JASPER EQUIVALENT AQUIFER SYSTEM SUMMARY

BASELINE MONITORING PROGRAM, FY 2006

APPENDIX 14

OF THE

TRIENNIAL SUMMARY REPORT

FOR THE

WATER QUALITY ASSESSMENT DIVISION

OF

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

PARTIAL FUNDING PROVIDED THROUGH THE CWA

JASPER EQUIVALENT AQUIFER SYSTEM SUMMARY
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BACKGROUND

In order to assess the water quality of a particular aquifer at a given point in time, an attempt was made during the year to sample all Baseline Monitoring Program (BMP) wells producing from a common aquifer in a narrow time frame. Also, to more conveniently and economically promulgate those data collected from a particular aquifer, a summary report on each aquifer sampled was prepared separately. Collectively, these aquifer summaries will make up part of the Baseline Monitoring Program Triennial Summary Report.

Figure 14-1 shows the geographic locations of the Jasper Equivalent Aquifer System and the associated wells, whereas Table 14-2 lists the wells in the aquifer along with their total depths and the use made of produced waters and the date sampled.

In April of 2006, fifteen wells were sampled that produce from the Jasper Equivalent Aquifer System for water quality parameters, metals, nutrients, volatile organic compounds, semi-volatile organic compounds, pesticides, and PCBs. Of these fifteen wells, twelve are classified as public supply, one is classified as a domestic well, one is classified as an irrigation well and one is classified as an industrial well. These wells are located in nine parishes in southeast Louisiana.

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

GEOLOGY

The Jasper Equivalent aquifer system is composed of the Miocene aged aquifers of the Baton Rouge area and St. Tammany, Tangipahoa, and Washington Parishes. These Miocene sediments outcrop in southwestern Mississippi. The sedimentary sequences that make up the aquifer system are subdivided into several aquifer units separated by confining beds. Northward within southeast Louisiana, fewer units are recognized because some younger units pinch out updip and some clay layers present to the south disappear. Where clay layers are discontinuous or disappear, aquifer units coalesce. The aquifers consist of fine to coarse sand and gravel, with grain size increasing and sorting decreasing with depth.

HYDROGEOLOGY

The deposits that constitute the individual aquifers are not readily differentiated at the surface and act as one hydraulic system that can be subdivided into several hydrologic zones in the subsurface. A zone or ridge of saline water occurs within the Miocene sediments beneath the Mississippi River alluvial valley. Recharge occurs primarily by the direct infiltration of rainfall in interstream, upland outcrop areas, and by the movement of water between aquifers. The hydraulic conductivity varies between 10-200 feet/day.

The maximum depths of occurrence of freshwater in the Jasper Equivalent range from 500 to 3,200 feet below sea level. The range of thickness of the fresh water interval in the Jasper Equivalent is 1,600 to 2,350 feet. The depths of the Jasper Equivalent wells that were monitored in conjunction with the BMP range from 960 to 2,700 feet.

INTERPRETATION OF DATA

Field, Water Quality, and Nutrients Parameters

Table 14-3 lists the field parameters that are checked and the water quality and nutrients parameters for which samples are collected at each well. It also shows the field results and the water quality and nutrients analytical results for each well. Table 14-5 lists the minimum, maximum, and average results for the field data, water quality data, and nutrients data for the Jasper Equivalent Aquifer System.

Federal Primary Drinking Water Standards

Under the Federal Safe Drinking Water Act, EPA has established maximum contaminant levels (MCLs) 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.

A review of the analyses listed on Table 14-3 shows that no primary MCL was exceeded for field, water quality, or nutrients parameters. Those wells reporting turbidity levels greater than 1.0 NTU, do not exceed the Primary MCL of 1.0, as this standard applies only to public supply surface water systems and ground water systems under the influence of surface water.

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 Table 14-3 show that the following secondary MCLs (SMCLs) were exceeded.

Color – SMCL = 15 PCU
PC-275 – 45 PCU
WA-248 – 20 PCU

pH – SMCL = 6.5 – 8.5 SU
EB-630 – 9.03 SU
EB-854 – 8.85 SU
EF-272 – 8.80 SU
LI-185 – 8.70 SU (original and duplicate)
LI-229 – 8.91 SU
PC-275 – 9.22 SU
SH-104 – 9.20 SU
ST-FOLSOM – 8.93 SU
TA-286 – 8.91 SU
WA-248 – 8.62 SU

Comparison to Historical Data

Table 14-7 lists the current field, water quality, and nutrients data averages alongside those parameters' data averages for the three previous sampling rotations (three, six and nine years prior). A comparison shows that the average for pH had an initial increase but is now consistent; the average for alkalinity has been consistent since 2000, while color has fluctuated but has been fairly consistent. The average for chloride has fluctuated, but with an overall increasing trend. All other field, water quality and nutrient parameter averages have remained consistent.

Inorganic Parameters

Table 14-4 shows the inorganic (total metals) parameters for which samples are collected at each well and the analytical results for those parameters. Table 14-6 lists the minimum, maximum, and average results for the inorganic data for the Jasper Equivalent Aquifer System.

Federal Primary Drinking Water Standards

Further review of the analyses listed on Table 14-4 shows that no primary MCL was exceeded for inorganic parameters.

Federal Secondary Drinking Water Standards

Laboratory data contained in Table 14-4 also shows that the no secondary MCL was exceeded for inorganic parameters.

Comparison to Historical Data

Table 14-8 lists the current inorganic data averages alongside the inorganic data averages for the three previous sampling rotations (three, six and nine years prior). A comparison shows that the averages for barium and iron have fluctuated while the other averages have been consistent, or have remained below their respective detection levels.

Volatile Organic Compounds

Table 14-9 shows the volatile organic compound (VOC) parameters for which samples are collected at each well. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a VOC would be discussed in this section.

No VOC was detected at or above their respective detection limits during the 2006 sampling of the Jasper Equivalent Aquifer System.

Semivolatile Organic Compounds

Table 14-10 shows the semivolatile organic compound (SVOC) parameters for which samples are collected at each well. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a semivolatile would be discussed in this section.

Diethylphthalate was detected in well TA-560 at a concentration of 16 parts per billion (ppb). There is no primary or secondary drinking water standard for this compound, so it does not exceed an established standard. Additionally, diethylphthalate is a common field/lab contaminant due to its widespread use in plastics.

There was no other confirmed detection of any SVOCs during the 2006 sampling of the Jasper Equivalent Aquifer System.

Pesticides and PCBs

Table 14-11 shows the pesticide and PCB parameters for which samples are collected at each well. Due to the large number of analytes in this category, a total list of the analytical results for each analyte is not provided, however any detection of a pesticide or PCB would be discussed in this section.

No pesticide or PCB was detected during the 2006 sampling of the Jasper Equivalent Aquifer System.

Common Water Characteristics

Table 14-1 highlights some of the more common water characteristics that are considered when studying ground water quality. The minimum, maximum, and average values that were found during the current sampling of the Jasper Equivalent Aquifer System for chloride, field pH, hardness, iron, and nitrite/nitrate (as N) are listed in the table. Figures 14-2, 14-3, 14-4, and 14-5 respectively, represent the contoured data for pH, TDS, chloride, and iron. The data values that are contoured and reported in the following maps are derived from the current sampling of each well. Averaged data values are used when duplicate samples were collected. The data average for hardness show that the ground water produced from this aquifer is soft[1]

Table 14-1 Common Water Characteristics

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
Chloride (ppm)	2.3	121	24.5
Field pH (SU)	7.96	9.22	8.67
Hardness (ppm)	<5	11.3	5.8
Iron (ppb)	<20	211	30.9
Nitrates/Nitrites (ppm)	<0.05	0.16	<0.05
TDS (ppm)	171	481	249.7

[1] Classification based on hardness scale from: *Peavey, H. S. et all. Environmental Engineering, 1985.*

SUMMARY AND RECOMMENDATIONS

In summary, the data show that the ground water produced from the Jasper Equivalent Aquifer System is soft and that no primary MCLs were exceeded. Furthermore, this aquifer is of good quality when considering taste, odor, or appearance guidelines. A comparison of present and historical BMP data averages also shows that for the most part the data averages are fairly consistent, with increases in pH, alkalinity and chloride.

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

Table 14-2 List of Wells Sampled

DOTD WELL NUMBER	PARISH	DATE SAMPLED	OWNER	DEPTH (FEET)	WELL USE
EB-630	E BATON ROUGE	4/24/2006	BATON ROUGE WATER CO.	2253	PUBLIC SUPPLY
EB-854	E BATON ROUGE	4/25/2006	CITY OF ZACHARY	2090	PUBLIC SUPPLY
EF-272	E FELICIANA	4/25/2006	LA. WAR VETS HOME	1325	PUBLIC SUPPLY
LI-185	LIVINGSTON	4/24/2006	CITY OF DENHAM SPRINGS	2610	PUBLIC SUPPLY
LI-229	LIVINGSTON	4/4/2006	WARD 2 WATER DISTRICT	1826	PUBLIC SUPPLY
LI-257	LIVINGSTON	4/4/2006	VILLAGE OF ALBANY	1842	PUBLIC SUPPLY
PC-275	POINTE COUPEE	4/25/2006	PRIVATE OWNER	1912	DOMESTIC
SH-104	ST HELENA	4/24/2006	CAL MAINE FOODS	1652	INDUSTRIAL
ST-763	ST TAMMANY	4/3/2006	LDOTD	2230	PUBLIC SUPPLY
ST-995	ST TAMMANY	4/3/2006	PRIVATE OWNER	2290	IRRIGATION
ST-FOLSOM	ST TAMMANY	4/3/2006	VILLAGE OF FOLSOM	2265	PUBLIC SUPPLY
TA-560	TANGIPAHOA	4/4/2006	TOWN OF ROSELAND	2032	PUBLIC SUPPLY
TA-826	TANGIPAHOA	4/4/2006	CITY OF PONCHATOULA	2015	PUBLIC SUPPLY
WA-248	WASHINGTON	4/3/2006	TOWN OF FRANKLINTON	2700	PUBLIC SUPPLY
WF-264	W FELICIANA	4/25/2006	W. FELICIANA PARISH UTILITIES	960	PUBLIC SUPPLY

Table 14-3 Summary of Water Quality Data

Well Name	pH SU	Sal. ppt	Sp. Cond. mmhos/cm	TDS g/L	Temp. Deg. C	Alk. ppm	NH3 ppm	Cl ppm	Color PCU	Hard. ppm	Nitrite-Nitrate (as N) ppm	TKN ppm	Tot. P ppm	Sp. Cond. umhos/cm	SO4 ppm	TDS ppm	TSS ppm	Turb. NTU
LABORATORY DETECTION LIMITS →						2.0	0.1	1.3	5.0	5.0	0.05	0.1	0.05	10	1.3	4.0	4.0	1.0
	FIELD PARAMETERS					LABORATORY PARAMETERS												
EB-630	9.03	0.38	0.784	0.51	32.36	191	0.23	110	10	9	<0.05	0.28	0.18	732	8.8	406	<4	<1
EB-854	8.85	0.14	0.302	0.20	30.37	145	0.27	2.4	<5	<5	<0.05	0.4	0.18	281	9	177	<4	<1
EF-272	8.80	0.16	0.345	0.22	24.72	166	<0.1	5.1	<5	<5	0.16	<0.1	0.32	329	7.6	197	<4	<1
LI-185	8.70	0.13	0.282	0.18	32.79	134	0.13	3	10	7.2	<0.05	0.16	0.19	264	7.9	175	<4	<1
LI-185*	8.70	0.13	0.282	0.18	32.79	134	0.2	3	10	7.4	<0.05	0.31	0.21	264	8	191	<4	<1
LI-229	8.91	0.15	0.318	0.21	28.35	155	0.22	2.6	<5	5.2	<0.05	0.4	0.13	312	8.2	198	<4	<1
LI-257	8.37	0.12	0.247	0.16	29.26	115	0.24	3.1	<5	<5	<0.05	0.3	0.22	241	8.7	177	<4	<1
PC-275	9.22	0.33	0.672	0.44	26.49	308	0.52	25.4	45	<5	<0.05	0.63	0.33	644	9.6	372	<4	<1
SH-104	9.20	0.20	0.419	0.27	27.33	209	0.25	3	10	<5	<0.05	0.29	0.44	398	7.7	249	<4	<1
ST-763	8.28	0.23	0.473	0.31	29.66	235	0.73	121	†12	11.3	<0.05	0.93	0.13	827	6.5	475	<4	†1
ST-763*	8.28	0.23	0.473	0.31	29.66	234	0.71	117	†12	11.2	<0.05	1.21	0.14	819	6.6	481	<4	†1
ST-995	7.96	0.09	0.196	0.13	28.77	86.4	0.18	2.8	†5	9.6	<0.05	0.3	0.33	192	8.5	177	<4	†1
ST-FOLSOM	8.93	0.13	0.270	0.18	29.60	126	0.23	2.8	<5	<5	<0.05	0.34	0.18	263	9.2	185	<4	†1
TA-560	8.46	0.10	0.222	0.14	26.74	103	0.15	2.7	<5	<5	<0.05	0.14	0.58	219	7.9	171	<4	<1
TA-826	8.91	0.15	0.329	0.21	30.72	158	0.16	2.7	<5	8.4	<0.05	0.61	0.18	322	10	212	<4	<1
WA-248	8.62	0.17	0.358	0.23	31.04	168	0.39	8	20	<5	<0.05	0.63	0.52	359	8.1	224	<4	<1
WF-264	8.20	0.14	0.291	0.19	25.07	143	0.27	2.3	<5	9.3	<0.05	0.35	0.13	276	7.9	178	<4	<1

*Denotes Duplicate Sample
†Estimated Value

Table 14-4 Summary of Inorganic Data

WELL NAME	Antimony ppb	Arsenic ppb	Barium ppb	Beryllium ppb	Cadmium ppb	Chromium ppb	Copper ppb	Iron ppb	Lead ppb	Mercury ppb	Nickel ppb	Selenium ppb	Silver ppb	Thallium ppb	Zinc ppb
Laboratory Detection Limits	50	20	2	1	1	5	10	20	20	0.05	5	5	2.5	5	10
EB-630	<50	<20	27.5	<1	<1	<5	15.3	211	<20	<0.05	<5	<5	<2.5	<5	<10
EB-854	<50	<20	5.9	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
EF-272	<50	<20	3.9	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
LI-185	<50	<20	19.8	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
LI-185*	<50	<20	19.3	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
LI-229	<50	<20	11.5	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
LI-257	<50	<20	6.4	<1	<1	<5	<10	44.9	<20	<0.05	<5	<5	<2.5	<5	<10
PC-275	<50	<20	8.6	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
SH-104	<50	<20	2.5	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
ST-763	<50	<20	27.8	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
ST-763*	<50	<20	28.1	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
ST-995	<50	<20	9.2	<1	<1	<5	<10	35.8	<20	<0.05	<5	<5	<2.5	<5	<10
ST-FOLSOM	<50	<20	<2	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
TA-560	<50	<20	<2	<1	<1	<5	<10	72.9	<20	<0.05	<5	<5	<2.5	<5	<10
TA-826	<50	<20	23.5	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
WA-248	<50	<20	3.4	<1	<1	<5	<10	<20	<20	<0.05	<5	<5	<2.5	<5	<10
WF-264	<50	<20	43.9	<1	<1	<5	<10	41.1	<20	<0.05	<5	<5	<2.5	<5	<10

* Denotes Duplicate Sample

Table 14-5 Current Year Water Quality Statistics

	PARAMETER	MINIMUM	MAXIMUM	AVERAGE
FIELD	Temperature (^{O}C)	24.72	32.79	29.16
	pH (SU)	7.96	9.22	8.67
	Specific Conductance (mmhos/cm)	0.196	0.784	0.368
	Salinity (ppt)	0.09	0.38	0.18
	TDS (g/L)	0.127	0.51	0.239
LABORATORY	Alkalinity (ppm)	86.4	308	165.3
	Chloride (ppm)	2.3	121	24.5
	Color (PCU)	<5	45	8.9
	Specific Conductance (umhos/cm)	192	827	396.6
	Sulfate (ppm)	6.5	10	8.3
	TDS (ppm)	171	481	249.7
	TSS (ppm)	<4	<4	<4
	Turbidity (NTU)	<1	<1	<1
	Ammonia, as N (ppm)	<0.1	0.73	0.29
	Hardness (ppm)	<5	11.3	5.8
	Nitrate - Nitrite, as N (ppm)	<0.05	0.16	<0.05
	TKN (ppm)	<0.1	1.21	0.43
	Total Phosphorous (ppm)	0.13	0.58	0.26

Table 14-6 Current Year Inorganic Statistics

PARAMETER	MINIMUM	MAXIMUM	AVERAGE
Antimony (ppb)	<50	<50	<50
Arsenic (ppb)	<20	<20	<20
Barium (ppb)	<2	43.9	14.3
Beryllium (ppb)	<1	<1	<1
Cadmium (ppb)	<1	<1	<1
Chromium (ppb)	<5	<5	<5
Copper (ppb)	<10	15.3	<10
Iron (ppb)	<20	211	30.9
Lead (ppb)	<20	<20	<20
Mercury (ppb)	<0.05	<0.05	<0.05
Nickel (ppb)	<5	<5	<5
Selenium (ppb)	<5	<5	<5
Silver (ppb)	<2.5	<2.5	<2.5
Thallium (ppb)	<5	<5	<5
Zinc (ppb)	<10	<10	<10

Table 14-7 Three-year Water Quality Statistics

	PARAMETER	FY 1997 AVERAGE	FY 2000 AVERAGE	FY 2003 AVERAGE	FY 2006 AVERAGE
FIELD	Temperature (^{O}C)	29.00	28.84	28.13	29.16
	pH (SU)	7.64	Invalid Data	8.67	8.67
	Specific Conductance (mmhos/cm)	0.35	0.38	0.37	0.368
	Field Salinity (ppt)	0.17	0.18	0.17	0.18
LABORATORY	Alkalinity (ppm)	137.3	167.2	163.2	165.3
	Chloride (ppm)	12.1	17.9	14.4	24.5
	Color (ppm)	8.1	5.9	10.3	8.9
	Specific Conductance (umhos/cm)	335.0	393.9	343.0	396.6
	Sulfate (ppm)	8.8	7.3	8.1	8.3
	TDS (ppm)	258.3	251.4	221.4	249.7
	TSS (ppm)	4.1	8.6	<4.00	<4
	Turbidity (NTU)	<1	1.1	1.1	<1
	Ammonia, as N (ppm)	0.31	0.27	0.24	0.29
	Hardness (ppm)	6.9	5.89	10.8	5.8
	Nitrate - Nitrite, as N (ppm)	<0.05	<0.02	0.06	<0.05
	TKN (ppm)	0.19	0.47	0.33	0.43
	Total Phosphorous (ppm)	0.20	0.28	0.32	0.26

Table 14-8 Three-year Inorganic Statistics

PARAMETER	FY 1997 AVERAGE	FY 2000 AVERAGE	FY 2003 AVERAGE	FY 2006 AVERAGE
Antimony (ppb)	7.78	<5	<5	<50
Arsenic (ppb)	<5	<5	<5	<20
Barium (ppb)	24.20	11.65	22.20	14.3
Beryllium (ppb)	<1	<1	<1	<1
Cadmium (ppb)	1.13	1.02	<1	<1
Chromium (ppb)	<5	<5	<5	<5
Copper (ppb)	<5	14.01	<5	<10
Iron (ppb)	27.46	28.25	86.47	30.9
Lead (ppb)	<10	<10	<10	<20
Mercury (ppb)	<0.05	<0.05	<0.05	<0.05
Nickel (ppb)	<5	<5	<5	<5
Selenium (ppb)	<5	<5	<5	<5
Silver (ppb)	<1	<1	<1	<2.5
Thallium (ppb)	<5	<5	<5	<5
Zinc (ppb)	<10	22.92	56.80	<10

Table 14-9 List of VOC Analytical Parameters

BASELINE MONITORING PROGRAM
VOLATILE ORGANICS BY EPA METHOD 624

COMPOUND	DETECTION LIMIT (ppb)
1,1-DICHLOROETHANE	2
1,1-DICHLOROETHENE	2
1,1,1-TRICHLOROETHANE	2
1,1,2-TRICHLOROETHANE	2
1,1,2,2-TETRACHLOROETHANE	2
1,2-DICHLOROBENZENE	2
1,2-DICHLOROETHANE	2
1,2-DICHLOROPROPANE	2
1,3-DICHLOROBENZENE	2
1,4-DICHLOROBENZENE	2
BENZENE	2
BROMOFORM	2
CARBON TETRACHLORIDE	2
CHLOROBENZENE	2
DIBROMOCHLOROMETHANE	2
CHLOROETHANE	2
TRANS-1,2-DICHLOROETHENE	2
CIS-1,3-DICHLOROPROPENE	2
BROMODICHLOROMETHANE	2
METHYLENE CHLORIDE	2
ETHYLBENZENE	2
BROMOMETHANE	2
CHLOROMETHANE	2
METHYLENE CHLORIDE	2
O-XYLENE	2
STYRENE	2
METHYL-t-BUTYL ETHER	2
TETRACHLOROETHENE	2
TOLUENE	2
TRANS-1,3-DICHLOROPROPENE	2
TRICHLOROETHENE	2
TRICHLOROFLUOROMETHANE	2
CHLOROFORM	2
VINYL CHLORIDE	2

ppb = parts per billion

Table 14-10 List of Semivolatile Analytical Parameters

BASELINE MONITORING PROGRAM
SEMIVOLATILE ORGANICS BY EPA METHOD 625

COMPOUND	DETECTION LIMIT (ppb)
1,2-Dichlorobenzene	10
1,2,3-Trichlorobenzene	10
1,2,3,4-Tetrachlorobenzene	10
1,2,4-Trichlorobenzene	10
1,2,4,5-Tetrachlorobenzene	10
1,3-Dichlorobenzene	10
1,3,5-Trichlorobenzene	10
1,4-Dichlorobenzene	10
2-Chloronaphthalene	10
2-Chlorophenol	20
2-Methyl-4,6-dinitrophenol	20
2-Nitrophenol	20
2,4-Dichlorophenol	20
2,4-Dimethylphenol	20
2,4-Dinitrophenol	20
2,4-Dinitrotoluene	10
2,4,6-Trichlorophenol	20
2,6-Dinitrotoluene	10
3,3'-Dichlorobenzidine	10
4-Bromophenyl phenyl ether	10
4-Chloro-3-methylphenol	20
4-Chlorophenyl phenyl ether	10
4-Nitrophenol	20
Acenaphthene	10
Acenaphthylene	10
Anthracene	10
Benzidine	20
Benzo[a]pyrene	10
Benzo[k]fluoranthene	10
Benzo[a]anthracene	10
Benzo[b]fluoranthene	10
Benzo[g,h,i]perylene	10
Bis(2-chloroethoxy)methane	10
Bis(2-ethylhexyl)phthalate	10
Bis(2-chloroethyl)ether	10
Bis(2-chloroethyl)ether	10
Bis(2-chloroisopropyl)ether	10
Butylbenzylphthalate	10
Chrysene	10

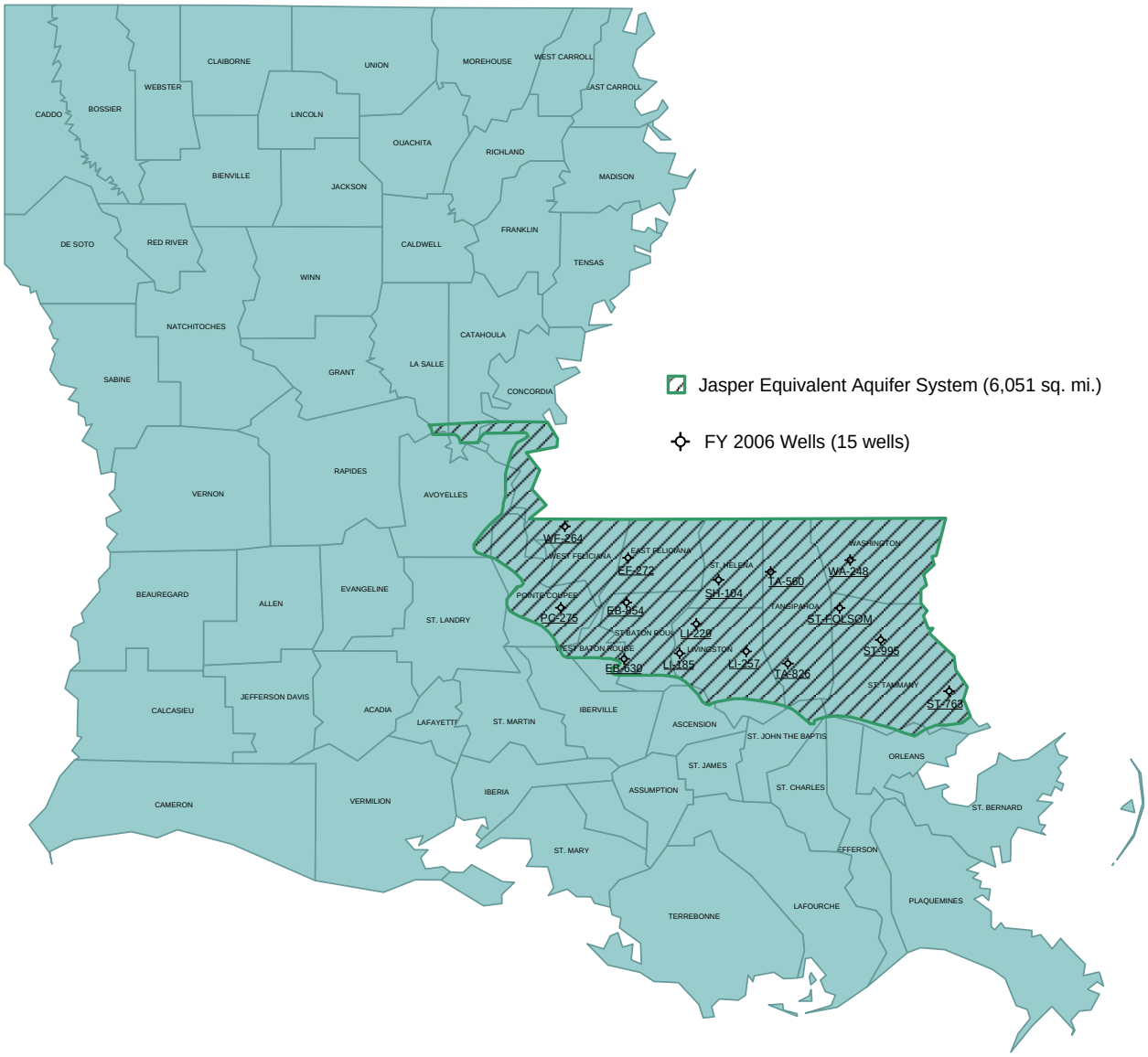
Table 14-10 (Cont'd)
Semivolatile Parameters

COMPOUND	DETECTION LIMIT (ppb)
Dibenzo[a,h]anthracene	10
Diethylphthalate	10
Dimethylphthalate	10
Di-n-butylphthalate	10
Di-n-octylphthalate	10
Fluoranthene	10
Fluorene	10
Hexachlorobenzene	10
Hexachlorobutadiene	10
Hexachlorocyclopentadiene	10
Hexachloroethane	10
Indeno[1,2,3-cd]pyrene	10
Isophorone	10
Naphthalene	10
Nitrobenzene	10
N-Nitrosodimethylamine	10
N-Nitrosodiphenylamine	10
N-nitroso-di-n-propylamine	10
Pentachlorobenzene	10
Pentachlorophenol	20
Phenanthrene	10
Phenol	20
Pyrene	10

Table 14-11 List of Pesticide and PCB Analytical Parameters
BASELINE MONITORING PROGRAM
EPA METHOD 625

COMPOUND	DETECTION LIMIT (ppb)
4,4'-DDD	2
4,4'-DDE	2
4,4'-DDT	2
Aldrin	2
alpha-BHC	2
beta-BHC	2
delta-BHC	2
gamma-BHC (Lindane)	2
Chlordane	2
Dieldrin	2
Endosulfan I	2
Endosulfan II	2
Endosulfan sulfate	2
Endrin	2
Endrin aldehyde	2
Heptachlor	2
Heptachlor epoxide	2
Toxaphene	75
Aroclor-1016	10
Aroclor-1221	10
Aroclor-1232	10
Aroclor-1242	10
Aroclor-1248	10
Aroclor-1254	10
Aroclor-1260	10

BASELINE MONITORING 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 14-1 Location Plat, Jasper Equivalent Aquifer System

JASPER EQUIVALENT AQUIFER SYSTEM - pH

Baseline Monitoring Program, FY2006

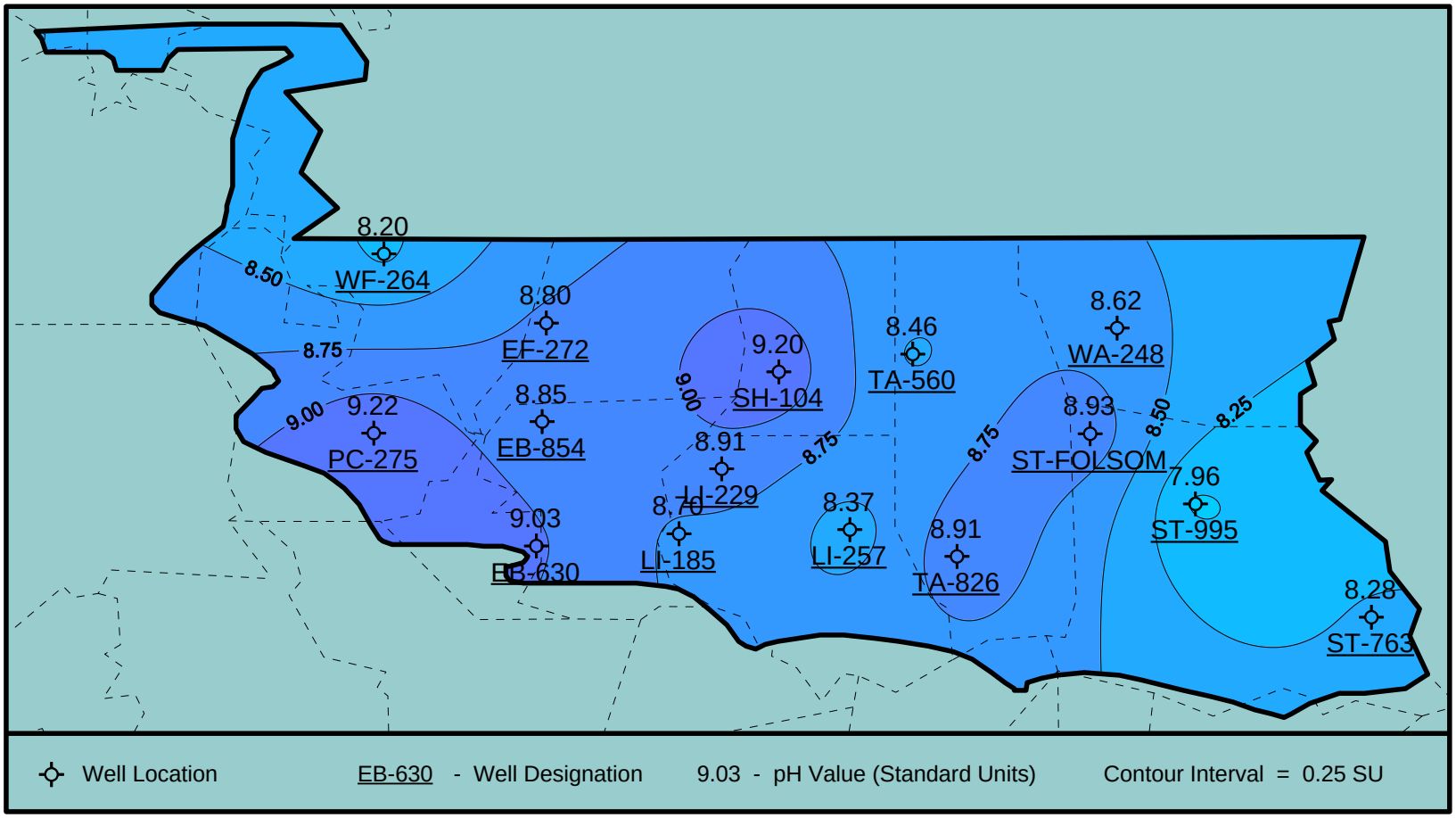


Figure 14-2 Map of pH Data

JASPER EQUIVALENT AQUIFER SYSTEM
Total Dissolved Solids

Baseline Monitoring Program, FY2006

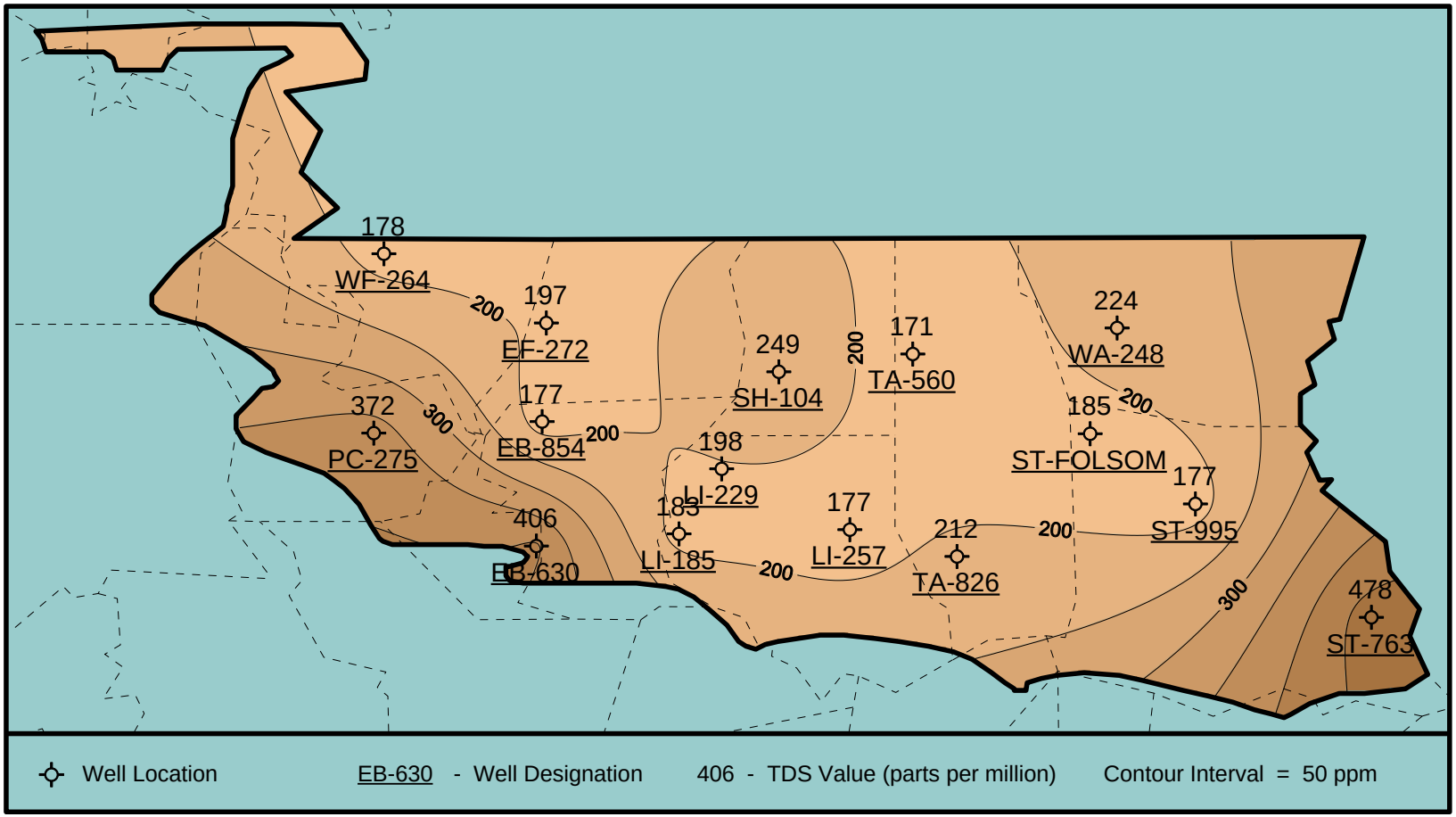


Figure 14-3 Map of TDS Data

JASPER EQUIVALENT AQUIFER SYSTEM - Chloride

Baseline Monitoring Program, FY2006

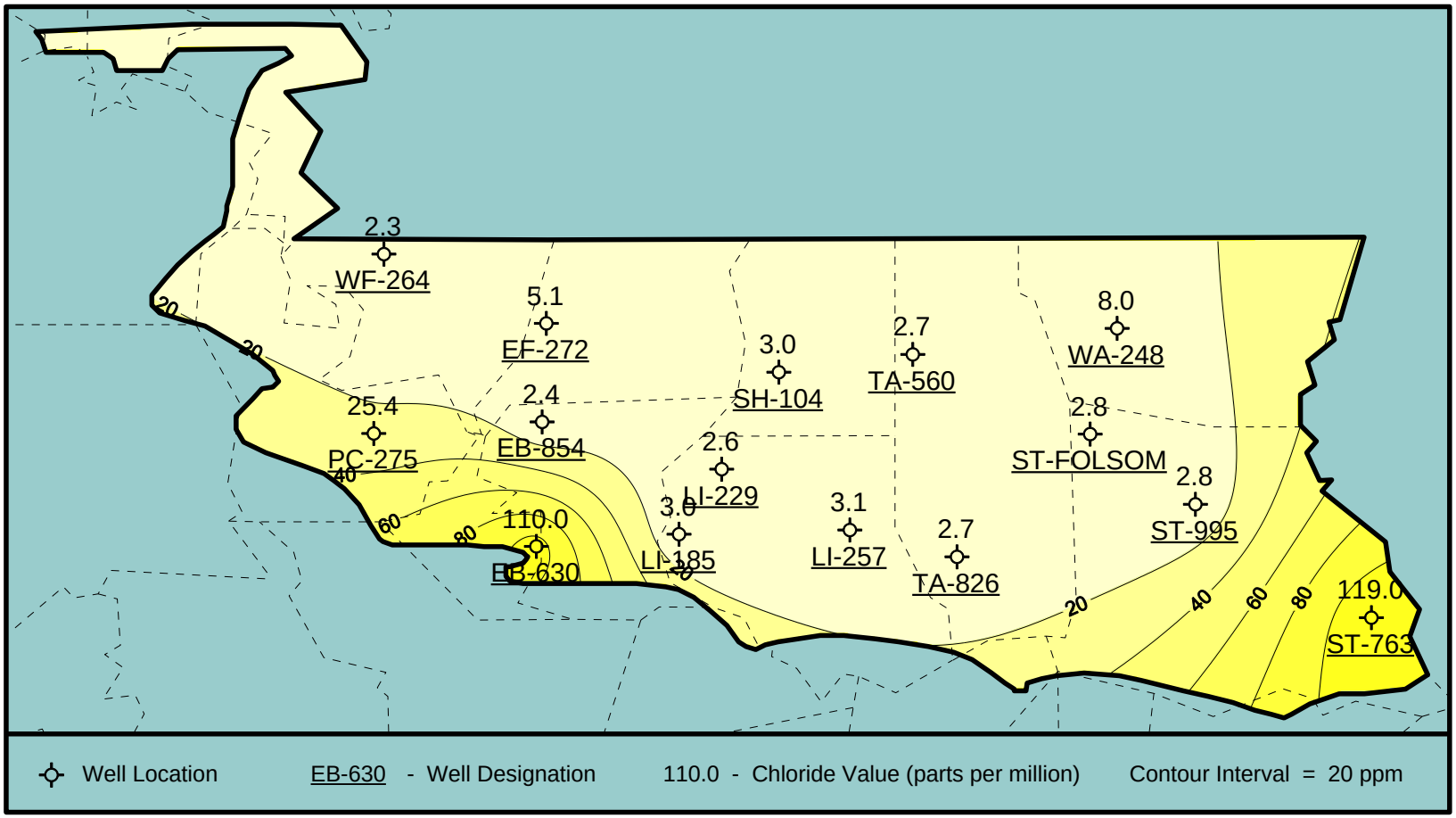


Figure 14-4 Map of Chloride Data

JASPER EQUIVALENT AQUIFER SYSTEM - Iron

Baseline Monitoring Program, FY2006

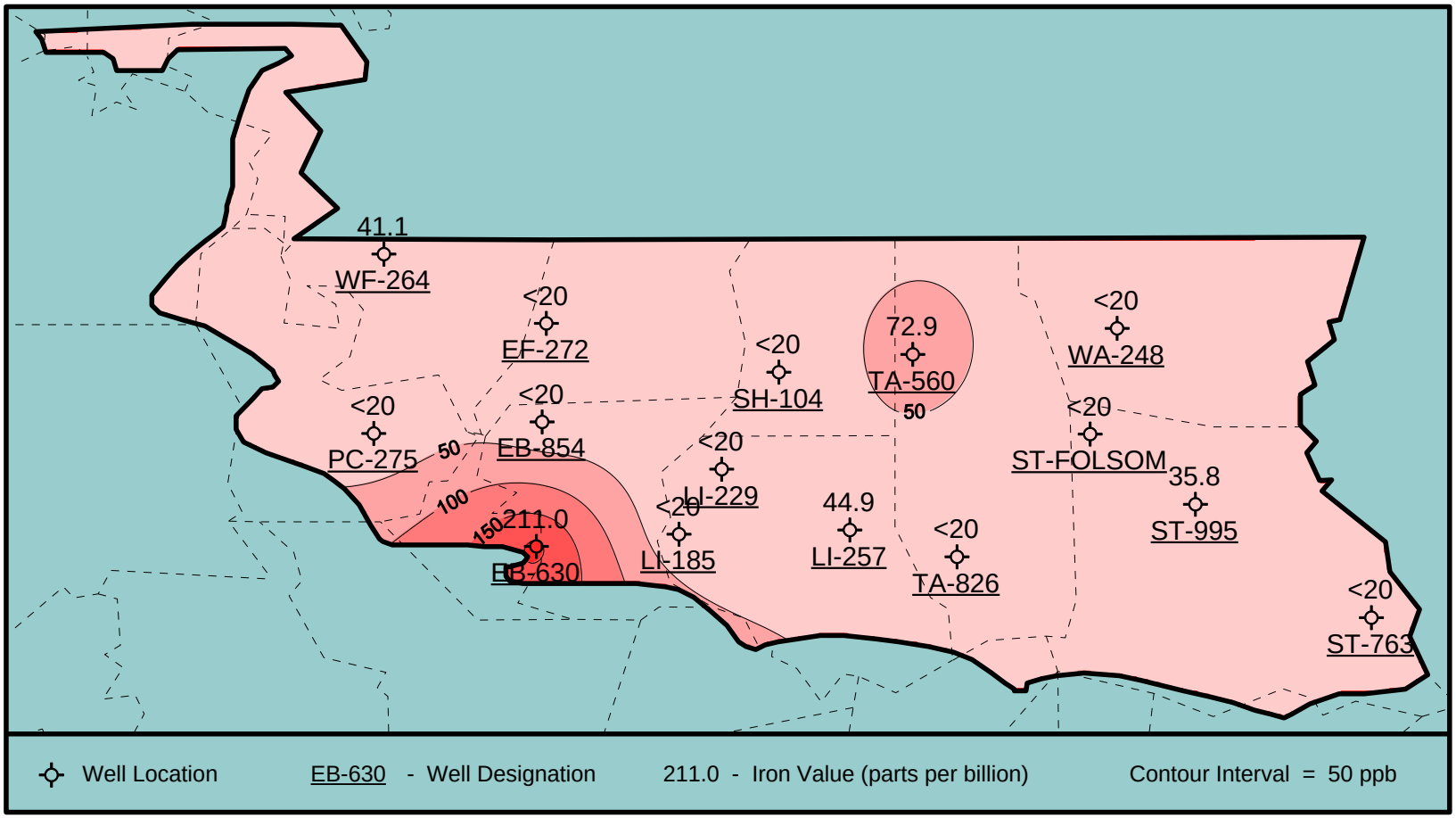


Figure 14-5 Map of Iron Data