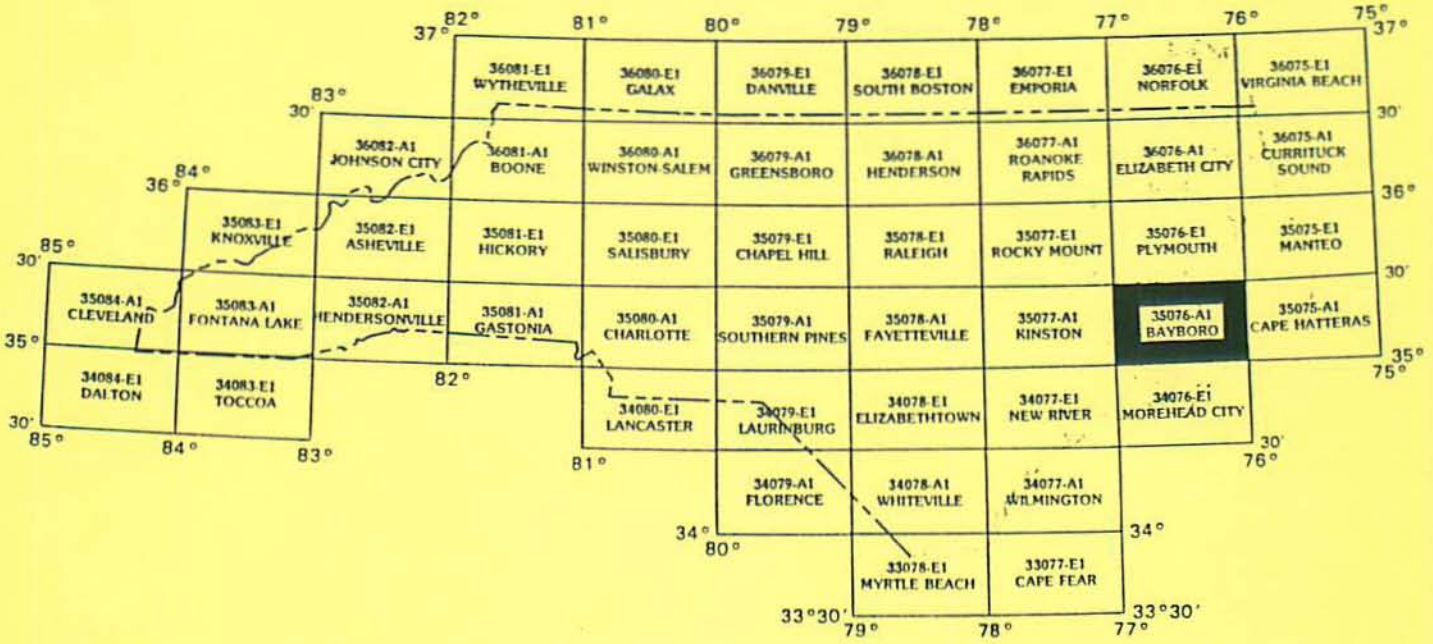
Listing of Concentrations of Variables of Stream Sediment, Stream Water, and Groundwater for the Bayboro 30 x 60 - Minute Quadrangle -NURE Database

by
Robert H. Carpenter and Jeffrey C. Reid



NORTH CAROLINA GEOLOGICAL SURVEY
OPEN-FILE REPORT 93-32

State of North Carolina
James B. Hunt, Jr., Governor

Department of Environment, Health and Natural Resources
Jonathan B. Howes, Secretary
Division of Land Resources
Charles H. Gardner,
Director and State Geologist

July, 1993

GEOLOGICAL SURVEY SECTION

The Geological Survey Section examines, surveys and maps the geology, mineral resources, and topography of the State to encourage the wise conservation and use of these resources by industry, commerce, agriculture and government agencies for the general welfare of the citizens of North Carolina.

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Jeffrey C. Reid
Chief Geologist

Listing of Concentrations of Variables of Stream Sediment, Stream Water, and Groundwater for the Bayboro 30 x 60 - Minute Quadrangle -NURE Database

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INTRODUCTION

This report is a compilation of geochemical data for stream sediment and groundwater for the Bayboro 30 x 60 - minute quadrangle (Figure 1). Maps and tables were prepared from statewide data obtained by the Savannah River Laboratory under sponsorship of the U.S. Dept. of Energy in its National Uranium Resources Evaluation (NURE) program (Sargent and others, 1982). Sampling and analysis were performed during the period 1976 - 1980.

Because of the large size of the database, the North Carolina Geological Survey is presenting the database in both statewide and 30 x 60 - minute quadrangle formats. Statewide formats currently available include atlases of stream sediment and hydrogeochemical data which contain maps showing quartile distribution of concentrations of variables (Reid, 1991; Reid, 1993). Reid and Carpenter (1993a, 1993b) present listings of concentrations of variables which equal or exceed the 90th percentile (and pH and conductivity below the 10th percentile) for stream sediment and groundwater-stream water.

This open-file report is part of a series of reports that present sample-location maps and listings of analyses of all variables in all of the 30 x 60 - minute quadrangles that comprise the state of North Carolina. Subsequent reports will review the NURE data for individual 30 x 60 - minute quadrangles. These reviews will contain the following: 1) maps showing concentrations of all the variables in up to eight class intervals; 2) geologic review of the quadrangle and discussion of relationship of geochemical variables to rock units and structural features; 3) review of mineral resources and discussion of relationship of geochemical variables to mineral occurrences; and 4) discussion of outliers that may relate to anthropogenic contamination.

In this report, site-location maps use state boundaries, county boundaries and 7-1/2 - minute quadrangle boundaries as references to site-locations. The North Carolina Index to Topographic and Other Map Coverage, prepared by the U.S. Geological Survey, is a useful reference document. The List of Publications of the North Carolina Geological Survey indicates areas within the state for which some geologic and geophysical maps, and reports, are available.

Listings in this report are in the same basic format as those presented in microfiche by Sargent

and others (1982). Column 1 lists the laboratory numbers applied to each analyzed sample. Column 2 lists site identification codes. The first two characters are the codes for the county name. The next three digits are sample numbers. They are listed sequentially for each county in the order they were collected. The next two columns list the latitude and longitude of the sampling sites in decimal degree format. The remaining columns are data columns and analyses are given in parts per million (stream sediment) and parts per billion (groundwater). In these columns, a minus (-) sign indicates that a value is below the detection limit. If background is high, and an accurate estimate of minimum detection limit could not be made, a period (.) indicates that the element was not detected and that the detection limit is unusually high. Missing data are denoted by the letter "M". For gold, analyses are listed only for those samples in which gold was detected. For arsenic, a value of 0 is assigned for samples in which arsenic was analyzed, but not detected.

For stream sediment, two listings are presented. The first listing is for elements analyzed by neutron activation as well as field measurements for pH and conductivity of stream water. Variables included in this listing are pH, conductivity, uranium (U), thorium (Th), hafnium (Hf), cerium (Ce), iron (Fe), manganese (Mn), sodium (Na), scandium (Sc), titanium (Ti), vanadium (V), aluminum (Al), dysprosium (Dy), europium (Eu), lanthanum (La), samarium (Sm), ytterbium (Yb), and lutetium (Lu). The second listing is for supplemental elements analyzed by a variety of techniques. These include extractable uranium (Ux), silver (Ag), arsenic (As), barium (Ba), beryllium (Be), calcium (Ca), cobalt (Co), chromium (Cr), copper (Cu), potassium (K), lithium (Li), magnesium (Mg), molybdenum (Mo), niobium (Nb), nickel (Ni), phosphorous (P), lead (Pb), selenium (Se), tin (Sn), strontium (Sr), tungsten (W), yttrium (Y), and zinc (Zn). Stream sediment analyses are for the minus 100 mesh fraction (< 149 microns) unless otherwise noted.

Groundwater, normally samples of water from wells, was also analyzed by neutron activation. Field measurements were made of pH and conductivity. Variables included in listings of groundwater analyses include pH, conductivity, uranium (U), bromine (Br), chlorine (Cl), fluorine (F), magnesium (Mg), manganese (Mn), sodium (Na), vanadium (V), uranium/conductivity, aluminum (Al), and dysprosium (Dy). Stream water was also analyzed for these variables at 295 sites in North Carolina. Listings for stream water are included for areas in which these sites are located.

Although the data was acquired with considerable attention to quality control, some errors exist. These include uncertainties of sample locations due to the use of county road maps as base maps for field use and digitizing sampling sites. Malfunction of field equipment used in measurement of pH and conductivity has also been recognized in some areas. Some of the analyses are also in error. Some of these errors are apparent when concentrations show systematic "breaks" at county boundaries. This suggests that conditions of analysis for different batches of samples were not uniform. In general, analyses of stream sediment by neutron activation are more reliable than analyses of sediment by other supplemental methods.

For a number of counties, supplemental analyses were not made. Thus elements of interest for mineral exploration and environmental geochemistry are lacking for large areas.

REFERENCES

Reid, Jeffrey C., 1991 (revised 1993), A geochemical atlas of North Carolina: North Carolina Geological Survey, Bulletin 93, text plus 45 plates.

Reid, Jeffrey C., 1993, A hydrogeochemical atlas of North Carolina: North Carolina Geological Survey, Bulletin 94, text plus 26 plates.

Reid, Jeffrey C., and Carpenter, Robert H.,1993a, Listings of concentrations (stream sediments) of variables which equal or exceed the 90th percentile, and pH and conductivity below the 10th percentile in the North Carolina portion of the NURE database: North Carolina Geological Survey, Open-File Report 93-1, introductory text plus 178 pages of data.

Reid, Jeffrey C., and Carpenter, Robert H., 1993b, Listing of concentrations (groundwater and stream water) of variables which equal or exceed the 90th percentile, and pH and conductivity below the 10th percentile in the North Carolina portion of the NURE data base: North Carolina Geological Survey, Open-File Report 93-2, introductory text plus 162 pages of data.

Sargent, K.A., Cook, J.R., and Fay, W.M., 1982, Data report: North and South Carolina, National Uranium Resource Evaluation Program, Hydrochemical and stream sediment reconnaissance: E.I. du Pont de Nemours & Co., Savannah River Laboratory, Aiken, S.C., under contract to the U.S. Dept of Energy, contract DE-AC09-76SR000001 (DPST-81-146-22; GBJX-102), 45 p. plus microfiche.

CONTENTS

COUNTY CODES

Code	County
BE	Beaufort
CN	Craven
HD	Hyde
PA	Pamlico

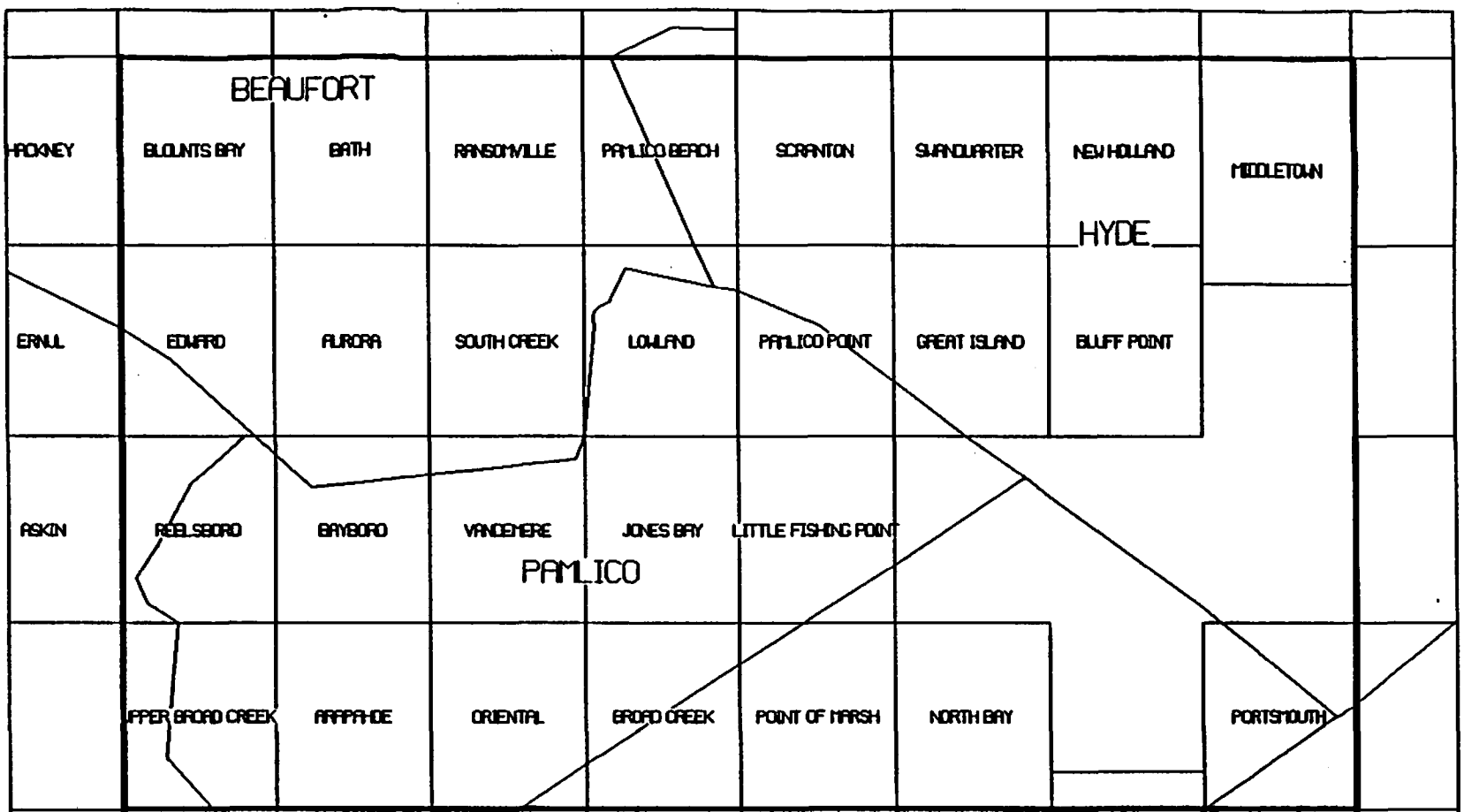

Figure 1. Map Showing Outlines of Bayboro 30 x 60 Minute - Quadrangle and Contained 7 - 1/2 Minute Quadrangles.

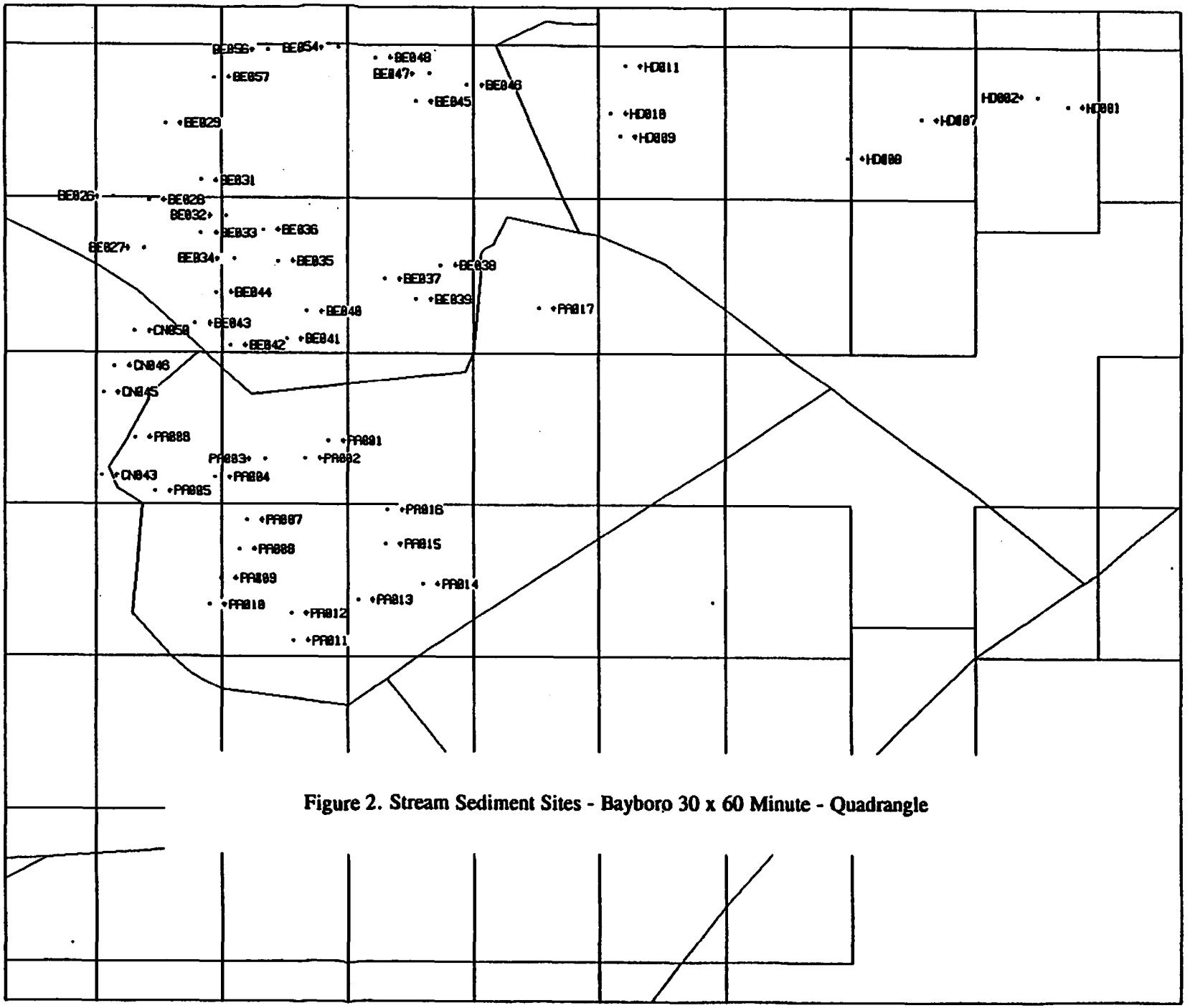

Figure 2. Stream Sediment Sites - Bayboro 30 x 60 Minute - Quadrangle

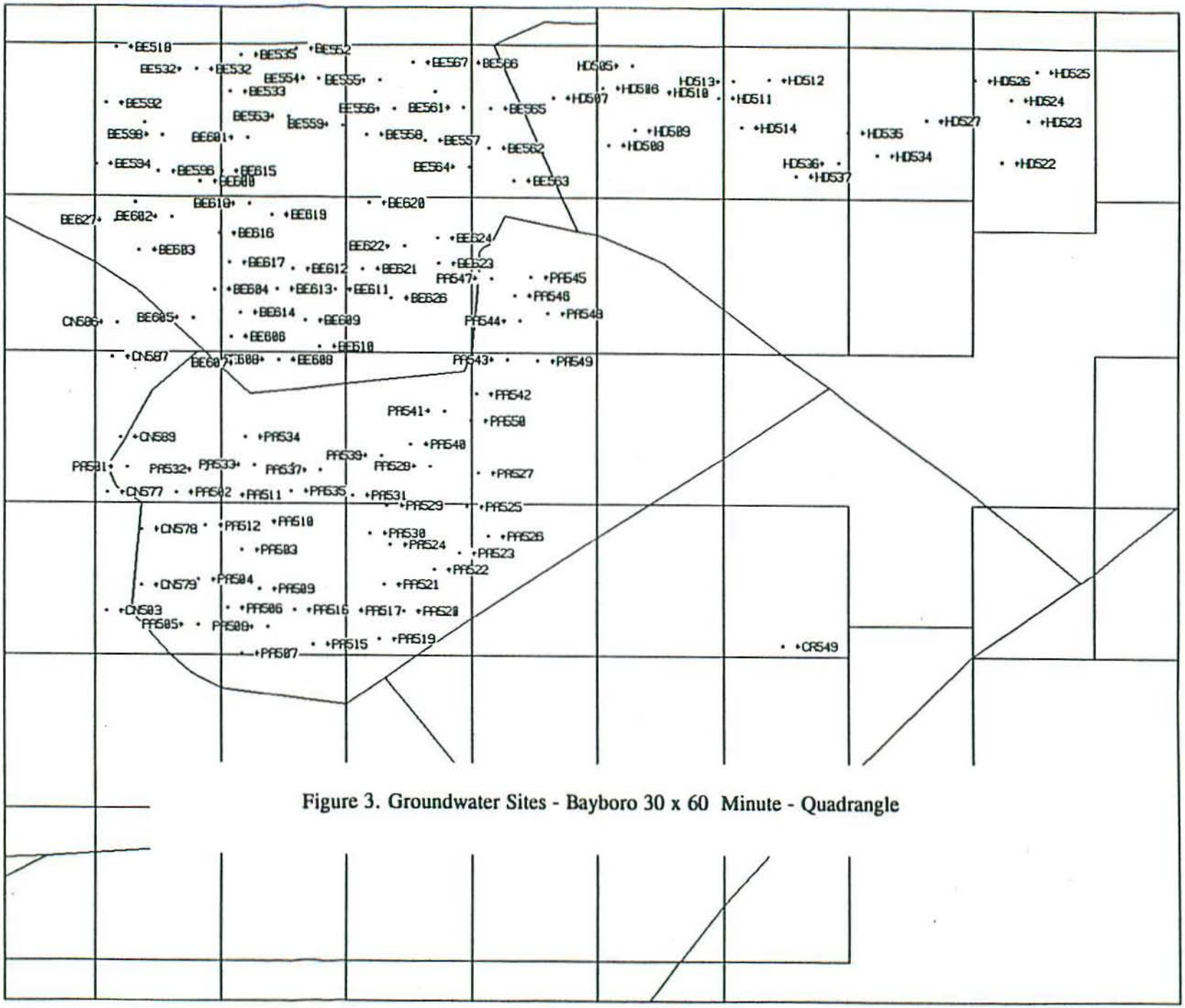

Figure 3. Groundwater Sites - Bayboro 30 x 60 Minute - Quadrangle

BAYBORO 100K QUADRANGLE - STREAM SEDIMENT

Lab #	County ID	Lat	Long	pH	Cond um/cm	U ppm	Th ppm	Hf ppm	Al ppm	Ce ppm	Fe ppm	Mn ppm	Na ppm	Sc ppm	Ti ppm	V ppm	Dy ppm	Eu ppm	La ppm	Sm ppm	Yb ppm	Lu ppm	Au ppm
400	BE026	35.3759	76.9826	5.1	40	2.9	11	39	17200	47	8700	220	4500	2.8	6900	20	M	-1.0	25	4	M	0.2	
401	BE027	35.3344	76.9521	5.7	60	2.1	9	22	21700	22	18000	160	4000	2.4	5300	20	0.1	-1.0	20	4	M	0.2	
402	BE028	35.3735	76.9469	5.2	38	1.4	9	22	17100	25	10600	160	3700	3.2	6000	20	M	M	12	M	M	0.2	
403	BE029	35.4351	76.9303	5.1	38	1.5	7	17	18900	12	10700	140	3200	1.6	4600	20	1.5	-1.0	14	1	M	0.2	
405	BE031	35.3893	76.8956	5.0	32	2.9	9	11	41900	61	18700	80	1400	5.9	4900	50	0.2	-1.0	30	3	5.8	0.2	
406	BE032	35.3610	76.8709	5.7	45	1.9	6	25	18700	39	10100	270	3500	2.3	8900	30	M	M	19	4	M	0.2	
407	BE033	35.3468	76.8957	4.5	32	2.3	9	32	17900	29	8600	220	2200	3.2	8300	30	M	-1.0	16	2	M	0.2	
408	BE034	35.3261	76.8631	4.1	48	3.6	13	98	13800	38	32000	780	2300	3.7	23400	60	5.9	-1.0	28	6	3.5	0.6	
409	BE035	35.3244	76.8192	5.7	120	6.9	25	118	22400	125	38900	900	4900	4.6	24100	70	0.3	1.1	61	8	8.4	0.8	
410	BE036	35.3497	76.8344	6.2	80	3.3	11	58	20800	74	25200	750	5000	4.6	21500	60	M	M	33	4	3.4	0.4	
411	BE037	35.3104	76.7126	6.2	290	3.9	8	7	52300	81	24300	130	4400	6.1	4500	50	M	M	23	4	M	M	0.052
412	BE038	35.3216	76.6576	6.9	1200	3.1	8	14	47800	73	37000	250	7200	7.2	6400	50	M	-1.0	29	8	M	M	
413	BE039	35.2940	76.6819	6.7	800	2.6	M	7	40300	45	22300	170	4000	2.9	3800	40	M	1.4	26	4	M	M	
414	BE040	35.2838	76.7907	6.6	270	3.4	11	14	56800	51	40900	210	5600	6.5	6500	70	0.3	-1.0	30	9	M	M	
415	BE041	35.2615	76.8115	6.7	150	4.5	21	68	28500	105	30800	760	9300	5.1	18800	60	M	1.7	45	9	4.4	0.6	
416	BE042	35.2564	76.8672	4.1	47	1.0	M	4	8000	-20	6200	30	700	3.2	1000	10	0.1	M	6	1	M	M	
417	BE043	35.2738	76.9017	4.6	40	2.8	4	10	42400	57	16500	70	1300	7.9	4900	50	2.4	M	17	5	3.8	M	
418	BE044	35.2993	76.8808	4.9	40	1.7	6	28	17900	44	14700	200	3800	3.1	6200	20	0.2	-1.0	25	4	M	0.3	
419	BE045	35.4536	76.6821	6.7	355	2.7	4	8	43300	43	19000	160	9700	6.0	4300	40	M	-1.0	18	4	M	M	
420	BE046	35.4671	76.6317	7.0	650	6.2	18	120	28000	65	33600	1090	7200	7.4	27100	70	M	-1.0	39	8	M	0.7	
421	BE047	35.4765	76.6690	6.6	450	3.4	9	15	58400	57	26500	230	7100	6.4	7200	70	M	-1.0	19	3	M	M	
422	BE048	35.4899	76.7216	6.2	120	3.6	6	6	39500	69	20600	140	4400	4.3	4400	60	0.6	M	29	5	M	0.2	
428	BE054	35.4971	76.7598	6.2	85	2.0	7	31	24800	46	16100	300	8300	2.6	8100	20	M	-1.0	18	4	M	0.4	
430	BE056	35.4956	76.8291	6.3	110	3.4	15	12	56400	89	29400	150	3700	5.9	7800	80	M	2.0	41	6	M	0.4	
431	BE057	35.4730	76.8830	5.3	50	3.4	9	13	61800	40	13300	170	3000	5.9	8400	70	7.5	-1.0	18	3	4.7	0.2	
1307	CN043	35.1488	76.9940	5.4	82	2.1	8	29	8400	40	7400	150	1500	1.3	5600	20	2.2	-1.0	20	3	0.9	0.3	
1309	CN045	35.2172	76.9930	4.4	42	2.0	8	32	18800	50	13200	260	3700	2.0	8800	30	M	-1.0	21	3	5.2	0.3	
1310	CN046	35.2392	76.9815	4.5	39	2.1	7	28	18800	30	7100	300	5300	2.1	10100	30	1.0	-1.0	19	3	1.6	0.3	
1314	CN050	35.2676	76.9619	5.4	49	3.9	19	66	15300	84	21600	670	2700	4.6	22100	60	0.4	-1.0	39	6	4.3	0.6	
2702	HD001	35.4519	76.0317	5.6	750	3.0	11	13	55500	90	23900	170	9000	8.7	7000	90	0.8	-1.0	36	6	M	0.2	
2703	HD002	35.4594	76.0632	4.3	300	2.0	5	11	45800	74	20700	180	12600	4.2	4600	30	2.6	-1.0	27	6	3.6	0.3	
2708	HD007	35.4405	76.1782	5.5	230	1.6	6	6	48900	50	14900	150	14100	6.7	3100	40	2.1	M	17	3	M	0.2	
2709	HD008	35.4088	76.2532	5.0	2000	2.6	5	7	51800	29	13300	140	14000	4.6	6200	60	0.2	-1.0	17	4	M	0.2	
2710	HD009	35.4254	76.4790	6.1	1200	3.0	7	11	54700	45	27700	240	12800	6.7	7400	50	0.9	-1.0	25	4	M	M	
2711	HD010	35.4442	76.4884	6.3	700	2.4	6	9	66900	70	38800	240	10700	7.3	5600	60	M	-1.0	32	8	M	0.3	
2712	HD011	35.4833	76.4740	6.2	300	2.1	9	10	60800	73	32100	550	13900	8.5	8600	70	M	1.5	33	8	2.3	0.3	
4511	PA001	35.1784	76.7695	4.2	50	2.4	9	22	34700	34	18800	210	6500	5.8	6300	40	0.5	1.7	17	3	M	0.4	
4512	PA002	35.1637	76.7927	4.4	78	2.3	7	5	64700	55	19300	170	9800	7.2	4700	60	M	0.6	21	2	1.8	0.3	

BAYBORO 100K QUADRANGLE - STREAM SEDIMENT

Lab #	County ID	Lat	Long	pH	Cond	U	Th	Hf	Al	Ce	Fe	Mn	Na	Sc	Ti	V	Dy	Eu	La	Sm	Yb	Lu	Au
					um/cm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
4513	PA003	35.1628	76.8328	5.7	90	1.9	7	8	47000	50	13000	180	13000	5.3	5900	50	2.3	-1.0	17	2	2.3	0.3	
4514	PA004	35.1476	76.8822	4.3	45	2.2	7	11	54200	56	22700	160	6900	8.0	5000	50	3.3	0.9	27	5	1.8	0.2	
4515	PA005	35.1360	76.9408	4.5	43	2.5	9	37	36300	52	17900	370	9000	3.5	9000	30	3.0	N	27	N	N	0.2	
4516	PA006	35.1806	76.9612	4.6	40	3.5	13	50	29500	66	24000	630	5500	4.7	14400	50	0.3	-1.0	28	7	3.1	0.3	
4517	PA007	35.1124	76.8506	5.0	83	5.6	26	83	29300	132	45500	1320	5300	7.8	28000	90	6.3	1.3	59	7	N	1.3	
4518	PA008	35.0880	76.8578	4.7	70	2.6	9	36	30900	66	23100	700	10700	3.0	15100	50	N	N	25	5	N	0.4	
4519	PA009	35.0641	76.8762	5.4	70	2.6	11	4	81600	45	18900	200	5600	6.3	8400	70	N	-1.0	25	3	N	0.2	
4520	PA010	35.0426	76.8871	5.6	55	2.6	13	36	21100	46	21000	590	4700	4.2	11800	40	0.4	N	26	5	N	0.8	
4521	PA011	35.0132	76.8041	6.5	150	2.3	7	28	38100	42	17200	280	9000	3.9	6600	30	N	N	25	6	2.3	0.3	
4522	PA012	35.0354	76.8061	4.9	85	2.3	6	25	31400	31	11800	230	7800	5.3	7200	30	N	-1.0	18	3	N	0.3	
4523	PA013	35.0470	76.7395	6.6	120	2.3	5	6	54300	63	20600	140	8600	6.7	4000	60	2.9	N	32	4	N	0.3	
4524	PA014	35.0602	76.6754	6.3	60	2.7	N	2	60400	41	21900	140	1100	7.0	4500	60	N	-1.0	35	7	N	N	
4525	PA015	35.0924	76.7122	6.4	315	4.4	11	8	83500	71	27000	260	3400	12.3	8900	120	N	N	37	6	3.3	0.4	
4526	PA016	35.1212	76.7103	6.3	270	7.7	37	134	23600	155	37700	1270	6600	6.4	34000	80	0.6	0.7	80	9	11.3	1.2	0.104
4527	PA017	35.2867	76.5597	6.4	1700	11.6	52	198	26500	232	86400	3290	3300	8.9	64900	150	9.4	-1.0	118	14	5.1	1.6	

BAYBORO 100K QUADRANGLE - GROUNDWATER

Lab #	County ID	Lat	Long	pH	Cond um/cm	U ppb	Br ppb	Cl ppb	F ppb	Mg ppb	Mn ppb	Na ppb	V ppb	U/cond x 1000	Al ppb	Dy ppb
238	BE518	35.4973	76.9787	7.4	275	0.006	.	4700	62	2270	74	14920	-0.1	0.0	106	-0.001
252	BE532	35.4792	76.8998	7.3	480	-0.002	.	5900	234	4600	47	17180	-0.1	0.0	166	-0.001
253	BE533	35.4603	76.8659	7.2	590	0.017	.	7700	455	10230	98	31020	-0.1	0.0	288	0.030
254	BE534	35.4706	76.8276	7.0	160	0.012	.	9300	108	.	33	40480	-0.1	0.0	168	-0.001
255	BE535	35.4911	76.8552	7.3	465	0.022	.	5600	686	8490	34	18440	.1.4	0.0	150	-0.001
272	BE552	35.4957	76.8002	7.2	680	-0.002	117	42600	317	22660	93	56160	-0.1	0.0	75	0.020
273	BE553	35.4403	76.8079	7.2	590	-0.002	135	17100	368	13900	92	31580	-0.1	0.0	82	-0.001
274	BE554	35.4716	76.7774	7.2	790	0.013	139	29100	468	19930	60	46240	0.7	0.0	68	-0.001
275	BE555	35.4711	76.7162	7.2	810	0.006	.	53100	649	29680	118	60120	-0.1	0.0	80	-0.001
276	BE556	35.4473	76.7022	6.9	415	0.016	.	10100	160	5890	171	22490	-0.1	0.0	38	-0.001
277	BE557	35.4218	76.6719	7.3	920	0.015	150	67600	626	32600	.	89900	-0.1	0.0	30	-0.001
278	BE558	35.4266	76.7294	7.3	700	-0.002	150	27900	501	25200	93	41220	-0.1	0.0	142	-0.001
279	BE559	35.4339	76.7536	7.0	690	-0.002	80	20200	238	19330	384	36340	-0.1	0.0	144	-0.001
280	BE560	35.4608	76.6621	7.1	1150	-0.002	215	70700	293	35420	741	127950	-0.1	0.0	346	-0.001
281	BE561	35.4482	76.6333	7.3	465	-0.002	16	13800	186	4810	149	23240	-0.1	0.0	51	-0.001
282	BE562	35.4157	76.6077	7.4	1090	0.114	524	132200	972	79150	221	173200	-0.1	0.1	505	-0.001
283	BE563	35.3891	76.5830	7.6	1090	0.074	138	81900	787	7950	190	228150	-0.1	0.0	700	-0.001
284	BE564	35.3999	76.6282	7.1	700	-0.002	.	51900	99	5580	211	48780	-0.1	0.0	373	-0.001
285	BE565	35.4478	76.6061	7.2	790	0.017	76	65800	.	.	113	42000	-0.1	0.0	107	-0.001
286	BE566	35.4851	76.6333	7.5	1400	0.003	.	162600	.	22080	.	120700	-0.1	0.0	180	0.070
287	BE567	35.4854	76.6838	7.4	990	0.053	.	96100	422	37120	.	96800	-0.1	0.0	244	-0.001
312	BE592	35.4506	76.9881	7.2	390	0.007	.	6600	189	.	56	72930	-0.1	0.0	109	0.030
314	BE594	35.4014	76.9986	7.2	370	-0.002	.	4700	139	1540	109	17630	-0.1	0.0	115	-0.001
315	BE595	35.3703	76.9596	7.2	550	0.011	67	7700	177	6350	149	31780	-0.1	0.0	302	-0.001
316	BE596	35.3956	76.9365	7.3	300	-0.002	26	5000	183	4430	129	16080	-0.1	0.0	125	-0.001
317	BE597	35.4352	76.9500	7.3	485	-0.002	22	18900	124	3450	112	27270	-0.1	0.0	153	-0.001
318	BE598	35.4250	76.9324	7.3	390	0.002	.	7100	100	.	120	16390	-0.1	0.0	147	-0.001
319	BE599	35.4220	76.8843	7.4	240	0.015	31	5500	134	1280	122	16420	-0.1	0.0	118	-0.001
320	BE600	35.3873	76.8958	7.4	315	-0.002	48	4900	172	4670	180	17380	-0.1	0.0	115	-0.001
321	BE601	35.4229	76.8487	7.4	365	-0.002	.	5100	223	1610	76	16980	-0.1	0.0	44	-0.001
322	BE602	35.3592	76.9236	7.5	435	-0.002	.	4800	396	.	47	77090	-0.1	0.0	38	-0.001
323	BE603	35.3320	76.9557	7.1	590	0.011	45	6300	351	18210	116	32900	-0.1	0.0	195	-0.001
324	BE604	35.3007	76.8823	7.2	435	0.003	.	5900	415	13560	59	18380	-0.1	0.0	104	-0.001
325	BE605	35.2773	76.9028	7.4	470	-0.002	18	5500	441	18570	30	18340	-0.1	0.0	128	-0.001
326	BE606	35.2624	76.8654	7.5	285	0.002	16	4500	129	5330	138	16690	-0.1	0.0	169	-0.001
327	BE607	35.2412	76.8496	7.3	450	0.012	.	6100	495	14720	58	23890	-0.1	0.0	178	-0.001
328	BE608	35.2441	76.8180	7.2	620	-0.002	.	6000	745	7730	96	82680	-0.1	0.0	318	-0.001
329	BE609	35.2756	76.7910	7.1	460	0.017	.	16100	144	5280	136	21890	0.5	0.0	105	-0.001

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Lab #	County ID	Lat	Long	pH	Cond um/cm	U ppb	Br ppb	Cl ppb	F ppb	Mg ppb	Mn ppb	Na ppb	V ppb	U/cond x 1000	Al ppb	Dy ppb
330	BE610	35.2550	76.7766	7.2	510	-0.002	.	9700	530	15680	57	45820	-0.1	0.0	280	-0.001
331	BE611	35.3008	76.7613	7.3	410	0.003	.	10300	665	22820	27	31380	-0.1	0.0	163	-0.001
332	BE612	35.3172	76.8036	5.8	162	0.106	.	12400	32	4960	156	18190	-0.1	0.6	159	-0.001
333	BE613	35.3010	76.8194	7.2	415	0.009	46	6400	541	16590	34	21880	-0.1	0.0	149	0.020
334	BE614	35.2820	76.8558	7.6	330	0.010	.	4400	585	11480	47	18270	-0.1	0.0	157	-0.001
335	BE615	35.3956	76.8748	7.3	315	-0.002	.	4900	118	2170	103	18950	-0.1	0.0	144	-0.001
336	BE616	35.3459	76.8773	7.2	520	-0.002	.	8800	327	10120	502	34340	-0.1	0.0	283	-0.001
337	BE617	35.3219	76.8667	6.4	65	0.005	.	8100	.	.	79	16310	-0.1	0.0	89	-0.001
338	BE618	35.3696	76.8469	7.1	460	0.010	.	5700	349	9780	39	20250	-0.1	0.0	154	-0.001
339	BE619	35.3610	76.8246	6.8	4100	0.031	2973	472000	.	38860	685	94960	-0.1	0.0	542	0.220
340	BE620	35.3709	76.7268	6.2	115	0.017	.	29300	.	.	74	27440	-0.1	0.1	131	-0.001
341	BE621	35.3175	76.7332	7.0	790	0.002	.	17000	314	7000	242	47880	-0.1	0.0	275	-0.001
342	BE622	35.3358	76.6923	7.3	600	0.030	434	62200	109	11380	153	51780	-0.1	0.0	294	-0.001
343	BE623	35.3219	76.6583	7.0	485	0.010	.	19300	46	1650	116	30610	-0.1	0.0	149	-0.001
344	BE624	35.3425	76.6596	7.1	490	-0.002	.	14300	184	8570	209	23760	-0.1	0.0	150	-0.001
345	BE625	35.3082	76.6447	7.1	610	0.025	.	27800	70	5060	163	43100	-0.1	0.0	351	-0.001
346	BE626	35.2943	76.7049	7.5	600	-0.002	.	19600	654	12900	123	83300	-0.1	0.0	266	-0.001
347	BE627	35.3557	76.9797	7.0	415	-0.002	.	6500	261	7140	246	20870	-0.1	0.0	161	-0.001
1167	CN503	35.0359	76.9885	7.4	345	0.012	.	7000	172	1300	87	17830	0.3	0.0	41	-0.001
1241	CN577	35.1340	76.9874	7.4	430	-0.002	.	M	.	M	.	M	-0.1	0.0	.	-0.001
1242	CN578	35.1035	76.9534	7.5	380	0.011	.	5900	216	1350	66	16220	-0.1	0.0	165	-0.001
1243	CN579	35.0571	76.9538	7.4	610	-0.002	.	70900	180	11870	79	67980	-0.1	0.0	298	-0.001
1250	CN586	35.2732	76.9776	7.6	330	-0.002	24	5400	278	3660	113	17140	-0.1	0.0	139	-0.001
1251	CN587	35.2457	76.9823	7.5	358	0.017	.	6400	159	.	75	18200	-0.1	0.0	148	-0.001
1253	CN589	35.1799	76.9744	7.7	420	0.003	.	5700	141	3120	64	18070	-0.1	0.0	150	-0.001
1331	CR549	35.0090	76.3151	7.5	650	0.009	65	5500	.	.	179	46540	-0.1	0.0	283	-0.001
2469	HD505	35.4836	76.4651	7.5	2130	0.172	.	252200	.	34840	680	502400	-0.1	0.0	2422	-0.001
2470	HD506	35.4647	76.4943	7.7	950	0.021	.	105600	.	5830	.	154720	-0.1	0.0	203	-0.001
2471	HD507	35.4566	76.5439	7.3	2200	0.642	761	352200	.	.	664	514400	-0.1	0.2	1116	0.240
2472	HD508	35.4183	76.4890	7.3	1670	0.004	389	178200	.	26560	242	200100	-0.1	0.0	215	0.030
2473	HD509	35.4302	76.4633	7.9	2050	0.332	1361	250400	.	33020	810	458400	-0.1	0.1	2258	-0.001
2474	HD510	35.4617	76.4440	7.5	2000	-0.002	419	265200	.	.	633	489000	-0.1	0.0	954	-0.001
2475	HD511	35.4572	76.3800	7.4	1420	0.049	952	147900	.	44490	110	161950	-0.1	0.0	639	-0.001
2476	HD512	35.4726	76.3288	8.1	2050	-0.002	478	247600	663	.	542	590400	-0.1	0.0	1098	-0.001
2477	HD513	35.4712	76.3642	7.5	1950	0.020	577	132300	341	39910	.	185700	-0.1	0.0	681	-0.001
2478	HD514	35.4333	76.3563	7.7	1500	0.091	714	165900	.	32770	205	226000	-0.1	0.0	317	-0.001
2486	HD522	35.4059	76.0963	7.8	680	0.057	.	16300	289	18910	80	79120	-0.1	0.0	154	-0.001
2487	HD523	35.4399	76.0695	7.4	1230	0.021	487	140100	.	17230	142	131500	-0.1	0.0	273	-0.001

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Lab #	County ID	Lat	Long	pH	Cond um/cm	U ppb	Br ppb	Cl ppb	F ppb	Mg ppb	Mn ppb	Na ppb	V ppb	U/cond x 1000	Al ppb	Dy ppb
2488	HD524	35.4572	76.0871	7.9	1230	0.110	221	145600	.	69100	169	147850	-0.1	0.0	539	-0.001
2489	HD525	35.4810	76.0602	7.9	600	0.011	173	13200	187	20280	90	74340	-0.1	0.0	286	-0.001
2490	HD526	35.4731	76.1228	8.0	1420	0.138	.	41200	251	.	164	256900	3.1	0.1	800	-0.001
2491	HD527	35.4399	76.1722	8.1	1650	0.084	762	154100	146	.	144	242650	-0.1	0.0	716	-0.001
2498	HD534	35.4111	76.2212	7.9	1000	0.048	244	72500	.	12940	55	119720	-0.1	0.0	141	-0.001
2499	HD535	35.4301	76.2501	7.6	2070	-0.002	1174	269200	598	40340	550	462800	-0.1	0.0	1510	-0.001
2500	HD536	35.4043	76.2600	7.4	970	0.018	.	61600	.	33880	74	58740	0.6	0.0	100	-0.001
2501	HD537	35.3940	76.3021	7.3	670	0.013	.	10100	114	9770	169	39600	-0.1	0.0	104	-0.001
3852	PA501	35.1550	76.9677	7.4	350	0.034	.	4800	433	4320	34	16290	-0.1	0.1	44	-0.001
3853	PA502	35.1342	76.9195	7.6	335	0.020	.	4200	402	10180	20	15460	-0.1	0.0	84	-0.001
3854	PA503	35.0863	76.8541	7.4	410	0.016	.	6900	382	6460	.	17330	-0.1	0.0	36	-0.001
3855	PA504	35.0619	76.8976	7.5	455	-0.002	.	5700	336	9330	.	16720	-0.1	0.0	49	-0.001
3856	PA505	35.0244	76.8981	5.6	105	0.026	61	12200	.	1200	35	18070	-0.1	0.2	111	-0.001
3857	PA506	35.0385	76.8686	7.3	370	0.006	21	5700	197	3100	66	16480	-0.1	0.0	75	-0.001
3858	PA507	35.0014	76.8541	7.5	390	0.017	35	8500	257	6600	26	19330	-0.1	0.0	60	-0.001
3859	PA508	35.0231	76.8287	7.6	423	0.011	.	13300	337	10540	.	22080	-0.1	0.0	119	-0.001
3860	PA509	35.0543	76.8368	6.3	35	-0.002	33	4800	.	930	33	12490	-0.1	0.0	106	-0.001
3861	PA510	35.1101	76.8371	7.4	600	-0.002	.	6400	456	29260	51	47540	-0.1	0.0	44	-0.001
3862	PA511	35.1320	76.8686	7.0	415	0.022	.	5900	218	13420	251	16950	-0.1	0.0	41	-0.001
3863	PA512	35.1066	76.8907	7.7	432	0.003	19	4300	511	17100	38	15250	-0.1	0.0	34	-0.001
3866	PA515	35.0091	76.7834	7.1	550	0.020	.	15400	199	7370	93	29860	-0.1	0.0	49	-0.001
3867	PA516	35.0372	76.8020	7.1	550	0.038	.	9900	224	8510	89	27480	-0.1	0.0	53	-0.001
3868	PA517	35.0370	76.7497	6.8	590	0.020	61	29900	.	3280	190	43340	-0.1	0.0	82	-0.001
3870	PA519	35.0135	76.7168	6.8	570	-0.002	.	31600	65	3580	148	40940	-0.1	0.0	69	-0.001
3871	PA520	35.0365	76.6929	7.2	405	0.015	.	22700	.	.	100	20790	-0.1	0.0	54	-0.001
3872	PA521	35.0584	76.7120	7.2	700	0.004	.	9900	235	26660	87	29640	-0.1	0.0	71	-0.001
3873	PA522	35.0707	76.6631	6.6	600	0.028	.	60800	.	5080	208	42680	-0.1	0.0	70	0.070
3874	PA523	35.0842	76.6376	7.2	700	0.007	.	70100	.	7410	96	54620	-0.1	0.0	28	-0.001
3875	PA524	35.0912	76.7060	7.3	700	0.023	.	11100	270	28200	42	39120	-0.1	0.0	70	-0.001
3876	PA525	35.1232	76.6302	6.0	240	0.009	.	39000	.	3940	168	22380	-0.1	0.0	32	-0.001
3877	PA526	35.0986	76.6087	7.1	550	-0.002	.	15300	35	.	126	31040	-0.1	0.0	71	-0.001
3878	PA527	35.1509	76.6186	7.1	700	0.049	38	28600	.	4230	153	34020	-0.1	0.0	74	-0.001
3879	PA528	35.1569	76.6666	7.0	320	0.006	.	10700	81	1620	123	18290	-0.1	0.0	32	-0.001
3880	PA529	35.1242	76.7094	6.2	200	-0.002	444	28800	.	3150	96	28960	-0.1	0.0	31	-0.001
3881	PA530	35.1011	76.7260	6.2	180	0.063	.	12100	.	1730	93	22150	-0.1	0.3	22	-0.001
3882	PA531	35.1323	76.7435	7.0	600	0.063	76	13500	59	9780	341	33340	-0.1	0.1	54	-0.001
3883	PA532	35.1532	76.8903	7.4	410	0.004	20	5300	410	23160	48	16090	-0.1	0.0	26	-0.001
3884	PA533	35.1576	76.8419	7.6	310	0.002	.	4800	375	7470	24	14370	-0.1	0.0	45	-0.001

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Lab #	County ID	Lat	Long	pH	Cond um/cm	U ppb	Br ppb	Cl ppb	F ppb	Mg ppb	Mn ppb	Na ppb	V ppb	U/cond x 1000	Al ppb	Dy ppb
3885	PA534	35.1805	76.8509	7.2	590	0.005	.	6700	346	29800	47	25960	-0.1	0.0	119	-0.001
3886	PA535	35.1358	76.8050	7.4	440	0.013	12	4900	534	19990	29	15650	-0.1	0.0	75	-0.001
3887	PA536	35.1583	76.8037	7.3	600	0.014	.	7100	370	26200	.	27660	0.7	0.0	179	-0.001
3888	PA537	35.1532	76.7757	7.1	650	0.052	.	18600	68	4730	128	31440	1.2	0.0	190	-0.001
3889	PA538	35.1628	76.7408	7.0	600	-0.002	.	12200	147	3530	176	31440	0.9	0.0	226	-0.001
3890	PA539	35.1657	76.7147	7.1	720	-0.002	.	12200	.	17240	499	36820	-0.1	0.0	96	0.010
3891	PA540	35.1753	76.6857	7.2	700	0.011	28	9400	172	21540	203	35940	-0.1	0.0	136	0.020
3892	PA541	35.2026	76.6530	7.2	750	-0.002	.	10400	237	.	56	150980	0.8	0.0	76	0.020
3893	PA542	35.2163	76.6205	7.1	710	0.002	.	14500	163	3780	198	40340	-0.1	0.0	79	-0.001
3894	PA543	35.2447	76.5891	7.5	900	0.011	.	21100	1016	16390	93	112380	-0.1	0.0	94	-0.001
3895	PA544	35.2757	76.5769	7.1	890	0.006	.	14200	106	36040	190	43960	-0.1	0.0	83	-0.001
3896	PA545	35.3110	76.5659	7.1	690	-0.002	44	22600	95	5160	271	31440	-0.1	0.0	57	-0.001
3897	PA546	35.2964	76.5822	7.1	990	0.042	125	16200	54	30480	163	58020	-0.1	0.0	127	-0.001
3898	PA547	35.3101	76.6057	9.0	80	0.023	.	3100	22	890	52	11830	0.4	0.2	148	0.010
3899	PA548	35.2818	76.5493	7.1	710	0.031	.	13500	.	23320	229	44020	-0.1	0.0	95	-0.001
3900	PA549	35.2436	76.5594	7.2	850	0.009	312	75200	107	.	132	88040	-0.1	0.0	83	0.070
3901	PA550	35.1945	76.6258	7.1	800	0.041	36	14700	230	26500	186	39320	0.5	0.0	86	-0.001