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PRELIMINARY DATA REVIEW

FOR

LAKE HOUSTON WATERSHED BACTERIA IMPAIRMENTS

SAN JACINTO RIVER BASIN

SEGMENTS:

1002	**LAKE HOUSTON**
1003	**EAST FORK SAN JACINTO**
1004	**WEST FORK SAN JACINTO**
1004D	**CRYSTAL CREEK**
1004E	**STEWARTS CREEK**
1008	**SPRING CREEK**
1008B	**UPPER PANTHER BRANCH**
1008H	**WILLOW CREEK**
1009	**CYPRESS CREEK**
1009C	**FAULKEY GULLY**
1009D	**SPRING GULLY**
1009E	**LITTLE CYPRESS CREEK**
1010	**CANEY CREEK**
1011	**PEACH CREEK**

Prepared For:

Texas Commission on Environmental Quality (TCEQ)
Austin, Texas

Prepared By:

James Miertschin & Associates, Inc.

August 2007

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20 August 2007

Mr. Casey Johnson, Project Manager
TMDL, Strategic Assessment Division
Texas Commission on Environmental Quality
Post Office Box 13087
Austin, Texas 78711-3087

RE: Final TMDL Preliminary Data Review
Northwest Houston Bacteria Impairments
Contract No. 582-7-80171
Work Order No.1

Dear Mr. Johnson:

We are submitting a Final TMDL Preliminary Data Review for the subject project. The report describes the compilation of bacteria and flow data for the study segments, determination of impairment, development of preliminary flow duration curves and load duration curves, presentation of land use data, soils data, septic system data, and a tabulation of point sources.

This submittal represents a deliverable for Task 2.1 and Task 2.2 of Work Order No. 1. Task 2.2 states that a "summary memorandum" will be prepared to contain the review information and strategy discussion. Due to the voluminous amount of information, we instead prepared a full report to transmit the "review" results conducted under Task 2.1.

If you have any questions, please do not hesitate to call me at (512) 327-2708.

Yours truly,

JAMES MIERTSCHIN & ASSOCIATES, INC.

James Miertschin, PE, PhD

TX200807.WPD

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PRELIMINARY DATA REVIEW
LAKE HOUSTON WATERSHED BACTERIA IMPAIRMENTS

CONTRACT NO. 582-7-80171
WORK ORDER NO. 1

Prepared for:

TMDL Program
Texas Commission on Environmental Quality
Post Office Box 13087
Austin, Texas 78711-3087

Prepared by:

James Miertschin & Associates

August 2007

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1.0 INTRODUCTION

1.1 BACKGROUND

Several stream segments of the San Jacinto River Basin above Lake Houston have been identified as impaired due to high bacteria levels that exceed state criteria for contact recreation. The Texas Commission on Environmental Quality (TCEQ) has included these segments on the 303(d) List under Category 5a, meaning that a TMDL can be scheduled immediately, and Category 5c, meaning that additional data will be collected before a TMDL is scheduled. A complete list of the impaired segments addressed in this report is provided in Table 1-1.

Table 1-1: Impaired Segments

Segment Number	Segment Name	303(d) Category
1002	**Lake Houston**	5a
1003	**East Fork San Jacinto**	5a
1004	**West Fork San Jacinto**	5a
1004D	Crystal Creek	5a
1004E	Stewarts Creek	5a
1008	**Spring Creek**	5a
1008B	Upper Panther Branch	5a
1008H	Willow Creek	5a
1009	**Cypress Creek**	5a
1009C	Faulkey Gully	5c
1009D	Spring Gully	5c
1009E	Little Cypress Creek	5a
1010	**Caney Creek**	5a
1011	**Peach Creek**	5a

This report provides a preliminary assessment of the *E. coli* bacteria data available for each of these impaired segments. This report is organized by the primary segments shown in bold. Sub-segments, which include the alphabetic suffix, are included in the report sections corresponding to their primary segments. Figure 1-1 shows the locations of the primary segments.

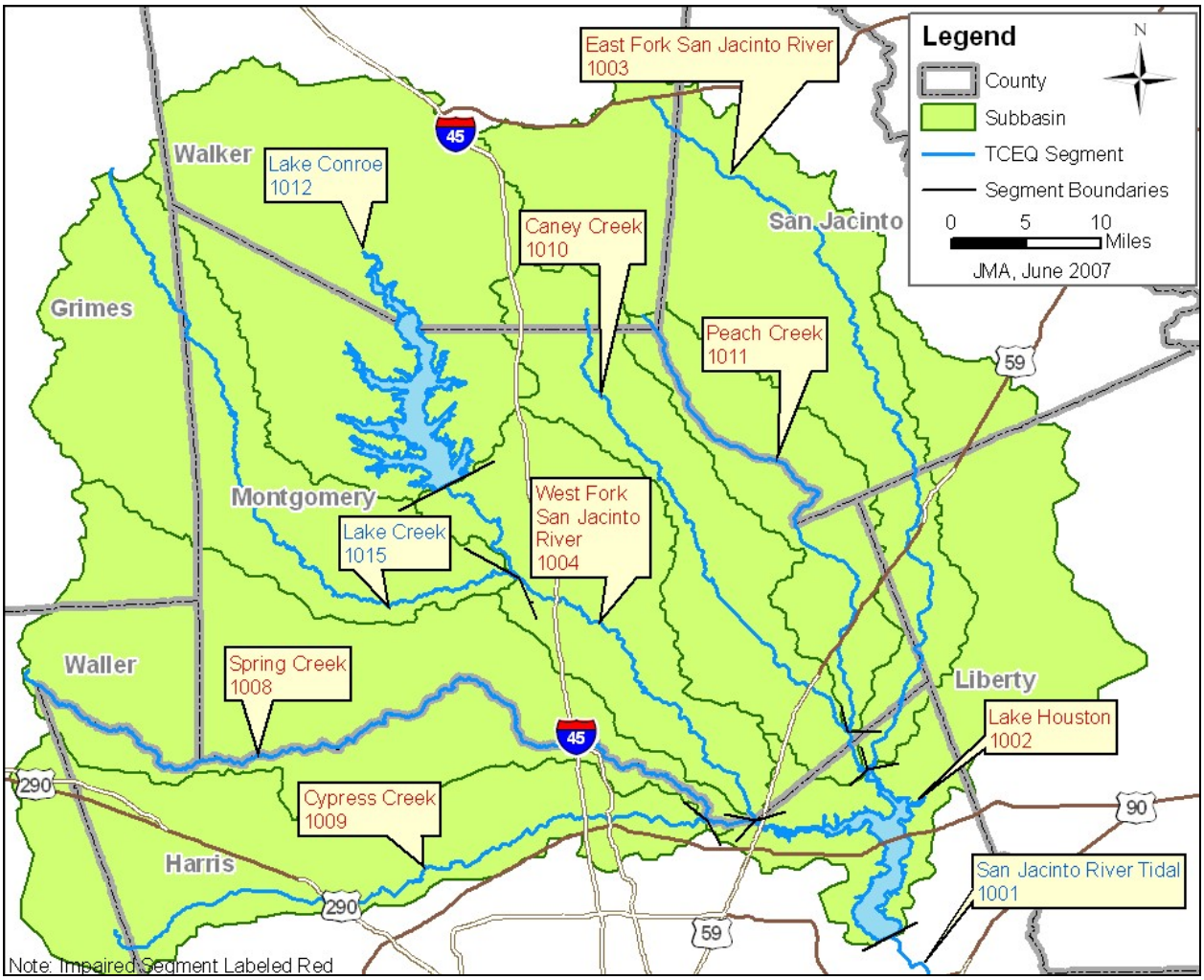

Figure 1-1: Segments of Project Study Area

1.2 BASIN-WIDE INFORMATION

This section includes land-use, soils, population, and waste-disposal data for the entire study area. The land use data are shown in Figure 1-2. These data are from the 2001 National Land Cover Database developed by the USGS. Land use data are discussed in more detail, on a segment-by-segment basis in the following sections of this report.

Soils data are presented in Figure 1-3. These data were retrieved from the NRCS Soils Website (http://soils.usda.gov/) and represent the most current soil classifications available. Figure 1-3 shows the various soil associations present in the study area. The figure is color-coded based on the soil textures common t the soils in these associations.

Population data for 1990 and 2005 are shown in Figures 1-4 and 1-5, respectively. The data shown are from the US Census Bureau. From these figures, it is clear that significant development has occurred in parts of the watershed.

Waste-disposal data are presented in Figures 1-6 and 1-7. These data are from the 1990 U.S. Census which included a question regarding the means of household sewage disposal. The available responses to this question were "public sewer", "septic tank or cesspool", and "other means." The vast majority of responses fell within the first two categories. Unfortunately, this question was not posed in the 2000 Census. Because of the age of this information and because of the rapid development occurring in parts of the study area, these data should be interpreted with caution.

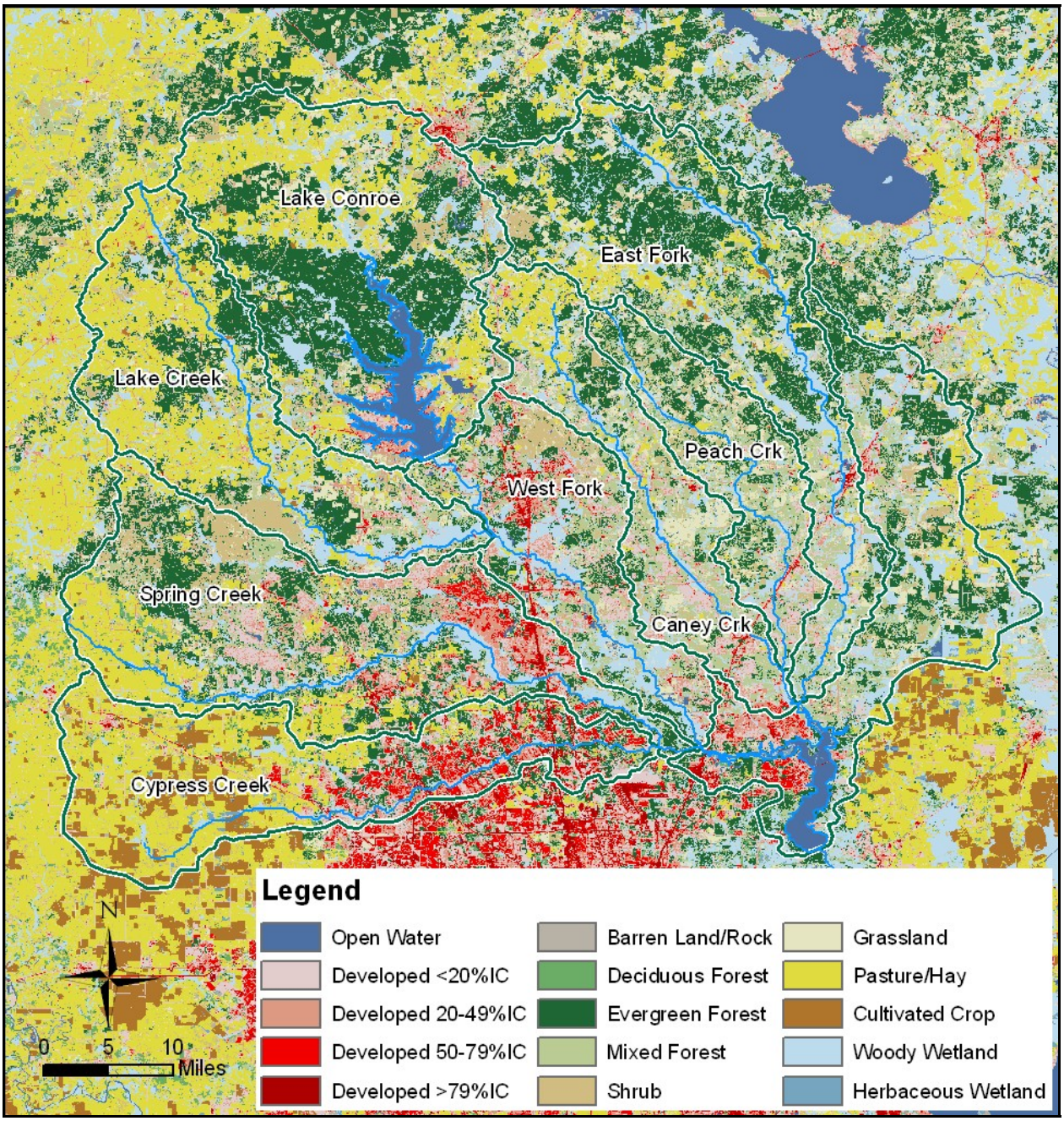

Figure 1-2: Project Area Land Use Data (2001)

Key	Soil Association
s7158	Ozan-Atasco-Aldine
s7179	Brackett-Bolar-Aledo
s7192	Lake charles-Beaumont
s7198	Morey-Mocarey-Bernard
s7217	Splendora-Segno-Landman-Boy
s7249	Gessner-Clodine-Addicks
s7257	Conroe
s7286	Huntsburg-Fetzer-Depcor-Boy-Annona
s7324	Greenvine-Falba-Burlewash-Arol
s7333	Latium-Frelsburg-Crockett-Carbengle-Brenham-Bosque-Bleiblerville
s7349	Tonkavar-Shiro-Gomery-Elmina
s7351	Nahatche-Kaufman-Gowker
s7364	Nahatche-Hatliff
s7365	Pluck-Kian-Hatliff
s7374	Wockley-Segno-Monaville-Hockley
s7389	Katy-Clodine-Aris
s7392	Tinn-Kaufman-Gladewater

Key	Soil Association
s7398	Sealy-Kenney-Chazos
s7403	Waller-Sorter-Kirbyville
s7520	Waller-Otanya-Kirbyville-Dallardsville
s7551	Pinetucky-Doucette
s7650	Waller-Sorter
s7705	Woodville-Vamont
s7725	Woodville-Wiergate-Burkeville
s7740	Wockley-Hockley-Gessner
s7744	Woodville-Pinetucky

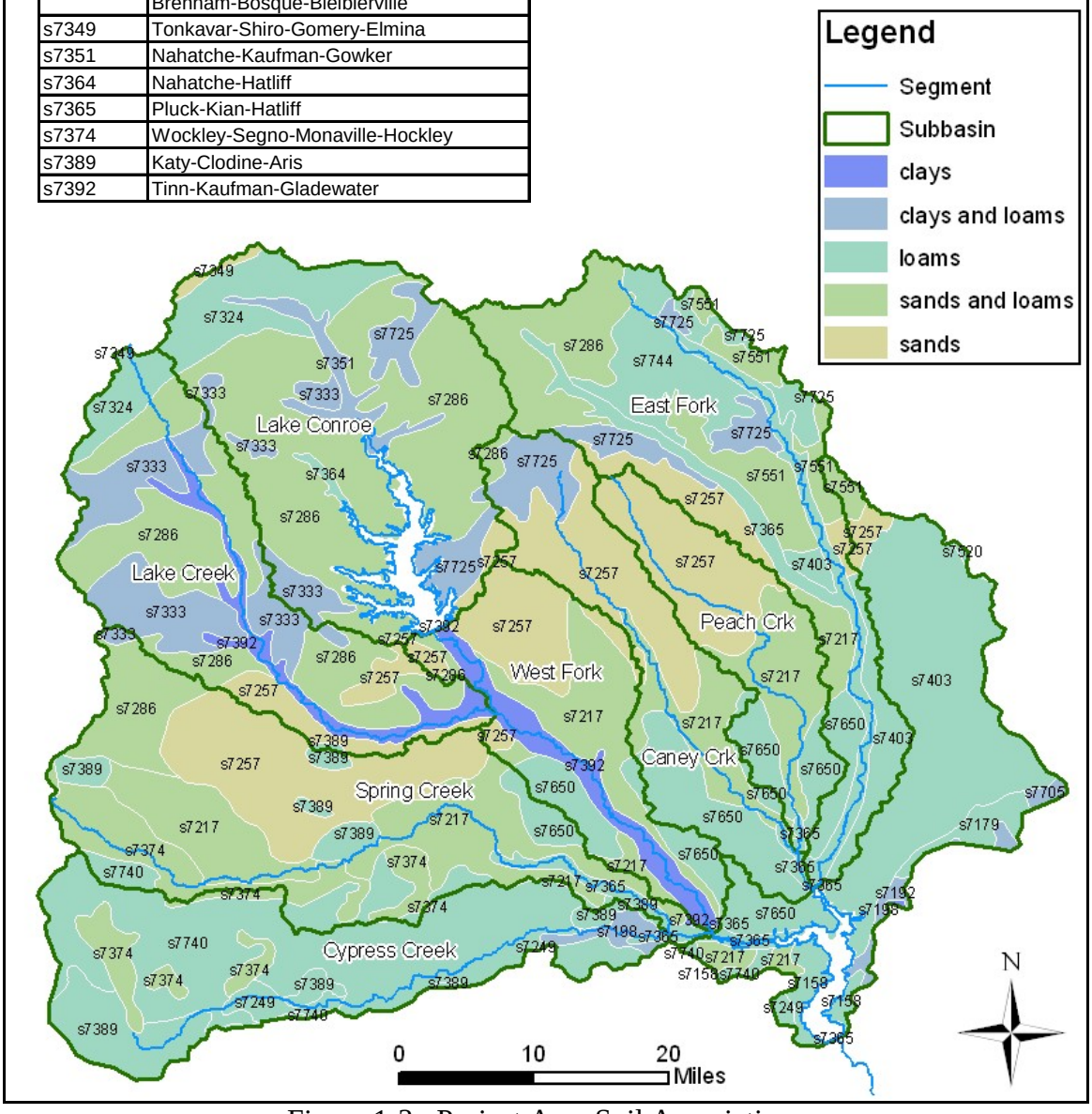

Figure 1-3: Project Area Soil Associations

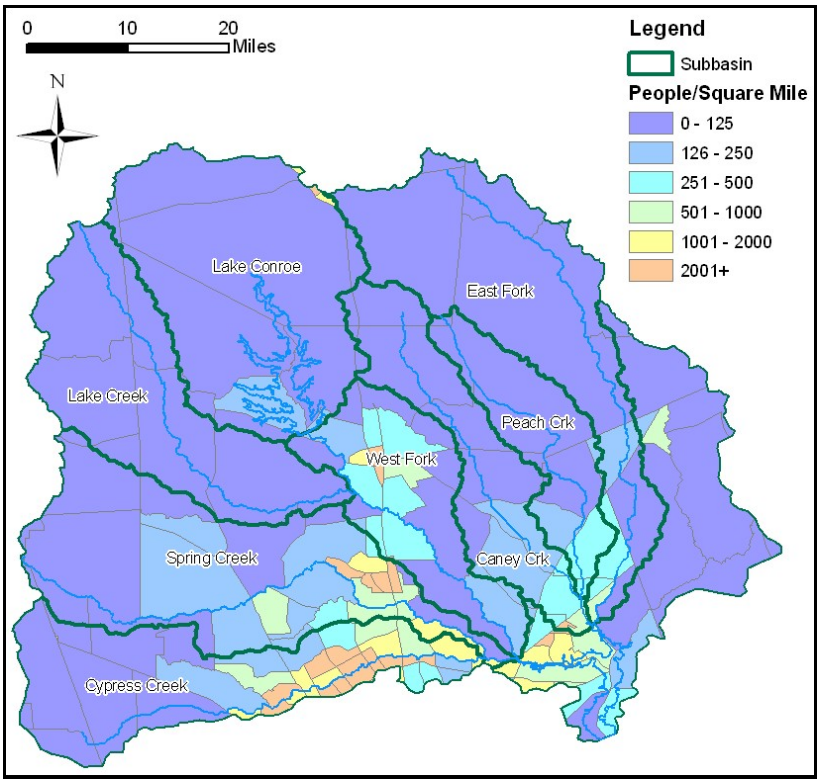

Figure 1-4: Project Area Population Density (1990)

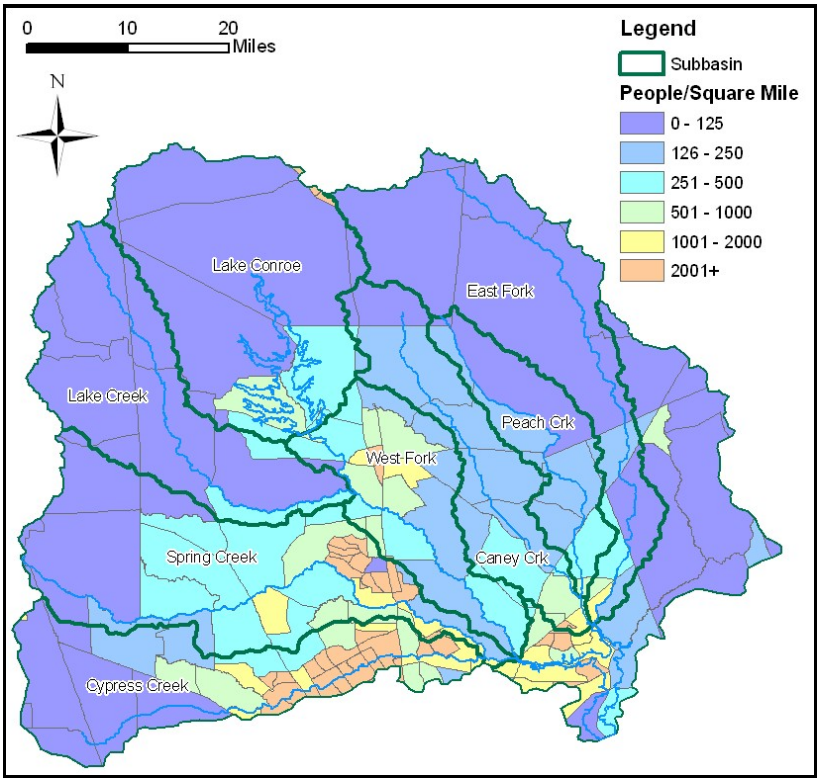

Figure 1-5: Project Area Population Density (2005)

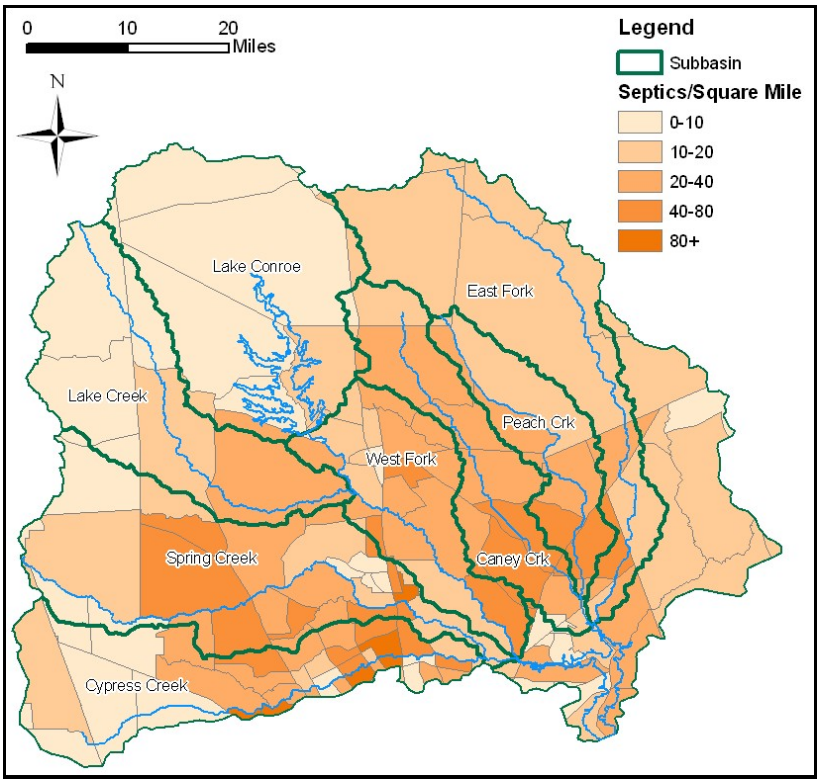

Figure 1-6: Septic System Density (1990)

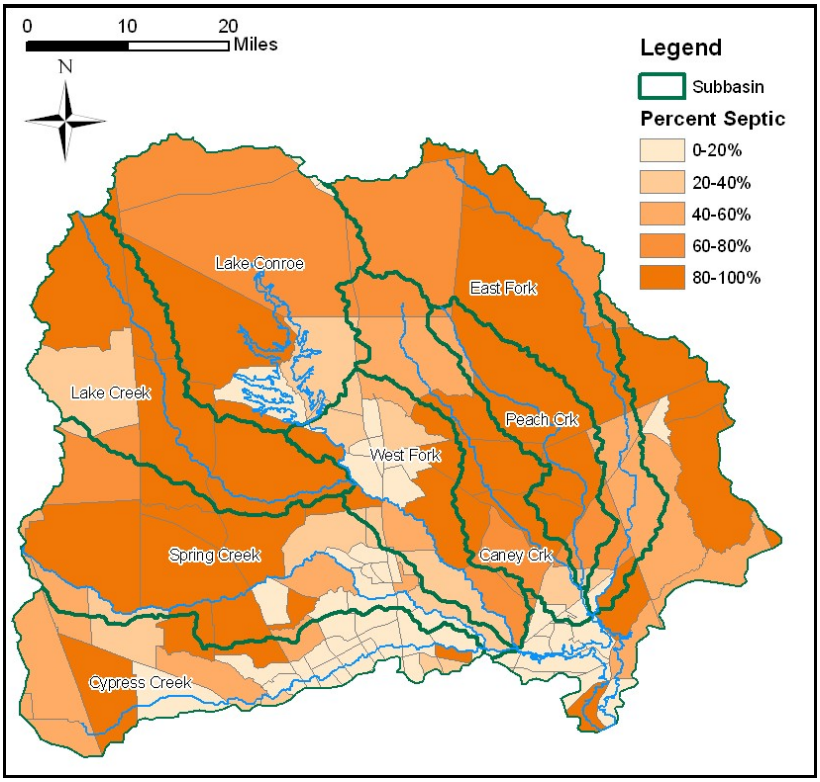

Figure 1-7: Percentage of Households Served by Septic Systems (1990)

2.0 LAKE HOUSTON, SEGMENT 1002

2.1 TCEQ ASSESSMENT FOR 303(d) LIST

When determining compliance with state water quality criteria, TCEQ often divides segments into various assessment units (AU) to refine the spatial resolution of the impairment. Assessment units for Lake Houston are shown in Table 2-1.

The information included in Table 2-1 is from the *Draft 2006 Texas Water Quality Inventory*, which was used as a basis for the *Draft 2006 Texas 303(d) List* (TCEQ, 2007). The period of record used by TCEQ in this assessment was 1 December 1999 through 30 November 2004. The "# Exceed" column provides the number of samples that exceeded the grab sample criterion for *E. coli* (394 org/100mL). Generally, TCEQ allows up to 25% of the samples to exceed the grab sample criterion before considering the reach impaired. The "Geo. Mean" column provides the geometric mean of the *E. coli* samples. If this number exceeds the criterion of 126 org/100mL, then the reach is considered impaired. As shown, only one of the assessment units was found to be impaired for *E. coli*.

Table 2-1: Lake Houston Assessment Units and Results

Assessment Unit	Segment Name	Assessment Unit Description	# Samples	# Exceed	Geo. Mean	Impaired
1002_01	Lake Houston	Confluence with Red Gully to FM 1960 East Pass	372	41	41	No
1002_02	Lake Houston	West Lake Houston Parkway to FM 1960 West Pass	695	117	57	No
1002_03	Lake Houston	FM 1960 to Missouri Pacific Railroad	51	6	53	No
1002_04	Lake Houston	Missouri Pacific Railroad to Foley Road	51	13	72	No
1002_05	Lake Houston	From Foley Road to Dam	291	75	58	No
1002_06	Lake Houston	Confluence with Spring Creek to West Lake Houston Pkwy	173	55	182	Yes
1002_07	Lake Houston	Confluence with East Fork San Jacinto River to confluence with Red Gully	51	7	54	No

The location of the impaired assessment unit (1002_06) and surrounding area is displayed in Figure 2-1. Also shown in this figure are water quality sampling locations where *E. coli* data have been regularly collected. Generally, each assessment unit corresponds to one or more sampling sites. The impaired assessment unit (1002_06) corresponds only to sampling station 11213. Station 18669, at Lake Houston Parkway, is part of assessment unit 1002_02, which also includes Stations 18667 and 11211.

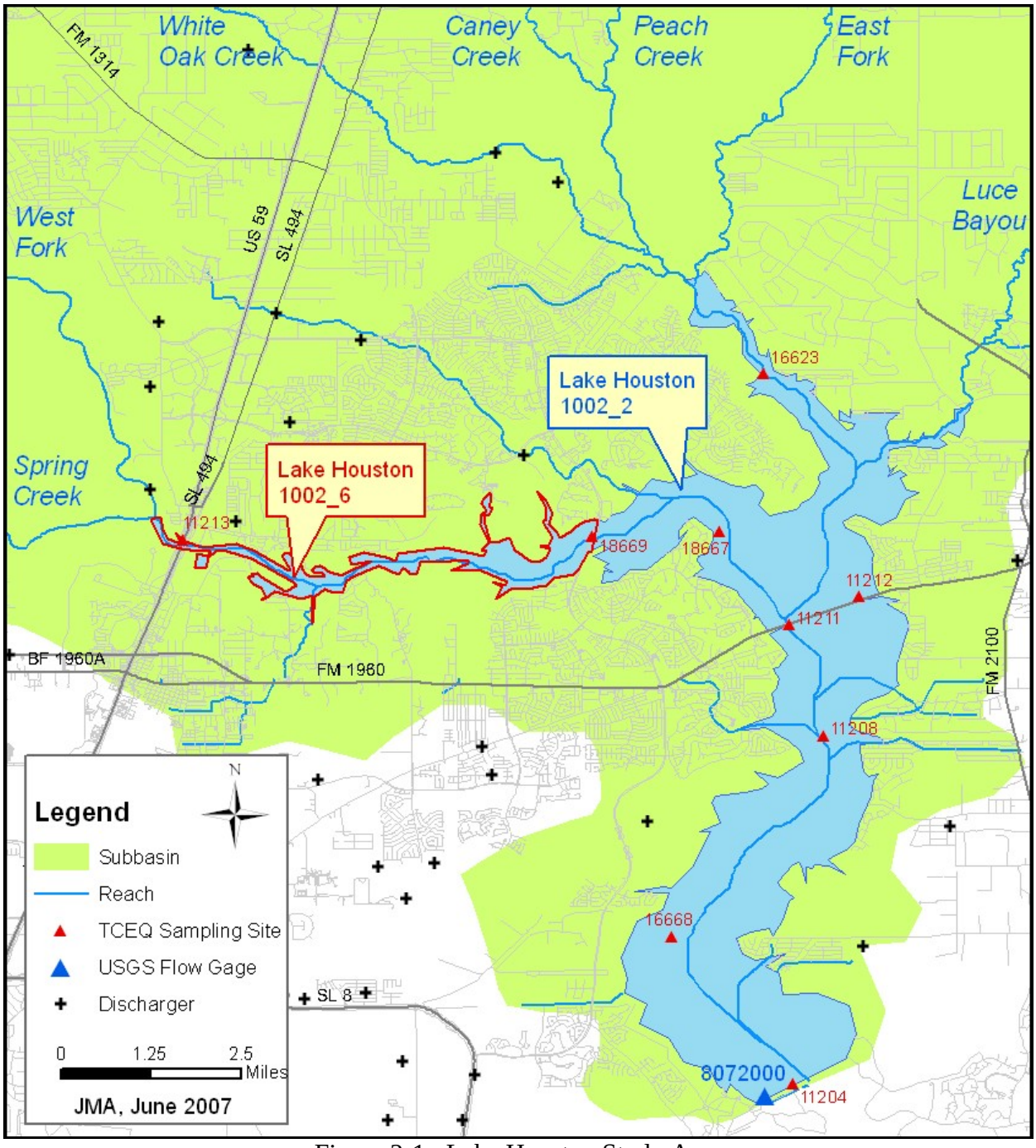

Figure 2-1: Lake Houston Study Area

2.2 SUMMARY OF *E. COLI* DATA BY STATION

With very few exceptions, *E. coli* sampling did not begin until 2000. (Before 2000, samples were only analyzed for fecal coliform.) Table 2-2 provides an inventory of active *E. coli* sampling sites in the West Fork arm of the reservoir, and Table 2-3 provides a summary of the currently available *E. coli* data for these sites. Table values in bold are indicative of exceedances of state criteria. It is important to note that the data in this table typically cover a longer period of record than that used in the *Draft 2006 Texas Water Quality Inventory*.

Table 2-2: Lake Houston, West Fork Arm Sampling Sites

TCEQ #	TCEQ Description
11213	LAKE HOUSTON WEST FORK SAN JACINTO ARM AT US 59 392 METERS SOUTH AND 71 METERS WEST OF INTERSECTION OF HAMBLEN ROAD AND US 59
18669	LAKE HOUSTON/WEST FORK SAN JACINTO RIVER AT NORTHBOUND/DOWNSTREAM W LAKE HOUSTON PKWY BRIDGE 380 M FROM INTERSECTION WITH KINGWOOD GREENS DR
18667	LAKE HOUSTON IN THE WEST FORK SAN JACINTO RIVER CHANNEL 270 M EAST AND 60 M NORTH OF MISTY COVE AT ATASCOCITA PLACE DR

Table 2-3: Lake Houston, West Fork Arm *E. coli* Data Summary

Station	11213	18669	18667
Reach	WF Arm	WF Arm	WF Arm
Begin Date	Jun-00	Dec-01	Jun-00
End Date	Jun-06	May-05	May-05
Count	192	278	57
75th Percentile	**689**	385	**436**
Geometric mean	**211**	102	92
25th Percentile	40	27	20

2.3 SPATIAL AND TEMPORAL ANALYSIS

Spatial analysis can be helpful when attempting to locate sources of bacteria. Figure 2-2 shows the variation in bacteria concentrations from upstream to downstream across the watershed. As shown, the bacteria concentrations are highest at the most upstream station, and significantly lower at the two downstream station. The large drop in bacteria levels between the first two stations is probably due to natural bacteria die-off, resulting from the long travel time between stations.

Temporal analysis can be useful for determining the emergence or diminution of bacteria sources over time. Figures 2-3, 2-4, and 2-5 present bacteria concentration over time for each of the three stations included in Table 2-3. For these stations, no significant temporal trends were observed. However, it was noted (particularly at Station 18669) that bacteria concentrations appear to be higher during the winter season than the summer.

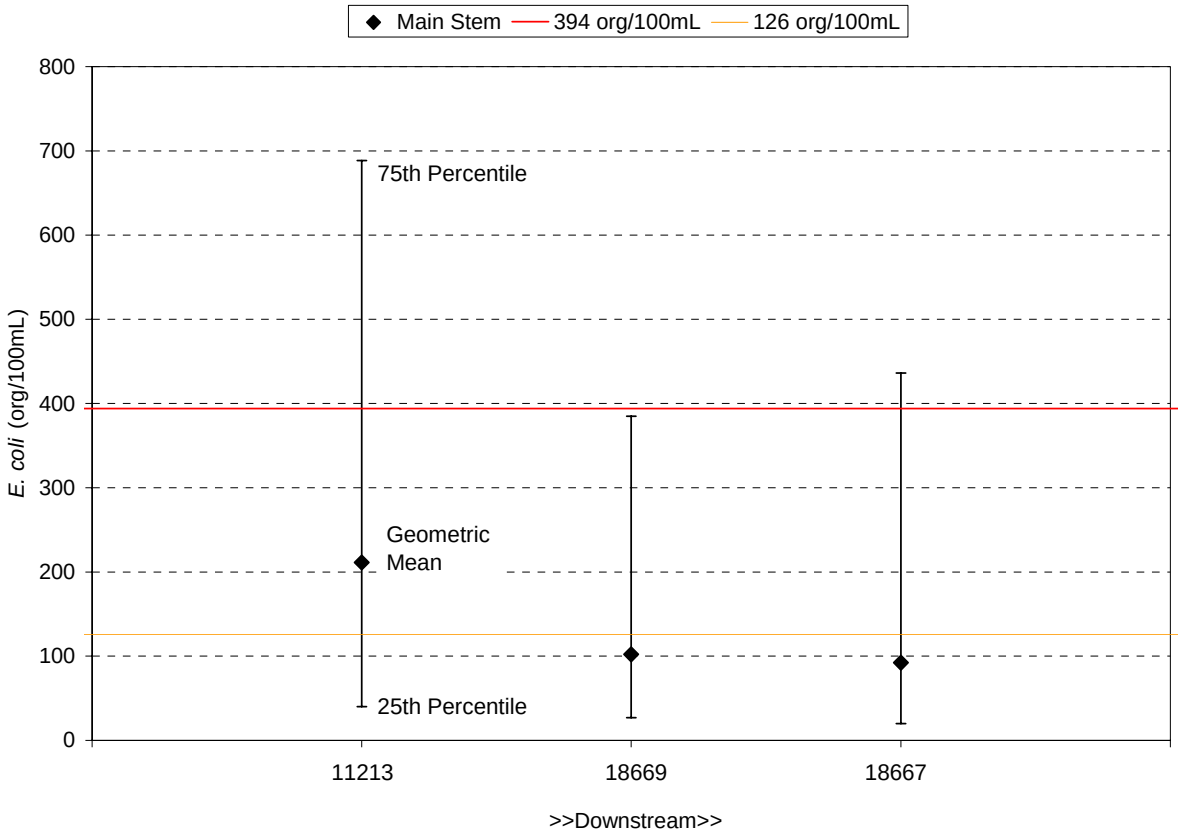

Figure 2-2: West Fork Arm Lake Houston Spatial Analysis

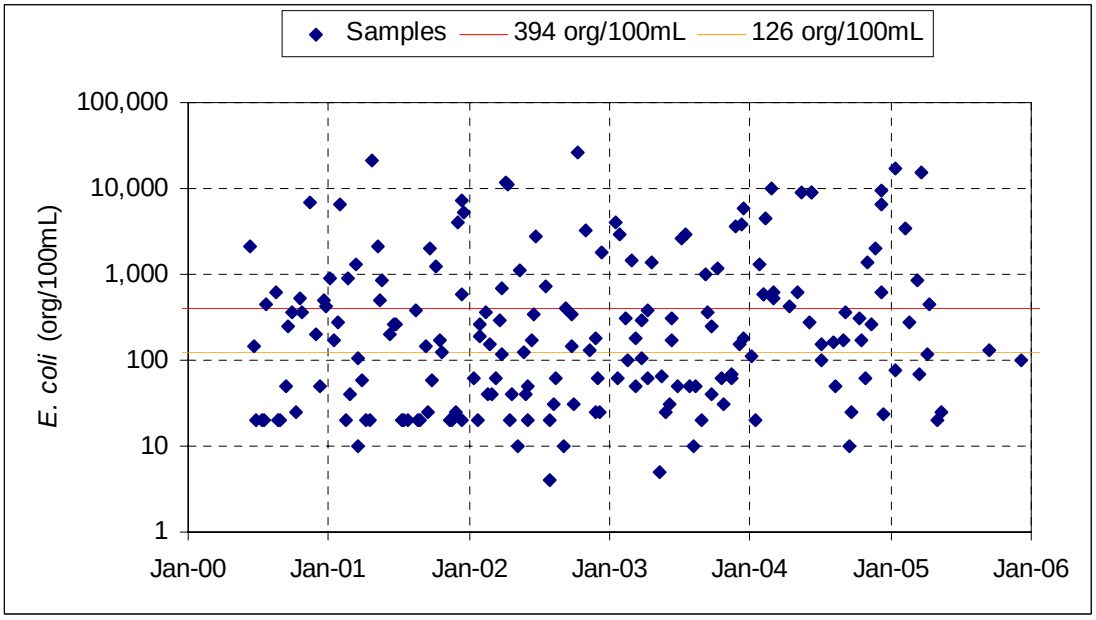

Figure 2-3: Temporal Analysis: Lake Houston at US 59 (#11213)

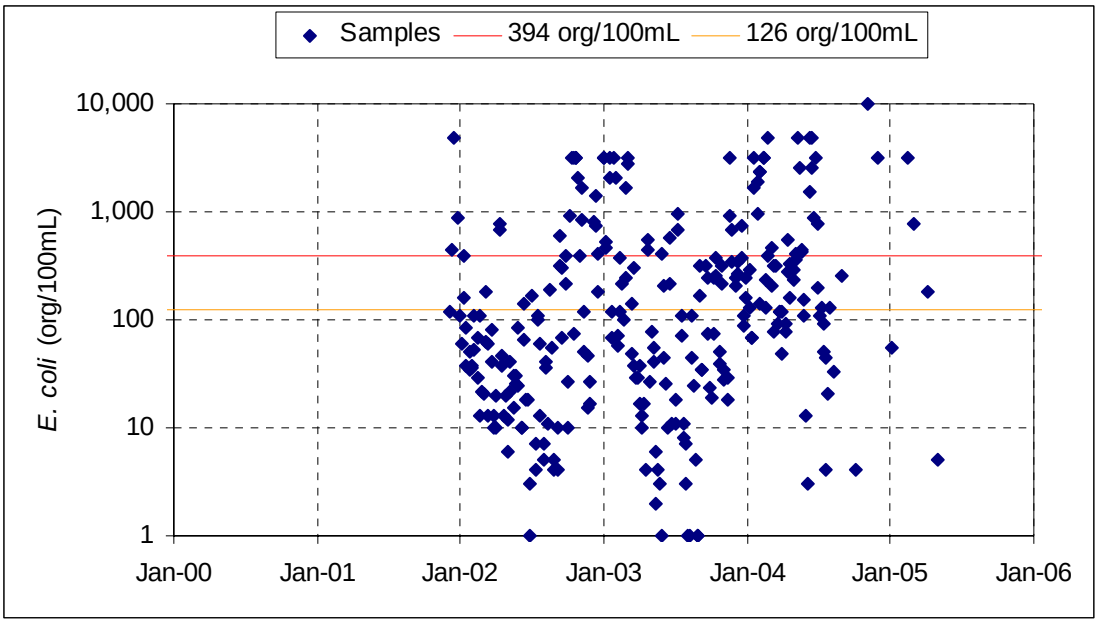

Figure 2-4: Temporal Analysis: Lake Houston Parkway (#18669)

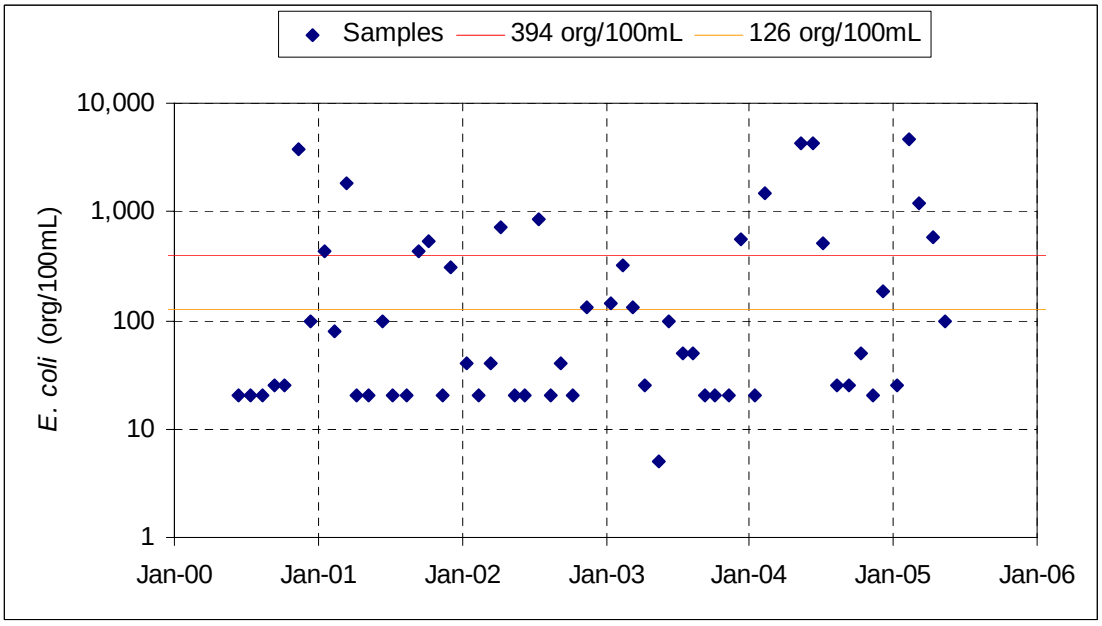

Figure 2-5: Temporal Analysis: Lake Houston at Misty Cove (#18667)

2.4 LOAD DURATION CURVE DEVELOPMENT

2.4.1 Flow Duration Curves

A flow duration curve (FDC) is a graph of daily average streamflow versus the percent of days that the average streamflow value is exceeded. FDCs are typically developed using daily flow data collected at USGS gaging stations. However, there are no flow gages in the West Fork Arm of Lake Houston. Instead, flow was estimated by summing the flows from the West Fork San Jacinto River, Spring Creek, and Cypress Creek. These flows were determined from USGS gages 8068090, 8068500, and 8069000, respectively, using appropriate drainage area adjustments. Additional description of these gages is provided in report sections corresponding to the segments the gages are located within.

The synthesized flow duration curve for the West Fork Arm of the reservoir is shown in Figure 2-6.

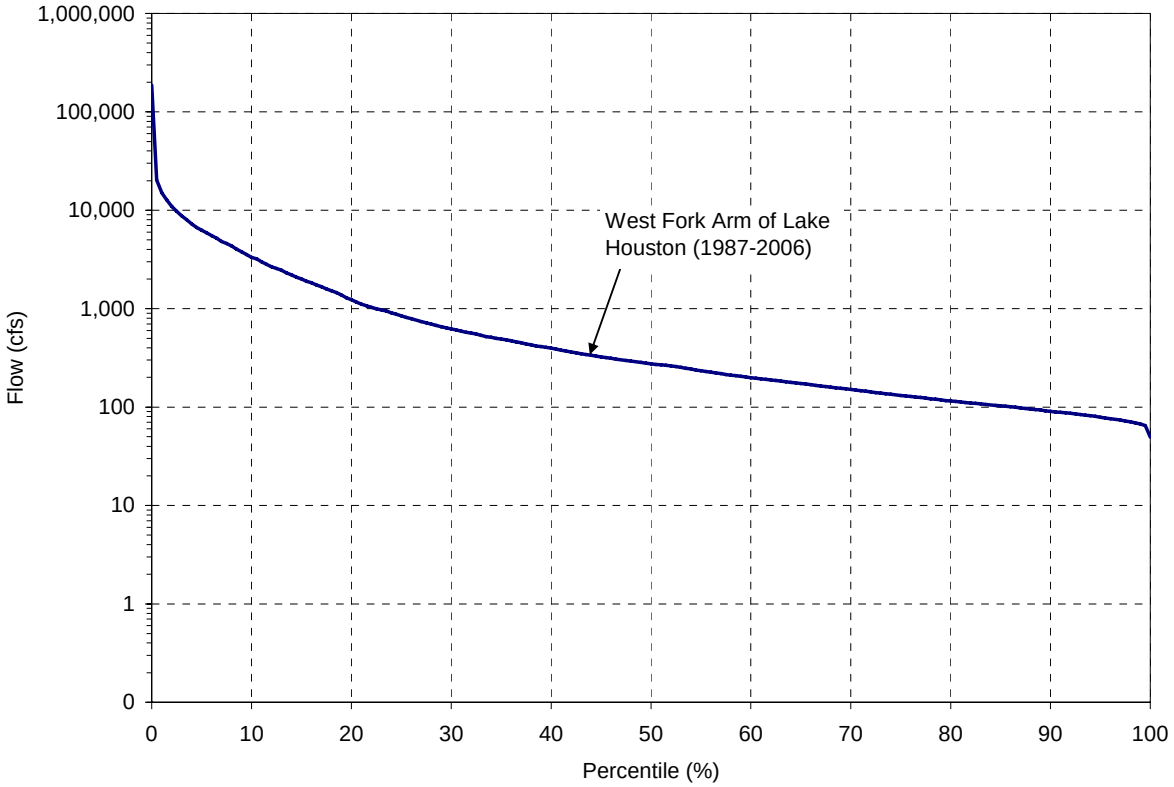

Figure 2-6: Lake Houston Flow Duration Curve

2.4.2 Load Duration Curves

This section presents load duration curves for various water quality sampling stations throughout the study area. The bacterial loads are the product of each grab sample bacteria concentration and the corresponding mean daily streamflow rate. Bacteria standards are represented in these figures by curves for the geometric mean and grab sample criteria, 126 org/100mL and 394 org/100mL, respectively. Load duration curves are presented from upstream to downstream.

An LDC for Lake Houston at US Highway 59 is presented in Figure 2-3. At this station, the greatest exceedances typically occur under high flow conditions (0-20th percentile), but exceedances are also common at lower flows.

An LDC for Lake Houston at Lake Houston Parkway is presented in Figure 2-4. As with the previous station, the greatest exceedances typically occur under high flow conditions. However, under low flows, bacteria levels appear to meet state criteria, probably as a result of longer residence times that allow more opportunity for the natural die-off of bacteria. A LDC for Lake Houston at Misty Cove is presented in Figure 2-5. Bacteria loads at this station appear similar to the previous station.

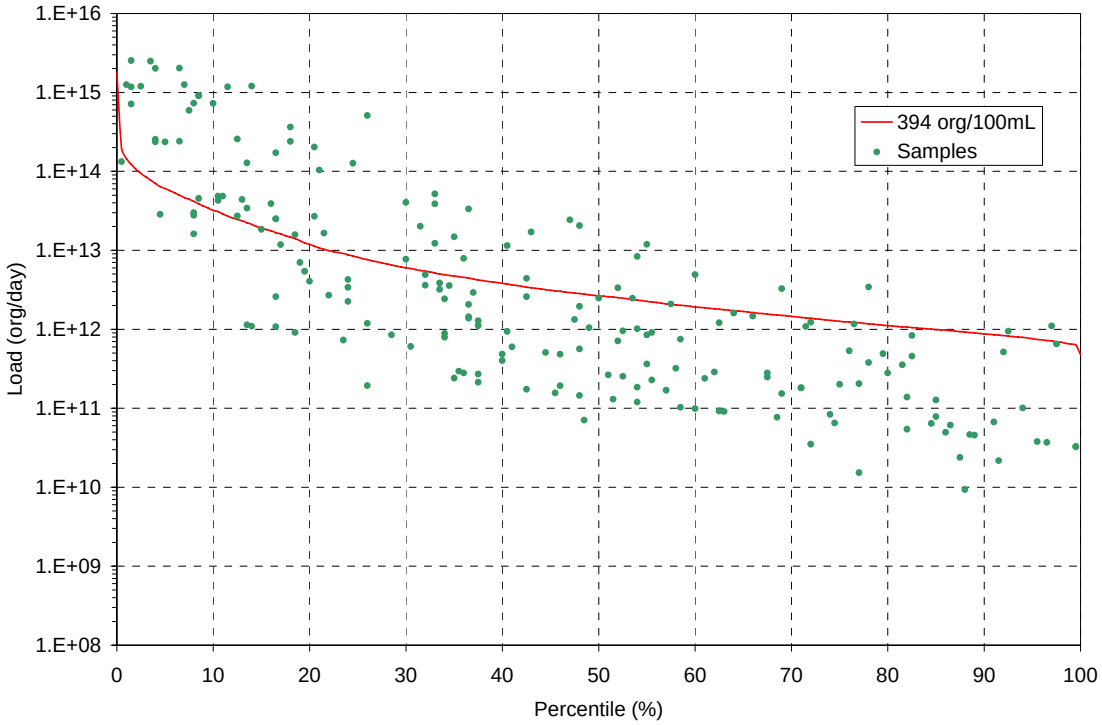

Figure 2-3: LDC for Lake Houston at US 59 (#11213)

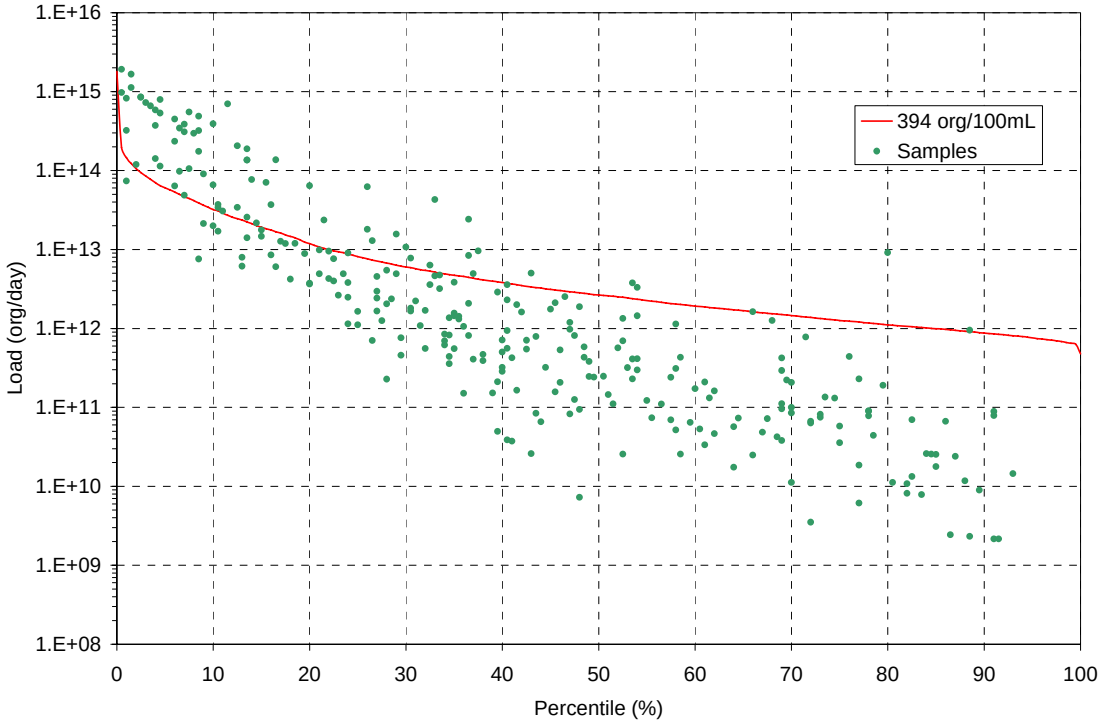

Figure 2-4: LDC for Lake Houston Parkway (#18669)

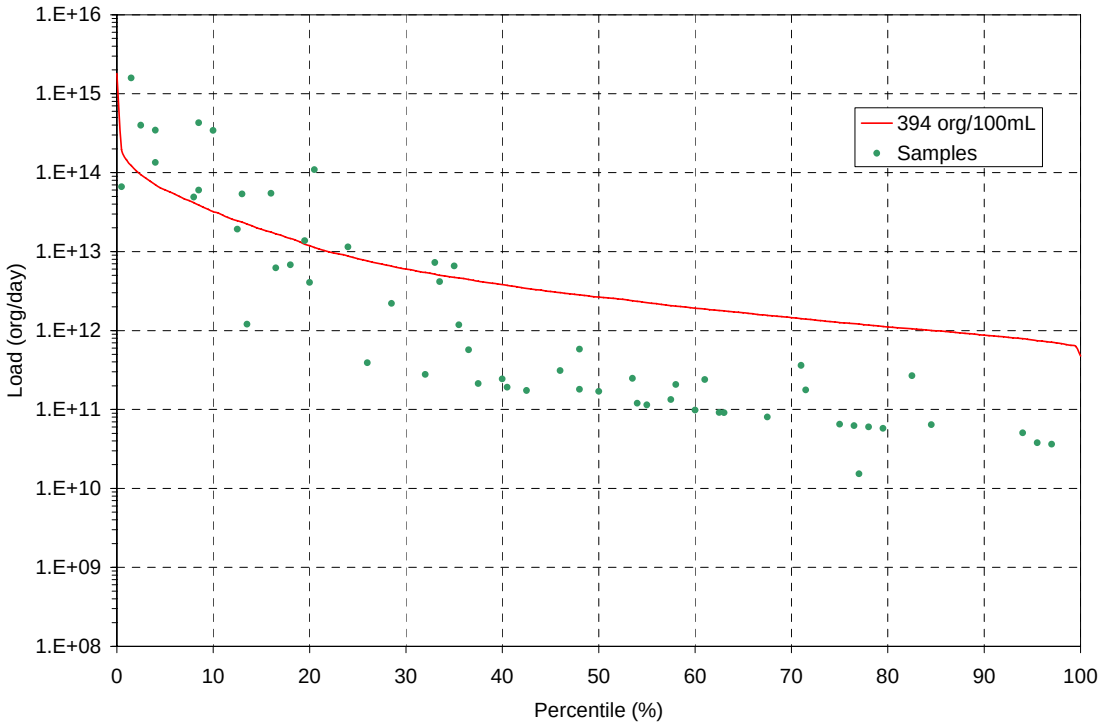

Figure 2-5: LDC for Lake Houston at Misty Cove (#18667)

2.5 DISCUSSION OF POTENTIAL SOURCES

There have historically been two general classifications of sources of pollutants that were distinguished by the mechanism of release to a receiving stream. Sources that were released via a pipe or defined outfall were labeled as "point sources", while sources that were diffuse in nature were labeled as "nonpoint sources". Thus, "point sources" of bacteria would usually include facilities such as wastewater treatment plants. Traditional "nonpoint sources" would include, but not be limited to, leaking sewer systems, failing septic systems, pets, wildlife, livestock, and general urban and rural runoff. However, TMDLs do not always adhere to the traditional usage of the terms point source and nonpoint source.

In accordance with EPA guidance, TMDLs are developed to establish two categories of allocations: wasteload allocations (WLAs) and load allocations (LA). EPA has determined that any source flowing into a waterway and covered by a permit should be classified as a waste load and be included in the WLA category. Thus, the "waste load" category would include not only facilities such as wastewater treatment plants, but also discharges of runoff from municipal areas covered under stormwater permits (MS4s).

Remaining diffuse sources of pollutants that are not covered by permit are defined as "loads" and ultimately are subject to development of the LA. This would include runoff from rural or urban areas outside of permitting jurisdictions.

2.5.1 Upstream Sources

Water quality in the West Fork Arm of Lake Houston is dominated by inflows from the West Fork San Jacinto River and its tributaries (including Spring and Cypress Creeks). It is possible that if bacteria levels in these upstream segments are reduced, then bacteria levels in the West Fork Arm of Lake Houston will also decline.

2.5.2 Runoff Sources

Runoff sources of bacteria can fall into either the waste load or load category, depending on the presence or absence of a permit allowing for discharge into a waterway. Runoff sources of bacteria can be anticipated based on land use. For example, it has been observed that natural areas typically produce the smallest runoff source loads. This is because they tend to produce the least runoff volume and tend to have the lowest density of fecal sources. Rural (farm and ranch) areas also tend to have smaller source loads for the same reasons. However, in both natural and rural areas, significant bacteria sources can still sometimes exist. For example, natural areas could include dense waterfowl areas, and rural areas could include confined animal pens. Urban areas tend to produce larger bacteria loads. This is generally the result of high impervious cover, which increases the frequency and intensity of runoff events. It can also be the result of an increasing density in potential sources (leaking sewage collection systems, failing septic drainfields, pets, wildlife, etc.).

Land uses in the watershed surrounding Lake Houston are shown in Figure 2-6. As shown, the watershed surrounding the impairment is comprised primarily of developed land, forest, and wetlands. The source of the data is USGS, 2001.

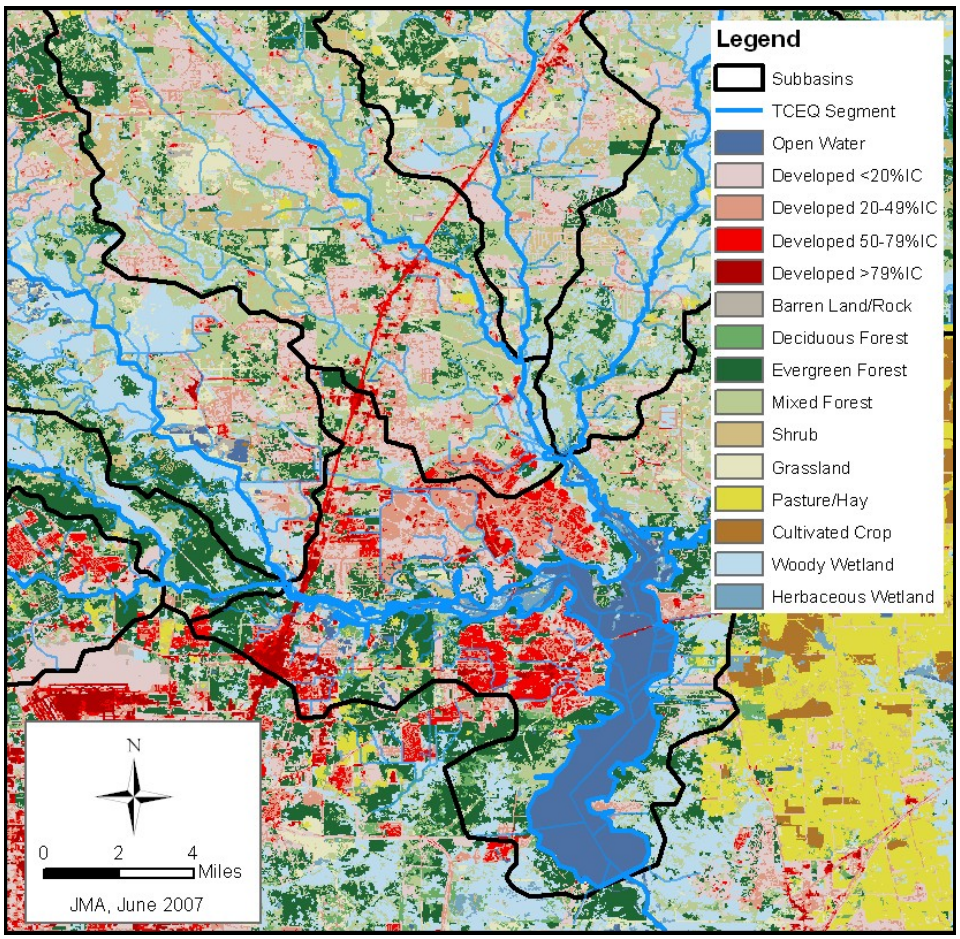

Figure 2-6: Lake Houston Land Use

2.5.3 Wastewater Treatment Facilities

Wastewater treatment plants have the potential to contribute significant bacteria loads if complete disinfection is not achieved. These loads may be most noticeable under low flow conditions, during which some streams may be effluent dominated. However, it is also possible for treatment plants to contribute significant loads under wet weather conditions. This could be the case if increased loading due to stormwater inflow and infiltration results in poorer plant performance.

For reference, wastewater treatment discharges in the Lake Houston watershed are shown in Table 2-4. However, it should be noted that all of these facilities are located downstream of the impaired monitoring location at US Highway 59, and are therefore not a cause of the impairment. Treatment plant locations are shown in Figure 2-7. It should also be noted that there are numerous treatment plants located in the watersheds of the major tributaries, especially Spring Creek and Cypress Creek.

Table 2-4 includes the permitted flow, estimated current flow, and disinfection monitoring requirements for each facility. Facilities without monitoring requirements for disinfection

(marked “N”) are typically facilities without a significant potential bacteria source (i.e. industries or drinking water treatment plants).

Table 2-4: Lake Houston Wastewater Treatment Facility Summary

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
02642-000	TX0093483	PWT Enterprises, Inc.	Montgomery	0.003	0.0007	N
10495-146	TX0066583	City of Houston	Harris	6.6	5.1	F
10495-149	TX0115924	City of Houston	Harris	0.95	0.39	F
12242-001	TX0084042	Porter MUD	Montgomery	1.6	0.49	C
13526-001	TX0105996	Kings Manor MUD	Harris	0.4	0.22	C
14650-001	TX0128244	Pulte Homes of Texas LP	Harris	0.45	0	C

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

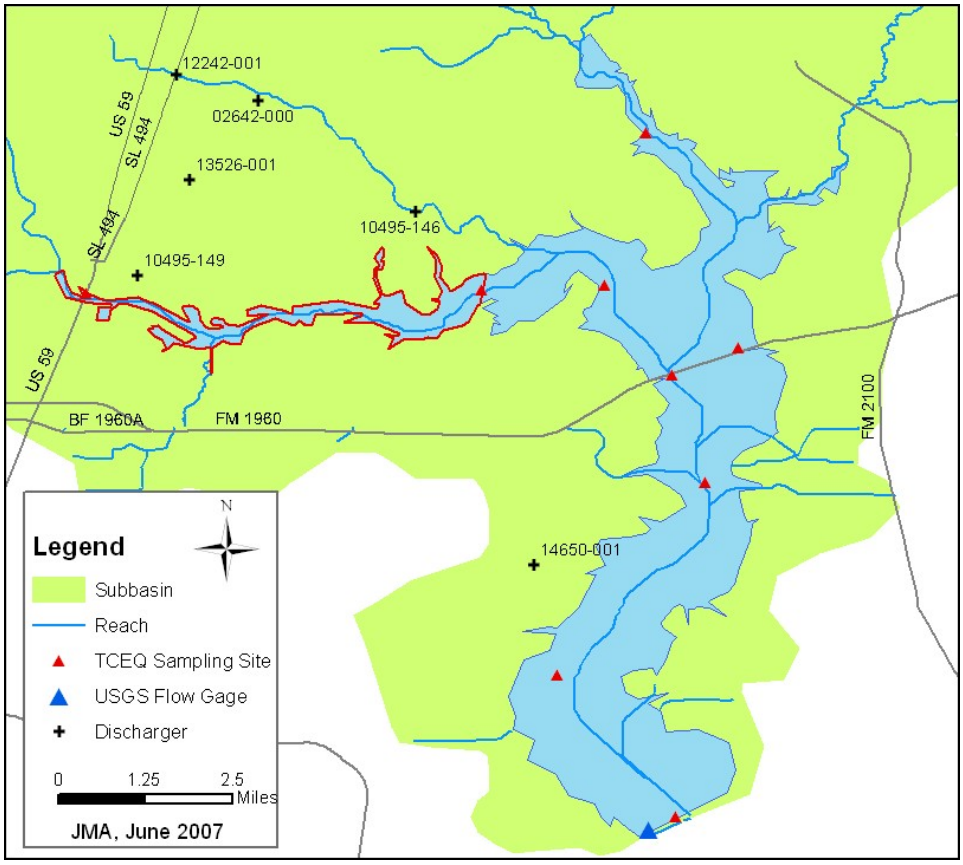

Figure 2-7: Lake Houston Treatment Facility Discharge Locations

3.0 EAST FORK SAN JACINTO RIVER, SEGMENT 1003

3.1 TCEQ ASSESSMENT FOR 303(d) LIST

When determining compliance with state water quality criteria, TCEQ often divides segments into various assessment units (AU) to refine the spatial resolution of the impairment. Assessment units for the East Fork of the San Jacinto River are shown in Table 3-1.

The information included in Table 3-1 is from the *Draft 2006 Texas Water Quality Inventory*, which was used as a basis for the *Draft 2006 Texas 303(d) List* (TCEQ, 2007). The period of record used by TCEQ in this assessment was 1 December 1999 through 30 November 2004. The "# Exceed" column provides the number of samples that exceeded the grab sample criterion for *E. coli* (394 org/100mL). Generally, TCEQ allows up to 25% of the samples to exceed the grab sample criterion before considering the reach impaired. The "Geo. Mean" column provides the geometric mean of the *E. coli* samples. If this number exceeds the criterion of 126 org/100mL, then the reach is considered impaired. As shown, all three of the assessment units were found to be impaired for *E. coli*.

Table 3-1: East Fork Assessment Units and Results

Assessment Unit	Segment Name	Assessment Unit Description	# Samples	# Exceed	Geo. Mean	Impaired
1003_01	East Fork San Jacinto River	Confluence with Caney Creek upstream to US 59	77	18	183	Yes
1003_02	East Fork San Jacinto River	US Hwy 59 to 25 miles upstream (just upstream of Clear Creek confluence)	36	10	189	Yes
1003_03	East Fork San Jacinto River	25 miles upstream of US 59 to US 190 (upper segment boundary)	11	3	197	Yes

The locations of the assessment units are displayed in Figure 3-1. Also shown in this figure are water quality sampling locations where *E. coli* data have been regularly collected. Generally, each assessment unit corresponds to one or more sampling sites.

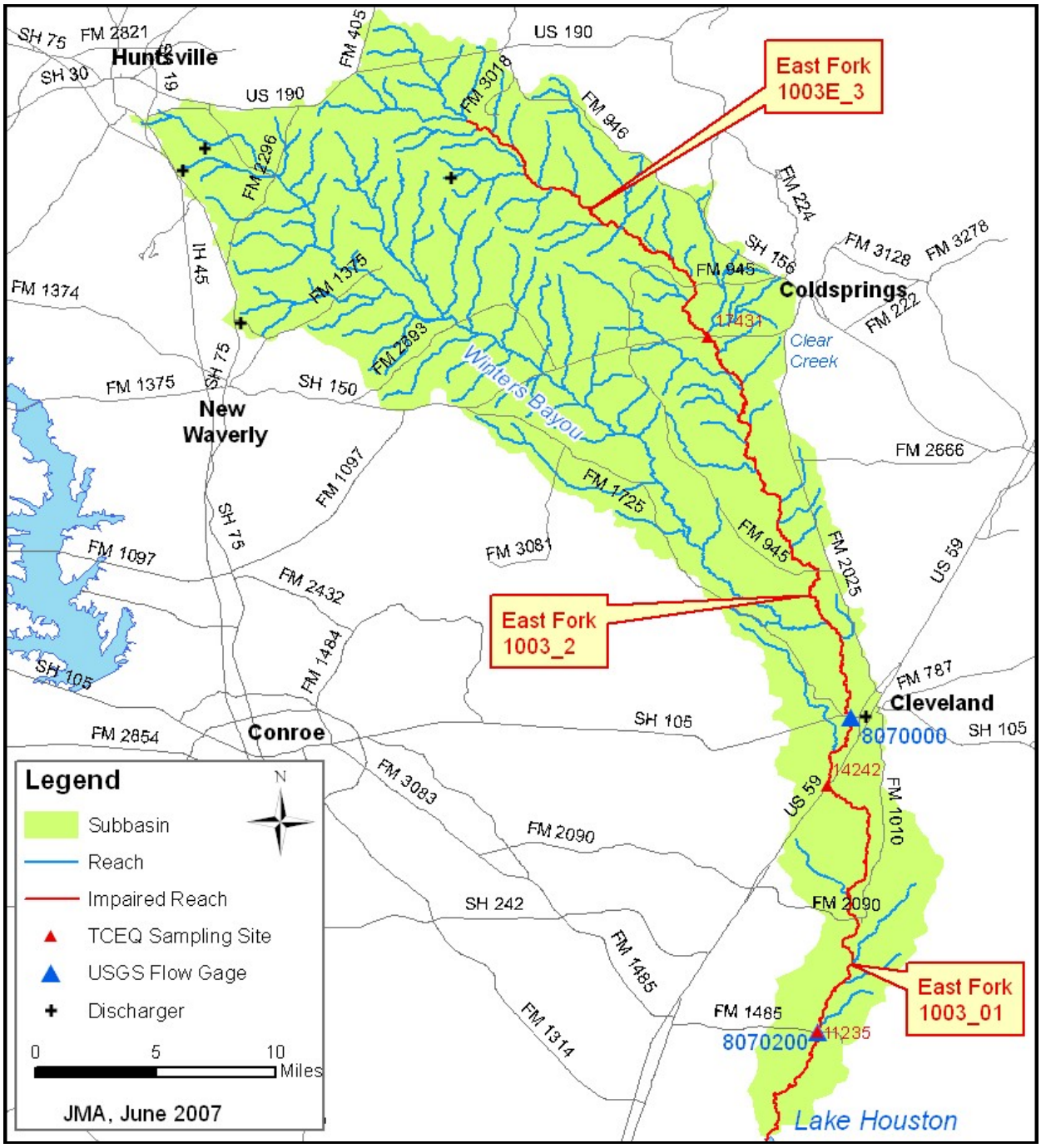

Figure 3-1: East Fork Study Area

3.2 SUMMARY OF *E. COLI* DATA BY STATION

With very few exceptions, *E. coli* sampling did not begin until 2000. (Before 2000, samples were only analyzed for fecal coliform.) Table 3-2 provides an inventory of active *E. coli* sampling sites, and Table 3-3 provides a summary of the currently available *E. coli* data for these sites. Table values in bold are indicative of exceedances of state criteria. It is important to note that the data in this table typically cover a longer period of record than that used in the *Draft 2006 Texas Water Quality Inventory*.

Table 3-2: East Fork Sampling Sites

TCEQ #	TCEQ Description
17431	EAST FORK SAN JACINTO RIVER IMMEDIATELY DOWNSTREAM OF SH 150 WEST OF COLDSPRING
14242	EAST FORK SAN JACINTO RIVER IMMEDIATELY DOWNSTREAM OF US 59 AT RED GULLY
11235	EAST FORK SAN JACINTO RIVER AT FM 1485

Table 3-3: East Fork *E. coli* Data Summary

Station	17431	14242	11235
Reach	E Fork	E Fork	E Fork
Begin Date	Mar-02	Jun-00	Jun-00
End Date	Jul-04	Apr-05	May-05
Count	11	39	86
75th Percentile	**620**	**492**	**423**
Geometric mean	**197**	**199**	**198**
25th Percentile	84	79	79

3.3 SPATIAL AND TEMPORAL ANALYSIS

Spatial analysis can be helpful when attempting to locate sources of bacteria. Figure 3-2 shows the variation in bacteria concentrations from upstream to downstream across the watershed. As shown, the bacteria concentrations are of similar magnitude at each of the three sampling sites.

Temporal analysis can be useful for determining the emergence or diminution of bacteria sources over time. Figures 3-3, 3-4, and 3-5 present bacteria concentration over time for stations 17431, 14242, and 11235, respectively. For these stations, no significant temporal trends were observed.

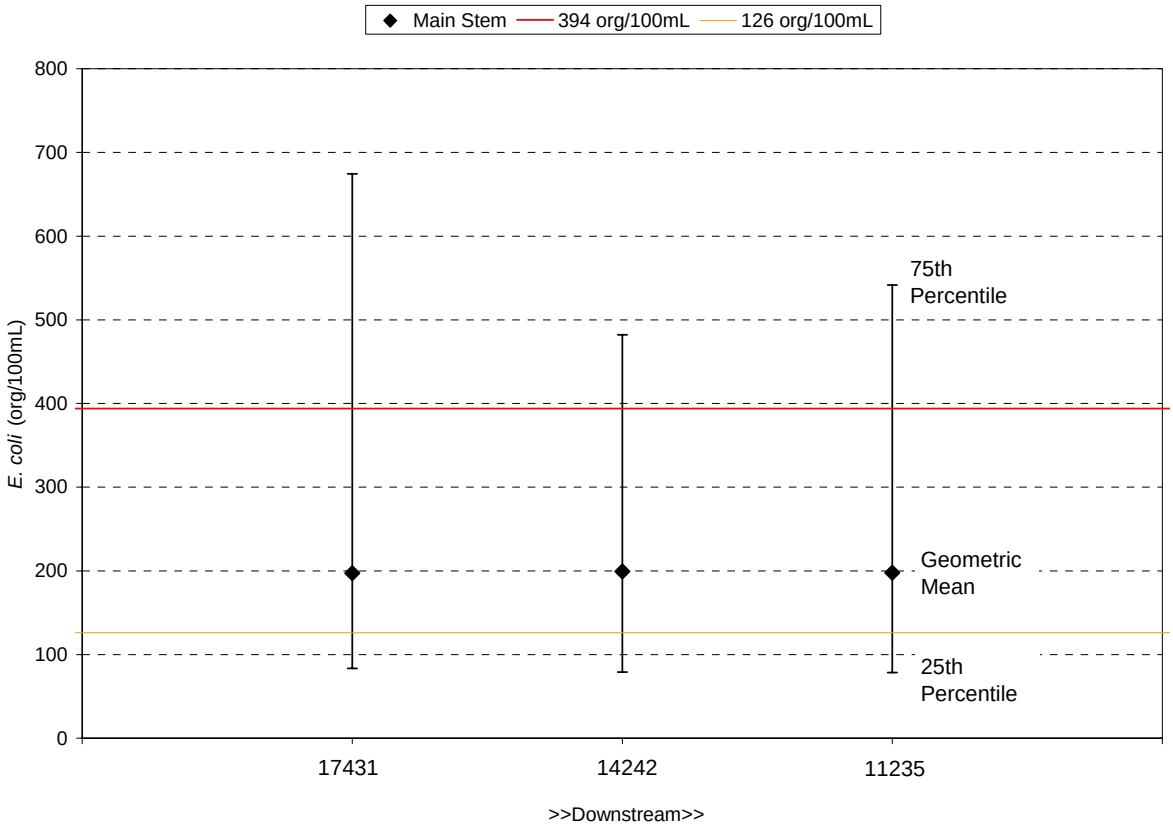

Figure 3-2: East Fork Spatial Analysis

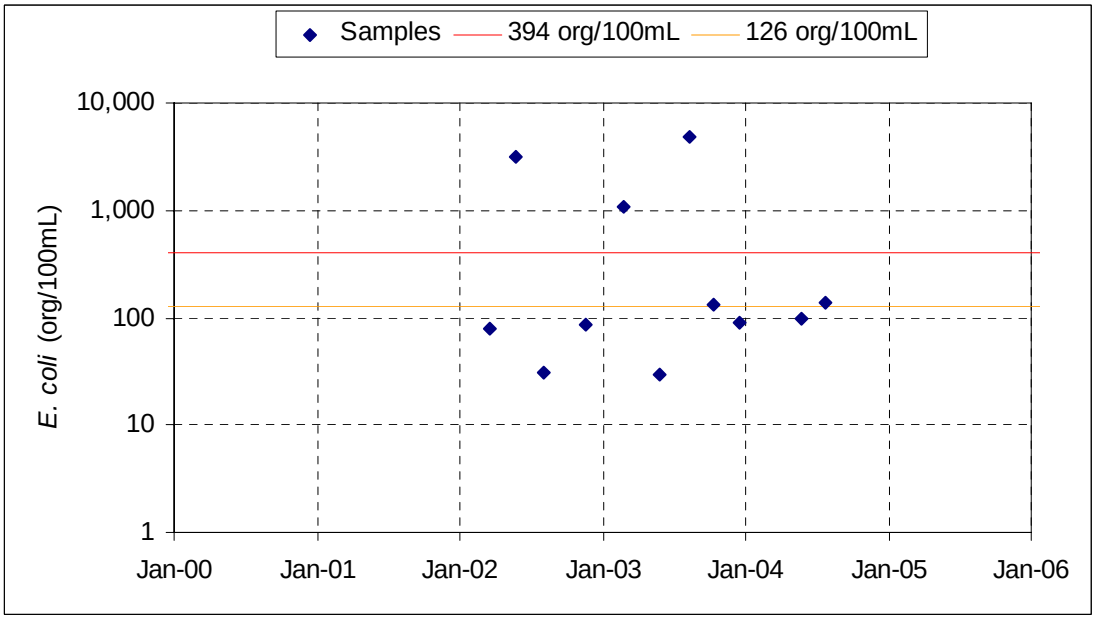

Figure 3-3: Temporal Analysis: East Fork at SH 150 (#17431)

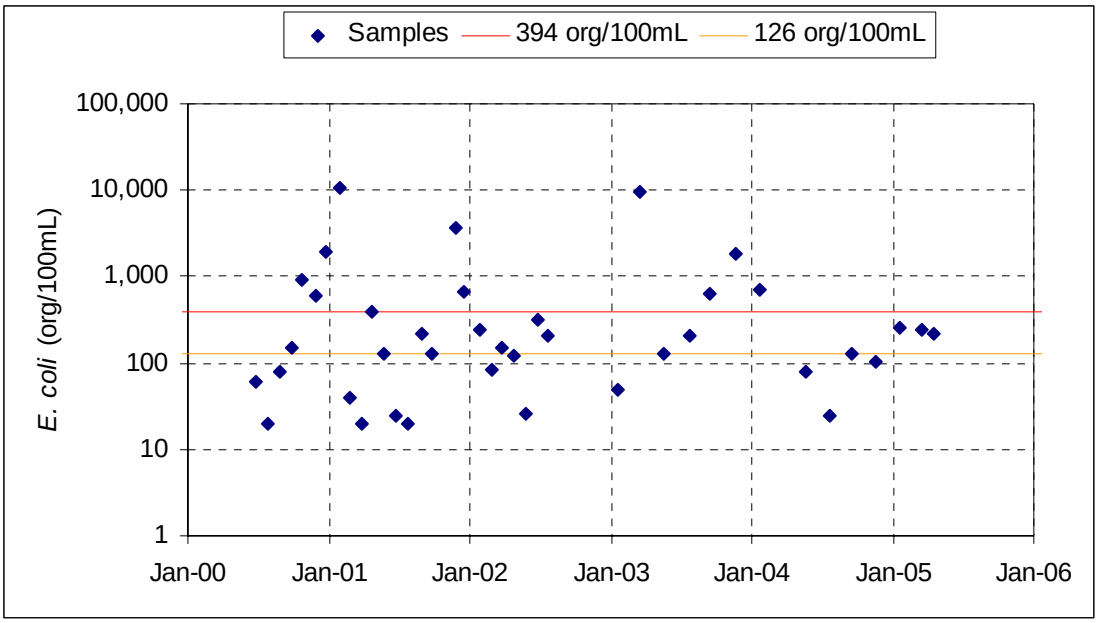

Figure 3-4: Temporal Analysis: East Fork at US 59 (#14242)

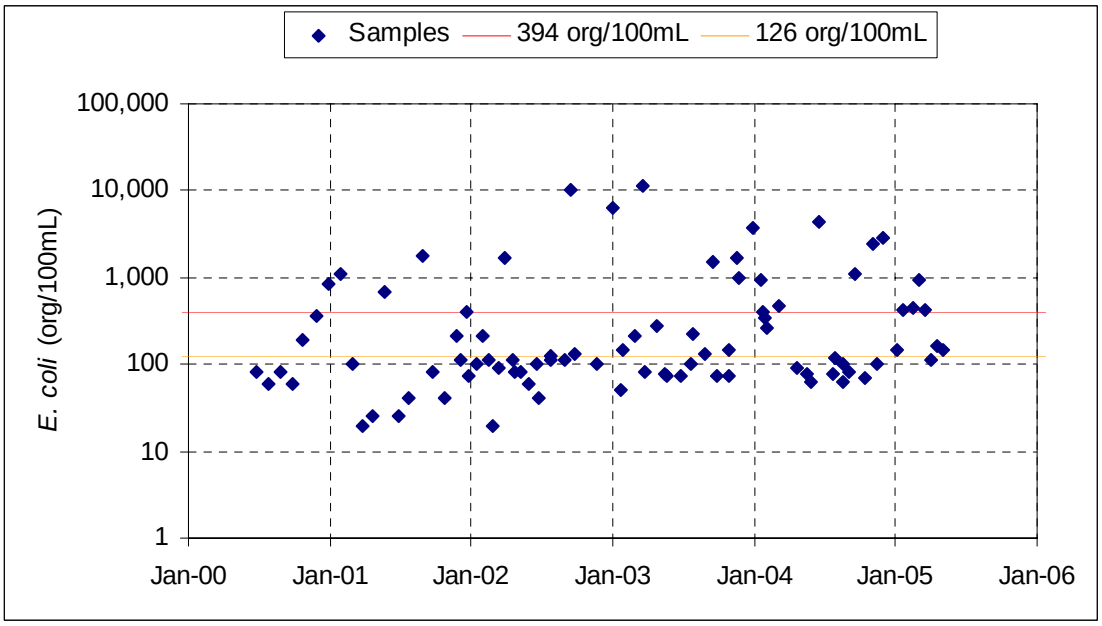

Figure 3-5: Temporal Analysis: East Fork at FM 1485 (#11235)

3.4 LOAD DURATION CURVE DEVELOPMENT

3.4.1 Flow Duration Curves

A flow duration curve (FDC) is a graph of daily average streamflow versus the percent of days that the average streamflow value is exceeded. FDCs are typically developed using daily flow data collected at USGS gaging stations. For this project, the desired period of record for FDC development is 1987-2006. Table 3-4 identifies the active USGS flow gaging stations in the segment for this time period. The locations of these gages are presented in Figure 3-1. Flow duration curves for these two USGS stations are shown in Figure 3-6.

Table 3-4: East Fork USGS Flow Gages

Station	Stream	Location	Available FDC data
08070000	East Fork San Jacinto River	near Cleveland, TX	1987-2006
08070200	East Fork San Jacinto River	near New Caney, TX	1987-2006

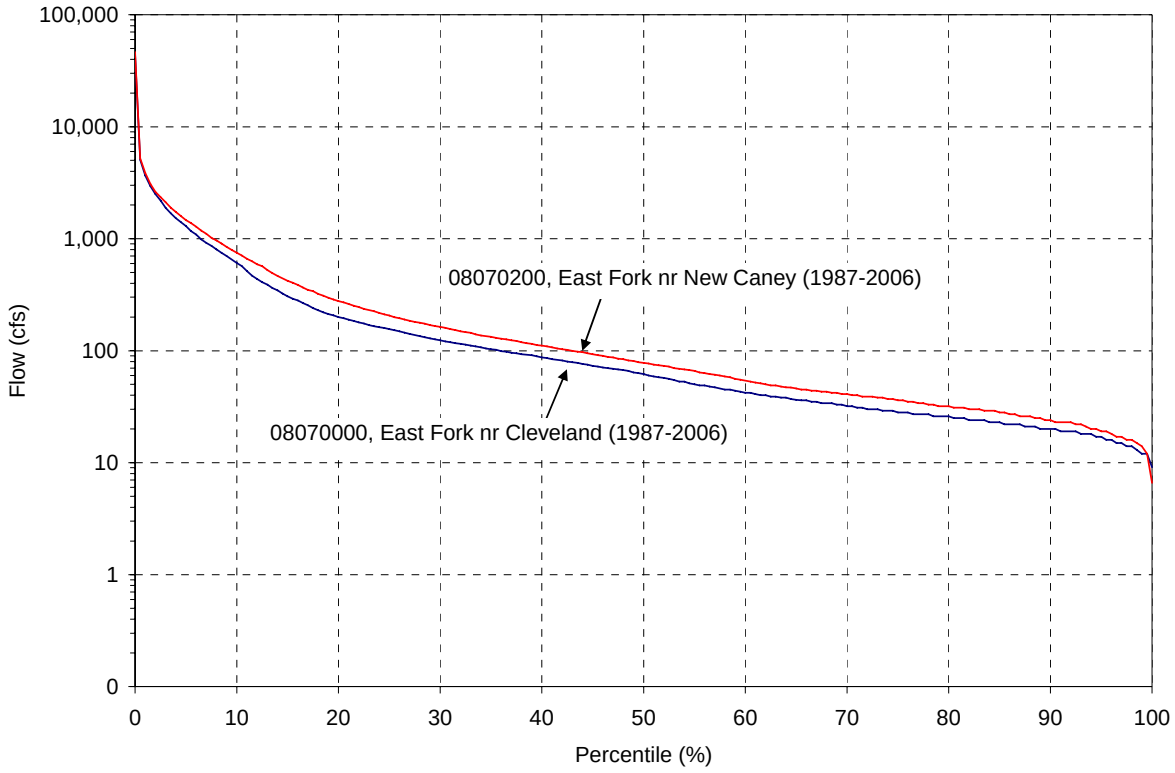

Figure 3-6: East Fork Flow Duration Curves

To create load duration curves, each water quality sampling site must have a complete flow record. Since most sampling sites do not have a corresponding USGS flow gage, these records have to be synthesized using nearby gages and drainage area adjustment factors.

3.4.2 Load Duration Curves

This section presents load duration curves for various water quality sampling stations throughout the study area. The bacterial loads are the product of each grab sample bacteria concentration and the corresponding mean daily streamflow rate. Bacteria standards are represented in these figures by curves for the geometric mean and grab sample criteria, 126 org/100mL and 394 org/100mL, respectively. Load duration curves are presented from upstream to downstream along the main segment, and then along tributaries.

An LDC for the East Fork San Jacinto River at State Highway 150 is presented in Figure 3-7. There are too few data for this station to draw any conclusions from LDC analysis. Additional sampling could provide better source characterization at this station.

Figures 3-8 and 3-9 present LDCs for the East Fork at US Highway 59 and FM 1485, respectively. For both of these stations, the greatest exceedances typically occur under high flow conditions (0-20th percentile), but high bacteria levels are observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to these stations.

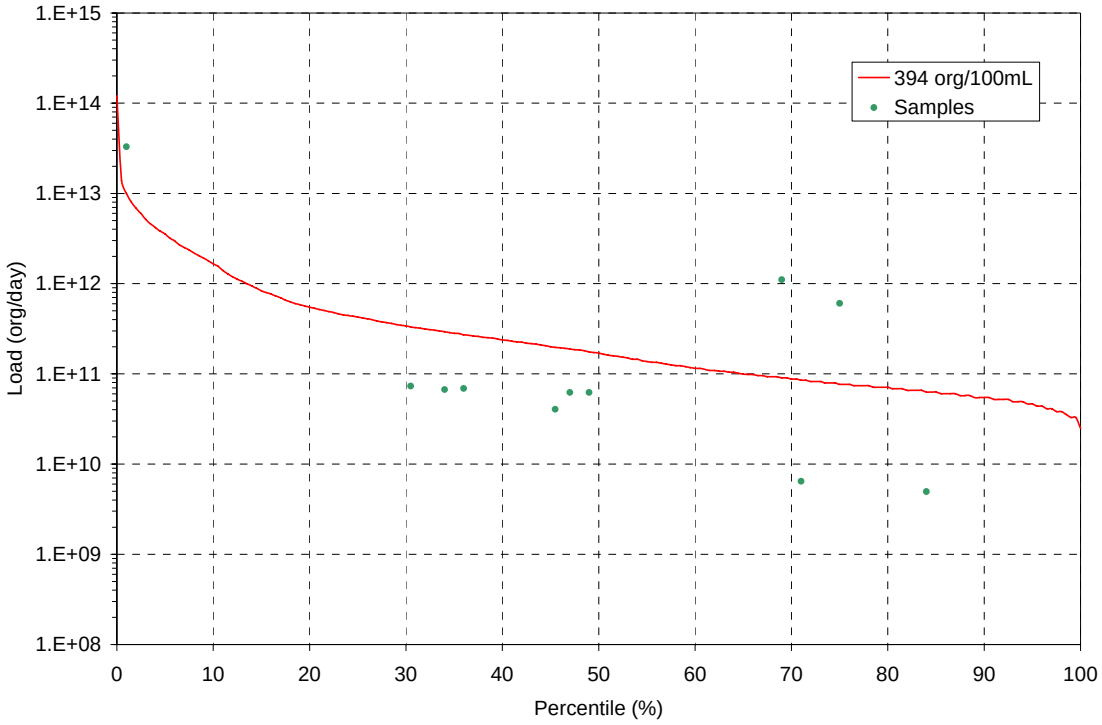

Figure 3-7: LDC for East Fork at SH 150 (#17431)

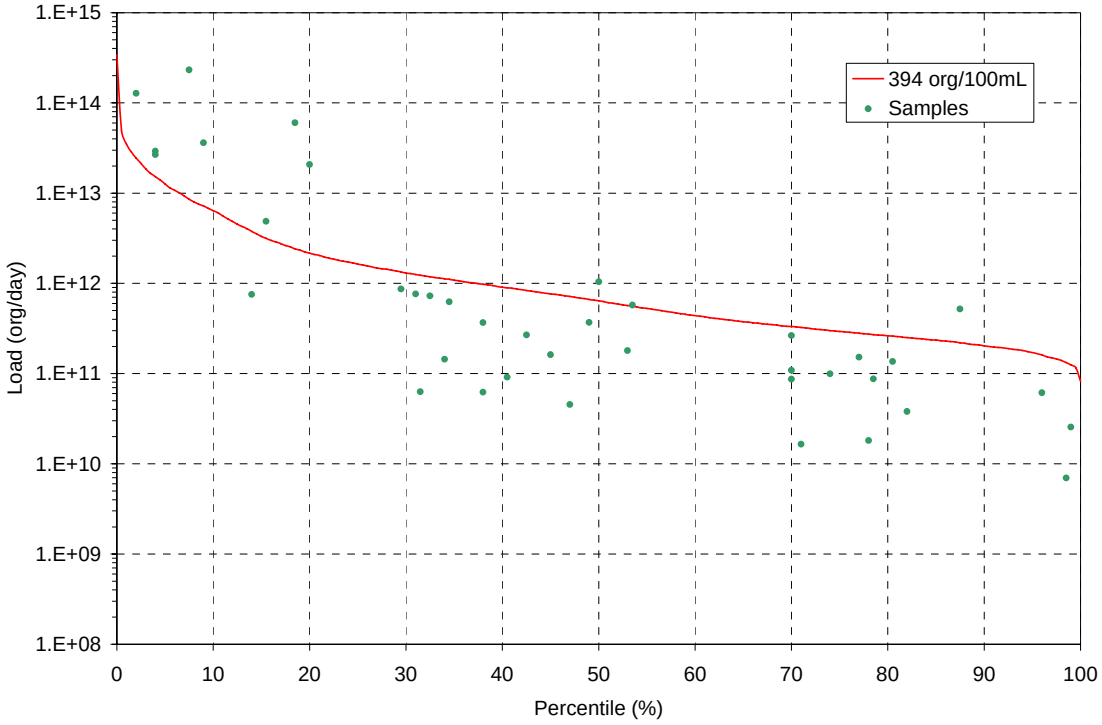

Figure 3-8: LDC for East Fork at US 59 (#14242)

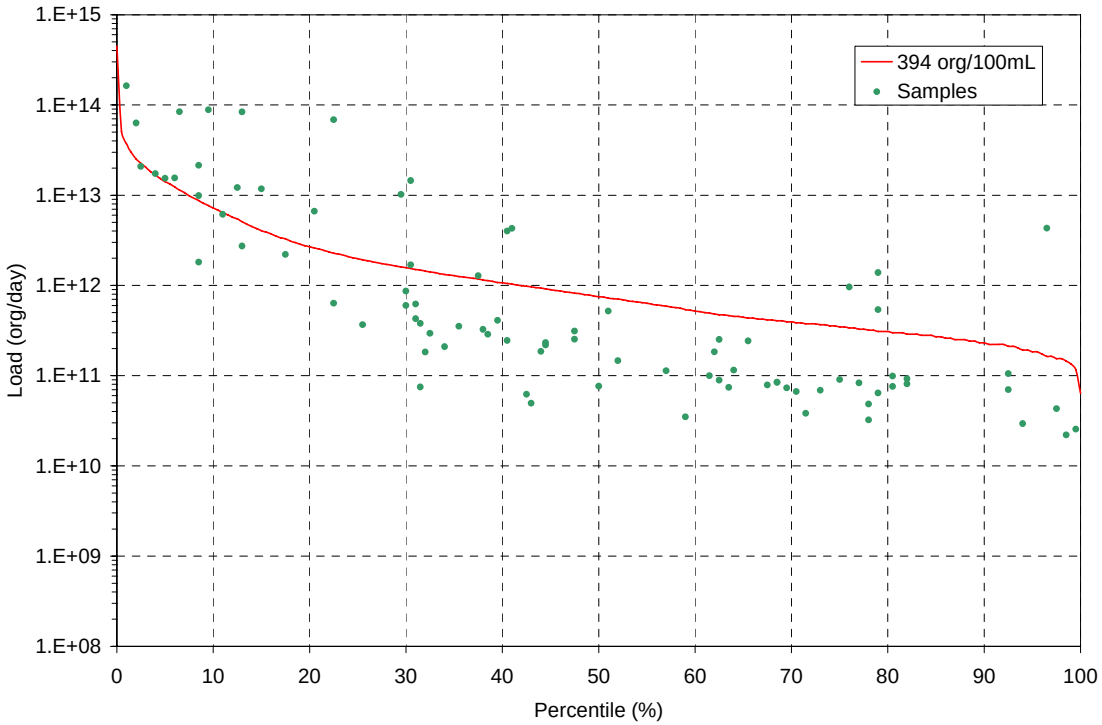

Figure 3-9: LDC for East Fork at FM 1485 (#11235)

3.5 DISCUSSION OF POTENTIAL SOURCES

There have historically been two general classifications of sources of pollutants that were distinguished by the mechanism of release to a receiving stream. Sources that were released via a pipe or defined outfall were labeled as "point sources", while sources that were diffuse in nature were labeled as "nonpoint sources". Thus, "point sources" of bacteria would usually include facilities such as wastewater treatment plants. Traditional "nonpoint sources" would include, but not be limited to, leaking sewer systems, failing septic systems, pets, wildlife, livestock, and general urban and rural runoff. However, TMDLs do not always adhere to the traditional usage of the terms point source and nonpoint source.

In accordance with EPA guidance, TMDLs are developed to establish two categories of allocations: wasteload allocations (WLAs) and load allocations (LA). EPA has determined that any source flowing into a waterway and covered by a permit should be classified as a waste load and be included in the WLA category. Thus, the "waste load" category would include not only facilities such as wastewater treatment plants, but also discharges of runoff from municipal areas covered under stormwater permits (MS4s).

Remaining diffuse sources of pollutants that are not covered by permit are defined as "loads" and ultimately are subject to development of the LA. This would include runoff from rural or urban areas outside of permitting jurisdictions.

3.5.1 Upstream Sources

There are no waterbodies upstream of the East Fork San Jacinto River.

3.5.2 Runoff Sources

Runoff sources of bacteria can fall into either the waste load or load category, depending on the presence or absence of a permit allowing for discharge into a waterway. Runoff sources of bacteria can be anticipated based on land use. For example, it has been observed that natural areas typically produce the smallest runoff source loads. This is because they tend to produce the least runoff volume and tend to have the lowest density of fecal sources. Rural (farm and ranch) areas also tend to have smaller source loads for the same reasons. However, in both natural and rural areas, significant bacteria sources can still sometimes exist. For example, natural areas could include dense waterfowl areas, and rural areas could include confined animal pens. Urban areas tend to produce larger bacteria loads. This is generally the result of high impervious cover, which increases the frequency and intensity of runoff events. It can also be the result of an increasing density in potential sources (leaking sewage collection systems, failing septic drainfields, pets, wildlife, etc.).

Land use data for the East Fork watershed are shown in Figure 3-10. As shown, the upper portion of the watershed includes primarily forest, wetland, and pasture. The lower portion of the watershed includes rural and light residential land uses. The source of the data is USGS, 2001.

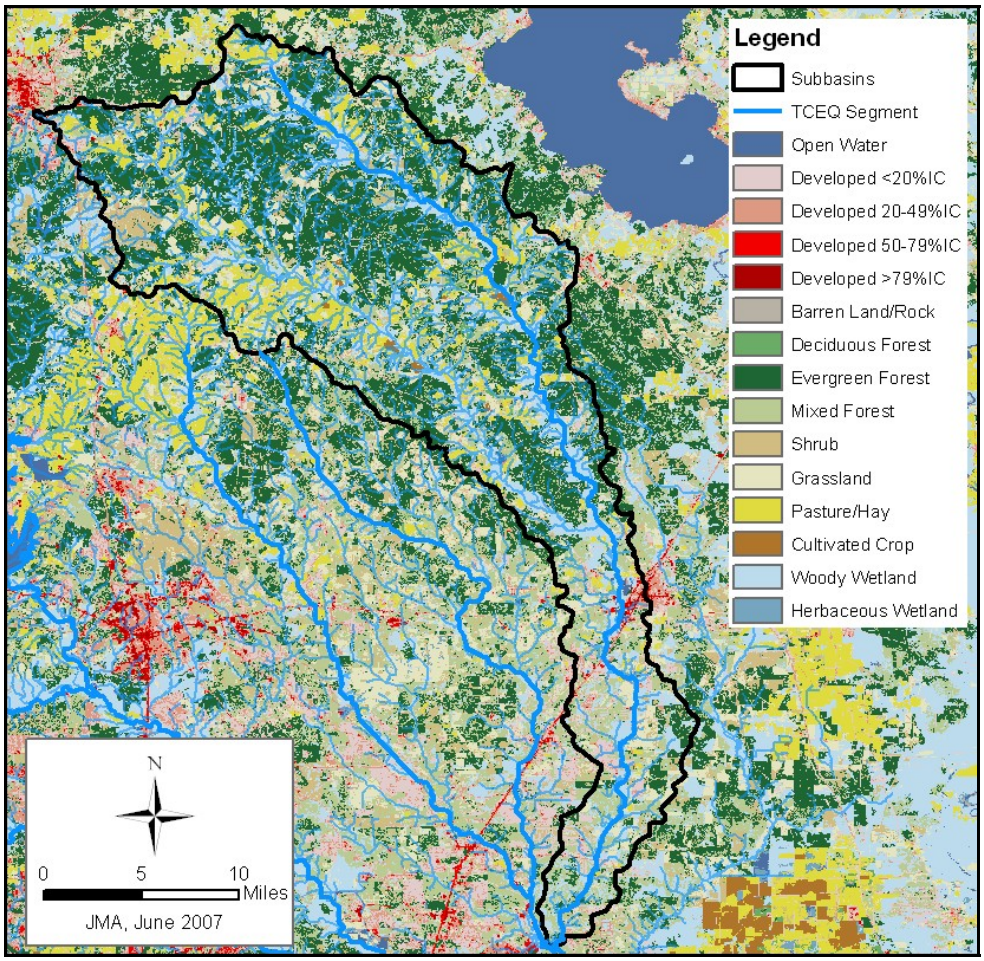

Figure 3-10: East Fork Land Use

3.5.3 Wastewater Treatment Facilities

Wastewater treatment facilities have the potential to contribute significant bacteria loads if complete disinfection is not achieved. These loads may be most noticeable under low flow conditions, during which some streams may be effluent dominated. However, it is also possible for treatment plants to contribute significant loads under wet weather conditions. This could be the case if increased loading due to stormwater inflow and infiltration results in poorer plant performance.

Wastewater treatment plants in the East Fork watershed are shown in Table 3-5. This table includes the permitted flow, estimated current flow, and disinfection monitoring requirements for each facility. Facilities without monitoring requirements for disinfection (marked "N") are typically facilities without a significant potential bacteria source (i.e. industries or drinking water treatment plants). Treatment facility discharge locations are shown in Figure 3-11. For this segment, the total permitted flow is approximately 0.9 MGD (1.4 cfs), and the total current effluent flow is approximately 0.6 MGD (0.9 cfs). (For facilities with unknown current flows, half the permitted flow was used.) Wastewater treatment facilities can represent a significant portion of the segment's baseflow (which could be defined as the 50th to 99th percentile range of

the FDC). At the 50th percentile flow, current effluent discharges account for about 1% of total stream flow, while at the 99th percentile, they account for about 6% of the total flow.

Table 3-5: East Fork Wastewater Treatment Facility Summary

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
01905-000	TX0028169	New Waverly Ventures Ltd Co	Walker	variable	0.10	F
02919-000	TX0102121	Gardner Glass Products, Inc	Walker	0.102	unk	N
04249-000	TX0123421	Steely Lumber Co., Inc.	Walker	n/a	unk	N
10766-001	TX0053473	City of Cleveland	Liberty	0.75	0.41	C
11844-001	TX0071765	Forest Glen, Inc	Walker	0.04	0.009	C

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

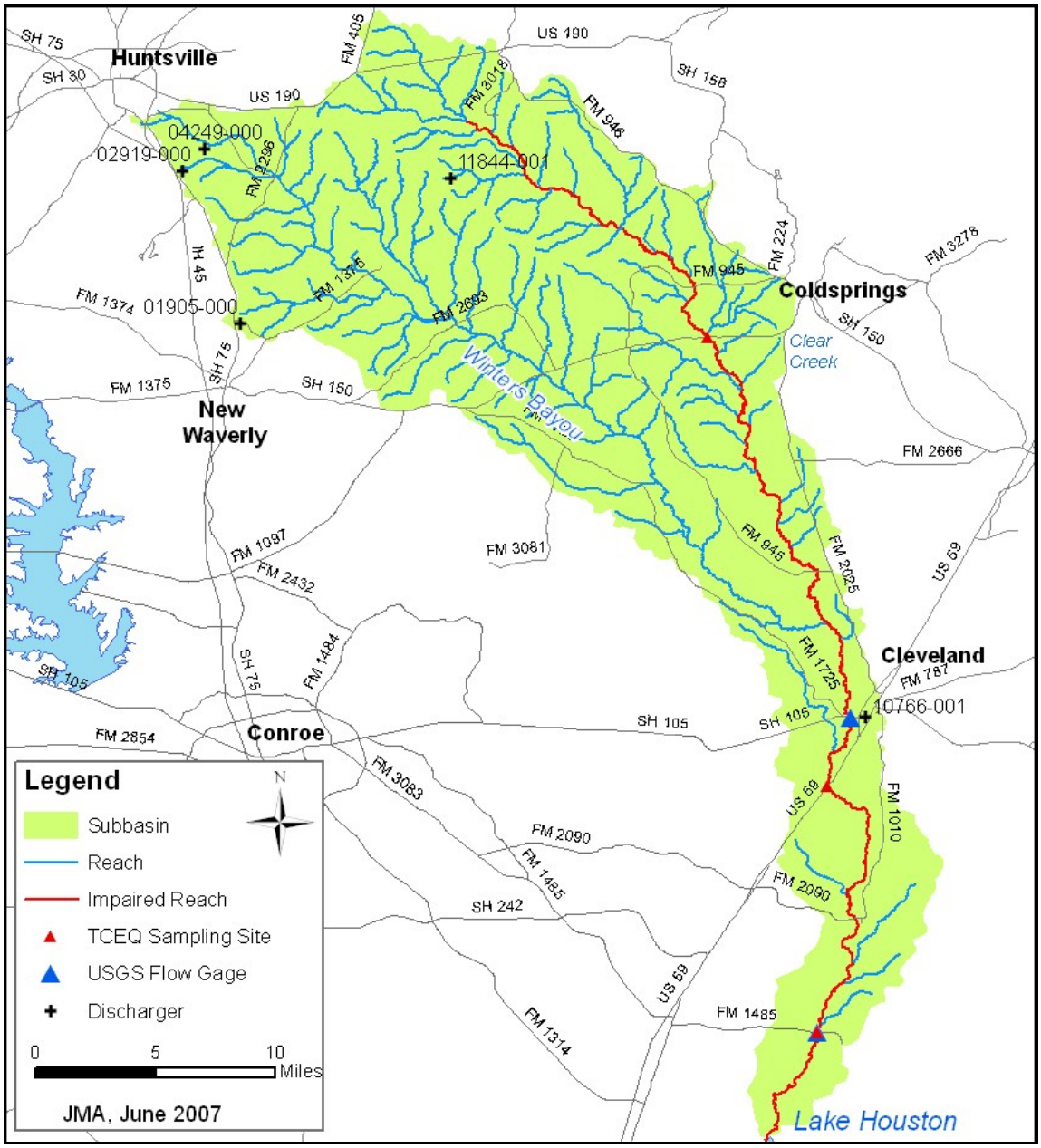

Figure 3-11: East Fork Treatment Facility Discharge Locations

4.0 WEST FORK SAN JACINTO RIVER, SEGMENT 1004

4.1 TCEQ ASSESSMENT FOR 303(d) LIST

When determining compliance with state water quality criteria, TCEQ often divides segments into various assessment units (AU) to refine the spatial resolution of the impairment. Assessment units for the West Fork of the San Jacinto River are shown in Table 4-1.

The information included in Table 4-1 is from the *Draft 2006 Texas Water Quality Inventory*, which was used as a basis for the *Draft 2006 Texas 303(d) List* (TCEQ, 2007). The period of record used by TCEQ in this assessment was 1 December 1999 through 30 November 2004. The "# Exceed" column provides the number of samples that exceeded the grab sample criterion for *E. coli* (394 org/100mL). Generally, TCEQ allows up to 25% of the samples to exceed the grab sample criterion before considering the reach impaired. The "Geo. Mean" column provides the geometric mean of the *E. coli* samples. If this number exceeds the criterion of 126 org/100mL, then the reach is considered impaired. As shown, three of the assessment units were found to be impaired for *E. coli*, and one unit was found to be unimpaired.

Table 4-1: West Fork Assessment Units and Results

Assessment Unit	Segment Name	Assessment Unit Description	# Samples	# Exceed	Geo. Mean	Impaired
1004_01	West Fork San Jacinto River	Lake Conroe Dam to IH45	39	6	60	No
1004_02	West Fork San Jacinto River	IH 45 to the Spring Creek confluence	38	10	167	Yes
1004D_01	Crystal Creek	Confluence with West Fork San Jacinto River upstream to confluence of the East and West Forks of Crystal Creek	86	19	136	Yes
1004E_02	Stewarts Creek	From Airport Rd to confluence with West Fork San Jacinto River	88	33	225	Yes

The locations of the assessment units are displayed in Figure 4-1. Also shown in this figure are water quality sampling locations where *E. coli* data have been regularly collected. Generally, each assessment unit corresponds to one or more sampling sites. However, at site #11250, bacteria sampling did not begin until late 2004, and so this station was not included in the TCEQ's 2006 assessment.

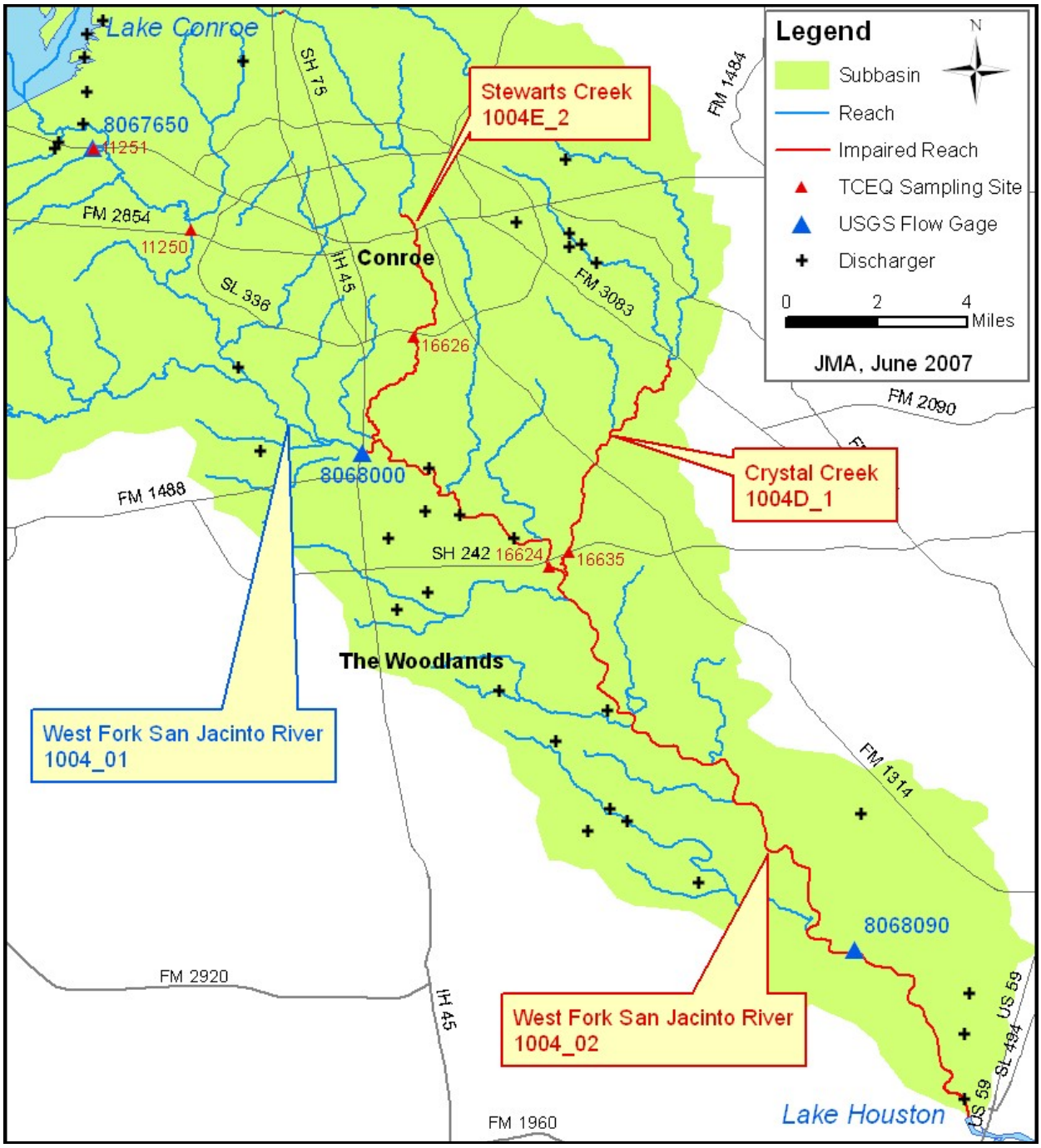

Figure 4-1: West Fork Study Area

4.2 SUMMARY OF *E. COLI* DATA BY STATION

With very few exceptions, *E. coli* sampling did not begin until 2000. (Before 2000, samples were only analyzed for fecal coliform.) Table 4-2 provides an inventory of active *E. coli* sampling sites, and Table 4-3 provides a summary of the currently available *E. coli* data for these sites. Table values in bold are indicative of exceedances of state criteria. Because of the limited number of data available at Station 11250, the results for this station should be interpreted with caution. It is important to note that the data in this table typically cover a longer period of record than that used in the *Draft 2006 Texas Water Quality Inventory*.

Table 4-2: West Fork Sampling Sites

TCEQ #	TCEQ Description	USGS #
11251	WEST FORK SAN JACINTO RIVER IMMEDIATELY DOWNSTREAM OF SH 105 NW OF CONROE	08067650
11250	WEST FORK SAN JACINTO RIVER 70 METERS UPSTREAM OF FM 2854 WEST OF CONROE	
16626	STEWARTS CREEK 175 METERS DOWNSTREAM OF SH LOOP 336 SOUTHEAST OF CONROE	
16624	WEST FORK SAN JACINTO RIVER 267 METERS DOWNSTREAM OF SH 242/LAZY RIVER ROAD	
16635	CRYSTAL CREEK AT SH 242 SOUTHEAST OF CONROE	

Table 4-3: West Fork *E. coli* Data Summary

Station	11251	11250	16626	16624	16635
Reach	W Fork	W Fork	Stewarts	W Fork	Crystal
Begin Date	Jun-00	Oct-04	Jun-00	Jun-00	Jun-00
End Date	Apr-05	Jul-06	Apr-05	Apr-05	Apr-05
Count	41	8	91	41	89
75th Percentile	130	**366**	**373**	**400**	**316**
Geometric mean	69	**178**	**229**	**170**	**164**
25th Percentile	20	95	210	62	25

4.3 SPATIAL AND TEMPORAL ANALYSIS

Spatial analysis can be helpful when attempting to locate sources of bacteria. Figure 4-2 shows the variation in bacteria concentrations from upstream to downstream across the watershed. As shown, the lowest bacteria concentrations are observed at the most upstream station (11251). The highest bacteria concentrations can generally be found at Station 16626, on Stewarts Creek.

Temporal analysis can be useful for determining the emergence or diminution of bacteria sources over time. Figures 4-3, 4-4, and 4-5 present bacteria concentration over time for main stem station 16624 and tributary stations 16626 and 16635. For these stations, no significant temporal trends were observed.

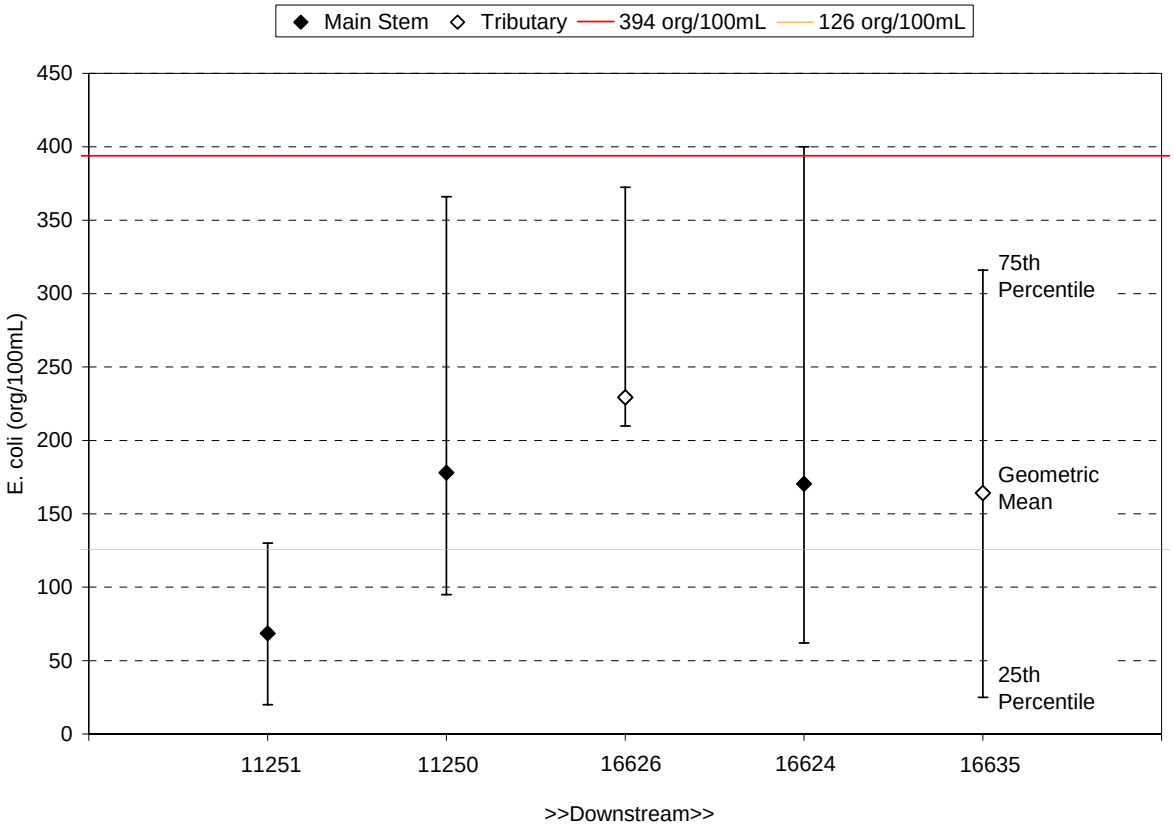

Figure 4-2: West Fork Spatial Analysis

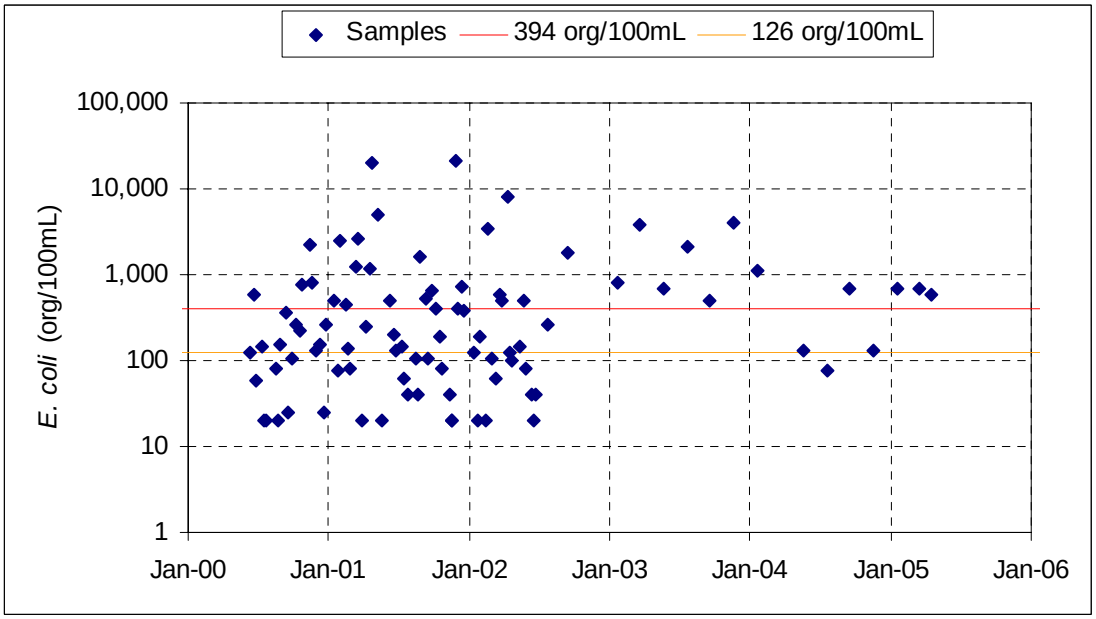

Figure 4-3: Temporal Analysis: West Fork at SH 242 (#16624)

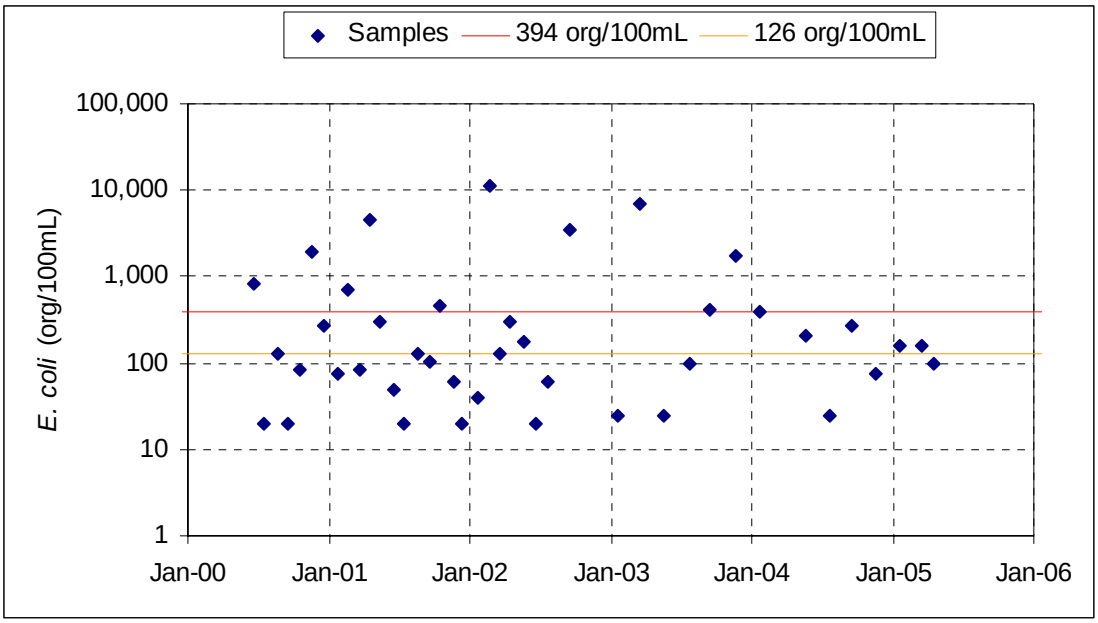

Figure 4-4: Temporal Analysis: Stewarts Creek (#16626)

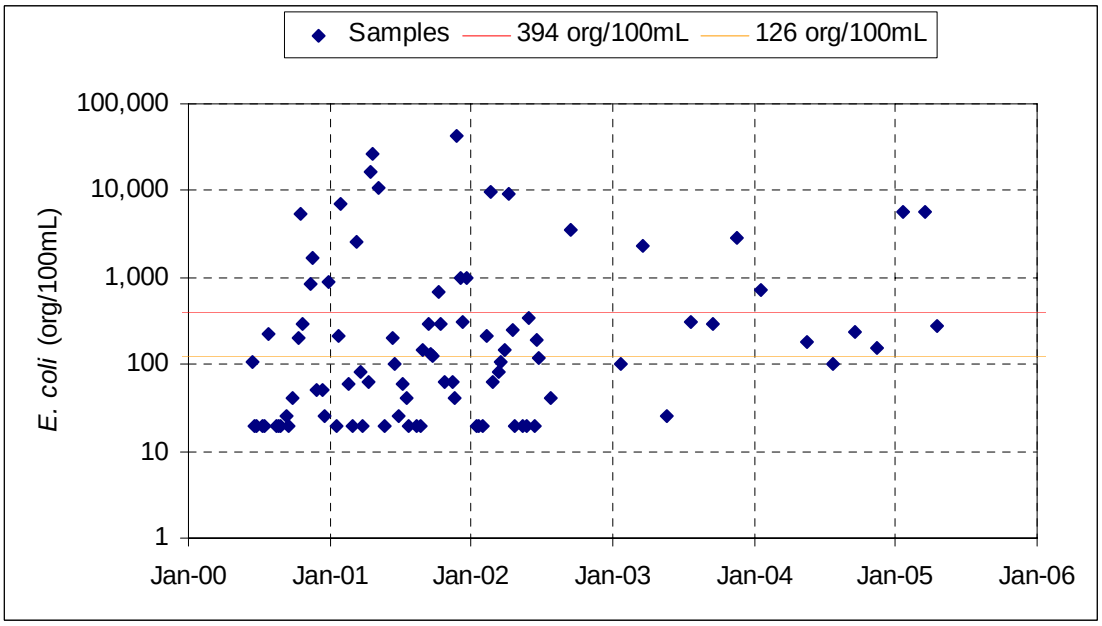

Figure 4-5: Temporal Analysis: Crystal Creek (#16635)

4.4 LOAD DURATION CURVE DEVELOPMENT

4.4.1 Flow Duration Curves

A flow duration curve (FDC) is a graph of daily average streamflow versus the percent of days that the average streamflow value is exceeded. FDCs are typically developed using daily flow data collected at USGS gaging stations. For this project, the desired period of record for FDC development is 1987-2006. Table 4-4 identifies the active USGS flow gaging stations in the segment for this time period. The locations of these gages are presented in Figure 4-1. The flow records for Gage 08067650 include large gaps making the data unusable for FDC development. Generally, these gaps corresponded with periods of low to moderate flows. Flow duration curves for the two applicable USGS stations are shown in Figure 4-6.

Table 4-4: West Fork USGS Flow Gages

Station	Stream	Location	Available FDC data
08067650	West Fork San Jacinto River	below Lk Conroe near Conroe, TX	N/A
08068000	West Fork San Jacinto River	near Conroe, TX	1987-2006
08068090	West Fork San Jacinto River	above Lk Houston near Porter, TX	1987-2006

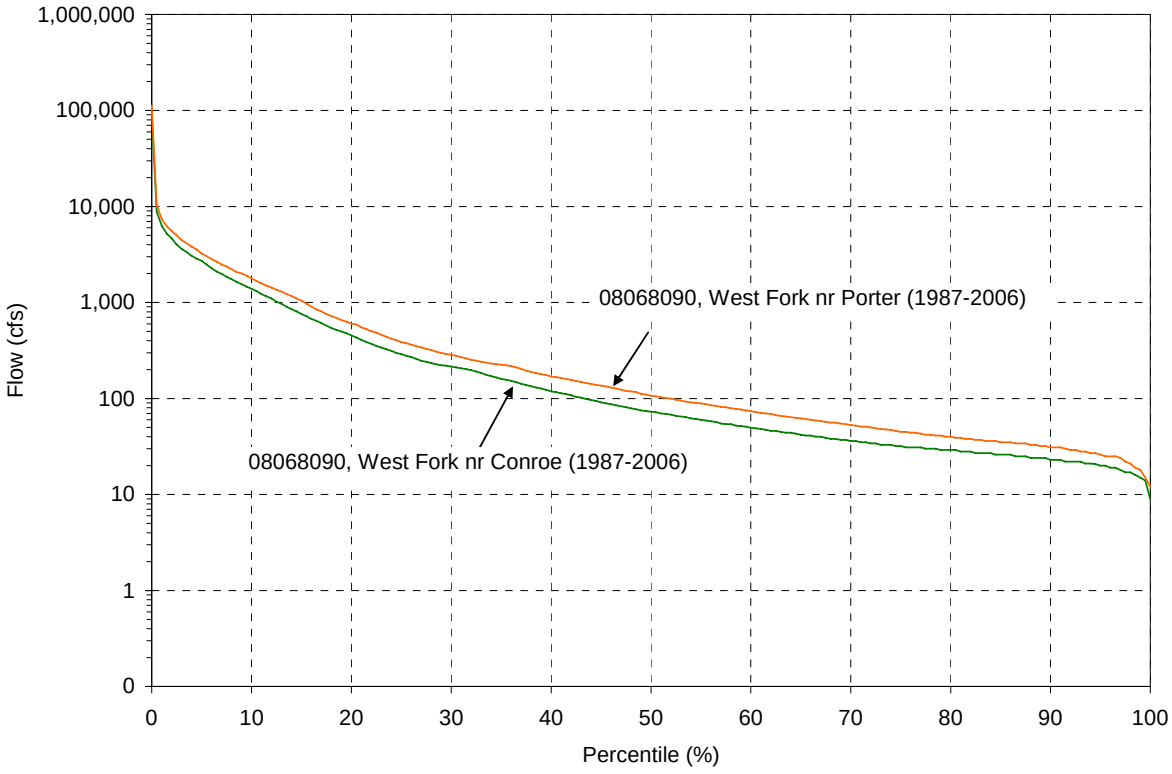

Figure 4-6: West Fork Flow Duration Curves

To create load duration curves, each water quality sampling site must have a complete flow record. Since most sampling sites do not have a corresponding USGS flow gage, these records have to be synthesized using nearby gages and drainage area adjustment factors. For the two tributary stations, flow records were synthesized based on the nearby USGS flow gage 08070500 on Caney Creek, which has a more similar upstream drainage area. Additional description of this gage is presented in Section 7.0.

4.4.2 Load Duration Curves

This section presents load duration curves for various water quality sampling stations throughout the study area. The bacterial loads are the product of each grab sample bacteria concentration and the corresponding mean daily streamflow rate. Bacteria standards are represented in these figures by curves for the geometric mean and grab sample criteria, 126 org/100mL and 394 org/100mL, respectively. Load duration curves are presented from upstream to downstream along the main segment, and then along tributaries. For the stations on the main stem of the West Fork, the determination of dry versus wet weather flow conditions can be somewhat complicated by flow releases from the dam at Lake Conroe.

LDCs were not developed for Stations 11251 and 11250. For both stations, adequate flow records could not be readily synthesized. As shown in Table 4-2, bacteria concentrations at Station 11251 are well below the state criteria. Flows at this site are dominated by releases from Lake Conroe, which apparently has low bacteria levels. At Station 11250 bacteria concentrations appear to be higher, but there are too few data points for an adequate assessment.

An LDC for the West Fork San Jacinto River at State Highway 242 is presented in Figure 4-7. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are sometimes observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station. Additional sampling could provide better source characterization at this station.

An LDC for Stewarts Creek (Station 16626) is presented in Figure 4-8. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are often observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station.

An LDC for the Crystal Creek (Station 16635) is presented in Figure 4-9. As with the previous stations, the greatest exceedances typically occur under high flow conditions. Under low flow conditions, bacteria levels are lower, but still sometimes exceed criteria. Both wet and dry weather bacteria sources are influencing this station, but it may be the wet weather sources that are primarily responsible for impairment.

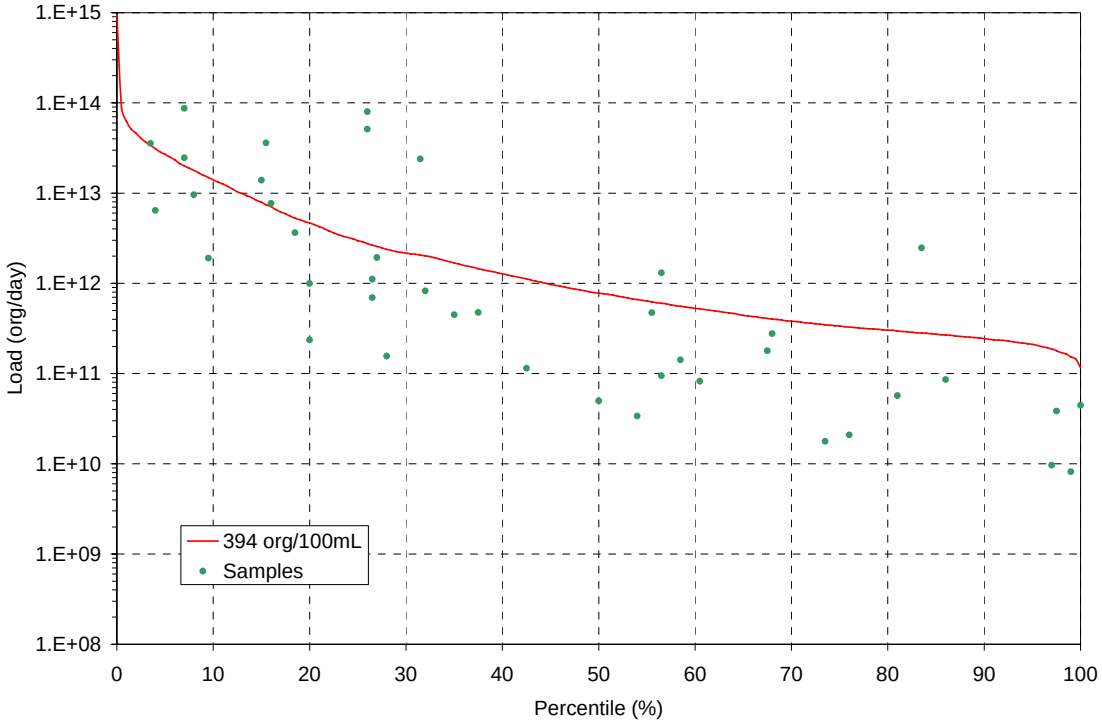

Figure 4-7: LDC for West Fork at SH 242 (#16624)

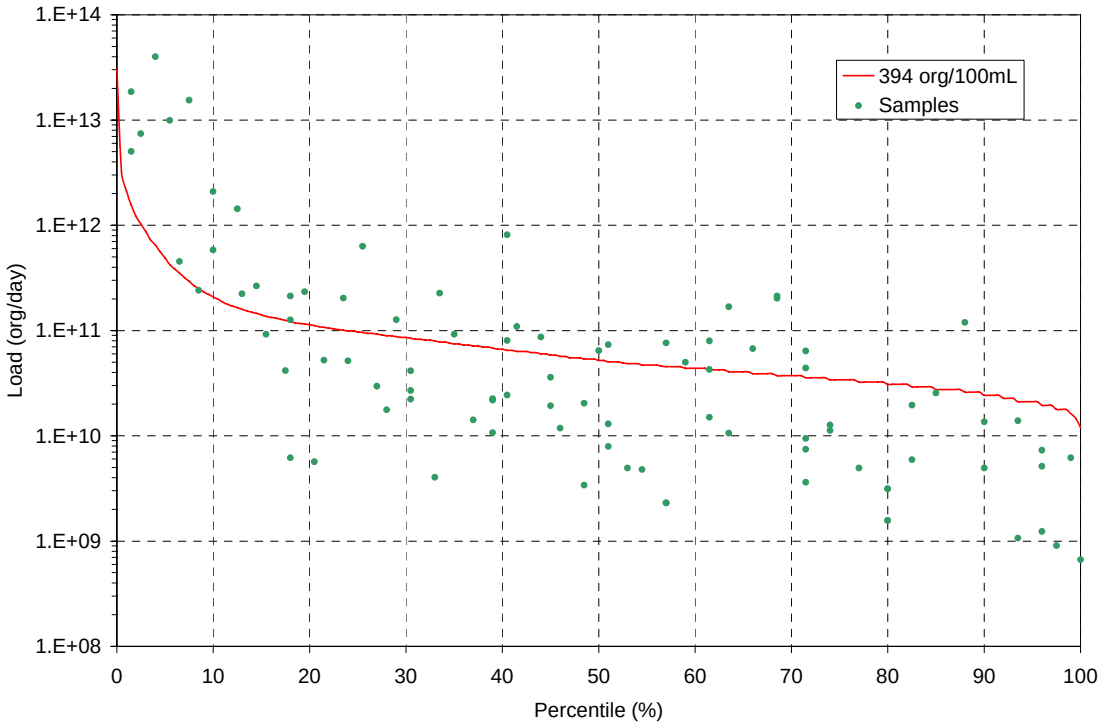

Figure 4-8: LDC for Stewarts Creek (#16626)

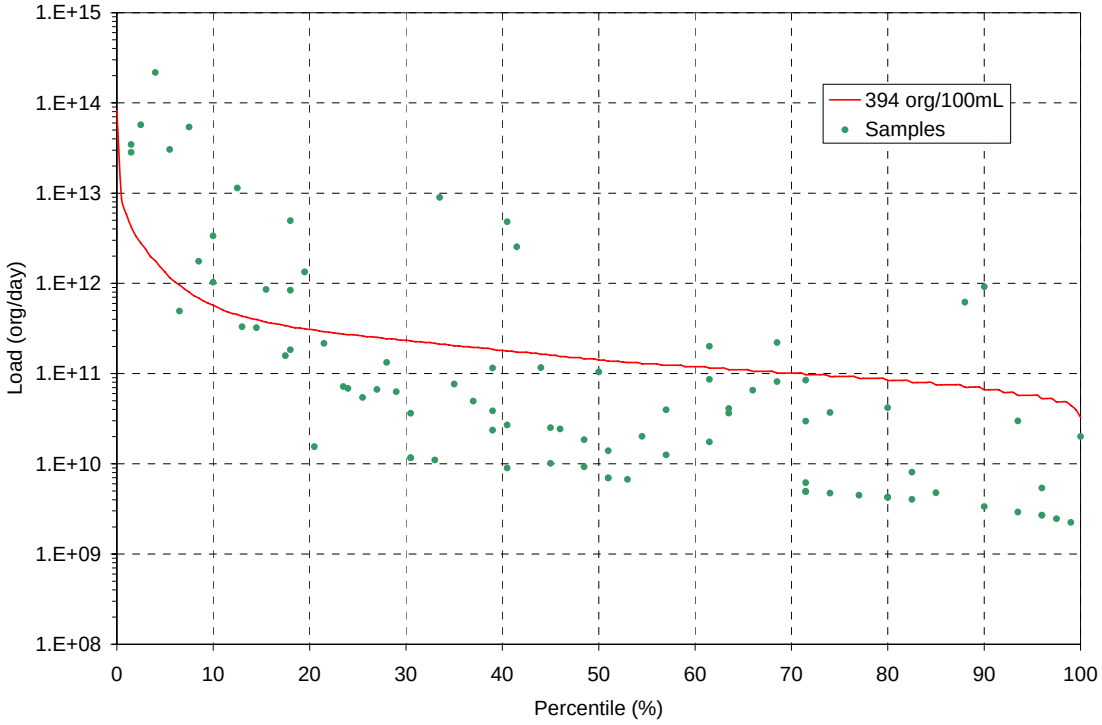

Figure 4-9: LDC for Crystal Creek (#16635)

4.5 DISCUSSION OF POTENTIAL SOURCES

There have historically been two general classifications of sources of pollutants that were distinguished by the mechanism of release to a receiving stream. Sources that were released via a pipe or defined outfall were labeled as "point sources", while sources that were diffuse in nature were labeled as "nonpoint sources". Thus, "point sources" of bacteria would usually include facilities such as wastewater treatment plants. Traditional "nonpoint sources" would include, but not be limited to, leaking sewer systems, failing septic systems, pets, wildlife, livestock, and general urban and rural runoff. However, TMDLs do not always adhere to the traditional usage of the terms point source and nonpoint source.

In accordance with EPA guidance, TMDLs are developed to establish two categories of allocations: wasteload allocations (WLAs) and load allocations (LA). EPA has determined that any source flowing into a waterway and covered by a permit should be classified as a waste load and be included in the WLA category. Thus, the "waste load" category would include not only facilities such as wastewater treatment plants, but also discharges of runoff from municipal areas covered under stormwater permits (MS4s).

Remaining diffuse sources of pollutants that are not covered by permit are defined as "loads" and ultimately are subject to development of the LA. This would include runoff from rural or urban areas outside of permitting jurisdictions.

4.5.1 Upstream Sources

Water quality in the West Fork of the San Jacinto River is influenced by two upstream segments. The first of these is Lake Conroe (Segment 1012) at the upstream end of the West Fork. The second of these is Lake Creek (Segment 1015) which enters the West Fork near the City of Conroe. The configuration of these segments can be observed in Figure 1-1.

Based on the TCEQ database, the geometric mean of all Lake Conroe *E. coli* data is less than 5 org/100mL. Station 11251, on the West Fork below Lake Conroe, has a geometric mean *E. coli* concentration of 69 org/100mL. While this is significantly higher than Lake Conroe and possibly indicative of nearby bacteria sources, this value is still well below the geometric mean criterion of 126 org/100mL.

Only 20 *E. coli* samples for Lake Creek (various stations) are available in the TCEQ database. The geometric mean of these 20 samples is 85 org/100mL indicating that the stream is in compliance with state criteria. Therefore, this segment is probably not a major contributor of bacteria to the West Fork.

4.5.2 Runoff Sources

Runoff sources of bacteria can fall into either the waste load or load category, depending on the presence or absence of a permit allowing for discharge into a waterway. Runoff sources of bacteria can be anticipated based on land use. For example, it has been observed that natural areas typically produce the smallest runoff source loads. This is because they tend to produce the least runoff volume and tend to have the lowest density of fecal sources. Rural (farm and ranch) areas also tend to have smaller source loads for the same reasons. However, in both natural and rural areas, significant bacteria sources can still sometimes exist. For example, natural areas could include dense waterfowl areas, and rural areas could include confined animal pens. Urban areas tend to produce larger bacteria loads. This is generally the result of high impervious cover, which increases the frequency and intensity of runoff events. It can also be the result of an increasing density in potential sources (leaking sewage collection systems, failing septic drainfields, pets, wildlife, etc.).

Land use data for the West Fork watershed are shown in Figure 4-10. As shown, the watershed includes a wide variety of land uses, ranging from wetlands, to forests, to rangeland, to urban areas. The source of the data is USGS, 2001.

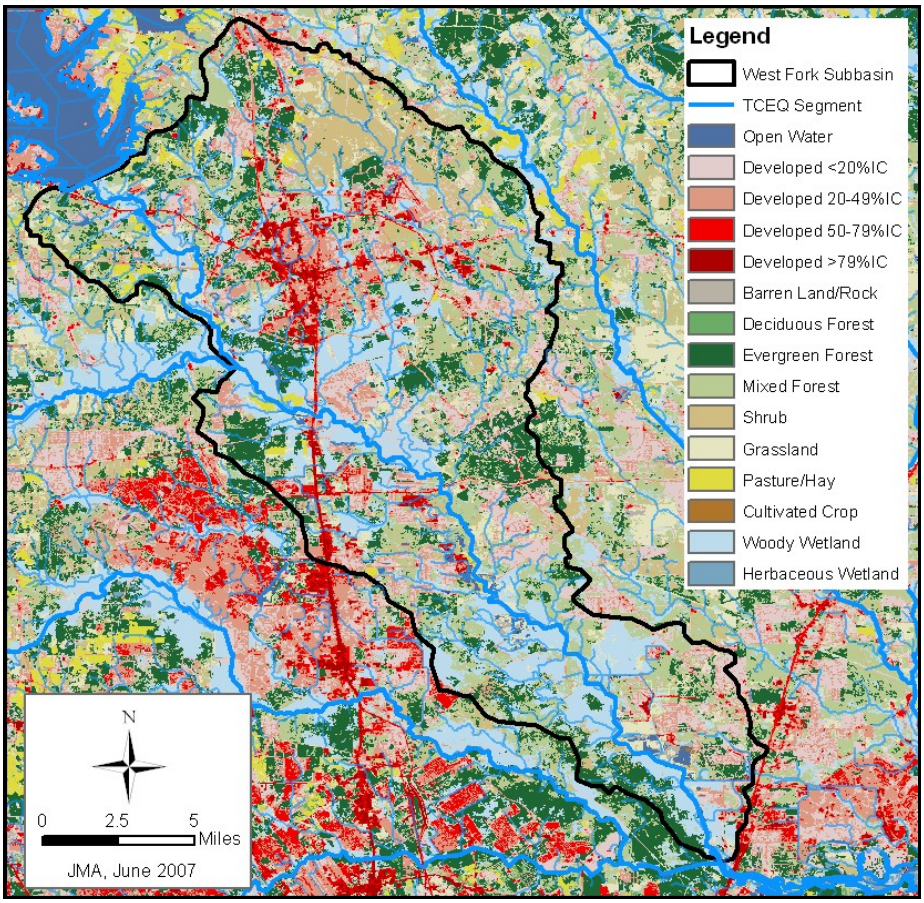

Figure 4-10: West Fork Land Use

4.5.3 Wastewater Treatment Facilities

Wastewater treatment facilities have the potential to contribute significant bacteria loads if complete disinfection is not achieved. These loads may be most noticeable under low flow conditions, during which some streams may be effluent dominated. However, it is also possible for treatment plants to contribute significant loads under wet weather conditions. This could be the case if increased loading due to stormwater inflow and infiltration results in poorer plant performance.

Wastewater Treatment Plants in the West Fork watershed are shown in Table 4-5. This table includes the permitted flow, estimated current flow, and disinfection monitoring requirements for each facility. Facilities without monitoring requirements for disinfection (marked "N") are typically facilities without a significant potential bacteria source (i.e. industries or drinking water treatment plants). Treatment facility discharge locations are shown in Figure 4-11. For this segment, the total permitted flow is approximately 23 MGD (36 cfs), and the total current effluent flow is approximately 11 MGD (18 cfs). (For facilities with unknown current flows, half the permitted flow was used.) Wastewater treatment facilities can represent a significant portion of the segment's baseflow (which could be defined as the 50th to 99th percentile range of the FDC). At the 50th percentile flow, current effluent discharges account for about 17% of total stream flow, while at the 99th percentile, they account for 100% of the total flow.

Table 4-5: West Fork Wastewater Treatment Facility Summary

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
00584-000	TX0005592	Huntsman Petrochemical Corp	Montgomery	0.75	0.38	N
02365-000	TX0034681	Maverick Tube, L.P.	Montgomery	0.11	0.03	N
02475-000	TX0087190	Drilling Specialties Co. LLC	Montgomery	0.02	0.005	N
02475-000	TX0087190	Drilling Specialties Co. LLC	Montgomery	0.02	0.005	N
02502-000	TX0087793	Hanson Aggregates Central, Inc.	Montgomery	0.35	unk	N
10008-002	TX0022268	City of Conroe	Montgomery	10.00	5.97	C
10315-001	TX0068845	City of Willis	Montgomery	0.80	0.57	C
10495-142	TX0088501	City of Houston	Montgomery	unk	unk	unk
10978-001	TX0025674	River Plantation MUD	Montgomery	0.60	0.41	C
11097-001	TX0020206	City of Panorama Village	Montgomery	0.40	0.23	C
11395-001	TX0022055	Montgomery Co MUD #15	Montgomery	0.90	unk	C
11580-001	TX0075680	Town of Woodloch	Montgomery	0.12	0.05	C
11658-001	TX0063461	San Jacinto River Authority	Montgomery	0.90	0.46	F
11820-001	TX0069256	Lazy River ID	Montgomery	0.10	0.06	C
11878-001	TX0073997	Evangelistic Temple	Montgomery	0.01	unk	C
11963-001	TX0076368	Montgomery Co MUD #42	Montgomery	0.15	0.08	C
12212-002	TX0093564	City of Shenandoah	Montgomery	3.00	0.45	C
12761-001	TX0093505	Malek Vashmeh	Montgomery	0.05	0.02	C
13700-001	TX0090123	Chateau Woods MUD	Montgomery	0.20	0.09	C
13760-001	TX0089672	Montgomery Co MUD #56	Montgomery	0.10	0.06	C
13985-001	TX0117706	Montgomery Co MUD 89	Montgomery	0.50	0.16	C
14114-001	TX0119504	Aqua Development, Inc	Montgomery	unk	unk	unk
14248-001	TX0099180	Vanceco, Inc	Montgomery	0.02	0.002	C
14414-001	TX0125601	Woodland Lake Development, LTD	Montgomery	0.90	unk	C
14482-001	TX0126209	Montgomery Co. MUD # 83	Montgomery	0.60	unk	C
14523-001	TX0126713	Elan Land Investments LP	Montgomery	0.60	unk	C
14531-001	TX0126799	JTM Housting LTD and Quadvest Inc	Montgomery	0.60	0.04	C
14586-001	TX0127400	LMV Management Co. LTD	Montgomery	0.90	unk	C
14604-001	TX0127752	Northway Land Company, LTD	Montgomery	0.58	unk	C
14671-001	TX0128431	Houston Intercontinental Trade Center LP	Montgomery	unk	unk	unk
14709-001	TX0102962	Stone Hedge Utility Co, Inc	Montgomery	0.02	unk	C

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

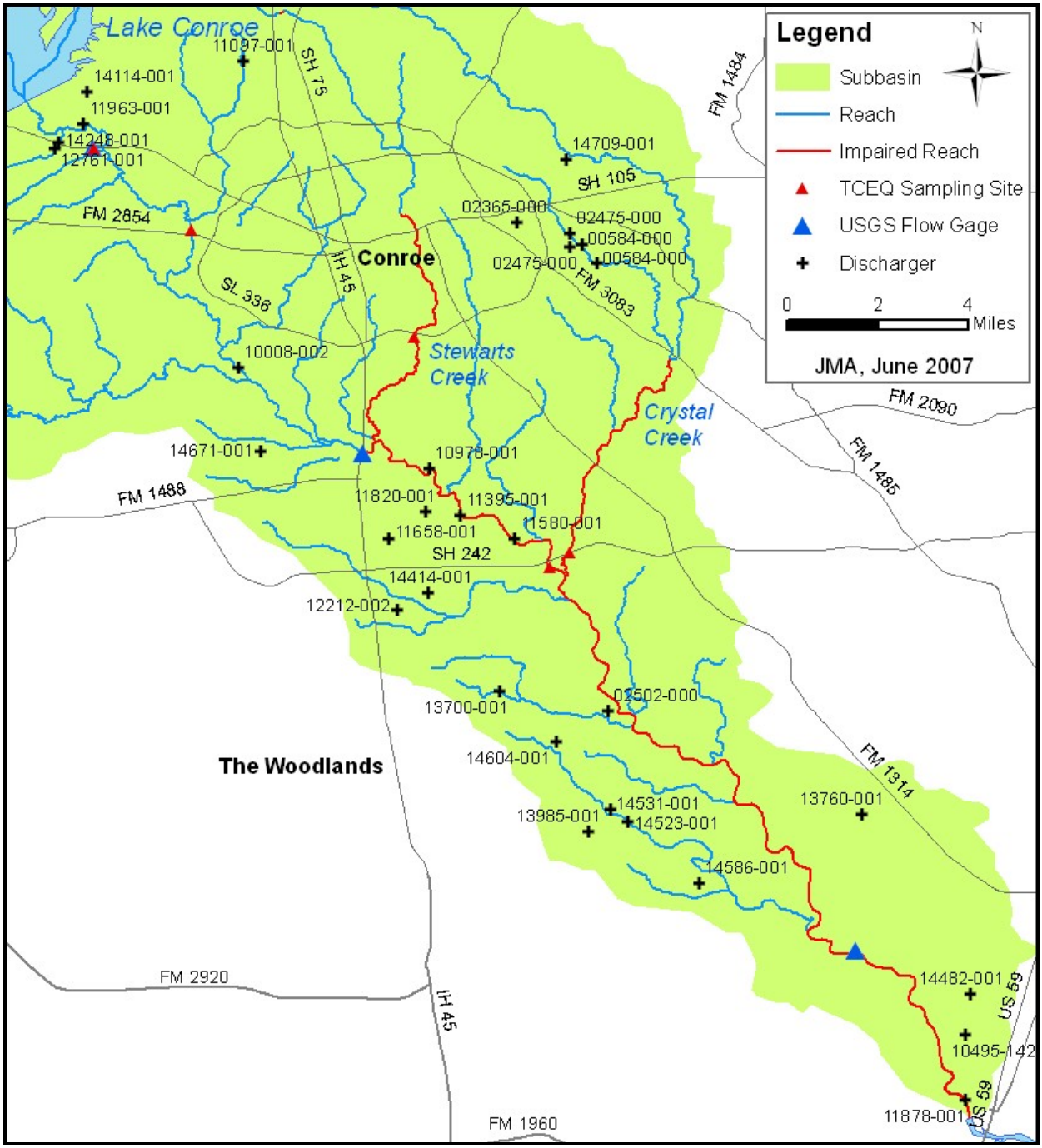

Figure 4-11: West Fork Treatment Facility Discharge Locations

5.0 SPRING CREEK, SEGMENT 1008

5.1 TCEQ ASSESSMENT FOR 303(d) LIST

When determining compliance with state water quality criteria, TCEQ often divides segments into various assessment units (AU) to refine the spatial resolution of the impairment. Assessment units for Spring Creek are shown in Table 5-1.

The information included in Table 5-1 is from the *Draft 2006 Texas Water Quality Inventory*, which was used as a basis for the *Draft 2006 Texas 303(d) List* (TCEQ, 2007). The period of record used by TCEQ in this assessment was 1 December 1999 through 30 November 2004. The "# Exceed" column provides the number of samples that exceeded the grab sample criterion for *E. coli* (394 org/100mL). Generally, TCEQ allows up to 25% of the samples to exceed the grab sample criterion before considering the reach impaired. The "Geo. Mean" column provides the geometric mean of the *E. coli* samples. If this number exceeds the criterion of 126 org/100mL, then the reach is considered impaired. As shown, only three of the assessment units were found to be impaired for *E. coli*. Included in the project area are three other assessment units (for Bear Branch and Lower Panther Branch) with limited available data (less than 10 samples). Though not included on the *303(d) List*, this project will take loads into account from these contributing tributaries.

The locations of the assessment units are displayed in Figures 5-1a and 5-1b. Figure 5-1a shows the greater Spring Creek watershed and Figure 5-1b provides a more detailed view of the Panther Branch tributaries. Also shown in these figures are water quality sampling locations where *E. coli* data have been regularly collected. Generally, each assessment unit corresponds to one or more sampling sites.

Table 5-1: Spring Creek Assessment Units and Results

Assessment Unit	Segment Name	Assessment Unit Description	# Samples	# Exceed	Geo. Mean	Impaired
1008_02	Spring Creek	Field Store Road to SH 249	71	23	303	Yes
1008_03	Spring Creek	SH 249 to IH 45	73	31	310	Yes
1008_04	Spring Creek	IH 45 to confluence with Lake Houston	36	14	309	Yes
1008B_01	Upper Panther Branch	From Old Conroe Road to the confluence with Bear Branch	18	3	138	Yes
1008C_01	Lower Panther Branch	From the Lake Woodlands Dam to Saw Dust Road	9	3	165	Concern
1008C_02	Lower Panther Branch	From Saw Dust Road to confluence with Spring Creek	9	2		Concern
1008E_01	Bear Branch	Entire stream	9	1	190	Not assessed
1008F_01	Lake Woodlands	Upper end of segment to Northshore Park/Woodlock Forest	9	2	45	No
1008F_02	Lake Woodlands	Northshore Park/Woodlock Forest to inflow from unnamed tributary	9	2	38	No
1008F_03	Lake Woodlands	From inflow of unnamed tributary to dam	9	2	56	No
1008F_04	Lake Woodlands	Arm near dam adjacent to West Isle Drive and Pleasure Cove Drive	9	2	63	No
1008H_01	Willow Creek	Entire segment	35	18	413	Yes

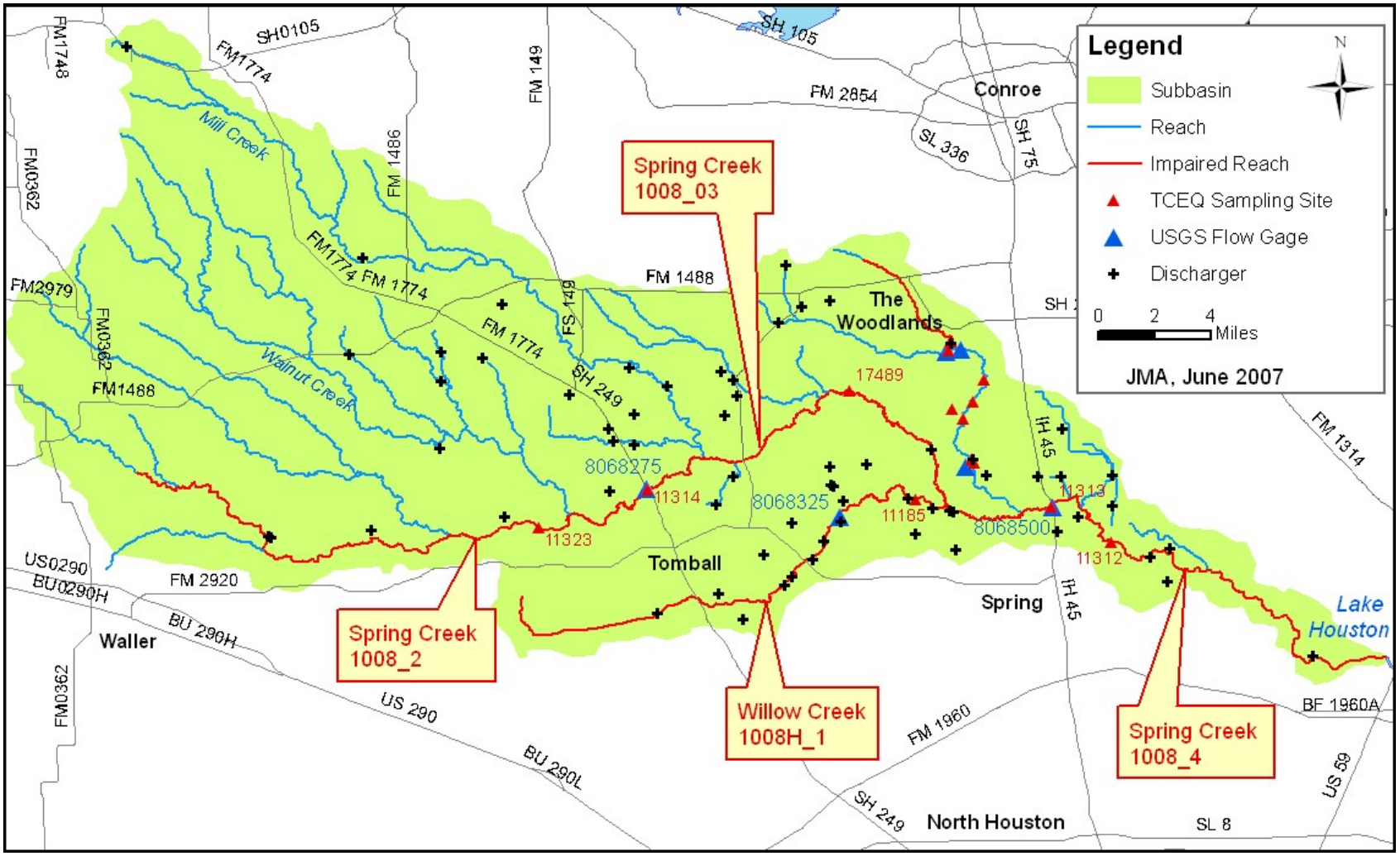

Figure 5-1a: Spring Creek Study Area

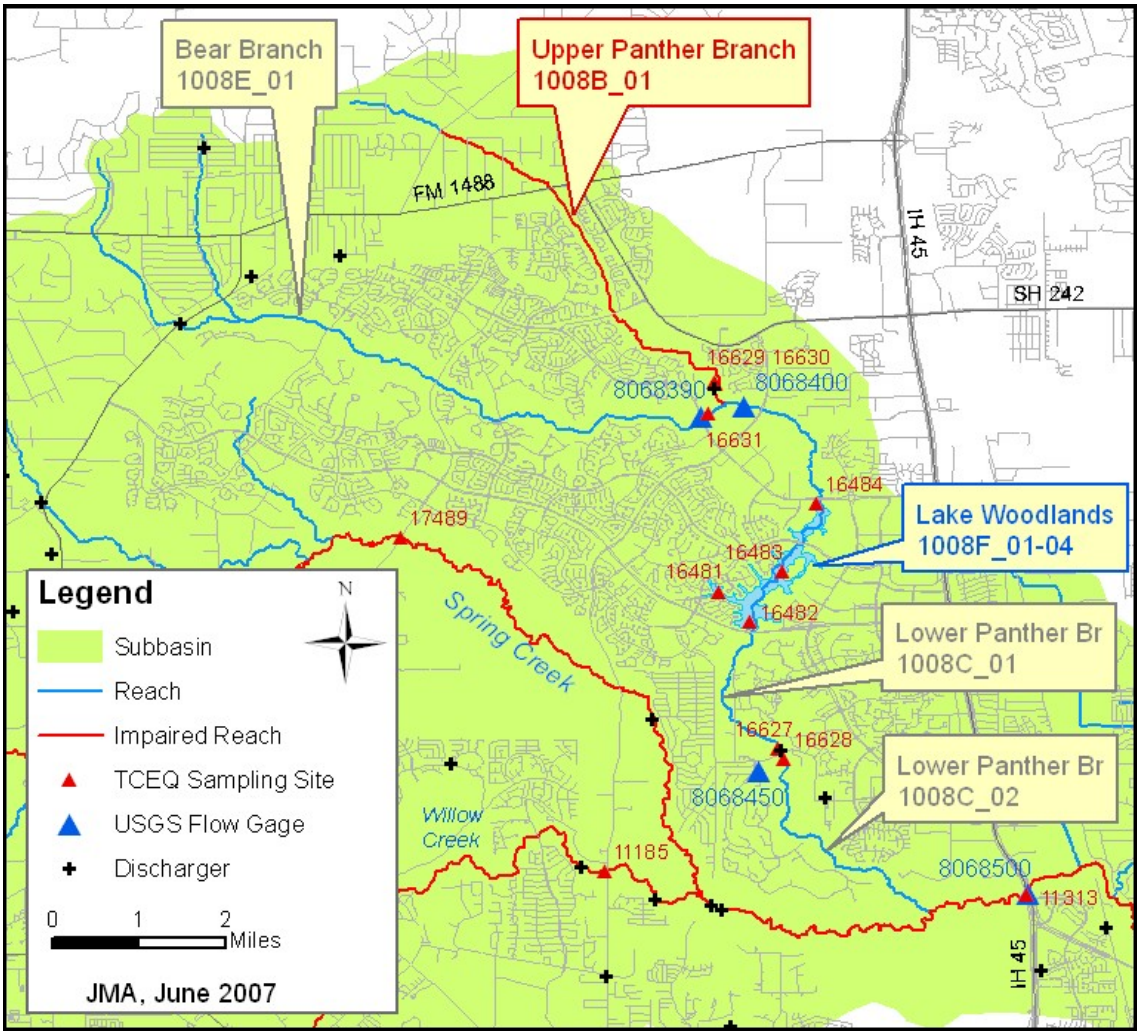

Figure 5-1b: Panther Branch Study Area

5.2 SUMMARY OF *E. COLI* DATA BY STATION

With very few exceptions, *E. coli* sampling did not begin until 2000. (Before 2000, samples were only analyzed for fecal coliform.) Table 5-2 provides an inventory of active *E. coli* sampling sites, and Tables 5-3a and 5-3b provide a summary of the currently available *E. coli* data for these sites. Table values in bold are indicative of exceedances of state criteria. It is important to note that the data in these tables typically cover a longer period of record than that used in the *Draft 2006 Texas Water Quality Inventory*.

Table 5-2: Spring Creek Sampling Sites

TCEQ #	TCEQ Description	USGS #
11323	SPRING CREEK IMMEDIATELY UPSTREAM OF DECKER PRAIRIE ROSEHILL ROAD	
11314	SPRING CREEK IMMEDIATELY UPSTREAM OF SH 249	08068275
17489	SPRING CREEK IMMEDIATELY DOWNSTREAM OF KUYKENDAHL ROAD NORTHEAST OF HOUSTON	
11185	WILLOW CREEK IMMEDIATELY UPSTREAM OF GOSLING ROAD	
16629	UPPER PANTHER BRANCH APPROX 80 M UPSTREAM OF PERMIT WQ0012597-001 LOCATED AT 5402 RESEARCH FOREST DR	
16630	UPPER PANTHER BRANCH APPROX 60 M DOWNSTREAM OF PERMIT WQ0012597-001 LOCATED AT 5402 RESEARCH FOREST DR	
16631	BEAR BRANCH BRIDGE 153 METERS DOWNSTREAM OF RESEARCH FOREST DRIVE	08068390
16484	LAKE WOODLANDS AT NORTH END 111 METERS DOWNSTREAM OF RESEARCH FOREST DRIVE IN THE WOODLANDS	
16483	LAKE WOODLANDS AT MID POINT 69 METERS NORTH AND 513 METERS EAST OF INTERSECTION OF N WINDSAIL PL AND SHORELINE PT IN THE WOODLANDS	
16481	LAKE WOODLANDS AT WESTERN REACH 104 METERS NORTH AND 306 METERS E OF INTERSECTION OF LEEWARD CV AND PANTHER CREEK DR IN THE WOODLANDS	
16482	LAKE WOODLANDS AT SOUTH END 147 METERS NORTH AND 48 METERS EAST WEST EDGE OF DAM IN THE WOODLANDS	
16627	LOWER PANTHER BRANCH 89 M UPSTREAM OF SAWDUST RD APPROX 25 M UPSTREAM OF PERMIT WQ0011401-001 LOCATED AT 2436 SAWDUST ROAD	
16628	LOWER PANTHER BRANCH 134 DOWNSTREAM OF SAWDUST RD APPROX 240 M DOWNSTREAM OF PERMIT WQ0011401-001 LOCATED AT 2436 SAWDUST ROAD	
11313	SPRING CREEK BRIDGE AT IH 45 20 MILES NORTH OF HOUSTON	08068500
11312	SPRING CREEK IMMEDIATELY DOWNSTREAM OF RILEY FUZZEL ROAD	

Table 5-3a: Spring Creek *E. coli* Data Summary

Station	11323	11314	17489	11185	11313	11312
Reach	Spring	Spring	Spring	Willow	Spring	Spring
Begin Date	Jan-02	Jun-00	Jan-02	Jan-02	Jun-00	Dec-01
End Date	May-05	Apr-05	May-05	May-05	Apr-05	May-05
Count	41	39	42	41	40	42
75th Percentile	**600**	**619**	**1103**	**2000**	**612**	**810**
Geometric mean	**346**	**351**	**432**	**483**	**271**	**370**
25th Percentile	120	130	143	120	82	106

Table 5-3b: Panther Branch *E. coli* Data Summary

Station	16629	16630	16631	16484	16483	16481	16482	16627	16628
Reach	Panther	Panther	Bear	Lake	Lake	Lake	Lake	Panther	Panther
Begin Date	Oct-02	Oct-02	Mar-99	Oct-02	Oct-02	Oct-02	Oct-02	Oct-02	Oct-02
End Date	Jul-05	Jul-05	Jul-05	Jul-05	Jul-05	Jul-05	Jul-05	Jul-05	Jul-05
Count	12	12	18	12	12	12	12	12	12
75th Percentile	**263**	**391**	**295**	130	128	**416**	367	**526**	**485**
Geometric mean	**141**	**200**	**202**	53	39	67	65	**177**	**179**
25th Percentile	83	119	90	18	10	10	18	60	60

5.3 SPATIAL AND TEMPORAL ANALYSIS

Spatial analysis can be helpful when attempting to locate sources of bacteria. Figures 5-2a and 5-2b illustrate the variation in bacteria concentrations from upstream to downstream across the watershed. Figure 2a shows that bacteria concentrations are high all along the main stem of Spring Creek with relatively little variation. Bacteria concentrations in the Willow Creek tributary are notably higher than in the main stem of Spring Creek. Figure 2b suggests that bacteria concentrations in the Panther and Bear Creek tributaries are generally above state criteria. However, Lake Woodlands seems to effectively reduce bacteria concentrations.

Temporal analysis can be useful for determining the emergence or diminution of bacteria sources over time. Figures 5-3 through 5-8 present bacteria concentration over time for main stem stations and for Willow Creek. No stations for the Panther Branch system are shown because of the limited number of samples available at these stations.

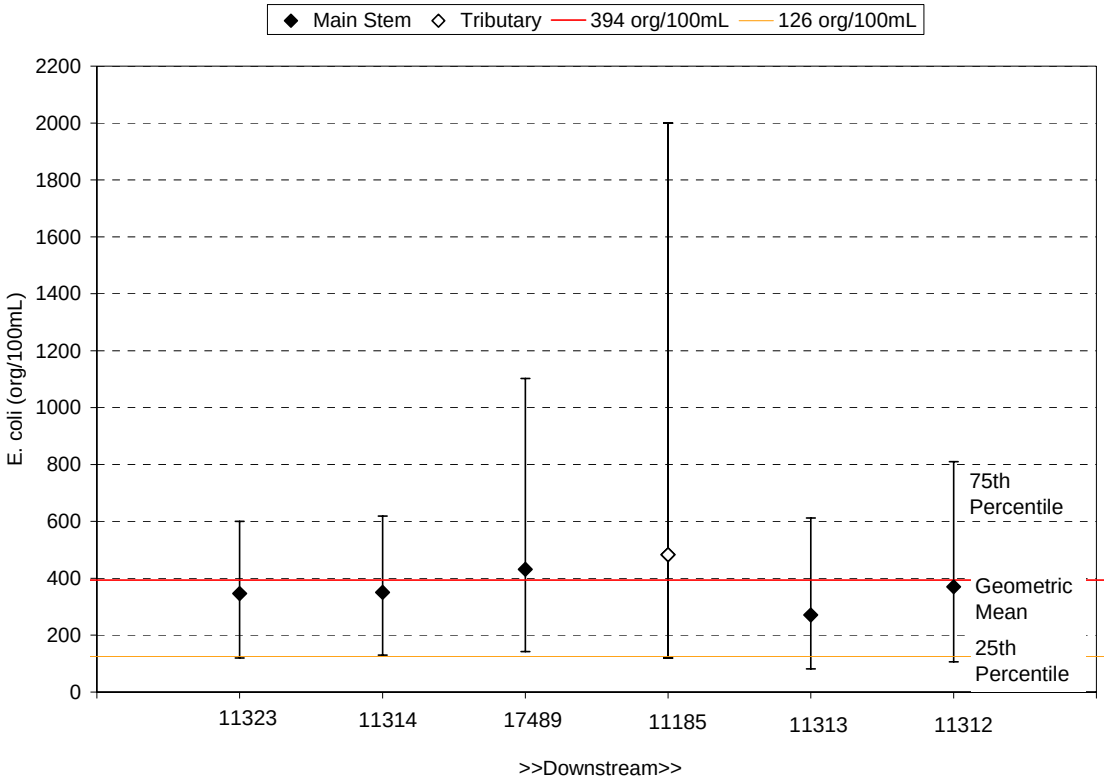

Figure 5-2a: Spring Creek Spatial Analysis

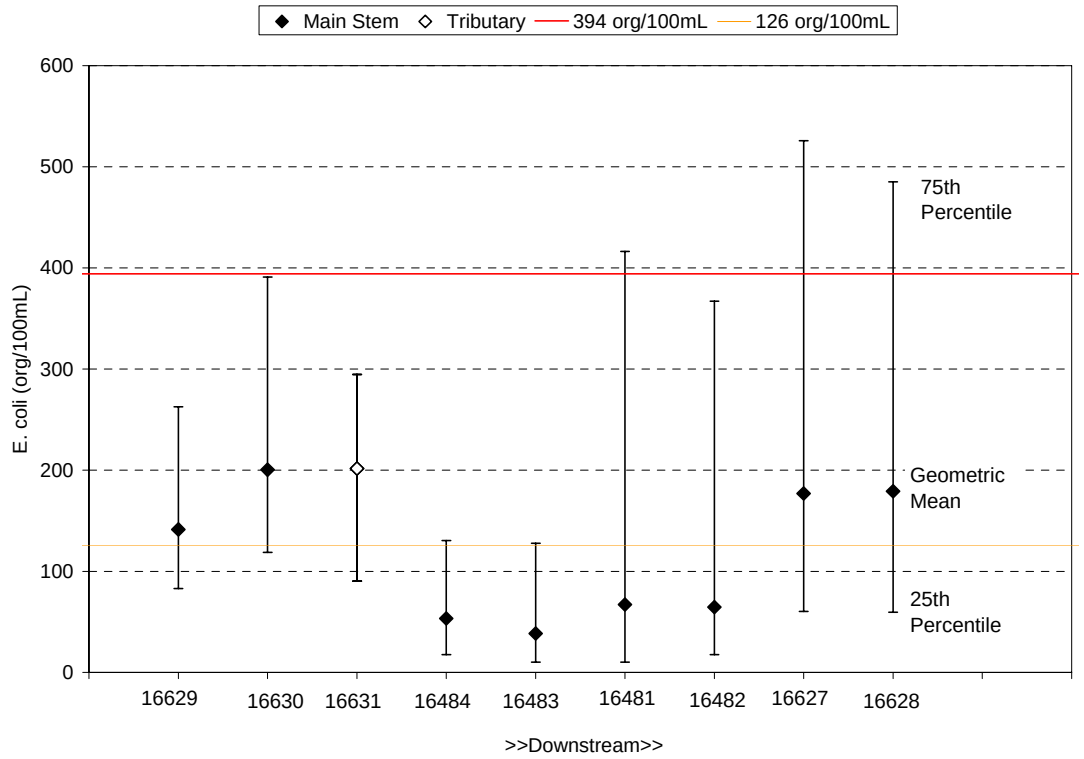

Figure 5-2b: Panther Branch Spatial Analysis

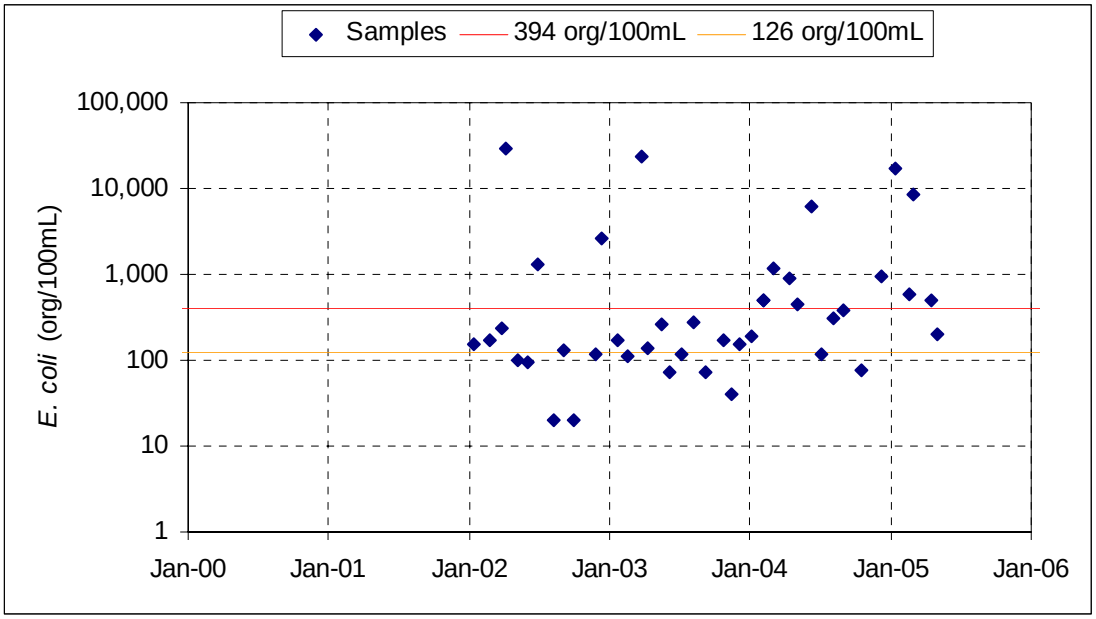

Figure 5-3: Temporal Analysis: Spring Crk at Rosehill Rd (#11323)

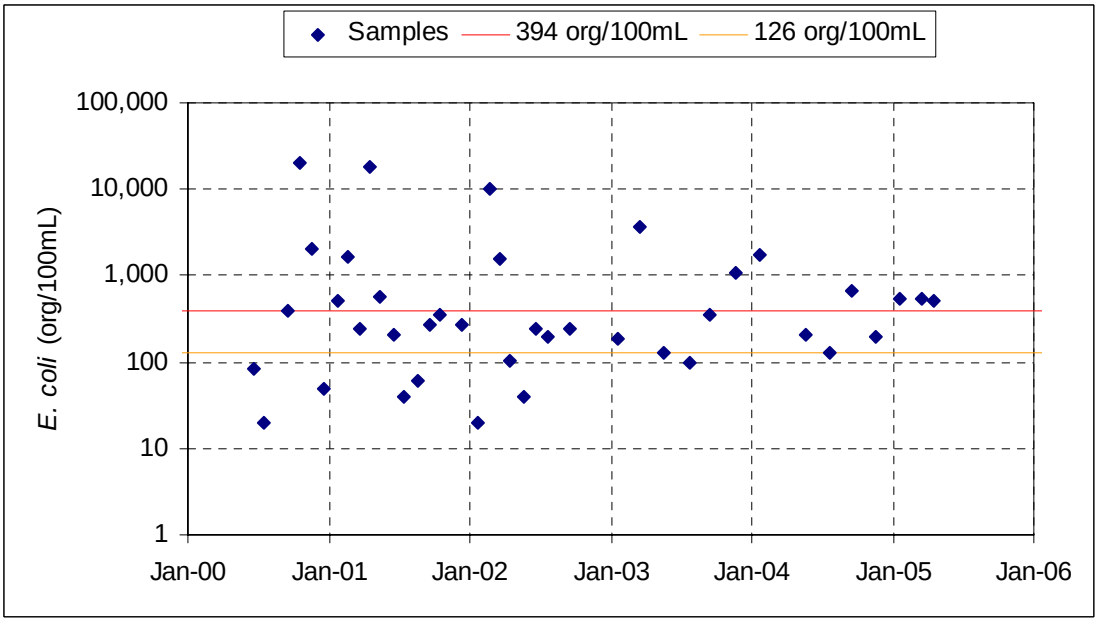

Figure 5-4: Temporal Analysis: Spring Crk at SH 249 (#11314)

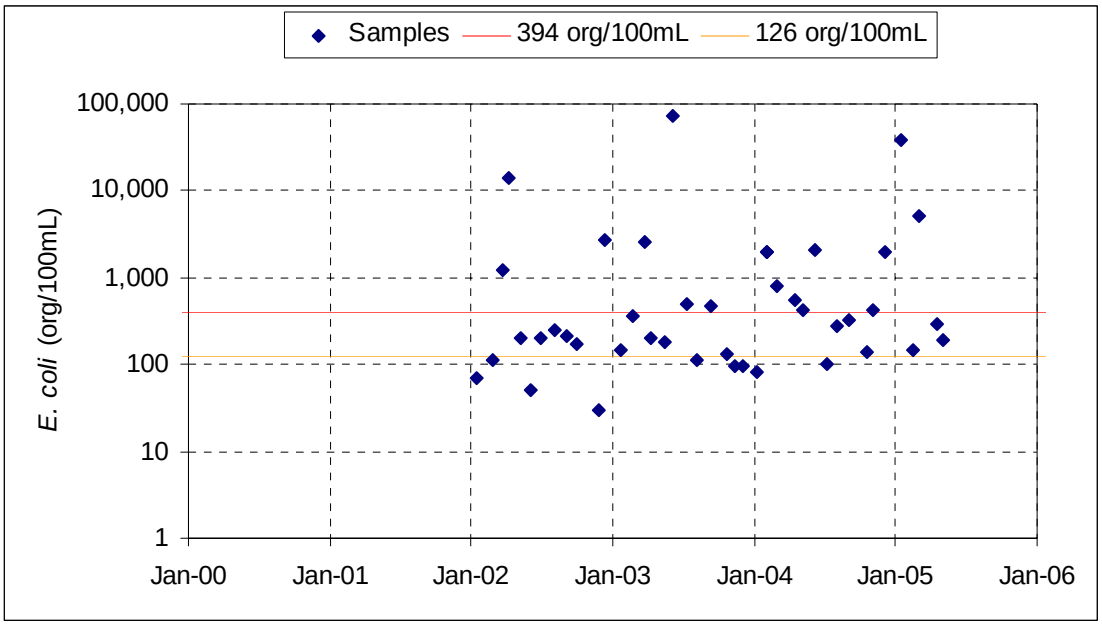

Figure 5-5: Temporal Analysis: Spring Crk at Kuykendahl Rd (#17489)

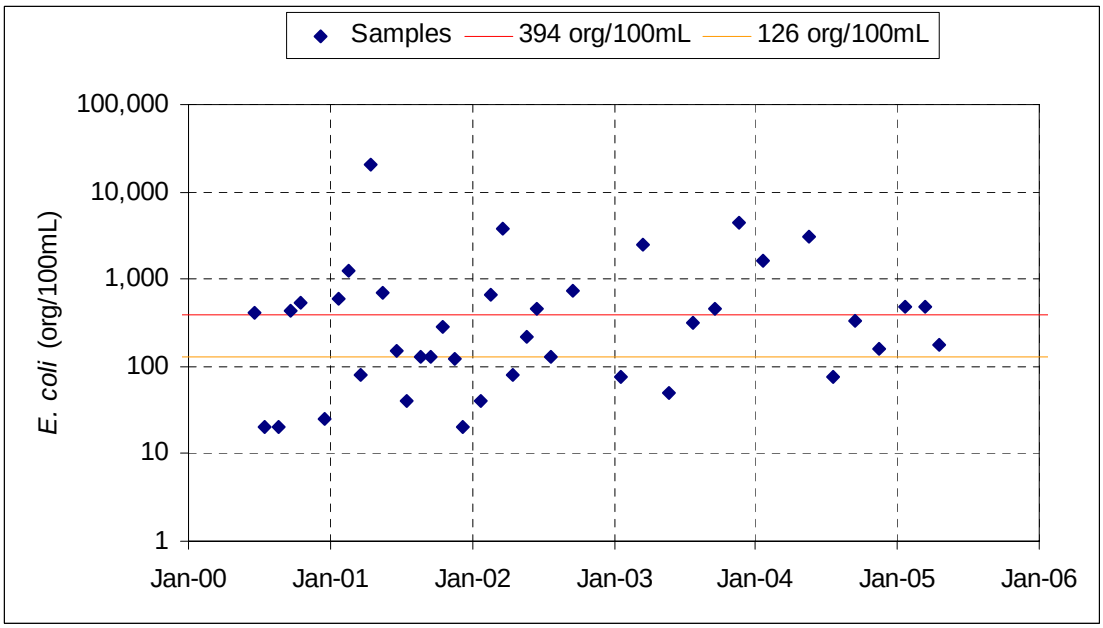

Figure 5-6: Temporal Analysis: Spring Crk at IH 45 (#11313)

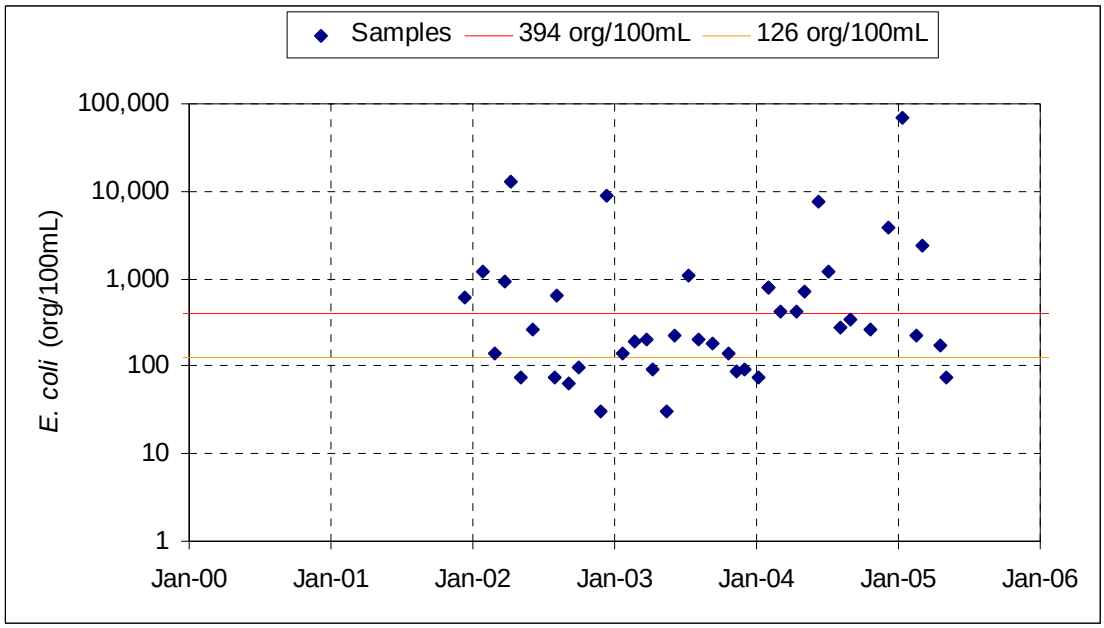

Figure 5-7: Temporal Analysis: Spring Crk at Riley Fuzzel Rd (#11312)

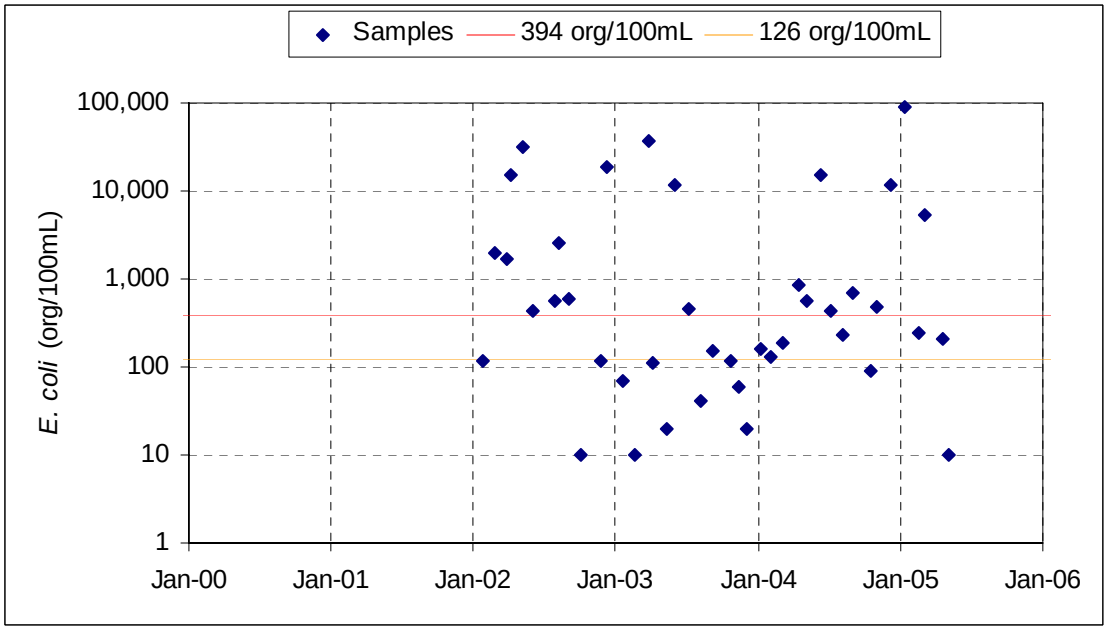

Figure 5-8: Temporal Analysis: Willow Crk at Rosling Rd (#11185)

5.4 LOAD DURATION CURVE DEVELOPMENT

5.4.1 Flow Duration Curves

A flow duration curve (FDC) is a graph of daily average streamflow versus the percent of days that the average streamflow value is exceeded. FDCs are typically developed using daily flow data collected at USGS gaging stations. For this project, the desired period of record for FDC development is 1987-2006. Table 5-4 identifies the active USGS flow gaging stations in the segment for this time period. The locations of these gages are presented in Figure 5-1. The flow records for Gage 08068325 include large gaps and apparent errors making the data unusable for FDC development. Flow duration curves for the applicable USGS stations are shown in Figure 5-9.

Table 5-4: Spring Creek USGS Flow Gages

Station	Stream	Location	Available FDC data
08068275	Spring Creek	near Tomball, TX	1999-2006
08068325	Willow Creek	near Tomball, TX	N/A
08068390	Bear Branch	at Research Blvd, The Woodlands, TX	1999-2006
08068400	Panther Branch	at Gosling Rd, The Woodlands, TX	1999-2006
08068450	Panther Branch	near Spring, TX	1999-2006
08068500	Spring Creek	near Spring, TX	1987-2006

To create load duration curves, each water quality sampling site must have a complete flow record. Since most sampling sites do not have a corresponding USGS flow gage, these records have to be synthesized using nearby gages and drainage area adjustment factors. For Willow Creek, flow records were synthesized based on a composite of the two Spring Creek gages.

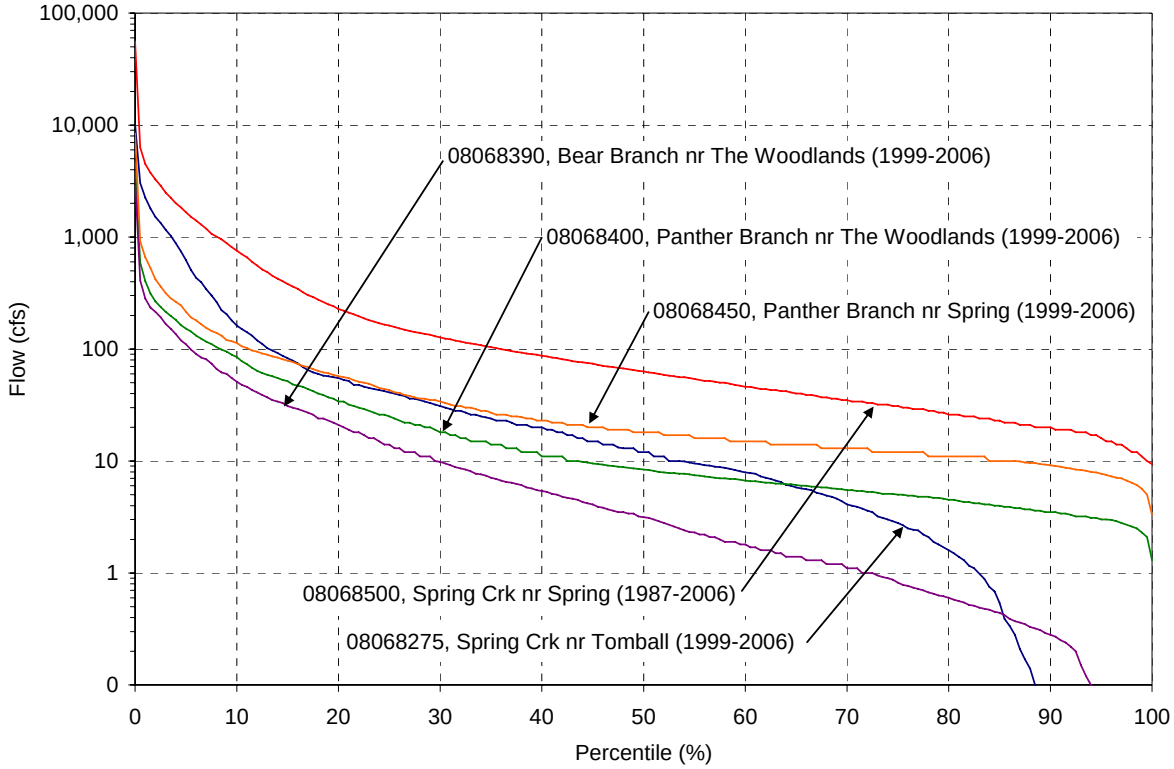

Figure 5-9: Spring Creek Flow Duration Curves

5.4.2 Load Duration Curves

This section presents load duration curves for various water quality sampling stations throughout the study area. The bacterial loads are the product of each grab sample bacteria concentration and the corresponding mean daily streamflow rate. Bacteria standards are represented in these figures by curves for the geometric mean and grab sample criteria, 126 org/100mL and 394 org/100mL, respectively. Load duration curves are presented from upstream to downstream along the main segment, and then along tributaries.

Load duration curves for the main stem of Spring Creek are presented in Figures 5-10 through 5-14. For these stations, the greatest exceedances typically occur under high flow conditions (0-20th percentile), but high bacteria levels are observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to these stations.

An LDC for Willow Creek is presented in Figure 5-15. This figure displays more scatter than the main stem stations. However, this could be a result of the imprecision in the synthesized nature of the flow record for this station. Generally, exceedances are observed under both high and low flow conditions. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to these stations.

An LDC for Upper Panther Branch is presented in Figure 5-16. Data from two stations (16629 and 16630) are included in this LDC because of the closeness of these two stations. Generally, exceedances are observed under both high and low flow conditions. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to these stations. However, additional sampling could provide better definition of the source types for this stream.

An LDC for Bear Branch is presented in Figure 5-17. As with the stations on Upper Panther Branch, exceedances are observed under both high and low flow conditions. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to these stations. However, additional sampling could provide better definition of the source types for this stream.

An LDC for the Lake Woodlands stations is presented in Figure 5-18. At this station, exceedances are observed primarily under high flow conditions. Under low flow conditions, the long residence time of the reservoir allows for the natural die off of bacteria.

An LDC for the Lower Panther Branch stations is presented in Figure 5-19. As with the stations on Upper Panther Branch, exceedances are observed under both high and low flow conditions. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to these stations. However, additional sampling could provide better definition of the source types for this stream.

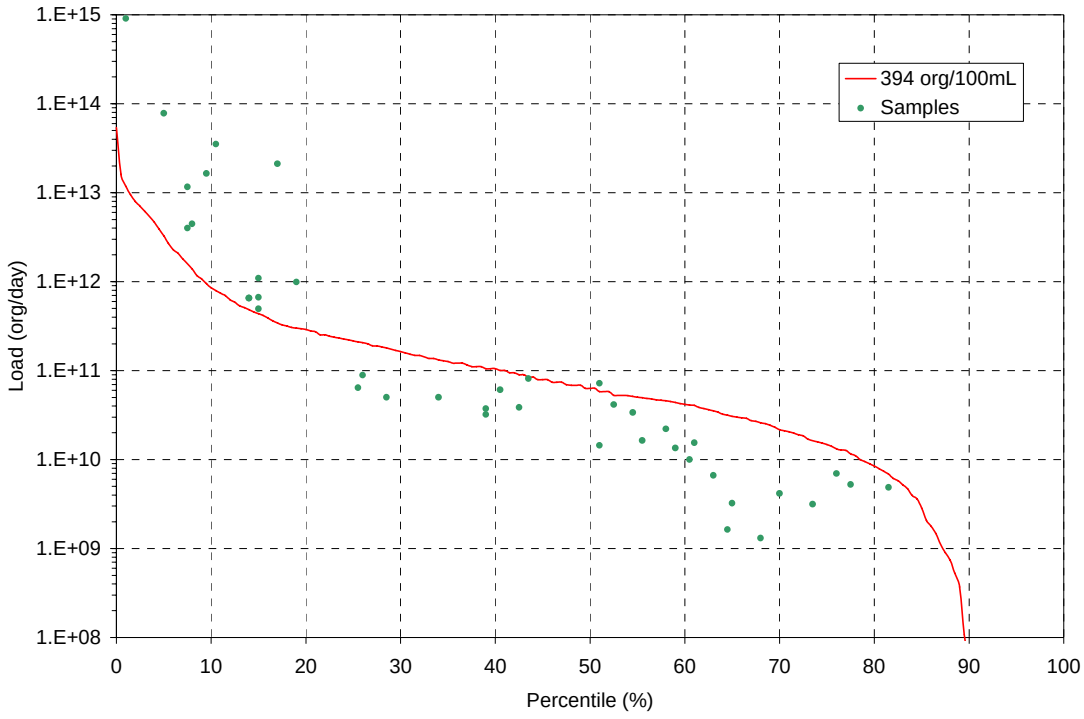

Figure 5-10: LDC for Spring Crk at Rosehill Rd (#11323)

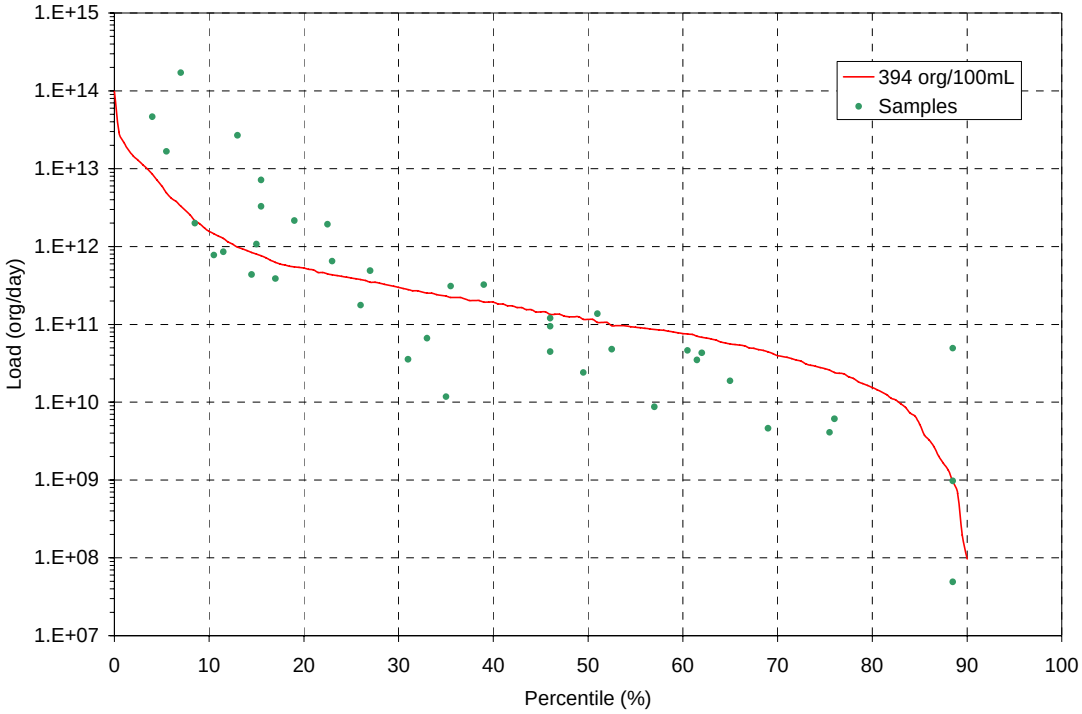

Figure 5-11: LDC for Spring Crk at SH 249 (#11314)

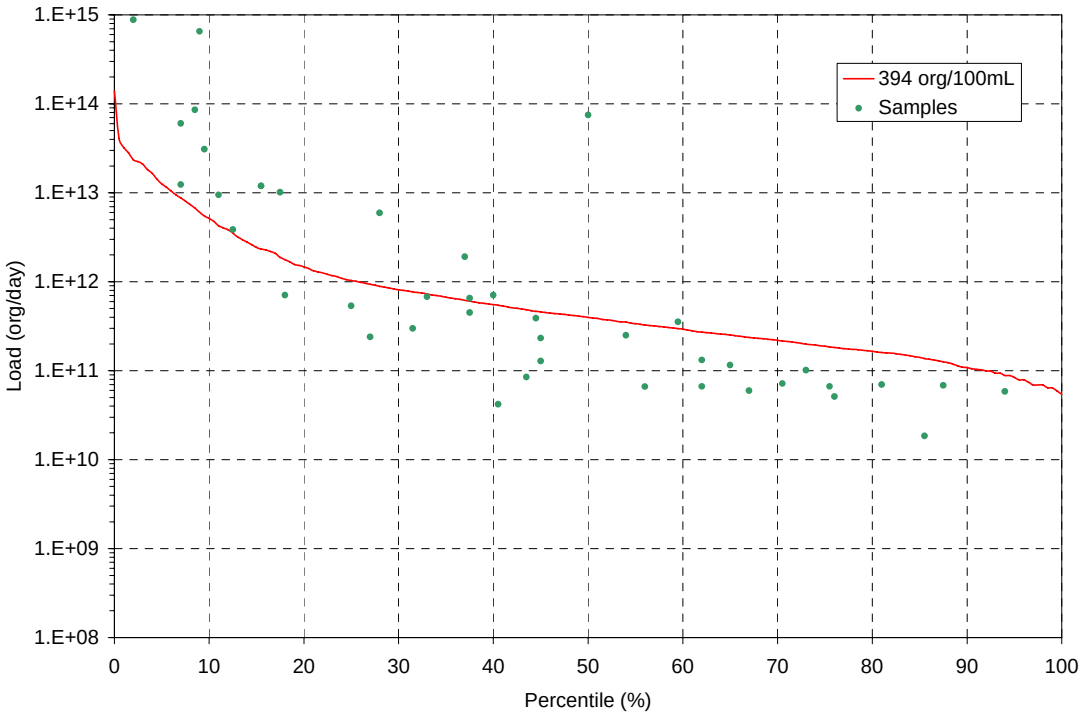

Figure 5-12: LDC for Spring Crk at Kuykendahl Rd (#17489)

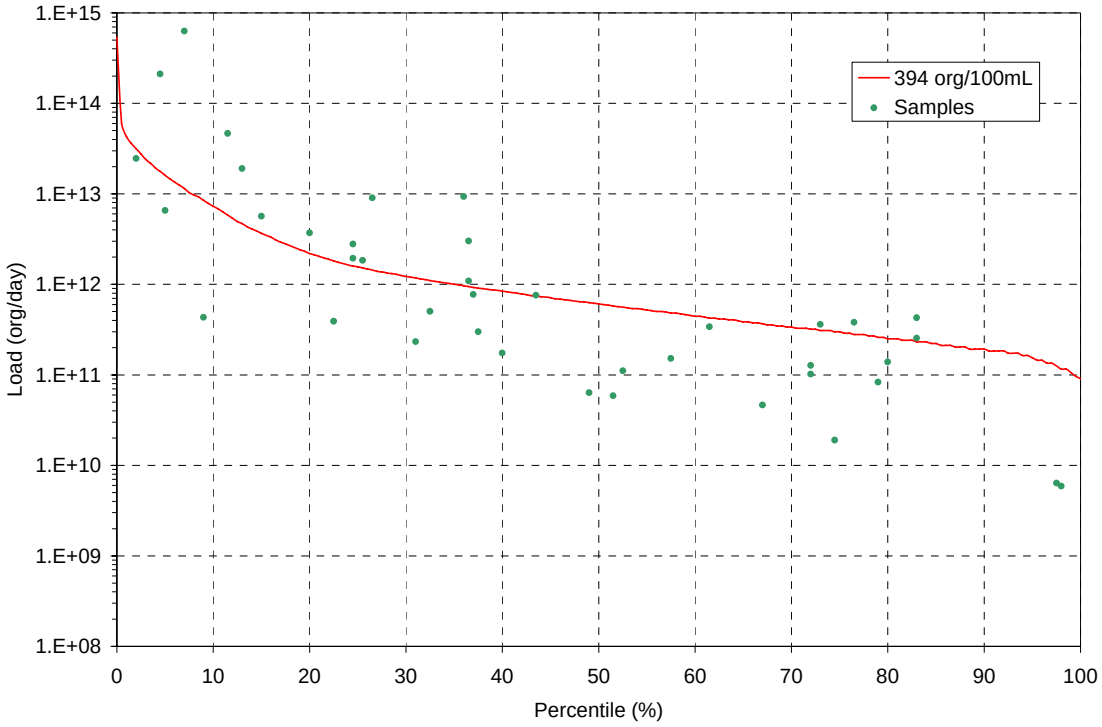

Figure 5-13: LDC for Spring Crk at IH 45 (#11313)

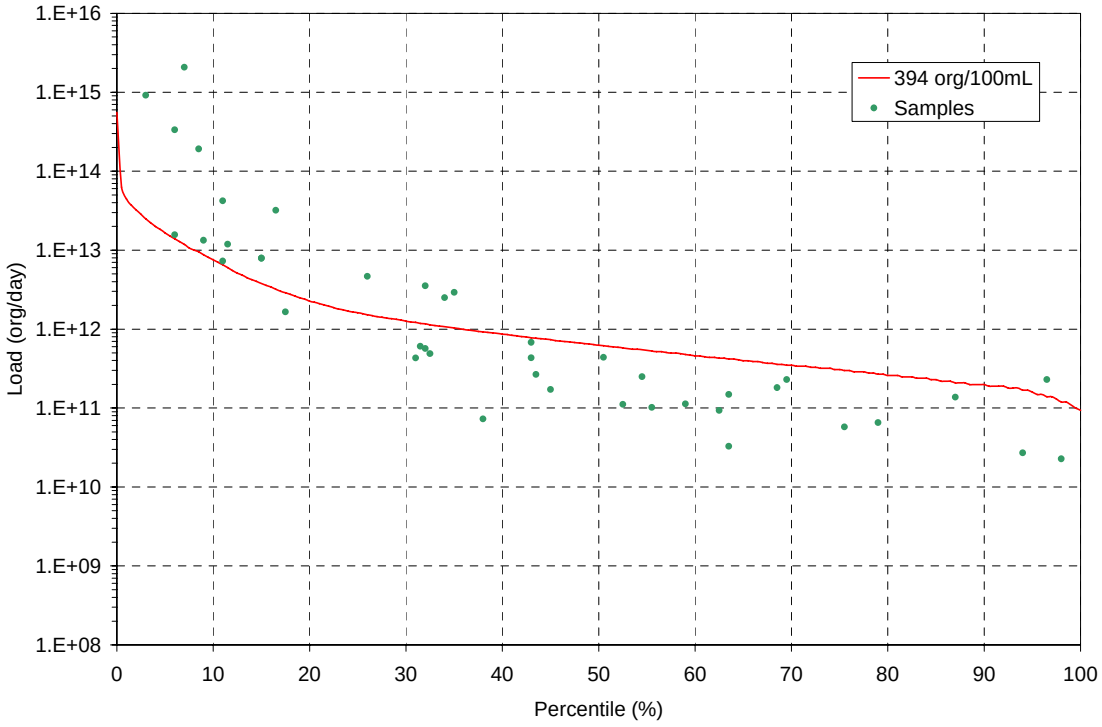

Figure 5-14: LDC for Spring Crk at Riley Fuzzel Rd (#11312)

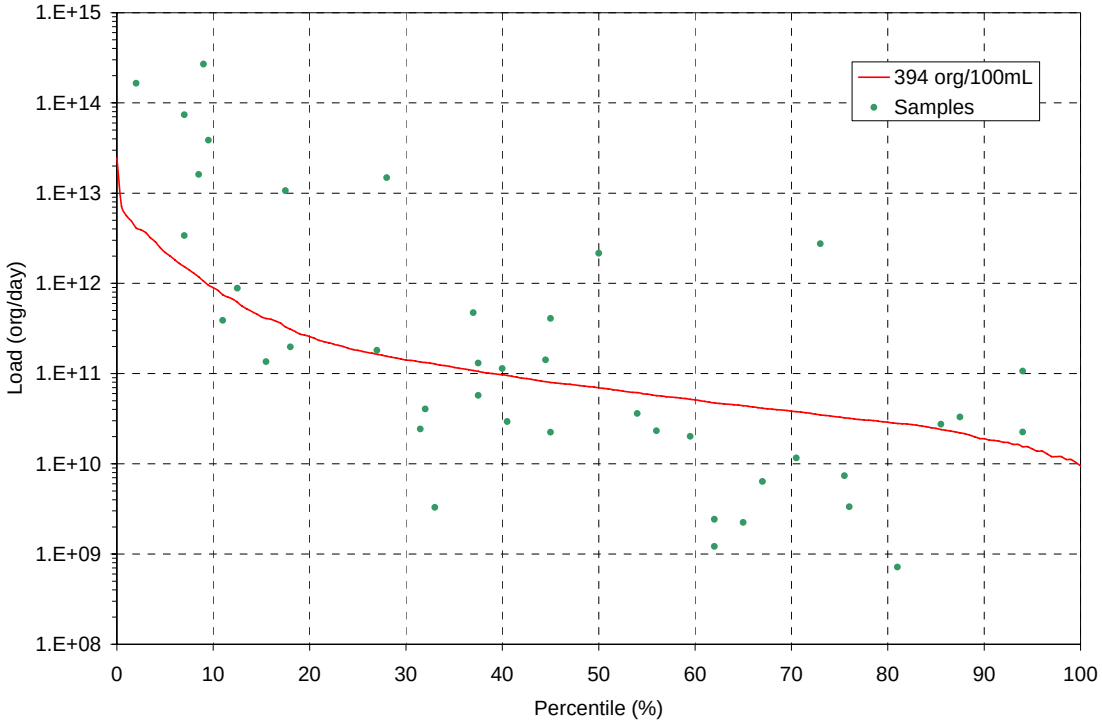

Figure 5-15: LDC for Willow Crk at Rosling Rd (#11185)

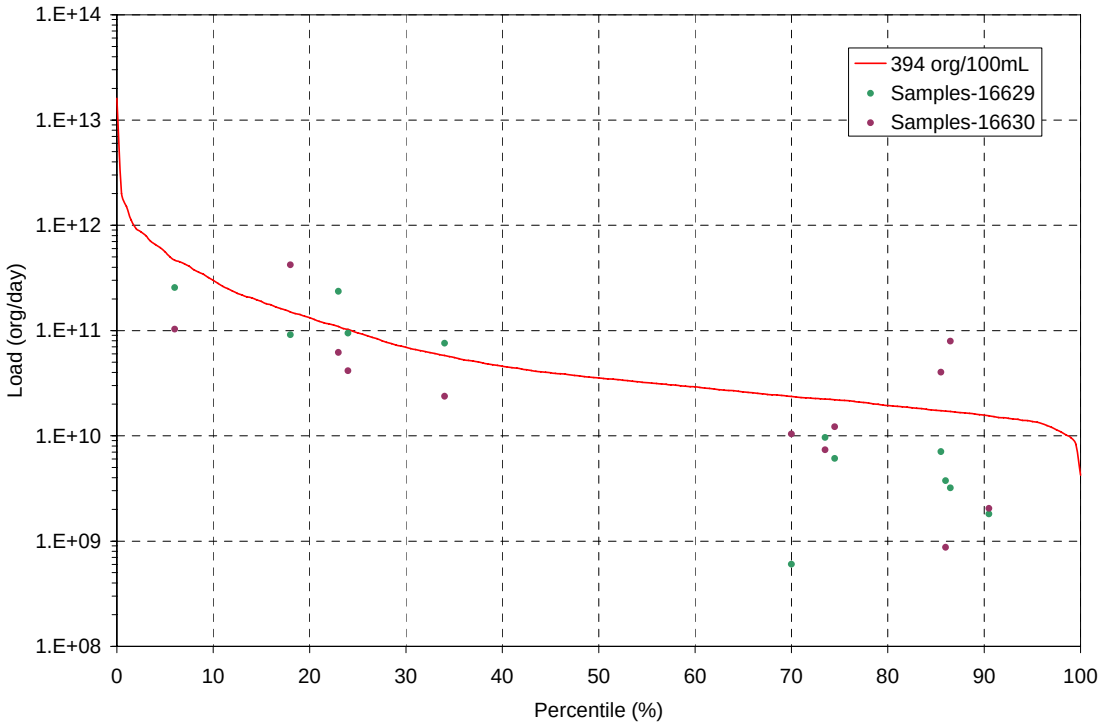

Figure 5-16: LDC for Upper Panther Branch (#16629-30)

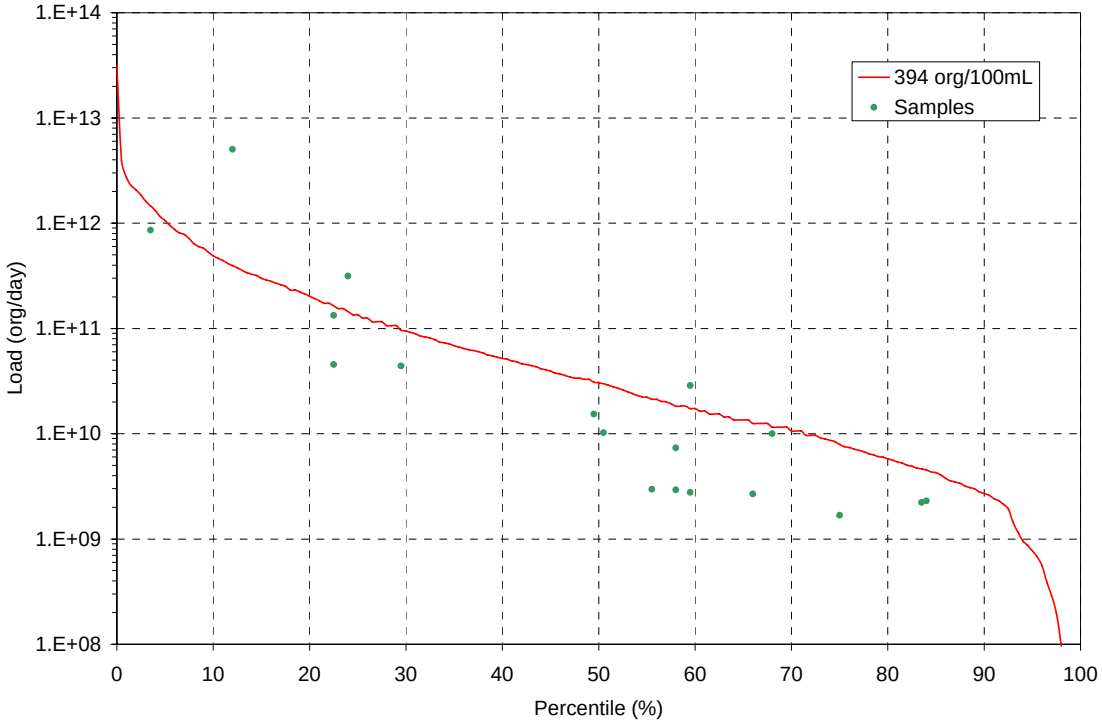

Figure 5-17: LDC for Bear Branch (#16631)

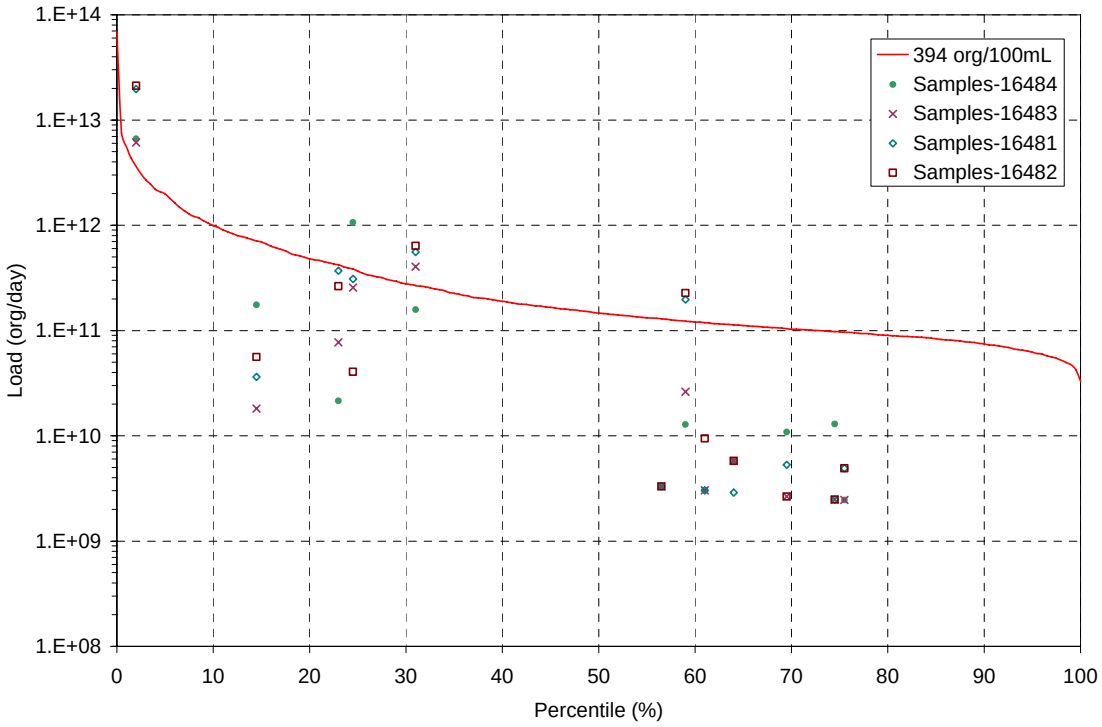

Figure 5-18: LDC for Lake Woodlands (#16481-84)

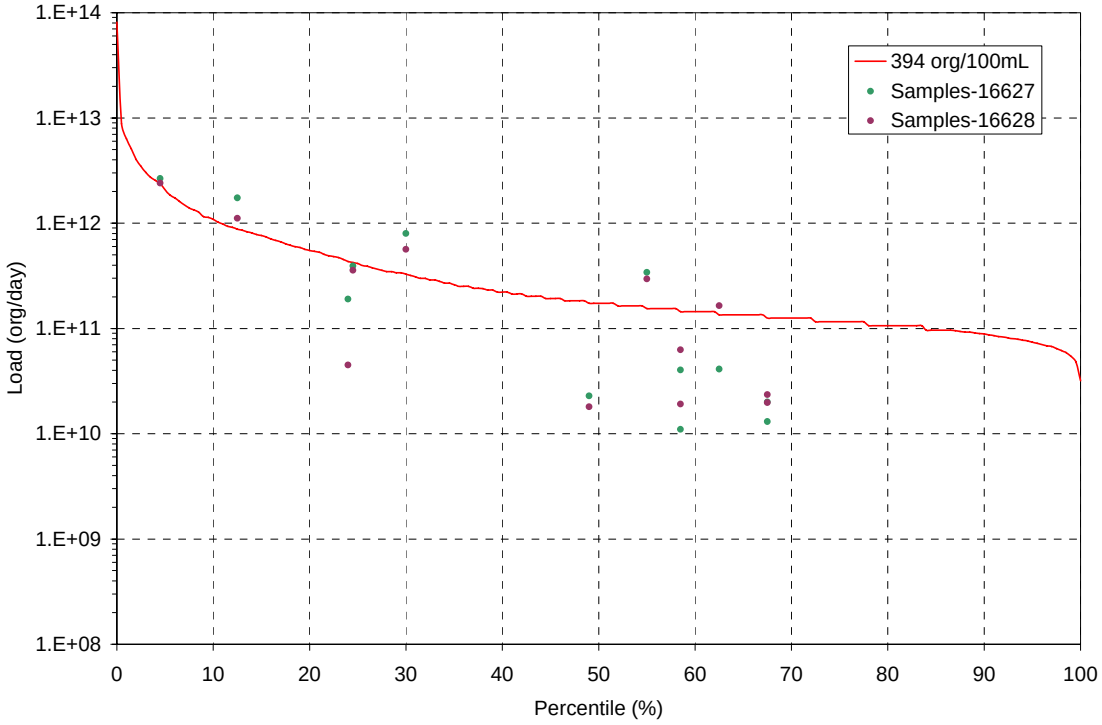

Figure 5-19: LDC for Lower Panther Branch (#16627-28)

5.5 DISCUSSION OF POTENTIAL SOURCES

There have historically been two general classifications of sources of pollutants that were distinguished by the mechanism of release to a receiving stream. Sources that were released via a pipe or defined outfall were labeled as "point sources", while sources that were diffuse in nature were labeled as "nonpoint sources". Thus, "point sources" of bacteria would usually include facilities such as wastewater treatment plants. Traditional "nonpoint sources" would include, but not be limited to, leaking sewer systems, failing septic systems, pets, wildlife, livestock, and general urban and rural runoff. However, TMDLs do not always adhere to the traditional usage of the terms point source and nonpoint source.

In accordance with EPA guidance, TMDLs are developed to establish two categories of allocations: wasteload allocations (WLAs) and load allocations (LA). EPA has determined that any source flowing into a waterway and covered by a permit should be classified as a waste load and be included in the WLA category. Thus, the "waste load" category would include not only facilities such as wastewater treatment plants, but also discharges of runoff from municipal areas covered under stormwater permits (MS4s).

Remaining diffuse sources of pollutants that are not covered by permit are defined as "loads" and ultimately are subject to development of the LA. This would include runoff from rural or urban areas outside of permitting jurisdictions.

5.5.1 Upstream Sources

There are no waterbodies upstream of Spring Creek.

5.5.2 Runoff Sources

Runoff sources of bacteria can fall into either the waste load or load category, depending on the presence or absence of a permit allowing for discharge into a waterway. Runoff sources of bacteria can be anticipated based on land use. For example, it has been observed that natural areas typically produce the smallest runoff source loads. This is because they tend to produce the least runoff volume and tend to have the lowest density of fecal sources. Rural (farm and ranch) areas also tend to have smaller source loads for the same reasons. However, in both natural and rural areas, significant bacteria sources can still sometimes exist. For example, natural areas could include dense waterfowl areas, and rural areas could include confined animal pens. Urban areas tend to produce larger bacteria loads. This is generally the result of high impervious cover, which increases the frequency and intensity of runoff events. It can also be the result of an increasing density in potential sources (leaking sewage collection systems, failing septic drainfields, pets, wildlife, etc.).

Land use data for the Spring Creek watershed are shown in Figure 5-20. The eastern portion of the watershed includes the heavily urbanized community known as The Woodlands, primarily located within the Panther Branch subwatershed. The remainder of the watershed includes a mixture of forest, wetlands, farm and range land, and urbanized areas. The source of the data is USGS, 2001.

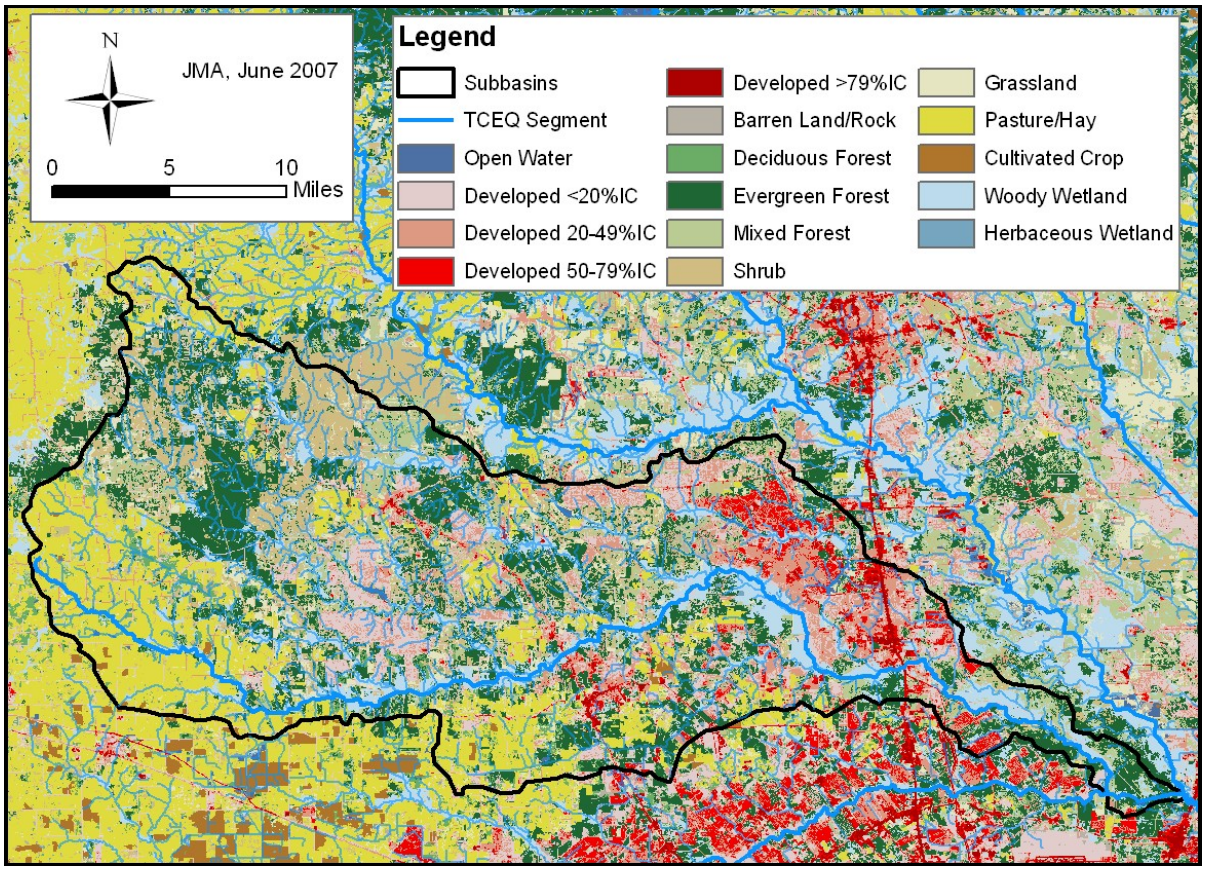

Figure 5-20: Spring Creek Land Use

5.5.3 Wastewater Treatment Facilities

Wastewater treatment facilities have the potential to contribute significant bacteria loads if complete disinfection is not achieved. These loads may be most noticeable under low flow conditions, during which some streams may be effluent dominated. However, it is also possible for treatment plants to contribute significant loads under wet weather conditions. This could be the case if increased loading due to stormwater inflow and infiltration results in poorer plant performance.

Wastewater treatment plants in the Spring Creek watershed are shown in Table 5-5. This table includes the permitted flow, estimated current flow, and disinfection monitoring requirements for each facility. Facilities without monitoring requirements for disinfection (marked "N") are typically facilities without a significant potential bacteria source (i.e. industries or drinking water treatment plants). Treatment facility discharge locations are shown in Figures 5-21a and 5-21b. For this segment, the total permitted flow is approximately 43 MGD (67 cfs), and the total current effluent flow is approximately 17 MGD (27 cfs). (For facilities with unknown current flows, half the permitted flow was used.) Wastewater treatment facilities can represent a significant portion of the segment's baseflow (which could be defined as the 50th to 99th percentile range of the FDC). At the 50th percentile flow, current effluent discharges account for about 39% of total stream flow, while at the 99th percentile, they account for 100% of the total flow.

Table 5-5: Spring Creek Wastewater Treatment Facility Summary

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
10616-001	TX0022381	City of Tomball	Harris	1.50	0.67	C
10616-002	TX0117595	City of Tomball	Harris	1.50	0.90	C
10857-001	TX0025399	Montgomery Co WCID #1	Montgomery	0.42	0.24	C
10908-001	TX0020974	Harris County WCID #92	Harris	0.70	0.42	C
10910-001	TX0058548	Northampton MUD	Harris	0.75	0.38	C
11001-001	TX0024759	Southern Montgomery County MUD	Montgomery	2.00	0.97	C
11401-001	TX0054186	San Jacinto River Authority	Montgomery	7.80	unk	C
11404-001	TX0026255	Dowdell PUD	Harris	0.95	0.23	C
11406-001	TX0056537	Harris Co. MUD #26	Harris	1.50	0.54	C
11574-001	TX0026221	Spring Creek UD	Montgomery	0.93	0.44	C
11630-001	TX0058530	Harris Co. MUD #1	Harris	1.50	0.25	C
11799-001	TX0071528	Harris Co. MUD #82	Harris	2.20	0.46	C
11871-001	TX0072702	City of Magnolia	Montgomery	0.65	0.27	C
11968-001	TX0077275	Tecon Water Company, LP	Montgomery	0.05	unk	C
11970-001	TX0076538	Montgomery Co. MUD #19	Montgomery	0.72	unk	C
12030-001	TX0078263	Rayford Road MUD	Montgomery	0.00	unk	C
12044-001	TX0078433	Harris Co MUD #368	Harris	1.60	0.46	C
12153-001	TX0081264	North Harris Co MUD #19	Harris	0.25	0.10	C
12303-001	TX0085693	Aqua Utilities, Inc	Harris	0.02	0.007	C
12382-001	TX0087475	C&P Utilities, Inc/ J&S Water Company, LLC5	Harris	0.12	0.07	C
12402-001	TX0086053	Houston Oaks Golf Management, LP	Waller	0.01	0.002	C
12519-001	TX0089915	Aquasource Utility, Inc	Harris	0.10	0.25	C
12587-001	TX0090905	Tecon Water Company, LP	Montgomery	0.46	unk	C
12597-001	TX0091715	San Jacinto River Authority	Montgomery	7.80	3.28	F
12637-001	TX0091791	Spring Center, Inc	Harris	0.01	0.004	C
12643-001	TX0091987	Pinewood Community LP	Harris	0.10	0.06	C
12650-001	TX0092088	Spring Oaks Mobile Home Park, Inc.	Harris	0.03	0.007	C
12703-001	TX0092843	Magnolia ISD	Montgomery	0.05	0.014	C
12788-001	TX0095621	Eastwood Mobile Home Park LP	Montgomery	0.05	0.007	C
12851-001	TX0094552	Richard Clark Enterprises, LLC	Montgomery	0.06	unk	C
12898-001	TX0095125	Aqua Utilities, Inc	Montgomery	0.08	0.03	C
12979-004	TX0119181	Northgate Crossing MUD #2	Harris	0.95	0.19	C
13115-001	TX0097969	Clovercreek MUD	Montgomery	0.12	0.03	C
13487-001	TX0119628	Timbercrest Community Association	Harris	0.20	0.07	C
13614-001	TX0108553	Richfield Investment Corp	Montgomery	0.61	unk	C
13619-001	TX0083976	Aqua Utilities, Inc	Harris	0.04	0.02	C
13636-001	TX0109622	Richfield Investment Corp	Montgomery	0.41	unk	C
13648-001	TX0042099	Encanto Real UD	Harris	0.25	0.08	C
13653-001	TX0110663	Magnolia ISD	Montgomery	0.02	0.004	C
13697-001	TX0090000	Cedarstone One Investors, Inc	Montgomery	0.00	0.0004	C
13863-001	TX0115827	H.H.J., Inc	Montgomery	0.80	0.07	C
13942-001	TX0117633	Inline Utilities, LLC	Harris	0.25	0.10	C
14007-001	TX0117846	AquaSource Development Co	Montgomery	0.13	unk	C
14013-001	TX0118028	AquaSource Development Co	Montgomery	0.05	unk	C
14124-001	TX0119598	Magnolia ISD	Montgomery	0.02	0.07	C
14133-001	TX0119857	White Oak Utilities, Inc	Montgomery	0.20	0.04	C
14141-001	TX0120073	Aqua Development, Inc	Montgomery	0.45	unk	C
14181-001	TX0122530	Aqua Development, Inc	Harris	0.08	0.02	C
14218-001	TX0123587	Diocese of Galveston-Houston	Montgomery	0.02	0	F
14266-001	TX0094315	HMV Special Utility District	Montgomery	0.03	0.03	C
14347-001	TX0124907	The Woodlands Land Development Co. LP	Harris	unk	unk	unk
14420-001	TX0125687	2920 Venture, LTD/ Harris County MUD #4014	Harris	0.60	0.002	C
14475-001	TX0126152	Northwest Harris Co. MUD #19	Harris	0.70	0	C
14491-001	TX0126306	Is Zen Center	Montgomery	0.04	0.001	C
14517-001	TX0125547	South Central Water Company	Harris	0.04	0	C
14542-001	TX0126934	1774 Utilities, Corp	Montgomery	0.15	0.008	C
14551-001	TX0127035	AUC Group, LP	Montgomery	0.95	unk	C
14592-001	TX0127663	South Central Water Company	Montgomery	0.32	0	C
14606-001	TX0127795	South Central Water Company	Harris	0.08	0	C
14610-001	TX0127850	501 Maple Ridge, LTD	Harris	0.64	0	C
14624-001	TX0127973	Rosehill Utilities, Inc	Waller	0.02	unk	C
14656-001	TX0128295	Montgomery Co MUD #94	Montgomery	1.08	unk	C
14662-001	TX0128333	Navasota ISD	Grimes	0.02	0.0010	C
14684-001	TX0128520	Jason Andrew Thompson	Montgomery	unk	unk	unk
14711-001	TX0128821	Maw Magnolia LTD	Montgomery	unk	unk	unk

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

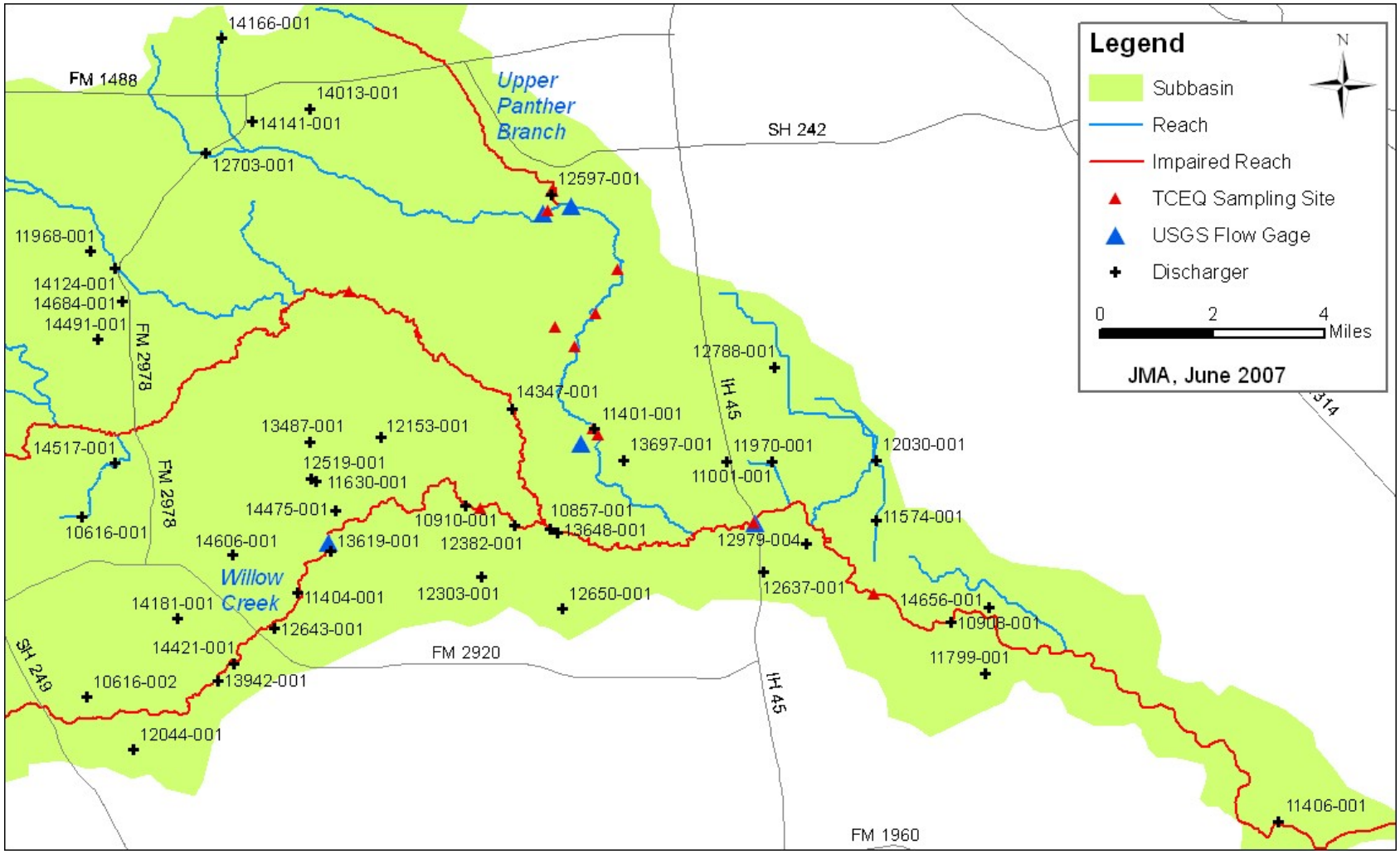

Figure 5-21a: Spring Creek Treatment Facility Discharge Locations East

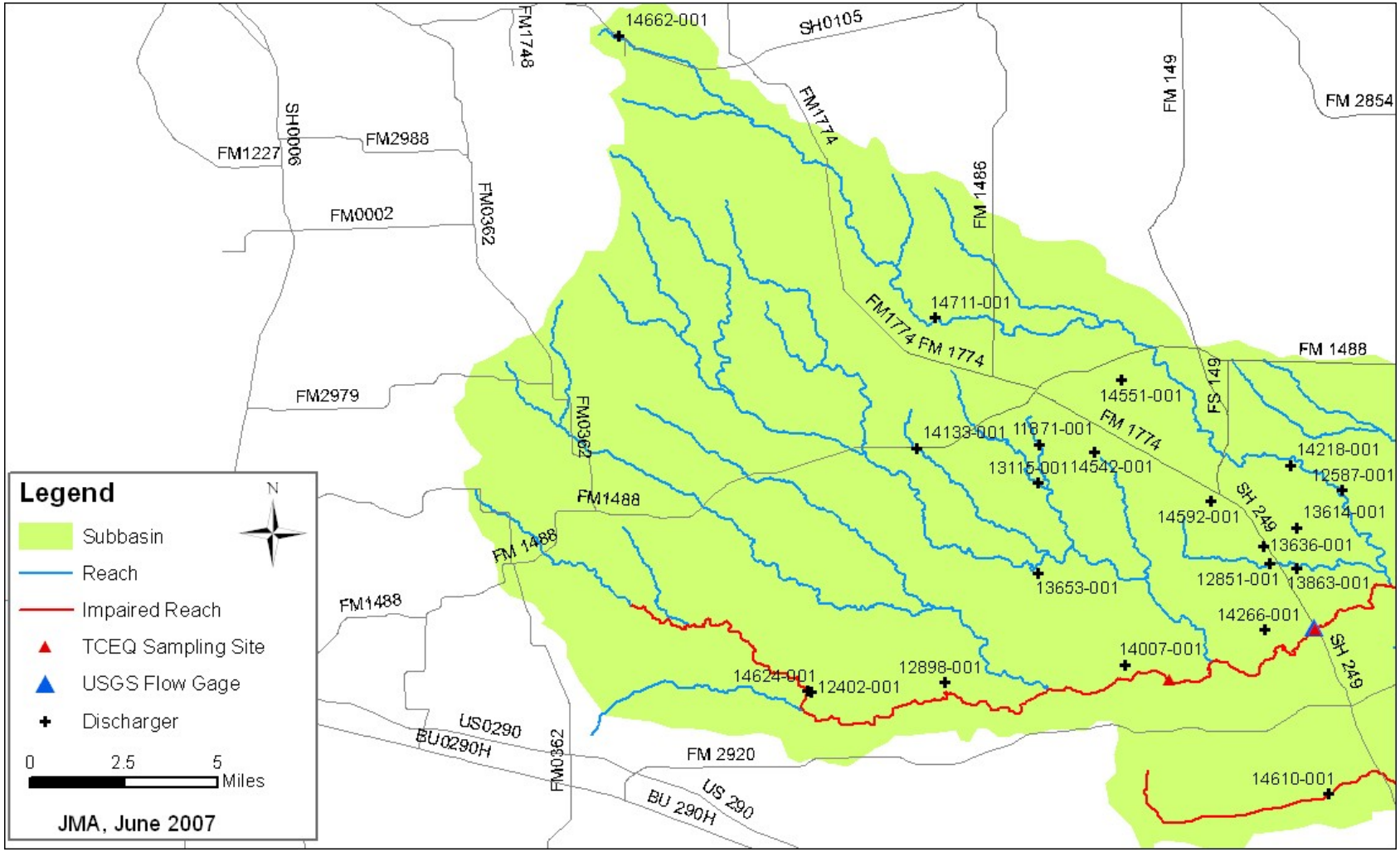

Figure 5-21b: Spring Creek Treatment Facility Discharge Locations West

6.0 CYPRESS CREEK, SEGMENT 1009

6.1 TCEQ ASSESSMENT FOR 303(d) LIST

When determining compliance with state water quality criteria, TCEQ often divides segments into various assessment units (AU) to refine the spatial resolution of the impairment. Assessment units for Cypress Creek are shown in Table 6-1.

The information included in Table 6-1 is from the *Draft 2006 Texas Water Quality Inventory*, which was used as a basis for the *Draft 2006 Texas 303(d) List* (TCEQ, 2007). The period of record used by TCEQ in this assessment was 1 December 1999 through 30 November 2004. The "# Exceed" column provides the number of samples that exceeded the grab sample criterion for *E. coli* (394 org/100mL). Generally, TCEQ allows up to 25% of the samples to exceed the grab sample criterion before considering the reach impaired. The "Geo. Mean" column provides the geometric mean of the *E. coli* samples. If this number exceeds the criterion of 126 org/100mL, then the reach is considered impaired. As shown, each of the seven assessment units was found to be impaired for *E. coli*.

Table 6-1: Cypress Creek Assessment Units and Results

Assessment Unit	Segment Name	Assessment Unit Description	# Samples	# Exceed	Geo. Mean	Impaired
1009_01	Cypress Creek	Upper portion of segment to downstream of US 290	35	14	304	Yes
1009_02	Cypress Creek	US 290 to SH 249	87	40	446	Yes
1009_03	Cypress Creek	SH 249 to IH 45	75	43	525	Yes
1009_04	Cypress Creek	IH 45 to confluence with Spring Creek	15	4	370	Yes
1009C_01	Faulkey Gully	From an unnamed lake 0.3 miles southeast of Telge Road to the confluence with Cypress Creek	36	15	550	Yes
1009D_01	Spring Gully	From immediately south of Spring Cypress Road to the confluence with Spring Creek	36	22	651	Yes
1009E_01	Little Cypress Creek	Entire Segment	35	20	612	Yes

The locations of the assessment units are displayed in Figure 6-1. Also shown in this figure are water quality sampling locations where *E. coli* data have been regularly collected. Generally, each assessment unit corresponds to one or more sampling sites.

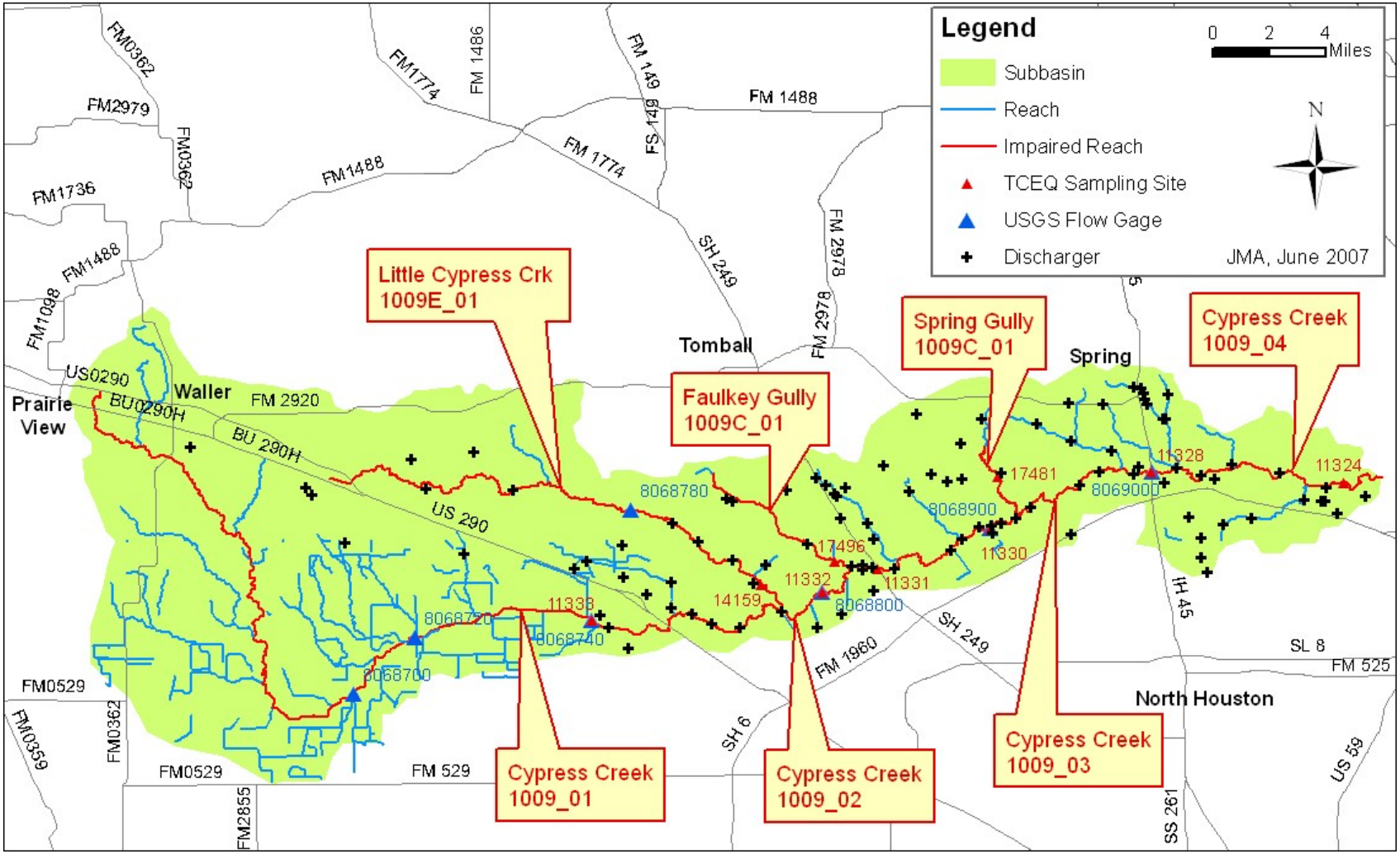

Figure 6-1: Cypress Creek Study Area

6.2 SUMMARY OF *E. COLI* DATA BY STATION

With very few exceptions, *E. coli* sampling did not begin until 2000. (Before 2000, samples were only analyzed for fecal coliform.) Table 6-2 provides an inventory of active *E. coli* sampling sites, and Table 6-3 provides a summary of the currently available *E. coli* data for these sites. Table values in bold are indicative of exceedances of state criteria. It is important to note that the data in this table typically cover a longer period of record than that used in the *Draft 2006 Texas Water Quality Inventory*.

Table 6-2: Cypress Creek Sampling Sites

TCEQ #	TCEQ Description
11333	CYPRESS CREEK IMMEDIATELY DOWNSTREAM OF HOUSE HAHL ROAD NEAR CYPRESS
14159	LITTLE CYPRESS CREEK IMMEDIATELY DOWNSTREAM OF KLUGE ROAD IN HOUSTON
11332	CYPRESS CREEK IMMEDIATELY DOWNSTREAM OF GRANT ROAD NEAR CYPRESS
17496	FAULKEY GULLY OF CYPRESS CREEK 105 METERS DOWNSTREAM OF LAKEWOOD FOREST DRIVE NORTHWEST OF HOUSTON
11331	CYPRESS CREEK AT SH 249
11330	CYPRESS CREEK AT STEUBNER-AIRLINE ROAD IN HOUSTON
17481	SPRING GULLY AT SPRING CREEK OAKS DRIVE IN TOMBALL
11328	CYPRESS CREEK BRIDGE ON IH 45 15 MI NORTH OF HOUSTON
11324	CYPRESS CREEK IMEDIATELY DOWNSTREAM OF CYPRESSWOOD DRIVE/OLD TETTAR RD EXTENSION

Table 6-3: Cypress Creek *E. coli* Data Summary

Station	11333	14159	11332	17496	11331	11330	17481	11328	11324
Reach	Cypress	Little Cyp	Cypress	Faulkey	Cypress	Cypress	Spring	Cypress	Cypress
Begin Date	Jan-02	Jan-02	Jan-01	Jan-02	Jun-00	Jan-02	Jan-02	Jun-00	Jan-01
End Date	May-05	May-05	May-06	May-05	Apr-05	May-05	May-05	May-05	Jun-06
Count	41	41	61	42	41	42	42	100	22
75th Percentile	**580**	**1700**	**1200**	**1075**	**1112**	**1275**	**1325**	**1925**	**1659**
Geometric mean	**291**	**589**	**405**	**555**	**573**	**642**	**597**	**533**	**470**
25th Percentile	110	210	110	175	242	228	233	130	182

6.3 SPATIAL AND TEMPORAL ANALYSIS

Spatial analysis can be helpful when attempting to locate sources of bacteria. Figure 6-2 shows the variation in bacteria concentrations from upstream to downstream across the watershed. As shown, the lowest bacteria concentrations are observed at the most upstream station (11333), though even here bacteria levels are still well above criteria. The highest bacteria concentrations can generally be found at Station 11330, on Cypress Creek.

Temporal analysis can be useful for determining the emergence or diminution of bacteria sources over time. Figures 6-3 through 6-11 present bacteria concentration over time for the main stem

and tributary stations of Cypress Creek. A couple of the figures (particularly stations 11332 and 11328) suggest that bacteria concentrations may have increased gradually throughout the period of record.

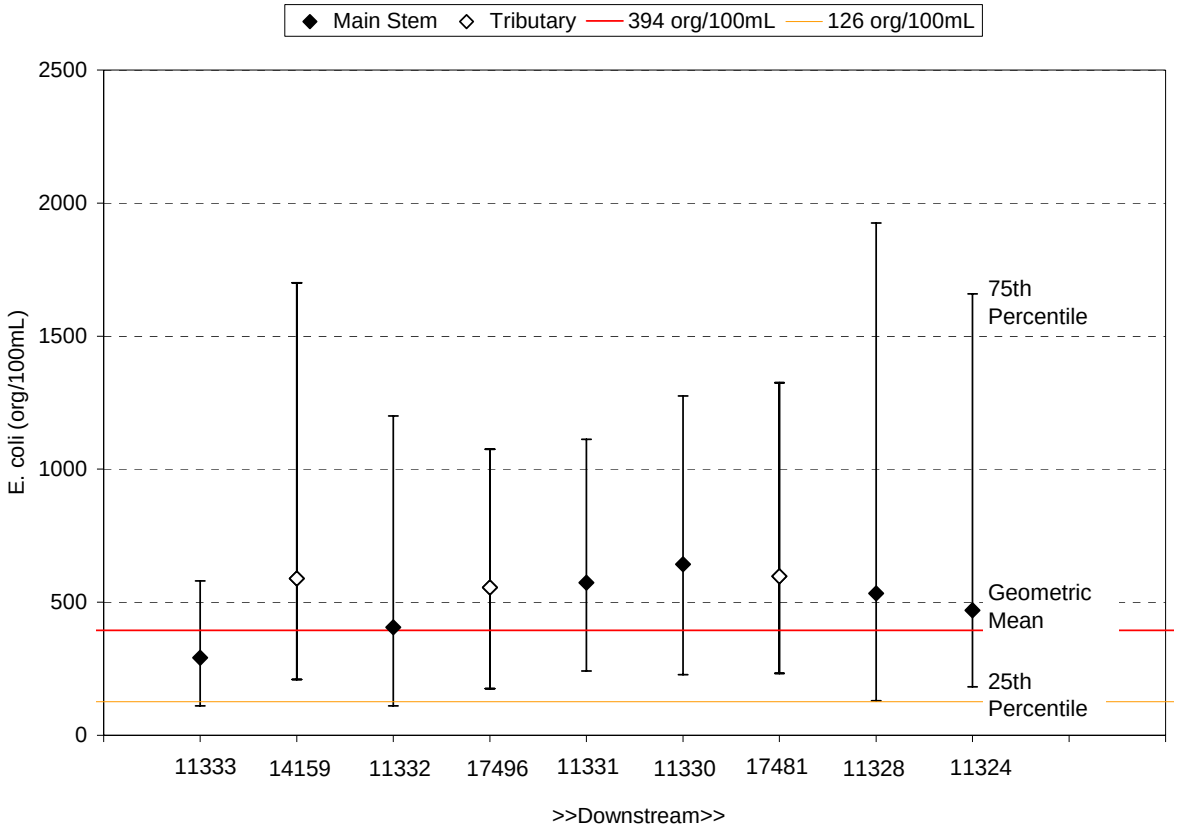

Figure 6-2: Cypress Creek Spatial Analysis

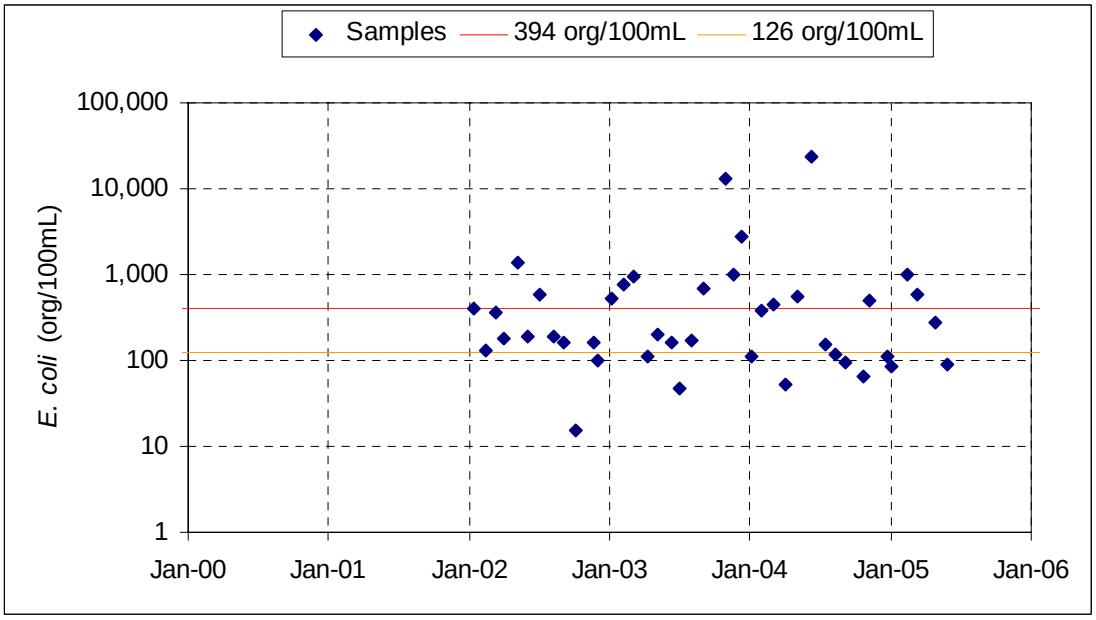

Figure 6-3: Temporal Analysis: Cypress Creek at Hahl Road (#11333)

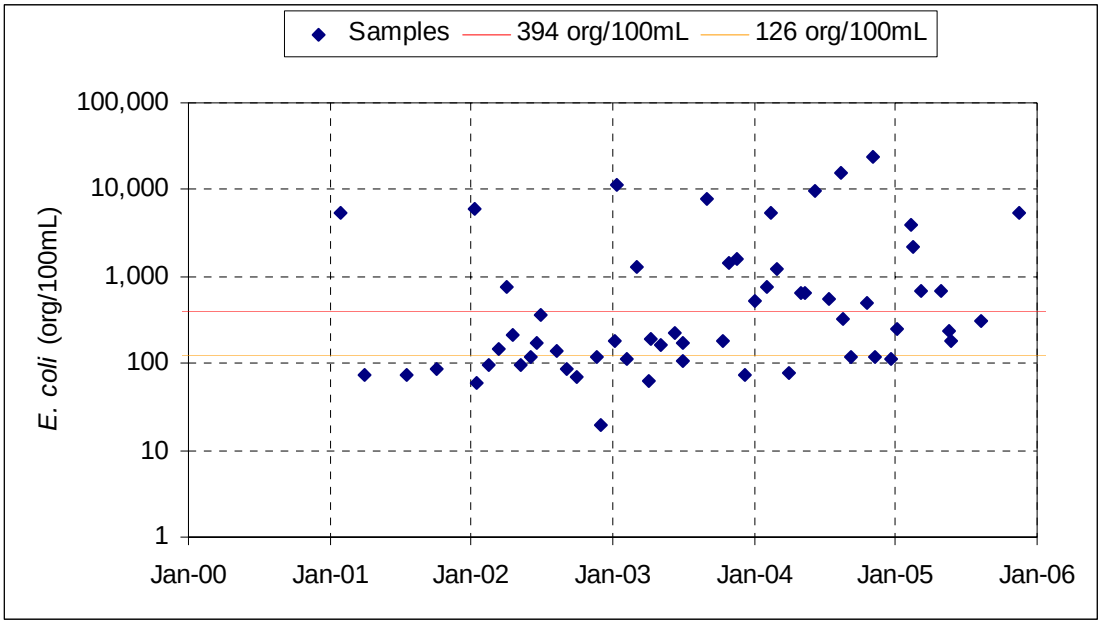

Figure 6-4: Temporal Analysis: Cypress Creek at Grant Road (#11332)

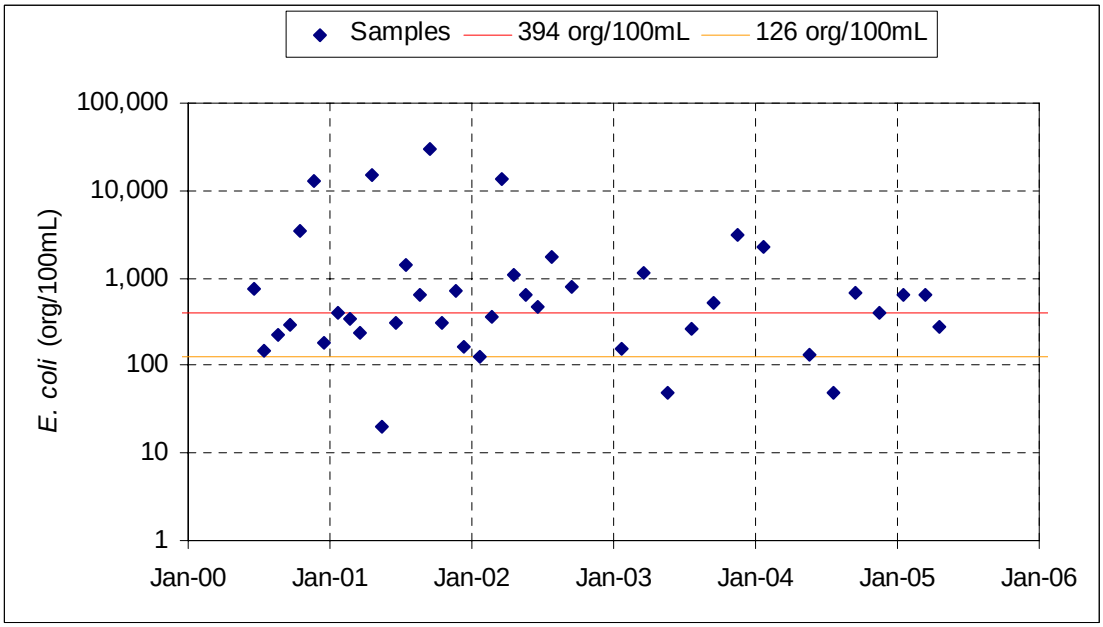

Figure 6-5: Temporal Analysis: Cypress Creek at SH 249 (#11331)

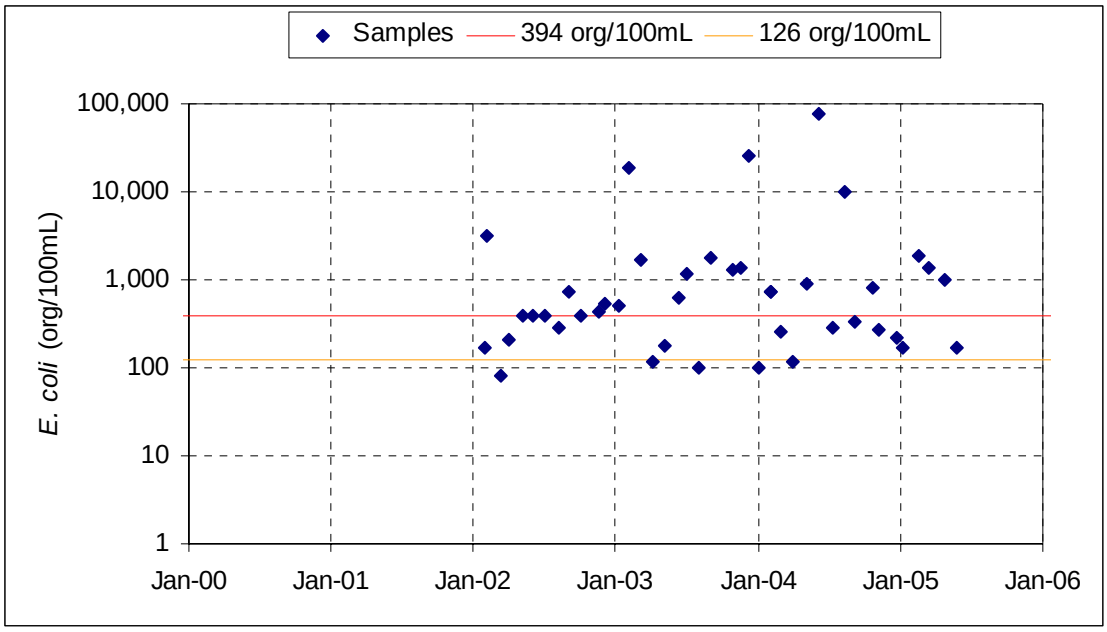

Figure 6-6: Temporal Analysis: Cypress Creek at Steubner-Airline Road (#11330)

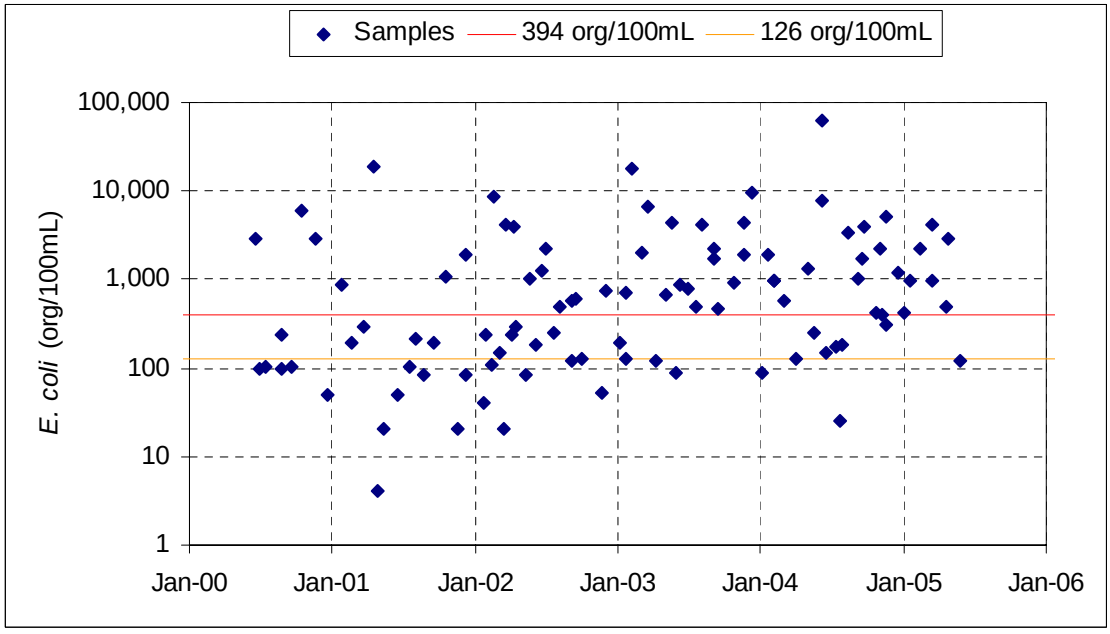

Figure 6-7: Temporal Analysis: Cypress Creek at at IH 45 (#11328)

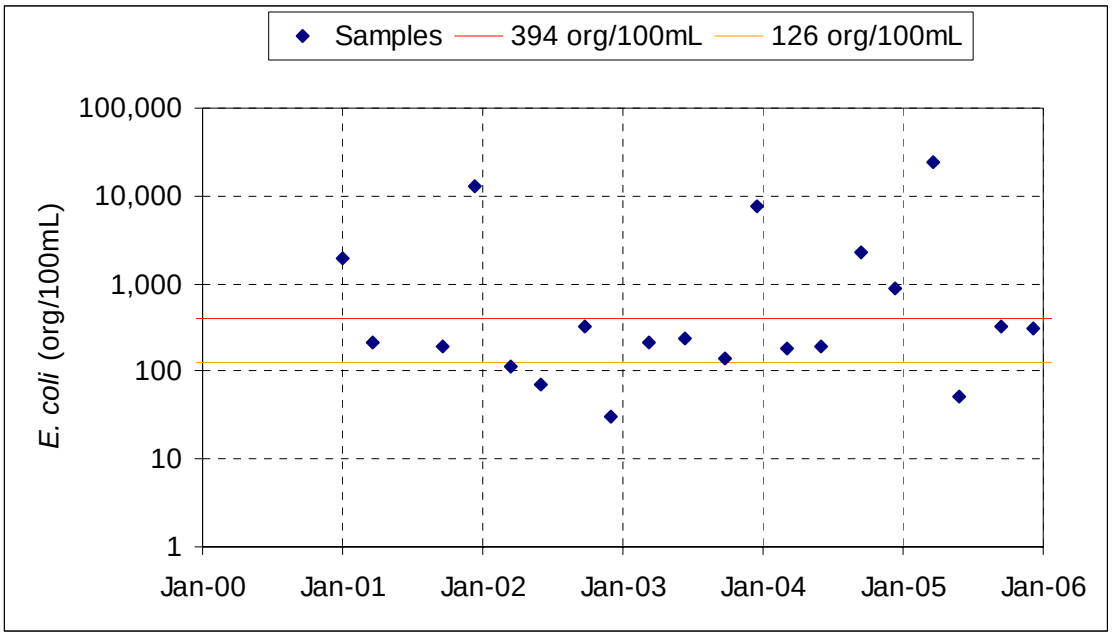

Figure 6-8: Temporal Analysis: Cypress Creek at Cypresswood Drive (#11324)

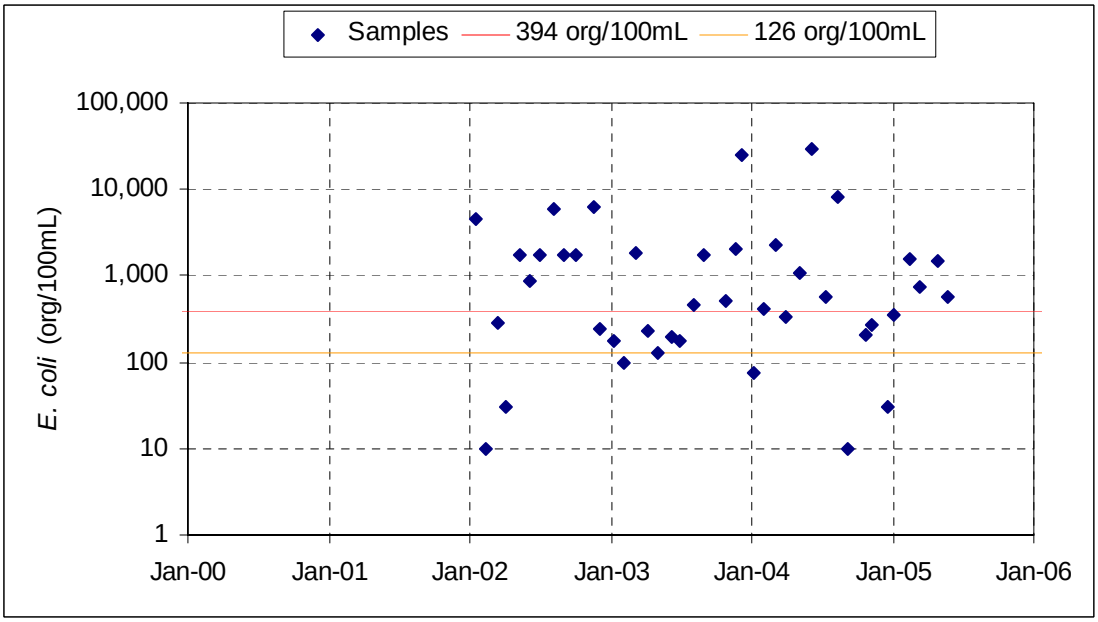

Figure 6-9: Temporal Analysis: Little Cypress Creek at Kluge Road (#14159)

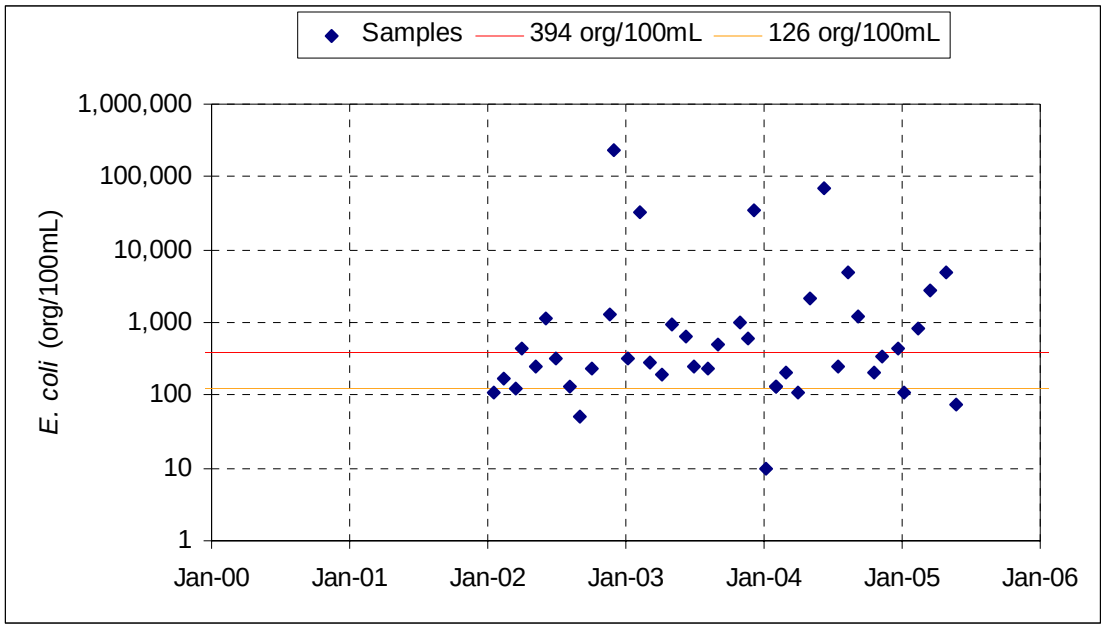

Figure 6-10: Temporal Analysis: Faulkey Gully at Lakewood Forest Drive (#17496)

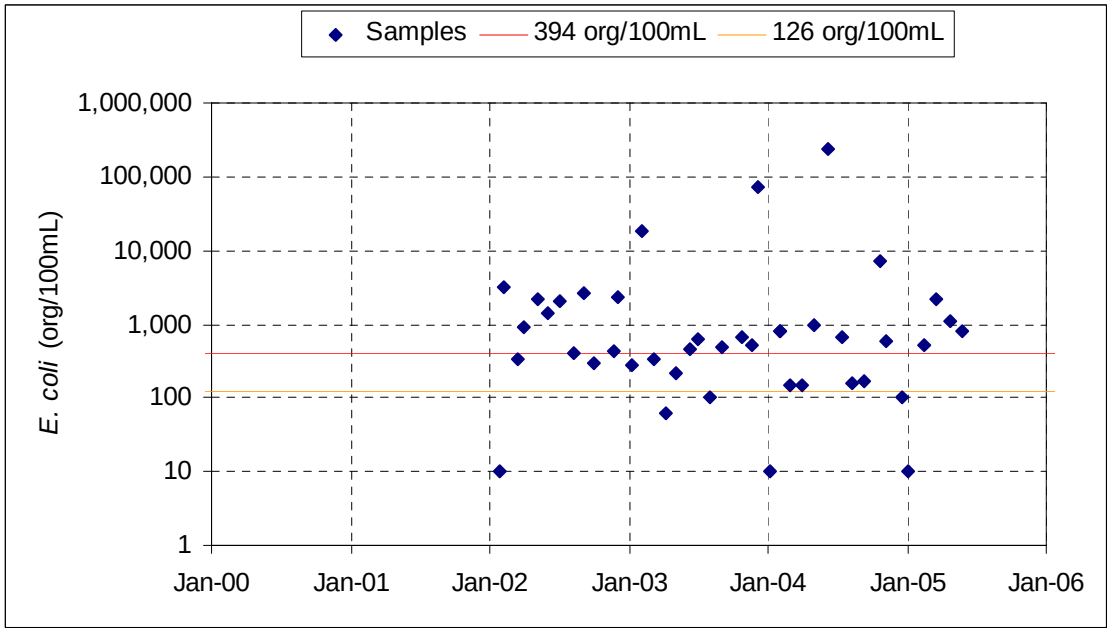

Figure 6-11: Temporal Analysis: 17481 Spring Gully at Spring Crk Oaks Rd (#17481)

6.4 LOAD DURATION CURVE DEVELOPMENT

6.4.1 Flow Duration Curves

A flow duration curve (FDC) is a graph of daily average streamflow versus the percent of days that the average streamflow value is exceeded. FDCs are typically developed using daily flow data collected at USGS gaging stations. For this project, the desired period of record for FDC development is 1987-2006. Table 6-4 identifies the active USGS flow gaging stations in the segment for this time period. The locations of these gages are presented in Figure 6-1. Flow duration curves for the applicable USGS stations are shown in Figure 6-12.

Table 6-4: Cypress Creek USGS Flow Gages

Station	Stream	Location	Available FDC data
8068700	Cypress Creek	at Sharp Rd nr Hockley, TX	N/A
8068720	Cypress Creek	at Katy-Hockley Rd nr Hockley, TX	1987-2006
8068740	Cypress Creek	at House-Hahl Rd nr Cypress, TX	1987-2006
8068780	Little Cypress Creek	near Cypress, TX	1987-1992, 1997-2006
8068800	Cypress Creek	at Grant Rd nr Cypress, TX	1987-1992, 2001-2006
8068900	Cypress Creek	at Stuebner-Airline Rd nr Westfield, TX	N/A
8069000	Cypress Creek	near Westfield, TX	1987-2006

To create load duration curves, each water quality sampling site must have a complete flow record. Since most sampling sites do not have a corresponding USGS flow gage, these records have to be synthesized using nearby gages and drainage area adjustment factors. For the stations on Faulkey Gully and Spring Gully, flows were synthesized based on the nearby USGS flow gage 08068390 on Bear Branch. Additional description of this gage is presented in Section 5.0.

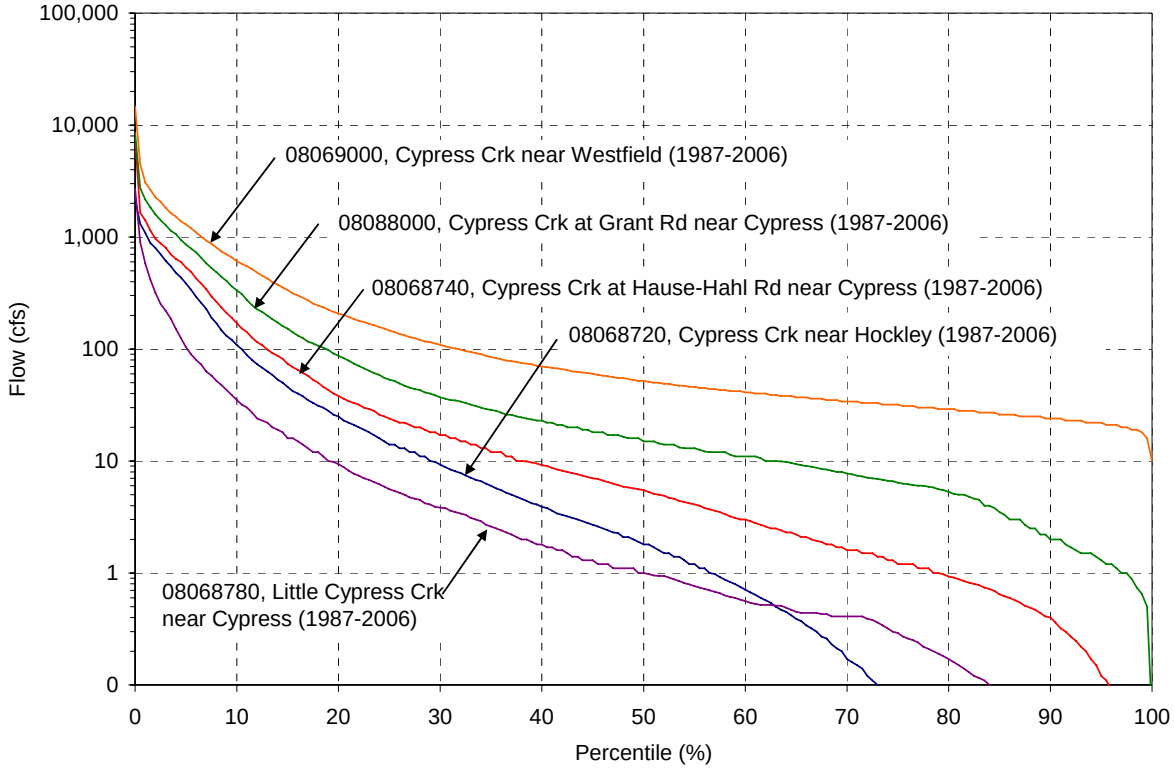

Figure 6-12: Cypress Creek Flow Duration Curves

6.4.2 Load Duration Curves

This section presents load duration curves for various water quality sampling stations throughout the study area. The bacterial loads are the product of each grab sample bacteria concentration and the corresponding mean daily streamflow rate. Bacteria standards are represented in these figures by curves for the geometric mean and grab sample criteria, 126 org/100mL and 394 org/100mL, respectively. Load duration curves are presented from upstream to downstream along the main segment, and then along tributaries.

Figures 6-13 through 6-18 present LDCs for stations on the main stem of Cypress Creek. Generally the greatest exceedances at these stations typically occur under high flow conditions, but high bacteria levels are sometimes observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station. At station 11328 near IH 45, bacteria concentrations are unusually high during low flow conditions, suggesting that dry weather sources may be especially severe at this location.

An LDC for Little Cypress Creek (Station 14159) is presented in Figure 6-19. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are often observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station.

An LDC for Faulkey Gully (Station 17496) is presented in Figure 6-16. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are often observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station.

An LDC for Spring Gully (Station 17481) is presented in Figure 6-19. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are often observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station.

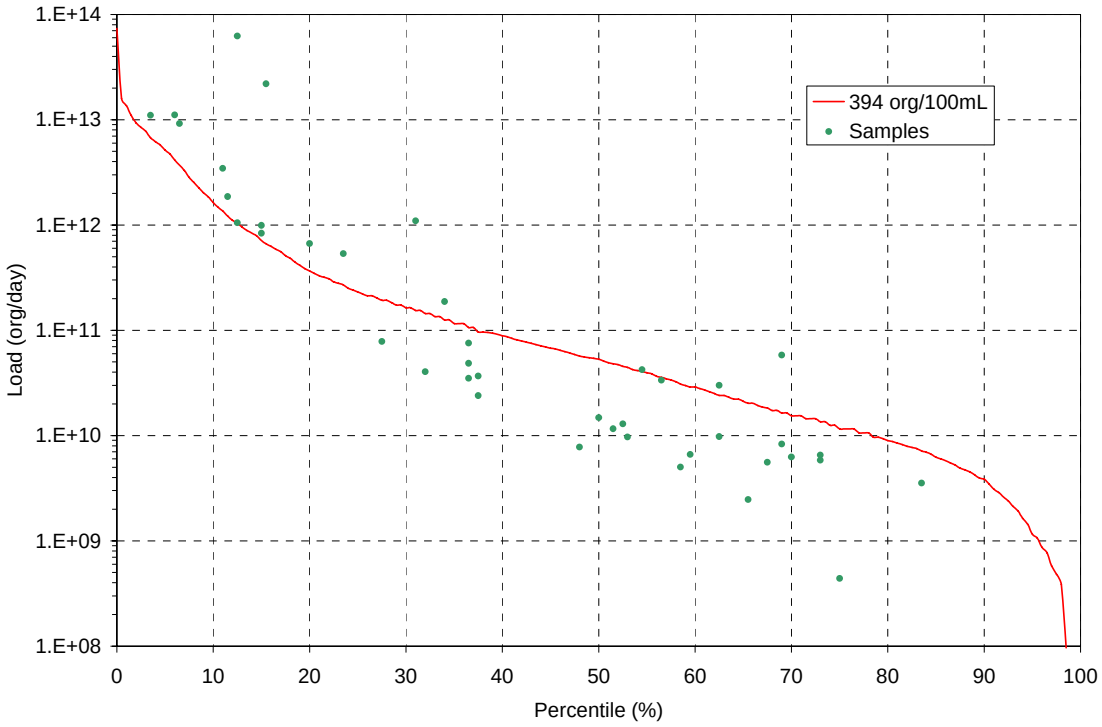

Figure 6-13: LDC for Cypress Creek at Hahl Road (#11333)

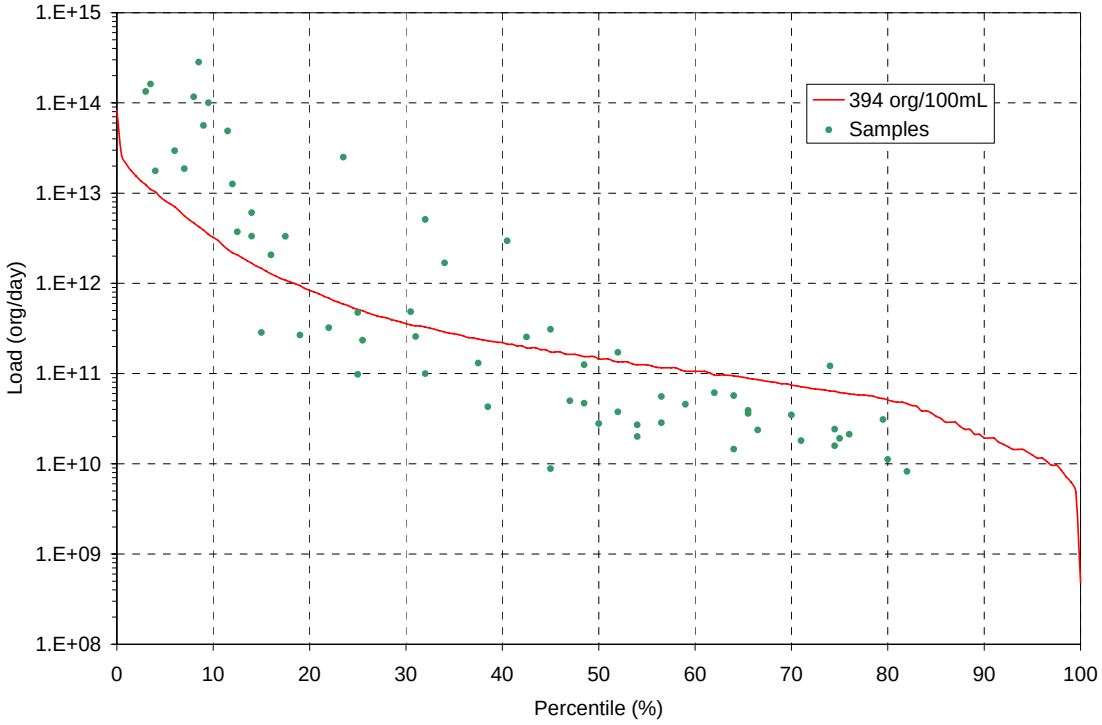

Figure 6-14: LDC for Cypress Creek at Grant Road (#11332)

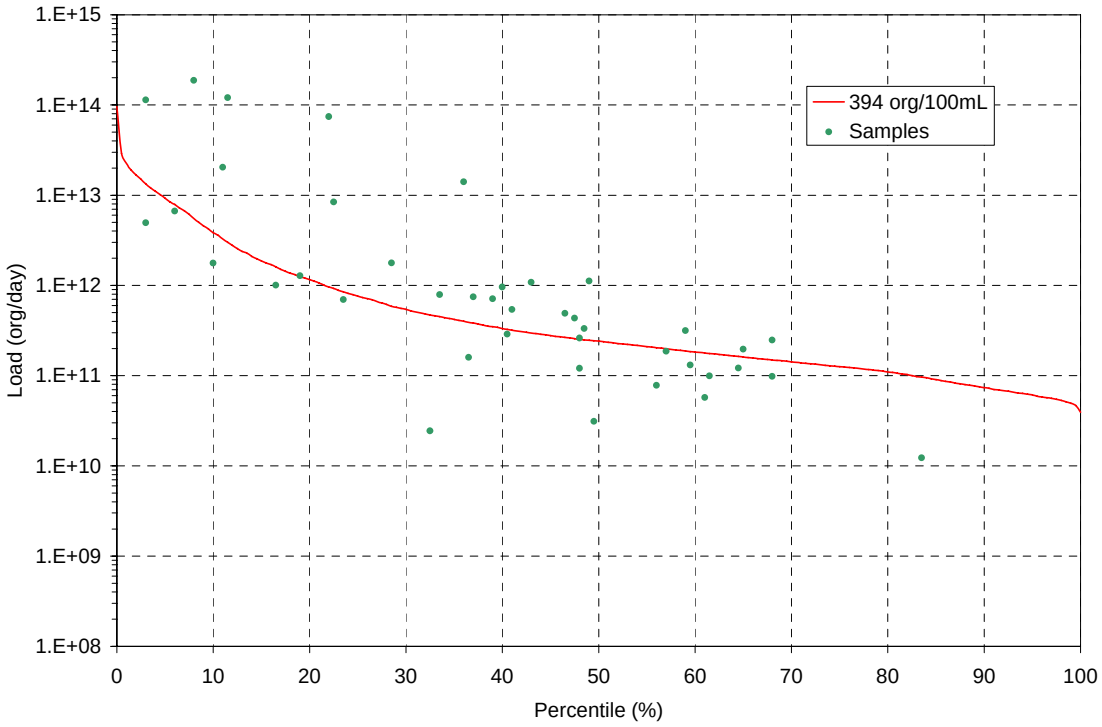

Figure 6-15: LDC for Cypress Creek at SH 249 (#11331)

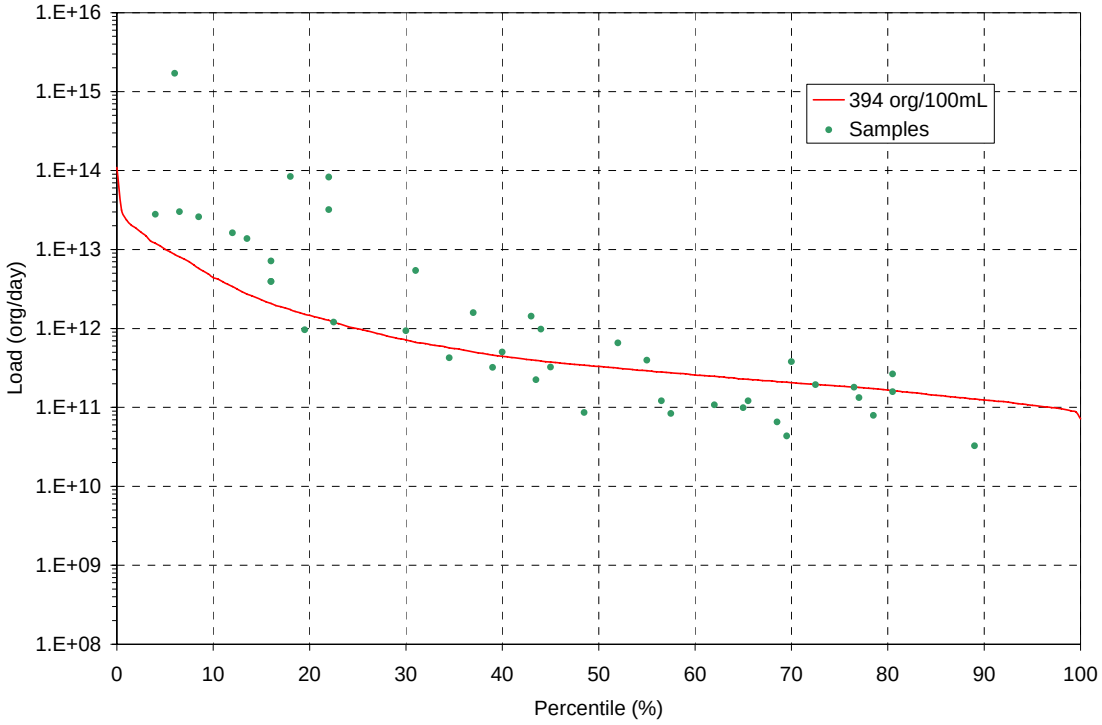

Figure 6-16: LDC for Cypress Creek at Steubner-Airline Road (#11330)

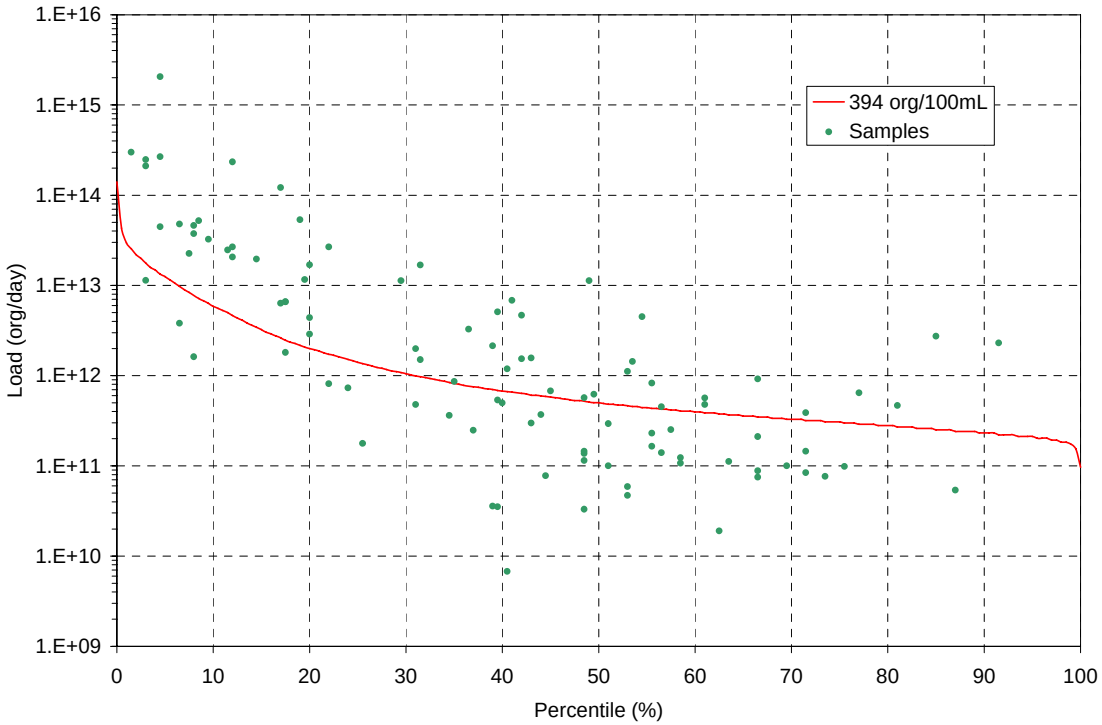

Figure 6-17: LDC for Cypress Creek at IH 45 (#11328)

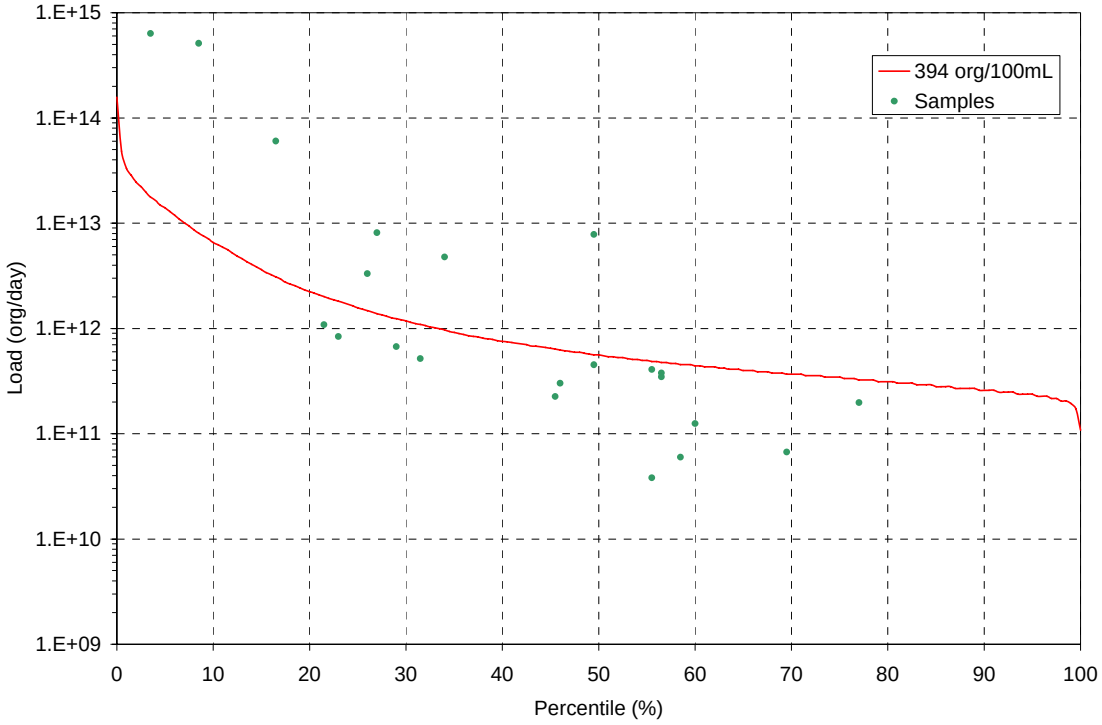

Figure 6-18: LDC for Cypress Creek at Cypresswood Drive (#11324)

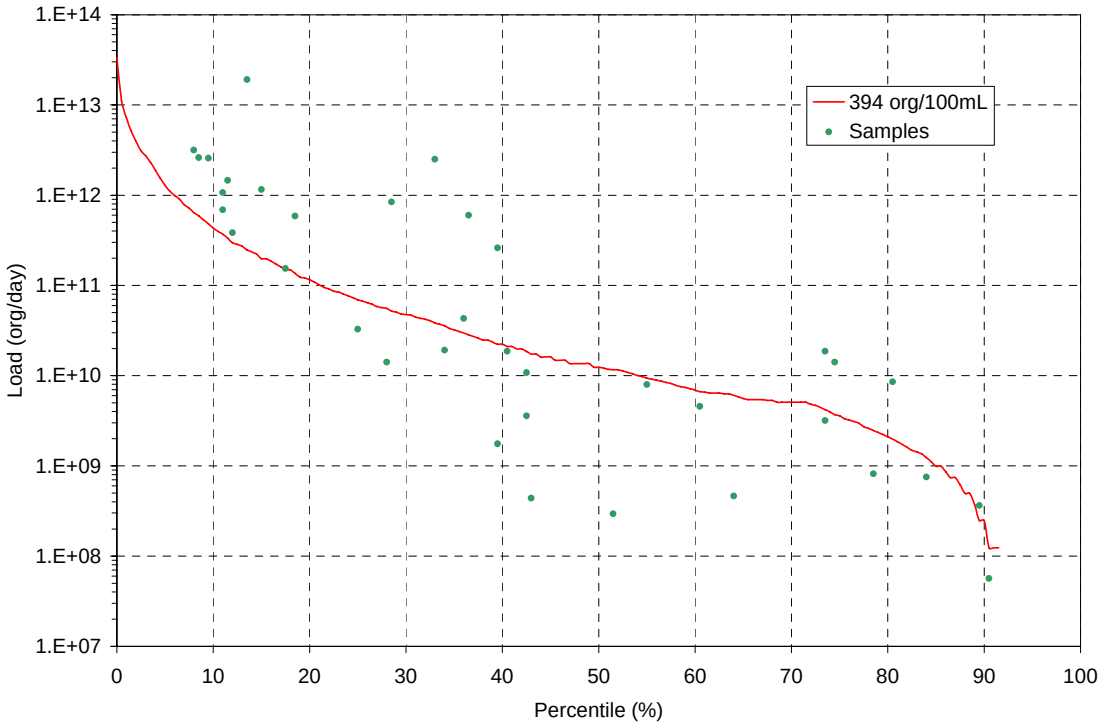

Figure 6-19: LDC for Little Cypress Creek at Kluge Road (#14159)

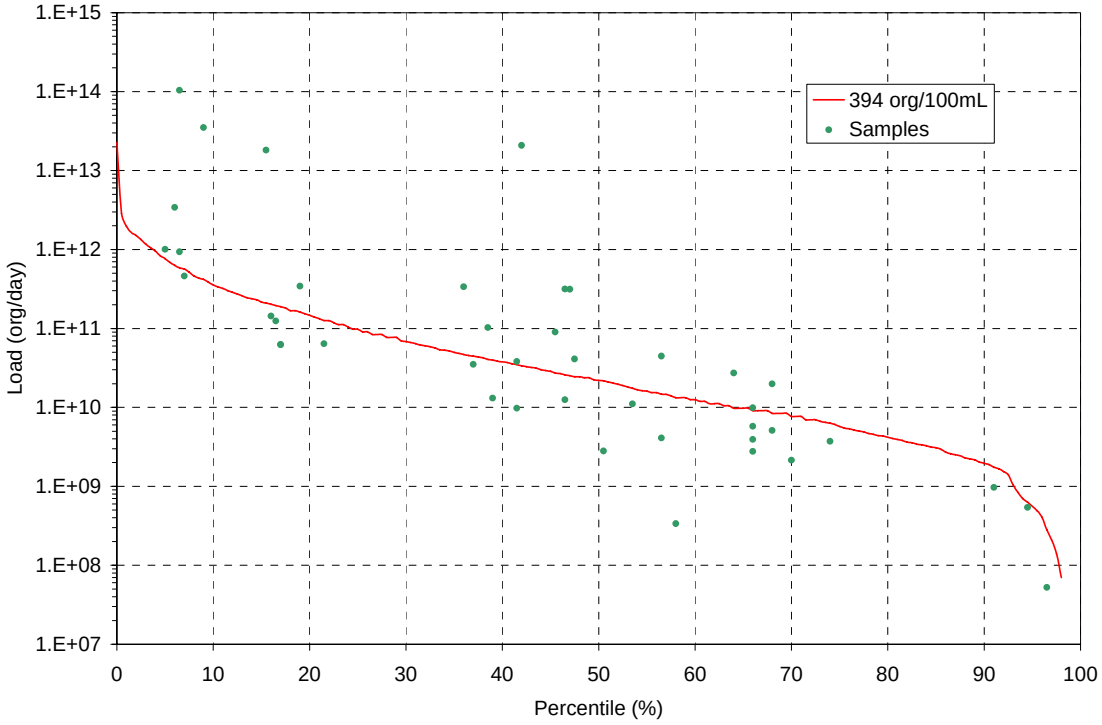

Figure 6-20: LDC for Faulkey Gully at Lakewood Forest Drive (#17496)

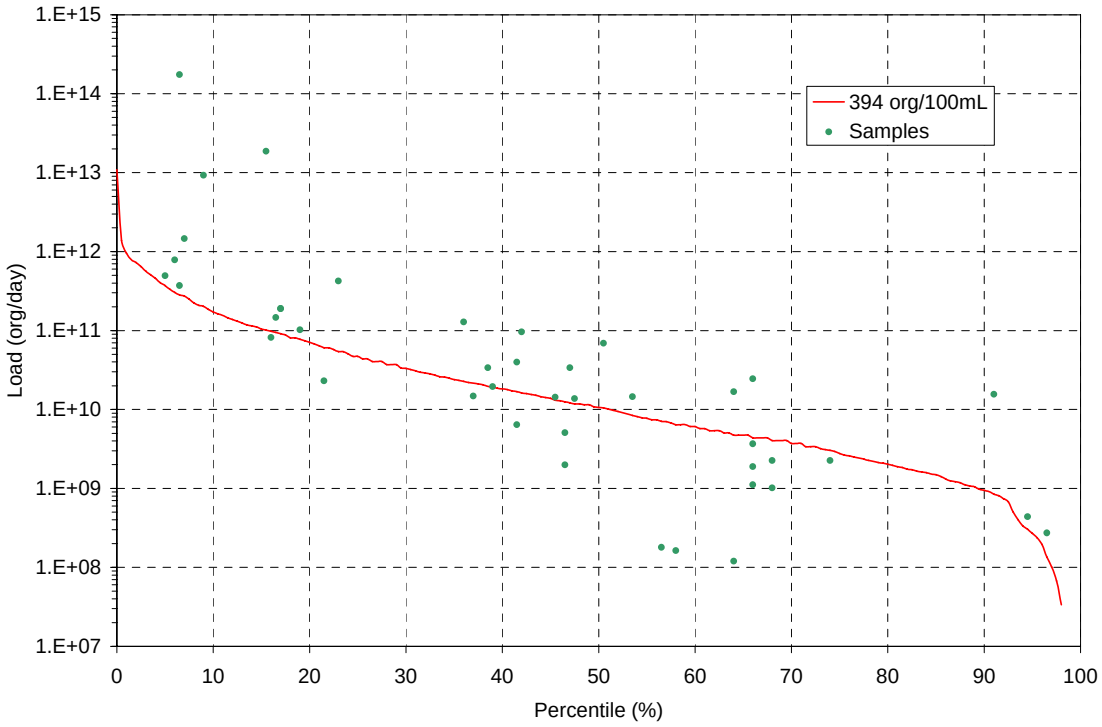

Figure 6-21: LDC for Spring Gully at Spring Creek Oaks Road (#17481)

6.5 DISCUSSION OF POTENTIAL SOURCES

There have historically been two general classifications of sources of pollutants that were distinguished by the mechanism of release to a receiving stream. Sources that were released via a pipe or defined outfall were labeled as "point sources", while sources that were diffuse in nature were labeled as "nonpoint sources". Thus, "point sources" of bacteria would usually include facilities such as wastewater treatment plants. Traditional "nonpoint sources" would include, but not be limited to, leaking sewer systems, failing septic systems, pets, wildlife, livestock, and general urban and rural runoff. However, TMDLs do not always adhere to the traditional usage of the terms point source and nonpoint source.

In accordance with EPA guidance, TMDLs are developed to establish two categories of allocations: wasteload allocations (WLAs) and load allocations (LA). EPA has determined that any source flowing into a waterway and covered by a permit should be classified as a waste load and be included in the WLA category. Thus, the "waste load" category would include not only facilities such as wastewater treatment plants, but also discharges of runoff from municipal areas covered under stormwater permits (MS4s).

Remaining diffuse sources of pollutants that are not covered by permit are defined as "loads" and ultimately are subject to development of the LA. This would include runoff from rural or urban areas outside of permitting jurisdictions.

6.5.1 Upstream Sources

There are no waterbodies upstream of Cypress Creek.

6.5.2 Runoff Sources

Runoff sources of bacteria can fall into either the waste load or load category, depending on the presence or absence of a permit allowing for discharge into a waterway. Runoff sources of bacteria can be anticipated based on land use. For example, it has been observed that natural areas typically produce the smallest runoff source loads. This is because they tend to produce the least runoff volume and tend to have the lowest density of fecal sources. Rural (farm and ranch) areas also tend to have smaller source loads for the same reasons. However, in both natural and rural areas, significant bacteria sources can still sometimes exist. For example, natural areas could include dense waterfowl areas, and rural areas could include confined animal pens. Urban areas tend to produce larger bacteria loads. This is generally the result of high impervious cover, which increases the frequency and intensity of runoff events. It can also be the result of an increasing density in potential sources (leaking sewage collection systems, failing septic drainfields, pets, wildlife, etc.).

Land use data for the Cypress Creek watershed are shown in Figure 6-23. As shown, the eastern portion of the watershed is heavily urbanized. The western portion of the watershed is comprised mostly of farm and range land. The source of the data is USGS, 2001.

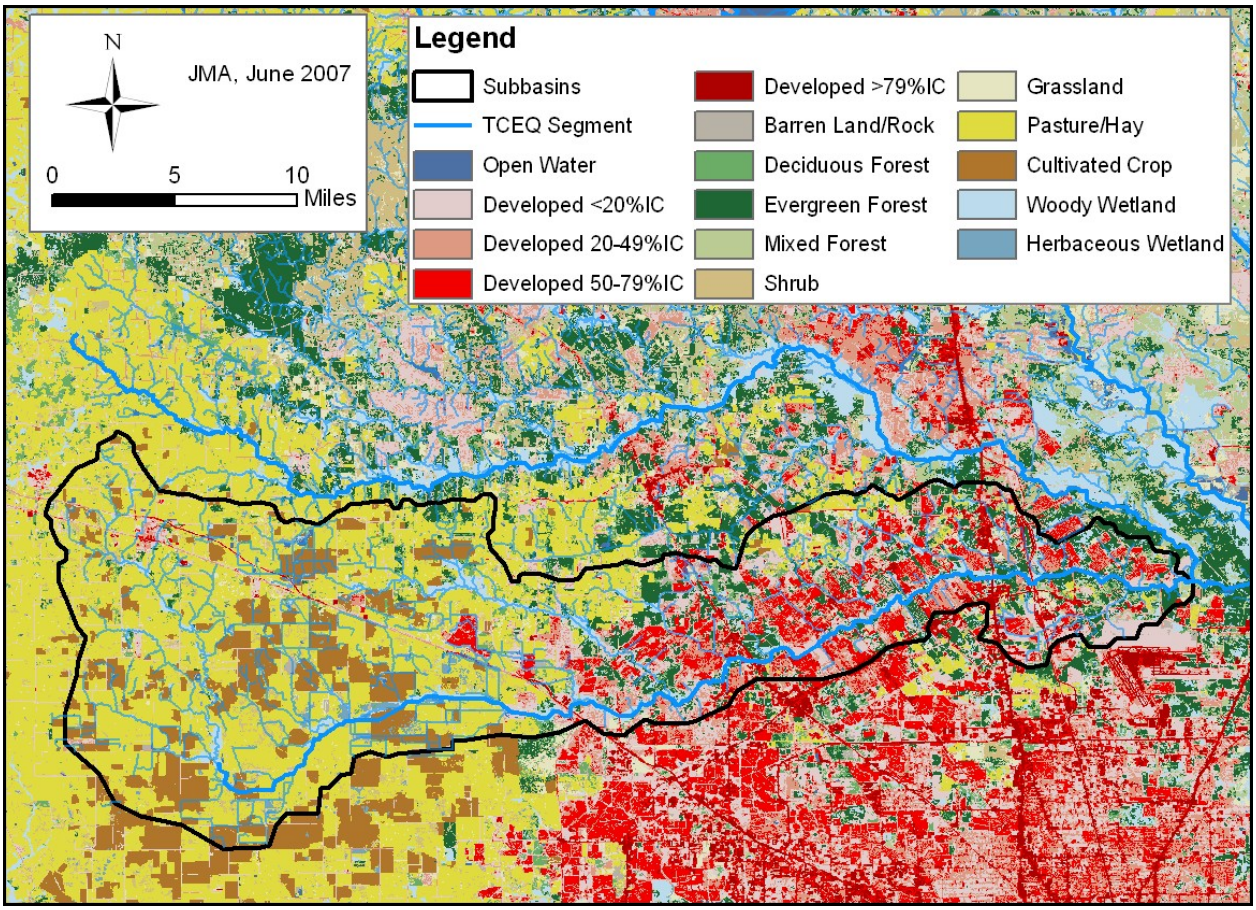

Figure 6-23: Cypress Creek Land Use

6.5.3 Wastewater Treatment Facilities

Wastewater treatment facilities have the potential to contribute significant bacteria loads if complete disinfection is not achieved. These loads may be most noticeable under low flow conditions, during which some streams may be effluent dominated. However, it is also possible for treatment plants to contribute significant loads under wet weather conditions. This could be the case if increased loading due to stormwater inflow and infiltration results in poorer plant performance.

Wastewater treatment plants in the Cypress Creek watershed are presented in Table 6-5. This table includes the permitted flow, estimated current flow, and disinfection monitoring requirements for each facility. Facilities without monitoring requirements for disinfection (marked "N") are typically facilities without a significant potential bacteria source (i.e. industries or drinking water treatment plants). Treatment facility discharge locations are shown in Figures 6-24a and 5-24b. For this segment, the total permitted flow is approximately 74 MGD (116 cfs), and the total current effluent flow is approximately 29 MGD (45 cfs). (For facilities with unknown current flows, half the permitted flow was used.) Wastewater treatment facilities can represent a significant portion of the segment's baseflow (which could be defined as the 50th to 99th percentile range of the FDC). At the 50th percentile flow, current effluent discharges

account for about 76% of total stream flow, while at the 99th percentile, they account for 100% of the total flow.

Table 6-5: Cypress Creek Wastewater Treatment Facility Summary

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
01310-001	TX0032476	City of Waller	Waller	0.90	unk	C
02608-000	TX0092258	Center Point Energy Houston Electric LLC	Harris	0.02	0.002	N
03076-000	TX0118605	Skinner Nurseries, Inc.	Harris	variable	unk	F
03627-000	TX0118320	Vopak Logistics Services USA, Inc	Harris	variable	0.33	N
04313-000	TX0113948	Northwest Airport Management LP	Harris	variable	unk	N
10528-001	TX0026450	Harris Co. FWSD # 52	Harris	0.70	0.32	C
10783-001	TX0023612	Inverness Forest ID	Harris	0.50	0.20	C
10955-001	TX0046710	Harris County WCID #116	Harris	1.30	0.65	C
10962-001	TX0062049	Harris County WCID #113	Harris	0.30	0.11	C
11024-001	TX0021211	Harris Co WCID #119	Harris	1.00	0.42	C
11044-001	TX0046671	Memorial Hills UD	Harris	0.50	0.19	C
11081-001	TX0046761	Ponderosa Joint Powers Agency	Harris	4.87	2.90	C
11084-001	TX0046833	Lake Forest Plant Advisory Council	Harris	2.76	1.33	C
11089-001	TX0046701	Prestonwood Frest UD	Harris	0.95	0.32	C
11105-001	TX0046639	Bammel UD	Harris	2.60	1.06	C
11141-001	TX0046728	Treschwig Joint Powers Board	Harris	2.00	1.20	C
11142-002	TX0046680	Timber Lane UD	Harris	2.62	0.93	F
11215-001	TX0046663	Meadowhill Regional MUD	Harris	2.40	0.52	C
11239-001	TX0055166	CNP UD	Harris	2.50	0.86	F
11267-001	TX0046868	Timberlake ID	Harris	0.40	0.26	C
11314-001	TX0046744	Aqua Texas, Inc	Harris	0.40	unk	C
11366-001	TX0046779	Cypress-Klein UD	Harris	0.70	0.31	C
11409-001	TX0046817	Kleinwood Joint Powers Board	Harris	5.00	2.16	C
11410-002	TX0046841	Charterwood MUD	Harris	1.60	0.28	C
11444-001	TX0046736	Harris County WCID #99	Harris	0.23	0.09	C
11572-001	TX0047775	Pilchers Property LP/ Northland Joint Venture[1]	Harris	0.06	0.03	C
11618-003	TX0118371	Hunter's Glen MUD	Harris	1.40	0.36	C
11814-001	TX0071609	Boys and Girls Country of Houston	Harris	0.10	0.02	C
11824-001	TX0072346	Northwest Harris County MUD #5	Harris	0.80	0.44	C
11824-002	TX0128210	Northwest Harris Co. MUD #5	Harris	0.40	unk	C
11832-001	TX0072354	Faulkey Gully MUD	Harris	1.42	0.67	C,F
11835-001	TX0072150	Bridgestone MUD	Harris	2.50	0.85	C
11855-001	TX0072567	North Park PUD	Harris	1.31	0.40	C
11886-001	TX0073105	Six Flag Splashtown L.P.	Harris	0.06	unk	C
11887-001	TX0073393	Grant Rd PUD	Harris	0.31	0.17	C
11900-001	TX0074217	Tina Lee Tilles DBA Turk Brothers Building	Harris	0.00	0.0004	C
11912-002	TX0075159	Northwest Harris Co MUD #10	Harris	1.50	0.48	C
11913-001	TX0075183	Northwest Freeway MUD	Harris	0.45	0.15	C
11925-001	TX0074632	Harris Co MUD #104	Harris	0.60	0.20	C
11933-001	TX0075671	Woodcreek MUD	Harris	0.60	0.23	C
11939-001	TX0075795	Northwest Harris Co MUD #15	Harris	3.12	0.43	C
11941-001	TX0074322	Harris Co MUD #58	Harris	0.60	0.12	C
11964-001	TX0076481	Harris Co WCID #110	Harris	1.00	0.49	C
11986-001	TX0076791	Tower Oak Bend WSC	Harris	0.05	unk	C
11988-001	TX0076856	Harris Co MUD #24	Harris	2.00	0.62	C
11988-002	TX0113123	Harris Co MUD #24	Harris	0.06	0.03	N
11988-003	TX0113115	Harris Co MUD #24	Harris	0.06	0.06	N
12025-002	TX0077941	Bilma PUD	Harris	0.75	0.29	C
12224-001	TX0083801	Klein ISD	Harris	0.01	0.005	C

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

Table 6-5: Cypress Creek Wastewater Treatment Facility Summary (continued)

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
12239-001	TX0084085	Harris Co MUD #36	Harris	0.99	unk	C
12248-001	TX0084760	UA Holdings 1994-5	Harris	0.10	0.03	C
12327-001	TX0086011	Cypress Hill MUD #1	Harris	0.80	0.38	C
12378-002	TX0092967	Richey Rd MUD	Harris	0.45	0.32	C
12470-001	TX0089184	Harris Co MUD #221	Harris	1.80	0.69	C,F
12541-001	TX0090182	Chasewood Utilities, Inc	Harris	0.10	0.02	C
12579-001	TX0090824	Spring West MUD	Harris	0.76	0.10	C
12600-001	TX0091171	Elite Computer Consultants, LP	Harris	0.01	0.001	C
12614-001	TX0091481	Harris Co MUD #16	Harris	0.50	0.15	C
12730-001	TX0090344	Champ's Water Company	Harris	0.02	0.003	C
12812-001	TX0093939	Regency 1-45/ Spring Cypress Retal, L.P.	Harris	0.06	0.002	C
12877-001	TX0094706	Harris Co MUD #230	Harris	0.76	0.20	C
13020-001	TX0096920	Harris Co MUD #286	Harris	0.60	0.21	C
13027-001	TX0096865	Harris County	Harris	0.01	unk	C
13054-001	TX0097209	CW-MHP Ltd	Harris	0.01	0.002	C
13059-001	TX0098434	Kwik-Kopy Corp	Harris	0.02	0.008	C
13152-001	TX0098647	Northwest Harris Co MUD #32	Harris	0.65	0.36	C
13296-002	TX0105376	Harris Co MUD #358	Harris	2.00	0.79	C
13472-001	TX0090841	Hockley Rail Car, Inc	Harris	0.01	0.0004	C
13569-001	TX0078930	Samuel Victor Pinter	Harris	0.00	0.0002	C
13573-001	TX0108120	Northwest Harris County MUD #36	Harris	0.20	0.11	C
13625-001	TX0081337	Northwest Harris Co MUD #20	Harris	0.40	0.60	C
13711-001	TX0085910	Spring Cypress WSC	Harris	0.04	0.02	C
13753-001	TX0113107	Harris Co MUD #360	Harris	0.80	0.25	C
13765-001	TX0116068	Harris Co MUD #249	Harris	0.80	0.21	C
13819-001	TX0113930	Arthur Edward Bayer	Harris	0.06	0	C
13875-002	TX0115983	Harris Co MUD #383	Harris	1.50	0.55	C
13881-001	TX0116009	Harris Co MUD #365	Harris	1.20	0.53	C
13893-001	TX0122211	Dia-Den LTD	Harris	0.02	0.002	C
13942-002	TX0125466	Inline Utilities, LLC	Harris	0.10	0	C
13963-001	TX0087424	Luther's Bar-B-Q, Inc.	Harris	0.01	unk	C
14028-001	TX0117129	Harris Co MUD 371	Harris	0.25	0.10	C
14030-001	TX0075221	Northwest Harris Co MUD #9	Harris	1.50	0.51	C
14044-001	TX0092894	149 Enterprises, Inc	Harris	0.01	unk	C
14106-001	TX0119270	Aqua Development, Inc	Harris	0.08	unk	C
14130-001	TX0081272	Northwest Harris Co MUD #10	Harris	0.05	0.001	C
14172-001	TX0121126	Utilities Investment Company, Inc	Harris	0.18	0.06	C
14193-001	TX0122963	Kennard Tom Foley	Harris	0.04	0.00	C
14209-001	TX0123366	CTP Utilities Inc	Harris	0.18	0	C
14327-001	TX0124770	Harris Co. MUD #391	Harris	0.95	0.16	C
14354-001	TX0124974	Harris Co. MUD #374	Harris	0.65	unk	C
14390-001	TX0125181	Huffsmith-Kohrville, Inc	Harris	0.05	0	C
14434-001	TX0125806	Westside Water, LLC	Harris	0.10	0.02	C
14441-001	TX0125881	Harris County MUD #389	Harris	0.30	unk	C
14448-001	TX0125938	Houston Warren Ranch Partners, LLC	Harris	0.55	0	C
14476-001	TX0126161	Rouse-Houston, LP	Harris	0.80	0.03	C
14526-001	TX0031305	Spring ISD	Harris	0.03	0.001	C
14576-001	TX0127311	523 Venture, Inc/ Becker Road LP[3]	Harris	0.20	0	C
14643-001	TX0128180	Northwest Harris Co MUD #10	Harris	0.09	0	C
14644-001	TX0128198	Redfin Development Co. Inc.	Harris	unk	0	unk
14675-001	TX0128457	Quadvest, LP	Harris	0.32	0	C
14696-001	TX0128660	Loan Oak Partners LP	Harris	unk	unk	unk

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

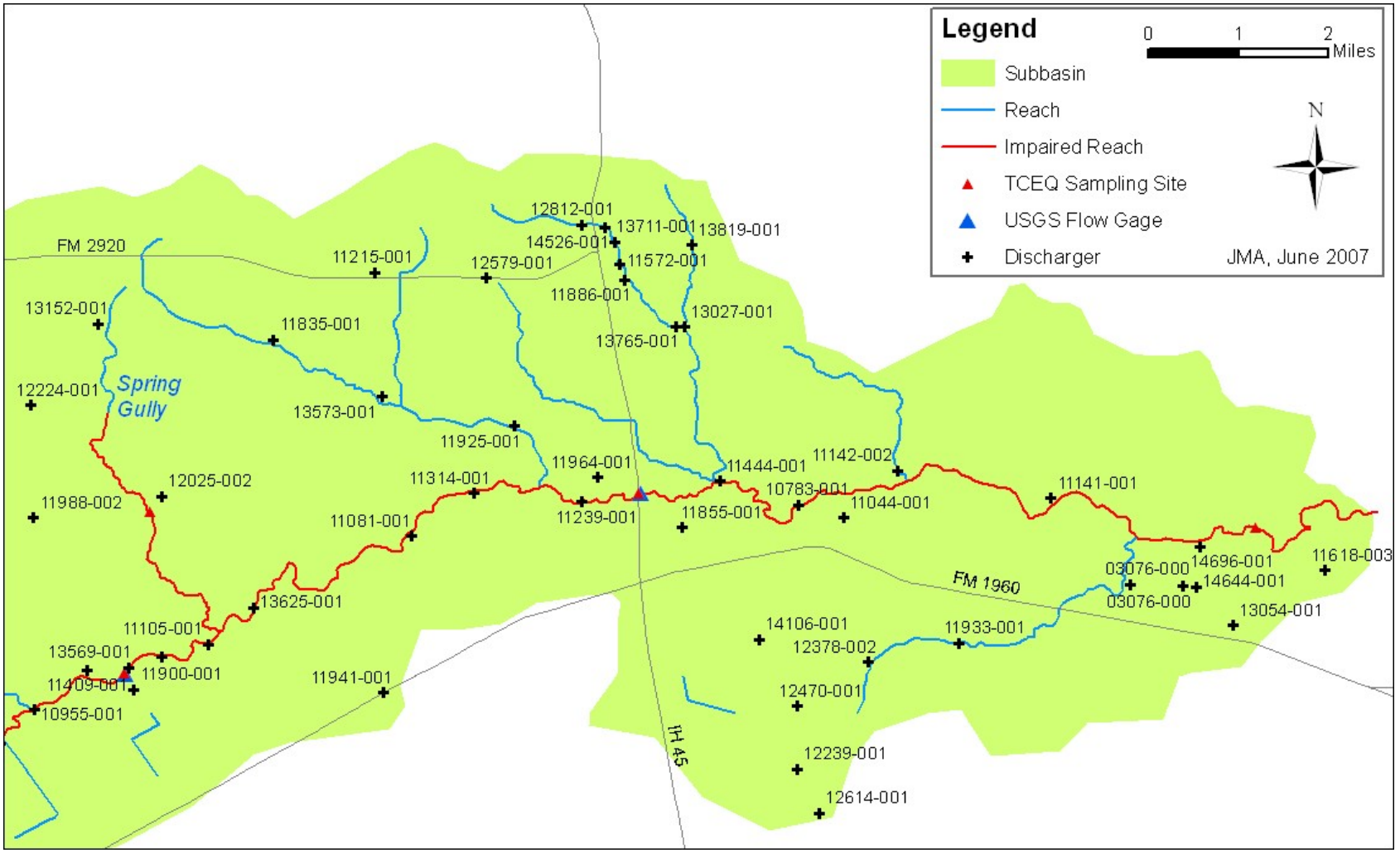

Figure 6-24a: Cypress Creek Treatment Facility Discharge Locations East

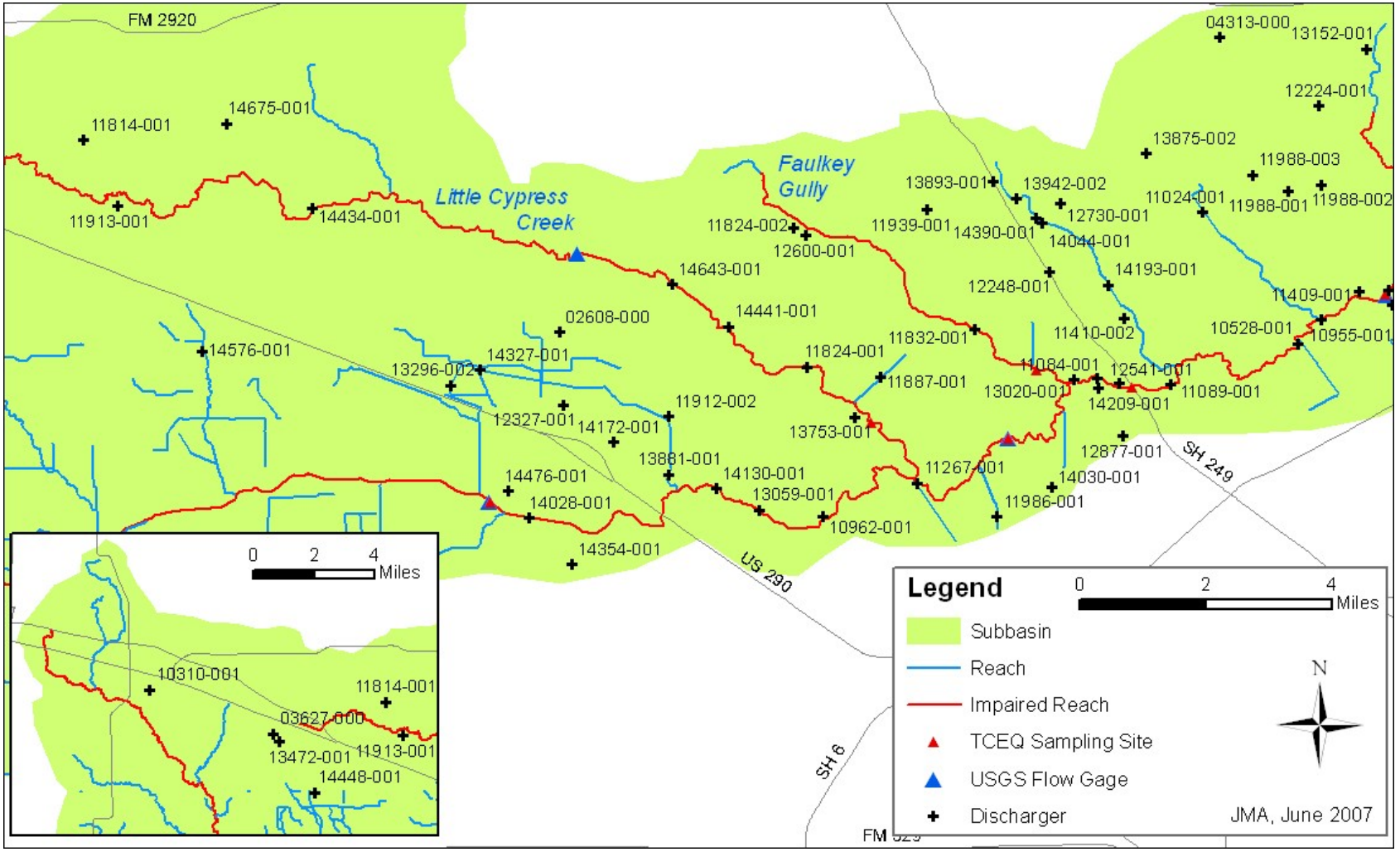

Figure 6-24b: Cypress Creek Treatment Facility Discharge Locations West

7.0 CANEY CREEK, SEGMENT 1010

7.1 TCEQ ASSESSMENT FOR 303(d) LIST

When determining compliance with state water quality criteria, TCEQ often divides segments into various assessment units (AU) to refine the spatial resolution of the impairment. Assessment units for Caney Creek are shown in Table 7-1.

The information included in Table 7-1 is from the *Draft 2006 Texas Water Quality Inventory*, which was used as a basis for the *Draft 2006 Texas 303(d) List* (TCEQ, 2007). The period of record used by TCEQ in this assessment was 1 December 1999 through 30 November 2004. The "# Exceed" column provides the number of samples that exceeded the grab sample criterion for *E. coli* (394 org/100mL). Generally, TCEQ allows up to 25% of the samples to exceed the grab sample criterion before considering the reach impaired. The "Geo. Mean" column provides the geometric mean of the *E. coli* samples. If this number exceeds the criterion of 126 org/100mL, then the reach is considered impaired. As shown, two of the three assessment units were found to be impaired for *E. coli*.

Table 7-1: Caney Creek Assessment Units and Results

Assessment Unit	Segment Name	Assessment Unit Description	# Samples	# Exceed	Geo. Mean	Impaired
1010_02	Caney Creek	FM 1097 to SH 105	42	10	274	Yes
1010_03	Caney Creek	SH 105 to FM 2090	4	0	83	No
1010_04	Caney Creek	FM 2090 to lower segment boundary	81	20	186	Yes

The locations of the assessment units are displayed in Figure 7-1. Also shown in this figure are water quality sampling locations where *E. coli* data have been regularly collected. Generally, each assessment unit corresponds to one or more sampling sites.

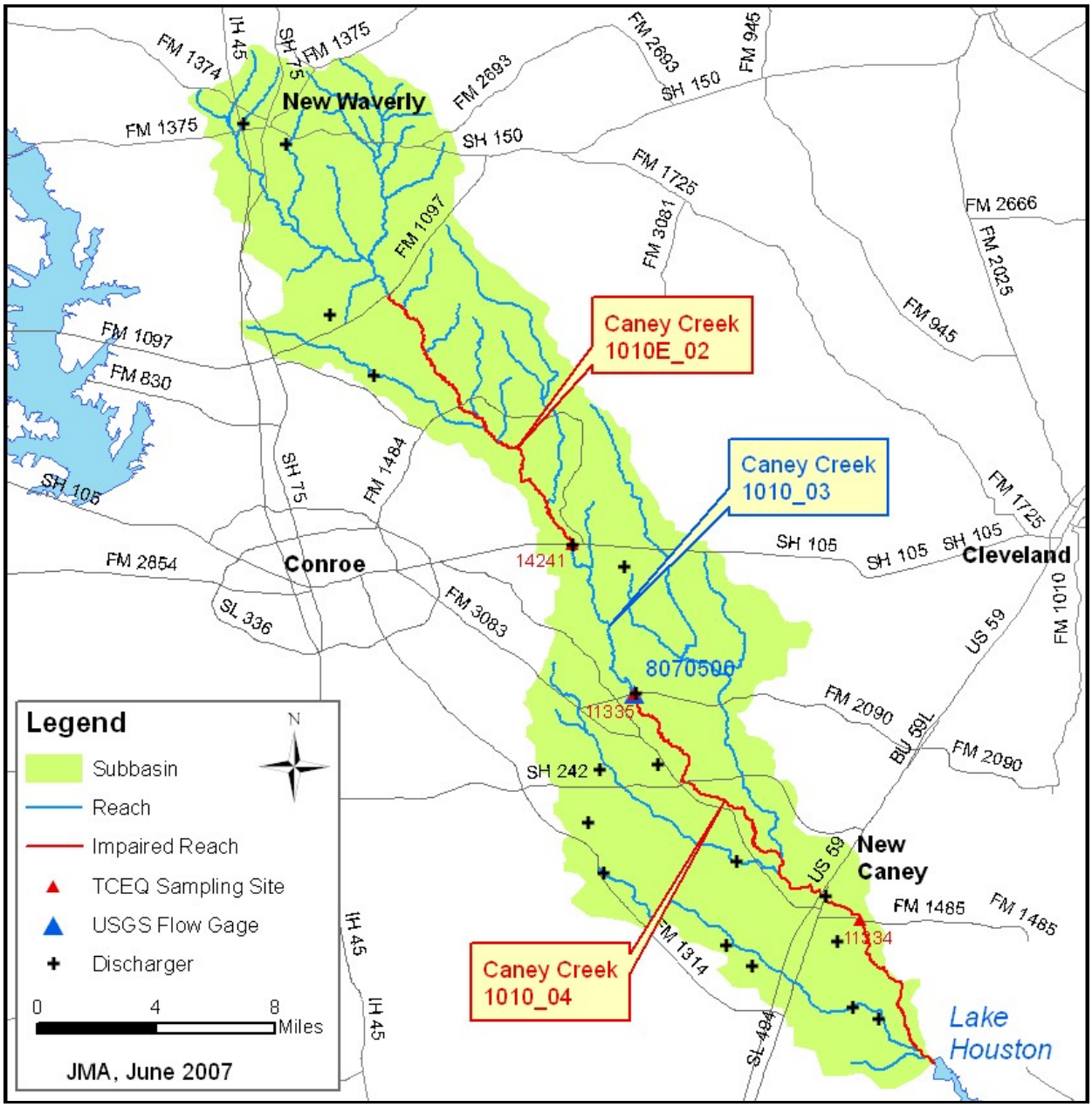

Figure 7-1: Caney Creek Study Area

7.2 SUMMARY OF *E. COLI* DATA BY STATION

With very few exceptions, *E. coli* sampling did not begin until 2000. (Before 2000, samples were only analyzed for fecal coliform.) Table 7-2 provides an inventory of active *E. coli* sampling sites, and Table 7-3 provides a summary of the currently available *E. coli* data for these sites. Table values in bold are indicative of exceedances of state criteria. It is important to note that the data in this table typically cover a longer period of record than that used in the *Draft 2006 Texas Water Quality Inventory*.

Table 7-2: Caney Creek Sampling Sites

TCEQ #	TCEQ Description	USGS #
14241	CANEY CREEK AT SH 105	08070495
11335	CANEY CREEK IMMEDIATELY UPSTREAM OF FM 2090 WEST OF SPLENDORA	08070500
11334	CANEY CREEK IMMEDIATELY DOWNSTREAM OF FM 1485	08070600

Table 7-3: Caney Creek *E. coli* Data Summary

Station	14241	11335	11334
Reach	Caney	Caney	Caney
Begin Date	Jun-00	Dec-02	Jun-00
End Date	Apr-05	Jun-04	May-06
Count	45	9	101
75th Percentile	**338**	170	**360**
Geometric mean	**264**	119	**196**
25th Percentile	104	80	63

7.3 SPATIAL AND TEMPORAL ANALYSIS

Spatial analysis can be helpful when attempting to locate sources of bacteria. Figure 7-2 shows the variation in bacteria concentrations from upstream to downstream across the watershed. Bacteria concentrations do appear to be lowest at the middle station, but this should be observed with caution, since there are relatively few bacteria samples available at this station.

Temporal analysis can be useful for determining the emergence or diminution of bacteria sources over time. Figures 7-3 and 7-4 present bacteria concentration over time for the main stem stations. From these figures, it appears that bacteria concentrations are typically higher in the winter months than in the summer.

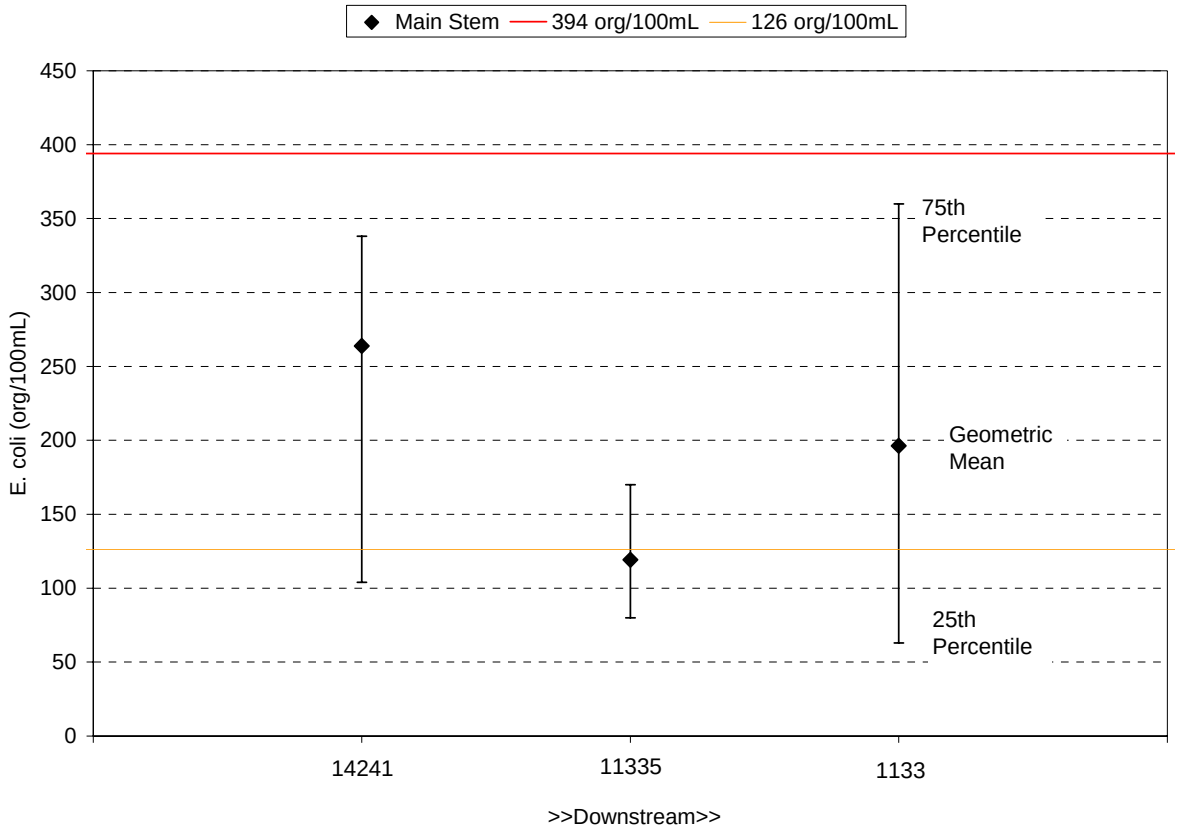

Figure 7-2: Caney Creek Spatial Analysis

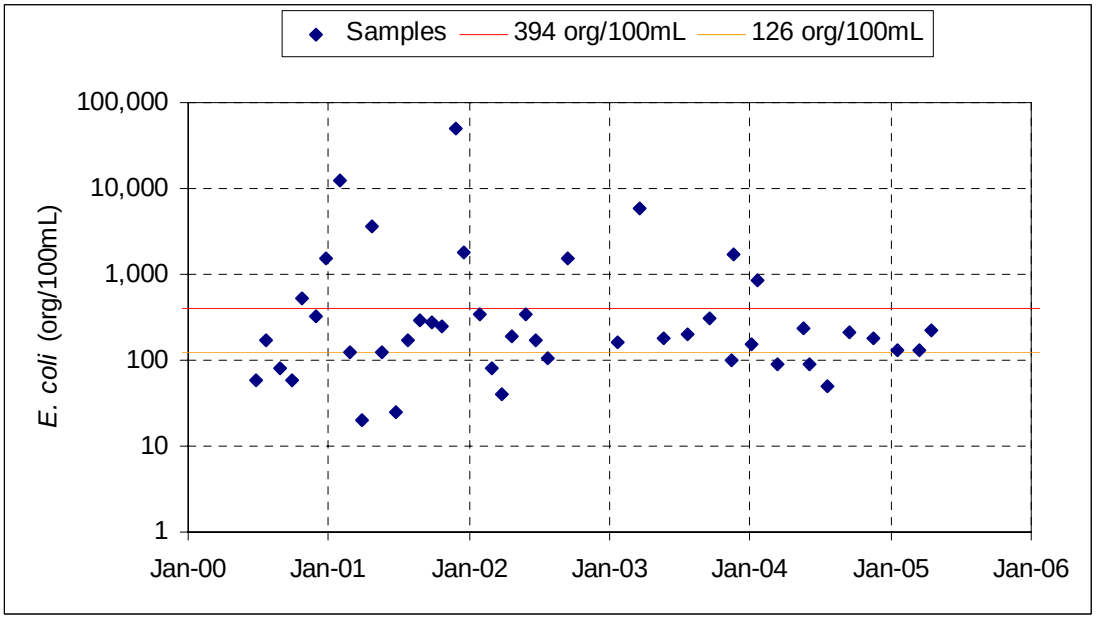

Figure 7-3: Temporal Analysis: Caney Creek at SH 105 (#14241)

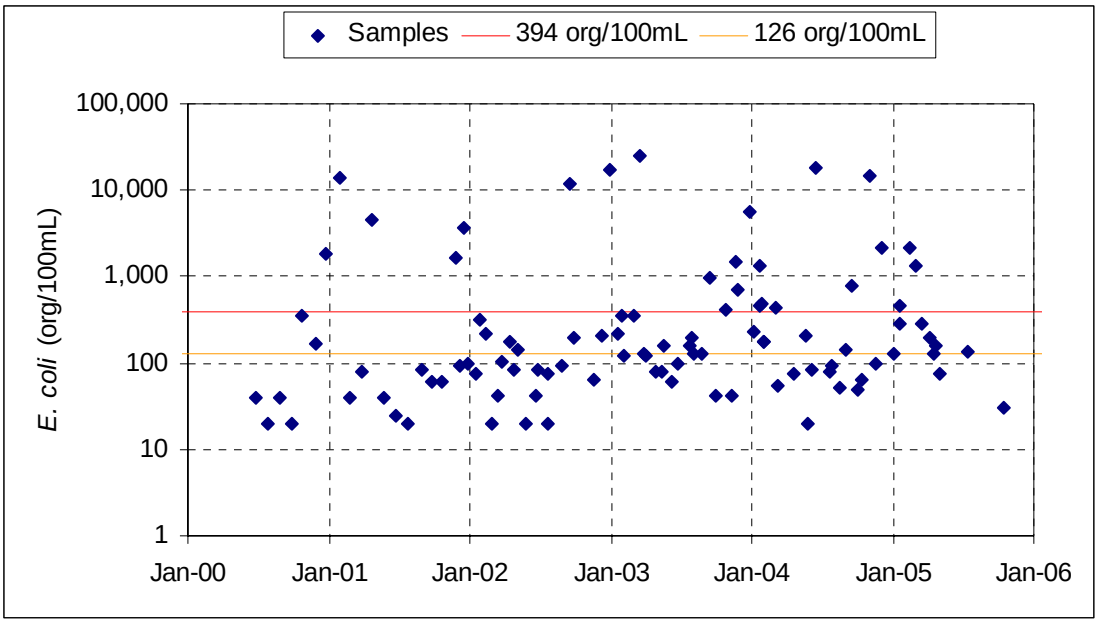

Figure 7-4: Temporal Analysis: Caney Creek at FM 1485 (#11334)

7.4 LOAD DURATION CURVE DEVELOPMENT

7.4.1 Flow Duration Curves

A flow duration curve (FDC) is a graph of daily average streamflow versus the percent of days that the average streamflow value is exceeded. FDCs are typically developed using daily flow data collected at USGS gaging stations. For this project, the desired period of record for FDC development is 1987-2006. Table 7-4 identifies the active USGS flow gaging station in the segment for this time period. The location of this gage is presented in Figure 7-1. The flow duration curve for this station is shown in Figure 7-5.

Table 7-4: Caney Creek USGS Flow Gages

CC

Station	Stream	Location	Available FDC data
08070500	Caney Creek	near Cleveland, TX	1987-2006

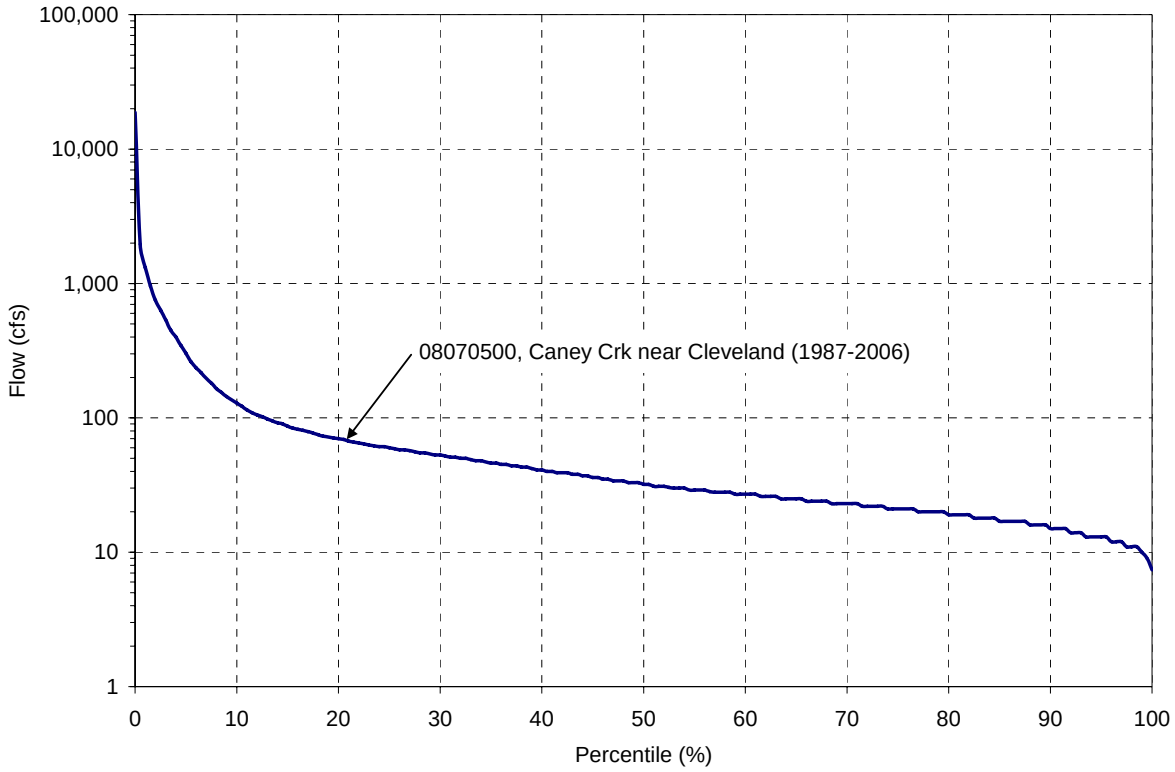

Figure 7-5: Caney Creek Flow Duration Curve

To create load duration curves, each water quality sampling site must have a complete flow record. Since most sampling sites do not have a corresponding USGS flow gage, these records have to be synthesized using nearby gages and drainage area adjustment factors.

7.4.2 Load Duration Curves

This section presents load duration curves for various water quality sampling stations throughout the study area. The bacterial loads are the product of each grab sample bacteria concentration and the corresponding mean daily streamflow rate. Bacteria standards are represented in these figures by curves for the geometric mean and grab sample criteria, 126 org/100mL and 394 org/100mL, respectively. Load duration curves are presented from upstream to downstream along the main segment, and then along tributaries.

An LDC for Caney Creek at State Highway 105 (#14241) is presented in Figure 7-6. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are sometimes observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station.

An LDC for Caney Creek at FM 1485 (#11334) is presented in Figure 7-7. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are often observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station.

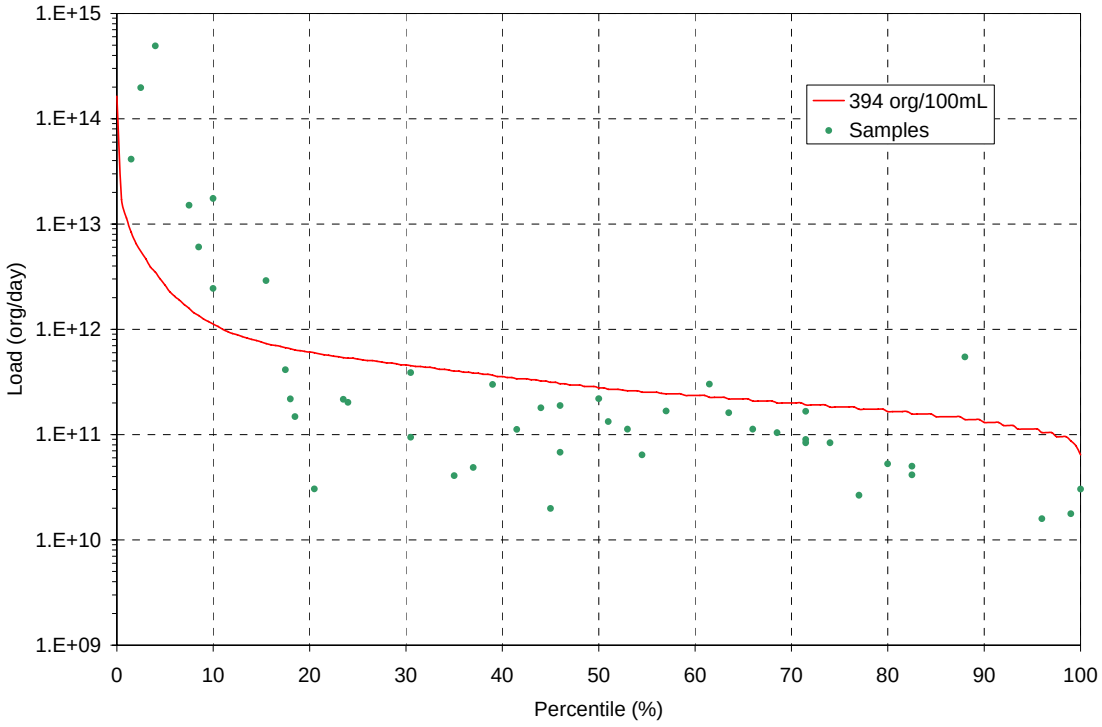

Figure 7-6: LDC for Caney Creek at SH 105 (#14241)

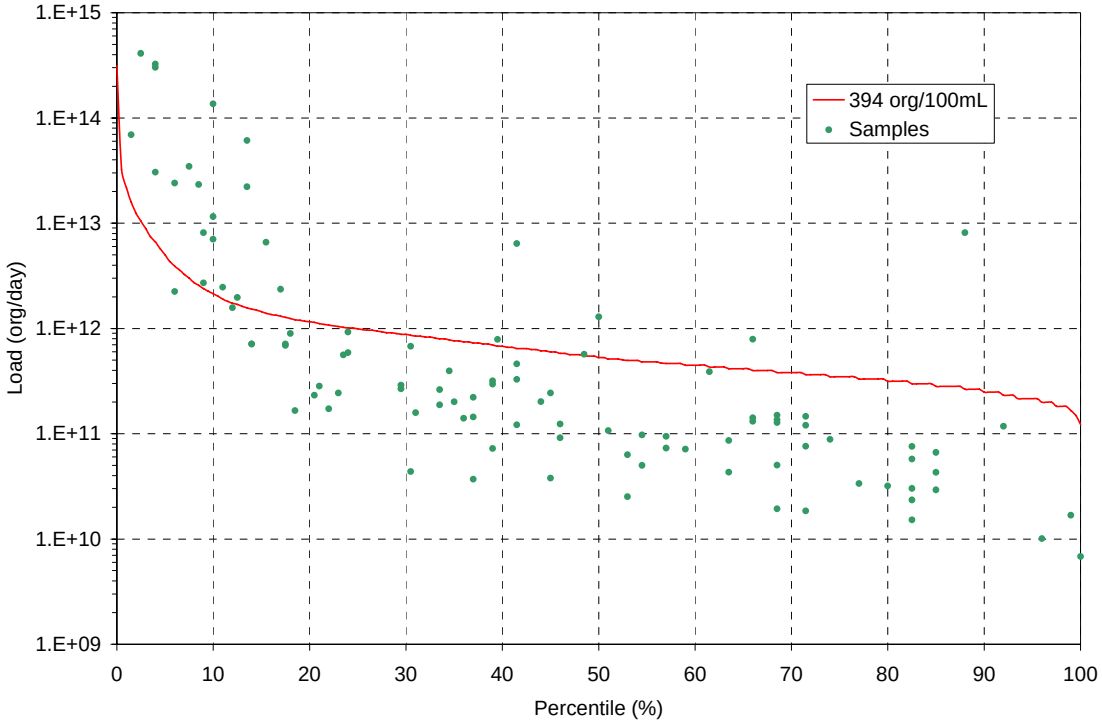

Figure 7-7: LDC for Caney Creek at FM 1485 (#11334)

7.5 DISCUSSION OF POTENTIAL SOURCES

There have historically been two general classifications of sources of pollutants that were distinguished by the mechanism of release to a receiving stream. Sources that were released via a pipe or defined outfall were labeled as "point sources", while sources that were diffuse in nature were labeled as "nonpoint sources". Thus, "point sources" of bacteria would usually include facilities such as wastewater treatment plants. Traditional "nonpoint sources" would include, but not be limited to, leaking sewer systems, failing septic systems, pets, wildlife, livestock, and general urban and rural runoff. However, TMDLs do not always adhere to the traditional usage of the terms point source and nonpoint source.

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Remaining diffuse sources of pollutants that are not covered by permit are defined as "loads" and ultimately are subject to development of the LA. This would include runoff from rural or urban areas outside of permitting jurisdictions.

7.5.1 Upstream Sources

There are no waterbodies upstream of Caney Creek.

7.5.2 Runoff Sources

Runoff sources of bacteria can fall into either the waste load or load category, depending on the presence or absence of a permit allowing for discharge into a waterway. Runoff sources of bacteria can be anticipated based on land use. For example, it has been observed that natural areas typically produce the smallest runoff source loads. This is because they tend to produce the least runoff volume and tend to have the lowest density of fecal sources. Rural (farm and ranch) areas also tend to have smaller source loads for the same reasons. However, in both natural and rural areas, significant bacteria sources can still sometimes exist. For example, natural areas could include dense waterfowl areas, and rural areas could include confined animal pens. Urban areas tend to produce larger bacteria loads. This is generally the result of high impervious cover, which increases the frequency and intensity of runoff events. It can also be the result of an increasing density in potential sources (leaking sewage collection systems, failing septic drainfields, pets, wildlife, etc.).

Land use data for Caney Creek watershed are shown in Figure 7-9. As shown, the watershed includes a wide variety of land uses, ranging from forests, to rangeland, to small urban areas. The source of the data is USGS, 2001.

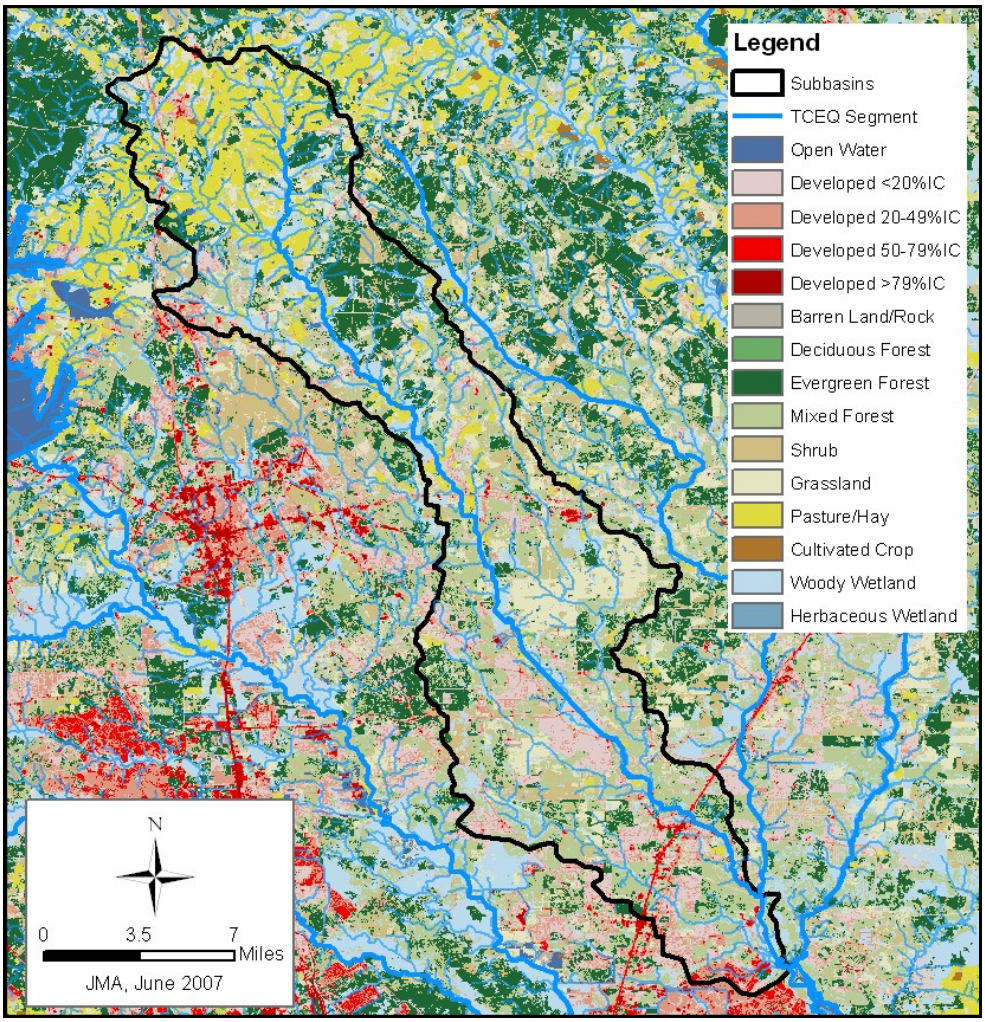

Figure 7-9: Caney Creek Land Use

7.5.3 Wastewater Treatment Facilities

Wastewater treatment facilities have the potential to contribute significant bacteria loads if complete disinfection is not achieved. These loads may be most noticeable under low flow conditions, during which some streams may be effluent dominated. However, it is also possible for treatment plants to contribute significant loads under wet weather conditions. This could be the case if increased loading due to stormwater inflow and infiltration results in poorer plant performance.

Wastewater treatment plants in the Caney Creek watershed are presented in Table 7-5. This table includes the permitted flow, estimated current flow, and disinfection monitoring requirements for each facility. Facilities without monitoring requirements for disinfection (marked "N") are typically facilities without a significant potential bacteria source (i.e. industries or drinking water treatment plants). Treatment facility discharge locations are shown in Figure 7-10. For this segment, the total permitted flow is approximately 4.7 MGD (7.3 cfs), and the total current effluent flow is approximately 1.8 MGD (2.8 cfs). (For facilities with unknown current flows, half the permitted flow was used.) Wastewater treatment facilities can represent a significant portion of the segment's baseflow (which could be defined as the 50^{th} to 99^{th} percentile range of the FDC). At the 50^{th} percentile flow, current effluent discharges account for about 5% of total stream flow, while at the 99^{th} percentile, they account for about 16% of the total flow.

Table 7-5: Caney Creek Wastewater Treatment Facility Summary

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
01497-001	TX0127710	The Signorelli Co.	Montgomery	0.60	0.01	C
11020-001	TX0056685	City of New Waverly	Walker	0.09	unk	C
11020-002	TX0087831	City of New Waverly	Walker	unk	unk	unk
11715-001	TX0068659	Texas National MUD WWTF	Montgomery	0.08	0.01	C
12204-001	TX0083216	Conroe ISD	Montgomery	0.02	0.02	C
12205-001	TX0083208	Conroe ISD	Montgomery	0.02	0.007	C
12274-001	TX0084638	New Caney MUD	Montgomery	1.06	0.67	C
12621-001	TX0091677	Martin Realty & Land, Inc	Montgomery	0.15	unk	C
12670-001	TX0092517	Mountain Man, Inc./ Ranch Utilities, LP[2]	Montgomery	0.18	0.05	C
13690-001	TX0111473	Conroe ISD	Montgomery	0.10	0.09	C
14029-001	TX0117145	LGI Housing, LLC/ Quadvest, LP6	Montgomery	0.60	0.12	C
14081-001	TX0118311	Martin Realty & Land, Inc.	Montgomery	0.15	0	C
14083-001	TX0118818	White Oak Developers, Inc.	Montgomery	0.20	unk	F
14116-001	TX0071412	Montgomery County MUD #24	Montgomery	unk	unk	unk
14285-001	TX0124281	C&R Water Supply, Inc.	Montgomery	0.30	0.09	C
14379-001	TX0125300	East Montgomery Co MUD #3	Montgomery	0.08	0.04	unk
14559-001	TX0127094	Whitestone Houston Land, Ltd.	Montgomery	0.90	unk	C
14694-001	TX0128651	Elan Development, LP	Montgomery	0.18	0	C

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

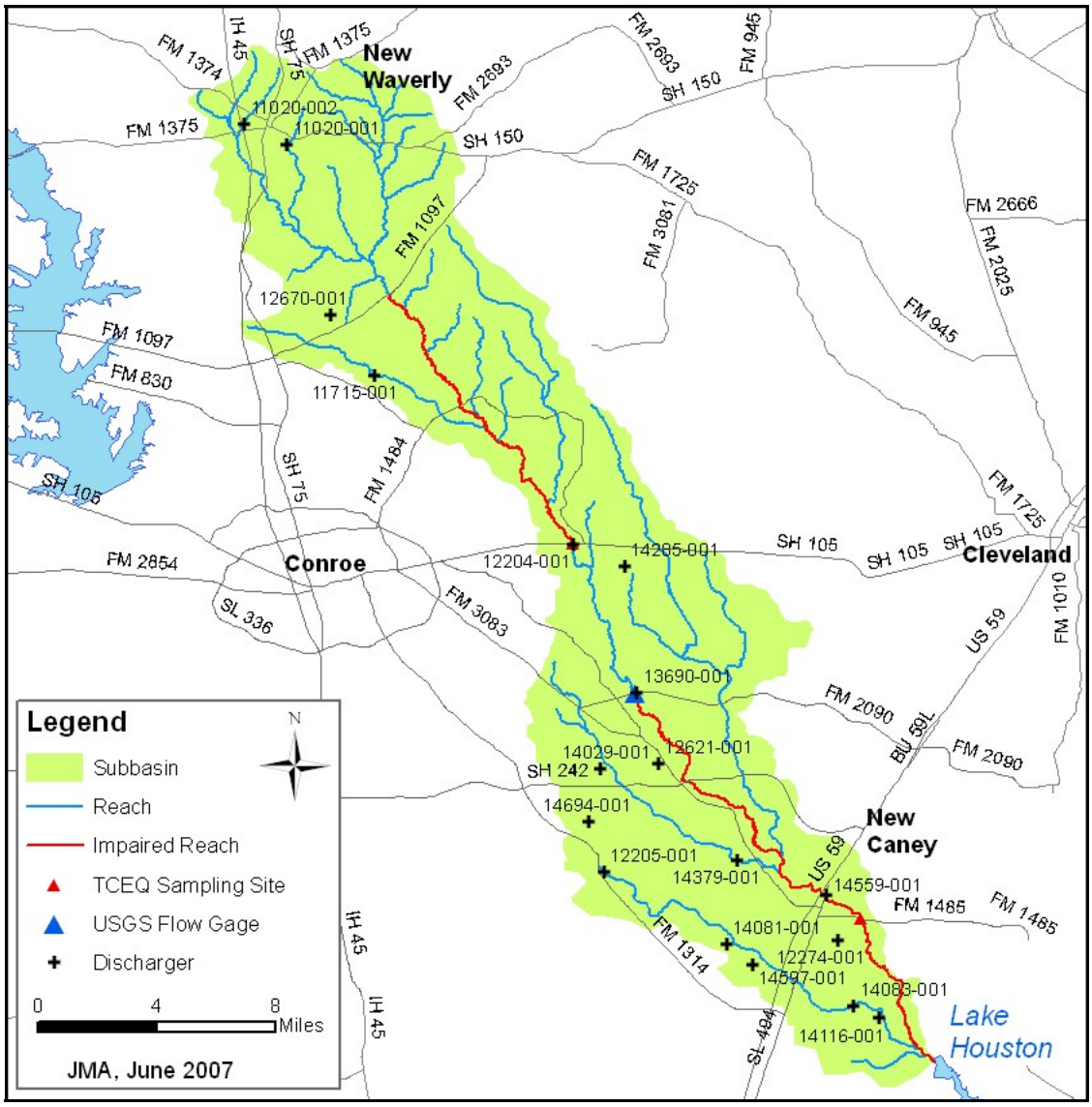

Figure 7-10: Caney Creek Treatment Facility Discharge Locations

8.0 PEACH CREEK, SEGMENT 1011

8.1 TCEQ ASSESSMENT FOR 303(d) LIST

When determining compliance with state water quality criteria, TCEQ often divides segments into various assessment units (AU) to refine the spatial resolution of the impairment. Assessment units for Peach Creek are shown in Table 8-1.

The information included in Table 8-1 is from the *Draft 2006 Texas Water Quality Inventory*, which was used as a basis for the *Draft 2006 Texas 303(d) List* (TCEQ, 2007). The period of record used by TCEQ in this assessment was 1 December 1999 through 30 November 2004. The "# Exceed" column provides the number of samples that exceeded the grab sample criterion for *E. coli* (394 org/100mL). Generally, TCEQ allows up to 25% of the samples to exceed the grab sample criterion before considering the reach impaired. The "Geo. Mean" column provides the geometric mean of the *E. coli* samples. If this number exceeds the criterion of 126 org/100mL, then the reach is considered impaired. As shown, one of the two assessment units was found to be impaired for *E. coli*.

Table 8-1: Peach Creek Assessment Units and Results

Assessment Unit	Segment Name	Assessment Unit Description	# Samples	# Exceed	Geo. Mean	Impaired
1011_01	Peach Creek	Upper segment boundary to US Hwy 59	47	9	105	No
1011_02	Peach Creek	US Hwy 59 to confluence with Caney Creek	81	20	235	Yes

The locations of the assessment units are displayed in Figure 8-1. Also shown in this figure are water quality sampling locations where *E. coli* data have been regularly collected. Generally, each assessment unit corresponds to one or more sampling sites.

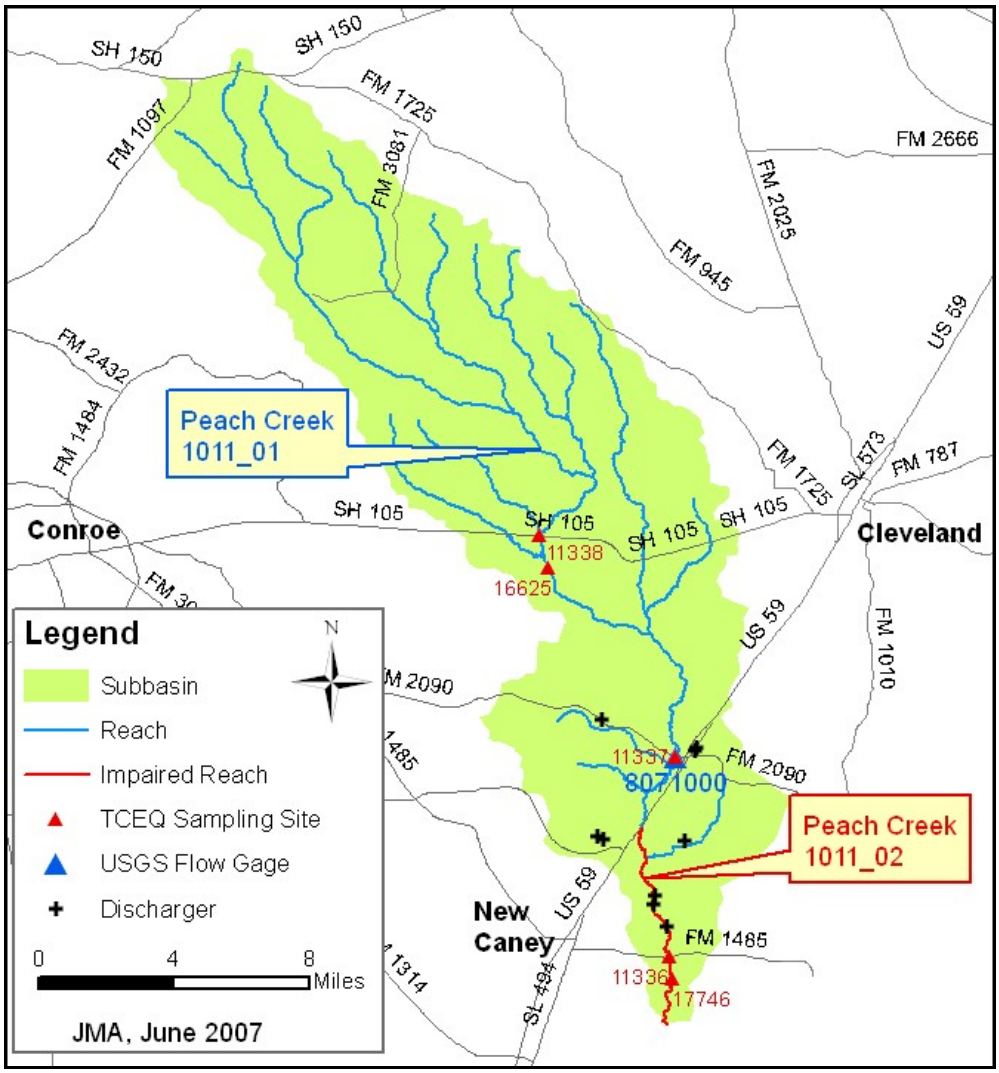

Figure 8-1: Peach Creek Study Area

8.2 SUMMARY OF *E. COLI* DATA BY STATION

With very few exceptions, *E. coli* sampling did not begin until 2000. (Before 2000, samples were only analyzed for fecal coliform.) Table 8-2 provides an inventory of active *E. coli* sampling sites, and Table 8-3 provides a summary of the currently available *E. coli* data for these sites. Table values in bold are indicative of exceedances of state criteria. It is important to note that the data in this table typically cover a longer period of record than that used in the *Draft 2006 Texas Water Quality Inventory*.

Table 3-2: Peach Creek Sampling Sites

TCEQ #	TCEQ Description	USGS #
11338	PEACH CREEK AT SH 105 WEST OF CLEVELAND	08070900
16625	PEACH CREEK IMMEDIATELY UPSTREAM OF OLD HWY 105	
11337	PEACH CREEK BRIDGE AT FM 2090 IN SPLENDORA	08071000
11336	PEACH CREEK AT FM 1485	08071100
17746	PEACH CREEK AT LAKE HOUSTON STATE PARK FOOTBRIDGE 1.09 KM DOWNSTREAM OF FM 1485	

Table 3-3: Peach Creek *E. coli* Data Summary

Station	11338	16625	11337	11336	17746
Reach	Peach	Peach	Peach	Peach	Peach
Begin Date	Dec-02	Jun-00	Dec-02	Jun-00	Oct-03
End Date	Jun-04	Apr-05	Jun-04	May-05	Jul-06
Count	9	41	9	93	10
75th Percentile	140	180	150	**320**	**354**
Geometric mean	86	118	**141**	**236**	**189**
25th Percentile	55	40	88	100	83

8.3 SPATIAL AND TEMPORAL ANALYSIS

Spatial analysis can be helpful when attempting to locate sources of bacteria. Figure 8-2 shows the variation in bacteria concentrations from upstream to downstream across the watershed. As shown, bacteria concentrations generally increase from upstream to downstream across the watershed.

Temporal analysis can be useful for determining the emergence or diminution of bacteria sources over time. Figures 8-3 and 8-4 present bacteria concentrations over time for stations 16625 and 11376. No clear significant temporal trends were observed.

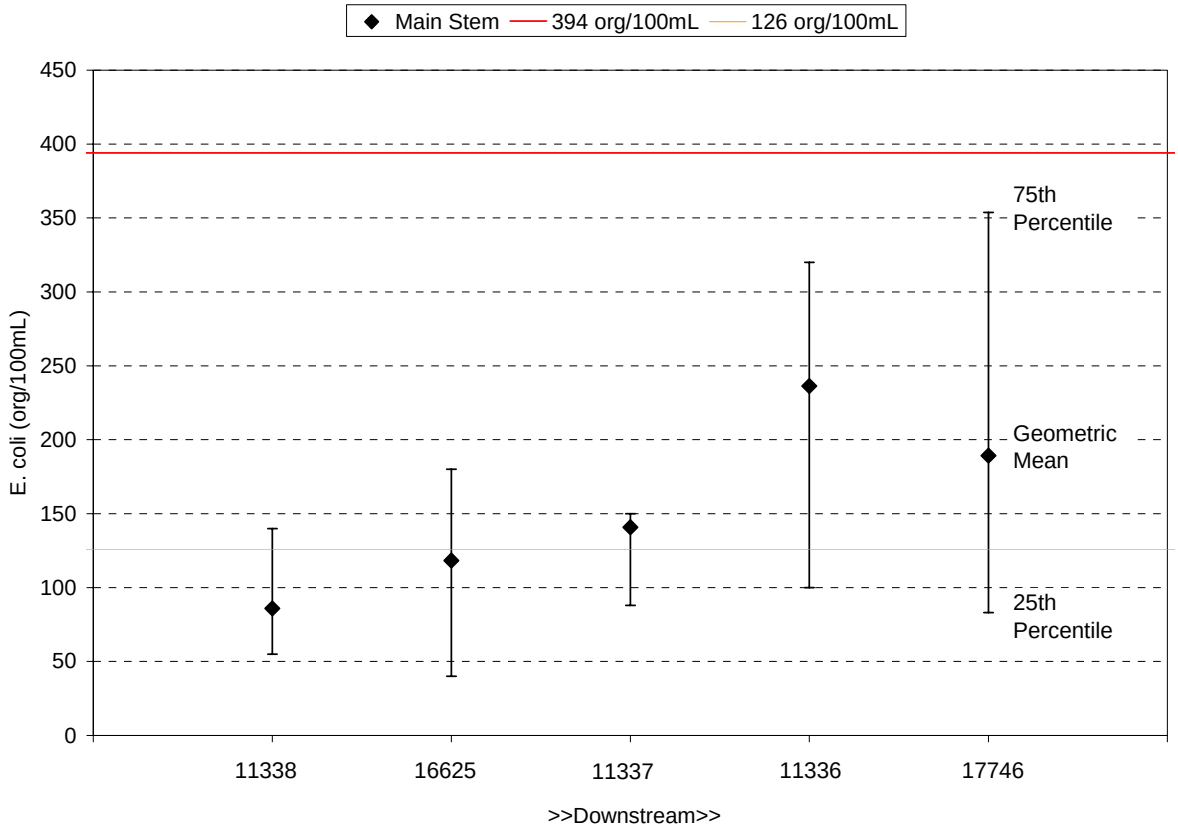

Figure 8-2: Peach Creek Spatial Analysis

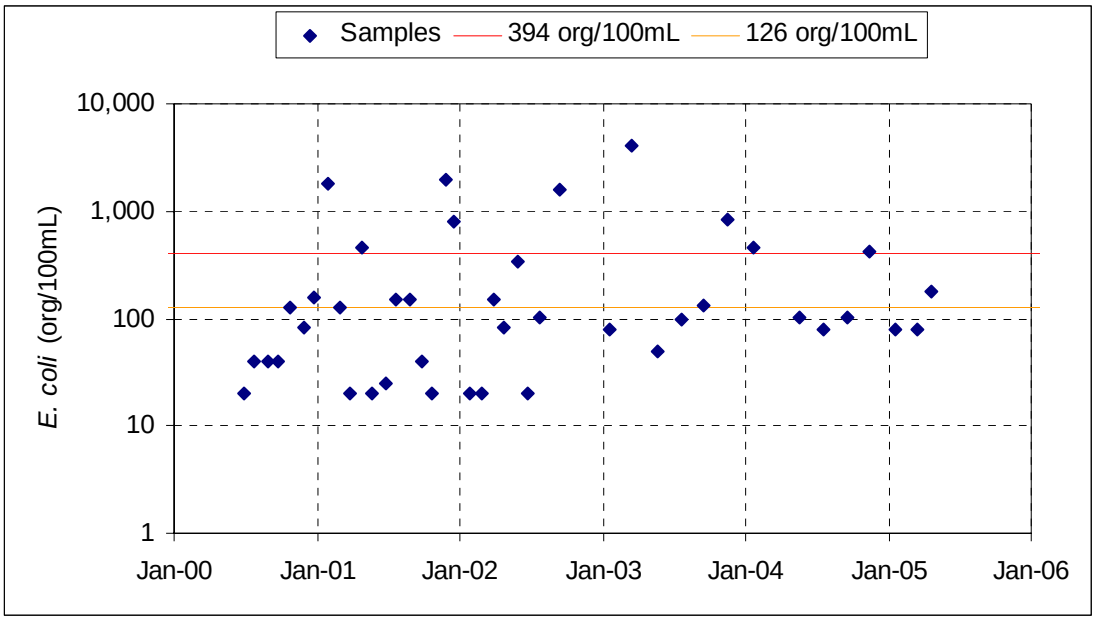

Figure 8-3: Temporal Analysis: Peach Creek at Old Highway 105 (#16625)

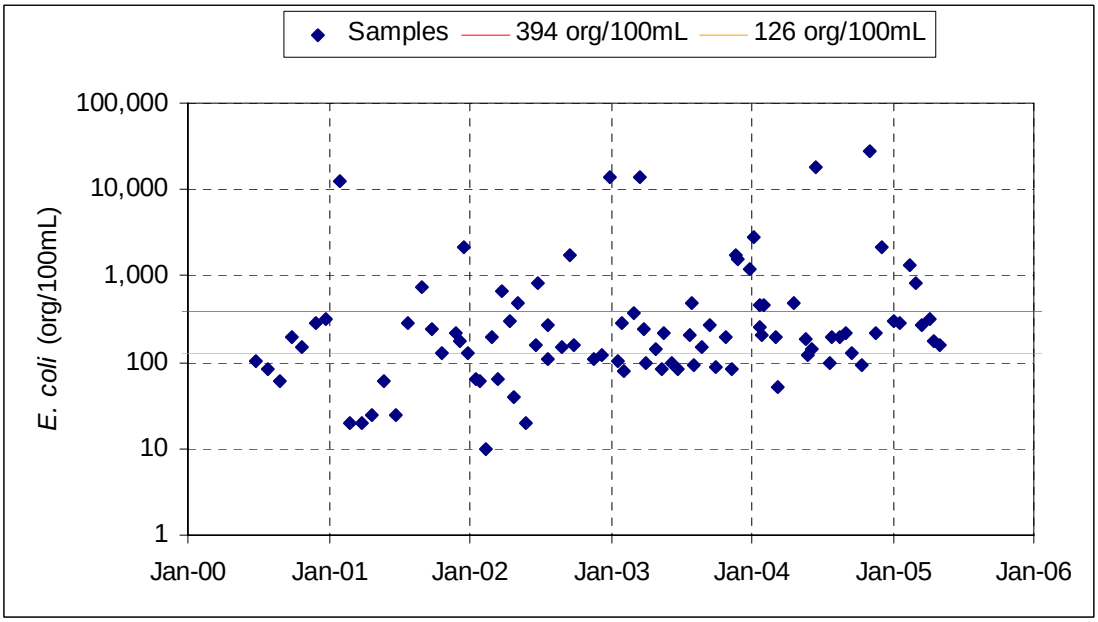

Figure 8-4: Temporal Analysis: Peach Creek at FM 1485 (#11336)

8.4 LOAD DURATION CURVE DEVELOPMENT

8.4.1 Flow Duration Curves

A flow duration curve (FDC) is a graph of daily average streamflow versus the percent of days that the average streamflow value is exceeded. FDCs are typically developed using daily flow data collected at USGS gaging stations. For this project, the desired period of record for FDC development is 1987-2006. Table 8-4 identifies the active USGS flow gaging station in the segment for this time period. The location of this gage is presented in Figure 8-1. The flow duration curve for this station is presented in Figure 8-6.

Table 8-4: Peach Creek USGS Flow Gages

Station	Stream	Location	Available FDC data
08071000	Peach Creek	near Cleveland, TX	1999-2006

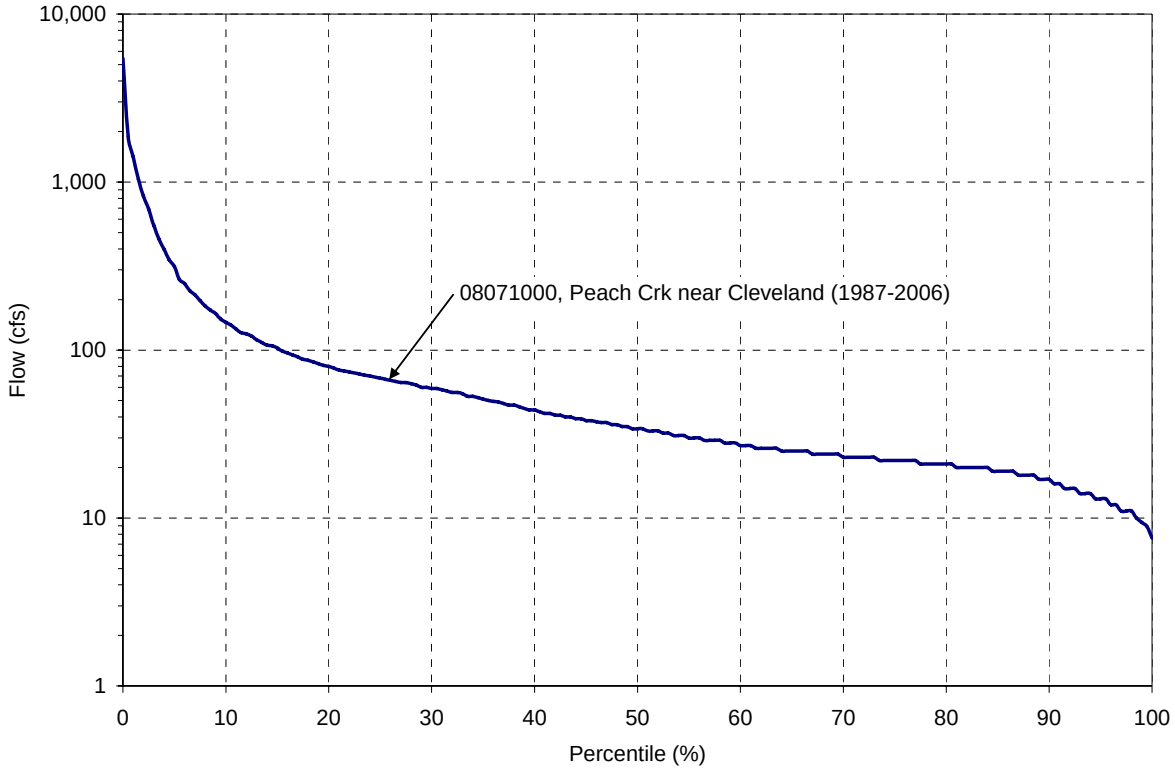

Figure 8-5: Peach Creek Flow Duration Curve

To create load duration curves, each water quality sampling site must have a complete flow record. Since most sampling sites do not have a corresponding USGS flow gage, these records have to be synthesized using nearby gages and drainage area adjustment factors.

8.4.2 Load Duration Curves

This section presents load duration curves for various water quality sampling stations throughout the study area. The bacterial loads are the product of each grab sample bacteria concentration and the corresponding mean daily streamflow rate. Bacteria standards are represented in these figures by curves for the geometric mean and grab sample criteria, 126 org/100mL and 394 org/100mL, respectively. Load duration curves are presented from upstream to downstream along the main segment, and then along tributaries.

An LDC for Peach Creek at Old Highway 105 (16625) is presented in Figure 4-8. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are sometimes observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station. Additional sampling could provide better source characterization at this station.

An LDC for Peach Creek at FM 1485 (Stations 11336 and 17746) is presented in Figure 8-8. The greatest exceedances typically occur under high flow conditions, but high bacteria levels are often observed under lower flow conditions as well. Therefore, it is possible that both wet and dry weather bacteria sources contribute significantly to this station.

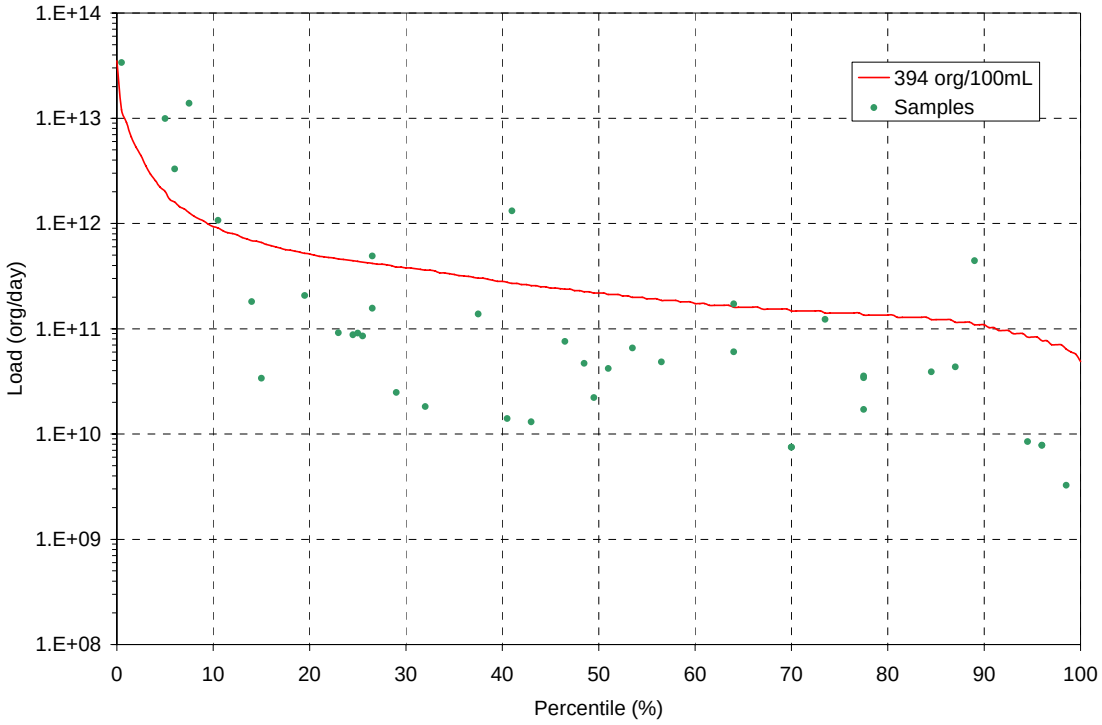

Figure 8-6: LDC for Peach Creek at Old Highway 105 (#16625)

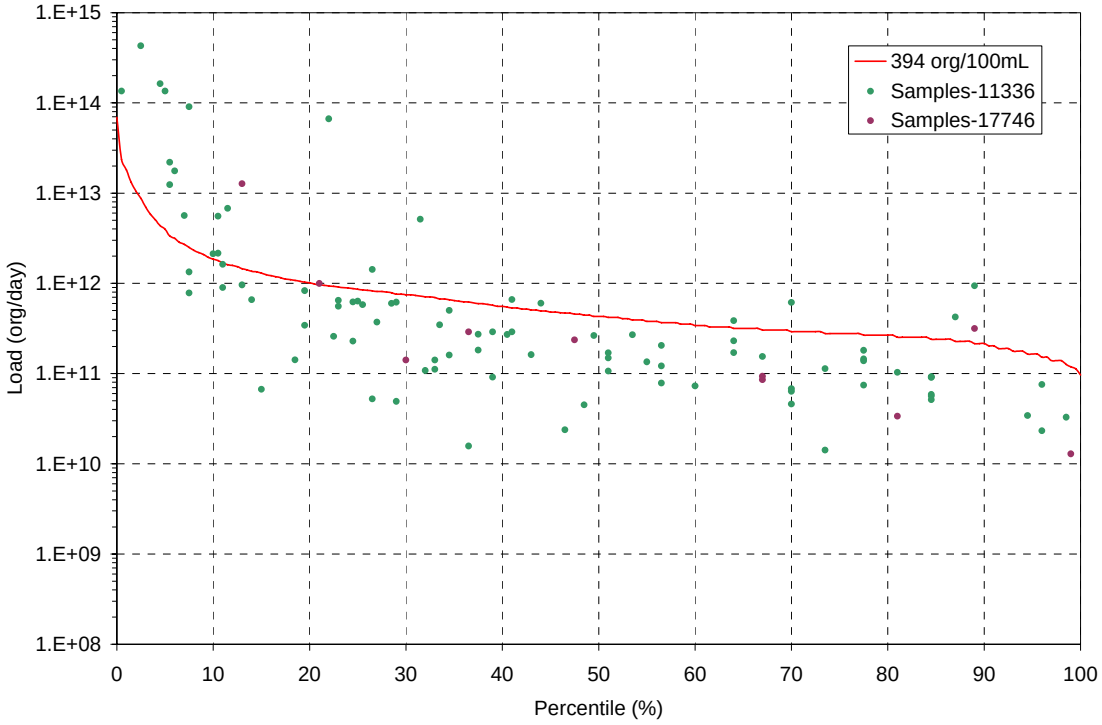

Figure 8-7: LDC for Peach Creek at FM 1485 and Foot Bridge (#11336, 17746)

8.5 DISCUSSION OF POTENTIAL SOURCES

There have historically been two general classifications of sources of pollutants that were distinguished by the mechanism of release to a receiving stream. Sources that were released via a pipe or defined outfall were labeled as "point sources", while sources that were diffuse in nature were labeled as "nonpoint sources". Thus, "point sources" of bacteria would usually include facilities such as wastewater treatment plants. Traditional "nonpoint sources" would include, but not be limited to, leaking sewer systems, failing septic systems, pets, wildlife, livestock, and general urban and rural runoff. However, TMDLs do not always adhere to the traditional usage of the terms point source and nonpoint source.

In accordance with EPA guidance, TMDLs are developed to establish two categories of allocations: wasteload allocations (WLAs) and load allocations (LA). EPA has determined that any source flowing into a waterway and covered by a permit should be classified as a waste load and be included in the WLA category. Thus, the "waste load" category would include not only facilities such as wastewater treatment plants, but also discharges of runoff from municipal areas covered under stormwater permits (MS4s).

Remaining diffuse sources of pollutants that are not covered by permit are defined as "loads" and ultimately are subject to development of the LA. This would include runoff from rural or urban areas outside of permitting jurisdictions.

8.5.1 Upstream Sources

There are no waterbodies upstream of Peach Creek.

8.5.2 Runoff Sources

Runoff sources of bacteria can fall into either the waste load or load category, depending on the presence or absence of a permit allowing for discharge into a waterway. Runoff sources of bacteria can be anticipated based on land use. For example, it has been observed that natural areas typically produce the smallest runoff source loads. This is because they tend to produce the least runoff volume and tend to have the lowest density of fecal sources. Rural (farm and ranch) areas also tend to have smaller source loads for the same reasons. However, in both natural and rural areas, significant bacteria sources can still sometimes exist. For example, natural areas could include dense waterfowl areas, and rural areas could include confined animal pens. Urban areas tend to produce larger bacteria loads. This is generally the result of high impervious cover, which increases the frequency and intensity of runoff events. It can also be the result of an increasing density in potential sources (leaking sewage collection systems, failing septic drainfields, pets, wildlife, etc.).

Land use data for the Peach Creek watershed are shown in Figure 8-10. As shown, the watershed includes a wide variety of land uses, ranging from wetlands, to forests, to rangeland, to urban areas. The source of the data is USGS, 2001.

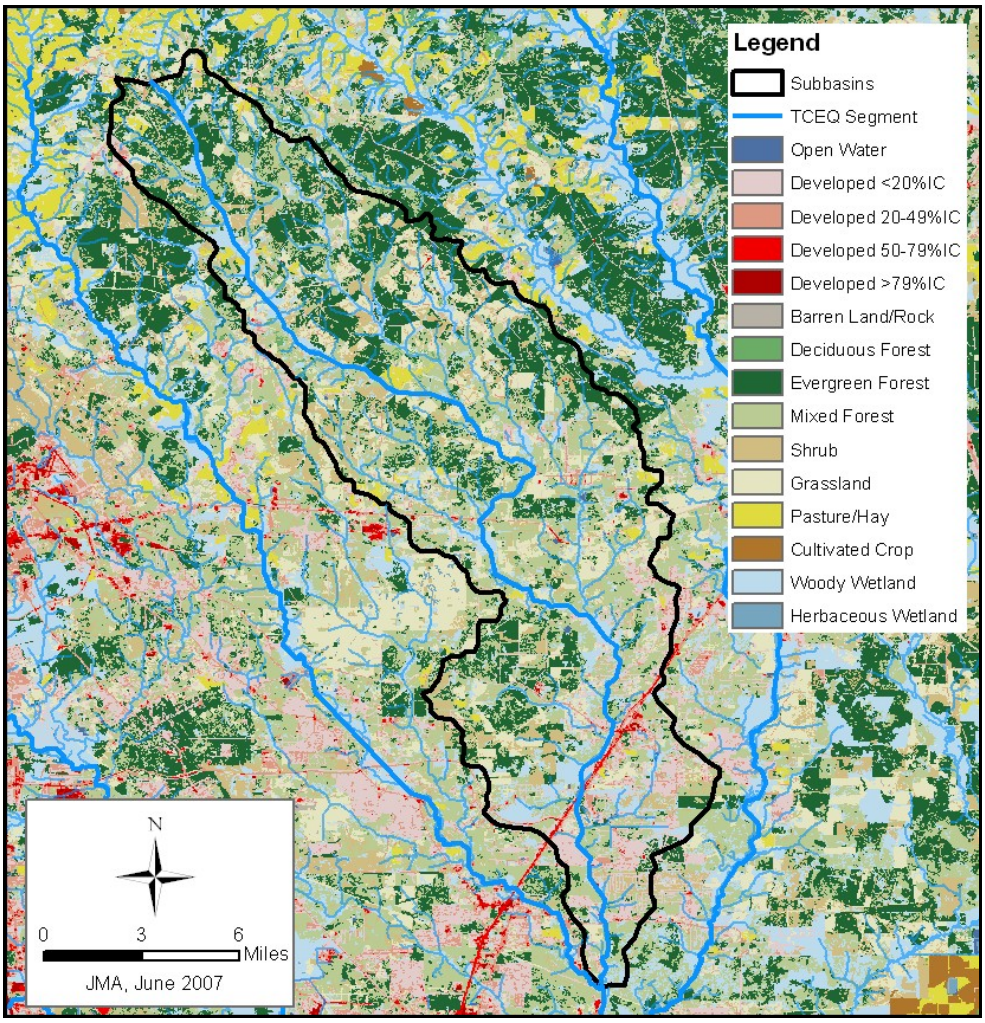

Figure 8-8: Peach Creek Land Use

8.5.3 Wastewater Treatment Facilities

Wastewater treatment facilities have the potential to contribute significant bacteria loads if complete disinfection is not achieved. These loads may be most noticeable under low flow conditions, during which some streams may be effluent dominated. However, it is also possible for treatment plants to contribute significant loads under wet weather conditions. This could be the case if increased loading due to stormwater inflow and infiltration results in poorer plant performance.

Wastewater treatment plants in the Peach Creek watershed are presented in Table 8-5. This table includes the permitted flow, estimated current flow, and disinfection monitoring requirements for each facility. Facilities without monitoring requirements for disinfection (marked "N") are typically facilities without a significant potential bacteria source (i.e. industries or drinking water treatment plants). Treatment facility discharge locations are shown in Figure 8-9. For this segment, the total permitted flow is approximately 2.7 MGD (4.2 cfs), and the total current effluent flow is approximately 0.9 MGD (1.3 cfs). (For facilities with unknown current flows, half the permitted flow was used.) Wastewater treatment facilities can represent a significant

portion of the segment's baseflow (which could be defined as the 50th to 99th percentile range of the FDC). At the 50th percentile flow, current effluent discharges account for about 3% of total stream flow, while at the 99th percentile, they account for about 10% of the total flow.

Table 8-5: Peach Creek Wastewater Treatment Facility Summary

TCEQ Permit Number	EPA Permit Number	Name	County	Permitted Flow (MGD)	Current Flow (MGD)	Disinfection Monitoring
01386-001	TX0078344	Montgomery Co MUD #16	Montgomery	0.18	0.05	C
11143-001	TX0082511	Splendora ISD	Montgomery	0.04	0.02	C
11143-002	TX0117463	Splendora ISD	Montgomery	0.04	0.009	C
11993-001	TX0077241	City of Woodbranch Village	Montgomery	0.13	0.06	C
13389-001	TX0102512	City of Splendora	Montgomery	0.30	0.10	C
13638-001	TX0093220	Roman Forest Consolidated MUD	Montgomery	0.32	0.17	C
14311-001	TX0124583	East Montgomery Co MUD #4	Montgomery	0.75	0	C
14536-001	TX0126853	Flying J Inc.	Montgomery	0.05	0.003	C
14560-001	TX0127108	Whitestone Houston Land, Ltd.	Montgomery	0.90	unk	C

C=chlorine residual, F=fecal coliform, N=none, unk=unknown

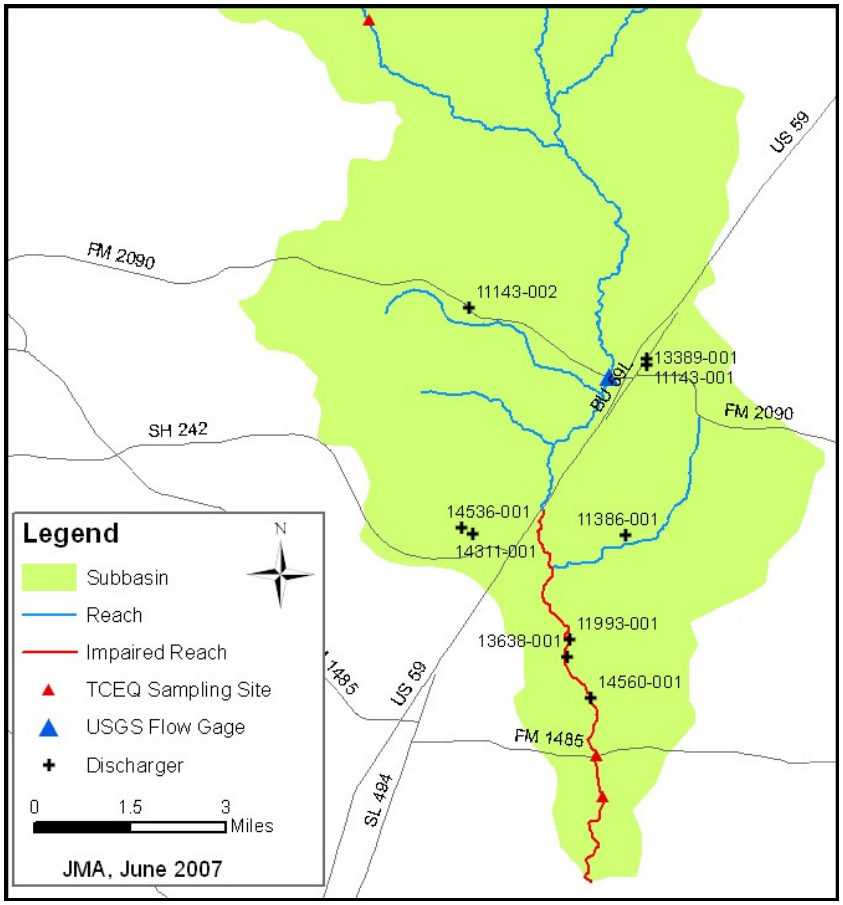

Figure 8-9: Peach Creek Treatment Facility Discharge Locations

APPENDIX: WASTEWATER TREATMENT FACILITY INVENTORY

This appendix includes information from TPDES discharge permits and from the EPA's online *Envirofacts* Data Warehouse (http://oaspub.epa.gov/enviro/ef_home2.water). These two data sources provided similar information, but the TPDES permits included more detailed information on the locations of discharge. The EPA database, on the other hand, provided self-reporting data and records of permit violations not found in TPDES permits. Both data sources were missing records for some of the dischargers. The information in this appendix is useful for determining discharge location, discharge route, ownership, type of facility, and effluent characteristics.

Some dischargers are required to monitor and self-report effluent fecal coliform levels on a monthly basis. The reported data can be in the form of a monthly average, a monthly geometric mean, a maximum 7-day average, or a maximum single grab sample. These monitoring results, as found in the EPA's online database, are included at the back of this appendix. Also included are the monthly flow data for these sources. The data provide an indication of the magnitude of bacterial loads from these sources.

Wastewater Treatment Facility Inventory - Column Descriptions:

Column Name	Column Description
NPDES ID	From EPA NPDES ID, used to sort data
TCEQ Seg. #	TCEQ stream segment #
TCEQ Permit Number	TCEQ's identification number for discharge
EPA NPDES Number	EPA's identification number for discharger
Name	Name of discharging entity
Plant Location	Location of discharge facility
County	County of discharge facility
Discharge Route	Description of discharge flow path
Permit Information Source	Available source of information (TCEQ permit and/or EPA database)
Status Notes	Current status of the facility (if blank, the plant is believed to be active)
Seasonal Limits	Seasonal periods for effluent limits (may apply to the following 5 columns)
Permitted flow [MGD]	Daily average flow limit
CBOD [mg/l]	Daily average CBOD limit, (lower values indicate higher level of treatment)
TSS [mg/l]	Daily average TSS limit, (lower values indicate higher level of treatment)
NH3N [mg/l]	Daily average ammonia limit, (lower values indicate higher level of treatment)
Chlorine Residual [mg/l]	Minimum chlorine residual, (indicates that chlorine is used as disinfectant)
Fecal Coliform [org/100mL]	Fecal coliform effluent limit (daily average unless noted otherwise)
Address 1	Line 1 of owner's address
Address 2	Line 2 of owner's address
City/State/ Zip	City, state, and zip code of owner
Flow Date	Date of last recorded flow statistics
Flow-effluent gross	Average flow for last day
Flow-annual	Average flow for last year
Disinfection Violations	Disinfection-related violations found in EPA database
Other comments	Comments

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
5592	1004	00584-000	TX0005592	Huntsman Petrochemical Corp	5 mi east of City of Conroe, 0.25 mi south of FM 1485, 0.5 mi west of City of Cut-N-Shoot	Montgomery	to West Fork Crystal Creek, to Crystal Creek, to West Fork San Jacinto River	TCEQ, EPA			0.75	report	report	report	na	na	5451 Jefferson Chemical Rd		Conroe, TX 77301	28-Feb-07	0.384	na	0	
20206	1004	11097-001	TX0020206	City of Panorama Village	North side of League Line Road	Montgomery	to East Fork White Oak Creek	EPA			0.4	10	15	3	1	na	99 Hiwon Drive		Panorama Village, TX 77304	28-Feb-07	0.228	na	10/31/06, minimum of .5	
20974	1008	10908-001	TX0020974	Harris County WCID #92	northeast end of Bell Chase Lane, 2 miles east of the City of Spring	Harris	to Spring Creek	TCEQ, EPA			0.7	10	15	3	1	na	c/o Coats, Rose, Yale, Ryman & Lee PC	1001 Fannin Street	Houston, TX 77002	28-Feb-07	0.416	na	0	
21211	1009	11024-001	TX0021211	Harris Co WCID #119	2000 ft south of Spring Cypress Rd, 5000 ft east of intersection of Louetta and Spring Cypress Rd	Harris	to Dry Gully, to Cypress Creek	TCEQ, EPA			0.995	7	15	2	1	na	1300 Post Oak Blvd, Suite 1400		Houston, TX 77056	28-Feb-07	0.415	na	0	
22055	1004	11395-001	TX0022055	Montgomery Co MUD #15	on Gleneagles Dr., 500 ft north of Needham Rd	Montgomery	pipe to unmaed drainage ditch, to unnamed trib, to West Fork San Jacinto River	TCEQ			0.9	10	15	3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002					
22268	1004	10008-002	TX0022268	City of Conroe	north of confluence of Lake Creek and San Jacinto River, at end of Old Magnolia Rd, 2.5 mi west of IH 45 and 2.5 mi south of FM 2845	Montgomery	to West Fork San Jacinto River	TCEQ, EPA			10	10	15	2	1	na	PO Box 3066		Conroe, TX 77305	28-Feb-07	6.1	5.972	0	There were pretreatment audits
22381	1008	10616-001	TX0022381	City of Tomball	615 Eaast Huffsmith, 1400 ft north of intersection of Neal Street and East Huffsmith Rd in City of Tomball	Harris	to Bogs Gully, to Spring Creek	TCEQ, EPA			1.5	10	15	3	1	na	401 Market St, Suite C		Tomball, TX 77375	31-Jan-07	0.926613	0.673	0	
23612	1009	10783-001	TX0023612	Inverness Forest ID	north side of Cypress Creek, 800 ft east of the Hardy Rd bridge crossing Cypress Creek	Harris	to Cypress Creek	TCEQ, EPA			0.5	10	15	3	1	na	c/o Johnson, Radcliffe, Pertroy & Bobbit PLLC	1001 McKinney Street, Suite 1000	Houston, TX 77002	31-Oct-06	0.198	na	0	
24759	1008	11001-001	TX0024759	Southern Montgomery County MUD	852 Rayford Road, 3500 feet north of Spring Creek and 4000 feet east of IH 45	Montgomery	Montgomery Co. Drainage District #6 then to Spring Creek	EPA			2	10	15	3	1	na	25212 Interstate Highway 45		Spring, TX 77386	30-Apr-07	1.007	0.972	0	
25399	1008	10857-001	TX0025399	Montgomery Co WCID #1	11 mi south of the City of Conroe, 3 mi west of IH 45 crossing of Spring Creek and at the south end of Glen Loch Drive in the Timber Ridge-Timber Lake subdivision	Montgomery	to Spring Creek	TCEQ, EPA			0.42	10	15	3	1	na	PO Box 7690		The Woodlands, Texas 77387	28-Feb-07	0.24005	na	0	
25674	1004	10978-001	TX0025674	River Plantation MUD	1.5 mi downstream from ih 45 bridge, on north bank of West Fork San Jacinto River	Montgomery	to unnamed trib, to West Fork San Jacinto River	TCEQ, EPA			0.6	10	15	3	1	na	PO Box 747		Conroe, TX 77305	28-Feb-07	0.4065	na	0	
26221	1008	11574-001	TX0026221	Spring Creek UD	1 mile west of intersection of Riley Fuzzel Rd and Rayford Rd	Montgomery	to Montgomery County Drainage Distric #6 Channle III F, to Spring Creek	TCEQ, EPA			0.93	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	30-Nov-06	0.439	na	0	
26255	1008	11404-001	TX0026255	Dowdell PUD	northwest of intersection of Kuykendahl Rd and Dowdell Rd, 1 mile east of FM 2920 and 7 miles west of IH 45	Harris	to Willow Creek to Spring Creek	TCEQ, EPA			0.95	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	31-Mar-07	0.234	na	0	
26450	1009	10528-001	TX0026450	Harris Co. FWSD # 52	2.75 mi northeast of intersection of FM 1960 and FM 149	Harris	to Cypress Creek	TCEQ, EPA			0.7	10	15	3	1	na	c/o Lockwood, Andres, & Newnam, Inc.	2925 Briarpark Dr, 5th Floor	Houston, TX 77042	31-Mar-07	0.32	na	0	
28169	1003	01905-000	TX0028169	New Waverly Ventures Ltd Co	3 mi north of City of New Waverly, east side of US 75	Walker	to drainage ditch, to Gourd Creek, to Winters Bayou, to East Fork San Jacinto River	TCEQ, EPA			variable	na	na	na	na	400 grab	PO Box 368		New Waverly, TX 77358	31-Jan-07	0.101648	na	f.coliform: 07/31/06- 927 (max limit 400); many overdue violations	see: separate worksheet for additional data

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
31305	1009	14526-001	TX0031305	Spring ISD	950 Wunsche Loop Road; 1.2m east of IH	Harris	to Wunsche Ditch, to Lemm Gully, to Cypress Creek	EPA			0.03	10	15	3	1	na	15330B Kuykendahl Road		Houston, TX 77090	31-May-06	0.001	na	freq. overdue; violations since 05/31/06	
32476	1009	01310-001	TX0032476	City of Waller	102 Walnut Street, 4500 ft southeast of intersection of US 290 and FM 362	Waller	to unnamed trip, to Mound Creek, to Cypress Creek	TCEQ			0.9	7	15	2	1	na	PO Box 239		Waller, TX 77484					
34681	1004	02365-000	TX0034681	Maverick Tube, L.P.	south side and adjecent to RR	Montgomery	to unnamed ditch to unnamed trib	EPA			0.11	na	na	na	na	na	Po Box 659		Conroe, TX 77305	30-Apr-07	0.028	na	does not report chlorine	
42099	1008	13648-001	TX0042099	Encanto Real UD	3.25 mi northwest of intersection of IH 45 and Spring-Stuebner Rd	Harris	to pipe, to Spring Creek	TCEQ, EPA			0.25	10	15	3	1	na	c/o David M. Marks, PC	2001 Kirby Dr, Suite 1111	Houston TX 77019	28-Feb-07	0.077	na	0	
46639	1009	11105-001	TX0046639	Bammel UD	south bank of Cypress Creek, 6400 ft downstream of crossing of Cypress Creek by Stuebner-Airline Rd.	Harris	to Cypress Creek	TCEQ, EPA		mar-oct / nov-feb	2.6	7/10	15	2/3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	28-Feb-07	0.948	1.06		
46663	1009	11215-001	TX0046663	Meadowhill Regional MUD	23102 Roseville Dr., 2 miles west of the intersection of IH 45 and FM 2920	Harris	to HCFD k123-02-03, to HCFD K124-02-00, to Seals Gully, to Cypress Creek	TCEQ, EPA		apr-oct / nov-mar	2.4	7/10	12/15	2/3	1	na	c/o Johnson, Radcliffe, Petroy & Bobbit PLLC	1001 McKinney Street, Suite 1000	Houston, TX 77002	31-Jan-07	0.625129	0.519	0	
46671	1009	11044-001	TX0046671	Memorial Hills UD	south of Cypress Creek, 600 ft north east of the intersection of FM 1960 and Hardy Rd.	Harris	to HCFD K-117-00-00, to Cypress Creek	TCEQ, EPA			0.5	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	31-Mar-07	0.188	na	0	
46680	1009	11142-002	TX0046680	Timber Lane UD	0.5 miles southwest of the intersection of Wood River dr and Aldine-Westfield Rd, 2.75 mi northeast of intersection of FM 1960 and IH 45	Harris	to Schultz Gully, to Cypress Creek	TCEQ, EPA		mar-oct / nov-feb	2.62	7/10	15	2/3	na	200	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	31-Dec-06	0.924387	0.929	Fecal coli measurements	see: separate worksheet for additional data
46701	1009	11089-001	TX0046701	Prestonwood Frest UD	14210 Prestonwood Forest Dr., 3100 ft east of intersection of Cypress Creek and SH 249, 9 mi southeast of City of Tomball	Harris	to Cypress Creek	TCEQ, EPA		apr-oct / nov-mar	0.95	7/10	15	2/3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	28-Feb-07	0.322	na	0	
46710	1009	10955-001	TX0046710	Harris County WCID #116	5335 Strack Road; 5000 feet west of Strack Road and Stuebner-Airline Road	Harris	to Cypress Creek	EPA		Apr-Oct/ Nov.- Mar	1.3	7/10	15	2/3	1	na	5135 Cobles Corner		Houston, TX 77069	31-Mar-07	0.637	0.652	01/31/05, 02/28/05- minimums of .98, .9	
46728	1009	11141-001	TX0046728	Treschwig Joint Powers Board	north bank of Cypress Creek, 1 mile north of FM 1960 and 2.5 mi easth of Mo Pac railroad	Harris	to Cypress Creek	TCEQ, EPA		apr-oct / nov-mar	2	7/10	15	2/3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	31-Mar-07	1.218	1.201	0	
46736	1009	11444-001	TX0046736	Harris County WCID #99	North Cypress Creek, 4600 ft. east of IH-45	Harris	to Cypress Creek	EPA			0.225	10	15	3	1	na	PO Box 11750		Springn, TX 77391	30-Apr-07	0.089	na	6/30/2005- minimum of .02	
46744	1009	11314-001	TX0046744	Aqua Texas, Inc	2 mi northwest of intersection of IH 45 and FM 1960	Harris	to Cypress Creek	TCEQ, EPA			0.4	10	15	3	1	na	2211 Louetta Rd		Spring, TX 77388					No measurements reported; pipe active
46761	1009	11081-001	TX0046761	Ponderosa Joint Powers Agency	17940 Butte Creek Drive in Houston, south of Cypress Creek, 2.3 miles west of IH 45	Harris	to Cypress Creek	TCEQ, EPA			4.87	7	15	2	1	na	17940 Butte Creek Drive		Houston, TX 77090	31-Jan-07	3.00123	2.897	0	
46779	1009	11366-001	TX0046779	Cypress-Klein UD	Cypresswood Blvd, 1500 ft north of Cypress Creek, 3500 ft north of intersection of Steubner-Airline Rd. and Strack Rd	Harris	to Cypress Creek	TCEQ, EPA			0.7	10	15	3	1	na	1001 Fannin St., Suite 800		Houston, TX 77002	30-Apr-07	0.314	na	0	
46817	1009	11409-001	TX0046817	Kleinwood Joint Powers Board	15903 Squyres	Harris	to Cypress Creek	TCEQ, EPA		apr-oct / nov-mar	5	7/10	15	2/3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	31-Mar-07	2.119	2.162	0	

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46833	1009	11084-001	TX0046833	Lake Forest Plant Advisory Council	south of Cypress Creek, 0.5 mi west of SH 249 and 1.25 mi north of Grant Road	Harris	to Cypress Creek	TCEQ, EPA		nov-feb / mar-oct	2.76	10/7	15	3/2	1	na	14223 Lakewood Drive		Houston, TX 77070	30-Apr-07	1.803	1.331	0	
46841	1009	11410-002	TX0046841	Charterwood MUD	15820 Quill Dr., Houston, TX	Harris	to Pilot Gully to Cypress Creek	TCEQ, EPA			1.6	10	15	3	1	na	c/o Coats, Rose, Yale, Ryman & Lee PC	3 East Greenway Plaza, Suite 2000	Houston, TX 77046	30-Apr-07	0.282	na	0	
46868	1009	11267-001	TX0046868	Timberlake ID	12702 Jarvis, south of Cypress Creek, 3.2 mi north of intersection of US 290 and FM 1960	Harris	to Harris Co Flood Control Ditch k163-00-00, to Cypress Creek	TCEQ, EPA			0.4	10	15	3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	31-Jan-07	0.257	na	0	
47775	1009	11572-001	TX0047775	Pilchers Property LP/ Northland Joint Venture[1]	700 ft east of IH 45 next to Northland Shopping Center, 1000 ft south-southeast of intersection of IH 45 and FM 2920	Harris	to Wunsche Ditch, to Lemm Gully, to Cypress Creek	TCEQ, EPA			0.06	10	15	3	1	na	7001 Preston Road, Suite 200		Dallas, TX 75205	28-Feb-07	0.025	na	0	
53473	1003	10766-001	TX0053473	City of Cleveland	south of SH 105, 0.5 mi west of intersection of SH 105 and US 59	Liberty	to East Fork San Jacinto River	TCEQ, EPA			0.75	10	15	3	1	na	203 East Boothe St.		Cleveland, TX 77327	28-Feb-07	0.4065	na	0	
54186	1008	11401-001	TX0054186	San Jacinto River Authority	north of Sawdust Rd, 2 miles west of IH 45 and 12 miles south of City of Conroe	Montgomery	to Panther Branch, to Spring Creek (001) or to Lake B on a trib of Panther Branch, to Spring Creek (002)	TCEQ, EPA			7.8	10	15	3	1	na	2436 Sawdust Rd		The Woodlands, Texas 77380					No measurements reported
54291	2204	11583-001	TX0054291	Nueces Co. WCID # 5	at crossing of Banquete Creek and Co. Rd. 40, 1.25 mi east of FM 666, 0.5 mi south of SH 44	Nueces	to Banquete Creek, to Petronilla Creek Above Tidal	TCEQ, EPA			0.1	10	15	na	1	na	PO Box 157		Banquete, TX 78339	28-Feb-07	0.035	na	0	Flow reading for 09/30/31 (.052); Two not received violations
55166	1009	11239-001	TX0055166	CNP UD	South bank of Cypress Creek, 2700 ft west of IH 45	Harris	to Cypress Creek	TCEQ, EPA			2.5	11	25	5	na	200	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	30-Apr-07	0.896	0.856	1- (coliform, fecal) 07/31/04	Stopped chlorine measurements in 2003
56537	1008	11406-001	TX0056537	Harris Co. MUD #26	3500 ft. east of the confluence of Spring Creek and Cypress Creek and 9400 ft. north of fm 1960	Harris	to Spring Creek	TCEQ, EPA			1.5	10	15	3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	31-Jan-07	0.656968	0.5417	0	
56685	1010	11020-001	TX0056685	City of New Waverly	west bank of Chicken Creek, 1600 ft south of intersection of Chicken Creek and IH 150	Walker	to Chicken Creek, to Little Caney Creek, to Caney Creek	TCEQ, EPA			0.088	10	15	3	1	na	PO Box 753		New Waverly, TX 77358					No measurements reported; pipe active
58530	1008	11630-001	TX0058530	Harris Co. MUD #1	South side of London Way Drive, 400 ft. east of intersection of London Way Dr. and Kuykendahl Rd.	Harris	Metzler Creek to Cannon Gully to Willow Creek to Spring Creek	TCEQ, EPA			1.5	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	31-Dec-06	0.248	na	0	
58548	1008	10910-001	TX0058548	Northampton MUD	24235 Gosling Rd, on north bank of Willow Creek , 1200 feet upstream of Gosling Rd crossing of Willow Creek	Harris	to Willow Creek to Spring Creek	TCEQ, EPA			0.75	10	15	3	1	na	600 Jefferson St., Suite 780		Houston, TX 77002	31-Dec-06	0.378	na	07/31/04: reported .99 (minimum of 1.0)	
62049	1009	10962-001	TX0062049	Harris County WCID #113	2 miles northeast of intersection of US 290 and Telge Rd	Harris	to a HCFCDD, to Cypress Creek	TCEQ, EPA			0.3	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	30-Apr-07	0.11	na	08/31/06: reported .6; 09/30/03: reported .89 (minimum of 1.0)	
63461	1004	11658-001	TX0063461	San Jacinto River Authority	2000 ft east of IH 45, 1.5 mi south of FM 1488	Montgomery	to unnamed trib, to West Fork San Jacinto River	TCEQ, EPA			0.9	10	15	3	na	200	c/o Manager, Woodlands Division	2436 Sawdust Rd	The Woodlands, TX 77380	28-Feb-07	0.464	na	0	
66583	1002	10495-146	TX0066583	City of Houston	4.5 miles east of US Hwy 59 between Bear Branch and Ben's Branch, 7.75 mi. northeast of the intersection between FM Road 1960 and US Hwy 59	Harris	to Bens Branch to Lake Houston	TCEQ, EPA			6.6	5	10	3	na	200	4545 Groveway		Houston, TX 77087	31-Mar-07	4.724	5.09	has fecal coliform measurements	see: separate worksheet for additional data

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68659	1010	11715-001	TX0068659	Texas National MUD WWTF	North of Camp Crk, 1.5 miles northeast INT	Montgomery	to Caney Creek	EPA			0.075	10	15	3	1	na	c/o Aqua Management	PO Box 585	Willis, TX 77383	31-Aug-06	0.011	na	overdue since 08/31/06	
68845	1004	10315-001	TX0068845	City of Willis	200 yards west of US Hwy 75 cross	Montgomery	to West Fork San Jacinto River	EPA			0.8	10	15	3	1	na	PO Box 436		Willis, TX 77378	31-Mar-07	0.5712	na	0	
69256	1004	11820-001	TX0069256	Lazy River ID	7500 ft. southeast of the intersection of IH 45 and FM 1488, south of the City of Conroe	Montgomery	unnamed trib to West Fork of San Jacinto River	TCEQ, EPA			0.1	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	28-Feb-07	0.055	na	0	
71081	303	12275-001	TX0071081	Texas Utilities Mining Co	2.2 mi southeast of intersectoin of IH 30 and FM 1870	Hopkins	to ponds, to unnmaed trib, to Rock Creek, to White Oak Creek, to Sulphur/South Sulpher River	TCEQ, EPA			0.0026	20	20	na	na	na	Energy Plaza	1601 Bryan Street	Dallas, TX 75201	31-Mar-07	.0012	na	0	
71412	1010	14116-001	TX0071412	Montgomery County MUD #24		Montgomery			No info. Available		unk													
71528	1008	11799-001	TX0071528	Harris Co. MUD #82	1.5 miles east of Aldine-Westfield Rd. and 3 miles north of FM 1960 at 2400 Domino Rd.	Harris	to Harris Co. Flood Control District Ditch to Spring Creek	TCEQ, EPA			2.2	10	15	3	1	na	c/o Allen Boone Humphries Robinson LLP	3200 Southwest Freeway, Suite 2600	Houston, TX 77027	31-Jan-07	0.516	0.462	0	
71609	1009	11814-001	TX0071609	Boys and Girls Country of Houston	Houston, Inc. WWTF, 1.7 miles North US	Harris	HCFCD ditch to Little Cypress Creek	EPA			0.1	10	15	3	1	na	Houston Inc.	18806 Roberts Road	Hockley, TX 77447	28-Feb-07	0.017	na	0	
71765	1003	11844-001	TX0071765	Forest Glen, Inc	6 mi southeast of intersection of US 190 and FM 2296	Walker	to Johnson Creek, to East Fork San Jacinto River	TCEQ, EPA			0.04	10	15	3	1	na	34 Forest Glen		Huntsville, TX 77340	31-Jul-06	0.009	na	overdue since 07/31/06	
72150	1009	11835-001	TX0072150	Bridgestone MUD	South bank of Seals Gully, approximately 2000 feet upstream of the intersection of Spring Cypress Road and Seals Gully	Harris	Seals Gully to Cypress Creek	TCEQ, EPA			2.5	7	15	2	1	na	c/o Johnson, Radcliffe, Pertroy & Bobbit PLLC	1001 McKinney Street, Suite 1000	Houston, TX 77002	31-Mar-07	0.924	0.846	0	
72346	1009	11824-001	TX0072346	Northwest Harris County MUD #5	14950 Cypress Green Drive	Harris	to Cypress Creek	EPA			0.8	7	15	2	1	na	c/o Aquasource	17815 East Strack Drive	Spring, TX 77002	30-Apr-07	0.437	na	0	
72354	1009	11832-001	TX0072354	Faulkey Gully MUD	15503 Hermitage Oak	Harris	to Faulkey Gully to Cypress Creek	TCEQ, EPA		mar-oct / nov-feb	1.42	7/10	15	2/3	1	Report	13310 Louetta Rd		Cypress, TX 77429	30-Apr-07	0.631	0.67	0	
72567	1009	11855-001	TX0072567	North Park PUD	22971 Imperial Valley Dr, 2200 ft east of IH 45 and 2400 ft north of FM 1960	Harris	to pipe, to Cypress Creek	TCEQ, EPA		apr-oct / nov-mar	1.31	7/10	15	2/3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	31-Mar-07	0.424	0.403	0	
72702	1008	11871-001	TX0072702	City of Magnolia	northeast corner of intersection of Arnold Branch and Nichols Sawmill Rd, 1.5 south of intersection of FM 1774 and FM 1488	Montgomery	to Arnold Branch, to Mink Branch, to Walnut Creek, to Spring Creek	TCEQ, EPA			0.65	10	15	3	1	na	PO Box 396		Magnolia, TX 77353	31-Mar-07	0.268	na	04/30/04-minimum of .95	
73105	1009	11886-001	TX0073105	Six Flag Splashtown L.P.	1400 feet east of Hwy 45 and 3000 feet south of Spring	Harris	Wunsche Ditch to Lemm Gully then to Cypress Creek	EPA			0.06	10	15	3	1	na	16337 Park Row		Houston, TX 77084	28-Feb-07	no charge; last charge .002 on 09/30/06	na	0	
73393	1009	11887-001	TX0073393	Grant Rd PUD	11837 Meadow Sweet, 0.5 mi south of Grant Rd near Kluge Rd corssing of Little Cypress Creek	Harris	to HCFCDD L-103-00-00, to Little Cypress Creek, to Cypress Creek	TCEQ, EPA			0.31	10	15	2	1	na	c/o Bacon & Wallace, LLP	600 Jefferson St, Suite 780	Houston, TX 77002	31-Mar-07	0.165	na	0	1984: request for a hearing
73997	1004	11878-001	TX0073997	Evangelistic Temple	2400 ft north-northwest of intersection of US 59 and McClellan Rd, 250 ft west of McClellan Rd	Montgomery	to West Fork San Jacinto River	TCEQ, EPA			0.008	10	15	3	1	na	PO Box 2423		Humble, TX 77338					
74217	1009	11900-001	TX0074217	Tina Lee Tilles DBA Turk Brothers Building	Farm Road 1960 & Cypress Creek, S.	Harris	drainage ditch then to Cypress Creek	EPA			0.001	10	15	3	1	na	DBA Turks Brothers Building	15219 Stuebner-Airline Suite 49	Houston, TX 77069	28-Feb-07	0.0004	na	0	
74322	1009	11941-001	TX0074322	Harris Co MUD #58	1100 ft west of Kuykendahl Rd, 2250 ft south of FM 1960	Harris	to HCFCDD K-128-00-00, to Cypress Creek	TCEQ, EPA			0.6	10	15	3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	31-Mar-07	0.117	na	0	
74632	1009	11925-001	TX0074632	Harris Co MUD #104	5500 ft west if IH 45, 2.1 mi northwest of intersection of FM 1960 and IH 45	Harris	to pipe, to Seals Gully, to Cypress Creek	TCEQ, EPA			0.6	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	31-Mar-07	0.198	na	0	

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75159	1009	11912-002	TX0075159	Northwest Harris Co MUD #10	1300 ft north of intersection of Spring-Cypress Rd and Dry Creek	Harris	to HCFCDD K-145-01-00, to Dry Creek, to Cypress Creek	TCEQ, EPA			1.5	7	15	2	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	30-Apr-07	0.43	0.481	0	
75183	1009	11913-001	TX0075183	Northwest Freeway MUD	.75 mi north northwest of intersection of Becker Rd and US 290	Harris	to HCFCDD L117-01-00, to Little Cypress Creek, to Cypress Creek	TCEQ, EPA			0.45	10	15	3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	28-Feb-07	0.151	na	0	
75221	1009	14030-001	TX0075221	Northwest Harris Co MUD #9	11023 Regency Green Dr, .25 mi west of Jones Rd and .33 mi south of Grant Rd	Harris	to HCFCDD K-143-00-00, to Cypress Creek	TCEQ, EPA			1.5	7	15	2	1	na	1100 Louisiana Street, Suite 400		Houston, TX 77002	28-Feb-07	0.469	0.51	0	
75671	1009	11933-001	TX0075671	Woodcreek MUD	3400 ft southwest of intersection of Aldine-Westfield Rd and FM 1960	Harris	to Turkey Creek, to Cypress Creek	TCEQ, EPA			0.6	10	15	3	1	na	c/o Bacon & Wallace, LLP	600 Jefferson, Suite 780	Houston, TX 77002	31-Dec-06	0.231	na	0	
75680	1004	11580-001	TX0075680	Town of Woodloch	2.75 miles east-northeast of the intersection of IH 45 & Needham	Montgomery	to West Fork San Jacinto River	EPA			0.12	10	15	3	1	na	PO Box 1379		Conroe, TX 77305	28-Feb-07	0.0499	na	0	
75795	1009	11939-001	TX0075795	Northwest Harris Co MUD #15	25 mi northwest of Houston, 4.5 mi south of Tomball, 1 mi west of intersection of Gregson Rd and SH 249	Harris	to HCFCDD K-147-07-00, to Faulkey Gully, to Cypress Creek	TCEQ, EPA		apr-oct / nov-mar	3.12	7/10	15	2/3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	28-Feb-07	0.427	0.43	0	
76368	1004	11963-001	TX0076368	Montgomery Co MUD #42	3000 ft northwest of intersection of LaSalle Ave and SH 105	Montgomery	to West Fork San Jacinto River	TCEQ, EPA			0.15	10	15	3	1	na	c/o Coats, Rose, Yale, Ryman & Lee PC	1001 Fannin Street, Suite 800	Houston, TX 77002	31-Mar-07	0.0797	na	07/31/06: minimum of .8	
76481	1009	11964-001	TX0076481	Harris Co WCID #110	1200 ft north of Cypress Creek, 1400 ft west of IH 45 and US 75	Harris	to HCFCDD K-123-00-00, to Cypress Creek	TCEQ, EPA			1	7/10	15	2/3	1	na	1001 Fannin St., Suite 800		Houston, TX 77002	1-Apr-07	0.517	0.493	0	
76538	1008	11970-001	TX0076538	Montgomery Co. MUD #19	on Volunteer Ln, 800 ft east of Buddle Rd , 1300 ft northwest of intersection of IH 45 and Sawdust Rd	Montgomery	to storm sewer system, to MCDD #6 Channel II-B, to Spring Creek	TCEQ			0.715	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002					
76791	1009	11986-001	TX0076791	Tower Oak Bend WSC	1 mi east of Jones Rd and 1000 ft north of Cypress-North Houston Rd	Harris	to HCFCDD K-161-00-00, to Cypress Creek	TCEQ			0.05	10	15	3	1	na	PO Box 9879		The Woodlands, TX 77387					
76856	1009	11988-001	TX0076856	Harris Co MUD #24	450 ft north of intersection of Theisswood Rd and Theiss Gully	Harris	to Theiss Gully, to Spring Gully, to Cypress Creek	TCEQ, EPA		apr-oct / nov-mar	2	7/10	15	2/3	1	na	602 Sawyer, Suite 205		Houston, TX 77007	31-Dec-06	0.612323	0.623	0	
77241	1011	11993-001	TX0077241	City of Woodbranch Village	800 ft east of US 59 and 2.5 mi northeast of intersection of SH 1485 and US 59	Montgomery	to Peach Creek	TCEQ, EPA			0.133	10	15	3	1	na	PO Box 804		New Caney, TX 77357	28-Feb-07	0.059	na	0	
77275	1008	11968-001	TX0077275	Tecon Water Company, LP	1200 ft west of Dry Creek, 3000 ft northwest of intersection of FM 2978 and Hardin Store Rd in City of Magnolia	Montgomery	to unnamed trib, to Dry Creek, to Spring Creek	TCEQ			0.052	10	15	3	1	na	6116 North Central Expressway, Suite 1300		Dallas, TX 75206					
77941	1009	12025-002	TX0077941	Bilma PUD	8000 ft northeast of intersection of Louetta Rd and Stuebner Airline Rd, 11000 ft southeast of the intersection of Spring Cypress Rd and Stuebner Airline Rd in City of Houston	Harris	to Northwest Gully, to Spring Creek, to Cypress Creek	TCEQ, EPA			0.75	10	15	3	1	na	c/o Bacon & Wallace, LLP	600 Jefferson, Suite 780	Houston, TX 77002	31-Dec-06	0.294	na	0	
78263	1008	12030-001	TX0078263	Rayford Road MUD	2.1 mi east of intersection of Rayford Road and IH 45	Montgomery	to Montogmery County Drainage Dtich #6 Channel IIDF, to Spring Creek	TCEQ			0.0015	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002					
78344	1011	01386-001	TX0078344	Montgomery Co MUD #16	south of intersection of Hickory Ln and Tupelo Lane, 2 miles north of New Caney	Montgomery	to unnamed trib, to unamed trib of Peach Creek, to Peach Creek	TCEQ, EPA			0.177	10	15	3	1	na	25522 White Oak Lane		Splendora, TX 77372	31-Jan-07	0.053	na	1 [06/30/03] with many overdue violations	

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
78433	1008	12044-001	TX0078433	Harris Co MUD #368	1 mi east of FM 249 and 1200 ft south of Boudreaux Rd	Harris	to HCFCDD M-122-00-00, to Willow Creek, to Spring Creek	TCEQ, EPA			1.6	10	15	2	1	na	c/o Johnson, Radcliffe, Petroy & Bobbit PLLC	1001 McKinney Street, Suite 1000	Houston, TX 77002	30-Apr-07	0.461	na	0	
78930	1009	13569-001	TX0078930	Samuel Victor Pinter	northwest corner of Stuebner Airline Rd and Mittelstead Rd, between FM 1960 and Cypress Rd	Harris	to Clow Gully, to Cypress Creek	TCEQ, EPA			0.0015	10	15	3	1	na	1413 Avenue J		Brooklyn, New York 11230	28-Feb-07	0.0002	na	0	
81264	1008	12153-001	TX0081264	North Harris Co MUD #19	25714 Steeple Canyon, 1.25 mi east of intersection of Hufsmith Rd and Kuykendahl Rd	Harris	to HCFCDD M-104-00-00, to Willow Creek, to Spring Creek	TCEQ, EPA			0.25	10	15	3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	31-Dec-06	0.096	na	07/31/03- minimum of .96	
81272	1009	14130-001	TX0081272	Northwest Harris Co MUD #10	24500 US 290, southeast of Town of Cypress	Harris	to Dry Creek, to Cypress Creek	TCEQ, EPA			0.048	10	15	2	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002	31-Dec-06	0.001	na	0	
81337	1009	13625-001	TX0081337	Northwest Harris Co MUD #20	6500 ft north and 8700 feet east of intersection of FM 1960 and Stuebner Airline Rd	Harris	to Cypress Creek	TCEQ, EPA			0.4	10	15	3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	30-Apr-07	0.57	0.601	0	
82511	1011	11143-001	TX0082511	Splendora ISD	east of SH Spur 512, 0.4 mi northeast of intersection of SH Spur 512 and FM 2090	Montgomery	to drainage ditch, to unnamed trib, to unnamed pond, to Peach Creek	TCEQ, EPA			0.04	10	15	3	1	na	26267 FM 2090		Splendora, TX 77372	31-Mar-07	0.021	na	0	
83208	1010	12205-001	TX0083208	Conroe ISD	2000 ft northwest of intersection of FM 1314 and Bennette Estates RD	Montgomery	to Copeland Ditch, to White Oak, to Caney Creek	TCEQ, EPA			0.015	10	15	3	1	na	702 North Thompson Street		Conroe, TX 77301	30-Apr-07	0.0071	na	0	
83216	1010	12204-001	TX0083216	Conroe ISD	1250 ft west of intersection of SH 105 and Waukegan in tow of Cut and Shoot	Montgomery	to Caney Creek	TCEQ, EPA			0.02	10	15	3	1	na	3205 West Davis Street		Conroe, TX 77304	30-Apr-07	0.0185	na	0	
83801	1009	12224-001	TX0083801	Klein ISD	200' East & 2000' North of the intersection of Stuebner	Harris	to Cypress Creek	EPA			0.011	10	15	3	1	na	111000 Brittmore Park Drive		Houston, TX 77269	31-Mar-07	0.005	na	0	
83976	1008	13619-001	TX0083976	Aqua Utilities, Inc	1000 ft southeast of Kuykendhal Rd Crossing of Willow Creek, 800 ft east of Willow Creek	Harris	to unnamed trib, to Willow Creek, to Spring Creek	TCEQ, EPA			0.04	10	15	3	1	na	2211 Louetta Rd		Spring, TX 77388	28-Feb-07	0.018	na	0	
84042	1002	12242-001	TX0084042	Porter MUD	7200 ft south southeast of intersection of US 59 an FM 1314, 2100 ft east southeastof intersection of Martin Dr and Loop 494	Montgomery	to unnamed trib, to Ben's Branch, to Lake Houston	TCEQ, EPA			1.6	10	15	3	1	na	PO Box 1030		Porter, TX 77365	28-Feb-07	0.49	na	0	
84085	1009	12239-001	TX0084085	Harris Co MUD #36	2.2 miles south and 1.2 miles east of intersection of FM 1960 and IH 45	Harris	to HCFCDD K11-07-00 to Turkey Creek, to Cypress Creek	TCEQ, EPA			0.99	7	15	2	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056					no measurements reported; pipe active
84638	1010	12274-001	TX0084638	New Caney MUD	.4 mile east & 1.6 mile south of the intersection of Caney Creek and TX Hwy 59	Montgomery	to unnamed tributary to Caney Creek	TCEQ, EPA			1.06	10	15	3	1	na	PO Box 1799		New Caney, TX 77357	31-Jan-07	0.7428	0.6717	0	
84760	1009	12248-001	TX0084760	UA Holdings 1994-5	1000' from southeast intersection SH 249/	Harris	to unnamed drainage ditch to Cypress Creek	EPA			0.1	10	15	3	1	na	c/o S C Utilities	PO Box 691034	Houston, TX 77269	28-Feb-07	0.029	na	0	
85693	1008	12303-001	TX0085693	Aqua Utilities, Inc	58181 Paloma, 300 ft west of Goslin Rd, 1500 ft south of Root Rd	Harris	to HCFCDD M101-01-00, to HCFCDD M101-00-00, to Willow Creek, to Spring Creek	TCEQ, EPA			0.015	10	15	3	1	na	1421 Wells Branch Parkway, Suite 105		Pflugerville, TX 78660	28-Feb-07	0.0065	na	0	
85910	1009	13711-001	TX0085910	Spring Cypress WSC	1442 Spring Cypress Rd, 600 ft northeast of intersection of IH 45 and Fm 2920	Harris	to Wunsche Ditch, to Lemm Gully, to Cypress Creek	TCEQ, EPA			0.035	10	15	3	1	na	PO Box 3326 MAC 5004-155		Houston, TX 77253	31-Aug-06	0.023	na	overdue since 08/31/06	
86011	1009	12327-001	TX0086011	Cypress Hill MUD #1	400 ft west of Cypress Rose Hill Rd and .75 mi norht of intersection of Cypress Rose Hill Rd and US 290	Harris	to New HCFCDD K145-00-00, to Old HCFCDD K145-00-00, to Cypress Creek	TCEQ, EPA			0.8	7	15	2	1	na	c/o Fullbright and Jaworski	1301 McKinney Street, Suite 5100	Houston, TX 77010	30-Apr-07	0.381	na	0	

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86053	1008	12402-001	TX0086053	Houston Oaks Golf Management, LP	2.5 mi norht of intersection of Hegar Rd and FM 2920	Waller	to unnmaed trib, to Spring Creek	TCEQ, EPA			0.01	10	15	3	1	na	22602 Hegar Rd		Hockley, TX 77447	28-Feb-07	0.002	na	0	
87190	1004	02475-000	TX0087190	Drilling Specialties Co. LLC	1 mi south of intersection of FM 1485 and Jefferson Chemical Rd, 5 mi east of the City of Conroe	Montgomery	to drainage ditch, to West Fork Crystal Creek, to Crystal Creek, to West Fork San Jacinto River	TCEQ, EPA			0.016	40	40	5	na	na	PO Box 2567		Conroe, TX 77305	28-Feb-07	0.0049	na	0	
87424	1009	13963-001	TX0087424	Luther's Bar-B-Q, Inc.	703 FM 1960 West, south of intersection of FM 1960 and Hafer Rd, 0.6 mi west of IH 45	Harris	to storm sewer, to Cypress Creek	TCEQ, EPA			0.005	10	15	3	1	na	2611 FM 1960 West, suite B101			31-Jan-07			overdue since 06/30/05	pipe has active status
87475	1008	12382-001	TX0087475	C&P Utilities, Inc/ J&S Water Company, LLC[5]	3300 ft west of intersection of Rothwood Rd crosses Spring Creek	Harris	to Willow Creek to Spring Creek	TCEQ, EPA			0.12	10	15	3	1	na	PO Box 9449		The Woodlands, TX 77380	28-Feb-07	0.068	na	0	
87793	1004	02502-000	TX0087793	Hanson Aggregates Central, Inc.	12541 Sleepy Hollow Rd, 3.5 mi east of IH 45, 7 mi south of City of Conroe	Montgomery	to unnamed trib, to West Fork San Jacinto River	TCEQ, EPA			0.35	na	report	na	na	na	8505 Freeport Parkway, Suite 135		Irving, TX 75063	31-Jan-07	no discharge	na	not reported	
87831	1010	11020-002	TX0087831	City of New Waverly		Walker			No info. Available		unk													
88501	1004	10495-142	TX0088501	City of Houston		Montgomery			No info. Available		unk													
89184	1009	12470-001	TX0089184	Harris Co MUD #221	3000 ft northeast of intersection of Richey Rd and Imperial Valley Dr and 3000 ft northwest of intersection of Richey Rd and Hardy Rd	Harris	to Turkey Creek, to Cypress Creek	TCEQ, EPA			1.8	7	15	2	1	report	c/o Vinson and Elkins	1001 Fannin Street, Suite 2300	Houston, TX 77002	30-Apr-07	0.709	0.688	Has both chlorine and fecal measurements	see: separate worksheet for additional data
89672	1004	13760-001	TX0089672	Montgomery Co MUD #56	northwest of intersection of US 59 and FM 1314	Montgomery	to San Jacinto Heights Channel 1A, to West Fork San Jacinto River	TCEQ, EPA			0.1	10	15	3	1	na	c/o Young & Brooks	1415 Louisiana St, 5th floor	Houston, TX 77002	31-Mar-07	0.0559	na	0	
89915	1008	12519-001	TX0089915	Aquasource Utility, Inc	3/8 mi east of Kuykendahl Rd, 1 mi norht of intersection of Hufsmith Rd and Kuykendahl Rd	Harris	to Metzler Creek, to Cannon Gully, to Willow Creek, to Spring Creek	TCEQ, EPA			0.1	10	15	3	1	na	11100 Bittmore Park Dr.		Houston, TX 77041	28-Feb-07	0.061- most data around .025	na	0	
90000	1008	13697-001	TX0090000	Cedarstone One Investors, Inc	.1 mi from intersection of Sawdust Rd and Sawmill Rd	Montgomery	to storm water ditch, to unnamed trib, to Panther Branch, to Spring Creek	TCEQ, EPA			0.003	10	15	3	1	na	1110 North Post Oak Rd, Suite 170		Houston, TX 77055	28-Feb-07	0.0004	na	0	
90123	1004	13700-001	TX0090123	Chateau Woods MUD	600 ft north of intersection of Longleaf Dr and Beech St	Montgomery	to White Oak Creek, to West Fork San Jacinto River	TCEQ, EPA			0.2	10	15	3	1	na	10224 Fairview Rd		Conroe, TX 77385	28-Feb-07	0.0875	na	Three Violations 11/30/06- .9 08/30/06- .9 09/30/04- .7	
90182	1009	12541-001	TX0090182	Chasewood Utilities, Inc	20131 SH 249, northwest of intersectoin of SH 249 and Cypress Creek	Harris	to Cypress Creek	TCEQ, EPA			0.1	10	15	3	1	na	8500 Cypresswood Dr, Suite 201		Spring, TX 77379	31-Mar-07	0.018	na	0	
90344	1009	12730-001	TX0090344	Champ's Water Company	10717 County Meadow Ln, 150 west of intersection of County Meadow Ln and Huffsmith-Kohrville, 2.3 mi south of city of Tomball	Harris	to unnamed roadside ditch, to HCFCDD K-140-00-00, to Cypress Creek	TCEQ, EPA			0.0154	10	15	3	1	na	13217-A Chrisman Rd		Houston, TX 77039	31-Jan-07	0.002617	na	0	
90824	1009	12579-001	TX0090824	Spring West MUD	1000 ft east of intersection of FM 2920 and Foster Rd	Harris	to Senger Gully, to Cypress Creek	TCEQ, EPA			0.762	7	15	2	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX	31-Mar-07	0.101	na	12/31/04: reported min of .58	
90841	1009	13472-001	TX0090841	Hockley Rail Car, Inc	17000 Premium Drive, west of the City of Hockley	Harris	to pipeline, to county ditch, to unnamed trib, to Little Cypress Creek, to Cypress Creek	TCEQ, EPA			0.006	10	15	3	1	na	17000 Premium Drive		Hockley, TX 77447	28-Feb-07	0.00035	na	0	
90905	1008	12587-001	TX0090905	Tecon Water Company, LP	1.3 mi west of intersection of Huffsmith-Dobbin Rd and Hardin-Store Rd	Montgomery	to unnamed trib, to Mill Creek, to Neidigk Lake, to Mill Creek, to Spring Creek	TCEQ			0.46	10	15	3	1	na	4144 North Central Expressway, Suite 900		Dallas, TX 75204					
91171	1009	12600-001	TX0091171	Elite Computer Consultants, LP	14110 Grant Rd, 00 ft west of Shaw Rd and 800 ft northeast of Grant Rd	Harris	to Faulkey Gully to Cypress Creek	TCEQ, EPA			0.008	10	15	3	1	na	10333 Northwest Freeway, Suite 414		Houston, TX 77092	28-Feb-07	0.0011	na	0	

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91481	1009	12614-001	TX0091481	Harris Co MUD #16	2000 ft west of Hardy Rd and 1 mi north of intersection of Hardy Rd and Farrell Rd	Harris	to lateral H ofTurkey Creek, to Turkey Creek, to Cypress Creek	TCEQ, EPA			0.5	10	15	3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	30-Apr-07	0.147	na	0	
91677	1010	12621-001	TX0091677	Martin Realty & Land, Inc	2 mi southeast of intersection of FM 1485 and FM 2090	Montgomery	to unnamed drainage dtich, to unnamed trib, to Caney Creek	TCEQ, EPA			0.15	10	15	3	1	na	PO Box 603		Porter, TX 77365	30-Apr-07	no charge; charge of .099 on 01/31/07	na	0	
91715	1008	12597-001	TX0091715	San Jacinto River Authority	2000 ft northwest of confluence of Bear Branch and Panther Branch, 3.5 miles south of intersection of FM 1488 and IH 45	Montgomery	to Panther Branch, to Lake Woodlands, to Panther Branch, to Spring Creek	TCEQ, EPA			7.8	10	15	2	na	200	2436 Sawdust Rd		The Woodlands, TX 77380	30-Nov-06	3.344	3.275	fecal coliform measurements	see: separate worksheet for additional data
91731		10008-001	TX0091731	City of Conroe		Montgomery		EPA	Inactive		unk						900 Holly Drive		Conroe, TX 77301					
91791	1008	12637-001	TX0091791	Spring Center, Inc	1.5 mi north of City of Spring at 22820 IH 45 North	Harris	to drainage ditch, to underground storm sewer, to Spring Creek	TCEQ, EPA			0.006	10	15	3	1	na	6671 Southwest Freeway, Suite 750		Houston, TX 77074	31-Dec-06	0.00385	na	14 Total 2006: Four 2005: Five 2004: Five many overdue violations	
91987	1008	12643-001	TX0091987	Pinewood Community LP	9601 Dowdell Road, quarter mile northeast INTX	Harris	to Spring Creek	EPA			0.1	10	15	3	1	na	12115 Wessex Dr.	Lot #1	Houston, TX 77089	30-Nov-06	0.062	na	0	
92088	1008	12650-001	TX0092088	Spring Oaks Mobile Home Park, Inc.	4200 Spring-Steubner Road, 2.5 miles	Harris	to HCFCD to Spring Creek	EPA			0.025	10	15	3	1	na	4320 Spring Stuebner Road		Spring, TX 77389	28-Feb-07	0.0069	na	0	
92258	1009	02608-000	TX0092258	Center Point Energy Houston Electric LLC	1808 Huffmeister Rd, northwest of the intersection of Huffmeister Rd and Cypress-Rosehill Rd and 25 mi northwest of the City of Houston	Harris	to storm sewer drain, to HCFCDD K145-05-00, to HCFCDD K145-00-00, to Dry Creek, to Cypress Creek	TCEQ, EPA			0.02	1.7	2.5	0.5	na	na	PO Box 1700		Houston, TX 77251	30-Apr-07	0.0016	na	0	
92517	1010	12670-001	TX0092517	Mountain Man, Inc./ Ranch Utilities, LP[2]	2100 ft north of FM 1097 and 1.9 mi east northeast of City of Willis	Montgomery	to unnamed gully, to unnamed trib, to Camp Creek, to Caney Creek	TCEQ, EPA			0.175	10	15	3	1	na	13721 Running Bear Drive		Willis, TX 77378	31-Jan-07	0.052	na	0	
92843	1008	12703-001	TX0092843	Magnolia ISD	1.1 mi south of intersection of FM 1488 and 2878	Montgomery	to Bear Branch, to Bear Branch Reservioir, to Bear Branch, to Panther Branch, to Lake Woodlands, to Panther Branch, to Spring Creek	TCEQ, EPA			0.048	10	15	3	1	na	PO Box 791		Montgomery, TX 77353	28-Feb-07	0.014	na	0	
92894	1009	14044-001	TX0092894	149 Enterprises, Inc	1300 ft east of FM 149 and 3500 ft north of intresection of FM 149 and Spring Cypress Rd	Harris	to Pilot Gully to Cypress Creek	TCEQ			0.01	10	15	3	1	na	1300 South Frazier Street, Suite 406		Conroe, TX 77301					
92967	1009	12378-002	TX0092967	Richey Rd MUD	3300 ft northeast of intersection of Hardy Toll Rd and WW Thorne Dr, 3 mi south southwest of the City of Westfield	Harris	to Turkey Creek, to Cypress Creek	TCEQ, EPA			0.45	10	15	3	1	na	c/o Johnson, Radcliffe, Pertroy & Bobbit PLLC	1001 McKinney Street, Suite 1000	Houston, TX 77002	28-Feb-07	0.319357	na	0	
93220	1011	13638-001	TX0093220	Roman Forest Consolidated MUD	1.7 mi east of US 59 and 1.2 mi north of intersection of US 59 and FM 1458 at 1602 Athens St	Montgomery	to Peach Creek	TCEQ, EPA			0.322	10	15	3	1	na	PO Box 899		New Caney, TX 77357	28-Feb-07	0.1707	na	0	
93483	1002	02642-000	TX0093483	PWT Enterprises, Inc.	1956 North Park Dr, 1.5 mi east of US 59	Montgomery	to drainage ditch, to HCFDD, to Lake Houston	TCEQ, EPA			0.003	na	0.4	na	na	na	6128 Jadecrest		Spring, TX 77389	28-Feb-07	0.000712	na	chlorine not measured	
93505	1004	12761-001	TX0093505	Malek Vashmeh	0.25 mi southeast of intersection of SH 105 and Old SH 105, 0.25 mi west of intersection of SH 105 and East Beach Rd	Montgomery	to Base Creek, to West Fork San Jacinto River	TCEQ, EPA			0.05	10	15	3	1	na	c/o L.R. Karbalai	PO Box 55528	Houston, TX 77255	31-Jan-07	0.017	na	0	
93564	1004	12212-002	TX0093564	City of Shenandoah	800 ft east of IH 45 and 4000 ft north of Tamina Road	Montgomery	to pipeline, to Carters Slough, to West Fork San Jacinto River	TCEQ, EPA			3	10	15	2	1	na	29811 IH 45 North		Shenandoah, TX 77391	28-Feb-07	0.416	0.449	0	

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93939	1009	12812-001	TX0093939	Regency 1-45/ Spring Cypress Retal, L.P.	1518 Spring Cypress Road	Harris	Wunsche Ditch to Lemm Gully to Cypress Creek	EPA			0.06	10	15	3	1	na	3700 Buffalo Speedway, Suite 840		Houston, TX 77098	28-Feb-07	0.0023	na	0	
94315	1008	14266-001	TX0094315	HMV Special Utility District	1.5m southwest of FM Road 149 & FM Road 2978	Montgomery	to unnamed tributary of Spring Creek	EPA			0.025	10	15	3	1	na	26718 Decker Praire-Rosehill		Pinehurst, TX 77362	31-Jan-07	0.031	na	0	
94552	1008	12851-001	TX0094552	Richard Clark Enterprises, LLC	600 ft west of Drecker Branch crossing of SH 249, 2.3 mi southeast of intersection of SH 249 and FM 1774	Montgomery	to Drecker Branch, to Neidigk Lake, to Mill Creek, to Spring Creek	TCEQ, EPA			0.06	10	15	3	1	na	32927 SH 249		Pinehurst, TX 77362	31-Jan-07			Overdue since 08/30/05	
94706	1009	12877-001	TX0094706	Harris Co MUD #230	3000 ft west of FM 149 and 4000 ft south of Cypress Creek	Harris	to HCFCDD K-139-00-00, to Cypress Creek	TCEQ, EPA			0.76	7	15	2	1	na	c/o Vinson and Elkins	1001 Fannin Street	Houston, TX 77002	31-Mar-07	0.204	na	0	
95125	1008	12898-001	TX0095125	Aqua Utilities, Inc	2300 feet north of Spring Creek, 5500 ft east of	Montgomery	unnamed trib to Spring Creek	EPA			0.075	10	15	3	1	na	11100 Brittmore Park Dr.		Houston, TX 77041	04/31/07	0.027	na	0	
95621	1008	12788-001	TX0095621	Eastwood Mobile Home Park LP	Eastwood Hills Subdivision, east of Mo Pac Railroad, 2500 ft south of Robinson Rd	Montgomery	to Montgomery County Drainage Ditch, to Montgomery County Drainage Ditch No. 6, Channel II DF, to Spring Creek	TCEQ, EPA			0.05	10	15	3	1	na	Eastwood Hills Subdivision	3000 Town Center, Suite 450	Southfield, MI 48075	28-Feb-07	0.0065	na	0	no chlorine minimum
96865	1009	13027-001	TX0096865	Harris County	25011 West Hardy Rd	Harris	to Lemm Gully, to Cypress Creek	TCEQ, EPA			0.01	10	15	3	1	na	1001 Preston Ave, 7th Floor		Houston, TX 77002	31-Jan-07	No charge; charge of .0007 on 07/31/06	na	0	
96920	1009	13020-001	TX0096920	Harris Co MUD #286	4500 ft west of crossing of FM 249 over Cypress Creek	Harris	to Cypress Creek	TCEQ, EPA			0.6	10	15	3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	31-Mar-07	0.207	na	06/30/03- minimum of .5	
97209	1009	13054-001	TX0097209	CW-MHP Ltd	20810 Cypress Wood Drive	Harris	to drainage ditch, to Cypress Creek	TCEQ, EPA			0.01	10	15	3	1	na	PO Box 130379		Houston, TX 77219	28-Feb-07	0.002	na	0	
97969	1008	13115-001	TX0097969	Clovercreek MUD	2 miles south of Magnolia, TX on Nichols-SA	Montgomery	to Spring Creek	EPA			0.12	10	15	3	1	na	11100 Brittmore Park Dr.		Houston, TX 77041	31-Mar-07	0.0326	na	0	
98434	1009	13059-001	TX0098434	Kwik-Kopy Corp	12715 Telge Rd, 1.25 mi north of intersection of Telg rd and SH 6 and US 290	Harris	to Cypress Creek	TCEQ, EPA			0.015	10	15	3	1	na	One Kwik Kopy Lane		Cypress, TX 77429	28-Feb-07	0.008	na	0	
98647	1009	13152-001	TX0098647	Northwest Harris Co MUD #32	4500 ft south of intersection of FM 2920 and Kuykendahl Rd, 9500 northeast of the intersection of Stuebner Airline Rd and Spring Cypress Rd	Harris	to HCFCDD K-131-04-00, to Spring Gully, to Cypress Creek	TCEQ, EPA			0.65	10	15	3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	30-Apr-07	0.356	na	0	
99180	1004	14248-001	TX0099180	Vanceco, Inc	3200 ft west of intersection of SH 105 and San Jacinto River	Montgomery	to Base Creek, to West Fork San Jacinto River	TCEQ, EPA			0.02	10	15	3	1	na	149 April Wind Drive East		Montgomery, TX 77356	31-Jan-07	0.001678	na	0	
102121	1003	02919-000	TX0102121	Gardner Glass Products, Inc	east side of SH 75, south of Goree State Prison Farm, 4 mi southeast of City of Huntsville	Walker	to drainage ditch, to unnamed trib, to Mays Creek, to Winters Bayou, to East Fork San Jacinto River	TCEQ			0.102	17	17	na	na	na	7553 Highway 75 South		Huntsville, TX 77340					
102512	1011	13389-001	TX0102512	City of Splendora	1800 ft northeast of intersection of FM 2090 and Cox Street in Splendora	Montgomery	to roadside channel, to unnamed trib, to Peach Creek	TCEQ, EPA			0.3	10	15	3	1	na	PO Box 1087		Splendora, TX 77372	28-Feb-07	0.098	na	06/30/04 minimum of .7	
102962	1004	14709-001	TX0102962	Stone Hedge Utility Co, Inc	6100 ft northeast of intersection of SH 105 and Sh 336	Montgomery	to unnamed trib, to East Fork Crystal Creek, to Crystal Creek, to West Fork San Jacinto River	TCEQ, EPA			0.015	10	15	3	1	na	PO Box 426		Spring, TX 77383					No measurements reported; pipe active
105376	1009	13296-002	TX0105376	Harris Co MUD #358	1500 ft north of US 290 and 2700 ft west of Mueschke Rd	Harris	to HSFCDD K-159-00-00, to Cypress Creek	TCEQ, EPA		mar-oct / nov-feb	2	7/10	15	2/3	1	na	c/o Vinson and Elkins	1001 Fannin Street	Houston, TX 77002	30-Apr-07	0.756	0.785	0	
105996	1002	13526-001	TX0105996	Kings Manor MUD	0.6 mi northeast of intersection of SH Loop 494 and Kingwood Dr	Harris	to HCFCDD G-103-38-01, to Bear Branch Diversion Channel G103-38, to Lake Houston	TCEQ, EPA			0.4	10	15	3	1	na	c/o Paul A. Philbin & Associates, PC	6363 Woodway Dr, Suite 725	Houston, TX 77057	31-Mar-07	0.2154	na	0	flow violation 12/31/05
108120	1009	13573-001	TX0108120	Northwest Harris County MUD #36	1200 feet west of IH 45 & Holzwarth Rd.	Harris	Seals Gully to Cypress Creek	EPA			0.2	5	10	3	1		c/o Bacon & Wallace, LLP	PO Box 11750	Spring, TX 77391	04/31/07	0.113	na	0	

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
108553	1008	13614-001	TX0108553	Richfield Investment Corp	1 mi northeast of SH 249, 7000 ft northwest of Chicagor Rock Island and Pacific and Mo Pac Railroad crossing, 4.5 mi northwest of Tomball	Montgomery	to unnamed trib, to Cow Branch, to Decker Branch, to Neidigk Lake, to Mill Crekk, to Spring Creek	TCEQ			0.61	5	12	2	1	na	10001 Westheimer Rd, Suite 2888		Houston, TX 77042					
109622	1008	13636-001	TX0109622	Richfield Investment Corp	4500 ft southeast of the intersection of Wright Rd and SH 249	Montgomery	to unnamed trib, to Decker branch, to Neidigk Lake, to Mill Creek, to Spring Creek	TCEQ			0.405	7	15	2	1	na	10001 Westheimer Rd, Suite 2888		Houston, TX 77042					
110663	1008	13653-001	TX0110663	Magnolia ISD	4.73 mi south of city of Magnolia	Montgomery	to pipe, to drainage ditch, to unnamed trib, to Walnut Creek, to Spring Creek	TCEQ, EPA			0.015	10	15	3	1	na	PO Box 791		Magnolia, TX 77353	28-Feb-07	0.004	na	0	
111473	1010	13690-001	TX0111473	Conroe ISD	2000 ft south of FM 2090 and 600 ft west of FM 1485 and 10 mi southeast of City of Conroe	Montgomery	to Caney Creek	TCEQ, EPA			0.1	10	15	3	1	na	3205 West Davis Street		Conroe, TX 77304	30-Apr-07	0.086	na	0	
113107	1009	13753-001	TX0113107	Harris Co MUD #360	3500 ft north of intersection of Kluge Rd and Huffmeister Rd, 1100 ft northwest of Kluge Rd, 4 mi north of intersection of US 290 and Huffermeister Rd	Harris	to Little Cypress Creek, to Cypress Creek	TCEQ, EPA			0.8	7	15	2	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	31-Mar-07	0.253	na	0	
113115	1009	11988-003	TX0113115	Harris Co MUD #24	7500 Ft north of Louetta Rd in Spring	Harris	to storm sewer, to HCFCDD K-131-02-00, to Spring Gully, to Cypress Creek	TCEQ, EPA			0.06	na	25	na	na	na	c/o Strawn & Richardson, PC	602 Sawyer Street, Suite 205	Houston, TX 77007	31-Dec-06	0.062	na	0	(drinking water treatment plant)
113123	1009	11988-002	TX0113123	Harris Co MUD #24	4000 Ft north of Louetta Rd, 200 ft east of Steubner Airline Rd	Harris	to storm water system, to Theiss Gully, to Spring Gully, to Cypress Creek	TCEQ, EPA			0.06	na	25	na	na	na	c/o Strawn & Richardson, PC	602 Sawyer Street, Suite 205	Houston, TX 77007	31-Dec-06	0.031	na	0	(drinking water treatment plant)
113930	1009	13819-001	TX0113930	Arthur Edward Bayer	1400 ft south of Spring Cypress Rd	Harris	to pipe, to Lemm Gully, to Cypress Creek	TCEQ, EPA	Inactive		0.06	10	15	3	1	na	PO Box 127		Spring, TX 77383					
113948	1009	04313-000	TX0113948	Northwest Airport Management LP	south of intersection of FM 2920 and Stubner-Airline Rd, 3.75 mi southeast of the City of Tomball	Harris	via pipe to taxiway ditch, to Hooks Airport stormwater detention pond, to HCFCD K131-02-04, to Theiss Gully, to Spring Gully, to Cypress Creek	TCEQ, EPA			variable	na	na	na	na	na	20803 Stuebner Airline Road, #0		Spring, TX 77379	31-May-07	0	na	0	
115827	1008	13863-001	TX0115827	H.H.J., Inc	0.8 mi north of intersection of SH 249 and Stagecoach Rd, 2.7 mi southeast of intersection of FM 149 and 1774, 4.0 mi northwest of City of Tomball	Montgomery	to Decker Branch, to Neidigk Lake, to Mill Creek, to Spring Creek	TCEQ, EPA			0.8	10	15	2	1	na	617 West Main Street		Tomball, TX 77375	31-Jul-06	0.0736	na	overdue since 07/31/06	
115924	1002	10495-149	TX0115924	City of Houston	1100 ft north of Hamblen Road, 2750 ft. east	Harris	18 inch pipe to unnamed ditch to HCFCD to Lake Houston	EPA			0.95	10	15	3	na	200	Dept of Public Works & Engineering	PO Box 262549	Houston, TX 77207	31-Mar-07	0.392	na	fecal coliform measurements One viol: 10/31/05	see: separate worksheet for additional data
115983	1009	13875-002	TX0115983	Harris Co MUD #383	2.3 mi northeast of the intersection of SH 249 and Spring Cypress Rd, 1.8 mi west of intersection of Stuebner-Airline Rd, and Spring Cypress Rd	Harris	to HCFCDD K-133-00-00, to Dry Gully, to Cypress Creek	TCEQ, EPA			1.5	7	15	2	1	na	c/o Allen Boone Humphries Robinson LLP	3200 Southwest Freeway, Suite 2600	Houston, TX 77027	31-Mar-07	0.548	na	0	
116009	1009	13881-001	TX0116009	Harris Co MUD #365	250 ft north of Jarvis Rd, 3150 ft east of Skinner Rd	Harris	to Dry Creek, to Cypress Creek	TCEQ, EPA			1.2	7	15	2	1	na	c/o Vinson and Elkins	1001 Fannin Street, Suite 2300	Houston, TX 77002	31-Mar-07	0.528	na	0	

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
116068	1009	13765-001	TX0116068	Harris Co MUD #249	1500 ft south southwest of confluence of Wunsche Gully and Lemm gully, 3000 ft east of IH 45 and 3800 ft west of Hardy Tool Road	Harris	to Wunsche Ditch, to Lemm Gully, to Cypress Creek	TCEQ, EPA			0.8	7	15	2	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056	31-Mar-07	0.2099	na	0	
117129	1009	14028-001	TX0117129	Harris Co MUD 371	House Hahl Rd, 5000 ft south of intersection of House Hahl Rd and US 290	Harris	to pipe, to Cypress Creek	TCEQ, EPA			0.25	10	15	3	1	na	c/o Vinson and Elkins	1001 Fannin, Suite 2300	Houston, TX 77002	30-Apr-07	0.104	na	0	
117145	1010	14029-001	TX0117145	LGI Housing, LLC/ Quadvest, LP[6]	2600 ft north of SH 242, 2.2 mi east of intersection of SH 242 and FM 1214	Montgomery	to unnamed drainage ditch, to Dry Creek, to Caney Creek	TCEQ, EPA			0.6	10	15	3	1	na	19221 IH 45 South, Suite 230		Conroe, TX 77385	28-Feb-07	0.121	na	0	
117463	1011	11143-002	TX0117463	Splendora ISD	23411 FM 2090, 3 miles northwest of the intersection of IH	Montgomery	to Peach Creek	EPA			0.04	10	15	3	1	na	26267 FM 2090 East		Splendora, TX 77372	30-Apr-07	0.009	na	0	
117595	1008	10616-002	TX0117595	City of Tomball	south of Holderrieth Rd, 2100 ft north of Willow Creek, 4300 ft east of intersection of SH 249 and Holderrieth Rd	Harris	to HCFCDD M121-00-00, to Willow Creek, to Spring Creek	TCEQ, EPA			1.5	10	15	3	1	na	401 Market St, Suite C		Tomball, TX 77375	31-Jan-07	1.108	0.9	0	
117633	1008	13942-001	TX0117633	Inline Utilities, LLC	between 900 and 10700 blocks of Boudreaux Rd, .5 mi west of the intersection of Boudreaux and Steubner Airline Rd	Harris	to storm water pond, to Willow`	TCEQ, EPA			0.25	10	15	3	1	na	10100 Boudreaux Road		Tomball, TX 77375	28-Feb-07	0.101	na	0	
117706	1004	13985-001	TX0117706	Montgomery Co MUD 89	5200 ft north of intersection of Riley Fussell Rd and Rayford Rd	Montgomery	to drainage ditch, to unnamed trib, to Woodson Gully, to West Fork San Jacinto River Basin	TCEQ, EPA			0.5	10	15	3	1	na	450 Gears Rd, Suite 200		Houston, TX 77067	30-Dec-06	0.159	na	0	Two flow violations on 12/31/06, 10/31/06
117846	1008	14007-001	TX0117846	AquaSource Development Co	7150 ft northwest of intersection of Rose Hill Rd and Spring Creek, 12500 ft north norht east of FM 2920 an dMueschke Rd	Montgomery	to Spring Creek	TCEQ			0.13	10	15	3	1	na	11100 Bittmore Park Dr.		Houston, TX 77041					
118028	1008	14013-001	TX0118028	AquaSource Development Co	2900 ft south of FM 1488, 1100 ft east of Bear Branch Lane, 500 ft west of Sweetgum Lane	Montgomery	to unnamed trib, to Bear Branch, to Bear Branch Reservoir, to Bear Branch, to Panther Branch, to Lake Woodlands, to Panther Branch, to Spring Creek	TCEQ			0.05	10	15	3	1	na	11100 Brittmore Park Dr.		Houston, TX 77041					
118311	1010	14081-001	TX0118311	Martin Realty & Land, Inc.	1.2 miles east- northeast of Portland Rd/ FM 1314	Montgomery	to unnamed tributary of White Oak Creek	EPA			0.15	10	15	3	1	na	PO Box 603		Porter, TX 77365	31-Mar-07	no discharge	na	0	
118320	1009	03627-000	TX0118320	Vopak Logistics Services USA, Inc	17020 Premium Dr, 0.5 mi southeast of intersection of US 290 and Kickapoo Rd	Harris	to drainage ditch, to unnamed trib, to Little Cypress Creek, to Cypress Creek	TCEQ, EPA			variable	na	na	na	na	na	2000 West Loop South, Suite 2200		Houston, TX 77027	30-Apr-07	0.3308	na	0	
118371	1009	11618-003	TX0118371	Hunter's Glen MUD	west and adjacent to Fox Trail Lane, 3400 ft east of Cypresswood Drive, 5000 ft north of FM 1960	Harris	to unnamed trib, to Cypress Creek	TCEQ, EPA			1.4	7	15	2	1	na	c/o Johnson, Radcliffe, Pertroy & Bobbit PLLC	1001 McKinney Street, Suite 1000	Houston, TX 77002	31-Jan-07	0.356	na	0	
118605	1009	03076-000	TX0118605	Skinner Nurseries, Inc.	intersection of Broze Rd and FM 1960, 5.5 mi east of IH 45	Harris	001: to ditch, to Turkey Creek, to Cypress Creek. 002: to unnamed trib, to Cypress Creek	TCEQ, EPA			variable	na	na	na	na	report grab	5301 FM 1960 Rd. West		Humble, TX 77338	31-Oct-06	sporadic discharge last reported- 001: 2.596; 002: 5.192	na	reports fecal coliform; frequently overdue	see: separate worksheet for additional data
118818	1010	14083-001	TX0118818	White Oak Developers, Inc.	1000 ft west of Robinson Gully	Montgomery	to Caney Creek	EPA			0.2	10	15	3	na	200	19221 I-45 South		Conroe, TX 77385					no measurements reported

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
119181	1008	12979-004	TX0119181	Northgate Crossing MUD #2	5000 ft east southeast of corssing of Spring Creek under IH 45 and 8000 ft northeast of intersection of Spring Stuebner Rd and IH 45	Harris	to HCFCDD J-113-00-00, to Spring Creek	TCEQ, EPA			0.95	10	15	3	1	na	c/o Coats, Rose, Yale, Ryman & Lee PC	1001 Fannin Street, Suite 800	Houston, TX 77002	30-Apr-07	0.19	na	0	
119270	1009	14106-001	TX0119270	Aqua Development, Inc	1.3 miles southeast of the intersection of IH 45 & FM 1960	Harris	to HCFCD (K1110800) to Turkey Creek to Cypress Creek	EPA			0.08	10	15	3	1	na	11100 Brittmore Park Dr.		Houston, TX 77269					no measurements reported
119504	1004	14114-001	TX0119504	Aqua Development, Inc		Montgomery			No info. Available		unk													
119598	1008	14124-001	TX0119598	Magnolia ISD	2400' east of the intersection of Hardin Store Road &	Montgomery	to Spring Creek	EPA			0.02	10	15	3	1	na	Smith Elementary WWTP	PO Box 791	Magnolia, TX 77355	28-Feb-07	0.065	na	0	
119628	1008	13487-001	TX0119628	Timbercrest Community Association	600 feet east of the intersection of Kuykendahl Road &	Harris	to Spring Creek	EPA			0.2	10	15	3	1	na	ES, LP	31200 Northwestern Highway	Farmington Hills, MI 48334	31-Oct-06	0.067	na	frequently overdue	
119857	1008	14133-001	TX0119857	White Oak Utilities, Inc	450 ft north of FM 1488, 1100 ft east of Montgomery/Waller Co Line	Montgomery	to open ditch, to Log Gully, to Walnut Creek, to Spring Creek	TCEQ, EPA			0.2	10	15	3	1	na	19221 IH 45 South, Suite 370		Conroe, TX 77385	28-Feb-07	0.0373	na	Thirteen Total 2006: Three 2005: Seven 2004: Three [chlorine below minimum]	
120073	1008	14141-001	TX0120073	Aqua Development, Inc	.125 mi southeast of intersection of FM 1488 and FM 2978	Montgomery	to unnamed trib, to Bear Branch, to Bear Branch Reservoir, to Bear Branch, to Panther Branch, to Lake Woodlands, to Panther Branch, to Spring Creek	TCEQ			0.45	10	15	3	1	na	1421 Wells Branch Parkway, Suite 105		Pflugerville, TX 78660					
121126	1009	14172-001	TX0121126	Utilities Investment Company, Inc	1010 ft northeast of intersection of US 290 and Cypress Rosehill Rd and 1145 ft northwest of intersection of US 290 and Spring-Cypress Rd	Harris	to unnamed rainage swale, to HCFCDD K145-02-00, to Dry Creek, to Cypress Creek	TCEQ, EPA			0.183	10	15	3	1	na	PO Box 2482		Conroe, TX 77305	28-Feb-07	0.056	na	0	02/28/07, 12/31/06, 12/31/05 flow violations of .056, .051, .05
122211	1009	13893-001	TX0122211	Dia-Den LTD	2500 ft north of intersection of SH 249 and Coons Rd	Harris	to Pilot Gully, to Cypress Creek	TCEQ, EPA			0.018	10	15	3	1	na	PO Box 691405		Houston, TX 77269	31-Mar-07	0.002	na	0	
122327	1015	14166-001	TX0122327	Woodland Oaks Utility Company, Inc	1 mi north of FM 1488 and .5 mi west of Old Egypt Rd	Montgomery	to force main, to Lake Creek	TCEQ, EPA			0.498	10	15	3	1	na	PO Box 247		Conroe, TX 77305	31-Mar-07	0.112	na	0	
122530	1008	14181-001	TX0122530	Aqua Development, Inc	2000' southeast of the intersection of Huffsmith and Kohrvi	Harris	to unnamed trib to unnamed reservoir	EPA			0.075	10	15	2	1	na	1421 Wells Branch Pkwy	Suite 105	Pflugerville, TX 78660	28-Feb-07	0.0212	na	0	
122963	1009	14193-001	TX0122963	Kennard Tom Foley	1000 ft south of Cosse Road and 4000 ft east of FM 249	Harris	to Pillot Gully, to Cypress Creek	TCEQ, EPA			0.035	10	15	3	1	na	10011 Cossey Rd, Apt. 100		Houston, TX 77070	28-Feb-07	0.0027	na	0	
123366	1009	14209-001	TX0123366	CTP Utilities Inc	300 ft south of Cypress Creek, 1800 ft west of FM 249	Harris	to unnamed trib, to Cypress Creek	TCEQ	Plant not built		0.18	10	15	2	1	na	12750 Merit Dr, Suite 1175		Dallas, TX 75251					
123421	1003	04249-000	TX0123421	Steely Lumber Co., Inc.	1405 Southwood Dr., 1.5m east of US Hwy	Walker	outfall to ditch to Sheperd Creek	EPA			n/a						1405 Southwood Dr.		Huntsville, TX 77340	28-Feb-07	no discharge 01/31/07-363.17	na	does not report chlorine	sporadic discharges
123587	1008	14218-001	TX0123587	Diocese of Galveston-Houston	7 mi southeast of intersection of FM 1488 and SH 249	Montgomery	to pipeline, to Mill Creek, to Spring Creek	TCEQ, EPA	Inactive		0.015	10	15	3	na	200	PO Box 1408		Pinehurst, TX 77362					
124281	1010	14285-001	TX0124281	C&R Water Supply, Inc.	2000' East of Crockett-Martin Road	Montgomery	to drain ditches to Milam Br to West Fork Spring B	EPA			0.3	10	15	3	1	na	PO Box 187		Willis, TX 77385	28-Feb-07	0.09	na	0	
124583	1011	14311-001	TX0124583	East Montgomery Co MUD #4	4000 ft northwest of intersection of US 59 and FM 242	Montgomery	to Mare Branch, to Peach Creek	TCEQ, EPA	Inactive		0.75	10	15	3	1	na	3700 Buffalo Speedway, Suite 830		Houston, TX 77098					
124770	1009	14327-001	TX0124770	Harris Co. MUD #391	4000 ft northwest of Intersection of US 290 and Mueschke Rd	Harris	to Dry Creek, to HCFCDD K145-00-00, to Dry Creek, to Cypress Creek	TCEQ, EPA			0.95	7	15	2	1	na	c/o Allen Boone Humphries Robinson LLP	3200 Southwest Freeway, Suite 2600	Houston, TX 77027	30-Apr-07	0.159	na	0	
124907	1008	14347-001	TX0124907	The Woodlands Land Development Co. LP		Harris			No info. Available		unk													

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124974	1009	14354-001	TX0124974	Harris Co. MUD #374	1.7 mi south of intersection of SH 290 and Spring Cypress Rd	Harris	to HC MUD #374 channel, to Cypress Creek	TCEQ, EPA			0.65	10	15	3	1	na	c/o Allen Boone Humphries Robinson LLP	3200 Southwest Freeway, Suite 2600	Houston, TX 77027					No measurements reported; pipe active
125181	1009	14390-001	TX0125181	Huffsmith-Kohrville, Inc	1750 ft west of Hufsmith Kohrville Rd and 3960 ft north of Spring Cypress Rd	Harris	to Pillot Gully, to Cypress Creek	TCEQ, EPA	Inactive		0.053	10	15	3	1	na	17717 Hufsmith Kohrville Rd		Tomball, TX 77375					
125300	1010	14379-001	TX0125300	East Montgomery Co MUD #3	11000 feet west of the intersection of FM 1485 and Tree	Montgomery	to Caney Creek	EPA			0.08						Attn: Chip Callegari	PO Box 2749	Spring, TX 77383	28-Feb-07	0.039	na		
125466	1009	13942-002	TX0125466	Inline Utilities, LLC	23822 SH 249, 850 ft north of intersection of SH 249 and Coons Road	Harris	to HCFCDD to Pilot Gully, to Cypress Creek	TCEQ, EPA	Inactive		0.099	10	15	2	1	na	9850 1/2 Boudreaux Road		Tomball, TX 77375					
125547	1008	14517-001	TX0125547	South Central Water Company	.5 mi west of intersection of FM 2978 and Spring Creek	Harris	to Bogs Gully, to Spring Creek	TCEQ, EPA	Inactive		0.038	10	15	3	1	na	5818 Beverlyhill Street		Houston, TX 77057					
125601	1004	14414-001	TX0125601	Woodland Lake Development, LTD	4600 ft southeast of intersection of SH 242 and Donwick Dr	Montgomery	to drainage ditch, to West Fork Sanjacinto River	TCEQ			0.9	10	15	3	1	na	6024 Fairdale Rd		Houston, TX 77057					
125687	1008	14420-001	TX0125687	2920 Venture, LTD/ Harris County MUD #401[4]	4000 ft west and 1500 ft north of intersection of FM 2920 and Boudreaux Rd	Harris	to stormwater pond, to Willow Creek, to Spring Creek	TCEQ, EPA			0.6	10	15	2	1	na	8000 IH 10 West, Suite 700		San Antonio, TX 78230	31-Mar-07	0.0016	na	0	
125806	1009	14434-001	TX0125806	Westside Water, LLC	2.1 m northeast of Bauer Road and US 290	Harris	to Little Cypress Creek, to Cypress Creek	EPA			0.1	10	15	3	1	na	1704 Avenue D		Katy, TX 77493	28-Feb-07	0.023	na	0	
125881	1009	14441-001	TX0125881	Harris County MUD #389	2640' west & 3432' north of intersection of Telge	Harris	to Cypress Creek	EPA			0.3	10	15	3	1	na	Aqua Services	11100 Brittmoore Park Drive	Houston, TX 77041					no measurements reported
125938	1009	14448-001	TX0125938	Houston Warren Ranch Partners, LLC	at intesection of US 290 and Hegar Rd, 0.25 mi east of Warren Ranch Rd	Harris	to drainage ditch, to unnamed trib, to Cypress Creek	TCEQ, EPA	Inactive		0.55	10	15	3	1	na	480 North Sam Houston Parkway East 77060		Houston, TX 77060					
126152	1008	14475-001	TX0126152	Northwest Harris Co. MUD #19	3000 ft east of intersection of West Rayford Road and Kuykendahl Rd	Harris	to pipeline, to Cannon Gully, to Willow Creek, to Spring Creek	TCEQ, EPA	Inactive		0.7	10	15	3	1	na	1415 Louisiana Street, 5th floor		Houston, TX 77002					
126161	1009	14476-001	TX0126161	Rouse-Houston, LP	4000 ft south and 3000 ft west of intersection of House Hahl Rd and US 290	Harris	to Cypress Creek	TCEQ, EPA			0.8	7	15	2	1	na	10275 Little Patuxent Parkway		Columbia, MD 21044	30-Apr-07	0.031	na	0	
126209	1004	14482-001	TX0126209	Montgomery Co. MUD # 83	4800 ft west northwest of intersection of Northpark Dr and US 59	Montgomery	to pipeline, to Bentwood Diversion Channel, to West Fork San Jacinto River	TCEQ			0.6	10	15	3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056					
126306	1008	14491-001	TX0126306	Is Zen Center	850 ft northeast of the intertsection of Dobbin-Hufsmith Rd and Carraway Ln	Montgomery	to unnamed ditch, to underground culvert, to unnamed trib to Spring Creek	TCEQ, EPA			0.035	10	15	3	1	na	1400 Graham, Suite B 514		Tomball, TX 77375	28-Feb-07	0.0012	na	02/28/07: reported .8 w/ minimum limit of 1	
126713	1004	14523-001	TX0126713	Elan Land Investments LP	7200 ft northeast of intersection of Rayford Rd and Riley Fuzzel Rd	Montgomery	to Woodson's Gully, to Tantrough Gully, to West Fork San Jacinto River	TCEQ			0.6	10	15	3	1	na	211 Highland Cross Drive, Suite 101		Houston, TX 77073					
126799	1004	14531-001	TX0126799	JTM Housting LTD and Quadvest Inc	5000 ft west of intersection of Riley Fussell Rd and Main Bender Tram, east of intersection of Woodson's Gully and Texas Illinois Natural Gas Pipeline	Montgomery	to Woodson's Gully, to Tantrough Gully, to Westfork San Jacinto River	TCEQ, EPA			0.6	10	15	3	1	na	19221 IH 45 South, Suite 320		Conroe, Texas 77385	28-Feb-07	0.039	na	0	
126853	1011	14536-001	TX0126853	Flying J Inc.	4000 ft northwest US Hwy 59 & south of Hwy 242	Montgomery	to March Branch to Peach Creek	EPA			0.05	10	15	3	1	na	1104 Country Hills Drive		Ogden, UT 84403	28-Feb-07	0.0025	na	0	
126934	1008	14542-001	TX0126934	1774 Utilities, Corp	500 ft south southwest of intersection of Magnolia Industrial Blvd and FM 1774	Montgomery	to Sulpher Branch, to Lake Apache, to Sulpher Branch, to Walnut Creek, to Spring Creek	TCEQ, EPA			0.15	10	15	3	1	na	32360 SH 249, Suite 160		Pinehurst, TX 77362	28-Feb-07	0.0076	na	0	

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
127035	1008	14551-001	TX0127035	AUC Group, LP	10200 ft west southwest of intersection of FM 149 and FM 1488	Montgomery	to unnamed trib, to Mill Creek, to Neidigk Lake, to Mill Creek, to Spring Creek	TCEQ			0.95	10	15	3	1	na	5851 San Filipe Street		Houston, TX 77057					
127094	1010	14559-001	TX0127094	Whitestone Houston Land, Ltd.	3800 ft south of intersection of Roman Forest Blvd and US 59	Montgomery	to pipeline, to Caney Creek	TCEQ			0.9	10	15	3	1	na	Two Gallera Tower	13455 Noel Road, Floor 23	Dallas, TX 75240					
127108	1011	14560-001	TX0127108	Whitestone Houston Land, Ltd.	4300 ft south of Roman Forest Boulevard and 8500 ft east of intersection of US 59 and Caney Creek	Montgomery	to Peach Creek	TCEQ			0.9	10	15	3	1	na	Two Gallera Tower	13455 Noel Road, Floor 23	Dallas, TX 75240					
127311	1009	14576-001	TX0127311	523 Venture, Inc/ Becker Road LP[3]	1.3 mi south and .7 mi east of intersection of US 290 and Becker rd	Harris	to unnamed trib, to Cypress Creek	TCEQ, EPA	Inactive		0.2	10	15	3	1	na	1 Riverway, Suite 2050		Houston, TX 77056					
127400	1004	14586-001	TX0127400	LMV Management Co. LTD	8200 ft south of intersection of Riley Fuzzel Rd and Woodsons Gully	Montgomery	to unnamed ditch, to Tantrough Gully, to West Fork San Jacinto River	TCEQ			0.9	10	15	3	1	na	700 Louisiana Street, Suite 2450		Houston, TX 77002					
127663	1008	14592-001	TX0127663	South Central Water Company	1560 ft southeast of intersection of Lone Star and FM 1774 and 840 ft south of intersection of FM 149 and FM 1774	Montgomery	to unnamed trib, to Decker branch, to Neidigk Lake, to Mill Creek, to Spring Creek	TCEQ, EPA	Inactive		0.32	10	15	3	1	na	5818 Beverlyhill Street		Houston, TX 77057					
127710	1010	01497-001	TX0127710	The Signorelli Co.	4400 ft west of corssing of US 59 over White Oak Creek	Montgomery	to unnamed trib, to White Oak Creek, to Caney Creek	TCEQ, EPA			0.6	10	15	3	1	na	235 I 45 North		Conroe, TX 77304	28-Feb-07	0.012375	na	0	
127752	1004	14604-001	TX0127752	Northway Land Company, LTD	2000 ft east of Aldine Westfield Rd, 1700 ft north of intersection of Fountain Brook Park Ln and Trinyt Park Ln	Montgomery	to unnamed ditch, to White Oak Creek, to West Fork San Jacinto River	TCEQ			0.58	10	15	3	1	na	1300 Post Oak Blvd, Suite 1110		Houston, TX 77056					
127795	1008	14606-001	TX0127795	South Central Water Company	3550 ft northeast of intersection of FM 2920 and Stubner Airline Rd	Harris	to HCFDD M112-00-00, to Willow Creek, to Spring Creek	TCEQ, EPA	Inactive		0.08	10	15	3	1	na	PO Box 570177		Houston, TX 77257					
127850	1008	14610-001	TX0127850	501 Maple Ridge, LTD	1.75 mi southeast of intersection of FM 2920 and Telge RD	Harris	to detention pond, to Willow Creek, to Spring Creek	TCEQ, EPA	Inactive		0.64	10	15	3	1	na	7850 North Sam Houston Parkway West		Houston, TX 77064					
127973	1008	14624-001	TX0127973	Rosehill Utilities, Inc	2 mi north and 120 ft east of intersection of FM 2920 and Hegar Rd	Waller	to unnamed trib, to Spring Creek	TCEQ			0.02	5	15	1	1	na	17230 Huffmeister Rd		Cypress, TX 77429					
128180	1009	14643-001	TX0128180	Northwest Harris Co MUD #10	east side of Barker Cypress Rd, 4600 ft norht of Huffmeister Rd	Harris	to Little Cypress Creek, to Cypress Creek	TCEQ, EPA	Inactive		0.0945	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002					
128198	1009	14644-001	TX0128198	Redfin Development Co. Inc.		Harris		EPA	Application withdrawn		unk													
128210	1009	11824-002	TX0128210	Northwest Harris Co. MUD #5	3000 ft east and 1300 ft souht of the intersection of Telge Rd and Grant Rd	Harris	to Harris Co. Flood Control District Ditch to Faulkey Gully to Cypress Creek	TCEQ, EPA			0.4	10	15	3	1	na	c/o Smith, Murdaugh, Little & Bonham, LLP	1100 Louisiana Street, Suite 400	Houston, TX 77002					Pipe inactive-10/16/2006
128244	1002	14650-001	TX0128244	Pulte Homes of Texas LP	1.8 mi south an d.2 mi west of intersection of FM 1960 and West of Lake Houston Parkway	Harris	to South Fork Harmon Gully, to Lake Houston	TCEQ, EPA	Inactive		0.45	5	5	3	1	na	16670 Park Row, Suite 100		Houston, TX 77084					
128295	1008	14656-001	TX0128295	Montgomery Co MUD #94	8300 ft southeast of intersection of Spring Trails Ridge and Riley-Fuzzell Rd	Montgomery	to drainage swale, to Spring Creek	TCEQ			1.08	10	15	3	1	na	c/o Schwartz, Page & Harding LLP	1300 Post Oak Blvd, Suite 1400	Houston, TX 77056					
128333	1008	14662-001	TX0128333	Navasota ISD	5.5 mi east of SH 6, 100 ft north of SH 105, 800 ft west of Loop 234 and CR 309	Grimes	to unnamed trib, to Hurricane Creek, to Mill creek, to Neidigk Lake, to Mill Creek, to Spring Creek	TCEQ, EPA			0.024	15	25	6	1	na	PO Box 511		Navasota, TX 77868	28-Feb-07	0.001	na	0	
128368	1015	14711-001	TX0128368	Quadvest, LP	4000 ft north northeast of intersection of FM 1488 and Community Rd	Montgomery	to pipelilne, to Lake Creek	TCEQ, EPA	Inactive		0.32	10	15	3	1	na	Po Box 409		Tomball, TX 77377					

NPDES ID	TCEQ Seg. #	TCEQ Permit Number	EPA NPDES Number	Name	Plant Location	County	Discharge Route	Permit Information Source	Status Notes	Seasonal Limits	Permitted flow [MGD]	CBOD [mg/l]	TSS [mg/l]	NH3N [mg/l]	Chlorine Residual [mg/l]	Fecal Coliform [org/100mL]	Address 1	Address 2	City/State/ Zip	Flow Date	Flow- effluent gross	Flow- annual	Disinfection Violations	Other comments
128431	1004	14671-001	TX0128431	Houston Intercontinental Trade Center LP	4400 ft north of FM 1488	Montgomery		EPA			unk						Attn: Micahel P. Barsi	14405 Walter Road	Houston, TX 77014					little information provided
128457	1009	14675-001	TX0128457	Quadvest, LP	2400 ft southeast of intersection of Bauer Rd and Botkins Rd	Harris	to HCFCDD L114-00-00, to Little Cypress Creek, to Cypress Creek	TCEQ, EPA	Inactive		0.32	10	15	3	1	na	PO Box 409		Tomball, TX 77377					
128520	1008	14684-001	TX0128520	Jason Andrew Thompson	The intersection of Shady Lane &	Montgomery		EPA			unk						Woodlands RV Park WWTP	28323 FM 2978	Magnolia, TX 77354					little information provided
128651	1010	14694-001	TX0128651	Elan Development, LP	4300 Ft east & 1500 ft North FM 1314 &	Montgomery	to Caney Creek	EPA	Inactive		0.18	10	15	3	1	na	211 Highland Cross Drive, Suite 101		Houston, TX 77073					
128660	1009	14696-001	TX0128660	Loan Oak Partners LP	1400 ft south of Cy	Harris		EPA			unk						7322 SW Frwy Suite 1717		Houston, TX 77074					little information provided
128821	1008	14711-001	TX0128821	Maw Magnolia LTD		Montgomery		EPA			unk													little information provided
838011	1009	12224-001	TX00838011	Klein ISD	2000 ft east and 2000 ft north of intersection of Stuebner Airline Road and Spring-Cypress Creek rd	Harris	to Spring Gully, to Cypress Creek	TCEQ			0.011	10	15	3	1	na	7200 Spring Cypress Road		Klein, TX 77379					

New Waverly Ventures LTD. Co., TCEQ #01905-000

Monitoring Period End Date	Flow Effluent Average (MGD)	Fecal Coliform Max Grab (org/100mL)
31-Jan-07	0.101648	177
31-Dec-06	0.058852	
30-Nov-06	0.294247	
31-Oct-06	0.360806	210
30-Sep-06	0.0155	
31-Aug-06	0.0035	
31-Jul-06	0.02543	927
30-Jun-06	0.041967	
31-May-06	0.01823	67

CNP UD- Harris County, TCEQ #11239-001

Monitoring Period End Date	Flow Effluent Average (MGD)	Fecal Coliform Max 7-day Average (org/100mL)	Fecal Coliform Average (org/100mL)
30-Apr-07	0.0896	11	3.81
31-Mar-07	0.888	9.7	3.42
28-Feb-07	0.849	5.3	2.74
31-Jan-07	0.82	3.7	2.29
31-Dec-06	0.755	5.7	2.6
30-Nov-06	0.815	9.4	4.03
31-Oct-06	0.882	7.7	3.72
30-Sep-06	0.856	76.6	9.15
31-Aug-06	0.885	143.1	13.85
31-Jul-06	0.907	65.1	11.79
30-Jun-06	0.913	51.4	13
31-May-06	0.917	21.9	7.5
30-Apr-06	0.836	29.1	6.05
31-Mar-06	0.866	92.9	11.05
28-Feb-06	0.833	98.6	8.45
31-Jan-06	0.842	37.1	7.29
31-Dec-05	0.828	54.9	9.79
30-Nov-05	0.85	7.4	4.72
31-Oct-05	0.841	18.1	5.5
30-Sep-05	0.908	4.8	4
31-Aug-05	0.85	20.7	5.17
31-Jul-05	0.876	51	1.5
30-Jun-05	0.853	7.6	1
31-May-05	0.835	1.1	1.02
30-Apr-05	0.803	1	1
31-Mar-05	0.803	na	na
28-Feb-05	0.799	7.3	1.63
31-Jan-05	0.775	4	1.61
31-Dec-04	0.731	3.3	1.37
30-Nov-04	0.8125	4	1.81
31-Oct-04	0.7935	6.6	2.86
30-Sep-04	0.7844	8.7	3.7
31-Aug-04	0.8178	5.4	3.9
31-Jul-04	0.8139	57.6	25.19
30-Jun-04	0.8511	2096.8	37.04
31-May-04	0.81	263	8.87
30-Apr-04	0.8244	60	5.2
31-Mar-04	0.8343	192.4	4.92
28-Feb-04	0.8401	171	4.92
31-Jan-04	0.8809	171	4.92
31-Dec-03	0.8433	238.6	5.79

Time Lane UD- Harris County, TCEQ # 11142-002

Monitoring Period End Date	Flow Effluent Average (MGD)	Fecal Coliform Max 7-day Average (org/100mL)	Fecal Coliform Average (org/100mL)
28-Feb-07	na	na	na
31-Jan-07	na	na	na
31-Dec-06	0.924387	<39	<7
30-Nov-06	0.883033	<2	<2
31-Oct-06	1.092645	<86	<18
30-Sep-06	0.9104	<63	<20
31-Aug-06	0.969152	<25	<19
31-Jul-06	1.04	53	17
30-Jun-06	0.98	169	45
31-May-06	0.941	88	36
30-Apr-06	0.85	65	26
31-Mar-06	0.817	7	5
28-Feb-06	0.836	12	7
31-Jan-06	0.879	6	5
31-Dec-05	0.761	54	11
30-Nov-05	0.761	42	15
31-Oct-05	0.761	18	6
30-Sep-05	0.761	37	10
31-Aug-05	0.761	9	6
31-Jul-05	0.761	28	8
30-Jun-05	0.622	18	13
31-May-05	0.765	11	7
30-Apr-05	0.684	21	7
31-Mar-05	0.81	27	16
28-Feb-05	1.032	52	36
31-Jan-05	0.568	63	12

City of Houston, TCEQ #10495-146

Monitoring Period End Date	Flow Effluent Average (MGD)	Fecal Coliform Max 7-day Average (org/100mL)	Fecal Coliform Average (org/100mL)
31-Mar-07	4.724	77	40
28-Feb-07	4.678	26	21
31-Jan-07	5.04	38	23
31-Dec-06	4.623	32	21
30-Nov-06	4.729	45	25
31-Oct-06	5.569	85	37
30-Sep-06	4.738	38	22
31-Aug-06	5.256	38	22
31-Jul-06	5.429	57	26
30-Jun-06	5.502	29	25
31-May-06	5.472	119	65
30-Apr-06	5.315	67	44
31-Mar-06	4.993	31	25
28-Feb-06	4.956	17	16
31-Jan-06	5.032	46	29
31-Dec-05	5.258	56	31
30-Nov-05	4.949	26	22
31-Oct-05	5.372	61	30
30-Sep-05	5.384	43	18
31-Aug-05	5.611	51	32
31-Jul-05	5.589	52	33
30-Jun-05	5.549	91	25
31-May-05	5.497	58	54
30-Apr-05	5.378	24	11
31-Mar-05	5.527	37	20
28-Feb-05	5.919	39	23
31-Jan-05	5.544	52	29
31-Dec-04	5.441	51	40
30-Nov-04	6.076	106	69
31-Oct-04	5.297	78	34
30-Sep-04	5.214	102	53
31-Aug-04	5.37	152	96
31-Jul-04	5.585	145	64
30-Jun-04	6.494	74	56

Harris Co MUD #221, TCEQ #12470-001

Monitoring Period End Date	Flow Effluent Average (MGD)	Chlorine Conc Average (mg/L)	Fecal Coliform Geometric Mean (org/100mL)
04/31/07	0.709	0.09	30.9

San Jacinto River Authority, TCEQ #12597-001

Monitoring Period End Date	Flow Effluent Average (MGD)	Fecal Coliform Max 7-day Average (org/100mL)	Fecal Coliform Average (org/100mL)
28-Feb-07	3.405	17	6
31-Jan-07	3.637	25	4
31-Dec-06	3.384	11	5
30-Nov-06	3.344	6	3
31-Oct-06	3.691	5	2
30-Sep-06	3.306	12	2
31-Aug-06	3.37	4	2
31-Jul-06	3.228	21	7
30-Jun-06	3.306	22	14
31-May-06	3.353	20	8
30-Apr-06	3.206	21	6
31-Mar-06	3.18	2.89	2.5
28-Feb-06	3.13	41	3
31-Jan-06	3.12	12	5
31-Dec-05	3.068	48	16
30-Nov-05	3.141	13	4
31-Oct-05	3.061	43	5
30-Sep-05	3.162	5	2
31-Aug-05	3.176	5	3
31-Jul-05	2.984	3	2
30-Jun-05	2.959	4	2
31-May-05	2.948	10	2
30-Apr-05	2.959	10	3
31-Mar-05	2.948	38	11
28-Feb-05	2.932	377	42
31-Jan-05	3.307	4	2
31-Dec-04	2.462	na	na
30-Nov-04	2.206	5	2
31-Oct-04	na	na	na
30-Sep-04	1.615	4	2
31-Aug-04	1.901	2	2
31-Jul-04	1.887	25	2
30-Jun-04	1.785	81	13
31-May-04	1.944	18	10
30-Apr-04	1.865	5	3
31-Mar-04	1.763	29	7
28-Feb-04	1.936	3	2
31-Jan-04	1.766	23	5
31-Dec-03	1.723	7	3
30-Nov-03	1.811	12	4
31-Oct-03	1.742	9	3
30-Sep-03	1.754	8	4
31-Aug-03	1.803	14	6
31-Jul-03	1.634	9	4
30-Jun-03	1.804	15	5
31-May-03	1.727	9	4
30-Apr-03	1.637	14	4
31-Mar-03	1.795	6	2

City of Houston, TCEQ #10495-149

Monitoring Period End Date	Flow Effluent Average (MGD)	Fecal Coliform Max 7-day Average (org/100mL)	Fecal Coliform Average (org/100mL)
31-Mar-07	0.392	30	20
28-Feb-07	0.323	30	18
31-Jan-07	0.407	24	21
31-Dec-06	0.274	30	20
30-Nov-06	0.278	18	16
31-Oct-06	0.464	56	27
30-Sep-06	0.286	20	16
31-Aug-06	0.304	22	16
31-Jul-06	0.333	48	18
30-Jun-06	0.371	26	26
31-May-06	0.307	57	31
30-Apr-06	0.261	78	41
31-Mar-06	0.259	19	16
28-Feb-06	0.266	25	19
31-Jan-06	0.265	82	32
31-Dec-05	0.295	106	46
30-Nov-05	0.26	51	26
31-Oct-05	0.259	451	64
30-Sep-05	0.272	71	43
31-Aug-05	0.267	262	114
31-Jul-05	0.324	33	13
30-Jun-05	0.257	117	42
31-May-05	0.303	325	123
30-Apr-05	0.267	41	17
31-Mar-05	0.328	169	95
28-Feb-05	0.509	215	121
31-Jan-05	0.323	164	91
31-Dec-04	0.314	206	76
30-Nov-04	0.505	252	116
31-Oct-04	0.29	185	48
30-Sep-04	0.292	83	44
31-Aug-04	0.301	133	122
31-Jul-04	0.344	322	120
30-Jun-04	0.654	209	115
31-May-04	0.448	196	40
30-Apr-04	0.424	54	25
31-Mar-04	0.414	66	44
28-Feb-04	0.514	20	11
31-Jan-04	0.457	25	14
31-Dec-03	0.339	20	11
30-Nov-03	0.506	76	31

Skinner Nurseries-Harris County, TCEQ #03076-000

Monitoring Period End Date	Flow Effluent Average* 001 (MGD)	Flow Effluent Average* 002 (MGD)	Fecal Coliform Max Grab 001 (org/100mL)	Fecal Coliform Max Grab 002 (org/100mL)
31-Jan-07				
31-Dec-06				
30-Nov-06				
31-Oct-06	2.596	5.192	570	4300
30-Sep-06				
31-Aug-06				
31-Jul-06	1.573	3.146	38	56
30-Jun-06	2.832	5.664	52	39
31-May-06	2.242	4.484	9	7
30-Apr-06				
31-Mar-06				
28-Feb-06	0.314	0.628	36	682
31-Jan-06	0.944	1.89	360	390
31-Dec-05	1.89	3.78	476	463
30-Nov-05				
31-Oct-05				
30-Sep-05				
31-Aug-05				
31-Jul-05			440	
30-Jun-05				
31-May-05	0.292	0.584	560	400
30-Apr-05	0.472	0.945	415	450
31-Mar-05	0.212	0.424		
28-Feb-05	0.306	0.612	430	390
31-Jan-05	0.236	0.472	320	460
31-Dec-04	0.319	0.638	430	200
30-Nov-04	1.675	3.35	51	49
31-Oct-04				
30-Sep-04				
31-Aug-04				
31-Jul-04				

*average of days when discharge occurs (not including zero-flow days)