WATER QUALITY TECHNICAL REPORT
FOR THE
LEE COUNTY CONSTRUCTION & DEMOLITION DEBRIS RECYCLING FACILITY
LOCATED AT THE
LEE COUNTY SOLID WASTE ENERGY RECOVERY FACILITY
(FEBRUARY 2011 – FEBRUARY 2013)

WACS Facility ID: 93715

Prepared for:

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1.0 INTRODUCTION

This Water Quality Technical Report was prepared for the Lee County Construction & Demolition Debris Recycling Facility (CDDRF) located at the Lee County Solid Waste Energy Recover Facility (SWERF) in accordance with the requirements of Rule 62-701.510(8)(b), F.A.C. Ground water monitoring is conducted at the SWERF and CDDRF in accordance with the Groundwater Monitoring Plan (GWMP) dated August 2010 and approved by the Florida Department of Environmental Protection (FDEP) in correspondence dated October 19, 2010. The GWMP is based on the Construction and Demolition Debris Recycling Facility Rules contained in 62-701.730, F.A.C. which cite Rule 62-701.510, F.A.C. for ground water monitoring design and reporting with the exceptions described in Rule 62-701.730(4)(b). The approved GWMP dated August 2010 is summarized below.

FDEP's October 19, 2010 correspondence specified that the technical report required for C&D facilities would commence in February 2011 for the 2.5 years data collection period. Thus, in accordance with Rule 62-701.510(8)(b), F.A.C., this report summarizes and interprets the water quality and water level measurements collected from the CDDRF's approved ground water monitoring well network for the period of February 2011 through March 2013 and contains the information outlined in Rule 62-701.510(8)(b)1.-8., F.A.C. as described in detail below. In addition, this report summarizes and interprets the water level measurements collected from the SWERFs ground water monitoring wells, including both the shallow and sandstone monitoring wells, during the same period. The ground water elevation data from the SWERF's shallow and sandstone wells was used to determine ground water flow rates and ground water flow direction across the site.

The August 2010 GWMP includes two ground water monitoring (GWM) networks, one monitoring the SWERF and the other monitoring the CDDRF. The SWERF's GWM network includes the following six wells which were installed to monitor the shallow/water table aquifer (WTE-1S, WTE-2S, WTE-3SR, WTE-4S, WTE-5S, and WTE-6S):

- Background Well: WTE-1S
- Detection Wells: WTE-2S, WTE-3SR, WTE-4S, WTE-5S, and WTE-6S.

The CDDRF's GWM network includes the following three wells that were installed to monitor the shallow/water table aquifer (WTE-2S, WTE-3SR, and WTE-4S):

- Background Well: WTE-2S
- Detection Wells: WTE-3SR and WTE-4S

In accordance with the approved GWMP and FDEP's October 19, 2010 correspondence approving the GWMP, ground water samples are collected from the shallow/water table aquifer GWM wells semi-annually during February and August and analyzed for the parameters listed in Rule 62-701.730(4)(b), F.A.C.

Although not currently monitored for water quality under the approved GWMP, six deep wells were previously installed to monitor the sandstone aquifer at the SWERF. In accordance with the Department's approval of the August 2010 GWMP dated October 19, 2010, the sandstone aquifer monitoring wells are inspected and maintained and sampled for groundwater elevations on the same schedule as the shallow aquifer monitoring wells.

This technical evaluation report summarizes data from the First Semiannual 2011 through the First Semiannual 2013 sampling events and conforms with the requirements outlined in Chapter 62-701.510(8)(b) FAC. The following is a summary of the information included in this report:

- Tabular displays of any data from the CDDRF wells which show that a monitoring parameter has been detected (Attachment 4 and Attachment 5)
- Hydrographs for all monitoring wells (Attachment 3).
- Trend analyses of any monitoring parameters consistently detected in the CDDRF wells (Section 4.5 and Attachment 7).
- Comparisons among shallow-, middle-, and deep-zone wells (Section 4.6).
- Comparisons between background water quality and the water quality in detection and compliance wells at the CDDRF (Sections 4.3, 4.4, 4.5, and 4.6).
- Correlations between related parameters at the CDDRF such as Total Dissolved Solids and Specific Conductance (Section 4.7).
- Discussion of erratic or poorly correlated data from the CDDRF wells (Section 4.8).
- An interpretation of the groundwater contour maps, including an evaluation of groundwater flow rates (Section 3.0).
- An evaluation of the adequacy of the water quality monitoring frequency and the CDDRF sampling locations based on site conditions (Section 6.0).

The five semiannual groundwater sampling events summarized in this report were conducted on the dates listed in Table 1.1. The period from the First Semiannual 2011 through the First Semiannual 2013 sampling events is referred to as the "report period" throughout this document.

Table 1.1 Summary of Sampling Events During Report Period

Sampling Event	Sampling Dates
First Semiannual 2011 (11S1)	February 9, 2011
Second Semiannual 2011 (11S2)	August 3, 2011
First Semiannual 2012 (12S1)	February 1, 2012
Second Semiannual 2012 (12S2)	August 1, 2012
First Semiannual 2013 (13S1)	February 6, 2013

2.0 PHYSICAL LOCATION AND GEOLOGICAL SETTING

2.1 SITE LOCATION

The facility is about 2.5 miles east the intersection of Interstate-75 and State Road 82, on the north side of Buckingham Road in Lee County, Florida. The facility is on a 155 acre site including the solid waste energy recovery facility, a transfer station, a household hazardous waste drop-off area, a waste tire storage facility, a horticultural waste processing facility, a recovered-materials processing facility, a construction and demolition debris recycling facility, and associated infrastructure and stormwater control. The remainder of the 155 acre site is used as buffer and conservation areas.

A map of the facility is provided in Attachment 1.

2.2 GEOLOGICAL SETTING

The geology of the facility is described in the November 2002 Supplemental Application for Power Plant Site Certification PA-90-30C (Malcolm Pirnie, 2002) and in the August 1992 Power Plant Siting Act Permit Application PA-90-30 (Malcolm Pirnie, 1992). Based on these site hydrogeological studies, there are three significant hydrologic strata beneath the facility including the shallow/water table aquifer, the Hawthorn confining unit, and the "sandstone aquifer" as described below:

- The shallow/water table aquifer is a brown to white fine sand to sandy-clayey silt extending from the ground surface to an elevation about 0 ft NGVD or 20 feet below the ground surface. The shallow aquifer (S) wells are screened in this unit.
- The Hawthorn confining unit is a green to gray silty clay to silty sand that extends from the base of the water table aquifer to about -45 ft NGVD, ranging from 40 to 50 feet thick on-site but up to 75 feet thick regionally.
- The sandstone aquifer is dense, gray, weathered (semi-consolidated) sandstone that begins at about 66 to 69 feet below the surface and continues to a thickness of about 50 feet. The sandstone aquifer (D) wells are screened in this unit.

3.0 APPROPRIATENESS OF MONITORING WELL LOCATIONS

3.1 WELL LOCATIONS & GROUNDWATER FLOW DIRECTION

Groundwater contour maps for the report period are provided in Attachment 2. The groundwater flow direction in the water table aquifer forms a converging pattern toward the the west central part of the site. The groundwater in the sandstone aquifer flows south-southwest. Monitoring wells WTE-2S (background well for the CDDRF) and WTE-1S (background well for the SWERF) serve as upgradient wells and are located on the northeast and southeast corners of the facility, respectively. Monitoring wells WTE-5S and WTE-6S are on the west side of the property. WTE-4S and WTE-3SR are located in the center of the property.

Chapter 62-701.730(4)(b)3 FAC states that the well spacing requirements of Chapter 62-701.510(3)(d)3 FAC do not apply to construction and demolition debris recycling facilities. Chapter 62-701.730(4)(b)3 FAC requires a minimum of one upgradient and two downgradient wells. Monitoring well WTE-2S is upgradient of the CDDRF and monitoring wells WTE-3SR and WTE-4S are downgradient of the CDDRF. The current monitoring system is compliant with the applicable rules.

3.2 GROUNDWATER ELEVATION

Table 3.2 lists groundwater elevation data collected during the report period. Hydrographs of the shallow/water table aquifer are provided in Attachment 3. The highest groundwater elevations were recorded during the Second Semiannual sampling events of each year and the lowest groundwater elevations were recorded during the First Semiannual sampling events of each year. There has been a decline in water level through the report period of about 1 foot. The decreasing levels correlate with lower than average rainfall during the dry season of 2011 and 2012.

Table 3.2 Groundwater Elevation Fluctuation During the Report Period

Monitoring Well		Screen Elevation (NGVD)		Groundwater Elevation (NGVD)	
		Top of Screen	Bottom of Screen	Minimum	Maximum
Shallow Aquifer Wells	WTE-1S	11.9	6.9	17.72	21.3
	WTE-2S	14.2	9.2	17.11	20.67
	WTE-3SR	12.81	7.81	16.08	19.75
	WTE-4S	12.5	7.5	14.46	18.03
	WTE-5S	10.9	5.9	16.78	20.29
	WTE-6S	13.7	8.7	13.81	17.28
Sandstone Aquifer Wells	WTE-1D	-62	-72	8.93	14.71
	WTE-2D	-63	-73	15.62	19.6
	WTE-3DR	-50.19	-60.19	14.83	18.6
	WTE-4D	-65	-75	13.3	17.19
	WTE-5D	-63	-73	15.23	19
	WTE-6D	-65	-75	12.69	16.6

Note: Screen elevations are taken from Malcolm Pirnie, 1993, except for WTE-3SR and WTE-3DR which are from Lee County, 2010.

3.3 GROUNDWATER FLOW RATES

Jones Edmunds calculated the flow rate at the site to evaluate the appropriateness of the well spacing and semi-annual sampling frequency. Malcolm Pirnie (2002) provides estimates of hydraulic conductivity (*K*) between 400 and 550 ft/day for the water table aquifer. This estimate is based on regional transmissivity (T) data compared to local aquifer thickness (b) using the K=T/b approximation. However, this method over-estimates the hydraulic conductivity since this site is in a location where the water table aquifer is relatively thin (about 20 feet) compared to the places where transmissivity data were collected. Malcolm Pirnie cites the Lee County Water Resources Management Project report (James Montgomery, 1988) as the source of the water table aquifer transmissivity for their estimation.

Descriptions of the water table aquifer from the on-site borings indicate that most of the saturated thickness of the aquifer is a “Sandy/clayey SILT with limestone fragments (MARL).” These sediments should not be able to sustain the hydraulic conductivities estimated by Pirnie. Literature values for similar materials range from 0.003 ft/day (silt and clayey sands from Fetter, 2001) to 2 ft/day (sandy loam from Schroeder, 1994). Jones Edmunds estimates that the hydraulic conductivity of the water table aquifer beneath the facility is between 2 and 20 feet/day based on lithology descriptions and slug tests conducted at similar sites in the area. We used a hydraulic conductivity of 50 feet/day in the flow rate calculations as a conservative estimate to adjust for uncertainty.

For the Sandstone aquifer, James Montgomery (1998) estimated a hydraulic conductivity of 30 ft/day, which appears to be a reasonable estimation.

Hydraulic gradients (*i*) in the shallow aquifer are measured using WTE-2S and WTE-4S to represent an average flow rate across the site. The shallow aquifer gradients range from 0.00185 to 0.00212 ft/ft during the report period. Hydraulic gradients in the sandstone aquifer are measured using WTE-2D and WTE-1D. The sandstone aquifer gradients range from 0.00237 to 0.00322 ft/ft during the report period.

Fetter (2001) describes effective porosity as the porosity available for fluid flow. Fetter cites Peyton, et al, (1986) to conclude that, “*even in lacustrine clay, water molecules could pass through all the pore throats, so the effective porosity was the same as the porosity. This suggests that at least in sediments all the pores are connected and we need not be concerned with effective porosity with respect to flow of water.*” The difference between total porosity and effective porosity only arises when the sediments become cemented and vugs or hydraulic dead-ends are produced. For unconsolidated sediments effective porosity *is* the total porosity. Soil porosity, for determining groundwater flow rate are based on the default soil, waste, and geosynthetic characteristics table in the HELP model users guide (Schroeder, 1994). The SM soils of the water table aquifer should sustain a porosity of approximately 45.3% and the poorly consolidated sand of the sandstone aquifer should sustain a porosity of 43.7%.

Based on these variables the calculated velocity (v_x) using Darcy's equation $[v_x = -(K/n)i]$ ranges from 58.91 feet/year to 80.59 feet/year with a median of 74.99 feet/year. Table 3.3 provides rate calculations for each sampling event of the report period.

Table 3.3: Groundwater Flow Rates

Wells Used to Calculate Gradient	Sampling Event	Up-gradient Elevation (ft)	Down-gradient Elevation (ft)	Distance Between Wells (ft)	***i*** (ft/ft)	***K*** (ft/day)	***n*** (unitless)	Horizontal Velocity (ft/yr)
WTE-2S to WTE-4S	11S1	18.15	15.60	1370	0.00211679	50	0.453	74.99
	11S2	20.67	18.03	1370	0.00192701	50	0.453	77.63
	12S1	17.59	15.04	1370	0.00186131	50	0.453	74.99
	12S2	19.50	16.97	1370	0.00184672	50	0.453	74.40
	13S1	17.11	14.46	1370	0.00193431	50	0.453	77.93
WTE-2D to WTE-1D	11S1	17.04	12.11	2080	0.00237019	30	0.437	59.39
	11S2	19.60	14.71	2080	0.00235096	30	0.437	58.91
	12S1	16.08	9.41	2080	0.00320673	30	0.437	80.35
	12S2	18.29	12.73	2080	0.00267308	30	0.437	66.98
	13S1	15.62	8.93	2080	0.00321635	30	0.437	80.59
					Shallow Aquifer		Mean =	75.99
							Median =	74.99
							Max =	77.93
							Min =	74.40
					Sandstone Aquifer		Mean =	69.24
							Median =	66.98
							Max =	80.59
							Min =	58.91
					Overall		Mean =	72.62
							Median =	74.99
							Max =	80.59
							Min =	58.91

Flow rates may be used to modify monitoring programs in two ways:

- Chapter 62-701.510(3)(d)3 FAC, includes a provision allowing groundwater flow rates and other site conditions to be used to demonstrate an alternate well spacing.

- Chapter 62-701.510(5)(c) FAC, provides a provision allowing groundwater flow rates and other site conditions to be used to demonstrate an alternate sampling frequency.

Jones Edmunds recommends that the routine sampling frequency remain semiannual and an alternate well spacing is not proposed at this time.

4.0 GROUNDWATER QUALITY

4.1 SAMPLING REQUIREMENTS

Groundwater data have been submitted with the semiannual groundwater monitoring reports in compliance with Chapter 62-701.510(8)(a) FAC and the Conditions of Certification. The parameters listed in the Table 4.1 are required to be analyzed semiannually at all water table wells. The wells were sampled in accordance with the approved August 2010 GWMP. The October 19, 2010 GWMP approval letter from FDEP requires semi-annual monitoring during the months of February and August.

Table 4.1 Routine Groundwater Sampling Parameter List from 62-701.730(4)(b)

Field Parameters	Laboratory Parameters
pH	Aluminum
Turbidity	Chlorides
Temperature	Nitrate
Specific Conductivity	Sulfate
Dissolved Oxygen	Total Dissolved Solids
Static Water Level (before purging)	Iron
Colors and Sheens (by observation)	Sodium
	Arsenic
	Cadmium
	Chromium
	Lead
	Mercury
	Total Ammonia-N
	Xylenes
	Those parameters listed in EPA Methods 601 and 602

Sandstone aquifer wells are required to be measured for water levels on the same semiannual schedule concurrent with the water table wells. The conditions of Certification specify that the semiannual sampling events must alternate dry-season and wet-season and be conducted approximately 6 months apart. During the report period, these events have been conducted in February (dry season) and August (wet season).

4.2 TABULAR DISPLAYS AND TREND GRAPHS

Attachment 4 provides a table of parameters that exceeded groundwater standards during the report period for the wells monitoring the CDDRF (WTE-2S, WTE-3SR and WTE-4S). Attachment 5 provides a summary table of results for detected parameters during the report period for the same wells. Attachment 6 provides groundwater chemistry graphs.

Groundwater standards include the Primary Drinking Water Standards (PDWS), Secondary Drinking Water Standards (SDWS), and Chapter 62-777 FAC Groundwater Cleanup Target

Levels (GCTL). The parameters listed in Table 4.2 were reported at or outside groundwater standards during the report period.

Table 4.2 Parameters Exceeding Groundwater Standards	
Field and Indicator Parameters	pH
	Total Dissolved Solids
Metals	Iron

Data from the monitoring wells indicate no impact on groundwater quality. The parameters reported at or outside groundwater standards are discussed below.

4.3 FIELD AND INDICATOR PARAMETERS

The pH levels in detection well WTE-4S were slightly below the SDWS lower limit of 6.5 S.U. during the first semiannual 2011 sampling event at 6.22 S.U. The range of pH reported for the site was within the narrow band of 7.57 and 6.19 S.U. These results are within the normal range of natural background for pH in the water table aquifer in Florida.

Total Dissolved Solids (TDS) concentrations above the SDWS of 500 mg/L were reported in WTE-2S ranging from 522 to 786 mg/L. The range of TDS reported for the site was within the range of 362 and 786 mg/L. These results are within the normal range of natural background for TDS in the water table aquifer in Florida.

4.4 METALS

All wells had consistent exceedances of the Iron above the SDWS of 300 µg/L. WTE-3SR had the highest Iron concentrations ranging from 2,140 to 3,110 µg/L. The range of Iron reported for the site was within the range of 712 and 3,780 µg/L. These results are within the normal range of natural background for Iron in the water table aquifer in Florida.

4.5 GROUNDWATER QUALITY TRENDS

Attachment 7 provides long-term concentration trend graphs of consistently detected parameters in the CDDRF monitoring network. Concentrations of most parameters at the site are insignificant enough that trends are inconclusive. However, the following trends are noted:

- Specific Conductance has generally declining results in all wells.
- Sulfate is increasing in WTE-2S and WTE-3SR and decreasing or stable in the other well.
- Iron appears to vary seasonally with higher concentrations in the wet season and lower concentrations in the dry season.
- Though Aluminum is only occasionally detected, Aluminum also tends to have higher concentrations in the wet season when compared to the dry season.

4.6 COMPARISON OF SHALLOW, MIDDLE, AND DEEP WELLS

The sandstone aquifer wells are not analyzed for chemical parameters. However, water levels in the sandstone aquifer are typically about 1 foot lower than the levels in the water table aquifer indicating a downward flow gradient.

4.7 RELATED PARAMETERS

Indicator parameters Specific Conductivity, Total Dissolved Solids, Chloride, and Sodium tend to display some similar trends in the CDDRF groundwater monitoring network, but the range in concentration variation is low enough that this is not conclusive. However, the low range in variation in all wells is itself an indicator that there is little to no impact on the groundwater at the site.

As mentioned in Section 4.5, Iron and Aluminum appear to vary seasonally with higher relative concentrations in the wet season when compared to the dry season. Ammonia-Nitrogen, though of vary low concentration, also appears to have a similar seasonality. A comparison of the water level and the ground surface shows that the water table in the wet season typically encounters the soil horizons where Iron and Aluminum mobilization are inherent to natural soil development processes in Florida. Normal soil-forming processes are largely dependant on the mobilization (chelation) of Iron and Aluminum. This pattern appears to occur similarly in the background as well as in the detection wells at the CDDRF.

4.8 ERRATIC AND POORLY CORRELATED DATA

The CDDRF wells show no particularly erratic or poorly correlated data during the report period except that the first semiannual sampling event of 2013 included detections of Chromium between 2.05 and 2.72 µg/L in all wells where historically Chromium is either non-detect (<1) or slightly over 1 µg/L. The low-level first semiannual 2013 sampling event Chromium detections are likely due to laboratory error. However, this error is inconsequential since the PDWS for Chromium is 100 µg/L.

5.0 SUMMARY AND RECOMMENDATIONS

Data collected from the monitoring wells during the report period indicate no impacts to the groundwater at the site.

Well locations and screened intervals are compliant with the applicable rules for monitoring construction and demolition debris recycling facilities.

Iron and Aluminum detections increase when water levels are close to the ground surface. These detections are due to Iron and Aluminum mobilization inherent to natural soil development processes in Florida.

Groundwater velocities are estimated to average about 76 feet/year. Based on the calculated velocities, the semi-annual sampling frequency is conservative. Groundwater flow direction for the water table aquifer converges in the west central part of the site. Based on the estimate groundwater flow direction, the current locations and spacing of the CDDRF wells is adequate to detect water quality impacts to the surficial aquifer at the site.

Based on the above observations, Jones Edmunds concludes that the existing groundwater monitoring plan is appropriate to monitor the facility. No revisions to the monitoring network are proposed.

6.0 REFERENCES

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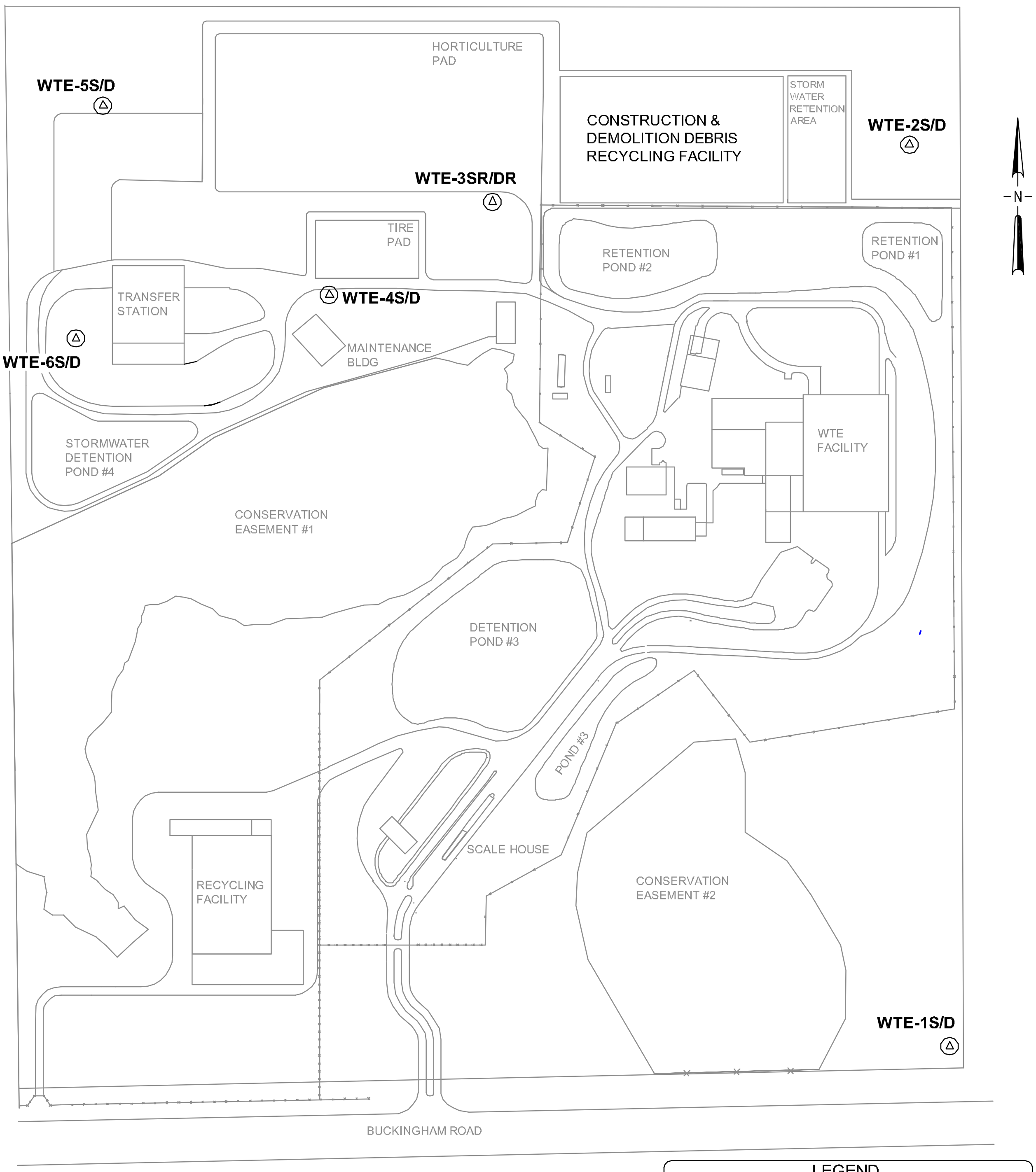
ATTACHMENT 1

SITE MAP

SHALLOW (WATER TABLE) WELLS			
WELL	TOC ELEVATION	LATITUDE	LONGITUDE
WTE-1S	21.91 FT	26° 37' 41"	81° 45' 36"
WTE-2S	24.18 FT	26° 38' 03"	81° 45' 37"
WTE-3SR	23.98 FT	26° 38' 1.62"	81° 45' 46.08"
WTE-4S	22.48 FT	26° 37' 58"	81° 45' 51"
WTE-5S	23.81 FT	26° 38' 03"	81° 45' 59"
WTE-6S	23.66 FT	26° 37' 57"	81° 45' 59"

SANDSTONE AQUIFER WELLS			
WELL	TOC ELEVATION	LATITUDE	LONGITUDE
WTE-1D	22.96 FT	26° 37' 41"	81° 45' 36"
WTE-2D	23.52 FT	26° 38' 03"	81° 45' 37"
WTE-3DR	23.91 FT	26° 38' 1.62"	81° 45' 46.14"
WTE-4D	23.81 FT	26° 37' 58"	81° 45' 51"
WTE-5D	24.50 FT	26° 38' 03"	81° 45' 59"
WTE-6D	22.91 FT	26° 37' 57"	81° 45' 59"



LEGEND

WTE-1S/D GROUNDWATER MONITORING WELL CLUSTER LOCATION

GRAPHIC SCALE

0 75 150 300

SCALE IN FEET APPROXIMATE

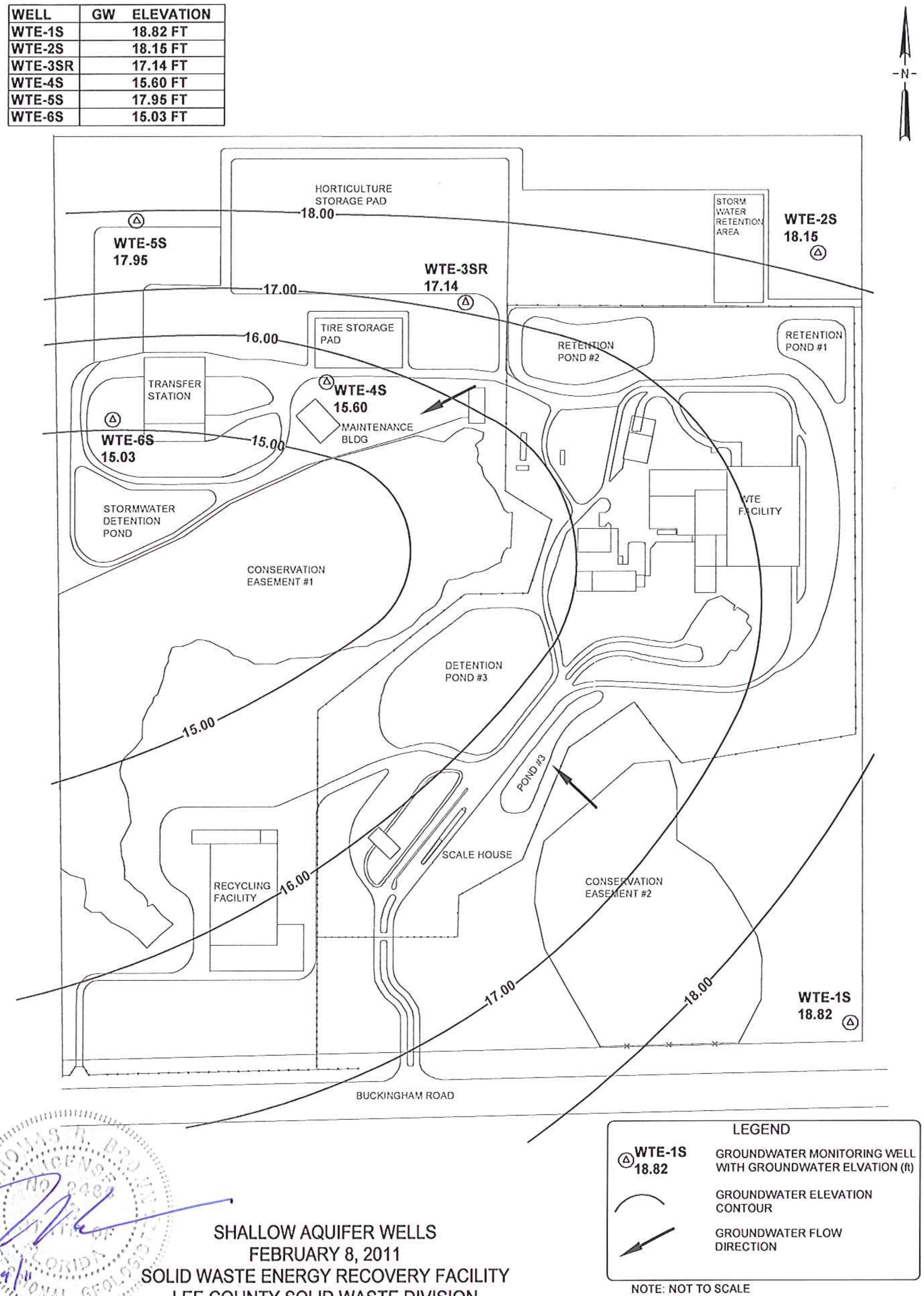
FIGURE 1: SITE MAP
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

JONES EDMUNDS

ATTACHMENT 2

GROUNDWATER CONTOUR MAPS

WELL	GW ELEVATION
WTE-1S	18.82 FT
WTE-2S	18.15 FT
WTE-3SR	17.14 FT
WTE-4S	15.60 FT
WTE-5S	17.95 FT
WTE-6S	15.03 FT



SHALLOW AQUIFER WELLS
FEBRUARY 8, 2011
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

3/29/11

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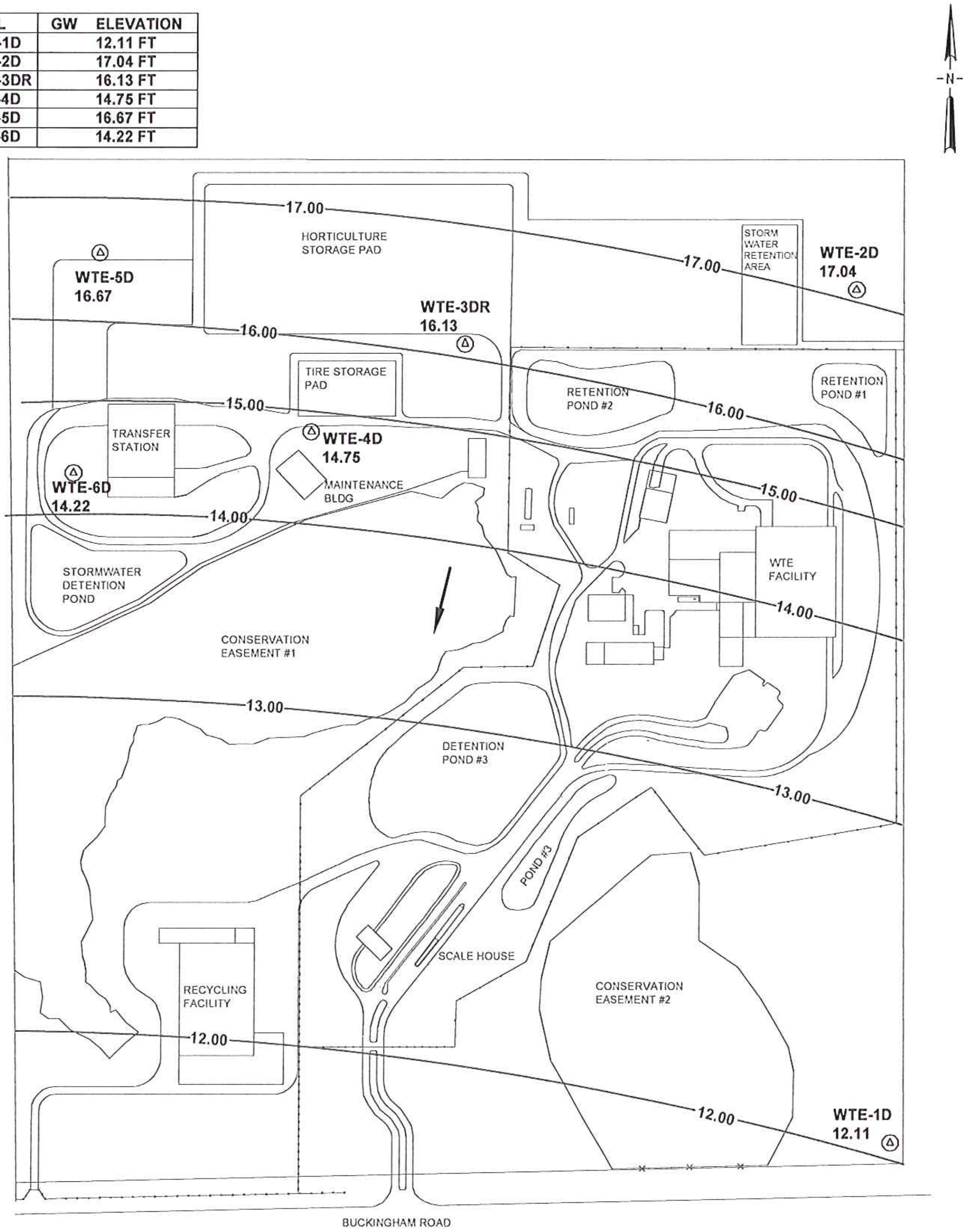
12345-005-01

WELL	GW ELEVATION
WTE-1D	12.11 FT
WTE-2D	17.04 FT
WTE-3DR	16.13 FT
WTE-4D	14.75 FT
WTE-5D	16.67 FT
WTE-6D	14.22 FT



LEGEND

WTE-1D 12.11 — GROUNDWATER MONITORING WELL WITH GROUNDWATER ELVATION (ft)

GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

NOTE: NOT TO SCALE

3/29/11

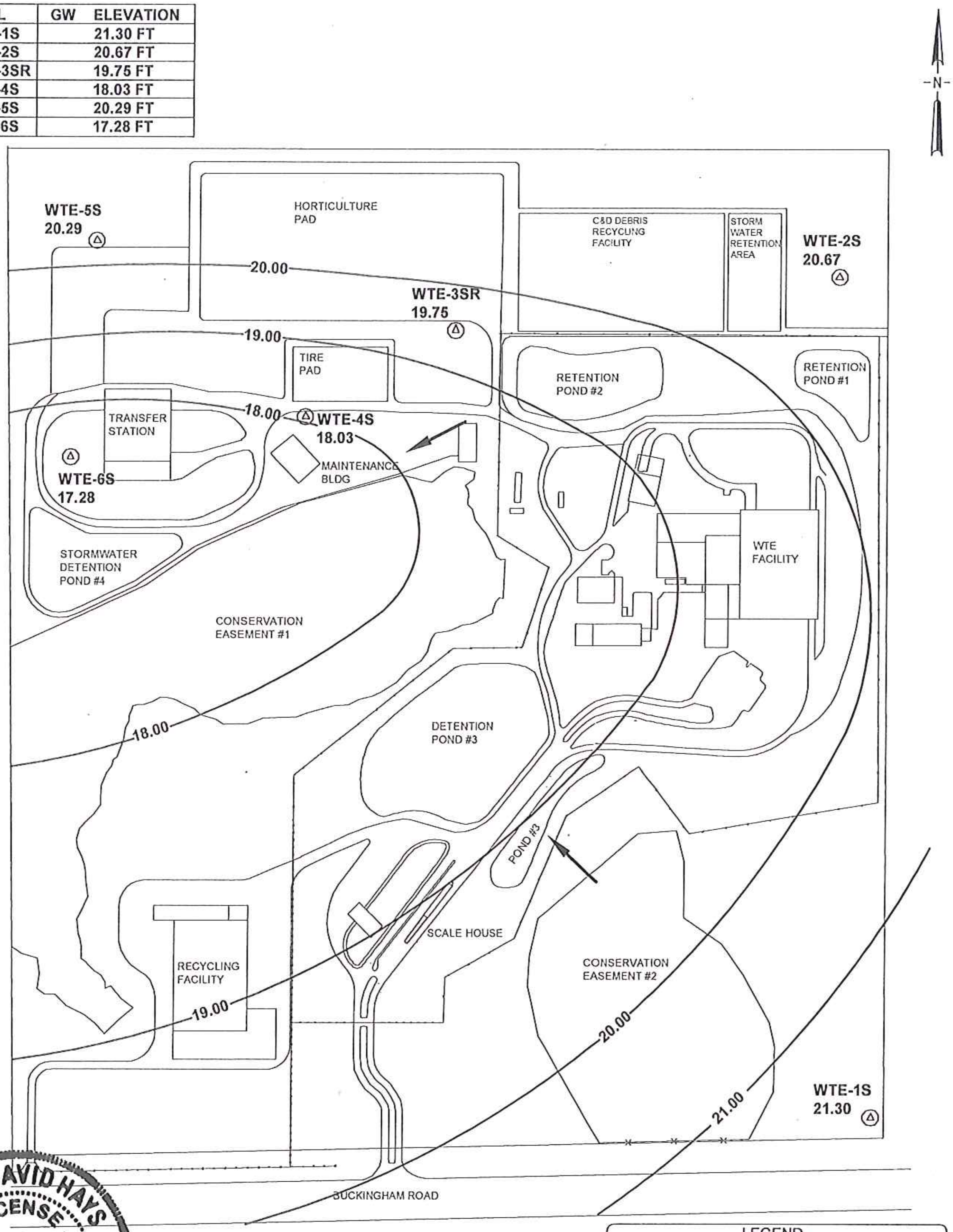
STATE OF FLORIDA

DEEP AQUIFER WELLS
FEBRUARY 8, 2011
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

JONES EDMUNDS

12345-005-01

WELL	GW ELEVATION
WTE-1S	21.30 FT
WTE-2S	20.67 FT
WTE-3SR	19.75 FT
WTE-4S	18.03 FT
WTE-5S	20.29 FT
WTE-6S	17.28 FT



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LEGEND

WTE-1S 21.30	GROUNDWATER MONITORING WELL WITH GROUNDWATER ELVATION (ft)
	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

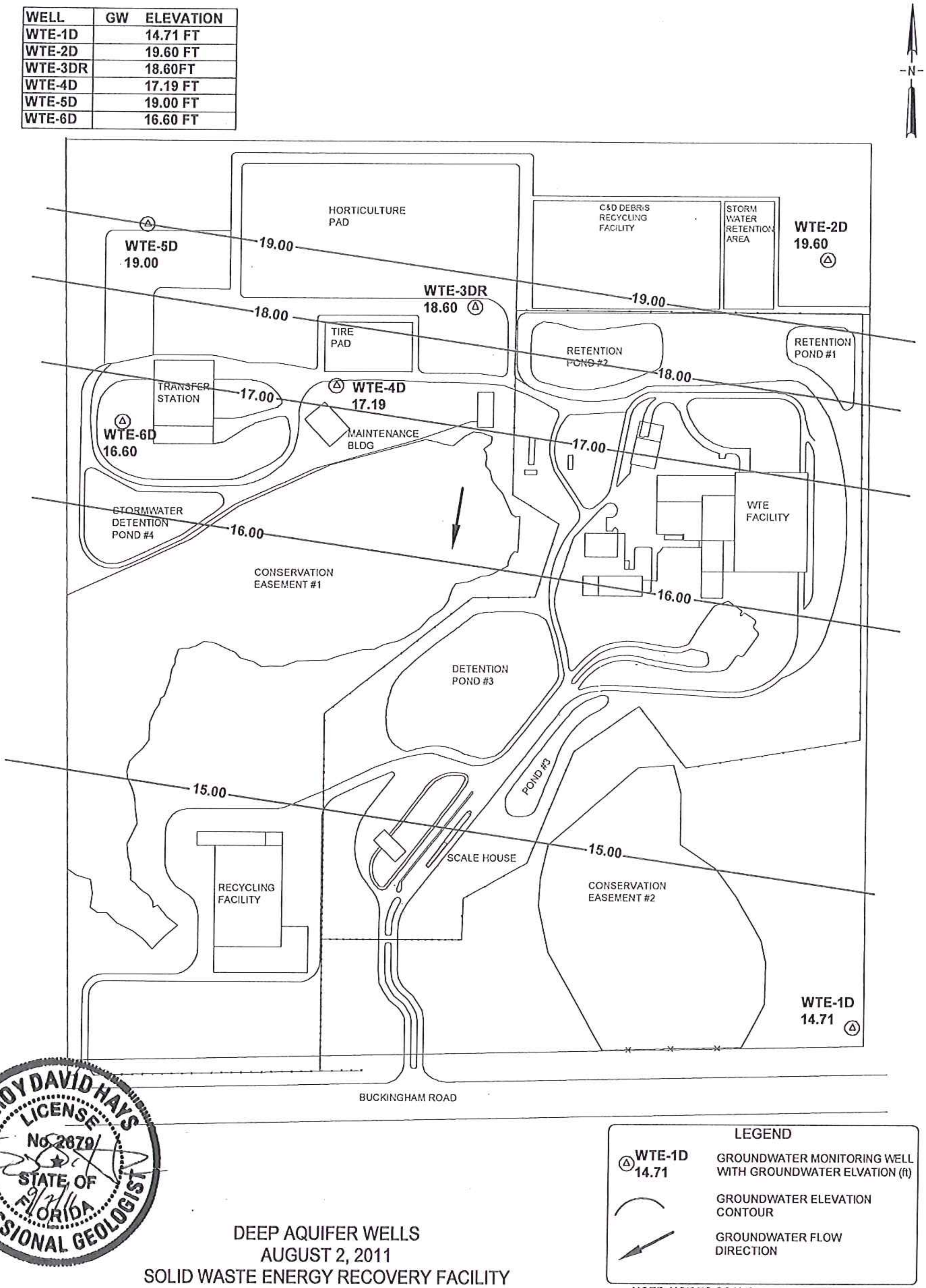
NOTE: NOT TO SCALE

SHALLOW AQUIFER WELLS
AUGUST 2, 2011
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

JONES EDMUNDS

12345-005-01

WELL	GW ELEVATION
WTE-1D	14.71 FT
WTE-2D	19.60 FT
WTE-3DR	18.60FT
WTE-4D	17.19 FT
WTE-5D	19.00 FT
WTE-6D	16.60 FT



TROY DAVID HAYS
LICENSE
No 2679
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST
9/2/16

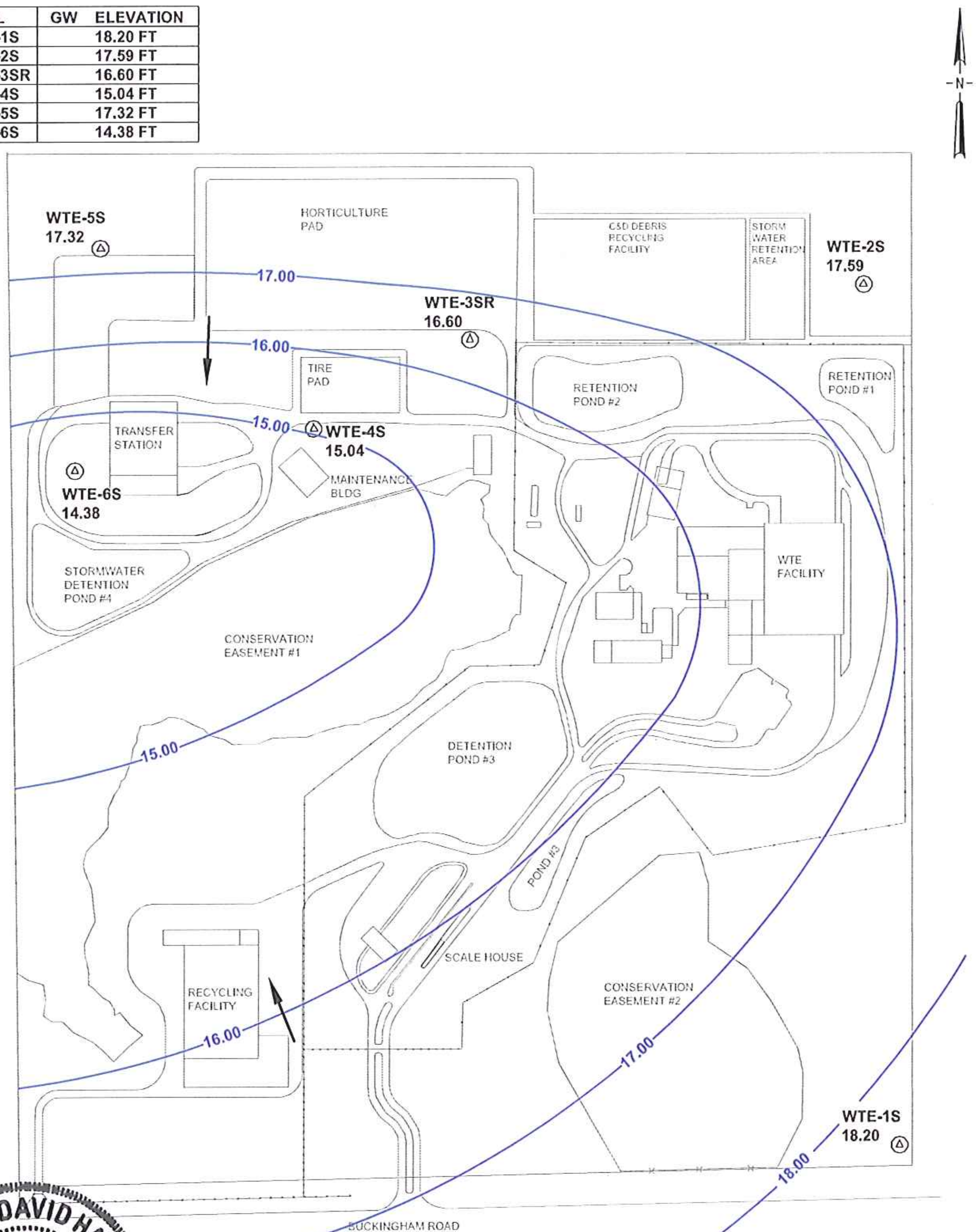
DEEP AQUIFER WELLS
AUGUST 2, 2011
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

NOTE: NOT TO SCALE

JONES EDMUNDS

PLOTTED: 2/8/2012 02:23 PM MICHELLE R. HAYS 12345-005-01

WELL	GW ELEVATION
WTE-1S	18.20 FT
WTE-2S	17.59 FT
WTE-3SR	16.60 FT
WTE-4S	15.04 FT
WTE-5S	17.32 FT
WTE-6S	14.38 FT



TROY DAVID HAYS LICENSE No. 2879 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

2/10/12

LEGEND

WTE-1S 18.20 GROUNDWATER MONITORING WELL WITH GROUNDWATER ELVATION (ft)

GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

NOTE: NOT TO SCALE

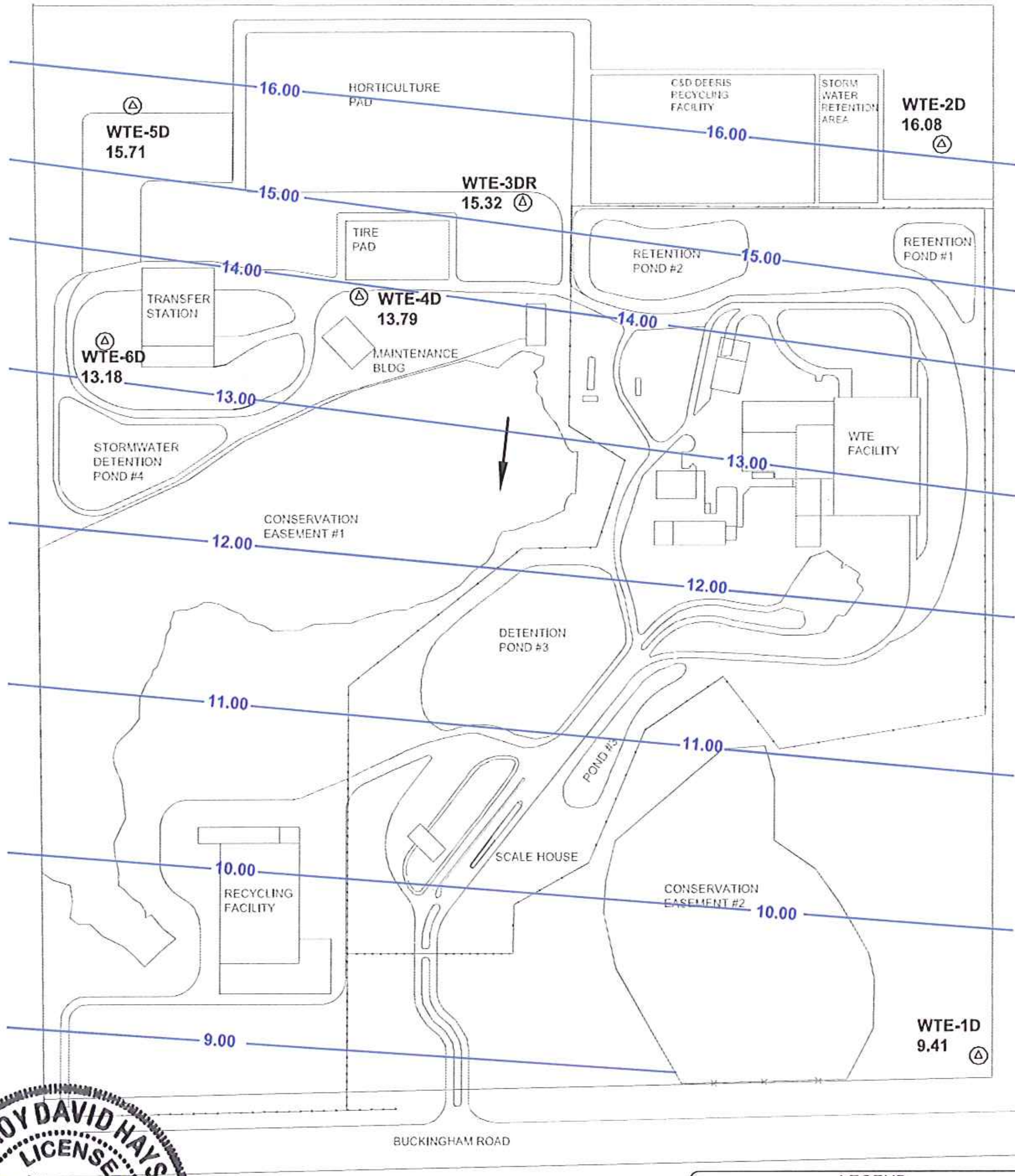
SHALLOW AQUIFER WELLS
FEBRUARY 1, 2012
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

JONES EDMUNDS

SAVED: 2/8/2012 9:18 AM MHAYS K:\JONES EDMUNDS\LEE COUNTY\WTE PLANT\12S1\WTE SHALLOW2-1-2012.DWG

WELL	GW ELEVATION
WTE-1D	9.41 FT
WTE-2D	16.08 FT
WTE-3DR	15.32FT
WTE-4D	13.79 FT
WTE-5D	15.71 FT
WTE-6D	13.18 FT

-N-



TROY DAVID HAYS
LICENSE
No. 2879
STATE OF
FLORIDA
PROFESSIONAL GEOLOGIST

2/20/12

LEGEND

WTE-1D 9.41	GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION (ft)
	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

NOTE: NOT TO SCALE

DEEP AQUIFER WELLS
FEBRUARY 1, 2012
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

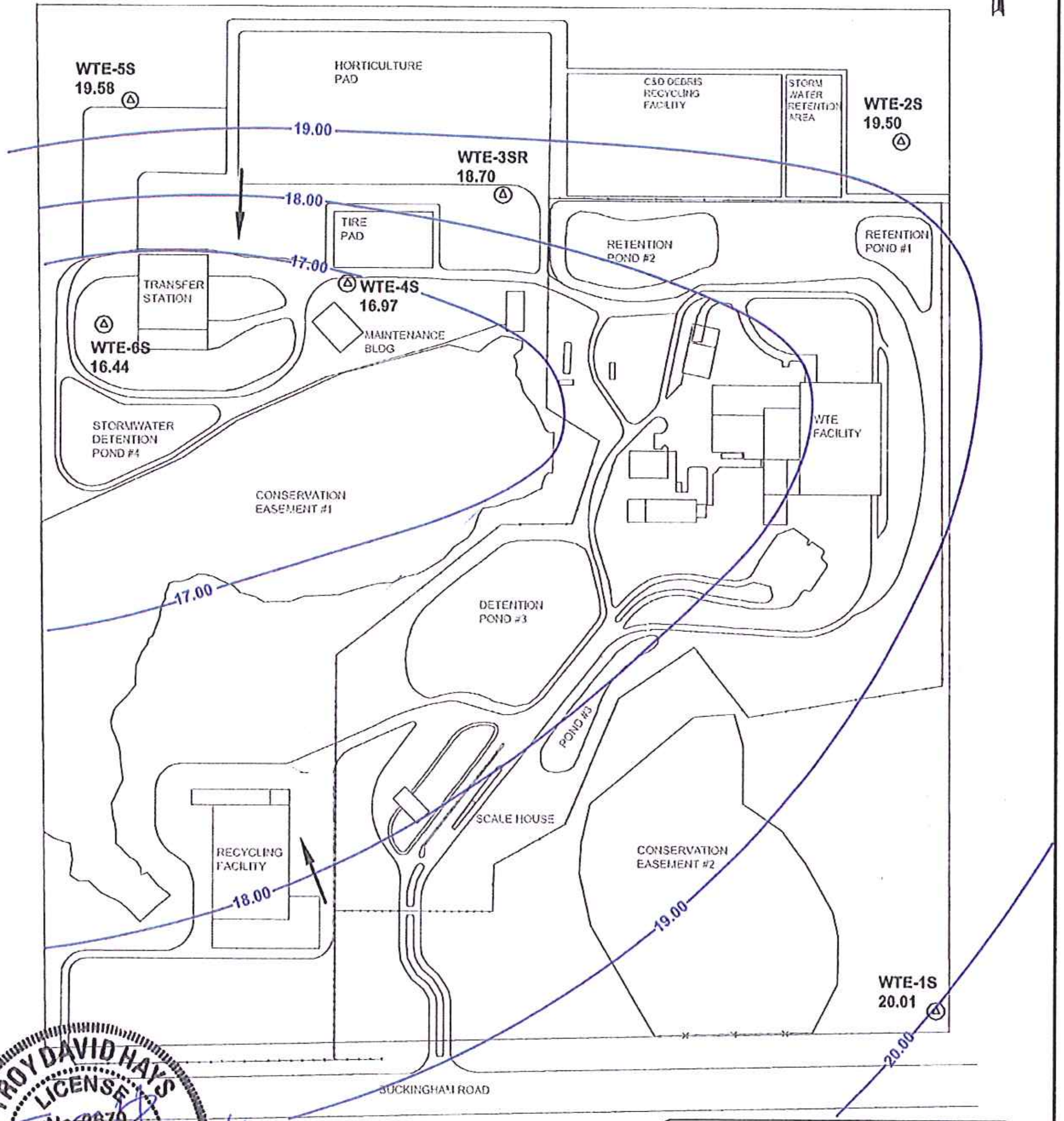
JONES EDMUNDS

PLOTTED: 2/8/2012 02:36 PM MICHELLE R. HAYS 12345-005-01

SAVED: 2/8/2012 9:30 AM MHAYS K:\JONES EDMUNDS\LEE COUNTY\WTE PLANT\12S1\WTE DEEP 2-1-2012.DWG

WELL	GW ELEVATION
WTE-1S	20.01 FT
WTE-2S	19.50 FT
WTE-3SR	18.70 FT
WTE-4S	16.97 FT
WTE-5S	19.58 FT
WTE-6S	16.44 FT

-N-



TROY DAVID HAYS LICENSE No 2679 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

8/31/12

LEGEND

WTE-1S 20.01	GROUNDWATER MONITORING WELL WITH GROUNDWATER ELVATION (ft)
	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

NOTE: NOT TO SCALE

SHALLOW AQUIFER WELLS
AUGUST 2, 2012
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

JONES EDMUNDS

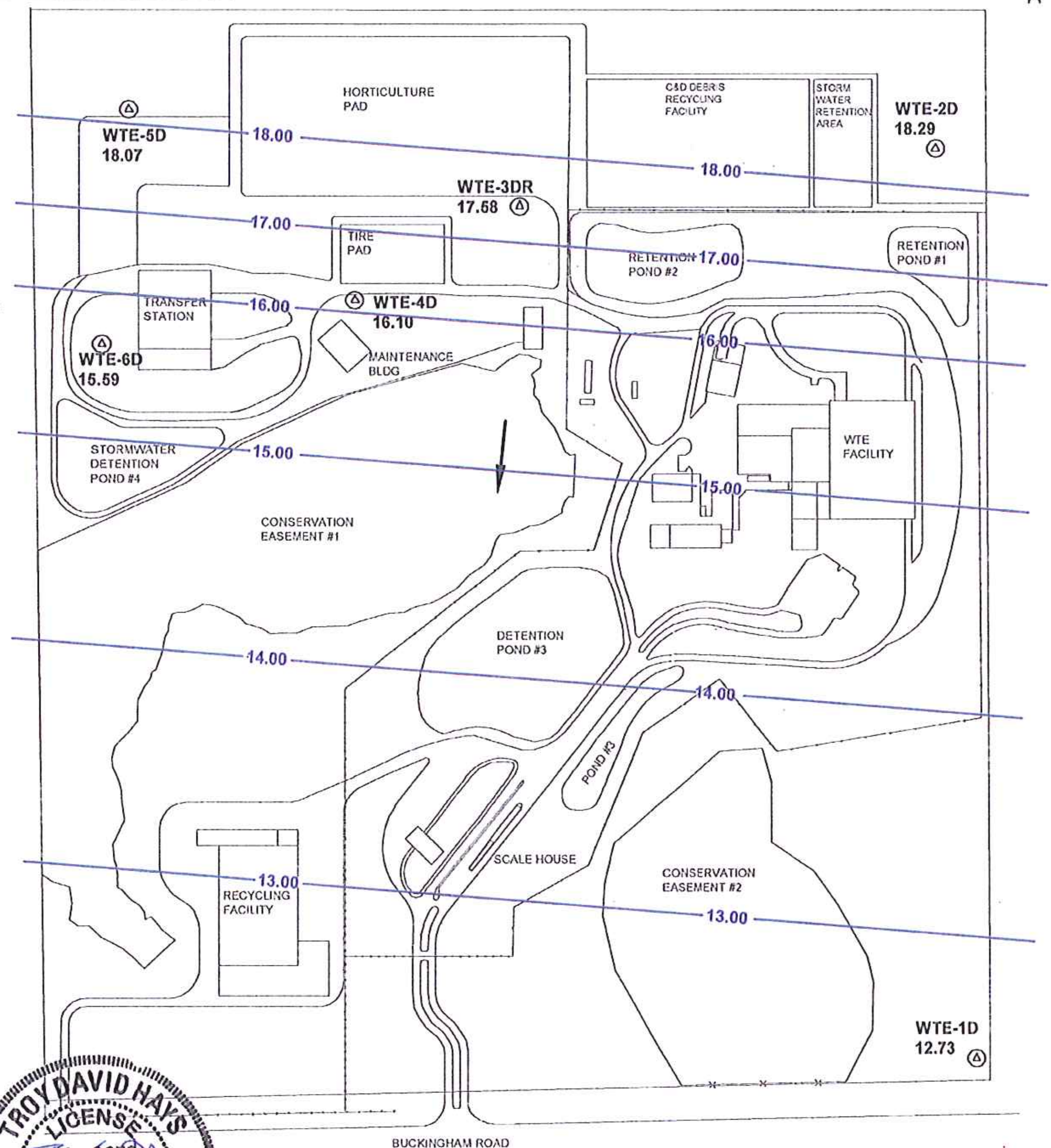
PLOTTED: 8/30/2012 04:59 PM MICHELLE R. HAYS 12345-005-01

SAVED: 8/30/2012 4:56 PM MHAYS Z:\JONES EDMUNDS\LEE COUNTY\WTE PLANT\12532\WTE SHALLOWS-2-2012_MRH.DWG

PLOTTED: 8/29/2012 11:28 AM TROY HAYS 12345-005-01

WELL	GW ELEVATION
WTE-1D	12.73 FT
WTE-2D	18.29 FT
WTE-3DR	17.58 FT
WTE-4D	16.10 FT
WTE-5D	18.07 FT
WTE-6D	15.59 FT

-N-



TROY DAVID HAYS
LICENSE
No. 2679
STATE OF
FLORIDA
PROFESSIONAL GEOLOGIST

8/30/12

LEGEND

WTE-1D 12.73	GROUNDWATER MONITORING WELL WITH GROUNDWATER ELVATION (ft)
	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

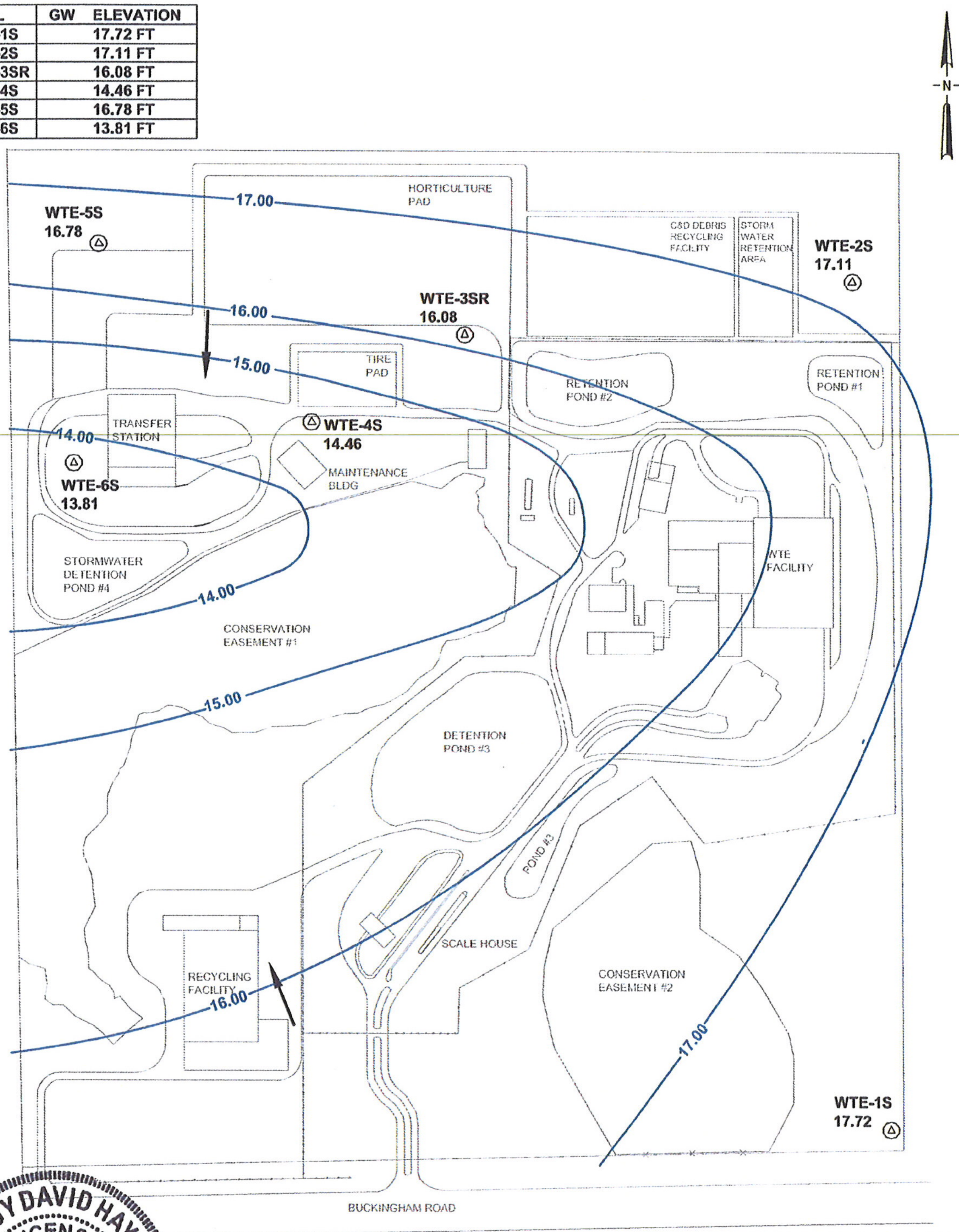
NOTE: NOT TO SCALE

DEEP AQUIFER WELLS
AUGUST 2, 2012
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

JONES EDMUNDS

SAVED: 8/29/2012 11:17 AM THAYS K:\JONES EDMUNDS\LEE COUNTY\WTE PLANT\12S2\WTE DEEP 8-2-2012.DWG

WELL	GW ELEVATION
WTE-1S	17.72 FT
WTE-2S	17.11 FT
WTE-3SR	16.08 FT
WTE-4S	14.46 FT
WTE-5S	16.78 FT
WTE-6S	13.81 FT



TROY DAVID HAYS
LICENSE
No. 2679
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

4/10/13

SHALLOW AQUIFER WELLS
FEBRUARY 6, 2013
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

LEGEND

WTE-1S 17.72	GROUNDWATER MONITORING WELL WITH GROUNDWATER ELVATION (ft)
	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

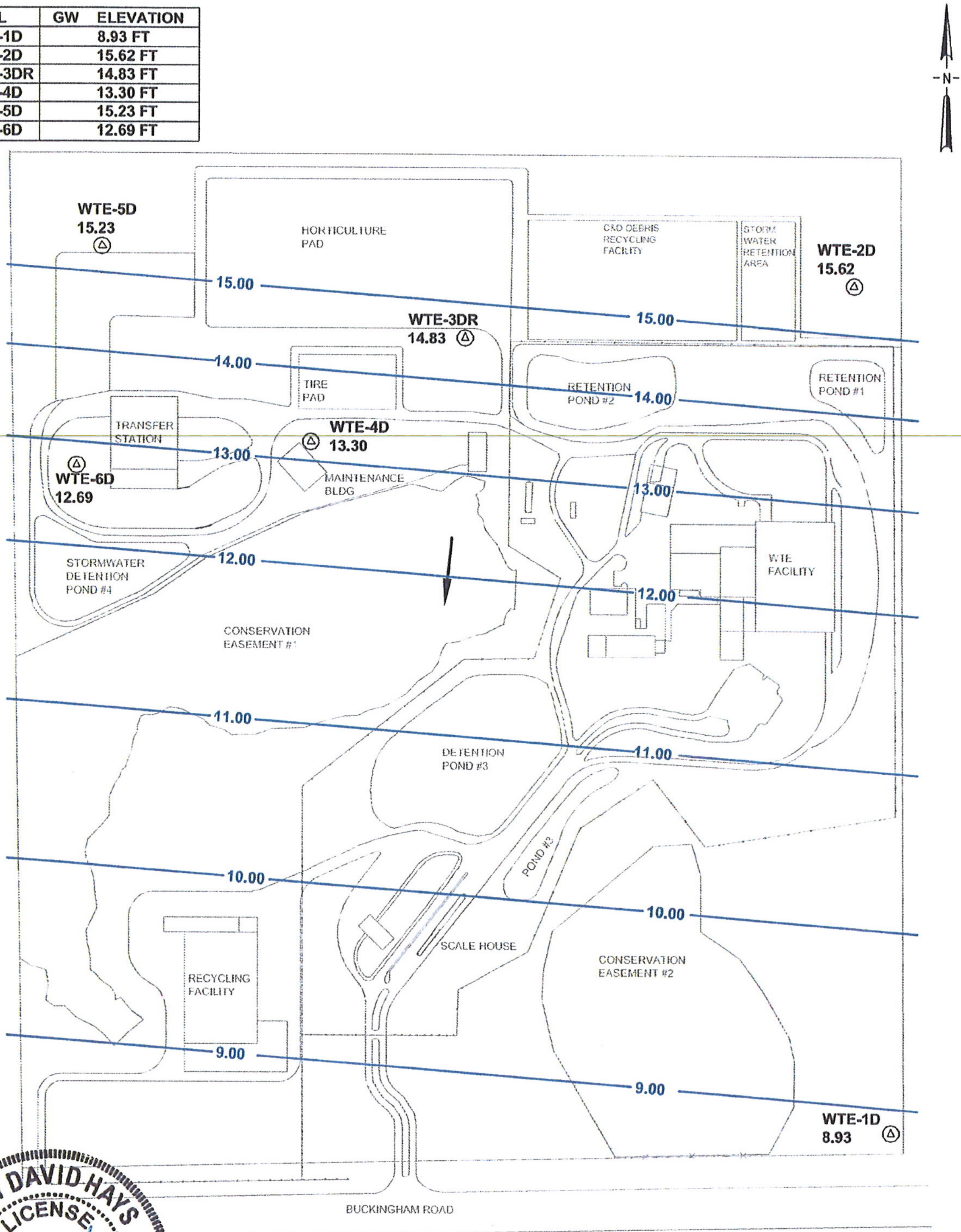
NOTE: NOT TO SCALE

JONES EDMUNDS

PLOTTED: 4/11/2013 07:47 AM TROY HAYS 12345-005-01

SAVED: 4/11/2013 7:46 AM THAYS K:\JONES EDMUNDS\LEE COUNTY\WTE PLANT\1351\WTE SHALLOW2-6-2013.DWG

WELL	GW ELEVATION
WTE-1D	8.93 FT
WTE-2D	15.62 FT
WTE-3DR	14.83 FT
WTE-4D	13.30 FT
WTE-5D	15.23 FT
WTE-6D	12.69 FT



TROY DAVID HAYS LICENSE No. 2679 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

4/10/13

LEGEND

WTE-1D 8.93	GROUNDWATER MONITORING WELL WITH GROUNDWATER ELVATION (ft)
	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

NOTE: NOT TO SCALE

DEEP AQUIFER WELLS
FEBRUARY 6, 2013
SOLID WASTE ENERGY RECOVERY FACILITY
LEE COUNTY SOLID WASTE DIVISION

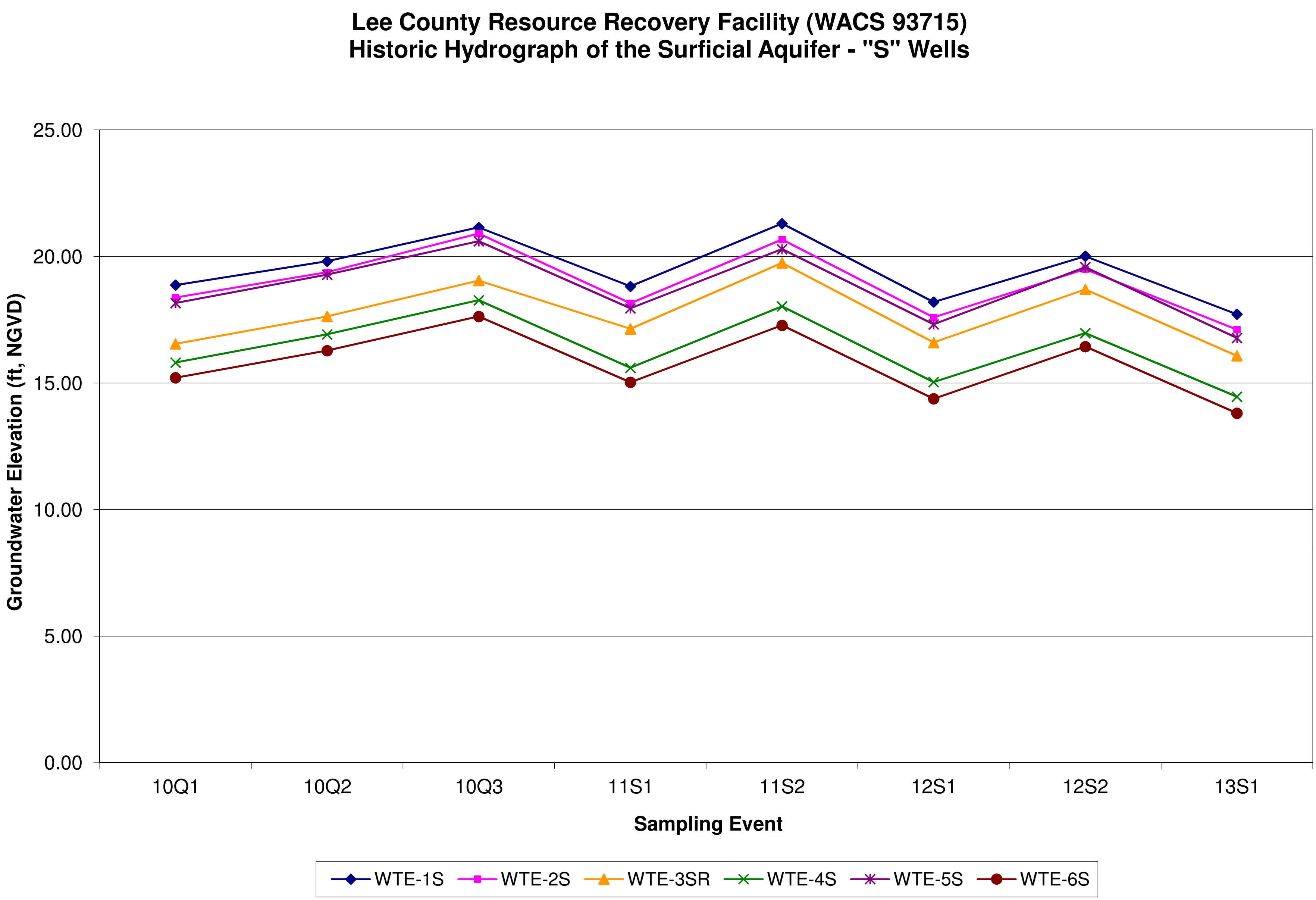
JONES EDMUNDS

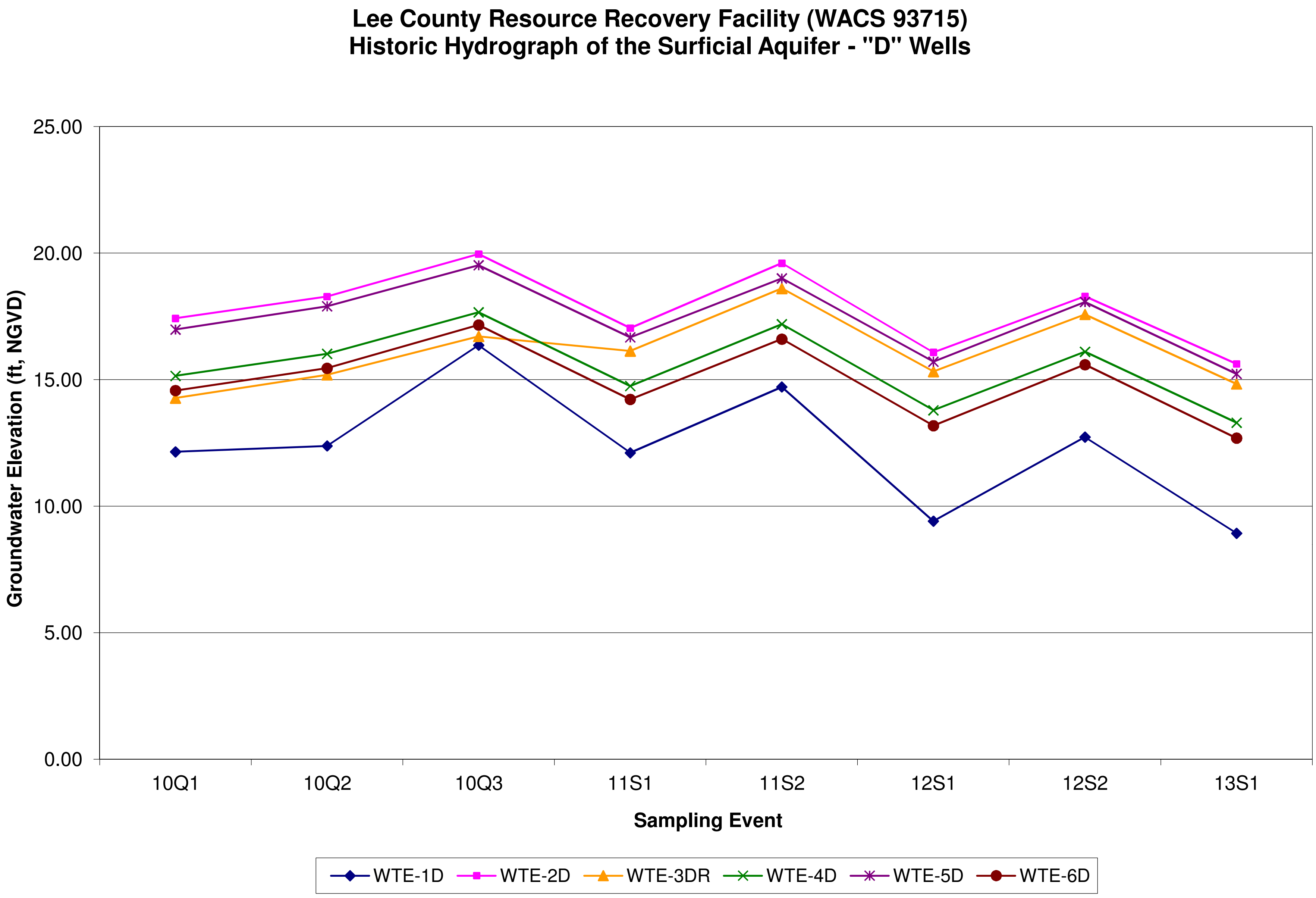
PLOTTED: 4/11/2013 07:48 AM TROY HAYS 12345-005-01

SAVED: 4/11/2013 7:46 AM THAYS K:\JONES EDMUNDS\LEE COUNTY\WTE PLANT\1351\WTE DEEP 2-6-2013.DWG

ATTACHMENT 3

HISTORICAL HYDROGRAPHS


Lee County Resource Recovery Facility (WACS 93715)
Historic Hydrograph of the Surficial Aquifer - "S" Wells
Groundwater Elevation (ft, NGVD)
25.00
20.00
15.00
10.00
5.00
0.00
10Q1
10Q2
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-1S
WTE-2S
WTE-3SR
WTE-4S
WTE-5S
WTE-6S



Lee County Resource Recovery Facility (WACS 93715)
Historic Hydrograph of the Surficial Aquifer - "D" Wells
Groundwater Elevation (ft, NGVD)
25.00
20.00
15.00
10.00
5.00
0.00
10Q1
10Q2
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-1D
WTE-2D
WTE-3DR
WTE-4D
WTE-5D
WTE-6D

ATTACHMENT 4

PARAMETERS DETECTED AT OR OUTSIDE OF GROUNDWATER STANDARDS DURING THE REPORT PERIOD

ANALYSIS RESULTS COMPARED TO GROUNDWATER STANDARDS AND/OR GUIDANCE CONCENTRATIONS
LEE COUNTY RESOURCE RECOVERY FACILITY
FEBRUARY 2011 THROUGH FEBRUARY 2013

PARAMETER		pH (FIELD)	TOTAL DISSOLVED SOLIDS	IRON
STANDARD		6.5-8.5 S.U.**	500 mg/L**	300 µg/L**
UNITS		S.U.	mg/L	µg/L
DETECTION				
WTE-2S	02/09/2011	-	568	1220
WTE-2S	08/03/2011	-	786	3030
WTE-2S	02/01/2012	-	522	1400
WTE-2S	08/01/2012	-	578	3090
WTE-2S	02/06/2013	-	568	1430
WTE-3SR	02/09/2011	-	NM	NM
WTE-3SR	08/03/2011	-	NM	NM
WTE-3SR	02/01/2012	-	-	2470
WTE-3SR	08/01/2012	-	-	2140
WTE-3SR	02/06/2013	-	-	3110
WTE-4S	02/09/2011	6.22	-	1270
WTE-4S	08/03/2011	-	-	1820
WTE-4S	02/01/2012	-	-	966
WTE-4S	08/01/2012	-	-	2190
WTE-4S	02/06/2013	-	-	712

LEGEND

*	=Primary Drinking Water Standard
**	=Secondary Drinking Water Standard
***	=Chapter 62-777 Groundwater Cleanup Target Levels (GCTL)
@	=Analysis Result is at Groundwater Standard or GCTL
-	=Analysis Result is not at or outside Groundwater Standard or GCTL
NS	=Not Sampled
NM	=Not Measured

Note:

This table displays analysis results which were reported at or outside Groundwater Standards or GCTL.
Analysis results notated with "@" indicate that the analysis result was reported at the Groundwater Standard or GCTL.
Analysis results which were reported above the laboratory detection limit (reporting limit), but not at or above the Groundwater Standard or GCTL concentration are not displayed in this table.

ATTACHMENT 5

SUMMARY OF PARAMETERS ABOVE THE LABORATORY DETECTION LIMIT DURING THE REPORT PERIOD

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
LEE COUNTY RESOURCE RECOVERY FACILITY
FEBRUARY 2011 THROUGH FEBRUARY 2013

PARAMETER		CONDUC-TIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	GROUND-WATER ELEVATION	pH (FIELD)	TEMPER-ATURE (FIELD)	TURBIDITY (FIELD)	AMMONIA NITROGEN	CHLORIDE	NITRATE NITROGEN	SULFATE	TOTAL DISSOLVED SOLIDS	ALUMINUM	ARSENIC	CHROMIUM
STANDARD		(1)	(1)	(1)	6.5-8.5 S.U.**	(1)	(1)	2.8 mg/L***	250 mg/L**	10 mg/L*	250 mg/L**	500 mg/L**	200 µg/L**	10 µg/L*	100 µg/L*
UNITS		umhos/cm	ppm	ft, NGVD	S.U.	deg C	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
DETECTION															
WTE-2S	02/09/2011	797	1.34	18.15	7.25	18.90	1.45	0.0983	50.6	<0.01	47.7	568	<10	<1	1.04
WTE-2S	08/03/2011	755	1.29	20.67	7.57	23.80	1.50	0.268	57.2	<0.01	57.6	786	13.9	1.51	1.17
WTE-2S	02/01/2012	597	1.86	17.59	7.23	21.00	1.05	0.108	34.3	<0.01	69.2	522	<10	1.07 I	<1
WTE-2S	08/01/2012	698	0.57	19.50	6.75	24.00	2.74	0.304	61.1	<0.01	60.2	578	<10	<1	<1
WTE-2S	02/06/2013	547	2.77	17.11	6.90	21.6	0.59	0.105	51.7	<0.01	74.1	568	<10	1.4 I	2.64
WTE-3SR	02/09/2011	615	0.18	17.14	7.37	23.90	5.43	-	-	-	-	-	-	-	-
WTE-3SR	08/03/2011	645	0.29	19.75	6.82	27.50	6.90	-	-	-	-	-	-	-	-
WTE-3SR	02/01/2012	541	0.31	16.60	7.21	25.00	9.51	-	25.4	<0.01	36.1	420	16.5 I	1.81 I	<1
WTE-3SR	08/01/2012	564	0.29	18.70	7.04	27.90	11.50	0.5	20.9	0.0214	38.6	370	12.3 I	<1	<1
WTE-3SR	02/06/2013	538	1.44	16.08	6.83	25.3	12.4	0.438	18.1	<0.01	42.5	450	14.4 I	2.23	2.05
WTE-4S	02/09/2011	755	0.98	15.60	6.22	24.50	0.53	0.408	36.3	<0.01	71.2	440	<10	<1	<1
WTE-4S	08/03/2011	653	0.96	18.03	7.37	28.80	1.30	0.583	16.9	<0.01	63	464	<10	<1	<1
WTE-4S	02/01/2012	603	0.55	15.04	7.21	26.90	0.48	0.35	15.1	0.044	62.5	458	<10	<1	<1
WTE-4S	08/01/2012	649	0.33	16.97	6.91	28.70	2.37	0.731	<16	<0.01	74.1	490	19.6 I	<1	<1
WTE-4S	02/06/2013	510	1.59	14.46	6.97	26.5	0.56	0.349	10.2	0.0885	49	422	<10	<1	2.15

LEGEND

*	=Primary Drinking Water Standard	I	= Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	=Secondary Drinking Water Standard	J	= Estimated value
***	=Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	V	= Analyte found in associated method blank
(1)	=No Standard	Q	= Estimated value; analyte analyzed after acceptable holding time
-	=Not Analyzed		

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT
LEE COUNTY RESOURCE RECOVERY FACILITY
FEBRUARY 2011 THROUGH FEBRUARY 2013

PARAMETER		IRON	MERCURY	SODIUM
STANDARD		300 µg/L**	2 µg/L*	160 mg/L*
UNITS		µg/L	µg/L	mg/L
DETECTION				
WTE-2S	02/09/2011	1220	<0.02	23.7
WTE-2S	08/03/2011	3030	<0.02	25
WTE-2S	02/01/2012	1400	0.026 I	23.3
WTE-2S	08/01/2012	3090	<0.02	27.4
WTE-2S	02/06/2013	1430	<0.02	25
WTE-3SR	02/09/2011	-	-	-
WTE-3SR	08/03/2011	-	-	-
WTE-3SR	02/01/2012	2470	0.025 I	14.4
WTE-3SR	08/01/2012	2140	<0.02	8.38
WTE-3SR	02/06/2013	3110	<0.02	14.3
WTE-4S	02/09/2011	1270	<0.02	13
WTE-4S	08/03/2011	1820	<0.02	12.7
WTE-4S	02/01/2012	966	0.026 I	11.5
WTE-4S	08/01/2012	2190	<0.02	9.8
WTE-4S	02/06/2013	712	<0.02	7.52

LEGEND

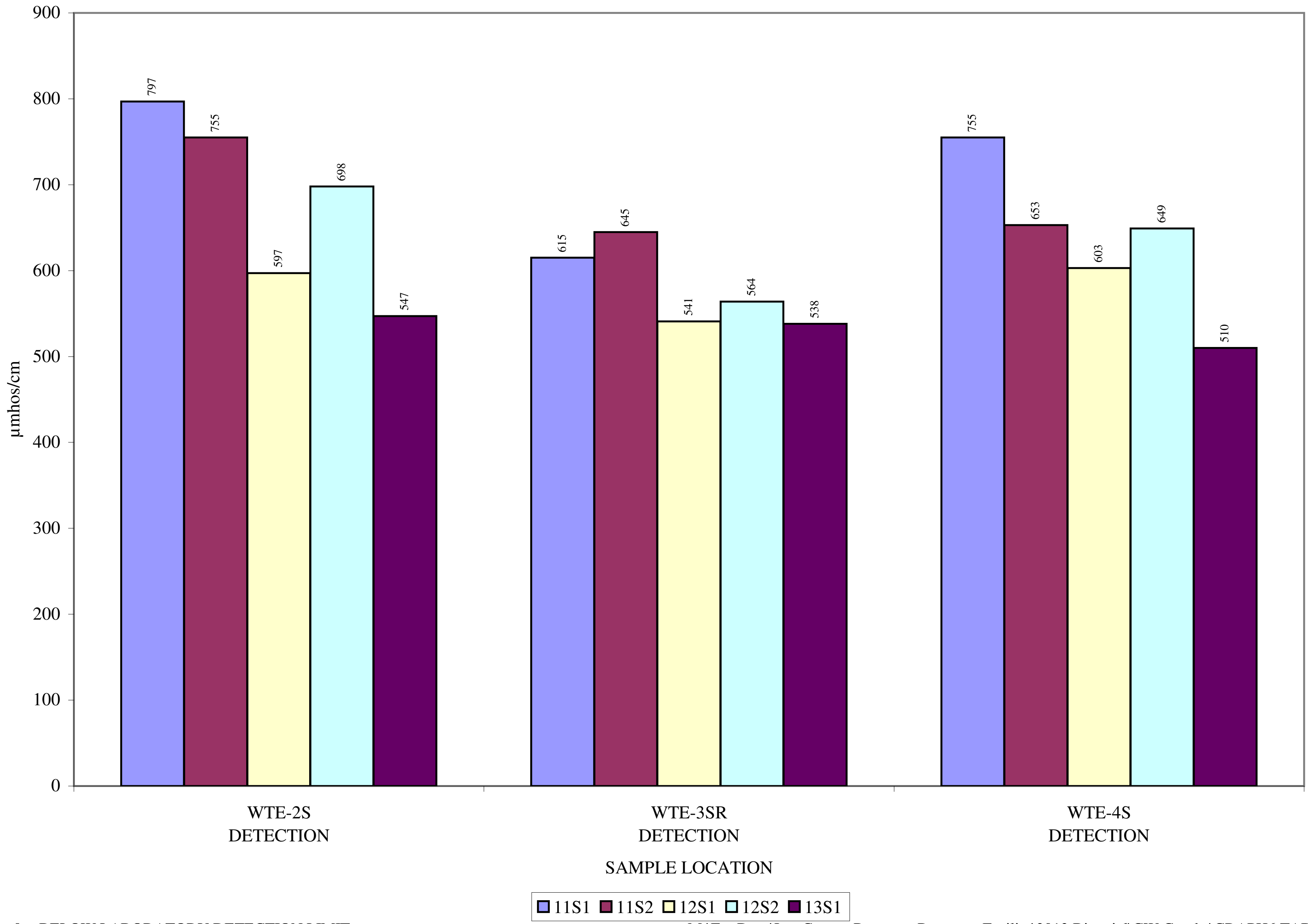
*	=Primary Drinking Water Standard	I	= Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)
**	=Secondary Drinking Water Standard	J	= Estimated value
***	=Chapter 62-777 - Groundwater Cleanup Target Level (GCTL)	V	= Analyte found in associated method blank
(1)	=No Standard	Q	= Estimated value; analyte analyzed after acceptable holding time
-	=Not Analyzed		

ATTACHMENT 6

GROUNDWATER CHEMISTRY GRAPHS

CONDUCTIVITY (FIELD)

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH

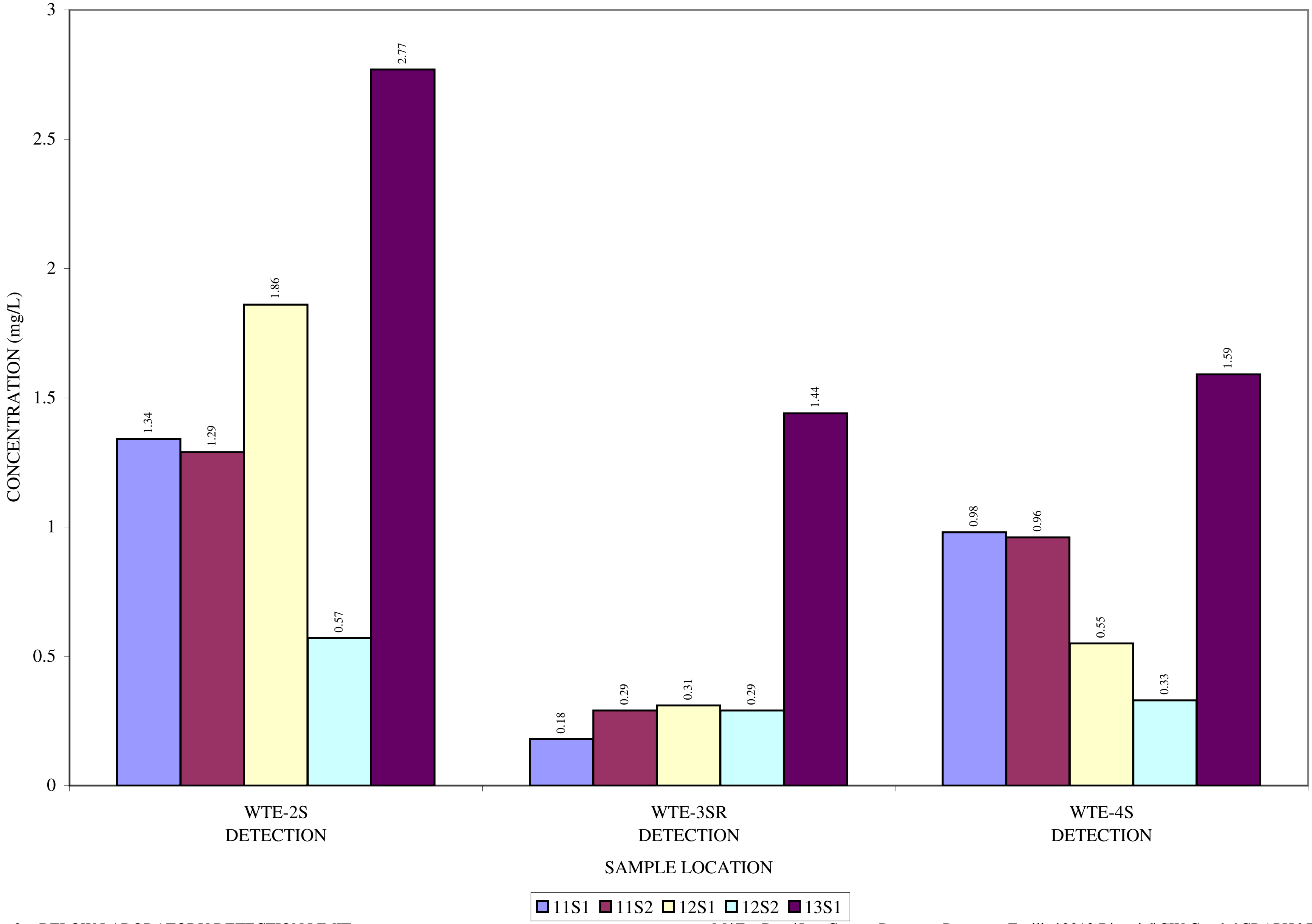


0 = BELOW LABORATORY DETECTION LIMIT

M:\EnvDocs\Lee County Resource Recovery Facility\2013 Biennial\GW Graphs\GRAPH6 TABLE:COND

DISSOLVED OXYGEN (FIELD)

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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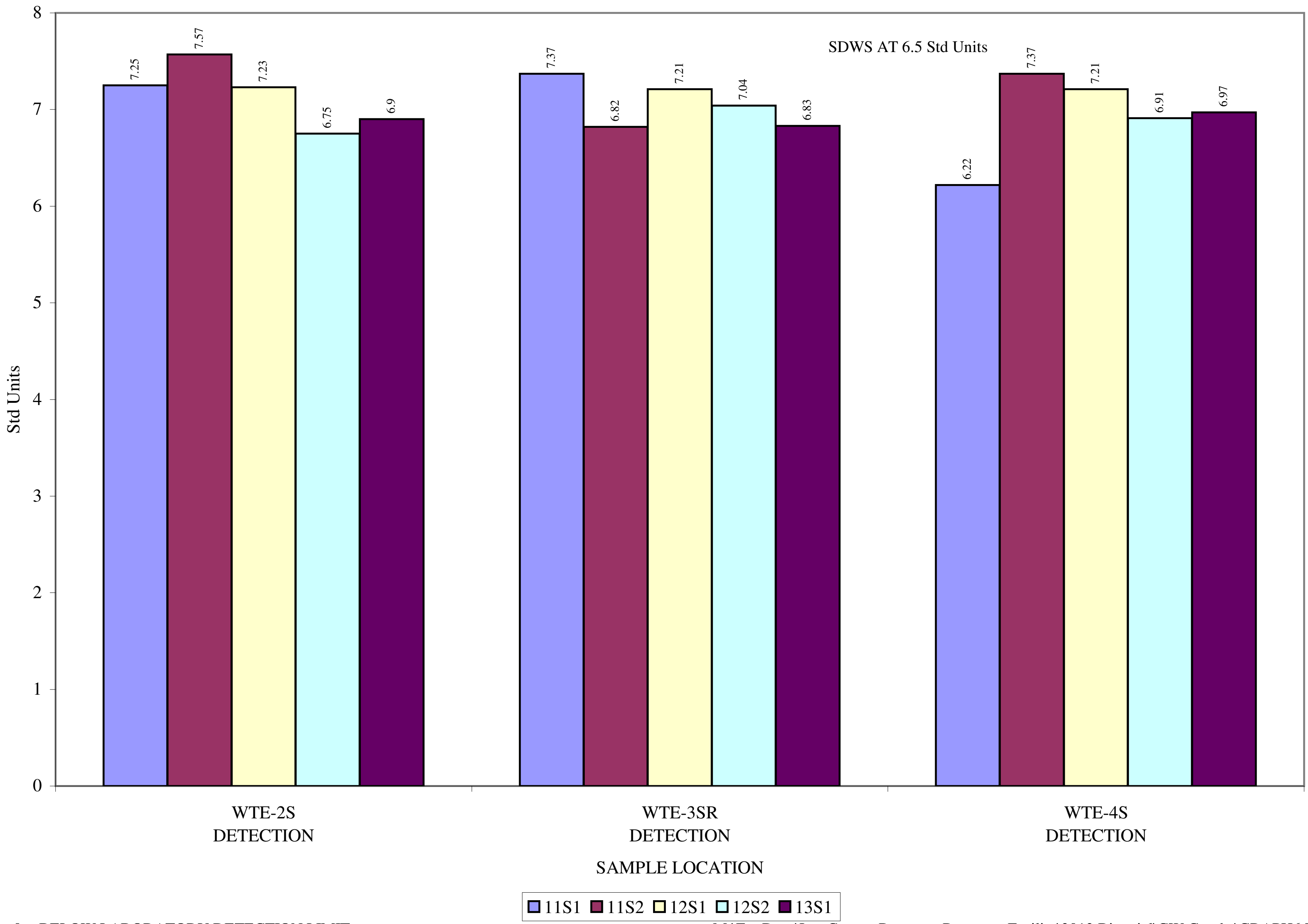
pH (FIELD)

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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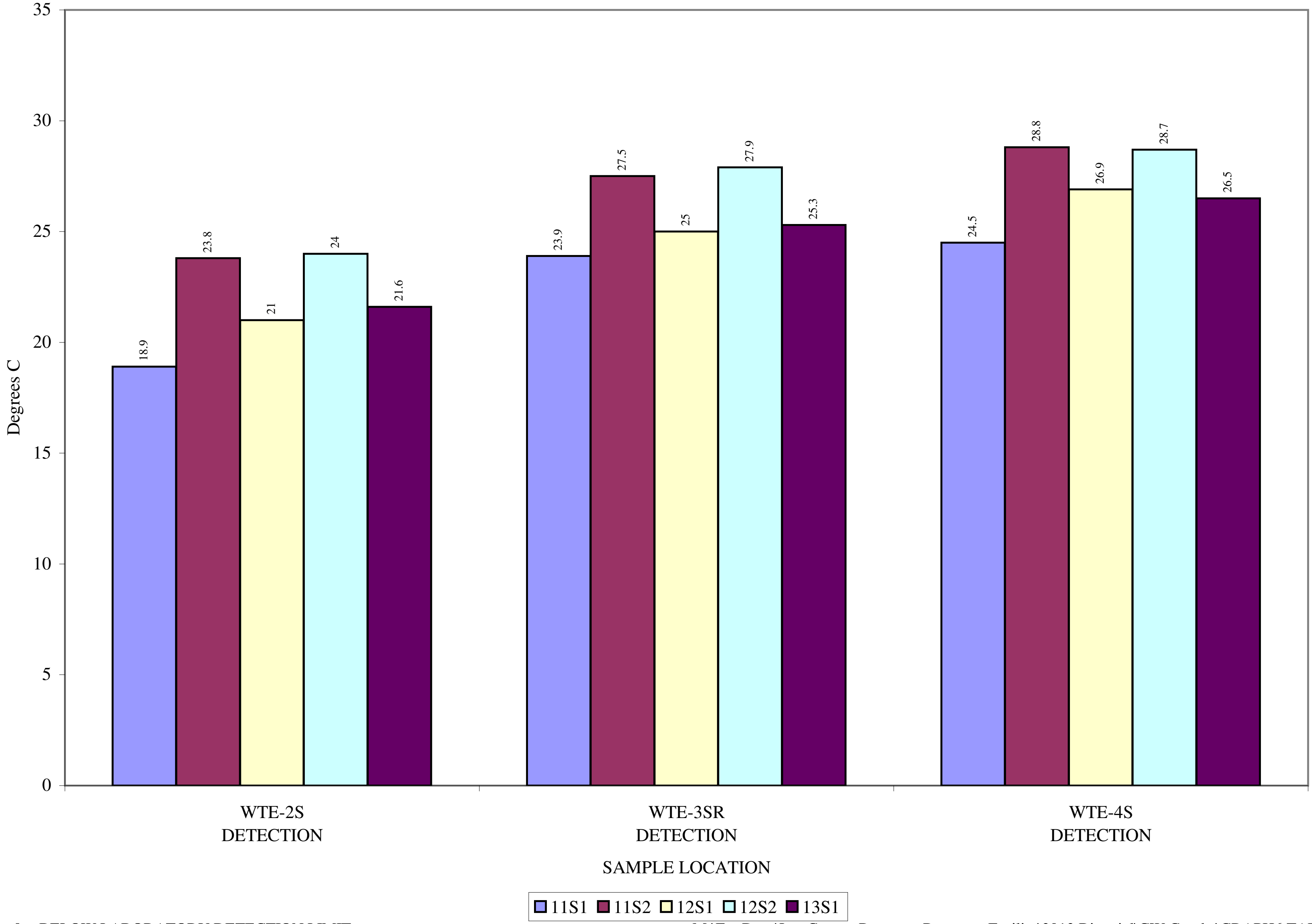
TEMPERATURE (FIELD)

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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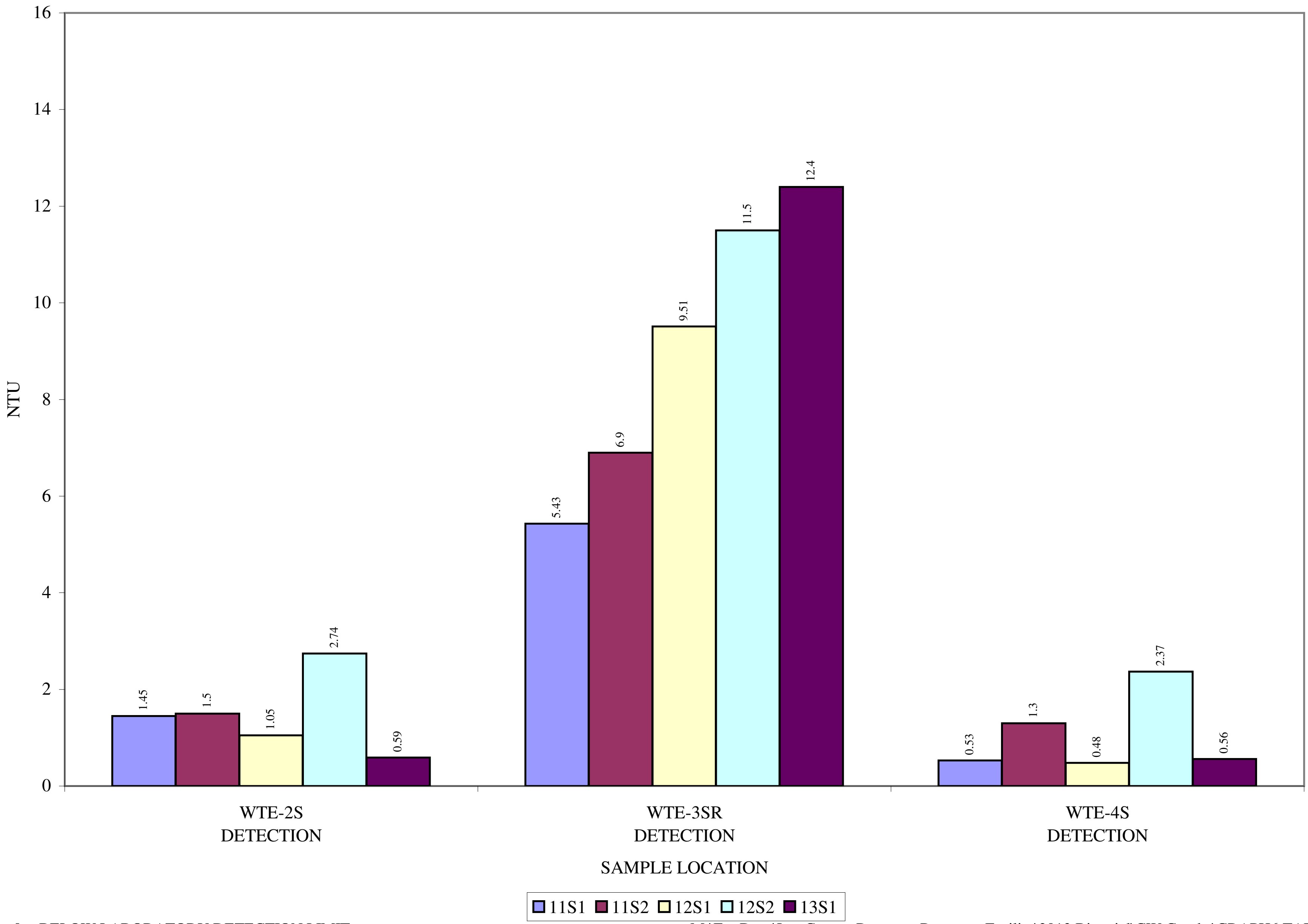
TURBIDITY (FIELD)

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



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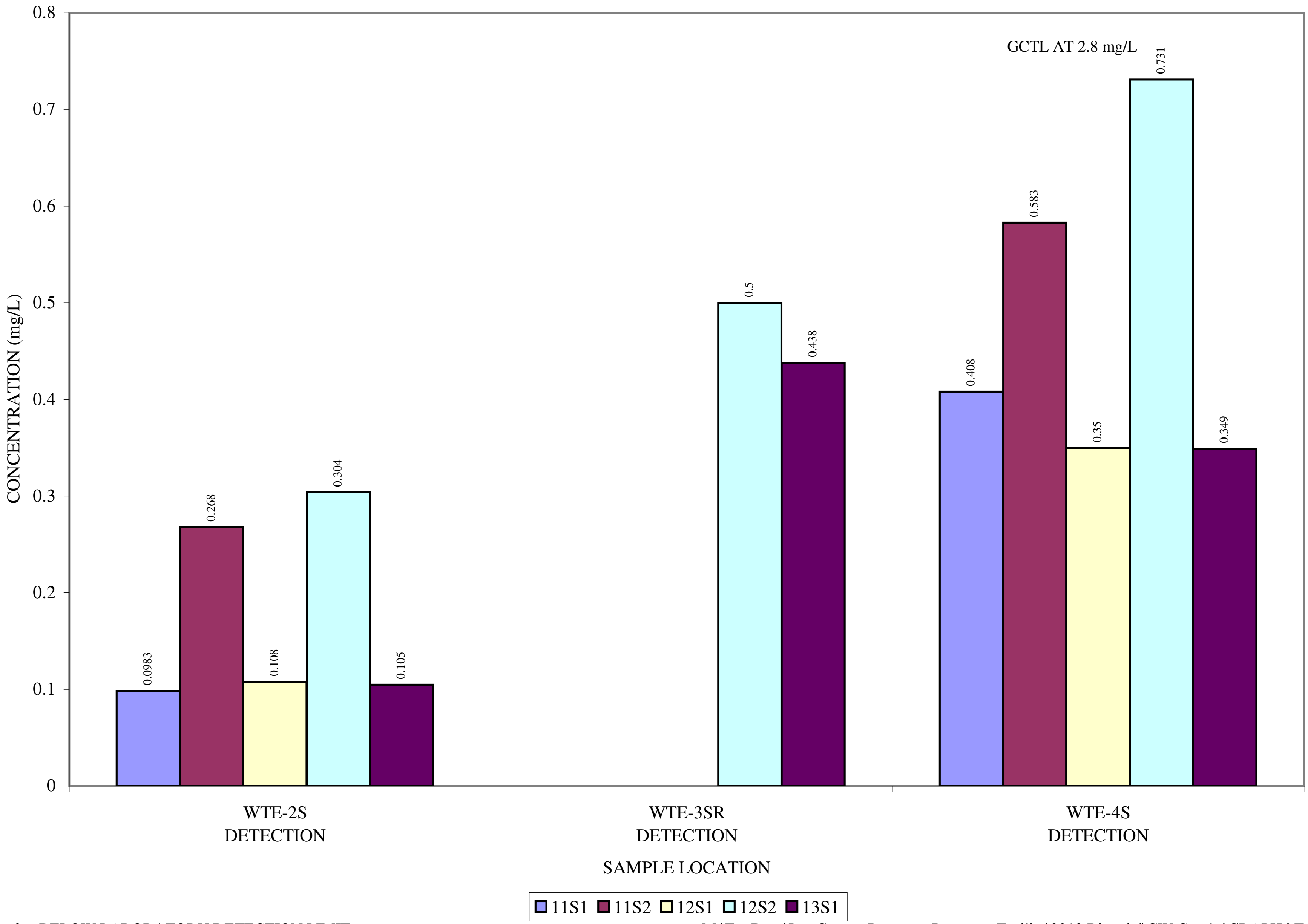
M:\EnvDocs\Lee County Resource Recovery Facility\2013 Biennial\GW Graphs\GRAPH6 TABLE:TURB

AMMONIA NITROGEN

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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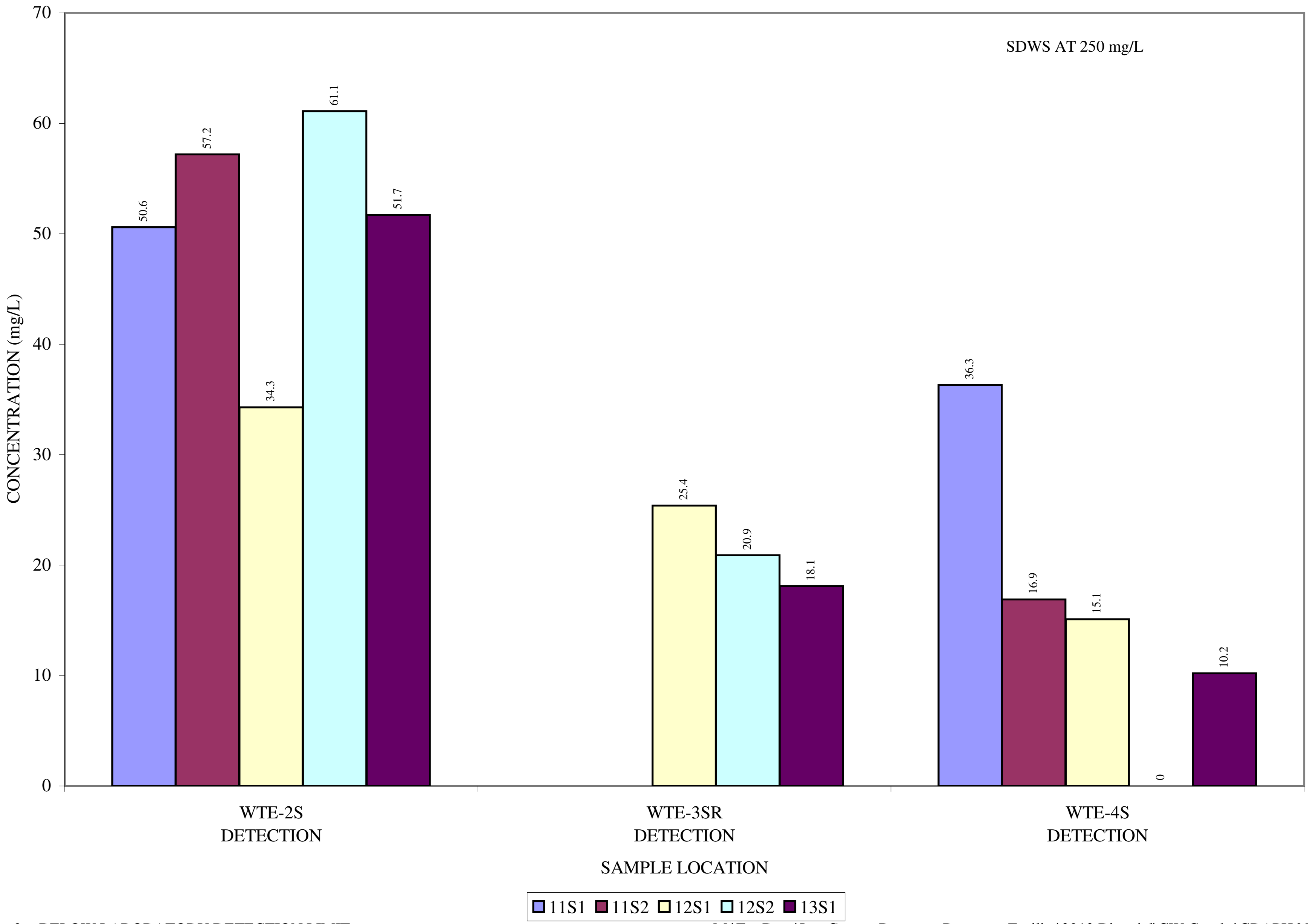
CHLORIDE

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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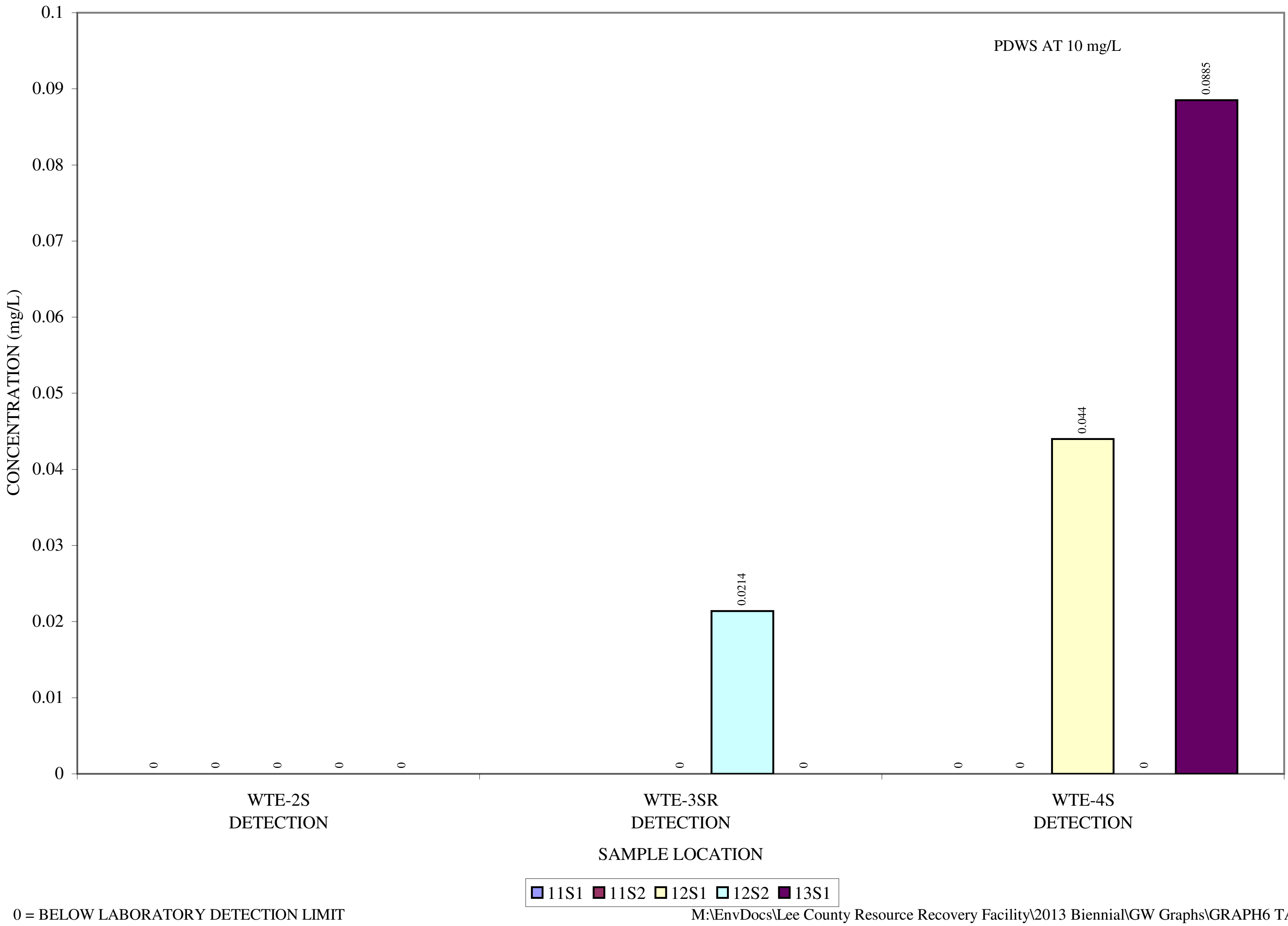
NITRATE NITROGEN

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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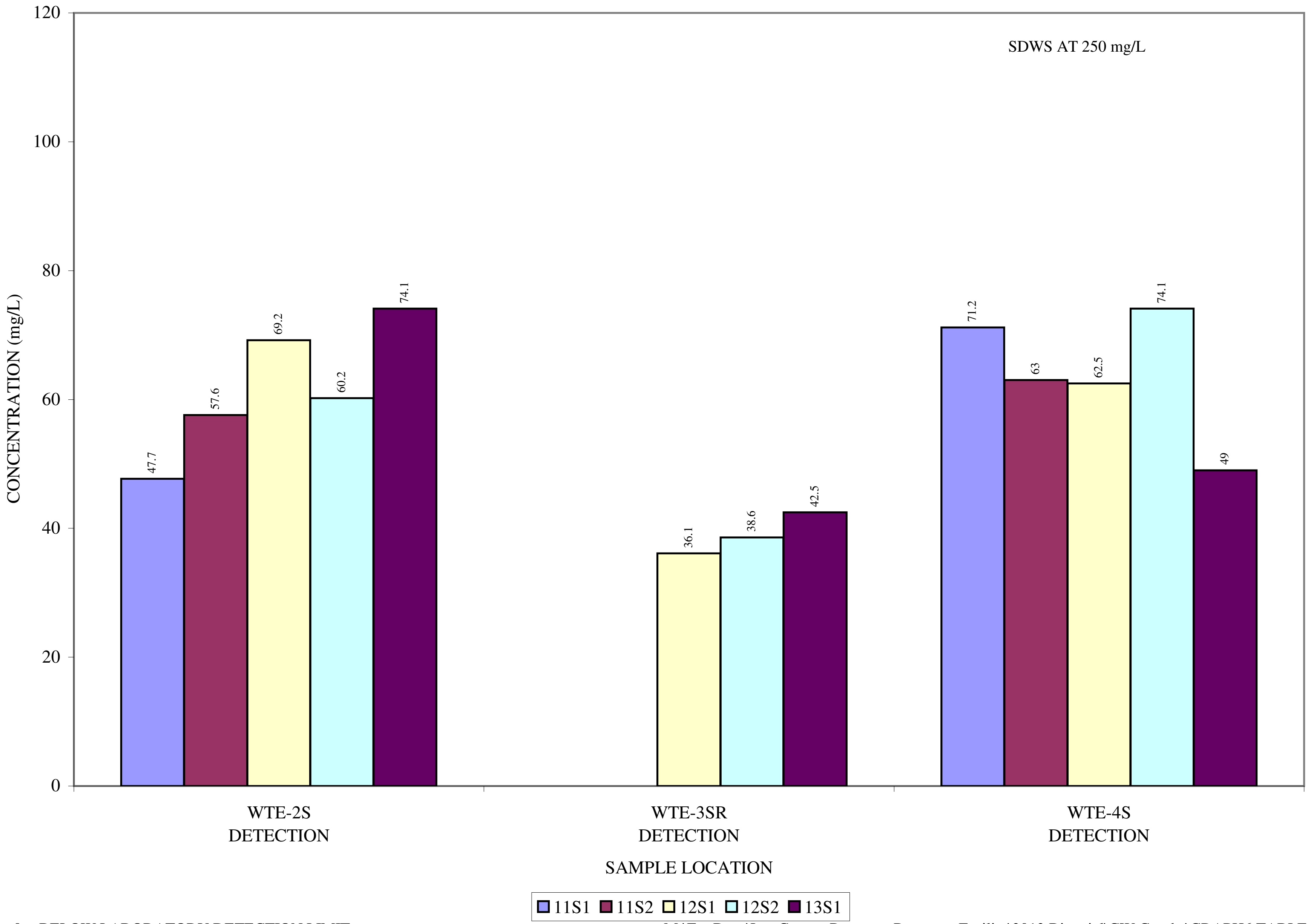
SULFATE

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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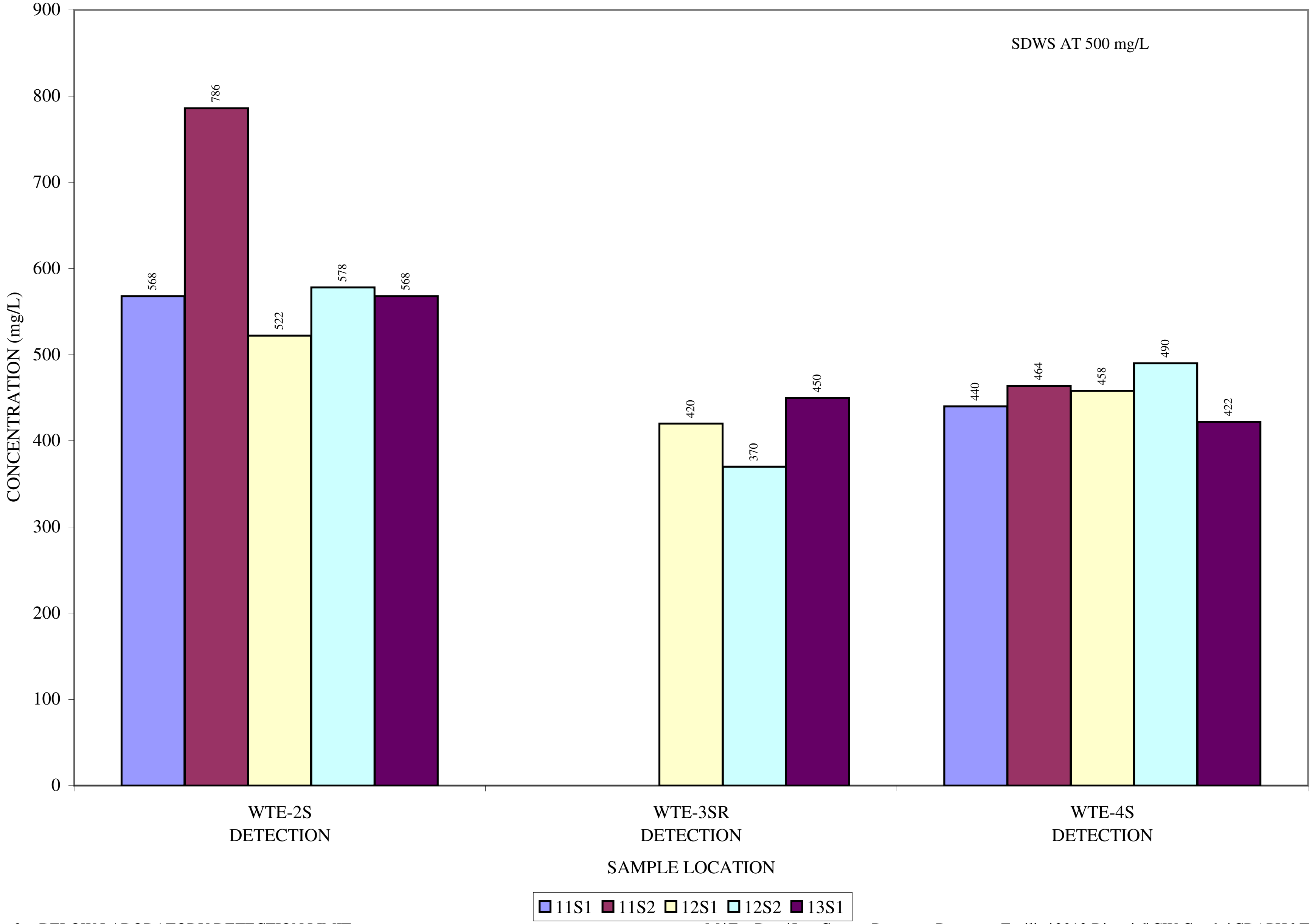
TOTAL DISSOLVED SOLIDS

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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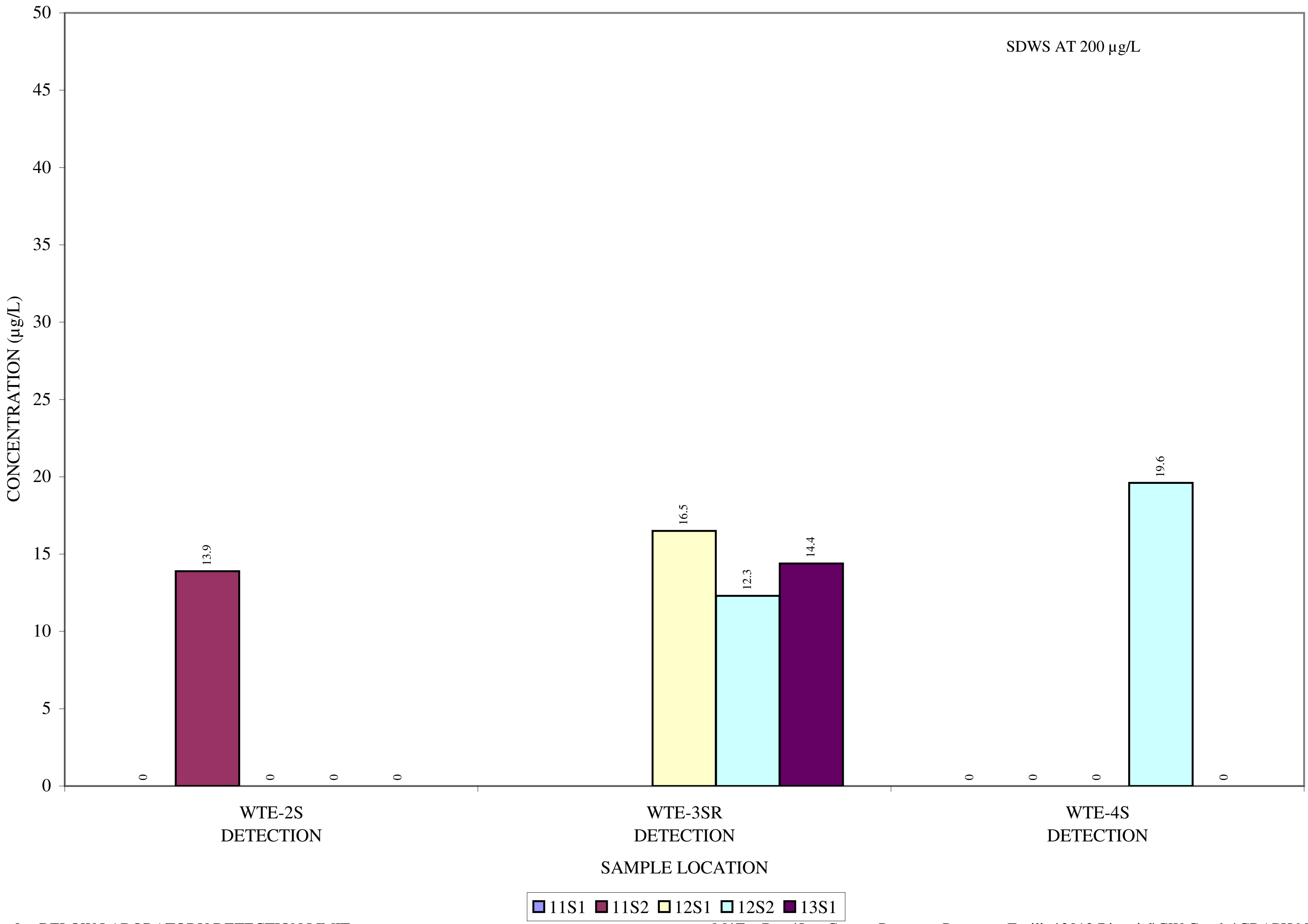
ALUMINUM

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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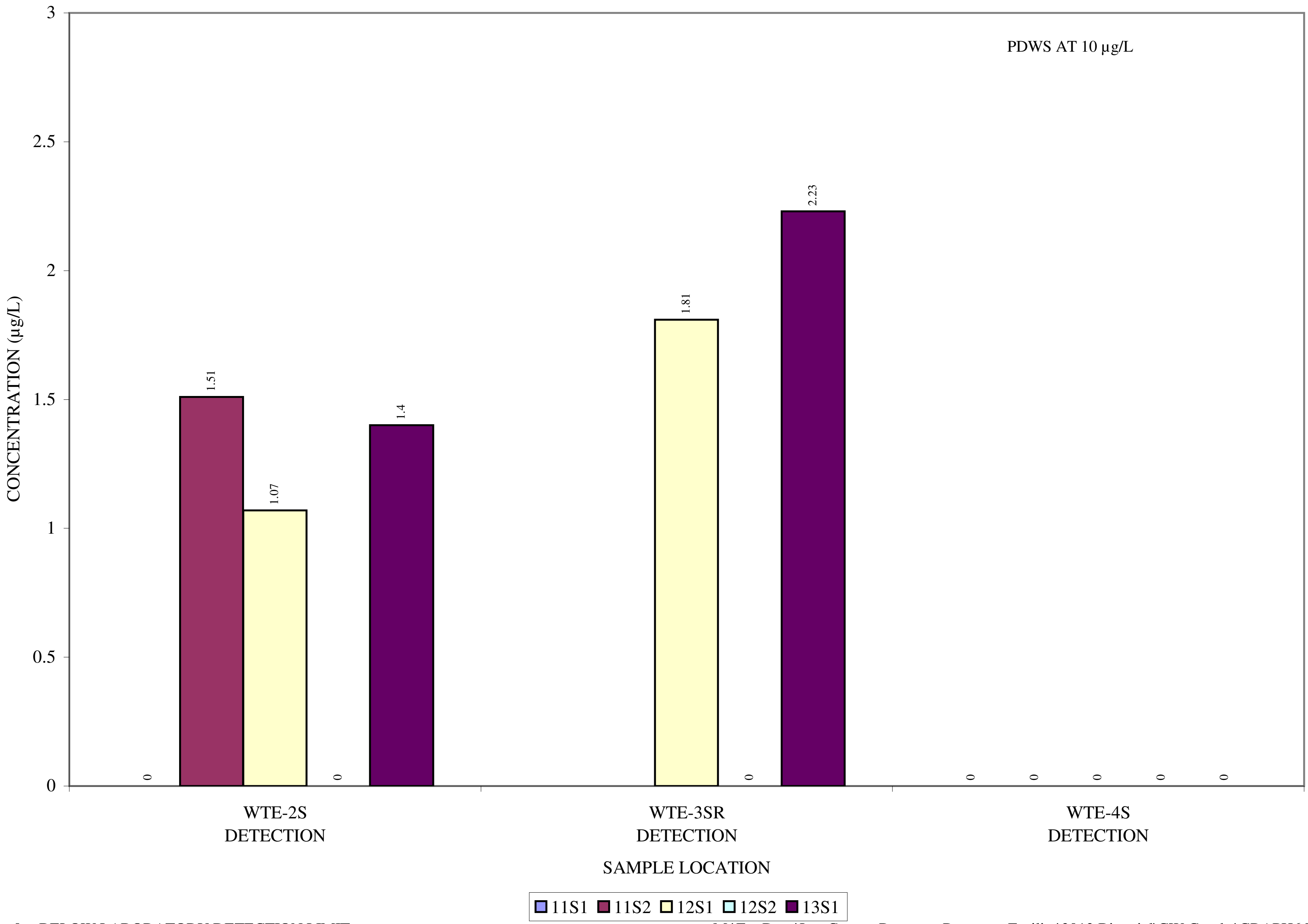
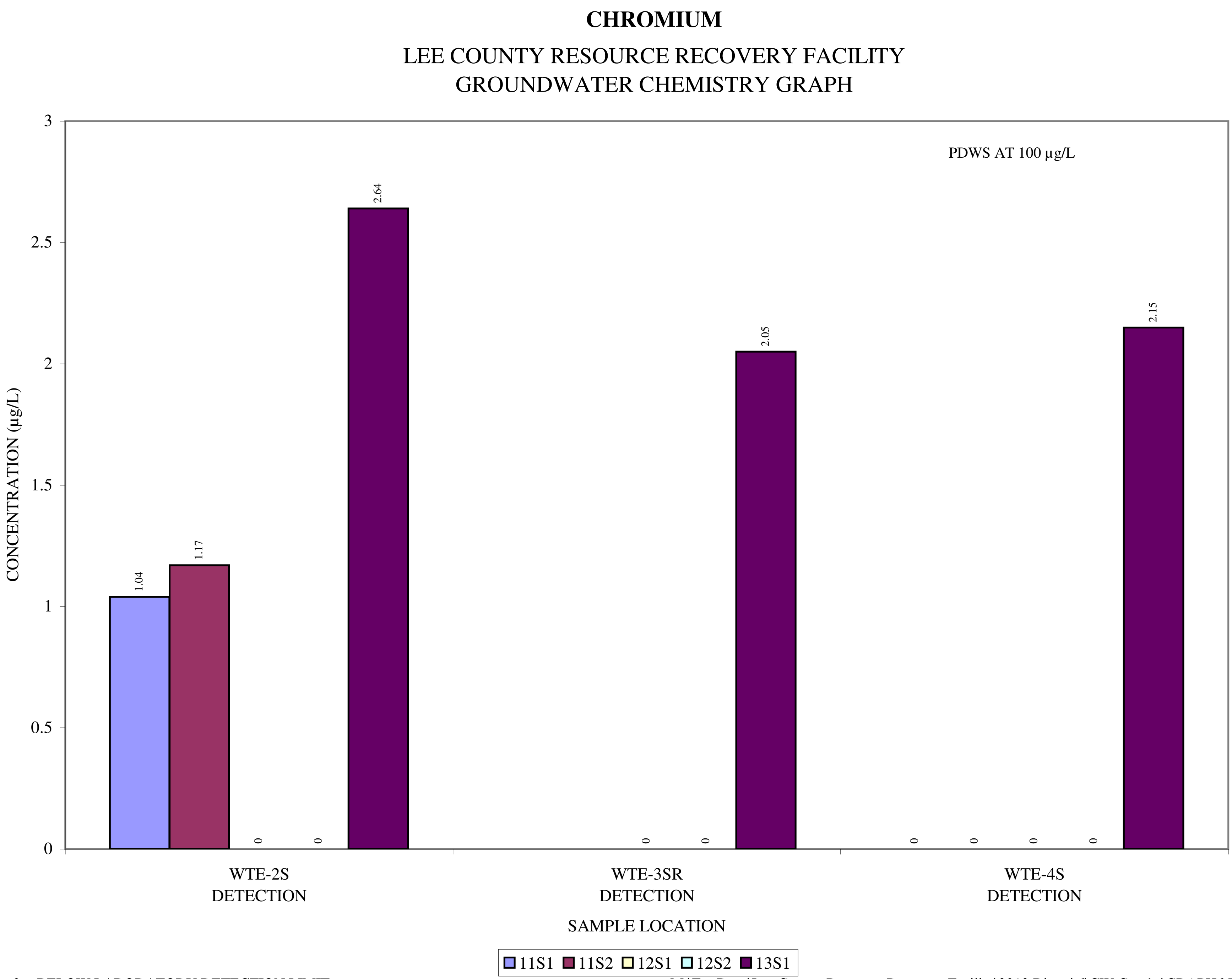
ARSENIC

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

M:\EnvDocs\Lee County Resource Recovery Facility\2013 Biennial\GW Graphs\GRAPH6 TABLE:AS



0 = BELOW LABORATORY DETECTION LIMIT

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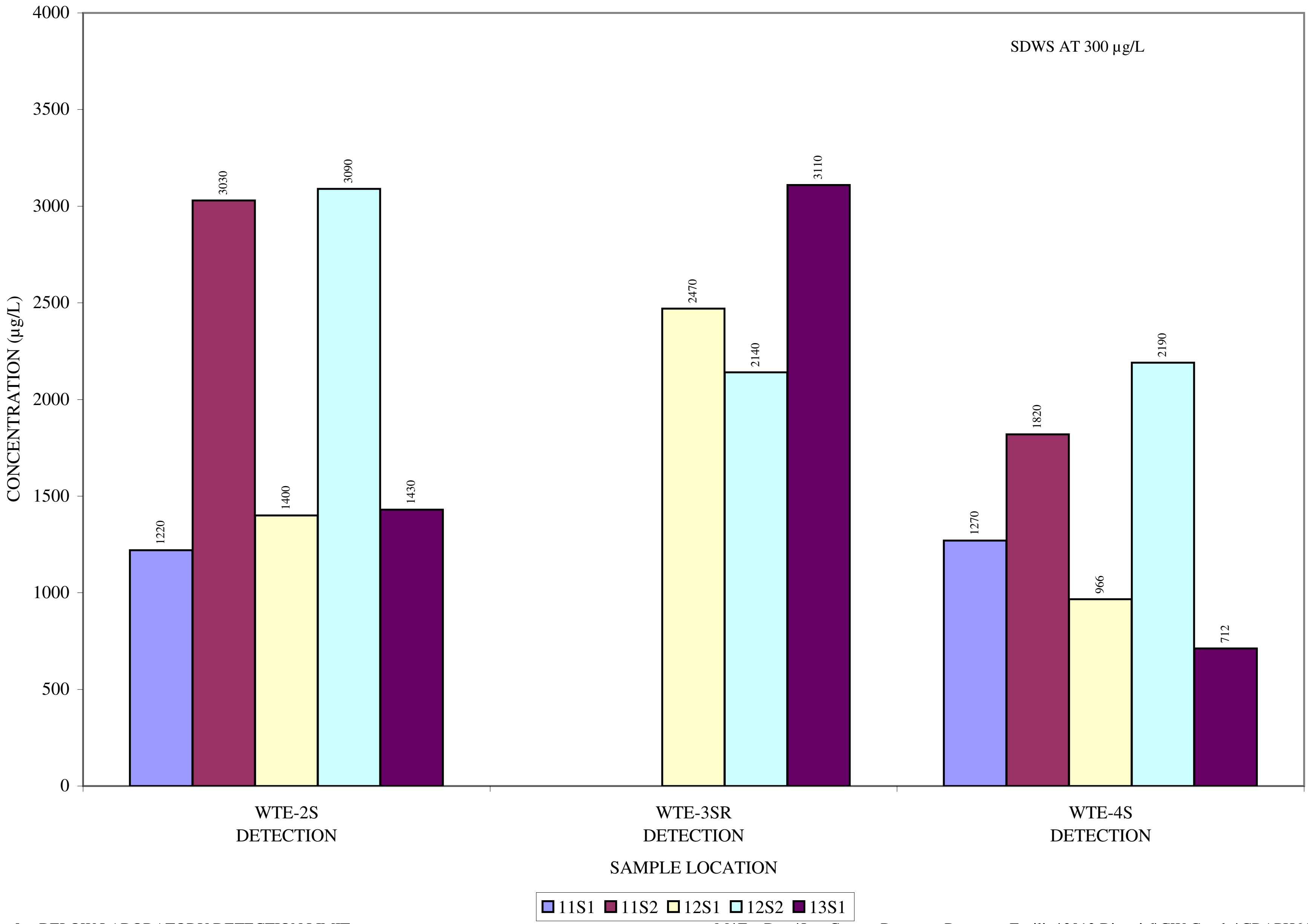
IRON

LEE COUNTY RESOURCE RECOVERY FACILITY
GROUNDWATER CHEMISTRY GRAPH



0 = BELOW LABORATORY DETECTION LIMIT

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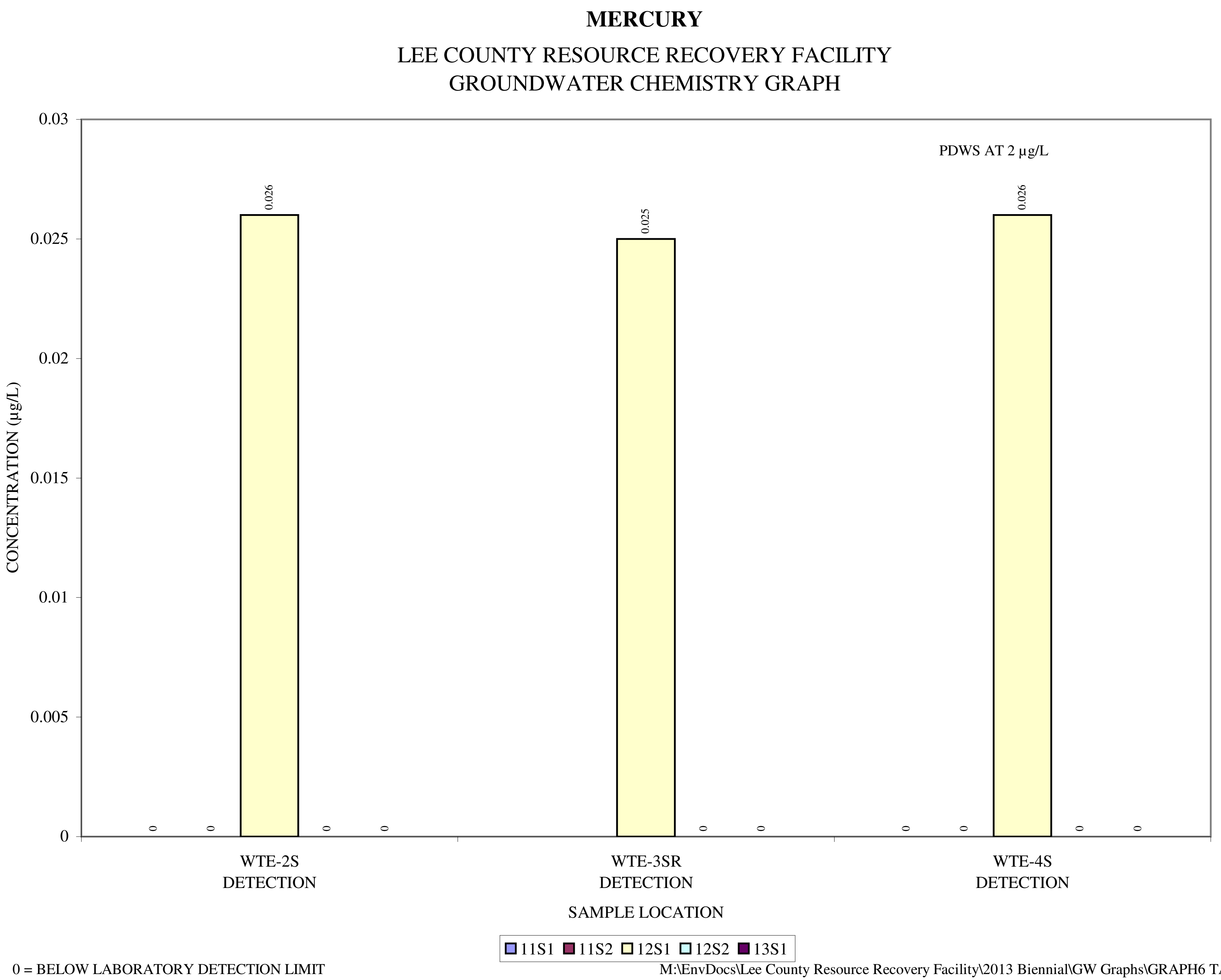

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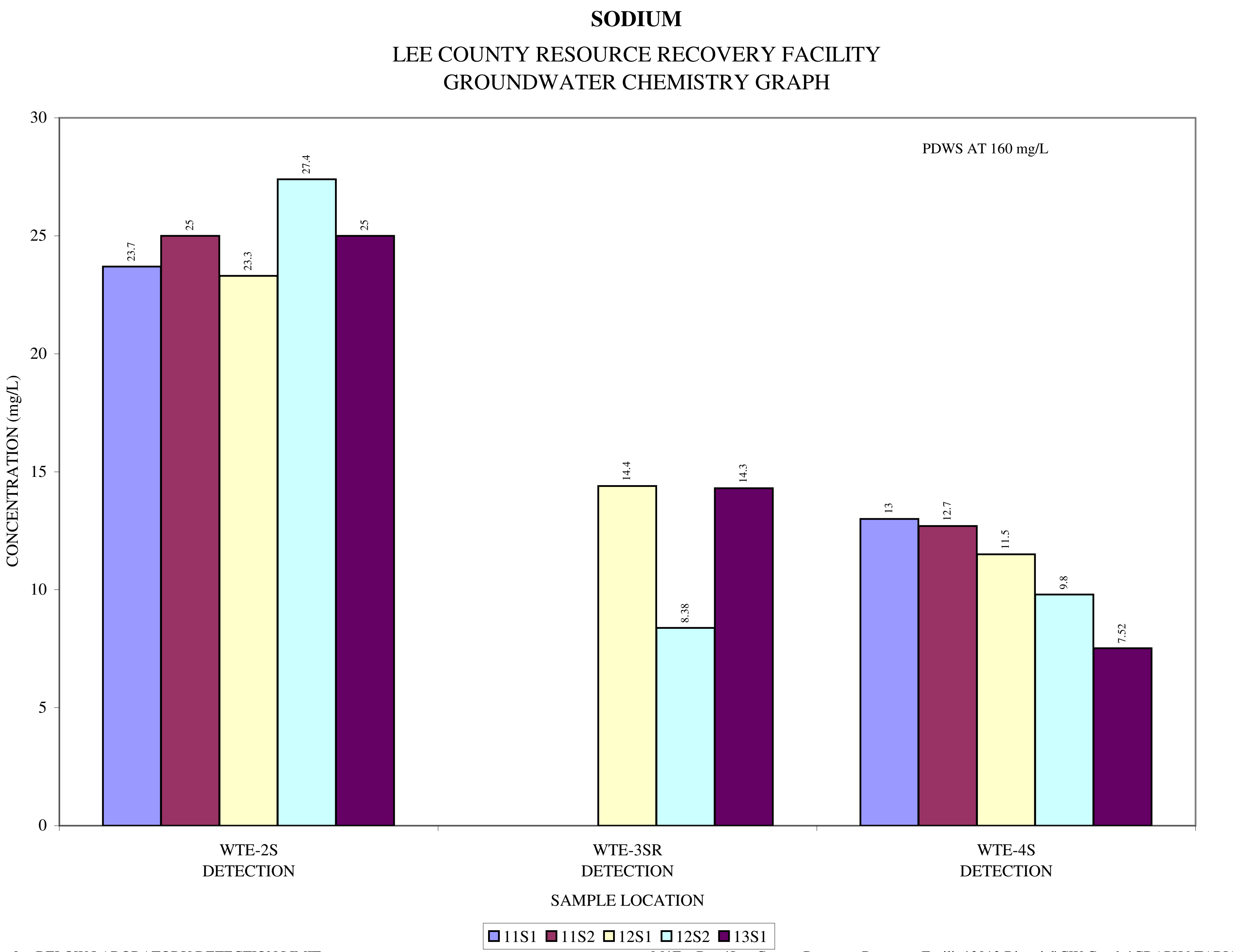

0 = BELOW LABORATORY DETECTION LIMIT

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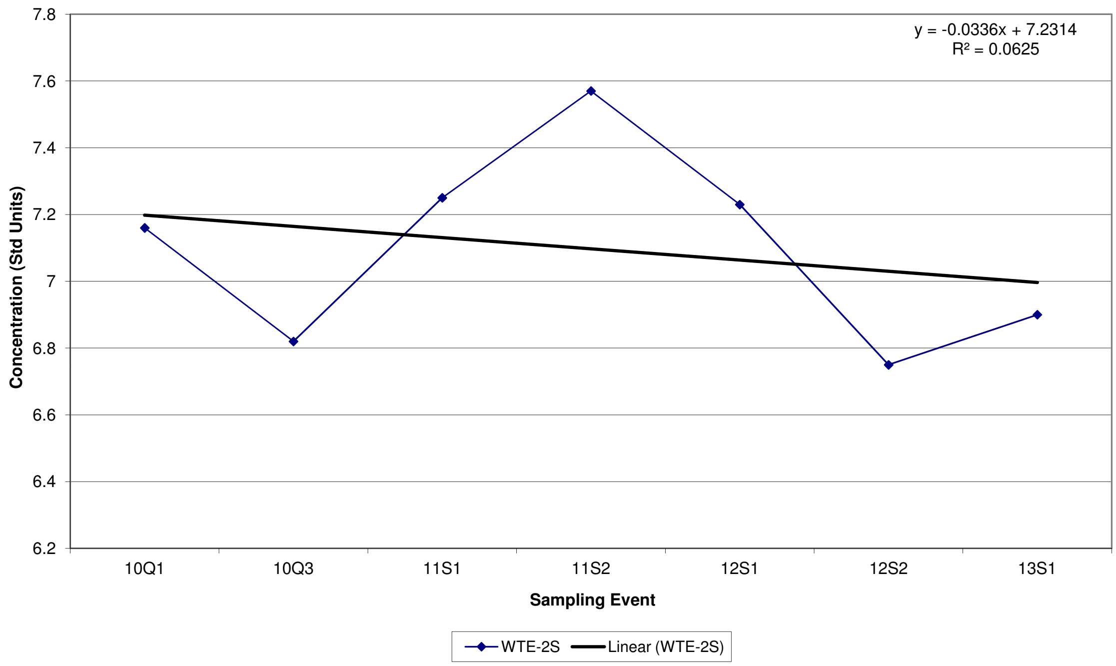
ATTACHMENT 7

HISTORICAL TREND GRAPHS

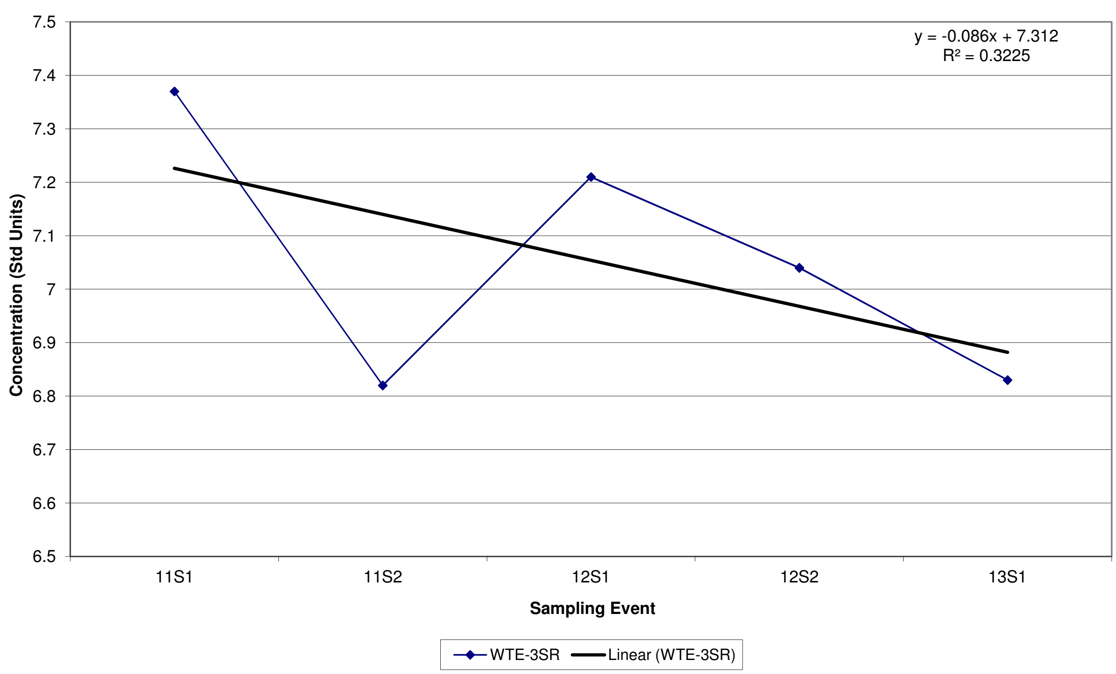
Lee County Resource Recovery Facility

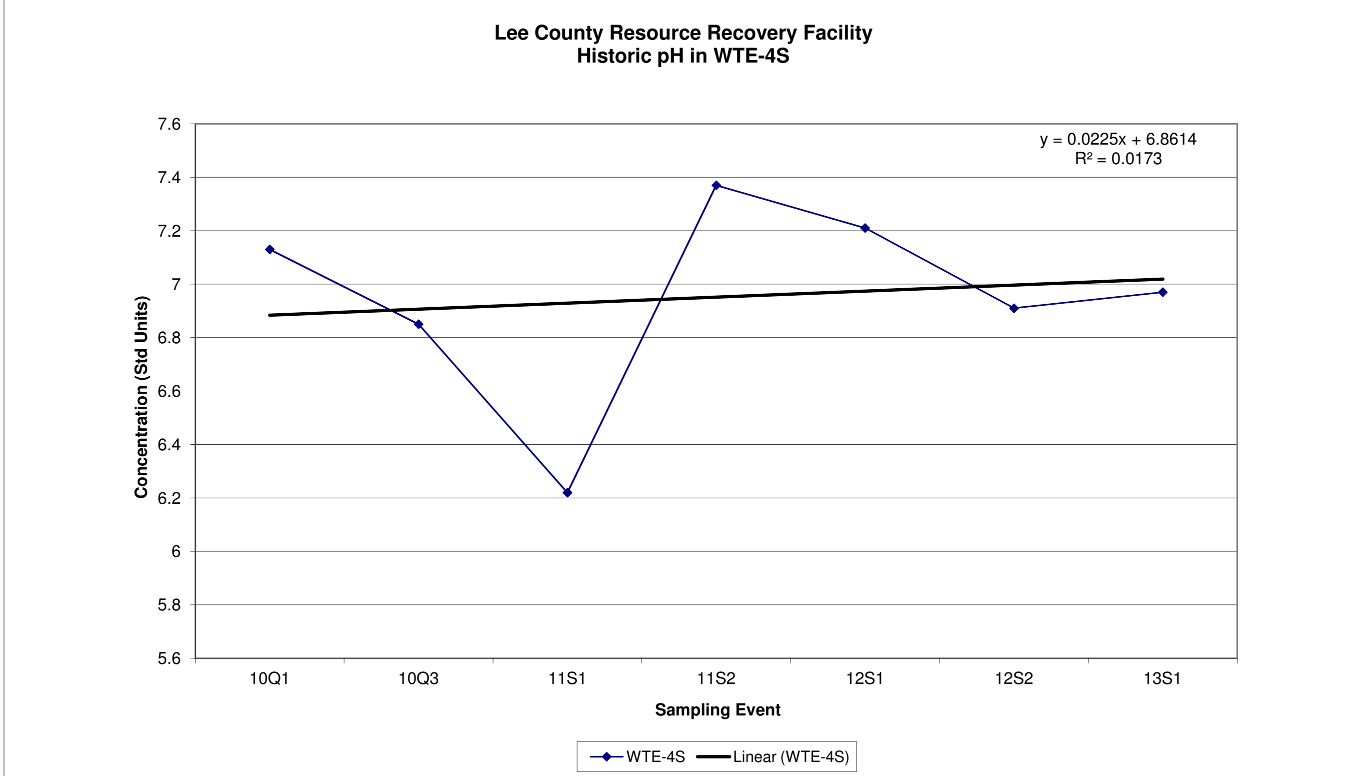
Historic pH Data

Lee County Resource Recovery Facility
Historic pH in WTE-2S



Lee County Resource Recovery Facility
Historic pH in WTE-3SR

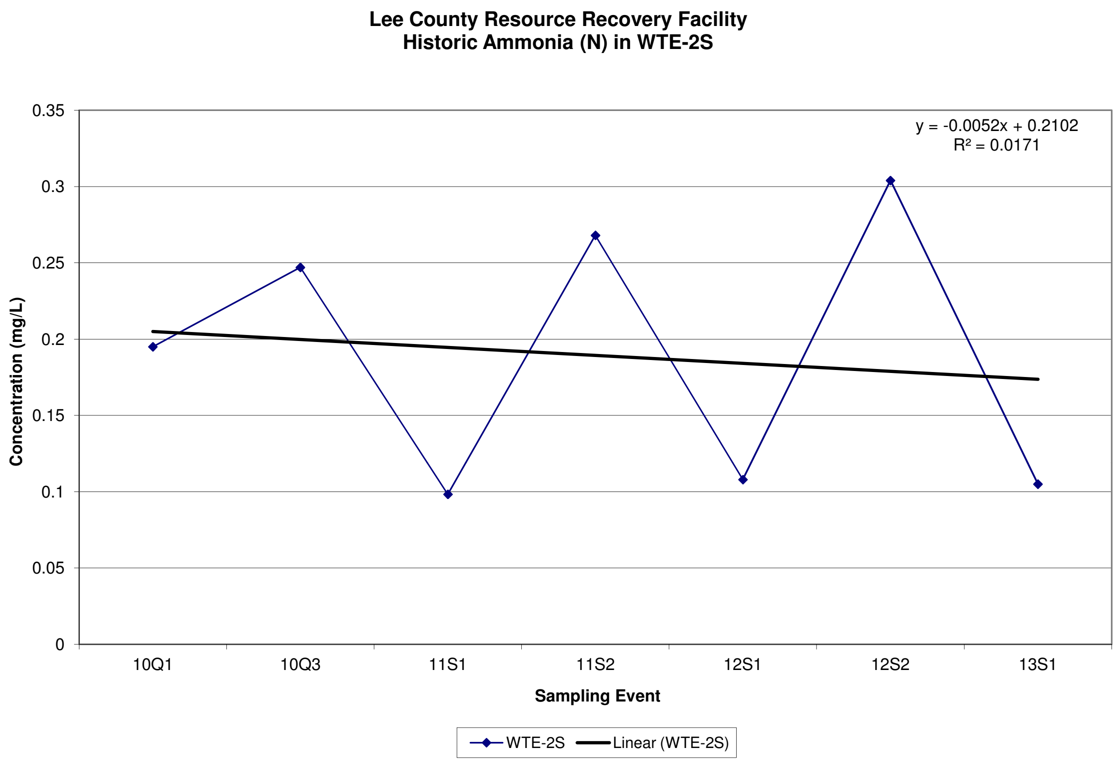


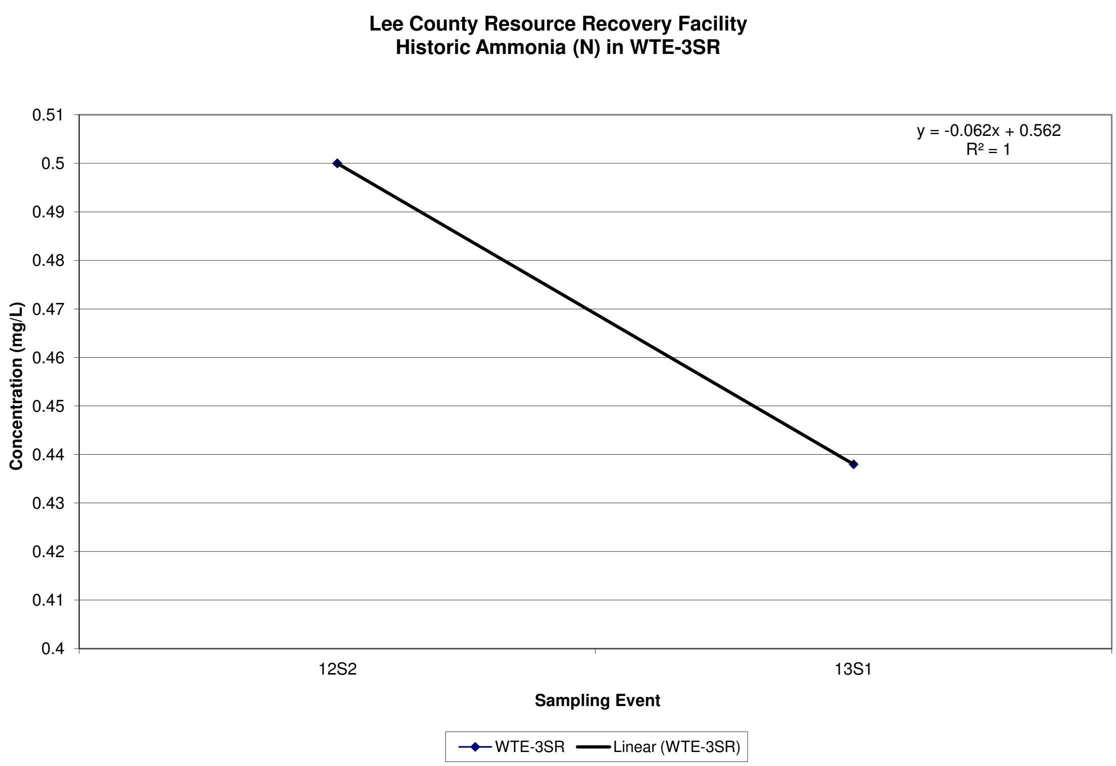


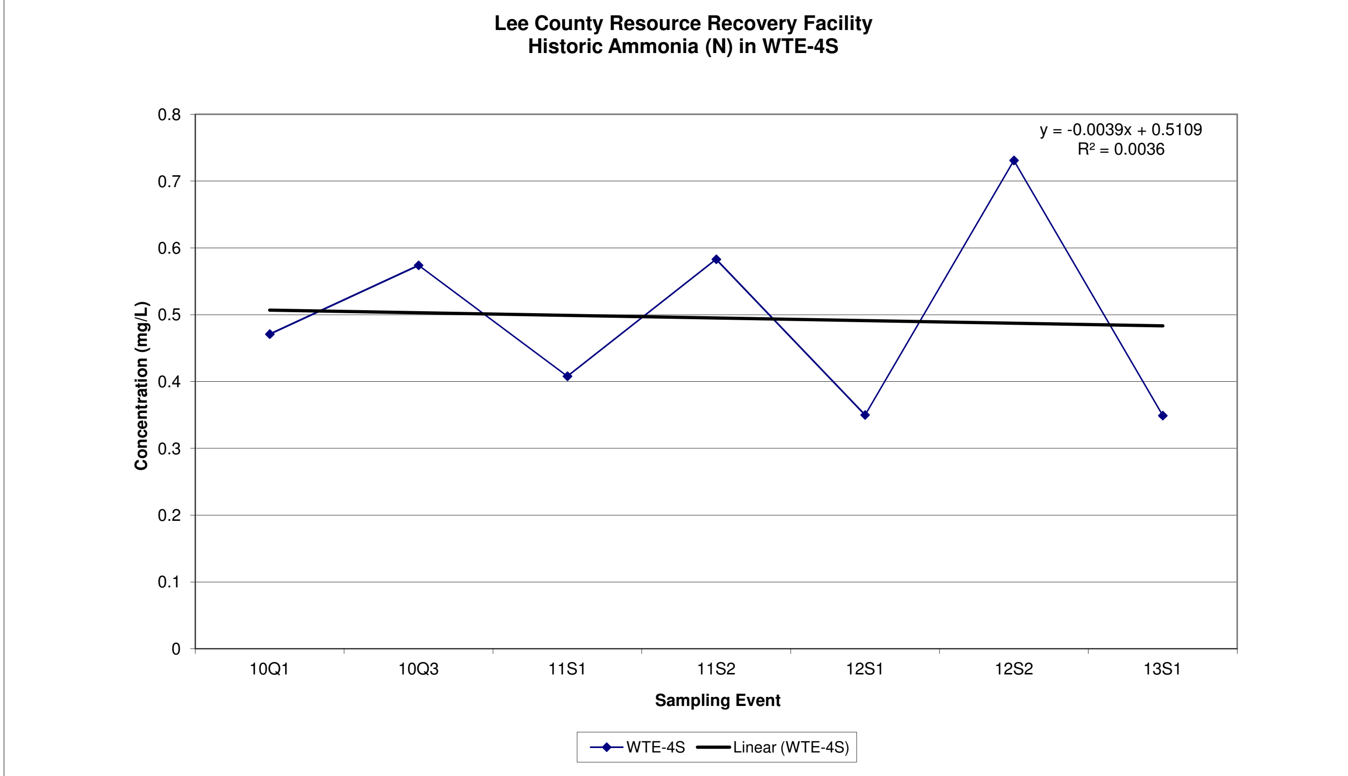
Lee County Resource Recovery Facility
Historic pH in WTE-4S
y = 0.0225x + 6.8614
R² = 0.0173
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
5.8
5.6
Concentration (Std Units)
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

Historic Ammonia-Nitrogen Data


Lee County Resource Recovery Facility
Historic Ammonia (N) in WTE-2S
y = -0.0052x + 0.2102
R² = 0.0171
Concentration (mg/L)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)

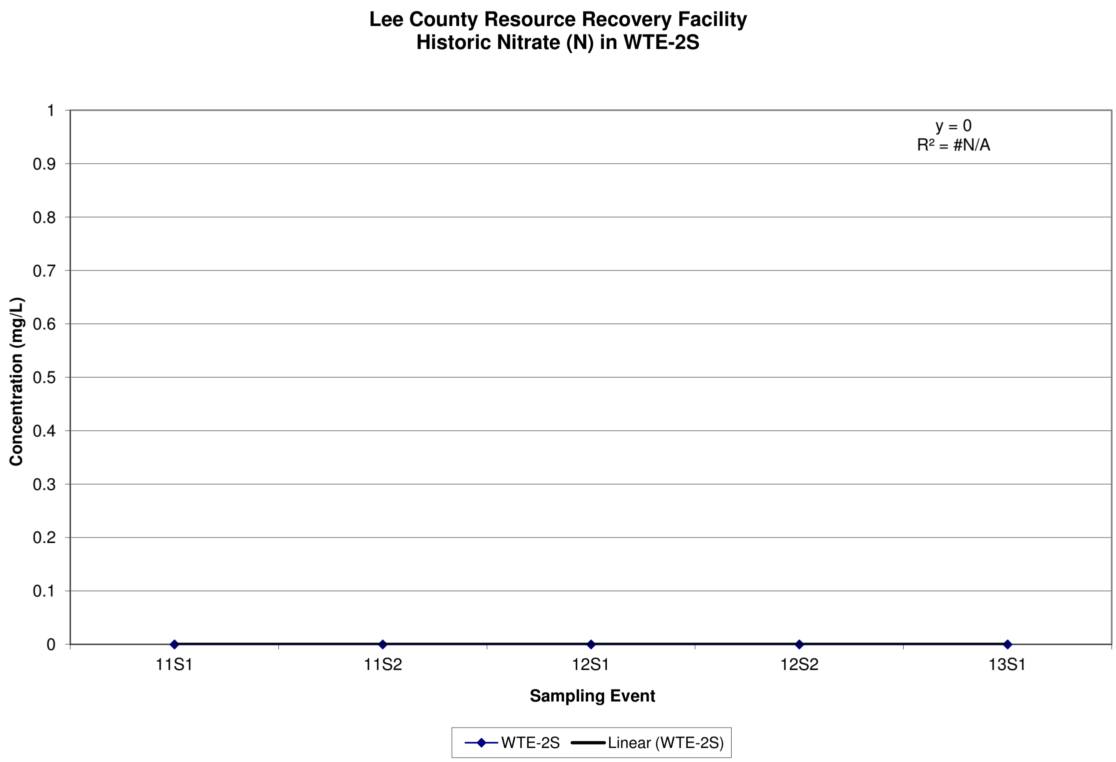

Lee County Resource Recovery Facility
Historic Ammonia (N) in WTE-3SR
y = -0.062x + 0.562
R² = 1
Concentration (mg/L)
0.51
0.5
0.49
0.48
0.47
0.46
0.45
0.44
0.43
0.42
0.41
0.4
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)

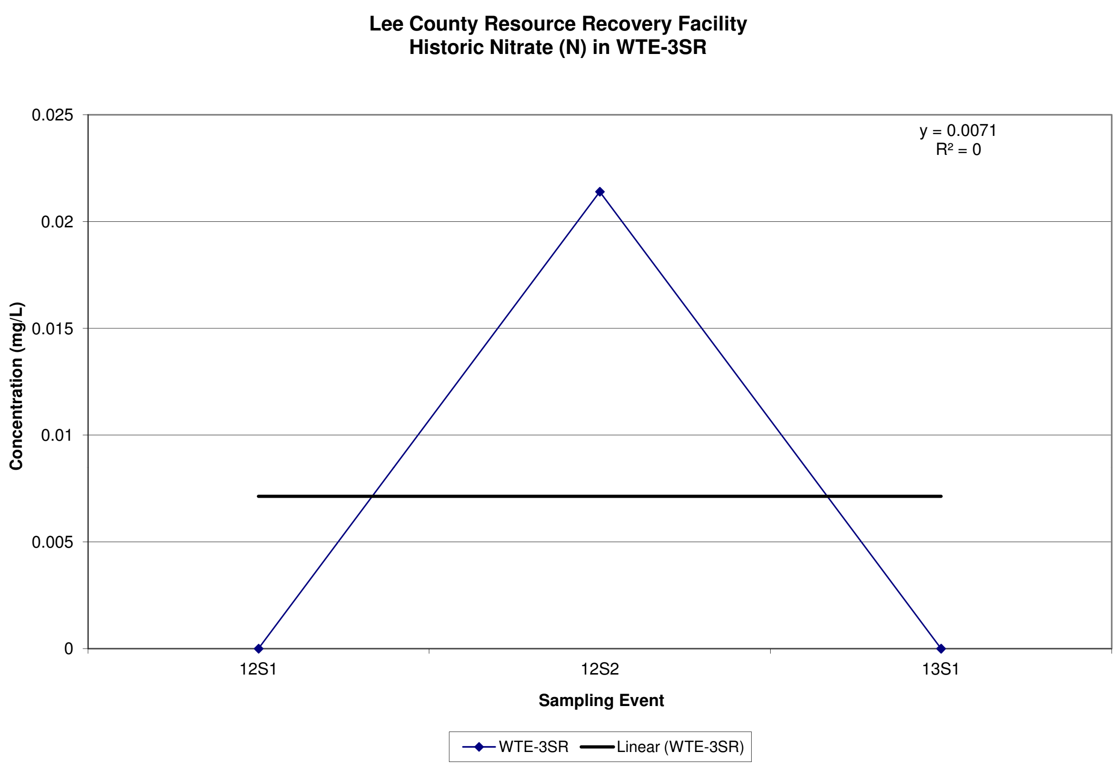


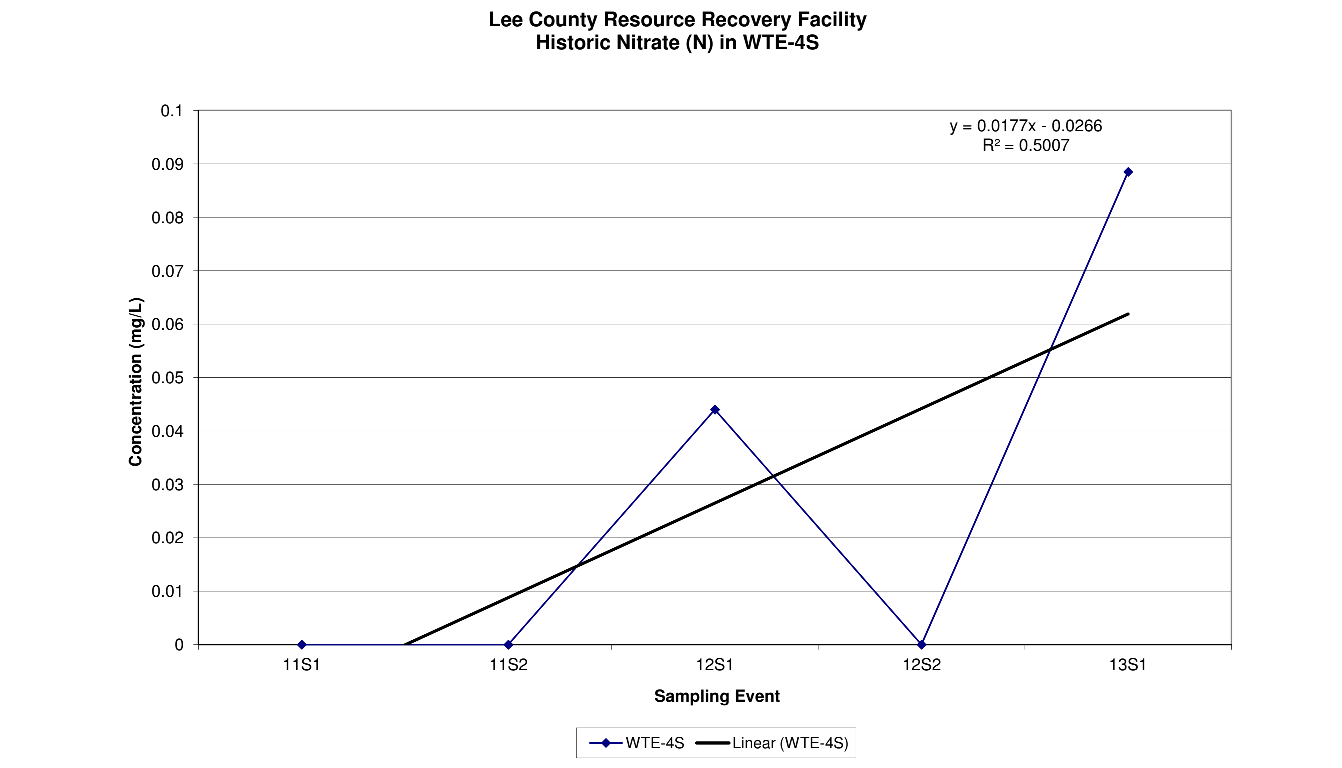
Lee County Resource Recovery Facility
Historic Ammonia (N) in WTE-4S
y = -0.0039x + 0.5109
R² = 0.0036
Concentration (mg/L)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

Historic Nitrate-Nitrogen Data


Lee County Resource Recovery Facility
Historic Nitrate (N) in WTE-2S
y = 0
R² = #N/A
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Concentration (mg/L)
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)

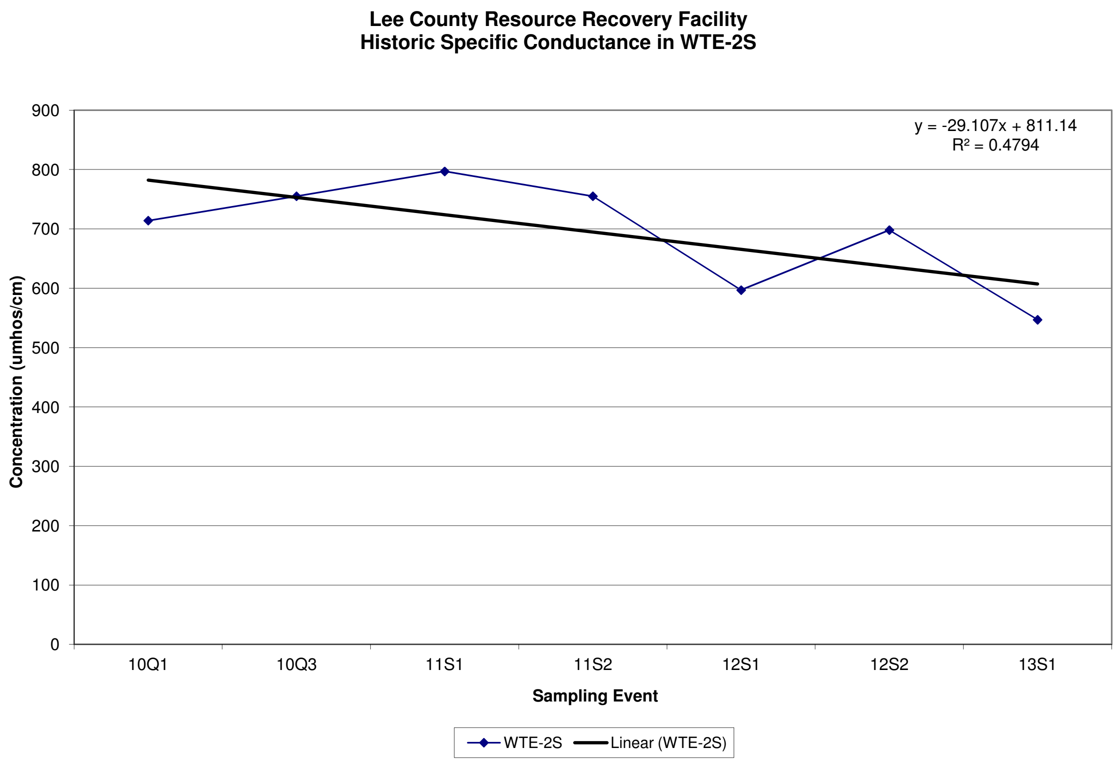

Lee County Resource Recovery Facility
Historic Nitrate (N) in WTE-3SR
y = 0.0071
R² = 0
0.025
0.02
0.015
0.01
0.005
0
Concentration (mg/L)
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)

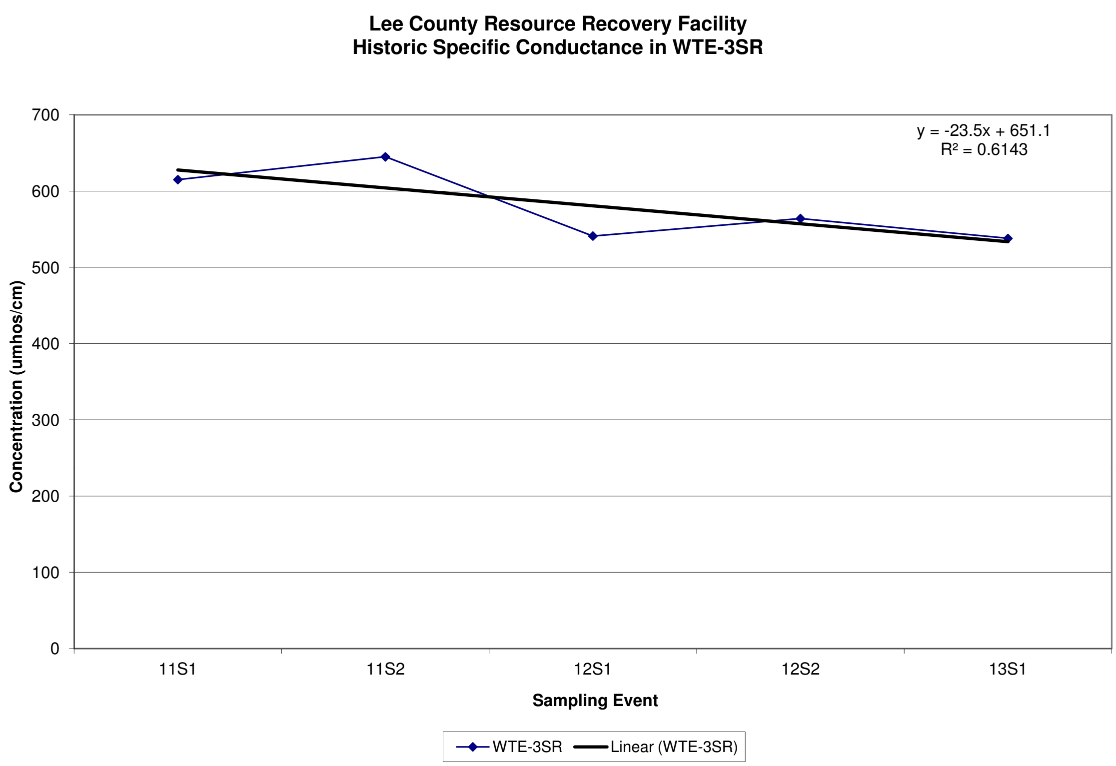


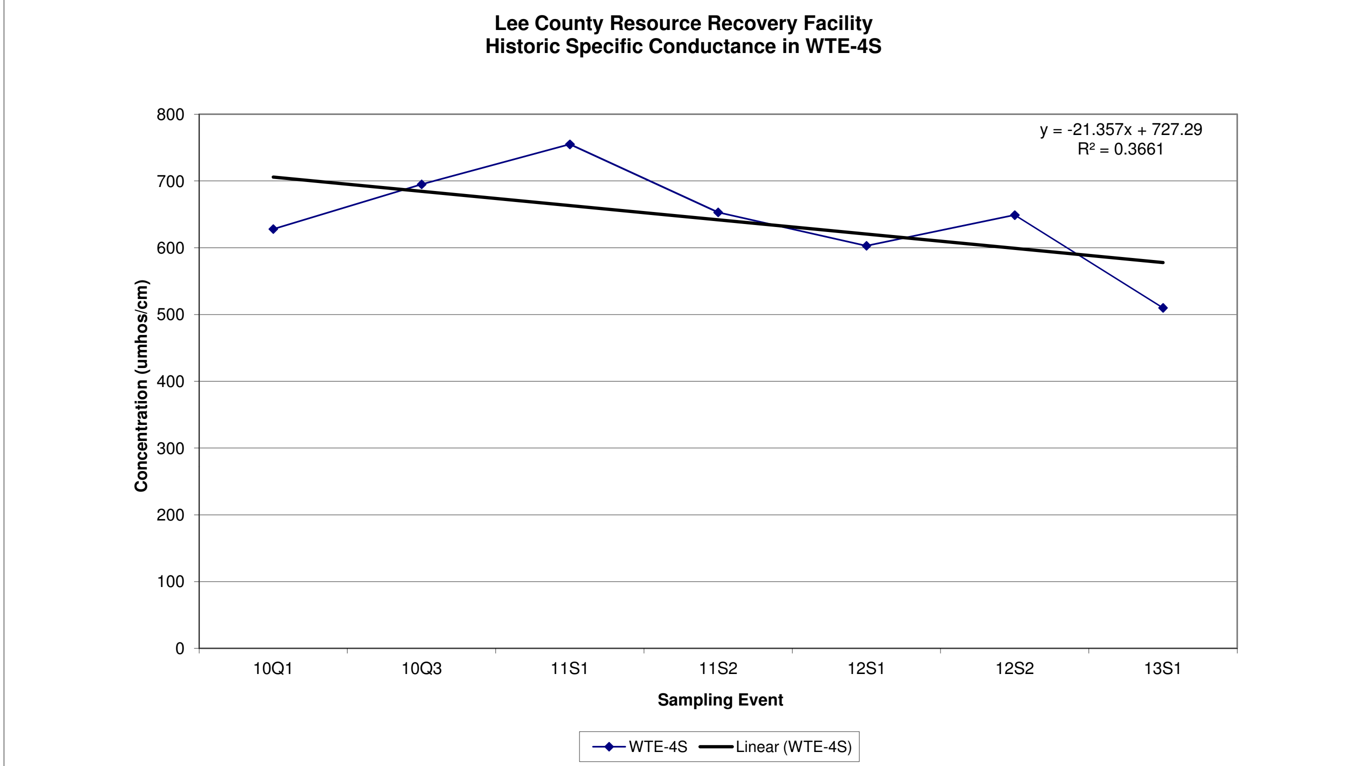
Lee County Resource Recovery Facility
Historic Nitrate (N) in WTE-4S
y = 0.0177x - 0.0266
R² = 0.5007
Concentration (mg/L)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

Historic Conductivity Data


Lee County Resource Recovery Facility
Historic Specific Conductance in WTE-2S
y = -29.107x + 811.14
R² = 0.4794
Concentration (umhos/cm)
900
800
700
600
500
400
300
200
100
0
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)

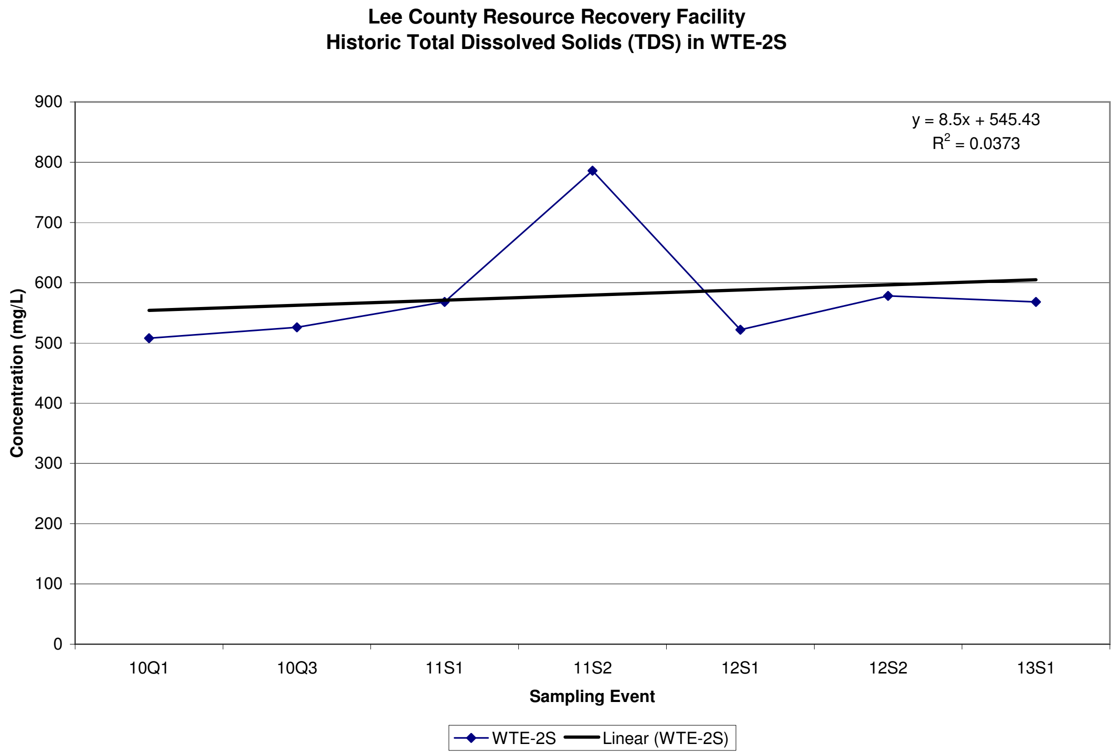

Lee County Resource Recovery Facility
Historic Specific Conductance in WTE-3SR
y = -23.5x + 651.1
R² = 0.6143
Concentration (umhos/cm)
700
600
500
400
300
200
100
0
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)



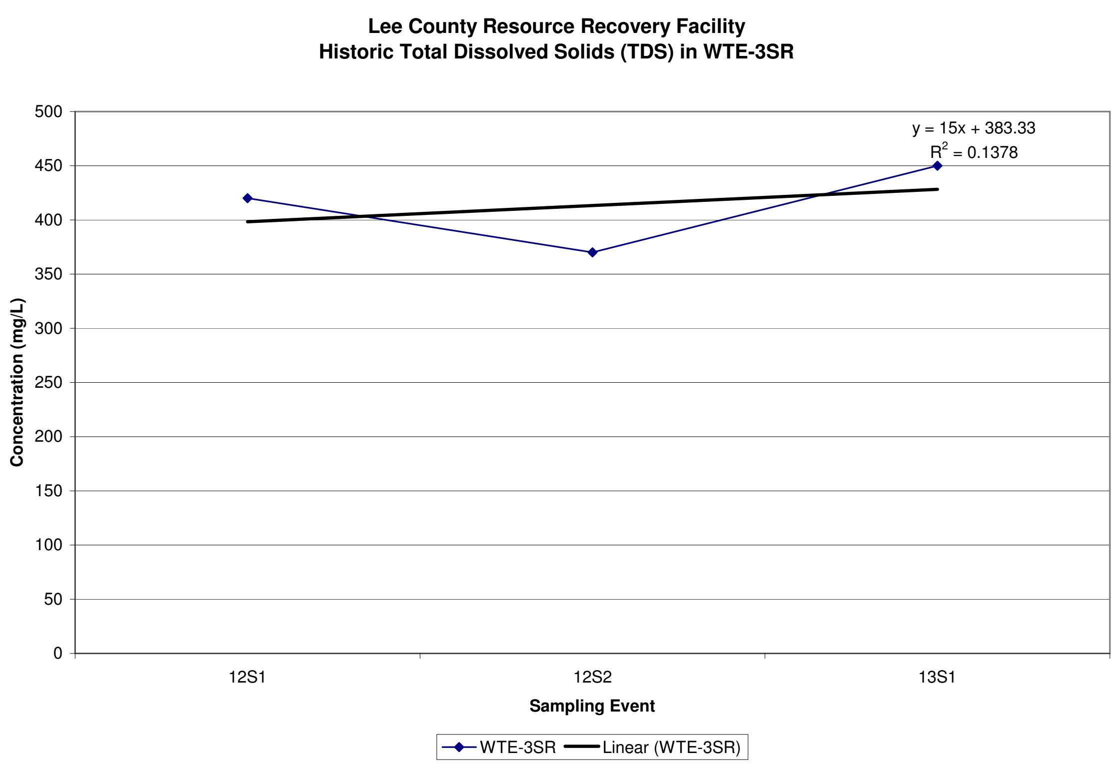
Lee County Resource Recovery Facility
Historic Specific Conductance in WTE-4S
y = -21.357x + 727.29
R² = 0.3661
800
700
600
500
400
300
200
100
0
Concentration (umhos/cm)
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

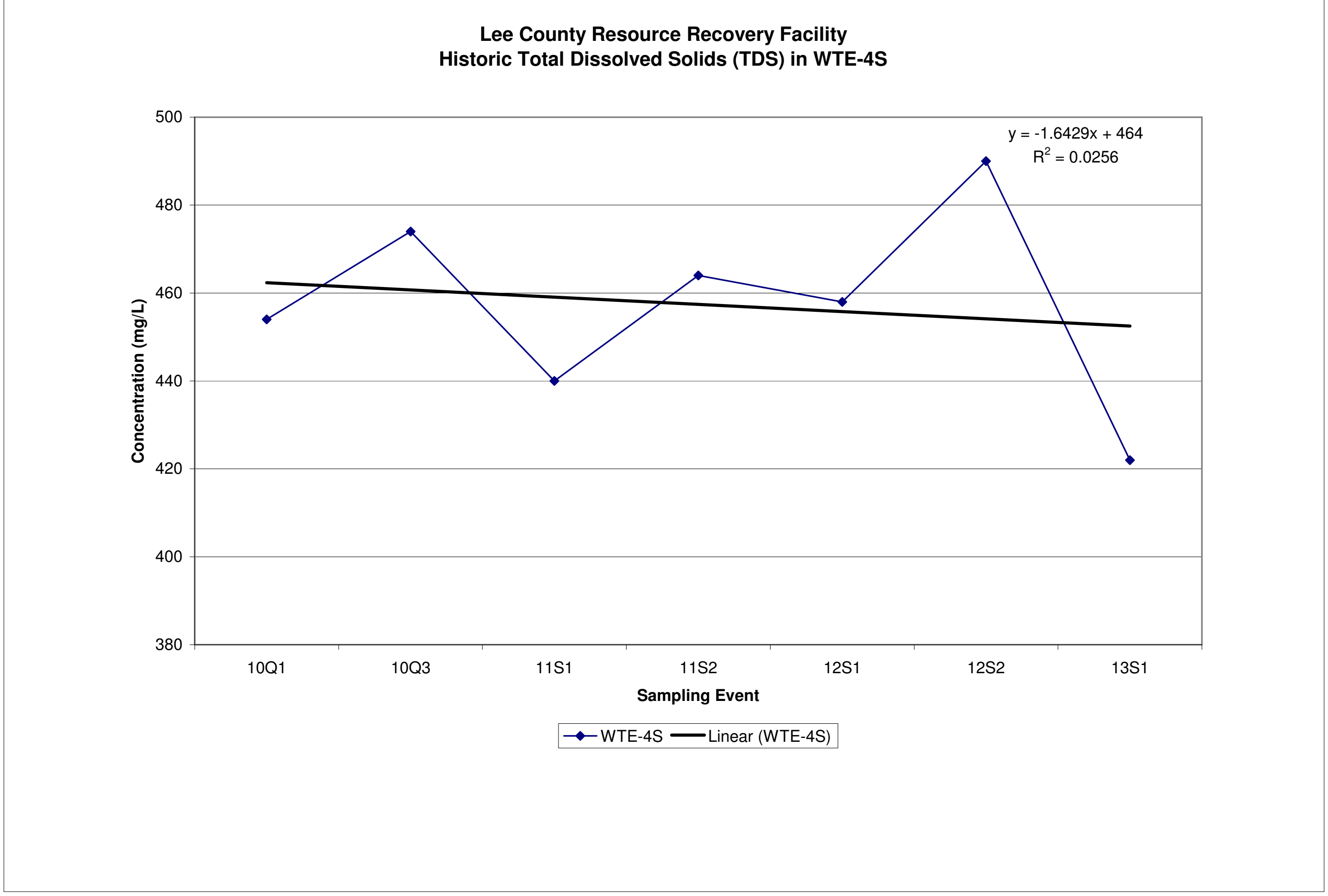
Historic Total Dissolved Solids Data



Lee County Resource Recovery Facility
Historic Total Dissolved Solids (TDS) in WTE-2S
y = 8.5x + 545.43
R2 = 0.0373
900
800
700
600
500
400
300
200
100
0
Concentration (mg/L)
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)

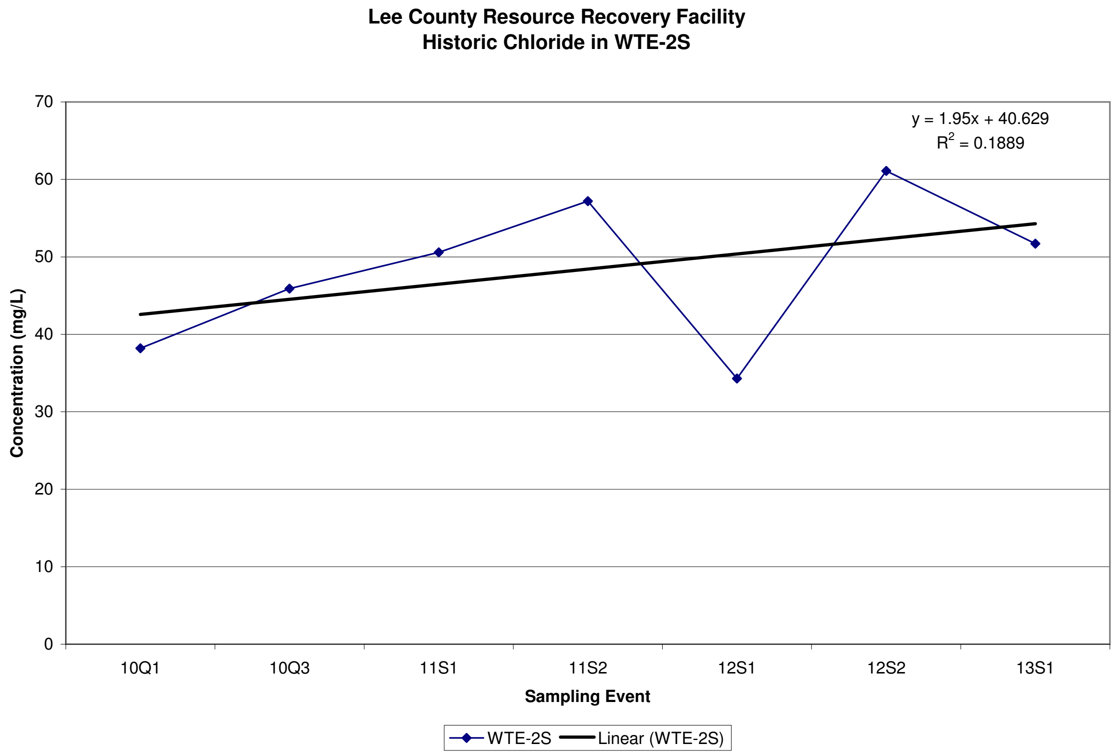


Lee County Resource Recovery Facility
Historic Total Dissolved Solids (TDS) in WTE-3SR
y = 15x + 383.33
R2 = 0.1378
500
450
400
350
300
250
200
150
100
50
0
Concentration (mg/L)
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)

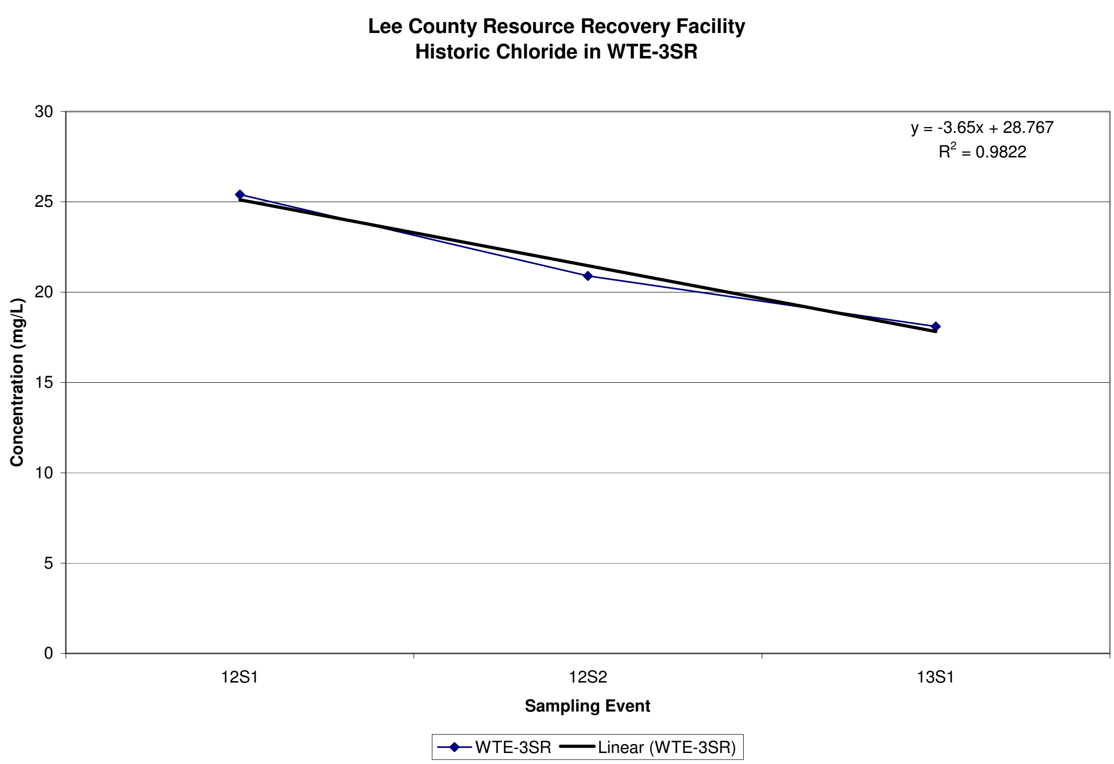

Lee County Resource Recovery Facility
Historic Total Dissolved Solids (TDS) in WTE-4S
y = -1.6429x + 464
R2 = 0.0256
Concentration (mg/L)
500
480
460
440
420
400
380
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

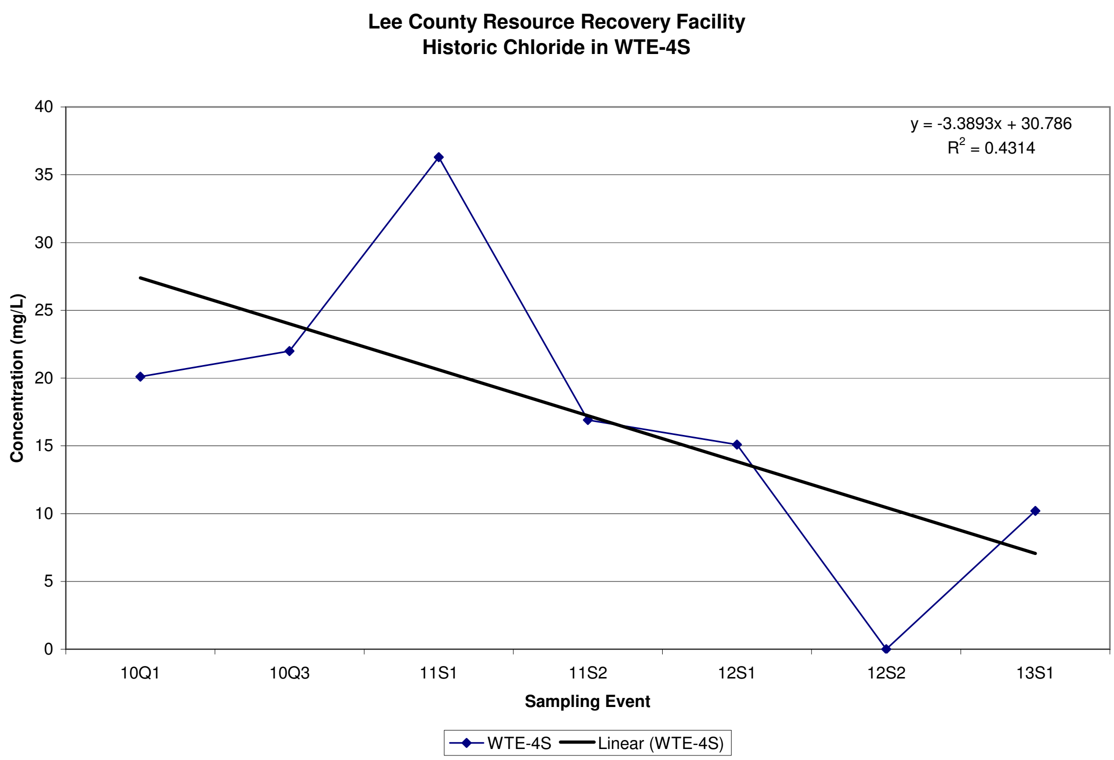
Historic Chloride Data



Lee County Resource Recovery Facility
Historic Chloride in WTE-2S
y = 1.95x + 40.629
R^2 = 0.1889
70
60
50
40
30
20
10
0
Concentration (mg/L)
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)



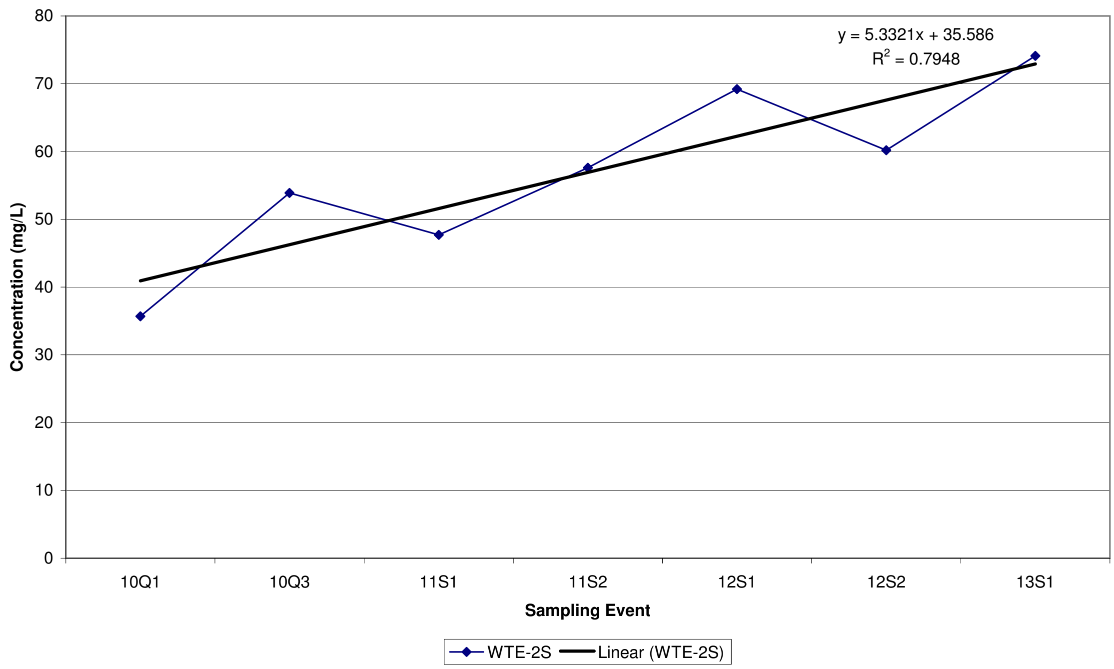
Lee County Resource Recovery Facility
Historic Chloride in WTE-3SR
y = -3.65x + 28.767
R^2 = 0.9822
30
25
20
15
10
5
0
Concentration (mg/L)
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)


Lee County Resource Recovery Facility
Historic Chloride in WTE-4S
y = -3.3893x + 30.786
R2 = 0.4314
Concentration (mg/L)
40
35
30
25
20
15
10
5
0
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

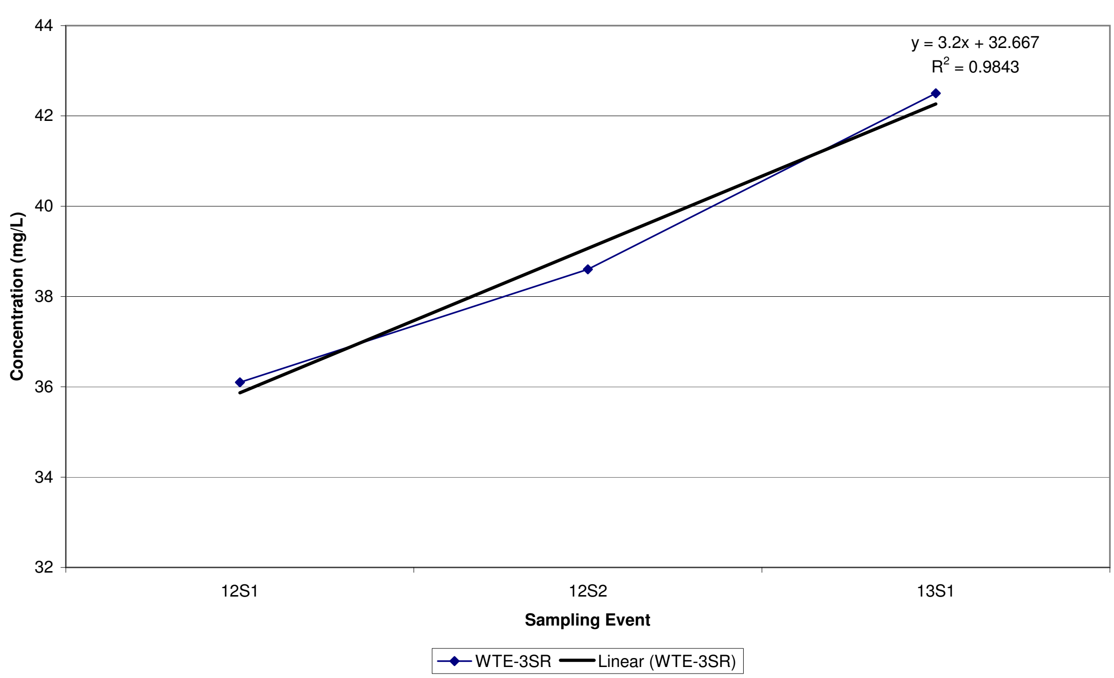
Lee County Resource Recovery Facility

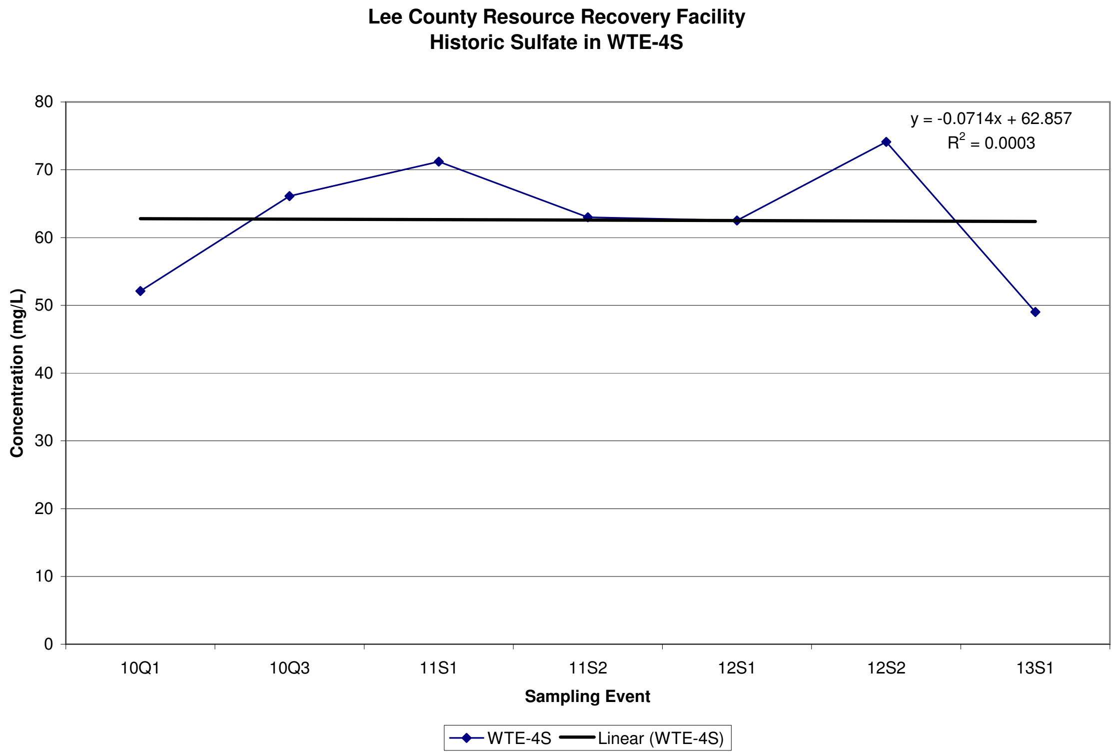
Historic Sulfate Data

Lee County Resource Recovery Facility
Historic Sulfate in WTE-2S



Lee County Resource Recovery Facility
Historic Sulfate in WTE-3SR

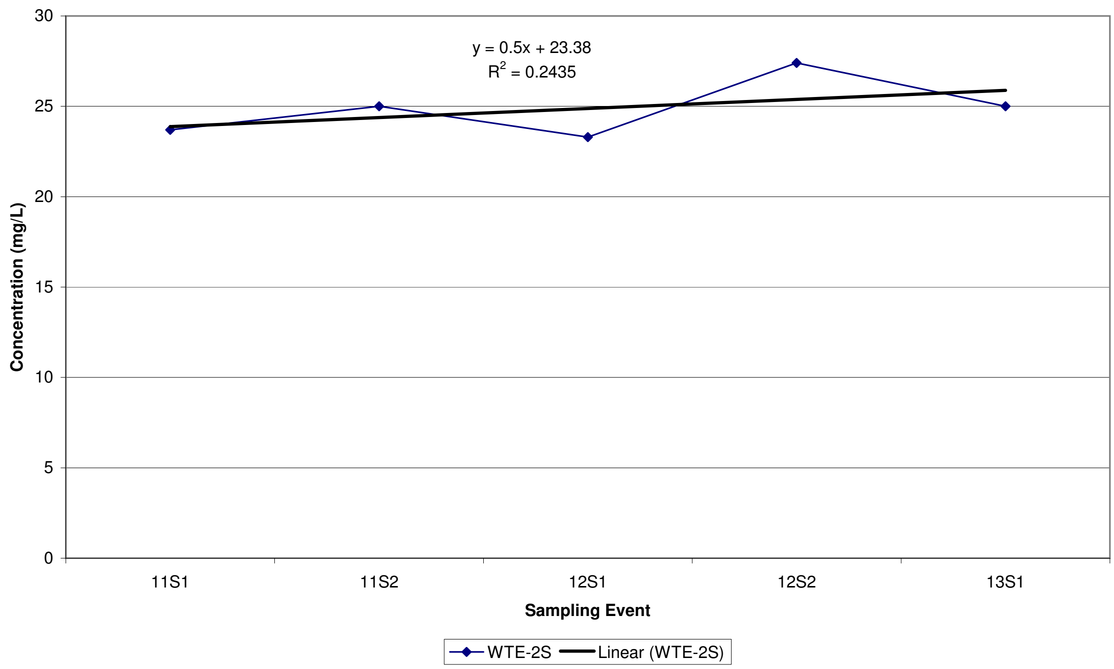



Lee County Resource Recovery Facility
Historic Sulfate in WTE-4S
y = -0.0714x + 62.857
R2 = 0.0003
80
70
60
50
40
30
20
10
0
Concentration (mg/L)
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

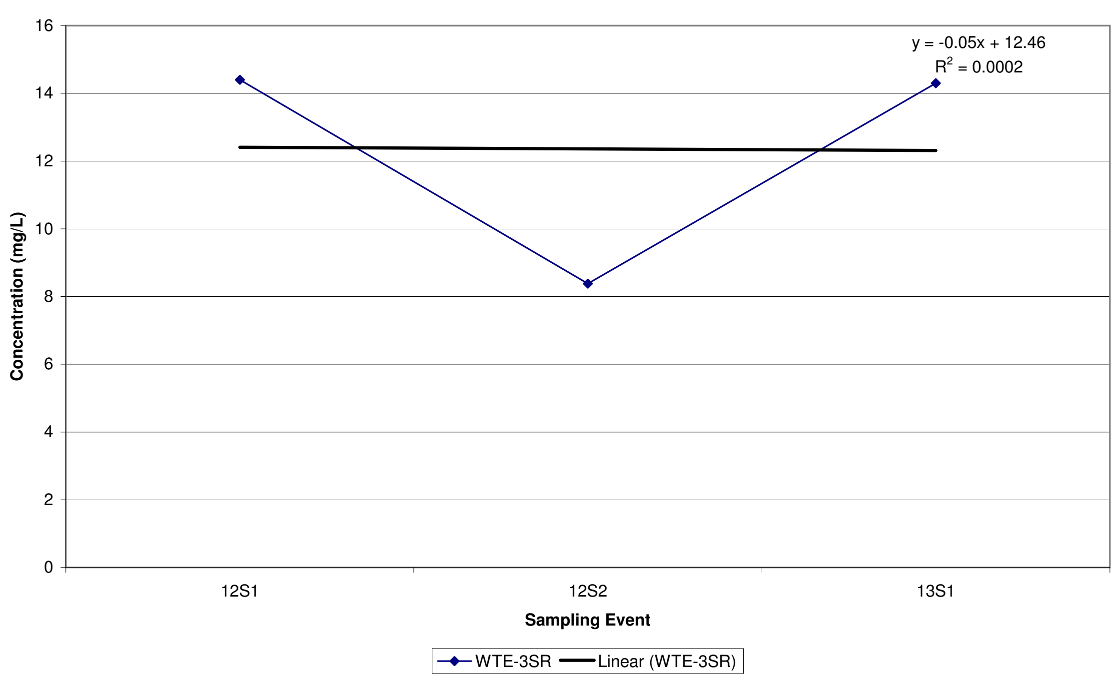
Lee County Resource Recovery Facility

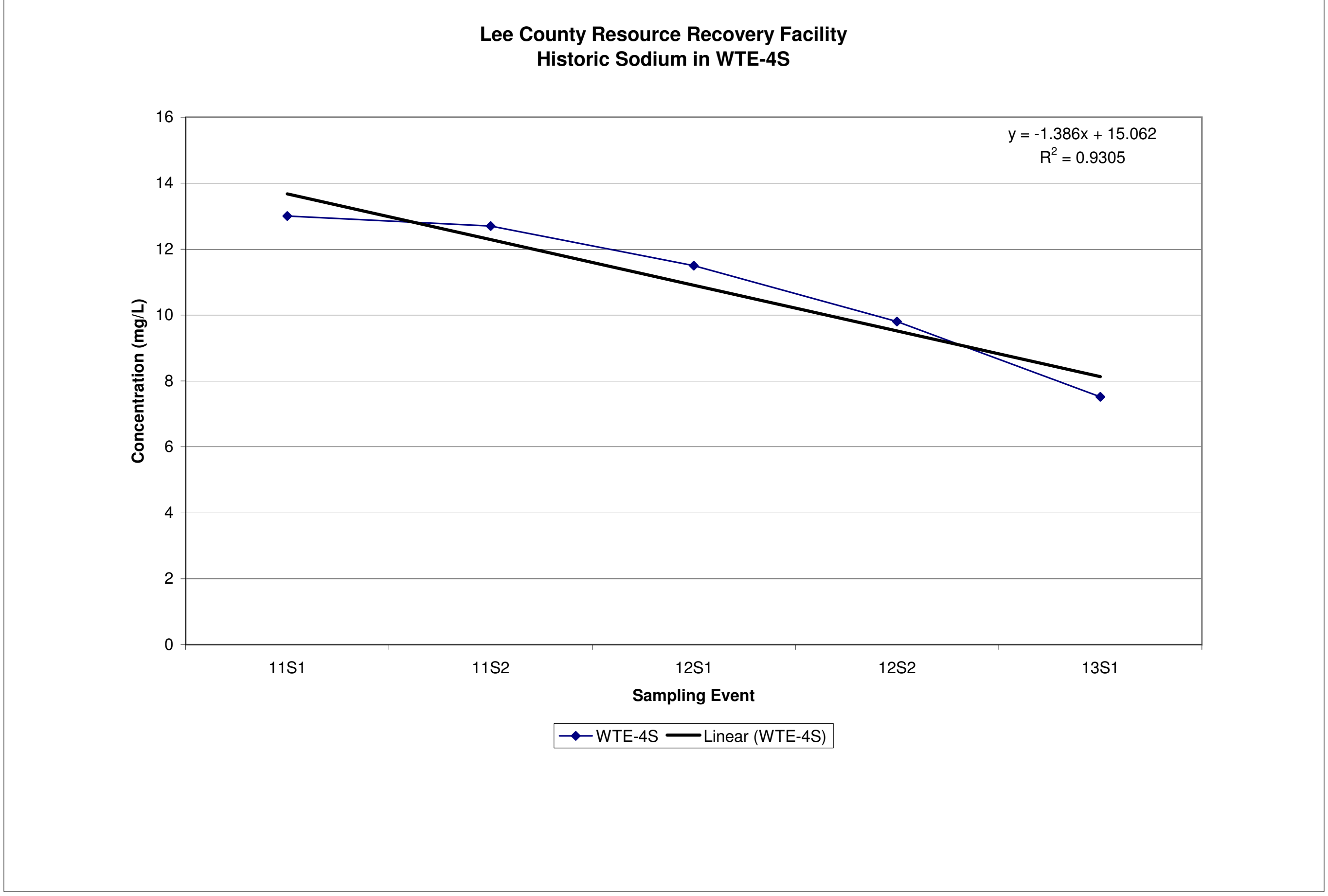
Historic Sodium Data

Lee County Resource Recovery Facility
Historic Sodium in WTE-2S



Lee County Resource Recovery Facility
Historic Sodium in WTE-3SR

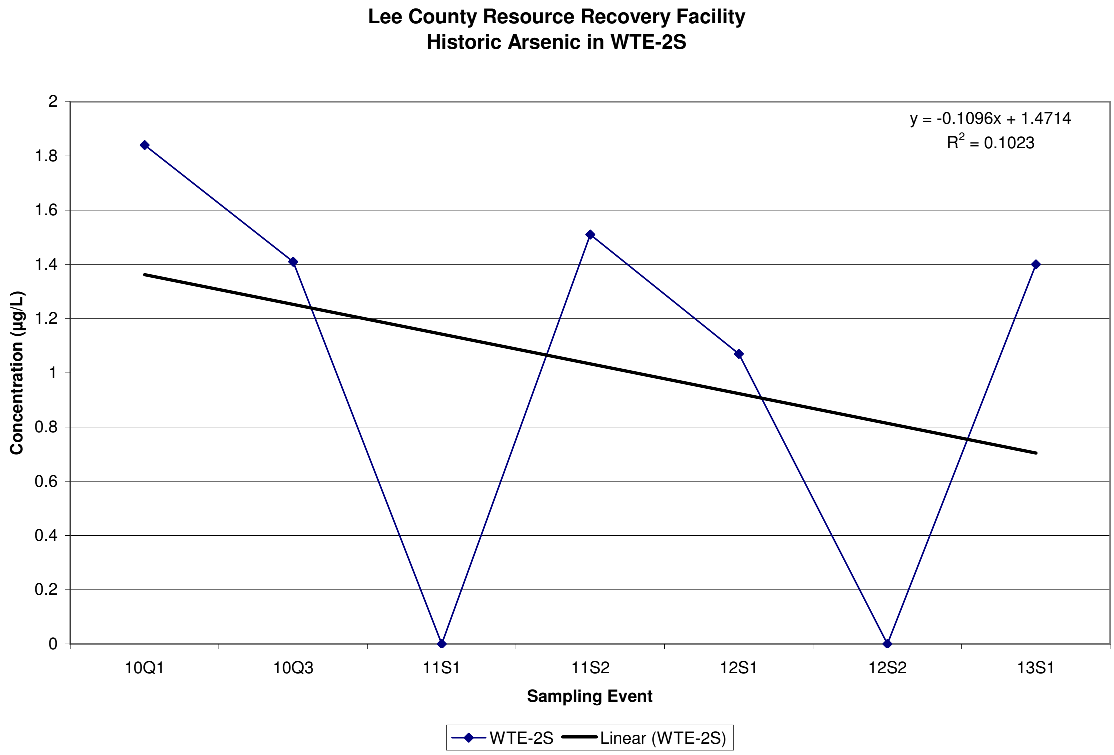


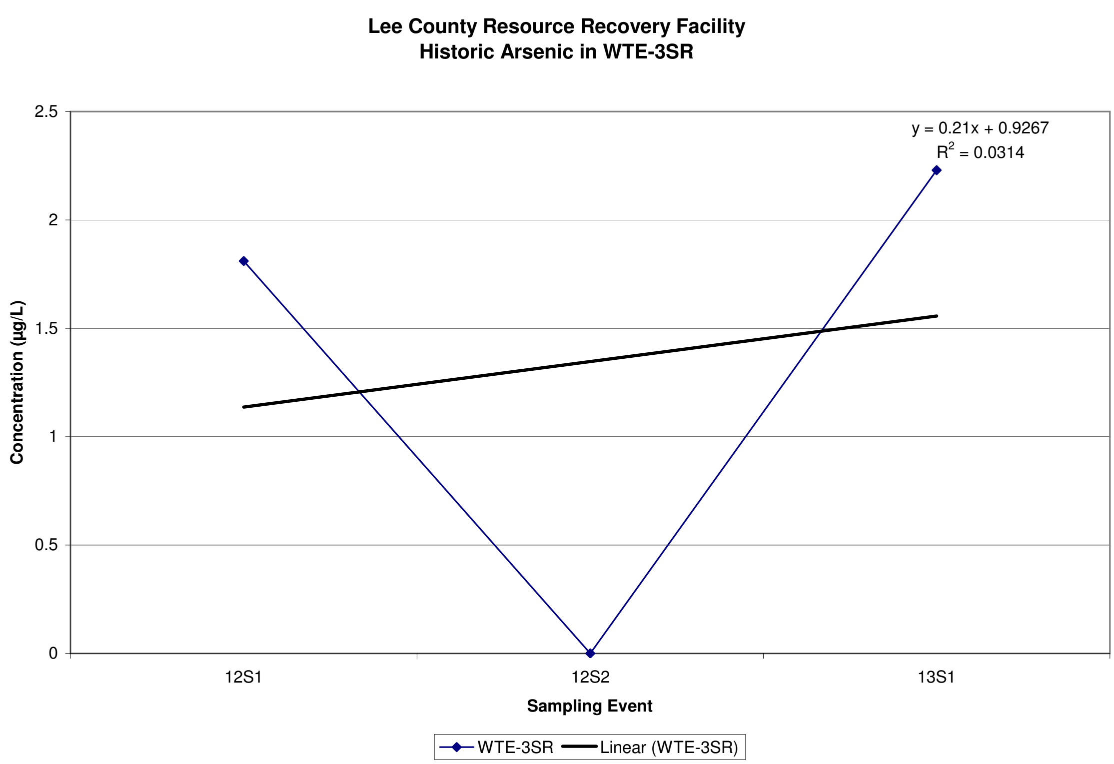


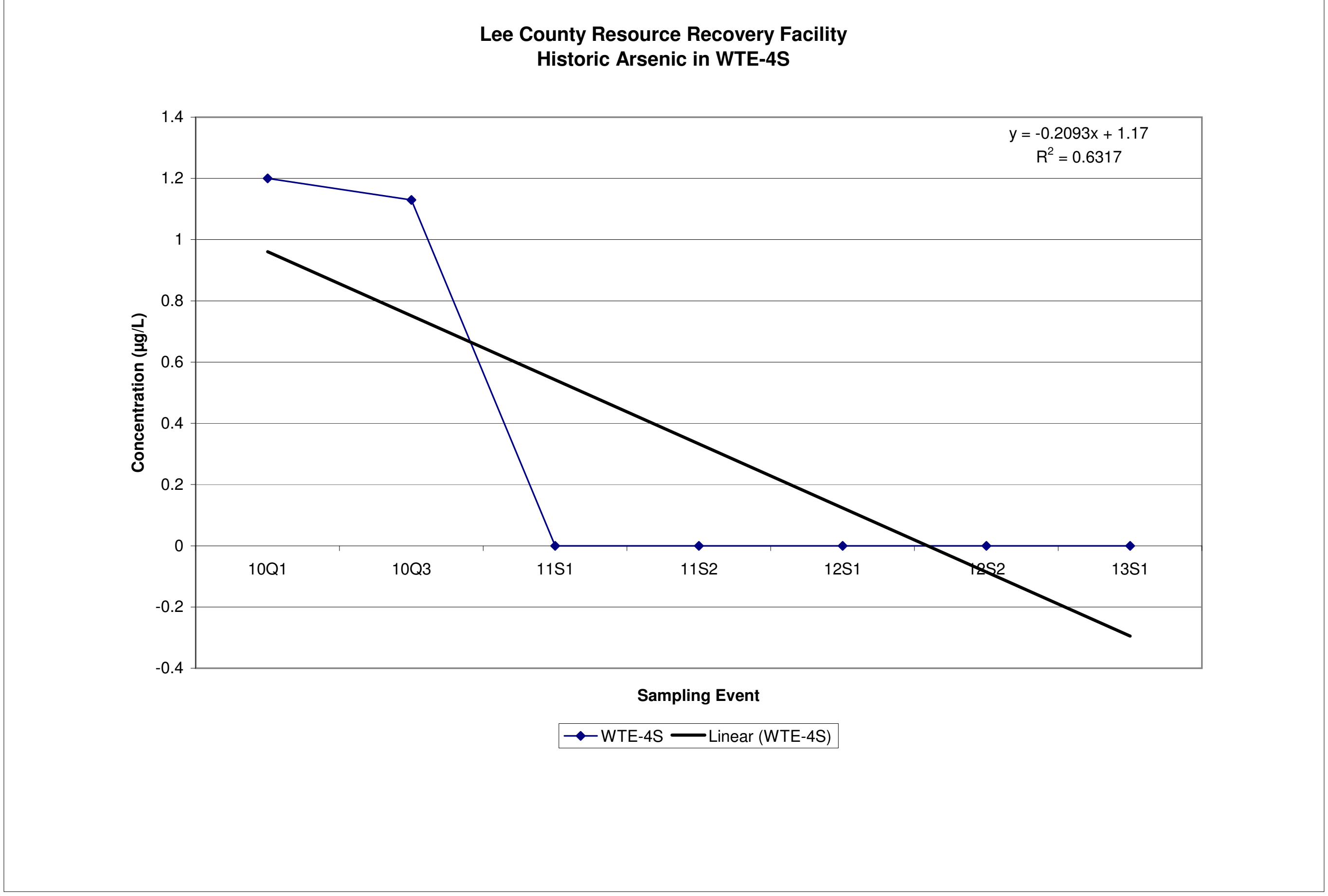
Lee County Resource Recovery Facility
Historic Sodium in WTE-4S
y = -1.386x + 15.062
R2 = 0.9305
16
14
12
10
8
6
4
2
0
Concentration (mg/L)
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

Historic Arsenic Data

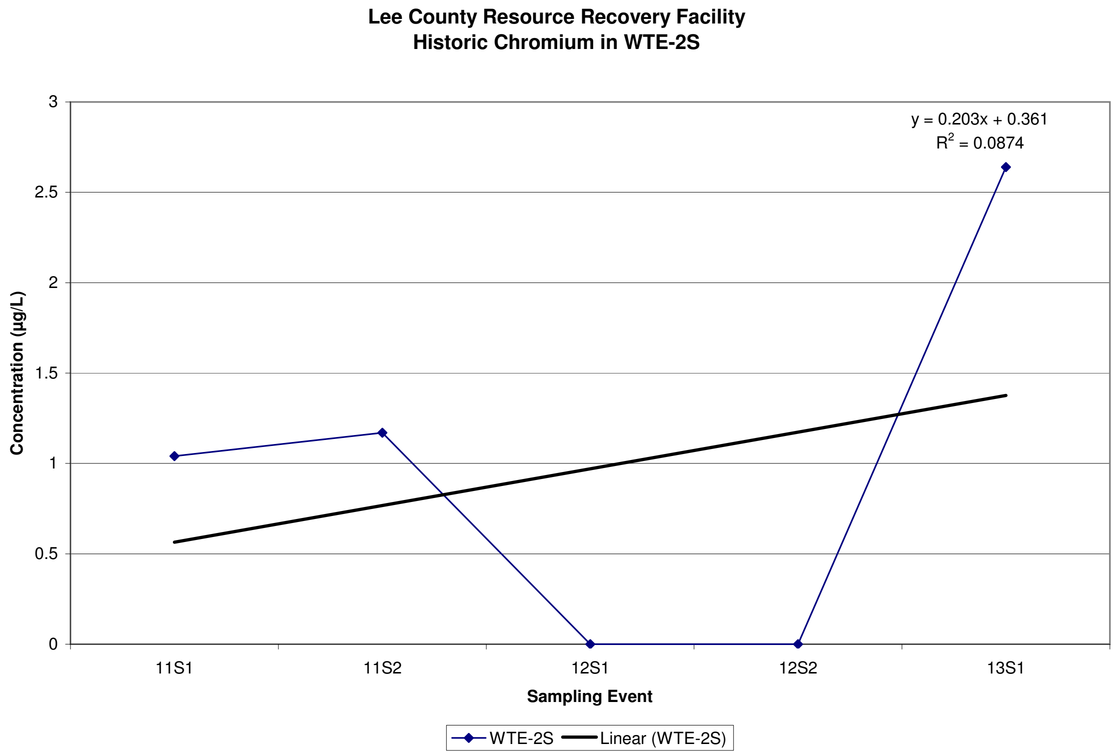

Lee County Resource Recovery Facility
Historic Arsenic in WTE-2S
y = -0.1096x + 1.4714
R2 = 0.1023
Concentration (µg/L)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)


Lee County Resource Recovery Facility
Historic Arsenic in WTE-3SR
y = 0.21x + 0.9267
R2 = 0.0314
Concentration (µg/L)
0
0.5
1
1.5
2
2.5
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)

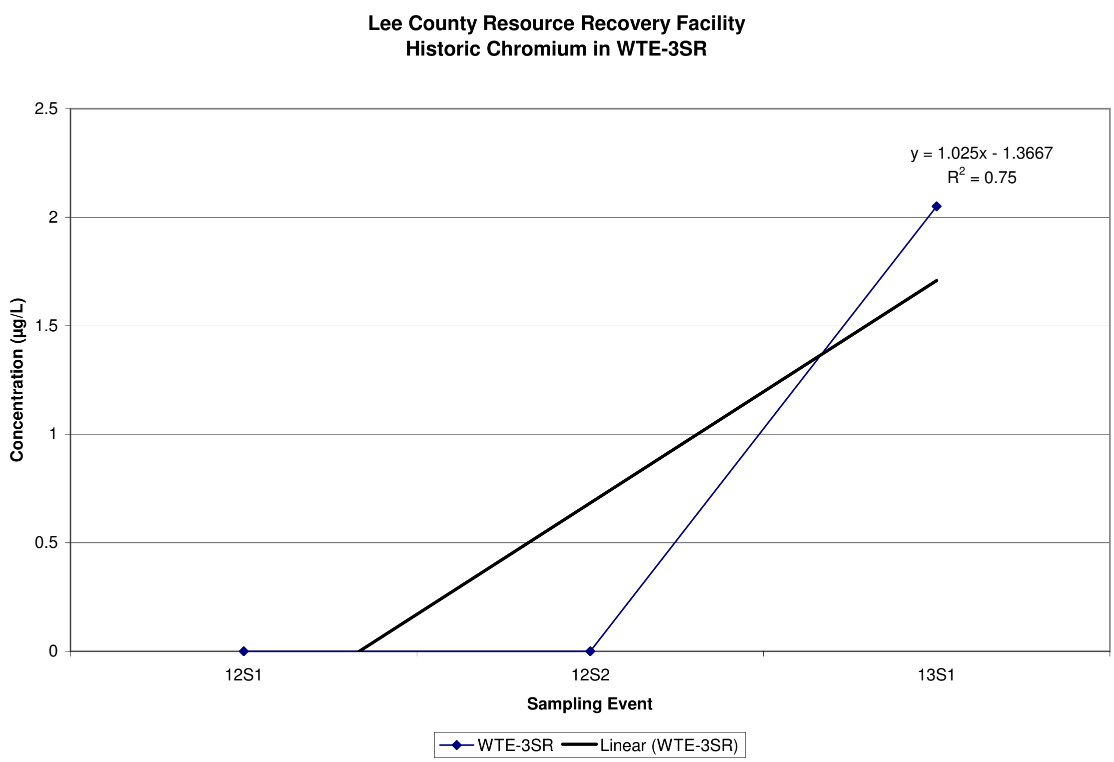

Lee County Resource Recovery Facility
Historic Arsenic in WTE-4S
y = -0.2093x + 1.17
R2 = 0.6317
Concentration (µg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

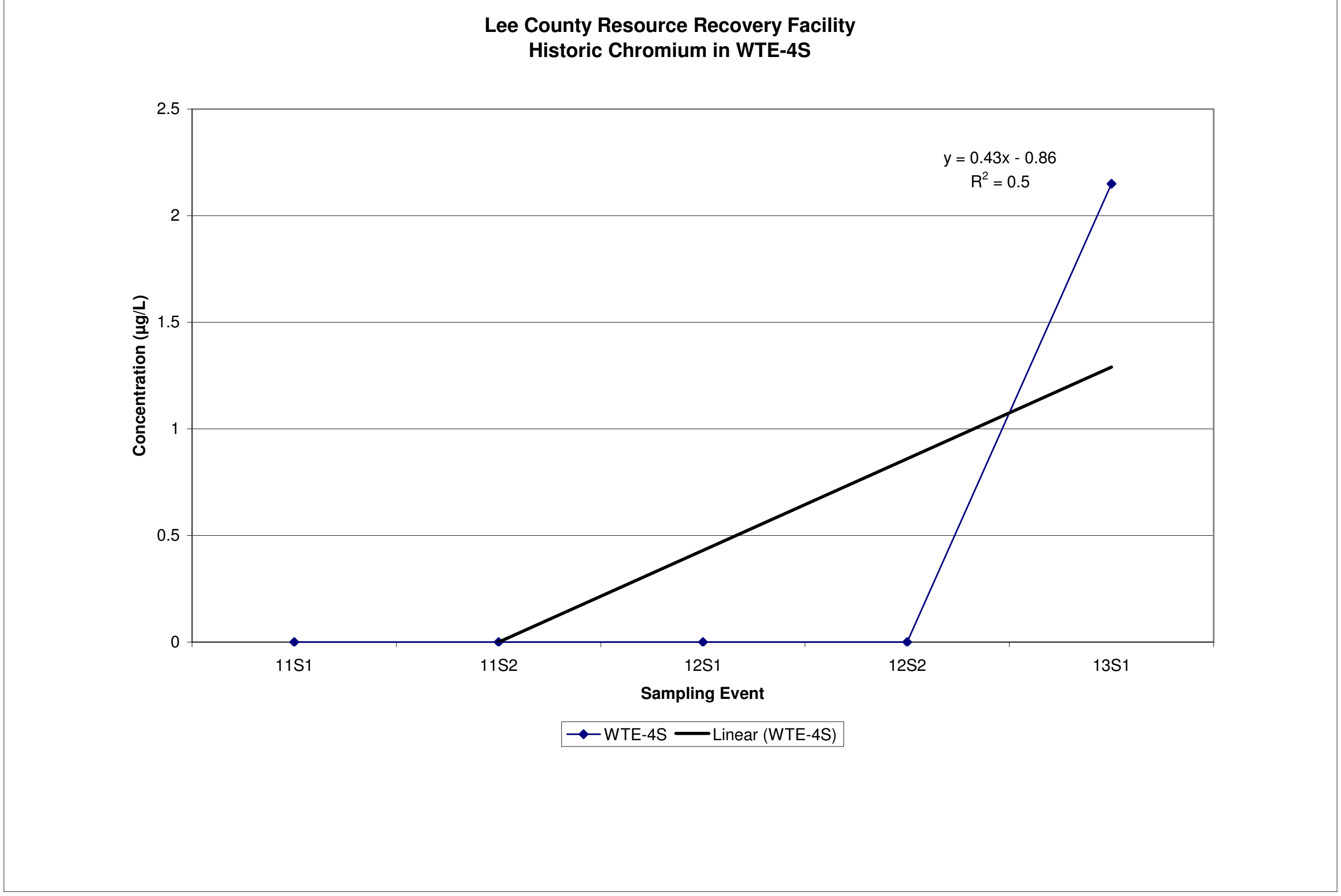
Historic Chromium Data



Lee County Resource Recovery Facility
Historic Chromium in WTE-2S
y = 0.203x + 0.361
R2 = 0.0874
Concentration (µg/L)
3
2.5
2
1.5
1
0.5
0
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)

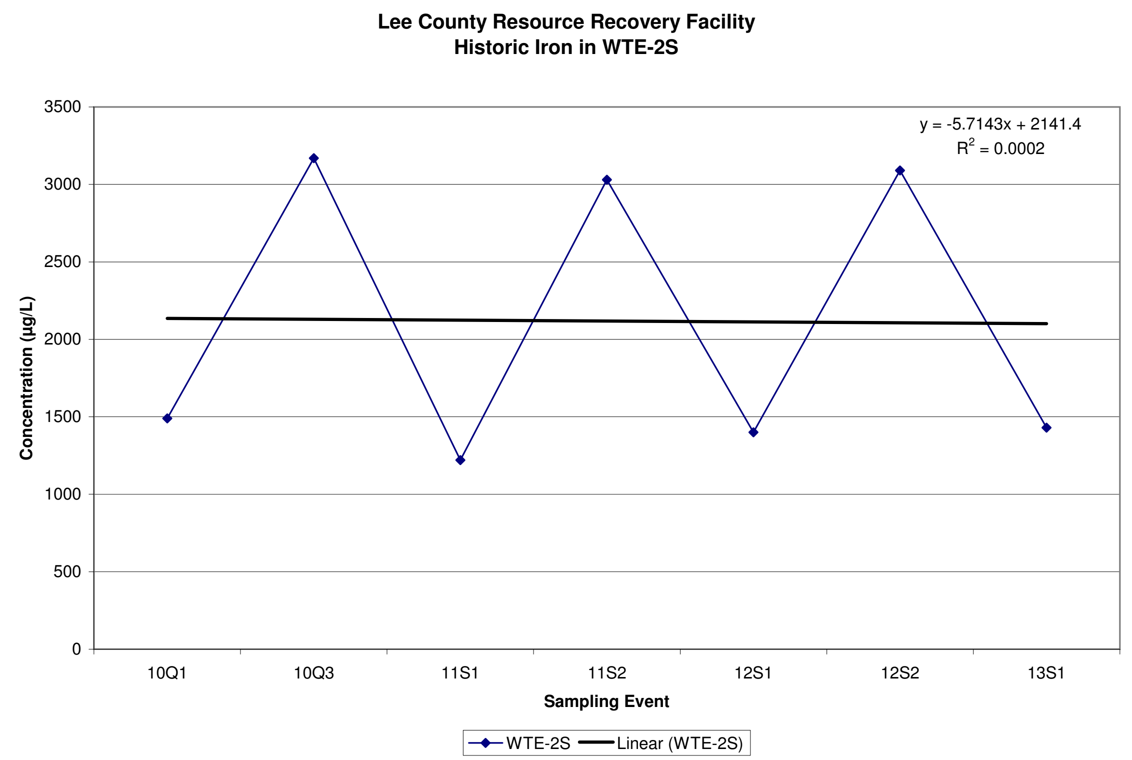


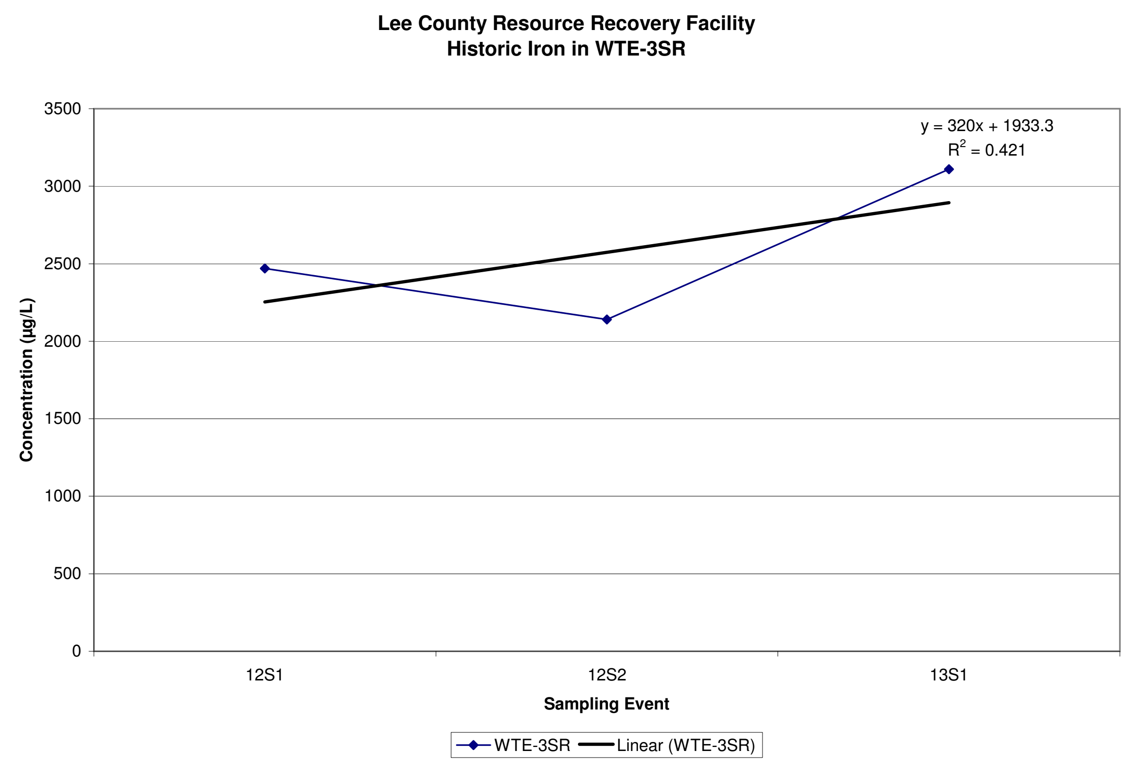
Lee County Resource Recovery Facility
Historic Chromium in WTE-3SR
y = 1.025x - 1.3667
R2 = 0.75
Concentration (µg/L)
2.5
2
1.5
1
0.5
0
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)

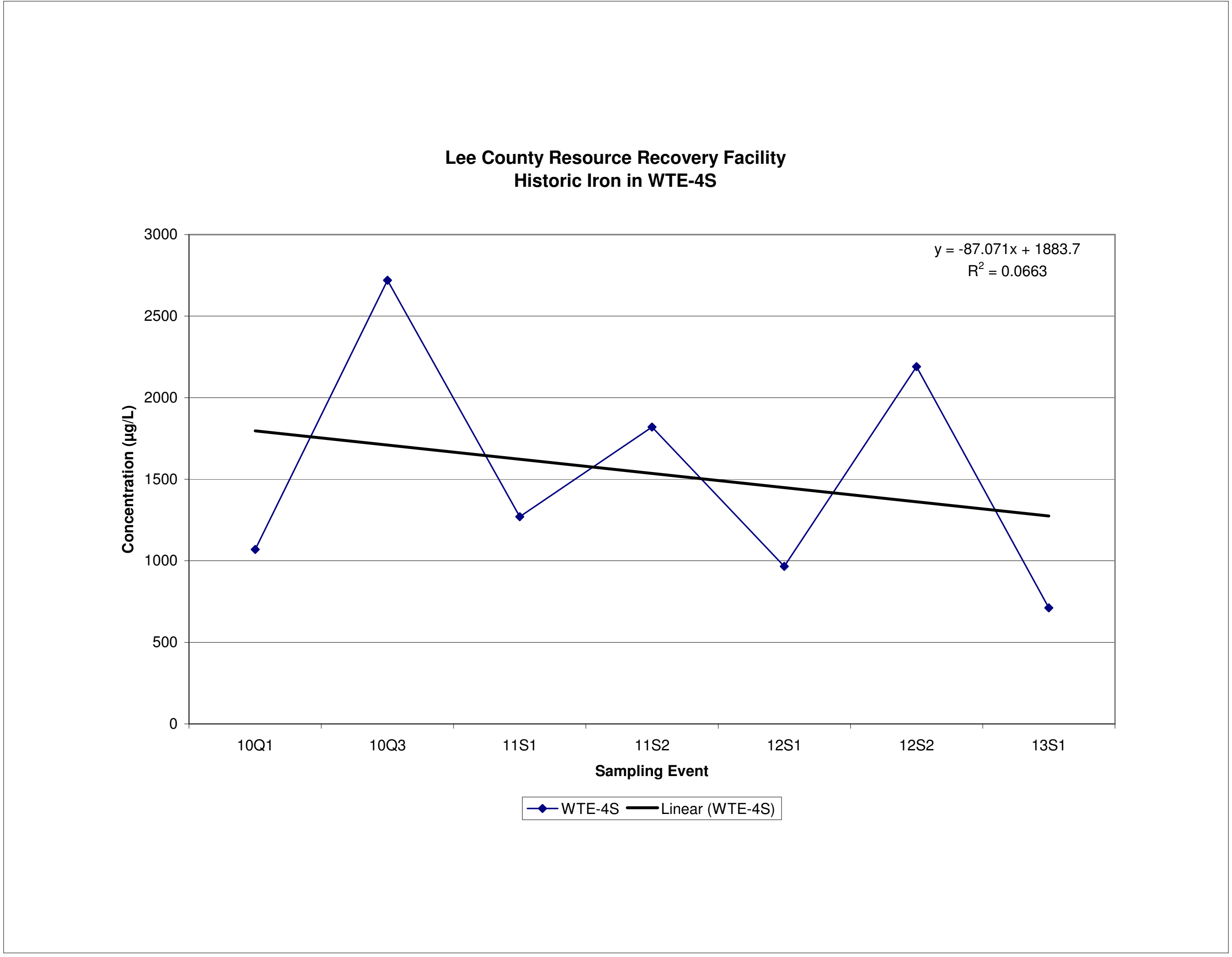

Lee County Resource Recovery Facility
Historic Chromium in WTE-4S
y = 0.43x - 0.86
$R^2 = 0.5$
2.5
2
1.5
1
0.5
0
Concentration (µg/L)
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

Historic Iron Data

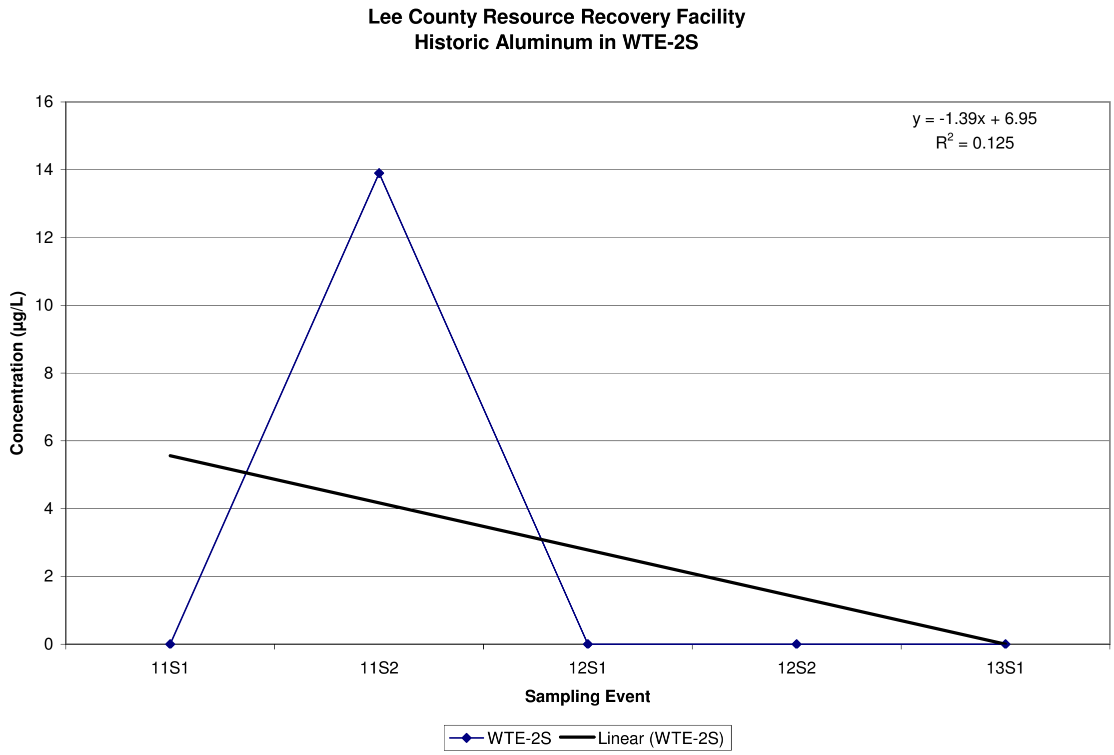

Lee County Resource Recovery Facility
Historic Iron in WTE-2S
y = -5.7143x + 2141.4
R2 = 0.0002
3500
3000
2500
2000
1500
1000
500
0
Concentration (µg/L)
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)


Lee County Resource Recovery Facility
Historic Iron in WTE-3SR
y = 320x + 1933.3
R2 = 0.421
3500
3000
2500
2000
1500
1000
500
0
Concentration (µg/L)
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)

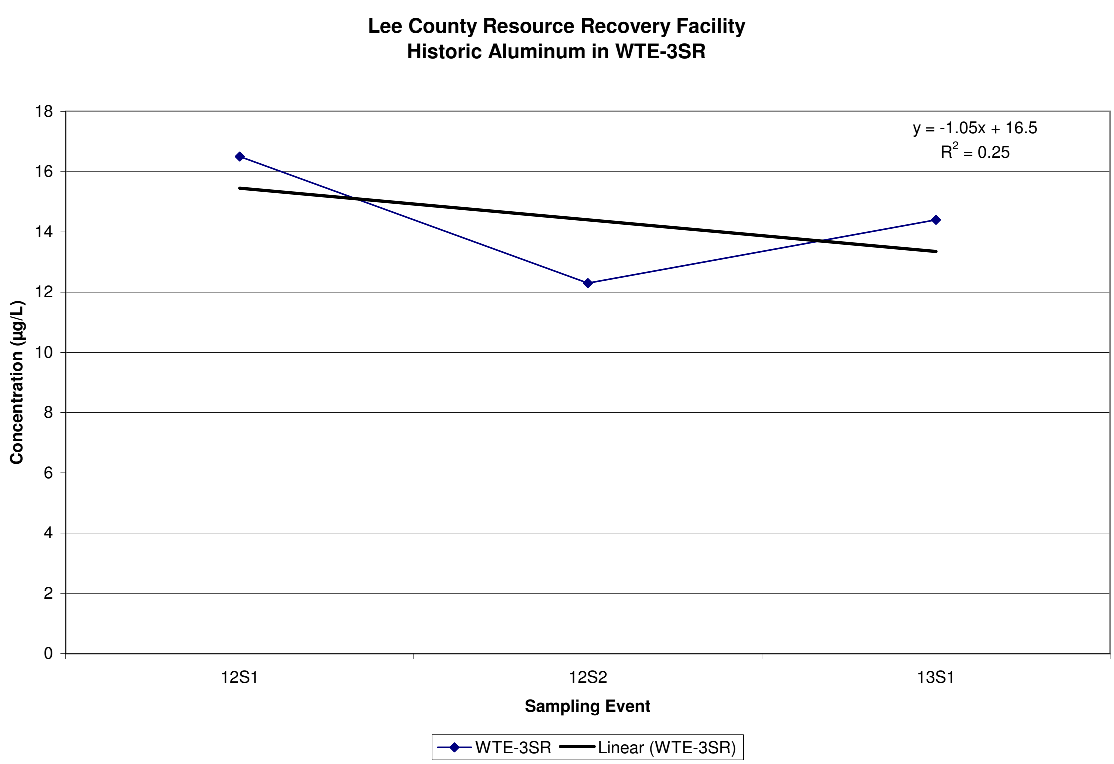

Lee County Resource Recovery Facility
Historic Iron in WTE-4S
y = -87.071x + 1883.7
R^2 = 0.0663
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
10Q1
10Q3
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)

Lee County Resource Recovery Facility

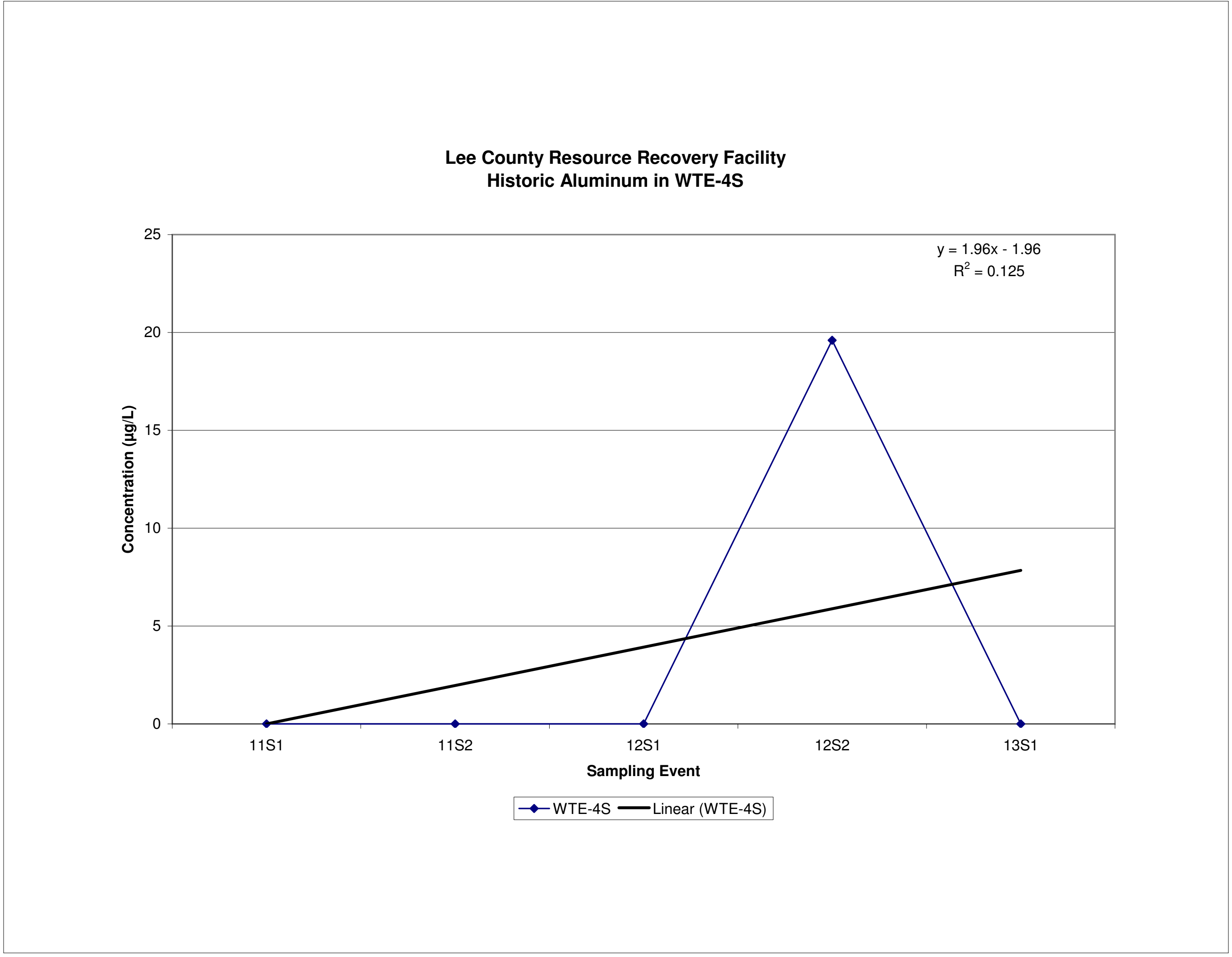
Historic Aluminum Data



Lee County Resource Recovery Facility
Historic Aluminum in WTE-2S
y = -1.39x + 6.95
R2 = 0.125
Concentration (µg/L)
0
2
4
6
8
10
12
14
16
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-2S
Linear (WTE-2S)



Lee County Resource Recovery Facility
Historic Aluminum in WTE-3SR
y = -1.05x + 16.5
R2 = 0.25
Concentration (µg/L)
0
2
4
6
8
10
12
14
16
18
12S1
12S2
13S1
Sampling Event
WTE-3SR
Linear (WTE-3SR)


Lee County Resource Recovery Facility
Historic Aluminum in WTE-4S
y = 1.96x - 1.96
R^2 = 0.125
25
20
15
10
5
0
Concentration (µg/L)
11S1
11S2
12S1
12S2
13S1
Sampling Event
WTE-4S
Linear (WTE-4S)