH3-N (Ammonia as N) mg/liter

MPV = 0.704 +/- 0.021
F-pseudosigma = 0.072
N =   55   Hu = 0.738
Range = 0.270 1.000   Hl = 0.640

			0. Other		22p. Color: phenate		
		22d. Color: distil, Nesslerization			22s. Color: salicylate		
		22i. Color: indophenol			40. Ion electrode		
	N =	6	3	5	26	2	13
	Max =	0.710	0.740	0.784	1.000	0.544	0.940
	Median =				0.703		0.720
	Min =	0.600	0.712	0.600	0.519	0.440	0.270

Lab #	Rating	Z-value	O	22d	22i	22p	22s	40
1	2	-1.16	0.620					
11	0	-2.12				0.550		
16	4	0.51				0.740		
17	4	0.51				0.740		
18	4	0.03				0.706		
19	4	-0.46						0.670
25	4	0.51		0.740				
26	0	-3.65					0.440	
27	4	-0.33				0.680		
28	2	1.11						0.784
30	0	3.27						0.940
32	1	1.69				0.826		
34	4	0.44				0.735		
35	0	2.30						0.870
36	3	-0.88				0.640		
39	2	-1.43				0.600		
43	3	-0.88	0.640					
45	4	0.09						0.710
48	2	-1.02				0.630		
51	1	-1.85				0.570		
53	4	-0.05						0.700
55	0	3.00						0.920
57	3	-0.55			0.664			
58	4	0.23				0.720		
61	0	2.03						0.850
63	1	-1.97				0.561		
66	4	0.09				0.710		
70	0	-6.00						0.270
72	4	0.44				0.735		
73	4	-0.03			0.701			
74	4	0.23		0.720				
78	3	0.64				0.750		
79	2	1.20				0.790		
80	4	0.13				0.713		
81	2	-1.43	0.600					
82	3	-0.81	0.645					
83	4	0.23						0.720
87	2	-1.43			0.600			
90	4	-0.33				0.680		
91	3	0.78				0.760		
93	0	4.10				1.000		
97	0	-2.55				0.519		
98	4	-0.46				0.670		
103	0	<	< 0.09					
107	3	-0.74				0.650		
108	4	0.23						0.720
110	4	-0.41			0.674			
111	2	-1.43						0.600
113	2	1.11			0.784			
118	4	0.12		0.712				
120	4	0.10						0.711
121	4	-0.05				0.700		
122	4	0.09	0.710					
125	4	-0.05				0.700		
131	0	-2.21					0.544	

OTHER   NESSLER   INDOPHENOL   PHENATE

SALICYLATE   ION ELECTRODE   LESS THAN
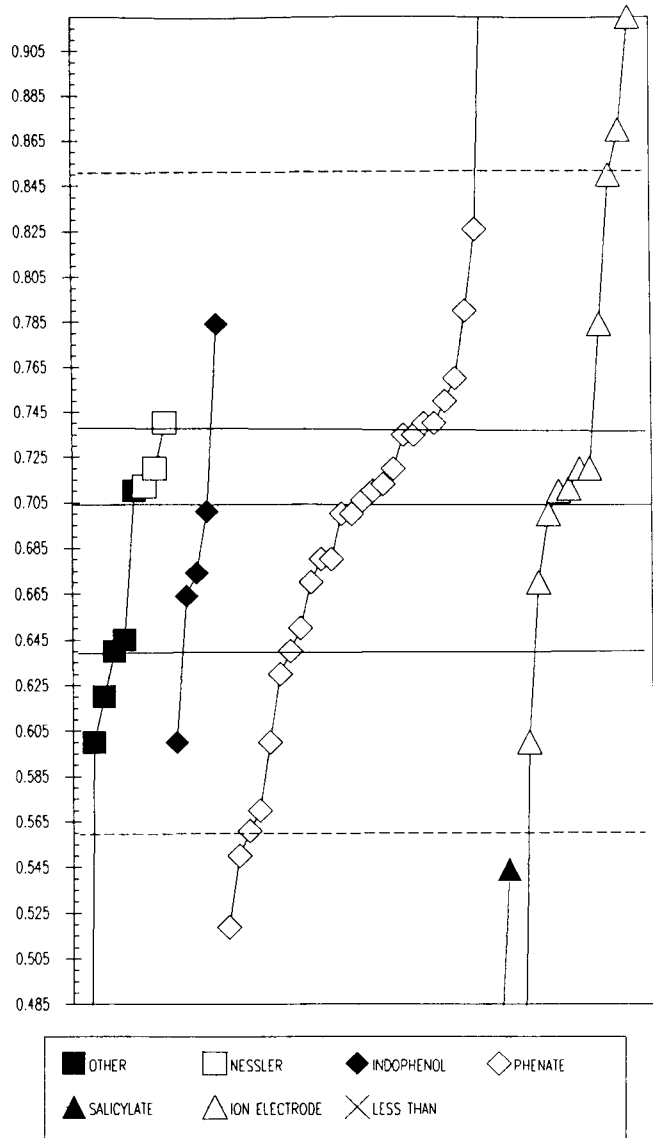
N--22 NH3 + Org-N (Ammonia + Organic N)   mg/liter

MPV = 1.260 +/- 0.096
F-pseudosigma = 0.297
N = 43   Hu = 1.500
Range = 0.770 3.000   Hl = 1.100

0. Other		22h. Color: hypochlorite		40. Ion electrode		
20. Titrate		22p. Color: phenate				
22d. Color: distil, Nesslerization		22s. Color: salicylate				
N =	11	3	2	1	13	6	7
Max =	3.000	1.630	1.090	1.350	1.970	1.320	1.736
Median =	1.348				1.250		
Min =	0.780	0.770	1.070	1.350	1.030	0.935	1.080

Lab #	Rating	Z-value	0	20	22d	22h	22p	22s	40
1	4	0.44	1.390						
14	2	1.15							1.600
16	3	-0.57			1.090				
17	0	2.39					1.970		
18	4	-0.07					1.240		
19	3	-0.61							1.080
27	4	-0.37					1.150		
28	4	-0.10							1.230
29	4	0.30					1.350		
30	2	1.15							1.600
32	3	-0.71	1.050						
34	4	-0.20	1.200						
35	1	-1.65		0.770					
36	NR	NR				< 2.5			
39	4	0.34					1.360		
43	3	-0.98	0.970						
45	2	1.15		1.600					
51	2	-1.10						0.935	
53	4	0.00						1.260	
58	4	-0.20					1.200		
61	2	1.25		1.630					
63	4	0.30					1.350		
72	3	-0.78					1.030		
73	4	0.30			1.350				
74	3	-0.64			1.070				
80	4	-0.34					1.160		
81	0	5.87	3.000						
82	4	0.00	1.260						
83	4	-0.20							1.200
87	2	1.08	1.580						
90	4	0.34					1.360		
97	2	1.10					1.585		
98	2	1.15	1.600						
107	4	0.20						1.320	
110	4	0.30	1.348						
111	1	1.61							1.736
113	3	-0.81					1.020		
120	3	0.54							1.420
121	4	-0.03					1.250		
122	2	1.42	1.680						
125	4	-0.10					1.230		
131	3	-0.54					1.100		
134	1	-1.62	0.780						
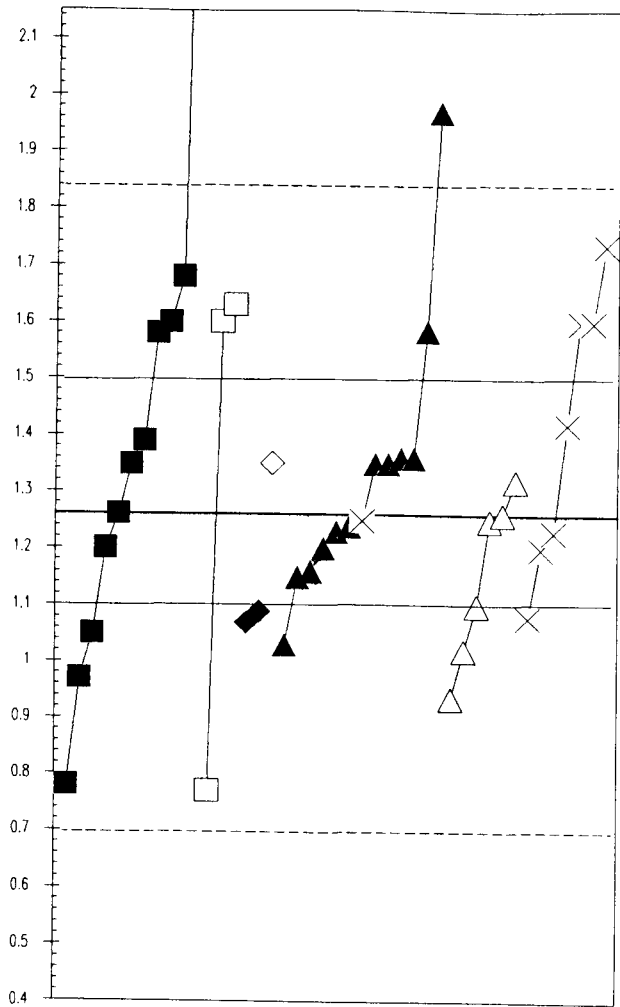
|			
■ OTHER	☐ TITRATE	◆ NESSLER	◇ HYPOCHLORITE
▲ PHENATE	△ SALICYLATE	✕ ION ELECTRODE	✕ LESS THAN

N-22   NO2-N (Nitrite as N)   mg/liter

MPV = 0.125 +/- 0.008
F-pseudosigma = 0.030
N = 56   Hu = 0.150
Range = 0.016 290   Hl = 0.110

			0. Other		
			7. Ion Chromatography		
			22. Color: diazotization		
			N =	2	3	51
			Max =	0.259	290.1	1.000
			Median =			0.120
			Min =	0.140	0.150	0.016

Lab #	Rating	Z-value	0	7	22
1	4	-0.51			0.110
11	1	-1.52			0.080
14	4	0.51			0.140
16	4	-0.51			0.110
17	4	-0.51			0.110
19	3	0.84			0.150
20	1	1.85			0.180
25	3	0.54			0.141
26	0	3.88			0.240
27	2	-1.18			0.090
28	3	0.84			0.150
29	3	-0.61			0.107
30	4	0.27			0.133
32	1	-1.69			0.075
34	4	-0.27			0.117
35	4	-0.17			0.120
36	4	0.17			0.130
39	1	-1.52			0.080
45	3	0.84			0.150
48	2	-1.18			0.090
51	4	-0.24			0.118
53	4	-0.17			0.120
55	0	12.65			0.500
57	4	0.03			0.126
58	4	-0.17			0.120
61	4	0.51			0.140
63	3	0.84			0.150
65	4	-0.13			0.121
66	4	0.51			0.140
70	3	0.84			0.150
72	4	-0.17			0.120
73	1	-1.75			0.073
74	0	-3.34			0.026
78	0	<			< 0.01
79	4	0.51			0.140
80	4	-0.07			0.123
81	0	29.51			1.000
82	3	-0.61			0.107
83	3	0.84		0.150	
87	3	0.84			0.150
93	0	5.56			0.290
98	2	-1.18			0.090
103	0	9779		290	
107	4	-0.51			0.110
108	4	0.51	0.14		
109	0	5.90			0.300
111	0	4.52	0.259		
113	4	0.37			0.136
117	NR	NR		< 0.5	
118	4	-0.17			0.120
120	0	<			< 0.02
121	4	-0.51			0.110
122	4	-0.03			0.124
125	4	0.17			0.130
131	0	-3.68			0.016
134	0	<			< 0.02

OTHER   IC   DIAZOTIZATION   LESS THAN
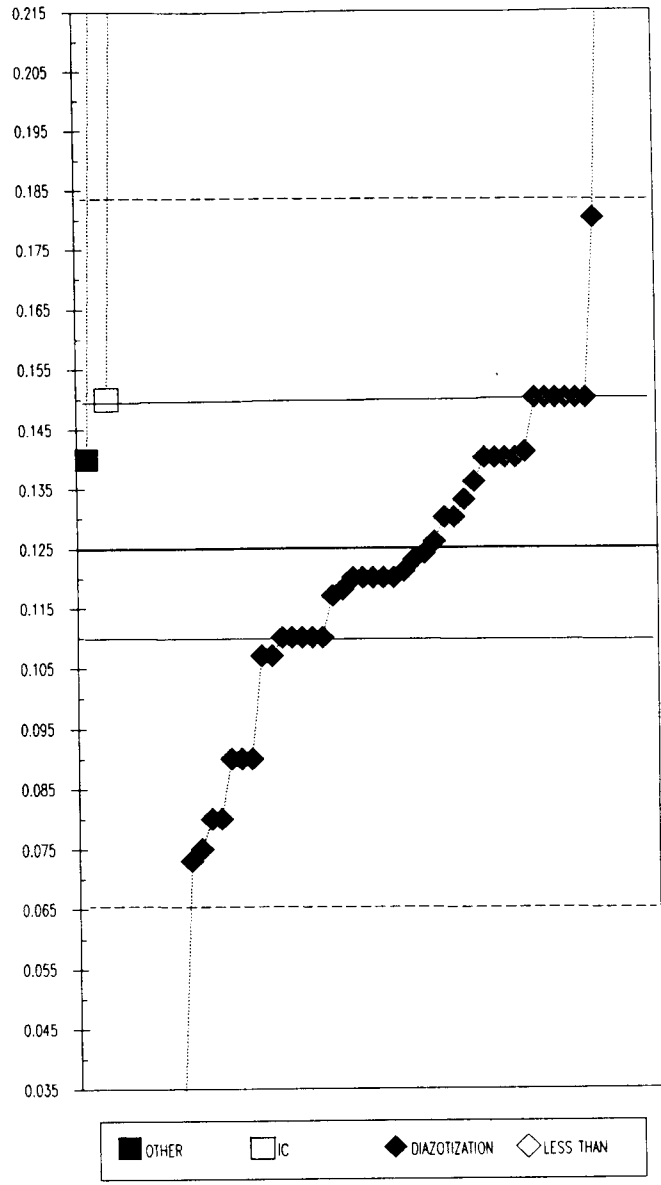
N-22   NO3-N (Nitrate as N)   mg/liter

MPV =   1.420   +/- 0.032
F-pseudosigma =   0.117
N = 62   Hu = 1.500
Range = 0.391 6.860   Hl = 1.342

0. Other			22c. Color: Cd, diazo		
7. Ion Chromatography			22h. Color: hydrazine, diazo		
22b. Color: Brucine					
N =	8	8	9	33	4
Max =	3.361	6.860	1.730	2.020	1.510
Median =			1.440	1.390	
Min =	1.340	1.180	1.300	0.391	1.307

Lab #	Rating	Z-value	0	7	22b	22c	22h
1	3	-0.60			1.350		
11	3	0.85		1.520			
14	4	-0.43			1.370		
16	3	0.51					1.480
17	3	-0.60		1.350			
18	3	0.68				1.500	
19	1	1.96			1.650		
20	3	0.77		1.510			
25	4	-0.15			1.402		
26	0	-3.42				1.020	
27	4	-0.43				1.370	
28	4	0.17			1.440		
29	3	-0.67				1.342	
30	0	2.65			1.730		
32	2	1.28				1.570	
34	4	-0.26				1.390	
35	3	-0.68	1.340				
36	4	0.17				1.440	
39	0	5.12				2.020	
45	0	-3.59				1.000	
48	4	0.17				1.440	
51	0	-8.79				0.391	
53	4	0.00				1.420	
55	0	-8.71				0.400	
57	2	-1.02			1.300		
58	4	-0.26				1.390	
61	0	-4.61				0.88	
63	4	-0.29				1.386	
65	0	2.73				1.740	
66	4	-0.43			1.370		
69	2	-1.11				1.290	
70	0	-2.05		1.180			
72	3	0.68				1.500	
73	4	0.09				1.430	
74	3	0.68	1.500				
78	4	-0.17				1.400	
79	4	-0.34				1.380	
80	0	-6.32				0.680	
81	3	0.68	1.500				
82	4	0.43	1.470				
83	0	2.48		1.710			
84	4	0.09	1.430				
85	3	0.94			1.530		
87	3	0.77					1.510
93	4	0.43			1.470		
98	2	-1.02				1.300	
103	0	46		6.860			
107	3	0.60				1.490	
108	4	-0.26		1.390			
109	0	-6.15				0.700	
110	3	-0.96					1.307
111	0	16.57	3.361				
113	3	-0.68					1.340
117	2	1.37		1.580			
118	4	0.00	1.420				
120	0	4.61				1.960	
121	4	-0.34				1.380	
122	4	0.00	1.420				
125	3	0.68				1.500	
131	4	0.26				1.450	
134	0	-4.95				0.840	
135	4	-0.17				1.400	

Legend: ■ OTHER   □ IC   ◆ BRUCINE   ◇ Cd   ▲ HYDRAZINE
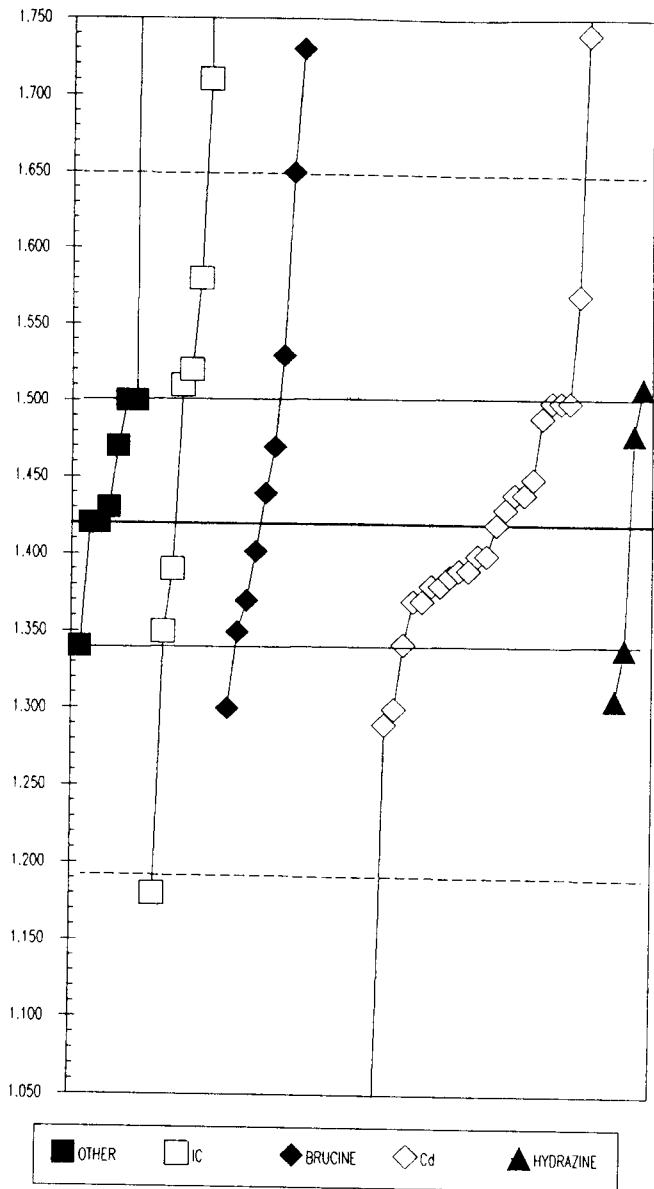
N-22   total P (total Phosphorus)   mg/liter

MPV =   1.000   +/-   0.015
F-pseudosigma =   0.052
N = 53   Hu = 1.020
Range =   0.250 1.490   HI = 0.950

	0. Other	22a. Color: ascorbic, phosphomolybdate			
		22k. Color: K & Hg, phosphomolybdate			
		22p. Color: persulfate			
N =	5	43	2	3	
Max =	1.200	1.490	1.011	1.011	
Median =		1.000			
Min =	0.960	0.250	0.250	0.895	

Lab #	Rating	Z-value	0	22a	22k	22p
1	4	0.39		1.020		
11	4	-0.39		0.980		
16	0	-4.05		0.790		
17	2	-1.35		0.930		
18	0	-2.02				0.895
19	4	0.00		1.000		
27	4	-0.39		0.980		
28	4	0.39	1.020			
29	4	0.39		1.020		
30	4	0.39		1.020		
32	4	-0.39		0.980		
34	4	0.00		1.000		
35	4	-0.39		0.980		
36	4	0.19		1.010		
39	2	1.16		1.060		
43	3	0.96	1.050			
45	3	-0.96		0.950		
48	4	0.00		1.000		
51	4	-0.40		0.979		
53	4	0.19				1.010
57	4	-0.48		0.975		
58	4	0.19		1.010		
61	4	0.19		1.010		
63	0	4.12		1.214		
65	0	-3.22		0.833		
66	4	0.00		1.000		
67	0	9.44		1.490		
70	3	-0.96		0.950		
72	2	-1.16		0.940		
73	4	0.39		1.020		
74	1	-1.54		0.920		
79	3	0.96		1.050		
80	1	1.93		1.100		
81	3	-0.77	0.960			
82	4	0.19	1.010			
83	3	-1.00		0.948		
87	0	2.12		1.110		
90	4	0.00		1.000		
93	4	0.39		1.020		
97	0	-5.51		0.714		
98	0	8.09		1.420		
103	0	-14.45			0.250	
107	1	-1.54			0.920	
110	4	0.21				1.011
113	3	-0.96		0.950		
115	4	-0.27		0.986		
118	4	0.25		1.013		
120	2	-1.08		0.944		
121	4	0.00		1.000		
122	0	3.85	1.200			
125	4	0.39		1.020		
131	4	0.02		1.001		
134	3	-0.67		0.965		

Legend: ■ OTHER   □ ASCORBIC   ◆ K & Hg   ◇ PERSULFATE
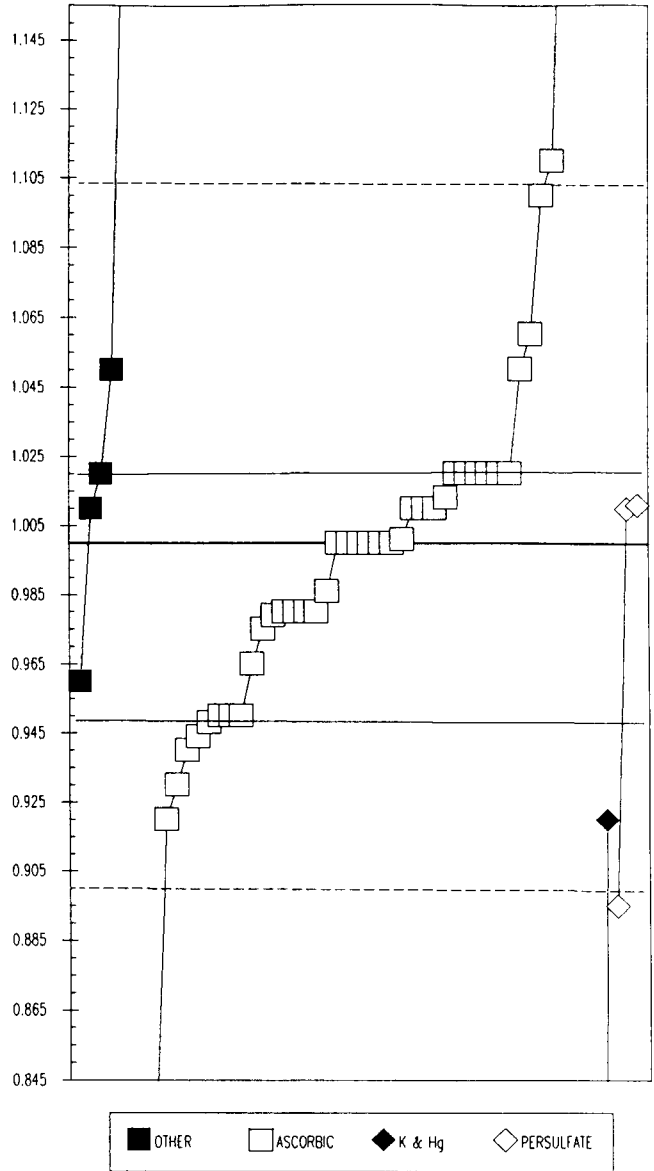
N-22 PO4-P(Orthophosphate as P) mg/liter

MPV = 0.470 +/- 0.007
F-pseudosigma = 0.024
N = 56   Hu = 0.488
Range = 0.066 0.570   Hl = 0.456

0. Other		
7. Ion Chromatography		
22. Color: ascorbic acid, phosphomolybdate		

	2	2	52
N =			
Max =	0.457	0.422	0.570
Median =			0.470
Min =	0.390	0.360	0.066

Lab #	Rating	Z-value	0	7	22
1	3	0.80			0.489
11	4	0.00			0.470
16	4	-0.42			0.460
17	4	0.42			0.480
18	3	-0.67			0.454
19	4	-0.42			0.460
20	0	-3.37	0.390		
26	1	1.69			0.510
27	0	-2.95			0.400
28	3	-0.55	0.457		
29	0	2.99			0.541
30	2	-1.10			0.444
32	0	2.36			0.526
34	4	-0.08			0.468
35	4	-0.42			0.460
36	4	0.00			0.470
39	4	-0.34			0.462
45	0	4.22			0.570
48	4	0.00			0.470
51	4	-0.38			0.461
53	4	-0.42			0.460
57	3	0.63			0.485
58	4	0.42			0.480
61	4	0.42			0.480
63	0	-2.82			0.403
65	3	-0.84			0.450
66	4	-0.42			0.460
67	4	-0.17			0.466
70	2	1.26			0.500
72	4	0.42			0.480
73	4	0.08			0.472
74	1	-1.69			0.430
79	4	-0.42			0.460
80	3	0.67			0.486
81	3	0.84			0.490
82	4	0.34			0.478
83	1	-1.56			0.433
87	4	0.00			0.470
90	4	-0.42			0.460
93	2	1.26			0.500
97	4	-0.04			0.469
98	1	-1.69			0.430
103	0	-17.03			0.066
107	0	2.11			0.520
108	0	-2.02		0.422	
109	0	3.79			0.560
110	0	2.02			0.518
113	3	-0.97			0.447
115	2	-1.14			0.443
117	0	-4.64		0.360	
118	4	0.34			0.478
120	0	3.75			0.559
122	4	0.42			0.480
125	4	0.42			0.480
131	2	1.39			0.503
134	2	1.35			0.502

OTHER   IC   COLOR
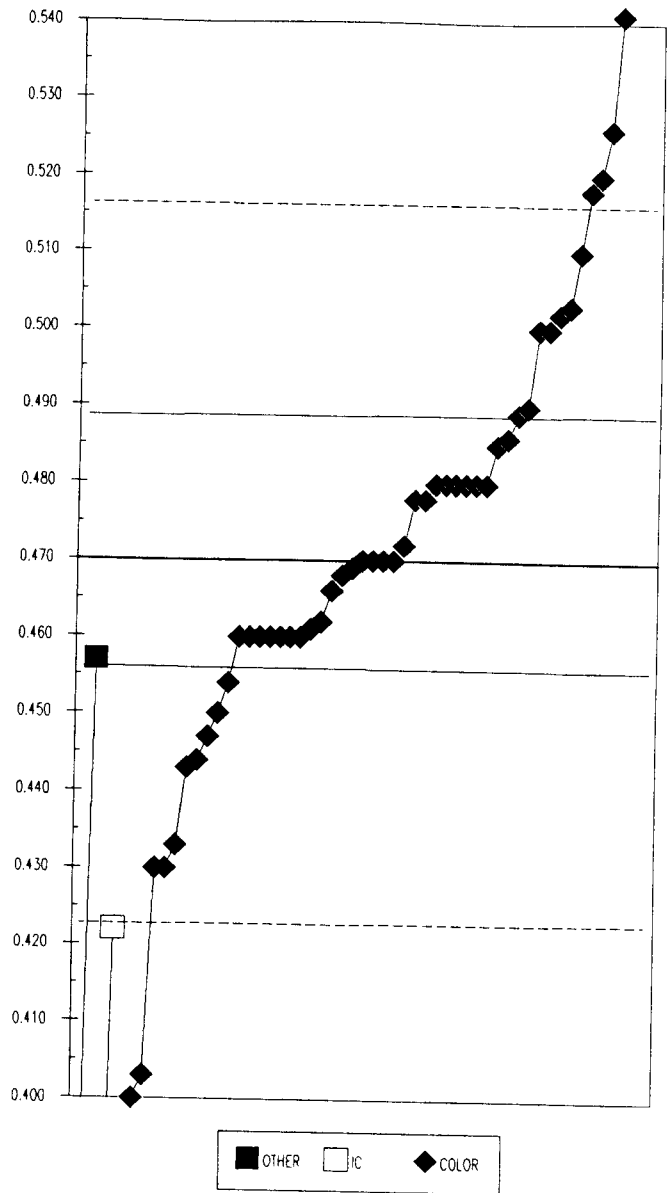
N-23   NH3-N (Ammonia as N)   mg/liter

MPV = 0.500 +/- 0.015
F-pseudosigma = 0.053
N = 57   Hu = 0.531
Range = 0.160 2.400   Hl = 0.460

0. Other		22p. Color: phenate			
22d. Color: distil, Nesslerization		22s. Color: salicylate			
22i. Color: indophenol		40. Ion electrode			
N =	5	4	8	25	2	13
Max =	0.896	2.400	0.550	1.100	0.640	0.700
Median =				0.500		0.514
Min =	0.190	0.420	0.410	0.330	0.386	0.160

Lab #	Rating	Z-value	0	22d	22i	22p	22s	40
1	4	-0.32	0.483					
11	0	-2.09				0.390		
16	3	-0.76				0.460		
17	4	0.38				0.520		
18	4	-0.38				0.480		
19	3	0.95						0.550
21	0	7.52	0.896					
25	4	0.19			0.510			
26	0	2.66					0.640	
27	4	0.00				0.500		
28	4	0.13						0.507
30	1	1.90						0.600
32	2	1.25	0.566					
34	4	0.27				0.514		
35	0	3.23						0.670
36	1	-1.71				0.410		
39	1	-1.90				0.400		
43	2	-1.14	0.440					
45	3	0.57						0.530
48	1	-1.71			0.410			
51	1	-1.71				0.410		
53	4	0.19						0.510
55	0	3.80						0.700
57	4	-0.08			0.496			
58	4	0.00				0.500		
61	0	2.28						0.620
63	2	-1.33				0.430		
66	4	0.38				0.520		
70	0	-6.46						0.160
72	0	2.24				0.618		
73	4	0.02			0.501			
74	1	-1.52		0.420				
78	3	0.95			0.550			
79	1	1.71				0.590		
80	3	0.59				0.531		
81	0	36.10		2.400				
82	3	-0.76				0.460		
83	4	-0.19						0.490
87	2	-1.33			0.430			
90	4	-0.38				0.480		
91	4	0.38			0.520			
93	0	11.40				1.100		
97	0	-3.23				0.330		
98	3	-0.76				0.460		
103	0	-5.89	0.190					
107	3	-0.76				0.460		
108	4	0.19						0.510
110	3	-0.65			0.466			
111	3	-0.91						0.452
113	3	-0.70			0.463			
118	4	0.29			0.515			
120	4	0.27						0.514
121	4	0.00				0.500		
122	4	0.00				0.500		
125	3	0.57				0.530		
131	0	-2.17					0.386	
133	2	1.33				0.570		

OTHER   NESSLERIZATION   INDOPHENOL
PHENATE   SALICYLATE   ION ELECTRODE

81
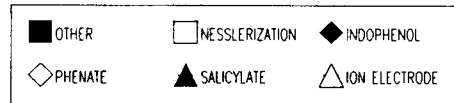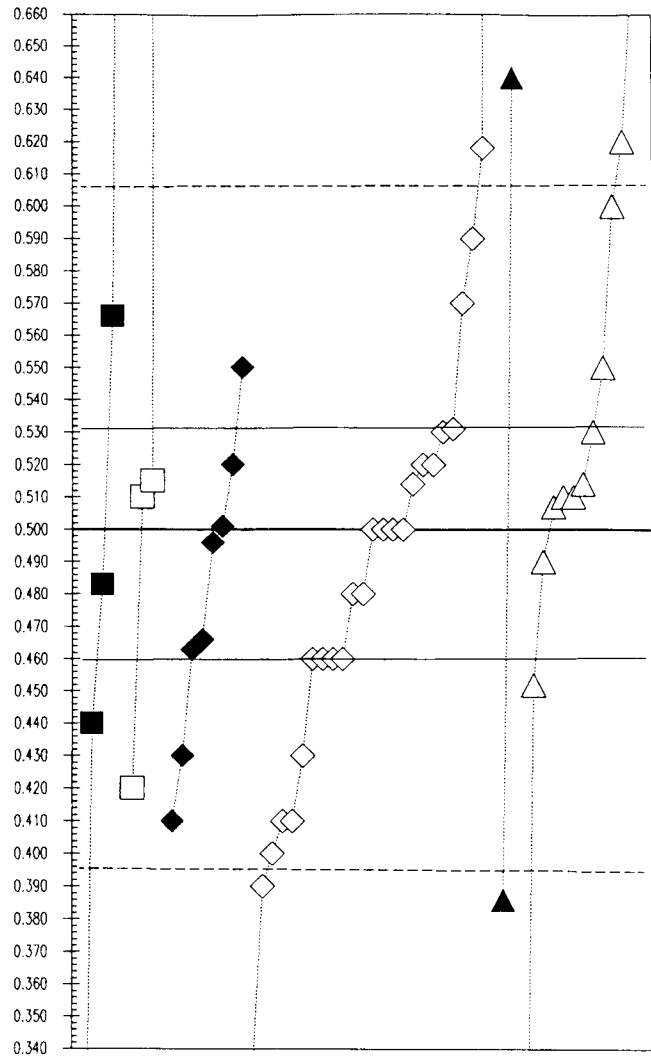
N-23 NH3 + Org-N (Ammonia + Organic N)   mg/liter

MPV = 0.816 +/- 0.075
F-pseudosigma = 0.237
N = 45   Hu = 1.050
Range = 0.290 4.800   HI = 0.730

			0. Other	20. Titrate	22d: Color: distil. Nesslerization	22h. Color: hypochlorite	22p. Color: phenate	22s. Color: salicylate	40. Ion electrode
		N =	3	6	3	3	17	6	7
		Max =	1.050	1.500	4.800	2.800	1.362	0.800	3.695
		Median =					0.820		
		Min =	0.590	0.290	0.730	0.783	0.700	0.700	0.680
Lab #	Rating	Z-value	0	20	22d	22h	22p	22s	40
1	4	0.27					0.880		
14	0	2.08							1.31
16	4	-0.36					0.730		
17	2	1.49			1.170				
18	4	-0.07					0.800		
19	3	-0.57							0.680
21	0	2.88		1.500					
27	4	-0.40					0.720		
28	2	1.07							1.070
29	4	0.19					0.86		
30	2	1.03							1.06
32	3	-0.91	0.599						
34	4	-0.02					0.812		
35	0	-2.22		0.290					
36	NR	NR					< 2.5		
39	4	0.35					0.900		
43	3	-0.95	0.590						
45	4	-0.07		0.800					
51	4	-0.41						0.718	
53	4	-0.15						0.780	
58	4	-0.49					0.700		
61	4	0.19		0.860					
63	4	0.14					0.850		
72	4	-0.45					0.709		
73	4	-0.14				0.783			
74	4	-0.36			0.730				
80	3	0.61					0.960		
81	0	16.80			4.800				
82	4	0.02					0.82		
83	4	-0.24							0.760
87	3	0.99	1.050						
90	4	-0.24					0.760		
97	0	2.30					1.362		
98	2	1.20		1.100					
107	4	-0.07					0.800		
110	4	0.42		0.915					
111	0	12.14							3.695
113	4	-0.49					0.700		
120	2	1.24							1.110
121	4	-0.28					0.750		
122	3	0.69					0.98		
125	4	0.19					0.86		
131	4	-0.07					0.800		
133	0	8.36				2.800			
134	4	-0.49					0.700		

Legend:
■ OTHER   □ TITRATE   ◆ NESSLERIZATION   ◇ HYPOCHLORITE
▲ PHENATE   △ SALICYLATE   ✕ ION ELECTRODE   ✳ LESS THAN
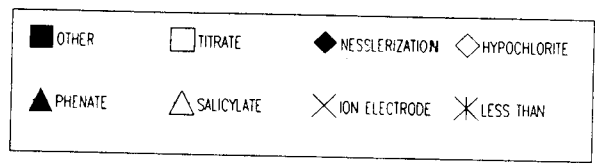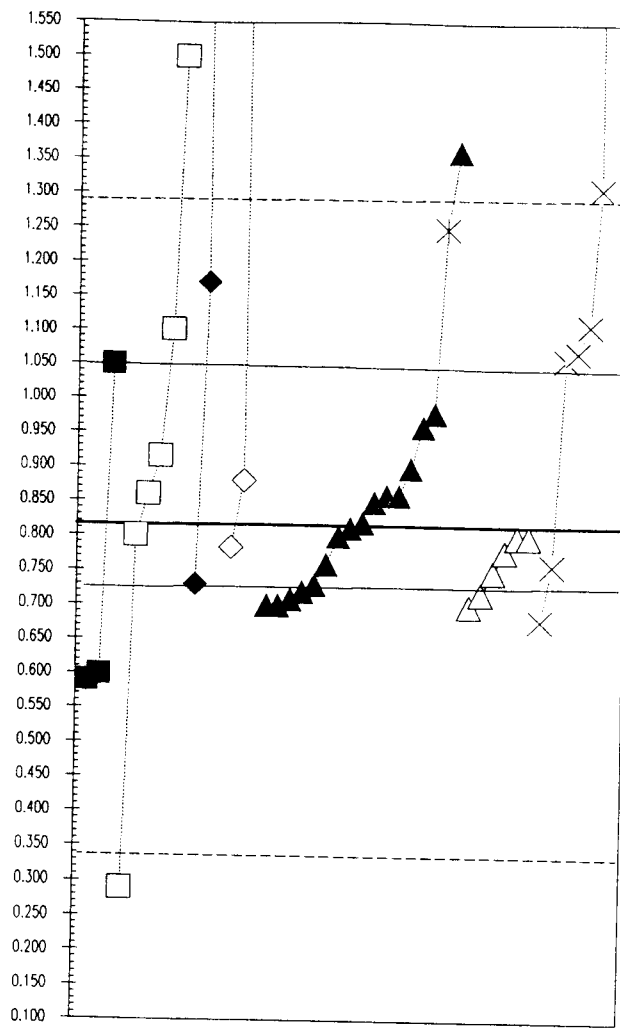
N-23   NO2-N (Nitrite as N)   mg/liter

MPV = 0.201 +/- 0.002
F-pseudosigma = 0.007
N = 58   Hu = 0.210
Range = 0.170 186   Hl = 0.200

		0. Other		
		7. Ion Chromatography		
		22. Color: diazotization		
		N =	5	3	50
		Max =	0.520	186	1.950
		Median =			0.200
		Min =	0.199	0.230	0.170

Lab #	Rating	Z-value	0	7	22
1	2	1.28			0.210
11	0	2.63			0.220
14	4	-0.07			0.200
16	3	0.74			0.206
17	2	1.28			0.210
19	0	2.63			0.220
20	0	5.33			0.240
21	NR	NR			< 0.5
25	3	-0.88			0.194
26	2	-1.42			0.190
27	2	1.28			0.210
28	2	-1.01			0.193
29	3	-0.74			0.195
30	3	-0.74			0.195
32	4	-0.20	0.199		
34	4	0.07			0.201
35	4	-0.07			0.200
36	2	-1.42			0.190
39	4	-0.07			0.200
45	4	-0.07	0.200		
48	2	-1.42			0.190
51	4	0.07			0.201
53	4	-0.07			0.200
55	0	60.64			0.650
57	4	0.07			0.201
58	4	-0.07			0.200
61	4	-0.07			0.200
63	4	-0.07			0.200
65	4	0.07			0.201
66	4	-0.07			0.200
70	4	-0.07			0.200
72	4	-0.07			0.200
73	4	0.34			0.203
74	3	0.88			0.207
78	4	-0.07			0.200
79	4	-0.07			0.200
80	4	-0.20			0.199
81	0	6.68			0.250
82	3	0.74			0.206
83	0	3.98		0.230	
87	2	1.28			0.210
93	0	43.10	0.520		
98	2	1.28			0.210
103	0	25077.84		186.1	
107	0	-2.77			0.180
108	2	1.28	0.210		
109	0	236.01			1.950
111	0	27.45	0.404		
113	4	-0.20			0.199
117	NR	NR		< 0.2	
118	4	-0.07			0.200
120	0	4.65			0.235
121	2	1.28			0.210
122	4	-0.07			0.200
125	0	9.38			0.270
131	3	0.74			0.206
133	0	-4.11			0.170
134	4	-0.07			0.200

OTHER   IC   DIAZOTIZATION   LESS THAN
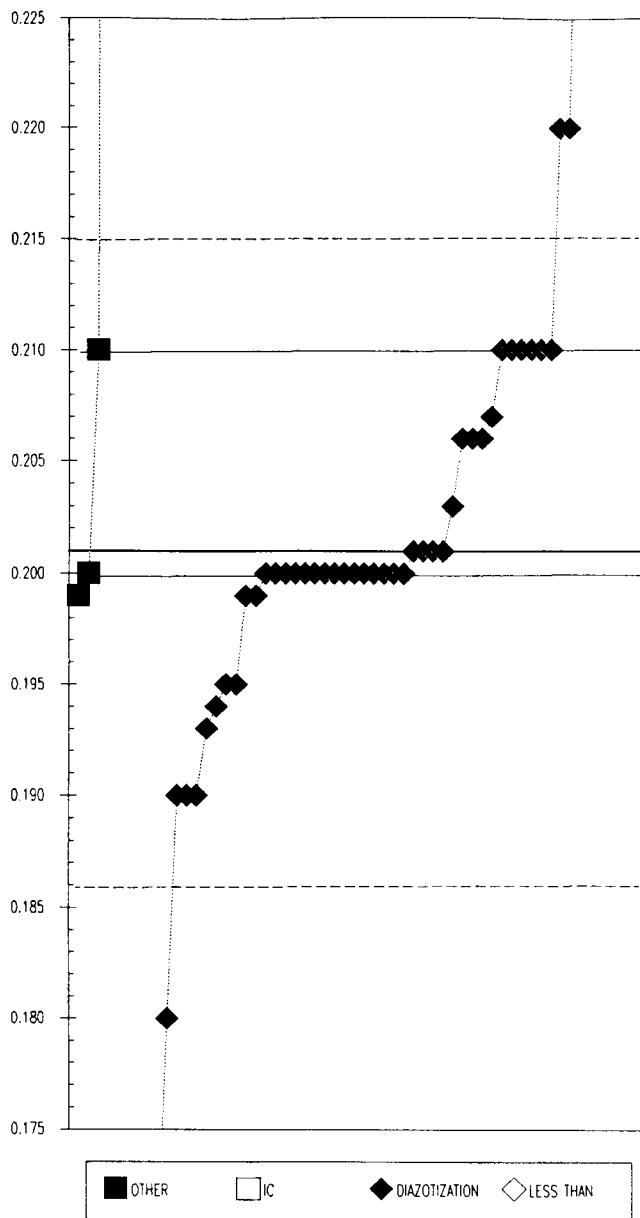
N-23   NO3-N (Nitrate as N)   mg/liter

MPV = 0.770 +/- 0.032
F-pseudosigma = 0.119
N = 64
Range = 0.009 3.530
Hu = 0.860
Hl = 0.700

		0. Other	22c. Color: Cd, diazo		
		7. Ion Chromatography	22h. Color: hydrazine, diazo		
		22b. Color: Brucine			
N =		4	7	6	42	5
Max =		1.050	3.530	0.980	1.440	1.031
Median =					0.741	
Min =		0.009	0.580	0.460	0.300	0.653

| Lab #	Rating	Z-value	0	7	22b	22c	22h
1	4	-0.13			0.755		
11	4	0.17		0.790			
14	4	-0.51				0.710	
16	2	1.10					0.900
17	2	-1.35				0.610	
18	3	0.67				0.850	
19	3	0.67			0.850		
20	4	-0.17		0.750			
21	2	1.10				0.900	
25	4	-0.34			0.730		
26	0	5.65				1.440	
27	4	-0.17				0.750	
28	4	0.05			0.776		
29	4	0.08				0.779	
30	1	1.77			0.980		
32	4	0.25	0.800				
34	3	-0.57				0.702	
35	3	-0.84				0.670	
36	4	0.17				0.790	
39	1	1.94				1.000	
45	1	-1.85				0.550	
48	1	1.94				1.000	
51	2	-1.05				0.645	
53	4	-0.25				0.740	
55	0	-3.96				0.300	
57	3	0.78				0.862	
58	4	-0.34				0.730	
61	2	-1.26				0.620	
63	4	-0.24				0.742	
65	2	1.04				0.893	
66	4	-0.42				0.720	
69	3	0.76				0.860	
70	1	-1.60		0.580			
72	4	0.00				0.770	
73	4	-0.33				0.731	
74	0	2.36	1.050				
78	2	1.26				0.920	
79	4	-0.08				0.760	
80	0	-2.28				0.500	
81	3	-0.59				0.700	
82	4	-0.26				0.739	
83	3	0.76		0.860			
84	4	0.42	0.820				
85	4	0.17				0.790	
87	4	0.17					0.790
93	0	-2.61		0.460			
98	2	-1.43				0.600	
103	0	23.27		3.530			
107	4	0.17				0.790	
108	4	0.00		0.770			
109	0	4.30				1.280	
110	0	2.20					1.031
111	0	-6.42	0.009				
113	3	-0.99					0.653
117	0	2.70		1.090			
118	4	-0.34				0.730	
120	2	-1.05				0.645	
121	3	-0.59				0.700	
122	4	0.00				0.770	
125	1	1.60				0.960	
131	4	-0.42				0.720	
133	4	0.08					0.780
134	2	1.35				0.930	
135	3	-0.59				0.700	

Legend: OTHER, IC, BRUCINE, Cd, HYDRAZINE
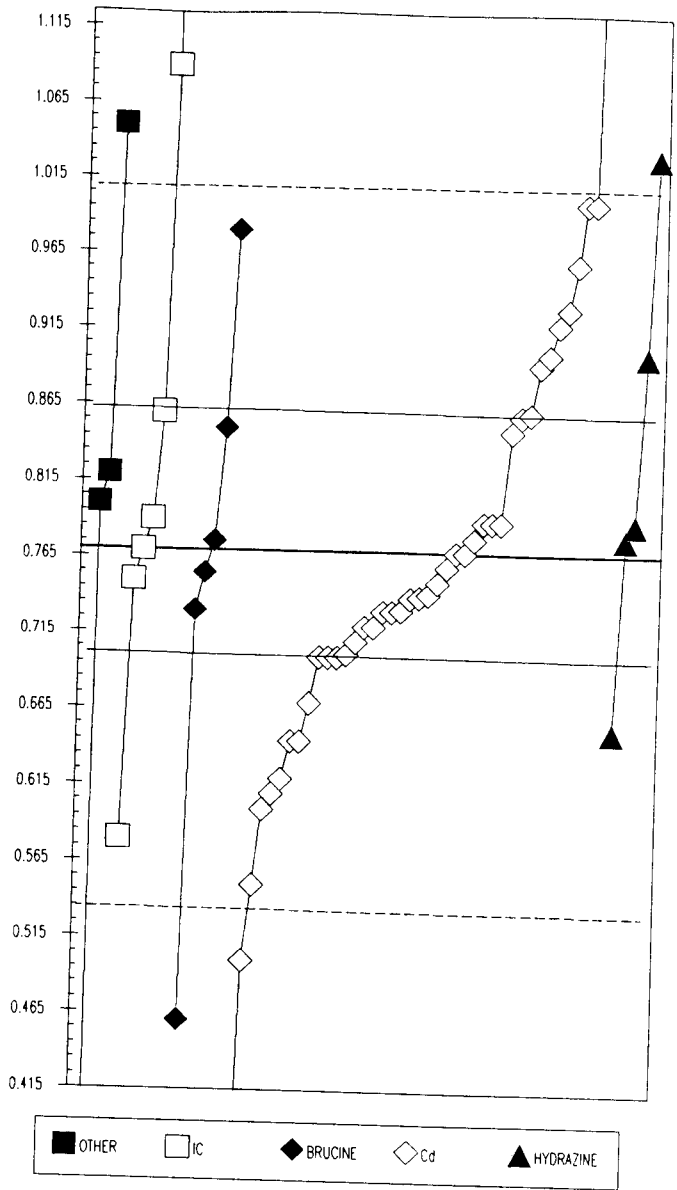
N-23 total P (total Phosphorus) mg/liter

MPV = 0.600 +/- 0.009
F-pseudosigma = 0.032
N = 56
Range = 0.433 0.920
Hu = 0.614
Hl = 0.571

	0. Other	22a. Color: ascorbic, phosphomolybdate		
		22k. Color: K & Hg, phosphomolybdate		
		22p: Color: persulfate		
N =	5	46	2	3
Max =	0.637	0.920	0.570	0.612
Median =		0.600		
Min =	0.433	0.460	0.560	0.592

Lab #	Rating	Z-value	0	22a	22k	22p
1	4	0.00		0.600		
11	1	-1.88		0.540		
16	3	-0.63		0.580		
17	1	-1.57		0.550		
18	4	-0.25				0.592
19	4	0.31		0.610		
21	0	-4.39		0.460		
27	4	-0.31		0.590		
28	3	-0.78	0.575			
29	4	-0.16		0.595		
30	4	0.09		0.603		
32	4	0.16	0.605			
34	3	0.82		0.626		
35	3	-0.63		0.580		
36	4	0.31		0.610		
39	3	-0.94		0.570		
43	2	1.16	0.637			
45	0	-2.51		0.520		
48	4	0.00		0.600		
51	3	-0.63		0.580		
53	4	0.00				0.600
57	2	-1.25		0.560		
58	4	0.00		0.600		
61	3	0.63		0.620		
63	0	5.68		0.781		
65	0	-3.23		0.497		
66	3	0.63		0.620		
67	4	0.16		0.605		
70	0	8.78		0.880		
72	1	-1.88		0.540		
73	3	0.53		0.617		
74	4	0.31		0.610		
79	0	2.20		0.670		
80	1	1.82		0.658		
81	4	0.00		0.600		
82	4	0.00		0.600		
83	2	-1.51		0.552		
87	3	0.94		0.630		
90	4	0.00		0.600		
93	3	0.94		0.630		
97	0	-3.07		0.502		
98	0	10.04		0.920		
103	0	-5.24	0.433			
107	3	-0.94			0.570	
108	0	-5.02	0.440			
110	4	0.38				0.612
113	3	-0.69		0.578		
115	4	0.09		0.603		
118	3	-0.91		0.571		
120	4	0.19		0.606		
121	4	0.00		0.600		
122	3	-0.63		0.580		
125	3	0.63		0.620		
131	4	0.47		0.615		
133	2	-1.25			0.560	
134	3	-0.72		0.577		

Legend: ■ OTHER □ Cd ◆ DEVARDA ◇ PERSULFATE
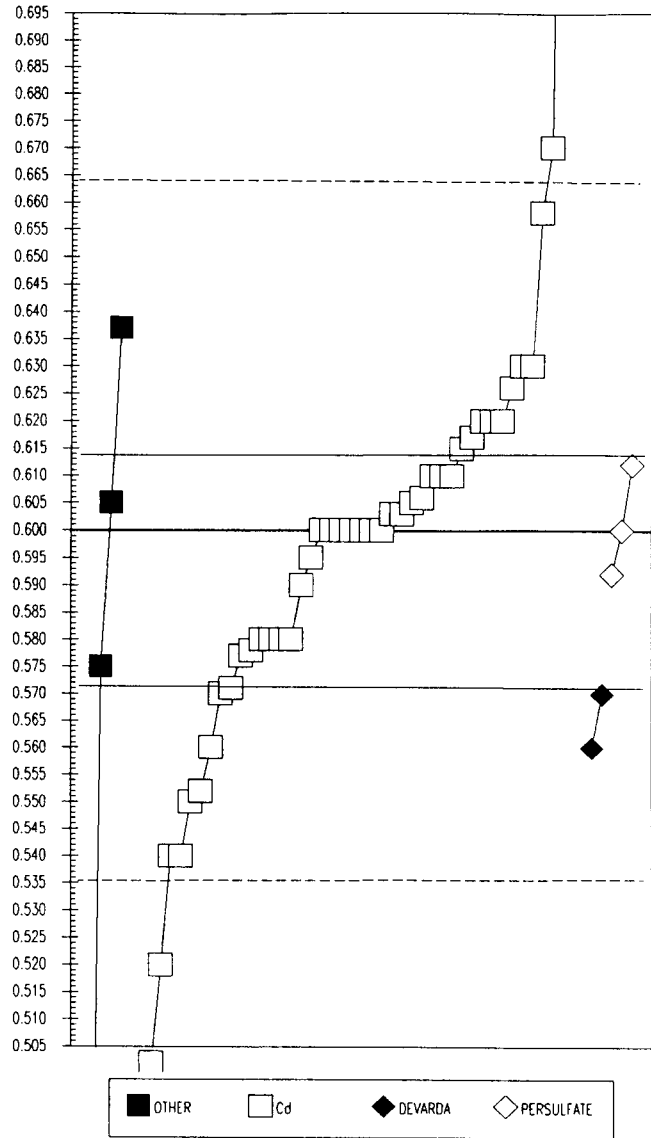
N-23 PO4-P (Orthophosphate as P) mg/liter

MPV = 0.481 +/- 0.006
F-pseudosigma = 0.022
N = 57   Hu = 0.500
Range = 0.063 0.560   HI = 0.470

	0. Other			
	22. Color: ascorbic acid, phosphomolybdate			
		N =	5	52
		Max =	0.485	0.560
		Median =		0.484
		Min =	0.063	0.430

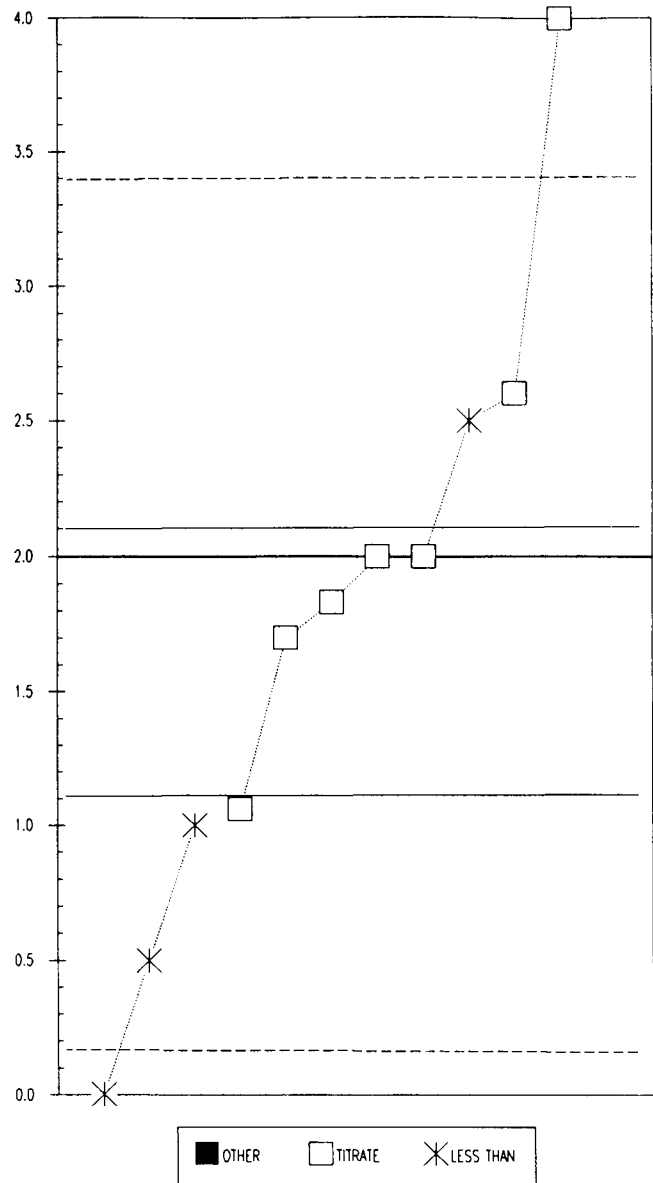| Lab #	Rating	Z-value	0	22
1	2	1.21		0.508
11	4	-0.49		0.470
16	4	-0.04		0.480
17	1	1.75		0.520
18	1	-1.57		0.446
19	4	-0.04		0.480
20	0	-3.19	0.410	
21	1	-1.84		0.440
26	4	0.40		0.490
27	0	-2.29		0.430
28	4	0.18	0.485	
29	3	0.99		0.503
30	4	-0.04		0.480
34	2	1.48		0.514
35	4	-0.49		0.470
36	4	0.40		0.490
39	4	-0.04		0.480
45	2	1.30		0.510
48	4	0.40		0.490
51	4	-0.13		0.478
53	4	0.40		0.490
57	4	0.04		0.482
58	4	0.40		0.490
61	1	1.75		0.520
63	2	-1.12		0.456
65	3	-0.54		0.469
66	3	0.85		0.500
67	4	-0.04		0.480
70	2	-1.39		0.450
72	3	0.90		0.501
73	4	0.45		0.491
74	4	-0.49		0.470
79	3	0.85		0.500
80	3	0.85		0.500
81	4	-0.04		0.480
82	4	0.40		0.490
83	1	-1.71		0.443
87	4	-0.04		0.480
90	3	-0.94		0.460
93	3	0.85		0.500
97	4	0.00		0.481
98	2	-1.39		0.450
103	0	-18.80	0.063	
107	2	1.30		0.510
108	1	-1.84	0.440	
109	0	3.55		0.560
110	1	1.80		0.521
113	4	-0.36		0.473
115	4	-0.40		0.472
117	4	-0.04	0.480	
118	3	0.63		0.495
120	4	0.22		0.486
122	3	-0.94		0.460
125	4	0.40		0.490
131	4	0.27		0.487
133	1	-1.84		0.440
134	3	0.85		0.500

OTHER   COLOR
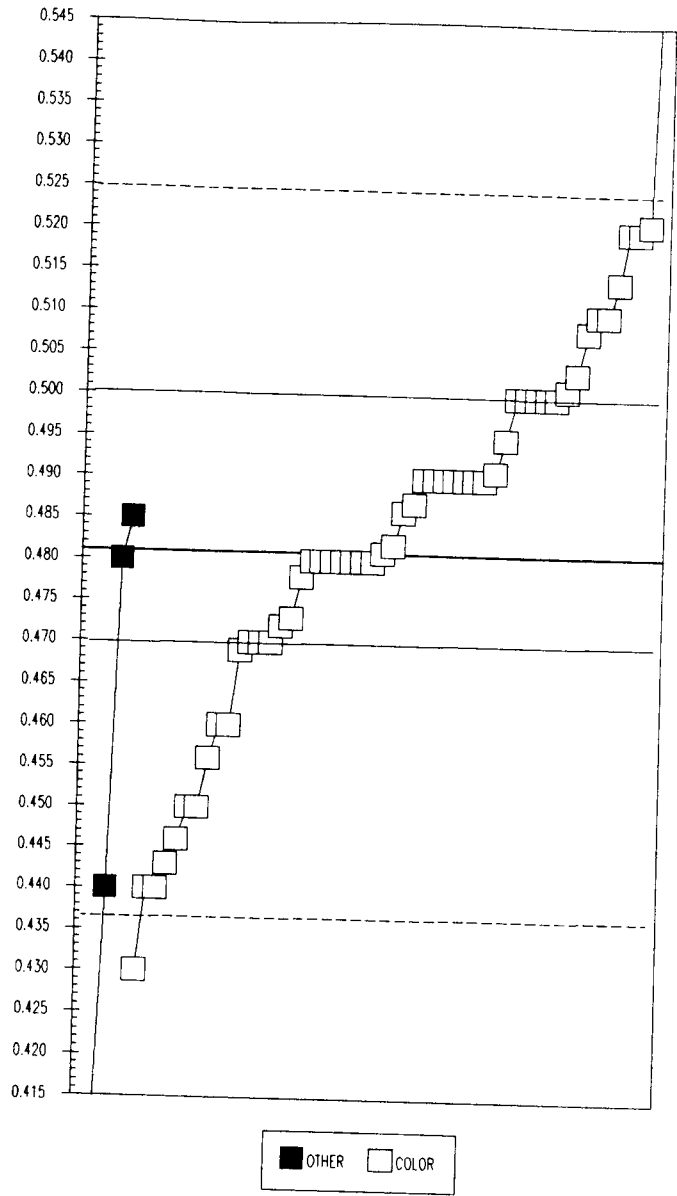
P-13 Acidity (as CaCO3) mg/liter

MPV = 2.0 +/- 0.4
F-pseudosigma = 0.7
N = 12 Hu = 2.0
Range = 1.1 4.0 Hl = 1.1

	0. Other	
21. Titrate: electrometric		
N =	3	9
Max =	0.0	4.0
Median =		2.0
Min =	0.0	1.1

Lab #	Rating	Z-value	0	21
1	0	0.00	< 0.005	
6	4	0.00		2.0
25	NR	NR		< 5
34	NR	NR	< 1	
37	4	-0.24		1.8
60	3	0.86		2.6
64	4	-0.43		1.7
73	2	-1.35		1.1
90	0	2.87		4.0
98	NR	NR		< 10
120	NR	NR	< 2	
122	4	0.00		2.0

OTHER TITRATE LESS THAN

P-13   Ca (Calcium)   mg/liter

MPV =   0.26   +/-   0.02
F-pseudosigma =   0.06
N = 26   Hu =   0.30
Range =   0.17   2.00   Hl =   0.22

0. Other			4. ICP	
1. AA: direct, air			5. DCP	
2. AA: direct, N2O				
N =	2	11	2	10	1
Max =	0.31	2.00	0.22	0.30	0.31
Median =		0.29		0.23	
Min =	0.23	0.20	0.22	0.17	0.31

Lab #	Rating	Z-value	0	1	2	4	5
1	4	−0.44		0.23			
5	1	−1.52				0.17	
6	3	0.84					0.31
19	0	2.36		0.40			
23	2	1.35		0.34			
25	NR	NR				< 1	
34	NR	NR			< 0.2		
37	3	−0.67			0.22		
39	3	0.67		0.30			
40	4	−0.51	0.23				
49	2	−1.01				0.20	
53	4	−0.34		0.24			
58	4	0.51		0.29			
60	3	0.67				0.30	
64	3	0.84	0.31				
67	2	−1.18				0.19	
73	2	−1.01		0.20			
85	0	29.34		2.00			
90	3	−0.67				0.22	
98	3	−0.67				0.22	
100	4	0.00		0.26			
101	NR	NR				< 1	
110	4	0.19		0.27			
120	4	0.13				0.27	
122	4	−0.35				0.24	
134	2	1.01		0.32			

OTHER   AA: AIR   AA: N2O   ICP
DCP   LESS THAN

88
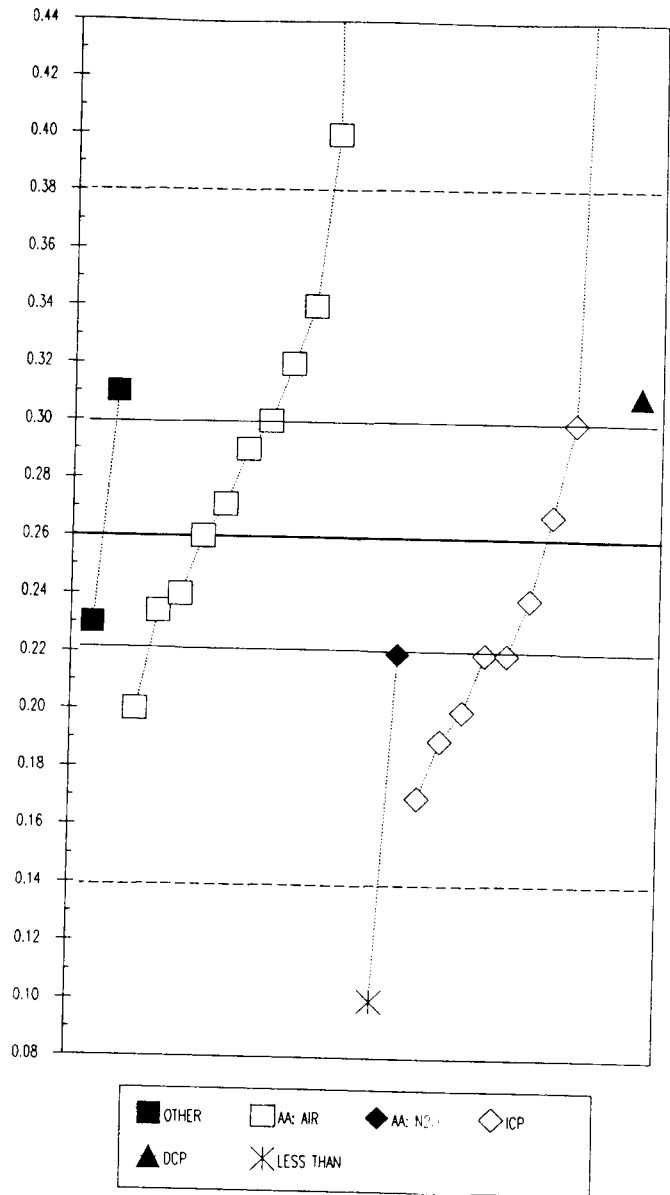
P-13   Cl (Chloride)   mg/liter

MPV = 0.12 +/- 0.08
F-pseudosigma = 0.19
N = 27   Hu = 0.33
Range = 0.00 2.40   Hl = 0.07

0. Other			20h. Titrate: Hg(NO3)2		
7. Ion Chromatography			22. Color: FeSCN		
20a. Titrate: AgNO3			40. Selective Ion Electrode		
N =	5	11	4	1	5	1
Max =	0.69	0.20	2.40	0.52	0.10	0.45
Median =		0.09				
Min =	0.00	0.01	0.51	0.52	0.10	0.45

Lab #	Rating	Z-value	0	7	20a	20h	22	40
1	4	-0.22		0.08				
5	4	-0.16		0.09				
19	NR	NR	0.00					
23	3	-0.59		0.01				
25	NR	NR	< 5					
27	NR	NR					< 1	
34	NR	NR					< 1	
39	NR	NR			< 1			
40	4	-0.21		0.08				
48	NR	NR					< 2	
49	4	-0.11					0.10	
53	4	-0.27	0.07					
58	4	0.32		0.18				
64	1	1.76						0.45
73	0	2.08			0.51			
78	NR	NR					< 1	
85	0	4.69			1.00			
90	4	0.00		0.12				
95	4	0.43		0.20				
98	0	2.56	0.60					
100	0	3.04	0.69					
101	0	12.16			2.40			
112	4	-0.24		0.07				
116	4	-0.18		0.09				
120	NR	NR	< 1					
122	NR	NR	< 0.1					
134	0	2.13				0.52		

OTHER   IC   AgNO3   Hg(NO3)2
FeSCN   ION ELECTRODE   LESS THAN
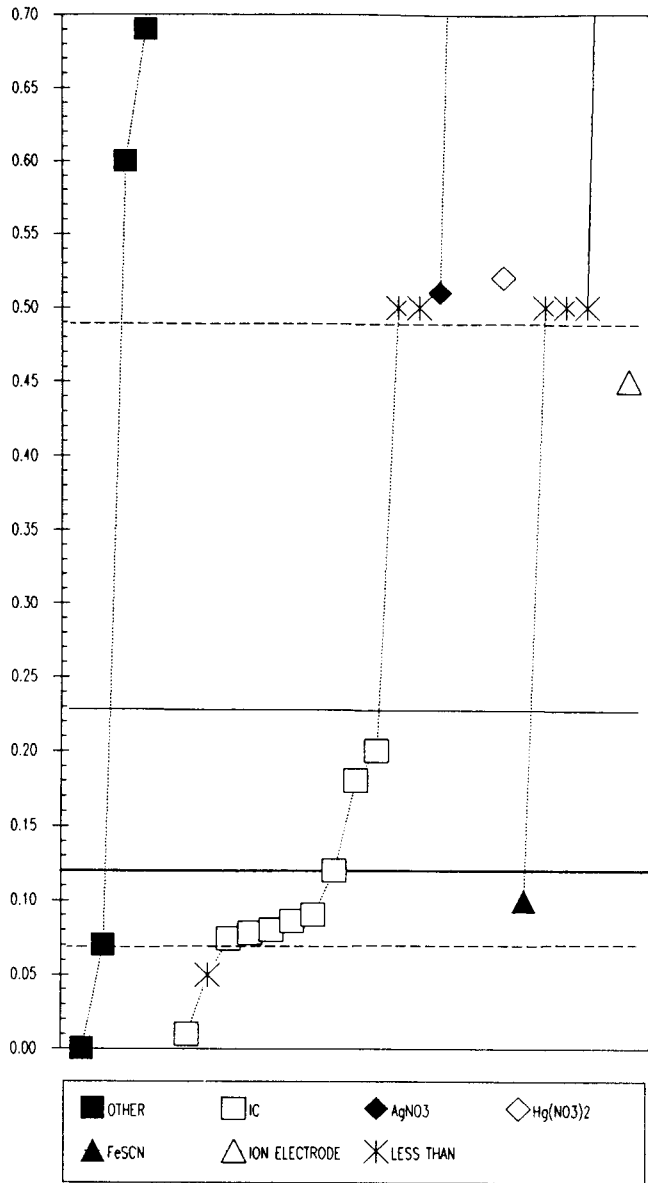
P-13   F (Fluoride)   mg/liter

MPV = insufficient data

F-pseudosigma =

N =   18

Range =   0.04   0.06

0. Other		22s. Color: SPADNS			
7. Ion Chromatography		22z. Color: Zr eriochrome			
22l. Color: La alizarin		40. Selective Ion Electrode			
N =	1	4	3	0	0	10
Max =						
Median =						
Min =						

Lab #	Rating	Z-VALUE	0	7	22l	22s	22z	40
1								< 0.01
5								< 0.1
19								0.06
25								< 0.01
34			< 0.02					
40				< 0.01				
48				< 0.02				
53								< 0.01
58						0.04		
60				< 0.1				
64								0.06
70								0.04
73								< 0.1
85								0.06
98						< 0.1		
101						0.05		
120								< 0.1
122				< 0.1				

■ OTHER	□ IC	◆ ALIZARIN	◇ SPADNS
▲ ERIOCHROME	△ ION ELECTRODE	✕ LESS THAN	
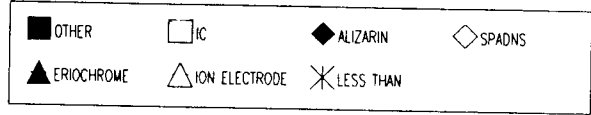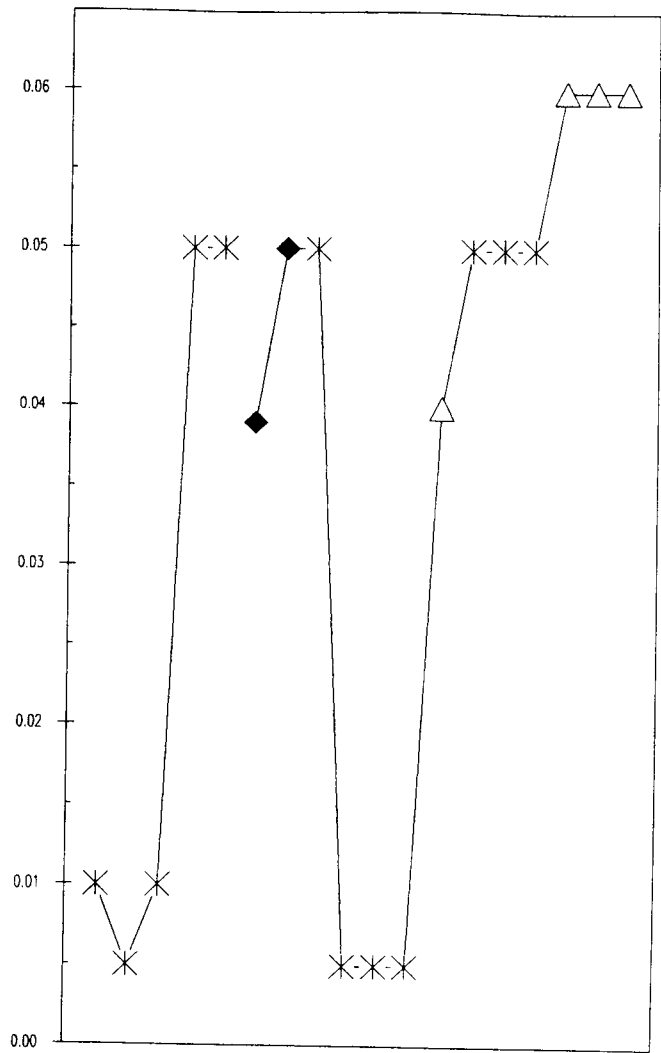
P-13   K (Potassium)   mg/liter

MPV = 0.028 +/- 0.003
F-pseudosigma = 0.008
N = 26   Hu = 0.031
Range = 0.000 0.250   HI = 0.020

0. Other			4. ICP
1. AA: direct, air			
N =	2	20	4
Max =	0.060	0.250	0.100
Median =		0.030	
Min =	0.020	0.000	0.020

Lab #	Rating	Z-value	0	1	4
1	4	-0.31		0.025	
5	NR	NR			< 0.05
6	0	3.99	0.060		
19	NR	NR		0.000	
23	0	17.23		0.168	
25	0	-2.15		0.010	
34	NR	NR		< 0.10	
37	4	0.31		0.030	
39	0	-2.15		0.010	
40	3	-0.92	0.020		
48	NR	NR		< 0.10	
49	4	0.31		0.030	
53	1	1.53		0.040	
58	3	-0.92		0.020	
60	0	8.89			0.100
64	3	-0.92		0.020	
70	0	27.29		0.250	
73	3	-0.92		0.020	
90	4	0.43		0.031	
98	3	-0.92			0.020
100	3	-0.67		0.022	
101	NR	NR			< 2
110	0	16.25		0.160	
120	4	0.31		0.030	
122	NR	NR		< 0.135	
134	NR	NR		< 0.10	

OTHER   AA: AIR   AA: N2O   LESS THAN

91
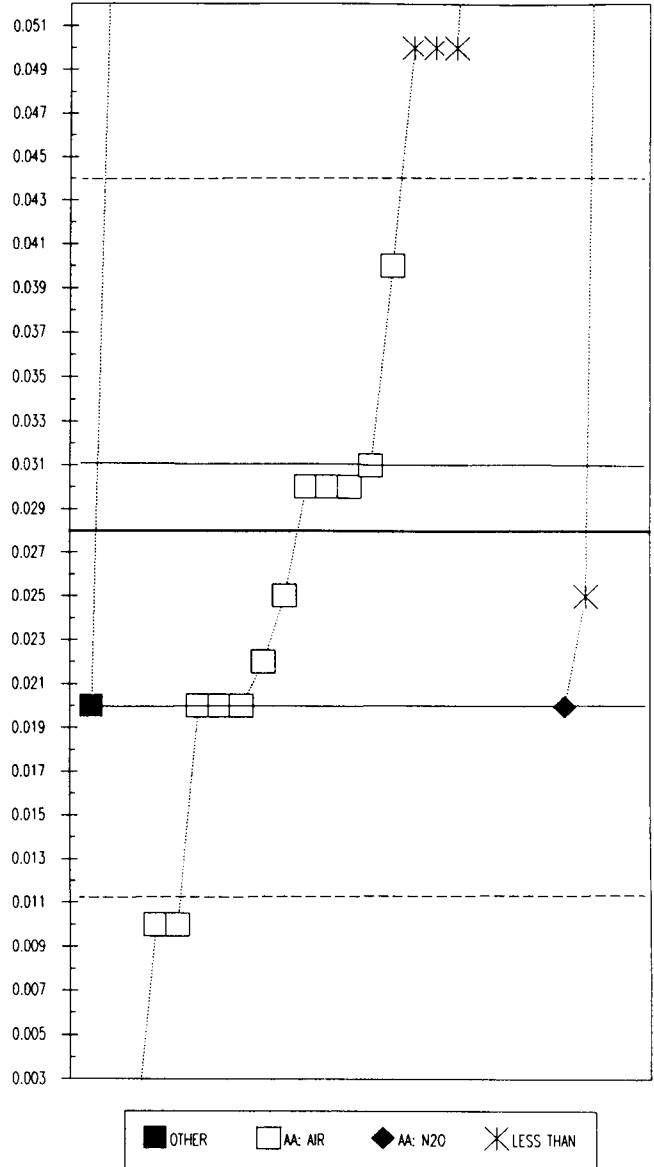
P-13   Mg (Magnesium)   mg/liter

MPV = 0.020 +/- 0.001
F-pseudosigma = 0.001
N = 25   Hu = 0.021
Range = 0.000 0.060   HI = 0.019

			0. Other		4. ICP	
			1. AA: direct, air		5. DCP	
		N =	1	14	9	1
		Max =	0.020	0.060	0.020	0.000
		Median =		0.023	0.020	
		Min =	0.020	0.000	0.020	0.000

Lab #	Rating	Z-value	0	1	4	5
1	0	16.19		0.044		
5	0	<			< 0.01	
6	4	0.00				0.020
19	0	-13.42		0.000		
23	0	-6.74		0.010		
25	NR	NR			< 1	
34	NR	NR		< 0.05		
37	0	2.70		0.024		
39	3	0.67		0.021		
40	4	0.00	0.020			
49	4	0.00			0.020	
53	0	13.49		0.040		
58	0	26.98		0.060		
60	NR	NR			< 0.1	
64	NR	NR		< 0.5		
67	4	0.00			0.020	
73	2	-1.35		0.018		
90	4	0.00			0.020	
98	4	0.00			0.020	
100	3	-0.67		0.019		
101	NR	NR			< 1	
110	2	1.35		0.022		
120	4	0.00			0.020	
122	0	2.02		0.023		
134	4	0.00		0.020		

■   □ OTHER   ◆ AA: AIR   ◇ ICP
▲ DCP   △ LESS THAN
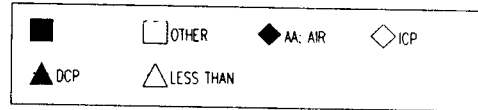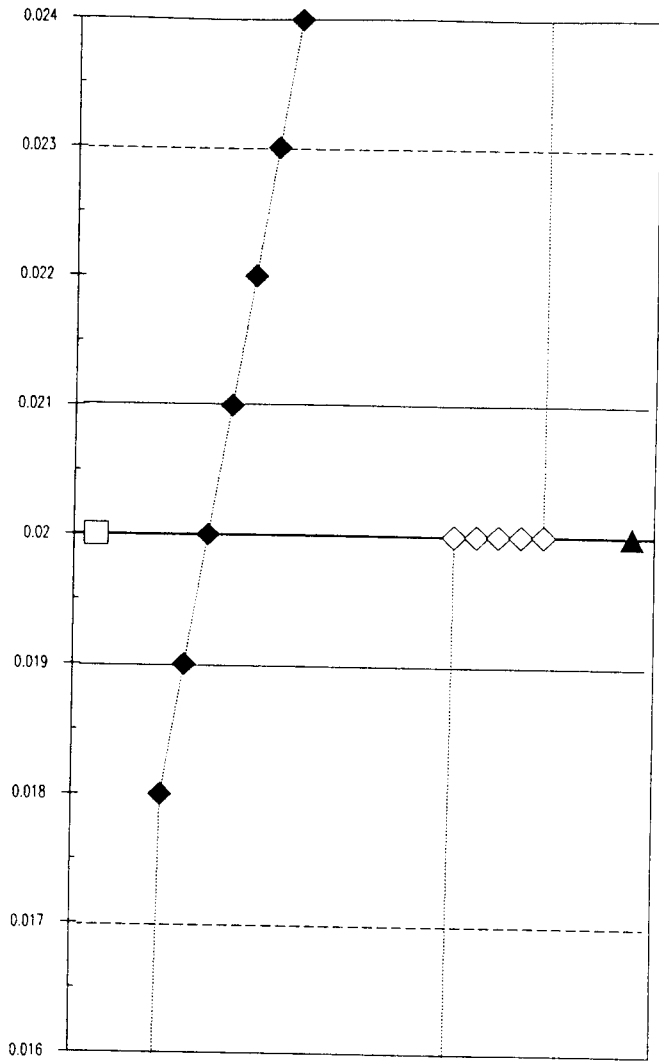
P-13   Na (Sodium)   mg/liter

MPV = 0.040 +/- 0.007
F-pseudosigma = 0.018
N = 27   Hu = 0.044
Range = 0.000 0.143   HI = 0.020

0. Other			4. ICP	
1. AA: direct, air				
N =	2	20	5	
Max =	0.040	0.143	0.100	
Median =		0.040		
Min =	0.030	0.000	0.030	

Lab #	Rating	Z-score	0	1	4
1	4	0.00		0.040	
5	4	0.00			0.040
6	4	0.00	0.040		
19	0	-2.25		0.000	
25	NR	NR		< 1	
34	NR	NR		< 0.2	
37	1	1.69		0.070	
39	0	<		< 0.002	
40	3	-0.56	0.030		
48	NR	NR		< 0.1	
49	4	0.00		0.040	
53	3	0.56		0.050	
58	0	2.81		0.090	
60	0	3.37			0.100
64	1	-1.69		0.010	
67	3	-0.56			0.030
70	1	-1.69		0.010	
73	NR	NR		< 0.05	
85	0	3.37		0.100	
90	3	-0.56		0.030	
98	4	0.00		0.040	
100	0	5.79		0.143	
101	NR	NR			< 1
110	4	-0.17		0.037	
120	4	0.45		0.048	
122	NR	NR			< 0.2
134	2	-1.12		0.020	

■ OTHER   □ AA: AIR   ◆ ICP   ✳ LESS THAN

93
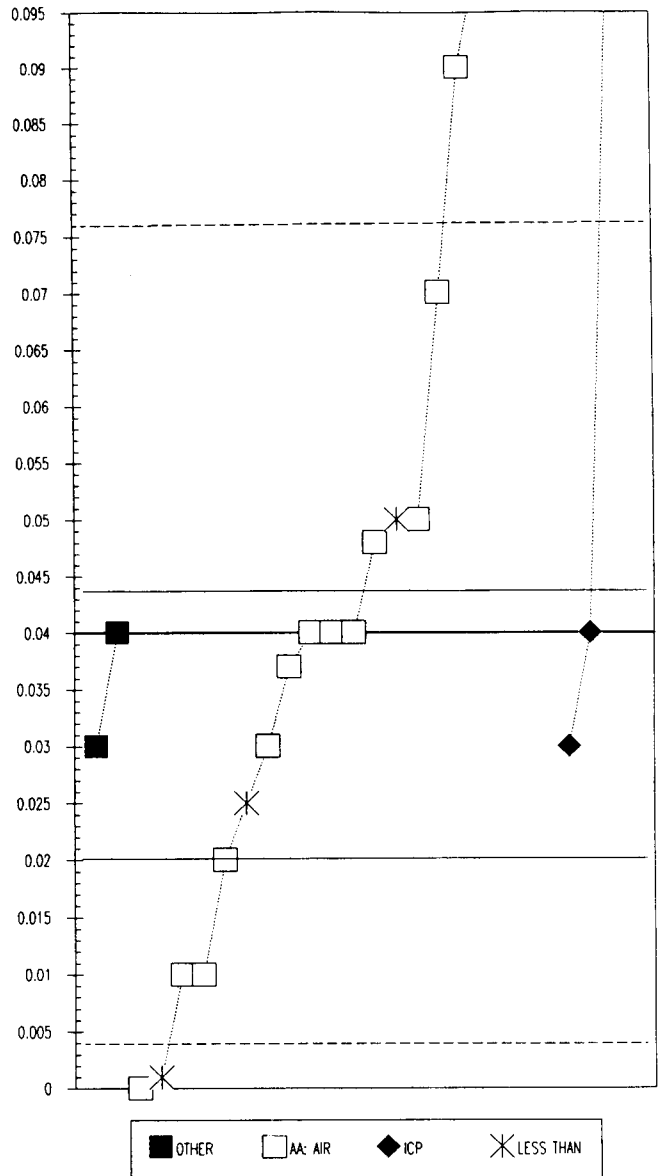
P-13　　　　　　　pH

MPV = 5.94 +/- 0.09
F-pseudosigma = 0.24
N = 32　　　　　Hu = 6.12
Range = 4.36　7.69　　Hl = 5.79

		0. Other		
		41. Electrometric		
		N =	1	31
		Max =	5.58	7.69
		Median =		5.94
		Min =	5.58	4.36

Lab #	Rating	Z-score	0	41
1	3	0.58		6.08
5	4	0.42		6.04
6	4	-0.08		5.92
19	0	6.39		7.48
23	0	7.26		7.69
25	1	1.70		6.35
34	4	0.00		5.94
37	3	0.66		6.10
39	3	-1.00		5.70
40	4	-0.08		5.92
48	2	-1.41		5.60
49	4	-0.37		5.85
53	1	1.70		6.35
58	2	-1.49	5.58	
60	0	-6.56		4.36
64	4	0.42		6.04
67	1	-1.91		5.48
70	4	-0.42		5.84
73	3	0.91		6.16
78	4	-0.37		5.85
85	0	2.12		6.45
90	1	-1.62		5.55
95	3	-0.66		5.78
98	3	0.75		6.12
100	4	-0.08		5.92
101	2	-1.20		5.65
110	4	0.04		5.95
112	4	0.00		5.94
116	3	0.71		6.11
120	2	1.08		6.20
122	3	-0.58		5.80
134	4	0.04		5.95

OTHER　　　ELECTROMETRIC
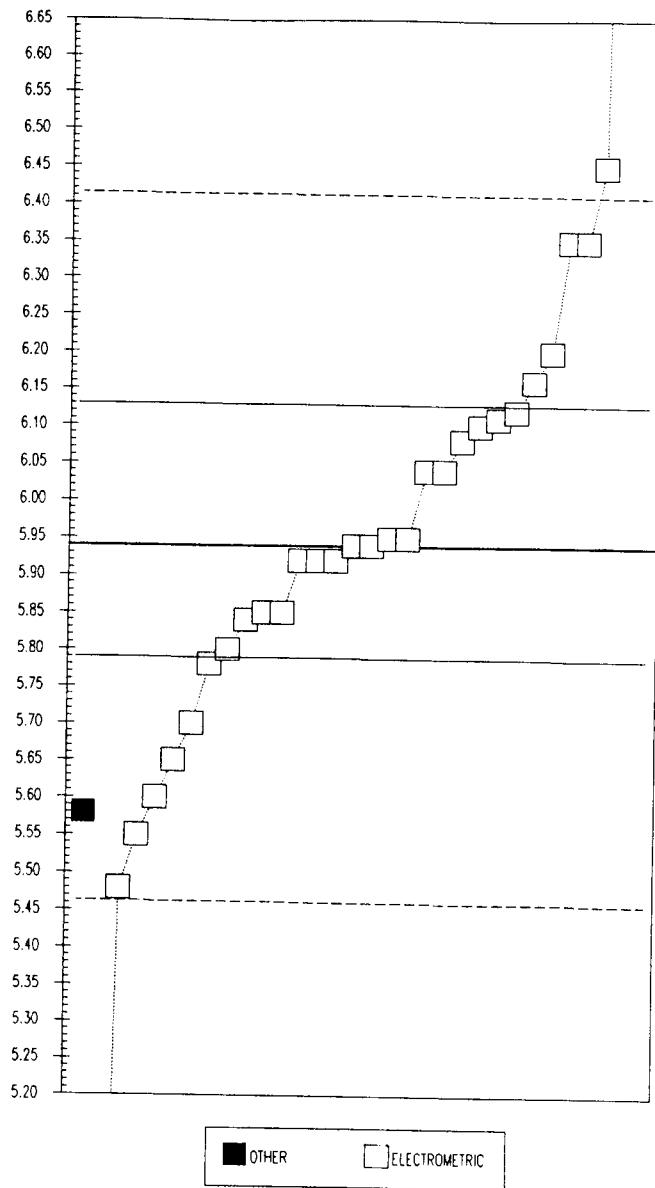
P-13   PO4 as P   mg/liter

MPV = Insufficient data
F-pseudosigma =
N = 21
Range =

0. Other			22. Color: ascorbic acid
7. Ion Chromatography			
N =	0	1	20
Max =			
Median =			
Min =			

Lab	Rating	Z-score	0	7	22
1					0.063
5				.	< 0.002
19					0.000
23					< 0.02
27					0.005
34					< 0.005
37					0.001
39					< 0.005
40				< 0.01	
48					< 0.10
49					< 0.001
53					< 0.002
58					< 0.01
60					0.010
64					< 0.01
70					0.010
73					< 0.002
98					< 0.01
120					< 0.02
122					< 0.002
134					0.002

P-13   SO4 (Sulfate)   mg/liter

MPV =   0.17 +/- 0.04
F-pseudosigma =   0.11
N = 28   Hu = 0.15
Range =   0.00   3.50   HI = 0.00

0. Other			22. Color: methyl thymol blue	
7. Ion Chromatography			50. Gravimetric	
			51. Turbidimetric	
N =	3	12	5	8
Max =	0.15	0.25	3.50	0.77
Median =		0.18		
Min =	0.03	0.00	0.80	0.00

Lab #	Rating	Z-value	0	7	22	51
1	4	-0.13	0.15			
5	0	5.71			0.80	
19	NR	NR				0.00
23	4	-0.12		0.15		
25	NR	NR				< 1
27	NR	NR			< 1	
34	NR	NR				< 1
39	NR	NR				< 1
40	4	-0.13		0.15		
48	NR	NR		< 0.15		
49	4	0.31		0.20		
53	4	-0.31				0.13
58	4	0.22		0.19		
60	2	-1.44		0.01		
64	0	5.44				0.77
70	4	0.31		0.20		
73	NR	NR				< 1
85	0	29.99			3.50	
90	3	0.76		0.25		
95	NR	NR		0.00		
98	NR	NR				< 10
101	0	15.15			1.85	
110	2	-1.21	0.03			
112	4	-0.10		0.15		
116	4	0.00		0.17		
120	NR	NR		< 1		
122	NR	NR		< 1		
134	NR	NR				< 1

■ OTHER   □ IC   ◆ COLOR   ◇ TURBID
✳ LESS THAN
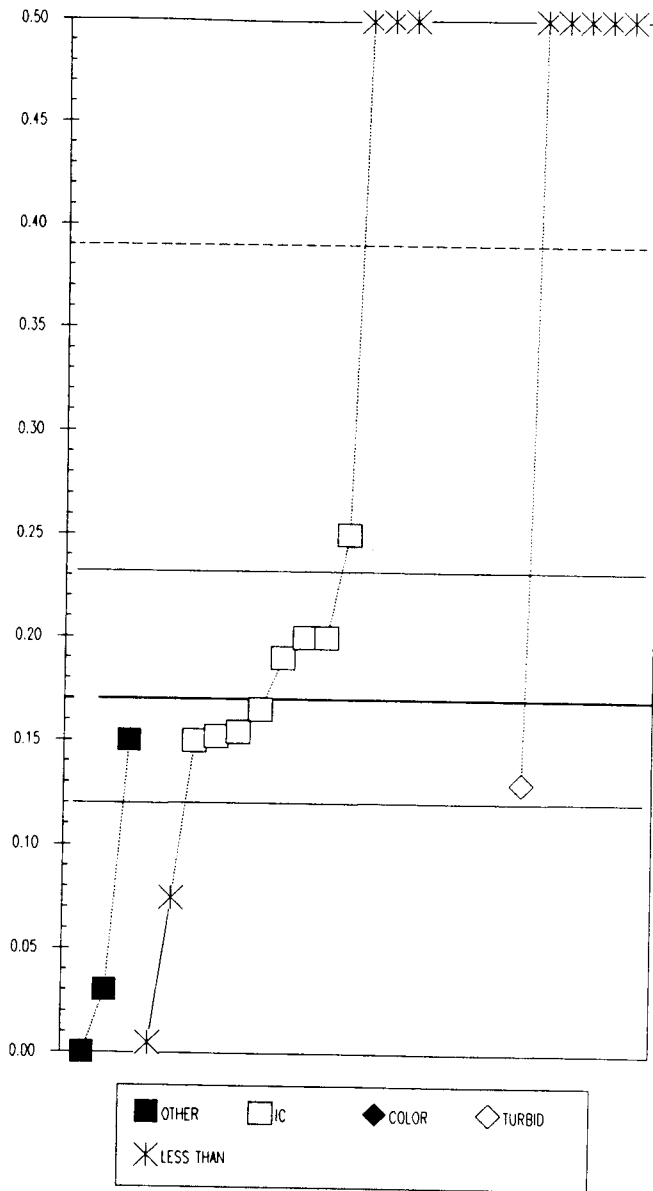
P-13   Specific Conductance   uS/cm

MPV =   2.77 +/- 0.29
F-pseudosigma =   0.76
N = 30   Hu = 3.60
Range =   0.00 27.10   HI = 2.58

		0. Other		
		41d. Direct reading		
		41w. Wheatstone bridge conductivity		
		N =	2	21	7
		Max =	6.00	27.10	4.10
		Median =		2.73	
		Min =	3.00	0.00	2.51

Lab #	Rating	Z-value	0	41d	41w
1	4	-0.35		2.50	
5	4	0.31		3.00	
6	3	-0.61		2.30	
23	0	2.32		4.52	
25	4	-0.11		2.68	
27	0	-3.66		0.00	
34	1	1.77			4.10
37	4	-0.23			2.59
39	4	-0.05		2.73	
40	4	-0.24		2.58	
48	4	-0.50		2.39	
49	4	-0.34			2.51
53	0	8.25		9.00	
58	4	-0.38		2.48	
60	2	1.10		3.60	
64	0	32.18		27.10	
67	1	1.51			3.91
70	0	4.28	6.00		
73	4	-0.11			2.68
78	4	0.31		3.00	
85	0	2.69		4.80	
90	4	0.51		3.15	
95	4	-0.22		2.60	
98	4	0.31	3.00		
100	4	0.05		2.80	
101	4	0.18		2.90	
112	4	-0.33		2.52	
120	4	-0.07			2.71
122	3	0.97			3.50
134	4	-0.15		2.65	
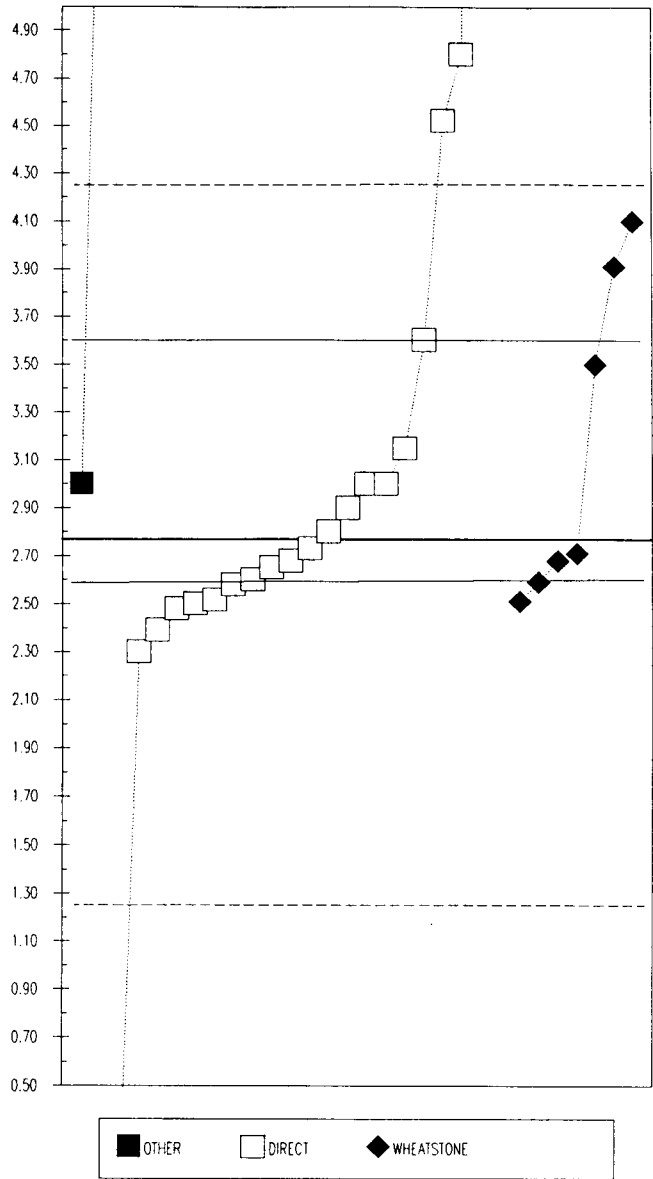
OTHER   DIRECT   WHEATSTONE

Hg--5   Hg (Mercury)   ug/liter

	0. Other		
	3. AA: cold vapor		
	N =	7	38
	Max =	15	166
	Median =	0.25	0.30
	Min =	0.10	0.03

Lab #	Rating	Z-value	0	3
1	3	-0.53		0.20
5	3	-0.53		0.20
11	1	1.59		0.60
14	NR	NR		< 0.2
16	3	-0.53		0.20
17	NR	NR		< 0.2
18	4	0.00		0.30
19	4	0.00		0.30
20	3	-0.53		0.20
24	3	0.53	0.40	
25	1	1.59		0.60
29	3	0.58		0.41
30	0	6.35		1.50
33	3	-0.58		0.19
34	3	0.82		0.46
35	3	-0.58	0.19	
39	4	-0.26		0.25
48	4	0.00		0.30
51	0	48.78	9.52	
55	0	77.77	15.00	
57	4	0.00		0.30
58	4	-0.16		0.27
60	4	-0.11		0.28
62	2	1.20		0.53
65	2	-1.27		0.06
67	4	0.42		0.38
70	0	8.46		1.90
73	4	-0.42		0.22
74	NR	NR		< 0.5
79	3	0.53		0.40
80	NR	NR	< 0.5	
81	NR	NR		< 1
91	4	-0.37		0.23
93	0	2.27		0.73
96	3	0.53		0.40
98	2	1.43		0.57
101	4	-0.26	0.25	
102	NR	NR		< 0.5
107	0	2.70		0.81
109	4	-0.26		0.25
111	0	876.59		166
118	2	-1.43		0.03
120	2	-1.06	0.10	
121	4	-0.13		0.28
122	4	0.10		0.32

OTHER   AA: COLD VAPOR   LESS THAN