PART IV: GROUND WATER ASSESSMENT

Chapter 1: Baseline Monitoring Project

Introduction

Table 4.1.1 is designed to provide an indication of the most critical contaminant sources and contaminants impacting ground water resources in Louisiana. Table 4.1.2 provides a summary of Louisiana ground water protection programs. It provides an overview of legislation, statutes, rules, and/or regulations that are in place. It also provides an indication of how comprehensive ground water protection activities are in Louisiana.

The Environmental Evaluation Division's **BASELINE MONITORING PROJECT** provides water quality data from fresh water aquifers around the State. Wells producing from a common aquifer are sampled in a narrow time frame. The smaller aquifers can be sampled in one or two days, whereas, the larger aquifers may take several months to complete. At such time when all project wells of a particular aquifer have been sampled, a summary report is written.

For this report, EPA has encouraged States to select an aquifer or hydrogeologic setting and discuss available data that best reflects the quality of the resource. For 2002, the baseline monitoring networks for the Chicot Equivalent, Evangeline Equivalent, and Jasper Equivalent aquifer systems are discussed. As a group, these aquifer systems make up a larger system, known as the Southern Hills aquifer system.

Index to Table 4.1.1

Factors in selecting a contaminant source

A. Human health and/or environmental risk (toxicity)
B. Size of the population at risk
C. Location of the sources relative to drinking water sources
D. Number and/or size of contaminant sources
E. Hydrogeologic sensitivity
F. State findings, other findings
G. Documented from mandatory reporting
H. Geographic distribution/occurrence
I. Other criteria - high to very high priority in localized areas of the state

Contaminants

A. Inorganic pesticides
B. Organic pesticides
C. Halogenated solvents
D. Petroleum compounds
E. Nitrate
F. Fluoride
G. Salinity/brine
H. Metals
I. Radionuclides
J. Bacteria
K. Protozoa
L. Viruses
M. Other - sulfates from gypsum stacks

Table 4.1.1

Major sources of ground water contamination in Louisiana's Southern Hills Aquifer System.

Contaminant Source	Ten Highest-Priority Sources(□)	Factors in Selecting a Contaminant Source	Contaminants
Agricultural Activities			
Agricultural chemical facilities			
Animal feedlots			
Drainage wells			
Fertilizer applications			
Irrigation practices			
Pesticide applications			
On-farm agricultural mixing and loading procedures			
Land application of manure (unregulated)			
Storage and Treatment			
Land Application			
Material stockpiles			
Storage tanks (above ground)	□	A,B,C,D,E,F,G	B,C,D
Storage tanks (underground)	□	A,B,C,D,E,F,	B,C,D
Surface impoundments	□	A,B,C,D,E,F,G	C,D,G,H,J,L
Waste piles	□	D,G	I,M
Waste tailings			
Disposal Activities			
Deep injection wells			
Landfills	□	A,B,C,D,E,F,G	A,B,C,D,E,H
Septic systems	□	C,D,G	A,B,C,D,E,H,J,L
Shallow injection wells			
Other			
Hazardous waste generators*			
Hazardous waste sites*			
Industrial facilities*			
Material transfer operations*			
Mining and mine drainage			
Pipelines and sewer lines	□	A,B,C,D,E,F,G	C,D,G
Salt storage and road salting			
Salt water intrusion	□	B,C,E,G	G
Spills	□	B,D,G	C,D
Transportation of materials			
Urban runoff	□	A,B,D,G	A,B,C,D,E,H,J,L
Small-scale manufacturing and repair shops			
Other sources (please specify)			

* Represents facilities with multiple sources of ground water contamination rather than unit sources

Table 4.1.2

Summary of state ground water protection programs for Louisiana

Programs or Activities	Check	Implementation Status	Responsible State Agency
Active SARA Title III Program	□	Fully established	LDEQ
Ambient ground water monitoring system	□	Fully established	LDEQ
Aquifer vulnerability assessment	□	Fully established	LDEQ
Aquifer mapping	□	Fully established	LDEQ
Aquifer characterization	□	Continuing efforts	LDOTD
Comprehensive data management system	□	Continuing efforts	LDEQ
EPA-endorsed Core Comprehensive State Ground Water Protection Program(CSGWPP)	□	Pending	LDEQ
Ground water discharge permits	□	Fully established	DNR (UIC)
Ground water Best Management Practices	□	Continuing efforts	LDEQ
Ground water legislation	T	Continuing efforts	Office of the Governor
Ground water classification	□	Fully established	LDEQ
Ground water quality standards	□	Continuing efforts	LDEQ
Interagency coordination for ground water protection initiatives	□	Fully established	LDEQ
Nonpoint source controls	□	Continuing efforts	LDEQ
Pesticide State Management Plan	□	Continuing efforts	LDAF
Pollution Prevention Program	□	Continuing efforts	LDEQ
Resource Conservation and Recovery Act (RCRA) Primacy	□	Fully established	LDEQ
Source Water Assessment Program	□	Fully established	LDEQ
State Superfund	□	Fully established	LDEQ
State RCRA Program incorporating more stringent requirements than RCRA Primacy	□	Continuing efforts	LDEQ
State septic system regulations	□	Fully established	LDHH
Underground storage tank installation requirements	□	Fully established	LDEQ
Underground Storage Tank Remediation Fund	□	Fully established	LDEQ
Underground Storage Tank Permit Program	□	Fully established	LDEQ
Underground Injection Control Program	□	Fully established	LDNR
Vulnerability assessment for drinking water/wellhead protection	□	Continuing efforts	LDEQ
Well abandonment regulations	□	Fully established	LDOTD
Wellhead Protection Program(EPA-approved)	□	Fully established	LDEQ
Well installation regulations	□	Fully established	LDOTD

Chapter 2: Ambient Monitoring Network For The Southern Hills Aquifer System

The data that follows were derived from the **BASELINE MONITORING PROJECT** of the Environmental Evaluation Division of the Louisiana Department of Environmental Quality. The project is conducted as a Clean Water Act, Section 106 activity and the objective of the project is to provide water quality data from freshwater aquifers across Louisiana that will be used to aid the Environmental Evaluation Division in formulating and implementing Ground Water Protection Strategy for the State.

Figure 4.2.1 shows the geographic locations of the Southern Hills aquifer system and the associated project wells, whereas Table 4.2.2 lists the wells in the system, their total depths, from which sub-system they produce, and the use made of produced waters.

These data show that from August 1999, through May 2000, 54 project wells were sampled which produce from the Southern Hills aquifer system. Of these 54 wells, 23 are classified as public supply, 14 are classified as industrial, 12 are classified as domestic, three are classified as irrigation, one is classified as monitor, and one is classified as power generation. The wells are located in eighteen parishes that are situated in the southeastern area, or the "Florida Parishes" of Louisiana, and in two parishes west of the Mississippi River.

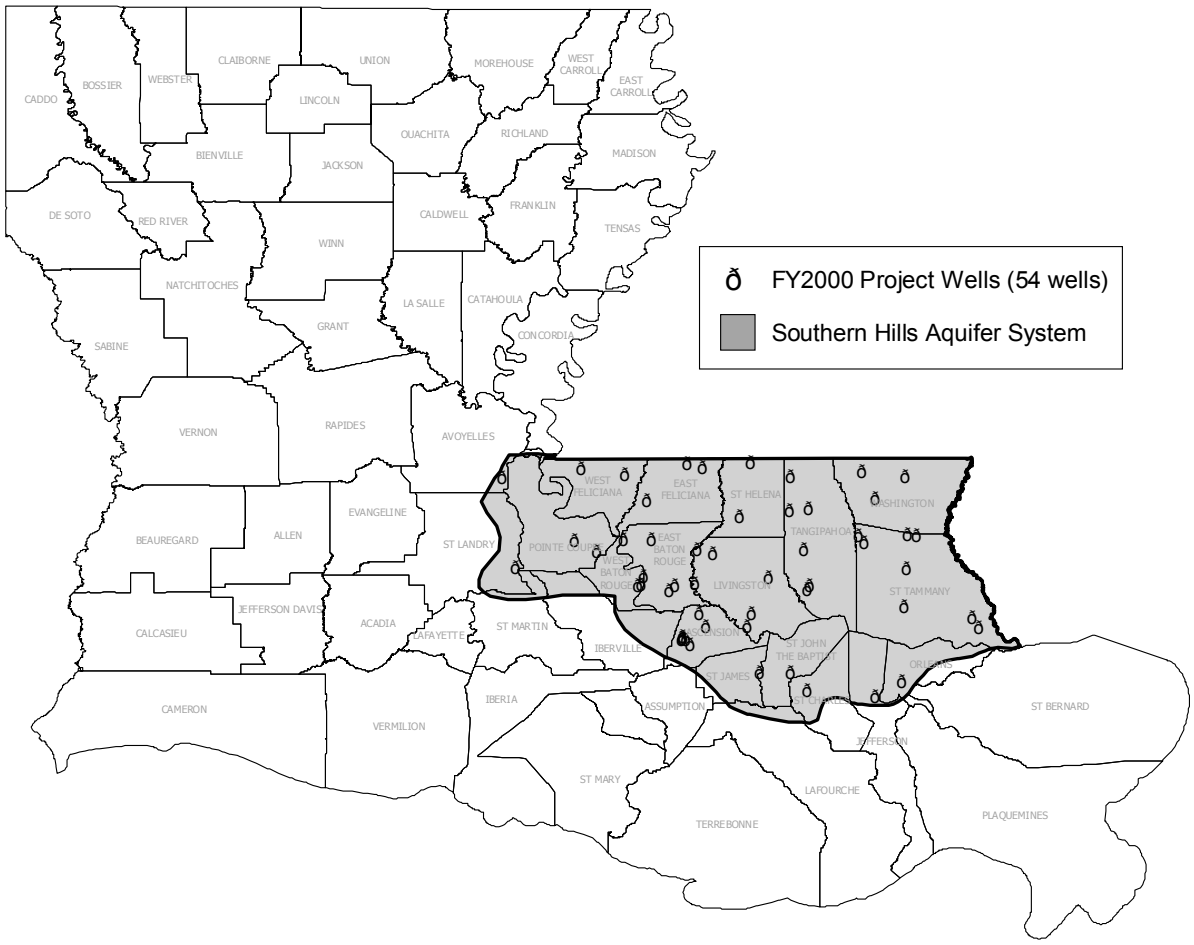
Table 4.2.1. Aquifer Monitoring Data

Hydrogeologic Setting: **Southern Hills Aquifer System**
Spatial Description: **Southeastern Louisiana**
Map Available: **See Figure 4-1**
Data Reporting Period: **August 1999 – May 2000**

Monitoring Data Type	Total No. of Wells Used in the Assessment	Parameter Groups	Number of Wells									
			No detections of parameters above MDLs or background levels		Nitrite/nitrate concentrations range from background levels to less than or equal to 5 mg/l. No detections of parameters other than nitrite/nitrate above MDLs or background levels and/or located in areas that are sensitive or vulnerable.			Nitrite/nitrate ranges from greater than 5 to less than or equal to 10 mg/l. Other parameters are detected at concentrations exceeding the MDL but are less than or equal to the MCLs.	Parameters are detected at concentrations exceeding the MCLs	Number of wells removed from service	Number of wells requiring special treatment	Back-ground para-meters exceed MCLs
			ND	Number of wells in sensitive or vulnerable areas	Nitrite/ nitrate < 1 mg/l	Nitrite/ nitrate ≥ 1 to ≤5 mg/l	Number of wells in sensitive or vulnerable areas					
Ambient Monitoring Network	54	VOC	53									
		SOC	54									
		NO3	9		44	1						
		*Other	37					17				

***For Other category, the following metals were considered: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Mercury, Nickel, Selenium, Lead, and Thallium.**

BASELINE MONITORING PROJECT WELLS OF THE SOUTHERN HILLS AQUIFER SYSTEM



The Southern Hills aquifer system boundary is a merged and edited theme from the boundaries of the Chicot Equivalent, Evangeline Equivalent, and Jasper Equivalent aquifer systems. These three aquifer boundaries were digitized from the Louisiana Hydrologic Map No. 2: Areal Extent of Freshwater in Major Aquifers of Louisiana. Smoot, 1988; USGS/LDOTD Report 86-4150.

Figure 4.2.1. Baseline monitoring project wells of the Southern Hills Aquifer System.

Table 4.2.2

Baseline Monitoring project wells of the Southern Hills Aquifer System.

Well Number	Aquifer Sub-System	Depth (ft)	Use
LI-5477Z	Chicot Equivalent	106	Domestic
AN-296	Chicot Equivalent	300	Industrial
WA-5295Z	Chicot Equivalent	100	Domestic
WA-5311Z	Chicot Equivalent	90	Domestic
LI-85	Chicot Equivalent	405	Public Supply
AN-316	Chicot Equivalent	478	Industrial
AN-266	Chicot Equivalent	548	Public Supply
EB-34	Chicot Equivalent	453	Industrial
EF-184	Chicot Equivalent	88	Domestic
AN-321	Chicot Equivalent	523	Industrial
AN-333	Chicot Equivalent	645	Public Supply
AN-337	Chicot Equivalent	459	Public Supply
AN-500	Chicot Equivalent	480	Industrial
AN-6297Z	Chicot Equivalent	294	Monitor
SH-77	Chicot Equivalent	170	Public Supply
TA-520	Chicot Equivalent	135	Irrigation
SC-179	Chicot Equivalent	460	Industrial
EB-1231	Chicot Equivalent	280	Industrial
ST-5245Z	Chicot Equivalent	90	Domestic
JF-28	Chicot Equivalent	807	Industrial
SJB-175	Chicot Equivalent	422	Industrial
SJ-226	Chicot Equivalent	248	Industrial
OR-61	Chicot Equivalent	653	Power Generation
EB-991B	Chicot Equivalent	565	Public Supply
TA-284	Evangeline Equivalent	608	Public Supply
WF-DELEE	Evangeline Equivalent	240	Domestic
TA-286	Evangeline Equivalent	640	Public Supply
TA-6677Z	Evangeline Equivalent	495	Domestic
AV-5304Z	Evangeline Equivalent	547	Domestic
ST-6711Z	Evangeline Equivalent	860	Domestic
ST-532	Evangeline Equivalent	1520	Public Supply
EB-1003	Evangeline Equivalent	1430	Public Supply
LI-299	Evangeline Equivalent	1417	Public Supply
EF-5045Z	Evangeline Equivalent	160	Domestic
WA-241	Evangeline Equivalent	400	Irrigation
WA-5210Z	Evangeline Equivalent	752	Domestic
PC-325	Evangeline Equivalent	1252	Industrial
WBR-181	Evangeline Equivalent	1900	Industrial
SL-679	Evangeline Equivalent	1152	Industrial
EB-630	Jasper Equivalent	2253	Public Supply
EB-770	Jasper Equivalent	2080	Public Supply
ST-763	Jasper Equivalent	2230	Public Supply
TA-560	Jasper Equivalent	2032	Public Supply
WF-264	Jasper Equivalent	960	Public Supply

Table 4.2.2

Baseline Monitoring project wells of the Southern Hills Aquifer System.

Well Number	Aquifer Sub-System	Depth (ft)	Use
ST-FOLSOM	Jasper Equivalent	2265	Public Supply
TA-826	Jasper Equivalent	2015	Public Supply
PC-275	Jasper Equivalent	1912	Domestic
ST-995	Jasper Equivalent	2290	Irrigation
LI-185	Jasper Equivalent	2610	Public Supply
EF-272	Jasper Equivalent	1325	Public Supply
LI-229	Jasper Equivalent	1826	Public Supply
WA-248	Jasper Equivalent	2700	Public Supply
SH-104	Jasper Equivalent	1652	Industrial
LI-257	Jasper Equivalent	1842	Public Supply

Chapter 3: Chicot Equivalent Aquifer System

Background

To better assess the water quality of a particular aquifer at a given point in time, an attempt was made during the project year to sample all project wells producing from a common aquifer in a narrow time frame. Also, to more conveniently and economically promulgate those data collected, these aquifer summaries will make up the project Triennial Summary Report.

Figure 4.3.1 shows the geographic locations of the Chicot Equivalent Aquifer System and the associated project wells, whereas Table 4.3.1 lists the wells in the aquifer along with their total depths and the use made of produced waters and the date sampled.

These data show that from August through December of 1999, twenty-four project wells were sampled which produce from the Chicot Equivalent Aquifer System. Of these twenty-four wells, ten are classified as Industrial wells, six are classified as Public Supply, five are classified as a Domestic, one is classified as a Power Generation well, one is classified as a Monitoring well, and one is classified as an Irrigation well. The wells are located in thirteen parishes in southeast Louisiana.

Well data for registered project water wells were obtained from the Louisiana Department of Transportation and Development's Water Well Registration Data file.

Project Field And Analytical Parameters

The field parameters that are checked at each sampling site and the list of water quality parameters that are analyzed in the laboratory are shown in Table 4.3.2. Those project inorganic (total metals) parameters analyzed in the laboratory are listed in Table 4.3.3. These tables also show the field and analytical results determined for each analyte.

In addition to the analytical parameters mentioned above, a list of project analytical parameters that include three other categories of compounds (volatiles, semi-volatiles, and pesticides/PCB's) is included. Due to the large number of analytes in these three categories, tables were not prepared for each well. However, in order for the reader to be aware of the total list of analytes, Tables 4.3.4, 4.3.5, and 4.3.6 were included in this summary. These tables list the project analytes along with their Practical Quantitation Limits (PQLs) used during processing.

Discussion Of Water Quality Data

Federal Primary Drinking Water Standards

Under the Federal Safe Drinking Water Act, EPA has established Maximum Contaminant Levels (MCL) for pollutants that may pose a health risk in public drinking water. An MCL is the highest level of a contaminant that EPA allows in public drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. While not all wells sampled were public supply wells, this Office does use the MCLs as a benchmark for further evaluation.

Laboratory data from the sampling of the Chicot Equivalent Aquifer System show that two project water wells exceeded the Federal MCL of 6 parts per billion (ppb) for bis(2-ethylhexyl)phthalate (BEHP). Laboratory data from the sampling of EB-34 exhibited a value of 39 ppb for BEHP. EB-991B exhibited a value of 23 ppb in the initial sample and 29 ppb in the duplicate sample. However, these two wells were resampled for semi-volatile organics, and BEHP was not detected in these resamples. Therefore it is the opinion of this Office that the BEHP exceedances were due laboratory/field contamination.

Laboratory data from the sampling of project well ST-5245Z revealed a concentration of 0.43 ppb for mercury. While this concentration did not exceed the Federal Primary MCL of 2 ppb established for mercury, it is a higher than expected concentration. Therefore the well was resampled for total metals and the results of the resampling showed concentrations of 0.20 ppb in the initial resample and in the duplicate resample. It is this Office's opinion that the resampling has confirmed the existence of mercury in the well. Please see the Summary and Recommendations for further discussion of this.

Those project wells reporting turbidity levels of >1 NTU, do not exceed the MCL of 1.0, as this primary standard applies to surface water systems only.

Federal Secondary Drinking Water Standards

EPA has set secondary standards that are defined as non-enforceable taste, odor or appearance guidelines. Field and laboratory data contained in Tables 4.3.2 and 4.3.3 show that nine of the wells sampled in the Chicot Equivalent Aquifer System exceeded the Secondary Maximum Contaminant Level (SMCL) for total dissolved solids (TDS), four of the wells exceeded the SMCL for iron, four wells exceeded the SMCL for chloride, seven of the wells exceeded the SMCL for pH, and four wells exceeded the SMCL for color.

TDS (SMCL=500 ppm):
AN-296 – 795.9 ppm
AN-316 – 583.4 ppm, 560 ppm
SJB-175 – 948 ppm
JF-28 – 880 ppm
AN-6297Z – 1,267 ppm
AN-321 – 795.9 ppm
SJ-226 – 544 ppm
SC-179 – 1,004 ppm
OR-61 – 600 ppm

Iron (SMCL=300 ppm):
AN-296 – 491 ppb
SH-77 – 600.3 ppb
AN-6297Z – 733.7 ppb
ST-5245Z – 2,049 ppb, 2,418 ppb (resample), 2,332 ppb (resample duplicate)

Chloride (SMCL=250 ppm):
AN-321 – 375 ppm
SC-179 – 304 ppm
SJB-175 – 298 ppm
AN-6297Z – 729 ppm

pH (SMCL=6.5 – 8.5 standard units (S.U.)):
AN-6297Z – 9.26 S.U.
EF-184 – 5.88 S.U.
WA-5311Z – 5.56 S.U.
ST-5245Z – 5.55 S.U., 5.49 S.U. (resample)
SH-77 – 5.87 S.U.
TA-520 – 5.36 S.U.
WA-5295Z – 5.93 S.U.

Color (SMCL=15 color units (PCU)):
SJB-175 – 25 PCU
JF-28 – 170 PCU
SC-179 – 60 PCU
OR-61 – 200 PCU

Federal Lead Action Level

Under the Federal Safe Drinking Water Act, EPA has established an Action Level of 15 ppb for lead to ensure that this contaminant does not pose either a short-term or long-term health risk in public drinking water. While not all wells sampled were public supply wells, this Office does use this Action Level as a benchmark for further evaluation. Laboratory data contained in Table 4.3.3 show that one of the wells sampled exceeded the Action Level for lead. ST-5245Z exceeded the Action Level with a concentration of 32.2 ppb. Even though this well is not a public supply well, it was resampled due to this concentration. The laboratory results from the resampling revealed a concentration of 13.9 ppb (under the Action Level) for the initial resample and 15.9 ppb (over the Action Level) for the duplicate resample. It is this Office's opinion that the resampling has confirmed the existence of lead in the well. Please see the Summary and Recommendations for further discussion of this.

Semivolatile Organics That Have No Established MCL

A concentration of 32 ppb of butylbenzylphthalate was exhibited in the sample results from project well SJ-226. As of the writing of this summary, no MCL has been established for butylbenzylphthalate. Since this well is an industrial well and since butylbenzylphthalate has no established primary MCL, the well was not resampled. Taking into account the EPA guidance document "Guidance For Data Usability In Risk Assessment, EPA 1992," it is this Office's opinion that the occurrence of butylbenzylphthalate is due to field/laboratory contamination. It will therefore be considered a false positive.

Selected Water Quality Maps

For the reader's convenience, maps showing the contoured values for pH, TDS, chloride, and iron are included in this summary report in Figures 4.3.2 through 4.3.5.

Summary And Recommendations

In summary, the analytical data show that the ground water from this aquifer is of fair quality when considering taste, odor or appearance guidelines. The data also show that this aquifer is of good quality as far as short-term or long-term health risks are concerned.

This is with the exception of the occurrence of mercury and lead in project well ST-5245Z. The well is located on a horse ranch north of Folsom, it is 90 feet deep, and the water drawn from it feeds into a pond located toward the front of the property which is mainly used for fishing. The laboratory results from the regularly scheduled sampling of this well revealed that lead was at a concentration of 32.2 ppb, which is above the Federal Action Level of 15 ppb for lead, and that mercury was at a concentration of 0.43 ppb. Consequently, the well was resampled for metals. The laboratory results from both the initial resample, and the duplicate resample taken directly after the initial resample, revealed concentrations of lead and mercury. Lead was detected at a concentration of 13.9 ppb in the initial resample and at a concentration of 15.9 ppb in the duplicate resample. Mercury was detected at a concentration of 0.20 ppb in both the initial and the duplicate resamples. It is this Office's opinion that the resampling has confirmed the existence of lead and mercury in the well. The owner of the well was made aware of this and was given information on lead and mercury contamination, and was informed of steps that can be taken to alleviate the problem. In addition to the owner, LDEQ's Mercury Contaminant Program, the Louisiana Department of Health and Hospitals, and the Louisiana Department of Agriculture and Forestry was also notified.

It is recommended that the several project wells assigned to the Chicot Equivalent Aquifer be resampled as planned, in approximately three years. In addition, several wells should be added to those currently sampled to increase the well density for this aquifer.

Table 4.3.1
List of project wells sampled.

Project Number	Parish	Well Number	Date Sampled	Owner	Depth (Feet)	Well Use
199904	Ascension	AN-266	08/10/1999	City Of Gonzales	548	Public Supply
199005	Ascension	AN-296	09/13/1999	Uniroyal Chemical Co.	300	Industrial
199004	Ascension	AN-316	09/14/1999	Borden Chemical And Plastics	478	Industrial
199008	Ascension	AN-321	09/13/1999	Rubicon, Inc.	523	Industrial
198403	Ascension	AN-333	08/10/1999	Capital Utilities	645	Public Supply
199007	Ascension	AN-337	09/13/1999	BASF Corp.	459	Public Supply
199406	Ascension	AN-500	09/13/1999	Uniroyal Chemical Co.	480	Industrial
199009	Ascension	AN-6297Z	11/10/1999	Vulcan Chemical	294	Monitor
199903	East Baton Rouge	EB-1231	08/09/1999	Georgia Pacific Corp.	280	Industrial
199002	East Baton Rouge	EB-34	08/09/1999	Exxon USA	453	Industrial
198607	East Baton Rouge	EB-991B	08/09/1999	Baton Rouge Water Works	565	Public Supply
199201	East Feliciana	EF-184	11/15/1999	Private Owner	88	Domestic
199014	Jefferson	JF-28	10/12/1999	Entergy	807	Industrial
199317	Livingston	LI-5477Z	08/10/1999	Private Owner	106	Domestic
198504	Livingston	LI-85	08/10/1999	French Settlement Water System	405	Public Supply
199328	Orleans	OR-61	10/12/1999	Entergy	653	Power Generation
199013	St Charles	SC-179	10/11/1999	Union Carbide	460	Industrial
199624	St Helena	SH-77	11/15/1999	Transco	170	Public Supply
199905	St James	SJ-226	10/11/1999	La Roche Chemical	248	Industrial
199011	St John The Baptist	SJB-175	10/11/1999	E.I. Dupont	422	Industrial
199318	St Tammany	ST-5245Z	11/16/1999	Private Owner	90	Domestic
198820	Tangipahoa	TA-520	11/15/1999	Private Owner	135	Irrigation
199319	Washington	WA-5295Z	11/16/1999	Private Owner	100	Domestic
199320	Washington	WA-5311Z	11/16/1999	Private Owner	90	Domestic

Table 4.3.2
Summary of water quality data.

Well Number	Temp. °C	pH SU	Cond. Mmhos/ Cm	Sal. ppt	TSS ppm	TDS ppm	Alk. ppm	Hard. ppm	Turb. NTU	Cond. Umhos/cm	Color PCU	Cl ppm	SO4 ppm	Tot. P ppm	TKN ppm	NH3 (As N) ppm	Nitrite-Nitrate (As N) ppm
AN-266	NO DATA				<4.0	214.0	147.0	38.5	<1.0	309.0	<5.0	12.42	3.92	0.26	0.41	0.33	<0.02
AN-296	22.01	7.70	1.235	0.62	<4.0	795.9	329.0	150.0	2.3	1258.0	10.0	214.00	<1.25	0.23	2.90	2.34	0.03
AN-316	24.18	7.97	0.975	0.48	<4.0	583.4	159.0	68.7	<1.0	990.0	5.0	218.00	<1.25	0.14	0.38	0.37	0.03
AN-316*	24.18	7.97	0.975	0.48	<4.0	560.0	159.0	68.7	<1.0	989.0	5.0	219.00	<1.25	0.12	0.37	0.37	0.03
AN-321	22.97	7.99	1.448	0.73	<4.0	795.9	166.0	67.3	<1.0	1459.0	5.0	375.00	<1.25	0.19	0.55	44.00	0.03
AN-333	NO DATA				5.0	392.0	180.0	11.8	<1.0	682.0	5.0	107.51	1.64	0.22	0.23	0.20	<0.02
AN-337	23.43	8.3	0.387	0.18	<4.0	244.0	178.0	9.3	<1.0	395.0	10.0	26.40	<1.25	0.22	0.77	0.52	0.03
AN-500	24.64	7.77	0.869	0.43	<4.0	349.9	157.0	43.4	<1.0	568.0	5.0	84.60	1.80	0.14	0.05	0.45	0.04
AN-6297Z	26.13	9.26	2.457		<4.0	1267.0	131.0	82.8	6.7	2615.0	4.0	729.00	<1.25	0.14	3.18	1.80	<0.02
EB-1231	20.63	6.84	0.229	0.11	4.5	149.0	66.8	63.1	<1.0	241.0	5.0	32.11	3.60	0.06	<0.05	<0.10	0.05
EB-34	22.71	7.23	0.259	0.12	<4.0	223.0	134.0	29.1	<1.0	270.0	<5.0	7.58	4.01	0.14	0.10	0.12	0.02
EB-991B	22.93	7.74	0.259	0.12	<4.0	196.0	133.0	10.2	<1.0	263.0	<5.0	3.63	8.45	0.12	0.18	0.12	0.02
EB-991B*	22.93	7.74	0.259	0.12	<4.0	208.0	133.0	9.9	<1.0	264.0	5.0	3.62	8.36	0.14	0.14	0.12	0.02
EF-184	19.36	5.88	0.040	0.02	<4.0	53.3	7.9	<5.0	2.6	36.3	5.0	5.00	<1.25	<0.05	<0.05	<0.10	0.92
JF-28	24.81	8.31	1.394	0.70	<4.0	880.0	358.0	26.1	<1.0	1444.0	170.0	237.00	<1.25	0.64	1.02	0.69	0.03
LI-5477Z	21.37	8.06	0.389	0.19	<4.0	266.0	210.0	53.3	<1.0	399.0	<5.0	8.51	<1.25	0.25	0.43	0.41	0.02
LI-85	23.62	8.17	0.601	0.29	<4.0	369.9	140.0	60.2	<1.0	611.0	<5.0	106.20	3.03	0.17	0.34	0.32	0.02
OR-61	24.48	8.32	0.930	0.46	<4.0	480.0	397.0	19.0	<1.0	963.0	160.0	75.80	<1.25	0.52	1.22	0.70	0.04
OR-61*	24.48	8.32	0.930	0.46	<4.0	600.0	398.0	20.2	1.2	960.0	200.0	75.90	<1.25	0.50	1.59	0.72	0.04
SC-179	22.93	8.01	1.718	0.87	<4.0	1004.0	442.0	64.9	<1.0	1779.0	60.0	304.00	<1.25	0.55	2.46	1.74	0.03
SH-77	18.16	5.87	0.028	0.01	4.0	45.3	9.3	7.8	9.6	29.7	10.0	3.30	<1.25	0.06	<0.05	<0.10	0.14
SJ-226	20.04	7.53	0.906	0.45	<4.0	544.0	209.0	183.0	2.1	955.0	12.0	144.00	27.70	0.55	1.04	0.85	0.03
SJB-175	22.31	7.55	1.605	0.81	<4.0	948.0	391.0	162.0	1.8	1673.0	25.0	298.00	<1.25	0.28	1.88	1.32	0.03
ST-5245Z	18.23	5.55	0.048	0.02	5.0	46.7	12.3	15.7	19.0	42.4	5.0	5.20	1.40	0.11	0.21	<0.10	0.28
TA-520	19.83	5.36	0.023	0.01	<4.0	40.7	5.2	<5.0	1.2	21.5	5.0	3.00	<1.25	<0.05	<0.05	<0.10	0.56
WA-5295Z	20.74	5.93	0.030	0.01	<4.0	50.7	12.4	<5.0	1.0	48.8	5.0	3.00	<1.25	<0.05	<0.05	<0.10	0.04
WA-5311Z	17.84	5.56	0.028	0.01	<4.0	39.3	3.1	5.2	1.9	26.4	5.0	3.50	<1.25	0.14	0.11	<0.10	1.29
WA-5311Z*	17.84	5.56	0.028	0.01	<4.0	38.0	3.8	5.2	1.1	25.9	5.0	3.50	<1.25	<0.05	0.13	<0.10	1.29

* Denotes duplicate sample.

Table 4.3.3
Summary of Inorganic Data

Well Number	Arsenic ppb	Silver ppb	Barium ppb	Beryllium ppb	Cadmium ppb	Chromium ppb	Copper ppb	Iron ppb	Mercury ppb	Nickel ppb	Antimony ppb	Selenium ppb	Lead ppb	Thallium ppb	Zinc Ppb
AN-266	<5.0	<2.0	111.0	<1.0	<1.0	<5.0	<5.0	165.0	0.06	<5.0	<5.0	<1.0	<10.0	<1.0	<10.0
AN-296	<5.0	<1.0	330.0	<1.0	<1.0	<1.0	6.0	491.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	46.4
AN-316	<5.0	<1.0	321.0	<1.0	<1.0	<5.0	<5.0	185.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	26.0
AN-316*	<5.0	<1.0	50.7	<1.0	<1.0	<5.0	<5.0	41.8	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
AN-321	<5.0	<1.0	320.0	<1.0	<1.0	<5.0	<5.0	251.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	15.3
AN-333	<5.0	<2.0	83.7	<1.0	<1.0	<5.0	15.0	33.0	0.05	<5.0	<5.0	<1.0	<10.0	<1.0	10.7
AN-337	<5.0	<1.0	50.7	<1.0	<1.0	<5.0	<5.0	41.8	<0.05	<5.0	<10.0	<5.0	<10.0	<5.0	<10.0
AN-500	<5.0	<1.0	136.0	<1.0	<1.0	<5.0	<5.0	45.6	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	111.0
AN-6297Z	<5.0	<1.0	292.4	<1.0	<1.0	<5.0	<5.0	733.7	<0.05	10.2	<5.0	<5.0	<10.0	<5.0	25.0
EB-1231	<5.0	<2.0	127.0	<1.0	<1.0	<5.0	<5.0	28.7	0.13	<5.0	<5.0	<1.0	<10.0	<1.0	6.4
EB-34	<5.0	<2.0	89.9	<1.0	1.0	<5.0	<5.0	209.0	0.05	<5.0	<5.0	<1.0	<10.0	<1.0	16.4
EB-991B	<5.0	<2.0	28.1	<1.0	<1.0	<5.0	<5.0	165.0	0.07	<5.0	<5.0	<1.0	<10.0	<1.0	11.8
EB-991B*	<5.0	<2.0	29.2	<1.0	<1.0	<5.0	<5.0	165.0	0.06	<5.0	<5.0	<1.0	<10.0	<1.0	20.2
EF-184	<5.0	<1.0	7.3	<1.0	<1.0	<5.0	<5.0	<10.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	32.8
JF-28	<5.0	<1.0	117.5	<1.0	<1.0	<5.0	<5.0	115.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
LI-5477Z	<5.0	<5.0	97.7	<1.0	3.7	<5.0	<5.0	77.0	<0.05	<5.0	<5.0	<1.0	<10.0	<1.0	<10.0
LI-85	<5.0	<2.0	201.0	<1.0	<1.0	<5.0	26.7	77.0	<0.05	<5.0	<5.0	<1.0	<10.0	<1.0	12.2
OR-61	<5.0	<1.0	71.0	<1.0	<1.0	<5.0	<5.0	97.1	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
OR-61*	<5.0	<1.0	72.2	<1.0	<1.0	<5.0	<5.0	98.9	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	221.3
SC-179	<5.0	<1.0	78.1	<1.0	<1.0	<5.0	<5.0	234.4	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
SH-77	<5.0	<1.0	14.6	<1.0	<1.0	<5.0	18.8	600.3	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	283.0
SJ-226	10.8	<1.0	273.1	<1.0	<1.0	<5.0	<5.0	652.8	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
SJB-175	<5.0	<1.0	341.9	<1.0	<1.0	<5.0	<5.0	477.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	14.6
ST-5245Z	<5.0	<1.0	132.7	<1.0	<1.0	<5.0	18.1	2,049.0	0.43	<5.0	<5.0	<5.0	32.2	<5.0	28.0
TA-520	<5.0	<1.0	21.1	<1.0	<1.0	<5.0	13.3	10.4	<0.05	5.9	<5.0	<5.0	<10.0	<5.0	14.7
WA-5295Z	<5.0	<1.0	65.8	<1.0	<1.0	<5.0	79.6	9.5	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	31.1
WA-5311Z	<5.0	<1.0	28.5	<1.0	<1.0	<5.0	47.2	100.9	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	49.6
WA-5311Z*	<5.0	<1.0	28.4	<1.0	<1.0	<5.0	54.6	39.1	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	45.0

* Denotes duplicate sample.

Table 4.3.4

List of VOC analytical parameters, Baseline Monitoring Project.
Volatile Organics By EPA Method 8260

Compounds	PQL (ppb)
Dichlorofluoromethane	5
Chloromethane	2
Vinyl Chloride	2
Bromomethane	2
Chloroethane	2
Trichlorofluoromethane	5
1,1-Dichloroethene	2
Methylene Chloride	2
trans-1,2-Dichloroethene	2
Methyl-t-Butyl Ether	2
1,1-Dichloroethane	2
2,2 Dichloropropane	2
cis-1,2 Dichloroethene	2
Bromochloromethane	2
Chloroform	2
1,1,1-Trichloroethane	2
1,1 Dichloropropene	2
Carbon Tetrachloride	2
Benzene	2
1,2-Dichloroethane	2
Trichloroethene	2
1,2-Dichloropropane	2
Bromodichloromethane	2
Dibromomethane	2
cis-1,3-Dichloropropene	2
Toluene	2
trans-1,3-Dichloropropene	2
1,1,2-Trichloroethane	2
1,3--Dichloropropane	2
Tetrachloroethene	2
1,2-Dibromoethane	2
Dibromochloromethane	2
Chlorobenzene	2
Ethylbenzene	2
1,1,1,2-Tetrachloroethane	2
p&m Xylene	4
o-Xylene	2
Styrene	2

Table 4.3.4

List of VOC analytical parameters, Baseline Monitoring Project.
Volatile Organics By EPA Method 8260

Compounds	PQL (ppb)
Bromoform	2
Isopropylbenzene	2
1,1,2,2-Tetrachloromethane	2
1,2,3,-Trichloropropane	2
Bromobenzene	2
n-Propylbenzene	2
2-Chlorotoluene	2
4-Chlorotoluene	2
1,3,5-Trimethylbenzene	2
tert-Butylbenzene	2
1,2,4-Trimethylbenzene	2
sec-Butylbenzene	2
p-Isopropyltoluene	2
1,3-Dichlorobenzene	2
1,4-Dichlorobenzene	2
n-Butylbenzene	2
1,2-Dibromo-3-Chloropropane	2
Naphthalene	2
1,2,4-Trichlorobenzene	2
Hexachlorobutadiene	2
1,2-Dichlorobenzene	2
1,2,3-Trichlorobenzene	2

PQL = Practical Quantitation Limit
ppb = parts per billion

Table 4.3.5

List of semi-volatile analytical parameters, Baseline Monitoring Project.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (Ppb)
N-Nitrosodimethylamine	10
2-Picoline	10
Methyl Methanesulfonate	10
Ethyl Methanesulfonate	20
Phenol	10
Aniline	10
bis(2-chloroethyl)ether	10
2-Chlorophenol	10
1,3-Dichlorobenzene	10
1,4-Dichlorobenzene	10
Benzyl alcohol	10
1,2-Dichlorobenzene	10
2-Methylphenol	10
bis(2-Chloroisopropyl) Ether	10
4-Methylphenol	10
n-Nitroso-di-n-propylamine	10
Hexachloroethane	20
Acetophenone	10
Nitrobenzene	10
n-Nitrosopiperidine	20
Isophorone	10
2,4-Dimethylphenol	10
2-Nitrophenol	10
Benzoic acid	50
bis(2-Chloroethoxy)methane	10
2,4-Dichlorophenol	10
A,a-Dimethylphenethylamine	10
1,2,4-trichlorobenzene	10
Benzidine	50
Pyrene	10
p-Dimethylaminoazobenzene	10
Butylbenzylphthalate	10
bis(2-Ethylhexyl)phthalate	10
3,3'-Dichlorobenzidine	20
Benzo(a)anthracene	10

Table 4.3.5

List of semi-volatile analytical parameters, Baseline Monitoring Project.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (Ppb)
Chrysene	10
Di-n-octylphthalate	10
7,12-Dimetnylbenz(a)anthracine	10
Benzo(b)fluoranthene	10
Benzo(k)fluoranthene	10
Benzo(a)pyrene	10
3-Methylcholanthrene	10
Dibenz(a,j)acridine	10
Indeno(1,2,3-cd)pyrene	10
Dibenz(a,h)anthracene	10
Benzo(g,h,i)perylene	10
Naphthalene	10
4-Chloroaniline	10
2,6-Dichlorophenol	10
Hexachlorobutadiene	10
N-Nitrose-di-n-butylamine	10
4-Chloro-3-methylphenol	20
2-Methylnapthalene	10
Hexachlorocyclopentadiene	10
1,2,4,5-Tetrachlorobenzene	10
2,4,6-Trichlorophenol	10
2,4,5-Trichlorophenol	10
2-Chloronapthalene	10
1-Chloronapthalene	10
2-Nitroaniline	50
Dimethylphthalate	10
2,6-Dinitrotoluene	10
Acenaphthylene	10
3-Nitroaniline	50
4-Nitrophenol	50
2,4-Dinitrophenol	50
Acenaphthene	10
2,4-Dinitrotoluene	10
Pentachlorobenzene	10
Dibenzofuran	10
1-Naphthylamine	10

Table 4.3.5

List of semi-volatile analytical parameters, Baseline Monitoring Project.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (Ppb)
Diethylphthalate	10
2,3,4,6-Tetrachlorophenol	10
2-Naphthylamine	10
4-Chlorophenyl phenyl ether	10
4-Nitroaniline	50
Fluorene	10
4,6-Dinitro-2-methylphenol	50
4-Aminobiphenyl	20
1,2-Diphenylhydrazine	10
Phenacetin	20
4-Bromophenyl phenyl ether	10
Hexachlorobenzene	10
Pronamide	10
N-Nitrosodiphenylamine/Diphenylamine	10
Pentachlorophenol	50
Pentachloronitrobenzene	20
Phenanthrene	10
Anthracene	10
Di-n-butylphthalate	10
Fluoranthene	10
Alpha BHC	2
Beta BHC	2
Gamma BHC	2
Delta BHC	2
Heptachlor	2
Aldrin	2
Heptachlor epoxide	2
Chlordane	2
Endosulfan I	2
4,4'-DDE	2
Dieldrin	2
4,4'-DDD	2
Endrin	2
Toxaphene	2
Endosulfan II	2
Endrin Aldehyde	2

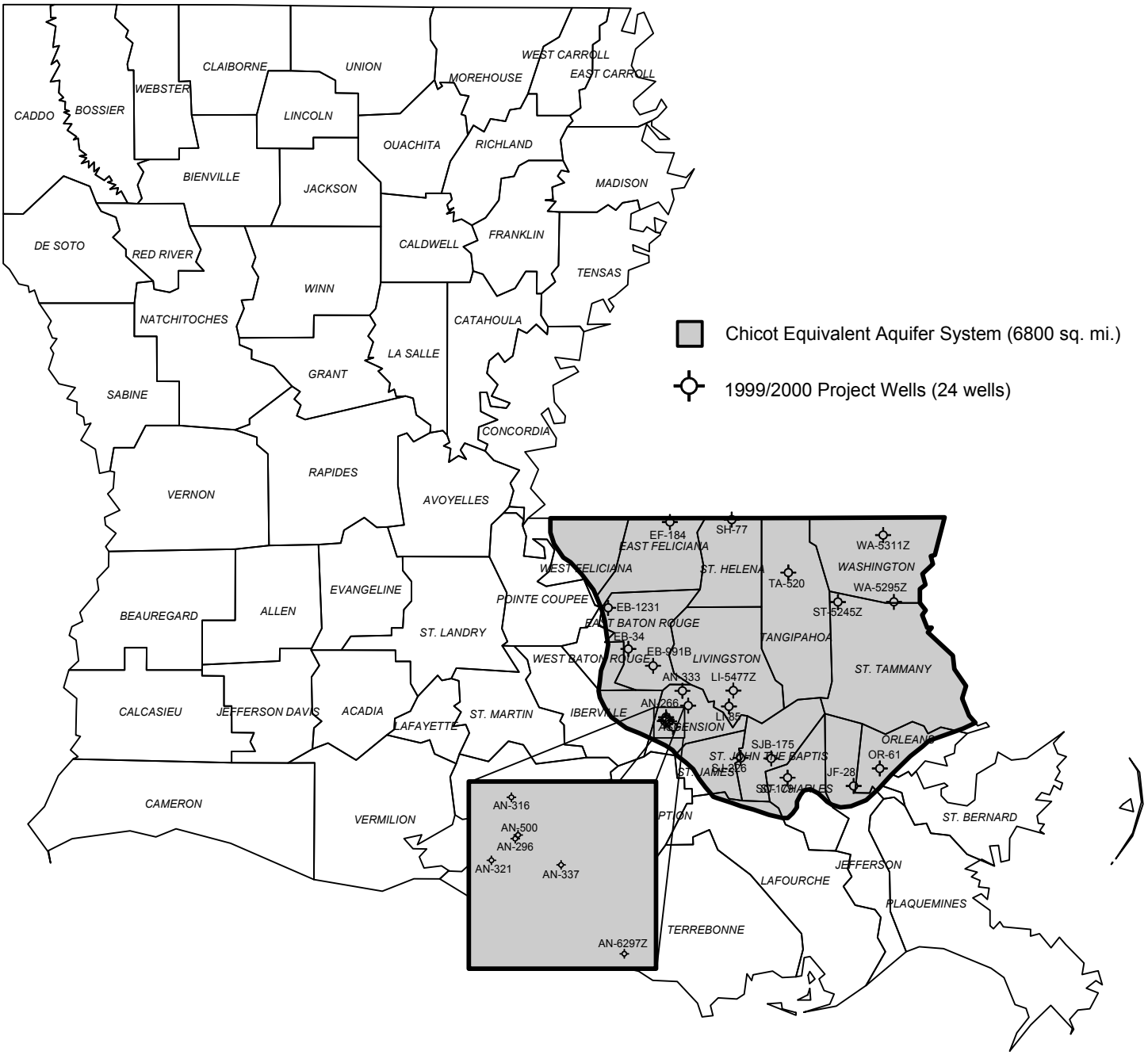
Table 4.3.5

List of semi-volatile analytical parameters, Baseline Monitoring Project.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (Ppb)
4.4'DDT	2
Endosulfan Sulfate	2
Methoxychlor	2
Endrin Ketone	2
PCB 1221/ PCB 1232	10
PCB 1016/ PCB 1242	10
PCB 1254	10
PCB 1248	10
PCB 1260	10

BASELINE MONITORING PROJECT WELLS OF THE CHICOT EQUIVALENT AQUIFER SYSTEM



Aquifer boundary digitized from Louisiana Hydrologic Map No. 2: Areal Extent of Freshwater in Major Aquifers of Louisiana. Smoot, 1988; USGS/LDOTD Report 86-4150 **Figure 4.3.1**

Location plat, Chicot Equivalent Aquifer System

CHICOT EQUIVALENT AQUIFER SYSTEM - pH (SU)

Baseline Monitoring Project, FY1999-2000

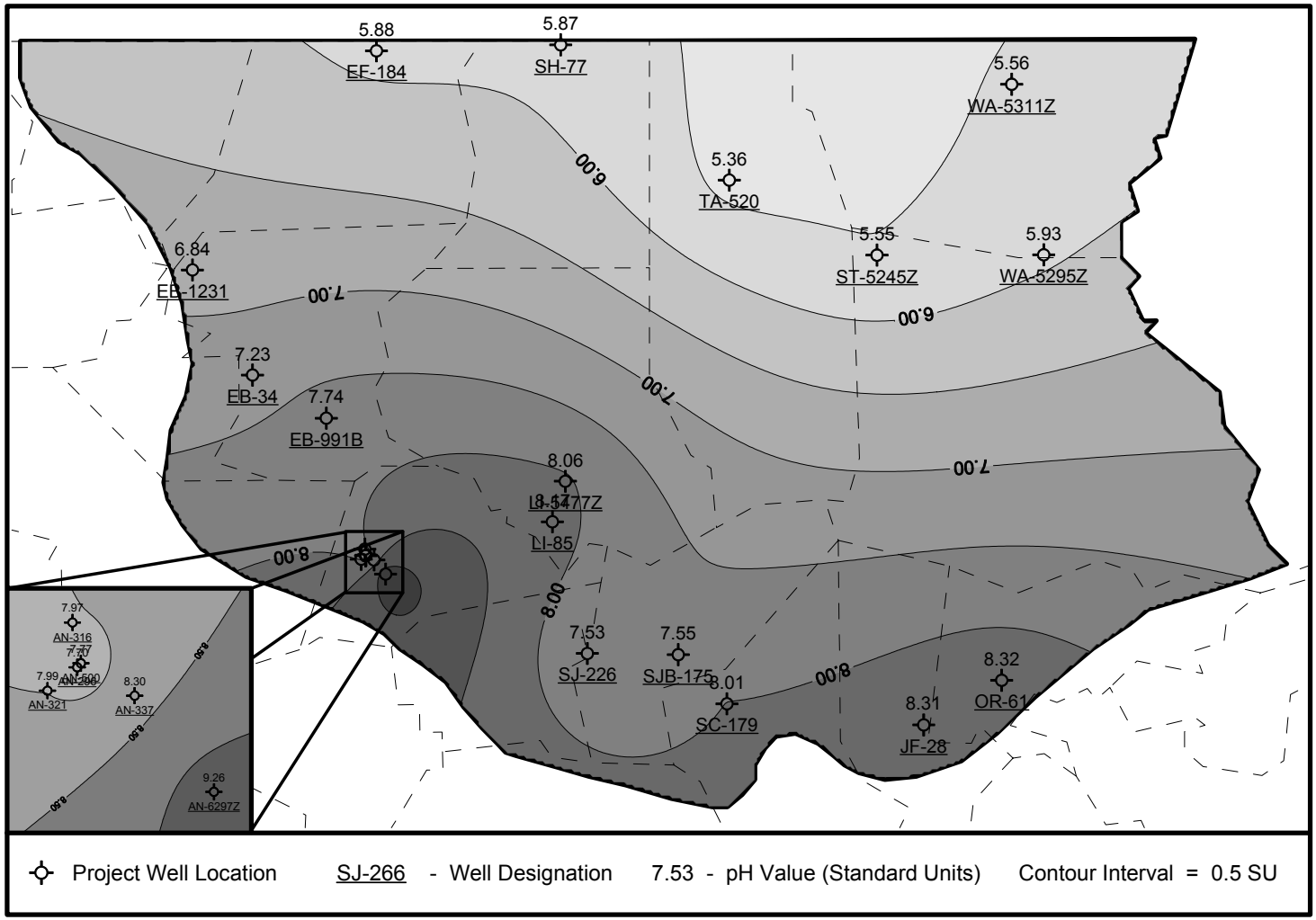


Figure 4.3.2

Map of pH data, Chicot Equivalent Aquifer System

CHICOT EQUIVALENT AQUIFER SYSTEM - TDS (PPM)

Baseline Monitoring Project, FY1999-2000

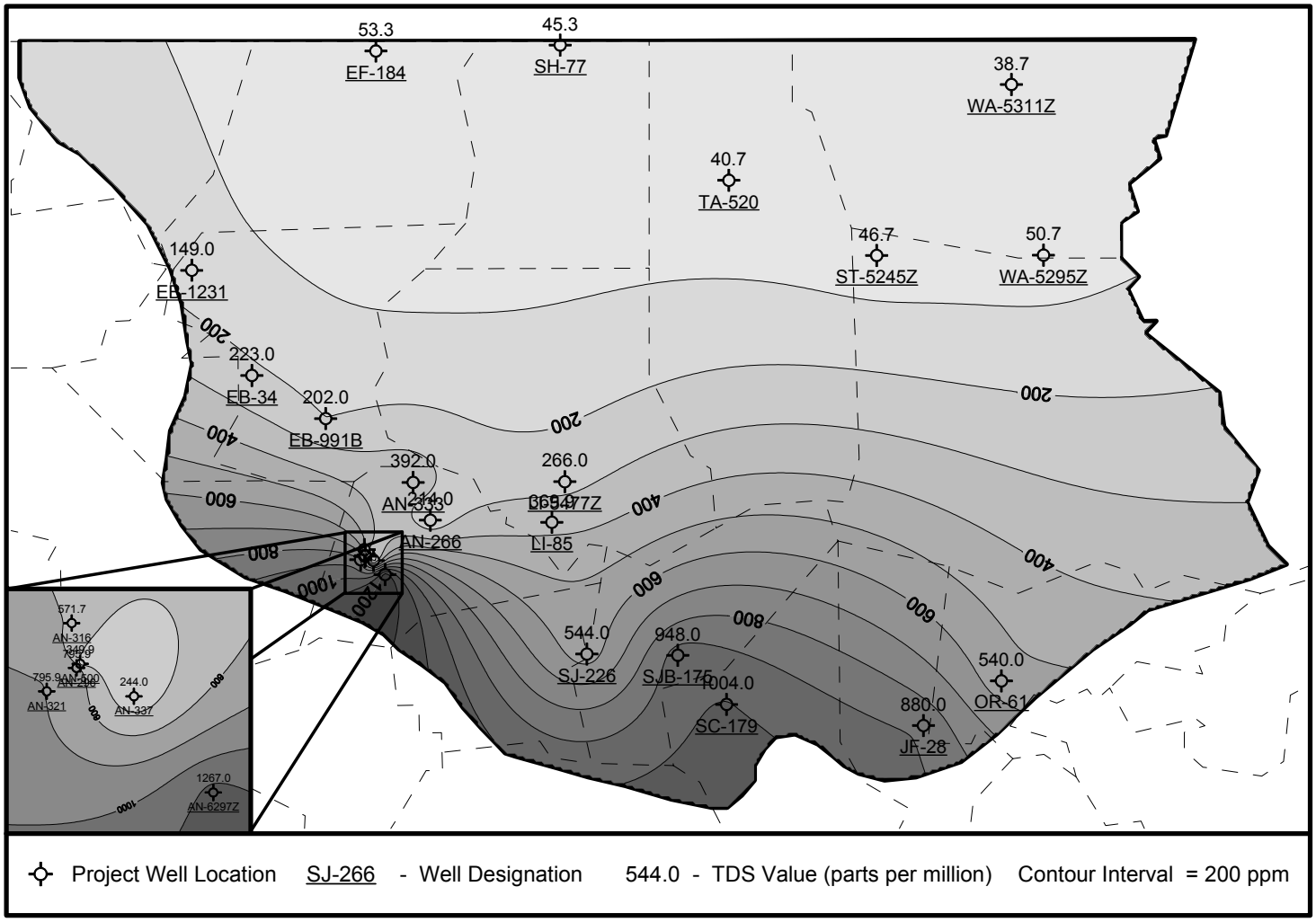


Figure 4.3.3

Map of TDS data, Chicot Equivalent Aquifer System

CHICOT EQUIVALENT AQUIFER SYSTEM - CHLORIDE (PPM)

Baseline Monitoring Project, FY1999-2000

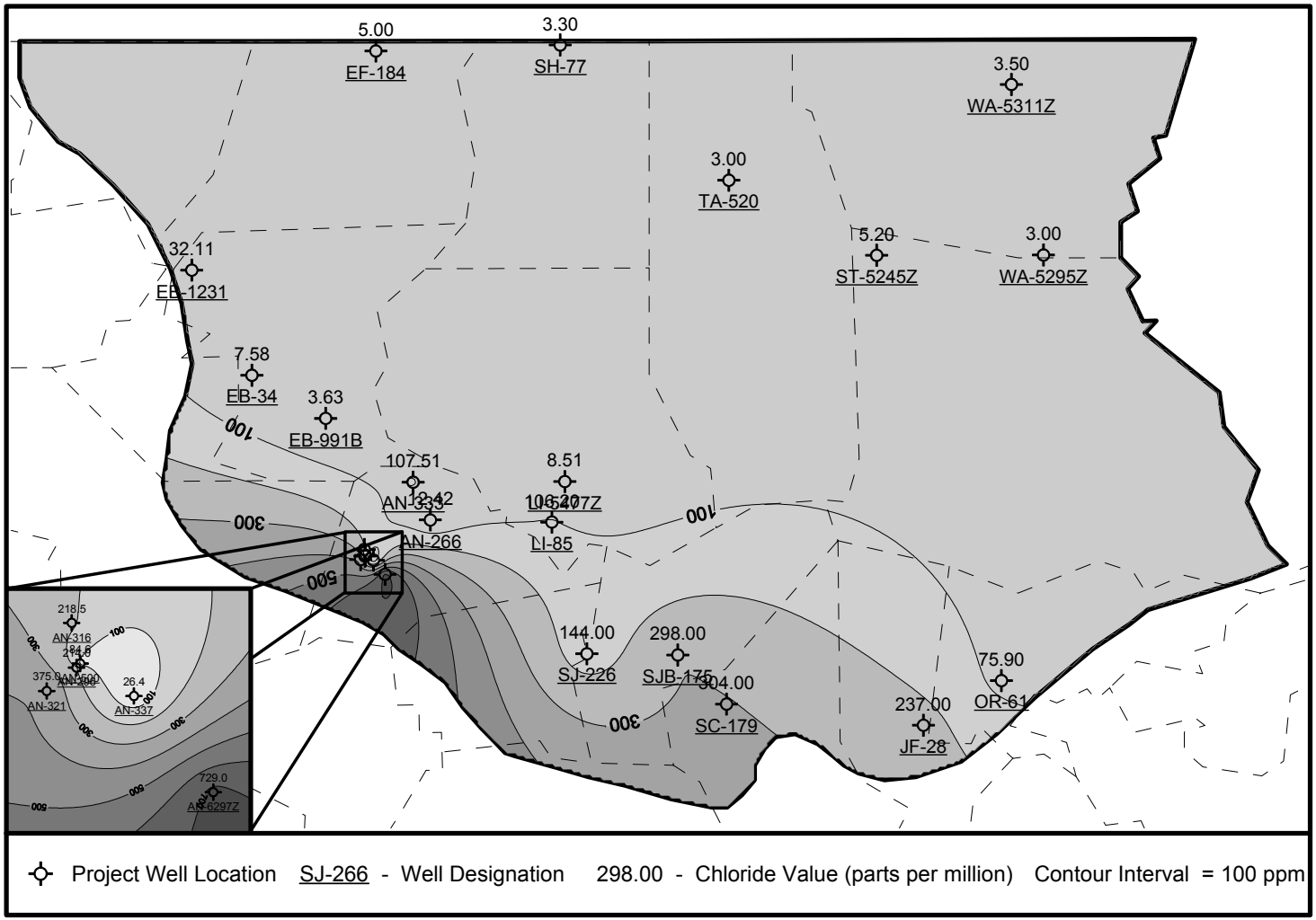


Figure 4.3.4

Map of chloride data, Chicot Equivalent Aquifer System

CHICOT EQUIVALENT AQUIFER SYSTEM - IRON (PPB)

Baseline Monitoring Project, FY1999-2000

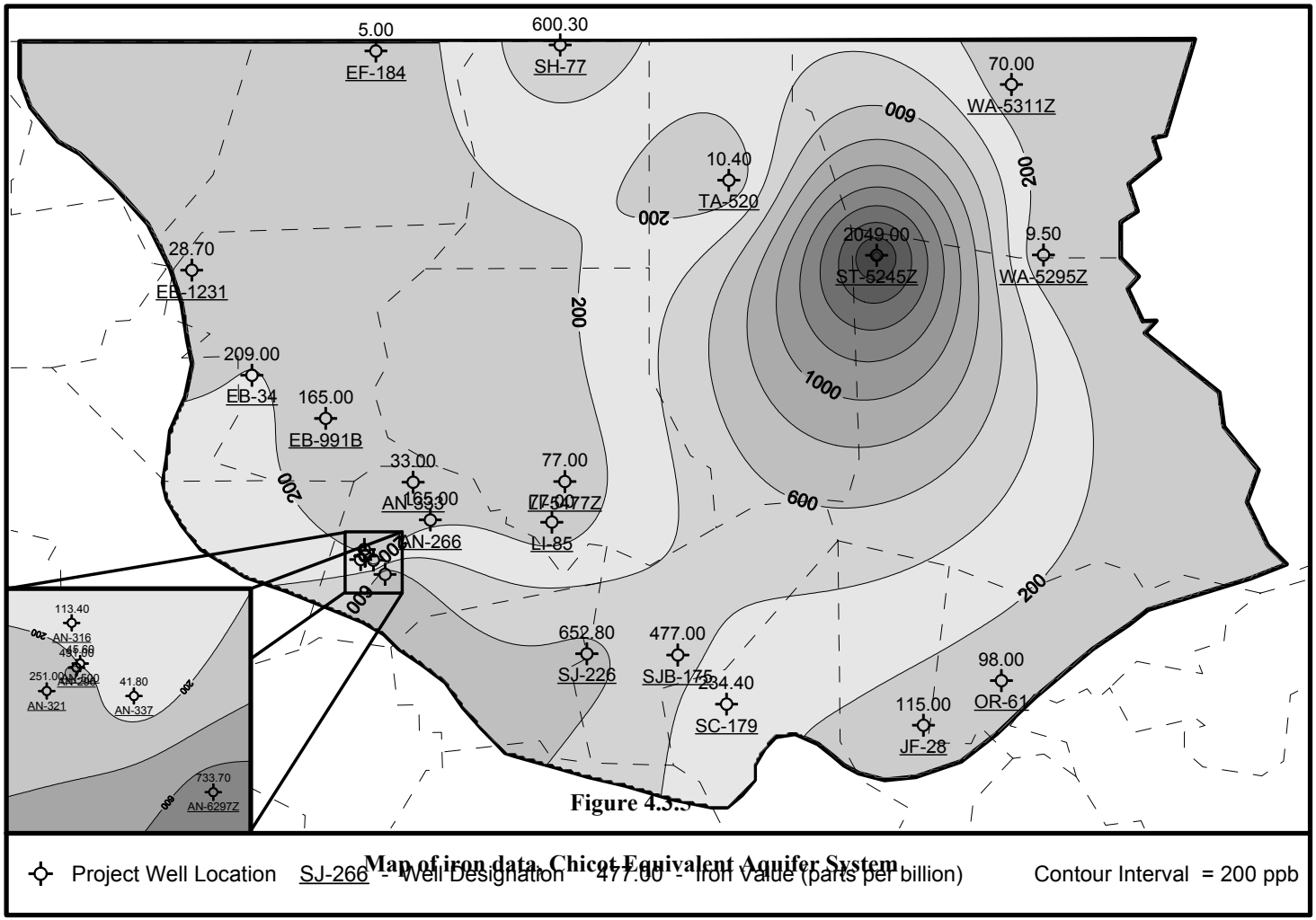


Figure 4.3.5

Map of iron data, Chicot Equivalent Aquifer System

Chapter 4: Evangeline Equivalent Aquifer System

Background

To better assess the water quality of a particular aquifer at a given point in time, an attempt was made during the project year to sample all project wells producing from a common aquifer in a narrow time frame. Also, to more conveniently and economically promulgate those data collected, these aquifer summaries will make up the project Triennial Summary Report.

Figure 4.4.1 shows the geographic locations of the Evangeline Equivalent Aquifer System and the associated project wells, whereas Table 4.4.1 lists the wells in the aquifer along with their total depths and the use made of produced waters and the date sampled.

These data show that in January, February, and in April of 2000, fifteen project wells were sampled which produce from the Evangeline Equivalent Aquifer System. Of these fifteen wells, six are classified as Domestic wells, five are classified as Public Supply wells, three are classified as Industrial wells, and one is classified as an Irrigation well. The wells are located in eleven parishes in southeast and south central Louisiana.

Well data for registered project water wells were obtained from the Louisiana Department of Transportation and Development's Water Well Registration Data file.

Project Field And Analytical Parameters

The field parameters that are checked at each sampling site and the list of water quality parameters that are analyzed in the laboratory are shown in Table 4.4.2. Those project inorganic (total metals) parameters analyzed in the laboratory are listed in Table 4.4.3. These tables also show the field and analytical results determined for each analyte.

In addition to the analytical parameters mentioned above, a list of project analytical parameters that include three other categories of compounds (volatiles, semi-volatiles, and pesticides/PCB's) is included. Due to the large number of analytes in these three categories, tables were not prepared for each well. However, in order for the reader to be aware of the total list of analytes, Tables 4.4.4, 4.4.5, and 4.4.6 were included in this summary. These tables list the project analytes along with their Practical Quantitation Limits (PQLs) used during processing.

Discussion Of Water Quality Data

Federal Primary Drinking Water Standards

Under the Federal Safe Drinking Water Act, EPA has established Primary Maximum Contaminant Levels (MCL) for pollutants that may pose a health risk in public drinking water. A Primary MCL is the highest level of a contaminant that EPA allows in public drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. While not all wells sampled were public supply wells, this Office does use the MCLs as a benchmark for further evaluation.

Laboratory data show that no project well that was sampled during the Fiscal Year 2000 monitoring of the Evangeline Equivalent Aquifer System exceeded a Primary MCL.

Those project wells reporting turbidity levels of >1 NTU, do not exceed the MCL of 1.0, as this primary standard applies to surface water systems only.

Federal Secondary Drinking Water Standards

EPA has set secondary standards that are defined as non-enforceable taste, odor or appearance guidelines. Field and laboratory data contained in Tables 4.4.2 and 4.4.3 show that eight of the wells sampled in the Evangeline Equivalent Aquifer System exceeded the Secondary Maximum Contaminant Level (SMCL) for pH, three of the wells exceeded the SMCL for iron, and one well exceeded the SMCL for color.

pH (SMCL=6.5 – 8.5 standard units (S.U.)):

ST-532 – 9.20 S.U.
TA-286 – 6.31 S.U.
PC-325 – 8.62 S.U.
EF-5045Z – 6.40 S.U.
ST-6711Z – 9.06 S.U.
WBR-181 – 9.13 S.U.
AV-5304Z – 8.61 S.U.
SL-679 – 8.88 S.U.

Iron (SMCL=300 ppm):

WA-241 – 1,586 ppb
SL-679 – 5,580 ppb,
8,517 ppb (duplicate)
WA-5210Z – 574 ppb

Color (SMCL=15 color units (PCU)):

ST-6711Z – 55 PCU

Volatile Organics That Have No Established MCL

The following values were exhibited in project well WBR-181. The listed volatile organic compounds do not have MCLs established for them.

Chloroform – 2.6 ppb
Dibromochloromethane – 4.5 ppb
Bromodichloromethane – 3.4 ppb
Bromoform – 1.5 ppb

Since this well is an industrial well and since there are no primary MCLs established for these compounds, and that these compounds were detected in the low ppb range, the well was not resampled to confirm the presence of these compounds.

Selected Water Quality Maps

For the reader's convenience, maps showing the contoured values for pH, TDS, chloride, and iron are included in this summary report in Figures 4.4.2 through 4.4.5.

Summary And Recommendations

In summary, the data show that this aquifer is of good quality when considering short-term or long-term health risk guidelines. Laboratory data show that no project well that was sampled during the Fiscal Year 2000 monitoring of the Evangeline Equivalent Aquifer System exceeded a Primary MCL. The data show that this aquifer is also of good quality when considering taste, odor, or appearance guidelines.

It is recommended that the several project wells assigned to the Evangeline Equivalent Aquifer be resampled as planned, in approximately three years. In addition, several wells should be added to those currently sampled to increase the well density for this aquifer.

Table 4.4.1

List of project wells sampled.

Project Number	Parish	Well Number	Date Sampled	Owner	Depth (Feet)	Well Use
200007	Avoyelles	AV-5304Z	02/07/2000	Private Owner	547	Domestic
198608	East Baton Rouge	EB-1003	02/08/2000	Baton Rouge Water Works	1430	Public Supply
200011	East Feliciana	EF-5045Z	02/08/2000	Private Owner	160	Domestic
200010	Livingston	LI-299	02/08/2000	Ward 2 Water District	1417	Public Supply
200006	Pointe Coupee	PC-325	02/07/2000	Alma Plantation Ltd	1252	Industrial
200008	St Landry	SL-679	04/19/2000	Valero Energy Corporation	1152	Industrial
198819	St Tammany	ST-532	01/11/2000	Se Louisiana State Hospital	1520	Public Supply
200001	St Tammany	ST-6711Z	01/11/2000	Private Owner	860	Domestic
199403	Tangipahoa	TA-284	01/11/2000	City Of Ponchatoula	608	Public Supply
198618	Tangipahoa	TA-286	01/12/2000	Town Of Kentwood	640	Public Supply
200003	Tangipahoa	TA-6677Z	01/11/2000	Private Owner	495	Domestic
199705	Washington	WA-241	01/12/2000	Private Owner	400	Irrigation
200002	Washington	WA-5210Z	01/12/2000	Private Owner	752	Domestic
200004	West Baton Rouge	WBR-181	02/07/2000	Port Of Greater Baton Rouge	1900	Industrial
200009	West Feliciana	WF-DELEE	02/08/2000	Private Owner	240	Domestic

Table 4.4.2

Summary of Water Quality Data

Well Number	Temp. °C	Ph Su	Cond. Mmhos/ cm	Sal. ppt	TSS ppm	TDS ppm	Alk. ppm	Hard. ppm	Turb. NTU	Cond. Umhos/cm	Color PCU	Cl ppm	SO4 ppm	Tot. P ppm	TKN ppm	NH3 (As N) ppm	Nitrite-Nitrate (As N) ppm
AV-5304Z	18.91	8.61	0.613	0.30	<4.0	364.0	227.0	20.6	<1.0	648.0	12.0	63.90	2.10	0.11	0.32	0.29	0.06
EB-1003	27.47	8.76	0.276	0.13	<4.0	190.0	134.0	6.0	<1.0	286.0	1.0	3.10	9.20	0.21	0.21	0.18	0.02
EF-5045Z	17.60	6.4	0.044	0.02	<4.0	32.0	17.3	9.4	<1.0	46.3	<1.0	3.60	<1.25	0.12	0.16	<0.10	0.04
LI-299	25.61	8.71	0.252	0.12	<4.0	174.0	122.0	<5.0	1.0	264.0	2.0	9.40	11.70	0.53	0.48	0.16	0.02
PC-325	24.94	8.62	0.271	0.13	<4.0	196.0	133.0	<5.0	1.1	282.0	<1.0	3.10	8.40	0.43	0.14	0.14	0.02
SL-679	26.54	8.88	0.349	0.17	4.5	220.0	173.0	6.4	10.4	350.0	10.0	4.10	3.10	0.30	0.22	<0.10	<0.02
SL-679*	26.54	8.88	0.349	0.17	16.3	222.0	163.0	8.2	8.6	348.0	11.0	3.80	9.80	0.27	0.19	<0.10	<0.02
ST-532	27.83	9.2	0.338	0.16	<4.0	184.0	162.0	<5.0	<1.0	341.0	10.0	2.80	11.30	0.35	0.07	<0.10	0.02
ST-6711Z	20.79	9.06	0.657	0.32	<4.0	392.0	336.0	<5.0	<1.0	672.0	55.0	16.00	3.30	0.51	0.85	0.23	0.03
TA-284	23.42	8.82	0.275	0.13	<4.0	162.0	132.0	<5.0	<1.0	277.0	13.0	2.90	9.30	0.40	0.13	0.11	0.02
TA-286	21.35	6.31	0.049	0.02	<4.0	50.0	16.7	9.3	1.7	56.2	1.0	2.90	2.90	0.24	0.59	<0.10	0.03
TA-6677Z	20.29	7.37	0.101	0.05	<4.0	89.0	44.2	18.0	1.3	100.0	13.0	3.60	3.70	0.14	<0.05	<0.10	0.05
WA-241	19.67	6.58	0.083	0.04	<4.0	81.0	25.0	17.9	<1.0	79.5	2.0	2.70	10.00	0.16	0.33	<0.10	0.02
WA-5210Z	21.90	7.21	0.150	0.07	<4.0	149.0	60.8	35.8	<1.0	150.0	2.0	3.20	9.40	0.25	0.54	0.15	0.04
WA-5210Z*	21.90	7.21	0.150	0.07	<4.0	144.0	60.7	35.6	<1.0	150.0	1.0	3.30	9.40	0.25	0.31	0.16	0.02
WBR-181	26.26	9.13	0.289	0.14	<4.0	182.0	137.0	<5.0	<1.0	294.0	<1.0	3.70	8.70	0.30	<0.05	<0.10	0.02
WF-DELEE	19.04	7.33	0.072	0.03	<4.0	38.0	21.3	16.2	1.2	75.5	<1.0	8.30	<1.25	0.10	<0.05	<0.10	0.64
WF-DELEE*	19.04	7.33	0.072	0.03	<4.0	58.0	21.2	16.0	<1.0	75.7	1.0	8.30	<1.25	0.14	0.09	<0.10	0.63

* Denotes duplicate sample.

Table 4.4.3

Summary of Inorganic Data

Well Number	Arsenic ppb	Silver ppb	Barium Ppb	Beryllium ppb	Cadmium ppb	Chromium ppb	Copper ppb	Iron ppb	Mercury ppb	Nickel ppb	Antimony ppb	Selenium ppb	Lead ppb	Thallium ppb	Zinc ppb
AV-5304Z	<5.0	<1.0	106.0	<1.0	<1.0	<5.0	<5.0	25.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	1268.0
EB-1003	<5.0	<1.0	16.2	<1.0	<1.0	<5.0	<5.0	<10.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	51.1
EF-5045Z	<5.0	<1.0	74.8	<1.0	1.0	<5.0	13.4	11.8	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	24.0
LI-299	<5.0	<1.0	<5.0	<1.0	<1.0	<5.0	6.3	77.8	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	602.3
PC-325	<5.0	<1.0	<5.0	<1.0	<1.0	<5.0	<5.0	30.6	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	111.9
SL-679	<5.0	<1.0	18.2	<1.0	1.41	<5.0	26.6	5.580.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	144.0
SL-679*	<5.0	<1.0	25.0	<1.0	3.6	<5.0	35.7	8,517.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	153.7
ST-532	<5.0	<1.0	3.8	<1.0	<5.0	<5.0	<5.0	13.4	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	165.0
ST-6711Z	<5.0	<1.0	10.7	<1.0	<1.0	<5.0	<5.0	39.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	107.7
TA-284	<5.0	<1.0	<5.0	<1.0	<1.0	<5.0	<5.0	10.6	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	56.9
TA-286	<5.0	<1.0	62.0	<1.0	<1.0	<5.0	7.7	<10.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	133.4
TA-6677Z	<5.0	<1.0	107.9	<1.0	<1.0	<5.0	8.7	74.8	<0.05	<5.0	<5.0	<5.0	<5.0	<5.0	56.6
WA-241	<5.0	<1.0	78.9	<1.0	<1.0	<5.0	<5.0	1,586.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	62.1
WA-5210Z	<5.0	<1.0	62.0	<1.0	<1.0	<5.0	7.7	7.8	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	133.4
WA-5210Z*	<5.0	<1.0	62.5	<1.0	<1.0	<5.0	<5.0	574.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	28.1
WBR-181	<5.0	<1.0	6.1	<1.0	<1.0	<5.0	<5.0	11.8	0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
WF-DELEE	<5.0	<1.0	45.9	<1.0	1.3	<5.0	<5.0	215.9	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
WF-DELEE*	<5.0	<1.0	43.0	<1.0	<1.0	<5.0	5.7	177.2	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	85.2

* Denotes duplicate sample.

Table 4.4.4

List Of VOC analytical parameters, baseline monitoring project.
Volatile Organics By Epa Method 8260

Compounds	PQL (ppb)
Dichlorofluoromethane	5
Chloromethane	2
Vinyl Chloride	2
Bromomethane	2
Chloroethane	2
Trichlorofluoromethane	5
1,1-Dichloroethene	2
Methylene Chloride	2
trans-1,2-Dichloroethene	2
Methyl-t-Butyl Ether	2
1,1-Dichloroethane	2
2,2 Dichloropropane	2
cis-1,2 Dichloroethene	2
Bromochloromethane	2
Chloroform	2
1,1,1-Trichloroethane	2
1,1 Dichloropropene	2
Carbon Tetrachloride	2
Benzene	2
1,2-Dichloroethane	2
Trichloroethene	2
1,2-Dichloropropane	2
Bromodichloromethane	2
Dibromomethane	2
cis-1,3-Dichloropropene	2
Toluene	2
trans-1,3-Dichloropropene	2
1,1,2-Trichloroethane	2
1,3--Dichloropropane	2
Tetrachloroethene	2
1,2-Dibromoethane	2
Dibromochloromethane	2
Chlorobenzene	2
Ethylbenzene	2
1,1,1,2-Tetrachloroethane	2
p & m Xylene	4
o-Xylene	2

Table 4.4.4

List Of VOC analytical parameters, baseline monitoring project.
Volatile Organics By Epa Method 8260

Compounds	PQL (ppb)
Styrene	2
Bromoform	2
Isopropylbenzene	2
1,1,2,2-Tetrachloromethane	2
1,2,3-Trichloropropane	2
Bromobenzene	2
n-Propylbenzene	2
2-Chlorotoluene	2
4-Chlorotoluene	2
1,3,5-Trimethylbenzene	2
tert-Butylbenzene	2
1,2,4-Trimethylbenzene	2
sec-Butylbenzene	2
p-Isopropyltoluene	2
1,3-Dichlorobenzene	2
1,4-Dichlorobenzene	2
n-Butylbenzene	2
1,2-Dibromo-3-Chloropropane	2
Naphthalene	2
1,2,4-Trichlorobenzene	2
Hexachlorobutadiene	2
1,2-Dichlorobenzene	2
1,2,3-Trichlorobenzene	2

PQL = Practical Quantitation Limit
ppb = parts per billion

Table 4.4.5

List of semi-volatile analytical parameters, baseline monitoring program.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (ppb)
n-Nitrosodimethylamine	10
2-Picoline	10
Methyl Methanesulfonate	10
Ethyl Methanesulfonate	20
Phenol	10
Aniline	10
bis(2-chloroethyl)ether	10
2-Chlorophenol	10
1,3-Dichlorobenzene	10
1,4-Dichlorobenzene	10
Benzyl alcohol	10
1,2-Dichlorobenzene	10
2-Methylphenol	10
bis(2-chloroisopropyl)ether	10
4-Methylphenol	10
n-Nitroso-di-n-propylamine	10
Hexachloroethane	20
Acetophenone	10
Nitrobenzene	10
n-Nitrosopiperidine	20
Isophorone	10
2,4-Dimethylphenol	10
2-Nitrophenol	10
Benzoic acid	50
bis(2-chloroethoxy)methane	10
2,4-Dichlorophenol	10
a,a-Dimethylphenethylamine	10
1,2,4-trichlorobenzene	10
Benzidine	50
Pyrene	10
p-Dimethylaminoazobenzene	10
Butylbenzylphthalate	10
bis(2-ethylhexyl)phthalate	10
3,3'-Dichlorobenzidine	20
benzo(a)anthracene	10
Chrysene	10

Table 4.4.5

List of semi-volatile analytical parameters, baseline monitoring program.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (ppb)
di-n-octylphthalate	10
7,12-Dimetnylbenz(a)anthracine	10
Benzo(b)fluoranthene	10
Benzo(k)fluoranthene	10
Benzo(a)pyrene	10
3-Methylcholanthrene	10
Dibenz(a,j)acridine	10
Indeno(1,2,3-cd)pyrene	10
Dibenz(a,h)anthracene	10
Benzo(g,h,i)perylene	10
Naphthalene	10
4-Chloroaniline	10
2,6-Dichlorophenol	10
Hexachlorobutadiene	10
n-Nitrose-di-n-butylamine	10
4-Chloro-3-methylphenol	20
2-Methylnapthalene	10
Hexachlorocyclopentadiene	10
1,2,4,5-Tetrachlorobenzene	10
2,4,6-Trichlorophenol	10
2,4,5-Trichlorophenol	10
2-Chloronapthalene	10
1-Chloronapthalene	10
2-Nitroaniline	50
Dimethylphthalate	10
2,6-Dinitrotoluene	10
Acenaphthylene	10
3-Nitroaniline	50
4-Nitrophenol	50
2,4-Dinitrophenol	50
Acenaphthene	10
2,4-Dinitrotoluene	10
Pentachlorobenzene	10
Dibenzofuran	10
1-Naphthylamine	10
Diethylphthalate	10
2,3,4,6-Tetrachlorophenol	10

Table 4.4.5

List of semi-volatile analytical parameters, baseline monitoring program.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (ppb)
2-Naphthylamine	10
4-Chlorophenyl phenyl ether	10
4-Nitroaniline	50
Fluorene	10
4,6-Dinitro-2-methylphenol	50
4-Aminobiphenyl	20
1,2-Diphenylhydrazine	10
Phenacetin	20
4-Bromophenyl phenyl ether	10
Hexachlorobenzene	10
Pronamide	10
n-Nitrosodiphenylamine/Diphenylamine	10
Pentachlorophenol	50
Pentachloronitrobenzene	20
Phenanthrene	10
Anthracene	10
di-n-butylphthalate	10
Fluoranthene	10

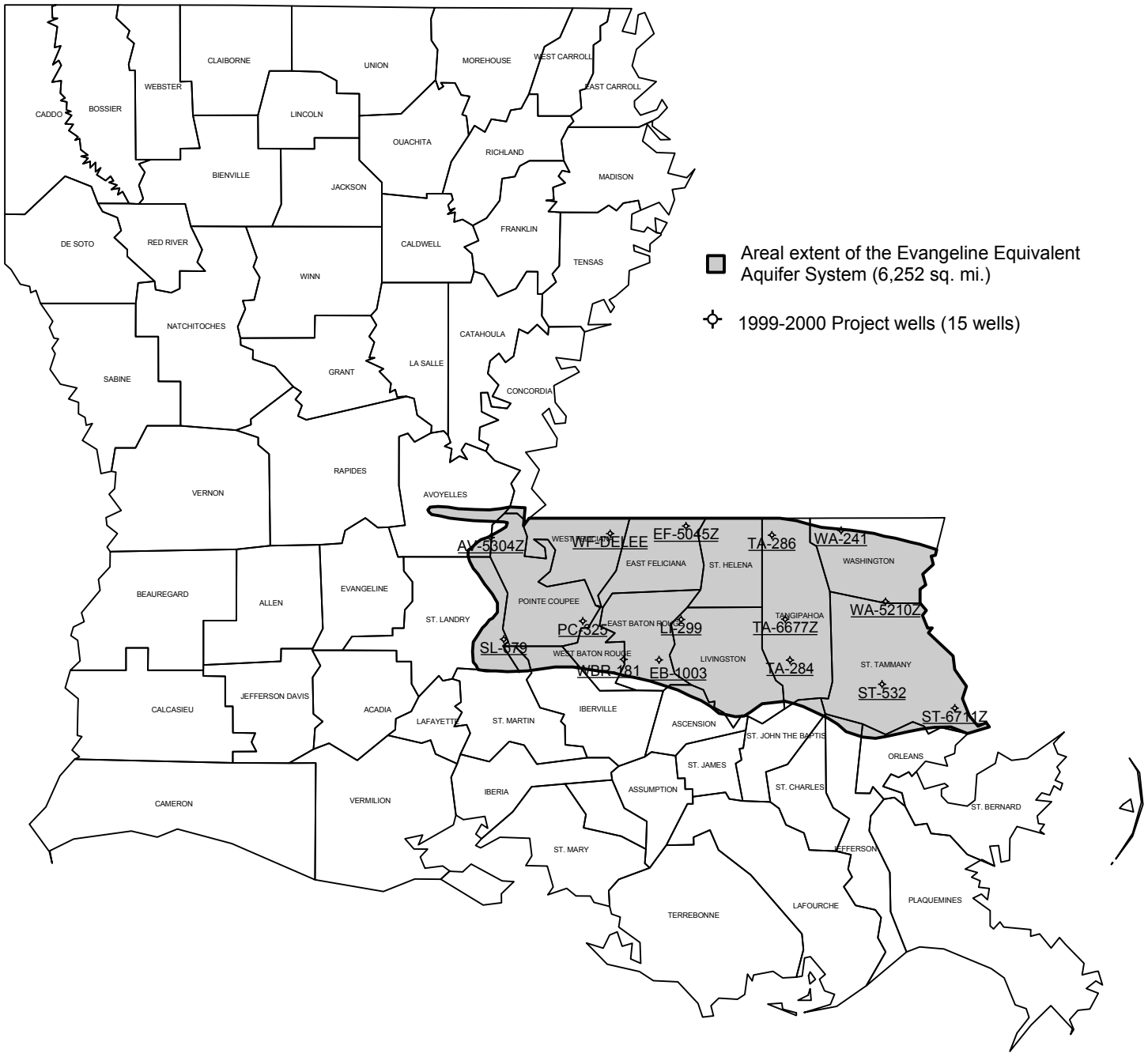
Table 4.4.6

List of pesticide and PCB analytical parameters, Baseline Monitoring Project.

Semivolatile Organics By Epa Method 8270

Compounds	PQL (ppb)
Alpha BHC	2
Beta BHC	2
Gamma BHC	2
Delta BHC	2
Heptachlor	2
Aldrin	2
Heptachlor epoxide	2
Chlordane	2
Endosulfan I	2
4,4'-DDE	2
Dieldrin	2
4,4'DDD	2
Endrin	2
Toxaphene	2
Endosulfan II	2
Endrin Aldehyde	2
4,4'DDT	2
Endosulfan Sulfate	2
Methoxychlor	2
Endrin Ketone	2
PCB 1221/ PCB 1232	10
PCB 1016/ PCB 1242	10
PCB 1254	10
PCB 1248	10
PCB 1260	10

BASELINE MONITORING PROJECT WELLS OF THE EVANGELINE EQUIVALENT AQUIFER SYSTEM



Aquifer boundary digitized from Louisiana Hydrologic Map No. 2: Areal Extent of Freshwater in Major Aquifers of Louisiana. Smoot, 1988; USGS/LDOTD Report 86-4150

Figure 4.4.1
Location plat, Evangeline Equivalent Aquifer System

EVANGELINE EQUIVALENT AQUIFER SYSTEM - pH (SU)

Baseline Monitoring Project, FY1999-2000

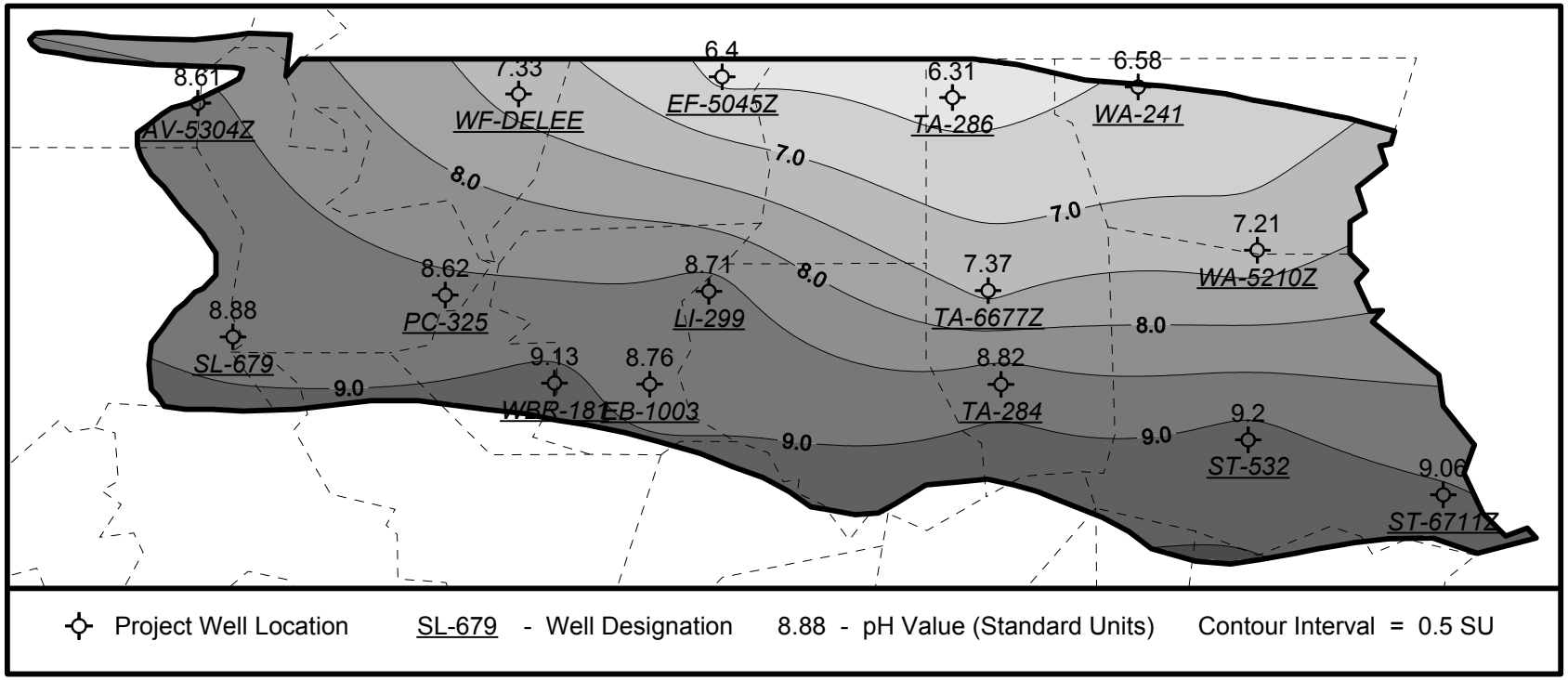


Figure 4.4.2

Map of pH data, Evangeline Equivalent Aquifer System

EVANGELINE EQUIVALENT AQUIFER SYSTEM - TDS (ppm)

Baseline Monitoring Project, FY1999-2000

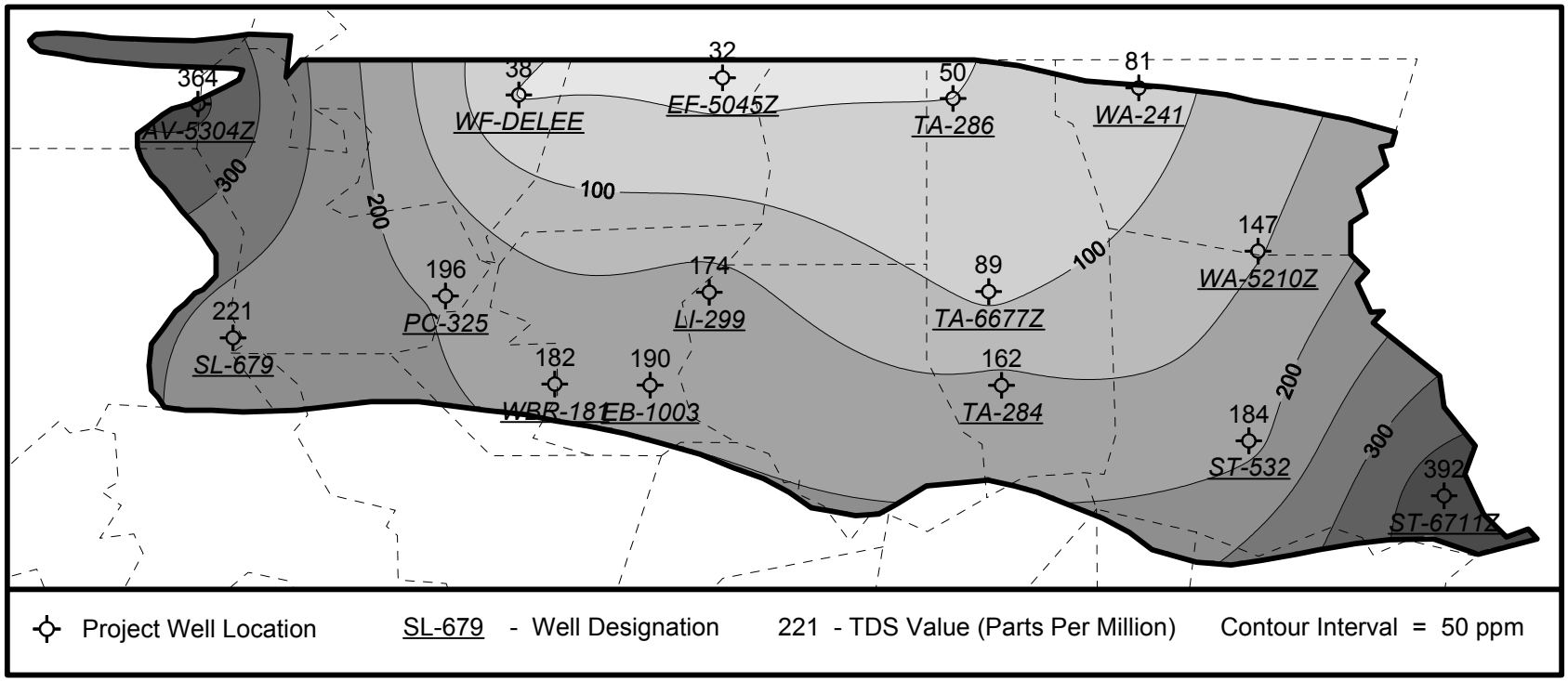


Figure 4.4.3

Map of TDS data, Evangeline Equivalent Aquifer System

EVANGELINE EQUIVALENT AQUIFER SYSTEM - CHLORIDE (ppm)

Baseline Monitoring Project, FY1999-2000

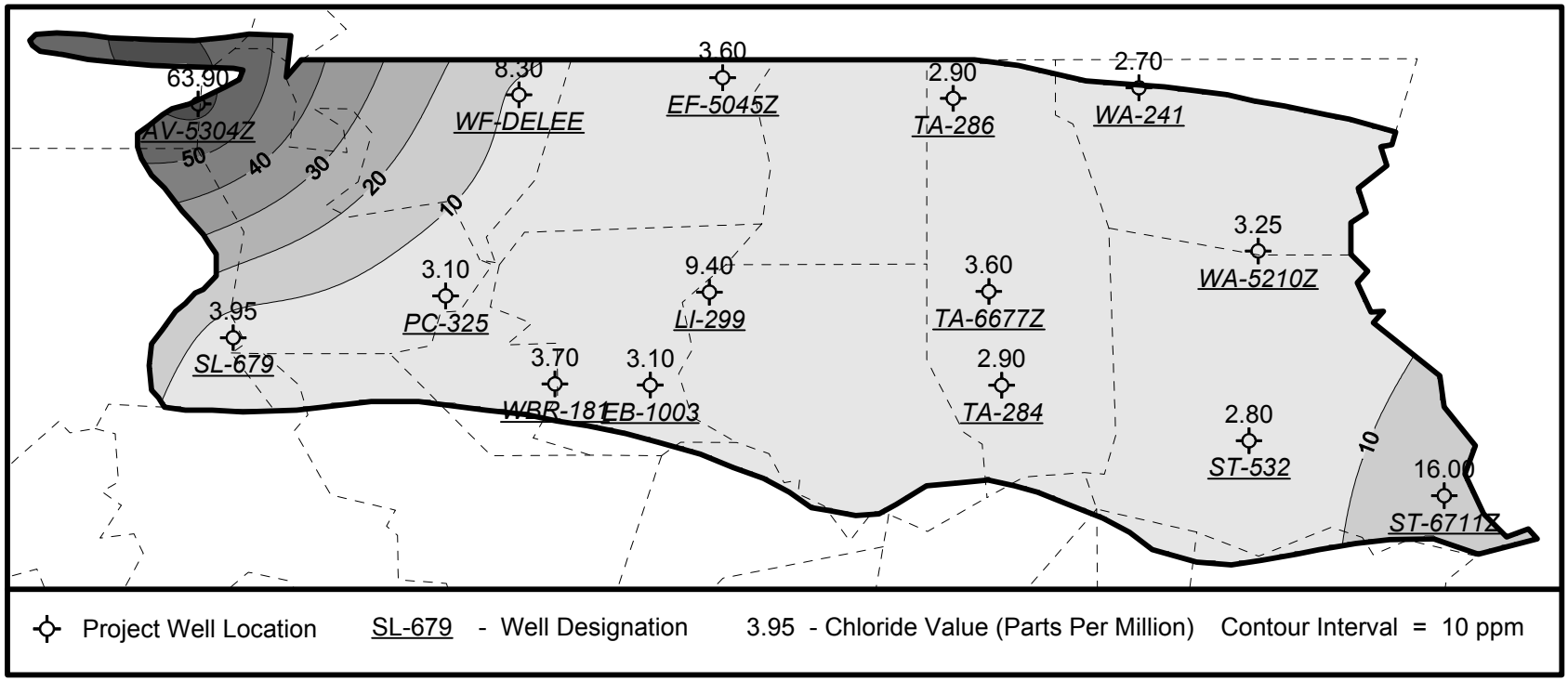


Figure 4.4.4

Map of chloride data, Evangeline Equivalent Aquifer System

EVANGELINE EQUIVALENT AQUIFER SYSTEM - IRON (ppb)

Baseline Monitoring Project, FY1999-2000

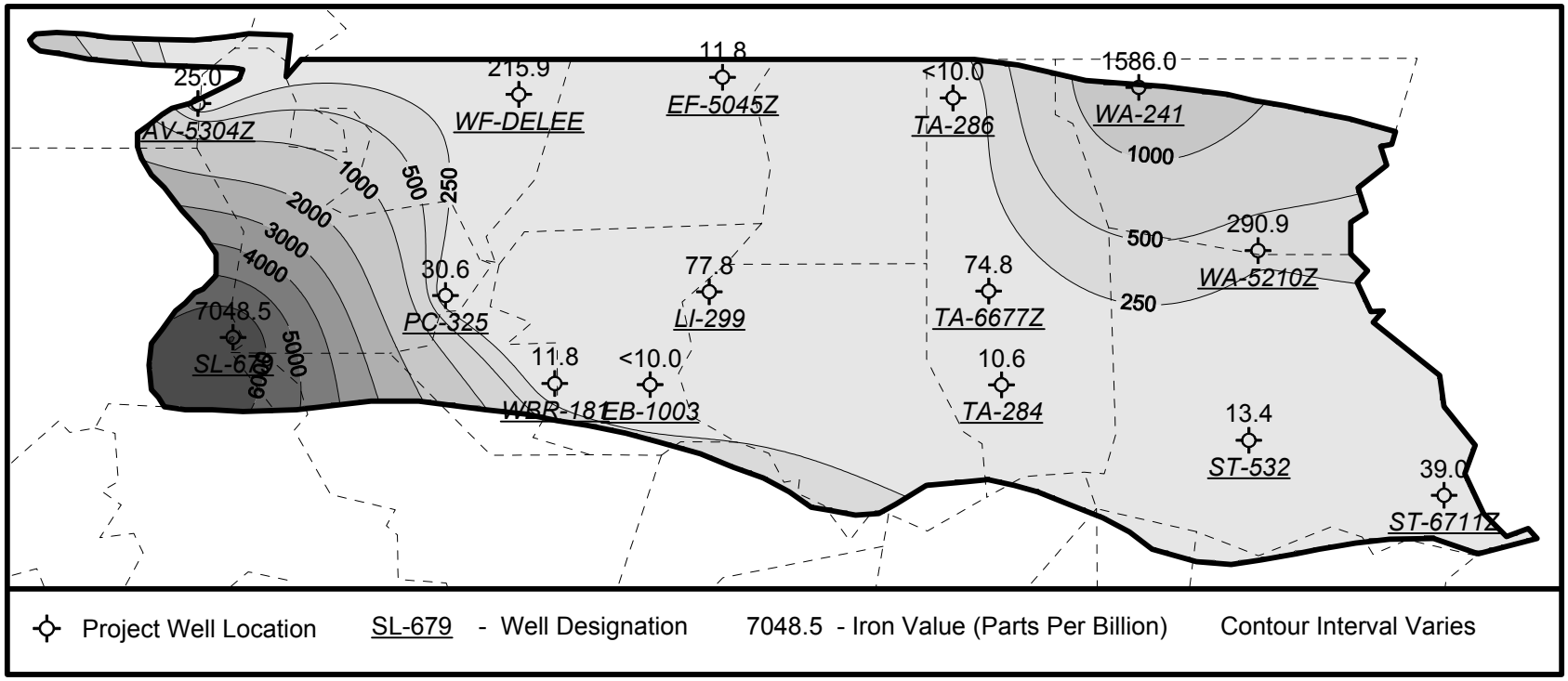


Figure 4.4.5

Map of iron data, Evangeline Equivalent Aquifer System

Chapter 5: Jasper Equivalent Aquifer System

Background

To better assess the water quality of a particular aquifer at a given point in time, an attempt was made during the project year to sample all project wells producing from a common aquifer in a narrow time frame. Also, to more conveniently and economically promulgate those data collected, these aquifer summaries will make up the project Triennial Summary Report.

Figure 4.5.1 shows the geographic locations of the Jasper Equivalent Aquifer System and the associated project wells, whereas Table 4.5.1 lists the wells in the aquifer along with their total depths and the use made of produced waters and the date sampled.

These data show that in March, April, and May of 2000, fifteen project wells were sampled which produce from the Jasper Equivalent Aquifer System. Of these fifteen wells, twelve are classified as Public Supply wells, one is classified as a Domestic well, one is classified as an Industrial well, and one is classified as an irrigation well. The wells are located in nine parishes in southeast Louisiana.

Well data for registered project water wells were obtained from the Louisiana Department of Transportation and Development's Water Well Registration Data file.

Project Field And Analytical Parameters

The field parameters that are checked at each sampling site and the list of water quality parameters that are analyzed in the laboratory are shown in Table 4.5.2. Those project inorganic (total metals) parameters analyzed in the laboratory are listed in Table 4.5.3. These tables also show the field and analytical results determined for each analyte.

In addition to the analytical parameters mentioned above, a list of project analytical parameters that include three other categories of compounds (volatiles, semi-volatiles, and pesticides/PCB's) is included. Due to the large number of analytes in these three categories, tables were not prepared for each well. However, in order for the reader to be aware of the total list of analytes, Tables 4.5.4, 4.5.5, and 4.5.6 were included in this summary. These tables list the project analytes along with their Practical Quantitation Limits (PQLs) used during processing.

Discussion Of Water Quality Data

Federal Primary Drinking Water Standards

Under the Federal Safe Drinking Water Act, EPA has established Primary Maximum Contaminant Levels (MCL) for pollutants that may pose a health risk in public drinking water. A Primary MCL is the highest level of a contaminant that EPA allows in public drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. While not all wells sampled were public supply wells, this Office does use the MCLs as a benchmark for further evaluation.

Laboratory data show that the duplicate sample of project well ST-763 exceeded the Primary MCL of 6 parts per billion (ppb) for bis(2-ethylhexyl)phthalate (BEHP) at 12 ppb. However, BEHP was below the quantitation limit of 10 ppb in the initial sample. Taking this into consideration and taking into consideration the EPA guidance document "Guidance For Data Usability In Risk Assessment, EPA 1992," it is this Office's opinion that the BEHP value found in well ST-763 is a false positive and is not a result of the compound coming from the well. Therefore, it is this Office's opinion this exceedance was due to laboratory or field contamination.

Those project wells reporting turbidity levels of >1 NTU, do not exceed the MCL of 1.0, as this primary standard applies to surface water systems only.

Federal Secondary Drinking Water Standards

EPA has set secondary standards that are defined as non-enforceable taste, odor or appearance guidelines. Field and laboratory data show that eleven of the wells sampled in the Jasper Equivalent Aquifer System exceeded the Secondary Maximum Contaminant Level (SMCL) for pH and that one well exceeded the SMCL for color.

pH (SMCL=6.5 – 8.5 standard units (S.U.)):
EF-272 – 9.11 S.U.
EB-770 – 9.17 S.U.
PC-275 – 9.60 S.U.
SH-104 – 9.18 S.U.
ST-763 – 8.65 S.U.
WA-248 – 8.54 S.U.
EB-630 – 9.43 S.U.
LI-185 – 8.58 S.U.
LI-229 – 8.95 S.U.
ST-FOLSOM – 8.81 S.U.
TA-826 – 8.81 S.U.

Eleven out of the fifteen wells that were sampled exhibited pH values outside of the SMCL. In fact, all of the wells that were sampled exhibited elevated pH levels. Where available, the data from previous sampling events of the project wells in the Jasper Equivalent Aquifer system were examined to compare past pH results with these current results. These comparisons showed that the pH levels were indeed elevated. It is therefore this Office's opinion that the pH values exhibited in the current sampling of the Jasper Equivalent Aquifer system are erroneous, and are due to a malfunction of the sampling equipment. The pH data for this round of sampling of the Jasper Equivalent will therefore be excluded from this summary and from any further analysis.

Color (SMCL=15 color units (PCU)):
ST-995 – 17 PCU

Federal Lead Action Level

Under the Federal Safe Drinking Water Act, EPA has established an Action Level of 15 ppb for lead to ensure that this contaminant does not pose either a short-term or long-term health risk in public drinking water. While not all wells sampled were public supply wells, this Office does use this Action Level as a benchmark for further evaluation. Laboratory data contained in Table 4.5.3 show that one of the wells sampled exceeded the Action Level for lead. ST-995 exceeded the Action Level with a concentration of 15.5 ppb. The owner of this well was notified of this level. No further action has been taken as a result of this lead level since the well is classified as an irrigation well and not a drinking water supply well.

Selected Water Quality Maps

For the reader's convenience, maps showing the contoured values for TDS, chloride, and iron are included in this summary report in Figures 4.5.2 through 4.5.4. Please note that a contour map of the pH values is not included in this summary as the pH values have been excluded due to the reasons stated above.

Summary And Recommendations

In summary, the data show that this aquifer is of good quality when considering short-term or long-term health risk guidelines.
The data also show that this aquifer is of good quality when considering taste, odor, or appearance guidelines.

Eleven out of the fifteen wells that were sampled exhibited pH values outside of the SMCL. In fact, all of the wells that were sampled exhibited elevated pH levels. Comparisons with past pH results confirmed that the current pH levels were elevated. It is therefore this Office's opinion that the pH values exhibited in the current

sampling of the Jasper Equivalent Aquifer system are erroneous, and are due to a malfunction of the sampling equipment. The pH data for this round of sampling of the Jasper Equivalent will therefore be excluded from this summary and from any further analysis.

It is recommended that the several project wells assigned to the Jasper Equivalent Aquifer be resampled as planned, in approximately three years. In addition, several wells should be added to those currently sampled to increase the well density for this aquifer.

Table 4.5.1

List of project wells sampled

Project Number	Parish	Well Number	Date Sampled	Owner	Depth (Feet)	Well Use
199003	East Baton Rouge	EB-630	03/13/2000	Baton Rouge Water Co.	2253	Public Supply
200012	East Baton Rouge	EB-770	03/13/2000	City Of Zachary	2080	Public Supply
200014	East Feliciana	EF-272	03/13/2000	La. War Vets Home	1325	Public Supply
198613	Livingston	LI-185	04/10/2000	City Of Denham Springs	2610	Public Supply
200015	Livingston	LI-229	04/10/2000	Ward 2 Water District	1826	Public Supply
200017	Livingston	LI-257	04/10/2000	Village Of Albany	1842	Public Supply
200013	Pointe Coupee	PC-275	03/13/2000	Private Owner	1912	Domestic
200016	St. Helena	SH-104	04/10/2000	Cal Maine Foods	1652	Industrial
200019	St. Tammany	ST-763	05/09/2000	LDOTD	2230	Public Supply
200005	St Tammany	ST-995	05/08/2000	Private Owner	2290	Irrigation
200020	St. Tammany	ST-FOLSOM	05/09/2000	Village Of Folsom	2265	Public Supply
199324	Tangipahoa	TA-560	04/10/2000	Town Of Roseland	2032	Public Supply
199404	Tangipahoa	TA-826	05/08/2000	City Of Ponchatoula	2015	Public Supply
200018	Washington	WA-248	05/09/2000	Town Of Franklinton	2700	Public Supply
199701	West Feliciana	WF-264	03/13/2000	W. Feliciana Parish Utilities	960	Public Supply

Table 4.5.2

Summary of water quality data

Well Number	Temp. ^{O}C	Cond. Mmhos/cm	Sal. ppt	TSS ppm	TDS ppm	Alk. ppm	Hard. ppm	Turb. NTU	Cond. Umhos/cm	Color PCU	Cl ppm	SO4 ppm	Tot. P ppm	TKN ppm	NH3 (As N) ppm	Nitrite-Nitrate (As N)
EB-630	34.14	0.529	0.25	11.0	334.0	194.0	<5.0	1.0	542.0	3.0	43.30	6.90	0.27	0.39	0.21	0.02
EB-770	30.57	0.337	0.16	12.0	240.0	167.0	<5.0	<1.0	347.0	3.0	2.90	6.40	0.31	0.20	0.20	0.02
EF-272	25.57	0.307	0.14	9.0	213.0	151.0	<5.0	<1.0	324.0	1.0	4.10	5.30	0.36	0.26	<0.10	0.03
LI-185	32.25	0.264	0.12	<4.0	184.0	126.0	7.0	<1.0	270.0	4.0	3.60	8.70	0.22	<0.05	<0.10	0.02
LI-229	28.12	0.308	0.15	<4.0	193.0	152.0	<5.0	<1.0	315.0	3.0	2.98	9.13	0.19	0.35	0.13	0.02
LI-257	28.85	0.233	0.11	<4.0	169.0	109.0	<5.0	<1.0	241.0	2.0	3.50	9.20	0.18	0.27	0.24	0.02
LI-257*	28.85	0.233	0.11	<4.0	165.0	109.0	<5.0	<1.0	240.0	2.0	3.60	9.10	0.20	0.27	0.23	0.03
PC-275	24.39	0.625	0.30	<4.0	408.0	289.0	<5.0	1.5	659.0	12.0	27.50	4.70	0.37	1.13	0.44	0.02
PC-275*	24.39	0.625	0.30	4.0	400.0	289.0	<5.0	1.9	663.0	15.0	27.40	4.60	0.33	1.25	0.46	0.02
SH-104	25.65	0.397	0.19	<4.0	239.0	200.0	<5.0	<1.0	413.0	6.0	3.68	8.26	0.43	0.26	0.18	0.02
ST-763	31.48	0.711	0.34	<4.0	428.0	231.0	7.5	<1.0	726.6	12.0	87.90	5.30	0.17	0.82	0.75	0.02
ST-763*	31.48	0.711	0.34	<4.0	420.0	231.0	7.4	<1.0	727.6	12.0	87.80	5.40	0.14	0.80	0.70	<0.02
ST-995	28.30	0.185	0.09	66.3	160.0	85.2	8.1	1.3	189.2	2.0	3.10	8.00	0.43	0.88	0.18	<0.02
ST-	30.10	0.257	0.12	<4.0	172.0	124.0	<5.0	<1.0	259.5	2.0	3.30	8.80	0.20	0.24	0.20	<0.02
TA-560	28.64	0.210	0.10	<4.0	164.0	96.7	<5.0	<1.0	218.0	4.0	3.20	8.70	0.48	0.18	<0.10	0.02
TA-826	31.09	0.323	0.15	<4.0	219.0	159.0	6.6	1.8	326.6	5.0	3.30	9.30	0.19	0.30	0.13	<0.02
WA-248	31.08	0.341	0.16	<4.0	221.0	161.0	<5.0	<1.0	346.7	17.0	8.80	7.60	0.39	0.46	0.36	<0.02
WF-264	24.08	0.269	0.13	4.3	196.0	135.0	9.1	<1.0	283.0	2.0	2.50	6.00	0.15	0.36	0.19	0.02

* Denotes duplicate sample.

Please note that pH has been reported due to the reasons stated on page 2, “Federal Secondary Drinking Water Standards” and in the summary section.

Table 4.5.3

Summary of inorganic data

Well Number	Arsenic ppb	Silver ppb	Barium ppb	Beryllium ppb	Cadmium ppb	Chromium ppb	Copper ppb	Iron ppb	Mercury ppb	Nickel ppb	Antimony ppb	Selenium ppb	Lead ppb	Thallium ppb	Zinc ppb
EB-630	<5.0	<1.0	14.4	<1.0	<1.0	<5.0	<5.0	26.2	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
EB-770	<5.0	<1.0	6.1	<1.0	<1.0	<5.0	<5.0	49.9	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	13.2
EF-272	<5.0	<1.0	<5.0	<1.0	<1.0	<5.0	<5.0	67.6	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	49.1
LI-185	<5.0	<1.0	19.6	<1.0	1.9	<5.0	<5.0	<20.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
LI-229	<5.0	<1.0	11.9	<1.0	1.1	<5.0	<5.0	<20.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
LI-257	<5.0	<1.0	6.7	<1.0	2.4	<5.0	<5.0	64.2	<0.05	<5.0	<5.0	5.7	<10.0	<5.0	80.3
LI-257*	<5.0	<1.0	6.7	<1.0	2.5	<5.0	<5.0	63.5	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
PC-275	<5.0	<1.0	<5.0	<1.0	<1.0	<5.0	<5.0	<20.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	75.5
PC-275*	<5.0	<1.0	9.1	<1.0	<1.0	<5.0	<5.0	<20.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	75.5
SH-104	<5.0	<1.0	<5.0	<1.0	1.1	<5.0	<5.0	27.6	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
ST-763	<5.0	<1.0	24.7	<1.0	<1.0	<5.0	190.0	<10.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	35.0
ST-763*	<5.0	<5.0	22.1	<1.0	<1.0	<5.0	<5.0	<10.0	<0.05	<5.0	<5.0	6.8	<10.0	<5.0	<10.0
ST-995	<5.0	<1.0	10.7	<1.0	<1.0	<5.0	22.2	29.5	<0.05	<5.0	<5.0	6.2	15.5	<5.0	<10.0
ST-FOLSOM	<5.0	<1.0	<5.0	<1.0	<1.0	<5.0	<5.0	<10.0	<0.05	<5.0	<5.0	9.3	<10.0	<5.0	12.4
TA-560	<5.0	<1.0	<5.0	<1.0	2.7	<5.0	<5.0	45.3	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0
TA-826	<5.0	<1.0	27.4	<1.0	<1.0	<5.0	<5.0	<10.0	<0.05	<5.0	<5.0	<5.0	<10.0	<1.0	<10.0
WA-248	<5.0	<1.0	<5.0	<1.0	1.2	<5.0	<5.0	29.1	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	21.6
WF-264	<5.0	<1.0	35.3	<1.0	<1.0	<5.0	<5.0	45.6	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	<10.0

* Denotes duplicate sample.

Table 4.5.4

List Of VOC analytical parameters, baseline monitoring project.

Volatile Organics By Epa Method 8260

Compounds	PQL (ppb)
Dichlorofluoromethane	5
Chloromethane	2
Vinyl Chloride	2
Bromomethane	2
Chloroethane	2
Trichlorofluoromethane	5
1,1-Dichloroethene	2
Methylene Chloride	2
trans-1,2-Dichloroethene	2
Methyl-t-Butyl Ether	2
1,1-Dichloroethane	2
2,2 Dichloropropane	2
cis-1,2 Dichloroethene	2
Bromochloromethane	2
Chloroform	2
1,1,1-Trichloroethane	2
1,1 Dichloropropene	2
Carbon Tetrachloride	2
Benzene	2
1,2-Dichloroethane	2
Trichloroethene	2
1,2-Dichloropropane	2
Bromodichloromethane	2
Dibromomethane	2
cis-1,3-Dichloropropene	2
Toluene	2
trans-1,3-Dichloropropene	2
1,1,2-Trichloroethane	2
1,3--Dichloropropane	2
Tetrachloroethene	2
1,2-Dibromoethane	2
Dibromochloromethane	2
Chlorobenzene	2
Ethylbenzene	2
1,1,1,2-Tetrachloroethane	2
p & m Xylene	4
o-Xylene	2

Table 4.5.4

List Of VOC analytical parameters, baseline monitoring project.

Volatile Organics By Epa Method 8260

Compounds	PQL (ppb)
Styrene	2
Bromoform	2
Isopropylbenzene	2
1,1,2,2-Tetrachloromethane	2
1,2,3,-Trichloropropane	2
Bromobenzene	2
n-Propylbenzene	2
2-Chlorotoluene	2
4-Chlorotoluene	2
1,3,5-Trimethylbenzene	2
tert-Butylbenzene	2
1,2,4-Trimethylbenzene	2
sec-Butylbenzene	2
P-Isopropyltoluene	2
1,3-Dichlorobenzene	2
1,4-Dichlorobenzene	2
n-Butylbenzene	2
1,2-Dibromo-3-Chloropropane	2
Naphthalene	2
1,2,4-Trichlorobenzene	2
Hexachlorobutadiene	2
1,2-Dichlorobenzene	2
1,2,3-Trichlorobenzene	2

PQL = Practical Quantitation Limit
ppb = parts per billion

Table 4.5.5

List of Semi-volatile Analytical Parameters, baseline monitoring project.
Semivolatile organics by EPA method 8270

Compounds	PQL (ppb)
N-Nitrosodimethylamine	10
2-Picoline	10
Methyl methanesulfonate	10
Ethyl methanesulfonate	20
Phenol	10
Aniline	10
bis(2-chloroethyl)ether	10
2-Chlorophenol	10
1,3-Dichlorobenzene	10
1,4-Dichlorobenzene	10
Benzyl alcohol	10
1,2-Dichlorobenzene	10
2-Methylphenol	10
bis(2-chloroisopropyl)ether	10
4-Methylphenol	10
n-Nitroso-di-n-propylamine	10
Hexachloroethane	20
Acetophenone	10
Nitrobenzene	10
n-Nitrosopiperidine	20
Isophorone	10
2,4-Dimethylphenol	10
2-Nitrophenol	10
Benzoic acid	50
bis(2-chloroethoxy)methane	10
2,4-Dichlorophenol	10
a,a-Dimethylphenethylamine	10
1,2,4-trichlorobenzene	10
Benzidine	50
Pyrene	10
p-Dimethylaminoazobenzene	10
Butylbenzylphthalate	10
bis(2-ethylhexyl)phthalate	10
3,3'-Dichlorobenzidine	20
Benzo(a)anthracene	10

Table 4.5.5

List of Semi-volatile Analytical Parameters, baseline monitoring project.
Semivolatile organics by EPA method 8270

Compounds	PQL (ppb)
Chrysene	10
di-n-octylphthalate	10
7,12-Dimetnylbenz(a)anthracine	10
Benzo(b)fluoranthene	10
Benzo(k)fluoranthene	10
Benzo(a)pyrene	10
3-Methylcholanthrene	10
Dibenz(a,j)acridine	10
Indeno(1,2,3-cd)pyrene	10
Dibenz(a,h)anthracene	10
Benzo(g,h,i)perylene	10
Napthalene	10
4-Chloroaniline	10
2,6-Dichlorophenol	10
Hexachlorobutadiene	10
n-Nitrose-di-n-butylamine	10
4-Chloro-3-methylphenol	20
2-Methylnapthalene	10
Hexachlorocyclopentadiene	10
1,2,4,5-Tetrachlorobenzene	10
2,4,6-Trichlorophenol	10
2,4,5-Trichlorophenol	10
2-Chloronapthalene	10
1-Chloronapthalene	10
2-Nitroaniline	50
Dimethylphthalate	10
2,6-Dinitrotoluene	10
Acenaphthylene	10
3-Nitroaniline	50
4-Nitrophenol	50
2,4-Dinitrophenol	50
Acenaphthene	10
2,4-Dinitrotoluene	10

Table 4.5.5

List of Semi-volatile Analytical Parameters, baseline monitoring project.
Semivolatile organics by EPA method 8270

Compounds	PQL (ppb)
Pentachlorobenzene	10
Dibenzofuran	10
1-Naphthylamine	10
Diethylphthalate	10
2,3,4,6-Tetrachlorophenol	10
2-Naphthylamine	10
4-Chlorophenyl phenyl ether	10
4-Nitroaniline	50
Fluorene	10
4,6-Dinitro-2-methylphenol	50
4-Aminobiphenyl	20
1,2-Diphenylhydrazine	10
Phenacetin	20
4-Bromophenyl phenyl ether	10
Hexachlorobenzene	10
Pronamide	10
n-Nitrosodiphenylamine/Diphenylamine	10
Pentachlorophenol	50
Pentachloronitrobenzene	20
Phenathrene	10
Anthracene	10
di-n-butylphthalate	10
Fluoranthene	10

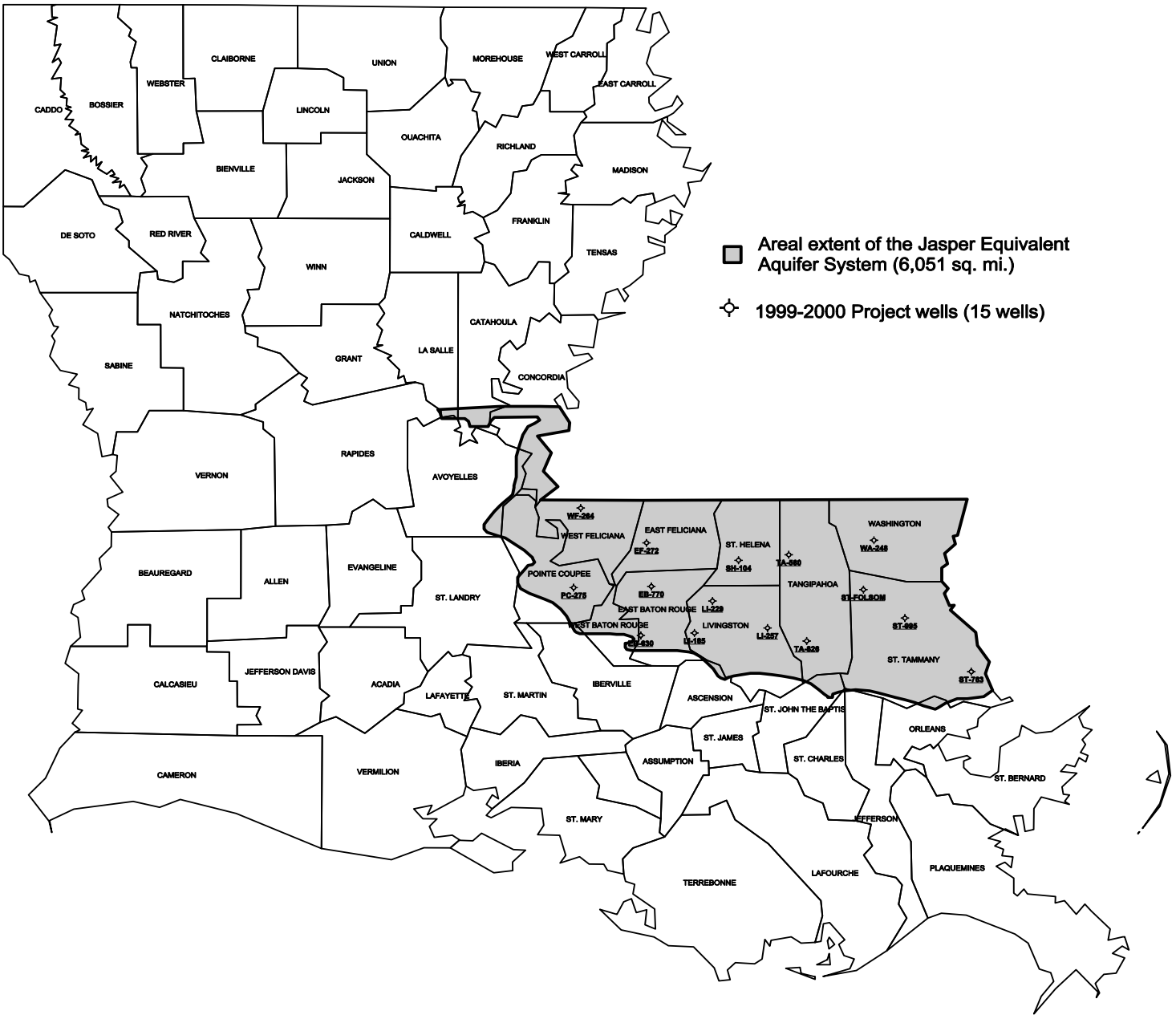
Table 4.5.6

List Of Pesticide and PCB analytical parameters, baseline monitoring program.

Semivolatile organics by EPA Method 8270

Compounds	PQL (ppb)
alpha BHC	2
beta BHC	2
gamma BHC	2
delta BHC	2
Heptachlor	2
Aldrin	2
Heptachlor epoxide	2
Chlordane	2
Endosulfan I	2
4,4'-DDE	2
Dieldrin	2
4,4'DDD	2
Endrin	2
Toxaphene	2
Endosulfan II	2
Endrin Aldehyde	2
4,4'DDT	2
Endosulfan Sulfate	2
Methoxychlor	2
Endrin Ketone	2
PCB 1221/ PCB 1232	10
PCB 1016/ PCB 1242	10
PCB 1254	10
PCB 1248	10
PCB 1260	10

BASELINE MONITORING PROJECT WELLS OF THE JASPER EQUIVALENT AQUIFER SYSTEM



Aquifer boundary digitized from Louisiana Hydrologic Map No. 2: Areal Extent of Freshwater in Major Aquifers of Louisiana. Smoot, 1988; USGS/LDOTD Report 86-4150

Figure 4.5.1

Location plat, Jasper Equivalent Aquifer System.

JASPER EQUIVALENT AQUIFER SYSTEM - TDS (ppm)

Baseline Monitoring Project, FY1999-2000

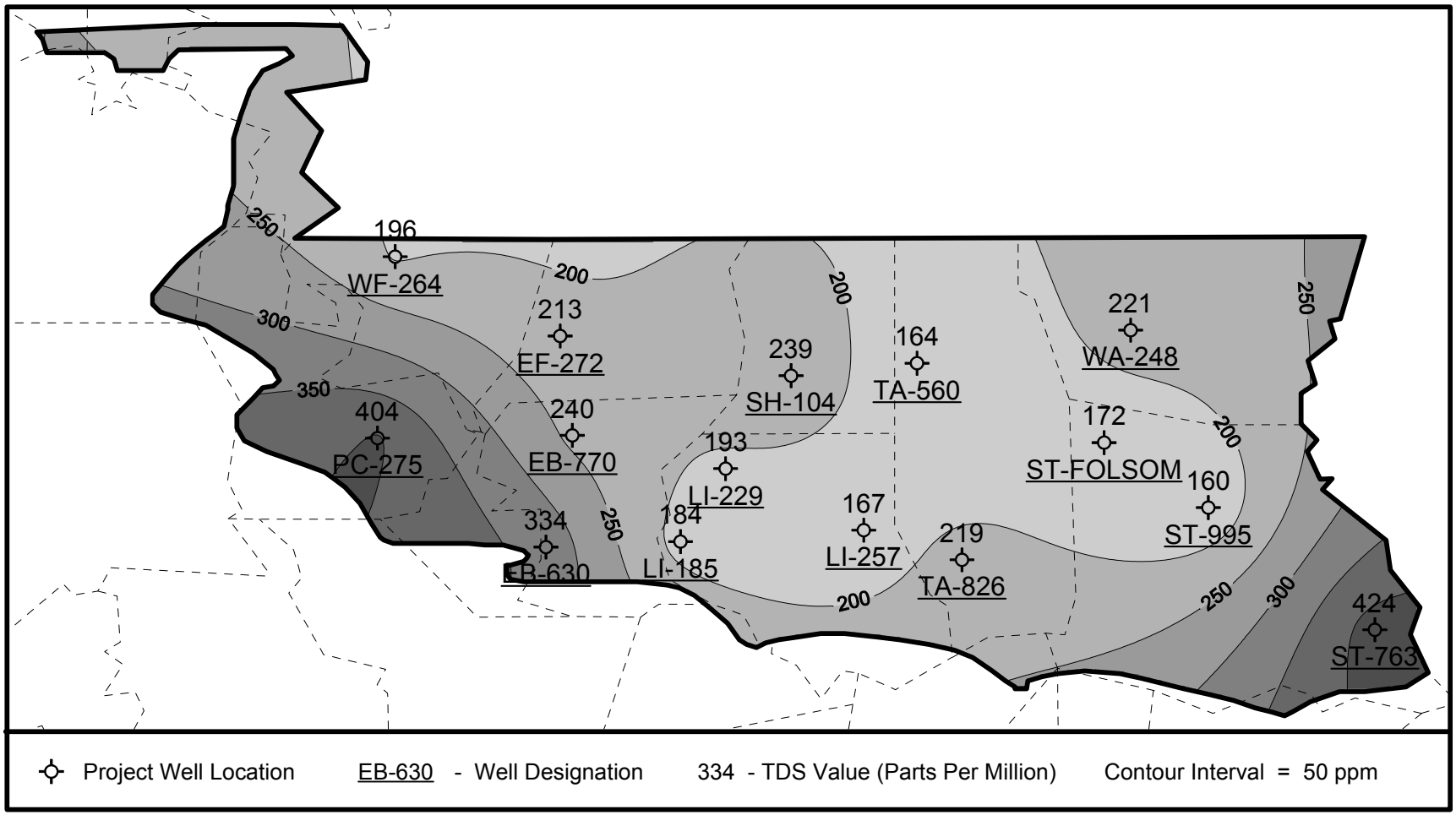


Figure 4.5.2 Map of TDS data, Jasper Equivalent Aquifer System.

JASPER EQUIVALENT AQUIFER SYSTEM - CHLORIDE (ppm)

Baseline Monitoring Project, FY1999-2000

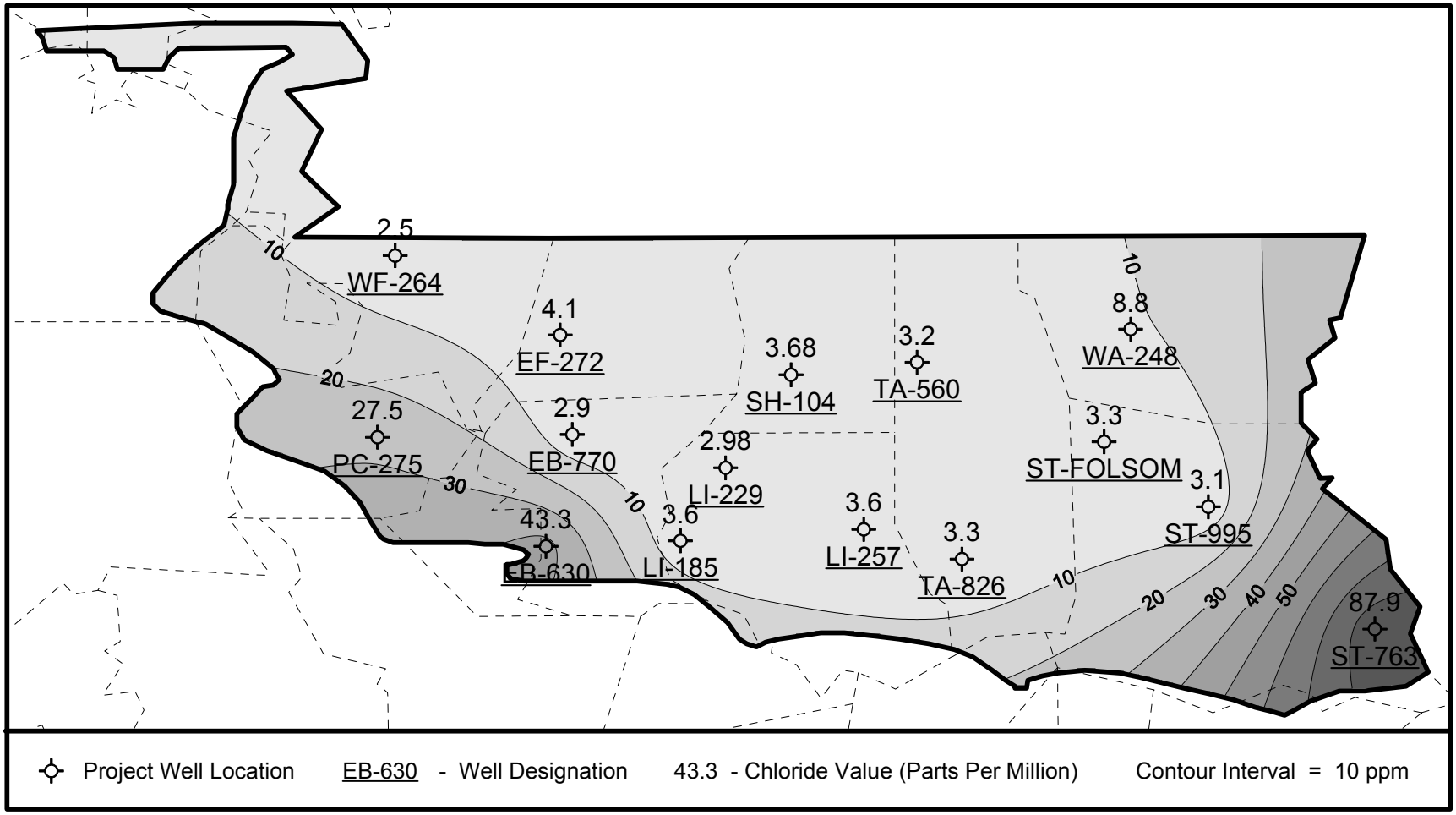


Figure 4.5.3. Map of chloride data, Jasper Equivalent Aquifer System.

JASPER EQUIVALENT AQUIFER SYSTEM - IRON (ppb)

Baseline Monitoring Project, FY1999-2000

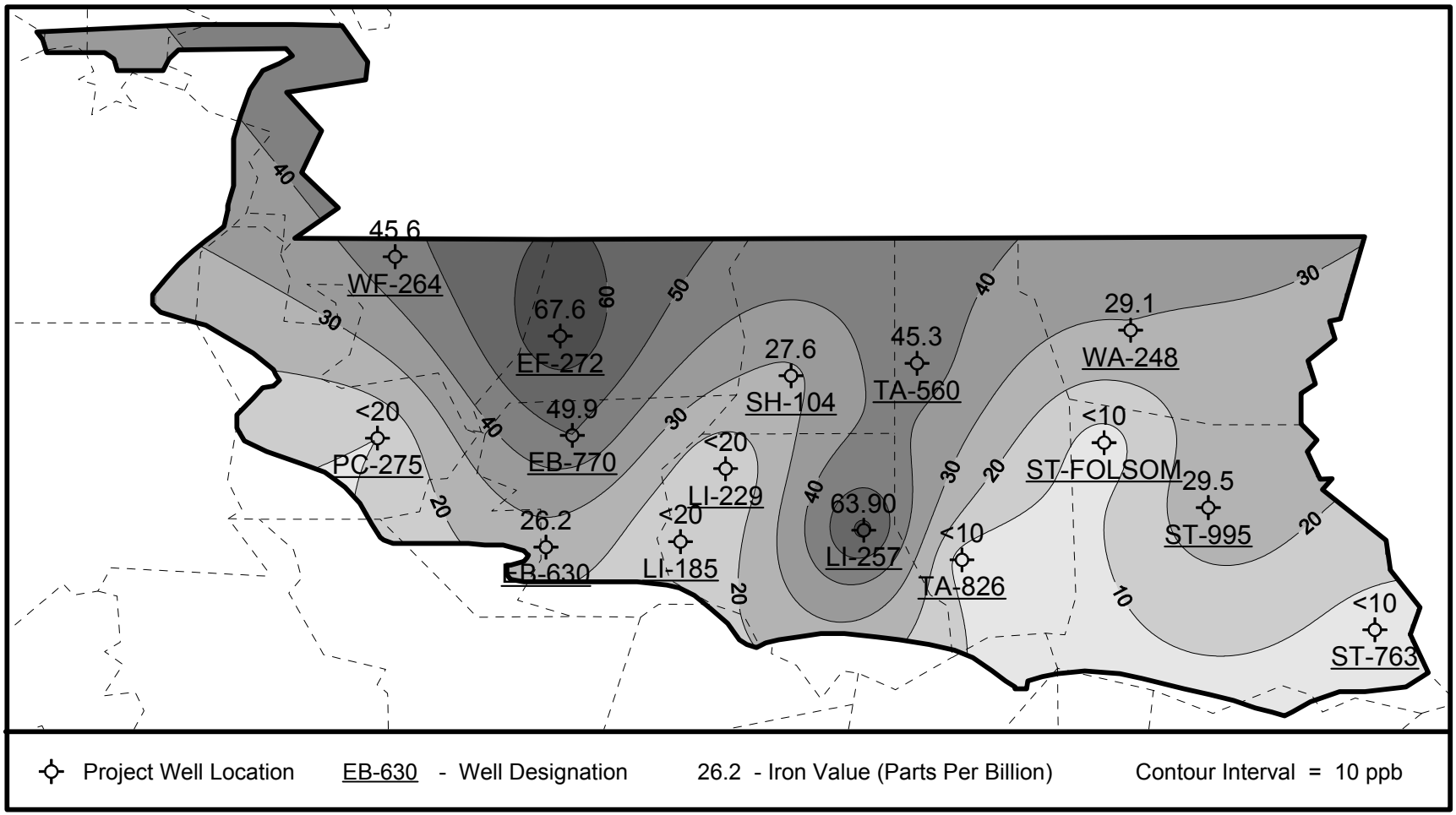


Figure 4.5.4 Map of iron data, Jasper Equivalent Aquifer System.