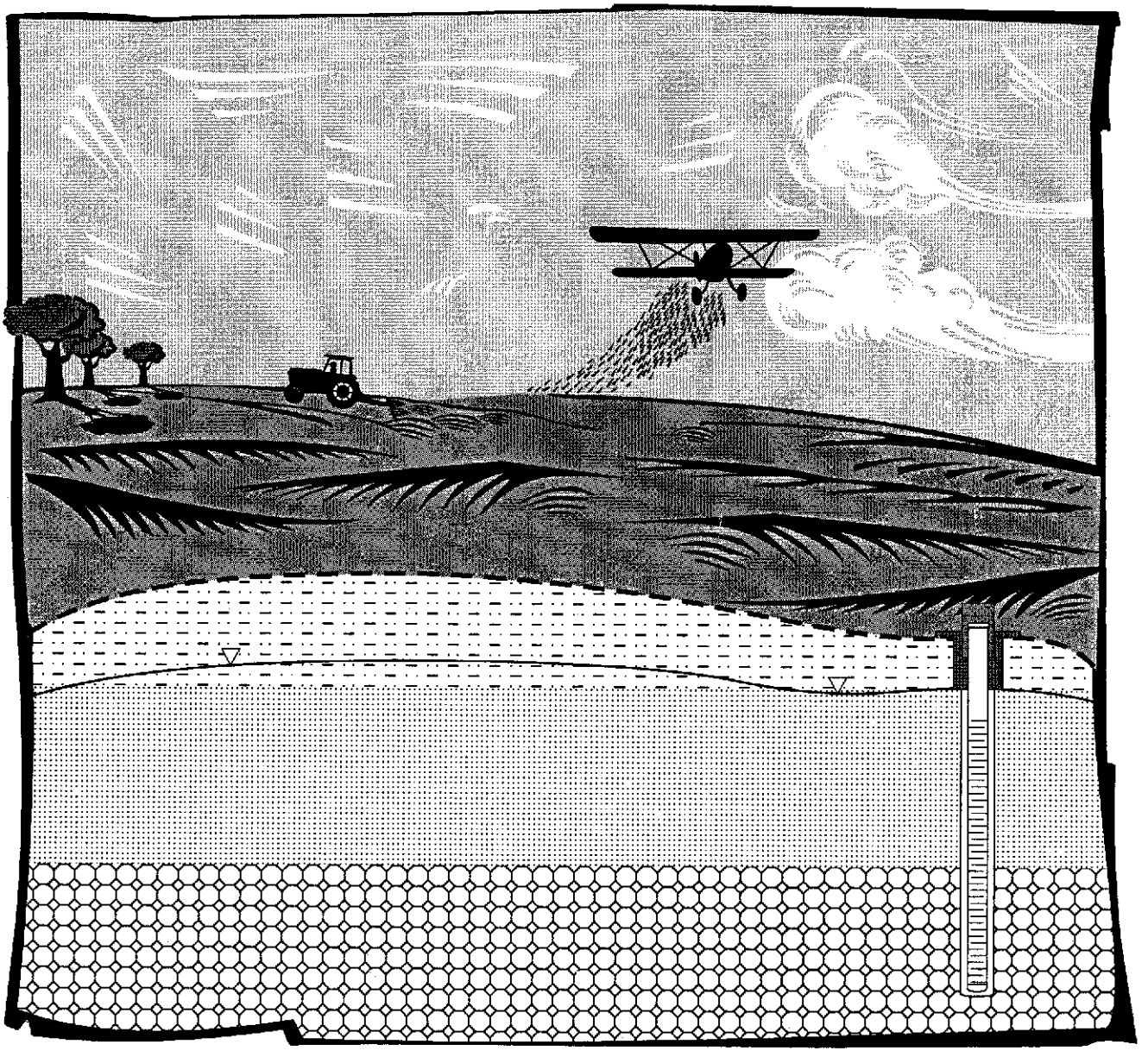
OCCURRENCE OF PESTICIDES IN ALLUVIAL AQUIFER OF EASTERN ARKANSAS



Prepared by Water Division
Arkansas Department of Pollution Control and Ecology
Water Quality Report WQ97-10-1
October 1997

OCCURRENCE OF PESTICIDES IN ALLUVIAL AQUIFER OF EASTERN ARKANSAS

By Tim Kresse, Ed Van Schaik, Jim Wise and Tom Huetter
Arkansas Department of Pollution Control & Ecology
WQ97-10-1
October 1997

Table of Contents

List of Figures

List of Tables

List of Appendix

Acknowledgments

The authors are indebted to many people who assisted in various phases of the project. Our gratitude goes out to the farmers in portions of Phillips, Jefferson and Desha counties who graciously donated their time and assistance in locating and providing access to the irrigation wells sampled for the project. These farmers on several occasions started wells which were not in use because of ample rain throughout the sampling period.

Charles Armstrong of the Arkansas State Plant Board and Ples Spradley of the Cooperative Extension Service assisted in reviewing the pesticide use figures compiled for the report, and Mr. Spradley also assisted in reviewing the table pertaining to chemical characteristics of the pesticides. Terry Nichols of the Arkansas Water Resource Center provided the pesticide data which was collected by the Center from 1993 through 1996.

Diane Fowler, graphic artist with the Department of Pollution Control and Ecology, assisted in development of numerous figures provided in the report. Her last minute corrections and late-night hours associated with her typical work-day are deeply appreciated by the authors. The authors are also deeply indebted to the Department laboratory personnel, who persevered through endless weeks of sampling including the labor intensive analyses involved with several of the pesticides. The laboratory also graciously agreed to providing analyses on major cations and anions and trace metals for inclusion into the general water quality data base.

A final word of thanks is offered to both Ken Steele of the Arkansas Water Resources Center and Phil Hays of the U. S. Geological Survey for their review of the draft phase of the document. This investigation of pesticides in eastern Arkansas was funded in part by the Environmental Protection Agency 319 nonpoint source program.

INTRODUCTION

The monitoring of pesticides has gained increased attention in Arkansas since the early 1990's with the federal mandates for each state to develop a State Management Plan (SMP) for pesticide use (EPA, 1992a; 1992b). In addition, the federal 319 Nonpoint Source Program has provided a source of revenue for assessing both surface and subsurface water sources for nonpoint source impacts, including pesticides. As part of the 319 program, 1996 nonpoint source water-quality assessment, the Department of Pollution Control & Ecology (Department) sampled 77 wells in three areas that are within or near to the borders of three Arkansas counties: Jefferson, Desha and Phillips.

Because pesticide and fertilizer use are the dominant contributors to nonpoint impacts within Arkansas' agricultural community, 61 pesticides and various degradation products were analyzed by the Department laboratory in addition to ammonia, nitrate, major cations and anions, and dissolved metals. The wells were sampled between July 29, 1996, and September 23,1996. The wells are used exclusively for irrigation and average 80+ feet in depth. Pesticide use in the area is directed primarily to the control of weeds in soybean, rice and cotton fields.

The following report discusses the general water quality of the three study areas and the nonpoint source impacts resulting from agricultural practices in the areas. For additional information on the water quality of both surface and subsurface water and nonpoint source impacts, refer to the 1997 Department report entitled "Arkansas' Nonpoint Source Pollution Assessment Report"

SITE CHARACTERISTICS

LOCATION

The main focus of the present study was to investigate potential nonpoint source impacts to ground water, primarily in the form of pesticide contamination, by sampling irrigation wells in an agricultural area. Because pesticides have been monitored on a continual basis by the Department as part of the state's ambient ground-water monitoring program and also by the Arkansas Water Resource Center (Nichols et al., 1993; Steele et al., 1993; Steele et al., 1994; Nichols et al., 1995; and Nichols et al., 1996) as part of the SMP monitoring program, Department personnel focused on areas of the eastern portion of the state which had little or no previous sampling activities.

In addition to locating the wells in previously non-sampled areas, an effort was made to select wells with ten feet or less of confining layer thickness based on well logs. Although the wells were initially located using this methodology, various reasons including the well being temporarily out of service, dictated that a well in close proximity to the selected well be used as a replacement. Replacement wells, although in close proximity to originally-selected wells, sometimes showed a large local variance of confining layer thickness based on well driller logs.

The sampling sites ultimately are located in three general areas referred to in this report as Area I, Area II and Area III, which generally are associated with portions of Jefferson, Desha and Phillips counties, respectively. Figure 1 depicts the locations of the sampling sites and also the wells from which water samples contained one or more pesticides.

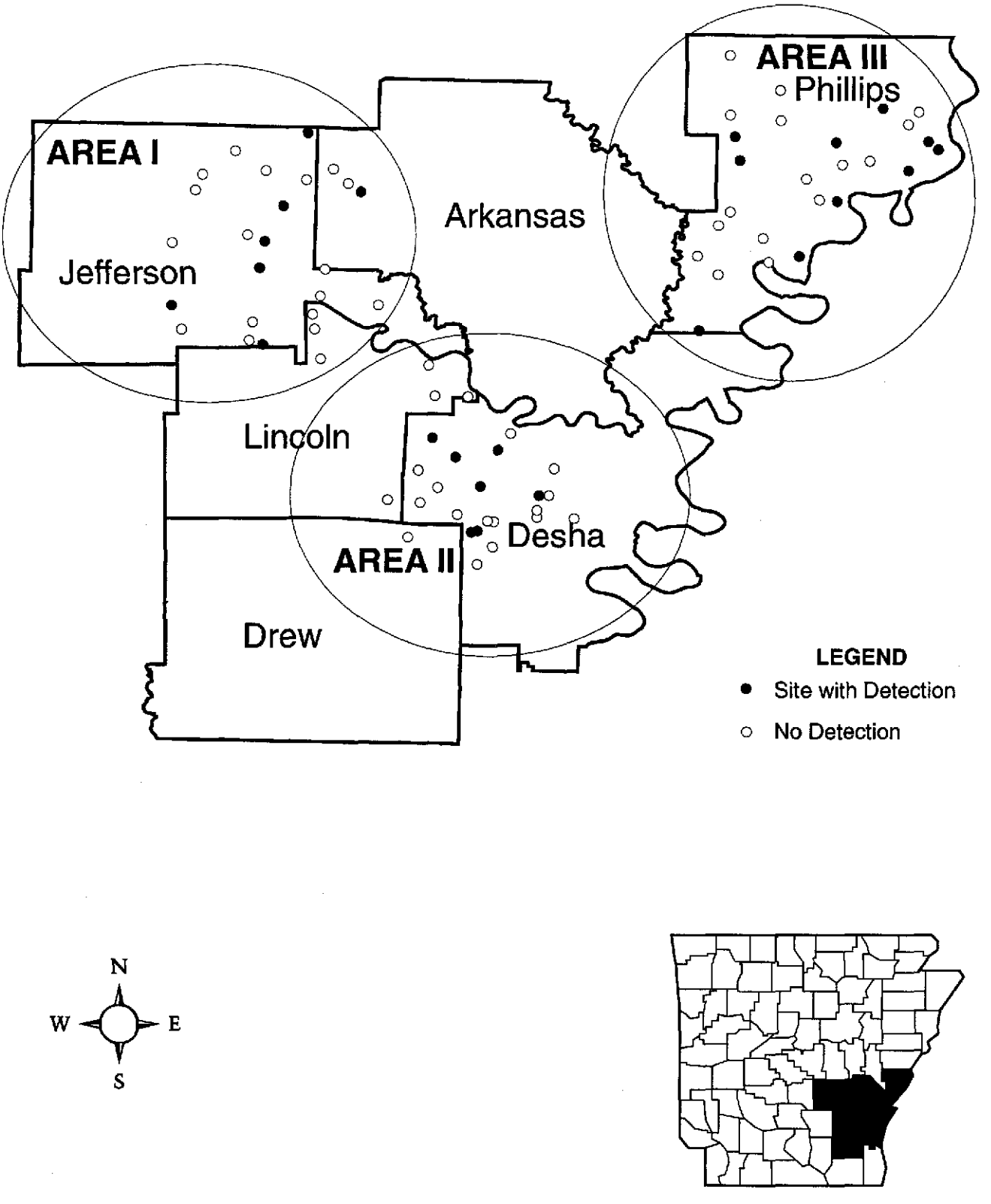


Figure 1. Location of 1996 nonpoint source accessment ground water monitoring sites. Solid circles represent sites with positive pesticide detections.

GEOLOGY

The three study areas are located physiographically in the Gulf Costal Plain region of the state. The deposits underlying this region consist of clay, silt, sand and gravel. The three study areas are underlain entirely by Quaternary-aged alluvial sediments, which were the product of large-scale erosion and deposition during the Pleistocene and Recent Epochs (Boswell et al., 1968). Although the western 1/3 of Jefferson County is underlain by the Jackson Group of Tertiary age, no wells were sampled in this area as yields are typically low (5 gpm) and most irrigation wells are located in the eastern 2/3 of the county within the Quaternary alluvium. The Quaternary alluvium is characterized by a progressive change from fine-grained material at the surface to a coarse sand or gravel at the base.

The Quaternary deposits consist of both Pleistocene terrace deposits and Recent alluvial deposits, which are undifferentiated in this report and referred to as simply Quaternary alluvium. A detailed map differentiating the Quaternary terrace and alluvial deposits within Desha and Lincoln counties is included in Bedinger and Reed (1961).

SUBSURFACE HYDROLOGY

The 77 wells sampled for the present study are completed entirely in the saturated portion of the Quaternary deposits, which together are referred to as the Mississippi River Valley alluvial aquifer. This aquifer provides most all of the water used for irrigation in the study areas. Well yields in the study areas range from 50 to 3000 gallons per minute but generally average about 1400-1600 gallons per minute (Bedinger and Reed, 1961; Klein et al., 1950).

Average water levels in the study areas range from approximately 18 to 24 feet below the surface. Table 1 lists historical and recent water levels for each study area. Average decreases were noted in each area and ranged from approximately 2-10 feet. Because the number of wells varied among different data sets, the possibility that individual years were represented by atypically high or low water tables, and the fact that measurements were taken during different seasons, care should be taken in interpreting the data presented in Table 1. For example, water levels reported for 1989 (Westerfield and Baxter, 1990) were actually lower than those reported for 1992 (Westerfield and Touschner, 1993), which were used for Table 1.

Table 1. Historical versus recent water levels.

	Report	Number of Wells	Water Level (feet)
AREA I	Klein et al., 1950	59	20.8
	Westerfield and Touschner, 1993	11	22.6
AREA II	Bedinger and Reed, 1961	237	14.6
	Westerfield and Touschner, 1993	15	24.4
AREA III	Westerfield, 1977	31	11.3
	Westerfield and Touschner, 1993	16	17.8

METHODOLOGY

Sampling sites were chosen according to a random grid to provide even coverage across each study area. The sampling plan initially included wells which had ten feet or less of confining layer thickness. Attempts to locate and sample the selected wells were made difficult by the fact that many wells were inoperative for a variety of reasons; most often as a result of the cessation of pumping in anticipation of harvest. Although replacement wells were in close proximity to the originally-selected sites, logs of these wells often showed a wide variation in the confining layer thickness, and some replacement wells had thicknesses > 10 feet. Additionally, comparison of many well logs to USGS maps (Gonthier and Mahon, 1994) of confining layer thickness often demonstrated numerous discrepancies. Without additional information, it is assumed that either the well logs are lacking in accuracy in many cases or that the confining layer is of variable thickness across short distances.

The wells were sampled between July 29, 1996, and September 23, 1996. The extension of the sampling period into and past the harvest season (late August and September, 1996), was one of the reasons that operative wells were scarce. The extended sampling period was the result of the increased time requirements associated with the analyses of bentazon, which resulted in a limit of generally ten samples per week to the laboratory. All wells were sampled as near to the wellhead as possible through available faucets or other ports. Where these devises were not available, samples were taken from openings in the irrigation equipment, which included both disposable (plastic) and metal irrigation lines. In the event that a well was started by the farmer for sampling purposes, the well was allowed to run for a minimum of ten minutes prior to sampling.

All samples were collected in approved containers for the selected parameters. Samples were filtered through 0.45 μm pore-sized membranes in the field for metal analysis and, as such, all metals are reported as dissolved metals. All other parameters including pesticides were unfiltered samples. All samples were stored on ice and delivered to the Department laboratory under chain-of-custody requirements by the sampling team.

All analyses are represented by an numbering system which denotes the project type, water type, county and well number. For example, NSGWAR01 represents a nonpoint source (NS) water sample derived from a ground water (GW) source in Arkansas County (AR) from well # 1. Because all samples have the same first four-letter designation, the samples in many instances will be represented by county and number only.

WATER QUALITY

Interpretation of water quality analyses was performed by evaluating general water quality, geochemistry and the detection of pesticides. Individual parameters were compared to federal drinking water standards in order to evaluate the general water quality for use as a drinking water source. Detections of pesticides were compared to health advisory limits and/or federal drinking water standards. Because nitrate as nitrogen concentrations in all cases were below 0.5 ppm and in most cases below 0.1 ppm, impacts from fertilizer use were not considered problematic and are not addressed in the report.

GENERAL WATER QUALITY

In general, the water quality from all three study areas is very good. The water in all three areas is a calcium-bicarbonate type, although sodium, chloride and sulfate were significant contributors to the total dissolved solids (TDS) in several wells, primarily in Jefferson and Desha counties. Calcium comprised over 50% of the total cation concentration in all but 3 cases and averaged 60% of the total cations. Bicarbonate comprised over 50% of the total anion concentration in all cases and averaged 79% of the total anions.

Tables 2, 3 and 4 list the minimum, maximum and mean concentrations for the dominant cations and anions for each of the study areas. A cursory review of the data reveals differences between the data sets for Area I and II wells versus Area III wells. Although sodium and chloride are considerably elevated in Areas I and II with respect to Area III, the mean TDS values are somewhat similar between all three areas, and the mean TDS concentration for the Area III wells is actually higher than that of the mean TDS for the Area I wells. A detailed inspection reveals that the lower concentrations for sodium and chloride are offset by the higher bicarbonate concentrations for the Area III wells. Also, average magnesium concentrations in Area III wells were twice as high as either Area I or II wells. The higher bicarbonate concentrations are related to the increase in magnesium and together with the lower sodium and chloride concentrations clearly demonstrate a ground-water chemistry for Area III which is considerably different from that of the Area I and II well-water samples.

Figure 2 depicts a set of Piper diagrams for all data. Area I and II wells generally plot in an overlapping area of the diagram, indicating the similarity of the chemistry between the two data sets as noted in Tables 2-4. However, Area III wells plot as a separate and distinct pattern as a result of the higher magnesium and bicarbonate concentrations and lower sodium and chloride concentrations. This distinct pattern for the Area III wells is better defined on the tri-linear diagrams for the cations and anions than on the center diagram which plots both cations and anions.

Mean TDS concentrations from the data for the present study were below 500 mg/L, although individual well samples exceeded this number in 17 wells. Chloride was elevated in several samples, although none exceeded the secondary MCL of 250 mg/L. Iron was consistently high (0.75 to 70.5 mg/L) in all samples; however, high iron concentrations are ubiquitous throughout the extent of the alluvial aquifer and often limit its use for municipal, industrial and domestic supply without treatment (Broom and Lyford, 1981). The MCLs for TDS (500 mg/L), iron (0.3 mg/L) and chloride (250 mg/L) are all secondary drinking water limits, which are unenforceable federal guidelines regarding taste, odor, color and other non-aesthetic effects of drinking water (EPA, 1996). As such, there are no human health concerns associated with these secondary MCLs. Individual analyses for each well are in Appendix 1.

Tables 2-4 also compare the data from each of the areas to that of older data from three USGS reports, respectively: Klein et al. (1950), Bedinger and Reed (1961) and Westerfield (1977). The mean values for each of the data sets are remarkably similar including the data from the 1950 report by Klein et al., which reported on data from samples collected dominantly throughout 1949. Most of the samples collected for the 1961 report by Bedinger and Reed were collected during 1952.

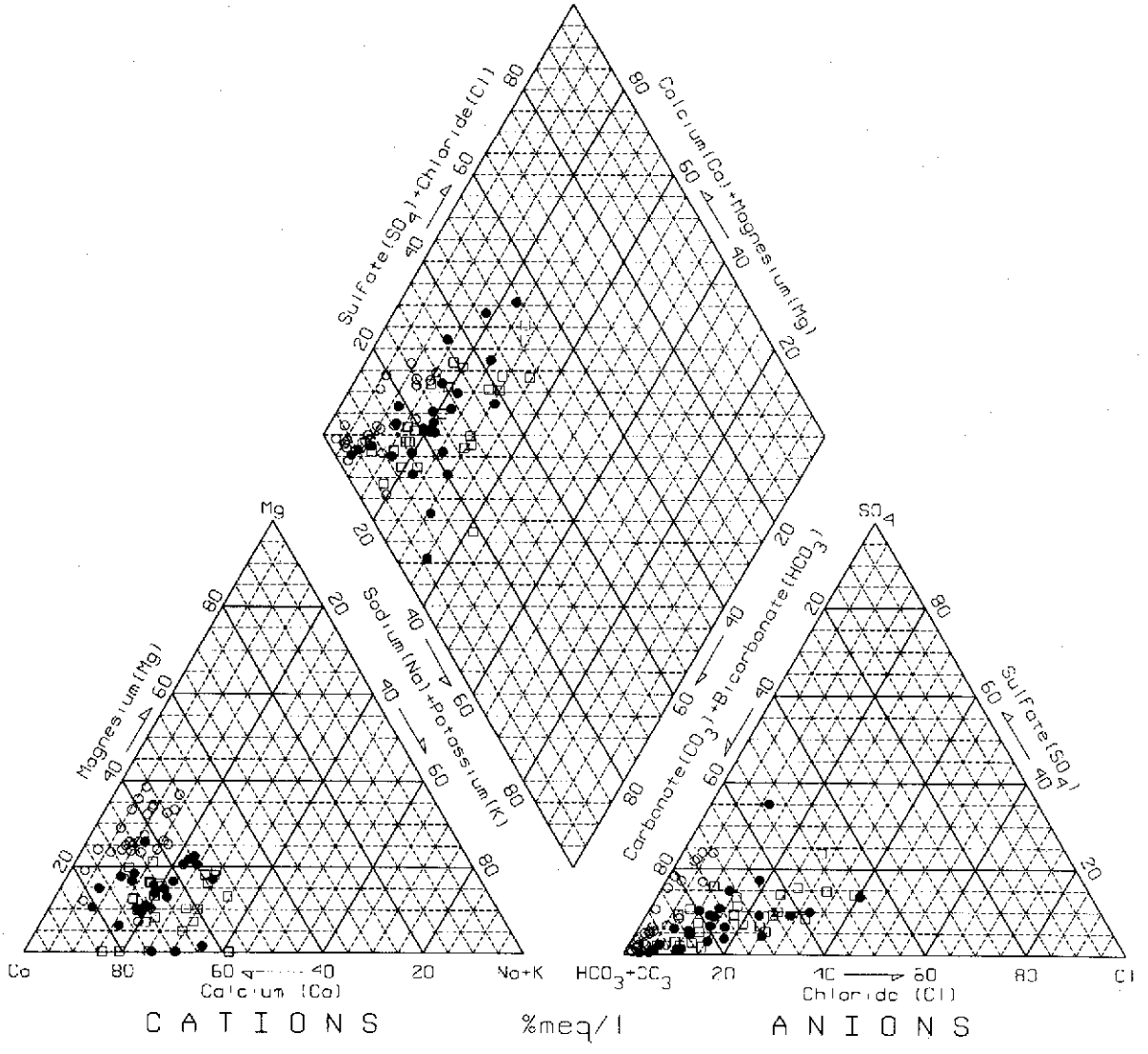


Figure 2 - Piper diagram showing dominant cation/anion relationships. Area I wells are represented by solid circles; Area II wells are represented by squares; and Area III wells are represented by open circles.

Table 2. Statistics for selected parameters for Area I wells.

	Minimum		Maximum		Mean	
	ADPC&E[1]	USGS[2]	ADPC&E	USGS	ADPC&E	USGS
Fe (μg/L)	4690	30	70500	28000	14426	6800
Ca (mg/L)	30	8	132	162	85	79
Mg (mg/L)	0.03	2.3	33	39	11.8	20.8
K (mg/L)	0.4	---	2.2	---	1.0	---
Na (mg/L)	11.9	8.3	71	206	28.5	36.0
SiO_2 (mg/L)	18.7	11	17.4	53	27.9	25.6
Cl (mg/L)	8	3.8	184	100	35	39
SO_4 (mg/L)	0.5	1.0	174	294	28	29
HCO_3 (mg/L)	165	4	541	602	323	355
TDS (mg/L)	195	195	697	851	395	417

[1] Data from 1996 nonpoint sources assessment wells (77 wells).
[2] Data from Klein et al., 1950 (32 wells).

Table 3. Statistics for selected parameters for Area II wells.

	Minimum		Maximum		Mean	
	ADPC&E[1]	USGS[2]	ADPC&E	USGS	ADPC&E	USGS
Fe (μg/L)	1500	20	26700	62000	12118	13060
Ca (mg/L)	39	9.1	127	137	82	49.5
Mg (mg/L)	0.03	5.4	25.6	39	10.7	19.6
K (mg/L)	0.8	---	2.0	---	1.2	---
Na (mg/L)	7.9	12	78.4	54	35	32
SiO_2 (mg/L)	26.0	---	41.1	---	30.4	---
Cl (mg/L)	11	3.2	181	188	56	62
SO_4 (mg/L)	2.1	1	145	172	37	38
HCO_3 (mg/L)	151	53	533	561	299	331
TDS (mg/L)	184	123	707	682	433	464

[1] Data from 1996 nonpoint sources assessment wells.
[2] Data from Bedinger and Reed, 1961 (58 wells for Fe, HCO_3, SO_4, and Cl; 13 wells for Ca and Mg; 10 wells for TDS; 7 wells for Na).

Table 4. Statistics for selected parameters for Area III wells.

	Minimum		Maximum		Mean	
	ADPC&E[1]	USGS[2]	ADPC&E	USGS	ADPC&E	USGS
Fe (µg/L)	753	2400	22200	6100	6964	4457
Ca (mg/L)	57	58	145	120	93	94
Mg (mg/L)	4.5	21	50.5	47	24.4	31
K (mg/L)	0.5	1.2	3.4	3.3	1.5	2.2
Na (mg/L)	3.6	12	37.9	47	15.1	24
SiO_2 (mg/L)	32.0	31	42.6	37	35.5	34
Cl (mg/L)	3	4.9	25	29	8	13
SO_4 (mg/L)	2.1	3.5	135	110	35.7	37
HCO_3 (mg/L)	236	310	749	595	418	440
TDS (mg/L)	227	299	669	625	421	436

[1] Data from 1996 nonpoint sources assessment wells (77 wells).
[2] Data from Westerfield, 1977 (7 wells).

Another point of interest is that average chloride concentrations virtually have not changed since 1952 in the high chloride areas of Desha county. Elevated chlorides were documented in several places in Desha county and a chloride isoconcentration map was developed from the 1952 data set and is presented in Figure 3. Figure 4 depicts an isoconcentration map developed from data collected for the present study. The areas of high chloride concentrations are similar between both maps and suggest that individual well-water chloride concentrations, similar to that of the average chloride concentrations, have changed little since 1952.

RESULTS OF PESTICIDE ANALYSES

Monitoring for pesticides in ground water is both a challenging and expensive exercise. There are numerous pesticides and pesticide combinations used for control of weeds, fungi and insects. However, insecticide and fungicide use pale in comparison to herbicide use in Arkansas. Herbicides are used previous to and throughout the growing season as preemergents, weed control during the plant cycle, and defoliants prior to harvest. Because of the numerous pesticides used in the state and the exorbitant cost of pesticide analyses, the primary focus of most monitoring plans is on high-use pesticides and those pesticides with a medium to high potential for being transported to the ground water table. One of the objectives of the investigation was to compare the analyses to both pesticide use figures and chemical characteristics in order to evaluate current monitoring practices and modify future practices if required.

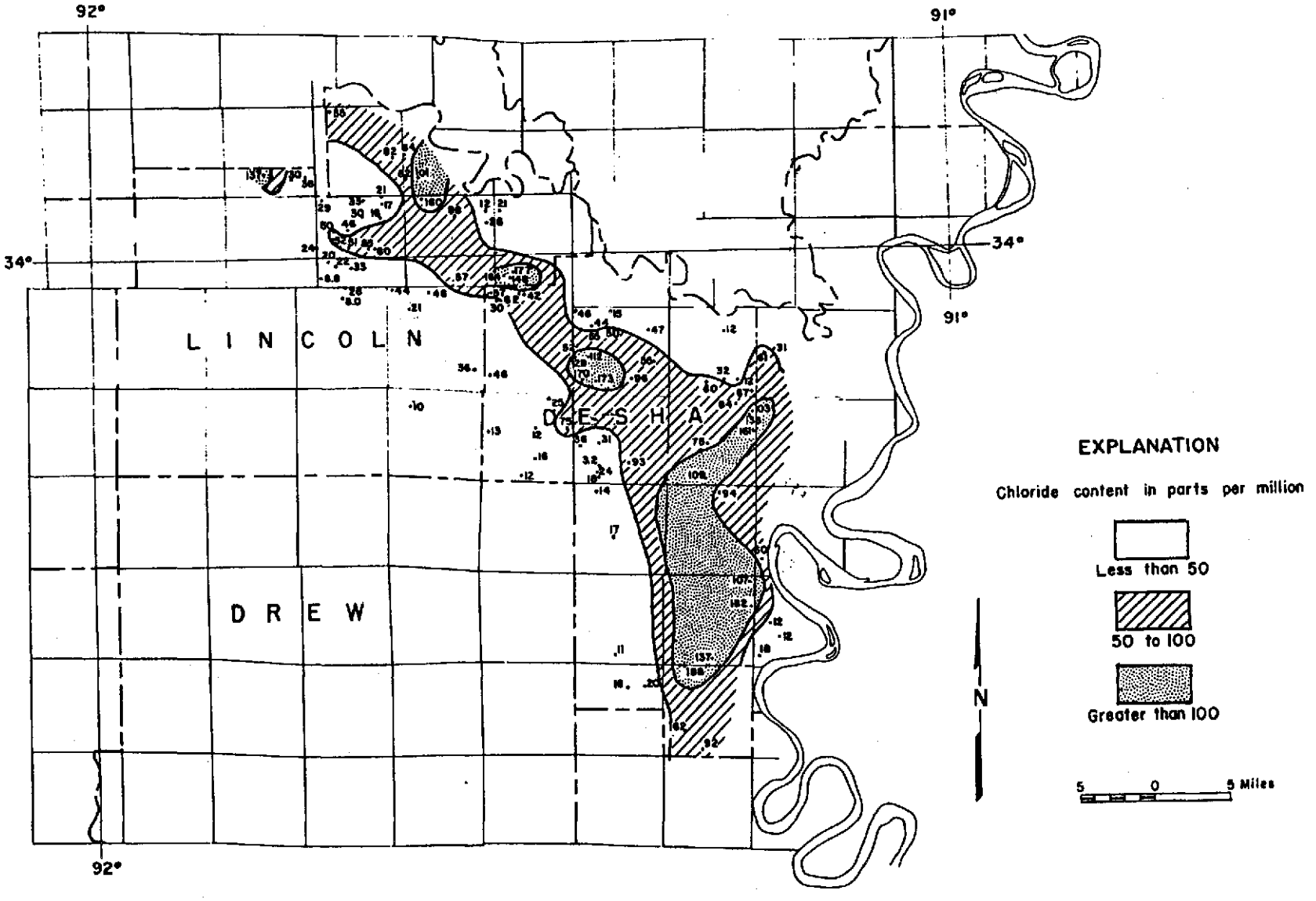


Figure 3. Chloride isoconcentration map of water from the Quaternary alluvium (taken from Bedinger and Reed, 1961).

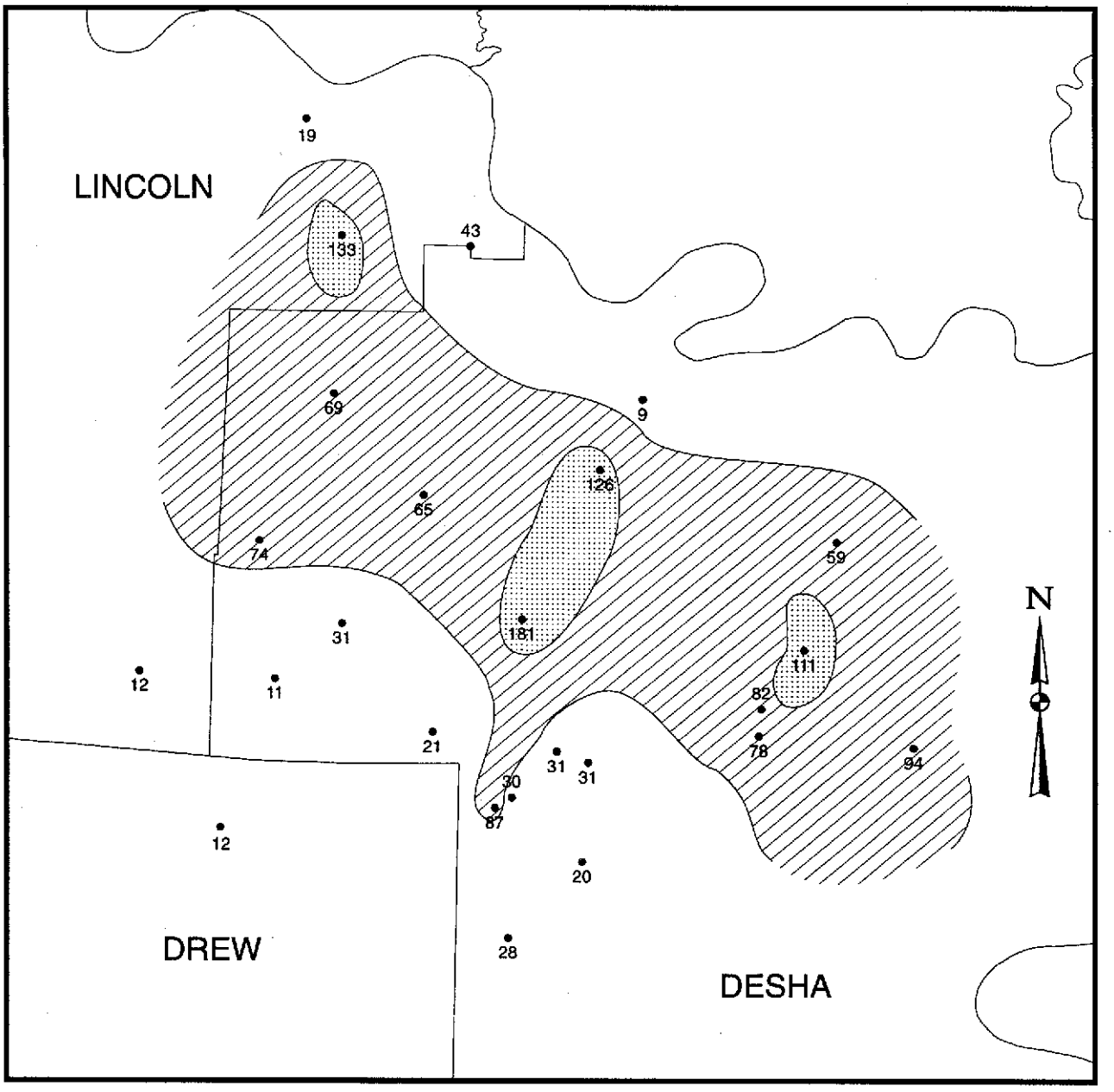


Figure 4. Chloride isoconcentration map for Area II wells (1996 data).

Table 5 lists some of the major pesticides used in the state according to the number of acres receiving pesticide application. Because figures for actual use are not kept and/or reported by the farmer, the figures listed in Table 5 are interpolated from three separate studies by the Arkansas Cooperative Extension Service (Spradley, 1991; Spradley, 1992; Johnson and Meyers, 1997). These studies represent a compilation of questionnaire results from participating farmers across the state. As such, the figures should not be interpreted as representing the actual use of any one pesticide, although they provide a good estimate of the more frequently-used pesticides.

Table 6 provides an index of chemical properties and an associated range of values that are used to assess the leaching potential of pesticides. The table was developed by the EPA and represents the range of values for the frequently detected pesticides in the EPA data base up to 1985 (EPA, 1986). Although there are several chemical characteristics that promote or retard the leaching potential of a pesticide including solubility, adsorption, mineralization and microbial degradation, the most important characteristic is probably the solubility of a pesticide. Low-solubility pesticides are not commonly detected in ground water except under special conditions such as an unusually shallow water table, preferred pathways including clay fractures and root zones, and through facilitated transport mechanisms. Also, in most cases low solubility is associated with high adsorption values, which further limits the migration potential of a pesticide.

Table 7 lists some of the more important chemical characteristics affecting leaching potential for the major-use pesticides in Arkansas. Adsorption is represented by the organic carbon partition coefficient (Koc), which is a measure of the tendency of the pesticide to adsorb onto soil organic carbon. The table also cites a leaching potential for each of the pesticides based on three characteristics: solubility, Koc and field half-life ($t_{1/2}$). The leaching potential is provided as a means of estimating the effects of the chemical characteristics on the migration potential of the pesticide and should not be interpreted as a quantitative or exact value. It is the author's opinion that too much weight is given in many cases to the $t_{1/2}$ value in assessing leaching potential. For instance, bentazon is the most frequently detected pesticide in ground water in Arkansas. Bentazon has an effectively infinite solubility in water (2.3 kg/L) and a relatively low organic carbon partition coefficient of 35 mL/g, which would indicate a high leaching potential; however, bentazon is rated as a medium-potential leaching pesticide based on a $t_{1/2}$ of 10 days. Although a low $t_{1/2}$ value is an important characteristic in protecting ground water by destruction of the chemical prior to large-scale migration, field half-lives are based largely on photodegradation and microbial destruction, which are processes that are most effective at the land surface. Once dissolved and leached into the subsurface, field-determined half lives are no longer applicable and the pesticide can remain stable for several months or years, although the half life may be in days. In spite of these considerations, however, the qualitative predictions are very useful to the pesticide investigator. Pesticides termed as low leaching-potential pesticides are rarely present in ground water; however, the medium to high potential leachers are commonly present depending on use and site characteristics.

As stated above, there is an inverse correlation between solubility and Koc; as solubility increases, Koc decreases. However, there are exceptions as noted in four of the pesticides listed in Table 7: glyphosate, MSMA, paraquat and ethephon, with reported solubilities of 1,000,000 mg/L and Koc values of 10,000 mL/g. These pesticides, although very soluble in water, are retarded by mechanisms other than adsorption to the organic carbon content of soil. They either interact with

Table 5. Most frequently used pesticides in Arkansas

Pesticide	Rice (acres)	Soybean (acres)	Cotton (acres)	Corn (acres)	Total (acres)
Fluometuron			1930500		1930500
Trifluralin		1241000	666900		1907900
Tribufos			1298700		1298700
Imazaquin		1224000			1224000
Propanil	1165800				1165800
Pendimethalin	147400	574600	285900		1037900
MSMA			1006200		1006200
Cyanazine			982800		982800
Carboxin		958800			958800
Acifluorfen	53600	894200			947800
Metolachlor		574600	58500	75000	708100
Chlorimuron		703800			703800
Captan		697000			697000
Bentazon		693600			693600
Ethephon			666900		666900
Metribuzin		612000			612000
DSMA			456300		456300
Prometryn			409500		409500
Clomisone			374400		374400
Molinate	361800				361800
Fomesafen		340000			340000
Glyphosate		336600			336600
Benomyl	335000				335000
2,4,D	294800				294800
Fluazifop		272000			272000
Atrazine				270000	270000
Alachlor		176800		75000	251800
Thiram		224400			224400
Norflurazon			222300		222300
Propiconazole	201000				201000
Thidiazuron			198900		198900
Thiobencarb	187600				187600
Quinclorac	160800				160800
Sethoxydim		159800			159800
Bromoxynil	93800				93800
Paraquat Dichloride			93600		93600
Dimethipin			93600		93600
Quizalofop		91800			91800
2,4,DB		88400			88400
Diuron			81900		81900
Triclopyr	80400				80400
Iprodione	80400				80400
Acetochlor				75000	75000
Dimethenamid				75000	75000
Methyl Parathion	67000				67000
Lactofen			58500		58500
Malathion	53600				53600
Phenoxyprop	40200				40200
Methazole			35100		35100

Table 6. Chemical characteristics of pesticides indicating leaching potential.

CHEMICAL CHARACTERISTIC OF PESTICIDE	VALUE OR RANGE OF VALUES INDICATING LEACHING POTENTIAL
Solubility	**> 30 mg/L**
Partition Coefficient (Kd)	**<5, usually <1**
Organic Carbon Partition Coefficient (Koc)	**< 300-500**
Speciation	**Negatively charged, fully or partially at ambient pH**
Hydrolysis Half-Life	**> 25 weeks**
Photolysis Half-Life	**> 1 week**
Field Dissipation Half-Life	**> 3 weeks**
Henry's Law Constant	**$< 10^{-2}$ atm-m^3 mol**

Adapted from U.S. Environmental Protection Agency (1986)

iron, which is common to most soils, or react with clay minerals in such a way as to retard leaching and, as such, have a leaching potential listed as "small." Apparently, for sake of consistency, the researchers replaced a bulk K_d value with a high Koc to indicate the high retardation factor associated with the pesticides.

Table 7 also suggests that where the runoff potential is high, the leaching potential is often low. Conversely, where the leaching potential is high, the runoff potential is low. Highly sorptive pesticides are generally immobile because of their strong binding characteristics with solids and generally have low solubility values. As such, these pesticides would not be expected to be transported to either surface or subsurface waters. However, the insoluble pesticides commonly are present in surface water bodies as a result of movement with eroded sediment through a process known as facilitated transport. The pesticides are attached to suspended sediment in the water and unfiltered surface water samples commonly demonstrate positive pesticide detections. For pesticides which are highly soluble and would be expected to occur in all phases of the hydrologic system, an inverse relationship exists; surface waters are generally void of positive detections but ground-water systems commonly exhibit positive detections. Although photodegradation is more active in surface water bodies than on the land surface, another phenomena largely accounts for the discrepancy in positive detections in both water systems. It has been demonstrated with conservative tracers, such as bromide, that directly following a rainfall event, the tracer infiltrates the soil zone in the early phase of the rain event. By the time runoff occurs the tracer has largely been loss to migration into the soil zone with little available for transport by runoff water. Similarly, soluble pesticides often are leached to the subsurface before the occurrence of runoff and are not available for transport to surface water bodies (Wauchope, 1996).

Table 7. Chemical characteristics of major use pesticides

Pesticide (common name)	Solubility (mg/L)	Koc (mL/g)	Field $t_{1/2}$ (days)	Runoff Potential	Leaching Potential
Quizalofop	1	100000	140	Large	Small
Trifluralin	1	1400	60	Large	Small
Pendimethalin	1	24300	60	Large	Small
Tribufos	1	5000	10	Large	Small
Benomyl	2	2100	100	Large	Small
Fluazifop	2	3000	20	Large	Small
Methazole	2	10000	14	Large	Small
Iprodione	13	500	20	Medium	Small
Thidiazuron	20	100	10	Medium	Medium
Triclopyr	23	780	46	Large	Medium
Norflurazon	28	248	45	Medium	Medium
Thiram	30	383	20	Medium	Medium
Atrazine	33	160	60	Medium	Large
Diazinon	40	85	30	Medium	Large
Diuron	42	400	60	Large	Medium
Prometryn	48	614	30	Medium	Small
Bromoxynil	50	1000	14	Medium	Small
Methyl Parathion	60	5100	5	Medium	Small
Fluometuron	90	100	14	Medium	Medium
Propiconazole	110	100	20	Medium	Medium
Malathion	145	1780	1	Small	Small
Carboxin	170	264	20	Medium	Medium
Cyanazine	171	168	20	Medium	Medium
Ametryn	185	388	30	Medium	Medium
Alachlor	240	190	14	Medium	Medium
Propanil	500	188	1	Small	Small
Chlorimuron	500	20	50	Small	Large
Metolachlor	530	200	20	Medium	Medium
Propachlor	580	420	7	Medium	Small
Prometon	750	300	120	Large	Large
Molinate	880	110	21	Medium	Medium
Sethoxydim	1000	50	5	Small	Small
Metribuzin	1220	41	30	Medium	Large
Dimethapin	3000	10	10	Small	Large
Endothall	100000	20	2	Small	Small
Trichlorfon	154000	2	27	Small	Large
Imazaquin	160000	20	60	Small	Large
2-4-DB	200000	20	10	Small	Medium
MCPA	270000	20	14	Small	Large
2-4-D	300000	109	10	Medium	Medium
Fomesafen	600000	50	180	Medium	Large
Acifluorfen	900000	139	30	Medium	Medium
Glyphosate	1000000	10000	30	Large	Small
MSMA	1000000	10000	100	Large	Small
Paraquat	1000000	10000	3600	Large	Small
Ethephon	1000000	10000	5	Medium	Small
Bentazon	2300000	35	10	Small	Medium

*adapted from Wauchope, 1988

Table 8 lists samples with positive pesticide detections for the present study. A comparison of the available chemical characteristics for the pesticides in Table 8 to the ranges denoting a potential leacher (Table 6) reveals that all of the solubility concentrations except for trifluralin exceed the 30 mg/L concentration denoting a potential leacher; the range of Koc values fall below 300 mL/g except for prometryn and trifluralin, which have Koc values of 614 and 1400 mL/g, respectively; and the half-life values range from 10-60 days with three of the pesticides below the ">3-weeks" value cited as contributing to leaching potential. Because the best correlation of detected pesticides is with solubility, solubility is considered the most important factor in the potential for ground-water contamination as a result of pesticide leaching. All of the detected pesticides are listed in Table 7 as having a medium to large potential for leaching, except for prometryn and trifluralin, which have a small leaching potential. The low leaching potential for prometryn probably is based on the high Koc value, although this propensity for binding to soils is greater in soils with high clay and organic matter content (EPA, 1983), and available data indicates that prometryn is mobile in sandy soils and moderately mobile in sandy loams (EPA, 1987).

The most frequently detected pesticide for the present study was bentazon (14 detections) followed by molinate (7) and metolachlor (3). Figure 5 lists the pesticide detections by the number of detections and the percentage of the total detections for each of the pesticides. Bentazon far exceeded any other pesticide detection and accounted for approximately 37% of the total detections. This information correlates closely with the data gathered by the AWRC (Nichols et al., 1996), which listed bentazon as the most frequently detected pesticide; accounting for 10 of the 23 (43%) detections through 1996. Table 9 compares pesticide data from three sources: the Department, the AWRC and the USGS. The USGS data were generated from a project conducted from 1991-1993 which included sampling and re-sampling of 27 wells in various counties in the Coastal Plain area of the state; the AWRC data are from of an ongoing pesticide monitoring program begun in 1992 and includes 231 wells through the 1996 sampling period; and the Department data are from the present study results. The data vary widely in the type of pesticides monitored and detected by each organization and in the total percentage of detections. Individual detections and the resulting percentage of total detections are dependent on the methodology, instrumentation, and reporting criteria of each agency and strict interpretation of the differences should be avoided. Consideration of these differences have been incorporated into recent agendas on the part of participating agencies and future objectives include evaluating and standardizing certain elements of the analytical and reporting mechanisms.

Figures 6 and 7 depict graphs of solubility versus sorption for some of the major-use pesticides in Arkansas. Figure 6 denotes which pesticides were detected in ground water, whereas Figure 7 depicts the pesticides detected in surface water. The surface water data were generated from samples collected by Department personnel from 1993-1996, and the ground water data were extracted from the totals provided in Table 9. Using the qualitative models proposed in Table 6 and Table 7, the pesticides in the center of the graph dominantly are medium-potential leachers; those in the far left corner below the 10 mg/L solubility line and above the 1000 mL/g line are dominantly small-potential leachers; and those to the right of the 1000 mg/L line and below the 300 mL/g line are dominantly high-potential leachers.

Table 8. List of Sample Locations with Positive Pesticide Detections

Sample Location	Molinate (µg/L)	Trifluralin (µg/L)	Atraton (µg/L)	Atrazine (µg/L)	Metribuzin (µg/L)	Ametryn (µg/L)	Prometryn (µg/L)	Metolachlor (µg/L)	Cyanazine (µg/L)	Methoxychlor (µg/L)	Silvex (µg/L)	Bentazon (µg/L)	Acifluorfen (µg/L)
NSGWAR02	0.03484												
NSGWJF02	0.24612					0.01141							
NSGWJF05	0.08647							0.00407					
NSGWJF08		0.01137	0.0164			0.00769		0.01055					
NSGWJF11				0.00726						0.0124			
NSGWDE01	0.09336												
NSGWDE06	0.17074											0.07643	
NSGWDE07	0.01605											0.06582	
NSGWJF19	0.09861											0.11531	0.60906
NSGWPH26				0.02107									
NSGWPH06					0.00536								
NSGWDE21								0.01808				0.08748	
NSGWPH07							0.01205		0.5578				
NSGWPH10							0.07306					0.01435	
NSGWDE10											0.23		
NSGWDE11											0.28485	0.02051	
NSGWJF04												0.03757	
NSGWDE02												0.03424	
NSGWPH04												0.04071	
NSGWPH08												0.05019	
NSGWPH09												0.04735	
NSGWPH17												0.01791	
NSGWPH22												0.05375	
NSGWPH23												0.07965	

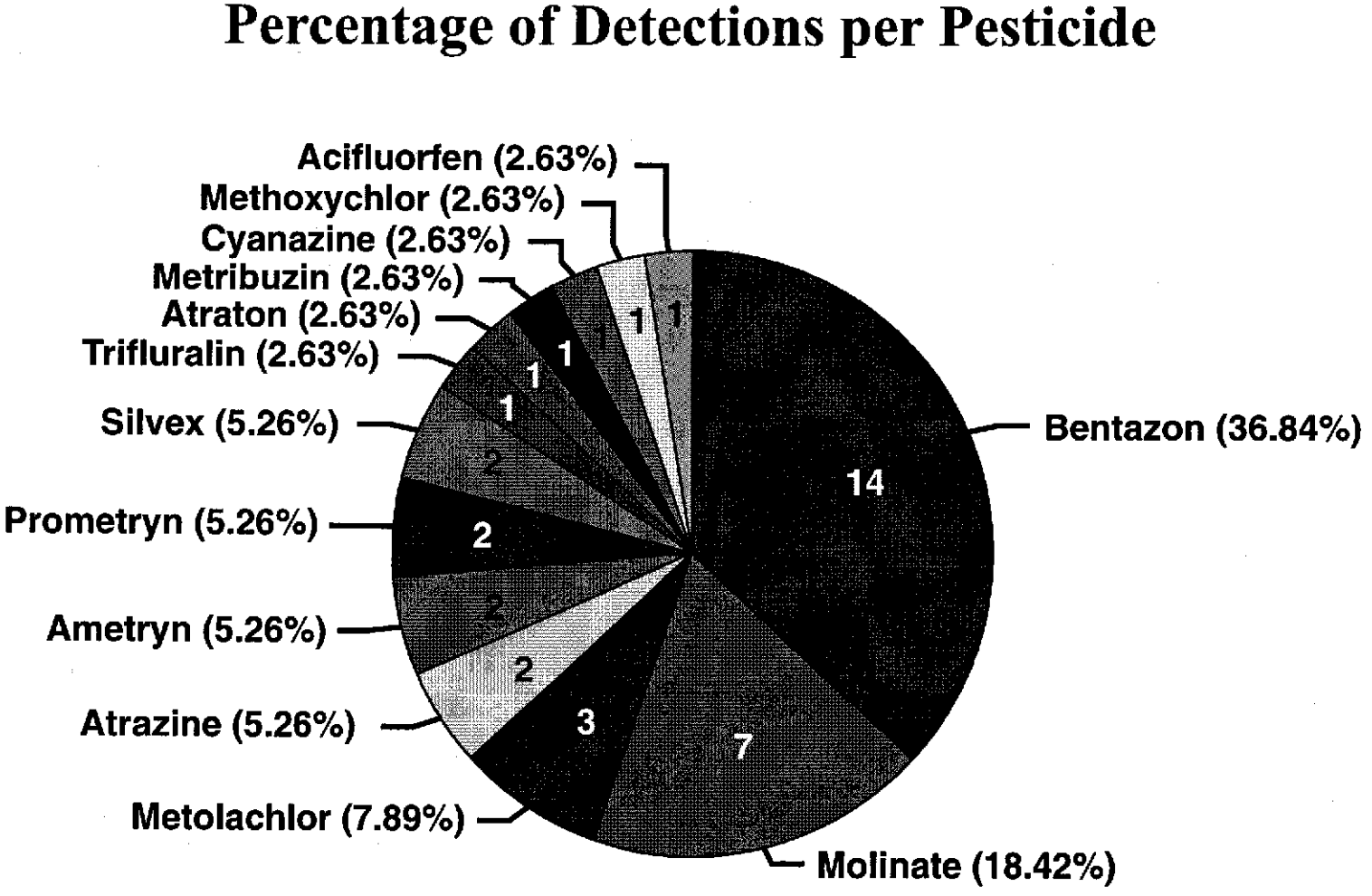


Figure 5. Number and percentage of individual pesticide detections.

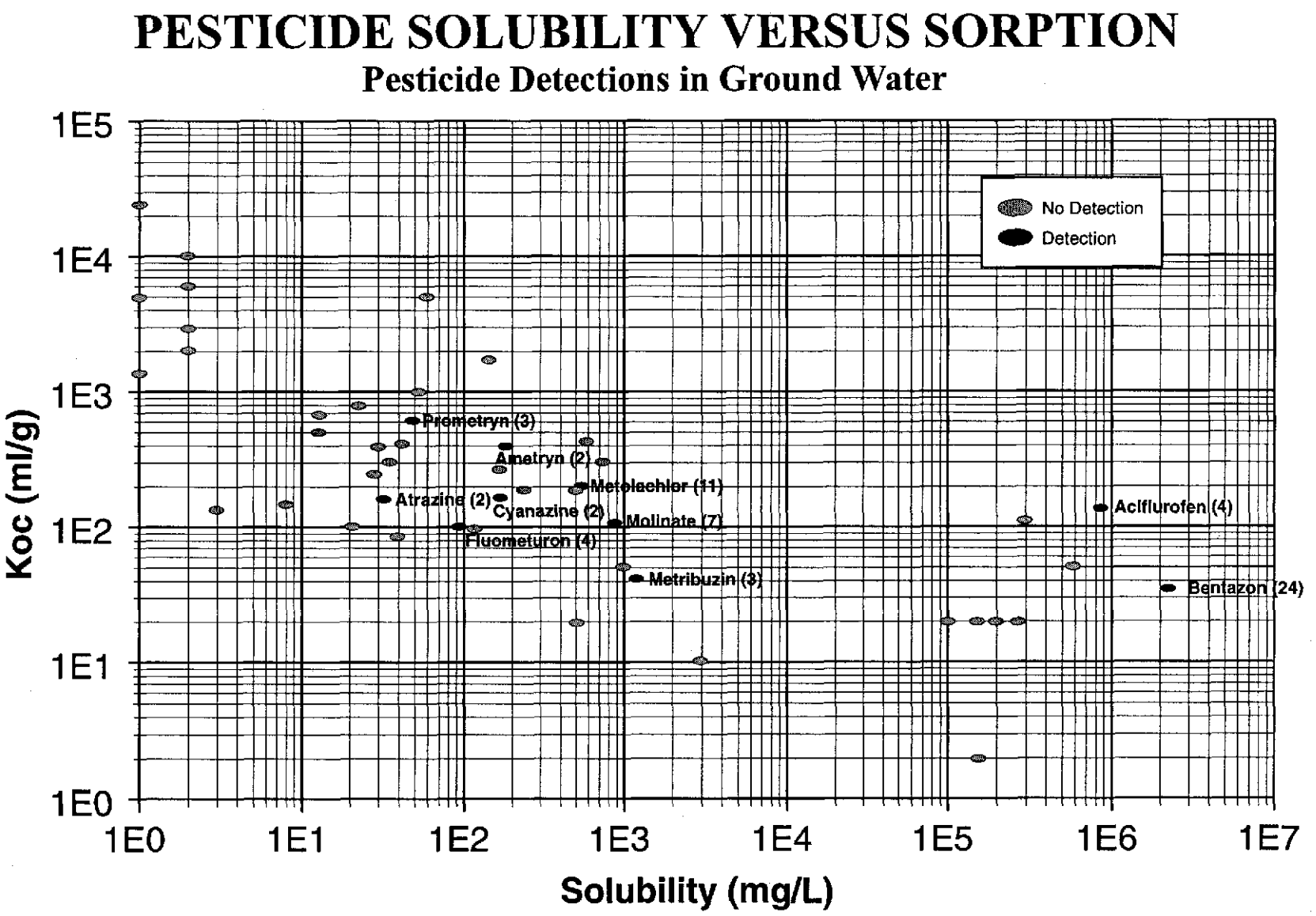


Figure 6. Pesticide detections in ground water as related to solubility and sorption (represented by Koc).

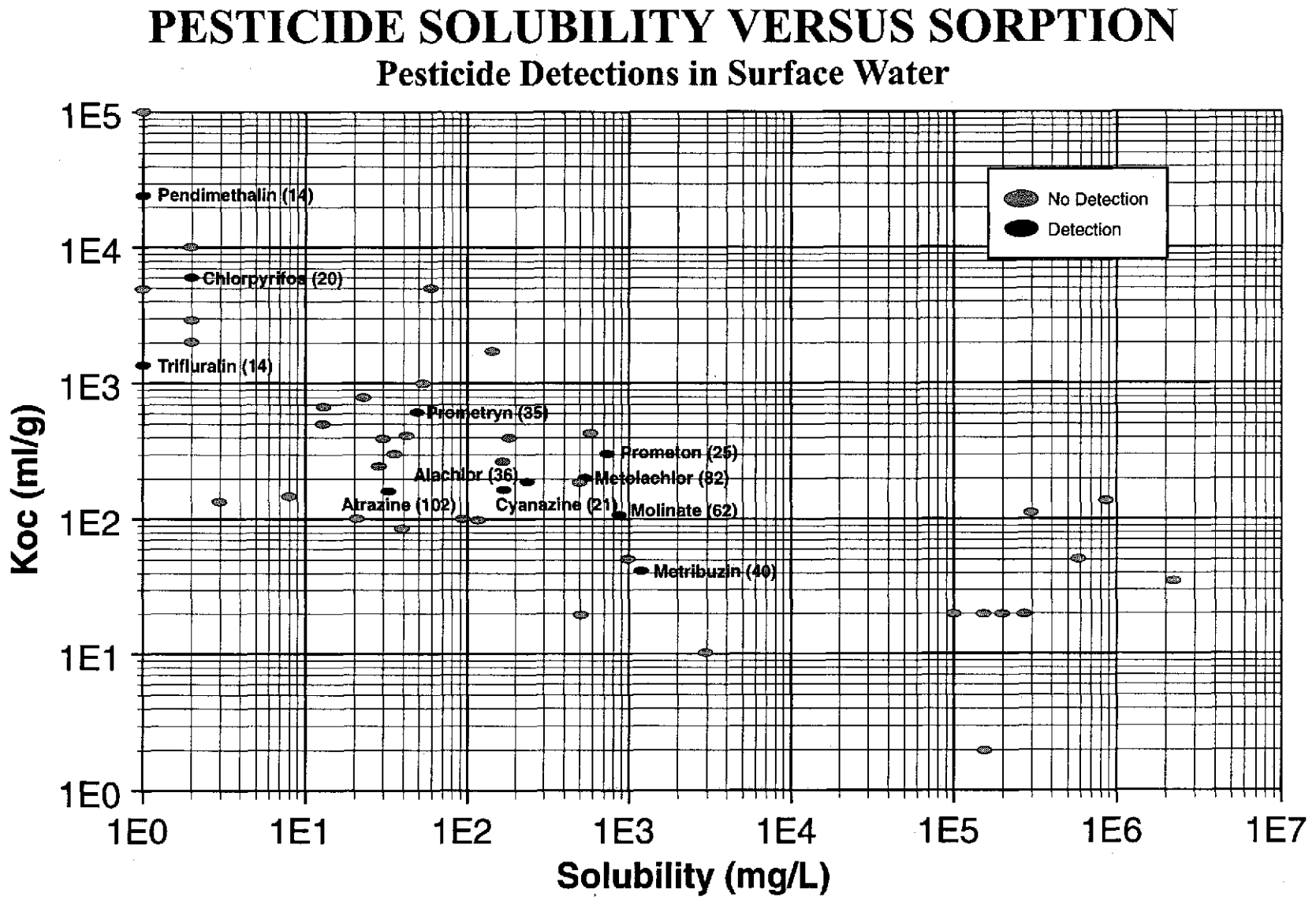


Figure 7. Pesticide detections in surface water as related to solubility and sorption (represented by Koc).

Table 9. Pesticide detections in ground water from major sources*

	AWRC	ADPC&E	USGS	Total
Bentazon	10	14	NA	24
Metolachlor	2	3	6	11
Molinate	0	7	NA	7
Acifluorfen	3	1	NA	4
Fluometuron	4	0	NA	4
Metribuzin	2	1	0	3
Prometryn	NA	2	1	3
Cyanazine	0	1	1	2
Atrazine	0	2	0	2
Ametryn	NA	2	0	2
Silvex	NA	2	0	2
# Wells Sampled	231	77	27	335
# Wells w/ Detection	14	24	9	47
% Detected	6	31	33	14

NA = Not Analyzed

* Detections include multiple hits at some wells; as such, detections outnumber # of wells w/ detections. Table includes only pesticides with two or more total detections.

It is interesting to note that the pesticides in the center of the Figures 6 and 7 were detected in both surface and subsurface waters; those in the upper left-hand corner (pendimethalin, chlorpyrifos, and trifluralin) were detected only in surface waters; and the pesticides in the far right-hand corner (bentazon and acifluorfen) were detected only in ground water. This observation supports the preceding discussion concerning the detection of the highly-sorptive, low-solubility pesticides in surface water only; whereas, the high-solubility pesticides are found in ground water, but generally not detected in surface water. The findings also suggest that further investigations may be needed for determining the flux of pesticides into the water and sediment phases of surface water bodies in Arkansas.

The most frequently detected pesticides for the present study, bentazon (14), molinate (7) and metolachlor (3), all have solubilities greater than 500 mg/L and Koc values less than 200 mL/g. Also, all pesticide detections for the present study and pesticide detections for the combined studies (Table 9) were pesticides in the top 20 of the most frequently used pesticides (Table 5). Four of the seven most frequently-used pesticides from Table 5, including tribufos (3rd), propanil (5th), pendimethalin (6th) and MSMA (7th), were not detected in any of the studies and are all "low-potential" leachers according to Table 7. This finding suggests that the chemical and physical properties of pesticides far exceeds pesticide use as the overall controlling factor for the migration

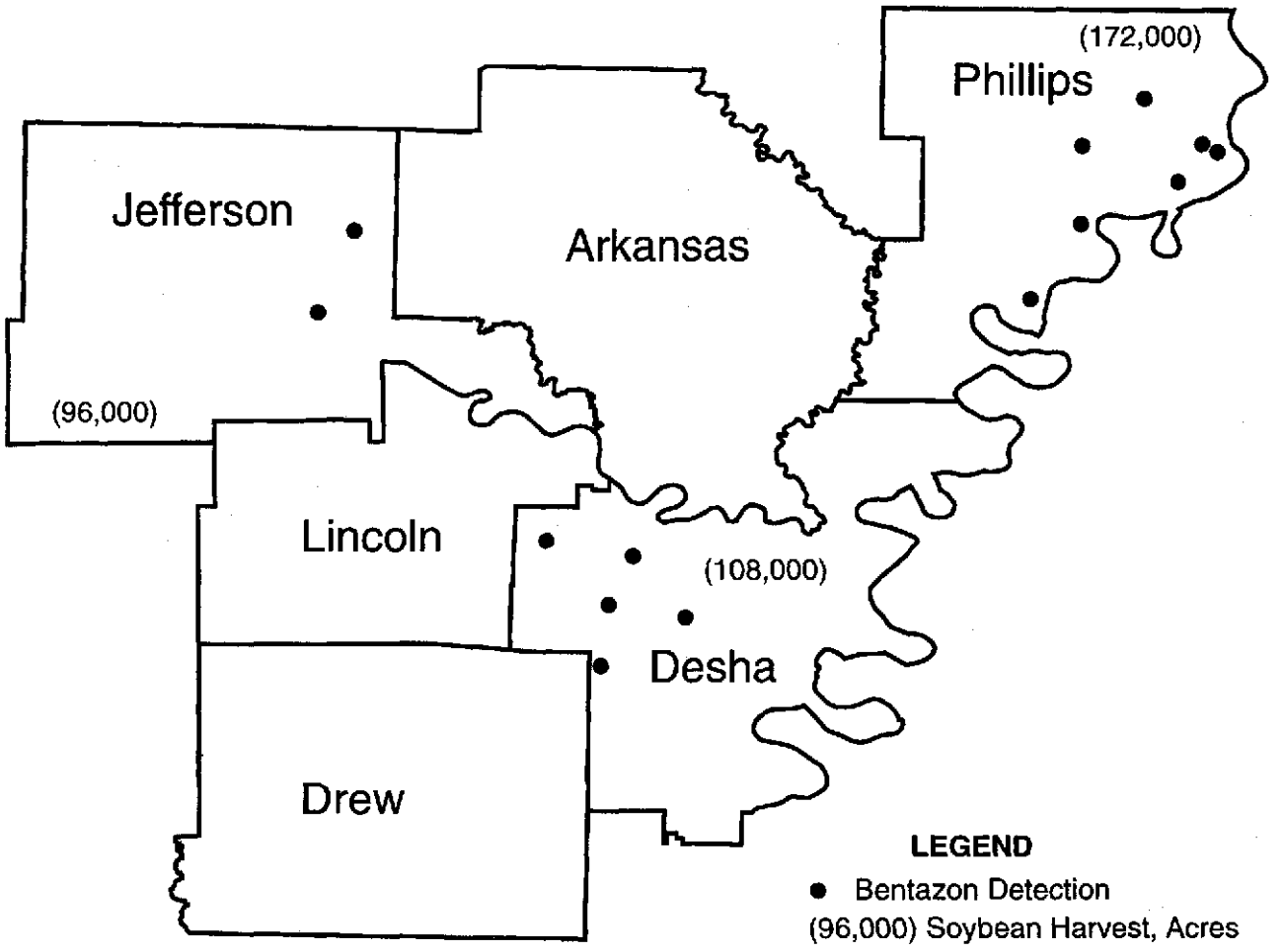
of pesticides to ground water. However, pesticide use and patterns of use seem to play an important role in the occurrence of pesticides in ground water. Figures 8 and 9 denote the locations of sampling sites with associated bentazon detections and molinate detections, respectively, and also the 1996 number of acres of harvested soybeans and rice, respectively . Because molinate is used on rice, whereas bentazon is used dominantly on soybeans, a clear pattern of occurrence of detections versus use is evident from the figures. For example, Phillips County produced almost the combined total of soybeans harvested in Jefferson and Desha counties and also had seven detections of bentazon; the combined total detections for Jefferson and Desha counties. However, both Jefferson and Desha counties produced twice the rice harvested in Phillips county and had a combined total of seven detections for molinate; whereas, no molinate was detected in Phillips County. This relationship indicates the need for gathering information concerning dominant crops near pesticide sampling locations and also provides an additional cause for the diversity of results from various agencies by introducing another important variable in addition to analytical and reporting criteria.

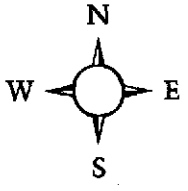
In summary, pesticides were detected in ground water at percentages ranging from 6 to 33% of the sites sampled by the various investigators. Pesticides were detected at 24 of the 77 (31%) sites sampled for the present study. The most pesticides detected at any one well was 4 pesticides at NSGWJF08. The chemical and physical properties of pesticides strongly control the migration potential and transport to the ground water table. Highly soluble pesticides were found by all investigators in ground water but not in the surface water bodies; whereas, the low-soluble, highly-sorptive pesticides were not detected in ground water, but frequently detected in surface water. Moderately soluble pesticides are found in both water sources. A relationship was established between the harvested acres of rice and soybeans and the total detections for molinate and bentazon, respectively.

GEOCHEMISTRY OF ALLUVIAL AQUIFER IN STUDY AREA

As stated above, the water in all study areas is a calcium-bicarbonate type with varying concentrations of sodium, chloride, sulfate and magnesium as other major contributors to the TDS. Least-squares linear regression analyses was applied to the data using QuattroPro in order to compare the relationships between various chemical parameters. This analysis method tests the variance between a set of independent and dependent variables. The r-squared value explains the variation within the linear model, and, as such, represents the reliability of the regression with a value between zero and unity. The linear relationship is more reliable as the r-squared value approaches unity.

The charge balance of the ground water parameters is evident from Figure 10, which displays the close correlation between the cations and anions. In view of this relationship, a close correlation should exist between the individual ion-pairs, where there is a singular source rock for the dissolved ions and a lack of reactions between the ions in solution and the material through which the water flows. Calcium and bicarbonate ions are commonly derived from the dissolution of calcium carbonate rocks and the sodium and chloride is in most cases from the dissolution of halite. However, inspection of the graphical relationship between both ion pairs (Figures 11 and 12), although depicting a strongly positive relationship, have relatively low r^2 values.





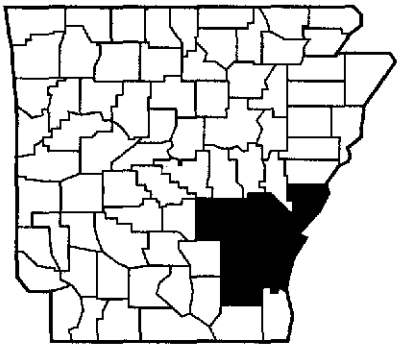
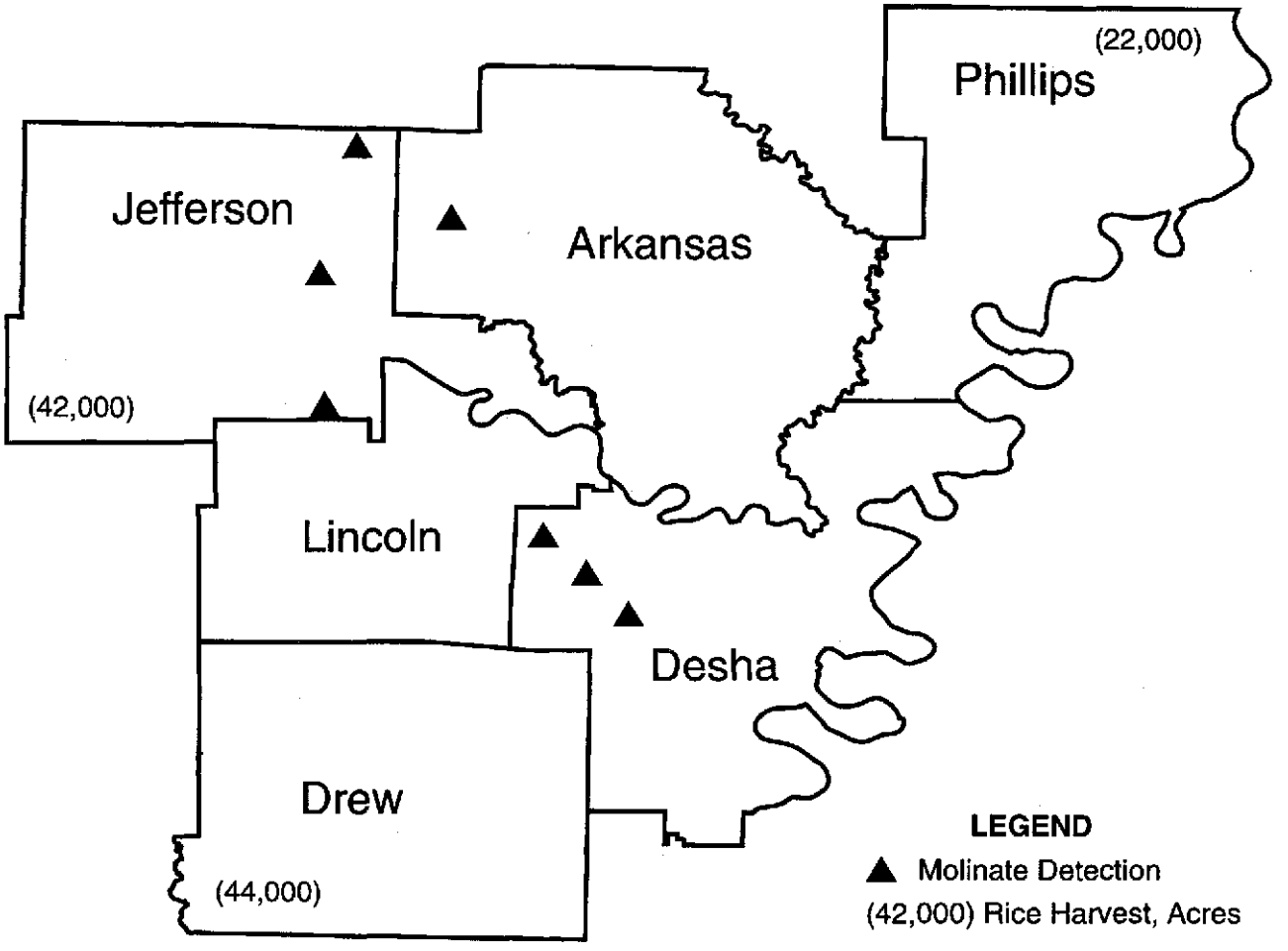
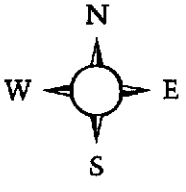


Figure 8. Detections of bentazon as related to soybean production.





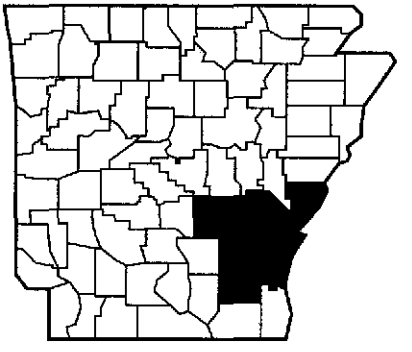


Figure 9. Detections of molinate as related to rice production.

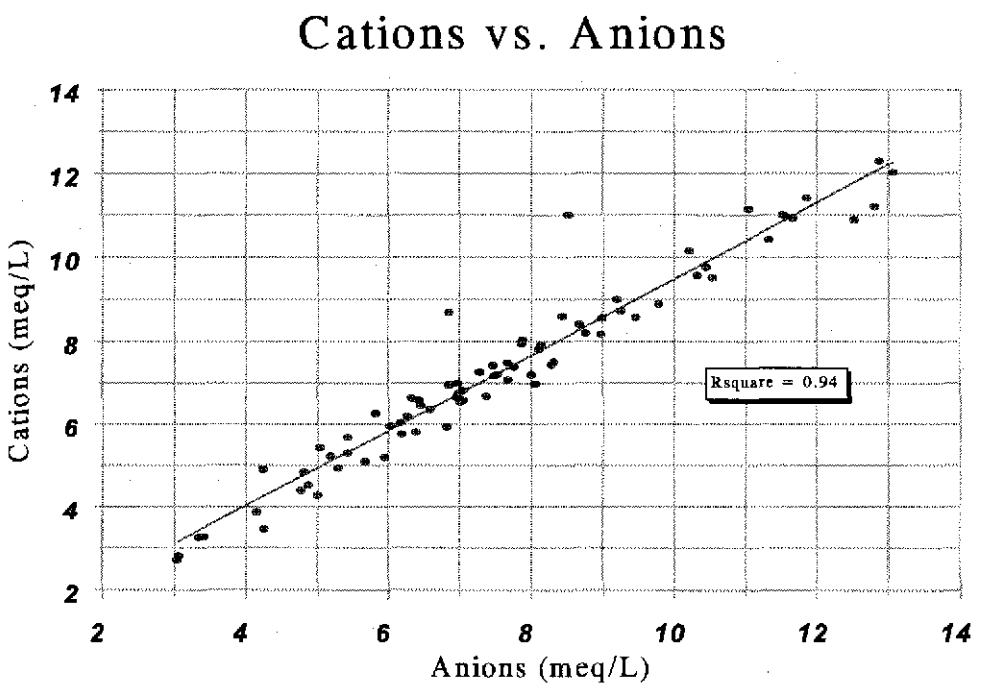


Figure 10. Relationship of Total Cations (meq/L) to Total Anions (meq/L). Goodness of Fit is Represented by Rsquared Value from Regression Analyses.

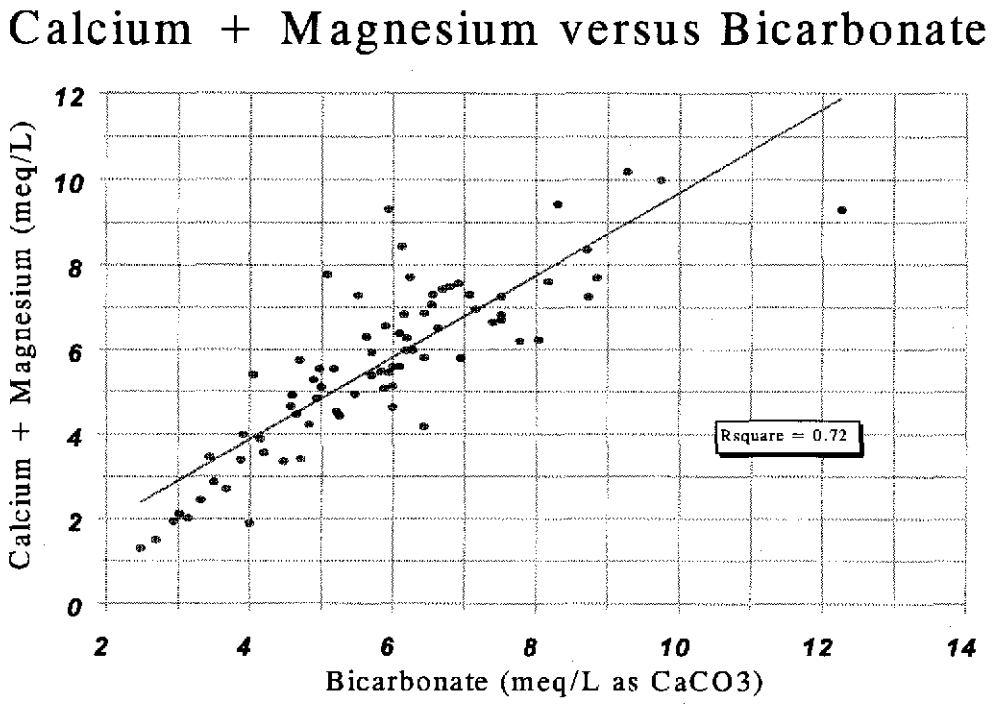


Figure 11. Relationship Between Calcium and Magnesium (meq/L) to Bicarbonate (meq/L). Goodness of Fit is Represented by the Rsquared Value from Regression Analyses.

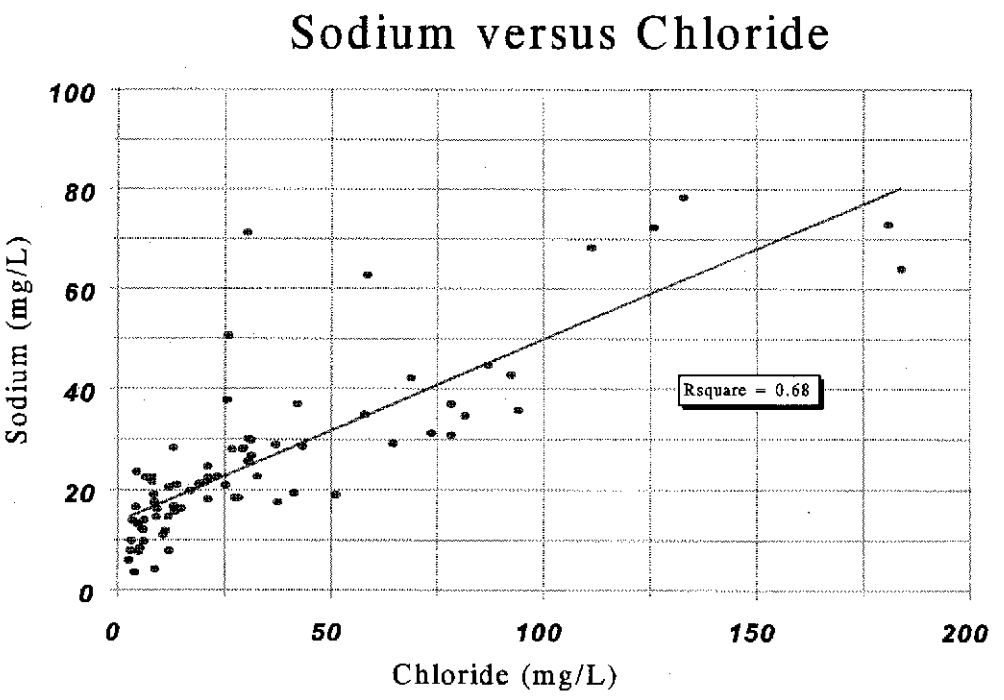


Figure 12. Linear relationship between sodium (mg/L) and chloride (mg/L). Goodness of fit is represented by r^2, which was calculated by linear regression analysis.

The fact that individual relationships between the major ion pairs did not exhibit a high level of correlation suggests that there are additional mineral sources and/or chemical reactions which result in a change to the overall chemistry of the study area ground water. Ion exchange processes can account for an increase of some ions at the expense of other ions. The dominant cation exchange process within most soils and unconsolidated sediments is the exchange of calcium for sodium, especially within clay minerals. In addition, sulfate concentrations ranged upwards to 174 mg/L, which suggests that some of the calcium may be derived from the dissolution of gypsum. In order to test the influence of sources of calcium other than calcium carbonate and the influence of cation exchange, several relationships were investigated.

Figure 13 depicts the relationship of calcium and magnesium divided by bicarbonate versus sulfate concentrations. The dissolution of calcium carbonate should yield calcium plus magnesium concentrations equal to that of bicarbonate concentrations in meq/L; i.e., a ratio of one. Two phenomena are noted from inspection of Figure 13. First, ratios greater than one, which indicate an enrichment of calcium and/or magnesium, correlate to an increase in sulfate concentrations. The increase in sulfate with corresponding increases in calcium suggests that gypsum is most likely contributing substantial amounts of calcium to the ground water. This theory was further investigated by plotting calcium plus magnesium versus bicarbonate plus sulfate (Figure 14). The r-squared value improved from 0.72 (Figure 11) to 0.86, which supports the theory that gypsum is contributing substantially to the enrichment of calcium. Secondly, ratios less than one extend to the left past the x=0.5 line on Figure 13, which denotes a concentration of calcium and magnesium at 50% of the bicarbonate concentration, and suggests that cation exchange processes are contributing to the depletion of calcium.

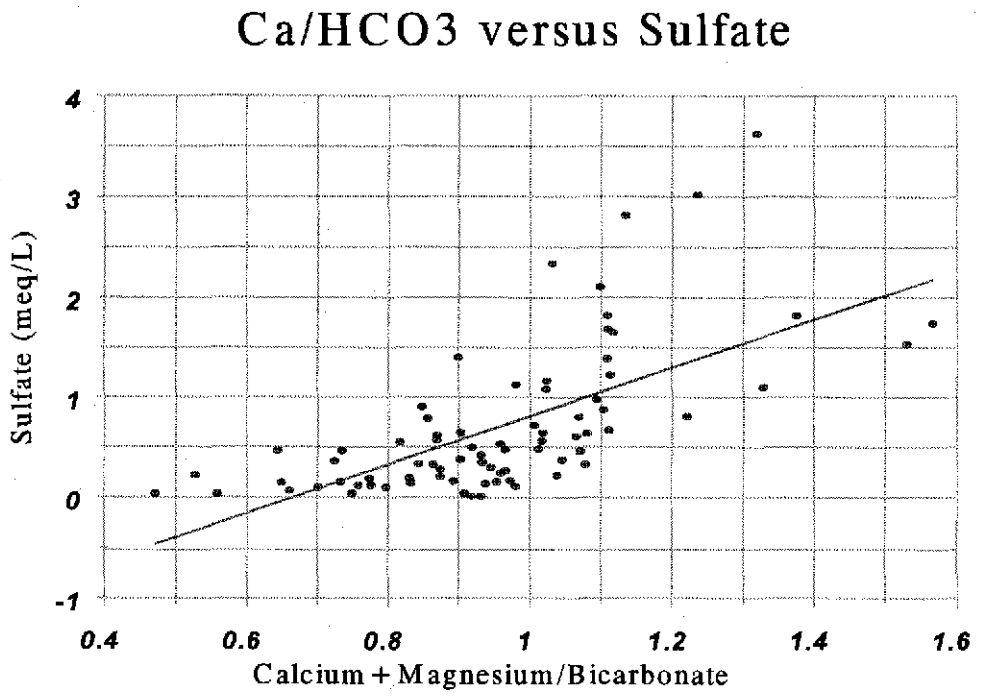


Figure 13. Linear relationship of calcium and magnesium (meq/L) divided by bicarbonate (meq/L) to sulfate (meq/L). Increase of sulfate to the right of x=1 indicates potential contribution of calcium by dissolution of gypsum.

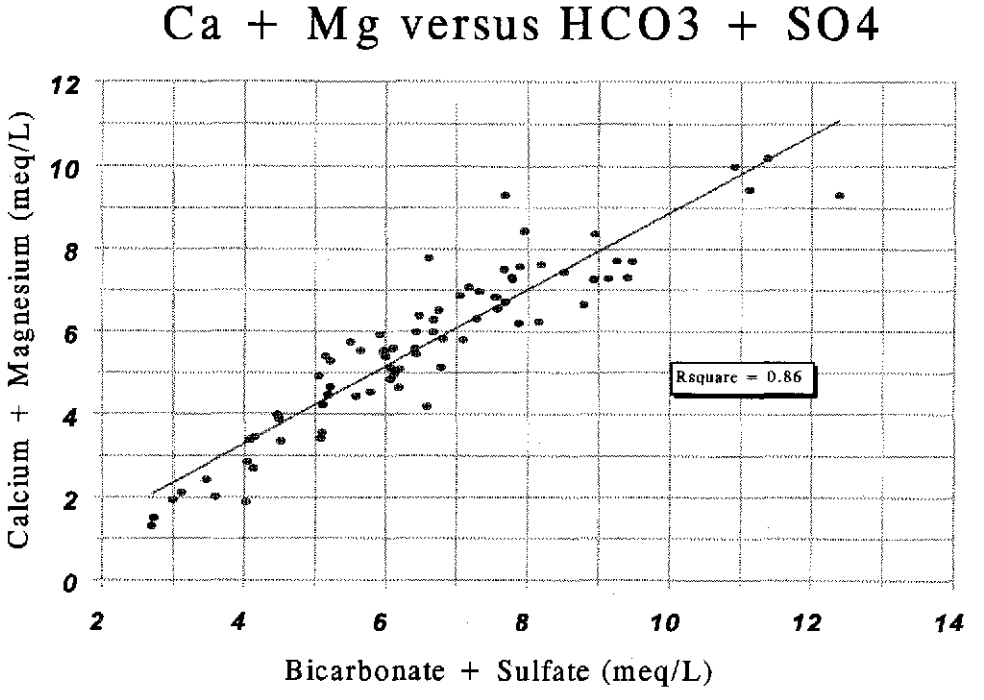


Figure 14. Linear relationship of bicarbonate plus sulfate (meq/L) to calcium plus bicarbonate (meq/L). Goodness of fit is represented by r^2, which was calculated by regresssion analyses.

The potential for cation exchange as a cause of calcium depletion was tested by plotting the ratio of calcium plus magnesium divided by bicarbonate plus sulfate to the ratio of sodium divided by chloride (Figure 15). The ratio involving calcium should equal 1.0 in the case of dissolution of limestone and gypsum and in the absence of chemical reactions along the ground-water flow path. It is interesting to note that at the point of x=1 for the relationship involving calcium, the sodium to chloride ratio is also approximately one (y=1). Extending 15 % in either direction does not result in a substantial change in the sodium to chloride ratio; however, an increase is noted moving left in the area of x=0.85 and large increases begin at x=0.75. It is evident from the graph that cation exchange is affecting the chemistry in many of the well-water samples, resulting in an increase in sodium at the expense of calcium. Figure 16 is the same graph as Figure 15 with the addition of study area locations and demonstrates that most of the wells to the left of the x=0.75 line are wells located in Area III. This relationship suggests that cation exchange processes are more active in Area III. It is possible that the water in Area III has chemically evolved to a greater degree as a result of an increased resident time in the aquifer. Another possibility is an increase in the amount of clay minerals in the soils or aquifer in Area III. In either case, the difference in the water chemistry of Area III to that of Areas I and II, which is noted in the Piper diagram and review of Tables 2 through 4, is further demonstrated by the relationship depicted in Figure 16. To test the theory of cation exchange, an exercise similar to the one used in Figure 14 for testing gypsum as an additional source of calcium was employed by plotting calcium plus magnesium plus sodium versus bicarbonate plus chloride (Figure 17). Again, the r-squared value has improved demonstrating the effect of cation exchange on calcium concentration.

Figures 14 and 17 show that depletion of calcium through cation exchange and enrichment of calcium through dissolution of gypsum both impact calcium concentrations to a similar degree (r^2=0.83 and r^2=0.86, respectively). Plotting the total cations and anions from both graphs results in the relationship depicted in Figure 18. Because iron and potassium, both present in smaller quantities, are the only other cations missing, and bicarbonate, chloride and sulfate are the only major anions, the graph results in an r-squared value similar to that of Figure 10 for total cations versus anions. All of the multiple-ion graphs merely provide a convenient methodology for assessing the chemical evolution of the ground water within the study areas.

Precision and Accuracy of Water Quality Data

A quality-control program for checking the precision of the laboratory and field analyses was applied to the data for the present study. The data were entered into a spreadsheet program developed by Department personnel according to procedures set forth in Section 1030 of Standard Methods for the Examination of Water and Wastewater, 18th Edition (APHA, 1992). The procedures outlined in Standard Methods require analysis of the major cations and anions contributing to the TDS and uses this information to develop the following ratios: anion-cation balance, measured TDS versus calculated TDS, measured conductance versus calculated conductance, measured conductance versus ion sums, calculated TDS to conductance, and measured TDS to conductance. The procedures outline methods for calculating TDS and conductance and also cite a recommended ranges of values for the above-outlined ratios, which indicate correctness of analyses.

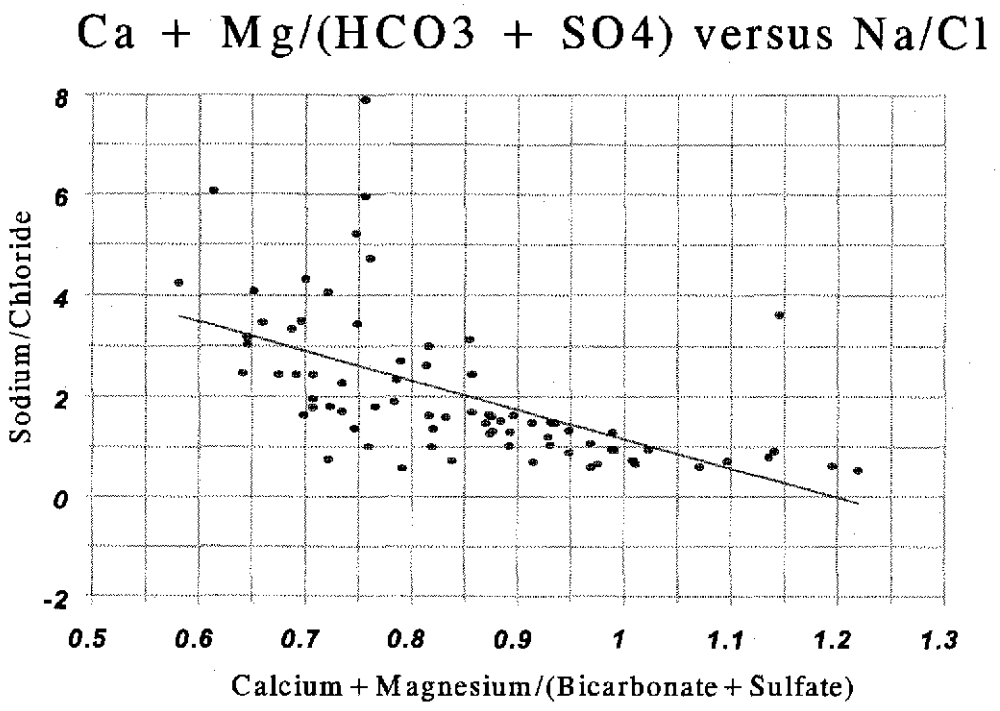


Figure 15. Linear relationship of calcium plus magnesium divided by bicarbonate and sulfate to sodium dived by chloride. Increase in the sodium to chloride ratio is interpreted as an increase in sodium with the depletion of calcium through cation exchange processes.

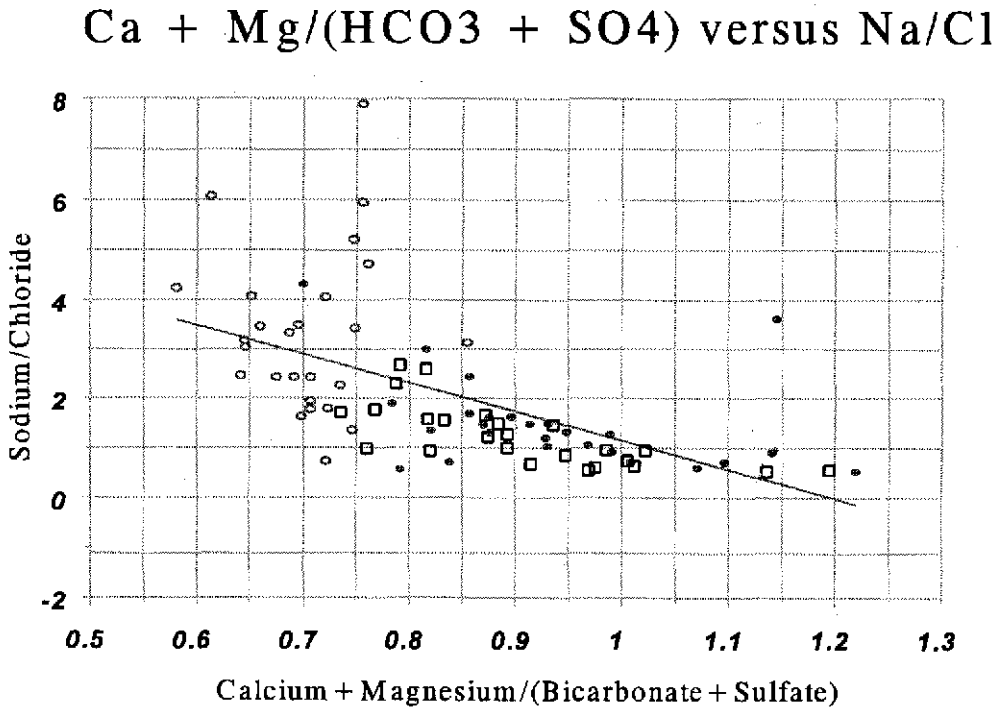


Figure 16. Same relationship as expressed in Figure 15. Symbols have been added to indicate the area represented by each of the sample locations. Area I wells are represented by solid circles; Area II wells by squares; and Area III wells by open circles.

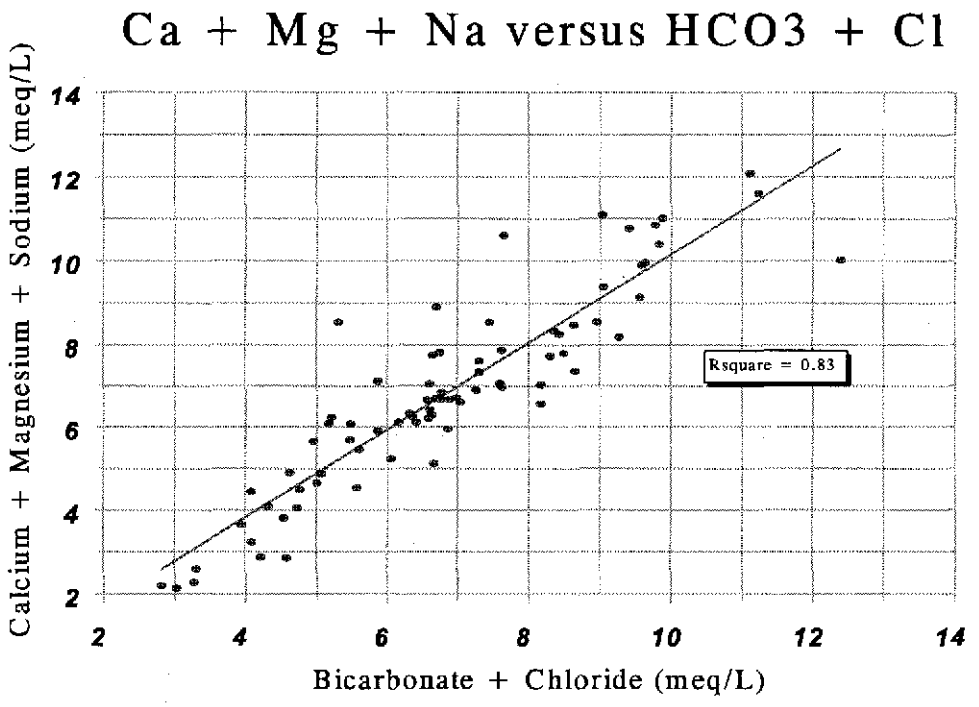


Figure 17. Linear relationship of calcium plus magnesium plus sodium to bicarbonate plus chloride in meq/L. Goodness of fit is represented by r^2, which was calculate by regression analyses.

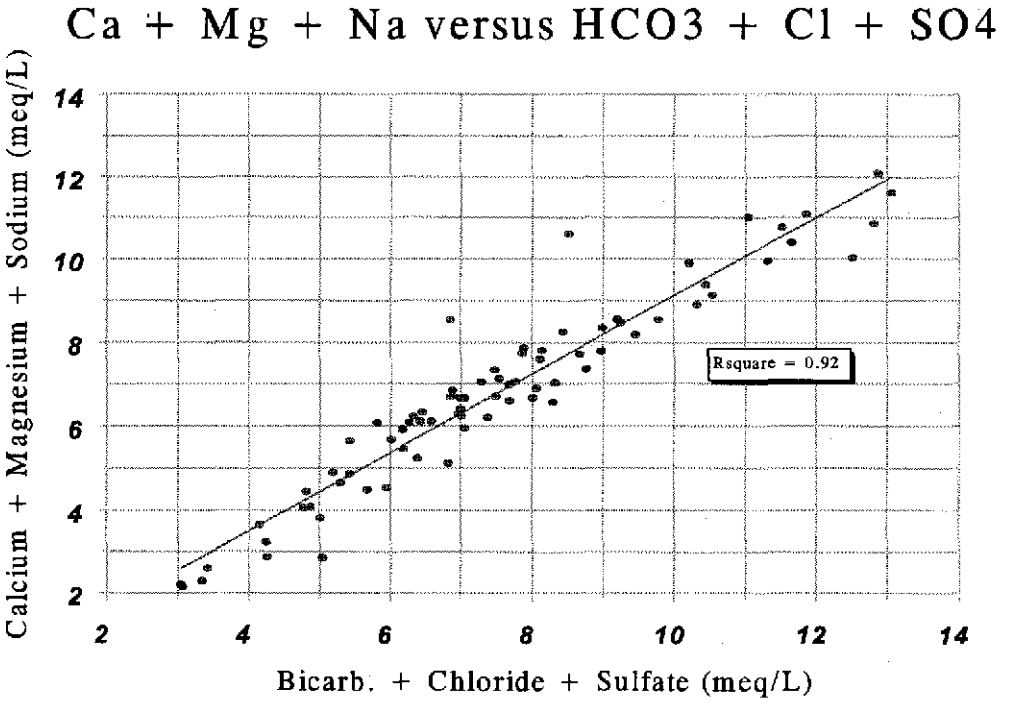


Figure 18. Linear relationship of calcium plus magnesium and sodium to bicarbonate plus chloride and sulfate (meq/L). Goodness of fit is represented by r^2, which was calculated by regression analysis.

Statistical results from the spreadsheet program are in Appendix II and a summary of the results is provided in Table 10. The ratios most applicable to checking analytical accuracy are those involving the measured (residue weight) to calculated TDS ratios and the cation to anion ratios. The other ratios involving conductance are dependent on the accuracy of the field measurements and do not serve as a direct indicator of laboratory accuracy and precision; however, the ratios do provide an excellent means of identifying and/or confirming which analytes are in error as identified by other means.

A review of the ratios of measured to calculated TDS demonstrates that all values were within the recommended range with the exception of three sites: JFO4, JF14 and PH07. The excellent correlation between the measured and calculated TDS is graphically displayed in Figure 19, which reveals an r-squared value of 0.98. Because of this relationship and the fact that waters with moderate TDS concentrations (250-1000 mg/L) are electrically neutral, it follows that the cation/anion ratio should also have a close relationship. However, the ratios of total cations (meq/L) to anions (meq/L) display a wider deviation from the accepted ranges (Table 10) than that of the relationship of the TDS values, although the r-squared value of 0.94 for the regression analysis performed on cations versus anions (see Figure 10) demonstrates a very good linear relationship between the two variables. The largest percentage error for the cation/anion ratios are for sites JF04 and PH07, which also display the largest deviation from the measured to calculated TDS ratios. Inspection of both the data and graphs such as Figures 19 and 10 can be used to determine which samples and which ion pairs are unbalanced, but does not indicate which value is in error. For instance, inspection of the data for JF04 reveals that milliequivalent concentrations of calcium and magnesium are approximately equal to sulfate and bicarbonate, whereas sodium (3.1 meq/L) is 3 times higher than chloride (0.86 meq/L), although it is not evident which value is in error.

To determine which analyte values were in error, a combination of techniques was applied including a review of the data and an inspection of graphs for cations versus conductance and anions versus conductance (figures 20 and 21, respectively). The total milliequivalents per liter for either cations or anions multiplied by 100 agrees closely with conductance in microSiemens per centimeter (Hem, 1989; APHA, 1992). The graphs can assist in determining whether the cations or anions are low and used in combination with the analytical results often can isolate an individual analyte that might be in error. For instance, an inspection of Figure 20 shows that JF04 falls very close to the best-fit line for cations versus conductance; whereas, Figure 21 shows that JF04 falls far below the line indicating that the anions are too low or the conductance is too high. Because both graphs have the same value for conductance and the TDS/Conductance ratio (column 2, Table 10) is within the accepted range, it can be assumed that the conductance values are reasonable and the anions are too low. With the information provided in the previous paragraph, the chloride value is probably suspect. The same technique can be used without the aid of the graphs by simply inspecting the ratios for both cations and anions versus conductance (Table 10). These ratios for JF04 were 0.96 for cations versus conductance and 0.74 for anions versus conductance. The latter value falls outside the accepted range of 0.9 to 1.1 and suggests that there is an error in the anion values and also that the anions are low with respect to the ratio.

Table 10. Statistical results of precision control analyses of laboratory data.

Location	TDS (meas)/ TDS (calc)	Cond (meas)/ Cond (calc)	TDS/Cond Calculated	TDS/Cond Measured	Cation/Anion % difference		Cation/Cond	Anion/Cond
	0.9-1.1	0.9-1.1	0.55-0.7	0.55-0.7	<2%	<5%	0.9-1.1	0.9-1.1
ARO1	0.97	0.8	0.63	0.49	1.18		0.87	0.89
ARO2	0.99	0.82	0.64	0.52	0.88		0.89	0.88
AR03	1.02	0.84	0.62	0.53	2.38		0.92	0.88
JF01	0.99	0.85	0.6	0.5	3.63		1	0.93
JF02	1.04	0.83	0.66	0.57		3.79	0.87	0.94
JF03	1.01	0.81	0.61	0.5	0.14		0.9	0.9
JF04	1.14	0.72	0.63	0.52		12.73	0.96	0.74
JF05	0.98	0.82	0.62	0.5		2.31	0.88	0.92
JF07	0.99	0.81	0.65	0.52		0.24	0.98	0.98
LN01	1	0.82	0.63	0.52	0.41		0.91	0.92
LN02	1	0.81	0.64	0.52	2.06		0.9	0.94
LN03	1	0.75	0.65	0.48	3.4		0.86	0.92
JF06	0.99	0.83	0.62	0.51	1.88		0.89	0.92
JF08	0.99	0.81	0.73	0.58	4.63		0.84	0.92
JF09	0.97	0.75	0.76	0.56	10.57		0.77	0.95
JF10	1	0.8	0.63	0.5	0.65		0.94	0.93
JF11	0.97	0.84	0.64	0.52	2.37		0.94	0.99
JF12	1	0.82	0.63	0.51	0.85		1	0.98
JF13	1	0.82	0.62	0.51	0		0.94	0.94
JF14	0.88	0.85	0.68	0.5	7.11		1	0.86
JF15	0.9	0.84	0.66	0.5	3.61		0.93	0.87
JF16	0.99	0.85	0.63	0.53	1.11		1.01	0.99
JF17	0.98	0.88	0.64	0.55	0.2		0.96	0.95
JF18	0.97	0.84	0.63	0.5	1.63		0.92	0.95
LN04	1	0.81	0.64	0.52	5.17		0.89	0.99
LN05	1.03	0.8	0.64	0.53		4.19	0.85	0.93
LN06	0.97	0.83	0.64	0.52	5		0.96	1.06
DE01	1.03	0.83	0.62	0.53	2.63		0.92	0.97
DE02	0.97	0.9	0.65	0.57		6.71	0.92	1.05
DE03	1	0.86	0.65	0.56		3.39	0.95	1.02
DE04	1	0.85	0.64	0.54		5.08	0.9	1
DE05	1	0.84	0.65	0.55		3.25	0.91	0.97
DE06	1	0.87	0.62	0.54		4.18	0.91	1
DE07	1	0.84	0.64	0.53	5.38		0.86	0.96
LN07	0.98	0.76	0.71	0.53	1.29		0.83	0.85
DE08	0.99	0.75	0.69	0.5	2.25		0.81	0.84
DE09	1	0.77	0.65	0.5	3.41		0.86	0.92
DE10	1	0.87	0.66	0.57	3.73		0.9	0.97
DE11	1.02	0.87	0.63	0.56	3.98		0.9	0.98
DE12	1	0.81	0.66	0.55	5.44		0.84	0.94
DE13	1	0.82	0.65	0.53	4.72		0.89	0.98
DE14	1.04	0.8	0.63	0.52	7.15		0.81	0.93
DE15	0.99	0.84	0.65	0.55	5.02		0.92	1.01

Table 10. Statistical results of precision control analyses of laboratory data.

Location	TDS (meas)/ TDS (calc)	Cond (meas)/ Cond (calc)	TDS/Cond Calculated	TDS/Cond Measured	Cation/Anion % difference		Cation/Cond	Anion/Cond
	0.9-1.1	0.9-1.1	0.55-0.7	0.55-0.7	<2%	<5%	0.9-1.1	0.9-1.1
DR01	0.97	0.81	0.71	0.55	5.97		0.82	0.93
JF19	1.02	0.88	0.63	0.56	3.46		0.95	1.02
DE20	1.05	0.88	0.64	0.59	3.04		0.96	1.02
DE21	1.06	0.87	0.67	0.62	3.56		0.95	1.02
PH01	1	0.89	0.65	0.58	1.16		1.04	1.06
PH02	1.04	0.89	0.63	0.58	2.23		1.04	1
PH03	0.98	0.89	0.63	0.55	0.18		1.04	1.04
PH04	1	0.85	0.65	0.54	2.49		1	1.05
PH05	1	0.9	0.64	0.58	1.51		1	1.04
PH06	0.96	0.83	0.65	0.51	1.79		0.96	1
PH07	1.13	0.86	0.62	0.6	11.76		1.09	0.86
PH08	0.98	0.92	0.65	0.58	1.78		1.05	1.09
PH09	0.94	0.92	0.65	0.56		2.31	1.08	1.13
PH10	0.99	0.87	0.66	0.56	1.75		1	1.04
PH11	1	0.95	0.66	0.63		4.82	1.03	1.14
PH12	0.97	0.91	0.66	0.58	3.64		1	1.08
PH13	1	0.93	0.65	0.6	0.65		1.04	1.05
PH14	1.02	0.94	0.65	0.62	2.17		1.04	1.08
PH15	1	0.84	0.67	0.57		7	0.99	1.14
PH16	1.01	0.94	0.66	0.63		1.97	1.07	1.16
PH17	0.96	0.77	0.67	0.5	5.53		0.88	0.98
PH18	0.96	0.84	0.7	0.56	7.05		0.92	1.06
PH19	0.93	0.9	0.69	0.57	3.78		0.98	1.05
PH20	1	0.96	0.62	0.59	0.39		1.15	1.16
PH21	0.98	0.94	0.63	0.58	0.53		1.13	1.11
PH22	0.98	0.92	0.64	0.58	1.24		1.1	1.13
PH23	0.96	0.91	0.65	0.57	1.29		1.08	1.1
PH24	0.97	0.95	0.64	0.6	0.96		1.15	1.13
PH25	0.95	1	0.65	0.61	0.46		1.15	1.14
PH26	0.97	0.99	0.65	0.62		0.42	1.2	1.19

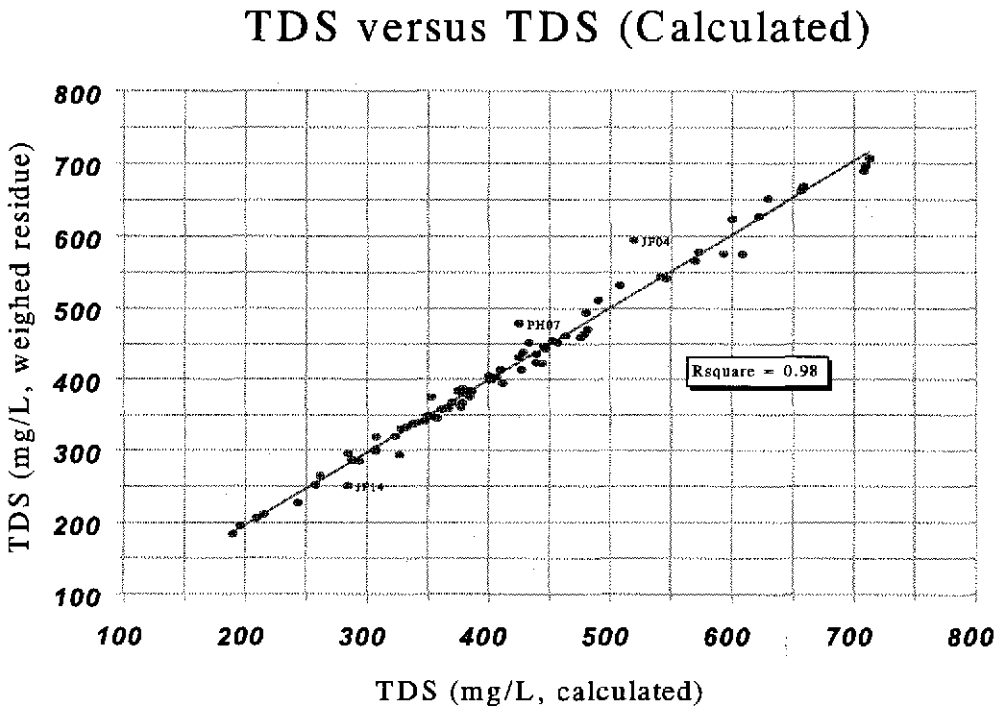


Figure 19. Linear relationship between TDS as measured in the laboratory (weighted residue) to calculated TDS (sum of the individual parameters). Goodness of fit represented by r^2, which was calculated by regression analysis.

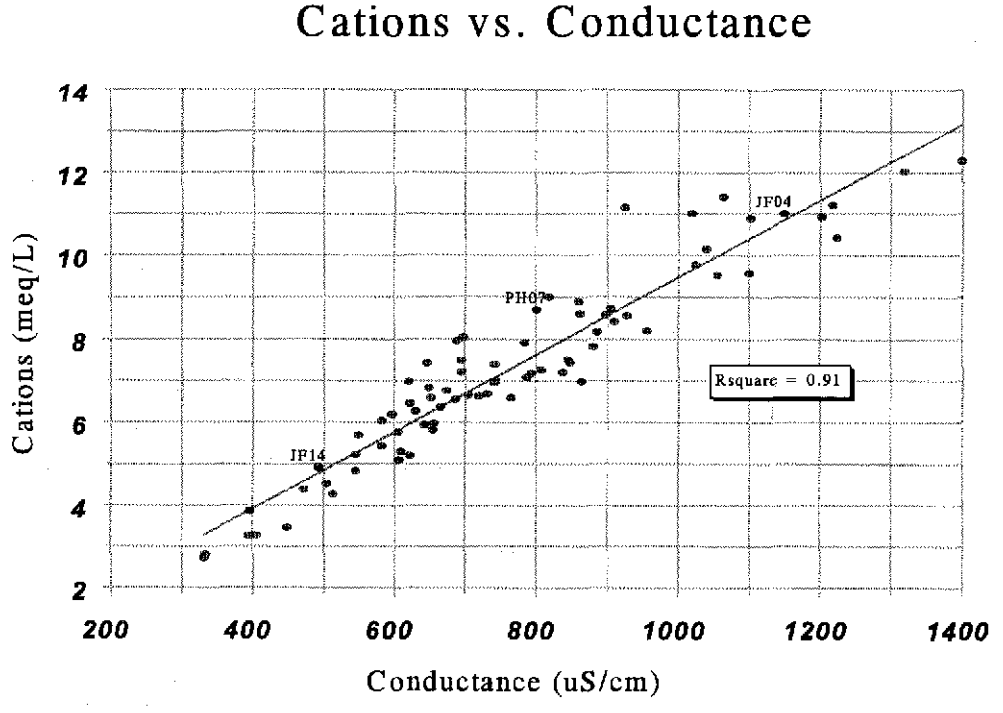


Figure 20. Linear relationship of total cations (meq/L) to conductance (μS/cm). Goodness of fit is represented by r^2, which was calculated by regression analysis.

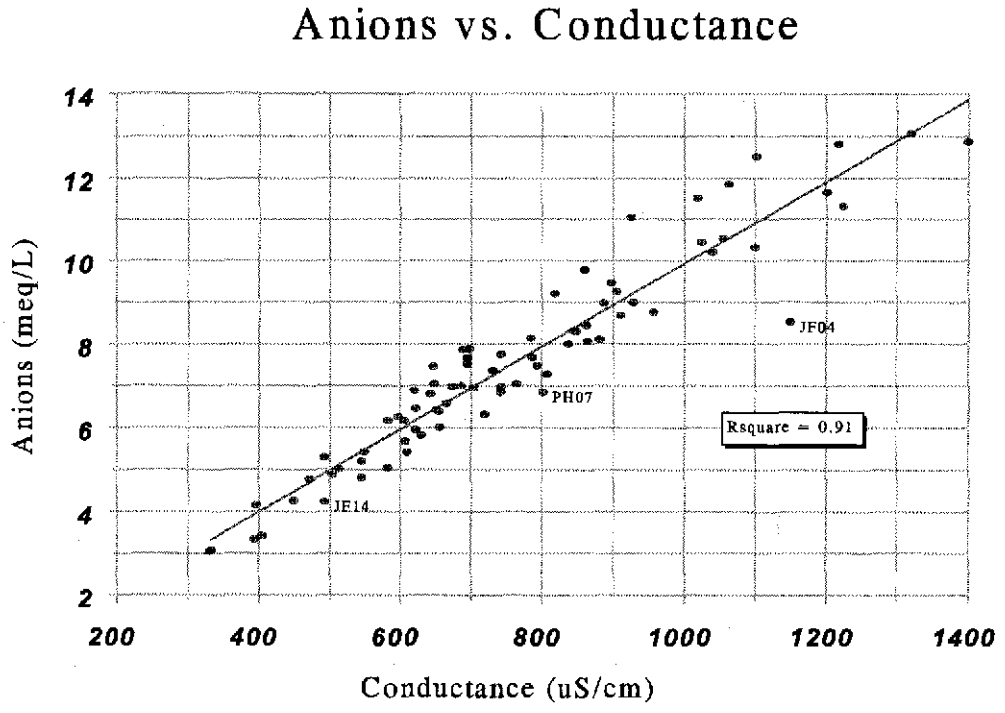


Figure 21. Linear relationship of total anions (meq/L) to conductance (μS/cm). Goodness of fit is represented by r^2, which was calculated by regression analysis.

The methodology described above was applied to eight samples with cation/anion ratios ≥ 7 and the results are presented in Table 11. The difference in milliequivalent concentrations of major ion pairs will indicate which pair deviates the most from unity. The anions or cations versus conductance can then be used to isolate which ion is in error. The anions and cations versus conductance ratios were effective in potentially identifying seven cases where either the anion and/or cation value was in error (high or low), and, in conjunction with the inspection of individual ion pairs from the data, demonstrated which analyte was in error. The method was less effective in the case where both the cations and anions versus conductance varied from a ratio of unity by the same degree. Potential uses for this method, in addition to identifying possible laboratory errors, is the ability to identify one or two parameters for re-analysis instead of re-analyzing the sample for the entire suite of analytes.

The ratios involving measured versus calculated conductance and measured TDS versus measured conductance (Table 10) demonstrate that measured conductance values were consistently low. This is supported by the fact that measured TDS to calculated conductance values were consistently within the accepted range. Subsequent calibration checks indicated that the conductivity meter was providing low values in reference to the laboratory standard solutions used to calibrate the instrument. Figures 22 and 23 reveal that the error was consistent between all sampling sites, as demonstrated by the high r-squared values and close fit of the data points to the best-fit line.

Table 11. Results of applied methodology for determining possible analytical errors in data set.

Sample	Cations meq/L	Anions meq/L	Cacium - Bicarbonate	Sodium - Chloride	Cation/ Conductivity	Anion/ Conductivity	Potential Error
JF04	11.02	8.53	0.16	2.2	0.96	0.74	Chloride Low
JF09	3.47	4.27	2.15	0.75	0.77	0.95	Calcium Low
JF14	4.91	4.25	1.01	0.03	1.00	0.86	Calcium Low
DE14	6.99	8.06	0.44	0.72	0.81	0.93	Sodium Low
DE17	4.28	5.02	1.43	0.24	0.83	0.98	Calcium Low
PH07	8.7	6.85	1.17	0.53	1.09	0.76	Bicarbonate Low
PH15	10.89	12.52	3.09	0.61	0.99	1.14	Bicarbonate High
PH18	5.94	6.82	2.4	0.71	0.92	1.06	?

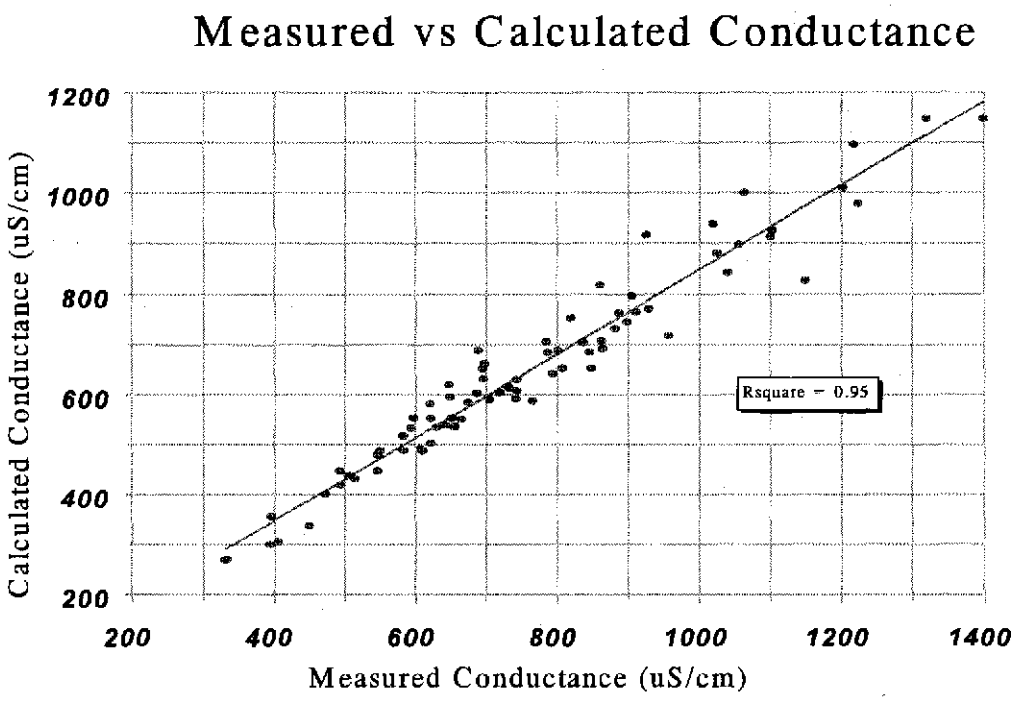


Figure 22. Linear relationship of calculated conductance to field-measured conductance (μS/cm). Goodness of fit represented by r^2, which was calculated from regression analysis.

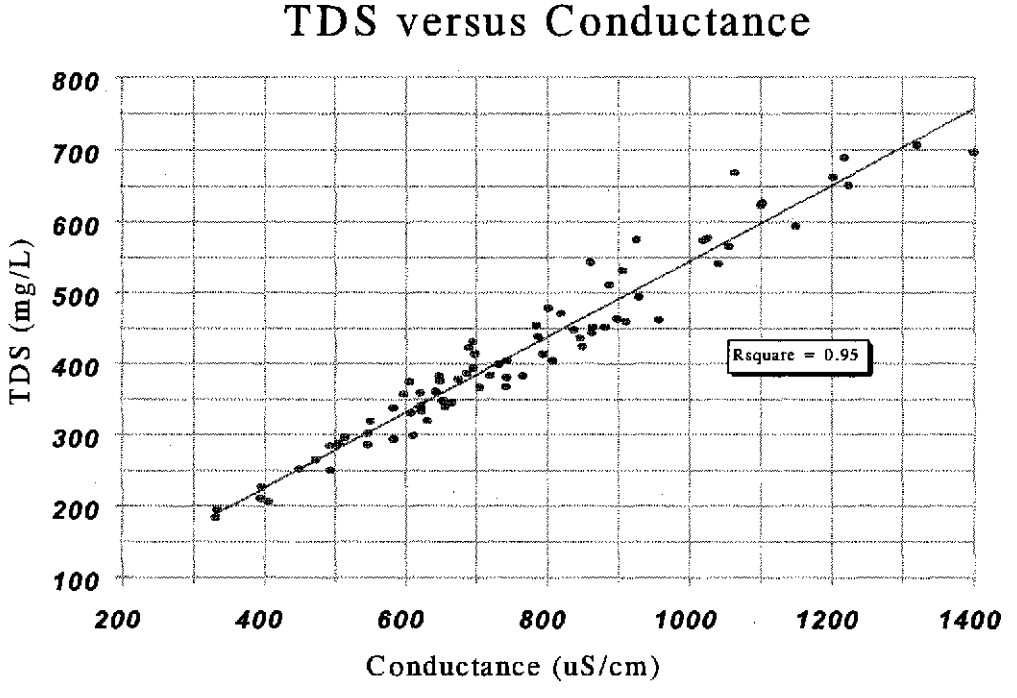


Figure 23. Linear relationship of measured TDS (mg/L) to measured conductance (μS/cm). Goodness of fit represented by r^2, which was calculated by regression analysis.

SUMMARY AND CONCLUSIONS

A total of 77 wells, all of which were completed in the Mississippi Alluvial Aquifer, were sampled between July 29 and September 23, 1996, in areas within and surrounding Jefferson, Phillips and Desha Counties. Water quality analyses reveal the water to be of very good quality with the exception of high iron concentrations, which ranged from 0.75 to 70.5 mg/L in all of the samples. Areas of elevated chloride were noted in portions of Desha and Jefferson Counties, although all chloride concentrations were below the secondary MCL of 250 mg/L for chloride. Areas of elevated chloride concentrations in Desha County are similar to those first documented over 47 years ago in this area.

Pesticides were detected at 24 of the 77 sites. Pesticide concentrations ranged from 0.007 to 0.609 μg/L and were below EPA-established MCLs and HALs for all of the detected pesticides. Bentazon was the most frequently-detected pesticide and was detected at 14 of the 24 sites with pesticide detections. The high solubility of bentazon apparently increases the potential for migration to the ground-water table.

Comparisons of pesticides detected in ground water and those detected in surface water revealed two interesting phenomena. First, high-solubility, low-adsorption pesticides were frequently detected in ground water but not in surface water. Secondly, low-solubility, highly sorptive pesticides were detected with a high frequency in surface water, whereas there were no detections in any of the ground water samples. Medium solubility and medium adsorption pesticides were found in both surface and ground waters. Transport of highly sorptive pesticides to surface water is facilitated by movement with eroded sediment, and unfiltered surface water samples commonly revealed positive detections for these pesticides. The absence of detections of highly soluble pesticides in surface water may be explained by rapid subsurface infiltration of the pesticides during the early stages of a rainfall event, leaving little available for transport by runoff water, and by the greater suseptability of pesticides in surface water to photolysis.

Comparison of the pesticide analyses for the present study with analyses performed by both the AWRC and the USGS demonstrate a wide variation of the types of pesticides detected and the frequency (percentage) of overall detections. All three agencies are currently engaged in a series of meetings, which aim to standardize, where possible, a uniform list of pesticides, analytical techniques and reporting criteria. These efforts represent a commitment by all agencies to gather and report data, which can be compared on a state-wide basis.

Precision of water quality data was analyzed using various ratios involving TDS, conductance, total cations (meq/L) and total anions (meq/L). Overall precision was very good for the data, and efforts associated with the QA/QC process have resulted in the laboratory adopting the procedure for analyses checks prior to releasing the data to Department personnel.

REFERENCES

American Public Health Association. 1992. *Standard Methods for the Examination of Water and Wastewater, 18th Edition.* A.E. Greenberg, L.S. Clesceri, and A.D. Eaton, editors.

Bedinger, M.S. and Reed, J.E. 1961. *Geology and Ground-Water Resources of Desha and Lincoln Counties, Arkansas.* Arkansas Geological and Conservation Commission, Little Rock, Water Resources Circular No. 6. 129p.

Boswell, E.H., Cushing E.M. and Hosman R.L. 1968. *Quaternary Aquifers in the Mississippi Embayment.* U.S. Geological Survey, Little Rock, Geological Survey Professional Paper 448-E. 15p.

Broom, M.E. and Lyford, F.P. 1981. *Alluvial Aquifer of the Cache and St. Francis River Basins, Northeastern Arkansas.* U.S. Geological Survey, Little Rock, Open File Report 81-476. 48p.

Gonthier, G.J. and Mahon, G.L. 1994. *Thickness of the Mississippi River Valley Confining Unit, Eastern Arkansas.* U.S. Geological Survey, Little Rock, Water Resources Investigations Report 92-4121, 4 maps.

Hem, J.D. 1989. *Study and Interpretation of the Chemical Characteristics of Natural Water.* Third Edition - U.S. Geological Survey Water-Supply Paper 2254. 263p.

Johnson, D.R. and Meyers, H. 1997. *Arkansas Cotton Pesticide Use Survey.* Arkansas Cooperative Ext. Service, Little Rock, In Draft.

Klein, H., Baker, R.C., and Billingsley, G.A. 1950. *Ground-Water Resources of Jefferson County, Arkansas.* U.S. Geological Survey, Little Rock, Research Series #19. 43p.

Nichols, T.W., Vendrell, P.F. and Steele, K.F. 1993. *Completion Report: Arkansas State Pesticides in Ground Water Monitoring Project.* Arkansas Water Resources Center, Fayetteville, Miscellaneous Report No. 136. 50p.

Nichols, T.W., Vendrell, P.F., Steele, K.F., Scott, H.D. and Armstrong, C. 1995. *Completion Report: Arkansas State Pesticides in Ground Water Monitoring Project - Phase IV: Eastern Arkansas.* Arkansas Water Resources Center, Fayetteville, Pub. # MSC-202. 74p.

Nichols, T.W., Vendrell, P.F., Steele, K.F., Scott, H.D. and Armstrong, C. 1996. *Completion Report: Arkansas State Pesticides in Ground Water Monitoring Project - Phase V: Vulnerable Areas in Jackson, Monroe, Lawrence and Lonoke Counties.* Arkansas Water Resources Center, Fayetteville, Pub. # MSC-199. 100p.

Spradley, J.P. 1991. *Arkansas Soybean Pesticide Use Survey.* Arkansas Cooperative Ext. Service, Little Rock, ETB 206. 27p.

Spradley, J.P. 1992. *Arkansas Rice Pesticide Use Survey.* Arkansas Cooperative Ext. Service, Little Rock, ETB 251. 44p.

Steele, K.F., Clayton, W.R., Nichols, T.W. and Vendrell, P.F. 1993. *Completion Report: Pesticide and Nitrate Monitoring Results for Craighead, Mississippi, and Poinsett Counties, Arkansas - Phase II.* Arkansas Water Resources Center, Fayetteville, Pub. # MSC-200. 27p.

Steele, K.F., Hill, S.S., Nichols, T.W., Scott, D.H., Vendrell, P.F. and Lin, H.S. 1994. *Completion Report: Ground Water Monitoring Project for Arkansas, Phase III.* Arkansas Water Resources Center, Fayetteville, Pub. # MSC-197. 59p.

U.S. Environmental Protection Agency. 1983. *Food and Drug Administration, Environmental Fate Branch Surveillance index Profile: Prometryn.* Hazard Evaluation Division, Washington, DC.

_____ 1986. *Pesticides in Ground Water: Background Document.* Office of Ground Water Protection (WH-550G). Washington, DC.

_____ 1987. *Guidance for the Reregistration of Pesticide Products Containing Prometryn as the Active Ingredient.* Washington, DC.

_____ 1992a. *Appendix A. Review, Approval and Evaluation of State Management Plans.* Washington, DC.

_____ 1992b. *Appendix B. Assessment, Prevention Monitoring, and Response Components of State Management Plans.* Washington, DC.

_____ 1996. *Drinking Water Regulations and Health Advisories.* Office of Water. Washington, DC.

Wauchope, R.D. 1988. *Pesticides Properties Data Base. Version 1.0.* USDA SCS/ARS, Tifton, Georgia.

Wauchope, R.D. 1996. *Personal Communication.* SCS/ARS, Tifton, Georgia.

Westerfield, P.W. 1977. *Well Records, Water-level Measurements, Logs of Test Holes, and Chemical Analyses of Ground Water in the Cache River Alluvial Aquifer-Stream System, Northeast Arkansas, 1946-76.* U.S. Geological Survey, Little Rock, Open-File Report 77-402. 166p.

Westerfield, P.W. and Baxter C.R. 1990. *Ground-Water Levels in the Alluvial Aquifer in Eastern Arkansas.* U.S. Geological Survey, Little Rock, Open-File Report 90-558. 35p.

Westerfield, P.W. and Touschner, S.T. 1993. *Ground-Water Levels in the Alluvial Aquifer in Eastern Arkansas, 1992.* U.S. Geological Survey, Little Rock, Open-File Report 93-96. 25p.

APPENDIX I

Water Quality Data

Station_ID	Date	pH	Temp Fahrenheit	Latitude	Longitude	Alkalinity mg/L CaCO3	Conductivity umhos/cm	Fluoride ug/L	Cd ug/L	Cr ug/L	Pb ug/L	As ug/L	Se ug/L	Al ug/L	Cu ug/L
NSGWAR01	960729	6.87	64.6	34 23 15.3	91 39 30.9	208	610	0.32	<.5	<1	<2	<5.0	<5.0	54.2	<2
NSGWAR02	960729	6.91	64.7	34 22 10.8	91 38 10.5	172	546	0.27	<.5	<1	<2	<5.0	<5.0	28.5	<2
NSGWAR03	960729	6.94	64.8	34 24 49.4	91 41 01.0	203	720	0.28	<.5	<1	<2	11.15	<5.0	52.9	<2
NSGWJF01	960729	6.88	64.7	34 24 39.7	91 48 17.0	245	630	0.27	<.5	<1	<2	11.32	<5.0	17.7	<2
NSGWJF02	960805	6.81	64.9	34 28 30.7	91 43 39.7	276	1101	0.21	<.5	<1	<2	<5.0	<5.0	<16	3
NSGWJF03	960805	7	64.2	34 23 44.5	91 44 01.4	249	808	0.27	<.5	<1	<2	9.65	<5.0	<16	<2
NSGWJF04	960805	6.92	64.7	34 14 26.8	91 48 47.0	340	1150	0.25	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF05	960805	6.81	65.2	34 06 05.8	91 48 27.6	297	1400	0.27	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF07	960805	7.07	65.4	34 08 13.8	91 49 45.7	443	1040	0.32	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWLN01	960805	7.03	64.5	34 04 20.0	91 42 23.5	233	656	0.27	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWLN02	960805	6.88	64.1	34 07 36.4	91 43 03.7	297	794	0.21	<.5	<1	<2	6.83	<5.0	<16	<2
NSGWLN03	960805	6.95	64.8	34 09 06.0	91 43 18.3	389	957	0.21	<.5	<1	<2	5.79	<5.0	<16	4.2
NSGWJF06	960729	7.05	64.6	34 06 28.0	91 50 06.4	235	882	0.27	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF08	960812	6.75	65.2	34 10 02.2	91 58 26.6	135	334	0.22	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF09	960812	6.96	64.5	34 07 37.9	91 57 16.7	200	450	0.33	<.5	<1	<2	5.43	<5.0	<16	<2
NSGWJF10	960812	6.89	65.3	34 17 14.8	91 58 29.8	314	741	0.31	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF11	960812	6.81	64.9	34 17 14.5	91 48 20.9	294	705	0.26	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF12	960812	7.02	65.5	34 11 16.7	91 42 32.3	409	863	0.25	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF13	960812	6.87	65.3	34 10 06.9	91 36 15.4	285	743	0.31	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF14	960813	6.76	64.9	34 24 14.0	91 54 54.1	166	494	0.15	<.5	<1	<2	14.34	<5.0	<16	3.6
NSGWJF15	960813	6.65	64.7	34 22 37.8	91 55 47.7	157	583	0.13	<.5	<1	<2	8.25	<5.0	<16	3.1
NSGWJF16	960813	6.97	65	34 14 01.9	91 42 07.6	305	652	0.3	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF17	960813	7.15	64.8	34 17 48.3	91 50 07.3	196	546	0.22	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWJF18	960813	7.15	64.9	34 26 50.6	91 51 29.4	305	911	0.24	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWLN04	960819	6.8	65.9	34 00 16.2	91 26 42.0	348	846	0.27	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWLN05	960819	6.83	66.2	34 00 30.7	91 30 00.0	295	1224	0.25	<.5	<1	<2	<5.0	<5.0	<16	65.3
NSGWLN06	960819	7.17	65.8	34 03 36.2	91 30 53.6	437	898	0.25	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWDE01	960819	6.93	66.4	33 53 49.4	91 27 55.9	327	929	0.3	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWDE02	960819	6.99	65.6	33 54 28.6	91 23 23.3	312	1218	0.25	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWDE03	960819	6.94	65.5	33 52 34.9	91 17 19.1	370	1025	0.2	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWDE04	960819	6.98	65.3	33 47 15.4	91 15 18.8	346	1056	0.17	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWDE05	960819	6.99	65.9	33 49 44.4	91 18 06.4	335	1202	0.22	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWDE06	960819	6.89	64.5	33 50 35.9	91 25 20.6	307	1320	0.25	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWDE07	960819	6.78	65.7	33 55 48.2	91 30 26.2	247	838	0.2	<.5	<1	<2	<5.0	<5.0	<16	<2
NSGWLN07	960826	6.63	66.3	33 49 19.8	91 35 12.6	147	395	0.14	0.08	0.56	<.4	<5.0	<5.0	<16	<2
NSGWDE08	960826	6.67	65.3	33 49 02.9	91 31 49.5	151	406	0.23	<.04	0.41	<.4	<5.0	<5.0	<16	<2
NSGWDE09	960826	6.98	65.1	33 50 29.3	91 29 58.4	300	765	0.21	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE10	960826	7	74.5	33 45 57.1	91 25 39.0	175	505	0.2	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE11	960826	6.89	74.2	33 45 43.4	91 26 06.3	229	787	0.17	<.04	<.4	<.4	<5.0	<5.0	<16	<2

Station_ID	Date	pH	Temp Fahrenheit	Latitude	Longitude	Alkalinity mg/L CaCO3	Conductivity umhos/cm	Fluoride ug/L	Cd ug/L	Cr ug/L	Pb ug/L	As ug/L	Se ug/L	Al ug/L	Cu ug/L
NSGWDE12	960826	6.92	65.3	33 44 17.6	91 23 46.2	210	607	0.22	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE13	960826	6.78	64.7	33 42 15.6	91 25 42.7	263	655	0.21	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE14	960826	6.89	64.6	33 52 38.2	91 32 08.9	259	865	0.2	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE15	960902	6.74	65.5	33 47 39.0	91 27 41.1	300	732	0.28	<.04	<.4	<.4	<5.0	<5.0	<16	2.9
NSGWDR01	960902	7.11	65.7	33 45 11.4	91 33 11.4	124	332	0.33	<.04	<.4	<.4	<5.0	<5.0	<16	55.6
NSGWJF19	960903	7.28	64	34 20 58.2	91 46 27.2	274	687	0.29	<.04	<.4	<.4	5.08	<5.0	<16	<2
NSGWDE16	960903	7.34	64.9	33 46 52.1	91 23 41.5	236	622	0.24	<.04	<.4	<.4	<5.0	<5.0	<16	2.7
NSGWDE17	960903	6.92	65	33 47 07.9	91 24 28.1	184	514	0.17	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE18	960903	7.23	65.1	33 56 17.4	91 22 15.1	224	473	0.15	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE19	960903	6.93	65	33 48 14.1	91 19 15.6	310	887	0.2	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWDE20	960903	7.59	64.8	33 47 34.4	91 19 16.4	322	906	0.25	<.04	<.4	<.4	<5.0	<5.0	<16	2.1
NSGWDE21	960903	7.41	64.5	33 49 38.9	91 19 10.4	261	605	0.23	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH01	960909	6.84	64.3	34 30 00.2	90 53 17.4	285	583	0.27	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH02	960909	7.51	63.9	34 33 06.1	90 53 18.9	230	550	0.29	<.04	<.4	<.4	6.17	<5.0	<16	<2
NSGWPH03	960909	7.71	63.8	34 36 39.3	90 58 34.0	292	622	0.29	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH04	960909	7.19	66.8	34 24 42.6	90 39 30.1	376	743	0.27	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH05	960910	7.42	65	34 30 31.2	90 58 40.2	308	785	0.29	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH06	960910	7.38	71.2	34 28 10	90 58 08	300	665	0.28	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH07	960910	7.12	66.6	34 25 42	90 57 31	254	801	0.26	<.04	<.4	<.4	<5.0	<5.0	<16	2.3
NSGWPH08	960910	7.54	65.6	34 27 34	90 47 09	310	649	0.23	<.04	<.4	<.4	<5.0	<5.0	<16	2.5
NSGWPH09	960910	7.15	68.4	34 31 18	90 42 07	464	1020	0.27	<.04	<.4	<.4	9.85	<5.0	<16	2.3
NSGWPH10	960917	6.63	63.5	34 21 27.9	90 47 20.5	322	674	0.25	<.04	<.4	<.4	9.5	<5.0	20	2.5
NSGWPH11	960917	7.32	63.2	34 21 29.1	90 49 16.1	354	861	0.26	<.04	<.4	<.4	5	<5.0	<16	2.7
NSGWPH12	960917	7.25	62.3	34 23 57.1	90 50 25.1	242	493	0.24	<.04	<.4	<.4	<5.0	<5.0	<16	4.8
NSGWPH13	960917	7.81	63.9	34 20 12.6	90 58 34.3	250	597	0.18	<.04	<.4	<.4	<5.0	<5.0	71	2.2
NSGWPH14	960917	7.72	63.9	34 18 39.9	90 59 56.5	282	695	0.12	<.04	0.73	<.4	<5.0	<5.0	41	2.6
NSGWPH15	960917	7.26	64.8	34 14 49.7	90 54 36.7	614	1103	0.23	<.04	<.4	<.4	14.9	<5.0	<16	3.9
NSGWPH16	960917	7.57	64.2	34 17 17	90 55 15	416	1064	0.23	<.04	<.4	<.4	5.1	<5.0	<16	2.5
NSGWPH17	960917	7.34	70.1	34 15 24	90 51 28	402	849	0.18	<.04	<.4	<.4	31.1	<5.0	49	3.5
NSGWPH18	960917	7.65	63.8	34 25 38	90 43 39	322	643	0.31	<.04	<.4	<.4	<5.0	<5.0	<16	2.7
NSGWPH19	960917	7.64	67.5	34 25 24	90 46 37	194	397	0.25	<.04	<.4	<.4	7.9	<5.0	16.7	10.9
NSGWPH20	960923	7.55	63.5	34 30 55.2	90 38 29.3	358	647	0.32	<.04	<.4	<.4	16.8	<5.0	<16	10.6
NSGWPH21	960923	7.57	63.7	34 29 36.3	90 39 26.0	332	620	0.31	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH22	960923	7.55	64	34 27 33.7	90 37 15.2	436	819	0.29	<.04	<.4	<.4	<5.0	<5.0	<16	2
NSGWPH23	960923	7.47	63.9	34 26 56.1	90 36 22.1	376	696	0.29	<.04	<.4	<.4	5	<5.0	<16	<2
NSGWPH24	960923	7.44	63.8	34 15 25.7	91 02 04.2	376	698	0.18	<.04	0.9	<.4	<5.0	<5.0	<16	<2
NSGWPH25	960923	7.72	63.6	34 13 25.9	90 59 58.7	328	689	0.2	<.04	<.4	<.4	<5.0	<5.0	<16	<2
NSGWPH26	960923	7.64	64.1	34 07 28	91 01 59	488	926	0.18	<.04	<.4	<.4	<5.0	<5.0	<16	39.8

Station_ID	Ca mg/L	Fe ug/L	Fe mg/L	K mg/L	Mg mg/L	Mn ug/L	Na mg/L	Zn ug/L	Hardness mg/L CaCO3	Ni ug/L	B ug/L	Be ug/L	Ba ug/L	Co ug/L
NSGWAR01	67.7	11900	11.9	0.6	6.1	335	22.7	<2.0	194	<5	31.1	5.6	271.8	<3
NSGWAR02	57.8	10600	10.6	0.6	7	672	22.7	2.9	173	<5	32.7	5.1	238.5	<3
NSGWAR03	87.4	10700	10.7	0.5	12.6	802	19.4	4.4	270	<5	33.2	5.1	313.6	<3
NSGWJF01	83.5	5060	5.06	0.4	13.6	694	18.2	<2.0	265	<5	43.6	2.6	480.1	<3
NSGWJF02	118	17900	17.9	1.4	17	820	37.1	<2.0	365	<5	?136	11.9	444.8	<3
NSGWJF03	81.7	5120	5.12	1.2	17.7	482	35	<2.0	277	<5	?137	3.6	565.8	<3
NSGWJF04	114	10400	10.4	1.5	22.1	339	71.3	<2.0	376	<5	?138	7.2	585.1	<3
NSGWJF05	132	4690	4.69	1.3	33.1	1740	64	2.7	466	<5	?139	3.5	625.8	<3
NSGWJF07	111	6430	6.43	1.2	26.3	1060	50.6	<2.0	385	<5	?141	4.3	492.8	<3
NSGWLN01	70.5	7100	7.1	1	11.5	237	28.2	<2.0	223	<5	?142	4.7	337	<3
NSGWLN02	94.5	12200	12.2	1.2	9	605	29	<2.0	273	<5	?143	7.9	361.7	<3
NSGWLN03	115	22300	22.3	1.2	5.6	1500	26.8	<2.0	310	<5	?144	14.2	499.6	<3
NSGWJF06	83.7	5380	5.38	0.9	19	562	42.8	<2.0	287	<5	?140	3.7	346.8	<3
NSGWJF08	30.2	17900	17.9	1	0.03	479	14.7	<2.0	50	<5	33.1	6.4	160	<3
NSGWJF09	37	15400	15.4	1.7	0.5	616	22.6	3.5	94	<5	72	8.5	292.1	<3
NSGWJF10	96.2	6830	6.83	0.8	14.4	402	16.4	<2.0	300	<5	49.3	2.9	368.9	<3
NSGWJF11	84.3	9270	9.27	0.8	10.6	1080	28.1	2.4	254	<5	55.5	3.8	376	<3
NSGWJF12	128	9260	9.26	0.7	15	1750	14.6	<2.0	381	<5	80	5.7	362.6	<3
NSGWJF13	84	8240	8.24	0.5	21	1580	17.7	<2.0	296	<5	63	5.3	423.1	<3
NSGWJF14	48.7	45600	45.6	1.6	0.03	435	18.5	<2.0	26	<5	<3	15.1	400.1	<3
NSGWJF15	40.5	70500	70.5	2.2	0.03	725	19.1	<2.0	<	<5	<3	29.1	413.8	<3
NSGWJF16	99.3	12800	12.8	0.6	7.8	379	11.9	<2.0	280	<5	51.1	6.2	366.3	<3
NSGWJF17	70.6	8510	8.51	1.1	5.6	542	21	<2.0	199	<5	28.7	4.3	452.6	<3
NSGWJF18	112	18600	18.6	1.1	9.6	729	30.9	2.7	319	<5	46.9	9.5	546.2	<3
NSGWLN04	102	12900	12.9	0.8	8.5	1010	28.7	<2.0	289	<5	51.9	6.9	437.2	<3
NSGWLN05	105	12200	12.2	1.4	15.9	1640	78.4	3.1	328	<5	70	10.1	590.9	<3
NSGWLN06	113	10400	10.4	1	19.7	621	21.2	4.6	363	<5	55.3	5.8	401.4	<3
NSGWDE01	106	5370	5.37	0.8	21.6	720	29.3	<2.0	354	<5	44.2	3.1	553.3	<3
NSGWDE02	113	9120	9.12	1.3	25.2	649	72.3	<2.0	386	<5	43.6	5.1	517.4	<3
NSGWDE03	99.2	10000	10	1.5	20.7	603	62.7	<2.0	333	<5	42.3	5.6	342.1	<3
NSGWDE04	122	9850	9.85	2	18	736	35.9	<2.0	379	<5	39.5	5.3	467.5	<3
NSGWDE05	115	13400	13.4	2	20.6	1120	68.3	<2.0	372	<5	54.3	6.6	803.7	<3
NSGWDE06	127	10400	10.4	1.5	25.6	359	72.9	<2.0	423	<5	50.2	5.2	649.3	<3
NSGWDE07	83.4	14000	14	0.8	8.3	531	42.2	<2.0	242	<5	69	10.4	499.6	<3
NSGWLN07	38.9	26700	26.7	0.9	0.03	538	7.9	<2.0	50	<5	44.9	9.8	258.7	<3
NSGWDE08	42.4	18100	18.1	1	0.03	473	11.1	<2.0	91	<5	38.1	6.8	244.3	<3
NSGWDE09	83.3	16700	16.7	1.4	5.9	509	30.2	2.6	232	<5	48.5	6	485.7	<3
NSGWDE10	51.3	11600	11.6	1.2	3.6	566	28.3	2.4	143	<5	32	4.2	338.1	<3
NSGWDE11	79.9	12300	12.3	1.7	8.2	460	44.8	<2.0	233	<5	40.8	4.5	519.6	<3

Station_ID	Ca mg/L	Fe ug/L	Fe mg/L	K mg/L	Mg mg/L	Mn ug/L	Na mg/L	Zn ug/L	Hardness mg/L CaCO3	Ni ug/L	B ug/L	Be ug/L	Ba ug/L	Co ug/L
NSGWDE12	64.9	16300	16.3	0.8	3.9	1250	21.4	<2.0	178	<5	46.4	5.8	328.4	<3
NSGWDE13	75.7	15300	15.3	1.1	8	602	18.5	<2.0	222	<5	50.7	5.6	581.9	<3
NSGWDE14	89.6	1500	1.5	1.2	13	841	31.3	<2.0	277	<5	70	6.4	496.5	<3
NSGWDE15	82.6	12600	12.6	1.1	12.3	598	24.7	5	257	<5	46.7	4.6	571.4	<3
NSGWDR01	26.2	13700	13.7	0.9	0.03	294	20.6	2.3	54	<5	45.9	4.8	182.7	<3
NSGWJF19	80.7	7960	7.96	0.9	11.2	635	29.9	2.3	248	<5	31.9	2.8	457.5	<3
NSGWDE16	68.4	17700	17.7	1	0.1	992	25.8	11.5	171	<5	36.6	5.9	390.8	<3
NSGWDE17	50.4	12300	12.3	1.2	2.3	667	25.4	4.4	135	<5	31.5	4.2	389.6	<3
NSGWDE18	57.5	8800	8.8	0.9	5.9	372	16.2	5.1	168	<5	41.3	3.1	319.6	<3
NSGWDE19	105	9480	9.48	1.5	12.6	1090	34.8	<2.0	314	<5	50.2	3.2	659.2	<3
NSGWDE20	110	6050	6.05	1.3	16.7	1350	37.1	8.1	343	<5	46.5	2.3	777.9	<3
NSGWDE21	72.9	8300	8.3	0.9	10.9	1010	21.1	2.2	227	<5	31.4	3.2	377.7	<3
NSGWPH01	67.2	3370	3.37	0.6	24.7	237	12	2.3	270	<5	26.9	2.1	117.8	<3
NSGWPH02	57	753	0.753	0.5	25.3	834	16.8	3.6	247	<5	23.6	<2	74.1	<3
NSGWPH03	67.3	2860	2.86	0.5	25.7	295	19.9	5.6	274	<5	30.7	<2	91	<3
NSGWPH04	93.3	8850	8.85	1	25	543	8	142	336	<5	80	7	452.4	<3
NSGWPH05	86	2310	2.31	0.8	30.9	546	22.5	2.7	342	<5	17.8	<2	162.6	<3
NSGWPH06	72.4	6540	6.54	0.6	24	315	12.2	9.8	280	<5	24.6	3.8	110.8	<3
NSGWPH07	97.9	3810	3.81	0.9	35.1	757	17.6	188	389	<5	24.6	2.4	210.6	<3
NSGWPH08	83.1	3450	3.45	1.4	22.3	300	15.7	3.5	299	<5	27.9	2.3	711.2	<3
NSGWPH09	121	5970	5.97	1.1	50.5	302	13.3	6.5	510	<5	21.4	3.5	271.5	<3
NSGWPH10	82.8	7870	7.87	2.3	20.4	277	14.1	<2.0	291	<5	16.8	5.2	806.6	<3
NSGWPH11	105	8720	8.72	1.9	25.1	488	28.4	<2.0	366	<5	16.8	5.8	625.5	<3
NSGWPH12	62.5	6790	6.79	1.5	13.5	327	9.8	<2.0	212	<5	17.5	4.8	645.9	<3
NSGWPH13	71.5	1870	1.87	1.4	18.8	371	22.5	<2.0	256	<5	14.3	<2	361.9	<3
NSGWPH14	92.8	1420	1.42	1.3	20.3	363	19.1	9.9	315	<5	11.8	<2	601.5	<3
NSGWPH15	138	21900	21.9	2.9	29.4	1300	16.7	<2.0	466	<5	80.5	17.5	953.2	<3
NSGWPH16	131	7530	7.53	2	35.3	402	37.9	<2.0	472	<5	23.2	5.3	332.4	<3
NSGWPH17	109	22200	22.2	2.6	9.7	1050	7.8	<2.0	312	<5	43.5	13.8	482.5	<3
NSGWPH18	76.4	20500	20.5	3.1	4.5	578	21.6	<2.0	209	<5	22.4	12.4	696.9	<3
NSGWPH19	48.8	4560	4.56	2.2	11.6	209	6	3.6	170	<5	17	2.9	225.3	<3
NSGWPH20	86.8	2050	2.05	1	32	746	8.5	2.2	349	<5	13.2	<2	135.7	<3
NSGWPH21	84.6	2860	2.86	1.1	27.8	252	7.7	<2.0	326	<5	15.1	2.3	330.8	<3
NSGWPH22	126	10300	10.3	3.4	25.2	801	4.2	<2.0	418	<5	26.7	7.4	472.9	<3
NSGWPH23	110	12800	12.8	2	16.3	698	3.6	<2.0	342	<5	40.9	8.7	345.1	<3
NSGWPH24	106	3800	3.8	1.8	24	410	13.9	<2.0	364	<5	19.5	2.7	599.7	<3
NSGWPH25	110	5110	5.11	1.2	22.1	553	10	<2.0	366	<5	16.8	3.4	467.5	<3
NSGWPH26	145	2860	2.86	1.4	33.5	474	23.6	17.8	500	<5	24.7	2.1	264.1	<3

Station_ID	V ug/L	SiO2 mg/L	NH3-N mg/L	CL mg/L	NO3-N mg/L	O-PHOS mg/L	T-PHOS mg/L	SO4 mg/L	TOC mg/L	TSS mg/L	TDS mg/L	HCO3 mg/L
NSGWAR01	<5	23.9	0.409	32.799	0.23	?<0.03	?0.775	16.7	2.4	17.5	299	253.76
NSGWAR02	<5	28.6	0.308	23.386	0.217	?<0.03	?0.592	34.5	2	9.5	286	209.84
NSGWAR03	<5	28.5	0.422	41.426	0.18	?<0.03	?0.377	52.8	4.1	5.5	384	247.66
NSGWJF01	<5	18.7	0.249	21.152	0.478	?<0.03	?0.346	15.7	2.1	2.5	320	298.9
NSGWJF02	<5	28	0.454	42.117	0.165	0.051	0.558	174	3	17	624	336.72
NSGWJF03	<5	20.8	0.186	58.061	0.149	<0.03	0.315	32.2	2.4	7	405	303.78
NSGWJF04	<5	24	0.351	30.388	0.144	<0.03	0.994	41.9	2.5	25	594	414.8
NSGWJF05	<5	29	0.249	184	0.269	0.085	0.426	83.7	2	2.5	697	362.34
NSGWJF07	<5	29.4	0.269	26.024	0.145	<0.03	0.649	29.8	2.4	11	541	540.46
NSGWLN01	<5	27.7	0.219	29.276	0.139	<0.03	0.69	25.6	2.3	9	339	284.26
NSGWLN02	<5	25.5	0.219	37.2	0.149	<0.03	0.994	23.9	2.2	12.5	414	362.34
NSGWLN03	<5	23.2	0.747	31.472	0.141	<0.03	0.588	4.9	3.1	32	462	474.58
NSGWJF06	<5	33.2	0.155	92.501	0.146	0.03	0.548	38.7	2.4	6	452	286.7
NSGWJF08	<5	37.4	0.457	11.943	0.082	?0.041	0.905	1.9	2.2	12.5	195	164.7
NSGWJF09	<5	51	0.331	8.074	0.039	?<0.03	0.864	1.9	2.7	41.5	252	244
NSGWJF10	<5	25.1	0.43	14.949	0.046	?<0.03	0.682	7.5	2	13.5	368	383.08
NSGWJF11	<5	27.1	0.353	26.898	0.029	?<0.03	0.571	15.6	2.3	34	367	358.68
NSGWJF12	<5	25.1	0.239	9.183	<0.02	?<0.03	0.783	<1.0	2.9	24.5	444	498.98
NSGWJF13	<5	28.3	0.491	37.67	0.03	?<0.03	0.935	10.5	2.8	17.5	381	347.7
NSGWJF14	<5	35.6	0.981	27.471	0.059	0.07	0.571	7.5	4.1	30.5	251	202.52
NSGWJF15	<5	26.7	1.487	51.279	0.06	0.12	0.662	22.2	3.4	25.5	294	191.54
NSGWJF16	<5	24.4	0.249	11.272	0.034	<0.03	0.53	<1.0	4.5	11.5	348	372.1
NSGWJF17	<5	30.3	0.328	25.293	0.037	<0.03	0.672	27.1	1.9	7	302	239.12
NSGWJF18	<5	24.9	0.631	78.395	0.031	<0.03	0.783	17.9	3.5	36	460	372.1
NSGWLN04	<5	27.9	0.631	43.35	0.042	?0.076	?1.09	6.9	4.6	29	436	424.56
NSGWLN05	<5	26.7	0.534	133	0.048	?0.050	?0.488	80.7	2.9	21	652	359.9
NSGWLN06	<5	23.2	0.491	19.138	0.047	?0.043	?0.763	9.2	3.1	23.5	464	533.14
NSGWDE01	<5	26.4	0.283	64.653	0.044	?<0.03	?0.468	30.6	2.2	8	494	398.94
NSGWDE02	<5	29.4	0.687	126	0.029	?<0.03	?0.834	145.2	2.3	29	690	380.64
NSGWDE03	<5	31.2	0.75	58.77	0.028	?<0.03	?0.763	67.1	2.4	15	578	451.4
NSGWDE04	<5	33.8	0.708	94.045	0.032	?0.030	?0.580	46.8	6.1	22.5	566	422.12
NSGWDE05	<5	38.5	0.566	111.432	<0.02	?<0.03	?0.814	87.3	3.5	29	663	408.7
NSGWDE06	<5	23.6	0.479	181	0.022	?<0.03	?0.438	87.3	2.1	19.5	707	374.54
NSGWDE07	<5	26	0.646	68.931	0.048	?<0.03	?0.885	54.1	2.3	33.5	448	301.34
NSGWLN07	<5	37.4	0.476	12.153	0.063	0.047	1.019	3.3	7.3	28.5	211	179.34
NSGWDE08	<5	31.2	0.255	10.743	0.059	<0.03	1.019	4.9	6.4	35.5	207	184.22
NSGWDE09	<5	26	0.643	30.693	0.052	<0.03	0.949	9.1	2.8	30	383	366
NSGWDE10	<5	30.8	0.379	29.52	0.055	<0.03	0.398	26.5	2.1	13	288	213.5
NSGWDE11	<5	26.4	0.492	87.163	0.052	<0.03	0.307	30.9	2.4	19	439	279.38

Station_ID	V ug/L	SiO2 mg/L	NH3-N mg/L	CL mg/L	NO3-N mg/L	O-PHOS mg/L	T-PHOS mg/L	SO4 mg/L	TOC mg/L	TSS mg/L	TDS mg/L	HCO3 mg/L
NSGWDE12	<5	31.1	0.574	20.366	0.054	<0.03	0.889	43.5	2.2	14.5	331	256.2
NSGWDE13	<5	28.8	0.696	28.343	0.049	<0.03	0.688	16	2.8	24	348	320.86
NSGWDE14	<5	29.5	0.314	73.789	0.048	<0.03	0.688	38.5	2.2	39	452	315.98
NSGWDE15	<5	30.8	0.792	21.113	0.043	0.059	0.715	37.7	NA	37.5	399	366
NSGWDR01	<5	31.2	0.392	12.143	0.043	0.095	1.101	10.8	NA	16.5	184	151.28
NSGWJF19	<5	21.7	0.303	31.375	0.164	<0.03	0.552	31	NA	9	387	334.28
NSGWDE16	<5	30.1	0.36	30.628	0.036	<0.03	0.532	17.4	NA	32	333	287.92
NSGWDE17	<5	29.5	0.402	30.96	0.039	<0.03	0.176	22.3	NA	6.5	296	224.48
NSGWDE18	<5	26.4	0.515	9.221	0.036	<0.03	0.43	2.1	NA	7	265	273.28
NSGWDE19	<5	36.7	0.538	81.607	0.034	<0.03	0.633	23.2	NA	21	512	378.2
NSGWDE20	<5	36	0.467	78.386	0.025	<0.03	0.45	29.3	NA	8.5	532	392.84
NSGWDE21	<5	41.1	0.351	13.915	0.032	0.05	0.745	27.6	NA	6	375	318.42
NSGWPH01	<5	38.8	0.33	6.091	0.06	0.047	0.309	14.4	1.6	4.5	338	347.7
NSGWPH02	<5	34	0.296	13.282	0.056	0.067	0.239	22	1.4	8	319	280.6
NSGWPH03	<5	32	0.397	17.162	0.098	0.033	0.418	6.6	1.8	29.5	341	356.24
NSGWPH04	<5	34.6	0.219	3.025	0.051	<0.03	0.745	7.8	2.6	27.5	404	458.72
NSGWPH05	<5	37.9	0.724	21.228	0.05	0.064	0.428	66.5	2.5	4.5	455	375.76
NSGWPH06	<5	36.1	0.522	5.907	0.079	0.078	0.309	20.1	2	9	345	366
NSGWPH07	<5	35.4	0.606	8.649	0.068	0.046	0.249	73.5	2.5	22.5	479	309.88
NSGWPH08	<5	37.2	0.269	13.44	0.304	0.037	0.199	22.9	2.7	5	376	378.2
NSGWPH09	<5	32.6	1.014	4.828	0.05	<0.03	0.835	101.2	2.3	11.5	575	566.08
NSGWPH10	<5	38.62	0.273	6.239	0.024	0.045	0.586	18.1	2.9	15	379	392.84
NSGWPH11	<5	34.57	0.158	13.105	<0.02	0.137	0.344	112.4	1.6	16	544	431.88
NSGWPH12	<5	34.61	0.09	6.198	0.025	<0.03	0.435	13.6	1.7	7.5	285	295.24
NSGWPH13	<5	36.58	0.078	6.654	0.023	<0.03	0.223	51.9	1.3	2.5	358	305
NSGWPH14	<5	33.31	<0.05	8.574	0.02	<0.03	0.192	79.2	1.1	1.5	432	344.04
NSGWPH15	<5	35.36	1.256	4.239	0.031	<0.03	1.05	5.8	5	24	627	749.08
NSGWPH16	<5	35.43	0.165	25.682	<0.02	0.047	0.142	135.2	1.6	16.5	669	507.52
NSGWPH17	<5	36.42	1.271	4.928	0.035	<0.03	1.212	5.8	3.5	43.5	424	490.44
NSGWPH18	<5	42.59	0.506	8.194	0.023	<0.03	0.949	7.2	3.4	28	361	392.84
NSGWPH19	<5	41.37	0.267	2.673	0.025	0.082	0.687	9.9	1.8	5.5	227	236.68
NSGWPH20	<5	28.02	0.337	5.298	0.045	0.048	0.323	8	1.2	15	383	436.76
NSGWPH21	<5	33.69	0.264	4.862	0.034	0.042	0.353	5.2	1.1	28	359	405.04
NSGWPH22	<5	31.16	0.382	8.719	0.175	<0.03	0.829	11.7	2.1	27	471	531.92
NSGWPH23	<5	35.93	0.383	4.062	0.026	<0.03	1.224	2.1	2.4	34	395	458.72
NSGWPH24	<5	35.79	0.174	3.6	0.028	<0.03	0.191	12.9	1.7	7	414	458.72
NSGWPH25	<5	37.41	0.069	3.261	0.034	<0.03	0.171	58.7	1.3	14	423	400.16
NSGWPH26	<5	33.45	0.093	4.607	<0.02	<0.03	0.13	56	2.1	10.5	576	595.36

Station_ID	DCAA-Surr. % recovery	3-5-Dichlorobenzoic_Acid ug/L	Dicamba ug/L	Dichlorprop ug/L	2-4-D ug/L	Pentachlorophenol ug/L	Silvex ug/L	2-4-5-T ug/L	Dinoseb ug/L	2-4-DB ug/L	Bentazon ug/L	Picloram ug/L	Acifluorfen ug/L
NSGWAR01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NSGWAR02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NSGWAR03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NSGWJF01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NSGWJF02	75.572	<.06344	<.02733	<.04198	<.03322	<.05123	<.03553	<.04190	<.07826	<.04042	<.04057	<.07155	<.11140
NSGWJF03	69.592	<.03095	<.02360	<.04376	<.01863	<.06733	<.02466	<.02765	<.10242	<.03849	<.05668	<.04966	<.13955
NSGWJF04	54.593	<.01924	<.02130	<.02615	<.01284	<.01976	<.01749	<.03562	<.07256	<.02356	0.03757	<.03522	<.07621
NSGWJF05	69.204	<.02381	<.03241	<.03560	<.03935	<.03633	<.03548	<.02836	<.09476	<.05306	<.03464	<.07146	<.11963
NSGWJF07	54.301	<.02040	<.02350	<.02896	<.01757	<.02864	<.03087	<.03498	<.04860	<.01597	<.01676	<.06217	<.09287
NSGWLN01	81.01	<.02191	<.02671	<.06283	<.04497	<.06701	<.04927	<.04453	<.09731	<.04431	<.01704	<.09922	<.12389
NSGWLN02	70.933	<.02114	<.01095	<.04296	<.00964	<.03705	<.02999	<.02278	<.05871	<.02049	<.01532	<.06040	<.06589
NSGWLN03	75.603	<.06084	<.02867	<.06082	<.03792	<.03226	<.01632	<.03702	<.09730	<.04135	<.03331	<.03286	<.11849
NSGWJF06	68.581	<.01308	<.01909	<.02510	<.02131	<.02399	<0.4337	<.02162	<.06522	<.02509	<.03048	<.08734	<.05549
NSGWJF08	112.8	<.07448	<.04405	<.05502	<.03183	<.06640	<.04409	<.03110	<.05904	<.05437	<.02219	<.05428	<.12777
NSGWJF09	114.59	<.07715	<.06497	<.14500	<.11597	<.10908	<.08462	<.08413	<.14046	<.09299	<.04149	<.10418	<.24927
NSGWJF10	109.44	<.05113	<.05947	<.16395	<.04224	<.08318	<.05467	<.04222	<.11008	<.06977	<.02836	<.06730	<.10006
NSGWJF11	116.46	<.05209	<.03576	<.05933	<.02967	<.08423	<.06668	<.05183	<.09061	<.03008	<.02014	<.08209	<.12468
NSGWJF12	103.68	<.06261	<.04720	<.11705	<.07346	<.08272	<.03594	<.05331	<.07984	<.09795	<.02933	<.04424	<.17479
NSGWJF13	94.346	<.07292	<.02597	<.10493	<.06562	<.05603	<.06837	<.03552	<.09028	<.04726	<.04233	<.08417	<.17811
NSGWJF14	91.107	<.09749	<.07433	<.10068	<.05834	<.09535	<.07108	<.04850	<.19920	<.11275	<.03406	<.08751	<.13106
NSGWJF15	89.319	<.10312	<.07345	<.10926	<.03664	<.05278	<.03372	<.04714	<.21285	<.05865	<.02165	<.04152	<.11699
NSGWJF16	102.34	<.11594	<.06141	<.24325	<.08277	<.15678	<.08592	<.08811	<.17654	<.10445	<.06385	<.10577	<.23735
NSGWJF17	100.11	<.07672	<.09738	<.18561	<.12923	<.21861	<.08380	<.08185	<.22071	<.05143	<.03816	<.10316	<.15774
NSGWJF18	95.057	<.08947	<.08155	<.28376	<.03923	<.11564	<.07846	<.09458	<.21584	<.10144	<.09034	<.09660	<.34320
NSGWLN04	85.768	<.04474	<.02576	<.04024	<.06329	<.03769	<.04201	<.03165	<.05626	<.02580	<.02985	<.03453	<.07645
NSGWLN05	92.578	<.09242	<.06905	<.07183	<.03736	<.07721	<.04119	<.03659	<.10364	<.04878	<.02817	<.03386	<.39373
NSGWLN06	91.813	<.02980	<.04233	<.02970	<.03410	<.08888	<.02834	<.05379	<.07112	<.03250	<.01764	<.02329	<.06316
NSGWDE01	93.394	<.02089	<.01624	<.03579	<.02455	<.03693	<.03681	<.02025	<.05291	<.02864	<.01200	<.03025	<.03342
NSGWDE02	90.95	<.03303	<.02314	<.03717	<.02274	<.03267	<.03314	<.02333	<.08193	<.01749	0.03424	<.02724	<.07518
NSGWDE03	101.17	<.02865	<.03567	<.05704	<.02874	<.02853	<.03943	<.03075	<.08029	<.01783	<.03484	<.03241	<.07824
NSGWDE04	94.692	<.08478	<.08835	<.13278	<.06284	<.13225	<.04667	<.04891	<.21522	<.02641	<.05427	<.03835	<.18486
NSGWDE05	104.03	<.05666	<.03547	<.08199	<.02801	<.04829	<.06965	<.04128	<.05057	<.02221	<.01481	<.05725	<.11398
NSGWDE06	97.221	<.04102	<.02170	<.07172	<.04361	<.02427	<.03176	<.03855	<.10517	<.01711	0.07643	<.02611	<.07178
NSGWDE07	101.72	<.03641	<.02733	<.03698	<.03096	<.03541	<.03833	<.04345	<.05652	<.02121	0.06582	<.03151	<.08646
NSGWLN07	106.17	<.09458	<.09857	<.13667	<.12235	<.06191	<.10743	<.06118	<.10622	<.02588	<.03648	<.08626	<.13706
NSGWDE08	113.32	<.05404	<.03563	<.06004	<.07746	<.06083	<.05189	<.04979	<.07512	<.02221	<.03193	<.04166	<.25463
NSGWDE09	99.04	<.03797	<.01824	<.04856	<.04302	<.02870	<.03654	<.02886	<.14137	<.01277	<.02119	<.02934	<.12250
NSGWDE10	98.867	<.02988	<.01755	<.04398	<.02441	<.05702	0.23	<.02494	<.05431	<.01958	<.01905	<.02013	<.14919
NSGWDE11	107.86	<.01407	<.02995	<.03066	<.01110	<.03204	0.28485	<.01957	<.06385	<.01030	0.02051	<.01056	<.08258

Station_ID	DCAA-Surr. % recovery	3-5-Dichlorobenzoic_Acid ug/L	Dicamba ug/L	Dichlorprop ug/L	2-4-D ug/L	Pentachlorophenol ug/L	Silvex ug/L	2-4-5-T ug/L	Dinoseb ug/L	2-4-DB ug/L	Bentazon ug/L	Picloram ug/L	Acifluorfen ug/L
NSGWDE12	86.787	<.02909	<.02799	<.03745	<.03484	<.05466	<.04401	<.03181	<.06098	<.02947	<.01075	<.03534	<.14855
NSGWDE13	92.667	<.01885	<.03266	<.05005	<.02453	<.02523	<.02890	<.05476	<.08952	<.02527	<.01312	<.02320	<.10921
NSGWDE14	87.597	<.01276	<.02119	<.06043	<.02485	<.04309	<.03226	<.02173	<.07866	<.00923	<.01030	<.02590	<.10928
NSGWDE15	97.455	<.05354	<.07137	<.05685	<.06240	<.08071	<.07046	<.05027	<.04871	<.06258	<.02633	<.04986	<.08751
NSGWDR01	90.643	<.04921	<.06326	<.04716	<.06588	<.07348	<.03375	<.03596	<.07929	<.05176	<.01935	<.02388	<.08280
NSGWJF19	103.14	<.03598	<.02402	<.07416	<.04362	<.07915	<.05579	<.02629	<.06516	<.04444	0.11531	<.03948	0.60906
NSGWDE16	95.879	<.04272	<.04695	<.10170	<.05928	<.09426	<.06721	<.03370	<.05987	<.03282	<.02499	<.04756	<.06501
NSGWDE17	92.345	<.16016	<.16678	<.23701	<.11036	<.32578	<.45828	<.22892	<.33289	<.32814	<.11163	<.32431	<.19145
NSGWDE18	89.77	<.03755	<.04635	<.08036	<.07698	<.08703	<.05130	<.04651	<.12014	<.04393	<.04360	<.03630	<.06123
NSGWDE19	88.769	<.06640	<.02998	<.09476	<.04032	<.08446	<.07583	<.04546	<.06666	<.04022	<.01140	<.05366	<.03151
NSGWDE20	86.452	<.04876	<.04183	<.04742	<.03055	<.05575	<.04194	<.03168	<.06556	<.03020	<.02661	<.02968	<.05215
NSGWDE21	89.925	<.05678	<.05520	<.09830	<.04454	<.05971	<.03848	<.05097	<.06384	<.05085	0.08748	<.02723	<.06393
NSGWPH01	101.13	<.01853	<.00986	<.01816	<.01927	<.02092	<.01807	<.01175	<.02498	<.00657	<.00849	<.01555	<.06514
NSGWPH02	100.99	<.01723	<.01895	<.03211	<.03338	<.02255	<.01899	<.01915	<.04636	<.01606	<.01568	<.01634	<.10532
NSGWPH03	96.407	<.01203	<.02319	<.03573	<.02464	<.02172	<.02508	<.01550	<.02941	<.01172	<.00979	<.02158	<.10299
NSGWPH04	110.87	<.02876	<.01758	<.03102	<.02235	<.04850	<.03197	<.02160	<.07593	<.02264	0.04071	<.02751	<.14545
NSGWPH05	106.69	<.01496	<.01468	<.03154	<.02649	<.02505	<.02981	<.01420	<.04288	<.01349	<.01245	<.02565	<.12509
NSGWPH06	99.044	<.03480	<.01658	<.02785	<.01155	<.02547	<.01784	<.02785	<.04758	<.01417	<.01587	<.01535	<.07446
NSGWPH07	100.73	<.02920	<.01871	<.02207	<.03025	<.03231	<.01764	<.02111	<.05834	<.01390	<.01821	<.01518	<.05869
NSGWPH08	97.934	<.01934	<.02249	<.05555	<.02358	<.05610	<.02188	<.02918	<.06931	<.02752	0.05019	<.01883	<.18624
NSGWPH09	100.71	<.02809	<.01537	<.03020	<.03268	<.03216	<.02040	<.01910	<.02999	<.02159	0.04735	<.01755	<.10222
NSGWPH10	89.974	<.02044	<.01588	<.02104	<.01592	<.01852	<.01710	<.01277	<.04430	<.01414	0.01435	<.01356	<.05352
NSGWPH11	90.308	<.01881	<.01691	<.02143	<.02942	<.04395	<.02919	<.01590	<.03347	<.03560	<.01696	<.02315	<.05648
NSGWPH12	94.76	<.02148	<.01689	<.03788	<.02507	<.03092	<.02809	<.01706	<.02975	<.01556	<.01123	<.02227	<.06358
NSGWPH13	95.812	<.01108	<.01239	<.00835	<.01408	<.01730	<.02318	<.02044	<.02840	<.01125	<.00697	<.01838	<.05129
NSGWPH14	83.633	<.01855	<.01054	<.02701	<.01939	<.03430	<.02455	<.01649	<.02546	<.02287	<.01342	<.01947	<.05643
NSGWPH15	98.147	<.05021	<.02715	<.06463	<.03671	<.05693	<.03365	<.05168	<.05283	<.02145	<.01745	<.02669	<.07148
NSGWPH16	81.212	<.01823	<.02419	<.04347	<.02918	<.06204	<.02385	<.03148	<.05891	<.01781	<.01395	<.01892	<.06793
NSGWPH17	87.014	<.04048	<.04232	<.04273	<.03053	<.04009	<.02691	<.03753	<.06765	<.02736	0.01791	<.02134	<.10037
NSGWPH18	90.234	<.02899	<.03697	<.03918	<.02838	<.05692	<.04537	<.01885	<.05312	<.01957	<.01330	<.03598	<.06555
NSGWPH19	90.147	<.02894	<.04203	<.05640	<.02705	<.03867	<.04532	<.02688	<.05678	<.01777	<.01503	<.03594	<.06417
NSGWPH20	85.831	<.02175	<.02732	<.04099	<.05913	<.02668	<.03343	<.02444	<.03682	<.03478	<.01416	<.02387	<.01854
NSGWPH21	85.859	<.02764	<.01189	<.01906	<.04518	<.03315	<.02005	<.02234	<.03355	<.04177	<.02148	<.01432	<.05026
NSGWPH22	90.983	<.03582	<.01248	<.05244	<.04601	<.02875	<.03745	<.02053	<.02500	<.03098	0.05375	<.02675	<.05620
NSGWPH23	79.895	<.02870	<.03950	<.06082	<.04753	<.03048	<.03094	<.03191	<.03751	<.04374	0.07965	<.02209	<.07486
NSGWPH24	93.503	<.05960	<.01833	<.03586	<.04830	<.03609	<.04351	<.04000	<.03815	<.02534	<.01783	<.03107	<.03232
NSGWPH25	80.745	<.02929	<.01655	<.06690	<.04924	<.06118	<.02044	<.03862	<.02661	<.03854	<.01186	<.01460	<.04253
NSGWPH26	74.511	<.03358	<.03325	<.04188	<.05271	<.04335	<.02479	<.01494	<.06851	<.01979	<.02152	<.01770	<.06943

Station_ID	Nitrobenzene-d5 ug/L	2-Fluorobiphenyl % recovery	Terphenyl-d14 % recovery	Molinate ug/L	Propachlor ug/L	Trifluralin ug/L	Alpha-BHC ug/L	Atraton ug/L	Prometon ug/L	Simazine ug/L	Atrazine ug/L	Propazine ug/L	Beta-BHC ug/L
NSGWAR01	92.702	91.141	98.825	<.00540	<.00573	<.00330	<.02026	<.00778	<.00710	<.01098	<.00589	<.00747	<.02439
NSGWAR02	92.725	87.222	98.369	0.03484	<.00712	<.00440	<.02600	<.00933	<.01691	<.02199	<.00576	<.00903	<.03129
NSGWAR03	106.47	93.759	103.87	<.00493	<.00619	<.00239	<.01499	<.00775	<.00662	<.02530	<.00843	<.00561	<.01804
NSGWJF01	92.733	94.137	103.21	<.02813	<.01683	<.01901	<.04451	<.02294	<.02176	<.04539	<.01328	<.01676	<.05358
NSGWJF02	90.441	84.604	99.923	0.24612	<.01589	<.01137	<.03403	<.01763	<.01206	<.02234	<.00882	<.01383	<.04096
NSGWJF03	97.773	94.895	101.44	<.00814	<.00877	<.00949	<.02366	<.01362	<.00951	<.04463	<.00785	<.00693	<.02848
NSGWJF04	105.76	107.14	102.63	<.00265	<.00345	<.00378	<.00936	<.00706	<.00500	<.01173	<.00565	<.00318	<.01127
NSGWJF05	106.34	97.216	101.65	0.08647	<.00535	<.00391	<.01556	<.00631	<.00749	<.02083	<.00382	<.00262	<.01874
NSGWJF07	106.33	88.455	92.983	0.01023	<.00484	<.00318	<.01480	<.00642	<.00702	<.00832	<.00401	<.00422	<.01782
NSGWLN01	103.18	93.139	93.382	<.00459	<.00459	<.00251	<.00933	<.00877	<.00936	<.01654	<.00413	<.00410	<.01123
NSGWLN02	96.214	93.585	95.645	<.00507	<.00878	<.00365	<.01904	<.00595	<.00857	<.00774	<.00528	<.00256	<.02292
NSGWLN03	100.66	90.608	88.868	<.00397	<.00490	<.00289	<.00749	<.00719	<.01042	<.01362	<.00517	<.00254	<.00902
NSGWJF06				<.00459	<.00698	<.00274	<.01131	<.00800	<.00746	<.01322	<.00435	<.00471	<.01361
NSGWJF08	93.109	87.12	91.044	<.00427	<.00706	0.01137	<.01251	0.0164	<.01354	<.02826	<.00181	<.00567	<.01523
NSGWJF09	94.318	81.844	90.998	<.00721	<.00777	<.00393	<.02496	<.01292	<.00690	<.02821	<.00795	<.01094	<.03040
NSGWJF10	96.555	84.188	93.117	<.00414	<.01349	<.00483	<.01270	<.01112	<.01146	<.02870	<.00703	<.00658	<.01546
NSGWJF11	93.79	79.86	90.745	<.00434	<.00710	<.00329	<.01346	<.00436	<.01043	<.01613	0.00726	<.00691	<.01639
NSGWJF12	94.735	86.221	91.512	<.00593	<.00657	<.00157	<.01133	<.01403	<.01668	<.01744	<.00866	<.00863	<.01380
NSGWJF13	85.06	67.074	77.602	<.00799	<.00729	<.00287	<.01490	<.00966	<.01860	<.01910	<.00411	<.00520	<.01815
NSGWJF14	84.009	65.065	82.757	<.00327	<.00955	<.00233	<.01410	<.01141	<.02115	<.02132	<.00918	<.00549	<.01717
NSGWJF15	74.189	66.13	68.303	<.00563	<.00543	<.00241	<.01512	<.01431	<.01083	<.01423	<.00587	<.00584	<.01841
NSGWJF16	70.618	62.138	72.675	<.00435	<.00389	<.00261	<.01631	<.00929	<.01022	<.01520	<.00604	<.00417	<.01986
NSGWJF17	76.989	64.76	72.401	<.01194	<.01653	<.00479	<.01591	<.01345	<.01044	<.02840	<.01102	<.01285	<.01938
NSGWJF18	73.671	61.154	71.363	<.00873	<.00773	<.00885	<.02019	<.01296	<.02011	<.03759	<.01836	<.01009	<.02458
NSGWLN04	100.83	99.732	100.68	<.00560	<.01562	<.00492	<.02234	<.01558	<.01360	<.02412	<.00664	<.01268	<.02668
NSGWLN05	105.48	99.829	101.84	<.02104	<.02146	<.01760	<.02657	<.02207	<.02120	<.06679	<.02263	<.01203	<.02926
NSGWLN06	104.41	100.35	104.3	<.00780	<.01060	<.00639	<.01006	<.00833	<.01428	<.01348	<.00736	<.00972	<.01107
NSGWDE01	109.81	102.7	100 86	0.09336	<.00649	<.00381	<.01127	<.01588	<.01901	<.01777	<.01420	<.00346	<.01241
NSGWDE02	105.01	99.875	97.848	<.00619	<.00683	<.00326	<.01952	<.01776	<.01935	<.02720	<.00459	<.00546	<.02150
NSGWDE03	104.07	103.33	104.92	<.00775	<.00307	<.00327	<.01321	<.01479	<.01486	<.01892	<.00853	<.00498	<.01455
NSGWDE04	99.4	90.038	98.649	<.00877	<.00684	<.00625	<.01506	<.01254	<.01592	<.02512	<.01141	<.00387	<.01659
NSGWDE05	100.16	104.49	97.835	<.00644	<.00797	<.00401	<.01238	<.00765	<.01576	<.01301	<.00700	<.00482	<.01363
NSGWDE06	107.1	96.538	95.661	0.17074	<.00585	<.00293	<.01726	<.00658	<.01262	<.02023	<.00206	<.00414	<.01901
NSGWDE07	103.47	97.623	98.233	0.01605	<.00382	<.00462	<.02161	<.00861	<.01944	<.02512	<.00851	<.00663	<.02379
NSGWLN07	99.841	99.729	105.59	<.01907	<.01967	<.00670	<.02739	<.01764	<.03240	<.05116	<.01215	<.00778	<.03433
NSGWDE08	106.15	105.88	112.27	<.01179	<.00988	<.00749	<.02166	<.00935	<.01521	<.02822	<.00823	<.01076	<.02715
NSGWDE09	108.46	106.19	107.48	<.00895	<.00766	<.00551	<.02419	<.01496	<.01552	<.03413	<.00774	<.01173	<.03032
NSGWDE10	115.5	99.166	109.6	<.00704	<.00837	<.00268	<.01909	<.00972	<.01261	<.01992	<.00579	<.00799	<.02393
NSGWDE11	120.2	97.813	109.78	<.00704	<.00527	<.00176	<.01337	<.01221	<.00993	<.01859	<.00563	<.00534	<.01676

Station_ID	Nitrobenzene-d5 ug/L	2-Fluorobiphenyl % recovery	Terphenyl-d14 % recovery	Molinate ug/L	Propachlor ug/L	Trifluralin ug/L	Alpha-BHC ug/L	Atraton ug/L	Prometon ug/L	Simazine ug/L	Atrazine ug/L	Propazine ug/L	Beta-BHC ug/L
NSGWDE12	108.62	108.09	106.02	<.00495	<.00567	<.00415	<.01729	<.01575	<.01281	<.02565	<.01055	<.00702	<.02167
NSGWDE13	106.43	104.11	98.866	<.00797	<.00918	<.00487	<.01171	<.01169	<.00978	<.02324	<.00777	<.01253	<.01468
NSGWDE14	110.66	98.99	106.31	<.00451	<.00727	<.00457	<.01042	<.01082	<.00895	<.02095	<.00649	<.00240	<.01306
NSGWDE15	96.985	97.011	97.264	<.00330	<.00664	<.00099	<.01595	<.01265	<.00586	<.00989	<.00549	<.00396	<.01918
NSGWDR01	95.478	95.877	98.391	<.00341	<.00495	<.00295	<.01064	<.00682	<.00688	<.00651	<.00798	<.00520	<.01280
NSGWJF19	84.321	92.685	95.369	0.09861	<.00682	<.00426	<.01005	<.01058	<.00599	<.00799	<.00866	<.00532	<.01209
NSGWDE16	97.977	94.834	98.92	<.00862	<.00459	<.00251	<.00531	<.01191	<.01320	<.01137	<.00407	<.00418	<.00639
NSGWDE17	95.107	94.063	94.632	<.00476	<.00553	<.00194	<.01056	<.00362	<.00431	<.01486	<.00876	<.00344	<.01270
NSGWDE18	86.156	106.6	95.865	<.00789	<.00758	<.00480	<.01245	<.01167	<.01114	<.01972	<.00691	<.00588	<.01498
NSGWDE19	100.34	102.15	97.973	<.00659	<.00646	<.00315	<.01349	<.00420	<.00920	<.00686	<.00619	<.00374	<.01623
NSGWDE20	91.638	107.69	104.59	<.00617	<.00949	<.00233	<.00740	<.00840	<.00535	<.00706	<.00435	<.00541	<.00890
NSGWDE21	90.586	99.193	96.15	<.00396	<.00539	<.00168	<.00796	<.00769	<.00572	<.01314	<.00283	<.00317	<.00958
NSGWPH01	109.69	104.86	100.42	<.00449	<.00271	<.00081	<.00567	<.00407	<.00752	<.00826	<.00348	<.00247	<.00650
NSGWPH02	92.717	90.915	88.405	<.01524	<.00945	<.00183	<.01636	<.01743	<.02234	<.01969	<.01467	<.00605	<.01876
NSGWPH03	105.76	91.502	94.542	<.00265	<.00338	<.00178	<.00759	<.00438	<.00700	<.01232	<.00469	<.00557	<.00871
NSGWPH04	94.268	89.124	92.087	<.00324	<.00440	<.00250	<.00683	<.00737	<.00680	<.00997	<.00270	<.00263	<.00784
NSGWPH05	97.138	91.538	93.183	<.00283	<.00181	<.00211	<.00851	<.00564	<.00281	<.00601	<.00174	<.00457	<.00976
NSGWPH06	101.87	86.003	94.526	<.00314	<.00411	<.00185	<.00569	<.00368	<.00486	<.00841	<.00270	<.00237	<.00653
NSGWPH07	97.32	90.571	90.491	<.00210	<.00297	<.00278	<.00791	<.00696	<.00562	<.00919	<.00404	<.00297	<.00907
NSGWPH08	92.691	90.53	94.504	<.00295	<.00385	<.00130	<.00749	<.00393	<.00338	<.01074	<.00409	<.00334	<.00859
NSGWPH09	96.676	87.924	88.504	<.00340	<.00303	<.00137	<.00767	<.00460	<.00529	<.00585	<.00294	<.00193	<.00879
NSGWPH10	89.886	100.31	92.143	<.00295	<.00241	<.00179	<.00586	<.00421	<.00474	<.00738	<.00299	<.00179	<.00706
NSGWPH11	97.734	106.3	98.616	<.00267	<.00160	<.00266	<.00858	<.00507	<.00774	<.01087	<.00482	<.00279	<.01034
NSGWPH12	104.74	115.12	101.36	<.00281	<.00270	<.00175	<.01010	<.00435	<.00531	<.01207	<.00235	<.00184	<.01217
NSGWPH13	100.04	109.08	97.248	<.00214	<.00399	<.00132	<.00775	<.00490	<.00552	<.00681	<.00244	<.00328	<.00934
NSGWPH14	103.11	104.27	101.26	<.00378	<.00262	<.00150	<.00295	<.00245	<.00937	<.00613	<.00199	<.00127	<.00355
NSGWPH15	88.447	107.5	96.013	<.00179	<.00222	<.00206	<.00620	<.00538	<.00463	<.01308	<.00242	<.00401	<.00747
NSGWPH16	108.84	106.18	97.173	<.00240	<.00348	<.00220	<.00521	<.00612	<.00487	<.00708	<.00223	<.00206	<.00628
NSGWPH17	97.003	95.576	98.085	<.00231	<.00562	<.00206	<.00403	<.00515	<.00325	<.01367	<.00287	<.00181	<.00486
NSGWPH18	101.4	106.92	100.19	<.00334	<.00701	<.00304	<.00484	<.00774	<.00710	<.01504	<.00480	<.00482	<.00583
NSGWPH19	96.402	99.719	95.08	<.00364	<.00270	<.00224	<.00660	<.00382	<.00292	<.00663	<.00355	<.00248	<.00796
NSGWPH20	99.378	97.246	99.074	<.00236	<.00336	<.00218	<.00378	<.00298	<.00522	<.00619	<.00130	<.00131	<.00479
NSGWPH21	99.507	90.594	96.488	<.00264	<.00268	<.00167	<.00690	<.00356	<.00353	<.00308	<.00370	<.00227	<.00874
NSGWPH22	96.344	94.122	95.514	<.00274	<.00224	<.00148	<.00366	<.00317	<.00505	<.00830	<.00198	<.00300	<.00463
NSGWPH23	102.05	95.25	101.41	<.00155	<.00301	<.00126	<.00247	<.00525	<.00654	<.00673	<.00182	<.00272	<.00313
NSGWPH24	100.56	98.438	102.66	<.00360	<.00384	<.00249	<.00421	<.00630	<.00418	<.00880	<.00393	<.00272	<.00534
NSGWPH25	92.59	89.61	98.365	<.00185	<.00379	<.00225	<.00554	<.00393	<.00597	<.01020	<.00266	<.00251	<.00703
NSGWPH26	107.61	91.475	96.509	<.00263	<.00301	<.00232	<.00728	<.00407	<.00351	< 00686	0.02107	<.00240	<.00923

Station_ID	Gamma-BHC ug/L	Terbuthylazine ug/L	Diazinon ug/L	Fluchloralin ug/L	Fonofos ug/L	Delta-BHC ug/L	Cyprazine ug/L	Metribuzin ug/L	Methyl-Parathion ug/L	Alachlor ug/L	Ametryn ug/L	Prometryn ug/L	Heptachlor ug/L	Terbutryn ug/L
NSGWAR01	<.02122	<.01139	<.01196	<.00571	<.00509	<.02574	<.00536	<.00714	<.00409	<.00937	<.00491	<.00333	<.00604	<.00467
NSGWAR02	<.02723	<.01016	<.02220	<.00778	<.00491	<.03303	<.00400	<.00741	<.00692	<.00750	<.00687	<.00688	<.00743	<.00844
NSGWAR03	<.01570	<.01617	<.01938	<.00406	<.00904	<.01905	<.00696	<.00669	<.00679	<.01020	<.00500	<.01296	<.00827	<.00422
NSGWJF01	<.04662	<.04637	<.03065	<.03217	<.02930	<.05655	<.01429	<.01953	<.02598	<.01323	<.02438	<.02446	<.01495	<.00924
NSGWJF02	<.03564	<.02664	<.02331	<.01838	<.02365	<.04323	<.01284	<.01645	<.01652	<.01701	0.01141	<.00941	<.01101	<.00789
NSGWJF03	<.02478	<.01369	<.02222	<.01550	<.01573	<.03006	<.00766	<.00767	<.01212	<.00628	<.00623	<.00734	<.01185	<.00800
NSGWJF04	<.00981	<.01324	<.01455	<.00619	<.00319	<.01190	<.00411	<.00608	<.00517	<.00859	<.00350	<.00674	<.00432	<.00192
NSGWJF05	<.01630	<.01051	<.00983	<.00645	<.00550	<.01978	<.00600	<.00398	<.00575	<.00345	<.00412	<.00306	<.00796	<.00646
NSGWJF07	<.01550	<.01079	<.01305	<.00541	<.00348	<.01880	<.00447	<.00596	<.00532	<.00578	<.00624	<.00570	<.00643	<.00401
NSGWLN01	<.00977	<.00862	<.01307	<.00438	<.00296	<.01185	<.00381	<.00684	<.00449	<.00532	<.00403	<.00420	<.00688	<.00699
NSGWLN02	<.01994	<.00790	<.01396	<.00650	<.00549	<.02419	<.00652	<.00719	<.00350	<.00940	<.00654	<.00774	<.01215	<.00360
NSGWLN03	<.00785	<.00869	<.01349	<.00490	<.00321	<.00952	<.00721	<.00543	<.00646	<.00725	<.00588	<.00646	<.00395	<.00148
NSGWJF06	<.01184	<.00615	<.01063	<.00482	<.00291	<.01437	<.00552	<.00547	<.00893	<.00537	<.00539	<.00509	<.00517	<.00510
NSGWJF08	<.01335	<.02183	<.01710	<.00605	<.00641	<.01541	<.00911	<.00773	<.00390	<.01082	0.00769	<.00820	<.00613	<.00549
NSGWJF09	<.02666	<.02594	<.03379	<.00729	<.00637	<.03076	<.00797	<.00594	<.01327	<.01001	<.01430	<.00971	<.01302	<.01162
NSGWJF10	<.01356	<.01784	<.01192	<.00858	<.01259	<.01565	<.00996	<.01212	<.01036	<.01234	<.00823	<.00929	<.01092	<.00769
NSGWJF11	<.01437	<.01770	<.01298	<.00578	<.00600	<.01659	<.00482	<.00704	<.00584	<.00862	<.00555	<.00527	<.01399	<.00422
NSGWJF12	<.01210	<.01710	<.02015	<.00309	<.00746	<.01397	<.00627	<.00870	<.00592	<.01162	<.00858	<.00753	<.01375	<.00561
NSGWJF13	<.01591	<.01271	<.01722	<.00541	<.00356	<.01836	<.00723	<.00531	<.00936	<.00907	<.00534	<.00995	<.01228	<.00828
NSGWJF14	<.01506	<.02227	<.01172	<.00429	<.00405	<.01737	<.00446	<.00635	<.00487	<.01090	<.00437	<.00314	<.00743	<.00503
NSGWJF15	<.01614	<.01390	<.01090	<.00438	<.00770	<.01863	<.00638	<.00466	<.00494	<.00507	<.00561	<.01346	<.00737	<.00502
NSGWJF16	<.01742	<.00801	<.01057	<.00488	<.00373	<.02010	<.00616	<.00871	<.00442	<.00935	<.00840	<.00629	<.00599	<.00513
NSGWJF17	<.01699	<.02047	<.02148	<.00904	<.02366	<.01961	<.00823	<.01028	<.01458	<.01086	<.01619	<.01778	<.01095	<.00878
NSGWJF18	<.02156	<.02426	<.01647	<.01691	<.01517	<.02488	<.00801	<.00878	<.01142	<.02060	<.01498	<.01849	<.01251	<.00835
NSGWLN04	<.02331	<.01451	<.01256	<.00901	<.00783	<.02863	<.00837	<.00613	<.00793	<.00742	<.00608	<.01059	<.00951	<.00743
NSGWLN05	<.02667	<.05148	<.03962	<.03150	<.02386	<.03229	<.01437	<.02078	<.02785	<.01669	<.01632	<.02034	<.03297	<.01157
NSGWLN06	<.01009	<.01131	<.01854	<.01102	<.01102	<.01222	<.01019	<.00656	<.00764	<.01062	<.00716	<.00890	<.01627	<.00667
NSGWDE01	<.01131	<.01703	<.01996	<.00694	<.00516	<.01369	<.00706	<.00916	<.00837	<.00721	<.00598	<.00498	<.01190	<.00781
NSGWDE02	<.01959	<.00907	<.01562	<.00567	<.00729	<.02372	<.00858	<.00778	<.00867	<.01103	<.00647	<.00604	<.00972	<.00828
NSGWDE03	<.01326	<.01567	<.01663	<.00598	<.00348	<.01606	<.00714	<.00896	<.00983	<.00479	<.00567	<.00664	<.00793	<.00567
NSGWDE04	<.01512	<.01321	<.01662	<.01156	<.00374	<.01830	<.00772	<.00439	<.00938	<.01424	<.00842	<.00692	<.01465	<.00664
NSGWDE05	<.01242	<.01680	<.01828	<.00684	<.00710	<.01504	<.01188	<.00439	<.01100	<.00599	<.00829	<.00760	<.01111	<.00472
NSGWDE06	<.01733	<.01327	<.01613	<.00525	<.00502	<.02098	<.00640	<.00500	<.00551	<.00530	<.00712	<.00526	<.00716	<.00885
NSGWDE07	<.02169	<.01715	<.00884	<.00836	<.00664	<.02626	<.00811	<.00872	<.00860	<.00641	<.00503	<.00320	<.01814	<.00525
NSGWLN07	<.02949	<.05633	<.03823	<.01320	<.03017	<.03496	<.01894	<.01630	<.01701	<.02263	<.01055	<.01918	<.03416	<.01403
NSGWDE08	<.02332	<.02757	<.02402	<.01390	<.01144	<.02764	<.01436	<.01648	<.01688	<.00993	<.01579	<.01493	<.02354	<.01129
NSGWDE09	<.02605	<.02034	<.02174	<.01046	<.00610	<.03087	<.01015	<.01114	<.01321	<.01058	<.01088	<.00877	<.01235	<.00794
NSGWDE10	<.02056	<.00816	<.01617	<.00524	<.00981	<.02437	<.00637	<.00696	<.00704	<.00670	<.01077	<.00800	<.01453	<.00279
NSGWDE11	<.01439	<.01340	<.02801	<.00342	<.00983	<.01706	<.00840	<.00558	<.00971	<.00753	<.00646	<.00748	<.01376	<.00794

Station_ID	Gamma-BHC ug/L	Terbuthylazine ug/L	Diazinon ug/L	Fluchloralin ug/L	Fonofos ug/L	Delta-BHC ug/L	Cyprazine ug/L	Metribuzin ug/L	Methyl-Parathion ug/L	Alachlor ug/L	Ametryn ug/L	Prometryn ug/L	Heptachlor ug/L	Terbutryn ug/L
NSGWDE12	<.01862	<.01673	<.01498	<.00788	<.00847	<.02207	<.00648	<.01142	<.00546	<.01764	<.01079	<.00678	<.01112	<.00443
NSGWDE13	<.01261	<.02076	<.02348	<.00897	<.00381	<.01494	<.00815	<.00788	<.00830	<.01078	<.00637	<.01728	<.01805	<.00950
NSGWDE14	<.01122	<.02521	<.02444	<.00924	<.00855	<.01330	<.00916	<.00853	<.01093	<.00970	<.00711	<.01226	<.01132	<.00863
NSGWDE15	<.01717	<.01712	<.00926	<.00174	<.00387	<.02076	<.00527	<.00547	<.00541	<.00608	<.00676	<.00699	<.01092	<.00417
NSGWDR01	<.01145	<.00667	<.01314	<.00511	<.00176	<.01385	<.00346	<.00727	<.00614	<.00521	<.00610	<.00624	<.00972	<.00443
NSGWJF19	<.01082	<.01289	<.00914	<.00713	<.00773	<.01308	<.00617	<.00735	<.00502	<.00890	<.00363	<.00589	<.00567	<.00483
NSGWDE16	<.00572	<.01775	<.01587	<.00421	<.00592	<.00691	<.00595	<.00625	<.00265	<.00545	<.00636	<.00559	<.00884	<.00561
NSGWDE17	<.01137	<.01229	<.01326	<.00330	<.00672	<.01374	<.00458	<.00571	<.00832	<.00960	<.00513	<.00518	<.00766	<.01132
NSGWDE18	<.01340	<.01809	<.01438	<.00763	<.00734	<.01621	<.00764	<.01147	<.00740	<.00830	<.00816	<.01255	<.01499	<.00477
NSGWDE19	<.01453	<.01309	<.01171	<.00532	<.00656	<.01757	<.00534	<.00681	<.00726	<.00404	<.00725	<.00513	<.01178	<.00343
NSGWDE20	<.00797	<.01220	<.01294	<.00394	<.00424	<.00963	<.00492	<.00233	<.00564	<.00929	<.00523	<.00376	<.01267	<.00336
NSGWDE21	<.00857	<.01226	<.00890	<.00273	<.00626	<.01037	<.00388	<.00564	<.00377	<.00653	<.00454	<.00458	<.00878	<.00254
NSGWPH01	<.00584	<.00565	<.00833	<.00144	<.00339	<.00701	<.00463	<.00503	<.00356	<.00432	<.00340	<.00340	<.00521	<.00488
NSGWPH02	<.01687	<.02240	<.02793	<.00376	<.00722	<.02026	<.00915	<.01391	<.01089	<.00874	<.01326	<.00914	<.01711	<.00569
NSGWPH03	<.00783	<.00494	<.00511	<.00321	<.00496	<.00940	<.00462	<.00283	<.00279	<.00859	<.00566	<.00712	<.00639	<.00462
NSGWPH04	<.00705	<.00887	<.01131	<.00458	<.00325	<.00846	<.00754	<.00308	<.00360	<.00391	<.00414	<.00308	<.00521	<.00442
NSGWPH05	<.00878	<.00648	<.00708	<.00399	<.00236	<.01054	<.00275	<.00396	<.00548	<.00461	<.00365	<.00205	<.00407	<.00294
NSGWPH06	<.00587	<.00753	<.00516	<.00349	<.00269	<.00705	<.00318	0.00536	<.00246	<.00369	<.00308	<.00520	<.00422	<.00579
NSGWPH07	<.00815	<.00373	<.01308	<.00511	<.00611	<.00979	<.00640	<.00599	<.00625	<.00377	<.00380	0.01205	<.00409	<.00238
NSGWPH08	<.00772	<.00439	<.00720	<.00237	<.00345	<.00928	<.00335	<.00226	<.00395	<.00434	<.00193	<.00269	<.00473	<.00249
NSGWPH09	<.00790	<.00658	<.00939	<.00249	<.00160	<.00949	<.00328	<.00275	<.00371	<.00372	<.00290	<.00312	<.00506	<.00186
NSGWPH10	<.00642	<.00356	<.00466	<.00282	<.00179	<.00766	<.00246	<.00235	<.00460	<.00354	<.00421	0.07306	<.00472	<.00352
NSGWPH11	<.00940	<.00528	<.00788	<.00428	<.00236	<.01122	<.00426	<.00302	<.00558	<.00195	<.00182	<.00274	<.00417	<.00254
NSGWPH12	<.01107	<.00565	<.00788	<.00284	<.00258	<.01321	<.00665	<.00199	<.00376	<.00436	<.00367	<.00331	<.00339	<.00340
NSGWPH13	<.00850	<.00474	<.00838	<.00202	<.00188	<.01014	<.00248	<.00500	<.00291	<.00510	<.00150	<.00406	<.00605	<.00481
NSGWPH14	<.00323	<.00338	<.00473	<.00240	<.00192	<.00385	<.00308	<.00169	<.00404	<.00323	<.00388	<.00316	<.00418	<.00203
NSGWPH15	<.00680	<.00540	<.00807	<.00329	<.00278	<.00811	<.00249	<.00505	<.00214	<.00443	<.00308	<.00353	<.00549	<.00201
NSGWPH16	<.00571	<.00234	<.01163	<.00349	<.00220	<.00681	<.00321	<.00366	<.00132	<.00312	<.00309	<.00377	<.00760	<.00158
NSGWPH17	<.00442	<.00642	<.00785	<.00329	<.00417	<.00528	<.00381	<.00308	<.00329	<.00337	<.00260	<.00235	<.00667	<.00185
NSGWPH18	<.00530	<.00994	<.01140	<.00485	<.00209	<.00632	<.00435	<.00600	<.00617	<.00553	<.00474	<.00457	<.00758	<.00320
NSGWPH19	<.00724	<.00521	<.00671	<.00351	<.00251	<.00864	<.00248	<.00418	<.00269	<.00270	<.00265	<.00512	<.00636	<.00346
NSGWPH20	<.00405	<.00346	<.00355	<.00354	<.00240	<.00522	<.00329	<.00367	<.00496	<.00411	<.00177	<.00331	<.00454	<.00306
NSGWPH21	<.00739	<.00438	<.00588	<.00264	<.00270	<.00951	<.00245	<.00310	<.00247	<.00204	<.00244	<.00443	<.00422	<.00190
NSGWPH22	<.00392	<.00548	<.00823	<.00228	<.00172	<.00504	<.00417	<.00248	<.00346	<.00248	<.00250	<.00221	<.00381	<.00333
NSGWPH23	<.00265	<.00432	<.00649	<.00202	<.00182	<.00341	<.00362	<.00233	<.00486	<.00226	<.00187	<.00187	<.00564	<.00262
NSGWPH24	<.00451	<.00490	<.00684	<.00393	<.00259	<.00580	<.00228	<.00326	<.00583	<.00229	<.00303	<.00439	<.00539	<.00319
NSGWPH25	<.00594	<.00381	<.00468	<.00389	<.00205	<.00765	<.00384	<.00403	<.00455	<.00395	<.00284	<.00335	<.00433	<.00252
NSGWPH26	<.00781	<.00463	<.00721	<.00371	<.00375	<.01004	<.00453	<.00192	<.00608	<.00405	<.00386	<.00374	<.00859	<.00261

Station_ID	Metolachlor ug/L	Malathion ug/L	Dipropetryn ug/L	Chlorpyrifos ug/L	Cyanazine ug/L	Aldrin ug/L	Pendimethalin ug/L	Heptachlor-Epoxide ug/L	Endosulfan-I ug/L	p-p'-DDE ug/L	Dieldrin ug/L	Endrin ug/L	Endosulfan-II ug/L	p-p'-DDD ug/L
NSGWAR01	<.00305	<.00599	<.00630	<.01268	<.01190	<.01219	<.00508	<.00489	<.18287	<.00321	<.02112	<.04693	<.05499	<.00485
NSGWAR02	<.00223	<.00816	<.00910	<.01846	<.02292	<.02063	<.00595	<.00688	<.13808	<.00907	<.03590	<.04375	<.08146	<.00487
NSGWAR03	<.00542	<.01902	<.00990	<.02654	<.01649	<.02024	<.00914	<.01183	<.15731	<.00607	<.02525	<.09553	<.08418	<.00363
NSGWJF01	<.00735	<.09514	<.02052	<.03109	<.04113	<.07747	<.01410	<.02213	<.38494	<.01698	<.08235	<.11937	<.25307	<.00715
NSGWJF02	<.00983	<.05096	<.01477	<.01954	<.03153	<.04927	<.00809	<.01529	<.15694	<.01774	<.06730	<.07468	<.12282	<.00795
NSGWJF03	<.00293	<.02023	<.00839	<.00921	<.02787	<.03615	<.00370	<.01815	<.15855	<.00986	<.02802	<.06499	<.08312	<.00418
NSGWJF04	<.00258	<.00998	<.00564	<.01098	<.00811	<.01541	<.00339	<.01025	<.06723	<.00470	<.01789	<.05765	<.07021	<.00492
NSGWJF05	0.00407	<.01143	<.00473	<.00982	<.01146	<.01714	<.00379	<.00479	<.09350	<.00186	<.03320	<.03513	<.09029	<.00497
NSGWJF07	<.00250	<.00797	<.00539	<.00613	<.00980	<.01588	<.00376	<.01258	<.12202	<.00273	<.02886	<.01820	<.08020	<.00201
NSGWLN01	<.00266	<.00696	<.00331	<.00733	<.02047	<.01340	<.00412	<.00580	<.12722	<.00376	<.01689	<.02960	<.04859	<.00399
NSGWLN02	<.00280	<.01081	<.00772	<.00904	<.00957	<.01044	<.00331	<.00970	<.06693	<.00181	<.01739	<.03193	<.03397	<.00245
NSGWLN03	<.00312	<.01077	<.00582	<.00813	<.01315	<.01925	<.00218	<.00937	<.08963	<.00430	<.02715	<.05798	<.04101	<.00465
NSGWJF06	<.00356	<.01248	<.00723	<.00825	<.00638	<.02664	<.00497	<.00719	<.07976	<.00428	<.02848	<.02716	<.04227	<.00434
NSGWJF08	0.01055	<.00559	<.01038	<.01045	<.01711	<.01072	<.00654	<.00864	<.15535	<.00409	<.03012	<.05522	<.05005	<.00575
NSGWJF09	<.00577	<.01848	<.01458	<.01692	<.02559	<.03651	<.00679	<.01073	<.30333	<.00832	<.04302	<.08347	<.11403	<.00817
NSGWJF10	<.00506	<.01187	<.01185	<.01993	<.02675	<.02851	<.00964	<.01925	<.16209	<.00834	<.03387	<.06856	<.07964	<.00696
NSGWJF11	<.00375	<.01374	<.00876	<.01307	<.01027	<.01606	<.00699	<.01101	<.24406	<.00560	<.02235	<.03693	<.11828	<.00290
NSGWJF12	<.00323	<.00963	<.00704	<.01434	<.01057	<.01628	<.00502	<.01908	<.13450	<.00851	<.03964	<.04311	<.11315	<.00567
NSGWJF13	<.00440	<.01041	<.00802	<.01198	<.01639	<.02574	<.00390	<.01006	<.12630	<.00548	<.02779	<.03426	<.12809	<.00559
NSGWJF14	<.00326	<.01405	<.01091	<.01014	<.01815	<.01341	<.00470	<.00449	<.14601	<.00389	<.02790	<.03323	<.08398	<.00356
NSGWJF15	<.00361	<.00719	<.00417	<.00836	<.01813	<.01359	<.00367	<.00452	<.16607	<.00514	<.02315	<.03292	<.05027	<.00405
NSGWJF16	<.00159	<.00672	<.00924	<.00734	<.01067	<.01216	<.00562	<.01309	<.08953	<.00302	<.03274	<.03499	<.05448	<.00521
NSGWJF17	<.00438	<.02704	<.00838	<.01948	<.02327	<.04010	<.00656	<.02839	<.23103	<.01277	<.07168	<.10312	<.13467	<.01064
NSGWJF18	<.00545	<.02977	<.00652	<.01110	<.02606	<.03141	<.00481	<.01643	<.17934	<.00733	<.04962	<.09027	<.05413	<.00856
NSGWLN04	<.00550	<.01014	<.00772	<.00935	<.01756	<.01981	<.00846	<.01664	<.10110	<.00499	<.02770	<.06371	<.07411	<.00336
NSGWLN05	<.00778	<.03725	<.01851	<.03248	<.02011	<.07763	<.00690	<.02593	<.26601	<.01495	<.08885	<.17806	<.13712	<.00657
NSGWLN06	<.00417	<.01032	<.00904	<.01569	<.02262	<.02129	<.00757	<.01104	<.27177	<.00824	<.03862	<.06450	<.09539	<.00643
NSGWDE01	<.00466	<.00799	<.00482	<.01103	<.02378	<.02332	<.00473	<.01093	<.21181	<.00468	<.02198	<.03760	<.06715	<.00513
NSGWDE02	<.00581	<.01042	<.00908	<.01759	<.03598	<.02417	<.00333	<.01042	<.24558	<.00328	<.02192	<.03942	<.12737	<.00649
NSGWDE03	<.00519	<.00969	<.00787	<.01285	<.02772	<.02740	<.00587	<.01166	<.18906	<.00694	<.01225	<.02332	<.10439	<.00561
NSGWDE04	<.00396	<.01094	<.00890	<.01712	<.01666	<.02614	<.00438	<.02154	<.24712	<.00753	<.03935	<.06843	<.08606	<.00447
NSGWDE05	<.00473	<.01576	<.01024	<.00755	<.02273	<.03067	<.00588	<.01202	<.31708	<.00298	<.02127	<.05914	<.11347	<.00440
NSGWDE06	<.00389	<.01093	<.00536	<.00672	<.01015	<.01537	<.00317	<.01173	<.17570	<.00464	<.04877	<.04280	<.08469	<.00438
NSGWDE07	<.00564	<.01308	<.00478	<.01497	<.02458	<.02396	<.00663	<.01147	<.13677	<.00819	<.02858	<.04452	<.10482	<.00315
NSGWLN07	<.00783	<.05723	<.01966	<.02804	<.03332	<.05306	<.01416	<.03286	<.28676	<.01311	<.13667	<.14970	<.09880	<.01274
NSGWDE08	<.00670	<.03247	<.01940	<.02163	<.03765	<.05266	<.00744	<.01875	<.23762	<.00986	<.07791	<.08143	<.17219	<.00851
NSGWDE09	<.00394	<.01452	<.00490	<.01284	<.01898	<.04122	<.00411	<.01796	<.19833	<.00437	<.05900	<.02239	<.13736	<.00682
NSGWDE10	<.00397	<.02061	<.00884	<.00908	<.02008	<.02195	<.00540	<.01079	<.22069	<.00338	<.05486	<.07269	<.07925	<.00479
NSGWDE11	<.00561	<.00847	<.00364	<.01474	<.00853	<.03029	<.00663	<.02176	<.25293	<.00611	<.02675	<.03470	<.10684	<.00499

Station_ID	Metolachlor ug/L	Malathion ug/L	Dipropetryn ug/L	Chlorpyrifos ug/L	Cyanazine ug/L	Aldrin ug/L	Pendimethalin ug/L	Heptachlor-Epoxide ug/L	Endosulfan-I ug/L	p-p'-DDE ug/L	Dieldrin ug/L	Endrin ug/L	Endosulfan-II ug/L	p-p'-DDD ug/L
NSGWDE12	<.00371	<.01022	<.00958	<.01672	<.01736	<.01704	<.00645	<.01001	<.11022	<.01036	<.03973	<.05828	<.07599	<.00480
NSGWDE13	<.00545	<.01854	<.00941	<.01336	<.01278	<.02590	<.00957	<.00896	<.24702	<.00820	<.05932	<.03707	<.14668	<.00344
NSGWDE14	<.00715	<.01229	<.01011	<.01627	<.01491	<.03410	<.00724	<.01142	<.29203	<.00579	<.02891	<.04055	<.10065	<.00685
NSGWDE15	<.00203	<.01256	<.00896	<.00925	<.01676	<.01364	<.00458	<.00489	<.09966	<.00402	<.02277	<.03728	<.06351	<.00328
NSGWDR01	<.00179	<.00583	<.00554	<.01269	<.01680	<.01547	<.00497	<.00499	<.11093	<.00552	<.03390	<.02920	<.08328	<.00346
NSGWJF19	<.00284	<.01302	<.00890	<.01477	<.00992	<.01266	<.00607	<.01087	<.16005	<.00606	<.02449	<.04681	<.09987	<.00446
NSGWDE16	<.00366	<.00950	<.00664	<.01089	<.00749	<.00669	<.00525	<.00689	<.07843	<.00374	<.02996	<.03192	<.08131	<.00381
NSGWDE17	<.00318	<.00520	<.00674	<.00673	<.01548	<.02097	<.00551	<.00838	<.17428	<.00584	<.04455	<.03359	<.05407	<.00302
NSGWDE18	<.00451	<.01229	<.00865	<.01521	<.02143	<.01865	<.00925	<.01318	<.10031	<.00806	<.03467	<.10871	<.04272	<.00518
NSGWDE19	<.00289	<.01080	<.00757	<.01527	<.01236	<.01828	<.00420	<.01213	<.10483	<.00564	<.02249	<.01883	<.08576	<.00386
NSGWDE20	<.00334	<.01091	<.00614	<.00959	<.01123	<.01422	<.00662	<.00832	<.10473	<.00298	<.03208	<.03404	<.10258	<.00250
NSGWDE21	0.01808	<.00562	<.00778	<.00440	<.00895	<.00950	<.00321	<.00572	<.10004	<.00657	<.01682	<.02227	<.06194	<.00178
NSGWPH01	<.00181	<.00702	<.00505	<.00509	<.00886	<.00894	<.00588	<.00402	<.14951	<.00301	<.01792	<.01733	<.05086	<.00365
NSGWPH02	<.00870	<.02162	<.01561	<.01690	<.03300	<.02732	<.01567	<.00941	<.25632	<.01105	<.05546	<.09275	<.10586	<.00401
NSGWPH03	<.00233	<.01184	<.00511	<.00423	<.00663	<.00700	<.00527	<.00837	<.06484	<.00295	<.01726	<.02145	<.06374	<.00165
NSGWPH04	<.00221	<.00803	<.00346	<.00384	<.01176	<.00904	<.00406	<.00510	<.10938	<.00369	<.02405	<.02513	<.02993	<.00239
NSGWPH05	<.00292	<.00645	<.00357	<.00789	<.01082	<.01376	<.00405	<.00386	<.07632	<.00541	<.01675	<.02260	<.05300	<.00136
NSGWPH06	<.00221	<.00552	<.00444	<.00741	<.00614	<.00618	<.00336	<.00546	<.07625	<.00176	<.02673	<.02452	<.03423	<.00225
NSGWPH07	<.00156	<.00537	<.00429	<.00422	0.05578	<.01568	<.00473	<.00474	<.06868	<.00403	<.01194	<.00939	<.05295	<.00237
NSGWPH08	<.00163	<.00637	<.00482	<.00302	<.00969	<.00992	<.00203	<.00528	<.11357	<.00364	<.02316	<.02839	<.04073	<.00360
NSGWPH09	<.00120	<.00409	<.00483	<.00709	<.00589	<.00931	<.00171	<.00713	<.07514	<.00262	<.01703	<.03111	<.02776	<.00230
NSGWPH10	<.00198	<.00393	<.00278	<.00664	<.00390	<.01131	<.00245	<.00300	<.10210	<.00275	<.02122	<.01689	<.03588	<.00177
NSGWPH11	<.00149	<.00647	<.00365	<.00460	<.00638	<.01372	<.00240	<.00312	<.06878	<.00118	<.00960	<.00614	<.03523	<.00334
NSGWPH12	<.00083	<.00815	<.00364	<.00418	<.00803	<.00925	<.00472	<.00567	<.07713	<.00297	<.02693	<.02797	<.05236	<.00207
NSGWPH13	<.00092	<.00935	<.00465	<.00344	<.00357	<.00714	<.00303	<.00389	<.07874	<.00245	<.02269	<.01096	<.03320	<.00180
NSGWPH14	<.00088	<.00218	<.00241	<.00654	<.00525	<.00991	<.00431	<.00259	<.08280	<.00179	<.01547	<.00842	<.04620	<.00196
NSGWPH15	<.00257	<.00697	<.00282	<.00498	<.00819	<.00525	<.00438	<.00608	<.09321	<.00230	<.02721	<.01583	<.03732	<.00246
NSGWPH16	<.00137	<.00698	<.00320	<.00368	<.00706	<.00325	<.00249	<.00269	<.12908	<.00280	<.01470	<.01406	<.03231	<.00214
NSGWPH17	<.00160	<.00613	<.00245	<.00348	<.00394	<.00809	<.00335	<.00472	<.07119	<.00393	<.01438	<.01186	<.03990	<.00153
NSGWPH18	<.00166	<.01168	<.00592	<.00481	<.01052	<.01515	<.00182	<.00420	<.07436	<.00385	<.02469	<.02178	<.06532	<.00161
NSGWPH19	<.00111	<.00530	<.00483	<.00398	<.01053	<.00661	<.00311	<.00324	<.11170	<.00210	<.02550	<.01071	<.03178	<.00187
NSGWPH20	<.00198	<.00515	<.00299	<.00445	<.00723	<.01015	<.00498	<.00346	<.09354	<.00177	<.02577	<.01285	<.03504	<.00266
NSGWPH21	<.00270	<.00469	<.00360	<.00561	<.00643	<.00504	<.00212	<.00172	<.07628	<.00215	<.02273	<.01066	<.02961	<.00170
NSGWPH22	<.00161	<.00601	<.00411	<.00401	<.00625	<.00708	<.00229	<.00334	<.12114	<.00228	<.01986	<.01265	<.02529	<.00204
NSGWPH23	<.00204	<.00399	<.00339	<.00320	<.01155	<.00994	<.00581	<.00296	<.11726	<.00193	<.00992	<.02115	<.02819	<.00149
NSGWPH24	<.00162	<.00358	<.00508	<.00462	<.00762	<.01192	<.00422	<.00385	<.10826	<.00307	<.01797	<.01071	<.02408	<.00181
NSGWPH25	<.00103	<.00424	<.00363	<.00555	<.01004	<.00930	<.00443	<.00618	<.09256	<.00303	<.01561	<.01436	<.03708	<.00182
NSGWPH26	<.00110	<.00563	<.00314	<.00436	<.00559	<.01243	<.00324	<.00909	<.12968	<.00393	<.01463	<.03000	<.04749	<.00232

Station_ID	Endosulfan-Sulfate ug/L	p-p'-DDT ug/L	Hexazinone ug/L	Methoxychlor ug/L	PCB-AR1221 ug/L	PCB-AR1232 ug/L	PCB-AR1242 ug/L	PCB-AR1248 ug/L	PCB-AR1254 ug/L	PCB-AR1260 ug/L	Technical-Chlordane ug/L	Propanil ug/L
NSGWAR01	<.01697	<.00386	<.00679	<.00205	<.01881	<.04223	<.03438	<.08935	<.14864	<.06358	<.04217	<.01519
NSGWAR02	<.01645	<.00387	<.00382	<.00283	<.01507	<.03384	<.07811	<.20298	<.13147	<.05624	<.07706	<.03386
NSGWAR03	<.02493	<.00288	<.01671	<.00212	<.02048	<.04598	<.08168	<.21224	<.16194	<.06927	<.08784	<.03761
NSGWJF01	<.02526	<.00569	<.01882	<.01054	<.02657	<.05966	<.14699	<.38196	<.59433	<.25422	<.09250	<.07377
NSGWJF02	<.01238	<.00633	<.01021	<.00386	<.03416	<.07670	<.21565	<.56038	<.16345	<.06992	<.08665	<.05262
NSGWJF03	<.03538	<.00332	<.01321	<.00260	<.01262	<.02834	<.13736	<.35694	<.17869	<.07643	<.06637	<.05594
NSGWJF04	<.01622	<.00391	<.00588	<.00147	<.01725	<.03872	<.05616	<.14592	<.06105	<.02611	<.06719	<.01747
NSGWJF05	<.01206	<.00396	<.00466	<.00177	<.00692	<.01554	<.09484	<.24643	<.15675	<.06705	<.05526	<.01575
NSGWJF07	<.00745	<.00160	<.00621	<.00264	<.01160	<.02604	<.08016	<.20830	<.07479	<.03199	<.07504	<.01974
NSGWLN01	<.01494	<.00317	<.00247	<.00172	<.01068	<.02399	<.06719	<.17458	<.14522	<.06212	<.04994	<.02227
NSGWLN02	<.01470	<.00195	<.00687	<.00269	<.01888	<.04240	<.05710	<.14837	<.10505	<.04493	<.06569	<.03109
NSGWLN03	<.02046	<.00370	<.00937	<.00255	<.01455	<.03268	<.07334	<.19058	<.11592	<.04959	<.04961	<.02870
NSGWJF06	<.01308	<.00345	<.00361	<.00228	<.01079	<.02423	<.07342	<.19080	<.11462	<.04903	<.6570	<.02870
NSGWJF08	<.01873	<.00458	<.00822	<.00288	<.02266	<.05089	<.17874	<.46682	<.14529	<.06215	<.06117	<.04954
NSGWJF09	<.02908	<.00651	<.01142	<.00624	<.02096	<.04707	<.13353	<.34873	<.16722	<.07153	<.08056	<.04209
NSGWJF10	<.02196	<.00554	<.00931	<.00357	<.02585	<.05805	<.15063	<.39341	<.13567	<.05803	<.09922	<.03278
NSGWJF11	<.01557	<.00231	<.00689	0.0124	<.01806	<.04055	<.10956	<.28614	<.23380	<.10001	<.06866	<.03214
NSGWJF12	<.02343	<.00451	<.00636	<.00380	<.02435	<.05468	<.08636	<.22555	<.17558	<.07510	<.05932	<.02439
NSGWJF13	<.01900	<.00445	<.00834	<.00219	<.01900	<.04267	<.06288	<.16422	<.14814	<.06337	<.06047	<.03470
NSGWJF14	<.02644	<.00284	<.00587	<.00191	<.02283	<.05126	<.06925	<.18085	<.06460	<.02763	<.05742	<.03164
NSGWJF15	<.01311	<.00323	<.00972	<.00241	<.01062	<.02385	<.14246	<.37207	<.11430	<.04889	<.04194	<.04010
NSGWJF16	<.01283	<.00415	<.00939	<.00362	<.01959	<.04399	<.05705	<.14900	<.14848	<.06351	<.04935	<.03136
NSGWJF17	<.04510	<.00847	<.01539	<.00724	<.02275	<.05109	<.11757	<.30707	<.30249	<.12939	<.12251	<.07955
NSGWJF18	<.03005	<.00681	<.01335	<.00683	<.04315	<.09690	<.14002	<.36571	<.28520	<.12200	<.04461	<.03621
NSGWLN04	<.01610	<.00338	<.01204	<.00334	<.01436	<.03225	<.07527	<.19558	<.16800	<.07187	<.03647	<.05023
NSGWLN05	<.04403	<.00583	<.01042	<.00703	<.03292	<.07393	<.25030	<.65041	<.57007	<.24385	<.05844	<.07831
NSGWLN06	<.03094	<.00571	<.00715	<.00313	<.02095	<.04704	<.18933	<.49199	<.19647	<.08404	<.07360	<.03963
NSGWDE01	<.01819	<.00455	<.00688	<.00267	<.01423	<.03195	<.13015	<.33819	<.10597	<.04533	<.04330	<.02723
NSGWDE02	<.02728	<.00575	<.01345	<.00282	<.02176	<.04886	<.07972	<.20714	<.14210	<.06079	<.03421	<.06505
NSGWDE03	<.02231	<.00498	<.01289	<.00250	<.00945	<.02122	<.14285	<.37119	<.19816	<.08477	<.03130	<.04431
NSGWDE04	<.02145	<.00396	<.00635	<.00357	<.02809	<.06308	<.17910	<.46539	<.27858	<.11917	<.05247	<.02964
NSGWDE05	<.02659	<.00390	<.00701	<.00361	<.01181	<.02653	<.11001	<.28586	<.13160	<.05629	<.05520	<.06237
NSGWDE06	<.01066	<.00388	<.01168	<.00316	<.01046	<.02348	<.08952	<.23262	<.12850	<.05497	<.05187	<.03240
NSGWDE07	<.02062	<.00279	<.00822	<.00217	<.01263	<.02837	<.07151	<.18581	<.11686	<.04999	<.07023	<.04141
NSGWLN07	<.06150	<.01144	<.01877	<.00486	<.04649	<.10438	<.36936	<.95980	<.30558	<.13071	<.10991	<.07975
NSGWDE08	<.03654	<.00764	<.01341	<.00730	<.02041	<.04583	<.17545	<.45592	<.14302	<.06118	<.07503	<.07937
NSGWDE09	<.03420	<.00612	<.00922	<.00485	<.02174	<.04881	<.10871	<.28248	<.12211	<.05223	<.04456	<.05974
NSGWDE10	<.01925	<.00430	<.00881	<.00483	<.01376	<.03089	<.12900	<.33521	<.17389	<.07438	<.08087	<.05849
NSGWDE11	<.00948	<.00448	<.01007	<.00288	<.01548	<.03475	<.11976	<.31121	<.10473	<.07046	<.06365	<.04217

Station_ID	Endosulfan-Sulfate ug/L	p-p'-DDT ug/L	Hexazinone ug/L	Methoxychlor ug/L	PCB-AR1221 ug/L	PCB-AR1232 ug/L	PCB-AR1242 ug/L	PCB-AR1248 ug/L	PCB-AR1254 ug/L	PCB-AR1260 ug/L	Technical-Chlordane ug/L	Propanil ug/L
NSGWDE12	<.02723	<.00431	<.00978	<.00504	<.03625	<.08139	<.11005	<.28596	<.19460	<.08324	<.03826	<.06010
NSGWDE13	<.01617	<.00309	<.01194	<.00293	<.02215	<.04973	<.28005	<.72771	<.24198	<.10351	<.05494	<.04333
NSGWDE14	<.03101	<.00615	<.00844	<.00326	<.01992	<.04473	<.10960	<.28479	<.18079	<.07733	<.09369	<.05967
NSGWDE15	<.01757	<.00252	<.01024	<.00278	<.01575	<.03537	<.12188	<.31766	<.16894	<.07226	<.07000	<.02952
NSGWDR01	<.01912	<.00266	<.00979	<.00253	<.01350	<.03032	<.10430	<.27184	<.18616	<.07963	<.07142	<.03203
NSGWJF19	<.01321	<.00343	<.00999	<.00148	<.02307	<.05180	<.09471	<.24685	<.18232	<.07799	<.07292	<.03973
NSGWDE16	<.00812	<.00292	<.00875	<.00261	<.01412	<.03170	<.08808	<.22959	<.26839	<.11481	<.07900	<.02492
NSGWDE17	<.00885	<.00232	<.00637	<.00204	<.02488	<.05586	<.06767	<.17637	<.15735	<.06731	<.06321	<.03842
NSGWDE18	<.02030	<.00398	<.01606	<.00331	<.02151	<.04830	<.25028	<.65234	<.28679	<.12268	<.10299	<.02895
NSGWDE19	<.01328	<.00297	<.00670	<.00293	<.01047	<.02352	<.10379	<.27053	<.11233	<.04805	<.05365	<.03171
NSGWDE20	<.01108	<.00192	<.00969	<.00212	<.02407	<.05404	<.11461	<.29871	<.12227	<.05230	<.06086	<.01552
NSGWDE21	<.00918	<.00137	<.00592	<.00190	<.01692	<.03800	<.10559	<.27521	<.19359	<.08281	<.07114	<.01931
NSGWPH01	<.01585	<.00293	<.00518	<.00144	<.01172	<.02631	<.08273	<.21497	<.07757	<.03318	<.03249	<.01782
NSGWPH02	<.03252	<.00321	<.01040	<.00580	<.02369	<.05319	<.23653	<.61464	<.27495	<.11761	<.11427	<.05126
NSGWPH03	<.01289	<.00133	<.00618	<.00243	<.02329	<.05229	<.09292	<.24145	<.13495	<.05772	<.05725	<.01216
NSGWPH04	<.02171	<.00192	<.00592	<.00177	<.01060	<.02381	<.13099	<.34039	<.15314	<.06550	<.05361	<.01736
NSGWPH05	<.01081	<.00109	<.00387	<.00152	<.01249	<.02806	<.05413	<.14067	<.09844	<.04211	<.04503	<.01156
NSGWPH06	<.00612	<.00181	<.00308	<.00129	<.01001	<.02248	<.03741	<.09722	<.14032	<.06002	<.04495	<.01694
NSGWPH07	<.01014	<.00190	<.00547	<.00158	<.01022	<.02295	<.06820	<.17722	<.05537	<.02368	<.04952	<.02045
NSGWPH08	<.00822	<.00289	<.00566	<.00082	<.01175	<.02639	<.07808	<.20290	<.10418	<.04456	<.02196	<.02137
NSGWPH09	<.01180	<.00184	<.00450	<.00124	<.01009	<.02266	<.04885	<.12695	<.09891	<.04231	<.03668	<.01556
NSGWPH10	<.00849	<.00148	<.00603	<.00181	<.00987	<.02217	<.04735	<.12304	<.10814	<.04626	<.03113	<.01599
NSGWPH11	<.00539	<.00279	<.00453	<.00078	<.00543	<.01220	<.08332	<.21651	<.10619	<.04542	<.04675	<.01395
NSGWPH12	<.00810	<.00173	<.00510	<.00148	<.01215	<.02729	<.11912	<.30954	<.08645	<.03698	<.03393	<.02148
NSGWPH13	<.01114	<.00151	<.00393	<.00065	<.01421	<.03190	<.06365	<.16541	<.09799	<.04192	<.01612	<.01855
NSGWPH14	<.00784	<.00164	<.00322	<.00167	<.00900	<.02022	<.04840	<.12577	<.09979	<.04268	<.03830	<.01775
NSGWPH15	<.00652	<.00205	<.00287	<.00129	<.01235	<.02774	<.03689	<.09586	<.07302	<.03123	<.04029	<.01664
NSGWPH16	<.00786	<.00179	<.00577	<.00128	<.00869	<.01951	<.07545	<.19606	<.09679	<.04140	<.02385	<.01890
NSGWPH17	<.01089	<.00128	<.00480	<.00111	<.00939	<.02108	<.05152	<.13388	<.07284	<.03116	<.02970	<.01790
NSGWPH18	<.01555	<.00135	<.00506	<.00208	<.01542	<.03463	<.10180	<.26455	<.05877	<.02514	<.04834	<.01751
NSGWPH19	<.01047	<.00156	<.00418	<.00111	<.00752	<.01688	<.06287	<.16337	<.12314	<.05267	<.02425	<.00467
NSGWPH20	<.01045	<.00237	<.00531	<.00089	<.01050	<.02360	<.08883	<.23024	<.07975	<.03415	<.02490	<.01489
NSGWPH21	<.00648	<.00152	<.00437	<.00125	<.00522	<.01173	<.07572	<.19626	<.07931	<.03396	<.02889	<.01195
NSGWPH22	<.00572	<.00182	<.00457	<.00128	<.00634	<.01425	<.02453	<.06358	<.07707	<.03301	<.02607	<.01447
NSGWPH23	<.00993	<.00133	<.00500	<.00096	<.00578	<.01300	<.06213	<.16105	<.11360	<.04865	<.01626	<.01788
NSGWPH24	<.00865	<.00161	<.00532	<.00157	<.00584	<.01313	<.02824	<.07320	<.07261	<.03109	<.02309	<.01125
NSGWPH25	<.00833	<.00162	<.00578	<.00133	<.01010	<.02270	<.06045	<.15670	<.13550	<.05803	<.02053	<.02062
NSGWPH26	<.01119	<.00207	<.00958	<.00198	<.01034	<.02323	<.04887	<.12666	<.12183	<.05217	<.03923	<.00605

APPENDIX II

Water Quality Accuracy Checks

Sample Location:	AR01										
Alkalinity (mg/l)	**208**										
Measured conductivity (umho/cm)	**610**										
Infinite dilution conductivity (umho/cm)	585.124634										
Ionic strength (M)	0.0077										
Monovalent ion activity coefficient	0.9137										
Calculated conductivity (umho/cm)	**488.528229**										
Measured TDS	**299**										
Calculated TDS	**307.402792**										
Ratio: Meas TDS/Calc TDS	0.97266521	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.80086595	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62924264	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.49016393	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**22.7**	**0.6**	**67.7**	**6.1**	**11.9**	**32.799**	**16.7**	**0.23**	**0**	**253.76**	**23.9**
Concentration (meq/L)	0.9875	0.0153	3.3782	0.5020	0.4261	0.9253	0.3477	0.0037	0.0000	4.1591	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9875	0.0153	1.6891	0.2510	0.2131	0.9253	0.1738	0.0037	0.0000	4.1591	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	49.471245	1.128078	201.004685	26.6513148	23.01793	70.689848	27.81552	0.26488686	0	185.081125	
Ionic strength	0.00049373	7.674E-06	0.00337823	0.00050191	0.000426	0.00046263	0.00034769	1.855E-06	0	0.00207956	
Cation sum (meq/L)	5.309136										
Anion sum (meq/L)	5.43579009										
% Difference	-1.17873393	Should be < 5%									
Ion Difference	-0.12665409										
Ratio: Cation sum*(100)/Measured conductivity	0.87035016	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.89111313	Should be between 0.9 and 1.1									

Sample Location:	AR02										
Alkalinity (mg/l)	**172**										
Measured conductivity (umho/cm)	**546**										
Infinite dilution conductivity (umho/cm)	534.460761										
Ionic strength (M)	0.0071										
Monovalent ion activity coefficient	0.9166										
Calculated conductivity (umho/cm)	**449.036114**										
Measured TDS	**286**										
Calculated TDS	**288.581328**										
Ratio: Meas TDS/Calc TDS	0.99105511	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.82241047	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64266842	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.52380952	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**22.7**	**0.6**	**57.8**	**7**	**10.6**	**23.386**	**34.5**	**0.217**	**0**	**209.84**	**28.6**
Concentration (meq/L)	0.9875	0.0153	2.8842	0.5760	0.3796	0.6597	0.7183	0.0035	0.0000	3.4393	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9875	0.0153	1.4421	0.2880	0.1898	0.6597	0.3591	0.0035	0.0000	3.4393	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	49.471245	1.128078	171.61109	30.583476	20.50337	50.4025362	57.4632	0.24991499	0	153.047853	
Ionic strength	0.00049373	7.674E-06	0.00288422	0.00057596	0.00038	0.00032986	0.00071829	1.7501E-06	0	0.00171964	
Cation sum (meq/L)	4.842634										
Anion sum (meq/L)	4.82078687										
% Difference	0.2260807	Should be < 2%									
Ion Difference	0.02184713										
Ratio: Cation sum*(100)/Measured conductivity	0.8869293	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.882928	Should be between 0.9 and 1.1									

Sample Location:	AR03										
Alkalinity (mg/l)	**203**										
Measured conductivity (umho/cm)	**720**										
Infinite dilution conductivity (umho/cm)	736.527658										
Ionic strength (M)	0.0099										
Monovalent ion activity coefficient	0.9040										
Calculated conductivity (umho/cm)	**601.964658**										
Measured TDS	**384**										
Calculated TDS	**375.280422**										
Ratio: Meas TDS/Calc TDS	1.02323483	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83606203	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62342601	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.53333333	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**19.4**	**0.5**	**87.4**	**12.6**	**10.7**	**41.426**	**52.8**	**0.18**	**0**	**247.66**	**28.5**
Concentration (meq/L)	0.8439	0.0128	4.3613	1.0369	0.3832	1.1686	1.0993	0.0029	0.0000	4.0591	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.8439	0.0128	2.1806	0.5184	0.1916	1.1686	0.5496	0.0029	0.0000	4.0591	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	42.27939	0.940065	259.49497	55.0502568	20.696796	89.2831379	87.94368	0.20730276	0	180.6321	
Ionic strength	0.00042195	6.395E-06	0.00436126	0.00103673	0.00038327	0.00058431	0.0010993	1.4517E-06	0	0.00203	
Cation sum (meq/L)	6.637971										
Anion sum (meq/L)	6.32997426										
% Difference	2.375062	Should be < 5%									
Ion Difference	0.30799674										
Ratio: Cation sum*(100)/Measured conductivity	0.92194042	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.87916309	Should be between 0.9 and 1.1									

Sample Location:	JF01										
Alkalinity (mg/l)	**245**										
Measured conductivity (umho/cm)	**630**										
Infinite dilution conductivity (umho/cm)	647.831033										
Ionic strength (M)	0.0089										
Monovalent ion activity coefficient	0.9081										
Calculated conductivity (umho/cm)	**534.236343**										
Measured TDS	**320**										
Calculated TDS	**323.75913**										
Ratio: Meas TDS/Calc TDS	0.98838912	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.8479942	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.60602229	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.50793651	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**18.2**	**0.4**	**83.5**	**13.6**	**5.06**	**21.152**	**15.7**	**0.478**	**0**	**298.9**	**18.7**
Concentration (meq/L)	0.7917	0.0102	4.1667	1.1191	0.1812	0.5967	0.3269	0.0077	0.0000	4.8990	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.7917	0.0102	2.0833	0.5595	0.0906	0.5967	0.1634	0.0077	0.0000	4.8990	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	39.66417	0.752052	247.915675	59.4193248	9.7874568	45.5877211	26.14992	0.550504	0	218.0042	
Ionic strength	0.00039585	5.116E-06	0.00416665	0.00111901	0.00018125	0.00029835	0.00032687	3.8551E-06	0	0.002449	
Cation sum (meq/L)	6.2689246										
Anion sum (meq/L)	5.83025306										
% Difference	3.62563103	Should be < 5%									
Ion Difference	0.43867154										
Ratio: Cation sum*(100)/Measured conductivity	0.9950674	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.92543699	Should be between 0.9 and 1.1									

Sample Location:	JF02										
Alkalinity (mg/l)	**276**										
Measured conductivity (umho/cm)	**1101**										
Infinite dilution conductivity (umho/cm)	1169.09699										
Ionic strength (M)	0.0157										
Monovalent ion activity coefficient	0.8844										
Calculated conductivity (umho/cm)	**914.378377**										
Measured TDS	**624**										
Calculated TDS	**601.247224**										
Ratio: Meas TDS/Calc TDS	1.03784263	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83049807	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65754751	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56675749	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**37.1**	**1.4**	**118**	**17**	**17.9**	**42.117**	**174**	**0.165**	**0**	**336.72**	**28**
Concentration (meq/L)	1.6139	0.0358	5.8882	1.3989	0.6410	1.1881	3.6227	0.0027	0.0000	5.5188	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.6139	0.0358	2.9441	0.6994	0.3206	1.1881	1.8113	0.0027	0.0000	5.5188	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	80.853885	2.632182	350.3479	74.274156	34.623612	90.7724115	289.8144	0.19002753	0	245.5884	
Ionic strength	0.00080693	1.7906E-05	0.0058882	0.00139876	0.00064118	0.00059406	0.00362268	1.3307E-06	0	0.002759	
Cation sum (meq/L)	9.577791										
Anion sum (meq/L)	10.3323028										
% Difference	-3.7895945	Should be < 5%									
Ion Difference	-0.75451182										
Ratio: Cation sum*(100)/Measured conductivity	0.86991744	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.93844712	Should be between 0.9 and 1.1									

Sample Location:	JF03										
Alkalinity (mg/l)	**249**										
Measured conductivity (umho/cm)	**808**										
Infinite dilution conductivity (umho/cm)	808.843813										
Ionic strength (M)	0.0105										
Monovalent ion activity coefficient	0.9019										
Calculated conductivity (umho/cm)	**657.913515**										
Measured TDS	**405**										
Calculated TDS	**401.298826**										
Ratio: Meas TDS/Calc TDS	1.00922349	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.8142494	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.6099565	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.50123762	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**35**	**1.2**	**81.7**	**17.7**	**5.12**	**58.061**	**32.2**	**0.149**	**0**	**303.78**	**20.8**
Concentration (meq/L)	1.5225	0.0307	4.0768	1.4565	0.1833	1.6379	0.6704	0.0024	0.0000	4.9790	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.5225	0.0307	2.0384	0.7282	0.0917	1.6379	0.3352	0.0024	0.0000	4.9790	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	76.27725	2.256156	242.571385	77.3325036	9.9035136	125.135622	53.63232	0.17160062	0	221.5635	
Ionic strength	0.00076125	1.5348E-05	0.00407683	0.00145636	0.0001834	0.00081895	0.0006704	1.2017E-06	0	0.002489	
Cation sum (meq/L)	7.2699062										
Anion sum (meq/L)	7.28966238										
% Difference	-0.13569207	Should be < 5%									
Ion Difference	-0.01975618										
Ratio: Cation sum*(100)/Measured conductivity	0.89974087	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.90218594	Should be between 0.9 and 1.1									

Sample Location:	JF04										
Alkalinity (mg/l)	**340**										
Measured conductivity (umho/cm)	**1150**										
Infinite dilution conductivity (umho/cm)	1051.33696										
Ionic strength (M)	0.0142										
Monovalent ion activity coefficient	0.8891										
Calculated conductivity (umho/cm)	**831.143735**										
Measured TDS	**594**										
Calculated TDS	**519.68916**										
Ratio: Meas TDS/Calc TDS	1.14299094	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.72273368	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.6252699	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.51652174	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**71.3**	**1.5**	**114**	**22.1**	**10.4**	**30.388**	**41.9**	**0.144**	**0**	**414.8**	**24**
Concentration (meq/L)	3.1016	0.0384	5.6886	1.8186	0.3724	0.8572	0.8724	0.0023	0.0000	6.7986	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	3.1016	0.0384	2.8443	0.9092	0.1863	0.8572	0.4362	0.0023	0.0000	6.7986	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	155.387655	2.820195	338.4717	96.5564028	20.116512	65.4935547	69.78864	0.16584221	0	302.5365	
Ionic strength	0.00155078	1.9185E-05	0.0056886	0.00181839	0.00037253	0.00042862	0.00087236	1.1614E-06	0	0.003399	
Cation sum (meq/L)	11.019553										
Anion sum (meq/L)	8.5304982										
% Difference	12.7317048	Should be < 5%									
Ion Difference	2.4890548										
Ratio: Cation sum*(100)/Measured conductivity	0.958222	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.74178245	Should be between 0.9 and 1.1									

Sample Location:	JF05										
Alkalinity (mg/l)	**297**										
Measured conductivity (umho/cm)	**1400**										
Infinite dilution conductivity (umho/cm)	1488.085										
Ionic strength (M)	0.0182										
Monovalent ion activity coefficient	0.8776										
Calculated conductivity (umho/cm)	**1146.10978**										
Measured TDS	**697**										
Calculated TDS	**710.221578**										
Ratio: Meas TDS/Calc TDS	0.98138387	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.81864984	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.61968023	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.49785714	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**64**	**1.3**	**132**	**33.1**	**4.69**	**184**	**83.7**	**0.269**	**0**	**362.34**	**29**
Concentration (meq/L)	2.7840	0.0333	6.5868	2.7238	0.1679	5.1906	1.7426	0.0043	0.0000	5.9388	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	2.7840	0.0333	3.2934	1.3617	0.0840	5.1906	0.8713	0.0043	0.0000	5.9388	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	139.4784	2.444169	391.9146	144.616151	9.0717732	396.564896	139.41072	0.30980246	0	264.2745	
Ionic strength	0.001392	1.6627E-05	0.0065868	0.00272347	0.000168	0.00259532	0.00174263	2.1695E-06	0	0.002969	
Cation sum (meq/L)	12.2958019										
Anion sum (meq/L)	12.8763656										
% Difference	-2.30637139	Should be < 5%									
Ion Difference	-0.58056367										
Ratio: Cation sum*(100)/Measured conductivity	0.87827156	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.9197404	Should be between 0.9 and 1.1									

Sample Location:	JF07										
Alkalinity (mg/l)	**443**										
Measured conductivity (umho/cm)	**1040**										
Infinite dilution conductivity (umho/cm)	1069.51687										
Ionic strength (M)	0.0145										
Monovalent ion activity coefficient	0.8882										
Calculated conductivity (umho/cm)	**843.651657**										
Measured TDS	**541**										
Calculated TDS	**546.643182**										
Ratio: Meas TDS/Calc TDS	0.98967666	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.81120352	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64794892	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.52019231	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**50.6**	**1.2**	**111**	**26.3**	**6.43**	**26.024**	**29.8**	**0.145**	**0**	**540.46**	**29.4**
Concentration (meq/L)	2.2011	0.0307	5.5389	2.1642	0.2303	0.7341	0.6204	0.0023	0.0000	8.8581	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	2.2011	0.0307	2.7695	1.0820	0.1152	0.7341	0.3102	0.0023	0.0000	8.8581	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	110.27511	2.256156	329.56455	114.906488	12.4374204	56.0880699	49.63488	0.16699389	0	394.1872	
Ionic strength	0.00110055	1.5348E-05	0.0055389	0.00216396	0.00023032	0.00036707	0.00062044	1.1694E-06	0	0.004429	
Cation sum (meq/L)	10.1651813										
Anion sum (meq/L)	10.2150513										
% Difference	-0.24469785	Should be < 5%									
Ion Difference	-0.04986999										
Ratio: Cation sum*(100)/Measured conductivity	0.97742128	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.98221647	Should be between 0.9 and 1.1									

Sample Location:	LN01										
Alkalinity (mg/l)	**233**										
Measured conductivity (umho/cm)	**656**										
Infinite dilution conductivity (umho/cm)	649.856314										
Ionic strength (M)	0.0086										
Monovalent ion activity coefficient	0.9095										
Calculated conductivity (umho/cm)	**537.578685**										
Measured TDS	**339**										
Calculated TDS	**340.785642**										
Ratio: Meas TDS/Calc TDS	0.99476022	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.8194797	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.633927	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.51676829	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**28.2**	**1**	**70.5**	**11.5**	**7.1**	**29.276**	**25.6**	**0.139**	**0**	**284.26**	**27.7**
Concentration (meq/L)	1.2267	0.0256	3.5180	0.9463	0.2543	0.8259	0.5330	0.0022	0.0000	4.6590	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.2267	0.0256	1.7590	0.4731	0.1272	0.8259	0.2665	0.0022	0.0000	4.6590	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	61.45767	1.88013	209.318025	50.244282	13.733388	63.0969233	42.63936	0.1600838	0	207.3265	
Ionic strength	0.00061335	1.279E-05	0.00351795	0.00094622	0.00025432	0.00041294	0.00053299	1.121E-06	0	0.00233	
Cation sum (meq/L)	5.970816										
Anion sum (meq/L)	6.02013143										
% Difference	-0.41127217	Should be < 5%									
Ion Difference	-0.04931543										
Ratio: Cation sum*(100)/Measured conductivity	0.91018537	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.91770296	Should be between 0.9 and 1.1									

Sample Location:	LN02										
Alkalinity (mg/l)	**297**										
Measured conductivity (umho/cm)	**794**										
Infinite dilution conductivity (umho/cm)	793.381367										
Ionic strength (M)	0.0105										
Monovalent ion activity coefficient	0.9017										
Calculated conductivity (umho/cm)	**645.011727**										
Measured TDS	**414**										
Calculated TDS	**410.811578**										
Ratio: Meas TDS/Calc TDS	1.00776128	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.81235734	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.6369056	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.52141058	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**29**	**1.2**	**94.5**	**9**	**12.2**	**37.2**	**23.9**	**0.149**	**0**	**362.34**	**25.5**
Concentration (meq/L)	1.2615	0.0307	4.7156	0.7406	0.4369	1.0494	0.4976	0.0024	0.0000	5.9388	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.2615	0.0307	2.3578	0.3703	0.2185	1.0494	0.2488	0.0024	0.0000	5.9388	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	63.20115	2.256156	280.575225	39.321612	23.598216	80.1750768	39.80784	0.17160062	0	264.2745	
Ionic strength	0.00063075	1.5348E-05	0.00471555	0.00074052	0.000437	0.00052471	0.0004976	1.2017E-06	0	0.002969	
Cation sum (meq/L)	7.185238										
Anion sum (meq/L)	7.48816597										
% Difference	-2.06446964	Should be < 5%									
Ion Difference	-0.30292797										
Ratio: Cation sum*(100)/Measured conductivity	0.90494181	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.94309395	Should be between 0.9 and 1.1									

Sample Location:	LN03										
Alkalinity (mg/l)	**389**										
Measured conductivity (umho/cm)	**957**										
Infinite dilution conductivity (umho/cm)	891.995673										
Ionic strength (M)	0.0120										
Monovalent ion activity coefficient	0.8961										
Calculated conductivity (umho/cm)	**716.345697**										
Measured TDS	**462**										
Calculated TDS	**463.963986**										
Ratio: Meas TDS/Calc TDS	0.99576694	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.7485326	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64768168	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.48275862	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**26.8**	**1.2**	**115**	**5.6**	**22.3**	**31.472**	**4.9**	**0.141**	**0**	**474.58**	**23.2**
Concentration (meq/L)	1.1658	0.0307	5.7385	0.4608	0.7986	0.8878	0.1020	0.0023	0.0000	7.7784	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.1658	0.0307	2.8693	0.2304	0.3994	0.8878	0.0510	0.0023	0.0000	7.7784	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	58.40658	2.256156	341.44075	24.4667808	43.134444	67.8298392	8.16144	0.16238716	0	346.1373	
Ionic strength	0.0005829	1.5348E-05	0.0057385	0.00046077	0.00079879	0.00044391	0.00010202	1.1372E-06	0	0.003889	
Cation sum (meq/L)	8.194383										
Anion sum (meq/L)	8.77048365										
% Difference	-3.39584544	Should be < 5%									
Ion Difference	-0.57610065										
Ratio: Cation sum*(100)/Measured conductivity	0.85625737	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.91645597	Should be between 0.9 and 1.1									

Sample Location:	JF06										
Alkalinity (mg/l)	**235**										
Measured conductivity (umho/cm)	**882**										
Infinite dilution conductivity (umho/cm)	909.99167										
Ionic strength (M)	0.0113										
Monovalent ion activity coefficient	0.8986										
Calculated conductivity (umho/cm)	**734.872479**										
Measured TDS	**452**										
Calculated TDS	**457.29739**										
Ratio: Meas TDS/Calc TDS	0.98841588	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83318875	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62228128	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.51247166	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**42.8**	**0.9**	**83.7**	**19**	**5.38**	**92.501**	**38.7**	**0.146**	**0**	**286.7**	**33.2**
Concentration (meq/L)	1.8618	0.0230	4.1766	1.5635	0.1927	2.6095	0.8057	0.0024	0.0000	4.6990	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.8618	0.0230	2.0883	0.7817	0.0964	2.6095	0.4029	0.0024	0.0000	4.6990	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	93.27618	1.692117	248.509485	83.012292	10.4064264	199.362225	64.45872	0.16814557	0	209.1061	
Ionic strength	0.0009309	1.1511E-05	0.00417663	0.00156332	0.00019271	0.00130473	0.00080573	1.1775E-06	0	0.00235	
Cation sum (meq/L)	7.8176198										
Anion sum (meq/L)	8.11655519										
% Difference	-1.87606444	Should be < 5%									
Ion Difference	-0.29893539										
Ratio: Cation sum*(100)/Measured conductivity	0.88635145	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.92024435	Should be between 0.9 and 1.1									

Sample Location:	JF08										
Alkalinity (mg/l)	**135**										
Measured conductivity (umho/cm)	**334**										
Infinite dilution conductivity (umho/cm)	308.09049										
Ionic strength (M)	0.0040										
Monovalent ion activity coefficient	0.9348										
Calculated conductivity (umho/cm)	**269.202538**										
Measured TDS	**195**										
Calculated TDS	**196.35799**										
Ratio: Meas TDS/Calc TDS	0.99308411	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.80599562	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.72940616	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.58383234	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**14.7**	**1**	**30.2**	**0.03**	**17.9**	**11.943**	**1.9**	**0.082**	**0.22**	**164.7**	**37.4**
Concentration (meq/L)	0.6395	0.0256	1.5070	0.0025	0.6410	0.3369	0.0396	0.0013	0.0116	2.6994	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.6395	0.0256	0.7535	0.0012	0.3206	0.3369	0.0198	0.0013	0.0116	2.6994	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	32.036445	1.88013	89.66531	0.13107204	34.623612	25.7400791	3.16464	0.09443792	0.62999552	120.1248	
Ionic strength	0.00031973	1.279E-05	0.00150698	2.4684E-06	0.00064118	0.00016846	3.9558E-05	6.6133E-07	5.7904E-06	0.00135	
Cation sum (meq/L)	2.8154777										
Anion sum (meq/L)	3.08880649										
% Difference	-4.62932984	Should be < 2%									
Ion Difference	-0.27332879										
Ratio: Cation sum*(100)/Measured conductivity	0.8429574	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.92479236	Should be between 0.9 and 1.1									

Sample Location:	JF09										
Alkalinity (mg/l)	**200**										
Measured conductivity (umho/cm)	**450**										
Infinite dilution conductivity (umho/cm)	393.795436										
Ionic strength (M)	0.0051										
Monovalent ion activity coefficient	0.9277										
Calculated conductivity (umho/cm)	**338.893406**										
Measured TDS	**252**										
Calculated TDS	**258.5178**										
Ratio: Meas TDS/Calc TDS	0.97478781	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.75309646	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.76282924	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**22.6**	**1.7**	**37**	**0.5**	**15.4**	**8.074**	**1.9**	**0.039**	**0.33**	**244**	**51**
Concentration (meq/L)	0.9831	0.0435	1.8463	0.0411	0.5515	0.2278	0.0396	0.0006	0.0174	3.9992	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9831	0.0435	0.9232	0.0206	0.2758	0.2278	0.0198	0.0006	0.0174	3.9992	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	49.25331	3.196221	109.85485	2.184534	29.787912	17.4014401	3.16464	0.0449156	0.94499328	177.96262	
Ionic strength	0.00049155	2.1743E-05	0.0018463	4.114E-05	0.00055163	0.00011388	3.9558E-05	3.1454E-07	8.6856E-06	0.00199958	
Cation sum (meq/L)	3.465505										
Anion sum (meq/L)	4.28448581										
% Difference	-10.5675069	Should be < 2%									
Ion Difference	-0.81898081										
Ratio: Cation sum*(100)/Measured conductivity	0.77011222	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.95210796	Should be between 0.9 and 1.1									

Sample Location:	JF10										
Alkalinity (mg/l)	**314**										
Measured conductivity (umho/cm)	**741**										
Infinite dilution conductivity (umho/cm)	724.04652										
Ionic strength (M)	0.0101										
Monovalent ion activity coefficient	0.9033										
Calculated conductivity (umho/cm)	**590.787019**										
Measured TDS	**368**										
Calculated TDS	**370.895436**										
Ratio: Meas TDS/Calc TDS	0.99219339	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.79728343	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62779889	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.49662618	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**16.4**	**0.8**	**96.2**	**14.4**	**6.83**	**14.949**	**7.5**	**0.046**	**0.31**	**383.08**	**25.1**
Concentration (meq/L)	0.7134	0.0205	4.8004	1.1850	0.2446	0.4217	0.1562	0.0007	0.0163	6.2787	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.7134	0.0205	2.4002	0.5924	0.1223	0.4217	0.0781	0.0007	0.0163	6.2787	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	35.74134	1.504104	285.62261	62.9145792	13.2111324	32.2187426	12.492	0.05297737	0.88772096	279.401313	
Ionic strength	0.0003567	1.0232E-05	0.00480038	0.00118483	0.00024465	0.00021086	0.00015615	3.7099E-07	8.1592E-06	0.00313934	
Cation sum (meq/L)	6.9638023										
Anion sum (meq/L)	6.87360287										
% Difference	0.6518522	Should be < 5%									
Ion Difference	0.09019943										
Ratio: Cation sum*(100)/Measured conductivity	0.93978439	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.92761172	Should be between 0.9 and 1.1									

Sample Location:	JF11										
Alkalinity (mg/l)	**294**										
Measured conductivity (umho/cm)	**705**										
Infinite dilution conductivity (umho/cm)	723.615754										
Ionic strength (M)	0.0097										
Monovalent ion activity coefficient	0.9050										
Calculated conductivity (umho/cm)	**592.688933**										
Measured TDS	**367**										
Calculated TDS	**379.319956**										
Ratio: Meas TDS/Calc TDS	0.96752094	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84069352	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.63999838	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.52056738	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**28.1**	**0.8**	**84.3**	**10.6**	**9.27**	**26.898**	**15.6**	**0.029**	**0.26**	**358.68**	**27.1**
Concentration (meq/L)	1.2224	0.0205	4.2066	0.8723	0.3320	0.7588	0.3248	0.0005	0.0137	5.8788	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.2224	0.0205	2.1033	0.4361	0.1660	0.7588	0.1624	0.0005	0.0137	5.8788	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	61.239735	1.504104	250.290915	46.3121208	17.9307756	57.9717531	25.98336	0.03339878	0.74454016	261.605051	
Ionic strength	0.00061118	1.0232E-05	0.00420657	0.00087217	0.00033205	0.0003794	0.00032479	2.3389E-07	6.8432E-06	0.00293938	
Cation sum (meq/L)	6.6536167										
Anion sum (meq/L)	6.97650395										
% Difference	-2.36892437	Should be < 5%									
Ion Difference	-0.32288725										
Ratio: Cation sum*(100)/Measured conductivity	0.94377542	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.98957503	Should be between 0.9 and 1.1									

Sample Location:	JF12										
Alkalinity (mg/l)	**409**										
Measured conductivity (umho/cm)	**863**										
Infinite dilution conductivity (umho/cm)	881.905838										
Ionic strength (M)	0.0125										
Monovalent ion activity coefficient	0.8945										
Calculated conductivity (umho/cm)	**705.603874**										
Measured TDS	**444**										
Calculated TDS	**447.951466**										
Ratio: Meas TDS/Calc TDS	0.99117881	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.81761747	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.63484837	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.51448436	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**14.6**	**0.7**	**128**	**15**	**9.26**	**9.183**	**0.5**	**0.01**	**0.25**	**498.98**	**25.1**
Concentration (meq/L)	0.6351	0.0179	6.3872	1.2344	0.3316	0.2591	0.0104	0.0002	0.0132	8.1783	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.6351	0.0179	3.1936	0.6171	0.1658	0.2591	0.0052	0.0002	0.0132	8.1783	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	31.81851	1.316091	380.0384	65.53602	17.9114328	19.7916057	0.8328	0.01151682	0.715904	363.933558	
Ionic strength	0.00031755	8.953E-06	0.0063872	0.0012342	0.00033169	0.00012953	1.041E-05	8.065E-08	6.58E-06	0.00408914	
Cation sum (meq/L)	8.6061566										
Anion sum (meq/L)	8.46106593										
% Difference	0.85011296	Should be < 5%									
Ion Difference	0.14509067										
Ratio: Cation sum*(100)/Measured conductivity	0.99723715	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.98042479	Should be between 0.9 and 1.1									

Sample Location:	JF13										
Alkalinity (mg/l)	**285**										
Measured conductivity (umho/cm)	**743**										
Infinite dilution conductivity (umho/cm)	749.799502										
Ionic strength (M)	0.0102										
Monovalent ion activity coefficient	0.9029										
Calculated conductivity (umho/cm)	**611.25499**										
Measured TDS	**381**										
Calculated TDS	**379.21409**										
Ratio: Meas TDS/Calc TDS	1.0047095	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.82268505	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62038608	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.512786	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**17.7**	**0.5**	**84**	**21**	**8.24**	**37.67**	**10.5**	**0.03**	**0.31**	**347.7**	**28.3**
Concentration (meq/L)	0.7700	0.0128	4.1916	1.7281	0.2951	1.0627	0.2186	0.0005	0.0163	5.6988	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.7700	0.0128	2.0958	0.8639	0.1476	1.0627	0.1093	0.0005	0.0163	5.6988	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	38.574495	0.940065	249.4002	91.750428	15.9384672	81.1880415	17.4888	0.03455046	0.88772096	253.596733	
Ionic strength	0.00038498	6.395E-06	0.0041916	0.00172788	0.00029516	0.00053134	0.00021861	2.4195E-07	8.1592E-06	0.0028494	
Cation sum (meq/L)	6.9975044										
Anion sum (meq/L)	6.996886										
% Difference	0.00441891	Should be < 5%									
Ion Difference	0.0006184										
Ratio: Cation sum*(100)/Measured conductivity	0.94179063	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.9417074	Should be between 0.9 and 1.1									

Sample Location:	JF14										
Alkalinity (mg/l)	**166**										
Measured conductivity (umho/cm)	**494**										
Infinite dilution conductivity (umho/cm)	496.158332										
Ionic strength (M)	0.0067										
Monovalent ion activity coefficient	0.9187										
Calculated conductivity (umho/cm)	**418.780926**										
Measured TDS	**251**										
Calculated TDS	**284.789084**										
Ratio: Meas TDS/Calc TDS	0.88135401	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84773467	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.68004311	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.50809717	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**18.5**	**1.6**	**48.7**	**0.03**	**45.6**	**27.471**	**7.5**	**0.059**	**0.15**	**202.52**	**35.6**
Concentration (meq/L)	0.8048	0.0409	2.4301	0.0025	1.6329	0.7750	0.1562	0.0010	0.0079	3.3193	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.8048	0.0409	1.2151	0.0012	0.8167	0.7750	0.0781	0.0010	0.0079	3.3193	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	40.317975	3.008208	144.592735	0.13107204	88.203168	59.2067079	12.492	0.06794924	0.4295424	147.708975	
Ionic strength	0.00040238	2.0464E-05	0.00243013	2.4684E-06	0.00163339	0.00038748	0.00015615	4.7583E-07	3.948E-06	0.00165965	
Cation sum (meq/L)	4.9112127										
Anion sum (meq/L)	4.25925738										
% Difference	7.10929008	Should be < 2%									
Ion Difference	0.65195532										
Ratio: Cation sum*(100)/Measured conductivity	0.99417261	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.86219785	Should be between 0.9 and 1.1									

Sample Location:	JF15										
Alkalinity (mg/l)	**157**										
Measured conductivity (umho/cm)	**583**										
Infinite dilution conductivity (umho/cm)	590.143313										
Ionic strength (M)	0.0078										
Monovalent ion activity coefficient	0.9135										
Calculated conductivity (umho/cm)	**492.453492**										
Measured TDS	**294**										
Calculated TDS	**326.879218**										
Ratio: Meas TDS/Calc TDS	0.89941478	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84468867	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.66377683	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.50428816	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**19.1**	**2.2**	**40.5**	**0.03**	**70.5**	**51.279**	**22.2**	**0.06**	**0.13**	**191.54**	**26.7**
Concentration (meq/L)	0.8309	0.0563	2.0210	0.0025	2.5246	1.4466	0.4622	0.0010	0.0068	3.1393	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.8309	0.0563	1.0105	0.0012	1.2627	1.4466	0.2311	0.0010	0.0068	3.1393	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	41.625585	4.136286	120.246525	0.13107204	136.36674	110.518757	36.97632	0.06910092	0.37227008	139.700657	
Ionic strength	0.00041543	2.8138E-05	0.00202095	2.4684E-06	0.00252531	0.00072329	0.0004622	4.839E-07	3.4216E-06	0.00156967	
Cation sum (meq/L)	5.4351497										
Anion sum (meq/L)	5.05593619										
% Difference	3.61462592	Should be < 5%									
Ion Difference	0.37921351										
Ratio: Cation sum*(100)/Measured conductivity	0.93227268	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.86722748	Should be between 0.9 and 1.1									

Sample Location:	JF16										
Alkalinity (mg/l)	**305**										
Measured conductivity (umho/cm)	**652**										
Infinite dilution conductivity (umho/cm)	678.14447										
Ionic strength (M)	0.0095										
Monovalent ion activity coefficient	0.9056										
Calculated conductivity (umho/cm)	**556.119028**										
Measured TDS	**348**										
Calculated TDS	**351.86757**										
Ratio: Meas TDS/Calc TDS	0.98900845	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.85294329	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.63271989	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.53374233	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**11.9**	**0.6**	**99.3**	**7.8**	**12.8**	**11.272**	**0.5**	**0.034**	**0.3**	**372.1**	**24.4**
Concentration (meq/L)	0.5177	0.0153	4.9551	0.6419	0.4584	0.3180	0.0104	0.0005	0.0158	6.0987	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.5177	0.0153	2.4775	0.3209	0.2292	0.3180	0.0052	0.0005	0.0158	6.0987	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	25.934265	1.128078	294.826665	34.0787304	24.758784	24.2939104	0.8328	0.03915719	0.8590848	271.392996	
Ionic strength	0.00025883	7.674E-06	0.00495507	0.00064178	0.0004585	0.00015899	1.041E-05	2.7421E-07	7.896E-06	0.00304936	
Cation sum (meq/L)	6.588298										
Anion sum (meq/L)	6.44345254										
% Difference	1.11148122	Should be < 5%									
Ion Difference	0.14484546										
Ratio: Cation sum*(100)/Measured conductivity	1.01047515	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.98825959	Should be between 0.9 and 1.1									

Sample Location:	JF17										
Alkalinity (mg/l)	196										
Measured conductivity (umho/cm)	545										
Infinite dilution conductivity (umho/cm)	573.103248										
Ionic strength (M)	0.0076										
Monovalent ion activity coefficient	0.9140										
Calculated conductivity (umho/cm)	478.758381										
Measured TDS	302										
Calculated TDS	307.335304										
Ratio: Meas TDS/Calc TDS	0.98264012	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.87684685	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.6419424	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.55311355	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**21**	**1.1**	**70.6**	**5.6**	**8.51**	**25.293**	**27.1**	**0.037**	**0.22**	**239.12**	**30.3**
Concentration (meq/L)	0.9135	0.0281	3.5229	0.4608	0.3047	0.7135	0.5642	0.0006	0.0116	3.9192	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9135	0.0281	1.7615	0.2304	0.1524	0.7135	0.2821	0.0006	0.0116	3.9192	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	45.76635	2.068143	209.61493	24.4667808	16.4607228	54.5125865	45.13776	0.04261223	0.62999552	174.403368	
Ionic strength	0.00045675	1.4069E-05	0.00352294	0.00046077	0.00030483	0.00035676	0.00056422	2.9841E-07	5.7904E-06	0.00195959	
Cation sum (meq/L)	5.2301451										
Anion sum (meq/L)	5.20909194										
% Difference	0.20167336	Should be < 5%									
Ion Difference	0.02105316										
Ratio: Cation sum*(100)/Measured conductivity	0.95790203	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.95404614	Should be between 0.9 and 1.1									

Sample Location:	JF18										
Alkalinity (mg/l)	305										
Measured conductivity (umho/cm)	911										
Infinite dilution conductivity (umho/cm)	950.754878										
Ionic strength (M)	0.0123										
Monovalent ion activity coefficient	0.8953										
Calculated conductivity (umho/cm)	762.151317										
Measured TDS	460										
Calculated TDS	476.62757										
Ratio: Meas TDS/Calc TDS	0.96511412	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83660957	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62537131	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.50493963	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**30.9**	**1.1**	**112**	**9.6**	**18.6**	**78.395**	**17.9**	**0.031**	**0.24**	**372.1**	**24.9**
Concentration (meq/L)	1.3442	0.0281	5.5888	0.7900	0.6661	2.2115	0.3727	0.0005	0.0126	6.0987	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.3442	0.0281	2.7944	0.3949	0.3331	2.2115	0.1863	0.0005	0.0126	6.0987	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	67.341915	2.068143	332.5336	41.9430528	35.977608	168.960353	29.81424	0.03570214	0.68726784	271.392996	
Ionic strength	0.00067208	1.4069E-05	0.0055888	0.00078989	0.00066625	0.00110576	0.00037268	2.5002E-07	6.3168E-06	0.00304936	
Cation sum (meq/L)	8.417138										
Anion sum (meq/L)	8.69605358										
% Difference	-1.62982795	Should be < 5%									
Ion Difference	-0.27891558										
Ratio: Cation sum*(100)/Measured conductivity	0.9239449	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.95456132	Should be between 0.9 and 1.1									

Sample Location:	DE02										
Alkalinity (mg/l)	**312**										
Measured conductivity (umho/cm)	**1218**										
Infinite dilution conductivity (umho/cm)	1415.03183										
Ionic strength (M)	0.0176										
Monovalent ion activity coefficient	0.8793										
Calculated conductivity (umho/cm)	**1094.05732**										
Measured TDS	**690**										
Calculated TDS	**708.959688**										
Ratio: Meas TDS/Calc TDS	0.97325703	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.89824082	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64800964	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56650246	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SIO2**
Concentration (mg/L)	**72.3**	**1.3**	**113**	**25.2**	**9.12**	**126**	**145.2**	**0.029**	**0.25**	**380.64**	**29.4**
Concentration (meq/L)	3.1450	0.0333	5.6387	2.0737	0.3266	3.5545	3.0231	0.0005	0.0132	6.2387	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	3.1450	0.0333	2.8194	1.0367	0.1633	3.5545	1.5115	0.0005	0.0132	6.2387	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	157.567005	2.444169	335.50265	110.100514	17.6406336	271.560744	241.84512	0.03339878	0.715904	277.621687	
Ionic strength	0.00157252	1.6627E-05	0.0056387	0.00207346	0.00032668	0.00177723	0.00302306	2.3389E-07	6.58E-06	0.00311934	
Cation sum (meq/L)	11.2172992										
Anion sum (meq/L)	12.8298414										
% Difference	-6.70575433	Should be < 5%									
Ion Difference	-1.61254217										
Ratio: Cation sum*(100)/Measured conductivity	0.92096053	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.05335315	Should be between 0.9 and 1.1									

Sample Location:	DE03										
Alkalinity (mg/l)	**370**										
Measured conductivity (umho/cm)	**1025**										
Infinite dilution conductivity (umho/cm)	1112.03897										
Ionic strength (M)	0.0143										
Monovalent ion activity coefficient	0.8886										
Calculated conductivity (umho/cm)	**878.059513**										
Measured TDS	**578**										
Calculated TDS	**573.35138**										
Ratio: Meas TDS/Calc TDS	1.0081078	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.85664343	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65297554	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56390244	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SIO2**
Concentration (mg/L)	**62.7**	**1.5**	**99.2**	**20.7**	**10**	**58.77**	**67.1**	**0.028**	**0.2**	**451.4**	**31.2**
Concentration (meq/L)	2.7275	0.0384	4.9501	1.7034	0.3581	1.6579	1.3970	0.0005	0.0105	7.3984	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	2.7275	0.0384	2.4750	0.8516	0.1791	1.6579	0.6985	0.0005	0.0105	7.3984	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	136.645245	2.820195	294.52976	90.4397076	19.3428	126.66369	111.76176	0.0322471	0.5727232	329.230847	
Ionic strength	0.00136373	1.9185E-05	0.00495008	0.0017032	0.0003582	0.00082895	0.00139702	2.2582E-07	5.264E-06	0.00369922	
Cation sum (meq/L)	9.777403										
Anion sum (meq/L)	10.4643493										
% Difference	-3.39370984	Should be < 5%									
Ion Difference	-0.68694634										
Ratio: Cation sum*(100)/Measured conductivity	0.95389298	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.02091213	Should be between 0.9 and 1.1									

Sample Location:	DE04										
Alkalinity (mg/l)	**346**										
Measured conductivity (umho/cm)	**1056**										
Infinite dilution conductivity (umho/cm)	1130.95791										
Ionic strength (M)	0.0145										
Monovalent ion activity coefficient	0.8881										
Calculated conductivity (umho/cm)	**891.955732**										
Measured TDS	**566**										
Calculated TDS	**570.153404**										
Ratio: Meas TDS/Calc TDS	0.99271529	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84465505	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.63921715	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.53598485	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**35.9**	**2**	**122**	**18**	**9.85**	**94.045**	**46.8**	**0.032**	**0.17**	**422.12**	**33.8**
Concentration (meq/L)	1.5616	0.0512	6.0878	1.4812	0.3527	2.6530	0.9744	0.0005	0.0089	6.9185	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.5616	0.0512	3.0439	0.7405	0.1764	2.6530	0.4872	0.0005	0.0089	6.9185	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	78.238665	3.76026	362.2241	78.643224	19.052658	202.689922	77.95008	0.03685382	0.48681472	307.875333	
Ionic strength	0.00078082	2.558E-05	0.0060878	0.00148104	0.00035283	0.0013265	0.00097438	2.5808E-07	4.4744E-06	0.00345927	
Cation sum (meq/L)	9.5345585										
Anion sum (meq/L)	10.5553972										
% Difference	-5.08133878	Should be < 5%									
Ion Difference	-1.02083871										
Ratio: Cation sum*(100)/Measured conductivity	0.9028938	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.99956413	Should be between 0.9 and 1.1									

Sample Location:	DE05										
Alkalinity (mg/l)	**335**										
Measured conductivity (umho/cm)	**1202**										
Infinite dilution conductivity (umho/cm)	1294.2717										
Ionic strength (M)	0.0162										
Monovalent ion activity coefficient	0.8831										
Calculated conductivity (umho/cm)	**1009.40054**										
Measured TDS	**663**										
Calculated TDS	**657.71979**										
Ratio: Meas TDS/Calc TDS	1.00802805	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.8397675	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65159445	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.5515807	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**68.3**	**2**	**115**	**20.6**	**13.4**	**111.432**	**87.3**	**0.01**	**0.22**	**408.7**	**38.5**
Concentration (meq/L)	2.9710	0.0512	5.7385	1.6952	0.4799	3.1435	1.8176	0.0002	0.0116	6.6986	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	2.9710	0.0512	2.8693	0.8475	0.2400	3.1435	0.9088	0.0002	0.0116	6.6986	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	148.849605	3.76026	341.44075	90.0028008	25.919352	240.163149	145.40688	0.01151682	0.62999552	298.087389	
Ionic strength	0.00148552	2.558E-05	0.0057385	0.00169497	0.00047999	0.00157175	0.00181759	8.065E-08	5.7904E-06	0.0033493	
Cation sum (meq/L)	10.935738										
Anion sum (meq/L)	11.6714178										
% Difference	-3.25419007	Should be < 5%									
Ion Difference	-0.73567982										
Ratio: Cation sum*(100)/Measured conductivity	0.90979517	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.97099982	Should be between 0.9 and 1.1									

Sample Location:	DE06										
Alkalinity (mg/l)	307										
Measured conductivity (umho/cm)	1320										
Infinite dilution conductivity (umho/cm)	1480.14872										
Ionic strength (M)	0.0179										
Monovalent ion activity coefficient	0.8785										
Calculated conductivity (umho/cm)	1142.23795										
Measured TDS	707										
Calculated TDS	713.733318										
Ratio: Meas TDS/Calc TDS	0.99056606	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.86533178	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62485519	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.53560606	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SIO2**
Concentration (mg/L)	**72.9**	**1.5**	**127**	**25.6**	**10.4**	**181**	**87.3**	**0.022**	**0.25**	**374.54**	**23.6**
Concentration (meq/L)	3.1712	0.0384	6.3373	2.1066	0.3724	5.1060	1.8176	0.0004	0.0132	6.1387	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	3.1712	0.0384	3.1687	1.0532	0.1863	5.1060	0.9088	0.0004	0.0132	6.1387	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	158.874615	2.820195	377.06935	111.848141	20.116512	390.099164	145.40688	0.025337	0.715904	273.172622	
Ionic strength	0.00158558	1.9185E-05	0.0063373	0.00210637	0.00037253	0.00255301	0.00181759	1.7743E-07	6.58E-06	0.00306936	
Cation sum (meq/L)	12.025868										
Anion sum (meq/L)	13.0758215										
% Difference	-4.18279997	Should be < 5%									
Ion Difference	-1.04995346										
Ratio: Cation sum*(100)/Measured conductivity	0.91105061	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.99059253	Should be between 0.9 and 1.1									

Sample Location:	DE07										
Alkalinity (mg/l)	247										
Measured conductivity (umho/cm)	838										
Infinite dilution conductivity (umho/cm)	863.518552										
Ionic strength (M)	0.0108										
Monovalent ion activity coefficient	0.9005										
Calculated conductivity (umho/cm)	700.160133										
Measured TDS	448										
Calculated TDS	446.147878										
Ratio: Meas TDS/Calc TDS	1.00415136	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83551329	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.63720834	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.53460621	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SIO2**
Concentration (mg/L)	**42.2**	**0.8**	**83.4**	**8.3**	**14**	**68.931**	**54.1**	**0.048**	**0.2**	**301.34**	**26**
Concentration (meq/L)	1.8357	0.0205	4.1617	0.6830	0.5013	1.9445	1.1264	0.0008	0.0105	4.9390	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.8357	0.0205	2.0808	0.3415	0.2507	1.9445	0.5632	0.0008	0.0105	4.9390	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	91.96857	1.504104	247.61877	36.2632644	27.07992	148.563124	90.10896	0.05528074	0.5727232	219.783836	
Ionic strength	0.00091785	1.0232E-05	0.00416166	0.00068292	0.00050148	0.00097227	0.00112636	3.8712E-07	5.264E-06	0.00246948	
Cation sum (meq/L)	7.202171										
Anion sum (meq/L)	8.02117035										
% Difference	-5.37989217	Should be < 5%									
Ion Difference	-0.81899935										
Ratio: Cation sum*(100)/Measured conductivity	0.85944761	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.95718023	Should be between 0.9 and 1.1									

Sample Location:	LN07		
Alkalinity (mg/l)	**147**		
Measured conductivity (umho/cm)	**395**		
Infinite dilution conductivity (umho/cm)	348.745617		
Ionic strength (M)	0.0048		
Monovalent ion activity coefficient	0.9297		
Calculated conductivity (umho/cm)	**301.435237**		
Measured TDS	**211**		
Calculated TDS	**215.527478**		
Ratio: Meas TDS/Calc TDS	0.9789935	Should be between 0.9 and 1.1	
Ratio: Calc cond/Meas cond	0.76312718	Should be between 0.9 and 1.1	
Ratio: Calc TDS/Calc cond	0.71500426	Should be between 0.55 and 0.7	
Ratio: Meas TDS/Meas cond	0.53417722	Should be between 0.55 and 0.7	

	Constituent: Na	K	Ca	Mg	Fe	Cl	SO4	NO3	F	HCO3	SiO2
Concentration (mg/L)	**7.9**	**0.9**	**38.9**	**0.03**	**26.7**	**12.153**	**3.3**	**0.063**	**0**	**179.34**	**37.4**
Concentration (meq/L)	0.3437	0.0230	1.9411	0.0025	0.9561	0.3428	0.0687	0.0010	0.0000	2.9394	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.3437	0.0230	0.9706	0.0012	0.4782	0.3428	0.0344	0.0010	0.0000	2.9394	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	17.216865	1.692117	115.496045	0.13107204	51.645276	26.1926803	5.49648	0.07255597	0	130.802526	
Ionic strength	0.00017183	1.1511E-05	0.00194111	2.4684E-06	0.00095639	0.00017142	6.8706E-05	5.081E-07	0	0.00146969	

Cation sum (meq/L)	3.2663777	
Anion sum (meq/L)	3.35194092	
% Difference	-1.29282413	Should be < 2%
Ion Difference	-0.08556322	
Ratio: Cation sum*(100)/Measured conductivity	0.82693106	Should be between 0.9 and 1.1
Ratio: Anion sum*(100)/Measured conductivity	0.84859264	Should be between 0.9 and 1.1

Sample Location:	DE08		
Alkalinity (mg/l)	**151**		
Measured conductivity (umho/cm)	**406**		
Infinite dilution conductivity (umho/cm)	352.845129		
Ionic strength (M)	0.0048		
Monovalent ion activity coefficient	0.9298		
Calculated conductivity (umho/cm)	**305.017256**		
Measured TDS	**207**		
Calculated TDS	**210.112974**		
Ratio: Meas TDS/Calc TDS	0.98518428	Should be between 0.9 and 1.1	
Ratio: Calc cond/Meas cond	0.75127403	Should be between 0.9 and 1.1	
Ratio: Calc TDS/Calc cond	0.68885602	Should be between 0.55 and 0.7	
Ratio: Meas TDS/Meas cond	0.50985222	Should be between 0.55 and 0.7	

	Constituent: Na	K	Ca	Mg	Fe	Cl	SO4	NO3	F	HCO3	SiO2
Concentration (mg/L)	**11.1**	**1**	**42.4**	**0.03**	**18.1**	**10.743**	**4.9**	**0.059**	**0**	**184.22**	**31.2**
Concentration (meq/L)	0.4829	0.0256	2.1158	0.0025	0.6482	0.3031	0.1020	0.0010	0.0000	3.0194	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.4829	0.0256	1.0579	0.0012	0.3242	0.3031	0.0510	0.0010	0.0000	3.0194	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	24.190785	1.88013	125.88772	0.13107204	35.010468	23.1537863	8.16144	0.06794924	0	134.361778	
Ionic strength	0.00024143	1.279E-05	0.00211576	2.4684E-06	0.00064834	0.00015153	0.00010202	4.7583E-07	0	0.00150968	

Cation sum (meq/L)	3.2748197	
Anion sum (meq/L)	3.4253955	
% Difference	-2.24732782	Should be < 2%
Ion Difference	-0.1505758	
Ratio: Cation sum*(100)/Measured conductivity	0.80660584	Should be between 0.9 and 1.1
Ratio: Anion sum*(100)/Measured conductivity	0.84369347	Should be between 0.9 and 1.1

Sample Location:	DE09										
Alkalinity (mg/l)	**300**										
Measured conductivity (umho/cm)	**765**										
Infinite dilution conductivity (umho/cm)	722.162076										
Ionic strength (M)	0.0095										
Monovalent ion activity coefficient	0.9056										
Calculated conductivity (umho/cm)	**592.278182**										
Measured TDS	**383**										
Calculated TDS	**383.3072**										
Ratio: Meas TDS/Calc TDS	0.99919855	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.77421985	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64717427	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.50065359	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**30.2**	**1.4**	**83.3**	**5.9**	**16.7**	**30.693**	**9.1**	**0.052**	**0**	**366**	**26**
Concentration (meq/L)	1.3137	0.0358	4.1567	0.4855	0.5980	0.8658	0.1895	0.0008	0.0000	5.9987	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.3137	0.0358	2.0783	0.2427	0.2991	0.8658	0.0947	0.0008	0.0000	5.9987	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	65.81637	2.632182	247.321865	25.7775012	32.302476	66.1509041	15.15696	0.05988746	0	266.94393	
Ionic strength	0.00065685	1.7906E-05	0.00415667	0.00048545	0.00059819	0.00043292	0.00018946	4.1938E-07	0	0.00299937	
Cation sum (meq/L)	6.58972										
Anion sum (meq/L)	7.05489029										
% Difference	-3.40918707	Should be < 5%									
Ion Difference	-0.46517029										
Ratio: Cation sum*(100)/Measured conductivity	0.86140131	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.92220788	Should be between 0.9 and 1.1									

Sample Location:	DE10										
Alkalinity (mg/l)	**175**										
Measured conductivity (umho/cm)	**505**										
Infinite dilution conductivity (umho/cm)	517.952157										
Ionic strength (M)	0.0066										
Monovalent ion activity coefficient	0.9191										
Calculated conductivity (umho/cm)	**437.553287**										
Measured TDS	**288**										
Calculated TDS	**287.85295**										
Ratio: Meas TDS/Calc TDS	1.00051085	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.86644215	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65786947	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57029703	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**28.3**	**1.2**	**51.3**	**3.6**	**11.6**	**29.52**	**26.5**	**0.055**	**0**	**213.5**	**30.8**
Concentration (meq/L)	1.2311	0.0307	2.5599	0.2962	0.4154	0.8328	0.5517	0.0009	0.0000	3.4993	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.2311	0.0307	1.2799	0.1481	0.2078	0.8328	0.2759	0.0009	0.0000	3.4993	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	61.675605	2.256156	152.312265	15.7286448	22.437648	63.6228029	44.1384	0.06334251	0	155.717293	
Ionic strength	0.00061553	1.5348E-05	0.00255987	0.00029621	0.00041551	0.00041638	0.00055173	4.4358E-07	0	0.00174963	
Cation sum (meq/L)	4.533256										
Anion sum (meq/L)	4.88464135										
% Difference	-3.73103822	Should be < 2%									
Ion Difference	-0.35138535										
Ratio: Cation sum*(100)/Measured conductivity	0.89767446	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.96725571	Should be between 0.9 and 1.1									

Sample Location:	DE11										
Alkalinity (mg/l)	**229**										
Measured conductivity (umho/cm)	**787**										
Infinite dilution conductivity (umho/cm)	840.827858										
Ionic strength (M)	0.0103										
Monovalent ion activity coefficient	0.9027										
Calculated conductivity (umho/cm)	**685.181216**										
Measured TDS	**439**										
Calculated TDS	**428.786146**										
Ratio: Meas TDS/Calc TDS	1.02382039	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.87062416	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62579962	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.55781449	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**44.8**	**1.7**	**79.9**	**8.2**	**12.3**	**87.163**	**30.9**	**0.052**	**0**	**279.38**	**26.4**
Concentration (meq/L)	1.9488	0.0435	3.9870	0.6748	0.4405	2.4589	0.6433	0.0008	0.0000	4.5790	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.9488	0.0435	1.9935	0.3373	0.2203	2.4589	0.3217	0.0008	0.0000	4.5790	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	97.63488	3.196221	237.227095	35.8263576	23.791644	187.857533	51.46704	0.05988746	0	203.7672	
Ionic strength	0.0009744	2.1743E-05	0.00398701	0.0006747	0.00044059	0.00122943	0.00064334	4.1938E-07	0	0.00228952	
Cation sum (meq/L)	7.094537										
Anion sum (meq/L)	7.68208319										
% Difference	-3.97618794	Should be < 5%									
Ion Difference	-0.58754619										
Ratio: Cation sum*(100)/Measured conductivity	0.90146595	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.97612239	Should be between 0.9 and 1.1									

Sample Location:	DE12										
Alkalinity (mg/l)	**210**										
Measured conductivity (umho/cm)	**607**										
Infinite dilution conductivity (umho/cm)	592.671909										
Ionic strength (M)	0.0079										
Monovalent ion activity coefficient	0.9127										
Calculated conductivity (umho/cm)	**493.747358**										
Measured TDS	**331**										
Calculated TDS	**328.29354**										
Ratio: Meas TDS/Calc TDS	1.00824402	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.81342234	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.66490187	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.54530478	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**21.4**	**0.8**	**64.9**	**3.9**	**16.3**	**20.366**	**43.5**	**0.054**	**0**	**256.2**	**31.1**
Concentration (meq/L)	0.9309	0.0205	3.2385	0.3209	0.5837	0.5745	0.9057	0.0009	0.0000	4.1991	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9309	0.0205	1.6193	0.1604	0.2919	0.5745	0.4528	0.0009	0.0000	4.1991	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	46.63809	1.504104	192.691345	17.0393652	31.528764	43.8936993	72.4536	0.06219083	0	186.860751	
Ionic strength	0.00046545	1.0232E-05	0.00323851	0.00032089	0.00058387	0.00028726	0.00090567	4.3551E-07	0	0.00209956	
Cation sum (meq/L)	5.094508										
Anion sum (meq/L)	5.68018388										
% Difference	-5.43566244	Should be < 5%									
Ion Difference	-0.58567588										
Ratio: Cation sum*(100)/Measured conductivity	0.83929292	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.93577988	Should be between 0.9 and 1.1									

Sample Location:	DE13										
Alkalinity (mg/l)	**263**										
Measured conductivity (umho/cm)	**655**										
Infinite dilution conductivity (umho/cm)	653.503189										
Ionic strength (M)	0.0088										
Monovalent ion activity coefficient	0.9089										
Calculated conductivity (umho/cm)	**539.857367**										
Measured TDS	**348**										
Calculated TDS	**349.558862**										
Ratio: Meas TDS/Calc TDS	0.99554049	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.82420972	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64750225	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.53129771	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SIO2**
Concentration (mg/L)	**18.5**	**1.1**	**75.7**	**8**	**15.3**	**28.343**	**16**	**0.049**	**0**	**320.86**	**28.8**
Concentration (meq/L)	0.8048	0.0281	3.7774	0.6583	0.5479	0.7996	0.3331	0.0008	0.0000	5.2589	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.8048	0.0281	1.8887	0.3291	0.2740	0.7996	0.1666	0.0008	0.0000	5.2589	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	40.317975	2.068143	224.757085	34.952544	29.594484	61.0860807	26.6496	0.05643242	0	234.020845	
Ionic strength	0.00040238	1.4069E-05	0.00377743	0.00065824	0.00054805	0.00039978	0.00033312	3.9519E-07	0	0.00262945	
Cation sum (meq/L)	5.816531										
Anion sum (meq/L)	6.3923618										
% Difference	-4.71648666	Should be < 5%									
Ion Difference	-0.5758308										
Ratio: Cation sum*(100)/Measured conductivity	0.88802	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.9759331	Should be between 0.9 and 1.1									

Sample Location:	DE14										
Alkalinity (mg/l)	**259**										
Measured conductivity (umho/cm)	**865**										
Infinite dilution conductivity (umho/cm)	849.871768										
Ionic strength (M)	0.0107										
Monovalent ion activity coefficient	0.9009										
Calculated conductivity (umho/cm)	**689.820572**										
Measured TDS	**452**										
Calculated TDS	**433.804366**										
Ratio: Meas TDS/Calc TDS	1.04194433	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.79748043	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62886551	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.52254335	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SIO2**
Concentration (mg/L)	**31.3**	**1.2**	**89.6**	**13**	**1.5**	**73.789**	**38.5**	**0.048**	**0**	**315.98**	**29.5**
Concentration (meq/L)	1.3616	0.0307	4.4710	1.0698	0.0537	2.0816	0.8016	0.0008	0.0000	5.1789	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.3616	0.0307	2.2355	0.5348	0.0269	2.0816	0.4008	0.0008	0.0000	5.1789	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	68.213655	2.256156	266.02688	56.797884	2.90142	159.0333	64.1256	0.05528074	0	230.461593	
Ionic strength	0.00068078	1.5348E-05	0.00447104	0.00106964	5.373E-05	0.00104079	0.00080157	3.8712E-07	0	0.00258946	
Cation sum (meq/L)	6.986771										
Anion sum (meq/L)	8.06284413										
% Difference	-7.15017042	Should be < 5%									
Ion Difference	-1.07607313										
Ratio: Cation sum*(100)/Measured conductivity	0.80771919	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.93212071	Should be between 0.9 and 1.1									

Sample Location:	DE15										
Alkalinity (mg/l)	**300**										
Measured conductivity (umho/cm)	**732**										
Infinite dilution conductivity (umho/cm)	755.345134										
Ionic strength (M)	0.0102										
Monovalent ion activity coefficient	0.9028										
Calculated conductivity (umho/cm)	**615.709189**										
Measured TDS	**399**										
Calculated TDS	**403.1982**										
Ratio: Meas TDS/Calc TDS	0.98958775	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84113277	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65485169	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.54508197	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**24.7**	**1.1**	**82.6**	**12.3**	**12.6**	**21.113**	**37.7**	**0.043**	**0.28**	**366**	**30.8**
Concentration (meq/L)	1.0745	0.0281	4.1217	1.0122	0.4512	0.5956	0.7849	0.0007	0.0147	5.9987	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.0745	0.0281	2.0609	0.5060	0.2257	0.5956	0.3925	0.0007	0.0147	5.9987	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	53.829945	2.068143	245.24353	53.7395364	24.371928	45.5036666	62.79312	0.04952233	0.80181248	266.94393	
Ionic strength	0.00053723	1.4069E-05	0.00412174	0.00101204	0.00045133	0.0002978	0.00078491	3.4679E-07	7.3696E-06	0.00299937	
Cation sum (meq/L)	6.687701										
Anion sum (meq/L)	7.39468452										
% Difference	-5.0203392	Should be < 5%									
Ion Difference	-0.70698352										
Ratio: Cation sum*(100)/Measured conductivity	0.91362036	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.0102028	Should be between 0.9 and 1.1									

Sample Location:	DR01										
Alkalinity (mg/l)	**124**										
Measured conductivity (umho/cm)	**332**										
Infinite dilution conductivity (umho/cm)	306.497493										
Ionic strength (M)	0.0039										
Monovalent ion activity coefficient	0.9358										
Calculated conductivity (umho/cm)	**288.400566**										
Measured TDS	**184**										
Calculated TDS	**190.330376**										
Ratio: Meas TDS/Calc TDS	0.96674006	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.80843544	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.70912807	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.55421687	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**20.6**	**0.9**	**26.2**	**0.03**	**13.7**	**12.143**	**10.8**	**0.043**	**0.33**	**151.28**	**31.2**
Concentration (meq/L)	0.8961	0.0230	1.3074	0.0025	0.4906	0.3426	0.2249	0.0007	0.0174	2.4795	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.8961	0.0230	0.6537	0.0012	0.2454	0.3426	0.1124	0.0007	0.0174	2.4795	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	44.89461	1.692117	77.78911	0.13107204	26.499636	26.1711279	17.98848	0.04952233	0.94499328	110.336824	
Ionic strength	0.00044805	1.1511E-05	0.00130738	2.4684E-06	0.00049073	0.00017128	0.00022486	3.4679E-07	8.6856E-06	0.00123974	
Cation sum (meq/L)	2.7195677										
Anion sum (meq/L)	3.06495402										
% Difference	-5.97087083	Should be < 2%									
Ion Difference	-0.34538632										
Ratio: Cation sum*(100)/Measured conductivity	0.8191469	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.92317892	Should be between 0.9 and 1.1									

Sample Location:	**JF19**										
Alkalinity (mg/l)	**274**										
Measured conductivity (umho/cm)	**687**										
Infinite dilution conductivity (umho/cm)	734.869942										
Ionic strength (M)	0.0097										
Monovalent ion activity coefficient	0.9048										
Calculated conductivity (umho/cm)	**601.64208**										
Measured TDS	**387**										
Calculated TDS	**379.554476**										
Ratio: Meas TDS/Calc TDS	1.01961648	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.87575266	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.63086424	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56331878	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**29.9**	**0.9**	**80.7**	**11.2**	**7.96**	**31.375**	**31**	**0.164**	**0.29**	**334.28**	**21.7**
Concentration (meq/L)	1.3007	0.0230	4.0269	0.9216	0.2850	0.8851	0.6454	0.0026	0.0153	5.4788	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.3007	0.0230	2.0135	0.4608	0.1426	0.8851	0.3227	0.0026	0.0153	5.4788	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	65.162565	1.692117	239.602335	48.9335616	15.3968688	67.6207805	51.6336	0.18887585	0.83044864	243.808789	
Ionic strength	0.00065032	1.1511E-05	0.00402693	0.00092154	0.00028513	0.00044254	0.00064542	1.3227E-06	7.6328E-06	0.00273942	
Cation sum (meq/L)	6.5572976										
Anion sum (meq/L)	7.02726887										
% Difference	-3.45959712	Should be < 5%									
Ion Difference	-0.46997127										
Ratio: Cation sum*(100)/Measured conductivity	0.95448291	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.02289212	Should be between 0.9 and 1.1									

Sample Location:	**DE16**										
Alkalinity (mg/l)	**236**										
Measured conductivity (umho/cm)	**622**										
Infinite dilution conductivity (umho/cm)	601.580916										
Ionic strength (M)	0.0078										
Monovalent ion activity coefficient	0.9133										
Calculated conductivity (umho/cm)	**501.798659**										
Measured TDS	**333**										
Calculated TDS	**332.974264**										
Ratio: Meas TDS/Calc TDS	1.00007729	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.80675026	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.66356149	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.53536977	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**25.8**	**1**	**68.4**	**0.1**	**17.7**	**30.628**	**17.4**	**0.036**	**0.24**	**287.92**	**30.1**
Concentration (meq/L)	1.1223	0.0256	3.4132	0.0082	0.6338	0.8640	0.3623	0.0006	0.0126	4.7190	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.1223	0.0256	1.7066	0.0041	0.3170	0.8640	0.1811	0.0006	0.0126	4.7190	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	56.22723	1.88013	203.08302	0.4369068	34.236756	66.0108132	28.98144	0.04146055	0.68726784	209.995892	
Ionic strength	0.00056115	1.279E-05	0.00341316	8.228E-06	0.00063401	0.00043201	0.00036227	2.9034E-07	6.3168E-06	0.0023595	
Cation sum (meq/L)	5.203106										
Anion sum (meq/L)	5.95850696										
% Difference	-6.76784765	Should be < 5%									
Ion Difference	-0.75540096										
Ratio: Cation sum*(100)/Measured conductivity	0.83651222	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.95795932	Should be between 0.9 and 1.1									

Sample Location:	DE17										
Alkalinity (mg/l)	**184**										
Measured conductivity (umho/cm)	**514**										
Infinite dilution conductivity (umho/cm)	509.218841										
Ionic strength (M)	0.0065										
Monovalent ion activity coefficient	0.9200										
Calculated conductivity (umho/cm)	**430.980851**										
Measured TDS	**296**										
Calculated TDS	**284.945816**										
Ratio: Meas TDS/Calc TDS	1.03879399	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83848415	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.66115656	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57587549	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**25.4**	**1.2**	**50.4**	**2.3**	**12.3**	**30.96**	**22.3**	**0.039**	**0.17**	**224.48**	**29.5**
Concentration (meq/L)	1.1049	0.0307	2.5150	0.1893	0.4405	0.8734	0.4643	0.0006	0.0089	3.6792	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.1049	0.0307	1.2575	0.0946	0.2203	0.8734	0.2321	0.0006	0.0089	3.6792	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	55.35549	2.256156	149.64012	10.0488564	23.791644	66.7263542	37.14288	0.0449156	0.48681472	163.72561	
Ionic strength	0.00055245	1.5348E-05	0.00251496	0.00018924	0.00044059	0.00043669	0.00046429	3.1454E-07	4.4744E-06	0.00183961	
Cation sum (meq/L)	4.280286										
Anion sum (meq/L)	5.02647267										
% Difference	-8.01768582	Should be < 2%									
Ion Difference	-0.74618667										
Ratio: Cation sum*(100)/Measured conductivity	0.83274047	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.97791297	Should be between 0.9 and 1.1									

Sample Location:	DE18										
Alkalinity (mg/l)	**224**										
Measured conductivity (umho/cm)	**473**										
Infinite dilution conductivity (umho/cm)	473.677529										
Ionic strength (M)	0.0065										
Monovalent ion activity coefficient	0.9200										
Calculated conductivity (umho/cm)	**400.931047**										
Measured TDS	**265**										
Calculated TDS	**261.578776**										
Ratio: Meas TDS/Calc TDS	1.01307913	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84763435	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65242834	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.5602537	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**16.2**	**0.9**	**57.5**	**5.9**	**8.8**	**9.221**	**2.1**	**0.036**	**0.15**	**273.28**	**26.4**
Concentration (meq/L)	0.7047	0.0230	2.8693	0.4855	0.3151	0.2601	0.0437	0.0006	0.0079	4.4791	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.7047	0.0230	1.4346	0.2427	0.1576	0.2601	0.0219	0.0006	0.0079	4.4791	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	35.30547	1.692117	170.720375	25.7775012	17.021664	19.8735049	3.49776	0.04146055	0.4295424	199.318134	
Ionic strength	0.00035235	1.1511E-05	0.00286925	0.00048545	0.00031522	0.00013006	4.3722E-05	2.9034E-07	3.948E-06	0.00223953	
Cation sum (meq/L)	4.397611										
Anion sum (meq/L)	4.79138229										
% Difference	-4.28524951	Should be < 2%									
Ion Difference	-0.39377129										
Ratio: Cation sum*(100)/Measured conductivity	0.92972748	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.01297723	Should be between 0.9 and 1.1									

Sample Location:	DE19										
Alkalinity (mg/l)	**310**										
Measured conductivity (umho/cm)	**887**										
Infinite dilution conductivity (umho/cm)	954.777915										
Ionic strength (M)	0.0121										
Monovalent ion activity coefficient	0.8958										
Calculated conductivity (umho/cm)	**766.176358**										
Measured TDS	**512**										
Calculated TDS	**491.08194**										
Ratio: Meas TDS/Calc TDS	1.04259586	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.86378394	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64095157	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57722661	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**34.8**	**1.5**	**105**	**12.6**	**9.48**	**81.607**	**23.2**	**0.034**	**0.2**	**378.2**	**36.7**
Concentration (meq/L)	1.5138	0.0384	5.2395	1.0369	0.3395	2.3021	0.4830	0.0005	0.0105	6.1987	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.5138	0.0384	2.6198	0.5184	0.1698	2.3021	0.2415	0.0005	0.0105	6.1987	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	75.84138	2.820195	311.75025	55.0502568	18.3369744	175.882997	38.64192	0.03915719	0.5727232	275.842061	
Ionic strength	0.0007569	1.9185E-05	0.0052395	0.00103673	0.00033957	0.00115107	0.00048302	2.7421E-07	5.264E-06	0.00309935	
Cation sum (meq/L)	8.1680028										
Anion sum (meq/L)	8.99493189										
% Difference	-4.8181101	Should be < 5%									
Ion Difference	-0.82692909										
Ratio: Cation sum*(100)/Measured conductivity	0.92085714	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.01408477	Should be between 0.9 and 1.1									

Sample Location:	DE20										
Alkalinity (mg/l)	**322**										
Measured conductivity (umho/cm)	**906**										
Infinite dilution conductivity (umho/cm)	999.566934										
Ionic strength (M)	0.0128										
Monovalent ion activity coefficient	0.8934										
Calculated conductivity (umho/cm)	**797.749709**										
Measured TDS	**532**										
Calculated TDS	**508.270428**										
Ratio: Meas TDS/Calc TDS	1.0466869	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.88051844	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.6371302	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.58719647	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**37.1**	**1.3**	**110**	**16.7**	**6.05**	**78.386**	**29.3**	**0.025**	**0.25**	**392.84**	**36**
Concentration (meq/L)	1.6139	0.0333	5.4890	1.3742	0.2167	2.2113	0.6100	0.0004	0.0132	6.4386	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.6139	0.0333	2.7445	0.6870	0.1084	2.2113	0.3050	0.0004	0.0132	6.4386	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	80.853885	2.444169	326.5955	72.9634356	11.702394	168.940956	48.80208	0.02879205	0.715904	286.519818	
Ionic strength	0.00080693	1.6627E-05	0.005489	0.00137408	0.00021671	0.00110563	0.00061003	2.0163E-07	6.58E-06	0.00321932	
Cation sum (meq/L)	8.7269975										
Anion sum (meq/L)	9.27350591										
% Difference	-3.03607292	Should be < 5%									
Ion Difference	-0.54650841										
Ratio: Cation sum*(100)/Measured conductivity	0.96324476	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.02356577	Should be between 0.9 and 1.1									

Sample Location:	DE21										
Alkalinity (mg/l)	**261**										
Measured conductivity (umho/cm)	**605**										
Infinite dilution conductivity (umho/cm)	636.694997										
Ionic strength (M)	0.0087										
Monovalent ion activity coefficient	0.9092										
Calculated conductivity (umho/cm)	**526.346297**										
Measured TDS	**375**										
Calculated TDS	**353.544114**										
Ratio: Meas TDS/Calc TDS	1.060688	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.86999388	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.67169488	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.61983471	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**21.1**	**0.9**	**72.9**	**10.9**	**8.3**	**13.915**	**27.6**	**0.032**	**0.23**	**318.42**	**41.1**
Concentration (meq/L)	0.9179	0.0230	3.6377	0.8970	0.2972	0.3925	0.5746	0.0005	0.0121	5.2189	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9179	0.0230	1.8189	0.4484	0.1487	0.3925	0.2873	0.0005	0.0121	5.2189	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	45.984285	1.692117	216.443745	47.6228412	16.054524	29.9902203	45.97056	0.03685382	0.65863168	232.241219	
Ionic strength	0.00045893	1.1511E-05	0.00363771	0.00089685	0.00029731	0.00019627	0.00057463	2.5808E-07	6.0536E-06	0.00260945	
Cation sum (meq/L)	5.772766										
Anion sum (meq/L)	6.19870131										
% Difference	-3.55792067	Should be < 5%									
Ion Difference	-0.42593531										
Ratio: Cation sum*(100)/Measured conductivity	0.9541762	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.02457873	Should be between 0.9 and 1.1									

Sample Location:	PH01										
Alkalinity (mg/l)	**285**										
Measured conductivity (umho/cm)	**583**										
Infinite dilution conductivity (umho/cm)	632.786183										
Ionic strength (M)	0.0090										
Monovalent ion activity coefficient	0.9078										
Calculated conductivity (umho/cm)	**521.478456**										
Measured TDS	**338**										
Calculated TDS	**338.45509**										
Ratio: Meas TDS/Calc TDS	0.99865539	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.8944742	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64902986	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57975986	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**12**	**0.6**	**67.2**	**24.7**	**3.37**	**6.091**	**14.4**	**0.06**	**0.27**	**347.7**	**38.8**
Concentration (meq/L)	0.5220	0.0153	3.3533	2.0326	0.1207	0.1718	0.2998	0.0010	0.0142	5.6988	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.5220	0.0153	1.6766	1.0162	0.0604	0.1718	0.1499	0.0010	0.0142	5.6988	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	26.1522	1.128078	199.52016	107.91598	6.5185236	13.1275912	23.98464	0.06910092	0.77317632	253.596733	
Ionic strength	0.000261	7.674E-06	0.00335328	0.00203232	0.00012071	8.5914E-05	0.00029981	4.839E-07	7.1064E-06	0.0028494	
Cation sum (meq/L)	6.0438707										
Anion sum (meq/L)	6.18561871										
% Difference	-1.15906728	Should be < 5%									
Ion Difference	-0.14174801										
Ratio: Cation sum*(100)/Measured conductivity	1.03668451	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.06099806	Should be between 0.9 and 1.1									

Sample Location:	PH02											
Alkalinity (mg/l)	**230**											
Measured conductivity (umho/cm)	**550**											
Infinite dilution conductivity (umho/cm)	589.604035											
Ionic strength (M)	0.0083											
Monovalent ion activity coefficient	0.9111											
Calculated conductivity (umho/cm)	**489.383275**											
Measured TDS	**319**											
Calculated TDS	**307.95202**											
Ratio: Meas TDS/Calc TDS	1.03587565	Should be between 0.9 and 1.1										
Ratio: Calc cond/Meas cond	0.88978777	Should be between 0.9 and 1.1										
Ratio: Calc TDS/Calc cond	0.62926552	Should be between 0.55 and 0.7										
Ratio: Meas TDS/Meas cond	0.58	Should be between 0.55 and 0.7										
	Constituent:											
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**	
Concentration (mg/L)	**16.8**	**0.5**	**57**	**25.3**	**0.753**	**13.282**	**22**	**0.056**	**0.29**	**280.6**		**34**
Concentration (meq/L)	0.7308	0.0128	2.8443	2.0819	0.0270	0.3747	0.4580	0.0009	0.0153	4.5990		
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171		
Concentration (mM)	0.7308	0.0128	1.4222	1.0408	0.0135	0.3747	0.2290	0.0009	0.0153	4.5990		
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1		
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5		
Infinite dilution conductivity (umho/cm)	36.61308	0.940065	169.23585	110.53742	1.45651284	28.6259508	36.6432	0.06449419	0.83044864	204.657013		
Ionic strength	0.0003654	6.395E-06	0.0028443	0.00208168	2.6972E-05	0.00018734	0.00045804	4.5164E-07	7.6328E-06	0.00229952		
Cation sum (meq/L)	5.69679193											
Anion sum (meq/L)	5.4479281											
% Difference	2.23302002	Should be < 5%										
Ion Difference	0.24886383											
Ratio: Cation sum*(100)/Measured conductivity	1.03578035	Should be between 0.9 and 1.1										
Ratio: Anion sum*(100)/Measured conductivity	0.99053238	Should be between 0.9 and 1.1										

Sample Location:	PH03											
Alkalinity (mg/l)	**292**											
Measured conductivity (umho/cm)	**622**											
Infinite dilution conductivity (umho/cm)	670.69328											
Ionic strength (M)	0.0093											
Monovalent ion activity coefficient	0.9065											
Calculated conductivity (umho/cm)	**551.15273**											
Measured TDS	**341**											
Calculated TDS	**347.573208**											
Ratio: Meas TDS/Calc TDS	0.98108828	Should be between 0.9 and 1.1										
Ratio: Calc cond/Meas cond	0.88609764	Should be between 0.9 and 1.1										
Ratio: Calc TDS/Calc cond	0.63062957	Should be between 0.55 and 0.7										
Ratio: Meas TDS/Meas cond	0.54823151	Should be between 0.55 and 0.7										
	Constituent:											
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**	
Concentration (mg/L)	**19.9**	**0.5**	**67.3**	**25.7**	**2.86**	**17.162**	**6.6**	**0.098**	**0.29**	**356.24**		**32**
Concentration (meq/L)	0.8657	0.0128	3.3583	2.1149	0.1024	0.4841	0.1374	0.0016	0.0153	5.8388		
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171		
Concentration (mM)	0.8657	0.0128	1.6791	1.0573	0.0512	0.4841	0.0687	0.0016	0.0153	5.8388		
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1		
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5		
Infinite dilution conductivity (umho/cm)	43.369065	0.940065	199.817065	112.285048	5.5320408	36.9882975	10.99296	0.11286484	0.83044864	259.825425		
Ionic strength	0.00043283	6.395E-06	0.00335827	0.0021146	0.00010245	0.00024207	0.00013741	7.9037E-07	7.6328E-06	0.00291939		
Cation sum (meq/L)	6.4539796											
Anion sum (meq/L)	6.47717196											
% Difference	-0.17935263	Should be < 5%										
Ion Difference	-0.02319236											
Ratio: Cation sum*(100)/Measured conductivity	1.0376173	Should be between 0.9 and 1.1										
Ratio: Anion sum*(100)/Measured conductivity	1.04134597	Should be between 0.9 and 1.1										

Sample Location:	PH04										
Alkalinity (mg/l)	**376**										
Measured conductivity (umho/cm)	**743**										
Infinite dilution conductivity (umho/cm)	777.585304										
Ionic strength (M)	0.0112										
Monovalent ion activity coefficient	0.8992										
Calculated conductivity (umho/cm)	**628.706549**										
Measured TDS	**404**										
Calculated TDS	**407.448624**										
Ratio: Meas TDS/Calc TDS	0.99153605	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84617301	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64807441	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.54374159	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**8**	**1**	**93.3**	**25**	**8.85**	**3.025**	**7.8**	**0.051**	**0.27**	**458.72**	**34.6**
Concentration (meq/L)	0.3480	0.0256	4.6557	2.0573	0.3169	0.0853	0.1624	0.0008	0.0142	7.5184	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.3480	0.0256	2.3278	1.0285	0.1585	0.0853	0.0812	0.0008	0.0142	7.5184	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	17.4348	1.88013	277.012365	109.2267	17.118378	6.5196131	12.99168	0.05873578	0.77317632	334.569726	
Ionic strength	0.000174	1.279E-05	0.00465567	0.002057	0.00031701	4.2668E-05	0.0001624	4.1131E-07	7.1064E-06	0.00375921	
Cation sum (meq/L)	7.4034185										
Anion sum (meq/L)	7.78118748										
% Difference	-2.48784183	Should be < 5%									
Ion Difference	-0.37776898										
Ratio: Cation sum*(100)/Measured conductivity	0.99642241	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.04726615	Should be between 0.9 and 1.1									

Sample Location:	PH05										
Alkalinity (mg/l)	**308**										
Measured conductivity (umho/cm)	**785**										
Infinite dilution conductivity (umho/cm)	876.814554										
Ionic strength (M)	0.0122										
Monovalent ion activity coefficient	0.8956										
Calculated conductivity (umho/cm)	**703.303287**										
Measured TDS	**455**										
Calculated TDS	**453.239192**										
Ratio: Meas TDS/Calc TDS	1.00388494	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.89592775	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64444344	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57961783	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**22.5**	**0.8**	**86**	**30.9**	**2.31**	**21.228**	**66.5**	**0.05**	**0.29**	**375.76**	**37.9**
Concentration (meq/L)	0.9788	0.0205	4.2914	2.5428	0.0827	0.5988	1.3845	0.0008	0.0153	6.1587	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9788	0.0205	2.1457	1.2712	0.0414	0.5988	0.6923	0.0008	0.0153	6.1587	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	49.035375	1.504104	255.3383	135.004201	4.4681868	45.7515196	110.7624	0.0575841	0.83044864	274.062435	
Ionic strength	0.00048938	1.0232E-05	0.0042914	0.00254245	8.2744E-05	0.00029942	0.00138453	4.0325E-07	7.6328E-06	0.00307935	
Cation sum (meq/L)	7.9160961										
Anion sum (meq/L)	8.15815038										
% Difference	-1.50585149	Should be < 5%									
Ion Difference	-0.24205428										
Ratio: Cation sum*(100)/Measured conductivity	1.00841989	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.03925483	Should be between 0.9 and 1.1									

Sample Location:	PH06										
Alkalinity (mg/l)	**300**										
Measured conductivity (umho/cm)	**665**										
Infinite dilution conductivity (umho/cm)	674.229503										
Ionic strength (M)	0.0096										
Monovalent ion activity coefficient	0.9053										
Calculated conductivity (umho/cm)	**552.631945**										
Measured TDS	**345**										
Calculated TDS	**358.1682**										
Ratio: Meas TDS/Calc TDS	0.96323459	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83102548	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64811346	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.51879699	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**12.2**	**0.6**	**72.4**	**24**	**6.54**	**5.907**	**20.1**	**0.079**	**0.28**	**366**	**36.1**
Concentration (meq/L)	0.5307	0.0153	3.6128	1.9750	0.2342	0.1666	0.4185	0.0013	0.0147	5.9987	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.5307	0.0153	1.8064	0.9874	0.1171	0.1666	0.2092	0.0013	0.0147	5.9987	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	26.58807	1.128078	214.95922	104.857632	12.6501912	12.7310263	33.47856	0.09098288	0.80181248	266.94393	
Ionic strength	0.00026535	7.674E-06	0.00361276	0.00197472	0.00023426	8.3318E-05	0.00041848	6.3714E-07	7.3696E-06	0.00299937	
Cation sum (meq/L)	6.3679654										
Anion sum (meq/L)	6.59987194										
% Difference	-1.78832086	Should be < 5%									
Ion Difference	-0.23190654										
Ratio: Cation sum*(100)/Measured conductivity	0.95758878	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.99246195	Should be between 0.9 and 1.1									

Sample Location:	PH07										
Alkalinity (mg/l)	**254**										
Measured conductivity (umho/cm)	**801**										
Infinite dilution conductivity (umho/cm)	859.340253										
Ionic strength (M)	0.0125										
Monovalent ion activity coefficient	0.8945										
Calculated conductivity (umho/cm)	**687.613375**										
Measured TDS	**479**										
Calculated TDS	**425.554996**										
Ratio: Meas TDS/Calc TDS	1.12558895	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.85844366	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.61888703	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.5980025	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**17.6**	**0.9**	**97.9**	**35.1**	**3.81**	**8.649**	**73.5**	**0.068**	**0.26**	**309.88**	**35.4**
Concentration (meq/L)	0.7656	0.0230	4.8852	2.8884	0.1364	0.2440	1.5303	0.0011	0.0137	5.0789	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.7656	0.0230	2.4426	1.4440	0.0682	0.2440	0.7651	0.0011	0.0137	5.0789	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	38.35656	1.692117	290.669995	153.354287	7.3696068	18.6407054	122.4216	0.07831438	0.74454016	226.012527	
Ionic strength	0.0003828	1.1511E-05	0.00488521	0.00288803	0.00013647	0.00012199	0.00153027	5.4842E-07	6.8432E-06	0.00253947	
Cation sum (meq/L)	8.6986471										
Anion sum (meq/L)	6.86797473										
% Difference	11.7602418	Should be < 5%									
Ion Difference	1.83067237										
Ratio: Cation sum*(100)/Measured conductivity	1.08597342	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.85742506	Should be between 0.9 and 1.1									

Sample Location:	PH08										
Alkalinity (mg/l)	**310**										
Measured conductivity (umho/cm)	**649**										
Infinite dilution conductivity (umho/cm)	731.639038										
Ionic strength (M)	0.0102										
Monovalent ion activity coefficient	0.9028										
Calculated conductivity (umho/cm)	**596.320731**										
Measured TDS	**376**										
Calculated TDS	**385.98494**										
Ratio: Meas TDS/Calc TDS	0.97413127	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.91883009	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64727741	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57935285	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**15.7**	**1.4**	**83.1**	**22.3**	**3.45**	**13.44**	**22.9**	**0.304**	**0.23**	**378.2**	**37.2**
Concentration (meq/L)	0.6830	0.0358	4.1467	1.8351	0.1235	0.3791	0.4768	0.0049	0.0121	6.1987	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.6830	0.0358	2.0733	0.9174	0.0618	0.3791	0.2384	0.0049	0.0121	6.1987	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	34.215795	2.632182	246.728055	97.4302164	6.673266	28.9664794	38.14224	0.35011133	0.65863168	275.842061	
Ionic strength	0.00034148	1.7906E-05	0.00414669	0.00183484	0.00012358	0.00018957	0.00047678	2.4518E-06	6.0536E-06	0.00309935	
Cation sum (meq/L)	6.8240635										
Anion sum (meq/L)	7.07162912										
% Difference	-1.78159971	Should be < 5%									
Ion Difference	-0.24756562										
Ratio: Cation sum*(100)/Measured conductivity	1.05147357	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.08961928	Should be between 0.9 and 1.1									

Sample Location:	PH09										
Alkalinity (mg/l)	**464**										
Measured conductivity (umho/cm)	**1020**										
Infinite dilution conductivity (umho/cm)	1215.16241										
Ionic strength (M)	0.0175										
Monovalent ion activity coefficient	0.8794										
Calculated conductivity (umho/cm)	**939.653892**										
Measured TDS	**575**										
Calculated TDS	**609.159536**										
Ratio: Meas TDS/Calc TDS	0.9439235	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.92122931	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64828076	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56372549	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**13.3**	**1.1**	**121**	**50.5**	**5.97**	**4.828**	**101.2**	**0.05**	**0.27**	**566.08**	**32.6**
Concentration (meq/L)	0.5786	0.0281	6.0379	4.1556	0.2138	0.1362	2.1070	0.0008	0.0142	9.2781	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.5786	0.0281	3.0190	2.0776	0.1069	0.1362	1.0535	0.0008	0.0142	9.2781	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	28.985355	2.068143	359.25505	220.637934	11.5476516	10.405518	168.55872	0.0575841	0.77317632	412.873278	
Ionic strength	0.00028928	1.4069E-05	0.0060379	0.00415514	0.00021385	6.8099E-05	0.00210698	4.0325E-07	7.1064E-06	0.00463903	
Cation sum (meq/L)	11.0140187										
Anion sum (meq/L)	11.5362524										
% Difference	-2.31586431	Should be < 5%									
Ion Difference	-0.52223368										
Ratio: Cation sum*(100)/Measured conductivity	1.07980575	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.13100514	Should be between 0.9 and 1.1									

Sample Location:	PH10										
Alkalinity (mg/l)	**322**										
Measured conductivity (umho/cm)	**674**										
Infinite dilution conductivity (umho/cm)	716.099535										
Ionic strength (M)	0.0101										
Monovalent ion activity coefficient	0.9033										
Calculated conductivity (umho/cm)	**584.264293**										
Measured TDS	**379**										
Calculated TDS	**383.862428**										
Ratio: Meas TDS/Calc TDS	0.98733289	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.86686097	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65700135	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56231454	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**14.1**	**2.3**	**82.8**	**20.4**	**7.87**	**6.239**	**18.1**	**0.024**	**0.25**	**392.84**	**38.62**
Concentration (meq/L)	0.6134	0.0588	4.1317	1.6787	0.2818	0.1760	0.3768	0.0004	0.0132	6.4386	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.6134	0.0588	2.0659	0.8393	0.1410	0.1760	0.1884	0.0004	0.0132	6.4386	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	30.728835	4.324299	245.83734	89.1289872	15.2227836	13.4465673	30.14736	0.02764037	0.715904	286.519818	
Ionic strength	0.00030668	2.9417E-05	0.00413172	0.00167851	0.0002819	8.8001E-05	0.00037684	1.9356E-07	6.58E-06	0.00321932	
Cation sum (meq/L)	6.7644447										
Anion sum (meq/L)	7.00503891										
% Difference	-1.74730017	Should be < 5%									
Ion Difference	-0.24059421										
Ratio: Cation sum*(100)/Measured conductivity	1.00362681	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.03932328	Should be between 0.9 and 1.1									

Sample Location:	PH11										
Alkalinity (mg/l)	**354**										
Measured conductivity (umho/cm)	**861**										
Infinite dilution conductivity (umho/cm)	1034.95437										
Ionic strength (M)	0.0143										
Monovalent ion activity coefficient	0.8886										
Calculated conductivity (umho/cm)	**817.164281**										
Measured TDS	**544**										
Calculated TDS	**541.820396**										
Ratio: Meas TDS/Calc TDS	1.00402274	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.94908743	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.66304953	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.63182346	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**28.4**	**1.9**	**105**	**25.1**	**8.72**	**13.105**	**112.4**	**0.01**	**0.26**	**431.88**	**34.57**
Concentration (meq/L)	1.2354	0.0486	5.2395	2.0655	0.3123	0.3697	2.3402	0.0002	0.0137	7.0785	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.2354	0.0486	2.6198	1.0326	0.1562	0.3697	1.1701	0.0002	0.0137	7.0785	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	61.89354	3.572247	311.75025	109.663607	16.8669216	28.2444726	187.21344	0.01151682	0.74454016	314.993837	
Ionic strength	0.0006177	2.4301E-05	0.0052395	0.00206523	0.00031235	0.00018485	0.00234017	8.065E-08	6.8432E-06	0.00353926	
Cation sum (meq/L)	8.9012442										
Anion sum (meq/L)	9.80222095										
% Difference	-4.81716486	Should be < 5%									
Ion Difference	-0.90097675										
Ratio: Cation sum*(100)/Measured conductivity	1.03382627	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.13846933	Should be between 0.9 and 1.1									

Sample Location:	PH12										
Alkalinity (mg/l)	**242**										
Measured conductivity (umho/cm)	**493**										
Infinite dilution conductivity (umho/cm)	533.920822										
Ionic strength (M)	0.0075										
Monovalent ion activity coefficient	0.9147										
Calculated conductivity (umho/cm)	**446.703043**										
Measured TDS	**285**										
Calculated TDS	**293.932508**										
Ratio: Meas TDS/Calc TDS	0.96961034	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.90609136	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65800427	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57809331	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**9.8**	**1.5**	**62.5**	**13.5**	**6.79**	**6.198**	**13.6**	**0.025**	**0.24**	**295.24**	**34.61**
Concentration (meq/L)	0.4263	0.0384	3.1188	1.1109	0.2431	0.1748	0.2832	0.0004	0.0126	4.8390	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.4263	0.0384	1.5594	0.5554	0.1216	0.1748	0.1416	0.0004	0.0126	4.8390	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	21.35763	2.820195	185.565625	58.982418	13.1337612	13.3582023	22.65216	0.02879205	0.68726784	215.33477	
Ionic strength	0.00021315	1.9185E-05	0.00311875	0.00111078	0.00024322	8.7423E-05	0.00028315	2.0163E-07	6.3168E-06	0.00241949	
Cation sum (meq/L)	4.9374849										
Anion sum (meq/L)	5.31001803										
% Difference	-3.63535519	Should be < 5%									
Ion Difference	-0.37253313										
Ratio: Cation sum*(100)/Measured conductivity	1.00151824	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.07708276	Should be between 0.9 and 1.1									

Sample Location:	PH13										
Alkalinity (mg/l)	**250**										
Measured conductivity (umho/cm)	**597**										
Infinite dilution conductivity (umho/cm)	673.491062										
Ionic strength (M)	0.0094										
Monovalent ion activity coefficient	0.9063										
Calculated conductivity (umho/cm)	**553.217552**										
Measured TDS	**358**										
Calculated TDS	**361.3755**										
Ratio: Meas TDS/Calc TDS	0.9906593	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.92666257	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65322494	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.59966499	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**22.5**	**1.4**	**71.5**	**18.8**	**1.87**	**6.654**	**51.9**	**0.023**	**0.18**	**305**	**36.58**
Concentration (meq/L)	0.9788	0.0358	3.5679	1.5471	0.0670	0.1877	1.0806	0.0004	0.0095	4.9990	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9788	0.0358	1.7839	0.7734	0.0335	0.1877	0.5403	0.0004	0.0095	4.9990	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	49.035375	2.632182	212.287075	82.1384784	3.6171036	14.3409936	86.44464	0.02648869	0.51545088	222.453275	
Ionic strength	0.00048938	1.7906E-05	0.00356785	0.00154686	6.6983E-05	9.3855E-05	0.00108056	1.855E-07	4.7376E-06	0.00249948	
Cation sum (meq/L)	6.1964287										
Anion sum (meq/L)	6.27706353										
% Difference	-0.64644951	Should be < 5%									
Ion Difference	-0.08063483										
Ratio: Cation sum*(100)/Measured conductivity	1.03792776	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.05143443	Should be between 0.9 and 1.1									

Sample Location:	PH14										
Alkalinity (mg/l)	**282**										
Measured conductivity (umho/cm)	**695**										
Infinite dilution conductivity (umho/cm)	812.724896										
Ionic strength (M)	0.0114										
Monovalent ion activity coefficient	0.8985										
Calculated conductivity (umho/cm)	**656.108649**										
Measured TDS	**432**										
Calculated TDS	**425.308468**										
Ratio: Meas TDS/Calc TDS	1.01573336	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.94404122	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64822872	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.62158273	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**19.1**	**1.3**	**92.8**	**20.3**	**1.42**	**8.574**	**79.2**	**0.02**	**0.12**	**344.04**	**33.31**
Concentration (meq/L)	0.8309	0.0333	4.6307	1.6705	0.0509	0.2419	1.6489	0.0003	0.0063	5.6388	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.8309	0.0333	2.3154	0.8351	0.0254	0.2419	0.8245	0.0003	0.0063	5.6388	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	41.625585	2.444169	275.52784	88.6920804	2.7466776	18.4790621	131.91552	0.02303364	0.34363392	250.927294	
Ionic strength	0.00041543	1.6627E-05	0.00463072	0.00167028	5.0864E-05	0.00012094	0.00164894	1.613E-07	3.1584E-06	0.00281941	
Cation sum (meq/L)	7.2161612										
Anion sum (meq/L)	7.53627154										
% Difference	-2.16988171	Should be < 5%									
Ion Difference	-0.32011034										
Ratio: Cation sum*(100)/Measured conductivity	1.03829658	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.08435562	Should be between 0.9 and 1.1									

Sample Location:	PH15										
Alkalinity (mg/l)	**614**										
Measured conductivity (umho/cm)	**1103**										
Infinite dilution conductivity (umho/cm)	1188.22389										
Ionic strength (M)	0.0168										
Monovalent ion activity coefficient	0.8813										
Calculated conductivity (umho/cm)	**922.897382**										
Measured TDS	**627**										
Calculated TDS	**622.882636**										
Ratio: Meas TDS/Calc TDS	1.00661018	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.83671567	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.6749208	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56844968	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**16.7**	**2.9**	**138**	**29.4**	**21.9**	**4.239**	**5.8**	**0.031**	**0.23**	**749.08**	**35.36**
Concentration (meq/L)	0.7265	0.0742	6.8862	2.4193	0.7842	0.1196	0.1208	0.0005	0.0121	12.2774	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.7265	0.0742	3.4431	1.2095	0.3922	0.1196	0.0604	0.0005	0.0121	12.2774	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	36.395145	5.452377	409.7289	128.450599	42.360732	9.13607932	9.66048	0.03570214	0.65863168	546.345243	
Ionic strength	0.00036323	3.7091E-05	0.0068862	0.00241903	0.00078446	5.9791E-05	0.00012076	2.5002E-07	6.0536E-06	0.00613871	
Cation sum (meq/L)	10.890397										
Anion sum (meq/L)	12.5303666										
% Difference	-7.00220388	Should be < 5%									
Ion Difference	-1.63996962										
Ratio: Cation sum*(100)/Measured conductivity	0.98734334	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.13602599	Should be between 0.9 and 1.1									

Sample Location:	PH16										
Alkalinity (mg/l)	**416**										
Measured conductivity (umho/cm)	**1064**										
Infinite dilution conductivity (umho/cm)	1295.4689										
Ionic strength (M)	0.0179										
Monovalent ion activity coefficient	0.8784										
Calculated conductivity (umho/cm)	**999.505145**										
Measured TDS	**669**										
Calculated TDS	**659.829584**										
Ratio: Meas TDS/Calc TDS	1.01389816	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.93938453	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.66015627	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.6287594	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**37.9**	**2**	**131**	**35.3**	**7.53**	**25.682**	**135.2**	**0.01**	**0.23**	**507.52**	**35.43**
Concentration (meq/L)	1.6486	0.0512	6.5369	2.9048	0.2696	0.7245	2.8149	0.0002	0.0121	8.3183	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.6486	0.0512	3.2685	1.4522	0.1349	0.7245	1.4074	0.0002	0.0121	8.3183	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	82.597365	3.76026	388.94555	154.2281	14.5651284	55.3509764	225.18912	0.01151682	0.65863168	370.16225	
Ionic strength	0.00082432	2.558E-05	0.0065369	0.00290448	0.00026972	0.00036224	0.00281486	8.065E-08	6.0536E-06	0.00415913	
Cation sum (meq/L)	11.4111963										
Anion sum (meq/L)	11.8698745										
% Difference	-1.97017664	Should be < 5%									
Ion Difference	-0.45867822										
Ratio: Cation sum*(100)/Measured conductivity	1.07248086	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.11558971	Should be between 0.9 and 1.1									

Sample Location:	PH17										
Alkalinity (mg/l)	**402**										
Measured conductivity (umho/cm)	**849**										
Infinite dilution conductivity (umho/cm)	809.376842										
Ionic strength (M)	0.0114										
Monovalent ion activity coefficient	0.8982										
Calculated conductivity (umho/cm)	**653.018001**										
Measured TDS	**424**										
Calculated TDS	**439.812348**										
Ratio: Meas TDS/Calc TDS	0.96404751	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.76916137	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.67350723	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.49941107	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**7.8**	**2.6**	**109**	**9.7**	**22.2**	**4.928**	**5.8**	**0.035**	**0.18**	**490.44**	**36.42**
Concentration (meq/L)	0.3393	0.0665	5.4391	0.7982	0.7950	0.1390	0.1208	0.0006	0.0095	8.0383	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.3393	0.0665	2.7196	0.3991	0.3976	0.1390	0.0604	0.0006	0.0095	8.0383	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	16.99893	4.888338	323.62645	42.3799596	42.941016	10.6210424	9.66048	0.04030887	0.51545088	357.704866	
Ionic strength	0.00016965	3.3254E-05	0.0054391	0.00079812	0.0007952	6.9509E-05	0.00012076	2.8228E-07	4.7376E-06	0.00401916	
Cation sum (meq/L)	7.438103										
Anion sum (meq/L)	8.30812623										
% Difference	-5.52527985	Should be < 5%									
Ion Difference	-0.87002323										
Ratio: Cation sum*(100)/Measured conductivity	0.87610165	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	0.97857788	Should be between 0.9 and 1.1									

Sample Location:	PH18										
Alkalinity (mg/l)	**322**										
Measured conductivity (umho/cm)	**643**										
Infinite dilution conductivity (umho/cm)	656.137746										
Ionic strength (M)	0.0089										
Monovalent ion activity coefficient	0.9082										
Calculated conductivity (umho/cm)	**541.224515**										
Measured TDS	**361**										
Calculated TDS	**377.576428**										
Ratio: Meas TDS/Calc TDS	0.95609782	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.84171775	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.69763364	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56143079	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**21.6**	**3.1**	**76.4**	**4.5**	**20.5**	**8.194**	**7.2**	**0.023**	**0.31**	**392.84**	**42.59**
Concentration (meq/L)	0.9396	0.0793	3.8124	0.3703	0.7341	0.2312	0.1499	0.0004	0.0163	6.4386	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.9396	0.0793	1.9062	0.1851	0.3672	0.2312	0.0750	0.0004	0.0163	6.4386	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	47.07396	5.828403	226.83542	19.660806	39.65274	17.6600693	11.99232	0.02648869	0.88772096	286.519818	
Ionic strength	0.0004698	3.9649E-05	0.00381236	0.00037026	0.00073431	0.00011558	0.0001499	1.855E-07	8.1592E-06	0.00321932	
Cation sum (meq/L)	5.935668										
Anion sum (meq/L)	6.83639373										
% Difference	-7.05231269	Should be < 5%									
Ion Difference	-0.90072573										
Ratio: Cation sum*(100)/Measured conductivity	0.923121	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.06320276	Should be between 0.9 and 1.1									

Sample Location:	PH19										
Alkalinity (mg/l)	**194**										
Measured conductivity (umho/cm)	**397**										
Infinite dilution conductivity (umho/cm)	417.222376										
Ionic strength (M)	0.0059										
Monovalent ion activity coefficient	0.9230										
Calculated conductivity (umho/cm)	**355.464331**										
Measured TDS	**227**										
Calculated TDS	**243.753556**										
Ratio: Meas TDS/Calc TDS	0.93126847	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.89537615	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.68573281	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57178841	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**6**	**2.2**	**48.8**	**11.6**	**4.56**	**2.673**	**9.9**	**0.025**	**0.25**	**236.68**	**41.37**
Concentration (meq/L)	0.2610	0.0563	2.4351	0.9546	0.1633	0.0754	0.2061	0.0004	0.0132	3.8792	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.2610	0.0563	1.2176	0.4772	0.0817	0.0754	0.1031	0.0004	0.0132	3.8792	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	13.0761	4.136286	144.88964	50.6811888	8.8203168	5.76096721	16.48944	0.02879205	0.715904	172.623741	
Ionic strength	0.0001305	2.8138E-05	0.00243512	0.00095445	0.00016334	3.7703E-05	0.00020612	2.0163E-07	6.58E-06	0.00193959	
Cation sum (meq/L)	3.8702536										
Anion sum (meq/L)	4.17427178										
% Difference	-3.7791935	Should be < 2%									
Ion Difference	-0.30401818										
Ratio: Cation sum*(100)/Measured conductivity	0.97487496	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.05145385	Should be between 0.9 and 1.1									

Sample Location:	PH20										
Alkalinity (mg/l)	**358**										
Measured conductivity (umho/cm)	**647**										
Infinite dilution conductivity (umho/cm)	766.15815										
Ionic strength (M)	0.0111										
Monovalent ion activity coefficient	0.8996										
Calculated conductivity (umho/cm)	**620.098325**										
Measured TDS	**393**										
Calculated TDS	**386.787892**										
Ratio: Meas TDS/Calc TDS	0.9902068	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.9584209	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.62375252	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.59196291	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**8.5**	**1**	**86.8**	**32**	**2.05**	**5.298**	**8**	**0.045**	**0.32**	**436.76**	**28.02**
Concentration (meq/L)	0.3698	0.0256	4.3313	2.6333	0.0734	0.1495	0.1666	0.0007	0.0168	7.1585	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.3698	0.0256	2.1657	1.3165	0.0367	0.1495	0.0833	0.0007	0.0168	7.1585	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	18.524475	1.88013	257.71354	139.810176	3.965274	11.4184827	13.3248	0.05182569	0.91635712	318.55309	
Ionic strength	0.00018488	1.279E-05	0.00433132	0.00263296	7.3431E-05	7.4728E-05	0.00016656	3.6293E-07	8.4224E-06	0.00357925	
Cation sum (meq/L)	7.4333405										
Anion sum (meq/L)	7.49208363										
% Difference	-0.39357763	Should be < 5%									
Ion Difference	-0.05874313										
Ratio: Cation sum*(100)/Measured conductivity	1.14889343	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.15797274	Should be between 0.9 and 1.1									

Sample Location:	PH21										
Alkalinity (mg/l)	**332**										
Measured conductivity (umho/cm)	**620**										
Infinite dilution conductivity (umho/cm)	712.507643										
Ionic strength (M)	0.0103										
Monovalent ion activity coefficient	0.9026										
Calculated conductivity (umho/cm)	**580.431567**										
Measured TDS	**359**										
Calculated TDS	**367.314168**										
Ratio: Meas TDS/Calc TDS	0.97736497	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.93617995	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.63282941	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57903226	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**7.7**	**1.1**	**84.6**	**27.8**	**2.86**	**4.862**	**5.2**	**0.034**	**0.31**	**405.04**	**33.69**
Concentration (meq/L)	0.3350	0.0281	4.2215	2.2877	0.1024	0.1372	0.1083	0.0005	0.0163	6.6386	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.3350	0.0281	2.1108	1.1437	0.0512	0.1372	0.0541	0.0005	0.0163	6.6386	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	16.780995	2.068143	251.18163	121.46009	5.5320408	10.4787963	8.66112	0.03915719	0.88772096	295.417949	
Ionic strength	0.00016748	1.4069E-05	0.00422154	0.00228738	0.00010245	6.8579E-05	0.00010826	2.7421E-07	8.1592E-06	0.0033193	
Cation sum (meq/L)	6.9747066										
Anion sum (meq/L)	6.90089344										
% Difference	0.53196373	Should be < 5%									
Ion Difference	0.07381316										
Ratio: Cation sum*(100)/Measured conductivity	1.12495268	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.11304733	Should be between 0.9 and 1.1									

Sample Location:	PH22										
Alkalinity (mg/l)	**436**										
Measured conductivity (umho/cm)	**819**										
Infinite dilution conductivity (umho/cm)	946.939207										
Ionic strength (M)	0.0136										
Monovalent ion activity coefficient	0.8909										
Calculated conductivity (umho/cm)	**751.561889**										
Measured TDS	**471**										
Calculated TDS	**482.689064**										
Ratio: Meas TDS/Calc TDS	0.97578345	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.91765798	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64224793	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.57509158	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**4.2**	**3.4**	**126**	**25.2**	**10.3**	**8.719**	**11.7**	**0.175**	**0.29**	**531.92**	**31.16**
Concentration (meq/L)	0.1827	0.0870	6.2874	2.0737	0.3688	0.2460	0.2436	0.0028	0.0153	8.7182	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.1827	0.0870	3.1437	1.0367	0.1845	0.2460	0.1218	0.0028	0.0153	8.7182	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	9.15327	6.392442	374.1003	110.100514	19.923084	18.7915724	19.48752	0.20154435	0.83044864	387.958512	
Ionic strength	9.135E-05	4.3486E-05	0.0062874	0.00207346	0.00036895	0.00012298	0.00024359	1.4114E-06	7.6328E-06	0.00435908	
Cation sum (meq/L)	8.999623										
Anion sum (meq/L)	9.22581414										
% Difference	-1.24107388	Should be < 5%									
Ion Difference	-0.22619114										
Ratio: Cation sum*(100)/Measured conductivity	1.09885507	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.12647303	Should be between 0.9 and 1.1									

Sample Location:	PH23										
Alkalinity (mg/l)	**376**										
Measured conductivity (umho/cm)	**696**										
Infinite dilution conductivity (umho/cm)	781.858492										
Ionic strength (M)	0.0113										
Monovalent ion activity coefficient	0.8989										
Calculated conductivity (umho/cm)	**631.786929**										
Measured TDS	**395**										
Calculated TDS	**412.660624**										
Ratio: Meas TDS/Calc TDS	0.95720303	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.90773984	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.65316423	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.56752874	Should be between 0.55 and 0.7									
	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**3.6**	**2**	**110**	**16.3**	**12.8**	**4.062**	**2.1**	**0.026**	**0.29**	**458.72**	**35.93**
Concentration (meq/L)	0.1566	0.0512	5.4890	1.3413	0.4584	0.1146	0.0437	0.0004	0.0153	7.5184	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.1566	0.0512	2.7445	0.6706	0.2292	0.1146	0.0219	0.0004	0.0153	7.5184	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	7.84566	3.76026	326.5955	71.2158084	24.758784	8.75460113	3.49776	0.02994373	0.83044864	334.569726	
Ionic strength	7.83E-05	2.558E-05	0.005489	0.00134116	0.0004585	5.7295E-05	4.3722E-05	2.0969E-07	7.6328E-06	0.00375921	
Cation sum (meq/L)	7.496455										
Anion sum (meq/L)	7.6924168										
% Difference	-1.29016692	Should be < 5%									
Ion Difference	-0.1959618										
Ratio: Cation sum*(100)/Measured conductivity	1.07707687	Should be between 0.9 and 1.1									
Ratio: Anion sum*(100)/Measured conductivity	1.1052323	Should be between 0.9 and 1.1									

Sample Location:	PH24										
Alkalinity (mg/l)	**376**										
Measured conductivity (umho/cm)	**698**										
Infinite dilution conductivity (umho/cm)	824.966937										
Ionic strength (M)	0.0118										
Monovalent ion activity coefficient	0.8969										
Calculated conductivity (umho/cm)	**663.683683**										
Measured TDS	**414**										
Calculated TDS	**427.550624**										
Ratio: Meas TDS/Calc TDS	0.96830639	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.95083622	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64420843	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.59312321	Should be between 0.55 and 0.7									

	Constituent: Na	K	Ca	Mg	Fe	Cl	SO4	NO3	F	HCO3	SiO2
Concentration (mg/L)	**13.9**	**1.8**	**106**	**24**	**3.8**	**3.6**	**12.9**	**0.028**	**0.18**	**458.72**	**35.79**
Concentration (meq/L)	0.6047	0.0460	5.2894	1.9750	0.1361	0.1016	0.2686	0.0005	0.0095	7.5184	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.6047	0.0460	2.6447	0.9874	0.0681	0.1016	0.1343	0.0005	0.0095	7.5184	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	30.292965	3.384234	314.7193	104.857632	7.350264	7.7588784	21.48624	0.0322471	0.51545088	334.569726	
Ionic strength	0.00030233	2.3022E-05	0.0052894	0.00197472	0.00013612	5.0778E-05	0.00026858	2.2582E-07	4.7376E-06	0.00375921	

Cation sum (meq/L)	8.051132	
Anion sum (meq/L)	7.89848164	
% Difference	0.95707873	Should be < 5%
Ion Difference	0.15265036	
Ratio: Cation sum*(100)/Measured conductivity	1.15345731	Should be between 0.9 and 1.1
Ratio: Anion sum*(100)/Measured conductivity	1.13158763	Should be between 0.9 and 1.1

Sample Location:	PH25										
Alkalinity (mg/l)	**328**										
Measured conductivity (umho/cm)	**689**										
Infinite dilution conductivity (umho/cm)	854.355277										
Ionic strength (M)	0.0123										
Monovalent ion activity coefficient	0.8953										
Calculated conductivity (umho/cm)	**684.817513**										
Measured TDS	**423**										
Calculated TDS	**444.773672**										
Ratio: Meas TDS/Calc TDS	0.9510455	Should be between 0.9 and 1.1									
Ratio: Calc cond/Meas cond	0.99392963	Should be between 0.9 and 1.1									
Ratio: Calc TDS/Calc cond	0.64947765	Should be between 0.55 and 0.7									
Ratio: Meas TDS/Meas cond	0.61393324	Should be between 0.55 and 0.7									

	Constituent: Na	K	Ca	Mg	Fe	Cl	SO4	NO3	F	HCO3	SiO2
Concentration (mg/L)	**10**	**1.2**	**110**	**22.1**	**5.11**	**3.261**	**58.7**	**0.034**	**0.2**	**400.16**	**37.41**
Concentration (meq/L)	0.4350	0.0307	5.4890	1.8186	0.1830	0.0920	1.2221	0.0005	0.0105	6.5586	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	0.4350	0.0307	2.7445	0.9092	0.0915	0.0920	0.6111	0.0005	0.0105	6.5586	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	21.7935	2.256156	326.5955	96.5564028	9.8841708	7.02825068	97.77072	0.03915719	0.5727232	291.858697	
Ionic strength	0.0002175	1.5348E-05	0.005489	0.00181839	0.00018304	4.5996E-05	0.00122213	2.7421E-07	5.264E-06	0.00327931	

Cation sum (meq/L)	7.9562941	
Anion sum (meq/L)	7.88382563	
% Difference	0.45749951	Should be < 5%
Ion Difference	0.07246847	
Ratio: Cation sum*(100)/Measured conductivity	1.15475967	Should be between 0.9 and 1.1
Ratio: Anion sum*(100)/Measured conductivity	1.14424175	Should be between 0.9 and 1.1

Sample Location:	PH26		
Alkalinity (mg/l)	**488**		
Measured conductivity (umho/cm)	**926**		
Infinite dilution conductivity (umho/cm)	1174.43148		
Ionic strength (M)	0.0167		
Monovalent ion activity coefficient	0.8815		
Calculated conductivity (umho/cm)	**912.616181**		
Measured TDS	**576**		
Calculated TDS	**593.345512**		
Ratio: Meas TDS/Calc TDS	0.97076659	Should be between 0.9 and 1.1	
Ratio: Calc cond/Meas cond	0.98554663	Should be between 0.9 and 1.1	
Ratio: Calc TDS/Calc cond	0.65015888	Should be between 0.55 and 0.7	
Ratio: Meas TDS/Meas cond	0.62203024	Should be between 0.55 and 0.7	

	Constituent:										
	Na	**K**	**Ca**	**Mg**	**Fe**	**Cl**	**SO4**	**NO3**	**F**	**HCO3**	**SiO2**
Concentration (mg/L)	**23.6**	**1.4**	**145**	**33.5**	**2.86**	**4.607**	**56**	**0.01**	**0.18**	**595.36**	**33.45**
Concentration (meq/L)	1.0266	0.0358	7.2355	2.7567	0.1024	0.1300	1.1659	0.0002	0.0095	9.7580	
Molecular weight (mg/mM)	22.9898	39.0983	40.0780	24.3050	55.8470	35.4527	96.0636	62.0049	18.9984	61.0171	
Concentration (mM)	1.0266	0.0358	3.6178	1.3782	0.0512	0.1300	0.5830	0.0002	0.0095	9.7580	
Charge z (absolute value)	1	1	2	2	2	1	2	1	1	1	
Equivalent conductivity (mho-cm^2/equivalent)	50.1	73.5	59.5	53.1	54	76.4	80	71.4	54.4	44.5	
Infinite dilution conductivity (umho/cm)	51.43266	2.632182	430.51225	146.363778	5.5320408	9.92920911	93.2736	0.01151682	0.51545088	434.228793	
Ionic strength	0.0005133	1.7906E-05	0.0072355	0.00275638	0.00010245	6.4982E-05	0.00116592	8.065E-08	4.7376E-06	0.00487898	

Cation sum (meq/L)	11.1570436	
Anion sum (meq/L)	11.0634704	
% Difference	0.42111191	Should be < 5%
Ion Difference	0.09357323	
Ratio: Cation sum*(100)/Measured conductivity	1.20486432	Should be between 0.9 and 1.1
Ratio: Anion sum*(100)/Measured conductivity	1.19475922	Should be between 0.9 and 1.1